

FUJITSU Software

openUTM V7.0

Messages, Debugging and Diagnostics on BS2000 Systems

User Guide

November 2019

Comments... Suggestions... Corrections...

The User Documentation Department would like to know your opinion on this manual. Your feedback helps us to optimize our documentation to suit your individual needs.

Feel free to send us your comments by e-mail to: bs2000services@ts.fujitsu.com.

Certified documentation according to DIN EN ISO 9001:2015

To ensure a consistently high quality standard and user-friendliness, this documentation was created to meet the regulations of a quality management system which complies with the requirements of the standard DIN EN ISO 9001:2015.

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openUTM Messages, Debugging and Diagnostics

1 Preface

The IT infrastructure of today's companies as the heart and engine of the business must meet the requirements of the digital age. At the same time, it has to cope with increased amounts of data as well as with stricter requirements from the environment, e.g. compliance requirements. It must also be possible to integrate additional applications at short notice. And all this under the aspect of guaranteed security.

Thus, essential requirements for a modern IT infrastructure consist of, among others

- Flexibility and almost limitless scalability also for future requirements
- high robustness with highest availability
- absolute safety in all respects
- Adaptability to individual needs
- Causing low costs

To meet these challenges, Fujitsu offers an extensive portfolio of innovative enterprise hardware, software, and support services within the environment of our enterprise mainframe platforms, and is therefore your

- Reliable service provider, giving you longterm, flexible, and innovative support in running your company's mainframe-based core applications
- Ideal partner for working together to meet the requirements of digital transformation
- Longterm partner, by reason of continuous adjustment of modern interfaces required by a modern IT landscape with all its requirements.

With openUTM, Fujitsu provides you a thoroughly tried-and-tested solution from the middleware area.

openUTM is a high-end platform for transaction processing that offers a runtime environment that meets all these requirements of modern, business-critical applications, because openUTM combines all the standards and advantages of transaction monitor middleware platforms and message queuing systems:

- consistency of data and processing
- high availability of the applications
- high throughput even when there are large numbers of users (i.e. highly scalable)
- flexibility as regards changes to and adaptation of the IT system

A UTM application on Unix, Linux and Windows systems can be run as a standalone UTM application or sumultaneously on several different computers as a UTM cluster application.

openUTM forms part of the comprehensive **openSEAS** offering. In conjunction with the Oracle Fusion middleware, openSEAS delivers all the functions required for application innovation and modern application development. Innovative products use the sophisticated technology of openUTM in the context of the **openSEAS** product offering:

- BeanConnect is an adapter that conforms to the Java EE Connector Architecture (JCA) and supports standardized connection of UTM applications to Java EE application servers. This makes it possible to integrate tried-and-tested legacy applications in new business processes.
- Existing UTM applications can be migrated to the Web without modification. The UTM-HTTP interface and the WebTransactions product, are two openSEAS alternatives that allows proven host applications to be used flexibly in new business processes and modern application scenarios.



The products BeanConnect and WebTransactions are briefly presented in the performance overview. There are separate manuals for these products.

i Wherever the term Linux system or Linux platform is used in the following, then this should be understood to mean a Linux distribution such as SUSE or Red Hat.

Wherever the term Windows system or Windows platform is in the following, this should be understood to mean all the variants of Windows under which openUTM runs.

Wherever the term Unix system or Unix platform is used in the following, then this should be understood to mean a Unix-based operating system such as Solaris or HP-UX.

1.1 Summary of contents and target group

The openUTM manual “Messages, Debugging and Diagnostics on BS2000 Systems” is intended for users, administrators and programmers of UTM applications.

It describes how to debug an openUTM application on BS2000 systems, the structure of the openUTM dump, behavior in the event of an error, and all the openUTM messages and return codes output by openUTM.

Chapter 4 also describes the openUTM message system and the options for outputting messages in different languages for specific users or for modifying the messages supplied with openUTM for specific applications or redirecting messages to different destinations.

This manual assumes some familiarity with openUTM and BS2000 operating system. A separate openUTM manual “Messages, Debugging and Diagnostics on Unix, Linux and Windows Systems”, is available for the Unix operating systems and the Windows operating systems.

1.2 Summary of contents of the openUTM documentation

This section provides an overview of the manuals in the openUTM suite and of the various related products.

1.2.1 openUTM documentation

The openUTM documentation consists of manuals, the online help for the graphical administration workstation openUTM WinAdmin and the graphical administration tool WebAdmin as well as release notes.

There are manuals and release notes that are valid for all platforms, as well as manuals and release notes that are valid for BS2000 systems and for Unix, Linux and Windows systems.

All the manuals are available on the internet at <https://bs2manuals.ts.fujitsu.com>. For the BS2000 platform, you will also find the manuals on the Softbook DVD.

The following sections provide a task-oriented overview of the openUTM V7.0 documentation.

You will find a complete list of documentation for openUTM in the chapter on related publications at the back of the manual.

Introduction and overview

The **Concepts and Functions** manual gives a coherent overview of the essential functions, features and areas of application of openUTM. It contains all the information required to plan a UTM operation and to design a UTM application. The manual explains what openUTM is, how it is used, and how it is integrated in the BS2000, Unix, Linux and Windows based platforms.

Programming

- You will require the **Programming Applications with KDCS for COBOL, C and C++** manual to create server applications via the KDCS interface or UTM-HTTP programming interface. This manual describes the KDCS interface as used for COBOL, C and C++. This interface provides the basic functions of the universal transaction monitor, as well as the calls for distributed processing. The manual also describes interaction with databases. The UTM-HTTP programming interface provides functions that may be used for communication with HTTP clients.
- You will require the **Creating Applications with X/Open Interfaces** manual if you want to use the X/Open interface. This manual contains descriptions of the openUTM-specific extensions to the X/Open program interfaces TX, CPI-C and XATMI as well as notes on configuring and operating UTM applications which use X/Open interfaces. In addition, you will require the X/Open-CAE specification for the corresponding X/Open interface.
- If you want to interchange data on the basis of XML, you will need the document entitled openUTM **XML for openUTM**. This describes the C and COBOL calls required to work with XML documents.
- For BS2000 systems there is supplementary documentation on the programming languages Assembler, Fortran, Pascal-XT and PL/1.

Configuration

The **Generating Applications** manual is available to you for defining configurations. This describes for both standalone UTM applications and UTM cluster applications on Unix, Linux and Windows systems how to use the UTM tool KDCDEF to

- define the configuration
- generate the KDCFILE
- and generate the UTM cluster files for UTM cluster applications

In addition, it also shows you how to transfer important administration and user data to a new KDCFILE using the KDCUPD tool. You do this, for example, when moving to a new openUTM version or after changes have been made to the configuration. In the case of UTM cluster applications, it also indicates how you can use the KDCUPD tool to transfer this data to the new UTM cluster files.

Linking, starting and using UTM applications

In order to be able to use UTM applications, you will need the **Using UTM Applications** manual for the relevant operating system (BS2000 or Unix, Linux and Windows systems). This describes how to link and start a UTM application program, how to sign on and off to and from a UTM application and how to replace application programs dynamically and in a structured manner. It also contains the UTM commands that are available to the terminal user. Additionally, those issues are described in detail that need to be considered when operating UTM cluster applications.

Administering applications and changing configurations dynamically

- The **Administering Applications** manual describes the program interface for administration and the UTM administration commands. It provides information on how to create your own administration programs for operating a standalone UTM application or a UTM cluster application and on the facilities for administering several different applications centrally. It also describes how to administer message queues and printers using the KDCS calls DADM and PADM.
- If you are using the graphical administration workstation **openUTM WinAdmin** or the Web application **openUTM WebAdmin**, which provides comparable functionality, then the following documentation is available to you:
 - A **description of WinAdmin** and **description of WebAdmin**, which provide a comprehensive overview of the functional scope and handling of WinAdmin/WebAdmin.
 - The respective **online help systems**, which provide context-sensitive help information on all dialog boxes and associated parameters offered by the graphical user interface. In addition, it also tells you how to configure WinAdmin or WebAdmin in order to administer standalone UTM applications and UTM cluster applications.

i For detailed information on the integration of openUTM WebAdmin in SE Server's SE Manager, see the SE Server manual **Operation and Administration**.

Testing and diagnosing errors

You will also require the **Messages, Debugging and Diagnostics** manuals (there are separate manuals for Unix, Linux and Windows systems and for BS2000 systems) to carry out the tasks mentioned above. These manuals describe how to debug a UTM application, the contents and evaluation of a UTM dump, the openUTM message system, and also lists all messages and return codes output by openUTM.

Creating openUTM clients

The following manuals are available to you if you want to create client applications for communication with UTM applications:

- The **openUTM-Client for the UPIC Carrier System** describes the creation and operation of client applications based on UPIC. It indicates what needs to be taken into account when programming a CPI-C application and what restrictions apply compared with the X/Open CPI-C interface.

-
- The **openUTM-Client for the OpenCPIC Carrier System** manual describes how to install and configure OpenCPIC and configure an OpenCPIC application. It indicates what needs to be taken into account when programming a CPI-C application and what restrictions apply compared with the X/Open CPI-C interface.
 - The documentation for the product **openUTM-JConnect** shipped with **BeanConnect** consists of the manual and a Java documentation with a description of the Java classes.
 - The **BizXML2Cobol** manual describes how you can extend existing COBOL programs of a UTM application in such a way that they can be used as an XML-based standard Web service. How to work with the graphical user interface is described in the **online help system**.
 - You can also use the software product WS4UTM (WebServices for openUTM) to provide services of UTM applications as Web services. To do this, you need the **Web Services for openUTM** manual. Working with the graphical user interface is described in the corresponding **online help system**.

Communicating with the IBM world

If you want to communicate with IBM transaction systems, then you will also require the manual **Distributed Transaction Processing between openUTM and CICS, IMS and LU6.2 Applications**. This describes the CICS commands, IMS macros and UTM calls that are required to link UTM applications to CICS and IMS applications. The link capabilities are described using detailed configuration and generation examples. The manual also describes communication via openUTM-LU62 as well as its installation, generation and administration.

PCMX documentation

The communications program PCMX is supplied with openUTM on Unix, Linux and Windows systems. The functions of PCMX are described in the following documents:

- CMX manual "Betrieb und Administration" (Unix-Systeme) for Unix, Linux and Windows systems (only available in German)
- PCMX online help system for Windows systems

1.2.2 Documentation for the openSEAS product environment

The **Concepts and Functions** manual briefly describes how openUTM is connected to the openSEAS product environment. The following sections indicate which openSEAS documentation is relevant to openUTM.

Integrating Java EE application servers and UTM applications

The BeanConnect adapter forms part of the openSEAS product suite. The BeanConnect adapter implements the connection between conventional transaction monitors and Java EE application servers and thus permits the efficient integration of legacy applications in Java applications.

The manual **BeanConnect** describes the product BeanConnect, that provides a JCA 1.5- and JCA 1.6-compliant adapter which connects UTM applications with applications based on Java EE, e.g. the Oracle application server.

Connecting to the web and application integration

Alternatively, you can use the WebTransactions product instead of the UTM HTTP program interface. Then you will need the **WebTransactions** manuals. The manuals will also be supplemented by JavaDocs.

1.2.3 Readme files

Information on any functional changes and additions to the current product version described in this manual can be found in the product-specific Readme files.

Readme files are available to you online in addition to the product manuals under the various products at <https://bs2manuals.ts.fujitsu.com>. For the BS2000 platform, you will also find the Readme files on the Softbook DVD.

Information on BS2000 systems

When a Readme file exists for a product version, you will find the following file on the BS2000 system:

```
SYSRME.<product>.<version>.<lang>
```

This file contains brief information on the Readme file in English or German (<lang>=E/D). You can view this information on screen using the `/SHOW-FILE` command or an editor.

The `/SHOW-INSTALLATION-PATH INSTALLATION-UNIT=<product>` command shows the user ID under which the product's files are stored.

Additional product information

Current information, version and hardware dependencies, and instructions for installing and using a product version are contained in the associated Release Notice. These Release Notices are available online at <https://bs2manuals.ts.fujitsu.com>.

1.3 Changes in openUTM V7.0

The following sections provide more details about the changes in the individual functional areas.

1.3.1 New server functions

UTM as HTTP-Server

A UTM application can also act as an HTTP server.

GET, PUT, POST and DELETE are supported as methods. In addition to HTTP, access via HTTPS is also supported.

The following interfaces have been changed:

- Generation

All systems:

- KDCDEF statement BCAMAPPL:

- Additional specification for the transport protocol for the operand T-PROT= with value SOCKET

*USP: The UTM socket protocol is to be used on connections from this access point.

*HTTP: The HTTP protocol is to be used for connections from this access point.

*ANY: Both the UTM socket protocol and the HTTP protocol are supported on connections from this access point.

- Additional specification for encryption for the operand T-PROT= with value SOCKET

SECURE: On connections from this access point, communication takes place using transport layer security (TLS).

- New operand USER-AUTH = *NONE | *BASIC. Herewith you can specify which authentication mechanism HTTP clients must use for this access point.

- KDCDEF statement HTTP-DESCRIPTOR:

This statement defines a mapping of the path received in an HTTP request to a TAC and additional processing parameters can be specified.

BS2000 systems:

- KDCDEF statement CHAR-SET:

With this statement, each of the four UTM code conversions provided by openUTM can be assigned up to four character set names.

- Programming

- KDCS communication area (KB):

In the header of the KDCS communication area, there are new indicators for the client protocols HTTP, USP-SECURE, and HTTPS in the *kccp/KCCP* field.

- KDCS call INIT PU:

- The version of the interface has been increased to 7.

- To obtain the complete available information, the value 372 must be specified in the KCLI field.

- New fields for requesting (KCHTTP/http_info) and returning (KCHTTPINF/httpInfo) HTTP-specific information.

- Administration interface KDCADMI

- The data structure version of KDCADMI has been changed to version 11 (field *version_data* in the parameter area).

-
- New structure *kc_http_descriptor_str* in the identification area to support the HTTP descriptor.
 - New structure *kc_character_set_str* in the identification area for supporting the HTTP character set.
 - New fields *secure_soc* and *user_auth* in structure *kc_bcamappl_str* for the support of HTTP access points.
 - UTM-HTTP program interface

In addition to the KDCS interface, UTM provides an interface for reading and writing HTTP protocol information and handling the HTTP message body.

The functions of the interface are briefly listed below:

- Function *kcHttpGetHeaderByIndex()*
This function returns the name and value of the HTTP header field for the specified index.
- Function *kcHttpGetHeaderByName()*
The function returns the value of the HTTP header field specified by the name.
- Function *kcHttpGetHeaderCount()*
This function returns the number of header fields contained in the HTTP request, that can be read by the program unit.
- Function *kcHttpGetMethod()*
This function returns the HTTP method of the HTTP request.
- Function *kcHttpGetMputMsg()*
This function returns the MPUT message generated by the program unit.
- Function *kcHttpGetPath()*
This function returns the HTTP path of the HTTP request normalized with *KC_HTTP_NORM_UNRESERVED*.
- Function *kcHttpGetQuery()*
This function returns the HTTP query of the HTTP request normalized with *KC_HTTP_NORM_UNRESERVED*.
- Function *kcHttpGetRc2String()*
Help function to convert a function result of type enum into a printable zero terminated string.
- Function *kcHttpGetReqMsgBody()*
This function returns the message body of the HTTP request.
- Function *kcHttpGetScheme()*
This function returns the schema of the HTTP request.
- Function *kcHttpGetVersion()*
This function returns the version of the HTTP request.
- Function *kcHttpPercentDecode()*
Function to convert characters in percent representation in strings to their normal one-character representation.
- Function *kcHttpPutHeader()*
This function passes an HTTP header for the HTTP response.
- Function *kcHttpPutMgetMsg()*
This function passes a message for the program unit, which can be read with MGET.
- Function *kcHttpPutRspMsgBody()*
This function passes a message for the message body of the HTTP response.
- Function *kcHttpPutStatus()*
This function passes a HTTP status code for the HTTP response.

- Communication via the Secure Socket Layer (SSL)

BS2000 systems:

- If a BCAMAPPL with T-PROT=(SOCKET,...,SECURE) has been generated for a UTM application, an additional task is started with a reverse proxy when UTM starts the application. The reverse proxy acts as the TLS Termination Proxy for the application and handles all SSL communication.

Unix, Linux and Windows systems :

- Another network process of the type *utmnets*/is available for secure access with TLS.

If BCAMAPPL is generated with T-PROT=(SOCKET,...,SECURE) for a UTM application, a number of *utmnets*/processes are started when UTM is started. The number of these processes depends on the value LISTENER-ID of these BCAMAPPL objects. All TLS communication for the assigned BCAMAPPL port numbers is handled in a *utmnets*/process.

Encryption

The encryption functionality in UTM between a UTM application and a UPIC client has been revised. Security gaps have been closed, modern methods have been adopted and delivery has been simplified as follows:

- UTM-CRYPT variant

Previously, the encryption functionality in UTM was only available if the product UTM-CRYPT had been installed. With UTM V7.0 this is no longer necessary. As of this version, the decision as to whether or not to use the encryption functionality is made via generation or at the time of application start.

- Security

A vulnerability has been fixed in the communication between a UTM application and a UPIC client.

! This means that encrypted communication with a UTM application V7.0 is only possible together with UPIC client applications as of UPIC V7.0!

- Encryption Level 5 (*Unix, Linux and Windows systems*)

KDCDEF statements PTERM, TAC and TPOOL

The operand ENCRYPTION-LEVEL has an additional level 5, where the Diffie-Hellman method based on Elliptic Curves is used to agree the session key and input/output messages are encrypted with the AES-GCM algorithm.

OSI-TP communication and port numbers

BS2000 systems:

- KDCDEF statement OSI-CON

The operand LISTENER-PORT can also be specified on BS2000 systems.

- Administration interface KCADMI

In the structure *kc_osi_con_str*, the port number is also displayed in the *listener-port* field on BS2000 systems.

Subnets

In a UTM application, subnets can also be generated on BS2000 systems in order to restrict access to UTM applications to defined IP address ranges. In addition, name resolution can be controlled via DNS.

The following interfaces have been changed for this purpose:

- Generation

BS2000 systems:

- KDCDEF statement SUBNET:

The SUBNET statement can also be specified on BS2000 systems.

All systems:

- KDCDEF statement SUBNET:

RESOLVE-NAMES=YES/NO can be used to specify whether or not a name resolution via DNS is to take place after a connection is established.

If name resolution takes place, the real processor name of the communication partner is displayed via the administration interface and in messages. Otherwise, the IP address of the communication partner and the name of the subnet defined in the generation are displayed as the processor name.

- Administration interface KDCADMI

The structures *kc_subnet_str* and *kc_tpool_str* contain a new field *resolve_names*.

Access data for the XA database connection

A modified but not yet activated user name for the XA database connection can be read by Administration (KDCADMI):

- Operation code KC_GET_OBJECT:

Data Structure *kc_db_info_str*. New field *db_new_userid*.

Reconnect for the XA database connection

If an XA action to control the transaction detects that the connection to the database has been lost, the system tries to renew the connection and repeat the XA action.

Only if this is not successful, the affected UTM process and the UTM application are terminated abnormally.

Previously, the UTM application was terminated abnormally, if a XA-Connection was lost without trying to reconnect.

Other changes

- XA messages

The messages regarding the XA interface were extended by the inserts UTM-Userid and TAC. The messages K204-K207, K212-K215 and K217-K218 are affected.

- UTM-Tool KDCEVAL

In the TRACE 2 record of KDCEVAL the type of the last order (bourse announcement) was recorded in the WAITEND record (first two bytes can be printed).

1.3.2 Discontinued server functions

In particular, the following functions has been discontinued:

- **KDCDEF utility**

Several functions have been deleted and can no longer be generated in KDCDEF. If they are still specified, this will be rejected with a syntax error in the KDCDEF run.

- **KDCDEF statement PTERM**
Operand values 1 and 2 for ENCRYPTION-LEVEL
- **KDCDEF statement TPOOL**
Operanden values 1 and 2 for ENCRYPTION-LEVEL
- **KDCDEF statement TAC**
Operanden value 1 for ENCRYPTION-LEVEL

- *BS2000 systems*

- **UTM Cluster:**
UTM cluster applications are no longer supported on BS2000 systems.

- *Unix, Linux and Windows systems*

- **TNS operation:**
When starting a UTM application, the TNS generation is no longer read. The addressing information must be stored completely during configuration with KDCDEF.

1.3.3 New client functions

Encryption

The encryption functionality in openUTM-Client has been revised. Security gaps have been closed, modern methods have been adopted and delivery has been simplified as follows:

- **UTM-CLIENT-CRYPT variant**
Until now, the encryption functionality in openUTM-Client was only available if the product UTM-CLIENT-CRYPT was installed. With openUTM Client V7.0 this is no longer necessary. As of this version, it is decided at runtime whether the encryption functionality is available or not.
- **Security**
A vulnerability has been fixed when communicating with a UTM application.
- **Encryption Level 5**
The openUTM client V7.0 supports communication with UTM V7.0 applications when ENCRYPTION-LEVEL 5 was generated for the connections to the UPIC client.
With Level 5 the Diffie-Hellman method, based on Elliptic Curves, is used to agree on the session key. Input /output messages are encrypted using the AES-GCM algorithm. AES-GCM is an [authenticated encryption](#) algorithm designed to provide both data authenticity (integrity) and confidentiality.
Level 5 is supported by the openUTM-Client on all platforms.
- **Encryption BS2000**
openUTM-Client (BS2000) uses openssl instead of BS2000-CRYPT analogous to Unix, Linux and Windows systems.

1.3.4 New functions for openUTM WinAdmin

WinAdmin supports all new features of openUTM 7.0 relating to the program interface for the administration.

1.3.5 New functions for openUTM WebAdmin

WebAdmin supports all new features of openUTM 7.0 relating to the program interface for the administration.

1.4 Notational conventions

Metasyntax

The table below lists the metasyntax and notational conventions used throughout this manual:

| Representation | Meaning | Example |
|-------------------------------------|---|--|
| UPPERCASE LETTERS | Uppercase letters denote constants (names of calls, statements, field names, commands and operands etc.) that are to be entered in this format. | LOAD-MODE=STARTUP |
| lowercase letters | In syntax diagrams and operand descriptions, lowercase letters are used to denote place-holders for the operand values. | KDCFILE=filebase |
| <i>lowercase letters in italics</i> | In running text, variables and the names of data structures and fields are indicated by lowercase letters in italics. | <i>utm-installationpath</i> is the UTM installation directory |
| Typewriter font | Typewriter font (Courier) is used in running text to identify commands, file names, messages and examples that must be entered in exactly this form or which always have exactly this name or form. | The call tpcall |
| { } and | Curly brackets contain alternative entries, of which you must choose one. The individual alternatives are separated within the curly brackets by pipe characters. | STATUS={ ON OFF } |
| [] | Square brackets contain optional entries that can also be omitted. | KDCFILE=(filebase [, { SINGLE DOUBLE }]) |
| () | Where a list of parameters can be specified for an operand, the individual parameters are to be listed in parentheses and separated by commas. If only one parameter is actually specified, you can omit the parentheses. | KEYS=(key1,key2,...key <i>n</i>) |
| <u>Underscoring</u> | Underscoring denotes the default value. | CONNECT= { YES <u>NO</u> } |
| abbreviated form | The standard abbreviated form of statements, operands and operand values is emphasized in boldface type. The abbreviated form can be entered in place of the full designation. | TRANSPORT-SELECTOR =c`C` |
| ... | An ellipsis indicates that a syntactical unit can be repeated. It can also be used to indicate sections of a program or syntax description etc. | Start KDCDEF ... OPTION DATA=statement_file ... END |

Symbols



Indicates references to comprehensive, detailed information on the relevant topic.



Indicates notes that are of particular importance.



Indicates warnings.

Other

utmpath On Unix, Linux and Windows systems, designates the directory under which openUTM was installed.

filebase On Unix, Linux and Windows systems, designates the directory of the UTM application. This is the base name generated in the KDCDEF statement MAX KDCFILE=.

\$userid On BS2000 systems, designates the user ID under which openUTM was installed.

upic_dir The directory under which UPIC Client for UPIC Carrier System is installed on Unix, Linux, or Windows system.

2 Debugging and error diagnosis

This chapter tells you

- how to test a UTM application
- how to use return codes and messages for diagnostic purposes
- which traces you can use for diagnostics

2.1 Debugging UTM applications

You can debug a UTM application interactively in the dialog (BS2000 system, TIAM timesharing mode). This enables you to use the operating system debugging aids and the corresponding compiler (in particular, see the language-specific AID user guides).

A user-friendly option for testing your UTM application is also offered by the FUJITSU Software BS2000 BS2IDE – Eclipse-based Integrated Development Environment for BS2000, see also website <https://bs2000.ts.fujitsu.com/bs2ide/>.

Comprehensive interactive debugging functionality is available to you:

- all UTM function levels can be debugged, including functions for distributed processing
- all partner connections can be included for debugging
- debugging can be done in single task mode as well as in multitasking mode
- printer outputs can be debugged
- dialog I/Os for the BS2000 debugger and I/Os for the UTM application are entered and produced in different windows (or on different terminals) and do not interfere with each other; the user dialog will then run just like in live operation. Debugging statements for the application task are entered and analyzed in the corresponding window.
- you can update your application to a new openUTM version and test it in parallel to the "old" version. In parallel operation, you simply need to make sure that all the transport system endpoints in your application (MAX APPLINAME, BCAMAPPL, T-SEL of ACCESS-POINT) have different names and port numbers.
- the debugged application can be released for live operation without any additional changes.
- in a dialog task, you can only debug applications that share the same openUTM version, i.e. you cannot start by debugging a UTM application with an older openUTM version and then debug a version V7.0 application or vice versa.

2.1.1 Preparations for debugging in the dialog

Applications started in the dialog are intended exclusively for debugging purposes. The differences to applications started with ENTER-JOB or ENTER-PROCEDURE are that tasks are not automatically started afterwards and that UTM-STXIT handling can be switched off.

Symbolic debugging

If you want to carry out symbolic debugging, then you must compile the program such that the compiler creates a list for symbolic debugging (LSD). In COBOL, for example, you do this by specifying `COMOPT SYMTEST=ALL`.

You should not link the LSD information statically because you can load it dynamically from your module library as and when required. You can then put the debugged programs into live operation immediately.

Exchanging program units

Specifying `LOAD-MODE={STARTUP | ONCALL}` in the `LOAD-MODULE` statement can be advantageous when debugging your program units and event exits. You do not need to link the application after making a program change and recompiling.

You only have to relink the LLM that contains the modified program unit. If the LLM only consists of this program unit, then you do not have to relink. You activate the modified program unit by restarting the application or exchanging the LLM while the program is running (`KDCPROG LOAD-MODULE= ..., VERS=...` command) or via the program administration interface (`opcode=KC_MODIFY_OBJECT`) or via WinAdmin/WebAdmin.

! CAUTION!

If the modified program unit is assigned to a load module generated with `LOAD-MODULE=ONCALL`, then the modified program unit must have a different version than the program unit loaded to date.

Parallel operation for upgrading to a new version

If you make use of parallel operation, when upgrading to a new version of UTM you can minimize the effort involved as follows:

- Install the new version of UTM in addition to your current version.
- Link your application program (with a different name) to the new version (see the openUTM manual "Using UTM Applications on BS2000 Systems").
- Carry out debugging in parallel with live operation.

Number of tasks during debugging

For debugging purposes, it is normally sufficient to start the application with one task only. However, certain functions of a UTM application, such as programs which use `PWGT` calls, can be tested only if the application is started with more than one task.

If you want to start an application interactively with two or more tasks, please note the following points:

- It is not possible to start tasks in both interactive **and** batch mode.
- Follow-up tasks cannot be started with an administration command, but only "manually" at a terminal or in a separate window.

-
- The AID commands must be repeated for every task because you cannot determine which task of the application will process a user requirement. The required AID commands can be inserted in the start procedure to prevent having to repeatedly enter the commands when debugging in multitasking mode.
 - If you debug and shut down an OSI TP application in multiple dialog tasks then the application should not be started again in the same dialog tasks since this can result in start-up errors or the abnormal termination of the application.

A dialog task only works for the application as long as the program remains loaded. Following program termination, you can continue to work with the task in BS2000 timesharing mode as long as you want. If you are working with only one task, each program termination also causes the application to terminate.

2.1.2 Starting the application and entering debugging commands

You must carry out the following steps if you want to start an application in the dialog for debugging purposes:

1. Open a \$DIALOG session and start your UTM application in the dialog task. Do this just like for live operation but do not start the application, just load it with LOAD-EXECUTABLE-PROGRAM. The corresponding window will be called the *task window* in the following. LOAD-EXECUTABLE-PROGRAM loads all statically linked programs. If, for example, you want to test a program unit for a Start-Exit, you can now enter the corresponding test commands.
2. Start the program with %RESUME. openUTM now reads the start parameters and loads all the programs in load modules that were generated with LOAD-MODE=STARTUP. This also includes shareable components (LOAD-MODE=(POOL/POOL,STARTUP).
To avoid entering the start parameters manually you best execute steps 1 and 2 by using a procedure.
3. Press the K2 key so that the program is aborted and you can enter debugging commands.
The K2 key does not take effect until the UTM task is in the non-privileged state of BS2000 (TU). This may not be the case until you have executed step 4.
4. Connect to your UTM application via a UTM client and, if necessary, sign on at the UTM application via a user ID. Next start a program unit or make your first user input.
5. Now you have to acknowledge in the *task window* that you want to enter commands (CMD0170 DO YOU WANT TO INSERT COMMANDS? REPLY (Y=YES; N=NO)?).

If you want to debug using symbols and the LSD information is not statically linked to the program, then you must assign the libraries that contain the LSD information with %SYMLIB *symlib1*, *symlib2* ...

If you use variable names with uppercase and lowercase letters in your program (C/C++ program units) and you want to refer to these names, then you must change the predefined settings for AID using the %AID LOW command.

Now you can enter your debugging commands in the *task window*, for example to set a breakpoint, see the AID user guides.

You resume execution of the UTM application program with RESUME-PROGRAM.

Please note that load modules generated with LOAD-MODE=ONCALL are not loaded until they are called in a task. Only then can you enter debugging commands for these programs.

6. After the dialog step has been processed, the UTM client receives the response to your input just like in live operation.

If you want to start an additional dialog task, then you need to repeat steps 1 and 2, then enter something from the UTM client and then carry out the actions in step 4 again. If you have specified "TASKS=1" in the start parameters, then you will need to increase the number of tasks via administrative measures first, otherwise start error 31 will occur. Please note that if you are testing in dialog mode then the second task is a UTM system process

and that it may therefore be necessary to start three work processes. For testing in dialog mode, it is consequently recommendable to generate the application without UTM system processes (MAX SYSTEM-TASKS=0).

Please note that you **cannot** start any batch tasks afterwards.

The required AID commands can be inserted in the start procedure to prevent having to repeatedly enter the commands (the breakpoints must be set for each task) when debugging in multitasking mode.

You can connect additional UTM clients to your UTM application at any time, regardless of how many tasks the application runs with.

Notes

The following special points arise when an application is started in the dialog:

- The KDCS call PEND ER does not terminate the program. Thus, the program is not reloaded either. The user exit SHUT is **not** called. If you want to continue debugging with a newly loaded program, you have to terminate and restart the program yourself. If you are working with one task only, program termination also causes the application to terminate.
- BS2000 system does not give openUTM dialog tasks priority over other timesharing tasks. The tasks do not run as TP tasks, but as normal dialog tasks. The cache memory is not made resident (see the openUTM manual “Generating Applications”).
- It is not possible to exchange the application program via the administration. However, single LLM's can be exchanged (see [“Exchanging program units” \(Preparations for debugging in the dialog\)](#)).
- The TASKS= start parameter only sets the upper limit of the number of tasks, but does not cause the follow-up task to be started. Every task started allocates a timesharing task on the BS2000 system.
- The command KDCAPPL TASKS=n also does not cause the start of follow-up tasks but only allows you to do so manually. Further information is contained in the openUTM manual “Generating Applications”.
- You should analyze or save (recatalog) a UTM dump before the next start since the dump file can otherwise be overwritten.

2.1.3 STXIT response when debugging in the dialog

You have the option of switching off UTM STXIT handling during debugging using the start parameter STXIT=OFF.

If you have specified STXIT=OFF, your program will be aborted when an error occurs at the location where the error has occurred and you can diagnose the error with the appropriate debugging statements.

! **CAUTION!**

If you have specified STXIT=OFF, no transactions will be rolled back when an error occurs. This can lead to inconsistencies in the data. You should therefore never set this parameter when accessing databases used in live operation!

2.1.4 Testing for errors when accessing the address zero

openUTM provides a function that allows you to test for errors when the program units of the application access the address zero. This is achieved by openUTM is setting up a local task memory pool at the address zero. It can therefore only be used in applications that do not themselves work with a memory pool at the address zero, or that are loaded themselves to the address zero (24-bit application).

Activating/deactivating the test function

To activate the test method, you set up a FILE-LINK to the name KDCWRPR in the start procedure or in the ENTER job:

```
/SET-FILE-LINK LINK-NAME=KDCWRPR
```

If an error occurs when setting up the memory pool because, for example, there is already a memory pool working at the address zero in the application, openUTM outputs message K078 at startup:

```
K078 ENAMP xxxxxxxx. In KDCRTST.
```

In this case, the method cannot be used.

You can deactivate the test method again by restarting the application without the above SET-FILE-LINK command.

Accessing the address zero

If the address zero is accessed while the application is running, the program unit is terminated by an STXIT event (STXIT with IW = 48 or 5C).

The program unit can then be modified.

2.1.5 Example

The following trace listing shows the beginning of a debugging session in the dialog.

i Depending on the versions of the compiler and AID, the syntax of the AID commands and the AID output may change.

The application is started in the dialog with the START-APPLI command procedure.

The TAC DB4TP1 is called in the user dialog. The TAC is implemented in the C program TA4DB.

The symbolic information on this program is contained in the PLAM library OML.TA4DB.

The DB4TP1 TAC outputs the message received together with general information such as the service start or follow-up TAC in line mode. If the message contains the string "@end", then the service is terminated.

Step1: Load and start the application in the task window

```
/CALL-PROC NAME=START-APPLI,LOGGING=*YES
1 1 /SET-PROCEDURE-OPTIONS IMPLICIT-DECLARATION=*NO, -
    /DATA-ESCAPE-CHAR=*STD,JV-REPLACEMENT=*AFTER-BUILTIN-FUNCTION
7 1 /WRITE-TEXT TEXT='** Procedure starts openUTM - application DBAPP **'
** Procedure starts openUTM - application DBAPP **
9 1 /ASSIGN-SYSDTA TO-FILE=*SYSCMD
11 1 /SET-FILE-LINK FILE=DBAPP.SYSLOG(+1),LINK=SYSLOG,SHARED-UPDATE=*YES
14 1 /RELEASE-SUBSYSTEM-SPACE
% ESM0254 COMMAND 'RELEASE-SUBSYSTEM-SPACE' COMPLETELY PROCESSED
16 1 /LOAD-EXECUTABLE-PROGRAM -
    / FROM-FILE=*LIB-ELEM(LIB= plam-lib ,ELEM= start-llm )
% BLS0523 ELEMENT 'DBAPPT', VERSION '' FROM LIBRARY
    ':40SQ:$ userid.LIB.DBAPP.TD' IN PROCESSING
% BLS0524 LLM 'DBAPPT', VERSION '' OF '2019-09-11:13:21:55' LOADED
22 1 /%R
K044 Please enter start parameters
.UTM START FILEBASE=DBAPP
.UTM START TABLIB=NEWV5,ROOTNAME=DBAPPT
.UTM START TASKS=1,ASYNTASKS=0,STXIT=ON
.UTM END
K136 (First) SYSLOG file is :40SQ:$ userid.DBAPP.SYSLOG(*0001)
```

```
K044 Please enter start parameters
```

```
.FHS MAPLIB=MAPLIB=$userid.SYSLIB.UTM.070.EXAMPLE
```

```
.FHS ISTD=RUNP
```

```
.FHS DE=NO
```

```
END
```

```
FC01 FHS Version 08.3B00 ready
```

```
K051 Successful cold start for application DBAPP under V07.0A00/BS2000 (390) /32  
Bit
```

```
K156 UTM-UPIC encryption function available: N
```

```
K052 Startup completed - task 6HVK activated for application DBAPP version 0 ;  
System-Task: N
```

Step 2: Press the K2 key in the task window

User dialog window

```
KDCSIGN TESTUSER
```

```
K008 Sign-on accepted - input please
```

```
DB4TP1 ** message 1 **
```

Step 3: The user signs on to the UTM application (user dialog window)

Step 4: Enter commands

Task window

```
% CMD0170 DO YOU WANT TO INSERT COMMANDS? REPLY (Y=YES; N=NO)?
```

```
Y
```

```
% SSM2014 TASK IN ESCAPE MODE AT LEVEL NUMBER '1'
```

```
/%SYMLIB OML.TA4DB
```

```
/%AID LOW
```

```
/%INSERT S=N'TA4DB.C'.TA4DB
```

```
/%R
```

```
STOPPED AT SRC_REF: 148, SOURCE: TA4DB@, PROC: TA4DB
```

```
/%R
```

Step 5: End of dialog step, terminal output in *user dialog window* and new input

User dialog window

```
-----  
Service start with TAC = DB4TP1  
** message 1 **  
Follow-up TAC= DB4TP1  
** message 2 * @end **  
-----
```

Step 6: *Stop at the breakpoint*

Task window

```
STOPPED AT SRC_REF: 148, SOURCE: TA4DB@, PROC: TA4DB  
  
/%t 10  
  
148 EXT.PROC START , BLOCK START, ASSIGN  
  
156 ASSIGN  
157 ASSIGN  
159 ASSIGN  
163 CALL  
164 CALL  
165 ASSIGN  
166 ASSIGN  
168 CALL  
170 IF  
  
STOPPED AT SRC_REF: 170 , SOURCE: TA4DB@ , PROC: TA4DB , END OF TRACE  
  
/%d ca->ca_head.kcpr_tac  
  
ca_area.ca_head.kcpr_tac( 0: 7)  
  
( 0) |D| ( 1) |B| ( 2) |4| ( 3) |T| ( 4) |P| ( 5) |1| ( 6) | | ( 7) | |  
  
/%d ca->ca_head.kcpr_tac %xl  
  
CURRENT PC: 0106E396 CSECT: TA4DB@ *****  
V'0101B3E0' = ca_area.ca_head.kcpr_tac + #'00000000'  
0101B3E0 (00000000) C4C2F4E3 D7F14040 DB4TP1  
  
/%R
```

Step 7: End debugging

User dialog window

```
-----  
End of service with TAC = DB4TP1
```

```
** message 2 * @end **  
-----
```

```
KDCSHUT NORMAL
```

Task window

```
K056 Task 6HVK terminated
```

```
K138 SYSLOG file :4OSQ:$userid.DBAPP.SYSLOG(*0001) closed
```

```
K057 Application run terminatedK199 ROOT-Termination initiated with TERM-UNIT:  
&TRMTYP, reason: &ROOTTRMR
```

2.2 Error diagnosis

This section tells you

- which return codes the program interface supplies
- how openUTM signals errors by means of messages
- which documentation has to be produced in the event of errors
- which traces you can use for diagnostic purposes

For a description of an openUTM dump and how to evaluate it, please refer to chapter [“The UTM dump”](#).

2.2.1 Return codes at the program interface

Following each KDCS call (except PEND), openUTM returns the following error codes and IDs in the return field of the communication area:

- the KDCS error code,
- the internal error code.

KDCS error code in the KCRCCC field

Please note the following points:

- If two or more errors occur at the same time, the ones in the highest category are displayed. Within a category normally, but not always, the lowest return code is specified (in difference to DIN 66 265).
- The precise meanings of the KDCS error codes for each KDCS call are described in the openUTM manual „Programming Applications with KDCS“. A summary of all KCRCCC error codes can be found in the appendix in chapter "[KDCS return codes in KCRCCC](#)".

Internal UTM error code in KCRCDC

The internal error code contains a more accurate specification of the error than the KDCS error code in KCRCCC. Usually, this error code is set with the KDCS error codes 40Z or 70Z (system or UTM generation error). The precise meaning can be found in the appendix in chapter "[Internal return code KCRCDC](#)".

The internal UTM error code is not part of the standardized KDCS interface.

2.2.2 UTM messages in response to program errors

Program errors are errors in the programming of the KDCS interface (see chapter "[KDCS return codes in KCRCCC](#)"), formatting errors or errors that lead to STXIT events. openUTM then generates messages that are output by default to SYSOUT, SYSLSST and generally also to SYSLOG (see "[Destinations of UTM messages](#)").

Formatting errors

Whenever there are formatting errors, openUTM issues message K087 and - if the formatting system requests it - message K153. If there are formatting errors when an asynchronous message is output, openUTM also issues message K063. If there are formatting errors in the dialog, openUTM issues message K015 in cases where the formatting error does not lead to abnormal termination of the service.

When errors occur in the FORMAT event exit, openUTM enters the return code FRxx in the KCRCDC field. The FORMAT exit defines the meaning of these return codes.

If serious formatting errors occur while formatting with FHS, openUTM reports these with an internal return code KCRCDC = FHxx, e.g. 'FH01'. In this case, the message contains the 4-byte, printable, secondary FHS return code described in the manual "FHS Format Handling System for openUTM, TIAM, DCAM".

These messages contain the following entries:

- K015 Formatting error &RCDC &RCF2A - input please
contains the entries
&RCDC : internal return code in the KCRCDC field
&RCF2A : secondary FHS return code or VTSU return code
- K063 Formatting error &RCF1A &RCF2A for format &FMTN asynchronous message for LTERM = <RM
contains the entries
&RCF1A : internal return code in the KCRCDC field
&RCF2A : secondary FHS return code
&FMTN : format name
<RM : name of the LTERM to which the message was sent
- K087 Error in the interoperation of UTM and format handling system: opcode = &OPCD3, return code = &ERCD4 &ERCD5
contains the entries
&OPCD3 : operation code at the interface IUTMFORM
&ERCD4 : internal return code FHxx in the KCRCDC field
&ERCD : secondary FHS return code

Example

Message

```
K015 Formatting error FH01 080C - input please
```

means that the format is not available (see also sample dump "[Sample dump K326](#)"). In this way, an MSGTAC service which is intended to react to a formatting error can access the secondary return code simply and conveniently.

Abnormal termination of a service

If a dialog service is terminated abnormally, openUTM issues message K017. If an asynchronous service is terminated abnormally, it issues message K055.

These messages contain return codes that indicate the cause of the error:

- K017 Service &TCVG terminated by UTM (&RCCC/&RCDC &RCF2A) - input please
The entries in the message have the following meanings: &TCVG : TAC with which the service was started
&RCCC : KDCS return code in the KCRCCC field
&RCDC : internal return code in the KCRCDC field
&RCF2A : secondary FHS return code
- K055 Asynchronous service &ATAC1 terminated by UTM; KCRCCC= &RCCC ; KCRCDC= &RCDC ; USER= &USER ; LTERM= <RM

The entries in the message have the following meanings:

```
&ATAC1 : TAC with which the asynchronous service was started
&RCCC : KDCS return code in the KCRCCC field
&RCDC : internal return code in the KCRCDC field
&USER : user ID that created the asynchronous Service
<RM : LTERM partner that generated the asynchronous service
```

Errors in the INPUT exit

- When there are errors in the INPUT exit, openUTM generally issues message K098 to the terminal. You will find an explanation of the error codes contained in K098 in section "[Messages K071 - K101](#)".

STXIT events

- When STXIT events occur, openUTM issues messages K102 and K103 and terminates the service abnormally. The messages are described in section "[Messages K071 - K101](#)".
- For a better diagnosis of STXIT events an extended STXIT logging can be activated via the administration interface (KDCDIAG) or via start parameter STXIT-LOG.

2.2.3 Addressing errors

openUTM overwrites the first 4 KB of the KDCROOT table module and sets up write protection for the first page of KDCROOT to support the search for addressing errors in application programs. This reveals impermissible accesses to the table module (address error, PEND ER). Such accesses occur, for example, as the result of incorrectly transferred addresses (KB, SPAB, etc.) or incorrect register specifications.

Errored accesses to the address zero

If you have activated the test function described on "[Testing for errors when accessing the address zero](#)" then the program unit is aborted by an STXIT event (STXIT with IW = 48 or 5C) if address 0 is accessed during the operation of the application.

The program unit can then be modified.

2.2.4 Diagnostic dump on messages/events

You can cause a diagnostic dump, known as a message dump, to be generated when a certain event occurs. The dump ID depends on the event type.

A message dump is created by the task in which the event occurs. The UTM application is not terminated. In order to take such a message dump, you have to activate test mode for the application and define the event at which the message dump is to be taken. Both of these things can be done by means of start parameters or using the administration functions.

You can specify the following events:

- the output of a specific K message
- the occurrence of a specific KDCS return code (CC or DC) in a program unit run
- the occurrence of a specific SIGN status when a user signs on

Activating test mode

- using the relevant start Parameter
`.UTM TESTMODE = ON`
- using the relevant administration command
`KDCDIAG TESTMODE = ON`
- using the administration program interface (e.g. via WinAdmin or WebAdmin)

In the object type `KC_DIAG_AND_ACCOUNT`, specify:

```
testmode='Y' (data structure kc_diag_and_account_par_str)
```

Activating and resetting the message dump function

You can activate and reset the message dump function by means of a start parameter or using the administration functions. The function is deactivated by default at application startup.

Activating the message dump function

- using the relevant start parameter
`.UTM START DUMP-MESSAGE = (event-type,event)`

This causes a message dump to be created as soon as the event occurs.

You can only specify one event when you activate the function using a start parameter. It is not possible to specify inserts for a message.

- using the relevant administration command
`KDCDIAG DUMP-MESSAGE = (event-type,event)`

In the same way, you can use the parameters `DUMP-MESSAGEx` (where `x = 1, 2, 3`) to specify up to three different events for generating a message dump. `DUMP-MESSAGE` is synonymous with `DUMP-MESSAGE1`.

You can specify up to three inserts as additional constraints for the event "output of a specific K message" (parameter `INSERTx` where `x = 1,2,3`). For further details, see `KDCDIAG` in the openUTM manual "Administering Applications".

- using the administration program Interface
In object type `KC_DIAG_AND_ACCOUNT`, specify the event and the event type in the `event` and `event_type` fields (data structure `kc_diag_and_account_par_str` with the corresponding substructures). You can also specify up to three inserts as a condition. At the program interface, you can specify one event per call. For further details, see the description of `KC_DIAG_AND_ACCOUNT` in the openUTM manual "Administering Applications".
- using WinAdmin or WebAdmin
Open the *Message Dump* tab of the *Application Properties* dialog and select the event type and the event for the corresponding dump event, see WinAdmin/WebAdmin online help.

`event-type` specifies the event type and `event` specifies a particular event for which the message dump is to be generated. You can specify the following events:

- Output of a specific K message (`event-type = MSG`)
Specify the UTM message number `Knnn` as the `event`.
A dump is generated each time the message number occurs until such time as you reset the message number. Only one dump is generated for the message numbers K043, K061, K062. The message number is then automatically reset.
- Occurrence of a particular compatible KDCS return code (`event-type = RCCC`) Specify the number of the compatible KDCS return code (KCRCCC) as the `event` e.g. 14Z.
If the return code occurs during a KDCS call, only one dump is generated and the parameter `DUMP-MESSAGE[x]` is reset to `*NONE`.
- Occurrence of a particular incompatible KDCS return code (`event-type = RCDC`) Specify an incompatible KDCS return code (KCRCDC) as the `event`, e.g. KD10. If the return code occurs during a KDCS call, only one dump is generated and the parameter `DUMP-MESSAGE[x]` is reset to `*NONE`.
Note
In the case of all KDCS return codes $\geq 70Z$ and the associated incompatible KDCS return codes, when no PENDER dump is written (e.g. 70Z/K316), no message dump is created.
- Occurrence of a particular sign-on status (`event-type = SIGN`)
Specify the SIGNON status code in the form `xyy` as the `event` (e.g. U05):
 - `x` corresponds to the value in KCRSIGN1, with U, I, A or R being possible values.
 - `yy` corresponds to the value in KCRSIGN2
 If the status code occurs during a SIGN call, only one dump is generated and the parameter `DUMP-MESSAGE[x]` is reset to `*NONE`. This happens regardless of whether or not a sign-on service is generated in the application.

Deactivating the message dump function

- using the relevant administration command
`KDCDIAG DUMP-MESSAGE = *NONE`
The relevant parameter must be set to `*NONE` for events activated using the parameter `DUMP-MESSAGEx`.
- using the administration program Interface
In the object type `KC_DIAG_AND_ACCOUNT`, reset all the events by specifying `event_type=NONE` for each event.
- using WinAdmin or WebAdmin
Open the *Message Dump* tab of the *Application Properties* dialog and select the event type `<none>` for the corresponding dump event, see WinAdmin/WebAdmin online help.

2.2.5 Producing error documentation

This section lists which diagnostic documentation a user should create when he/she wishes to report a system error to the software support.

- A detailed description of the error situation and an indication as to whether and how the error can be reproduced.
- The BS2000 operating system version number with correction level.
- openUTM-specific documentation:
 - UTM dumps; you must take care to ensure that *a//dumps* from *a//tasks* which were active at the time the error occurred are supplied
 - all available traces. When reproducing errors, TESTMODE=ON should be activated, where KDCDEF parameter MAX TRACEREC should be set to at least 3000 (when openUTM-D is used: at least 10000).
 - in the case of warm start errors, errors in the KDCUPD and if the application aborts with PMIO22, the file(s) of the KDCFILE are required
 - openUTM version number with correction status
 - the log file of KDCDEF
 - linkage editor listing for the application program
 - the SYSLOG file(s)
 - user dumps for errors such as XT48, XT58..., for example
 - SYSLST and SYSOUT logs
- In the case of errors in UTM applications which are configured with BCAMAPPL T-PROT=(SOCKET,...., SECURE) additional documentation is required:
 - User-Dumps of the SSL-proxy processes for errors such as XT48, XT58, in this task.
 - SYSLST- und SYSOUT logs of the SSL-proxy process.
- Plus, for errors associated with FHS:
 - specification of the FHS version used, with correction status
 - IFG format definition (LMS element of type F)
 - ready-to-use format module (LMS element of type R)
 - user dumps and UTM dump, if available
- For errors associated with databases: Please refer to the release notices for the database systems in question.

2.2.6 Traces

Alongside the traces in the UTM dump, you can also utilize the following traces for diagnostic purposes for openUTM:

- Traces of KDCS-calls from C/C++ program unit runs
- BCAM trace in openUTM
- ADMI trace, i.e. trace of the administration program interface (KDCADMI)

2.2.6.1 Logging of KDCS calls from C/C++ program units

This function can be used to log all KDCS calls from C program units. For this to be possible, the C program unit must use the macros from the header file `kcmac.h`.

Enabling logging

Set the job variable `link *KDCSCDB`.

The job variable `link` is evaluated each time a UTM task is started. By default, logging is output to `SYSOUT`.

If logging is to be written to a different file, before including `kcmac.h` you must set the preprocessor variable `KDCS_DEBUG_FP` to the name of a self-defined FILE variable in every program unit in which you want to write traces to this file, and define this FILE variable as external. You define this FILE variable in the Start-Exit and supply its value.

Default: The calls are not logged.

2.2.6.2 BCAM trace in openUTM

The BCAM trace function of openUTM allows logging of all connection-related activities within a openUTM application.

Contents of the BCAM trace

The following types of trace record are written:

- Parameter block : The BCAM parameter blocks of the calls REQCON, ACCON, REJCON, DISCON and also the BCAM parameter blocks of the calls RECLET and SENDLET which supplied a return code or the RSO parameter blocks of the calls of the RSO interface.
- Announcement: All connection-related announcements
- Connection letter
- Communication via TS applications of socket type: parameters blocks for the `connection request`, `connection response` and `disconnect request` functions of the socket interface.
- Message: All input/output messages

Every trace record contains the following entries in the sequence given:

1. Time stamp
2. BCAMAPPL name
3. PTERM/MUX/CON name
4. PROCESSOR name
5. LTERM/LPAP name
6. USER name
7. Type of the trace record (see above):
 - announcement
 - parameter block
 - connection letter
 - TCP/IP record
 - message (input/output message)

Preparatory activities

In the UTM start procedure, a trace file must be created for each task and the link name KDCBTRC assigned to this file by means of the SET-FILE-LINK command.

Each task in a UTM application writes the trace records to a separate file. Therefore, the trace files must be created in such a way in the start procedure that they are given different file names. To this end, the TSN of the task can be appended to the file name for example.

Using SDF-P, this can be done in the following manner:

```

/CREATE-FILE FILE-NAME = &(FILEBASE//'.BTRC.'//TSN()) -
/ , SUPPORT=*PUBLIC-DISK(SPACE=*RELATIVE -
/ (PRIMARY-ALLOCATION=<integer_1..2147483647> -
/ ,SECONDARY-ALLOCATION=<*STD or integer_0..32767>))
/ADD-FILE-LINK FILE-NAME = &(FILEBASE//'.BTRC.'//TSN()) -
/ ,LINK-NAME = KDCBTRC [ , BUFFER-LEN = *STD(SIZE=<1..16>)]

```

Here, the procedure parameter FILEBASE should contain the base name of the UTM application.

As of a maximum trace record length of 1960, you must also specify the BUFFER-LENGTH parameter with the corresponding number of blocks. When doing so, note that the primary allocation must be at least twice as large as the block size and that the secondary allocation must be either zero or at least as large as the block size.

| Maximum trace length | BUFFER-LENGTH= |
|----------------------|----------------|
| > 1960 | STD(2) |
| > 4008 | STD(4) |
| > 8104 | STD(8) |
| > 16296 | STD(16) |

If SDF-P is not available, the same result may be achieved by using job variables or EDT procedures.

Activating/deactivating the BCAM trace

The BCAM trace can be activated and deactivated by means of a start parameter or an administration command. By default, the function is inactive on starting the application.

- Activation/deactivation by start parameter

```

.UTM START,BTRACE = { ON | ( ON, length ) }
.UTM START,BTRACE = { OFF | ( OFF, length ) }

```

In this way, the trace function is activated (ON) or left inactive (OFF) on starting the application.

You can also specify the maximum length of the data to be recorded.

Minimum: 32

Maximum: 32624

Default value: 256

This maximum length can only be defined via start parameters.

If you use the BCAM trace for the UPIC Capture function (see openUTM manual “Using UTM Applications on BS2000 Systems”) then it is advisable to use the maximum value.

- Activation/deactivation by administration command

```

KDCDIAG BTRACE=ON/OFF [ ,LTERM=lterm-name/LPAP=lpap-name / USER=user-name]/ MUX=(
mux-name,processor-name,bcamappl) ]

```

In this way, the trace function is activated/deactivated while the application is running. If anLTERM, LPAP or MUX nameis specified, only the events associated with this connection are recorded. If an USER name is specified, only the events associated with this user id are recorded.

- Activation/deactivation via administration program interface (e.g. via WinAdmin or WebAdmin)

In the object type KC_DIAG_AND_ACCOUNT, specify:

```
bcam_trace='Y' or 'N' (data structure kc_diag_and_account_par_str)
```

After activation of the BCAM trace function, the trace files (SAM file type) assigned through the SET-FILE-LINK commands are opened with EXTEND.

If the BCAM trace is activated with the KDCDIAG command without assigning trace files with SET-FILE-LINK commands, then the command will be executed successfully, but the application task will encounter a DMS error while writing the trace information, and the BCAM trace is then deactivated as a result.

After deactivation of the BCAM trace function, the trace files are closed and can subsequently be evaluated. Since closure of the files must be performed by all the application's tasks, it may take a little while until all trace files have been closed. The SHOW-FILE-ATTRIBUTES command can be used to see which files have been opened.

If a DMS error occurs for any of the trace files, then openUTM terminates the trace function.

Evaluating the BCAM trace

The trace files can be evaluated after deactivation of the BCAM trace function or after termination of the UTM application. The tool KDCBTRC is provided for this purpose. The tool KDCBTRC can only be used to evaluate trace files of the same openUTM version.

Before the KDCBTRC tool is called, the trace files for the individual tasks must be merged into a single file.

There is a sample procedure named BTRACE for merging the individual trace files and for evaluating the merged file with the KDCBTRC tool. The SDF-P BTRACE procedure is shipped in the SYSPRC.UTM.070 library.

As a general rule, KDCBTRC evaluates the file having the link name KDCBTRC. The results are written to the file having the link name LISTFILE. The control statement is read from SYSDTA.

The control statement has the following format

```
[argument-1, ..., argument-n]
```

and permits entry of optional arguments to control editing. The arguments are described in the following section.

The entire trace file is edited if you enter an „empty“ control statement (blank).

Arguments for the editing program

LT=ltn / (ltn1, ...,ltn5) One to five LTERM names can be specified with this operand. As a result, only those trace records which contain the LTERM/LPAP name are edited.
Default: all trace records are edited.

PT=ptn / (ptn1, ...,ptn5) One to five PTERM names, CON names or MUX names can be specified with this operand. As a result, only those trace records which contain the PTERM/MUX/CON names are edited.
Default: all trace records are edited.

BC=bcn / (bnc1, ..., bnc5) One to five BCAMAPPL names or ACCESS-POINT names can be specified with this operand. Only those trace records which contain one of the specified BCAMAPPL/ACCESS-POINT names are edited.
Default: all trace records are edited.

PR=prn / (prn1, ...,prn5) One to five processor names can be specified with this operand. Only those trace records that contain one of the specified PROCESSOR names are edited.Default: all trace records are edited.

| | |
|------------------------------|---|
| US=usr / (usr1, ...,usr5) | One to five user IDs (USER) can be specified with this operand. Only those trace records which contain the name of one of the specified user IDs are edited. Default: all trace records are edited. |
| AN=Y/N | When AN=Y is specified, those trace records which contain announcements are edited. If AN=N, editing is suppressed. Default: AN=N |
| PB=Y/N | When PB=Y is specified, those trace records which contain BCAM or RSO parameter blocks are edited. If PB=N, editing is suppressed. Default: PB=N |
| CL=Y/N | When CL=Y is specified, those trace records which contain connection letters are edited. If CL=N, editing is suppressed. Default: CL=Y |
| IN=Y/N | When IN=Y is specified, those trace records which contain input messages are specified. If IN=N, editing is suppressed. Default: IN=Y |
| OUT=Y/N | When OUT=Y is specified, those trace records which contain output messages are specified. If OUT=N, editing is suppressed. Default: OUT=Y |
| DVC=T/P/B | The DVC operand serves to determine the format of the output file. DVC=T: Max. line length 79 characters, no printer control characters DVC=B: Max. line length 79 characters, with printer control characters DVC=P: Max. line length 132 characters, with printer control characters Default: DVC=T |
| SOCKET=Y/N | When SOCKET=Y is specified, those trace records are edited which contain traces of functions for communication using the TCP/IP protocol. When SOCKET=N is specified, editing is suppressed. Default: SOCKET=Y |

2.2.6.3 ADMI trace

The ADMI trace logs all calls of the KDCADMI program interface.

The following data is written prior to the call:

- Content of the data area

The following data is written after the call:

- Addresses of the parameter area, identification area, selection area and data area
- Contents of the fields in the parameter area, e.g. operation code (opcode), object type, length of the data area, return code
- Content of the data area

The ADMI trace can be enabled via the start parameter ADMI-TRACE and enabled or disabled via WinAdmin, WebAdmin or the administration program interface (KDCADMI).

By default, the trace is written to the file

`KDC.TRC.ADMI.appliname.tsn`

where *appliname* is the name of the UTM application (MAX APPLINAME) and *tsn* is the number of the task.

In the UTM start procedure, you can also set up a different trace file for each task and use the SET-FILE-LINK command to assign it the link name KDCADMI.

3 The UTM Dump

In the event of serious errors, openUTM generates a UTM dump of all relevant data. Possible reasons for a UTM dump are as follows:

- a program unit has issued a PEND ER call
- a KDCS return code KCRCCC \geq 70Z occurred in an application program because of a severe error in a KDCS call or an error during interoperation with a database or formatting system or because an STXIT event occurred.
- a diagnostic dump was requested (e.g. KDCDIAG)
- an error in the UTM system code or in other software components such as BS2000 system, FHS, internal formatting routines or VTSU or an unrecoverable error in cooperation with a database system caused the abortion of the application run.

In the last instance, the UTM dumps are written from all tasks of the application and in all other cases, only the dump for the task concerned. All dumps are written in compressed form.

3.1 The files of the UTM dump

openUTM writes the dumps in a file generation group (FGG) or in a normal BS2000 file (dump file). By default, the names of the dump files or of the FGG possess the following structure:

```
DUMP.UTM.rrrrrr.ttttff.aaaaaaa[.iii]
```

If the dump was written while the application was running and the start parameter DUMP-PREFIX has been specified then the names of the dump files or of the FGG possess the following structure:

```
dump-prefix.rrrrrr.ttttff[.iii]
```

The letters mean:

| | |
|--------------------------|---|
| <code>dump-prefix</code> | prefix that was specified in the start parameter DUMP-PREFIX. |
| <code>rrrrrr</code> | ID identifying the cause of the memory dump. |
| <code>tttt</code> | is the task sequence number of the task which caused the dump. In the event of the application being aborted, <code>tttt</code> is the TSN of the task that initiated abortion. <code>###</code> = UTIL if the dump is generated in a UTM tool (KDCDEF or KDCUPD). |
| <code>ff</code> | running number of the dumps generated by a task in an application if the dump files are not created as a file generation group (FGG); or hexadecimal value of the counter for the number cold starts of the application if the dump files were created as FGG files. |
| <code>aaaaaaa</code> | name of the application for which the dump is produced. |
| <code>iii</code> | number of the file generation |

A file generation group is created if the dump is caused by the application being aborted. The name of the FGG depends on the task that initiated abortion of the application. For the other tasks, openUTM writes the dump information to other files of the FGG. This may not be possible in some cases. openUTM then writes the dump information of follow-up tasks to individual files and the 'ff' count is maintained on a task-specific basis.

In some cases, openUTM may set `tttt=0000`, `ff=00`, `aaaaaaa=NONAME` and, if existent, `iii=000`; this means that the relevant data is not available, e.g. at the start or end of a task.

You can specify the user ID to which openUTM writes a UTM dump by means of the start parameter DUMP-USERID, see the openUTM manual "Using UTM Applications on BS2000 systems". Syntax of the start parameter:

```
.UTM START DUMP-USERID={ STANDARD | SYSUSER }
```

When `STANDARD` is specified (default setting), the dump files are written under the user's own user ID (i.e. the user ID under which the UTM application is running), and under the `$SYSUSER` user ID when `SYSUSER` is specified.

Notes

If more than one task is active for the application, in the case of an application abortion the (chronological) first dump contains the reason indicating the reason for abortion (REASON). The other dumps contain a code indicating that these are follow-up dumps.

If the UTM application was started with TESTMODE=OFF, and if a PEND ER occurs with one of the following KRCRDC codes, the UTM dump is suppressed:

```
FH01, FH02,  
FR01, FR02,  
K301, K302, K345, K601, K602, K603, K608,  
KM01, KM02, KM03, KM04, KM05, KM07, KM08,  
KR01, KR02,  
KT01, KT02, KT04,  
KU14,  
XT80
```

If PGWT calls are permitted for the current TAC, and if the call where the error occurred was not a PEND call, the program will be loaded. In the case of the KRCRDC code K316, no UTM dump is written regardless of whether or not test mode is active.

Reducing the volume of dump information with the start parameter DUMP-CONTENT

The start parameter DUMP-CONTENT allows you to specify whether openUTM is to reduce the volume of dump information or not. In this case, reduction means that task-independent KAA memory areas (common memory pools) are only included in the dump of the task which caused the application to abort. Reducing the dump information means that the diagnostic documentation in the event of abortion of an application requires far less space. Reduction of the dump information is activated by default. The start parameter DUMP-CONTENT can be used to deactivate or reactivate reduction of the dump information as required.

Syntax of the start parameter:

```
.UTM START DUMP-CONTENT={ STANDARD | EXTENDED }
```

STAND When UTM creates a dump file generation, task-independent memory areas are only contained in the dump for the first task (which caused abortion). This is generally sufficient for diagnostic purposes and is set by default.

EXTENDED Task-independent memory areas are contained in all the dumps of a dump file generation. You should only set this value when required to explicitly by the software support.

3.2 The KDCDUMP tool

The dump files created by openUTM are PAM files. These files must be edited using the utility routine KDCDUMP. KDCDUMP offers two possible methods of editing:

- Interactive evaluation:
KDCDUMP loads a complete dump or a part of it into memory, allowing you to process it interactively at the terminal. Interactive evaluation allows you, for example, to perform specific editing and search operations on particular tables in an extensive dump.
- Editing of entire dump files in list form:
KDCDUMP produces complete, edited dump files or file generation groups (FGGs) which you can output to a printer or view on the terminal by means of /SHOW-FILE, for example.

Editing of the dumps is controlled by means of statements which are entered after starting KDCDUMP. The KDCDUMP utility can also be controlled by specifying link names.

KDCDUMP is terminated by the control statement END.

If KDCDUMP runs into an error during the evaluation of the dump, the link name KDCDUMP is not released automatically. In this case, you should release the link name manually before KDCDUMP starts up next time and you should try to prepare the dump without summary information (INFO=DUMP).

If KDCDUMP and the dump file do not belong to the same version of openUTM, then the dump is not output. KDCDUMP then outputs message K719 from which you can determine which version KDCDUMP and the UTM dump each belong to.

3.2.1 Starting KDCDUMP

The KDCDUMP utility can be started for the interactive analysis of a dump in the dialog or to create the dump file in the form of a list. The following sections describe how you use START-EXECUTABLE-PROGRAM to start KDCDUMP with and without a link name.

Alternatively, you can also call KDCDUMP via the SDF command START-KDCDUMP. This command is located in the SDF UTM application area. For more detailed information, see openUTM manual "Using UTM Applications on BS2000 Systems" section "Calling UTM tools".

Starting without link names to evaluate the dump

```
/START-EXECUTABLE-PROGRAM FROM-FILE= -  
/          *LIB-ELEM(LIB=SYSLNK.UTM.070.UTIL,ELEM=KDCDUMP) [ ,TEST-OPT=*AID ]
```

The TEST-OPTION=*AID only needs to be specified if a table is to be edited symbolically; see the KDCDUMP statement TABLE. After the utility has started, the KDCDUMP statements are read from SYSDTA. If you wish to edit dumps interactively, the link name KDCDUMP must not be assigned to a file.

Starting with link names to create the entire dump file in the form of a list

If you are using a link name, KDCDUMP can be started as follows:

```
/SET-FILE-LINK LINK-NAME=KDCDUMP,FILE-NAME=dumpfile  
/SET-FILE-LINK LINK-NAME=LISTFILE,FILE-NAME=listfile  
/START-EXECUTABLE-PROGRAM FROM-FILE= -  
/          *LIB-ELEM(LIB=SYSLNK.UTM.070.UTIL,ELEM=KDCDUMP)
```

dumpfile name of the dump file

listfile name of the edited file

It is also possible to specify an FGG file as a dump file in the /SET-FILE-LINK command. After starting, KDCDUMP executes the following statements:

```
FILE *KDCDUMP  
END
```

The FILE statement is described in section "[FILE Edit single dump file](#)". If no file is assigned the link name LISTFILE, KDCDUMP by default generates a list file under the following name (see chapter "[The files of the UTM dump](#)" for the meaning of the letters):

```
LST.UTMDMP.rrrrrr.ttttff.aaaaaaa.
```

You can subsequently print the file created:

```
/PRINT-DOCUMENT FILE-NAME=listfile,LINE-SPACING=*BY-EBCDIC-CONTROL
```

3.2.2 KDCDUMP statements

The following table gives an overview of all the KDCDUMP statements and their meanings:

| Statement | Meaning |
|----------------------|--|
| ! | Interrupt KDCDUMP and execute system command |
| !! | Execute most recently executed system command again |
| AFIND | Find address in UTM dump |
| scrolling statements | Position cursor in work area |
| DUMP | Read complete UTM dump or part of a UTM dump into memory |
| EDT | Call editor |
| END | Terminate KDCDUMP |
| FIND | Find and show table entry |
| FGG | Edit all files of an FGG (file generation group) |
| FILE | Edit single dump file |
| HELP | Display help for KDCDUMP statements |
| LIST | Edit table section |
| REPFIL | Information about REP file (only BS2000 systems) |
| SFIND | Search for a pattern in the dump |
| SH SYS | Interrupt KDCDUMP and return to operating system level |
| SYSLST | Activate/deactivate logging |
| TABLE | Show table |

If an error occurs during the execution of KDCDUMP, such as an input error or an error in the program itself, then job switch 3 will be set to "ON" if the error is not an address error or when the dump is incomplete. The list of KDCDUMP messages can be found in section ["Messages of the UTM tool KDCDUMP"](#).

Job switch 3 is set to "ON" by KDCDUMP at the beginning of the program run. If no error occurs during the program run, then the switch is set to "OFF". Switch 3 may also not be manipulated during the program run by the user. In particular, then user may not set the switch to "OFF" using the ! statement or after the SH or SYS statement.

Entering KDCDUMP statements

KDCDUMP statements are read from SYSDTA. A statement may comprise up to 256 characters; longer inputs result in error message K759.

Where statement names can be abbreviated, this is indicated in bold type. Thus, for example **AFIND**, indicates that you can abbreviate the statement name to AF.

With certain operands, one of the three input formats "C-string", "X-string" or "decimal" must be observed:

| Designation | Input format / Example |
|------------------------|-------------------------------|
| C-string | [C]'This is a C-string' |
| X-string (hexadecimal) | X'AAAF' or X'aaaf' or X'AaAf' |
| Decimal | 12345 |

Only C-strings are case-sensitive. Case is not significant for the other input formats.

If indices or displacements/offsets are specified, then these are always interpreted as being positive. The sections which follow describe the KDCDUMP statements in alphabetical order. Only the statements and operands are described here which are used for evaluating the KDCROOT area (see chapter "[The KDCROOT area](#)").

3.2.3 ! - Enter system command

This statement allows you to execute a BS2000 command during a KDCDUMP session.

| | |
|---|---------|
| ! | command |
|---|---------|

command BS2000 command. Note that some BS2000 commands cause the KDCDUMP program to terminate.

3.2.4 !! - Repeat most recently executed system command

This statement allows you to repeat the most recent BS2000 command (executed with ! or !!) during a KDCDUMP session.

| | |
|----|--|
| !! | |
|----|--|

3.2.5 AFIND - Find address in dump

This statement serves to find a memory address in the UTM dump which was a valid address for a UTM table area while the dump was in progress.

The output displayed on the terminal is the associated table entry, either from the beginning of the entry or from the desired location.

If the command syntax is faulty or if no dump was loaded into memory, then a corresponding error message is output (K710 or K711 respectively). Should the specified address not represent a memory address or not even be assignable to precisely one table entry, then also an error message is output (K712 or K713 respectively).

| | |
|--------------|---------|
| AFIND | address |
|--------------|---------|

address Desired address in memory. The address must be specified in hexadecimal form.

Example

```
AF X'01018000'
```


3.2.6 Scrolling statements for interactive evaluation

If the required information cannot be displayed in one screen, the following statements can be used to scroll the display:

| Statement | Meaning |
|-----------------------------------|---|
| + Return only (blank entry) | Scroll forward one screen page. |
| +n | <ul style="list-style-type: none">• With table elements which cannot be displayed in their entirety in one screen page, n is added to the start address of the information currently displayed. The result of this addition is the address starting at which the next information is displayed.• With tables where one element of the table can be displayed in its entirety in one screen page, n is added to the index of the first table element currently displayed. The result of this addition is the index of the element at which the continuation of the table display commences. If the end of the table is exceeded, the last table element is displayed; with trace tables, division into pages is performed automatically. n can be specified in decimal or hexadecimal form. <p>n is ignored for the statements HELP TABLE-NAMES and REPFIL. Scrolling continues normally.</p> |
| ++ | The end of the table or of the table entry is displayed. The trace tables are exceptions, where scrolling is performed to the chronological end. With the statements HELP TABLE-NAMES and REPFIL a normal "+" statement is executed. |
| - -n -- | For backward scrolling, the same applies - with the opposite sign - by analogy as with forward scrolling. Scrolling is performed in the reverse direction no further than to the beginning of the table. When displaying the REP file, backward scrolling is not possible. |
| << | In the case of the SFIND command, "<<" takes you to the beginning of the hit list. |
| >> | In the case of the SFIND command, ">>" takes you to the end of the hit list. |
| X | The table display is aborted. Alternatively, the END command may also be entered, for example. |

Screen support is offered in the form of a display indicating which statements are permitted in each case, for example

- "+/X" with the statement REPFIL,
- "+/-/X" for all other tables of the KDCROOT area.

3.2.7 DUMP - Read UTM dump into memory

You can use this command to decompress a UTM dump file (not an FGG file) and to read it into working memory either completely or area-by-area. You can specify the UTM dump file via either its file name or its link name.

You must submit this statement before you can edit a UTM dump interactively at the terminal (e.g. using the TABLE, LIST statements).

Particularly in the event of large UTM dumps, where the main memory or virtual memory available is insufficient to accommodate the entire uncompressed dump, it makes sense to read the KDCROOT area using the DOMAIN=ROOT operand.

Every time a DUMP command is issued, the dump or ROOT area that had been read into main memory previously is removed and the new dump or ROOT area is read in..

| | |
|------|---|
| DUMP | { FILE = { filename *SAME } LINK = linkname } [, DOMAIN = { ALL ROOT }] |
|------|---|

FILE=

filename Name of the UTM dump file

*SAME Specify FILE=*SAME in place of the file name if you wish to read a new area of the UTM dump which has already been uncompressed using DUMP into main memory (see DOMAIN operand).

LINK=linkname Link name of a UTM dump file. The link name may consist of alphanumeric characters only.

DOMAIN= This operand specifies whether the whole dump or only the KDCROOT area of the UTM dump is to be read into main memory.

ALL The entire UTM dump is read into memory.
Default

ROOT KDCROOT areas and DIAGAREAs (UTM Diagarea, DB Diagarea,...) are read into memory.

3.2.8 EDT - Call editor

This statement serves to call the editor EDT as a subroutine, i.e. you can use it to read a file into the work area of EDT.

| | |
|-----|--------------|
| EDT | [filename] |
|-----|--------------|

filename Name of the file to be read in.

3.2.9 END - Terminate KDCDUMP

This statement serves to terminate KDCDUMP normally.

| | |
|-----|--|
| END | |
|-----|--|

3.2.10 FGG - Edit all files of an FGG

The FGG statement serves to edit all the files of an FGG jointly in a single output file. The name of the output file is specified with the OUTFILE operand. In command mode, the user is free to issue any number of FGG commands.

| | |
|-----|---|
| FGG | {fgg-name *linkprefix } [,EDIT = { <u>PRINTER</u> TERMINAL }] [,INFO = { <u>LONG</u> DUMP SHORT }] [,OUTFILE = filename] |
|-----|---|

fgg-name Name of a file generation group (FGG) which contains the UTM dump. openUTM creates a separate file generation for each task in the application.

***linkprefix** Link name prefix of the files which originate from a dump FGG, but exist only as individual files. The prefix may consist of a maximum of three alphanumeric characters only. The actual link name has the format
linkprefix.number,
where number is a decimal number comprising a maximum of four digits, without leading zeros, commencing with '1', '2',... etc..

On successful execution of a command, all link names are deleted from the TFT.

EDIT= This operand controls editing:

With EDIT=PRINTER (default), an output file is created which is intended for printing on the printer. The output contains feed control characters, page headers, with a maximum line length of 132 characters. The table of contents at the end of the output relates to print pages and line numbers (for the unprinted dump). The file can be printed out by means of the command:

```
/PRINT-DOCUMENT FILE-NAME=listfile, -  
/ LINE-SPACING=*BY-EBCDIC-CONTROL
```

With EDIT=TERMINAL, the output file is edited in such a way that it can be evaluated on screen using an editor. The maximum line length is 80 characters. The table of contents at the end of the output relates to line numbers.

INFO= This operand controls output of the summary information. This is an extract of the complete dump information and contains the data frequently required for diagnosis.

INFO=LONG: editing with summary information (default).

INFO=DUMP: editing without summary information.

INFO=SHORT: KDCDUMP outputs only summary information.

OUTFILE= This operand allows you to specify that output is to be written to a file with the name *filename*. If you do not specify OUTFILE, KDCDUMP checks whether the link name LISTFILE has been assigned or assigns the default name LST.UTMDMP.rrrrrr.ttttff.aaaaaaa (See "[The files of the UTM dump](#)" for a description).

Notes

- When the FGG control statement is entered, a UTM dump file which was read in by means of the DUMP command is removed in its entirety from memory. Consequently, the UTM dump under examination prior to the FGG command will no longer be available for diagnostic purposes.
- The individual file generations of the FGG are read consecutively and removed from memory again after processing, so that after execution of this command none of the files remains in memory.
- If the dump files are read in by means of link names (*linkprefix is specified), then after each successful editing operation performed on a dump file the associated link name is removed from the TFT.

Example

- You want to edit all files of a dump FGG using the KDCDUMP command FGG:
FGG DUMP.UTM.LKLC64.885301.ANW1,EDIT=T
- You want to edit files of a former UTM dump FGG, which only exist as four single files.

To do this, assign a link name to the four files having the prefix UD1:

```
/SET-FILE-LINK LINK-NAME=UD1.1,FILE-NAME=DUMP.UTM.PCMM01.1  
/SET-FILE-LINK LINK-NAME=UD1.2,FILE-NAME=DUMP.UTM.WAITT2.2  
/SET-FILE-LINK LINK-NAME=UD1.3,FILE-NAME=DUMP.UTM.WAITT2.3  
/SET-FILE-LINK LINK-NAME=UD1.4,FILE-NAME=DUMP.UTM.WAITT2.4
```

These four files are edited by means of a single KDCDUMP command:

```
FGG *UD1
```

3.2.11 FILE - Edit single dump file

This control statement edits a single dump file or a single generation of a UTM dump FGG. The result of editing is written to an output file. The user can define the name of the output file by means of the OUTFILE operand or a SET-FILE-LINK command with the link name LISTFILE. If no file is specified, KDCDUMP creates a list file with the default name.

| | |
|------|---|
| FILE | [{ dumpfile *linkname }] [,EDIT={ <u>P</u> RINTER <u>T</u> ERMINAL }] [,INFO= { <u>L</u> ONG <u>D</u> UMP <u>S</u> HORT }] [,OUTFILE = filename] |
|------|---|

dumpfile Name of the UTM dump file. This file may also belong to an FGG.

If the positional operand is omitted, it is assumed that a UTM dump file has already been read in with the DUMP statement. The FILE statement is then applied to this file. In this instance, the UTM dump file is not removed from memory.

***linkname** Link name of the UTM dump file. The link name may consist of three alphanumeric characters only. On successful execution of the command, the link name is deleted from the TFT.

EDIT= This operand controls editing:

With EDIT=PRINTER (default), an output file is created which is intended for printing on the printer. The output contains feed control characters, page headers, with a maximum line length of 132 characters. The table of contents at the end of the output relates to print pages and line numbers (for the unprinted dump). The file can be printed out by means of the command:

```
/PRINT-DOCUMENT FILE-NAME=listfile, -  
/      LINE-SPACING=*BY-EBCDIC-CONTROL
```

With EDIT=TERMINAL, the output file is edited in such a way that it can be evaluated on screen using an editor. The maximum line length is 80 characters. The table of contents at the end of the output relates to line numbers.

INFO= This operand controls output of the summary information. This is an extract of the complete dump information and contains the data frequently required for diagnosis.

INFO=LONG: editing with summary information (default).

INFO=DUMP: editing without summary information.

INFO=SHORT: KDCDUMP outputs only summary information.

OUTFILE= This operand allows you to specify that output is to be written to a file with the name *filename*.

If you do not specify OUTFILE, KDCDUMP checks whether the link name LISTFILE has been assigned or assigns the default name

LST.UTMDMP.rrrrrrr.ttttff.aaaaaaaa (see ["The files of the UTM dump"](#) for a description).

Notes

- It should be noted that a UTM dump file which was read in by means of the DUMP command is deleted in its entirety from memory when the FILE control statement is used with the positional operand.

-
- If a link name KDCDUMP exists when KDCDUMP is started, KDCDUMP assumes that the associated file is a UTM dump. This is then edited. KDCDUMP subsequently terminates itself automatically.
 - If the dump file is read using a link name (*linkname is specified) the link name is removed from the TFT after the dump file is edited successfully.

3.2.12 HELP - Help about KDCDUMP

The HELP command provides information about the operation of the KDCDUMP program. HELP also outputs information which are only relevant for the system service and which are not described in this chapter.

This information is output to SYSOUT.

| |
|---|
| HELP' [{ <u>ALL</u> command-name TABLE-NAMES }] |
|---|

HELP without operands simply outputs a list of all KDCDUMP statements. The operands have the following meaning:

ALL outputs an overview of the KDCDUMP statements. Default value.

command-name

Name of a KDCDUMP statement about which brief information is output.

TABLE-NAMES

outputs all valid table names as well as additional brief information as to whether the table in question is capable of being edited symbolically. If the table can be edited symbolically, a "D" is displayed, (if not, an "N" is displayed). Table groups are indicated by an asterisk (*) prefixed before the name. The individual tables of the table group are listed according to the name of the table group and indicated by a plus sign (+) prefixed before the name. If a dump is in memory, then the number of table entries is output (in hexadecimal form). As a consequence of negative results obtained during address validation when taking a dump it may happen that UTM areas or tables are not contained in the dump. Since no table entries are present in such situations, the tables are flagged as follows: UA_ERROR: It was not possible to dump the UTM area containing the table. TA_ERROR: Only the table could not be dumped. REPFIL is similarly listed as a table. The REP file, however, must be output via the REPFIL statement (not via TABLE). REPFIL is followed by the number of different problem message numbers.

3.2.13 LIST - Edit table section

This control statement can be used to have a table section written to a SAM file or to SYSLST.

| | |
|------|---|
| LIST | { table-name REPFIL } , { listfile *SYSLST } [, START-INDEX = { <u>FIRST</u> start }] [, END-INDEX = { <u>LAST</u> end }] [, EDIT = { <u>TERMINAL</u> PRINTER }] |
|------|---|

| | |
|--------------|--|
| table-name | Name of the table from which is to be output in whole or in part. The valid names can be ascertained by means of HELP TABLE-NAMES. You can also specify a table group name as the table name (these are indicated by an asterisk in the output from HELP TABLE-NAMES). In this case, all the tables belonging to the group are output (indicated by a prefixed plus sign (+)). |
| REPFIL | The REP file is to be output. The specification of any further operands then has no effect. |
| listfile | The table section is output to the file "listfile". An existing file will be overwritten without any warning. |
| *SYSLST | The table section is written to SYSLST. <i>listfile</i> and SYSLST can be printed out by means of the following command: /PRINT-DOCUMENT <file>, LINE-SPACING=*BY-EBCDIC-CONTROL |
| START-INDEX= | Entry in the table at which the output is to commence: |
| FIRST | First entry in the table, default value. |
| start | Table entry index at which the output is to commence. This value can be entered in either decimal or hexadecimal form. |
| END-INDEX= | Last table entry which is to be output: |
| LAST | Output continues to the end of the table, default value. |
| end | Table entry index at which the output is to be terminated. This value can be entered in either decimal or hexadecimal form. |
| EDIT= | Editing for printer or terminal; see description of the FGG statement on " FGG Edit all files of an FGG ". |

Note

If two or more table areas are to be written into a single file, the operand value *SYSLST is available for the second positional operand as the following BS2000 command causes the table areas to be written consecutively to an output file:

```
/ASSIGN-SYSLST TO-FILE=< output-file >, OUTPUT=EXTEND
```

3.2.14 REPFIL - Information about REP file

This statement is used to output information about the REP file read in by the UTM dump creator on the terminal (dumps created by a UTM-T application do not contain a REP file).

| | |
|--------|---|
| REPFIL | [{ <u>*INFO</u> *ALL *ONLYPMNO pm-no [, E] }] |
|--------|---|

*INFO If the UTM-REP file was read in without errors, the information output comprises the name of the REP file and the number of active corrections. Otherwise, in addition to the name of the UTM-REP file that was incorporated as a REP file when the openUTM subsystem was started, the DMS return code generated on reading this file is output.

Default value.

*ALL The complete REP file is displayed.

*ONLYPMNO All the problem message numbers from the UTM-REP file are output in the form `pppppppps jjj`, where:

pppppppp = Number of the problem message

s = Status ("- " means active, "*" means deactivated)

jjj = Julian calendar REP date.

pm-no Eight-character problem message number (same as `pppppppp`) in the form of a C-string. KDCDUMP outputs the associated REP records from the REP file (if present) on the terminal.

E This causes all REP records to be output, starting with that belonging to "pm-no".

This operand must always be specified in conjunction with a problem message number, otherwise it will be ignored.

3.2.15 SFIND - Search for a string

This statement allows you to search for a string in the UTM dump and output it on the terminal. However, you can only search for strings that are part of the user information in the dump. Information created by KCSDUMP in order to prepare the dump is not compared with the search string.

In some tables (Program Table, ...), the information found is output in an edited form. In other words, if the table contains the string you are searching for, the table is displayed in a specially prepared way. Consequently, the string that has been found cannot always be seen immediately.

i In case of large dumps hits may be displayed belonging to an area that is not described here and which therefore are only relevant for the service staff.

| | |
|-------|---|
| SFIND | <pre>search [, ALIGN = { <u>1</u> 2 4 8 }] [, HITS = { <u>ALL</u> nr_max_hits }] [, DOMAIN = { <u>ALL</u> ROOT }]</pre> |
|-------|---|

search The positional operand stands for the string you are searching for, which cannot be longer than 190 bytes. It can be specified as a C-string or an X-string.

ALIGN = You can use this to specify the alignment limit of the search string.

1 Single-byte alignment

This is the default.

2 2-byte alignment

4 4-byte alignment

8 8-byte alignment

HITS = You can use HITS to specify the number of hits after which the search is terminated.

ALL The entire dump is searched.

This is the default.

nr_max_hits The search is terminated after *nr_max_hits*. *nr_max_hits* can be any value from 0 to 32767. 0 has the same effect as ALL.

DOMAIN This allows you to specify whether the whole dump or only the KDCROOT area of the UTM dump are to be searched.

ALL The whole dump is searched.

This is the default.

ROOT **KDCROOT** area and **DIAGAREAs** (UTM Diagarea, DB Diagarea,...) are searched.

3.2.16 SH and SYS - Interrupt KDCDUMP

The SH or SYS statement interrupts KDCDUMP and allows you to enter BS2000 commands on operating system level.

| | |
|--------------|--|
| { SH SYS } | |
|--------------|--|

You can return to the KDCDUMP program with the BS2000 command RESUME-PROGRAM.

Please note that some BS2000 commands terminate any loaded program, making it impossible to return to KDCDUMP.

3.2.17 SYSLST - Activate/deactivate logging

This statement serves to output the results of the statements AFIND, FIND, HELP TABLE-NAMES , REPFIL, TABLE via SYSLST..

The maximum length of an output line is 80 characters. No messages are written to SYSLST.

| | |
|--------|--------------|
| SYSLST | { ON OFF } |
|--------|--------------|

ON The output is directed to SYSLST.

OFF No output to SYSLST. "SYSLST OFF" applies when KDCDUMP starts.

Output to the terminal is never suppressed.

3.2.18 TABLE - Show table

The TABLE statement serves to output part or all of a table from the currently processed UTM dump. The output can be in dump format or in symbolic form.

| | |
|-------|---|
| TABLE | <pre>table-name [, start-index [, { <u>END-INDEX</u> = { <u>SAME</u> <u>LAST</u> } DISPL = displacement SDI = { *YES struct-par } [, OUTFILE = { filename *SYSLST }]] [, DB = db-no] }]]</pre> |
|-------|---|

table-name

Name of the table to be output.

You can use the HELP TABLE-NAMES command to display a list of all table names.

The table names can be abbreviated as long as they remain unique. The following rules apply:

- There must be at least one character at the beginning and after a hyphen. This character must be the first character of the name.
- The individual name parts which begin with a hyphen and are delimited by the next hyphen or by the end can be omitted if the following name part - where one was present - is also removed.

Example The table name HLL-USER-ARE can be abbreviated as HL-U or HL-US or H-U-A etc.

start-index

This positional operand specifies the number of the entry at which the output is to commence.

The default value is 0.

If the operand is given the value 0, the entire table is output and all other operands have no effect. *Notes*

- In the case of the trace tables, with a null specification the current entry is displayed as the last item on the screen page.
- For bit tables and tables whose entries are always two bytes in length, it is generally not possible to position precisely to the desired entry. But the entry is then contained in first line output with table information.

| | |
|--------------------|--|
| END-INDEX= | This operand can be used to specify whether, apart from the entry specified under "start-index", any other table entries are to be displayed. |
| SAME | Only the entry specified with "start-index" is displayed. |
| LAST | The entire table is displayed starting with the entry "start-index". |
| DISPL=displacement | This facility can be utilized in order to output the table entry specified in the second positional operand with a displacement from the beginning of the table entry. This capability is supported only for tables in normal dump format, i.e. in hexadecimal representation. The input format is decimal or hexadecimal (see example). |
| SDI = | The operand SDI (Symbolic Dump Information) serves to output the table entries which have been edited using AID. Not all tables can be edited symbolically. Those tables which can be edited symbolically are flagged by a "D" following the table name in the output produced by the command HELP TABLE-NAMES. If symbolic editing is not possible, this is flagged by means of an "N". Moreover, the KCDUMP utility must have been started with the operand TEST-OPTION=AID. |
| *YES | The table element is output with symbolic editing. |
| struct-par | Fully-qualified name of a structure element without a structure name (see examples below) which is to be edited symbolically. The maximum length of "structure-parameter" is 121 characters. The name must be specified as a C-string. |
| OUTFILE= | When symbolic editing is employed, this operand can be used to direct the output to a file. |
| filename | Name of the file to which the edited information is to be written. In this case, the AID link name F0 of the AID command %OUTFILE is destroyed. If the specified file already exists, it will be extended by the output. |
| *SYSLST | The output is directed to SYSLST. |

The default value applies for the optional operands END-INDEX, DISPL and SDI: END-INDEX = SAME.

Notes

- If the selected table information does not fit in one screen page, scrolling statements (see relevant section) can be used to make further data visible (does not apply to symbolic editing).
- If a substructure element is incorrectly specified for symbolic editing, AID will issue an error message. In this case, message K746 is not output and job switch 3 is not set.

Examples

1. `T KB,1,S=*YES`
Outputs the KB header and the KB return area.

-
2. T KB,1,S='KCRFELD'
Outputs the substructure KB.KCRFELD.
 3. T KB,1,D=116
Outputs the KB program area as of displacement 116.
 4. T UTM-D,X'2EB'
Outputs the trace entry 2EB of the UTM Diagarea.

3.2.19 Messages of KDCDUMP

KDCDUMP issues messages in the format K7nn. You will find the message texts and additional information on the messages later on in this document.

3.3 Contents of the UTM dump

A UTM dump edited with KDCDUMP normally contains the following information:

- KDCROOT with the KDCROOT tables and the DIAGAREAs UTM Diagarea, DB Diagarea, ...).
- A summary (Summary information).
- A table of contents.

In some cases the dump may contain addition areas which only can be evaluated by the system service and which therefore are not described in this manual (exception: CONS-ENTRIES table). This areas should be provided to the system service if necessary, see [section "Producing error documentation"](#).

If the dump was produced due to a PEND ER (either programmed by the user or produced internally after KCRCCC >= 70Z), then the dump only contains the KDCROOT area. To make finding the table easier, the prepared dump contains a list of tables with page numbers at the end of the dump. Each of these prepared tables has a header that identifies the prepared table.

The header starts with the corresponding storage area dumped (e.g. KDCROOT) and the name of the table.

Only those tables are described in the following which you can find in a PENDER dump. In addition, the CONS_ENTRIES table is listed which is created in case of dumps with other reasons and which provides useful information for the user.

3.3.1 The CONS_ENTRIES table

The table CONS_ENTRIES shows the history of the KDCFILE. It contains a maximum of 10 entries. The entries are sorted in descending order of the generation time, i.e. the most recent entry comes first. If 10 entries have not yet been created for the KDCFILE, the first entries in the table are blank.

Entries are written in the table when the following events occur:

- when a KDCDEF generation is executed
- when KDCUPD is called
- each time the UTM application is started

A table entry has the following format:

| type | r1 | r2 | f1 | i1 | i2 | i3 | f2 | yymmdd | hhmmss | tttt | |
|------|----|----|----|----|----|----|----|--------|--------|------|------|
| 4 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 6 | 6 | 4 | Byte |

type 'DEF ' for KDCDEF run
 'UPD ' for KDCUPD run
 'STRT' for application start.

r1 and r2 designate the correction status of KDCDEF, KDCUPD and UTM system code (e.g. '00' for V7.0A00).

r1,r2 'nm' two digits for the source correction character
 '00' space for the first release of a version.

f1, f2 Filler.

For *type* 'STRT' and 'DEF': i1,i2, i3 and ttt contain additional information.

For *type* = STRT:

i1 'C' for UTM cold start, 'W' for UTM warm start

i2 'P' for production for *type* = STRT

i3 'B' for batch process, 'D' for dialog process

tttt TSN of the UTM process for *type* = STRT.

For *type* = DEF:

i2 '-' when the KDCFILE was created successfully for *type* = DEF
 'W' when the KDCFILE was created with errors.

yymmdd Date (year, month, day)

hhmmss Time (hours, minutes, seconds).

3.3.2 The KDCROOT area

The tables and areas of the KDCROOT can be used in many cases to diagnose user errors. In the case of PENDING dumps, this is the only data that is available.

More precisely, the prepared dump contains the following individual KDCROOT areas, the name which has to be specified with the KDCDUMP statement TABLE is in brackets:

Context Area (CONTEXT-AREA)

The current register set at the time of the STXIT is output here with PC=Program-Counter, IW=Interrupt-Weight and the register contents of registers R0 to R15, ILC , PM and CC.

Program Table (PROGRAM-TABL)

An entry contains, among other things, the program name and the start address of a program unit.

Load Module Table (LOAD-MODULE)

Area with information on load modules.

Load Context Table (LOAD-CONTEXT)

Load context table.

Area Table (AREA)

Area containing information on the generated areas.

Exit Table (EXIT)

Area containing information on the exits.

Library Table (LIB)

Library table.

Memory Pool Table (MEMORY-POOL)

Area containing information on the memory pools. If UTM generation is performed without load modules, this area simply contains information from the UTM generation and additional information (e.g. the address of the memory pool) can be found in the User Root area.

Message Mod Table (MSG-MODULE)

Area containing information on the message modules.

UTM Diagarea (UTM-DIAGAREA)

Area with diagnostic information on all KDCS and FHS calls.

KB (KB)

Communication area, consisting of a KB header, KB return information and KBPROG in the generated length.

SPAB (SPAB)

Standard primary working area.

MPUT Buffer (MPUT-BUFFER)

Intermediate storage for MPUT messages.

FORMUSER Buffer (FORMUSER-BUF)

Buffer area with logical I/O messages.

RESTART Buffer (RESTART-BUFF)

Restart area for screen formatting.

IO Buffer (IO-BUFFER)

Buffer area with physical I/O messages.

ROOTDATA (ROOTDATA)

Communication areas between KDCROOT and the UTM system modules.

ROOT Trace (ROOT-TRACE)

Area with trace records for ROOT execution.

FORM USER Area (FORM-USER-AR)

Output of the IUTMFORM interface parameters

HLL User Area (HLL-USER-ARE)

Parameter list of IUTMHLL.

VGM Area (VGM-AREA)

Area for the service memory for a connected database.

Root gen by user (USER-ROOT)

Area contains data from user-own ROOT module.

XA Area (XA-AREA)

Database area.

TCB-ENTRY (COB1) (TCB-ENTRY)

Area for TCB entries, if generated.

Table Descriptors (TABDESC-AREA)

Area containing data on the edited root tables (contains name, address, number of entries and length).

Administration DIAGAREA (ADMI-DIAGAREA)

Area containing trace records for all calls to the administration program interface from the program units.

Administration USERAREA (ADMI-USERAREA)

Area containing a trace record for the data passed from the program unit through the administration program interface.

ETPNDS-TU-LIST (ETPNDS-TU-LIST)

Part list of the components linked in KDCROOT with their ETPNDs.

ENTER-PROC (ENTER-PROC)

The accumulated input from the UTM start parameters ENTER-PROC-INPUT

STRT-PAR-AREA (STRT-PAR)

Area containing the start parameters specified when the application was started.

Accounting Area (ACCOUNTING-A)

Area for accounting data.

TAM (TAM)

Transaction storage for a connected database.

TSKM (TSKM)

Task-specific storage for database communication.

DB Diagarea (DB-DIAGAREA)

Area containing diagnostic information for all database calls (only if a database has been generated).

DB User Area (DB-USER-AREA)

IUTMDB parameter list (only if DB generated.)

DB Info Program Unit (DB-INF-PROG)

Area which contains data relating to the current program unit.

DB Info Application (DB-INF-APPL)

Area which contains data relating to the application.

DB Summary Info (DB-SUMMARY)

Area containing general information on the generated databases (e.g. number etc.).

DB Table (DB-TABLE)

Table of generated databases

Code conversion tables

KDCEA1

KDCAE1

KDCEA2

KDCAE2

KDCEA3

KDCAE3

KDCEA4

KDCAE4

HTTP-REQLINE

Area containing the HTTP request line

HTTP-STATLINE

Area containing the HTTP status line

HTTP-REQHDR

Area containing the HTTP request headers

HTTP-RESPHDR

Area containing the HTTP response headers

HTTP-USR-BUFF

Area containing the HTTP user buffer

HTTP-SYS-BUFF

Area containing the HTTP system buffer

SSL-USER-P

Area containing call parameters for the SSL proxy (ENTER command)

In addition, the contents of the REP file `$userid.SYSREP.UTM.070` are output provided the file existed and was accessible during the application run.

3.3.2.1 Program table

The entries have the following structure and meaning:

| Entry | Bytes (hexadec.) | Meaning |
|-------|---------------------|--|
| 1 | - | Index of the entry in the ROOT program table |
| 2 | 24 | Program name |
| 3 | 49 | Language type of program as specified in statement PROGRAM... COMP= . Possible values ¹ : X'00' = ASSEMB X'06' = C X'01' = COB1 X'08' = FOR1 X'02' = SPL4 X'0B' = ILCS X'04' = PLI/1 X'05' = Pascal-XT |
| 4 | 48 | Load mode of program as specified in statement PROGRAM .. LOAD= . If the application is generated with load modules, this output corresponds to the value specified in the LOAD-MODULE statement (LOAD-MODE parameter). Meaning of values ¹ : STATIC = X'00': Program linked statically to application STARTUP = X'01': Program is dynamically loaded on starting application ONCALL = X'02': Program is loaded when first called (call through TAC) POOL = X'03': Program is loaded into a memory pool |
| 5 | 4C | Exchange mode of program, dependent on load mode. Meaning of values ¹ : NOTCH = X'00': Program not exchangeable LLMSI = X'01': Program in an exchangeable load module LLMGR = X'02':(not currently used) APPLI = X'03': Program in a load module which is loaded in a local pool |
| 6 | 44 | Hexadecimal index of the load module (LMOD) into which this program is linked as per UTM generation. |
| 7 | 4E | Hexadecimal index of the next program in the same load module |
| 8 | 46 | Hexadecimal index of the library from which the program or the load module was dynamically loaded |

| | | |
|----|-------|---|
| 9 | 4D | Load status of program. Meaning of values ¹ : NOT_LOADABLE = X'00': Program cannot be loaded LOADED = X'01': Program loaded LOAD_ONCALL = X'02': Program is loaded on being called RELOAD_ONCALL = X'03': (not currently used) |
| 10 | X'58' | Program address |

¹Hexadecimal values are relevant for a CDUMP

3.3.2.2 Load Module table

The entries have the following meaning:

| Bytes (hex.) | Meaning |
|--------------|--|
| 0-23 | (not relevant) |
| 24-43 | Load module name |
| 44 | Load mode of load module, possible values: X'00' = Load module linked statically to application X'01' = Load module is dynamically loaded on starting application X'02' = Load module is loaded when first called X'03' = Load module is loaded into a memory pool |
| 45 | Autolink function of load module (ALTLIB), possible values: X'00' = No searching in ALTLIB for resolving external references X'01' = Searching in ALTLIB for resolving external references |
| 46 | Exchange mode of load module, possible values: X'00' = Load module not exchangeable X'01' = Load module individually exchangeable X'02' = (not currently used) X'03' = Load module exchangeable only with entire application because loaded into local pool |
| 47-5E | Generated version of load module |
| 5F-77 | Version of the load module to be loaded (on exchanging) |
| 78-79 | Index of the context to which this load module belongs |
| 7A-7B | Index of the memory pool (MPOOL) into which this load module is loaded |
| 7C-7D | Index of the library (LIB) from which this load module was loaded |
| 84-85 | Index of the first program of this load module |
| 88-89 | Index of the next load module in the same context |
| 8A-8B | Index of the first AREA in this load module |
| 8C-A3 | Version of the current (=last loaded) load module |
| A4 | Load status of load module: X'00' = Load module not loaded X'01' = Load module loaded X'02' = Load module when a program which is linked into this load module is loaded. X'03' = (not currently used) |

If the generated version = version of the load module to be loaded, this means that this load module has not been exchanged since the last KDCDEF run.

3.3.2.3 UTM Diagarea

The UTM Diagarea is a task-specific trace area in which all events are logged. This area thus contains all the events that occurred immediately before a service or application aborted.

The UTM Diagarea is written cyclically. Two cycles are separated by a dividing line comprising '=' characters and blanks. The newest entry is above the dividing line and the oldest entry is below the dividing line. Every entry is 136 long. The total number of entries that can be accommodated by the UTM Diagarea depends on the UTM generation parameter `MAX TRACEREC`.

The following types of entries are written to the UTM Diagarea:

- UTM records (type `KDCS`)

UTM records of type `KDCS` are written when the following events occur:

- a `KDCS` call in a program unit or
- an internal call to the UTM system code or
- a call to the administration programming interface or
- an internal `PEND ER` call by `openUTM` (system `PEND ER`) in response to a serious error.

Additional trace information is written for calls from the administration interface (`KDCS-opcode=ADMI`), see [section "Administration DIAGAREA"](#).

If a `PEND ER` is issued by the system, then the entry in bytes 22- 57 contains an error text.

- UTM records when starting and terminating user-specific event exits:

- `FORMAT` exit program (types `FOXS` and `FOXE`)
- `INPUT` exit program (types `INXS` and `INXE`)
- `START` exit program (types `STXS` and `STXE`)
- `VORGANG` exit program (types `VGXS` and `VGXE`)
- `HTTP` exit program (Typ `HTXS` und `HTXE`)

- UTM records to identify the service (type `VGID`)

A `VGID` record is written to the UTM Diagarea every time a program unit is started and when a `PGWT` call returns.

- `FORM` records (type `FHCL`)

A `FORM` record is written on a call to a formatting system.

- UTM records when `HTTP` functions are called (type `HTTP`)

A `HTTP` record is written when a `HTTP` function is called.

Header for the records in the UTM Diagarea

Every record starts with a header containing the following information:

| Byte | | Meaning |
|------|----------|--|
| dec. | hexadec. | |
| 0-1 | 00-01 | Count of the current entries in the DIAGAREAs (UTM and DB) |

| | | |
|------|-------|---|
| 2-5 | 02-05 | Type identifications (KDCS, VGID, INXS, INXE, STXS, STXE, VGXS, VGXE, ITRC, HTXS, HTXE, HTTP, FOXS, FOXE, FHCL) |
| 6-7 | 06-07 | Currently not used (preset to '= =') |
| 8-15 | 08-0F | Time stamp |

Structure of the header

As of byte 16, the content of the records depends on the record type.

Structure of the UTM Diagarea for a KDCS call from a program unit

| Byte | | Field name and meaning | | | | | |
|-------|----------|--|---|---|--|---------------------|---|
| dec. | hexadec. | | | | | | |
| 16-19 | 10-13 | KCOP: ¹ | user operation code: INIT, MGET, MPUT, etc. | | | | |
| | | | internal operation code: see "table KCOP" | | | | |
| 20-21 | 14-15 | KCOM: operation modification | | | | | |
| 22-23 | 16-17 | KCLA: area length or queue level (in the case of QCRE) or KCLKBPRG: length of KB program area with INIT | | | | | |
| 24-25 | 18-19 | KCLM: message length or KCLPAB: length of standard primary work area with INIT KCWTIME: wait time in seconds in the case of DGET | | | | | |
| 26-33 | 1A-21 | KCRN: reference name | | | | | |
| | | | | | | | MCOM call |
| 34-41 | 22-29 | KCMF: format name or edit profile name KCLT: LTERM name of the LTERM partner or KCUS: user ID or KCPA: name of the partner application (with APRO call) | | | | | KCPOS: destination of positive confirmation job |
| 42-43 | 2A-2B | KCDF: screen function, see "table KCDF" | | | | | KCNEG: Destination of negative confirmation job |
| | | DPUT /DADM | DGET | QCRE | PADM | APRO | |
| 44 | 2C | KCMOD: mode ("A"/"R"/" _") | KCQTYP: destination type ("U"/"Q"/" T") | KCQMODE: mode ("S"/ "W"/bin. zero) | KCACT: action (ON/OFF /CON/DIS) | KCPI: service ID | |
| 45-47 | 2D-2F | KCTAG: days | | | | | |

| | | | | | | |
|---|---|---|-------|-------|---|------------------------|
| 48-49 | 30-31 | KCSTD: hours | empty | empty | KCADRLT: new LTERM name of the printer | KCCOMID: complex ID |
| 50-51 | 32-33 | KCMIN: minutes | | | | |
| 52-53 | 34-35 | KCSEC: seconds | | | | |
| 54 | 36 | KCQTYP: destination type ("U"/"Q" /bin. zero) | | | | |
| 55-57 | 37-39 | empty | | | KCOF: OSI TP functions | |
| 58-89 | 3A-59 | KCRFELD in KCKBC: KB return information areasee "table KCDF" | | | | |
| 92-95 (32-Bit) 96-103 (64-Bit) ² | 5C-5F (32-Bit) 60-67 (64-Bit) ² | Return address to the program unit (the address points to a position after the KDCS call in the program unit) | | | | |
| 96-99 (32-Bit) 104-111 (64-Bit) ² | 60-63 (32-Bit) 68-6F (64-Bit) ² | Address of the user data area (2nd parameter of the KDCS call) | | | | |
| 100-103 (32-Bit) 112-119 (64-Bit) ² | 64-67 (32-Bit) 70-77 (64-Bit) ² | Service index | | | | |
| 104-111 (32-Bit) 120-127 (64-Bit) ² | 68-6F (32-Bit) 80-87 (64-Bit) ² | KCLOGTER in KCKBC: LTERM name | | | | |
| 112-119 (32-Bit) 128-135 (64-Bit) ² | 70-77 (32-Bit) 88-8F (64-Bit) ² | KCBENID in KCKBC: name of the current user ID | | | | |

Structure of an entry of the UTM Diagarea for a KDCS call

¹If KCOP=INFO (bytes 16-19) and in the event of operation modification KCOM=CK (bytes 20-21), the message area of the logged call is written to the next entry of the UTM Diagarea at a length KCPAC. This information is of interest for diagnostic purposes, as it logs the call to be checked.

² The 64 bit specifications only apply to Unix, Linux and Windows systems.

The following entries are possible in the KCDF field (bytes 42-43; screen function):

| Contents KCDF, hexadecimal | Symbolic name | Meaning |
|-------------------------------|------------------|--------------------------------|
| 0000 | ----- | no screen function |
| 0001 | KCREPL | clear screen and output format |
| 0001 | KCRESTRT | screen restart after PEND RS |
| 0002 | KCERAS | erase unprotected fields |
| 0004 | KCALARM | BEL function |
| 0008 | KCREPR | local printer output |

For internal calls from openUTM, the following codes are entered in the KCOP field:

| KCOP contents | Situation in which this entry was written | Entries in subsequent fields |
|------------------|--|---|
| STRT | Start of UTM application program, beginning of start handling in the UTM system code | No entry |
| WAIT | UTM process is waiting in the system code for the next request | No entry |
| CONT | Continuation in UTM system code after execution of formatting or a DB action via KDCROOT or after the INPUT exit is called | KCRCCC, KCRCKZ and KCRCDC only. for INPUT exit: parameters, see table " UTM Diagarea after a call of the INPUT exit " |
| NOOP | Buffer area of MESSAREA must be emptied (only possible when event monitor is switched on) | - - - |
| ADMI | UTM administration action | UTM internal interface |

Structure of KCRFELD

| Byte | | Field name and meaning |
|-------|----------|---|
| dec. | hexadec. | |
| 58-59 | 3A-3B | KCRDF: screen function return KCRWVG: number of waiting services with DGET |

| | | | | |
|-------|-------|--|-------------------------------|-----------------------------|
| 60-61 | 3C-3D | KCRLM: actual length of the message | | |
| | | INFO CK call | MGET call | SIGN ON call |
| 62 | 3E | KCRINFCC: KDCS return code of the KDCS call checked | KCVGST: service status | KCRSIGN1: primary code |
| 63 | 3F | | KCTAST: transaction status | KCRSIGN2: secondary code |
| 64 | 40 | | empty | |
| 65 | 41 | empty | KCRMGT: message type | |
| 66-68 | 42-44 | KCRCCC: KCDS return code | | |
| 69 | 45 | KCRCKZ: identifier: P (productive or live operation application), | | |
| 70-73 | 46-49 | KCRCDC: internal return code | | |
| 74-81 | 4A-51 | KCRMF: return of the format identifier , edit profile or the abstract syntax | | |
| 82-89 | 52-59 | KCRPI: service identification return KCRUS: user ID in the case of SIGN ST or creator of the message with DGET KCRQN: name assigned by openUTM to the temporary queue in the case of QCRE NN | | |

UTM Diagarea after a call of the INPUT exit

After the INPUT exit is called, openUTM enters the most important parameters that the exit receives or sets (KCPAC) in the KDCS record:

| Byte | | Field name and meaning |
|-------|----------|---|
| dec. | hexadec. | |
| 16-19 | 10-13 | KCOP: "CONT" is entered here |
| 20-25 | 14-19 | empty |
| 26-33 | 1A-21 | KCIFCH: first 8 characters of input |
| 34-35 | 22-23 | KCICVST: service status: "ES"/"ET"/"RS"/"EC" |
| 36-37 | 24-25 | KCIFKEY: value of F key: 1,...,24 |
| 38-39 | 26-27 | KCIKKEY: value of K key: 1,...,14 |
| 40-41 | 28-29 | KCICFINF: information about control fields: "UN"/"NO"/"ON"/"MO" |
| 42-49 | 2A-31 | KCINTAC/KCINCMD: next TAC to be started or next user command |
| 50-51 | 32-33 | KCICCD: code for effect of input: "ER"/"CC"/"SC"/"ST"/"CD" |
| 52 | 34 | KCICUT: truncate TAC: "Y"/"N" |

| | | |
|--------|--------|--|
| 53 | 35 | --- |
| 54-57 | 36-39 | KCIERRCD: error info for data display terminal |
| 58-... | 3A-... | the following is not relevant for diagnostics |

Structure of an UTM Diagarea entry after a call of the INPUT exit

Error texts in UTM Diagarea after SYSTEM PEND ER

To allow more rapid diagnosis in the event of a SYSTEM-PEND ER, the corresponding line of the UTM Diagarea contains a printable error text in bytes 22-57.

The following table contains a list of all error texts, plus the relevant cause of the error, the module where the PEND ER occurred and the type of error involved (system error or user error).

The error texts marked with *) appear only on BS2000 systems and the values marked with **) appear only on Unix, Linux and Windows systems.

| Error text | Cause, module | Error type |
|------------------------------|---|-------------------|
| APPL. PROGRAM DOES NOT EXIST | No indicator (KCRARA) for a program unit existed when program unit started (70Z with KR01). | System error |
| APPL. PROGRAM WITHOUT PEND | Program unit run was not terminated with PEND. (84Z) | User error |
| ASYNC. PROGRAM NOT FOUND | Asynchronous program no longer available (program may have been exchanged). PEND ER dump follows with 70Z and KR02. | User error |
| ERROR IN "START-TP" OF LGCON | The language connection module supplied an incorrect return code when program unit was started. | System error |
| KB END LABEL OVERWRITTEN | The KB in the application program is greater than specified in the UTM generation (70Z with KR04). Action: change KB= operand in the MAX statement or adjust program unit. | User error |
| SPAB END LABEL OVERWRITTEN | The SPAB in the application program is greater than specified in UTM generation (70Z with KR05). Action: change SPAB= operand in MAX statement | User error |

| | | |
|----------------------------------|--|--------------------|
| KCRCCC >= 70Z AFTER UTM SVC | UTM SVC set KCRCCC in KB header to >= 70Z | User /system error |
| ROOTDATA CODE INVALID **) | UTM SVC set ROOTDATA CODE to an invalid value | System error |
| ERROR ROUTINE XT... ENTERED **) | A signal with the number ...(in KDCRTDI) occurred. | User /system error |
| ERROR ROUTINE EXIT ENTERED **) | An illegal exit() call (COBOL: STOP RUN statement) was recognized while a program unit was running; see also under return code KCRCDC= EXIT. | User error |
| ERR IN STXIT-ROUTINE OF LGCON *) | During STXIT handling, an faulty return code was supplied by the Language Connection Module. | User /system error |
| STXIT WITH XT.. ENTERED *) | A STXIT with weight .. occurred. | System error |
| DB ERRORCODE = TA_CHAIN_RSET | The database connection module supplied return code 'TA_CHAIN_RSET' . If this return code was issued by one of the messages K210, K211 or K216 with XAER_DUPID, the cause could be that the previous application run was terminated abnormally, and left a transaction in the database and that a new KDCFILE was generated in this state. Action in this event: shut down and restart the database. | System error |
| KDCS CALL IN VORGANG EXIT | An illegal KDCS call was made in the VORGANG exit program. | User error |
| VORGANGEXIT PROGRAM NOT LOADED | The VORGANG exit program is not loaded. | User error |
| KDCS CALL IN FORMAT EXIT *) | An illegal KDCS call was made in the FORMAT EXIT program. | User error |

| | | |
|----------------------------------|---|--------------------------|
| DATABASE DOWN AT USER DB CALL | The database was no longer connected at the time of the CALL to the database from the application program unit. | User/ system error |
| ILLEGAL RTCODE FROM DBCON | The database connection module supplied an illegal error code. | System error |
| NO DB CALL ALLOWED IN SIGN-ON | The sign-on service has issued an illegal DB-USER-CALL | User error |
| PROGRAM INDEX = 0 INVALID **) | UTM SVC set an invalid program index. | System error |
| DYNAM. PROGRAM LOADING FAILED *) | An error occurred when loading a program. PEND ER dump with 70Z and KR09 | User /system error |

Error texts in UTM Diagarea after SYSTEM PEND ER

Service identification entry (type VGID)

| Byte 32-Bit | | Byte: 64-Bit **) | | Meaning |
|-------------|----------|------------------|----------|--|
| dec. | hexadec. | dec. | hexadec. | |
| 16 | 10 | 16 | 10 | Service ID |
| 17 | 11 | 17 | 11 | Session counter |
| 18-19 | 12-13 | 18-19 | 12-13 | Transaction counter in the service |
| 20-23 | 14-17 | 24-31 | 18-1F | Service counter |
| 24-27 | 18-1B | 32-39 | 20-27 | Sum of USED and ERROR for the current TAC |
| 28-31 | 1C-1F | 40-47 | 28-2F | Length of the global transaction identifier (GTRID) of the XID |
| 32-35 | 20-23 | 48-55 | 30-37 | Length of the branch qualifier (BQUAL) of the XID |
| 36-115 | 24-73 | 56-137 | 38-89 | The first 80 bytes of the XID data *) |
| 116-117 | 74-75 | 138-139 | 8A-8B | Index to the program table |
| 118-119 | 76-77 | 140-141 | 8C-8D | Index of the service exit in the program table |
| 120-127 | 78-7F | 142-149 | 8E-95 | Name of the transaction code that started the service |
| 128-135 | 80-87 | 150-157 | 96-9D | Name of the current transaction code |

Structure of the service identification entry

*) For details on XID, GRTID and BQUAL, please refer to the corresponding XA specification

***) only valid for Unix, Linux and Windows systems

VORGANG exit entry (types VGXS and VGXE)

| Byte 32-Bit | | Byte: 64-Bit **) | | Meaning |
|-------------|----------|------------------|----------|--|
| dec. | hexadec. | dec. | hexadec. | |
| 16 | 10 | 16 | 10 | Service ID |
| 17 | 11 | 17 | 11 | Session counter |
| 18-19 | 12-13 | 18-19 | 12-13 | Transaction counter in the service |
| 20-23 | 14-17 | 24-31 | 18-1F | Service counter |
| 24-27 | 18-1B | 32-39 | 20-27 | Sum of USED and ERROR for the current TAC |
| 28-31 | 1C-1F | 40-47 | 28-2F | Length of the global transaction identifier (GTRID) of the XID |
| 32-35 | 20-23 | 48-55 | 30-37 | Length of the branch qualifier (BQUAL) of the XID |
| 36-115 | 24-73 | 56-137 | 38-89 | The first 80 bytes of the XID data *) |
| 116-117 | 74-75 | 138-139 | 8A-8B | Index to the program table |
| 118-119 | 76-77 | 140-141 | 8C-8D | Index of the service exit in the program table |
| 120-127 | 78-7F | 142-149 | 8E-95 | Name of the transaction code that started the service |
| 128-135 | 80-87 | 150-157 | 96-9D | Name of the SERVICE exit program |

Structure of the SERVICE exit entry

*) For details on XID, GRTID and BQUAL, please refer to the corresponding XA specification

***) only valid for Unix, Linux and Windows systems

FORMAT exit entry (types FOXS and FOXE)

| Byte | | Meaning |
|-------|----------|--|
| dec. | hexadec. | |
| 16-31 | 10-1F | String FORMATEXIT |
| 32-39 | 20-27 | Program name of the FORMAT exit |
| 40-47 | 28-2F | Format name |
| 48-63 | 30-3F | Type of formatting as a character string (e.g. OUTPUTFORMATTING) |

Structure of the FORMAT exit entry

INPUT exit entry (types INXS and INXE)

| Byte | | Meaning |
|---------|----------|--|
| dec. | hexadec. | |
| 16-31 | 10-1F | String INPUT-EXIT-FORM or INPUT-EXIT-USER or INPUT-EXIT-LINE |
| 32-39 | 20-27 | Program name of the INPUT exit |
| 40-47 | 28-2F | The first 8 characters of the input message |
| 48-55 | 30-37 | Format name |
| 56-63 | 38-3F | TAC name |
| 64-65 | 40-41 | Status |
| 66-67 | 42-43 | F key |
| 68-69 | 44-45 | K key |
| 70-71 | 46-47 | Control field |
| 72-79 | 48-4F | Lterm name |
| 80-87 | 50-57 | User name |
| 88-119 | 58-77 | (Not used) |
| 120-127 | 78-7F | Next TAC or command |
| 128-129 | 80-81 | Continuation code |
| 130 | 82 | CUT TAC |
| 131 | 83 | (Not used) |
| 132-135 | 84-87 | Error code |

Structure of the INPUT exit entry

START exit entry (types STXS and STXE)

| Byte | | Meaning |
|-------|----------|---|
| dec. | hexadec. | |
| 16-31 | 10-1F | String START-EXIT-# (# = 1 - 8 stands for the number of the START exit.) |
| 32-39 | 20-27 | Program name of the START exit |

| | | |
|-------|-------|--|
| 40-47 | 28-2F | String STARTUP (fixed name of the TAC) |
| 48-63 | 30-3F | Indicator, if the first process or the follow-up process is the string |

Structure of the START exit entry

HTTP exit entry (Typ HTXS und HTXE)

| Byte 32-Bit | | Byte 64-Bit **) | | Meaning |
|-------------|----------|-----------------|----------|---|
| dez. | hexadez. | dez. | hexadez. | |
| 16 | 10 | 16 | 10 | Opcode: HTTP_GET_EXIT = 1, HTTP_PUT_EXIT = 2 |
| 17 | 11 | 17 | 11 | Returncode: OK = 0; ROOT_INT_PEND_ER = 1 |
| 18 | 12 | 18 | 12 | Returncode of the HTTP exit |
| 19 | 13 | 19 | 13 | InOut indicator: I/O |
| 20-23 | 14-17 | 24-31 | 18-1F | Pointer to KDCS parameter area |
| 24-27 | 18-1B | 32-35 | 20-23 | KDCS operation code |
| 28-29 | 1C-1D | 36-37 | 24-25 | Counter for successfully read MGET message parts |
| 30-31 | 1E-1F | 36-39 | 26-27 | Length of remaining message part (nach RCCC=02Z) |
| 32-33 | 20-21 | 40-41 | 28-29 | Index of HTTP exit program |
| 34-35 | 22-23 | 42-43 | 2A-2B | |
| 36-51 | 24-33 | 44-59 | 2C-3B | HTTP info structure (see INIT PU) |
| 52-55 | 34-37 | 64-71 | 40-47 | Pointer to MGET structure information |
| 56-59 | 38-3B | 72-79 | 48-4F | Number of message parts from the MGET structure information |
| 60-63 | 3C-3F | 80-87 | 50-57 | Pointer to current message part |

Structure of the HTTP exit entry

**) only valid for Unix, Linux and Windows systems

HTTP function entry (Typ HTTP)

The structure of the HTTP record depends on the called function. Each record starts with the following structure.

| Byte 32-Bit | | Byte 64-Bit **) | | Meaning |
|-------------|----------|-----------------|----------|--|
| dez. | hexadez. | dez. | hexadez. | |
| 16-47 | 10-2F | 16-47 | 10-2F | Alphanumeric name of the HTTP function, e.g. kcHttpGetHeaderByName |
| 48-95 | 30-5F | 48-95 | 30-5F | Alphanumeric return code of the HTTP function, e.g. KC_HTTP_OK (0) |
| 96-99 | 60-63 | 96-99 | 60-63 | Sedecimal return code of the HTTP function |

**) only valid for Unix, Linux and Windows systems

The HTTP record of function kcHttpGetHeaderCount contains the following additional information.

| Byte 32-Bit | | Byte 64-Bit **) | | Meaning |
|-------------|----------|-----------------|----------|--|
| dez. | hexadez. | dez. | hexadez. | |
| 100-103 | 64-67 | 104-111 | 68-6F | Number of HTTP header fields of the HTTP request |

**) only valid for Unix, Linux and Windows systems

The HTTP record of function kcHttpGetHeaderByIndex contains the following additional information.

| Byte 32-Bit | | Byte 64-Bit **) | | Meaning |
|-------------|----------|-----------------|----------|---|
| dez. | hexadez. | dez. | hexadez. | |
| 100-103 | 64-67 | 104-111 | 68-6F | Number of HTTP header fields of the HTTP request |
| 104-107 | 68-6B | 112-119 | 70-77 | Index of the requested HTTP header field |
| 108-111 | 6C-6F | 120-127 | 78-7F | Address of the buffer for the name of the HTTP header |
| 112-115 | 70-73 | 128-135 | 80-87 | Length of the buffer for the name of the HTTP header |
| 116-119 | 74-77 | 136-143 | 88-8F | Length of the name of the HTTP header |
| 120-123 | 78-7B | 144-151 | 90-97 | Address of the buffer for the value of the HTTP header |
| 124-127 | 7C-7F | 152-159 | 98-9F | Length of the buffer for the the value of the HTTP header |
| 128-131 | 80-83 | 160-167 | A0-A7 | Length of the value of the HTTP header |

**) only valid for Unix, Linux and Windows systems

The HTTP record of function kcHttpGetHeaderByName contains the following additional information.

| Byte 32-Bit | | Byte 64-Bit **) | | Meaning |
|-------------|----------|-----------------|----------|--|
| dez. | hexadez. | dez. | hexadez. | |
| 100-103 | 64-67 | 104-111 | 68-6F | Address of the name of the HTTP header |
| 104-107 | 68-6B | 112-119 | 70-77 | Length of the name of the HTTP header |
| 108-111 | 6C-6F | 120-127 | 78-7F | Address of the buffer for the value of the HTTP header |
| 112-115 | 70-73 | 128-135 | 80-87 | Length of the buffer for the value of the HTTP header |
| 116-119 | 74-77 | 136-143 | 88-8F | Length of the value of the HTTP header |

**) only valid for Unix, Linux and Windows systems

The HTTP record of functions kcHttpGetMethod, kcHttpGetPath, kcHttpGetScheme, kcHttpGetVersion, and kcHttpGetQuery contain the following additional information.

| Byte 32-Bit | | Byte 64-Bit **) | | Meaning |
|-------------|----------|-----------------|----------|--|
| dez. | hexadez. | dez. | hexadez. | |
| 100-103 | 64-67 | 104-111 | 68-6F | Address of the buffer for the return value of the function |
| 104-107 | 68-6B | 112-119 | 70-77 | Length of the buffer for the return value of the function |
| 108-111 | 6C-6F | 120-127 | 78-7F | Length of the return value of the function , e.g. of the HTTP path |

**) only valid for Unix, Linux and Windows systems

The HTTP record of function kcHttpGetMsg contains the following additional information.

| Byte 32-Bit | | Byte 64-Bit **) | | Meaning |
|-------------|----------|-----------------|----------|---|
| dez. | hexadez. | dez. | hexadez. | |
| 100-103 | 64-67 | 104-111 | 68-6F | Adresse of the address of the HTTP message body |
| 104-107 | 68-6B | 112-119 | 70-77 | Address of the HTTP message body |
| 108-111 | 6C-6F | 120-127 | 78-7F | Length of the HTTP message body |

**) only valid for Unix, Linux and Windows systems

The HTTP record of function kcHttpPutHeader contains the following additional information.

| Byte 32-Bit | | Byte 64-Bit **) | | Meaning |
|-------------|----------|-----------------|----------|---|
| dez. | hexadez. | dez. | hexadez. | |
| 100-103 | 64-67 | 104-111 | 68-6F | Address of the name of the HTTP header |
| 104-107 | 68-6B | 112-119 | 70-77 | Address of the value of the HTTP header |
| 108-121 | 6C-79 | 120-127 | 78-7F | First 14 characters of the name of the HTTP header |
| 122-135 | 7A-87 | 128-135 | 80-87 | First 14 characters of the value of the HTTP header |

**) only valid for Unix, Linux and Windows systems

Der HTTP-Record der Funktion kcHttpPutStatus contains the following additional information.

| Byte 32-Bit | | Byte 64-Bit **) | | Meaning |
|-------------|----------|-----------------|----------|-------------|
| dez. | hexadez. | dez. | hexadez. | |
| 100-103 | 64-67 | 104-111 | 68-6F | status code |

| | | | | |
|---------|-------|---------|-------|--|
| 104-107 | 68-6B | 112-119 | 70-77 | Address of the reason phrase |
| 108-135 | 6C-87 | 120-147 | 78-93 | First 28 characters of the reason phrase |

**) only valid for Unix, Linux and Windows systems

The HTTP record of function kcHttpPutMsg contains the following additional information.

| Byte 32-Bit | | Byte 64-Bit **) | | Meaning |
|-------------|----------|-----------------|----------|--|
| dez. | hexadez. | dez. | hexadez. | |
| 100-103 | 64-67 | 104-111 | 68-6F | Address of the given message fragment |
| 104-107 | 68-6B | 112-119 | 70-77 | Length of the given message fragment |
| 108-111 | 6C-6F | 120-127 | 78-7F | Address of the address for the accumulated HTTP message body |
| 112-115 | 70-73 | 128-135 | 80-87 | Address for the length of the accumulated HTTP message body |
| 116-119 | 74-77 | 136-143 | 88-8F | Address of the accumulated HTTP message body |
| 120-123 | 78-7B | 144-151 | 90-97 | Length of the accumulated HTTP message body |
| 124-127 | 7C-7F | 152-159 | 98-9F | Size of the buffer for the accumulated HTTP message body |

**) only valid for Unix, Linux and Windows systems

The HTTP record of function kcHttpPercentDecode contains the following additional information.

| Byte 32-Bit | | Byte 64-Bit **) | | Meaning |
|-------------|----------|-----------------|----------|--|
| dez. | hexadez. | dez. | hexadez. | |
| 100-103 | 64-67 | 104-111 | 68-6F | Requested type of normalization |
| 104-107 | 68-6B | 112-119 | 70-77 | Address of the message to be normalized |
| 108-111 | 6C-6F | 120-123 | 78-7B | Length of the message to be normalized |
| 112-115 | 70-73 | 124-131 | 7C-83 | Address for the length of the normalized message |
| 116-119 | 74-77 | 132-135 | 84-87 | Length of the normalized message |
| 120-122 | 78-7A | 136-139 | 88-8B | in case of error: erroneous characters |

**) only valid for Unix, Linux and Windows systems

FORM-Record in the UTM Diagarea

Each time a call is issued to the format handling system via the IUTMFORM interface, a record is written to the UTM Diagarea.

| Byte | | Meaning |
|-------|----------|---|
| dec. | hexadec. | |
| 16 | 10 | IUTMFORM operation code |
| 17 | 11 | IUTMFORM return code |
| 18-21 | 12-15 | IUTMFORM info return code |
| 22-24 | 16-18 | Status information following IUTMFORM call |
| 25 | 19 | Format type |
| 26-27 | 1A-1B | Blanks (reserved for extensions) |
| 28-29 | 1C-1D | Device feature prior to IUTMFORM call (see KCDF) |
| 30-31 | 1E-1F | Printer acknowledge bytes |
| 32-39 | 20-27 | Terminal characteristics (see TSTAT macro) |
| 40-41 | 28-29 | Maximum length of (last) passed message |
| 42-43 | 2A-2B | Actual length of (last) message supplied following call |
| 44-47 | 2C-2F | Language ID and territory ID |
| 48-55 | 30-37 | Name of character set for USER or LTERM |
| 56-63 | 38-3F | Name of character set for format |
| 64-71 | 40-47 | Name of (last) transferred format |
| 72-79 | 48-4F | Name of (last) supplied format |
| 80-83 | 50-53 | Address of (last) transferred message area |
| 84-87 | 54-57 | Address of (last) transferred cursor |

Structure of the FORM record in the UTM Diagarea

3.3.2.4 DB Diagarea

Each time a user call is issued to the DB system, a DB record is written to the DB Diagarea. In the same way as UTM Diagarea, this area is cyclically written with trace records.

Two cycles are separated by a dividing line comprising '=' characters. The record above the line is the most recent and the one below the line the oldest.

| Byte 32-Bit | | Byte: 64-Bit **) | | Meaning |
|-------------|----------|------------------|----------|---|
| dec. | hexadec. | dec. | hexadec. | |
| 0-1 | 00-01 | 0-1 | 00-01 | Counter for the current entries in the DIAGAREAs (UTM and DB) |
| 2-5 | 02-05 | 2-5 | 02-05 | "DBCL"= ID for DB record |
| 6-7 | 06-07 | 6-7 | 06-07 | Unused at present (preset to '= =') |
| 8-15 | 08-0F | 8-15 | 08-0F | Timestamp |
| 16-19 | 10-13 | 16-19 | 10-13 | Status of DB transaction ¹ prior to DB call, see table "Status of the database transaction" |
| 20-23 | 14-17 | 20-23 | 14-17 | Status of DB transaction ¹ following DB call, see table "Status of the database transaction" |
| 24 | 18 | 24 | 18 | DB operation code, see table "DB operation codes" |
| 25 | 19 | 25 | 19 | DB secondary opcode |
| 26 | 1A | 26 | 1A | DB error code, see table "DB error codes" |
| 27 | 1B | 27 | 1B | DB type(hex): 01=UDS, 02=SESAM, 03=LEASY, 06=CIS, 07=generic DB system (type=DB), 09=XA in BS2000 |
| 28-31 | 1C-1F | 28-31 | 1C-1F | DB trace information (for contents and meaning see DB system) In the case of XA, on BS2000 systems: DB trace information of last XA call: 28: RM number, 29-30: XA function code, 31: XA return code |
| 32-63 | 20-3F | 32-63 | 20-3F | Secondary DB trace information (see DB system) |
| 64-67 | 40-43 | 64-67 | 40-43 | Combined status info TAM (further diagnostic information, relevant only when a multi-DB function is used) |
| 68-71 | 44-47 | 68-71 | 44-47 | combined status info VGM (further diagnostic information, relevant only when using the multi-DB functionality) |
| 72-73 | 48-49 | 72-73 | 48-49 | Transaction counter within the service |
| 74 | 4A | 74 | 4A | Number of the UTM application run (starts at 1 after KDCDEF generation) |
| 75 | 4A | 75 | 4A | Code for table index, '= T ' |

| | | | | |
|-------|-------|--------|-------|--|
| 76-77 | 4C-4D | 76-77 | 4C-4D | UTM table index that caused the database call |
| 78-79 | 4E-4F | 78-79 | 4E-4F | Action index within this table |
| 80-83 | 50-53 | 80-87 | 50-57 | Service counter (unique within the UTM application run) |
| 84-87 | 54-57 | 88-95 | 58-5F | Address used internally |
| 88-91 | 58-5B | 96-103 | 60-67 | Return address in the program unit. The address points to a location after the CALL-DB-SYSTEM call. |
| 92 | 5C | 104 | 68 | * to draw attention to the end of the diagnostics record |

DB record in the DB Diagarea

¹For operation codes which refer to DB conversations the status of the VGM is shown here.

**) only valid for Unix, Linux and Windows systems

If the database system is connected to openUTM via the XA interface and a "dynamic XA switch" is included (for Oracle, for example, the module "oraswd"), the following diagnostic record is written when a common transaction signs on or off :

| Byte | | Meaning |
|-------|----------|---|
| dec. | hexadec. | |
| 16-23 | 10-17 | Printable "ax_reg" when the transaction signs on Printable "ax_unreg" when the transaction signs off |
| 24-27 | 18-1B | Number of the RM instance |
| 28-31 | 1C-1F | not used |
| 32-47 | 20-2F | Printable return code for the call |
| 48 | 30 | Internal status of the transaction |
| 49 | 31 | Internal status of the sign-on/sign-off |
| 50-51 | 32-33 | not used |
| 52-54 | 34-36 | Is the call within an openUTM transaction? (printable, "yes" or "no") |
| 55 | 37 | not used |
| 56 | 38 | * to draw attention to the end of the diagnostics record |

Diagnostic record

Status of the database transaction:

| Contents (hex) | Meaning of the DB status |
|-----------------------|--|
| 04 | DB transaction was set to the preliminary end of transaction (PTC) |
| 08 | Updates were made within a DB transaction |
| 10 | DB transaction has been rolled back |
| 20 | DB transaction was closed |
| 40 | The program unit run issued a call CLOSE DB transaction; DB transaction is terminated from viewpoint of program unit run |
| 80 | DB transaction is open |

Status of the DB transaction. These values can also occur in combination, e.g. "88".

DB operation codes:

| Contents (hex) | DB op. codes | Meaning |
|-----------------------|---------------------|---|
| 00 | STPA | DB connection module is to check DB-specific start parameters. The call takes place at start of UTM application program |
| 04 | CONC | Connection setup between UTM task and connection module of DB system. Takes place at start of UTM application program |
| 08 | DCON | Connection cleardown between UTM task and DB system. Call takes place in end handling of openUTM application program |
| 10 | USRC | Execute DB call of application program (user call). |
| 14 | FITA | Terminate DB transaction. openUTM issues this call at the end of a joint DB/DC transaction |
| 18 | CATA | Terminate DB transaction abnormally, i.e. the DB transaction is rolled back to the last synchronization point |
| 1C | BKTA | The call is used with PEND KP or PEND PA/PR with task switch (due to TAC classes); the UTM task breaks off from DB/DC transaction processing. |
| 20 | COTA | The call takes place whenever a multi-step transaction is continued, i.e. following a PEND KP or PEND PA/PR with task switch (due to TAC classes) |

| | | |
|----|--------|---|
| 24 | STAT | Display status of a DB transaction or delete all DB states. The DB system maintains status information on DB transactions as a means for coordinated restarts in openUTM and the DB system. |
| 28 | PETA | Request preliminary end of DB transaction |
| 2C | EDVG | End of UTM conversation; DB conversation still open |
| 30 | BKVG | Interrupt of an open DB conversation |
| 34 | COVG | Continuation of an interrupted DB conversation following BKVG |
| 38 | RSVG | openUTM indicates a UTM conversation restart to the DB system if a DB service is open. |
| 3C | CNFPTC | DB connection module confirms the status of the precommitted transactions to the DB system via the XA interface and deletes these from the internal list. |
| 40 | STRT | DB connection module notifies the DB system of the start of a DB transaction via the XA interface. |
| 44 | PEND | DB connection module notifies the DB system of the preliminary end of the transaction via the XA interface and initiates the first commitment phase. |

DB operation codes

DB error codes:

| Contents (hex) | Meaning of the DB error codes |
|-----------------------|---|
| 00 | Job performed |
| 04 | DB transaction had to be rolled back. openUTM then also rolls back the UTM transaction. With a DB call (user call), control is restored to the application program unit |
| 08 | Causes conversation to abort with PEND ER when openUTM is used |
| 0C | DB system is not available, not activated |
| 10 | DB system not available for another reason |
| 14 | Job not carried out, retry later! |
| 18 | A (possibly) recoverable system error occurred. openUTM creates a task dump and tries to terminate the open DB transaction |
| 1C | An unrecoverable error occurred. Any further work with the DB system is pointless in this DB session |
| 20 | DB system detected a user error, e.g. during checking of the DB start parameters |
| 24 | DB system detected an interface error |

DB error codes

3.3.2.5 Administration DIAGAREA

The Administration DIAGAREA is a task-specific trace area in KDCROOT. Trace records are written to this area cyclically in the same way as to UTM Diagarea. A record is written to this area each time the administration program interface is called.

The area is large enough for 71 records, each record being 112 bytes in length. The area is written cyclically. A boundary consisting of "=" characters separates two cycles. The entry above the boundary is the most recent and the one below it the oldest. One record is written for every administration call.

Records have the following structure:

The column marked with **) is valid only on Unix, Linux and Windows systems.

| Byte 32-Bit | | Byte: 64-Bit **) | | Meaning |
|-------------|----------|------------------|----------|---|
| dec. | hexadec. | dec. | hexadec. | |
| 0-1 | 00-01 | 0-1 | 00-01 | Counter for the current entry in the Administration DIAGAREA |
| 2-3 | 02-03 | 2-3 | 02-03 | Counter for the corresponding entry (opcode "ADMI") in the UTM Diagarea |
| 4-5 | 04-05 | 4-5 | 04-05 | Printable abbreviation for opcode (see table below) |
| 6-7 | 06-07 | 6-7 | 06-07 | Printable abbreviation for object type or subopcode1, depending on the opcode specified (see table below) |
| 8-11 | 08-0B | 8-15 | 08-0F | Address of parameter area |
| 12-15 | 0C-0F | 16-23 | 10-17 | Address of identification area |
| 16-19 | 10-13 | 24-31 | 18-1F | Address of selection area |
| 20-23 | 14-17 | 32-39 | 20-27 | Address of data area |
| 24-79 | 18-4F | 40-95 | 28-5F | Parameter area |
| 80-111 | 50-6F | 96-127 | 60-7F | Name of the administered object in the length specified for the object type (2-32) from the identification area or from the data area |

Structure of Administration DIAGAREA

**) valid only on Unix, Linux and Windows systems.

The entry counter and the addresses of the areas are also logged before the UTM system code is called. The remaining data is logged after control has returned from the UTM system code and before branching back to the program unit. For this reason, the *parameter area* also contains return values - including the return code. The contents of the *identification area* are only logged if the area was used during the administration call. The name from the *data area* is only logged for KC_CREATE_OBJECT.

If the administration call is terminated with PEND ER because the address of the *parameter area* cannot be accessed or is not aligned on a word boundary, this log shows the address specified.

The following abbreviations are used:

| Abb. opcode | Opcode | Abb. subopcode1/ object type | Subopcode1 or object type |
|----------------------|---|-------------------------------------|----------------------------------|
| CA | KC_CHANGE_APPLICATION | N | KC_NEW |
| | | S | KC_SAME |
| | | O | KC_OLD |
| CD | KC_CREATE_DUMP | | |
| CS | KC_CREATE_STATEMENTS | | |
| EN | KC_ENCRYPT | V | KC_ACTIVATE_KEY |
| | | C | KC_CREATE_KEY |
| | | D | KC_DELETE_KEY |
| | | A | KC_READ_ACTIV_PUBLIC_KEY |
| | | N | KC_READ_NEW_PUBLIC_KEY |
| OI | KC_ONLINE_IMPORT | A | KC_ALL |
| PE | KC_PTC_TA | R | KC_ROLLBACK |
| LO | KC_LOCK_MGMT | UF | KC_UNLOCK_USF |
| | | US | KC_SIGNOFF_SINGLE |
| | | UA | KC_SIGNOFF_ALL |
| | | AB | KC_ABORT_BOUND_SERVICE |
| | | AA | KC_ABORT_ALL_BOUND_SERVICE |
| | | AP | KC_ABORT_PTC_SERVICE |
| UP | KC_UPDATE_IPADDR | A | KC_ALL |
| | | P | KC_PARTNER |
| CR DL GT MD | KC_CREATE_OBJECT KC_DELETE_OBJECT KC_GET_OBJECT KC_MODIFY_OBJECT | AB | KC_ABSTRACT_SYNTAX |
| | | AC | KC_ACCESS_POINT |
| | | AP | KC_APPLICATION_CONTEXT |
| | | BC | KC_BCAMAPPL |
| | | CL | KC_TACCLASS |
| | | CH | KC_CHARACTER_SET |
| | | CN | KC_CLUSTER_NODE |

| | |
|----|-------------------------|
| CC | KC_CLUSTER_PAR |
| CO | KC_CON |
| CP | KC_CURR_PAR |
| CU | KC_CLUSTER_CURR_PAR |
| DA | KC_DIAG_AND_ACCOUNT_PAR |
| DI | KC_DB_INFO |
| DP | KC_DYN_PAR |
| EC | KC_ENCRYPTION |
| ED | KC_EDIT |
| GB | KC_GSSB |
| HD | KC_HTTP_DESCRIPTOR |
| KS | KC_KSET |
| LC | KC_LTAC |
| LM | KC_LOAD_MODULE |
| LP | KC_LPAP |
| LS | KC_LSES |
| LT | KC_LTERM |
| MM | KC_MESSAGE_MODULE |
| MP | KC_MAX_PAR |
| MS | KC_MSG_DEST_PAR |
| MX | KC_MUX |
| OA | KC_OSI_ASSOCIATION |
| OC | KC_OSI_CON |
| OL | KC_OSI_LPAP |
| PE | KC_PTC |
| PO | KC_TPOOL |
| PP | KC_PAGEPOOL |
| PR | KC_PROGRAM |
| PT | KC_PTERM |

| | | | |
|----|-----------------|----|----------------------|
| | | QP | KC_QUEUE_PAR |
| | | QU | KC_QUEUE |
| | | SI | KC_SIGNON |
| | | SF | KC_SFUNC |
| | | SP | KC_SYSTEM_PAR |
| | | SN | KC_SUBNET |
| | | TA | KC_TASKS_PAR |
| | | TC | KC_TAC |
| | | TI | KC_TIMER_PAR |
| | | TR | KC_TRANSFER_SYNTAX |
| | | UP | KC_UTMD_PAR |
| | | US | KC_USER |
| | | UF | KC_USER_FIX |
| | | U1 | KC_USER_DYN1 |
| | | U2 | KC_USER_DYN2 |
| SH | KC_SHUTDOWN | K | KC_KILL |
| | | N | KC_NORMAL |
| | | W | KC_WARN |
| | | G | KC_GRACEFUL |
| SL | KC_SYSLOG | I | KC_INFO |
| | | CS | KC_CHANGE_SIZE |
| | | SC | KC_SWITCH_AND_CHANGE |
| | | SW | KC_SWITCH |
| | | WB | KC_WRITE_BUFFER |
| SM | KC_SEND_MESSAGE | | |
| SP | KC_SPOOLOUT | | |
| UL | KC_USLOG | SW | KC_SWITCH |

Abbreviations for opcode and subopcode1 or object type

3.3.2.6 Administration USERAREA

The Administration USERAREA is a task-specific trace area in KDCROOT.

This area is used to log the data passed from the program unit to openUTM at the program interface.

Since a large volume of data can be passed, only the data for one call is stored in the area. The area thus comprises a single record and covers 4140 bytes. The area is only written for those calls which pass data to openUTM. The contents of the *data area* or the *selection area* are logged, depending on the area used for the call. If this area is needed for diagnostic purposes, you must make sure that the call is the last call for which data is logged, otherwise the area will be overwritten by a subsequent call.

If a password for a user is passed in the *data area*, it is not logged, but is overwritten with binary zeros.

A record has the following structure:

| Byte | | Meaning |
|---------|----------|--|
| dec. | hexadec. | |
| 0-1 | 00-01 | Counter for the corresponding entry in Administration DIAGAREA |
| 2-3 | 02-03 | Irrelevant |
| 4-59 | 04-3B | Parameter area |
| 60-4139 | 3C-102B | Contents of the data area or the selection area in the length passed |

Structure of Administration USERAREA

The contents of the *parameter area* and the data passed are logged in the UTM system code. The *parameter area* is logged as it is passed by the program unit, i.e. without return values. The subreturn code is set to zero.

The entry counter is logged after control has returned from the UTM system code and before branching back to the program unit.

3.3.2.7 The Communication Area KB

The communication area (KB) consists of the KB header, the KB return area and the KB program area of the generated length.

| Byte | | Field names (COBOL and C++) and contents | | |
|-------|----------|--|--------------------------------------|-----------------------------------|
| dec. | hexadec. | | | |
| 0-7 | 00-07 | KCBENID kcuserid | UTM login name | |
| 8-15 | 08-0F | KCTACVG kccv_tac | TAC used to start this conversation. | |
| 16-17 | 10-11 | KCTAGVG: kccv_day | day | Date of the start of conversation |
| 18-19 | 12-13 | KCMONVG kccv_mon | month | |
| 20-21 | 14-15 | KCJHRVG kccv_year | year | |
| 22-24 | 16-18 | KCTJHVG kccv_doy | working day | |
| 25-26 | 19-1A | KCSTDVG kccv_hour | hour | Time of the start of conversation |
| 27-28 | 1B-1C | KCMINVG kccv_minute | minute | |
| 29-30 | 1D-1E | KCSEKVG kccv_second | second | |
| 31 | 1F | KCKNZVG kccv_status | service indicator | |
| 32-39 | 20-27 | KCTACAL kcpr_tac | TAC used to address the program | |
| 40-41 | 28-29 | KCTACAL kcpr_hour | hour | Time of the program start |
| 42-43 | 2A-2B | KCMINAL kcpr_minute | minute | |
| 44-45 | 2C-2D | KCSEKAL kcpr_second | second | |

| | | | |
|-------|-------|-----------------------|--|
| 46 | 2E | KCAUSWEIS kccard | card ID: A (ID card in reader) or blanks. |
| 47 | 2F | KCTAIND kctaind | transaction ID: F (first) or N (follow-up transaction) |
| 48-55 | 30-37 | KCLOGTER kclogter | name of the LPAP partner (sender) |
| 56-57 | 38-39 | KCTERMN kctermn | type of terminal or printer, see table for PTERM statement |
| 58-59 | 3A-3B | KCLKBPB kclpa | maximum length of the KB program area as generated |
| 60-61 | 3C-3D | KCHSTA: kchsta | number of stacked services from the point of view of the current service. |
| 62 | 3E | KCDSTA kcdsta | change in the number of stacked services |
| 63 | 3F | | empty |
| 64 | 40 | KCPRIND kcprind | Program ID. "A" = program unit run in an asynchronous service "D" = program unit run in a synchronous service |
| 65 | 41 | KCOF1 kcof1 | Permitted OSI-TP functions "B" = basic functions "H" = basic functions + handshake functions "C" = basic and commit functions with chained transactions "O" = other combination blank if service was not started via OSI-TP |
| 66 | 42 | KCCP kccp | UTM client protocol "0" = asynchronous service "1" = LU6.1 "2" = OSI TP "3" = UPIC "4" =TIAM "5" = APPLI "6" = SOCKET (USP) "7" = HTTP "8" = SOCKET (USP) SECURE "9" = HTTPS |
| 67 | 43 | KCTARB kctarb | TA is marked for rollback. |
| 68-71 | 44-47 | KCYEARVG kccv_year | 4-digit year specification for the start of the service |

| | | | |
|---------|---------|--|---|
| 72-83 | 48-53 | | empty (FILLER) |
| 84-115 | 54-73 | KCRFELD | KB return area |
| 84-85 | 54-55 | KCRDF kcrdf | return area for screen functions |
| | | KCRWVG kcrwvg | number of waiting services in the case of DGET |
| 86-87 | 56-57 | KCRLM kcrlm | return actual length of the message |
| | | INFO CK call | MGET call |
| 88 | 58 | KCRINFCC/ kcrinfcc: KDCS return code of checked KDCS call | KCVGST/ kpcv_state: service status |
| 89 | 59 | | KCTAST/ kcpta_state: transaction status |
| 90-91 | 5A-5B | | empty |
| 92-94 | 5C-5E | KCRCCC kcrccc | KDCS return code |
| 95 | 5F | KCRCKZ kcrckz | identifiers: P (production application) |
| 96-99 | 60-63 | KCRCDC kcrcdc | internal return code |
| 100-107 | 64-6B | KCRMF kcrfn | return of the format identifier, edit profile or the abstract syntax |
| 108-115 | 6C-73 | KCRPI kcrpi | KCRPI: service ID return |
| | | KCRUS kcrus | KCRUS: user ID in the case of SIGN ST or creator of message with DGET |
| | | KCRQN kcrqn | KCRQN: name assigned by openUTM to the temporary queue in the case of QCRE NN |
| 116-... | 74- ... | KB program area | |

KDCS communication area

3.3.3 Summary Information

The dump is concluded with the summary (Summary information area), a table of contents and a message section that contains the messages that are output while preparing the UTM dump.

The summary information is an extract of all dump information. It contains the data frequently required for diagnosis. This saves you time looking through the dump, especially in the preliminary diagnosis stage and when looking for duplicates.

The summary information contains significant UTM generation parameters of the application, version number and correction status of the operating system and openUTM, start parameters of the application, the most important current table entries and the last records of UTM Diagarea.

If the dump was produced by KDCUPD, then only the first page of the summary information is written.

Some UTM dumps will not contain all tables, e.g. the PEND ER dump. Some data will therefore be missing in the summary of such dumps during analysis.

The INFO operand in the FILE and FGG statements serves to control the output of summary information and of the dump.

3.4 Sample dumps

In the following you will find two examples of a UTM dump.

General procedure: Look for the KCRCCC and KCRCDC return codes in the dump and refer to [section “KDCS return codes in KCRCCC”](#) and [section “Internal returncode KCRCDC”](#) for the meanings of the return codes.

3.4.1 Sample dump K326

1. Look up UTM Diagarea --> last call: PEND ER
The return codes are found in the preceding entry of the UTM Diagarea or in the KB
2. Look up KB -->
 - Contents KCRCCC (bytes 92-94): 70Z
 - Contents KCRCDC (bytes 96-99): K326

UTM Diagarea

KDCROOT : UTM Diagarea

```
0001 02500000 0000 0000C9E3 D9C37E7E D6535F32 7D666900 ..ITRC==O...'...
02500010 0010 D9C1C9D5 C5D94040 40C3C1E2 C57A40F1 RAINER CASE: 1
02500020 0020 00007D00 7E7E7E7E 7E7E7E7E 7E7E7E7E ..',.=====
02500030 0030 7E7E7E7E 7E7E7E7E 7E7E7E7E 7E7E7E7E =====
= 02500070 0070 7E7E7E7E 7E7E7E7E 7E7E7E7E 7E7E7E7E =====
02500080 0080 7E7E7E7E 7E7E7E7E =====
...
03EF 02521670 0000 0494D2C4 C3E27E7E D6537155 D8F2E100 .mKDCS==O...Q2..
02521680 0010 E2C7C5E3 C7C20004 0000C7E2 E2C2D6C6 SGETGB....GSSBOF
02521690 0020 C6F94040 40404040 40400000 00000000 F9 .....
025216A0 0030 00000000 00000000 00000000 0000D6C3 .....OC
025216B0 0040 40D4F1F4 E9E3F0F0 F0F04040 40404040 M14ZT0000
025216C0 0050 40404040 40404040 40407E7E 810F90C2 ==a..B
025216D0 0060 03204010 0000003B C1D5E8F9 F7F6F3F1 .. ....ANY97631
025216E0 0070 C5E4D9D6 40404040 7E7E7E7E 7E7E7E7E EURO =====
025216F0 0080 7E7E7E7E 7E7E7E7E =====
03F0 025216F8 0000 0495D2C4 C3E27E7E D6537155 D9B25100 .nKDCS==O...R...
02521708 0010 D4D7E4E3 D5E30000 00334040 40404040 MPUTNT....
02521718 0020 40404040 40404040 40400000 00000000 .....
02521728 0030 00000000 00000000 00000000 0000D6C3 .....OC
02521738 0040 40D4F0F0 F0E3F0F0 F0F04040 40404040 M000T0000
02521748 0050 40404040 40404040 40407E7E 810F90C2 ==a..B
02521758 0060 03204010 0000003B C1D5E8F9 F7F6F3F1 .. ....ANY97631
02521768 0070 C5E4D9D6 40404040 7E7E7E7E 7E7E7E7E EURO =====
02521778 0080 7E7E7E7E 7E7E7E7E =====
03F1 02521780 0000 0496D2C4 C3E27E7E D6537163 65CAFD00 .oKDCS==O....}.
02521790 0010 D7C5D5C4 D2D70000 0000C1D7 C5D5C4C3 PENDKP...APENDC
025217A0 0020 D6D40000 00000000 00000000 00000000 OM.....
025217B0 0030 00000000 00000000 00000000 0000D6C3 .....OC
025217C0 0040 40D4F7F4 E9E3D2F3 F2F64040 40404040 M74ZTK326
025217D0 0050 40404040 40404040 40407E7E 810F90C2 ==a..B
025217E0 0060 03204010 0000003B C1D5E8F9 F7F6F3F1 .. ....ANY97631
025217F0 0070 C5E4D9D6 40404040 7E7E7E7E 7E7E7E7E EURO =====
02521800 0080 7E7E7E7E 7E7E7E7E =====
03F2 02521808 0000 0497D2C4 C3E27E7E D6537163 667DAD00 .pKDCS==O....'..
02521818 0010 D7C5D5C4 C5D97A40 4040D2C3 D9C3C3C3 PENDER: KCRCCC
02521828 0020 406E7E40 F7F0E940 C1C6E3C5 D940E4E3 >= 70Z AFTER UT
02521838 0030 D440E2E5 C340405A 5A404040 40404040 M SVC !!
02521848 0040 40404040 40404040 40404040 40404040
02521858 0050 40404040 40404040 40407E7E 810F90C2 ==a..B
02521868 0060 00000000 0000003B C1D5E8F9 F7F6F3F1 .....ANY97631
02521878 0070 C5E4D9D6 40404040 7E7E7E7E 7E7E7E7E EURO =====
02521888 0080 7E7E7E7E 7E7E7E7E =====
03F3 02521890 0000 7E7E7E7E 7E7E7E7E 7E7E7E7E 7E7E7E7E =====
= 02521900 0070 7E7E7E7E 7E7E7E7E 7E7E7E7E 7E7E7E7E =====
02521910 0080 7E7E7E7E 7E7E7E7E =====
```

Extract from the Summary information

Summary Information

KDCDEF related information

UTM-mode: S

Coldstart and first task: YES
Number of asynchron tasks: 10
Accounting generated: YES
UTM-D: YES
Filebase name: RAIT700

Maximum values generated

KBPROG: 32767
SPAB: 32767
MPUT length: 32764
FORMIO length: 65532
FORMAREA length: 32764
Restart buffer length: 65536
CPU-time: 120000 msec

System information

BS2000 version: 2190
Hardware type: XS31
Hostname: BS2HOST1

Settings at start time

KDCMON: OFF
Version number of KDCDATA: V07.0A00
Number of tasks: 10
Number of asynchron tasks: 10
Formatting system: FHS

Database related information

| | | |
|-------------------|--------|-----------|
| 1. Type: XA (BS2) | Entry: | TPXASWD |
| 2. Type: UDS | Entry: | DML |
| 3. Type: UDS | Entry: | \$UNIBASE |

Information on REP's

KDCRTST:

Information on exits

Input exit: YES
Format input exit: YES
Format exit: YES
Line input exit: YES
USERFORM input exit: YES
Start exit: YES
Shut exit: YES
SIGNON conversation: YES
MSGTAC: YES
BADTAC: YES
Active exits: NO EXIT ACTIVE

Current state

Current TAC: GETGSSB
Program name: KCSTPRG
FGG number of program: 0
Terminal type: APPLI
Kind of terminal: DIALOG
Programming language of current TAC: ILCS
Actual length of KBPROG: 2048
Actual length of SPAB: 2048

```
Diagnostic information
Dump reason: PENDER
Dump created: 19-06-25 14:32:50
KCRCCC: 74Z
KCRCDC: K326
FHS secondary returncode: 0000
Formatting mode: INPUT FORMATTING

Last ROOT action: CALL_WAIT
Action index: 2
```

3.4.2 Sample Dump STXIT

1. Look up UTM Diagarea --> last call: PEND ER

The return codes are found in the plain text of the PENDER entry or in the KB.

2. Look up KB

- Transaction code: (bytes 32-39): STXITPI
- Contents KCRCCC (bytes 92-94): 70Z
- Contents KCRCDC (bytes 96-99): XT5C
Meaning:
 - XT: The STXIT routine was called
 - 5C: Interrupt weight 5C: address error

3. Analyze registers (CONXTX-AREA)

The problem occurs in module STXITPI at distance x'4A2'. For a more detailed diagnosis, the user dump and module STXITPI must be analyzed.

Example

```

KDCROOT :      UTM Diagarea
003B  01BC2ED0 0000  003DE5C7 C9C47E7E D0D3102E 33BE4D00  ..VGID==.L....(.
      01BC2EE0 0010  C6040001 00000003 00000000 00000020  F.....
      01BC2EF0 0020  00000030 C4F0F1F6 E9C5F0F9 E2E3D9C2  ....D016ZE09STRB
      01BC2F00 0030  D3E24040 0A010204 00010000 00000003  LS .....
      01BC2F10 0040  00000002 C4F0F1F6 E9C5F0F9 E2E3D9C2  ....D016ZE09STRB
      01BC2F20 0050  D3E24040 0A010204 00010000 00000003  LS .....
      01BC2F30 0060  00000002 00000000 0000F1F0 F2F0F5F5  .....102055
      01BC2F40 0070  000249E6 00190000 E2E3E7C9 E3D7C940  ...W....STXITPI
      01BC2F50 0080  E2E3E7C9 E3D7C940  STXITPI
003C  01BC2F58 0000  003ED2C4 C3E27E7E D0D3102E 33C3DE00  ..KDCS==.L...C..
      01BC2F68 0010  C9D5C9E3 00000074 00000000 00000000  INIT.....
      01BC2F78 0020  00000000 00000000 00000000 00000000  .....
      01BC2F88 0030  00000000 00000000 00004040 00004040  .....
      01BC2F98 0040  4040F0F0 F0E3F0F0 F0F04040 40404040  000P0000
      01BC2FA8 0050  40404040 40404040 40407E7E 81592158  ==a...
      01BC2FB8 0060  40404040 00000003 E3D7F6F0 F0F0F0F1  ....TP600001
      01BC2FC8 0070  D2D3C1E4 E2404040 7E7E7E7E 7E7E7E7E  KLAUS =====
      01BC2FD8 0080  7E7E7E7E 7E7E7E7E  =====
003D  01BC2FE0 0000  003FD2C4 C3E27E7E D0D3102E 33C5A600  ..KDCS==.L...Ew.
      01BC2FF0 0010  D4C7C5E3 00000050 00000000 00000000  MGET...&.....
      01BC3000 0020  00004040 40404040 40400000 00000000  ..
      01BC3010 0030  00000000 00000000 00000000 0004D6C3  .....OC
      01BC3020 0040  40D4F0F0 F0E3F0F0 F0F04040 40404040  M000P0000
      01BC3030 0050  40404040 40404040 40407E7E 815921DC  ==a...
      01BC3040 0060  01592D32 00000003 E3D7F6F0 F0F0F0F1  .....TP600001
      01BC3050 0070  D2D3C1E4 E2404040 7E7E7E7E 7E7E7E7E  KLAUS =====
      01BC3060 0080  7E7E7E7E 7E7E7E7E  =====
003E  01BC3068 0000  0040D2C4 C3E27E7E D0D31036 6605FE00  . KDCS==.L.....
      01BC3078 0010  D7C5D5C4 C5D97A40 404040E2 E3E7C9E3  PENDER:  STXIT
      01BC3088 0020  40E6C9E3 C840E7E3 F5C340C5 D5E3C5D9  WITH XT5C ENTER
      01BC3098 0030  C5C44040 4040405A 5A404040 40404040  ED  !!
      01BC30A8 0040  40404040 40404040 40404040 40404040
      01BC30B8 0050  40404040 40404040 40407E7E 815921DC  ==a...
      01BC30C8 0060  00000000 00000003 E3D7F6F0 F0F0F0F1  .....TP600001
      01BC30D8 0070  D2D3C1E4 E2404040 7E7E7E7E 7E7E7E7E  KLAUS =====
      01BC30E8 0080  7E7E7E7E 7E7E7E7E  =====

```

```

003F 01BC30F0 0000 7E7E7E7E 7E7E7E7E 7E7E7E7E 7E7E7E7E =====
=    01BC3160 0070 7E7E7E7E 7E7E7E7E 7E7E7E7E 7E7E7E7E =====
    01BC3170 0080 7E7E7E7E 7E7E7E7E =====

```

```

KDCROOT :    KB
          01009E40 0000 D2D3C1E4 E2404040 E2E3E7C9 E3D7C940 KLAUS STXITPI
          01009E50 0010 F3F1F0F5 F1F6F1F5 F2F1F0F2 F0F5F5C6 310516152102055F
          01009E60 0020 E2E3E7C9 E3D7C940 F1F0F2F0 F5F540C6 STXITPI 102055 F
          01009E70 0030 E3D7F6F0 F0F0F0F1 C6C57FFF 0000F000 TP600001FE"~..0.
          01009E80 0040 C440F440 F2F0F1F6 00004040 40404040 D 4 2016..
          01009E90 0050 40404040 00000000 D6C340D4 F7F0E9E3 ....OC M70ZP
          01009EA0 0060 E7E3F5C3 40404040 40404040 40404040 XT5C
          01009EB0 0070 40404040 FFFFFFFF FFFFFFFF FFFFFFFF ~~~~~~
          01009EC0 0080 FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF ~~~~~~
=        01011EA0 8060 FFFFFFFF FFFFFFFF FFFFFFFF FFFFFFFF ~~~~~~
          01011EB0 8070 FFFFFF ~~~

```

```

KDCROOT :    Context Area
          PC=01592532 IW=5C ILC=40 PM=0C CC=00 AMODE=31 STXITPI + 000004A2
          R00 00000002 R01 01B0D4E0 R02 01592790 R03 010241C0
          R04 01592790 R05 01B5948C R06 01016000 R07 01015000
          R08 01BF2708 R09 00000050 R10 01592090 R11 0107BF80
          R12 01AD8B08 R13 01B0D480 R14 815921DC R15 0102D000

```

4 UTM Message Concept

When a UTM application executes, openUTM generates messages that provide you with information on particular events.

A **UTM message** consists of a **message number**, a fixed **message text** and variable parts referred to as inserts. These **inserts** are dynamically assigned current values when the respective message is output. Examples of inserts are the name of the application or of the communication partner, counters, return codes, etc.

Each message is associated with an identifier - a **message number**. UTM message numbers always consists of the letter K or P followed by a three-digit number, e.g. K008; this is then followed by the actual message text.

UTM messages serve different purposes and can be sent to different recipients (**message destinations**). Within certain limits you can define message destinations yourself on an application-specific basis.

Some explanations and examples for UTM messages are listed below:

- A user can be informed of a certain event at the terminal by means of a message and can be requested to make an input if necessary.

Example

During the sign-on check the password was found to be invalid. openUTM requests that the user repeat the KDCSIGN input at the terminal.

- An event in the UTM application is logged by means of a message in the UTM log file SYSLOG. In this way, data is collected for monitoring the application run and for diagnostic purposes.

Example

A message informs you that a user has signed on to the application.

- If certain UTM messages are generated and you have defined the message destination MSGTAC for them, openUTM calls an event-driven program unit in the application (see section on "MSGTAC event service" in the openUTM manual „Programming Applications with KDCS“). This event service can, for example, issue asynchronous calls to the administrator using FPUT. This makes it possible to use programmed administration to react to events for which openUTM generates messages.

Example

If the event "service abort" occurs, message K017 or K055 is generated. The MSGTAC service can act on this message by locking the TAC, for example, and sending a message to the administrator.

In order to output a message, openUTM utilizes a message module specific to openUTM. This contains the properties and texts of all UTM messages.

You can, to a certain extent, structure the output of UTM messages for specific applications, see "[section "Modifying message output"](#)".

4.1 Message Module, Message Definition File

When outputting a message, openUTM accesses the UTM message modules. These contain the following, among other things, for each message.

- the message number Knnn or Pnnn
- the message text
- the message destinations
- the place holders for the inserts

The message definition file SYSMSH.UTM.070.MSGFILE and the following two system message modules are supplied with openUTM.

KCSMSGs (German message texts)

KCSMSGSE (English message texts)

The system message modules contain default settings for the message destinations and German or English message texts. The message definition file is used as the basis if the user wishes to change the UTM messages. It contains message texts in both English and German.

! CAUTION!

You may only use the UTM tools KDCMTXT and KDCMMOD to process the message definition file! Any other write access, such as with an editor will **destroy** this file!

The message definition file can be expanded with message texts in other languages (see "[Messages in other languages - the KDCMTXT tool](#)"). From the message definition file you can use the KDCMMOD tool (see "[Generating a user-specific message module with KDCMMOD](#)") to create your own message modules.

A certain type of message output is defined in the standard message modules. If you wish to change this, you must generate one or more of your own message modules.

4.2 Message Destinations

Each message that openUTM generates while an application is running can be issued to one or more of the following destinations:

- SYSLST Output to SYSLST.
- SYSOUT Output to SYSOUT.
- STATION Output to clients connected via a PTERM or a TPOOL with PTYPE !=APPLI, SOCKET or UPIC.
- SYSLINE Output to the system line of the terminal; user screen formats are maintained. If a message is to be output to the system line, both SYSLINE and STATION must be specified as destinations
- CONSOLE Output to the console of the system operator; the application name is also output
- PARTNER Output to clients connected via a PTERM or a TPOOL with PTYPE=APPLI or SOCKET (except HTTP clients).
- SYSLOG Output to the system log file (see section "[UTM log file SYSLOG](#)").
- MSGTAC Output to the MSGTAC program unit (see section "MSGTAC event service" in the openUTM manual „Programming Applications with KDCS“).

- USER-DEST-1 to USER-DEST-4

Output to user-specific message destinations to which you can assign a USER queue, a TAC queue, an asynchronous TAC or an LTERM partner as concrete message destinations at generation time.

Either cyclically or when requested by the user, WinAdmin and WebAdmin can retrieve messages from these UTM queues, output these in lists and save them in the configuration database if required. For details, see online help for WinAdmin/WebAdmin, keyword „message collectors“.

The assignment between USER-DEST-1..4 and the concrete destination is defined by means of the KDCDEF statement MSG-DEST.

4.2.1 Output Format of the Messages

Depending on the message definition, openUTM outputs the messages in different formats:

- to SYSLOG and MSGTAC:
the message header without the message text and the current values of all inserts, as described in the section [“Structure of UTM system messages”](#)
- to CONSOLE:
the application name, the message number and the message text with the inserts contained in the text
- to USER-DEST-1...USER-DEST-4:
 - the message header without the message text and the current values of all inserts as described in the section [“Structure of UTM system messages”](#), if USER-DEST-*n* is generated with MSG-FORMAT=FILE
 - the date/time followed by the message number, message text and all inserts if USER-DEST-*n* is generated with MSG-FORMAT=PRINT
- to all other destinations:
the message number and the message text with the inserts contained in the text. In certain error situations during an application run (abnormal termination of an application, program or task) openUTM may only output a message to SYSOUT, SYSLST or CONSOLE, even though the message was meant for other destinations (e.g. SYSLOG). This is done to prevent any further errors that might result.
For the same reason, in certain error situations openUTM does not take the message text from the message module that can be modified by the user, but from the system message module.

Header with date and time for messages to SYSLST / SYSOUT

When outputting messages to the message destinations SYSLST and SYSOUT, by default openUTM precedes the messages with a header containing the date and time. One benefit of this is that it allows errors to be diagnosed more easily.

The header has the following format:

```
yyyy-mm-dd hh:mm:ss
```

Messages K038 and K044 are always output without this header. You can use the start parameter UTM-MSG-DATE=NO to suppress the output of this header for all other messages as well.

4.2.2 UTM messages to the BS2000 console

If UTM messages are to be output to the BS2000 console (message destination = CONSOLE), the BS2000 message file must contain the UTM message UTM0100.

openUTM uses this message as a “container” for the appropriate current UTM message. openUTM enters the application name in addition to the message text in messages that are to be output to the BS2000 console.

4.2.3 UTM messages to a TS application

If UTM messages are intended for a transport system application of the type PTYPE=APPLI or SOCKET (message destination = PARTNER), you must ensure that the application recognizes the messages and responds accordingly. If it does not, it can happen, for example, when two UTM applications are linked as TS applications, that the applications keep sending each other messages such as

```
K009 Transaction code K009 is invalid.
```

In this case the UTM application could, for example, define a TAC K009, and assign a program to this which is to respond to this message.

USP header in the case of UTM messages to a socket USP application

For UTM messages to a socket application (PTYPE=SOCKET, message destination = PARTNER), you can specify at UTM generation whether openUTM is to precede the message with a USP header (openUTM Socket Protocol header). One of the purposes of the USP header is to output the length of the received messages to the socket partner.

To do this, specify the following at KDCDEF generation in the USP-HDR= operand of the PTERM or TPOOL statement:

```
USP-HDR = MSG or USP-HDR = ALL
```

If you generate USP-HDR = NO (default setting), a USP header is not created.

You will find a description of the USP header in the openUTM manual „Programming Applications with KDCS“.

UTM messages to HTTP clients

UTM does not send K-messages to HTTP clients, not even then, if the K-message is configured with message destination PARTNER.

Exception:

The messages K017 and K034 are always sent to HTTP clients, even then, if the message destination PARTNER is not set for these messages.

4.2.4 UTM messages to user-specific message destinations

When a message occurs for which USER-DEST-1 ...USER-DEST-4 has been defined as the message destination, UTM creates an asynchronous job to this message destination internally. This asynchronous job is assigned the user KDCMSGUS and the LTERM partner KDCMSGLT as the originator. If the asynchronous job is rejected because, for example, the message destination is locked (STATUS=OFF), the message is lost to the message destination. If a message is created for this message destination again, UTM tries to create an asynchronous job again.

If an asynchronous TAC is generated as the message destination, UTM starts the program assigned to the TAC every time the relevant message is created (i.e., different to MSGTAC programs – only one message can be read with FGET in a program run).

4.2.5 UTM messages to MSGTAC

MSGTAC is a special asynchronous program unit, that users can program themselves, (see the openUTM manual „Programming Applications with KDCS“).

If there is an MSGTAC program, and a message occurs for which MSGTAC was defined as the message destination, the asynchronous service MSGTAC is started. The MSGTAC program can read a number of messages in a single program unit run.

The MSGTAC program unit runs under the internal UTM user ID KDCMSGUS with KSET=MASTER and PERMIT=ADMIN. It must be defined in a TAC statement with `TAC KDCMSGTC, PROGRAM=`

4.3 Modifying message output

The message definition file defines the way in which openUTM issues standard messages, i.e. which text is used, which destination it is sent to, etc., together with constraints as to the extent to which they can be modified. If you wish to change these default characteristics, you must generate your own message module and link it to the UTM application.

The following changes may be made:

- Adding or omitting message destinations (with KDCMMOD) such as issuing further messages to SYSOUT or entering the destination MSGTAC as a requirement for using an MSGTAC program, for example.
- Translating message texts into a different language and transferring them in the message definition file with the KDCMTXT tool ("[Messages in other languages - the KDCMTXT tool](#)").
- Changing message texts with the KDCMMOD tool ("[Generating a user-specific message module with KDCMMOD](#)"), such as adding or removing (permitted) inserts to/from a message text, converting texts into lowercase/uppercase letters, etc.
- Defining text constants. These can be used in many message texts. Control characters are also included here.

i However, individually designed message output is only possible for UTM applications that have been linked with the modified message module. It will have no effect on other UTM applications in the same computer and do not require any changes to the BS2000 system.

You can also create a number of your own message modules and link them into the application. This gives you the option of tailoring the output of messages to your users, e.g. by issuing them in different languages.

The message destinations are taken from an application-specific standard message module (see "[Generating a user-specific message module with KDCMMOD](#)").

Users may only perform modifications to the message definition file with the aid of the tools KDCMTXT.

The KDCMTXT tool must be used when translating all message texts into another language (see "[Messages in other languages - the KDCMTXT tool](#)"). If only a few texts are modified for a language contained in the message definition file, the KDCMMOD tool can be used.

Message output exceptions

When UTM messages are output, openUTM takes the message text and the current message destinations from the system message module, or the message destinations from the standard message module and the message texts from the standard message module or from a user-defined message module (if one or more user-defined message modules have been generated). However, the following exceptions to this exist:

- For some messages output by ROOT modules (e.g. for K078), English message texts are programmed in, and the output for these messages thus cannot be changed.
- In the start and end handling of the tasks, for technical reasons openUTM cannot access the application's message module(s). In these cases, openUTM takes the message text and the message destinations from the KCSMSGs message module, which contains German message texts. When the UTM subsystem starts up, KCSMSGs is loaded as part of the UTM system code.

If you want openUTM to use the english system message module in an English-language application, proceed as follows:

-
1. Before the UTM subsystem starts up, delete the KCSMSGSE message module from the SYSLNK.UTM.070.TPR library.
 2. Copy the KCSMSGSE module from SYSLNK.UTM.070 there instead, and rename the entry from KCSMSGSE to KCSMSGSE.

4.3.1 Messages in other languages - the KDCMTXT tool

The message definition file SYSMSH.UTM.070.MSGFILE supplied with openUTM contains the texts of the UTM messages in German and English. If openUTM is to output messages in another language, users can translate the UTM message texts into this language and incorporate them in the message definition file by using the KDCMTXT tool.

! CAUTION!

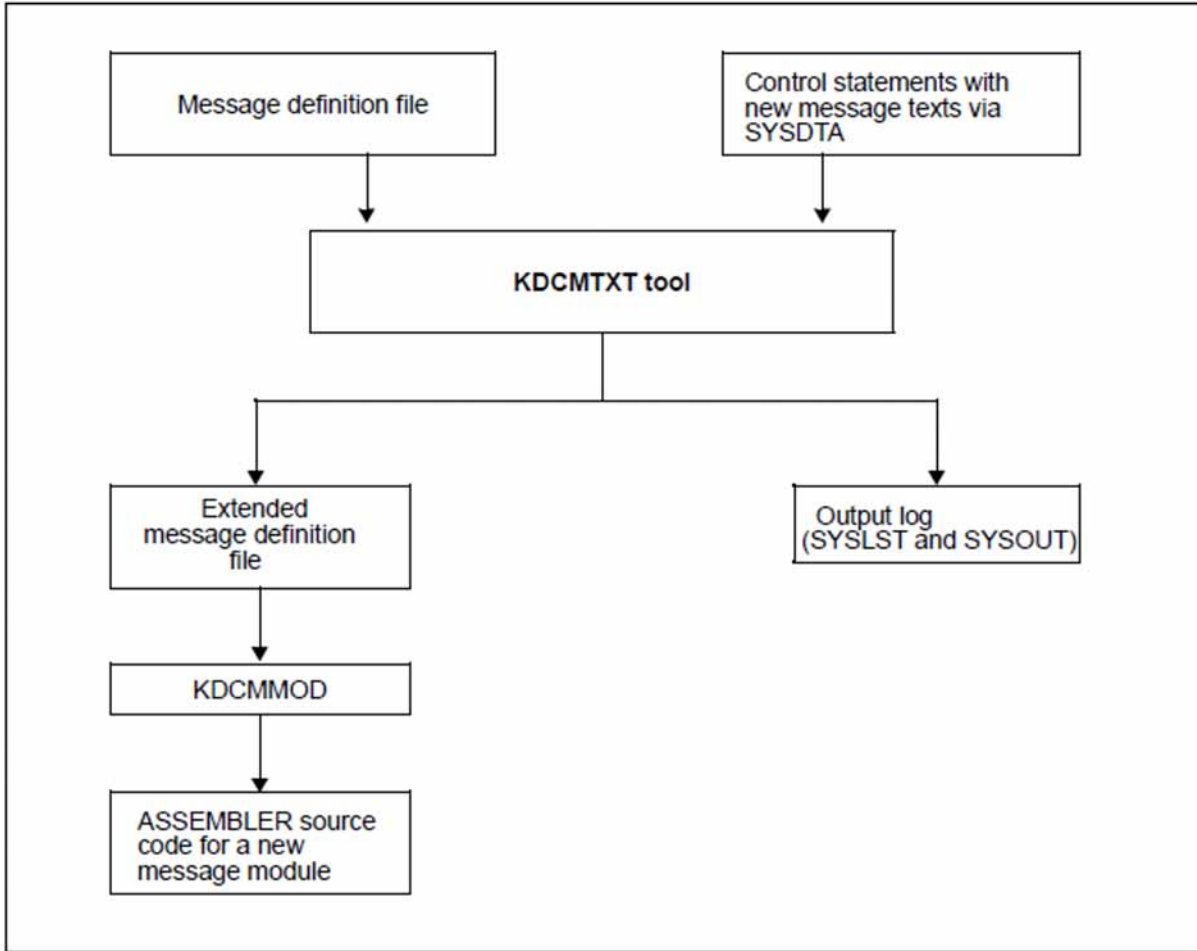
You can only make modifications and extensions to the message definition file using the KDCMTXT utility. Other methods of write access, e.g. using an editor will destroy the file!

The texts must be passed to KDCMTXT in the form of special control statements. On the basis of this extended message definition file, KDCMMOD can then be used to create the ASSEMBLER source program for a new message module, containing the messages in the desired language. KDCMMOD is described starting on "[Generating a user-specific message module with KDCMMOD](#)". After it has been assembled, this message module can be linked into the user's application in place of the system message module.

Note

When defining message text, the inserts allowed for the corresponding message may only be used once.

4.3.1.1 Inputs and outputs



Creating messages in other languages with KDCMTXT

4.3.1.2 Calling KDCMTXT

The KDCMTXT tool is started as follows:

```
/START-EXECUTABLE-PROGRAM FROM-FILE=*LIB-ELEM(LIB=SYSLNK.UTM.070.UTIL,ELEM=KDCMTXT)
```

KDCMTXT reads the control statements from SYSDTA.

i You can also start KDCMTXT using the SDF START-KDCMTXT command, see also openUTM manual "Using UTM Applications on BS2000 Systems", section, "Starting UTM tools via separate SDF commands".

4.3.1.3 Control statements for KDCMTXT

KDCMTXT recognizes the following control statements:

| | |
|---------|--|
| OPTION | Specify name of message definition file |
| FU | Define function unit and national language |
| MSGBASE | Select message group for FU SYS: UTM (K messages) or XAPTP (P messages) |
| STDTXT | Define start of standard message text |
| ENDTXT | Define end of standard message text |
| END | Define end of input of control statements |

The following rules apply to the input of statements:

- Comment lines are marked by means of an asterisk (*) in column 1.
- If a line ends with a comma, KDCMTXT then interprets the following line as a continuation line of the statement.

It is expedient to write the control statements for KDCMTXT to a file. When the control statement file KDCMTXT is created, the file SYSDAT.UTM.070.MTXTIN which is supplied with openUTM may be of assistance. This file contains the German and English standard message texts in the syntax of the KDCMTXT control statements. This file may be used as a template for the user's own input file.

OPTION statement

OPTION can be used to specify the name of the message definition file which is to be modified by KDCMTXT.

The OPTION statement must, if specified, be the first control statement; otherwise a syntax error will be reported. If no OPTION statement is specified, KDCMTXT uses the message definition file SYSMSH.UTM.070.MSGFILE supplied as standard with openUTM.

For safety reasons it is advisable to copy the message definition file and work on the copy with KDCMTXT.

| Operation | Operands |
|-----------|------------------|
| OPTION | MSGFILE=filename |

filename Name of the message definition file which is to be extended.
Default: SYSMSH.UTM.070.MSGFILE

FU statement

This statement can be used to define the function unit and the natural language.

| Operation | Operands |
|-----------|--------------------------------------|
| FU | [function-unit][,][LANG=language-id] |

function-unit Function unit for which the new natural language is to be entered. At present, the only value permitted is SYS. SYS represents the transaction monitor.

SYS K messages (K001-K399) or P messages (P001 - P049)

Default: SYS

LANG=language-id

The language ID can consist of a maximum of 3 characters. It can be freely assigned, but it must be unique within a message definition file.

You can use the language IDs found on cars or the language IDs defined in ISO IS/R639, for example.

| Country IDs on cars | ISO IS/R639 | Language |
|---------------------|-------------|------------|
| DK | Da | Danish |
| D | De | German |
| GB | En | English |
| E | Es | Spanish |
| FI | Fi | Finnish |
| F | Fr | French |
| GR | Gr | Greek |
| I | It | Italian |
| NL | Nl | Dutch |
| N | No | Norwegian |
| P | Pt | Portuguese |
| S | Sv | Sweden |

Default: GB

It is only necessary to specify the comma if both *function-unit* and *LANG=language-id* are specified., e.g. `FU SYS , LANG=DK .`

The LANG= option is only used to identify the texts in the message definition file and bears no relation to the language identifier for a user generated with the KDCDEF parameter LOCALE.

For any given functional unit, all the message texts for one language must be specified so that the message texts for this language and functional unit are transferred in the message definition file.

After the FU statement has been processed, the MSGBASE UTM statement is executed implicitly.

! CAUTION!

The message definition file supplied already contains the German and English message texts with language identifiers D and GB. If one of these identifiers is specified, KDCMTXT overwrites the corresponding standard message texts in the message definition file with the new message texts.

MSGBASE statement (only for FU SYS)

openUTM makes a distinction between two message groups within FU SYS: Messages of the UTM group, which start with the letter K, and messages of the XAPTP group, which start with the letter P.

The MSGBASE statement allows you to select the message group to which subsequent STDTXT statements are to apply until the next MSGBASE or FU statement is issued.

| Operation | Operands |
|-----------|-----------------|
| MSGBASE | { UTM XAPTP } |

UTM Select the UTM message group (K messages).

XAPTP Select the XAPTP message group (P messages).

STDTXT and ENDTXT statements

The control statement STDTXT introduces the definition of the standard text of a message. The subsequent input lines describe the standard text.

ENDTXT terminates the definition of the message text. The translated message text is passed to KDCMTXT as follows:

| Operation | Operands |
|-----------|----------------|
| STDTXT | msg-no text |
| ENDTXT | |

msg-no Message number for which the standard text is intended.

msg-no specifies the K or P message that is to be modified. The message number must lie within the message number range of the specified functional unit. The message number must be specified as three digits **without** the prefixed **K** or **P**.

Mandatory operand.

text The message text must be specified here; the syntax is the same as with the KDCMMOD utility (see "[Control statements for KDCMMOD](#)"). The same length restrictions similarly apply.

The control statements STDTXT and ENDTXT and also the message text must each begin in a new line. The STDTXT / ENDTXT statements for a single functional unit and a single language must all be located after the FU statement for this functional unit and must precede the next FU statement.

KDCMTXT will only transfer the message texts for an additional language in the message definition file if the input data contain all the message texts for this language and if all message texts are error-free.

If the message texts for a language are already present in the message definition file, KDCMTXT will then also accept individual messages. Existing message texts with the same message number and the same language identifier are then overwritten.

END statement

This statement terminates the input of control statements to KDCMTXT. END has no operands.

4.3.1.4 KDCMTXT log

After the KDCMTXT tool has processed all the modifications and created a new message definition file, it outputs an edited list of all messages to SYSLST and SYSOUT as a log (output log). The list contains the message texts edited in the form in which they would be output to a data display terminal. Here, the inserts are filled to the appropriate length as follows, depending on type:

- CHAR with @ characters
- INT with # characters
- HEXA with X characters

4.3.2 Generating a user-specific message module with KDCMMOD

The KDCMMOD tool is available for generating a user-own message module. From the message definition file and a user-generated modification definition it creates an ASSEMBLER source program from which, after compilation, the application-specific message module is generated. This is linked to the program units present in an application.

An application-specific module is checked for validity by openUTM in the start phase and is then used additionally with the system message module.

In cases where the application-specific module cannot be accessed, the system message module is accessed instead (e.g. when terminating a UTM task). The system message module is present in the UTM system code.

Users can also create a number of their own message modules and link them into the application, but only one module can be the application-specific message module. The message module that acts as the application-specific message module is specified by means of the LOCALE parameter in the KDCDEF MESSAGE statement during UTM generation. This application-specific message module is also referred to as the standard message module. All other message modules are user-specific message modules. The message destinations are always taken from the standard message module.

You will find more information on this topic, e.g. how to link your own message modules with the application program, in the openUTM manual "Using UTM Applications on BS2000 Systems".

The KDCMMOD tool stores the generated ASSEMBLER source program in the file SRC.ASSEMB.object-module-name, where object-module-name denotes the name of the message module specified in the GEN statement.

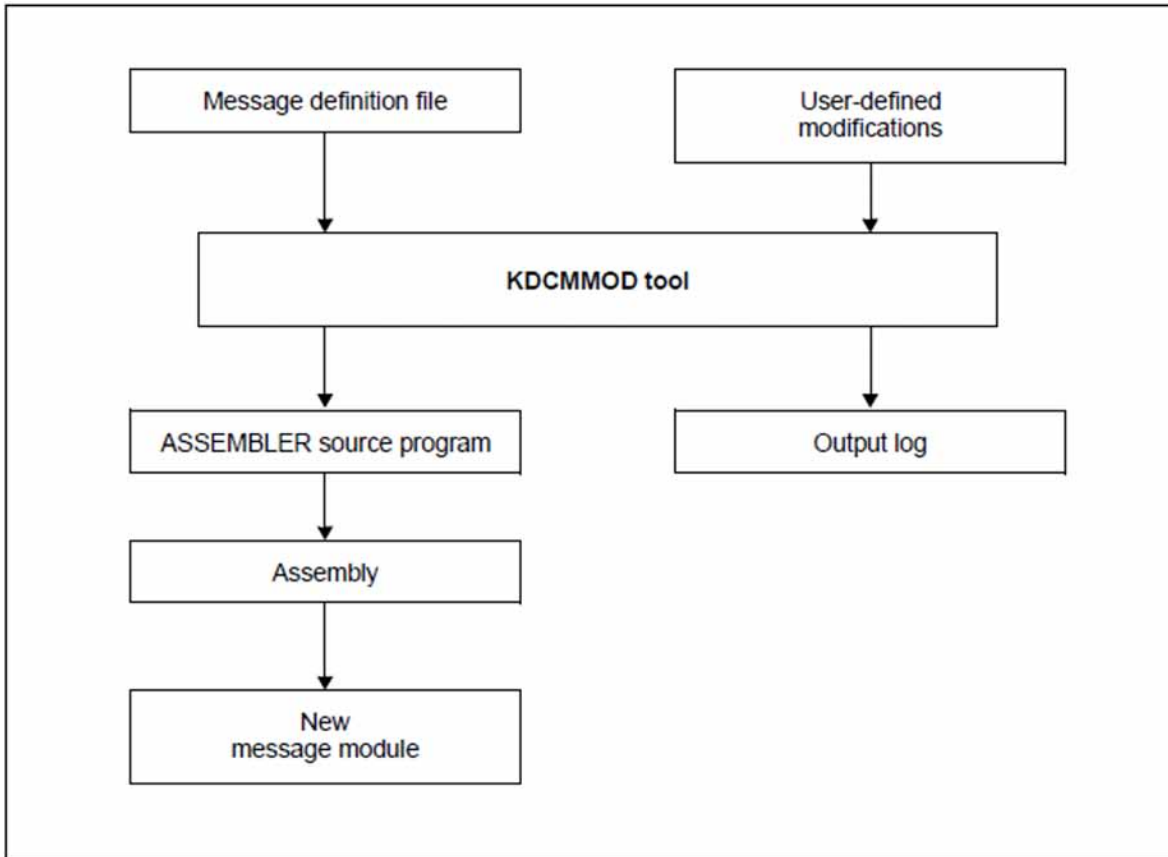
The following can be specified or modified:

- the natural language in which the messages are to be generated
- the fixed message texts
- the message destinations
- message attributes
- control characters.

There is considerable scope for modifying the message texts but the length restrictions must be observed; see "[Control statements for KDCMMOD](#)". The available inserts are listed on section "[Message inserts](#)". It is possible to remove inserts from the message text that were specified in the standard text or include inserts in a message that were not specified in the standard text. In addition, it is possible to alter the sequence of the inserts within the text. Each insert may only appear a maximum of once in the message. The message numbers can also be moved to another place in the message text or even removed altogether. However, this should only be done in certain exceptional cases since it can make diagnoses on the basis of the messages more difficult.

The message destinations can be modified within certain limits (see section "[Destinations of UTM messages](#)"). You should also note that different destinations may be required or prohibited for each message.

4.3.2.1 KDCMMOD inputs and outputs



Sequence for creating a user-specific message module

Once the KDCMMOD tool has processed all the changes, it writes an edited log of all messages to SYSOUT. In addition, the program creates an overview of the message definitions (insert list, destinations, compression) derived from the framework definitions and modifications.

In the output list, the defined standard texts are edited in the form in which they were output to a terminal, with the inserts being filled as follows to the appropriate length depending on the type:

- CHAR with @ characters
- INT with # characters
- HEXA with X characters

The messages for KDCMMOD will be found on "[Messages of the UTM tools KDCMMOD / KDCMTXT](#)".

4.3.2.2 Starting and terminating KDCMMOD

The KDCMMOD tool is started as follows:

```
/START-EXECUTABLE-PROGRAM FROM-FILE=*LIB-ELEM(LIB=SYSLNK.UTM.070.UTIL,ELEM=KDCMMOD)
```

i You can also start KDCMMOD using the SDF START-KDCMMOD command, see also openUTM manual “Using UTM Applications on BS2000 Systems”, section, “Starting UTM tools via separate SDF commands”.

KDCMMOD reads the statements of the modification description from the system file SYSDTA. Individual lines are read, whereby

- a comment line is marked by a “*” character (asterisk) in the first column
- for lines that have a comma as the last character the next line is interpreted as a continuation line.

All other lines are analyzed individually by the program.

The program run of KDCMMOD is terminated with the control statement END.

4.3.2.3 Control statements for KDCMMOD

KDCMMOD recognizes the following control statements:

| | |
|----------|---|
| CONSTANT | Define constants |
| END | Terminate input of control statements |
| ENDMSG | Terminate message definition |
| GEN | Generate messages for a function unit |
| MODMSG | Modify messages |
| MSGBASE | Select message group: UTM (K messages) or XAPTP (P messages) |
| OPTION | Specify name of the message definition file |

Observe the following rules regarding sequence of KDCMMOD control statements:

1. If used, the OPTION statement must be the first control statement.
2. The CONSTANT statement must be in the input file before a text definition can refer to it.
3. The GEN statement must appear in the input file before any associated MODMSG/ENDMSG control statements.
4. The MSGBASE statement affects all subsequent MODMSG statements.
5. The END statement must be at the end of the input file.

If an error occurs in a statement for KDCMMOD, the incorrect statement is ignored following output of a corresponding error message (K6xx). This does not terminate the program run.

CONSTANT statement

The CONSTANT statement defines a constant which then can be used in the text definitions of messages.

| Operation | Operands |
|-----------|-------------------------------|
| CONSTANT | constant-name, constant-value |

constant-name Denotes the name of a constant and can be up to 8 characters long.
If a constant with the same name already exists, the CONSTANT statement is rejected with an error message.

Mandatory operand.

constant-value Assigns a value to a constant. The value must be specified either in the hexadecimal format (X'.....') or in the printable format '...'. The maximum length is 50 characters.

Mandatory operand.

Several constants are already contained in the message definition file (see also "[Constants of the standard message definition file](#)"). You can find further logical control characters in the VTCSET macro.

END statement

The statements for KDCMMOD are terminated with the END statement. END must be entered as the last statement.

| Operation | Operands |
|-----------|----------|
| END | |

Without operands.

ENDMSG statement

A message text definition must be terminated with the ENDMSG statement.

| Operation | Operands |
|-----------|----------|
| ENDMSG | |

Without operands.

The ENDMSG statement must always be on a separate line.

GEN statement

The GEN statement specifies the functional unit for which the messages are to be generated as well as the language in which they are to be generated. The GEN statement may be given only **once** per program run and must appear before any MODMSG statements.

| Operation | Operands |
|-----------|---|
| GEN | [function-unit] [, LANG=language-id] ,MODULE=object-module-name |

function-unit Name of the function unit for which the messages are to be generated.
Default: SYS

LANG=language-id

notes the natural language for which the message texts are to be generated. A language identifier must be specified for which message texts are contained in the message file.

Default: GB

MODULE=object-module-name

Denotes the name of the message module. It corresponds to the MODULE name in the MESSAGE statement of the KDCDEF tool (see openUTM manual "Generating Applications").

Mandatory operand.

MODMSG statement

You use the MODMSG statement to modify a message in the functional unit that was specified in the GEN statement. The modifications can be made to the text, the insert and the message destinations. Only those modifications which are permitted under the general framework definition are possible (see section “[Destinations of UTM messages](#)”).

| Operation | Operands |
|-----------|--|
| MODMSG | <pre> msg-no [,BEL={YES NO}] ¹ [,COMPRESSION={YES NO}] [,EXTEND= { YES NO}] [,CONSOLE={ YES NO}] [,MSGTAC= {YES NO}] [,PARTNER={YES NO}] [,STATION={YES NO}] [,SYSLINE={YES NO}] [,SYSLOG= {YES NO}] [,SYSLST= {YES NO}] [,SYSOUT= {YES NO}] [,USER-DEST-1= {YES NO}] [,USER-DEST-2= {YES NO}] [,USER-DEST-3= {YES NO}] [,USER-DEST-4= {YES NO}] [text] ³ </pre> |

¹The operands of the MODMSG statement must be separated by commas. If there are continuation lines in a MODMSG statement, the comma must always appear as the last character in the preceding line (as the continuation character).

³The line prior to [text] must not be terminated by a comma.

msg-no Indicates which K or P message is to be modified. The message number must be in the message number range of the function unit specified in the GEN command. The message number must be given **without** the **K** or **P** prefix.

Mandatory operand.

BEL= Indicates whether an audible signal is given when the message is output to the destination STATION or SYSLINE.

YES an acoustic signal is triggered.

NO no acoustic signal is triggered.

Default: NO

COMPRESSION=

YES Superfluous blanks are removed from the message. YES only takes effect for message outputs that issue message texts.

NO Superfluous blanks remain in the message. The default value varies for the different messages. To find out the value set

as the default for the individual messages, refer to [section "Destinations of UTM messages"](#).

Default: framework definition

EXTEND=

YES The message text is to be output in extended line mode. YES only makes sense for messages that the message destination STATION or SYSLINE is assigned to.

NO The message text is not to be output in extended line mode.

Default: framework definition in SYSMO.UTM.070.MSGFILE.

The default value varies for the different messages. To find out the value set as the default for the individual messages, refer to [section "Destinations of UTM messages"](#).

Message destinations CONSOLE, MSGTAC etc.

denotes the message destination to which the message is to be sent (YES) or not sent (NO). Only destinations that are 'permitted' (+) or declared 'Default' (D) in the framework definitions may be specified (see table in chapter [Destinations of UTM messages](#). The basic definitions apply to all message destinations that are not specified in the MODMSG command.

To assign the user-specific message destinations USER-DEST-1,..., USER-DEST-4 to the concrete message destination, you have to use the KDCDEF statement MSG-DEST.

You will find detailed descriptions of the various message destinations on "[Message module, message definition file](#)".

text In the MODMSG statement, a new message text can be defined. If no new text is defined, then the text as described in the [chapter "UTM messages"](#) applies.

A new message text is defined in one or more lines. It consists of a series of text elements separated either by commas or end-of-line characters. Text = text-element,text-element,..... text-element,.....

The first text element must always occur in a new line.

Length restrictions

The message text, including the message number and any inserts which may be present, must not exceed 512 characters in length. For the lengths of the inserts, refer to the table "[Message inserts](#)". If the text is longer than 512 characters, KDCMMOD rejects it with message K686. The message definition is not then updated. Message texts having the message destination SYSLINE (=systemline) must not exceed 80 characters in length. If the text is longer than 80 characters, KDCMMOD gives a warning with message K687. On output, longer messages are limited to 80 characters and the excess is truncated.

The following text elements can be used:

- Literal** A literal is a character string enclosed in single quotes. Double quotes in a literal are used to designate a single quote in the literal.
- Insert** The text element insert is the name of a field (insert) in the message text that is preceded by the "&" character. Only field names (inserts) that are specified in the framework definition of the corresponding message may be used in the text. These field names are listed in section "[Destinations of UTM messages](#)".
- Insert fields are parts of the message texts into which actual values are inserted before the message is output.

Constant The text element constant is the name of a constant which is preceded by the "#" character.

Built-in function

The text element built-in function is a function that is executed at the point in question. The following built-in function is available:

MSGID

To simplify diagnosis, all message texts should start with MSGID.

This function returns the character string for the message identifier which corresponds to the message number.

Each MODMSG command must be terminated with an **ENDMSG** statement.

MSGBASE statement (only for FU SYS)

openUTM makes a distinction between two message groups within FU SYS: Messages of the UTM group, which start with the letter K, and messages of the XAPTP group, which start with the letter P.

The MSGBASE statement allows you to select the message group to which subsequent MODMSG statements are to apply within the SYS functional unit.

| Operation | Operands |
|-----------|-----------------|
| MSGBASE | { UTM XAPTP } |

UTM Default; select the UTM message group (K messages).

XAPTP Select the XAPTP message group (P messages).

OPTION statement

The **OPTION** statement is used to define the name of the message definition file which the KDCMMOD tool is to process.

| Operation | Operands |
|-----------|------------------|
| OPTION | MSGFILE=filename |

filename Name of the message definition file to be processed.

If the OPTION statement is omitted, the file SYSMH.UTM.070.MSGFILE is used.

Example 1

The user wishes to assign the destination MSGTAC for message K006 but otherwise retain the unchanged messages with English texts.

The following procedure provides the ASSEMBLER source file for the desired user-specific message module where the message definition file is called SYSMH.UTM.070.MSGFILE and the KDCMMOD is contained in the SYSLNK.UTM.070.UTIL library:

```
/BEGIN-PROCEDURE LOGGING=N
/ASSIGN-SYSDTA TO=*SYSCMD
/ASSIGN-SYSLST TO=LIST.KDCMMOD
/START-EXECUTABLE-PROGRAM FROM-FILE=*LIB-ELEM(LIB=SYSLNK.UTM.070.UTIL,ELEM=KDCMMOD)
OPTION MSGFILE=SYSMH.UTM.070.MSGFILE
GEN SYS,LANG=D,MODULE=KCSMSGSD
MODMSG 6,MSGTAC=YES
ENDMSG
END
/ASSIGN-SYSDTA TO=*PRIMARY
/ASSIGN-SYSLST TO=*PRIMARY
/END-PROCEDURE
```

As a result of the procedure, the KDCMMOD tool generates the ASSEMBLER source file SRC.ASEMB.KCSMSGSD. This file must be assembled, the result of the assembly being an object module with the name KCSMSGSD, which contains the user-specific messages.

In order for a user-specific message module to be used, the statement MESSAGE MODULE=KCSMSGSD, LIB=... must be included in the generation with KDCDEF.

Example 2

In the example below the message destination, a message property, and the message text of message K070 are modified.

```
GEN SYS,LANG=GB,MODULE=KCSMSGSD
MODMSG 070,
COMPRESSION = NO,
SYSOUT = YES
MSGID, ' User signed off: ', &USER, ', CPU-time: ', &CPTM
ENDMSG
END
```

4.4 UTM log file SYSLOG

openUTM maintains a log file for every UTM application. This file is called the SYSLOG file. openUTM records all messages intended for the SYSLOG message destination in this file. You can - within certain limits - specify which messages these are to be (see section “[Destinations of UTM messages](#)”).

You can create the system log file SYSLOG as:

- a simple file with the name *filebase*.SLOG or a file with the link name SYSLOG. *filebase* is the base name of the KDCFILE from the MAX statement.
- a file generation group SYSLOG-FGG (**F**ile **G**eneration **G**roup)
It is sufficient to create a file generation group; the individual generations of the FGG are created by openUTM for you.
If you have generated automatic monitoring of the size of the SYSLOG file, then the SYSLOG must be created as an FGG.

The openUTM manual “Using UTM Applications” describes in detail in chapter 8 how to create the system log file SYSLOG.

Events occurring during the execution of the application which could be useful for monitoring purposes or for making checks later are logged in the SYSLOG file in the form of UTM messages (e.g. K033, K070). In particular, the SYSLOG file contains important information for diagnostics.

Each time the application is started subsequently, the SYSLOG file is overwritten by openUTM. The logging information from the previous run is lost. Therefore, you should analyze the contents, or copy the file if necessary when the application terminates.

4.4.1 Evaluating the SYSLOG file

openUTM creates the SYSLOG file in PAM format. To print it out in a readable form or edit it using a program, you must process the file.

openUTM offers the following editing tools for this purpose:

- **KDCCSYSL**
Converts the PAM file into a SAM file. KDCCSYSL is provided in the SYSLNK.UTM.070.UTIL library.
- **KDCPSYSL**
From the SAM file created with KDCCSYSL KDCPSYSL creates another SAM file which also contains the message texts. KDCPSYSL is provided in the SYSLNK.UTM.070.UTIL library.

To make it easier to evaluate the SYSLOG file, the following sample procedures are supplied with openUTM:

- **SYSRPC.UTM.070(SYSLOG)**
This procedure allows you to evaluate an individual SYSLOG file or an individual file generation of a SYSLOG-FGG. <filebase>.SYSLOG is expected as the input file.
- **SYSRPC.UTM.070(SLOG-FGG)**
This procedure allows you to evaluate an individual or all file generations of a SYSLOG-FGG. In one loop, the procedure calls the two tools KDCCSYSL and KDCPSYSL for the individual file generations. The evaluation can also be made while the application is running.

4.4.1.1 The KDCCSYSL tool - converting the SYSLOG file to SAM format

The KDCCSYSL tool (convert SYSLOG) converts the system log file created by openUTM as a PAM file into a SAM file. For each UTM message, KDCCSYSL creates a record of variable length. The structure is described by KCMMSG *x* data structures, which are available for all programming languages and are supported by openUTM, for example KCMMSGC for COBOL.

Calling KDCCSYSL

```
/SET-FILE-LINK FILE-NAME=file_in,LINK-NAME=SLOGPAM [ ,SUPPORT=DISC(SHARED-UPDATE=YES) ]  
/CREATE-FILE FILE-NAME=file_out  
/SET-FILE-LINK FILE-NAME=file_out,LINK-NAME=SLOGSAM,ACCESS-METHOD=SAM  
/START-EXECUTABLE-PROGRAM FROM-FILE=*LIB-ELEM(LIB=SYSLNK.UTM.070.UTIL,ELEM=KDCCSYSL)
```

i You can also start KDCCSYSL using the SDF START-KDCCSYSL command, see also openUTM manual "Using UTM Applications on BS2000 Systems", section, "Starting UTM tools via separate SDF commands".

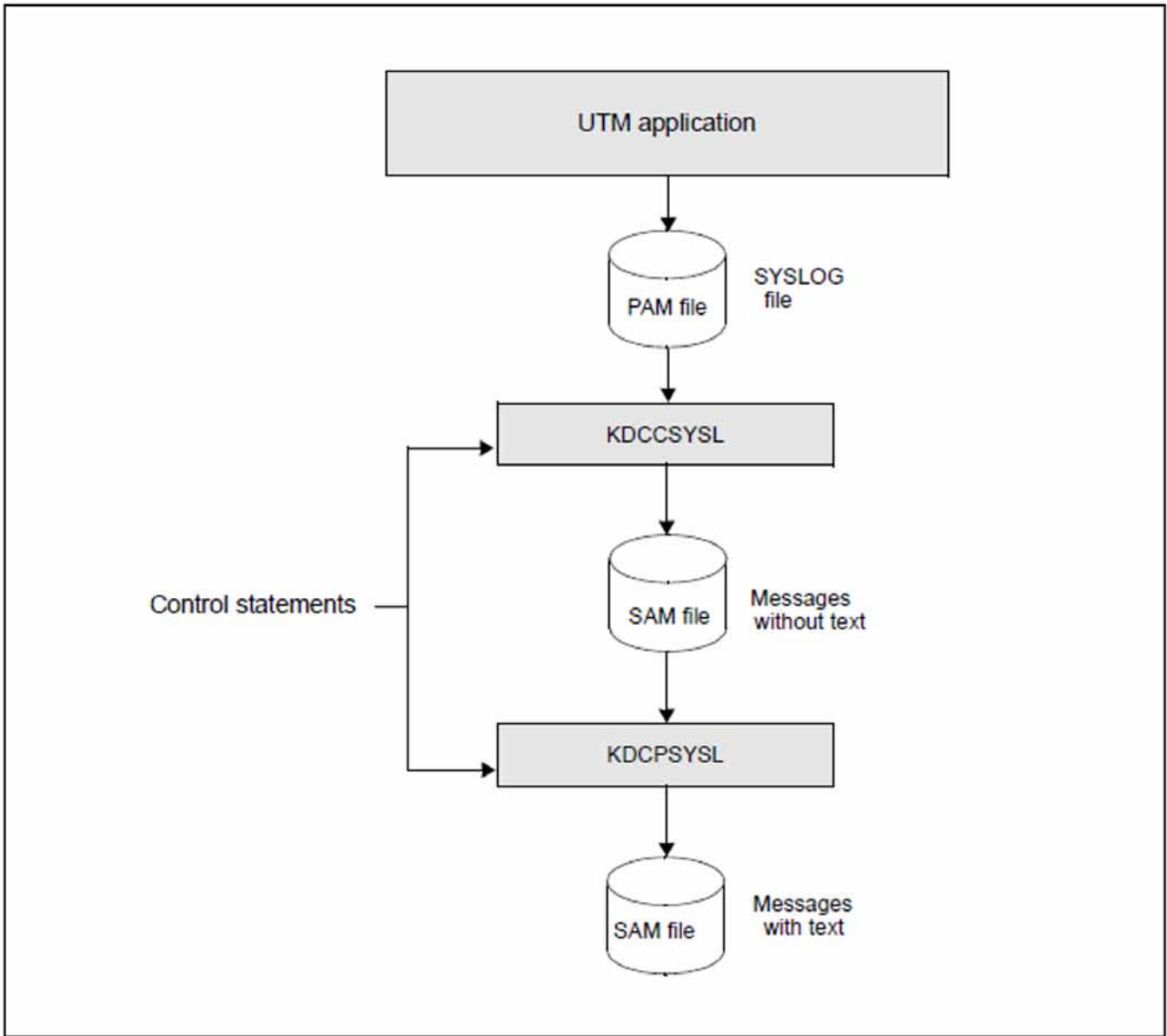
Meaning of parameters:

file_in Name of the SYSLOG file

file_out Name to be assigned to the SAM file

SHARED-UPDATE=YES must be specified in the SET-FILE-LINK command if the SYSLOG file is to be edited while the application is running. In this case, however, note that openUTM buffers SYSLOG records, i.e. does not write them directly to the PAM file.

If the SYSLOG file is to be evaluated while the application is running, it is advisable to issue the administration command KDCDIAG SYSLOG=WRITE beforehand. This means that SYSLOG UTM messages that are still buffered in the virtual memory will be written to the SYSLOG file by openUTM.



Editing the SYSLOG file

4.4.1.2 The KDCPSYSL tool - inserting message texts

The editing tool KDCPSYSL reads the SAM file created with KDCPSYSL and from it creates a SAM file which contains the message number and message text with current inserts for each UTM message.

The date and time are inserted at the start of the UTM message. The inserts that are not contained in the message text are added at the end. Inserts that provide hexadecimal information are prepared in printable form (e.g. BCAM info word in UTM message K065).

You can also edit the SYSLOG file with message texts from your own message module. In this case, enter the name of your message module after the UTM message:

```
K608 Please enter name of user message module, a blank, or /EOF.
```

If a user-specific module library was assigned beforehand with /SET-TASKLIB LIBRARY=, then KDCPSYSL searches for the specified module in this library.

If a blank or "/EOF" is entered in response to the UTM message or if the module is not found in the TASKLIB, then KDCPSYSL edits the UTM messages using the standard message module of openUTM.

The file created with KDCPSYSL is a SAM file, which contains one or more print lines for each UTM message. This file can be printed out using the PRINT-FILE command:

```
/PRINT-FILE FILE-NAME=file_out, LAYOUT-CONTROL=PARAMETERS (CONTROL-CHARACTERS=EBCDIC)
```

Calling KDCPSYSL

```
/SET-FILE-LINK FILE-NAME=file_in, LINK-NAME=SLOGSAM  
/CREATE-FILE FILE-NAME=file_out,  
/SET-FILE-LINK FILE-NAME=file_out, LINK-NAME=SLOGEDIT, ACCESS-METHOD=SAM  
[ /SET-TASKLIB LIBRARY=omlname ]  
/START-EXECUTABLE-PROGRAM FROM-FILE=*LIB-ELEM (LIB=SYSLNK.UTM.070.UTIL, ELEM=KDCPSYSL)
```

i You can also start KDCPSYSL using the SDF START-KDCPSYSL command, see also openUTM manual "Using UTM Applications on BS2000 Systems", section, Starting UTM tools via separate SDF commands".

KDCPSYSL responds with the UTM message:

```
K608 Please enter name of user message module, a blank, or /EOF.
```

Enter the following:

'BLANK' or

K2 and /EOF and /R or

message_module_name

The effect of these entries is illustrated in the text above.

Meaning of parameters:

file_in Name of the output file of KDCCSYSL (=input file of KDCPSYSL)

file_out Name of the output file of KDCPSYSL

omlname Name of the library (OML) containing the user-specific message module

message_module_name

 Name of the user-specific message module

4.4.1.3 KDCCSYSL and KDCPSYSL messages

The editing tools KDCCSYSL and KDCPSYSL write their messages to SYSOUT (see section "[Messages of the UTM tools KDCCSYSL and KDCPSYSL](#)").

4.5 Structure of UTM system messages

Structure of messages sent to SYSLOG or MSGTAC:

| | | |
|----------------|--|----|
| Message header | Message data, layout depending on message number | |
| 1 | 28 | 29 |

Structure of the messages:

| Bytes | Format | Meaning |
|---------|----------------|---|
| 1 | X'40' | Blank |
| 2-5 | C'Kxxx' | Message number |
| 6 | X'40 | Blank |
| 7-17 | C'mm/dd/yyjjj' | Date, where mm=month, dd=day of month, yy=year, jjj=day of year |
| 18 | X'40 | Blank |
| 19-24 | C'hmmss' | Time of day, where hh=hour, mm=minute, ss=second |
| 25-28 | C'yyyy' | 4-digit year specification |
| 29 & up | | Message data |

This message header corresponds to the following data structure in the COBOL COPY element KCMMSGC:

```

05      MSGKOPF .
*
*          07      FILLER-1      PIC X .
*
*          07      MSGNR        PIC X(4) .
*
*          07      FILLER-2      PIC X .
*
*          07      MSGDATE      PIC X(11) .
*
*          07      FILLER-3      PIC X .
*
*          07      MSGTIME      PIC X(6) .
*
*          07      MSGYEAR      PIC X(4) .
*
*
*
*          YEAR OF ORIGIN
*
*****
*          INSERTS OF MESSAGES
*
*****

05      KXXX PIC X(152) .

```

5 UTM Messages

The following lists contain all the messages which can be issued by openUTM. The messages of the UTM tools are included in these lists. "Additional information" has been added to the descriptions to explain the responses to the messages.

A "&" character precedes the name of an insert. UTM messages may contain more inserts than are contained in the standard messages. The meanings of the inserts and their assignment to the individual messages are given in the tables in section "[Message inserts](#)" and section "[Destinations of UTM messages](#)".

If a UTM application employs a sign-on service, messages K001, K002, K004, K005, K006, K007, K008, K030, K031, K097, K109, K110, K120, K123, K125 and K145 are not generated.

5.1 Messages of the Transaction Monitor

- Messages K001 - K048
- Messages K049 - K070
- Messages K071 - K101
- Messages K102 - K103
- Messages K104 - K146
- Messages K147 - K189
- Messages K191 - K320

5.1.1 Messages K001 - K048

K001 Connected to application &APPL - input please

K002 Connected to application &APPL - please sign on

K003 Command &CMD is not permitted at this time

K004 Invalid access authorization - please sign on

This message additionally contains the following insert:

&REA7 Reason why the sign-on failed. The values in &REA7 are described at message K147, see ["Messages K147 - K189"](#).

K005 User identification &USER is locked - please sign on

K006 Invalid access authorization - please sign on

i When output on a terminal, the text of this message contains the message number K004 instead of K006. The message number K006 is only visible when the message is output to other message destinations.

K007 User &USER already signed on - please sign on

This message additionally contains the following insert:

&REA7 Reason why the sign-on failed. The values in &REA7 are described at message K147, see ["Messages K147 - K189"](#).

K008 Sign-on accepted.

Last successful sign-on on &SGNT - input please

i The first time a user signs on after a KDCDEF run, the insert &SGNT may contain question marks as no time of the last sign on is available.

K009 Transaction code &TAC is invalid (&RCDC) - input please

The &RCDC insert contains the internal return code KCRCDC, see [section "Internal return code KCRCDC"](#).

K010 Transaction code &TAC is locked - input please

K011 Transaction &ATAC1 accepted - input please

K012 &NUMMSGs asynchronous messages present

K013 Error in &CMD - input please

| | |
|-------------|--|
| K014 | No base format defined - input please |
| K015 | Formatting error &RCDC/&RCF2A - input please |

K016 Application shutdown pending - please sign off

K017 Service &TCVG terminated by UTM (&RCCC /&RCDC &RCF2A) - input please

This message informs a user of the abnormal termination of the service started by this user.

The complete message K017 in the SYSLOG file contains the following inserts:

| | |
|-----------|--|
| PTRM | Name of the PTERM from which the terminated service was started. |
| PRNM | Name of the processor to which the terminal is connected. |
| BCAP | Name of the BCAM application to which the user has signed on. |
| LTRM | Name of the LTERM from which the service was started. |
| USER | Name of the user who started the service. |
| TCVG | Name of the service TAC of the service. |
| RCCC | Value of the compatible KCRCCC return code. |
| RCDC | Value of the incompatible KCRCDC return code. |
| &RCF2A *) | Secondary FHS or VTSU return code (if any). |
| TAC | Only for RCDC=KMxx return codes: Name of the TAC that caused the service to terminate. In all other cases this insert contains a blank. |

*) on BS2000 systems only

K018 Sign-off for application &APPL accepted - please sign on

K019 Sign-off for application &APPL accepted

K020 No message(s) present

K021 No input within the specified period

K022 The following message from &BCAP may have already been sent.

K023 &OMSG2

The message is called by the administration commandKDCSEND orKDCSHUT WARN or the corresponding call to the administrator interface.

K024 Input message lost - please repeat

K025 Message from application &BCAP to LTERM <RM was truncated

A message to an LTERM partner could not be transmitted completely, and was output in truncated form.

The following error recovery action is possible:

- increase the length specification in the TRMSGLTH operand for KDCDEF if this length is smaller than the maximum packet length for BCAM;
- increase the maximum packet length for BCAM if it is smaller than TRMSGLTH or
- insert "new line" (X'15') control character in output in line mode (in order to make fragmentation by VTSU possible).

K026 Broadcast to <RM accepted - input please

K027 Terminal <RM is locked - contact administrator or sign off

K029 Please insert card

K030 Card reader required - please sign on

K031 Wrong card - please sign on

K032 UTM-D connection message: &CON/&PRNM/&BCAP/&LPAP/&USER; reason1: &RCF1B; reason2: &RCF2B

In the following description of the return codes &RCF1B and &RCF2B, PLU (Primary Logical Unit) is the application in which SESCHA PLU=NO was generated, and SLU (Secondary Logical Unit) is the application in which PLU=YES was specified.

The &USER insert contains the UTM session name of the connection (LSES name).

| &RCF1B | Meaning | |
|-------------------|--------------------------------|--|
| C01 | BIND_REJECTED | The BIND request or the BIND response has been rejected. No session can be set up. |
| C02 | BIND_CHANGED | The BIND parameters have been modified. The BIND request may be modified by the SLU; while PLU can reject but not modify the BIND response. If the BIND response cannot be accepted by PLU, no session is set up. |
| C03 | CONNECTION / SESSION FAILED | A connection or session cannot be set up. |
| C04 | SESSION_FAILED | Session warm start could not be carried out. |
| C05 | STSN_CHANGED | SLU cannot accept the proposed orientation point. |

| &RCF2B | Meaning and possible action |
|------------------------------|--|
| CR00 | Session and connection do not belong to the same LPAP. Response: check the KDCDEF generation. |
| CR01 | The sessions were not able to agree on a valid restart point at session warm start. The applications were probably started with different KDCDEF states. Response: check whether either of the applications has been regenerated. |
| CR02 | SLU has suggested a new restart point. If the session cannot be set up, the applications were probably started with different KDCDEF states. Response: check whether either of the applications has been regenerated. |
| CR03 | Quiet command entered. |
| CR04 | No suitable session available; reasons: <ul style="list-style-type: none"> • more connections generated than sessions • KDCLSES command entered with ACT = QUIET • session not yet cleared down. |
| CR05 | Connection setup request from TRANSIT-CD or partner application generated for this connection (NEA logs) |
| CR06 | Connection setup in progress. |
| CR07 | Inconsistency with respect to PLU specification in the connection message from the partner and in the UTM generation. Both partners were possibly generated as PLU. Response: check the generations of both partners. |
| CR08 | Inconsistency with respect to PLU specification in the connection message from the partner and in the UTM generation. Both partners were possibly generated as SLU. Response: check the generations of both partners. |
| CR09 CR10 CR11 CR12 | Incorrect structure of a connection message. |
| CR13 | Resource bottleneck: no slot available for dynamic tables. |
| CR14 | The name of the PLU session in the connection message is incorrect. Response: check the generations of both partners. |
| CR15 CR16 CR19 CR21 | Session is still set up. |

| | |
|----------------------|---|
| CR17 CR18 CR20 | No suitable session available; reasons: <ul style="list-style-type: none"> • more connections generated than sessions • KDCLSES command entered with ACT = QUIET • session not yet cleared down. |
| SC00 | No reason given. |
| SC01 ¹ | The partner is responding with an invalid FM profile. UTM supports FM profile 18 only. |
| SC02 ¹ | The partner is responding with an invalid TS profile. UTM supports TS profile 4 only. |
| SC03 ¹ | UTM can process a message in small units (request units). For this reason, PLU must support "multiple RU chains". |
| SC04 ¹ | A request cannot be sent off until a previously requested response, if any, has arrived. PLU therefore has to operate in "immediate request mode". |
| SC05 ¹ | Depending on the message type, openUTM either requests all types of acknowledgment or only a negative acknowledgment. PLU must therefore accept both definite and exception response. |
| SC07 ¹ | Data compression is not supported for message transmission. |
| SC08 ¹ | PLU must always be able to close a bracket. |
| SC09 ¹ | Corresponds to reason SC03, but for SLU. |
| SC10 ¹ | Corresponds to reason SC04, but for SLU. |
| SC11 ¹ | Corresponds to reason SC05, but for SLU. |
| SC12 ¹ | openUTM does not support 2-phase commit. |
| SC13 ¹ | Corresponds to reason SC07, but for SLU. |
| SC14 ¹ | Corresponds to reason SC08, but for SLU. |
| SC15 ¹ | FM headers must be permitted. |
| SC16 | The home session is insisting on a session warm start although the partner considers a session cold start to be sufficient. |
| SC17 | The partner has indicated that the session has not terminated ("in bracket") without requesting a warm start. The session is assumed to have terminated (BETB). |
| SC18 ¹ | A service is not terminated until indicated as such by both partners. This means that openUTM makes use of the "Bracket Termination Rule 1". |

| | |
|-------------------|---|
| SC19 | The user data in BIND is not correct. The partner is probably sending an faulty BIND. The UTM BCAM trace is needed for diagnostics. |
| SC23 ¹ | In distributed processing, "half-duplex flip-flop" send or receive mode is used. This means that only one partner is authorized to send at any given time. |
| SC24 ¹ | Both partners must be responsible for a session restart, if applicable. |
| SC25 | BIND and KDCDEF generation are inconsistent with respect to the contention winner. Response: check the specification of the contention winner in both generations (KDCDEF control statement SESCHA CONTWIN=Y/N). |
| SC26 | PLU is requesting a send authorization at session warm start. If the session is not set up, the applications were probably started with different KDCDEF states. Response: check whether one of the applications has been regenerated. |
| SC27 | SLU is requesting a send authorization at session warm start. If the session is not set up, the applications were probably started with different KDCDEF states. Response: check whether one of the applications has been regenerated. |
| SC28 ¹ | UTM supports "two-stage pacing". |
| SC29 | Inconsistent pacing counts, Response: check the pacing count (= window size) in both generations. (KDCDEF control statement SESCHA PACCNT=) |
| SC30 ¹ | SLU is suggesting an illegal value for "maximum length of message segments from PLU" in the BIND response. |
| SC31 ¹ | SLU is suggesting an illegal value for "maximum length of message segments from SLU" in the BIND response. |
| SC32 | PLU is suggesting an illegal value for "maximum length of message segments from SLU" in the BIND request. |
| SC33 | PLU is suggesting a value for "maximum length of message segments from PLU" in the BIND request which is modified by SLU. |
| SC34 ¹ | Presentation Service (PS) usage field format must be defined as "basic format". |
| SC35 ¹ | LU session type 6 is the only permissible session type. |
| SC36 ¹ | Message coding is not supported. |
| SC37 | Incorrect name of PLU session in BIND response. Response: check association of LSES and RSES in both generations (KDCDEF control statement LSES RSES=name) |
| SC38 | Incorrect name of PLU session in BIND request. Response: see reason SC37 |

| | |
|-------------------|---|
| SC39 | Incorrect name of SLU session in BIND response. Response: see reason SC37 |
| SC40 | Incorrect name of SLU session in BIND request. Response: see reason SC37 |
| SC41 ¹ | User Request Correlation (URC) is not supported UTM-D. |
| SY01 | Session termination pending. Session clear-down has not yet been completed. |
| SY02 | PET no send request The session is in the PTC status and there is no message for this partner. |
| SY03 | PEND RS pending. PEND RS handling has not yet been completed. |
| SY04 | Job-submitting conversation active. The job-submitting service is active. |
| SY05 | Job submitter not available. The job submitted is not signed on or the job-submitting service is queued. |
| SY06 | RESTART_VIA_SEND_RQ. The session is in the IN_BRACKET status and there is no message for this partner. |
| SY07 | Session active The session is already active. |

¹ Only in the case of heterogeneous links

K033 USER / LSES active : &PTRM/&PRNM/&BCAP/<RM/&USER &REST, &GLOBALSG

The K033 message is output:

- following successful connection setup when working without USERS
- following successful KDCSIGN when working with USERS
- following successful linkage of a session in a LU6.1 connection.

| &REST | Meaning |
|------------------|----------------------------|
| Y | Service restart |
| N | No service restart |
| U | Undefined, with UTM-D only |

If a user signs on via an OSI-TP connection, the inserts have the following contents:

| Insert | Contents |
|---------------|-------------------|
| &PTRM | OSI-CON name |
| &PRNM | 8 blanks |
| &BCAP | ACCESS-POINT name |
| <RM | OSI-LPAP name |

A value is only entered for the insert &GLOBALSG 'Cluster Global Sign' in UTM cluster applications on Unix, Linux or Windows systems. The insert can have the following values:

| &GLOBALSG | Meaning |
|----------------------|--|
| Y | Global sign-on at the cluster |
| N | Local sign on at the node |
| A | The user was already signed on globally to the cluster at this node. |
| ' ' | Sign-on for an LU6.1 session user or a connection user. |

K034 Transaction has been reset

K035 Service restart in progress

K036 Connection setup: &PTRM, &PRNM, &BCAP, <RM, &RSLT, &REA1

| &RSLT | Meaning |
|------------------|---|
| Y | Connection set up |
| N | Connection was not set up; the cause is given in &REA1. |

| &REA1 | Meaning |
|------------------|--|
| X'00' | Connection already set up |
| X'01' | PTERM/CON name unknown |
| X'02' | Processor name unknown |
| X'03' | PTYPE not accepted |
| X'04' | No LTERM assigned |
| X'05' | Incorrect connection password |
| X'06' | STATUS=OFF for this PTERM/CON |
| X'07' | STATUS=OFF for this LTERM/LPAP |
| X'08' | Resource bottleneck |
| X'0A' | Application shutdown |
| X'0B' | Partner already connected |
| X'0C' | Connection clear-down being executed |
| X'0D' | Negative BCAM return code; see corresponding K065 message |
| X'0E' | Partner generated at another BCAM application |
| X'0F' | UTM-D connection request rejected, e.g. due to UTM generation error or QUIET command |
| X'10' | PTERM name unknown and no LTERM pool available for this processor name |
| X'11' | No LTERM pool available for PTYPE and PTERM name unknown |
| X'12' | No further free entry available in terminal pool |
| X'13' | Partner already connected to LTERM pool |
| X'14' | Connection rejected due to insufficient characteristics of the transport connection (GROS) |
| X'15' *) | MUX connection rejected More detailed description in BIND response |
| X'16' | User is already connected |

| | |
|----------|---|
| X'17' | The connection request has been rejected due to contention. The partner himself has initiated a connection setup. |
| X'18' *) | BCAM letter length too small |
| X'1B' | On application start, it was not possible to determine the IP address of the partner computer. |
| X'1F' | LPAP is set to quiet |
| X'20' | There is no suitable session available |
| X'21' | The session is already active |
| X'22' | The session is currently being terminated |
| X'23' | The local page is in PTC and does not have an output message for this session; it is necessary to wait for the restart of the local service to establish the session. |
| X'24' | PEND RS is being processed |
| X'25' | The job-submitting service is active |
| X'26' | The job-submitting user is not available |
| X'27' | It is necessary to wait for the restart of the local service to establish the session |
| X'29' | Terminal pool is generated at another BCAM application |
| X'2A' *) | Connection request from VTSU rejected, for instance because of unsupported PTYPE or incorrect connection letter |
| X'2B' *) | The connection request for an LTERM partner generated with PTYPE = *ANY is rejected because the type of the calling terminal or printer is not supported. |
| X'2C' *) | Connection request of a printer for a PTERM partner generated with PTYPE = *ANY and USAGE=D is rejected. |
| X'2D' *) | An invalid MUX protocol version is suggested on setting up the MUX connection. |
| X'2E' | The connection has not yet been completely cleared down, or the MUX session is still in "RELEASE-PENDING" status. |
| X'44' *) | Connection request refused by RSO, for instance because the printer is not known to RSO |
| X'45' | A connection cancel request occurred while waiting for confirmation of the establishment of a connection |
| X'46' | PTERM/CON was deleted by the administration |
| X'48' | A PTERM with the name of the multipool LTERM has already been generated. |
| X'55' | Rejected socket connection setup. |
| X'58' | Rejected confirmation of connection setup since the connection was interrupted in the interim. |

| | |
|----------|---|
| X'5B' *) | Error in calling up the ICO function for converting the computer names (see K037). |
| X'60' *) | The SSL proxy used an invalid address to connect to the UTM application. |
| X'61' *) | A connection request from the SSL proxy is rejected by UTM because of a shortage of resources |

The values indicated by *) only applies on BS2000 systems

This message, which is normally output to SYSLOG, helps to detect problems arising at connection setup.

For message output, the &REA1 insert is edited in printable form while at the program interface with MSGTAC / SYSLOG it appears in hexadecimal form.

K037 Host name mapping: &HST1 to &HST2

UTM uses this message to provide information about the assignment of real to local computer names or vice versa. The message is output every time the name is converted.

The complete message K037 in the SYSLOG file has the following inserts:

&HST1 Long or short computer name for which the assigned name is to be determined

&HST2 Short or long computer name that is assigned to the name in &HST1.

If equals signs are returned in &HST2 instead of a computer name, this means that the name conversion call was unsuccessful.

&RSLT Indicates whether or not the name conversion was successful:

Y: The name conversion was successful

N: The name conversion was not successful

&RCHX If &RSLT has the value 'N', a 4-byte long return code for the system function is output in this insert.

The following values are important:

X'00 01 81 08' means that a BCAM version less than V24 is being used. However, name conversion is only supported from BCAM V24 onwards.

X'00 01 03 55' means DNS name not found

X'00 01 08 55' means DNS/FQDN name not found

K038 Syntax error &SYN

K039 Startparameters &STRTPAR1 and &STRTPAR2 are mutually exclusive

K040 Warning level &WLEV for &PGPOOL no longer exceeded

K041 Warning level &WLEV for &PGPOOL exceeded

K042 Error reading start parameters from SYSDTA

This message is also output if no 2nd END command was specified.

K043 DMS error &DMSE for file &FNAM

The DMS error code is output in insert DMSE.

K044 Please enter start parameters

K045 --- No message text ---

The only destination permitted for this message is MSGTAC; therefore no message text is defined for this message.

The message is output when a message output in acknowledgment mode is terminated with a positive print acknowledgment.

No default destination is defined for this message.

K046 Print error: &PALTRM / &CID / &DPID / &ERPRT

The message is output only for printers that are assigned to a printer control terminal. It is primarily intended for programmed error handling with the help of the MSGTAC program unit.

Further inserts of this message are: &PTRM, &PRNM, &BCAP, <ERM, &IMSG2, &GNDATE, &GNTIME

The message is output in the following cases:

- termination of a printout with negative print acknowledgment
- repetition of a printout (in addition to the K022 message)
- connection setup to a printer is rejected by BCAM (negative COMPLETION announcement).

No default destination is defined for this message.

The &ERPRT insert provides information on the error. Independent of this, the &IMSG2 insert gives further information.

&ERPRT Meaning and contents of &IMSG2

- A Negative print acknowledgment. If the printer sends a logical print acknowledgment (return message), &IMSG2 contains the first 32 bytes of this acknowledgment (possibly padded with spaces).
The exact structure of this print acknowledgment is described in the appropriate equipment user guides.
- R Repetition of a printout. &IMSG2 has no meaning.
- C Connection setup is rejected by BCAM (negative COMPL announcement). &IMSG2 contains BCAM INFOWORD and BCAM USERREASON.

K047

Invalid SVC 134 call (SVC for UTM): opcode = &OPCD1, RC = &RTCD

UTM outputs the message K047, if UTM SVC (SVC 134) cannot be processed successfully. The message contains the inserts &OPCD1 and &RTCD.

The insert &OPCD1 contains the KDCS operation code, which is 4 bytes long and can be printed. It is known by the KDCS calls. There are also internal UTM operation codes, e.g. 'STRT' (see description of UTM Diagarea).

Insert &RTCD is the edited return code (8 characters, hexadecimal representation). The return code is set by UTM or by DSSM.

UTM SVC (SVC 134) return codes

UTM is the source of return codes with a value 00000nn. These codes have the following meaning:

| nn | Meaning |
|---------|--|
| 04 | Illegal ROOTDATA address (UTM error ¹). |
| 08 | Illegal ROOTDATA version. Possible cause: Modules which do not suit the openUTM version in the UTM macro library were linked to the application from SYSLNK.UTM.070. |
| 0C | Invalid parameter list address (UTM error). |
| 10 | Invalid KDCS parameter area address UTM error. If the include files made available by openUTM for the KDCS parameter areas are used, this is a UTM error. If user-defined areas are used in the program unit for the KDCS parameter area, this is a user error. Action: check the alignment and address of the parameter area |
| 14 | Illegal KTA address in ROOTDATA, possibly due to: <ul style="list-style-type: none"> • UTM error • KDCS call in START-EXIT program unit • KDCS call in SHUT-EXIT program unit • KDCS call after UTM Term Application |
| 18 | Illegal contents in KTA header. Possible causes: <ul style="list-style-type: none"> • UTM error • KDCS call in START-EXIT program unit • KDCS call in SHUT-EXIT program unit |
| 1C | Application names in ROOTDATA and KAA do not match, or illegal KAA header (UTM error). |
| 20 | Application names in ROOTDATA and KTA do not match (UTM error). |
| 24 | Parameter list address not aligned with word boundary (UTM error). |
| 28 | KDCS parameter area not aligned. If the include files made available by openUTM for the KDCS parameter areas are used, this is a UTM error. If user-defined areas are used in the program unit for the KDCS parameter area, this is a user error (alignment with halfword boundary). Action: check the alignment and address of the parameter area. |
| 2C) | Field SVC return code is not preset with X'FFFFFFFF' (UTM error). |
| FF) | SVC call could not be passed to the UTM subsystem. Cause: UTM was not defined or loaded as a subsystem. |

¹ In the case of return codes of the UTM error type notify Software Support.

*) on BS2000 systems only

00mmFFFF return codes:

This return code is set by either UTM or the BS2000 DSSM (see the "Executive Macros" manual, standard header). Possible values and reasons:

| mm | Meaning |
|-----------|---|
| 01 | For UTM SVC an incorrect value was specified for UNIT or FUNCTION in the standard header (UTM error ¹). |
| 03 | Interface version in the standard header is not supported by the operating system. Action: Check subsystem definition. |
| 04 | Parameter list, specified with SVC call is not aligned with word boundary (UTM error). |
| 41 | UTM has not yet been loaded as a subsystem (CREATIM=ONCREA), or the load library for UTM does not contain the complete system code of UTM V7.0. |
| 82 | When a new application or a new application task is started, it is discovered that the system administrator has put the UTM subsystem into DELETE or HOLD status. |

¹ In the case of return codes of the UTM error type notify Software Support.

K048 No additional UTM task can be created

5.1.2 Messages K049 - K070

K049 Error &RCCC2 during application startup

UTM issues message K049 whenever the start of a UTM task is aborted due to an error, and the error code &RCCC2 shows the cause of the error.

The table below lists the possible error codes together with error causes and possible error recovery actions.

Start error codes

| Code | Error cause | Response |
|------|---|--|
| 2 | There is not enough space available for the ROOTDATA area. | Check UTM generation and system configuration |
| 3 | The ROOTDATA area is not allocated or the string ,ROOTDATA' is not available. | Reconcile openUTM versions |
| 4 | KDCROOT and the UTM system modules are of different versions. | Reconcile openUTM versions |
| 5 | Application cannot be signed on to Name Manager. | System error; please write PR and notify Software Support |
| 6 | The start of a follow-up task is aborted due to abortion of the start of the first task. | See error code of 1st task |
| 7 | The user's message module is not consistent with the message module of the UTM system code (e.g. incorrect number of inserts). | Correct message module and link UTM application again |
| 8 *) | An attempt has been made to start UTM tasks both in dialog and in batch mode. | Start follow-up tasks in the same mode as the 1st task |
| 9 *) | Insufficient space for the fixed section of KAA or for the KDCA-FCB. | System error; please write PR and notify Software Support |
| 10 | The request of a UTM task for 4K of class 6 memory has been rejected. | Check BS2000 generation and memory requirements of the UTM application |
| 11 | Error at first OPEN call for the KDCA file of KDCFILE, possibly due to incorrect FILEBASE name specification in start parameters. Possible cause in UTM cluster applications: An online import is running for the node that is to be started. | See DMS error code |
| 12 | DMS error when reading first KAA page from the KDCA file. | See DMS error code |

| | | |
|----|---|---|
| 13 | DMS error when reading first or last check page of KDCA file; the file cannot be used. | Make copy or regenerate with KDCDEF |
| 14 | The openUTM version in the KAA (KDC Application Area) which is read from the KDCFILE does not match the version of the UTM system code. The error can occur if you attempt to run two UTM applications having the same name in different openUTM versions in parallel. | Change name of an application (MAX APPLINAME=...) |
| 15 | KDCDEF and UTM code inconsistent with respect to KAA structure. | Regenerate with correct KDCDEF |
| 16 | KDCDEF and UTM system modules are of different versions. | Reconcile versions |
| 17 | Before the start KDCFILE was processed by KDCUPD, which terminated abnormally | Make KDCFILE consistent by means of either KDCUPD or KDCDEF |
| 18 | The KDCFILE in a follow-up task does not have the same generation time as the first task. | Start follow-up task with same KDCFILE file as first task |
| 20 | The memory pool for KAA cannot be reserved in class 5 memory by the first task of the UTM application due to insufficient address space. | Check attributes of the BS2000 user name, e.g. ADDRESS-SPACE-LIMIT, and the MPOOL statement |
| 21 | A follow-up task of a UTM application is unable to link up with the KAA memory pool due to insufficient address space. | As for 20 |
| 22 | DMS error when reading an NSR page in KAA. | See DMS error code |
| 23 | A KAA NSR page has been destroyed, the KDCA file can no longer be used. | Regenerate with KDCDEF |
| 24 | DMS error when reading an SR page in KAA. | See DMS error code |
| 25 | A KAA SR page has been destroyed, the KDCA file can no longer be used. | Regenerate with KDCDEF |
| 26 | At least one program for a generated event function is missing or an event-driven service is missing; i.e. the program is neither linked nor can it be loaded | Transfer program to the library specified at UTM generation and relink if necessary |
| 27 | KCSBKAA returned a bad return code. Error during initialization of the SYSLOG data in the KAA | Write problem report |

| | | |
|----|--|---|
| 28 | During a (follow-up) start of the UTM application an inconsistency in the database generation between KDCFILE and ROOT was detected. The error occurs when KDCFILE and ROOT source are incompatible. UTM rejects this in order to avoid consequent errors. | Generate KDCFILE and ROOT with the same start parameters |
| 29 | <ul style="list-style-type: none"> • The administration program unit (KDCADM) is missing or • TAC KDCSHUT is not generated. | <ul style="list-style-type: none"> • Add the KDCADM program to the UTM generation and add to the UTM application • Generate TAC KDCSHUT |
| 30 | The request from a UTM task for a contiguous area for the task-specific UTM tables (= KTA) in class 5 memory has been rejected | Check attributes of the BS2000 user name, e.g. ADDRESS-SPACE-LIMIT, and memory requirements; reduce KTA by changing KDCDEF operands (e.g. check MAX TRACEREC=) |
| 31 | An attempt has been made to start more tasks than have been generated or set via administration.. | User error |
| 32 | Bad return code from KCSBKTA (KCSSLOG may not have been able to initialize the SYSLOG data in the KTA). | Write problem report |
| 33 | UTM refuses to start more tasks for the UTM application because the latter has already terminated (normal or abnormal termination). | Usual action |
| 34 | The KDCFILE in a follow-up task does not have the same KAA size as the first task. | Start follow-up task with same KDCFILE file as first task |
| 35 | While dynamically loading the application program, UTM detects that the UTM application is being aborted. | Usual action |
| 36 | Error in Name Manager call for a follow-up task of an UTM application. | System error; please notify Software Support |
| 37 | Number of tasks to be started insufficient for PGWT processing or for a UTM cluster application | Start at least 2 tasks |

| | | |
|--------|---|--|
| 38 *) | The task has already signed on to the Name Manager but with invalid KAA or KTA address. This error occurs if the application start terminated with errors (xx) and the application program is subsequently restarted with the same task. UTM terminates the task abnormally due to a suspected loop in the start procedure. | Check start procedure |
| 39 | When dynamically loading the application program, UTM detected that the UTM generation has been illegally changed. | Check start procedure and UTM generation |
| 40 | Number of entries in the program, load module or message module tables in ROOT and in the KDCFILE do not match (see K072 message) | Generate KDCFILE and ROOT with the same start parameters |
| 41 | A program or load module attribute in ROOT and in the KDCFILE do not match (see K073 message). | Generate KDCFILE and ROOT with the same start parameters |
| 42 *) | The task has failed to create a slot for the taskservice table due to insufficient address space. The slot should be created in a memory pool in the class 5 memory. | Check attributes of the BS2000 user name, e.g. ADDRESS-SPACE-LIMIT, and memory requirements of the UTM application |
| 43 *) | ROOT and KDCFILE do not match with regard to the sequence of the user message modules. | Generate KDCFILE and ROOT with the same start parameters |
| 44 | The generations of KDCFILE and ROOT do not match with regard to the maximum length of the messages to/from clients. (KDCDEF statement MAX TRMSG LTH) | Generate KDCFILE and ROOT with the same start parameters |
| 45 | Error in KCSLKLC when setting a TAC class lock | Increase parameter MAX RESWAIT= (... ,time2) |
| 46 **) | UTM cluster application: A follow-up task was started with different cluster filebase specifications from the first task. | Start first task and follow-up task with same start parameters |
| 47 | The generations of KDCFILE and ROOT do not match with respect to the use of BLS. | Generate KDCFILE and ROOT with the same start parameters |
| 48 | Error while initializing buffer management in start case 1 or 2. | Increase the virtual address space. If this does not help, write problem report. |
| 49 *) | The version number of the phase started in a follow-up task is different to that of the phase of the first task. | Supply phase of first task. |

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| 50 | The first UTM task is trying to set up the cache memory pool, or a follow-up task is trying to link up to it. This is not possible due to insufficient address space. The memory pool should be created in the class 5 memory. | Check attributes of the BS2000 user name, e.g. ADDRESS-SPACE-LIMIT, and memory requirements of the UTM application |
| 51 | The file is not a KDCDEF file; for file name see K082 message (possible cause: KDCDEF from older version) | Supply or generate correct file |
| 52 | The file has been inadvertently replaced by another KDCFILE file, e.g. pool file instead of KDCB file; for file name see K082 message. | As for 51 |
| 53 | The file does not match the KDCA file (e.g. different KDCDEF time); for file name see K082 message; for details on the error cause see the log in SYSOUT | As for 51 |
| 54 | The consistency check shows that the file has been destroyed. Possibly a version mix. For file name see K083 message | As for 51 Check versions |
| 55 | DMS error with KDCA/KDCB file | See DMS error code |
| 56 | DMS error with page pool file | |
| 57 | DMS error with restart file | |
| 58 | Error in conjunction with the SYSLOG file to be made available by the user. Possible causes: <ul style="list-style-type: none"> • Neither the link name SYSLOG nor a file generation group with the name basename.SLOG exists. Message K043 is additionally output. • Size monitoring was generated (MAX SYSLOG-SIZE), but the SYSLOG made available is not a file generation group. | Check start procedure, SYSLOG file and UTM generation |
| 59 | Error when opening SYSLOG file | See DMS error code |
| 60 | Error during sign-on of the UTM application or follow-up task to BCAM or socket. For exact error cases see BCAM info word in message K065 (default destination SYSLOG) or message K154 (default destination SYSLOG) for application name with T-PROT=SOCKET. User error or system error. | Evaluate K065 or K154 in the SYSLOG file; for contents of the BCAM word info, consult Systems Support |

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| 61 *) | When signing on to BCAM or socket, a continuation application task is informed that it is the first task; this error may occur if the UTM application was previously terminated by a BCAM command (e.g. BCLOSE) and a task of that UTM application was not able to terminate, e.g. because it was processing a long transaction or was waiting for the database to be loaded (1st task of the UTM application). | Check if application tasks are still present in the system; load database if necessary; then restart |
| 62 | As for 70. | As for 70. |
| 63 *) | The number of TCB entries in the KAA is not the same as in ROOT. | Regenerate KDCFILE and /or ROOT |
| 64 | A request from the first task of the UTM application for a work area of 8K of memory made during warm start is rejected | Check system generation and UTM generation |
| 65 | As for 64 (length = task no. * 2K) | As for 64 |
| 69**) | KDCFILE and ROOT do not match regarding the OSI-TP generation. Possible causes: a new KDCFILE was created (new: with OSI-TP, old: without OSI-TP), the UTM application could not be relinked or the ROOT source could not be recompiled. | Regenerate, compile ROOT and link. |
| 70 | The first task of the UTM application has detected inconsistent data in KDCFILE during warm start. | System error; please write PR and notify Software Support, regenerate KDCFILE with KDCDEF |
| 71**) | As for 70. | As for 70. |
| 72 | As for 70. | As for 70. |
| 73 *) | As for 70. | As for 70. |
| 74 | Database problem with DB status check during restart; error cause KU. is output, see KCRCDC error codes | Correct database, restart the UTM application |
| 75 | As for 70. | As for 70. |
| 76 | As for 70. | As for 70. |
| 77 | A user ID for an open asynchronous service could not be found | Write PR. |
| 79 | A UTM task requests, but is not allocated class 6 memory. | Check attributes of the BS2000 user name, e.g. ADDRESS-SPACE-LIMIT, and memory requirements of the UTM application. |

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| 80 | The first task of the UTM application has detected inconsistent data in KDCFILE when setting up the page pool map. | System error; please write PR and notify Software Support, regenerate KDCFILE with KDCDEF |
| 81 | As for 80. | As for 80. |
| 82 | Database problem when erasing DB status information; error cause KUxx is output, see KCRCDC codes. | Correct database, restart the UTM application |
| 83 | Database problem when rolling back a DB transaction; error cause KUxx is output, see KCRCDC codes. | Correct database, restart the UTM application |
| 84 | The task attempts to create a slot for an OSI service table. This attempt is unsuccessful due to a lack of memory space. The slot should be located in a memory pool in class 5 memory. | Check attributes of the BS2000 user name, e.g. ADDRESS-SPACE-LIMIT, and memory requirements of the UTM application. |
| 85 | The task has failed to create a slot for an open service due to insufficient address space. The slot should be located in a memory pool in class 5 memory. | Check attributes of the BS2000 user name, e.g. ADDRESS-SPACE-LIMIT, and memory requirements of the UTM application. |
| 86 | The 1st task of the UTM application has detected unallocated page pool pages in the cache (during warm start) | System error; please write PR and notify Software Support |
| 89 *) | Error during name manager call for the UTM application's first task | System error; please write PR and notify Software Support |
| 90 | Error when starting an open distributed asynchronous service | System error; please write PR and notify Software Support |
| 91 | Error when starting XAP-TP. A full description of the error can be found under message K124. | System error; please write PR and notify Software Support |
| 92 | No free NODE table was found during a restart for OSI-TP with XAP-TP. | System error; please write PR and notify Software Support |
| 93 | A user ID for a transaction which has not yet terminated was found during a restart for OSI-TP with XAP-TP. | System error; please write PR and notify Software Support |

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| 94 | An inconsistent NODE table was found during a restart for OSI-TP with XAP-TP. | System error; please write PR and notify Software Support |
| 95 **) | DMS error while writing a UTM cluster file (start case 1) | See DMS error code |
| 96 **) | A UTM cluster file does not correspond to the cluster configuration file, e.g. different generation time. File name, see K082 message. For details on the cause of the error see the log message in <i>stdout</i> . | Use the correct UTM cluster file or regenerate the UTM cluster application. |
| 97 **) | DMS error while writing a cluster file (operation code CL_FIRST_NODE) | See DMS error code |
| 98 **) | The KDCFILE does not correspond to the cluster configuration file, e.g. different generation time. File name, see K082 message. For details on the cause of the error see the log message in <i>stdout</i> . | Use the correct KDCFILE or regenerate the KDCFILE. |
| 99 | Database problem when starting via IUTMDB: Database system not available. | Check generated database systems |
| 100 | An inconsistency was detected between KDCFILE and ROOT while starting the UTM application in the KB length. | Create KDCFILE and ROOT with the same generation parameters |
| 101 | An inconsistency was detected between KDCFILE and ROOT while starting a follow-up task in the KB length. | Create KDCFILE and ROOT with the same generation parameters |
| 102 *) | An inconsistency was detected between KDCFILE and ROOT while restarting the application program in the KB length. | Create KDCFILE and ROOT with the same generation parameters |
| 103 | An inconsistency was detected between KDCFILE and ROOT while starting the UTM application in the NB length. | Create KDCFILE and ROOT with the same generation parameters. |
| 104 | An inconsistency was detected between KDCFILE and ROOT while starting a follow-up task in the NB length. | Create KDCFILE and ROOT with the same generation parameters. |
| 105 *) | An inconsistency was detected between KDCFILE and ROOT while reloading the application program in the NB length. | Create KDCFILE and ROOT with the same generation parameters. |
| 106 *) | An inconsistency was detected between KDCFILE and ROOT while starting the UTM application regarding the use of the SQL features. | Create KDCFILE and ROOT with the same generation parameters. |

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| 107 *) | An inconsistency was detected between KDCFILE and ROOT while starting a follow-up task regarding the use of the SQL features. | Create KDCFILE and ROOT with the same generation parameters. |
| 108 *) | An inconsistency was detected between KDCFILE and ROOT while reloading the application program regarding the use of the SQL features. | Create KDCFILE and ROOT with the same generation parameters. |
| 109 | An inconsistency was detected between KDCFILE and ROOT while starting the UTM application in the number of databases. | Create KDCFILE and ROOT with the same generation parameters. |
| 110 | An inconsistency was detected between KDCFILE and ROOT while starting a follow-up task in the number of databases. | Create KDCFILE and ROOT with the same generation parameters. |
| 111 *) | An inconsistency was detected between KDCFILE and ROOT while reloading the application program in the number of databases. | Create KDCFILE and ROOT with the same generation parameters. |
| 112 | The first task in the UTM application (start case 1) detected an inconsistency with respect to the database types (only possible in the case of UTM-S applications and a subsequent start). | Create KDCFILE and ROOT with the same generation parameters. |
| 113 **) | When a follow-up task was started, an inconsistency with respect to the database types was detected (only possible in the case of UTM-S applications and a subsequent start). | Create KDCFILE and ROOT with the same generation parameters. |
| 115 | An inconsistency was detected between KDCFILE and ROOT in the type of database or the database entries while starting the UTM application . | Create KDCFILE and ROOT with the same generation parameters. |
| 116 | An inconsistency was detected between KDCFILE and ROOT in the type of database or the database entries while starting a follow-up task . | Create KDCFILE and ROOT with the same generation parameters. |
| 117 *) | An inconsistency was detected between KDCFILE and ROOT in the type of database or the database entries while reloading the application program. | Create KDCFILE and ROOT with the same generation parameters. |
| 118 **) | <p>UTM cluster application: Error reading filebase name of KDCFILE from the cluster configuration file</p> <p>Possible causes:</p> <ul style="list-style-type: none"> • memory bottleneck • error accessing cluster file • invalid cluster file • own node not found <p>For more details, see message K043 and K190</p> | See message K043 or K190; correct start parameters or UTM generation if necessary |

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| 119 **) | UTM cluster application: The KDCFILE was generated as a UTM cluster application but no CLUSTER-FILEBASE start parameter was specified. | Correct start parameters |
| 120 **) | UTM cluster application: The KDCFILE was not generated as a UTM cluster application but a CLUSTER-FILEBASE start parameter was specified. | Correct start parameters |
| 122 **) | UTM cluster application: Error editing the cluster configuration file for initialization of the KAA | See message K043 and/or K190 |
| 123 **) | UTM cluster application: Error registering node | See message K043 and/or K190 |
| 125 **) | UTM cluster application: The sequence of node names in the KDCFILE is different from that in the cluster configuration file. | Correct the UTM generation; Regenerate the KDCFILE and, if necessary, the UTM cluster files |
| 127 **) | UTM cluster application: Error opening cluster user file on start of first process in application (start case 1) | See message K043 and/or K190 |
| 128 **) | UTM cluster application: Error opening cluster user file on start of a follow-up process in application (start case 2) | See message K043 and/or K190 |
| 130 **) | UTM cluster application: Error requesting start lock for serialization by KCSCONS (start case 1) | See message K043 and K190 |
| 131 **) | UTM cluster application: Error opening administration journal files on start of a follow-up process in application (start case 2) | See message K043 and K190 |
| 132 **) | UTM cluster application: Error opening cluster administration journal files when reloading the application program after a program replacement (start case 3) | See message K043/K190 |
| 133 **) | UTM cluster application: Error creating administration journal files on start of first process in application (start case 1) | See message K043/K190 |
| 134 **) | UTM cluster application: Error writing online copy on start of first process in application (start case 1) | See message K043 and/or K190 |
| 135 **) | UTM cluster application: Error processing online copy on start of first process in application (start case 1) | See message K043/K190 and/or K174 |
| 136 **) | UTM cluster application: Error editing cluster user file on start of first process in application (start case 1) | See message K043 and/or K190 |
| 137 **) | UTM cluster application: Calling KCCCTRL with operation code REGISTER_NODE returns an unknown return code. | System error, please write problem report and inform Software Support. |

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| 138 **) | UTM cluster application: Calling KCCJCTL with operation code WRITE_JOURNAL_PI returns an incorrect return code. | System error, please write problem report and inform Software Support. |
| 139 **) | UTM cluster application: No lock was requested for start serialization. | System error, please write problem report and inform Software Support. |
| 140 **) | UTM cluster application: Error concluding registration of node at cluster | See message K043 or K190 |
| 141 **) | UTM cluster application: Calling KCCJCTL with operation code JFCT_SET_KAA_INFO returned an incorrect return code. | System error, please write problem report and inform Software Support. |
| 142 **) | UTM cluster application: Calling KCCJCTL with operation code JFCT_GET_KAA_INFO returned an incorrect return code. | System error, please write problem report and inform Software Support. |
| 143 **) | UTM cluster application: Error opening administration journal files on start of first process in application (start case 1) | See message K043 and K190 |
| 144 **) | UTM cluster application: Error processing administration journal | System error, please write problem report and inform Software Support. |
| 145 **) | UTM cluster application: Calling KCCJCTL with operation code JFCT_SET_KAA_INFO returned an incorrect return code. | System error, please write problem report and inform Software Support. |
| 146 **) | UTM cluster application: The runtime configuration of the node application that is to be started does not match the runtime configuration of the running node applications. | See message K174 |
| 147 **) | UTM cluster application: Global administration actions should be processed in the warm start. However, the administration journal files cannot be opened. | Check whether the administration journal files exist, see message K043 /K190 |
| 148 **) | UTM cluster application: Global administration actions should be processed in the warm start. Internal error when reading journal files. | System error, please write problem report and inform Software Support. |
| 149 **) | UTM cluster application: Internal error when cleaning up node-specific information in the journal files. | System error, please write problem report and inform Software Support. |
| 150 **) | UTM cluster application: Error opening administration journal files on start of first process in application (start case 1) | See message K043 and K190 |

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| 151 **) | UTM cluster application: Error requesting lock for start serialization of nodes (during warm start). | See message K043 or K190 |
| 152 **) | UTM cluster application: Error requesting lock for start serialization of nodes | See message K043 or K190 |
| 153 **) | UTM cluster application: Cluster page pool control file defective. | See message K190 |
| 154 **) | UTM cluster application: Error opening the LOCK file on the start of a follow-up process in application (start case 2) | See message K043 |
| 155 **) | UTM cluster application: Error opening the LOCK file on the start of the first process in application (start case 1) | See message K043 |
| 156 **) | UTM cluster application: Error opening the LOCK file on the start of a follow-up process in application (start case 2) | See message K043 |
| 157 **) | UTM cluster application: Error while checking the cluster GSSB file | See message K043 or K190 |
| 158 **) | UTM cluster application: Error while checking the cluster ULS file | See message K043 or K190 |
| 161 **) | UTM cluster application: Error while releasing the ULS locks in the cluster ULS file | See message K190 |
| 162 **) | UTM cluster application: Error while releasing the GSSB locks in the cluster GSSB file | See message K190 |
| 164 **) | UTM cluster application: Error while opening the LOCK file on warm start | See message K043 |
| 165 **) | UTM cluster application: On the warm start of a node application, it was not possible to lock the cluster lock file in the generated time. | Repeat the UTM application start operation |
| 166 **) | UTM cluster application: Internal error when rolling back a transaction in PTC state during node recovery. | System error, please write problem report and inform Software Support. |
| 167 **) | UTM cluster application: Internal error when outputting existing transactions in PTC state during node recovery. | System error, please write problem report and inform Software Support. |
| 168 **) | As for 167. | As for 167. |
| 169 **) | UTM cluster application: An attempt was made to perform a node recovery for a node application that terminated normally. | Check whether the incorrect node was specified in the start parameter. |

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| 170 **) | UTM cluster application: Cluster page pool and KDCFILE generated with different BLKSIZE. | Regenerate all the UTM cluster files. |
| 171 **) | UTM cluster application: A node recovery was started in a dialog. | Start node recovery in batch operation. |
| 172 **) | UTM cluster application: Error while locking a cluster user file when starting the first process in application (start case 1) | See messages K043 and K190 |
| 173 *) | The UTM application is generated with BCAMAPPL with TPROT=(SOCKET,...,SECURE), but no job-variable with the filebase name is catalogued. | Catalogue the job-variable or change the configuration of the UTM application |

The codes marked with *) only appear on BS2000 systems and the codes marked with **) only appear on Unix, Linux and Windows systems.

K050 Successful warm start for application &APPL under UTM &VERS / &OST1

K051 Successful cold start for application &APPL under UTM &VERS / &OST1

The messages K050 and K051 are output after the successful startup of the application. The insert &VERS contains the openUTM version, &OST1 the type of operating system and &BMD1 the bit mode (32 /64).

Both messages have the additional inserts &AMOD, &TERM, &ATYP and &FNOD which are not contained in the default message text; these have the following meanings:

&AMOD contains the application mode of the application:

"S" in the case of UTM-S

"F" in the case of UTM-F

&TERM contains the termination type entered in the KDCFILE at application startup; the following values are possible:

"C": The KDCFILE was created anew with KDCDEF.

"U": The KDCFILE was updated with KDCUPD.

"N": The last application run was terminated normally.

"A": The last application run was terminated abnormally.

&ATYP contains:

"C" in the case of a UTM cluster application

"S" in the case of a standalone application

&FNOD contains:

" " (blank) in the case of a standalone application

"Y" on the startup of the first node application in a UTM cluster application

"N" on the startup of each subsequent node application in a UTM cluster application

K052 Startup completed - task &TASK activated for application &APPL, System-Task: &STSK

&STSK specifies whether (Y) or not (N) the task is a system task.

K053 New user log file created; old user log file contains &CNTR records.

K054 Copies of the user log files are not identical.

K055 Asynchronous service &ATAC1 terminated by UTM; KCRCCC=&RCCC; KCRCDC=&RCDC; USER=&USER; LTERM=<RM

K056 Task &TASK terminated

K057 Application run terminated

K058 Abnormal termination of task &TASK

K059 Abnormal termination of application run

K060 Application run aborted; reason = &TRMA

UTM creates a memory dump whenever a UTM application is aborted or a dump requested. Such a dump is produced for each task of the application (see [chapter "The UTM dump"](#)).

The insert &TRMA describes the reason (TRMA reason) for the termination. You will find this six-character code in the file name of the dump file (see [chapter "The UTM dump"](#)).

The TRMA reasons of the individual tasks in a UTM application are generally not identical. The TRMA reason of the task which is the first to initiate the application termination identifies the reason for the termination of the application. The TRMA reasons of the follow-up tasks, so-called continuation dumps, are of subsidiary importance.

A list of the termination codes, an explanation, and, if required, recommendations for changing the application's configuration can be found in [section "UTM dump error codes"](#).

For a more detailed diagnosis, please also see the most recent K190 messages.

K061 Dump file &FNAM created

K062 Dump file could not be created.

K063 Formatting error &RCF1A/&RCF2A for format &FMTN, asynchronous message for LTERM = <RM

K064 Message with length &IMSLTH discarded: &PTRM/&PRNM/&BCAP/<RM &DEVC &FIL1A &FIL2A &FIL3 &VTRC &CBRC &IMSG2 &REA1

Meaning:

1. An invalid or unexpected announcement was received at the work bourse. In this event, insert &REA1 has a value of X'05' and insert &IMSG2 contains the announcement received.
2. A message from an LTERM partner has been received which is logically inconsistent for UTM. One of the following reasons apply:
The message does not comply with the strict dialog, or
VTSU-B reports an error when processing a physical message from a terminal or a printer. The message contains as inserts a 4-bytes return code which VTSU passed to UTM and the return code which VTSU passed in the VTSUCB.
Or
a message with an invalid protocol was received from a UPIC or socket client.
3. A message which does not contain a valid transmission header was received from an LU6.1 partner.

For diagnostic purposes, the first 32 characters of the message are output. For an invalid USP protocol the first 12 bytes of the USP protocol are output filled with binary zero.

Note: If the message length is less than 32, parts of an earlier message may also be output. These characters can partly be remnants of an earlier message, with length < 32 or K-key.

The standard record output to SYSLOG has the following structure:

| Inserts | Meaning |
|----------------|---|
| &IMSLTH | Total length of input message |
| &DEVC | Terminal or printer type; the codes can be taken from the macro DCSTA with TYPE=TCHAR. |
| &FIL1A | Status of the application; possible values X'02' = start phase X'03' = normal run X'04' = shut warn X'05' = shut grace X'07' = fast shut X'08' = term application |
| &FIL2A | Status of the client or printer: X'00' = Connection clearing down X'01' = Connection not established X'02' = UTM waiting for the completion of the a connection set up X'03' = Connection established, user not yet signed on X'04' = UTM waiting for a password to be entered X'05' = UTM waiting for a password to be entered X'06' = UTM waiting for a new password to be entered X'07' = UTM waiting for an ID card to be inserted X'08' = User accepted X'09' = 2nd part of the sign-on service X'0A' = for LTERM with USAGE=O: Printer connected, otherwise user logged on |
| &FIL3 | Status of the physical terminal or printer (2 bytes), serves as a diagnostic aid in the event of errors. The meaning of the individual bits may be found below. |
| &VTRC | VTSU return code |
| &CBRC | Return code in the VTSUCB |
| &IMSG2 | The first 32 characters of the message (in the case of stations the first 8 characters contain the header of the station log) |

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| &REA1 | Reason for K064 message: X'01' = Bad VTSU return code X'02' = invalid function key X'03' = no positive print acknowledgment X'04' = bad return code from ISLP X'05' = inconsistent input message X'06' = LU6.1: The announcement length is shorter than the DCF in the transmission Header X'07' = Input message for disconnected MUX connection X'08' = inconsistent message from an LU6.1 partner X'09' = UPIC input message with invalid protocol X'0A' = inconsistent physical or logical acknowledgment X'0B' = input message from a socket USP application generated as an output partner X'0C' = unexpected GO signal received for a UPIC or socket connection X'0D' = inconsistent message from the SSL proxy X'0E' = message with invalid HTTP protocol received X'0F' = message with invalid USP protocol received |
|-------|--|

Meaning of the insert &FIL3:

| | | | | | | | | | | | |
|--------|----|----|----|----|----|--------|----|----|----|----|----|
| byte A | | | | | | byte B | | | | | |
| A1 | A2 | A3 | .. | .. | .. | B1 | B2 | .. | .. | .. | .. |

The individual bits have the following meaning:

| Bit | Value | Meaning |
|-----|-------|--|
| A1 | 1 | Last output was unformatted |
| | 0 | Last output was formatted |
| A2 | 1 | Waiting for transport or logical print acknowledgement |
| A3 | 1 | Last output was in extended line mod |
| B1 | 1 | Partner is a station (terminal) |
| | 0 | Partner is an application |
| B2 | 1 | Partner is a dialog partner (client) |
| | 0 | Partner is a Printer |

K065 Net message: &PTRM/&PRNM/&BCAP/<RM &FIL1B &FIL2B

The inserts &FIL1B and &FIL2B have the following meaning:

| Inserts | Meaning |
|---------|--|
| &FIL1B | BCAM call or BCAM, UTM or RSO announcement type |
| &FIL2B | BCAM info word, (see table " Values of the BCAM info word "), UTM announcement code or RSO return codecode |

&FIL1B is output in printable form. The values X'E0', X'E2' and X'F0' to X'FF' indicate a UTM (timer) announcement. The values are explained in the following table.

The values marked with *) only appear on BS2000 systems and the values marked with **) only on Unix, Linux and Windows systems.

| &FIL1B | Meaning | Meaning of &FIL2B |
|---------------|--|--|
| X'01' - X'4C' | BCAM call or BCAM announcement ¹ | BCAM, infoword (printable) |
| X'56' *) | RSO announcement | Asynchronous RSO return code (printable, see K150), the value and meaning can be found in the description of message K150 or obtained from System Support. |
| X'E0' | Idle timeout for an LU6.1 session (see KDCDEF statement SESCHA, parameter IDLETIME) | no meaning |
| X'E2' | Timeout on reception of message fragments at a socket connection since the message was not fully received within the permitted period of 10 minutes (internal value) | no meaning |
| X'F0' | UTM anno | If the first byte of &FIL2B is X'FD', then a shutdown announcement from MSCF was received and the application terminates. |
| X'F1' - X'FA' | UTM anno | no meaning |
| X'FB' | UTM anno: Timeout waiting for an acknowledgment from a printer or TS application after sending a queued message (see KDCDEF statement MAX, parameter LOGACKWAIT) | no meaning |
| X'FC' - X'FE' | UTM anno | no meaning |
| X'FF' | UTM anno: timeout | The first byte in &FIL2B specifies the cause of the timeout: |

| | | | |
|--|--|---------------------------|--|
| | | X'21' | Expiry of the timer which monitors the establishment of an LU6.1 session. See KDCDEF statement UTMD, parameter CONCTIME=(time1 ,....). |
| | | X'22' | Expiry of the timer which monitors the reception of the acknowledgment for a queued message sent via an LU6.1 session. See KDCDEF statement UTMD, parameter CONCTIME=(..., time2). |
| | | X'30' | Expiry of the PEND-KP timer. See KDCDEF statement MAX, parameter TERMWAIT or PGWTTIME. |
| | | X' 40' to X' 43' | Expiry of the PTERM idle timer. See KDCDEF statement PTERM or TPOOL, parameter IDLETIME or KDCDEF statement MAX, parameter PGWTTIME. |

¹The value and meaning of the BCAM call and announcement can be obtained from the BCAM diagnostic documentation or System Support

Values of the BCAM info word

The table below the codes of the BCAM info word, their meaning and possible actions to recover errors.

There are two variants of BCAM info word. In the first column of the table, you find the values of the BCAM info word (arranged in ascending order in byte 4) that are returned as the return code with a BCAM call (&FIL1B < X'40'). In the second column you find the values of the BCAM info word (arranged in ascending order in byte 1) that are returned in a BCAM anno (&FIL1B >= X'40').

| Value (Call) | Value (Anno) | Meaning | Actions |
|--------------|--------------|--------------------------------------|-----------------------------------|
| 00820004 | 04000000 | BCAM not active | BCEND-DCSTART |
| 0001xx08 | 08000000 | Illegal structure of parameter list: | Inform software maintenance staff |
| 00010014 | | Letter too long | |
| 00010108 | | CONNB not specified | |
| 00010208 | | NAME incorrect | |
| 00010308 | | APID not specified | |
| 00010408 | | DID not specified | |
| 00010508 | | NAME not specified | |

| | | | |
|----------|----------|---|---|
| 00010608 | | PNAME not specified | |
| 00010708 | | CID not specified | |
| 00010808 | | LETAR not specified | |
| 00010908 | | TELAR not specified | |
| 00010A08 | | NBUFS exceeds maximum | |
| 00010B08 | | distribution code length=0 | |
| 00010C08 | | distribution code length exceeds maximum | |
| 00010D08 | | NGBS not specified | |
| 00010E08 | | GROB not specified | |
| 00010F08 | | distribution code not specified | |
| 00011008 | | distribution bourse ID not specified | |
| 00011108 | | APREF not specified | |
| 00011208 | | BLTH not specified | |
| 00011308 | | user buffer length = 0 | |
| 00011408 | | TAKAR not specified | |
| 00011508 | | RTACK incorrect | |
| 00011608 | | telegram length = 0 | |
| 00011708 | | LANNO incorrect | |
| 00011808 | | NBUFS not specified | |
| 00011908 | | EVENT incorrect | |
| 00011A08 | | RCCOD incorrect | |
| 00011B08 | | Number of routes outside permitted limit | |
| 00011C08 | | OWNPN incorrect | |
| 0080000C | 0C00000 | Timeout | Check partner |
| 00400010 | 10000000 | No message received | Create UTM BCAM trace |
| 00010014 | 14000000 | Connection message too long (letter too long) | Check structure of the connection message |
| 00010018 | 18000000 | DISTAB error | Inform software maintenance staff |

| | | | | |
|----------|----------|--|--|--|
| 0480xx1C | 1C040000 | Resource bottleneck memory for BCAM: | | |
| 0480011C | | Data buffer | Repeat call/enlarge memory with BCMOD ask software maintenance staff to examine data flow problems | |
| 0480021C | | Reference | If error recurs, inform software maintenance staff | |
| 0480031C | | ACONCB or REQCB | | |
| 0480041C | | APPCB | | |
| 0480051C | | DISTAB | | |
| 0480061C | | Name Manager | | |
| 0480071C | | Interface flow control | | |
| 0480081C | | Bourse | | |
| 0480091C | | ENACB | | |
| 04800A1C | | ADDRCB-P | | |
| 04800B1C | | CID | | |
| 0840011C | 1C080000 | Warning: BCAM will be terminated | | |
| 0C40021C | 1C0C0000 | BCAM will be terminated | | |
| 1082001C | 1C100000 | Maximum number of predefined applications has been reached | /BCMOD-MAXNPA= | |
| 1440001C | 1C140000 | Waiting for GO signal | | |
| 04010020 | 20000400 | Application not yet known to BCAM | Open application with BCAM | |
| 08010020 | 20000800 | Application known to BCAM under another task | Repeat call with "correct" task | |
| 0C010020 | 20000C00 | Application signed on to BCAM exclusively through another task | | |
| 10010020 | 20001000 | Application already signed on with BCAM under this task | | |
| 14400220 | 20001400 | Forced closure of the application | Reopen application | |
| 18400120 | 20001800 | Forced closure of the application with warning | Reopen application | |
| 1C010020 | 20001C00 | Application is not active | /BCACT application name | |

| | | | |
|----------|----------|---|---|
| 20010010 | 20002000 | Application may not actively set up connection | |
| 24820020 | 20002400 | No further connections are allowed for this application | Increase number of connections with the BCMOD command |
| 28820020 | 20002800 | No non-predefined application allowed for this task | Increase with BCMOD MAXNPT |
| 2C010020 | 20002C00 | Application - password error | Correct password |
| 30010020 | 20003000 | Call already issued by another task | |
| 34010020 | 20003400 | Application may not work with high priority | Repeat call with lower priority |
| 04010024 | 24000004 | Partner has no connection | Set up connection |
| 08010024 | 24000008 | Partner already has a connection | |
| 0C010024 | 2400000C | The application has issued another connection setup request to a partner, but the partner has not yet responded | |
| 10400024 | 24000010 | Partner is already attempting to set up connection | Forget own connection request and accept partner's connection request |
| 14010024 | 24000014 | Connection request did not exist or time elapsed | Accept connection request within the allotted time |
| 18010024 | 24000018 | Partner not known | Generate partner correctly |
| 1C820024 | 2400001C | Partner processor not known | Check generation of BCIN partner processor |
| 1C820124 | 2400001C | Partner processor not active | /BCACT |
| 1C820224 | 2400001C | ROUTE not known | Check generation |
| 1C820324 | 2400001C | ROUTE not active | /BCACT |
| | 2400002C | Partner does not accept the connection request | Generate DCM.BCAM.CON trace |
| 30010024 | 24000030 | Application may not actively set up a connection | |
| | 24000034 | The partner has lost the connection and will set it up again immediately | Wait for connection setup |
| | 24000038 | Connection cleared down by the partner | |

| | | | |
|----------|----------|---|---|
| | 2400003C | Forced closure of the application by the operator | |
| 4001xx24 | 24000040 | Inconsistent connection parameters: | Correct connection parameters |
| 40010124 | | TELAR requested | |
| 40010224 | | telegrams not permitted | |
| 40010324 | | predefined connection: call requires GROS=F or THRU=N | |
| 40010424 | | user data not permitted | |
| 00800028 | 28000000 | Attempt input/output later | No acknowledgment for connection log: Look for cause in destination processor, Modify UTM parameters BRETRYNR in KDCDEF |
| 0040002C | 2C000000 | Message rejected after timeout | User problem / use more tasks with UTM |
| 0020xx30 | 30000000 | BCAM error | Take DUMP, create ASTRID TOTAL dump |
| | 34000000 | Inconsistent network address | Re-establish connection |
| 00800038 | 38000000 | Another input/output is currently running | Repeat call/ if error recurs again turn on DCM.BCAM.CON trace and make copy |
| 0001003C | 3C000000 | Illegal call | Inform software maintenance staff |
| 0001FFFF | | Illegal unit/function | |
| 0002FFFF | | Function not available | |
| 0003FFFF | | Illegal version | |
| 0004FFFF | | Incorrect parameter list | |

K066 Mandatory parameter FILEBASE not specified

K067 Error in interoperation with language connection module &MOD: error code = &ERCD1 &ERCD2; opcode = &OPCD2

The inserts of the message have the following meaning:

| &MOD | Meaning |
|-----------------|---------------------------------|
| KDCCC | Connection module for C |
| KDCCCOB | Connection module for COBOL |
| KDCCASS | Connection module for ASSEMBLER |
| KDCCFOR1 | Connection module for FORTRAN |
| KDCCILC | Connection module for ILCS |
| KDCCSPL | Connection module for SPL |
| UTMPLI1 | Connection module for PL/I |
| UTMPAS | Connection module for Pascal |

| &OPCD2 | Meaning |
|-------------------|---|
| INITIALISE | Initialize the language environment |
| DEACTIVATE | Release the language environment |
| STXIT-HANDLING | STXIT handling via the language |
| S; XXXXXXXX | Start the program unit ' XXXXXXXX' |
| E; XXXXXXXX | Execute the end handling routine for the program unit ' XXXXXXXX' |

The ERRORCODE is made up of 2 x 4 characters.

| &ERCD1 | Meaning and possible response |
|-------------------|---|
| 0000 | Job has already been executed |
| 0004 | Job was not executed correctly Provide error documentation and send to Software Support |
| 0008 | Error in application program |
| 00FF | The language connection module for a generated language is not linked when the application is started |

The inserts in &ERCD2 supply additional information on errors that have occurred and are used for diagnostic purposes. The meaning can be found in the manuals for the relevant programming languages.

K068 Database connection module &DBCON version &DBV1 cannot interoperate with KDCDB macro version &DBV2

K069 Disconnection : &PTRM/&PRNM/&BCAP/<RM/&REA4/&REA6/&COTM

The insert &REA4 indicates who initiated the connection cleardown. The insert &REA6 contains the cause of the connection cleardown.

| &REA4 | Meaning |
|------------------|--|
| B | Transport system reports connection cleardown |
| L | Connection lost for socket connection |
| other | Connection was cleared down by UTM, for reason see &REA6 |
| &REA6 | Meaning |
| X'00' | Reason not specified |
| X'08' | Resource bottleneck |
| X'09' | Connection cleared down |
| X'0A' | Application SHUTDOWN |
| X'0D' | Negative return code from transport system, see associated K065 message. |
| X'1A' *) | Too many invalid sign-on attempts |
| X'2A' *) | Connection interrupted after an unencrypted message was received from the terminal on an encrypted connection. |
| X'2F' *) | Closure of MUX session after the MUX transport connection had already been cleared down. |
| X'30' *) | Connection cleardown by KCSMUX |
| X'31' | Connection cleardown after KDCOFF |
| X'32' | Connection cleardown after SIGN OF |
| X'33' | Connection cleardown by the print administration |
| X'34' | Connection cleardown by the administration |
| X'35' | No messages for printer with PLEV > 0 |
| X'36' | Page pool warning level 2 exceeded on receipt of an asynchronous DTP message. |
| X'37' *) | Connection cleardown after receipt of an incorrect status message from the terminal |
| X'38' *) | Bad return code from VTSU-B or unencrypted message received although permanent encryption was defined for the connection |

| | |
|----------|---|
| X'39' | Invalid function key |
| X'3A' | Connection clear-down by DTP with session not yet established |
| X'3B' | Connection clear-down by UPIC |
| X'3C' | Connection clear-down after unsuccessful sign-on attempt |
| X'3D' | Connection clear-down after unsuccessful sign-on service |
| X'3E' | Connection clear-down after timeout |
| X'3F' | Message fragment received |
| X'40' | Negative transport or print acknowledgment |
| X'41' | Unexpected protocol element |
| X'42' | Inconsistent input message |
| X'43' | Connection clear-down through new connection setup request |
| X'44' *) | Connection cleared down after a negative acknowledgment from RSO. |
| X'47' | Connection cleared down because IDLE timer timed out. |
| X'49' | Socket - Connection cleared down because of invalid length of incoming message (negative or >32000) |
| X'4A' | Socket - Connection cleared down because of invalid version in the protocol header |
| X'4B' | Socket - Connection cleared down because of invalid type in the protocol header |
| X'4C' | Socket - Connection cleared down after an error occurred while writing the message in the message queue |
| X'4D' | Socket - Connection cleared down after timeout |
| X'4E' | Socket - Connection cleared down because of a length problem: The message generated is larger than the generated maximum length (see the MAX TRMSGLTH operand in the KDCDEF statement). |
| X'4F' | Socket - Connection cleared down because of unknown identifier in the protocol header |
| X'50' | Socket - Connection cleared down because of invalid version minor in the protocol header |
| X'51' | Socket - Connection cleared down because of invalid flag in the protocol header |
| X'52' | Socket - Connection cleared down because the maximum possible number of fragments was exceeded |
| X'53' | Socket - Connection cleared down because of an invalid message type FRAGMENT at the beginning of a message |

| | |
|----------|--|
| X'54' | Socket - Connection cleared down because the last part of a fragment was missing. |
| X'56' *) | Connection to RSO printer is shut down as the KDCS call FPUT/DPUT RP is not supported by the current RSO version. |
| X'57' | Cleardown of the connection to the client because insufficient processes are active to continue the service normally after timeout at the PGWT bourse. |
| X'59' | Connection cleared down by DTP while session established. |
| X'5A' | The socket connection was closed due to no longer supported USP protocol version 1.0 (minor version X'00') in the protocol header. |
| X'5C' | Inconsistency between the data length announced at the socket interface and the data length actually received. |
| X'5D' | A message fragment of size zero was received as the first fragment on a socket connection |
| X'5E' | HTTP protocol error |
| X'5F' | As the HTTP request did not contain the header field CONNECTION: KEEP-ALIVE, the socket connection to the HTTP client was closed by the server |
| X'60' *) | A connection to the SSL proxy was closed during connection setup |
| X'61' *) | The connection request for an SSL connection is rejected because no further SSL connections can be managed. |

The values marked with *) only appear on BS2000 systems.

K070 USER / LSES inactive : &USER, &GLOBALSG

A value is only entered for the insert &GLOBALSG 'Cluster Global Sign' in UTM cluster applications. The insert can have the following values:

| &GLOBALSG | Meaning |
|----------------------|--|
| Y | Global sign-off at the cluster |
| N | Local sign-off at the node |
| T | The global sign-off at the cluster was not successful because the cluster user file could not be locked in the generated time. |
| F | The global sign-off at the cluster was not successful because the user was not found in the cluster user file. |
| S | The global sign-off at the cluster was not successful because the user was not signed on globally at the cluster. |
| O | The global sign-off at the cluster was not successful because the user was not signed on globally at the cluster at this node. |
| ' ' | Sign-off for an LU6.1 session user or a connection user. |

The message is output when a user signs off. The message also possesses the following inserts:

| Insert | Meaning |
|---------------|--|
| &COTM | Number of seconds since &USER signed on at this connection |
| &CPTM | Elapsed CPU time in msec in the user ID &USER if only one user was currently signed on under the user ID &USER. If multiple users have previously signed on under &USER at different connections then the value also contains their elapsed CPU time. The value is then reset to 0. If further users are still signed on under the user ID &USER then the value is 0. |

5.1.3 Messages K071 - K101

K071 Internal Error in database connection &DBCON: operation=&OPCD1, error=&ERCD3, DB-trace-info=&DBTRAC

The inserts have the following meanings:

| | | |
|---------|---|--|
| &DBCON | Name of the connection module to the DB system | |
| &OPCD1 | DB operation code, see section "DB Diagarea" | |
| &ERCD3 | KCRCDC error code with the possible values KU04 through KU24, see section "Internal return code KCRCDC" | |
| &DBTRAC | DB trace information. The possible values and their meanings are described in the discussion of the relevant database system. For UDS-DB system: Interpretation of DB trace information, see description of return codes in the manual "UDS/SQL Messages". For the SESAM-DB system: see the manual "SESAM/SQL Database Operation", section "Diagnostic information in the DB Diagarea of openUTM" in the chapter "Error recovery" | |
| | If the DB system is connected via the XA interface then the 4 DB trace information bytes have the following meanings: | |
| | Byte 1 | Resource Manager index (cf sequence in the start parameters) |
| | Bytes 2 and 3 | Operation code of XA call, output hexadecimal and platform-dependent (EBCDIC or ASCII), e.g. in the BS2000 system: (EBCDIC) X'9697' = C'op' op = xa_open, en = xa_end etc. |
| | Byte 4 | Return code of XA call, output hexadecimal and platform-dependent e.g. in the BS2000 system: FD = -3 = XAER_RMERR |

K072 There is a mismatch in the number of &STMT entries in ROOT and KDCFILE.

This message is output when it is recognized at the start of the application that the number of programs and load modules in the ROOT and KDCFILE generation do not match. The start of the application or the task is terminated with the message K049, code 40.

Response: regenerate ROOT and/or KDCFILE

K073 The attribute &ATTR of &STMT &PROG in ROOT and KDCFILE does not match.

This message is output if when a task is started it is found that the entries of the LOAD MODULE table or the PROGRAM table in ROOT and in the KDCFILE do not match. The first insert indicates the attribute in which the entries differ.

The start of the application or the task is aborted with message K049, code 41.

Response: regenerate ROOT and/or KDCFILE

K074 Program exchange completed; &CTYP &PROG &PVER

(see K075)

K075 Program exchange aborted by task &TASK; &CTYP &PROG &PVER

K074 or K075 are issued after a positive or negative termination of a program exchange. The inserts give information as to which part of the application program were exchanged or which part could not be exchanged:

&TASK: TSN of the task for which program exchange was aborted.

&CTYP: APPL, Exchange of the entire application program
LMOD, Exchange of a load module

&PROG: Name of the load module (only when CTYP=LMOD)

&PVER: Version number of the load module (only when CTYP=LMOD)

K076 Error during asynchronous administration with transaction code &ADTC; KCRCCC=&RCCC, KCRCDC=&RCDC

K077 Internal cluster communication with &PTRM/&PRNM/&BCAP/<RM successful: &CLSIGT

The message K077 is only output if test mode is active.

During internal cluster communication, a &CLSIGT message was sent to another node application. &CLSIGT can have the following values:

| &CLSIGT | Meaning |
|---------|---|
| 1 | Check the availability of the monitored node application (check alive request). |
| 2 | Check for changes in the cluster configuration |
| 4 | Administration job |
| 8 | Job to wake up one of the tasks waiting at a GSSB or ULS |
| 16 | Response to an availability query from the monitoring node application (check alive response) |

No action is required.

K078 &ERRNAME &ERRCODE: in &REA3

Message K078 is output by UTM in several different variants, depending on the event that has occurred. The events can be subdivided into the following categories:

- [IICS messages](#)
- [Message on establishing connection to the DB system](#)
- [Messages when loading or exchanging programs](#)
- [STXIT messages](#)
- [Message \(warning\) on processing of start parameters](#)

ILCS messages

K078 WRONG SPL-VERSION (NO ILCS)

This means that an incorrect SPL version has been linked in (\leq V1.5): SPL does not establish ILCS-compliant stacks.

Response: Link the program again with SPL version \geq 2.0

K078 subcode: ERROR HANDLING IN module, RC = return code

This means that an internal error occurred when managing the ILCS stacks or on calling ILCS-internal functions. The return code is also output if ILCS functions are called.

The *subcode* allows you to identify the phase in which the error occurred:

subcode = IL01 - IL09: Error during initialization

subcode = IL20 - IL29: Error during start/end of TP

subcode = IL30 - IL39: Error during stack management

The following table describes the errors for which *subcode* describes a user error. In all other cases, you must write a problem report (PR) and contact systems support.

| subcode | Modul | Return code output? | Precise meaning of &ERCD2 |
|----------------|--------------|----------------------------|--|
| IL02 | IT0INIT | yes | Error initializing ILCS. User error if ILCS code is executed before UTM start code. Response: set the ENTRY-POINT of the application to KDCRTST. |
| IL08 | KDCCILCI | no | An incorrect ILCS version was linked in. Version 1.5 or higher is required. |

K078 xxxx : UNRECOVERABLE ILCS ERROR OCCURRED - ILCS FUNCTION WITHIN NON-ILCS PROGRAM UNIT.

xxxx = SEUB/SELB/ASID/AHID

Meaning:

This message is output on termination of a program unit run. In a program unit with COMP=ASSEMB/COB1, an ILCS object (source module) was compiled by an ILCS-compiler. However, the ILCS object changes one of the fields for which xxxx stands in the central ILCS data area (IT0PCD). openUTM can therefore no longer base itself on this data, and the application program is terminated.

Action:

You must either create an ILCS-capable program unit from your ASSEMB/COB1 program unit or adapt the ILCS-capable object so that it does not use the ILCS.

Message on establishing connection to the DB system

K078 Invalid DBCON-Adress in KDCRTDB:
KDCRTDB: application running in lower adress-space!Term in Start

While reloading the DBCON module, it is detected that the DBCON module was loaded in the upper address space, the application, however, is running in the lower address space.

K078 KDCRTDB ERROR : in SESAM : INSTALLATION-UNIT / VERSION = db-system / version
K078 GETINSP 00400013: in KDCRTDB: error accessing pathname for logical-id yyyyyy
K078 DCRTDB ERROR : in KDCRTDB - START OF APPLICATION WILL BE TERMINATED!

Error during dynamic loading of the DB connection module if the connection module was dynamically loaded with LIB=LOGICAL-ID (yyyyyy) via the IMON installation path. The specified name yyyyyy is incorrect.

K078 Variant of the message K078 for the verification of the Oracle interface that is linked to the application program:

```
"K078 *BIND -- MISMATCH -- : in KDCRTDB:
      old ORACLE IUTMDB interface linked in XA environment"
"K078 *BIND -- MISMATCH -- : in KDCRTDB:
      start of application will be terminated."
```

Meaning:

When a UTM Oracle XA application is started, a check is performed to determine whether the old IUTMDB interface has been linked by mistake. This check found the (old) ORADBCON connection module for the IUTMDB interface in the application program. openUTM terminates application start.

Action:

The application program must be linked again, see also Oracle® Database User's Guide (BS2000/OSD).

K078 *BIND 0C010600: in KDCRTDB ENTRYNAME = entryname
K078 *BIND ERROR---: in KDCRTDB: LOAD-LIBRARY = : library-name
K078 *BIND ERROR---: in KDCRTDB - START OF APPLICATION WILL BE TERMINATED!

Error during dynamic loading of the DB connection module if the connection module was dynamically loaded with LIB=LOGICAL-ID (SYSLNK) via the IMON installation path. The dynamically loadable module is not present in the library found via LOGICAL-ID(SYSLNK).

K078 RTIMER event A0 : in KDCRTDI - event in KDCRTDB while connecting to database

The establishment of the connection to the database system is aborted during UTM application start due to timer expiry (real-time). The task is then terminated.

The message is only output if the start parameter DB-CONNECT-TIME is set (minimum = 60 sec., maximum = 3600 sec.). In DB-CONNECT-TIME, you specify the timer which monitors the establishment of the connection to the DB system during the start phase of a UTM application.

Messages when loading or exchanging programs

K078 xxxxxxxx yyyyyyyy: IN module-name text

This message is output when dynamically loading or exchanging individual load modules.

Meaning of the inserts:

xxxxxxx contains a short ID of the error which occurred (see table "Values for xxxxxxxx"). For errors with xxxxxxxx = (KDCS00,LDRtnn) the field yyyyyyyy is not output.

yyyyyyy contains the return code of the BS2000 macro called. For further information, refer to the BS2000 manual "Executive Macros". This insert does not apply in the case of internal UTM error codes.

module-name

contains the module name of the module, in which this error occurred (for internal diagnostics)

text contains additional information on certain errors; possible texts:

```
' WRONG OPCODE IN KDCRTLD: WRONG OPCODE AT CALL OF KDCRTLD '  
' LMOD: STAT ERR IN KDCRTLD: LMOD: <name> / <version> '
```

These texts refer to internal errors in UTM.

```
' LINK ERR OF AREAS in KDCRTLD: FOR AREA: <areaname> '
```

In this case the specified area has not been linked in by the user (check UTM generation and load module creation).

Action: Link application program correctly.

| xxxxxxx | Error cause | Action |
|---------|--|------------------|
| ASHARE | Error when loading a load module into a memory pool. Further information is given by the insert ' LMOD: name / version ' | See return code |
| BIND | <ul style="list-style-type: none">• Error when loading a load module. Further information is given by the insert ' LMOD: name / version ' or• Error when loading the linkage module to the DB system (see insert ' ENTRYNAME = ')• Error when dynamically loading the root table module (see inserts &object and &lib)• Error when dynamically loading the userspecific message module (see inserts &object and &lib) | See return code. |

| | | |
|---------|--|--|
| CSTAT | The status of an MP page cannot be changed to ' read only'. For further information see supplementary insert 'PAGENUMBER = '. | System error |
| DEQAR | Error when releasing a serialization ID. | See return code (pool name possibly locked; change UTM generation) |
| DMS | Error when interoperating with the DMS. For further information see supplementary insert 'FILENAME = '. | See DMS error code |
| ENAMP | Error when creating a memory pool. SCOPE and NAME of the relevant memory pool are also specified. | See return code, e.g. pool name already in use by another task; change UTM generation |
| ENQAR | Error when accessing serialization ID. | See return code (e.g. DEQAR), change UTM generation where necessary and increase the value of MAX MP-WAIT. |
| ITABL | Error when determining addresses of shareable programs. May be caused by unresolved EXTRNS. For more information see supplementary insert ' ENTRYNAME = '. | System error |
| JOINFOA | Error when querying the user entry. | See return code |
| KDCALME | Not possible to provide sufficient memory on request for KL6 memory (INSUFFICIENT MEMORY and number of bytes output). | An attempt may have been made to start the application in the lower address space (insufficient memory!). |
| KDCS00 | CALL "KDCS" in START exit, in SHUT exit or in INPUT exit | Correct program unit. |
| LDRT00 | TABLIB start parameter missing but no ROOT module linked | Adapt start parameter or definitively link ROOT |
| LDRT01 | The version of the UTM macro library does not match that of the UTM modules or the message module. | Regenerate ROOT, link to current library SYSLNK.UTM.nnn or regenerate message module. |
| LDRT08 | The parameter CATID was used even though the filebase operand was specified with catid. | Change start procedure |
| LDRT12 | The root table module is to be dynamically loaded, but no load module has been generated. | Generate the application with at least one LOAD-MODULE. |

| | | |
|--------|--|---|
| LINK | Error when loading with LINK macro For further information see supplementary insert ' ENTRYNAME = ' . | Check UTM generation |
| MINF | The memory allocation table is not available. | System error |
| RELM | Error when releasing class 6 memory For further information see supplementary insert ' PAGENUMBER = ' | System error |
| REQM | Error when allocating a memory pool. | System error |
| REQMP | Error when requesting class 6 memory. Error code X'0C' can signify overlapping with a memory pool allocated by DSSM and defined with SCOPE=GLOBAL | Check BS2000 generation, possibly reduce UTM application Release area with command: /SET-SUBSYSTEM-OPTIONS SUBSYSTEM-NAME=NON-PRIVILEGED |
| SETIC | The interval timer could not be set. | System error |
| STXIT | Execution of the STXIT call failed. | System error |
| TMODE | Error when querying task characteristics. | System error |
| UNBIND | Error when unloading a load module For further information see supplementary insert ' LMOD: name / version ' | See return code |
| VSVI | Error in VSVI macro | See return code |
| VSVI1 | Error when determining program addresses. For further information see insert ' FOR PROGRAM: name' | See return code |
| \$APCB | Error when transferring the TU-PC to UTM-TPR, possible return codes: | See return code |
| | 02: \$APCB is not supported in this BS2000 version | UTM error |
| | otherwise: see macro return code | See return code |

STXIT messages

K078 STXIT 01 STXIT(ILCS_STXIT_CONTROL) started at xxxxxxxx with IW=yyyyyyyy

K078 STXIT 02 STXIT(STANDARD) started at xxxxxxxx with IW=yyyyyyyy

The messages "STXIT 01" and "STXIT 02" are output by UTM when the UTM STXIT routines start, and they record that an STXIT event has occurred.

STXIT 01 The STXIT routine was started for ILCS.

STXIT 02 The standard STXIT routine was started.

The insert xxxxxxxx contains the address of the STXIT routine, the insert yyyyyyyy contains the interrupt weight.

Example:

K078 STXIT 01 STXIT (ILCS_STXIT_CONTROL) started at 010A70FC with IW=00000064

An STXIT event generally causes the UTM service to abort.

STXIT events can occur that do not lead to the abortion of the service. This is the case when an STXIT event occurs, is passed to the ILCS runtime environment and handled there either by ILCS itself or a program unit, and the event is then not passed on to UTM.

If an STXIT event occurs due to the expiry of a timer (e.g. IW=A0), it is possible that the STXIT message is output without any STXIT routine being started since the program unit has already been terminated in the interim. You may therefore need to increase the timer value for this transaction code. The TAC can be taken from the K099 message which is subsequently output:

K099 STXIT occurred in TAC: tacname at date: xx-xx-xx time: xx:xx:xx

The date and time in the K099 message refer to the start of the program unit.

The event IW=90 (TERM) can occur when one of the application's tasks terminates.

Action:

If the service aborts, analyze the dump created. If there is an error in UTM, store the documents and write a PR; otherwise, correct the error in the program unit.

If the service does not abort, the message merely indicates that the interruption is being handled by the runtime system or the program unit. There is no error.

Message (warning) on processing of start parameters

K078 WARNING : in KDCRTBF! Syntax-error in SYSPROT-Parameter!
Default value used!

K078 WARNING : in KDCRTBF! SYSPROT-Parameter: prefix too long!
Default value used!

In both cases an incorrect SYSPROT start parameter was detected and the default value is effective. You may need to improve the SYSPROT start parameter!

K079 Accounting problem - reason: &REA2

When attempting to write accounting information, the BS2000 accounting routine reports an error. openUTM thus deactivates the accounting for the application. The application continues to run.

The error cause is given in the insert &REA2:

| &REA2 | Meaning |
|-------|---|
| 04 | BS2000 accounting is not active |
| 08 | in the BS2000 accounting the corresponding record type is not active (record type UTMA or UTMK) |
| 20 | Error in BS2000 accounting: Slot shortage |
| 28 | Error in BS2000 accounting write task |

If &REA2=X'08', openUTM deactivates the accounting phase, the calculation phase or both, depending on the record type.

In all other cases, openUTM deactivates both phases.

Action: Inform BS2000 system administrator.

Once the error has been rectified, the UTM administrator can reactivate the costing and/or accounting phase with the KDCAPPL command.

K080 KDCMON is not active.

Possible error reasons:

- The KDCMON sub system is not started
- The KDCMON event monitor is not started or has been terminated in the meantime

For details, please refer to the openUTM manual "Using UTM Applications on BS2000 Systems", section „Starting KDCMON“.

K081 Statistics: &IMSG1/&OMSG1/&CONU/&ATAC2/&LWRT/&HITR/&WTBF

| Inserts | Meaning |
|---------|--|
| &IMSG1 | Number of terminal input messages ¹⁾ |
| &OMSG1 | Number of terminal output messages ¹⁾ |
| &CONU | Number of connected users |
| &ATAC2 | Number of unprocessed ATACs ¹⁾ |
| &LWRT | Number of log writes |
| &HITR | Cache hit rate ¹⁾ |
| &WTBF | Cache waits for buffer |

This message is written every hour on the hour and in the case of normal termination of the application. The values marked with ¹⁾ are subsequently reset to 0.

K082 Wrong file &FNAM

K083 File &FNAM has been destroyed.

K084 &OBJ1 &VER1 &OST1 &BMD1 and &OBJ2 &VER2 &OST2 &BMD2 are not compatible.

K085 &FNKT functions are not available.

K086 UTM-D error information: &PTRM, &PRNM, &BCAP, <RM, &USER, &SYSD, &USSD, &FMH7, &AGUS

| Inserts | Meaning |
|----------------|---|
| &PTRM | Name of LU6.1 connection (CON) |
| &PRNM | Processor name |
| &BCAP | BCAM application name |
| <RM | Name of LPAP parameter |
| &USER | User ID |
| &SYSD | SNA sense code (system) |
| &USSD | SNA sense code (user) |
| &FMH7 | Error message from the remote application |
| &AGUS | ID of job-submitting user |

The following values are possible for the inserts &SYSD and &USSD with homogeneous interconnection:

| &SYSD&USSD | Meaning |
|---------------------------|--|
| 08120000 | Resource bottleneck (e.g. page pool full) |
| 08130000 081B0000 | Contention: A request to occupy a session was rejected by the contention loser application because the contention winner application had already occupied the session for a job. |
| 08641003 | Invalid or locked TAC |
| 0864C5E2 | PEND ER from UTM |
| 0864C5D9 | PEND ER from the application program unit |
| 0864D9E2 | PEND RS from UTM |
| 0864D9E4 | PEND RS from the application program unit |
| 0866D9E2 | PEND RS from UTM |
| 0866D9E4 | PEND RS from the application program unit |
| 10030000 | Invalid or locked TAC |

K087 Error in interoperation of UTM and format handling system: opcode = &OPCD3, error code = &ERCD4 &ERCD5

| &OPCD3 | Meaning |
|-------------------|--|
| STPA | Start parameter input |
| INIT | Initialize the formatting system |
| INPI | Create and enlarge the PI (Presentation Image) |
| ISOUT | Incorporate the output message section in the PI (in MPUT) |
| CRM | Generate output message (in PEND) |
| ISINP | Incorporate input message in the PI |
| RDMP | Read input message section from the PI (in MGET) |
| REST | Restart formatting for the screen restart |
| USER | User call to the formatting system |
| CUR | Cursor positioning |
| CRMA | Generate asynchronous output message |

The insert &ERCD4 contains the error code KCRCDC of the form FHxx:

| &ERCD4 | Meaning |
|-------------------|--|
| FH01 | An error has occurred in the formatting. See supplementary return code from FHSCON or FHS in field KCRMF. |
| FH02 | Hardware function not available. |
| FH04 | Serious error during initialization of the formatting system FHS. openUTM aborts the start of the application. |

The insert in &ERCD5 provides additional information on the errors that have occurred. You can find out the meaning of the supplementary information in the formatting system manual.

K088 UTM-D session start : &LSES/&RSES/&LPAP
 SR-STATE: &SRFG PET &PSQN
 SAVED : &ESQS &EBSS
 ACT. : &ESQR &ESRR &EBSR

UTM-D session start. The message contains diagnostic information

| Inserts | Meaning |
|----------------|----------------|
|----------------|----------------|

| | |
|-------|---|
| &LSES | LSES name |
| &RSES | RSES name |
| &LPAP | LPAP name |
| &SRFG | Status bits from the LSES table entry (SR) |
| &PSQN | PET sequence numbers Two 2 byte numbers: <ul style="list-style-type: none"> • sequence number sent saved • sequence number sent current |
| &ESQS | Secured sequence numbers Two 2-byte numbers: <ul style="list-style-type: none"> • SLU TO PLU • PLU TO SLU |
| &EBSS | Secured bracket state <ul style="list-style-type: none"> • "BETB" = BETWEEN Bracket • "INBR" = IN Bracket Receive (local side without send authorization) • "INBS" = IN Bracket Send (local side with send authorization) |
| &ESQR | Current sequence numbers (from STSN request) Total of 5 bytes: <ul style="list-style-type: none"> • SEC_TO_PRI_SQN (2 bytes) • PRI_TO_SEC_SQN (2 bytes) • ACTION_CODE_SEC_TO_PRI (2 bits) <ul style="list-style-type: none"> 00: ignore 01: set 10: test 11: set and test • ACTION_CODE_PRI_TO_SEC (2 bits) <ul style="list-style-type: none"> 00: ignore 01: set 10: test 11: set and test • RESERVED (4 bits) |

| | |
|-------|---|
| &ESRR | Current sequence numbers RSP(STSN) Total 5 bytes: <ul style="list-style-type: none"> • SEC_TO_PRI_SQN (2 bytes) • PRI_TO_SEC_SQN (2 bytes) • ACTION_CODE_SEC_TO_PRI (2 Bit) <ul style="list-style-type: none"> 00: ignore 01: set 10: test 11: set and test • ACTION_CODE_PRI_TO_SEC (2 bits) <ul style="list-style-type: none"> 00: ignore 01: set 10: test 11: set and test • RESERVED (4 bits) |
| &EBSR | Current bracket state <ul style="list-style-type: none"> • "BETB" = BETween Bracket • "INBR" = IN Bracket Receive (local side without send authorization) • "INBS" = IN Bracket Send (local side with send authorization) |

K089 Request to delete asynchronous message (&GNDATE/&GNTIME) for destination &DEST accepted.
 &GNUSER / &USER / (&DLDATE/&DLTIME) / &CHAIN

| &CHAIN | Meaning |
|--------|--|
| NO | No negative confirmation job of the deleted message was present. |
| DEL | The negative confirmation jobs should also be deleted. |
| ACT | The negative confirmation job should be activated, i.e. inserted in the message chain of its receiver. |

Any positive confirmation job is always deleted when the job is executed.

K090 Request to delete all asynchronous messages for destination &DEST accepted.
 &USER / (&DLDATE/&DLTIME)

K091 Due to a resource bottleneck no sign-on can be processed by application &BCAP at this time - try later

This message additionally contains the following insert:

&REA7 Reason why the sign-on failed. The values in &REA7 are described at message K147, see section "[Messages K147- K189](#)".

K092 Please enter password
> &PAS1 <
If you wish to change the password, please enter new password
> &PAS2 <
and repeat new password
> &PAS3 <

K093 Service cannot be stacked.
See also KDCDEF control statement MAX, operand NRCONV.

K094 Sequence of unsuccessful sign-on attempts

With this message openUTM initiates a silent alarm to indicate a sequence of unsuccessful sign-on attempts by a user or from a client. A response to this situation can be made in the application via the MSGTAC program unit, for example. The SIGNON SILENT-ALARM=*nnn* parameter of the KDCDEF utility can be used to set the number of unsuccessful attempts after which openUTM is to generate message K094.

The message contains the following inserts:

| Inserts | Meaning |
|---------|---|
| &PTRM | Terminal name |
| &PRNM | Processor name |
| &BCAP | Application name |
| <RM | Logical terminal name |
| &USER | User ID |
| &RCF1B | Reason for the rejection |
| &REA4 | Originator of the rejection (L=LTERM, U=USER, B=BOTH) |

Insert &USER contains the login name of the last unsuccessful sign-on attempt in the sequence. This may be a login name generated for the application or any character string passed to UTM as a login name.

Insert &RCF1B consists of three characters indicating the reason why the last sign-on attempt in the sequence was rejected. It is set by UTM as for return fields KCRSIGN1 and KCRSIGN2 of KDCS call SIGN ST.

The &REA4 insert specifies, if the user (U), the client LTERM (L) or both (B) have caused the message. The counter for the unsuccessful sign-on attempts is reset to zero.

K095 Sign-off is effective - please enter <SEND>

K096 Return to interrupted service - please enter <SEND>

K097 Input for new password cannot be used - please sign on

K098 Input exit returned error information &RCF1C &RCF2B - input please

This message is generated if errors are detected by UTM or by the exit itself when the INPUT exit is called.

Insert &RCF1C indicates what openUTM discovered during or after the INPUT exit:

| &RCF1C | Meaning |
|-------------------|--|
| IN00 | INPUT exit call okay from UTM standpoint |
| IN01 | Error in calling up INPUT exit via IUTMHLL |
| IN02 | KDCS call in INPUT exit |
| IN03 | Output parameters do not match KCICCD |
| IN04 | Illegal value in KCICCD |
| IN05 | DB USER CALL in INPUT exit |
| IN06 | Signal in INPUT exit |

Insert &RCF2B indicates what the INPUT exit has entered in the KCIERRCD output parameter in the case of KCICCD = 'ER'.

K099 &MSG

This message is output by openUTM when an STXIT event occurs, or as a supplement to message K078, or when the ENTER-PROC-INPUT start parameter is too long. In the first case the insert &MSG contains:

```
STXIT occurred in TAC: tacname at date: yy-mm-dd time: hh:mm:ss
```

In the second case the insert &MSG contains additional return codes.

In the third case the insert &MSG contains:

```
KDCRTBF: maximum length(2000 byte) of ENTER-PROC-INPUT exceeded!
```

This message is also output as an information message in the case of generated memory pools. In this case, it provides information about the actual allocation of the memory pool by the shared components of the application program loaded in this pool. Two K099 messages are output: The first indicates the relevant memory pool and the second the level of occupancy by generated shared components if this pool is generated with write-protection.

K101 Resource Bottleneck - please repeat last input

This message is output in response to any of the following events:

- If a dialog input message should be buffered in the page pool due to a TAC class waiting situation, and there is not enough room in the page pool
- If an input message destined for an asynchronous program, a TAC queue or a temporary file is to be saved to the page pool and either warn level 2 has been exceeded or there is not enough room in the page pool
- If an input message is intended for an asynchronous program, a TAC queue or a temporary queue, and the number of messages saved for this asynchronous TAC, this TAC queue or this temporary queue has already reached or exceeded the generated value of QLEV, and the temporary queues were generated with QMODE=STD

5.1.4 Messages K102 - K103

K102 Interrupt weight &CIW at program count &CPC &CDSPL.
Instruction length code : &CILC program mask : &CPM condition code : &CCC AMODE : &CAMODE
R0 &CR0 R1 &CR1 R2 &CR2 R3 &CR3 R4 &CR4

The messages K102 and K103 are output together (see explanation of the message K103).

K103 R5 &CR5 R6 &CR6 R7 &CR7 R8 &CR8 R9 &CR9
R10 &CR10 R11 &CR11 R12 &CR12 R13 &CR13 R14 &CR14
R15 &CR15

Outputs the context when an STXIT occurs (see also the table in the [section "Message inserts"](#)).

Interrupt weight 48:

If the STXIT event 48 occurs with the program KDCS + 8, this means that an address that cannot be accessed was specified for the KDCS parameter area when the KDCS interface was called.

Action: Change the application program unit.

Interrupt weight 90:

If a termination attempt is made in a program unit (e.g. with the "exit (1)" statement in a C++ or C program), a number of runtime modules are called before openUTM receives control of the application program. For this reason, the most recently available register record is interpreted when the register record is displayed.

You can then find the module responsible for termination via stack chaining if you register 13 points to a valid save area.

5.1.5 Messages K104 - K146

K104 UTM-D &UTMDEVT (&RCVDANNO): &LSES , &LPAP , &AGUS; old state: (&OCVST, &OTAST); action: &ACTION; new state: (&NCVST, &NTAST).

In the case of communication via LU6.1, the message is output on the following events:

- One of the following timers times out:
 - Session/association occupation timer (*time1* in the WAITTIME parameter in the LTAC statement). In this case, &LSES contains blanks.
Exception: Timeout after occupation of a contention loser session.
Special case: If the session occupation timer of a contention winner session equals 0 and there is no session free at the end of the program unit, this is treated like the timeout of a timer.
 - Response timer (*time2* in the WAITTIME parameter in the LTAC statement).
In this case, &LSES and &AGUS contain different names.
 - Prepare-to-commit timer (value of PTCTIME in the UTMD statement).
&LSES and &AGUS are identical.
- A connection loss if the session is occupied
 - by a conversation with an open transaction or
 - by a conversation that has initiated transaction termination.
- In the case of a session restart where the session is occupied by a service that has initiated transaction termination

In the case of communication via OSI TP, the message is output on the expiry of one of the following timers. &LSES always contains blanks.

- Association occupancy timer (for dialog jobs see value *time1* in KCDEF statement LTAC, parameter WAITTIME, for asynchronous jobs internal value of 60 seconds).
In the case of an asynchronous job, &ACTION contains the value ASYNCH.
- Response timer (for dialog jobs, see value *time2* in KCDEF statement LTAC, parameter WAITTIME, for asynchronous jobs, see value *time2* in KCDEF statement UTMD, parameter CONCTIME).
In the case of a dialog job, processing waits for the response and in the case of asynchronous jobs, processing waits for the acknowledgment from the job receiver. In the case of an asynchronous job, &ACTION contains the value ASYNCH.
- PEND KP and PGWT KP timers (see KDCDEF statement MAX, parameter TERMWAIT or PGWTTIME).
- Ready timer (see KDCDEF statement UTMD with parameter PTCTIME or KDCDEF statement MAX with parameter PGWTTIME)

| Inserts | Meaning | |
|----------|--|-----------------|
| &UTMDEVT | Event in response to which the message is issued | |
| | RESTART | Session restart |
| | DISCON | Connection loss |

| | TIMEOUT | Time out |
|-----------|---|---|
| &RCVDANNO | Last announcement received at the UTM exchange. In the case of &UTMDEVT = TIMEOUT, the last two bytes in &RCVDANNO have the following meaning: | |
| | X'F330' X'F331' | Timer expiry in OSI-TP job-receiving service after sending a message to a job submitter in a transaction (see KDCDEF statement MAX, parameter TERMWAIT or PGWTTIME). |
| | X'F332' | Timer expiry in OSI-TP job submitter service after all job receivers have been requested to initiate the end of the transaction. The timer corresponds to the greater of the generated values <i>time</i> in the KDCDEF statements MAX PGWTTIME= and <i>time2</i> in the KDCDEF statement LTAC WAITTIME= of the participating LTACs. |
| | X'F333' | Expiry of the ready timer in the OSI-TP job-receiving service (KDCDEF statement UTMD, parameter PTCTIME or KDCDEF statement MAX PGWTTIME=). |
| | X'F400' | Expiry of the OSI-TP association occupancy timer for a dialog job (<i>time1</i> in KDCDEF statement LTAC, parameter WAITTIME). |
| | X'F520' | Expiry of the OSI-TP association occupancy timer for an asynchronous job (internal 60-second timer). |
| | X'F522' | Expiry of the timer which monitors the reception of an acknowledgment for a queued message sent via an OSI-TP association (<i>time2</i> in KDCDEF statement UTMD, parameter CONCTIME). |
| | X'F534' | Expiry of the OSI-TP response timer in the job-submitter service for a dialog job. The timer corresponds to the greater of the generated values <i>time</i> in the KDCDEF statements MAX PGWTTIME= and <i>time2</i> in the KDCDEF statement LTAC WAITTIME= of the participating LTACs |
| | X'F800' | Expiry of the LU6.1 session occupancy timer for a dialog job (<i>time1</i> in KDCDEF statement LTAC, parameter WAITTIME). |
| | X'F933' | Expiry of the Prepare-to-Commit timer in the LU6.1 jobreceiving service (KDCDEF statement UTMD, parameter PTCTIME or KDCDEF statement MAX, parameter PGWTTIME). |
| X'F934' | Expiry of the LU6.1 response timer in a dialog job (The timer corresponds to the greater of the generated values for <i>time</i> in the KDCDEF statement MAX PGWTTIME= and <i>time2</i> in the KDCDEF statement LTAC WAITTIME= of the participating LTACs). | |

| | | |
|--------------------------------------|--|---|
| | X'F935' | Expiry of the LU6.1 response timer in a dialog job after reestablishment of the LU6.1 session (The timer corresponds to the greater of the generated values for <i>time</i> in the KDCDEF statement MAX PGWTTIME= and <i>time2</i> in the KDCDEF statement LTAC WAITTIME= of the participating LTACs) |
| | X'F936' | Expiry of the LU6.1 response timer on service restart after the establishment of a session (<i>time2</i> in KDCDEF statement LTAC, parameter WAITTIME) |
| &AGUS | Name of the job submitter (user, session or association) | |
| &ACTION | Response taken by openUTM: | |
| | COMMIT | Terminate transaction |
| | RESET | Roll back transaction |
| | WAIT | Nothing |
| | STPROG | Start of successor program |
| | ASYNCH | Re-execution of the asynchronous job. |
| &OCVST &OTAST &NCVST &NTAST | Service and transaction status of the job submitter specified in &AGUS (before and after the action specified in &ACTION). Possible values: | |
| | O O | Service and transaction are open. |
| | O P | The service is open and has initiated the end of the transaction. |
| | O C | The service is open and the transaction terminated. |
| | C C | The service and transaction have been terminated. |
| | O R | The transaction was rolled back and the service remains open. |
| | Z R | The transaction has been rolled back and the service has been terminated. |

K105 UTM-D &SYST mismatch; &LSES , &LPAP , &AGUS

&SYST contains the system with which a mismatch occurred:
DB = database / LPAP = other application

K106 Output message discarded

K107 Terminal type &TTY is not supported by VTSU or connection letter is wrong.

K108 Error &KRRC during Kerberos authentication.

The message contains the following inserts:

| Inserts | Meaning |
|----------------|--|
| &KRLH | Length of the client or server principal |
| &KRPR | The first 100 characters of the client or server principal. If the length of the principal is less than 100 then the content of the remaining characters is undefined. |
| &KRRC | Return code |

The return code KRRC is structured in accordance with the BS2000 standard header and has the following significance:

| SC2 | SC1 | MC | Meaning |
|------------|----------------|--|---|
| X'00' | X'00' | X'0000' | Function executed without error |
| | X'01' X'02' | X'0018' | The output area is not large enough to store the entire Kerberos principal. |
| | | X' FFFE' | Parameter error. |
| | | X' FFFF' | Function not available. |
| | X'03' | X' FFFF' | Function not available. |
| | | | Version not supported. |
| | X'20' | X' 00FF' | Internal SECOS error. A SERSLOG entry has been created. |
| | X'40' | X'0001' | The connection partner ticket is no longer valid. A valid client principal is present in the output area. |
| | | X'0002' | The connection partner ticket is too old. The client is located in the output area. |
| | | X'0003' | The server and client realm are different. However, this is forbidden in the system settings. The client is located in the output area. |
| | | X'0014' | The key table does not contain an entry with the specified ENTRY-ID. No entry in the output area. |
| | X'41' | X' FFFF' | The SECOS subsystem is not loaded. |
| | X'42' | X' FFFF' | The SECOS subsystem is not linked. |
| X'81' | X' FFFF' | The SECOS subsystem is not currently accessible. | |

| | | | |
|-------|-------|-------------|---|
| | X'82' | X' FFFF' | The SECOS subsystem has been halted or stopped. |
| X'01' | X'40' | X'0008' | The connection partner's ticket is invalid. The server's principal is located in the output area. |
| | | X'0009' | The connection partner's ticket is encrypted with an algorithm for which there is no key in the BS2000 system. The server's principal is located in the output area. |
| | | X' 000A' | There is no key in the BS2000 system for the server specified in the ticket. The server's principal is located in the output area. |
| | | X' 000B' | The key version specified in the ticket is not present in the BS2000 system . The server's principal is located in the output area. |
| X'02' | X'40' | X'0010' | Problem with VTSU-B. The possible causes are: <ul style="list-style-type: none"> • The connection partner does not support any Kerberos authentication. • The user has interrupted the authentication operation using a K key. No entry in the output area. |
| | | X'0011' | The connection partner has supplied a ticket which could not be interpreted. No entry in the output area. |
| | | X'0012' | The terminal emulation uses a protocol version which is not supported. No entry in the output area. |
| | | X'0013' | The connection was interrupted during authentication. No entry in the output area. |

K109 Error &KRRC during Kerberos authentication - please sign on

Inserts see message [K108](#).

K110 Invalid Kerberos Principal (&KRPR) - please sign on

Inserts see message [K108](#).

K111 Sign-on not possible because of missing Kerberos support - please sign on

K112 A password change is not possible at this time

K115 MUX protocol error: &PTRM/&PRNM/&BCAP/<RM
&SNPT/&SNPR/&SNLT &CCC &REA1
&ANNO

| Inserts | Meaning |
|----------------|--|
| &PTRM | PTRM name of the transport connection |
| &PRNM | Processor name of the transport connection |
| &BCAP | BCAM application name |
| <RM | LTRM name of the transport connection |
| &SNPT | PTRM name of the session |
| &SNPR | Processor name of the session |
| &SNLT | LTRM name of the session |
| &CCC | Error context (see table below) |
| &REA1 | Error cause |
| &ANNO | BCAM announcement |

| &CCC | Meaning |
|-----------------|--|
| X'01' | The error can be assigned to an existing session for multiplex connection. |
| X'02' | Error on BIND request. |
| X'03' | The error cannot be assigned. |

The insert &REA1 is only output for system diagnostics. The fields &SNPT, &SNLT and &SNPR can only be filled if the error can be assigned to a current session (&CCC=X'01') or if a session could be identified at the session setup (i.e. possibly with &CCC=X'02').

K116 MUX UNBIND: &PTRM/&PRNM/&BCAP/<RM
&SNPT/&SNPR/&SNLT/&USER &REA1

| &REA1 | Meaning |
|-------------------|---|
| X'01' | The user has cleared down the session by entering the KDCOFF command. |
| X'02' | The user has cleared down the session by entering the KDCOFF BUT command. |
| X'03' | A UTM-internal event caused the session to be cleared down (e.g. timeout for the session, administration, ...). |
| X'04' to X'07' | Protocol error |
| X'10' | The session was cleared down externally. |
| X'0E' | Message could not be read (LETTER_LOST). |

The insert &USER denotes the user to whom the session is assigned.

The other inserts have the same meaning as for message K115.

K117 MUX BIND rejected: &PTRM/&PRNM/&BCAP/<RM
&SNPT/&SNPR/&SNLT/&USER &REA1

| &REA1 | Meaning |
|------------------|---|
| X'01' | The specified interface version is not supported. |
| X'02' | The partner is responsible for sign-on handling. However, the sign-on data supplied was incomplete or incorrect. |
| X'03' | The maximum number of sessions is reserved, i.e. no further sessions can be reserved using this multiplex connection. |
| X'04' | The BIND request was rejected (general error code). |
| X'05' | The specified station is already signed on. |
| X'06' | The specified user is already signed on. |
| X'08' | The station information in the BIND is not consistent with the UTM generation. |
| X'09' | An incorrect password is supplied with the BIND. |
| X'0A' | The BIND request could not be read (LETTER_LOST). |
| X'0B' | Protocol error. |
| X'0C' | The specified station is not supported by the communication partner (UTM: DTP station, no dialog station, PTYPE=APPLI, ANNOAMSG=N). |

| | |
|-------|--|
| X'0D' | The specified station is not supported by the communication partner (UTM: PROTOCOL=N is generated). |
| X'0E' | Protocol error. |
| X'10' | Incorrect ID information with BIND. |
| X'11' | Invalid USER specified with BIND. |
| X'12' | No KSET for station. |
| X'13' | USER locked. |
| X'15' | Protocol error. |
| X'16' | Protocol error. |
| X'17' | Release pending, i.e. the session clear-down is in progress, but not yet completed. |
| X'18' | Transaction recovery - no sign-on for the user |
| X'1C' | Password is being checked |
| X'1D' | The new password is not sufficiently complex |
| X'1E' | Error in new password: new password = old password |
| X'1F' | The password is required |
| X'20' | KDCSIGN not permitted at present; user is already signed on |
| X'21' | No further users may sign on; the permitted number (MAX CONN-USERS) has been reached |
| X'22' | No new password specified |
| X'23' | Validity of password has lapsed |
| X'24' | The new password is too short |
| X'25' | Resource bottleneck |
| X'26' | Application is being terminated; SHUT WARN was issued |
| X'27' | The LTERM partner of the terminal does not have the correct key (KDCDEF statement) to continue the service |
| X'28' | After transfer of the password by KDCUPD, the password is no longer sufficiently complex or is too short |
| X'29' | PTERM name not known |
| X'2A' | Processor name not known |
| X'2B' | STATUS=OFF for this PTERM |

| | |
|-------|---|
| X'2C' | STATUS=OFF for this LTERM |
| X'2D' | Connection clear-down in progress |
| X'2E' | The LTERM/connection is generated on a different BCAM application |
| X'2F' | Processor name not known and also not a LTERM pool name |
| X'30' | No LTERM pool exists for station type or PTERM name not known |
| X'31' | No further free entry exists in LTERM pool |
| X'32' | Terminal already connected to the LTERM pool |
| X'33' | The LTERM pool is generated on a different BCAM application |
| X'34' | Connection request rejected due to contention |
| X'35' | Connection request rejected by VTSU, e.g. because of unsupported PTYPE or incorrect connection letter |
| X'36' | BCAM letter length too small |
| X'37' | BCAM return code not in order |

In the &USER insert, in some cases the USER specified in the BIND request is entered; otherwise, &USER contains blanks.

The meaning of the remaining inserts is the same as for message K115.

K118 Global transaction ID (length, data): (<HGTRID,>RID)
atomic action ID (length, data): (&AAIS,&AAID)

K119 OSI-TP error information: &OSLPAP, &USER, &TAC, &DIA1, &DIA2, &DIA3

The explanations in the tables below refer to (primitive) log elements at the XAP-TP interface. These data elements have the following meaning:

| Data element | Meaning |
|-----------------------|--|
| APM_ALLOCATE_CNF | Response (confirmation) to an association's request for an OSI-TP dialog. A negative response means that no association could be provided. |
| TP_BEGIN-DIALOGUE_REQ | Request to the partner to start an OSI-TP dialog. |
| TP_BEGIN_DIALOGUE_IND | Indication that the partner wants to start an OSI-TP dialog. |
| TP_BEGIN_DIALOGUE_CNF | Response to the request to start an OSI-TP dialog. A negative response means that the partner has rejected the dialog. |
| TP_END_DIALOGUE_REQ | Request to the partner to terminate the OSI-TP dialog. |
| TP_END_DIALOGUE_IND | Indication that the partner wants to terminate the OSI-TP dialog. |
| TP_U_ABORT_IND | Indication that the remote TP Service User ¹ has aborted the OSI-TP dialog. |
| TP_P_ABORT_IND | Indication that the remote TP Service Provider ² has aborted the OSI-TP dialog. |
| TP_DATA_IND | Indication that data has been transferred by the partner. |
| TP_U_ERROR_IND | Indication that the partner has reported an error. |
| TP_HANDSHAKE_IND | Indication of a synchronization (handshake) request by the partner. |
| APUTM_ABORT_REQ | Request to abort a connection. |

¹TP Service User: UTM application

²TP Service Provider: System section which provides the OSI-TP service. In the case of openUTM; this is the XAP-TP component.

The &DIA1 insert contains the reason for outputting message K119.

| &DIA1 | Meaning |
|------------------|---|
| 1 | A negative APM_ALLOCATE_CNF was received. |
| 2 | A negative TP_BEGIN_DIALOGUE_CNF was received. |
| 3 | A TP_BEGIN_DIALOGUE_IND was rejected by openUTM. |
| 4 | A TP_U_ABORT_IND or TP_P_ABORT_IND was received. |
| 5 | A TP_ERROR_IND was received. |
| 6 | UTM does not support reception of TP-HANDSHAKE-IND for a dialog message. |
| 7 | openUTM does not support reception of TP-END-DIALOGUE-IND from the client for a dialog message. A dialog RTAC may have been generated for an asynchronous LTAC. |
| 8 | With the unchained transactions functional unit, openUTM requires that the transaction starts with a dialog. |
| 9 | The association was rejected with APUTM_ABORT_REQ. |
| 10 | Resource bottleneck in UTM |

The inserts &DIA2 and &DIA3 contain additional information depending on the value of &DIA1:

| &DIA1 | &DIA2 / Meaning | &DIA3 / Meaning | |
|------------------|---|----------------------------|--|
| 1 | Cause of rejection: 0 = ACSE Service User 1 = ACSE Service Provider | Diagnostic information: | |
| | | -1 | No reason given |
| | | 1 | Association Establishment Timeout For UTM applications on BS2000 systems this might be caused by a missing BCMAP-Entry. |
| | | 2 | Application Context Name is not supported |
| | | 3 | Job submitter's Application Process Title (APT) is unknown |
| | | 4 | Job submitter's Application Identifier (APID) is unknown |
| | | 5 | Job submitter's Application Entity Qualifier (AEQ) is unknown |
| | | 6 | Job submitter's Application Entity Identifier (AEID) is unknown |
| 7 | Job receiver's Application Process Title (APT) is unknown | | |

| | | | |
|---|--|----|---|
| | | 8 | Job receiver's Application Identifier (APID) is unknown |
| | | 9 | Job receiver's Application Entity Qualifier (AEQ) is unknown |
| | | 10 | Job receiver's Application Entity Identifier (AEID) is unknown |
| | 2 = Presentation Service Provider | - | Not relevant |
| | 6 = TP Service Provider | -1 | No reason given. |
| | | 0 | CCR version 2 not available. |
| | | 1 | Incompatible TP protocol version |
| | | 2 | No contention winner association available. Possible cause: The number of associations in the partner application is smaller than in the local UTM application. |
| | 7 = Association Pool Manager | -1 | No reason given. |
| | | 4 | Association Pool Manager cannot construct any further associations. |
| | | 6 | Local or remote Application Entity Title (AET) is unknown. |
| | | 7 | No matching association found for the specified AET. |
| 2 | Cause of rejection: | | Diagnostic information: |
| | 2 = TP Service Provider 3 = TP Service User | 0 | No reason given. |
| | | 1 | TPSU title not known. |
| | | 2 | TPSU title permanently unavailable. |

| | |
|-------------------------|--|
| | <p>3 The possible reasons are:</p> <ul style="list-style-type: none"> • TPSU title temporarily unavailable. • No free OSI TP instance table for the ACCESS-POINT is available in the partner application. • No free dialog table available. • There is another resource bottleneck in openUTM. Message K119 with &DIA1=10 at the job receiver contains more detailed information about the type of bottleneck. <p>Action: Generate a larger number of associations for the ACCESS-POINT's OSI-LPAP partner at the partner application.</p> |
| | 4 No TPSU title specified. |
| | 5 Functional unit not supported. |
| | 6 Combination of functional units not supported. |
| | 7 Association reserved for partner. |
| | 8 Partner AEI unknown. |
| | 11 Functional Unit Shared Control not supported by openUTM. |
| | 12 TPSU title cannot be decoded. |
| | 13 Type of TPSU title not supported. |
| | 14 TPSU title is too long. |
| 2 = TP Service Provider | 15 Decoding error for user data. |
| 3 = TP Service User | 16 Decoding error for security data. |
| | 17 Abstract syntax (UTMSEC) unknown or not generated. |
| | 18 User ID unknown or partner application generated without USER or user ID rejected, e. g. due to incorrect password. |
| | 19 Partner not available, e.g. locked (STATUS=OFF) or due to QUIET command. |
| | 20 User ID or password too long. |

| | | | |
|---|---------------------|-------------------------|--|
| | | 21 | Warning level 2 for page pool exceeded. |
| | | 22 | The possible reasons are: <ul style="list-style-type: none"> • Invalid transaction code • Transaction code locked • No administration rights. |
| | | 23 | Transaction code not generated with CALL=FIRST. |
| | | 24 | Asynchronous service cannot be started. The queue level generated for the asynchronous TAC (maximum number of messages in the message queue) has already been reached. |
| | | 25 | Dialog service cannot be started because the transaction code has been generated as an asynchronous TAC (KDCDEF statement TAC TYPE=A). |
| | | 26 | Combination of functional unit and restart functionality (KDCDISP) is not supported. |
| 3 | Cause of rejection: | Diagnostic information: | |
| | 3 = TP Service User | 4 | No TPSU title specified |
| | | 11 | Functional Unit Shared Control not supported by openUTM. |
| | | 12 | TPSU title cannot be decoded. |
| | | 13 | Type of TPSU title not supported. |
| | | 14 | TPSU title is too long. |
| | | 15 | Decoding error for user data. |
| | | 16 | Decoding error for security data. |
| | | 17 | Abstract syntax (UTMSEC) unknown or not generated. |
| | | 18 | User ID unknown or partner application generated without USER or user ID rejected, e. g. due to incorrect password. For more detailed information, see the previous message K147. |

| | | | |
|---|--|--|---|
| | | 19 | Partner not available, e.g. locked (STATUS=OFF) or due to QUIET command. |
| | | 20 | User ID or password too long. |
| | | 21 | Warning level 2 for page pool exceeded. |
| 4 | Cause of rejection: | Diagnostic information: | |
| | 2 = TP Service Provider 3 = TP Service User | 0 | No reason given. |
| | | 1 | A permanent error has occurred. |
| | | 2 | TP_BEGIN_TRANSACTION_REQ rejected. |
| | | 3 | A temporary error has occurred. |
| | | 4 | A protocol error has occurred. |
| | | 5 | Collision of two TP_END_DIALOGUE_REQ primitives. |
| | 6 | Collision of TP_BEGIN_TRANSACTION_REQ and TP_END_DIALOGUE_REQ. | |
| 9 | Cause of rejection: | Diagnostic information: | |
| | 3 = TP Service User | 21 | Warning level 2 for page pool reached. The queued message could not be saved. |
| | | 31 | The KDCFILE file is full: The message could not be saved. |
| | | 32 | Decoding error for the UDT data of a TP_DATA_IND primitive |
| | The association is interrupted in all cases. | | |

| &DIA1 | &DIA2 / Meaning | &DIA3 / Meaning |
|-------|---|-------------------------|
| 10 | Affected resources: | Diagnostic information: |
| | 11 No free OSI TP instance table for this ACCESS-POINT is available in the application of the job-submitting service. The cause is a message to an OSI TP partner when all OSI TP instance tables are occupied. The message is entered in a queue. Action: Generate a larger number of associations for the access point's OSI-LPAP partners. ¹ | Not relevant |

| | | |
|----|---|--------------------|
| 12 | <p>No free OSI TP instance table for this OSI-LPAP partner is available in the application of the job-submitting service. The cause is a message to the OSI TP partner when all OSI TP instance tables are occupied. The message is entered in a queue.</p> <p>Action: Generate a larger number of associations for the access point's OSI-LPAP partners.¹</p> | OSI-LPAP index |
| 13 | <p>The instance is occupied in XAPTP in the application of the job-submitting service. The message is entered in a queue.</p> <p>Action: Generate a larger number of associations for the access point's OSI-LPAP partners.¹</p> | UTM instance index |
| 14 | <p>In the application of the job-submitting service, an error occurred while reading the queued message to be sent. The message is entered in a queue.</p> | Not relevant |
| 15 | <p>No free OSI TP node table available. This error can occur in both an application of a job-submitting service and in an application of a job-receiving service.</p> <p>In an application of a job-submitting service, the message is entered in a queue.</p> <p>Action: Generate a larger number of associations for the OSI-LPAP partners.¹</p> | Not relevant |
| 16 | <p>There is no free OSI TP service available in the application of the job-receiving service.</p> <p>Action: Generate a larger number of associations for the OSI-LPAP partners.¹</p> | Not relevant |
| 17 | <p>There is no free OSI TP user table for the OSI-LPAP partner in the application of the job-receiving service.</p> <p>Possible cause: A dialog program unit whose association has been interrupted in the interim is still active for the OSI-LPAP partner.</p> | OSI-LPAP index |

¹ KDCDEF generation OSI-LPAP ASSOCIATIONS=

K120 Password expired - please sign on

K122 Your password is valid for &NUMDAYS more day(s) only

K123 LTERM does not have the rights to continue the service - please sign on

K124 Error: &RCOSTS (&RCXAPTP) at startup of XAP-TP occurred in phase: &PHAXAPTP

This message is output as a diagnostic aid for errors which occur when starting XAP-TP

Meaning of the inserts:

&RCOSTS Return code specifying the error in more detail. Depending on the phase (value of &PHAXAPTP), the return codes have different meanings. If the return code is not listed in the following table, it is an internal error (in this event, you must write a problem report).

&RCXAPTP Return code specifying the internal error in more detail.

&PHAXAPTP Phase during start of XAP-TP. Possible values:
INIT (passing of the generation values to XAP-TP)
START/RECOVERY (OPEN and BIND of the instances and recovery of incomplete transactions).

| &PHAXAFTP | &RCXAFTP | Meaning |
|-----------|----------------|--|
| INIT | 18 | The OSS version is lower than 4.0A20. |
| | 20 | KDCFILE and ROOT do not match. Possible cause: A new KDCFILE was generated with KDCDEF (new: with OSI-TP, old: without OSI-TP); the UTM application was, however, not relinked or the ROOT source was not recompiled. |
| | 16 60 85 | Not enough memory space could be allocated to cover the OSI-TP-specific generation values. |
| | 21 | The KCSALME call to create the transfer buffer for the transfer syntaxes returned a bad return code. |
| | 41 | The "apext_init" sequence has already been executed. |
| | 44 | The KCSALME call to create the transfer buffer for the abstract syntaxes returned a bad return code. |
| | 63 | The KCSALME call to create the transfer buffer for the access points returned a bad return code. |
| | 99 | A function called by "apext_att" returned a bad return code. This return code can also mean that the address space that the OSS wants to allocate for its shared memory in a follow-up task is already being used as shared memory (e.g. by KAA, XAFTP global memory). Response: try to start additional tasks. |
| | 102 | Error on attach. Action: Check whether an application is already signed-on under this name at this computer. |
| | 106 | XAFTP "apext_att" call Return code: APEXT_ATTACH_INVEREF Meaning: The waiting point reference specified in the OSS o_attach call is invalid or is not (or no longer) recognized. Possible cause: Follow-on task cannot be started because the application has already been terminated. |

K125 Password not complex enough - contact administrator or sign off

The complexity of the password is inadequate. It does not correspond to the complexity level generated in the KDCDEF statement USER...,PROTECT-PW=(.,level,..).

Action: Administrator must assign new Password

K126 SAT error information: &SATRC

The &SATRC insert contains the reason for outputting message K126.

The hexa characters of the return code (XXSSMMMM) have the following meaning (with SATCP V1.0A and later)

| SS | Meaning |
|---------|---------------------------------------|
| 01 - 40 | System error |
| 41 - 42 | SATCP not available |
| 80 - 82 | SAT function currently not executable |

Additional return codes with SATCP V2.0A and later

| SS | MMMM | Meaning |
|----|------|--|
| 00 | 0001 | SAT log record buffered |
| 00 | 0101 | SATCP in start phase |
| 00 | 0102 | SATCP in hold mode |
| 00 | 0103 | SATCP in shutdown phase |
| 00 | 0104 | Event not logged |
| 00 | 0105 | Event rejected by system exit routine #110 |

The BS2000 security officer should be informed if there are no system errors.

K127 Internal error in UTM - ROOT: &ERCD6

Insert &ERCD6 contains the reason why message K127 was output.

K128 UTM-D job rejected: &CON/&PRNM/&BCAP/&LPAP &LSES &REA1 &RCDC &TAC

If the job is an OSI-TP UTM-D job, the inserts have the following meanings:

&CON: OSI-CON name

&PRNM: Eight blanks

&BCAP ACCESS-POINT name

&LPAP OSI-LPAP name

Insert &REA1 contains the reason why message K128 was output.

| &REA1 | Meaning |
|------------------|--|
| X'01' | Invalid transaction code <ul style="list-style-type: none"> • LU6.1: DPN or PRN in FMH-5 or FMH-6 or the first 8 characters of the message • OSI-TP: Recipient tpsu title in TP-BEGIN-DIALOGUE-RI &RCDC contains an error code KCRCDC |
| X'02' | Transaction code not generated with CALL=FIRST <ul style="list-style-type: none"> • LU6.1: DPN or PRN in FMH-5 or FMH-6 or the first 8 characters of the message • OSI-TP: Recipient tpsu title in TP-BEGIN-DIALOGUE-RI |
| X'03' | An asynchronous service is to be started, TAC is generated with TYPE= D <ul style="list-style-type: none"> • LU6.1: Message with begin bracket and end bracket • OSI-TP: Receipt of an TP-END-DIALOGUE-RI protocol element |
| X'04' | A dialog service is to be started, TAC is generated with TYPE=A <ul style="list-style-type: none"> • LU6.1: Message with begin bracket and change direction • OSI-TP: Receipt of TP-GRANT-CONTROL-RI or TP-HANDSHAKE-AND-GRANT-CONTROL-RI. |
| X'05' | An asynchronous service is to be started but the QLEV of the asynchronous TAC has already been reached. <ul style="list-style-type: none"> • LU6.1: The connection is cleared down. • OSI-TP: The connection is cleared down. |
| X'06' | Only in the case of heterogeneous connections via LU6.1: A asynchronous message was received with RQE. openUTM expects RQD2. Action: In the case of CICS, it is necessary to specify NOCHECK and PROTECT in the START command. |
| X'07' | Only for heterogeneous connection using LU6.1: A message was received with EC and RQD2 but neither CD nor EB is set. Response: modify CICS or IMS program. |

K129 &CMD - start parameter not allowed at this moment! Statement ignored

K130 Task priority &TPRIO not allowed for task &TASK! Priority not changed.

K132 &OBJ1 and &OBJ2 have not been generated by the same KDCDEF run

K133 Program for &EXIT missing!

K134 Message to &DEST has been placed into dead letter queue. &NMSG message(s) in dead letter queue

As soon as the generated threshold is reached, this message informs the administrator of asynchronous messages which have been sent to the dead letter queue after abnormal processing.

The inserts have the following meaning:

| Insert | Meaning |
|--------|--|
| &DEST | Original destination of the message which resulted in the dead letter queue threshold being reached. |
| &NMSG | Generated threshold value for the number of messages in the dead letter queue. |

K135 UPIC message :

&PTRM/&PRNM/&BCAP/<RM/&UPCREAS/&UPCSTAT/&UPCPROT/&UPVENC1/&UPPENC2

A problem occurred in interoperation with a UPIC client. The value of insert &UPCREAS indicates the cause of the problem. The possible values for &UPCREAS and their meanings are described in the following table.

| &UPCREAS | Meaning | Reason / Response |
|----------|---|---|
| 01 | UPIC client sends without send right | Error in product UPIC or UTM |
| 02 | UPIC client sends protocol which is too short | Error in product UPIC |
| 03 | UPIC client proposes a protocol version which is not supported for the connection setup | UPIC version incompatible with openUTM version |
| 04 | UPIC client sends invalid protocol | UPIC error |
| 05 | UPIC client has initiated abortion of the conversation | Effect of the UPIC function Deallocate() (CMDEAL()) |
| 06 | UPIC client has not sent a TAC | UPIC error or subsequent error after a suppressed service restart |
| 07 | TAC sent by the UPIC client <ul style="list-style-type: none">• is not generated• LTERM/USER don't have a key• is administrator TAC and the USER is not administrator• is existing and program does not exist. | User error (Side info or SETTP) |
| 08 | UPIC client has sent a TAC generated with CALL=NEXT | User error |

| | | |
|----|---|--|
| 09 | UPIC client has sent a TAC which is locked/deleted, or has too low encryption | User error (Side info or SETTP) |
| 0A | UPIC client has sent a TAC which is too short | UPIC error |
| 0B | UPIC client has sent a TAC when a service is open | UPIC error |
| 0C | UPIC client has sent a TAC for a continuation section | UPIC error |
| 0D | UTM page pool is too small for input message | Page pool for application generated too small (statement MAX PGPOOL) |
| 0E | UPIC client grants only send right when a message is open | UPIC error |
| 0F | UPIC client grants send right when a message is open without closure of current message section | UPIC error |
| 10 | UPIC client has sent a TAC generated with TYPE=A (asynchronous TAC) | User error |
| 11 | UPIC client is assigned to an LTERM with STATUS=OFF (locked) on connection setup | Normal behavior |
| 12 | UPIC client is assigned to an LTERM with STATUS=OFF (locked) on message receipt | Normal behavior Administrator has locked LTERM |
| 13 | UPIC client has sent USER with invalid length | UPIC error |
| 14 | UPIC client has sent invalid USER or PASSWORD | User error |
| 15 | UPIC client has sent invalid data for service restart, e. g. KDCDISP without USER or with additional user data. | User error |
| 16 | UPIC client has sent invalid data for service restart, e. g. KDCDISP for USER with RESTART=NO | User error |
| 17 | UPIC partner has sent a user but the UTM application is generated without users. | User error |
| 18 | Invalid length of the protocol token received. | UPIC error |
| 19 | Invalid protocol token has been received. | UPIC error |
| 1A | Overall length of the received data is inconsistent. | UPIC error or transport system error |
| 1B | The protocol token for data was not the last protocol token. | UPIC error |

| | | |
|----|--|-------------------|
| 1C | Two protocol tokens for the service were received. | UPIC error |
| 1D | Two protocol tokens for the user ID were received. | UPIC error |
| 1E | Two protocol tokens for the password were received. | UPIC error |
| 1F | Two protocol tokens for the form were received. | UPIC error |
| 20 | Two protocol tokens for the function key were received. | UPIC error |
| 21 | No protocol tokens for data were received. | UPIC error |
| 22 | Inconsistent sign-on data was received. | UPIC error |
| 23 | A protocol token was received for a user ID, but not for a service. | UPIC error |
| 24 | Invalid function key. | UPIC error |
| 25 | Protocol token for a form was received in a data fragment. | UPIC error |
| 26 | Protocol token for a function was received in a data fragment. | UPIC error |
| 27 | Invalid encryption level | UPIC or UTM error |
| 28 | Length of the received user message is invalid | UPIC error |
| 29 | An error occurred during the protocol discussion | UPIC or UTM error |
| 2A | Two protocol tokens were received for encrypted data | UPIC error |
| 2B | Two protocol tokens were received for one encrypted password | UPIC error |
| 2C | Two protocol tokens were received for one RSA key | UPIC error |
| 2D | Two protocol tokens were received for one DES or AES key | UPIC error |
| 2E | Two protocol tokens were received for one cursor | UPIC error |
| 2F | Two protocol tokens were received for one protocol discussion | UPIC error |
| 30 | No protocol tokens were received for encrypted data | UPIC error |
| 31 | One protocol token for one password and one encrypted password were received | UPIC error |
| 32 | An error occurred while decrypting the password | UPIC or UTM error |

| | | |
|----|---|--|
| 33 | The decrypted password is longer than the length supported by openUTM in this version. | UPIC error or the UPIC version supports longer passwords |
| 34 | An error occurred while reading the DES key | UPIC or UTM error |
| 35 | The RSA key cannot be sent | UPIC error |
| 36 | An error occurred while reading the RSA key | UPIC error |
| 37 | An error occurred while encrypting the data | UPIC error |
| 38 | An error occurred while decrypting the data | UPIC or UTM error |
| 39 | The message was encrypted with a lower encryption level than was negotiated for the service. | UPIC error |
| 3A | The protocol discussion could not be completed | UPIC error |
| 3B | An error occurred while exchanging keys | UPIC error |
| 3C | The UPIC client does not support encryption | Normal behavior, change UTM generation |
| 3D | Two protocol tokens were received for the transaction status | UPIC error |
| 3E | Two protocol tokens were received for the client context | UPIC error |
| 3F | The length of the user message in the connection letter is not compatible with the protocol version | UPIC error |
| 40 | openUTM does not support encryption | Normal behavior, change UTM generation |
| 41 | Two protocol tokens received for new password | UPIC error |
| 42 | Two protocol tokens received for encrypted new password | UPIC error |
| 43 | Protocol tokens received for new password and encrypted new password | UPIC error |
| 44 | Impermissible operation code occurred with the call of the internal function PASSWD_ENCRYPT_PROC to decrypt a password. | UPIC error |
| 45 | Two protocol tokens received for the client type. | UPIC error |
| 46 | No RSA key could be found. | Activate one of the RSA keys |

| | | |
|----|--|--|
| 47 | UPIC client proposes no protocol version for the connection setup. | No UPIC client or UPIC error |
| 48 | UPIC client sends protocol version that was not negotiated. | UPIC error |
| 49 | The password received from the client is longer than supported by openUTM in this version. | UPIC error or the UPIC version supports longer passwords |
| 4A | The new password received from the client is longer than supported by openUTM in this version. | UPIC error or the UPIC version supports longer passwords |
| 4B | The decrypted password received from the client is longer than supported by openUTM in this version. | UPIC error or the UPIC version supports longer passwords |
| 4C | The TAC received from the client is longer than supported by openUTM in this version. | UPIC error or the UPIC version supports longer TACs |
| 4D | The USER received from the client is longer than supported by openUTM in this version. | UPIC error or the UPIC version supports longer USERS |
| 4E | The format received from the client is longer than supported by openUTM in this version. | UPIC error or the UPIC version supports longer formats |
| 4F | The function key received from the client is longer than supported by openUTM in this version. | UPIC error or the UPIC version supports longer function keys |
| 50 | The DES or AES key received from the client is too long. | UPIC error |
| 51 | The encrypted password received from the client is too long. | UPIC error |
| 52 | The encrypted new password received from the client is too long. | UPIC error |
| 53 | Two protocol tokens received for GTRID | JConnect error |
| 54 | The GTRID received from the client is too long. | JConnect error |
| 55 | A protocol token has been received for GTRID although one transaction is still open. | JConnect error |
| 56 | The client sent a token which is not supported by the server in this version. | UPIC error |

| | | |
|----|---|----------------|
| 57 | The client sent a token which may only be sent by the server. | UPIC error |
| 58 | The client sent a token which may only be sent by the server. | UPIC error |
| 59 | The client sent a token which may only be sent by the server. | UPIC error |
| 5A | The client sent a token which may only be sent by the server. | UPIC error |
| 5B | The client sent a token which is not supported by the server in this version. | UPIC error |
| 5C | The client sent a token which may only be sent by the server. | UPIC error |
| 5D | The client sent a token which may only be sent by the server. | UPIC error |
| 5E | The client sent a token which may only be sent by the server. | UPIC error |
| 5F | The client sent a token which may only be sent by the server. | UPIC error |
| 60 | A GTRID was received in a sign-on conversation. | JConnect error |
| 61 | The length of the client type token is invalid. | UPIC error |
| 62 | The server expected an encrypted message. | UPIC error |
| 63 | The encrypted message is shorter as announced in the protocol data. | UPIC error |
| 64 | The IV-token for the user message is missing. | UPIC error |
| 65 | The IV-token for the user message was received more than once. | UPIC error |
| 66 | The IV-token for the password is missing. | UPIC error |
| 67 | The IV-token for the password was received more than once. | UPIC error |

| | | |
|----|--|--|
| 68 | The IV-token for the new password is missing. | UPIC error |
| 69 | The IV-token for the new password was received more than once. | UPIC error |
| 6A | The client sent a Diffie-Hellman token which may only be sent by the server. | UPIC error |
| 6B | The client Diffie-Hellman token was received more than once or it is illegal in the current context. | UPIC error |
| 6C | The client did not sent an AES-key. | UPIC error |
| 6D | The client did not sent a Diffie-Hellman token. | UPIC error |
| 6E | The length of the IV-Token is invalid. | UPIC error |
| 6F | Error while generating a Diffie-Hellman key pair. | UTM error; the encryption functionality might be unavailable |
| 70 | Error while generatig the Diffie-Hellman secret. | UTM error |
| 71 | Encryption error for algorithm AES-GCM | UTM error |
| 72 | Decryption error for algorithm AES-GCM | UTM error |

The inserts &UPCSTAT and &UPCROT are used for diagnosis in error situations.

Inserts &UPVENC1 and &UPPENC2 are used for diagnosing data encryption.

The first byte of &UPVENC1 contains the ENCRYPTION_LEVEL of the message, the second byte of &UPVENC1 contains the ENCRYPTION_LEVEL of the conversation.

The first byte of &UPPENC2 contains the ENCRYPTION_LEVEL of the session, the second byte of &UPPENC2 contains the ENCRYPTION_LEVEL of the partner.

K136 (First) SYSLOG file is &FNAM

openUTM outputs this message in the start phase. &FNAM contains the name of the SYSLOG file. If the SYSLOG is created as a file generation group, &FNAM then contains the name of the first file generation which is written by openUTM.

K137 SYSLOG switched to file &FNAM

openUTM has successfully switched to a new SYSLOG file generation. The switchover was initiated by the administration or by the automatic size monitoring facility. &FNAM contains the name of the new SYSLOG file generation.

K138 SYSLOG file &FNAM closed

Two situations should be differentiated:

- the SYSLOG is maintained as a single file:
The last UTM task of the application has closed the SYSLOG file. &FNAM contains the name of the SYSLOG file.
- the SYSLOG is maintained as a SYSLOG FGG:
A SYSLOG file generation was closed by the last openUTM task (i.e. completely). This file generation is now freely available. It is no longer required by UTM. &FNAM contains the name of the closed file generation.

K139 Switching SYSLOG failed! Still using file &FNAM

The attempt to switch to a new SYSLOG file generation has failed. openUTM continues working with the file generation &FNAM. It may be possible to ascertain the reason for the error occurring on switchover from the DMS error code in the preceding message K043.

K140 There is no supported MUX protocol version in the range from &MXP1 to &MXP2

K141 The MUX protocol version &MXP1 is not supported

K142 Release pending timeout for session. PTERM: &PTRM MUX-PTERM: &MXPT

K143 UTM-D: STSN sequence numbers response differ from request. Request: &STS1, &STS2 Response: &STS3, &STS4

K144 VTSU-B return code &VTRC &CBRC when processing asynchronous message with edit profile or format &FMTN and coded character set name &CCSN to LTERM = <RM

K145 Due to a transaction recovery no sign-on can be processed by user &USER at this time - please sign on

K146 Monitoring BCAM waiting time. OPCODE=&BCMOPCD, RTCODE= &BCMRTCD, standard header= &STDHEAD, TSN= &TASK, BCAM applname= &BCAP

This message is produced when:

- openUTM activates or deactivates monitoring of the BCAM waiting time, or
- BCAM reports an error on reading the BCAM waiting time. In this case, openUTM generates a UTM dump as diagnostic documentation and continues processing without monitoring the BCAM waiting time.

The values in OPCODE and RTCODE have the following meanings:

| OPCODE | Meaning |
|---------------|---------------------------------|
| 00000000 | Activation of time monitoring |
| 00000001 | Deactivation of time monitoring |
| 00000002 | Read waiting time of a message |

| RTCODE | Meaning |
|---------------------|--|
| 00000000 | Job executed by BCAM |
| 00000001 | Functions for time monitoring not available |
| 00000002 or greater | BCAM reports error, cause in openUTM or BCAM |

5.1.6 Messages K147 - K189

K147 Sign-on for &USRTYPE user &USER not successful.
&PTRM/&PRNM/&BCAP/<RM reason: U&REA7

&USRTYP contains the following values:

- CONNECTION at sign-on of the connection user ID of a connection to a UPIC client or transport system application
- CLIENT at sign-on of a genuine user ID via TS application, UPIC client or OSI TP partner.

The values in &REA7 have the following meanings:

| &REA7 | Meaning |
|------------------|---|
| U1 | The specified USER does not exist. |
| U2 | The specified USER is locked. |
| U3 | Somebody has already signed on with this USER name. |
| U4 | The “old” password specified is incorrect. |
| U5 | The new password specified cannot be used. |
| U6 | There is no card reader available. |
| U7 | The card information is incorrect |
| U8 | It is not possible to sign on at the moment: <ul style="list-style-type: none">• because of a resource bottleneck• because the maximum number of users who can be signed on simultaneously has already been reached• because a password could not be changed, since an inverse KDCDEF is currently running. |
| U9 | Sign-on not possible due to lack of Kerberos support. |
| U10 | The current LTERM partner is not authorized to continue the service. |
| U11 | The password is no longer valid. The password must be changed by the administrator. When the user signs on using an OSI TP association, the password cannot be changed (nor can it in an application with grace sign-on). |
| U12 | The new password does not fulfill the requirements of the generated complexity level |
| U13 | The new password is too short. |
| U14 | The password passed by KDCUPD does not fulfil the generated complexity requirements or is too short. |

| | |
|-----|--|
| U15 | A transaction restart is necessary for the specified user. |
| U16 | The open service cannot be continued from this partner type. |
| U17 | The administrator entered SHUT WARN; normal users can no longer sign on to the application (an administrator can still sign on). |
| U18 | The encryption mechanism required for continuing the open service is not available on the connection |
| U19 | The validity period of the password has expired. Because Grace Sign-On is generated, sign-on can be repeated by transferring a new password. |
| U22 | The specified USER does not exist in the cluster user file. |
| U23 | Someone else has already signed on to another node with this USER. |
| U24 | It is currently not possible to sign on because the cluster user file could not be locked in the generated time (CLUSTER statement, FILE-LOCK-TIMER-SEC parameter, FILE-LOCK-RETRY parameter). |
| U25 | It is not possible to sign on at this node application because the user has a service that is bound to another node application and may not be terminated. |
| U26 | Sign-on rejected because the open service belonging to the user has a transaction in the PTC state but no service restart has been requested. |

K149 Internal diagnostic information &DIA5

An event has occurred which is logged with diagnostic information. &DIA5 is the internal UTM diagnostic information.

K150 RSO error &RSORC &RSO2RC &RSOMSG when calling subsystem RSO with action &RSOOPC

The insert &RSOOPC describes the RSO call in which the error occurred and has the following meaning:

| RSOOPC | Meaning |
|---------------|--|
| X'01' | Reserve Printer |
| X'02' | Print Message |
| X'03' | Release Printer |
| X'04' | Invalidate Bourse |
| X'05' | Receive Info: Information on the printer or printer jobs |
| X'06' | Receive OLTP interfaces version number |

The inserts &RSORC, &RSO2RC and &RSOMSG describe the synchronous and asynchronous return code and the RSO error message. The RSO error message can be obtained from the RSO manual.

If the asynchronous return code is not X'00000000', then the error occurred during the execution of the preceding job. In this case, the operation code of the preceding call can be found in byte 4 and the return code in bytes 5 to 8 of the insert RSOANNO:

| | | | | |
|-------|-------|-------|--------|---------------------|
| X'56' | undef | undef | Opcode | R e t u r n c o d e |
|-------|-------|-------|--------|---------------------|

If the synchronous return code is not X'00000000' then the error occurred in the current &RSOACT call. The content of the insert &RSOANNO is then irrelevant.

If both the synchronous and the asynchronous return codes are X'00000000' then the RSO error message indicates a problem.

The return code (SC2 SC1 MC) consists of the components subcode 2 (SC2, always X'00'), subcode 1 (SC1) and main code (MC).

| SC1 | MC | Meaning |
|-------|---------|---|
| X'00' | X'0000' | The function was executed without error. |
| X'01' | X'0003' | Function call with invalid action. |
| | X'0004' | Length of the RSO macro OLTPRQX passed in the FPUT/DPUT RP by the UTM program unit is incorrect. |
| | X'0005' | Version of the RSO macro OLTPRQX passed in the FPUT/DPUT RP by the UTM program unit is incorrect. |
| | X'0006' | Function/unit of the RSO macro OLTPRQX passed in the FPUT/DPUT RP by the UTM program unit is incorrect. |
| | X'0011' | Character set name (CCSNAME) incorrect |
| | X'000A' | RSO buffer size too small (see RSO command MODIFY-SPOOL-PARAMETER). |
| | X'FFFF' | Unit or function not supported. |
| X'02' | X'0006' | Printer in release process. It will soon be available. |
| | X'FFFF' | Function not available. |
| X'03' | X'FFFF' | Version not supported. |
| X'20' | X'0001' | An error was reported during a memory request. |
| | X'0003' | Printer is already reserved by another application (as of RSO V3.2A). |
| | X'0004' | This printer is already reserved. |

| | | |
|-------|---------|---|
| | X'0005' | An error occurred when creating the OLTP controller. |
| | X'0009' | An error occurred when using the bourse interface. |
| | X'000F' | An error occurred when using the memory pool. |
| | X'0010' | An inconsistency in the internal tables was detected. |
| X'40' | X'0007' | The printer is currently being used. |
| | X'0012' | Character set name (CCSNAME) unknown |
| | X'0013' | XHCS error in RSO |
| | X'000B' | An error occurred on accessing the printer. |
| | X'000D' | UTM does not have any access rights for the device (see the MODIFY-PRINTER-OUTPUT command). |
| X'41' | X'0002' | Printer not reserved by UTM or not started (see RSO command START-PRINTER-OUTPUT). |
| | X'0006' | The printer is currently being released because the STOP-PRINTER-OUTPUT command was issued. |
| | X'0008' | Printer released internally as a result of an internal error (recovery). |
| | X'000C' | Printer cannot be reserved due to recovery. |
| | X'FFFF' | RSO subsystem not loaded. |
| X'42' | X'FFFF' | RSO subsystem not connected. |
| X'80' | X'000E' | An error occurred on accessing the printer. |
| X'81' | X'FFFF' | RSO subsystem temporarily unavailable. |
| X'82' | X'FFFF' | RSO subsystem halted or stopped. |

K151 Run of inverse KDCDEF terminated. Return code: &IDFRC &DMSE &FNAM

The insert &IDFRC contains a 16-digit return code for the inverse KDCDEF. The return code comprises two 8-digit printable numbers.

The first 8 digits have the following meanings:

| First 8 digits | Meaning |
|----------------|---|
| 00000000 | The inverse KDCDEF was terminated normally. |
| 00000001 | A file handling error occurred. |
| 00000002 | A memory bottleneck occurred. |
| 00000003 | No KDCDEF statements were generated. |

Digits 9 - 16 are only relevant if the first 8 digits contain 00000001. In this event, digits 9 - 16 contain a more detailed description of the error which occurred.

In all other cases, digits 9 - 16 contain 00000000.

| Digits 9 - 16 | Meaning |
|---------------|--|
| 00000001 | Invalid name for an output file. |
| 00000002 | Output file could not be created. |
| 00000003 | Output file could not be opened. |
| 00000004 | Output file could not be written. |
| 00000005 | Output file already exists and is not of the type SAM. |

The insert &DMSE contains the printable DMS error code if an error occurs during file handling and digits 9 - 16 of the insert &IDFRC contain one of the values 00000002, 00000003 or 00000004.

The insert &FNAM contains the name of the file for which the error occurred.

K152 Heuristic report: &COND &MTYPE &OSLPAP &USER <AC &AAIS &AAID

The inserts have the following meaning

| &COND | Meaning |
|------------------|---|
| MIX | The server reported data inconsistency. This is not possible with an asynchronous message to a UTM application. |
| HAZ | Possible data inconsistency. Connection to OSI TP job receiver (subordinate) was lost after a PREPARE was sent and the OSI TP job submitter (superior) had not carried out a backup. The transaction is rolled back on the job submitter and a asynchronous message is sent again. The transaction is also rolled back in a UTM job receiver, or an asynchronous message is rejected (immediately after a restart), so that the data is consistent. |

| &MTYPE | Meaning |
|-------------------|-----------------------------------|
| DIAL | A dialog message was sent. |
| ASYN | An asynchronous message was sent. |

&OSLPAP: Name of the partner application.

&USER: Name of the user who issued the job.

<AC: for an asynchronous message: LTAC name of the job for a dialog message: TAC of the transaction for which inconsistency is possible

&AAIS: Size of the atomic action identifier in bytes.

&AAID: contains the encoded atomic action identifier (up to 64 bytes).

K153 Info for FHS message: &PTRM/&PRNM/&BCAP/<RM/&USER

This message is generated if FHS requests openUTM to output a message to SYSOUT. The message allows you to assign the user and LTERM partner to the FHS message. This information can be required in the event of problems with OMNIS (with and without MUX connections) in order to identify where the problem originated.

K154 SOCKET message: &PTRM/&PRNM/&BCAP/<RM &TCPCL &TCPRC

The inserts of the message have the following meaning:

| Insert | Meaning |
|---------------|---|
| &TCPCL | internal socket function or internal socket event |
| &TCPRC | Diagnostic Word |

&TCPCL is output in printable form:

| &TCPCL | Meaning |
|--------------------|--|
| OPEN_EVENTGROUP | Open the event group |
| ATTACH IPv4 | Create a socket for the address family AF_INET |
| ATTACH IPv6 | Create a socket for the address family AF_INET6 |
| ATTACH AMBIGUOUS | A socket with the same port number has already been generated. |
| EVENT | Pick up an event |
| CONNECTION_REQ | Request the establishment of a connection |
| CONNECTION_RSP | Confirm the establishment of a connection |
| DISCONNECT_REQ | Clear connection |
| DATA_REQ | Send data |
| DATA_IND | Receive data |
| GET_HOST_BY_ADDR | Determine computer name of an IPv4 address |
| GET_IPNODE_BY_ADDR | Determine host name corresponding to an IPv6 address |
| GET_HOST_BY_NAME | Determine IPv4 address of a computer |
| GET_IPNODE_BY_NAME | Determine IPv6 address corresponding to a host Name |

The values of the diagnostic word are 4 byte long and are specified in hexadecimal notation. They correspond to the return codes of the "YDBSOC" interface.

General return codes

The following return codes can occur at every call of the TCP/IP functions:

| Return code | | | | Meaning |
|-------------|----|-----------|----|---|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 01 | FF | FF | Invalid unit or function in the standard header |
| 00 | 02 | FF | FF | Requested function not available |
| 00 | 03 | FF | FF | Invalid version number in standard header |
| 00 | 41 | FF | FF | Subsystem not present or not started |
| 00 | 20 | 00 | 30 | Internal BCAM error |
| 00 | 82 | 00 | 04 | BCAM is not active |
| 0C | 40 | 02 | 1C | BCAM shutdown running |
| 14 | 40 | 02 | 20 | SOCKET of BCAM administrator closed |
| 00 | 04 | 00 | 44 | Parameter list not accessible |

&TCPCL = OPEN_EVENTGROUP

| Return code | | | | Meaning |
|-------------|----|-----------|----|---|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | OPEN-EVENTGROUP executed successfully |
| 04 | 80 | 06 | 1C | No memory available for SUB-TCB |
| 04 | 80 | 0C | 1C | No memory available for layer 4 CB |
| 04 | 80 | 10 | 1C | No memory available for local event group control block |
| 04 | 80 | 11 | 1C | No memory available for global event group control block |
| 04 | 80 | 14 | 1C | No memory available for event group name |
| 08 | 40 | 01 | 1C | BCAM shutdown announced |
| 00 | 20 | 01 | 30 | System error at startup of CONHAND processing |
| 00 | 20 | 02 | 30 | System error waiting for the termination of CONHAND processing |
| 00 | 01 | 02 | 51 | Event group already opened by this task |
| 00 | 01 | 10 | 51 | USERID of the owner of the event group could not be determined |
| 00 | 01 | 11 | 51 | Specification of EVENTGROUP_NAME is not permitted for a TU user |

&TCPCL = CLOSE_EVENTGROUP

| Return code | | | | Meaning |
|-------------|----|-----------|----|---|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 01 | 00 | 00 | CLOSE_EVENTGROUP executed successfully |
| 04 | 80 | 0C | 1C | No memory available for layer 4 CB |
| 08 | 40 | 01 | 1C | BCAM shutdown announced |
| 00 | 80 | 00 | 28 | Event group cannot be closed at the moment (call can be repeated later) |
| 00 | 20 | 01 | 30 | System error at startup of CONHAND processing |
| 00 | 20 | 02 | 30 | System error waiting for the termination of CONHAND processing |
| 00 | 01 | 04 | 51 | Task not connected to the event group |
| 00 | 01 | 07 | 51 | Invalid EVENTGROUP_ID |
| 00 | 01 | 13 | 51 | Event group cannot be closed at the moment because it is still being used |

&TCPCL = ATTACH IPv4 or ATTACH IPv6

| Return code | | | | Meaning |
|-------------|----|-----------|----|---|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | SOCKET executed successfully |
| 00 | 01 | 33 | 08 | Specified port number already being used |
| 04 | 80 | 04 | 1C | No memory available for APPCB |
| 04 | 80 | 06 | 1C | No memory available for SUB-TCB |
| 04 | 80 | 09 | 1C | No memory available for ENACB |
| 04 | 80 | 0C | 1C | No memory available for layer 4 CB |
| 04 | 80 | 0D | 1C | No free ABID available |
| 04 | 80 | 0E | 1C | No free port number available |
| 04 | 80 | 13 | 1C | No name server entry available |
| 08 | 40 | 01 | 1C | BCAM shutdown announced |
| 10 | 82 | 00 | 1C | Global limit value for the number of open SOCKETS reached |
| 10 | 01 | 00 | 20 | SOCKET already opened by this task |
| 18 | 40 | 01 | 20 | SOCKET is currently being forcibly closed by the BCAM administrator |
| 28 | 82 | 00 | 20 | Local task limit value for the number of open SOCKETS |
| 00 | 80 | 00 | 28 | SOCKET currently not possible (call can be repeated later) |
| 00 | 20 | 01 | 30 | System error at startup of CONHAND processing |
| 00 | 20 | 02 | 30 | System error waiting for the termination of CONHAND processing |
| 00 | 01 | 01 | 50 | Unknown host |
| 00 | 01 | 02 | 50 | Host not active |
| 00 | 01 | 04 | 51 | Task not connected to the event group |
| 00 | 01 | 07 | 51 | Invalid EVENTGROUP_ID |
| 00 | 01 | 10 | 53 | USER_ID could not be determined |

&TCPCL = DETACH

| Return code | | | | Meaning |
|-------------|----|-----------|----|--|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | CLOSE_SOCKET executed successfully |
| 00 | 01 | 03 | 08 | SOCKET_ID not specified |
| 04 | 08 | 0C | 1C | No memory available for layer 4 CB |
| 04 | 01 | 00 | 20 | SOCKET not opened by this task |
| 00 | 20 | 01 | 30 | System error at startup of CONHAND processing |
| 00 | 20 | 02 | 30 | System error waiting for the termination of CONHAND processing |

&TCPCL = EVENT

| Return code | | | | Meaning |
|-------------|----|-----------|----|---|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | GET-EVENT executed successfully |
| 00 | 80 | 00 | 28 | GET-EVENT currently cannot be executed (call can be repeated later) |
| 00 | 01 | 04 | 51 | Task not connected to the event group |
| 00 | 01 | 07 | 51 | Invalid EVENTGROUP_ID |
| 00 | 80 | 09 | 51 | No event occurred |

&TCPCL = CONNECTION_REQ

| Return code | | | | Meaning |
|-------------|----|-----------|----|-------------------------------|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | CONNECT executed successfully |
| 00 | 01 | 03 | 08 | SOCKET_ID not specified |

| | | | | |
|----|----|----|----|--|
| 04 | 80 | 02 | 1C | No free transport reference available |
| 04 | 80 | 03 | 1C | No memory available for ACONCB |
| 04 | 80 | 0A | 1C | No memory available for ADDRCB-P |
| 04 | 80 | 0B | 1C | No free CONNECTION_ID available |
| 04 | 80 | 0C | 1C | No memory available for layer 4 CB |
| 04 | 80 | 0E | 1C | No free port number available |
| 04 | 80 | 15 | 1C | No memory available for EVOL |
| 08 | 40 | 01 | 1C | BCAM shutdown announced |
| 04 | 01 | 00 | 20 | SOCKET not opened by this task |
| 18 | 40 | 01 | 20 | SOCKET currently being closed forcibly by the BCAM administrator |
| 20 | 01 | 00 | 20 | CONNECT not permitted for SOCKET |
| 24 | 82 | 00 | 20 | No further connections permitted for this SOCKET |
| 08 | 01 | 00 | 24 | Connection already established |
| 0C | 01 | 00 | 24 | Connection is already being established |
| 18 | 01 | 00 | 24 | Partner not known |
| 1C | 82 | 00 | 24 | Partner processor not known |
| 1C | 82 | 01 | 24 | Partner processor not active |
| 1C | 82 | 04 | 24 | Partner IP address not known |
| 1C | 82 | 06 | 24 | Request to establish connection to broadcast address |
| 30 | 01 | 00 | 24 | SOCKET not authorized for connection establishment |
| 40 | 01 | 05 | 24 | Required interface functionality not supported |
| 40 | 01 | 07 | 24 | Interface functionality of partners does not match |
| 40 | 01 | 08 | 24 | Level 4 address not available |
| 60 | 40 | 00 | 24 | Port number already being used |
| 00 | 20 | 01 | 30 | System error at startup of CONHAND processing |
| 00 | 20 | 02 | 30 | System error waiting for the termination of CONHAND processing |
| 00 | 01 | 04 | 51 | Task not connected to the event group |
| 00 | 01 | 07 | 51 | Invalid EVENTGROUP_ID |

&TCPCL = CONNECTION_RSP

| Return code | | | | Meaning |
|-------------|----|-----------|----|--|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | ACCEPT executed successfully |
| 00 | 01 | 07 | 08 | CONNECTION_ID not specified |
| 04 | 80 | 0C | 1C | No memory available for layer 4 CB |
| 08 | 40 | 01 | 1C | BCAM shutdown announced |
| 04 | 01 | 00 | 20 | SOCKET not opened by this task |
| 18 | 40 | 01 | 20 | SOCKET currently being closed forcibly by the BCAM administrator |
| 04 | 01 | 00 | 24 | Invalid CONNECTION_ID |
| 14 | 01 | 00 | 24 | No CONNECTION request pending |
| 40 | 01 | 05 | 24 | Required interface functionality not supported |
| 00 | 20 | 01 | 30 | System error at startup of CONHAND processing |
| 00 | 20 | 02 | 30 | System error waiting for the termination of CONHAND process. |
| 00 | 01 | 04 | 51 | Task not connected to the event group |
| 00 | 01 | 07 | 51 | Invalid EVENTGROUP_ID |

&TCPCL = DISCONNECT_REQ

| Return code | | | | Meaning |
|-------------|----|-----------|----|--|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | CLOSE-CONNECTION executed successfully |
| 00 | 01 | 07 | 08 | CONNECTION_ID not specified |
| 04 | 80 | 0C | 1C | No memory available for layer 4 CB |
| 04 | 01 | 00 | 20 | SOCKET not opened by this task |
| 18 | 40 | 01 | 20 | SOCKET currently being closed forcibly by the BCAM administrator |
| 04 | 01 | 00 | 24 | Invalid CONNECTION_ID |
| 64 | 40 | 00 | 24 | Connection already being cleared down |
| 00 | 20 | 01 | 30 | System error at startup of CONHAND processing |
| 00 | 20 | 02 | 30 | System error waiting for the termination of CONHAND process. |

&TCPCL = DATA_REQ

| Return code | | | | Meaning |
|-------------|----|-----------|----|---|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | SEND executed successfully |
| 14 | 00 | 00 | 00 | SEND executed successfully, but further sending prevented by interface flow control |
| 00 | 01 | 07 | 08 | CONNECTION_ID not specified |
| 00 | 01 | 26 | 08 | LENGTH_OF_DATA invalid |
| 00 | 01 | 13 | 08 | User buffer length = 0 |
| 00 | 01 | 31 | 08 | User buffer not accessible |
| 00 | 01 | 00 | 14 | User data facility too large |
| 04 | 80 | 01 | 1C | No memory available for data buffer |
| 04 | 80 | 07 | 1C | Sending prevented by interface flow control |
| 14 | 40 | 00 | 1C | Waiting for DATA_GO_INDICATION |
| 04 | 01 | 00 | 20 | SOCKET not opened by this task |
| 04 | 01 | 00 | 24 | Invalid CONNECTION_ID |
| 48 | 01 | 00 | 24 | Connection is not in the data transfer phase (not yet fully established) |
| 00 | 80 | 00 | 28 | SEND currently cannot be executed (call can be repeated later) |

&TCPCL = DATA_IND

| Return code | | | | Meaning |
|-------------|----|-----------|----|--|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | READ executed successfully |
| 00 | 01 | 07 | 08 | CONNECTION_ID not specified |
| 00 | 01 | 26 | 08 | length_of_data invalid |
| 00 | 01 | 2D | 08 | No data available |
| 00 | 01 | 31 | 08 | User buffer cannot be accessed |
| 00 | 40 | 00 | 10 | No data received |
| 04 | 01 | 00 | 20 | SOCKET not opened by this task |
| 04 | 01 | 00 | 24 | Invalid CONNECTION_ID |
| 48 | 01 | 00 | 24 | Connection is not in the data transfer phase (not yet fully established) |
| 00 | 80 | 00 | 28 | READ currently cannot be executed (call can be repeated later) |
| 00 | 40 | 00 | 2C | User data lost |

&TCPCL = GET_HOST_BY_ADDR

| Return code | | | | Meaning |
|-------------|----|-----------|----|--|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | GET_HOST_BY_ADDR executed successfully |
| 04 | 80 | 0C | 1C | No memory available for layer 4 CB |
| 08 | 40 | 01 | 1C | BCAM shutdown announced |
| 00 | 80 | 00 | 28 | GET_HOST_BY_ADDR currently not possible (call can be repeated later) |
| 00 | 20 | 01 | 30 | System error at startup of CONHAND processing |
| 00 | 20 | 02 | 30 | System error waiting for the termination of CONHAND processing |
| 00 | 01 | 01 | 53 | Invalid IP address |

&TCPCL = GET_HOST_BY_NAME

| Return code | | | | Meaning |
|-------------|----|-----------|----|--|
| Subcode | | Main code | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | GET_HOST_BY_NAME executed successfully |
| 00 | 01 | 30 | 08 | Invalid socket host name |
| 04 | 80 | 0C | 1C | No memory available for layer 4 CB |
| 08 | 40 | 01 | 1C | BCAM shutdown announced |
| 00 | 80 | 00 | 28 | GET_HOST_BY_NAME currently not possible (call can be repeated later) |
| 00 | 20 | 01 | 30 | System error at startup of CONHAND processing |
| 00 | 20 | 02 | 30 | System error waiting for the termination of CONHAND processing |

&TCPCL = GET_IPNODE_BY_ADDR

| Return code | | | | Meaning |
|-------------|----|----------|----|---|
| Subcode | | Maincode | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | GET_IPNODE_BY_ADDR performed successfully |
| 04 | 80 | 0C | 1C | No memory available for Layer 4 CB |
| 08 | 40 | 01 | 1C | BCAM shutdown announced |
| 00 | 80 | 00 | 28 | GET_IPNODE_BY_ADDR not currently possible (repeat call later) |
| 00 | 20 | 01 | 30 | System error on starting CONHAND processing |
| 00 | 20 | 02 | 30 | System error on waiting for termination of CONHAND processing |
| 00 | 01 | 01 | 53 | Invalid IPv6 address |

&TCPCL = GET_IPNODE_BY_NAME

| Return code | | | | Meaning |
|-------------|----|----------|----|---|
| Subcode | | Maincode | | |
| 2 | 1 | 2 | 1 | |
| 00 | 00 | 00 | 00 | GET_IPNODE_BY_NAME performed successfully |
| 00 | 01 | 30 | 08 | Invalid socket host name |
| 04 | 80 | 0C | 1C | No memory available for Layer 4 CB |
| 08 | 40 | 01 | 1C | BCAM shutdown announced |
| 00 | 80 | 00 | 28 | GET_IPNODE_BY_NAME not currently possible (repeat call later) |
| 00 | 20 | 01 | 30 | System error on starting CONHAND processing |
| 00 | 20 | 02 | 30 | System error on waiting for termination of CONHAND processing |

K155 Your password is expired!
Please enter expired password
> &PAS1 <
Please enter new password
> &PAS2 <
and repeat new password
> &PAS3 <

K156 UTM-UPIC encryption functionality &CRYP available: &RSLT

K158 Inconsistent value for CPU time used: &CPUTEXT

The calculation of the CPU time used by the user resulted in an inconsistent value.

The message contains the following inserts:

| Insert | Meaning |
|---------------|---|
| PTRM | Name of the current PTERM |
| PRNM | Name of the current processor |
| BCAP | Name of the current BCAM application |
| LTRM | Name of the current LTERM |
| USER | Name of the current user |
| CPUTEXT | NEGATIVE: A negative value was observed OVERFLOW: Too much time used by the user |
| CPUBEGIN | CPU time used at the beginning of the period monitored |
| CPUEND | CPU time used at the end of the period monitored |
| CPUUSED | CPU time used calculated for the period monitored |
| CPUCLNT | CPU time actually used by the current user |
| CPUREAS | Internal diagnostic value |

K159 Password for User &USER changed

The password has been changed for the specified user. The message is sent every time the password is changed independently of how the password was changed (administrator, via SIGN CP, etc.)

The message possesses the following inserts:

| Insert | Meaning |
|--------|--|
| USER | Name of the user whose password was changed. |
| ENCPW | Modified password in encrypted form. |

This message can be used to transfer modified user passwords to a standby application. To this end, the message destination MSGTAC or USER-DEST must be defined for this message in the private message module. The new user password can be set in encrypted form in the standby application by defining pw_encrypted='Y' via programmed administration KC_MODIFY_OBJECT, object type USER.

Notes:

- You should note that no UTM-D communication is permitted in the MSGTAC program unit. The modified password cannot therefore be sent directly from the MSGTAC program unit via a UTM-D connection to the standby application.
- If the application terminates during productive operation and password changes are made during this period then it is possible that the corresponding messages to the MSGTAC program will not be received but will instead be lost.
- UTM generates the new message for each type of password change and in particular if the password is modified in the standby application. You should make sure that the standby application does not transfer the password back to the productive application in order to avoid any ping-pong effect.
- You should note that UTM uses different encryption algorithms on different platforms. As a result, the function cannot be used on a cross-platform basis.
- The passwords should be generated with the same level of complexity in the involved applications since UTM does not check the complexity when entering the encrypted password.
- In UTM(BS2000), the same host code should be used on the participating hosts so that special characters in passwords always have the same EBCDIC code.

K160 The &TACNTR. transaction of service &TCVG has been rolled back by &RBCAUSER (&RCCC/&RCDC)
The message has the following inserts:

| Insert | Meaning |
|----------|---|
| PTRM | Name of the current PTERM |
| PRNM | Name of the current processor |
| BCAP | Name of the current application |
| LTRM | Name of the current LTERM |
| USER | Name of the current user |
| TCVG | Name of the service TAC in which the transaction was rolled back |
| TAC | Name of the TAC in which the transaction was rolled back |
| TACNTR | Number of the rolled back transaction within the service |
| RBCAUSER | Initiator of the rollback. There are the following values for the initiator, <ul style="list-style-type: none"> • User PEND RS: Rollback was triggered by a PEND RS in the program unit. • System PEND RS: Rollback was triggered by a PEND RS initiated by UTM. • User PGWT RB: Rollback by triggered by a PGWT RB in the program unit. • System PGWT RB: Rollback was triggered by a PGWT RB initiated by UTM. • User PEND ER: Rollback was triggered by a PEND ER/FR in the program unit. • System PEND ER: Rollback was triggered by a PEND ER initiated by UTM. • DBSTATUS OPEN: The rollback was triggered during the warm start due to an unsuccessful database status query. |
| RCCC | Value of the compatible KCRCCC return code |
| RCDC | Valid of the incompatible KCRCDC return code |
| | |

K161 Synchronous Periodic Write started for task &TASK

K162 Long IO for task &TASK: &IOPG pages, &IOMS milliseconds

K163 Long Periodic Write for task &TASK: &IOPG pages, &IOMS milliseconds

K164 System file SYSOUT will be switched to file &FNAM.

K165 System file SYSLST will be switched to file &FNAM.

K166 Error &RCHX when switching system file &SYSFILE to file &FNAM.

K167 System files SYSOUT und SYSLST successfully switched.

If the UTM application was started in a dialog then message K167 confirms the successful switching of the SYSLST files for all the application's tasks. SYSOUT continues to be assigned to the terminals unchanged.

K175 File &FNAM created

K184 There is already an Online Import or a run of KDCUPD active for the old KDCFILE.

5.1.7 Messages K191 - K320

K191 Dump will be written without &SUFF-file because of request memory error (&RQM bytes requested).

K192 Node recovery for node &NNM1 on host &HST1, RESET-PTC=&RSPTC

This message is output at *stdout* and *stderr* at the start of a node recovery.

K193 PTC found : ID=&PTCID, USER=&USER, LPAP=&LPAP, LSES=&LSES, USER-type=&USTYPPTC

On a node recovery, this message is output once for every transaction with PTC status.

K194 After node recovery: Number of still locked GSSB: &GBLNBR, number of still locked ULS: &ULLNBR

This message is output at the end of node recovery.

If the failed node application for which a node recovery has been performed still has GSSB locks, then this can impair the running UTM cluster application.

K199 ROOT-Termination initiated with TERM-UNIT: &TRMTYP, reason: &ROOTTRMR

Message K199 is issued for diagnostic purposes. In some cases preceding messages contain additional information.

The inserts have the following meanings:

&TRMTYP Identifies the type of process termination:
PROG: Application program is to be dynamically loaded.
STEP: The task is to be terminated.

&ROOTTRMR Reason for terminating the process. The following values are possible:

| &ROOTTRMR | Meaning |
|----------------------|---|
| 01 | Dynamic ROOT generated but no parameters specified for it |
| 02 | Link error while dynamically loading the ROOT module |
| 03 | Invalid/Incorrect ROOT module linked |
| 04 | Incorrect version of the ROOT module |
| 06 | Link error while loading the message module |
| 07 | Incorrect version of the message module |
| 10 | Call for determining task info returns error |
| 11 | Error while requesting memory for start parameters |
| 12 *) | No DB generated but ORACLE start parameters |
| 13 **) | Cluster filebase and filebase specified simultaneously |

| | |
|--------|--|
| 15 *) | Catid parameter and filebase contain a ":", |
| 16 *) | STARTNAME and ENTER-PROC parameters specified simultaneously |
| 17 *) | Maximum length for ENTER-PROC parameter exceeded |
| 18 | Error while reading in the start parameters |
| 20 | Error while requesting memory for UTM Diagarea |
| 21 | Error while requesting memory for DB Diagarea |
| 25 | A STXIT has been issued |
| 26 | KDCTRMA was called |
| 27 | Error while initializing the language environment |
| 28 | Error while disabling the language environment |
| 30 *) | Link error for the FORMCON module |
| 31 | Invalid operation code with KDCRTFH call |
| 32 *) | Error when calling format start parameter |
| 33 *) | Error while initializing formating |
| 36 **) | exit() call in a program unit |
| 40 | Normal end of application |
| 41 | KDCS call in SHUT exit |
| 43 *) | Error while canceling write protection (ROOTDATA) |
| 44 *) | Error while setting write protection (ROOTDATA) |
| 45 | Unload (replace) program |
| 46 | Errored ROOT action table |
| 47 *) | Error while closing the STXIT |
| 48 | Error while requesting buffer |
| 49 *) | Error while dynamically initializing the voice connection |
| 50 | Error while calling START exit |
| 51 | Error while starting monitoring of the program runtime |
| 52 | Error while loading the application program |
| 53 | Error while replacing the application program |

| | |
|-------|---|
| 54 | Incorrect index when loading a load module |
| 55 | Invalid index for ROOT action table |
| 56 | Invalid ROOT action table |
| 57 | Error while calling START exit |
| 58 | Error while terminating program unit |
| 59 | SVC error |
| 69 *) | Incorrect DB parameter |
| 70 | Error with respect to the start parameters for the database system |
| 71 | UTM error while handling the start parameters for the database system |
| 72 | Database error while starting a transaction |
| 73 | Database call in INPUT exit |
| 74 | Database call in START exit |
| 75 | Incorrect operation code in KDCRTDB |
| 76 *) | Timer STXIT during database call |
| 77 *) | Error requesting memory for transaction management |
| 78 | Database not active or database administration error |
| 79 | Incorrect UTM behavior when signing on to the database |
| 80 | Canceling a database transaction from STXIT handling |
| 81 | Error when signing on to the database |
| 82 *) | Error in Get install Path for BIND (DBCON) |
| 83 *) | Error while loading the connection module for the database (will be repeated) |
| 84 *) | Error in Get Install Path DB modlib |
| 85 | Incorrect version of the connection module for the database |
| 86 *) | Error in database connection via XA (mismatch) |
| 87 *) | Error while dynamically loading the XA connection module |
| 88 *) | The database connection module was loaded incorrectly (upper instead of lower address space). |
| 90 | PEND ER called from user code / UTM system code |

| | |
|--------|--|
| 91 | Connection loss with PGWT |
| 92 **) | The application program is reloaded due to a request from a user error routine |
| 95 | KCSSTRT error routine enabled |

*) values only appear on BS2000 systems

***) values only appear on Unix, Linux and Windows systems

K201 XA(&TSNPID) Resource Manager support using X/Open &XASPEC

&XASPEC identifies the version of the XA connection. The insert can have the value XA-CAE-Spec.

K202 XA(&TSNPID) RM instance &INSTNUM, &TEXT32, &RMSTAT

The message provides information about the status of the XA connection.

The inserts have the following meanings:

&INSTNUM Serial number of the Resource Manager instance, starting with 1.
The numbering corresponds to the sequence of the start parameters.

&TEXT32 Name of the Resource Manager.

&RMSTAT Status of the connection. The following values are possible:

| &RMSTAT | Meaning |
|--------------------|--|
| opened | The Resource Manager has been opened |
| reopened | The Resource Manager has been opened after a restart |
| closed | The Resource Manager has been closed |

K203 XA(&TSNPID) RM &TEXT32,&INSTNUM - recovered transactions: &RTAANZ

The inserts have the following meanings:

&TEXT32 Name of the Resource Manager.

&INSTNUM Serial number of the Resource Manager instance, starting with 1.
The numbering corresponds to the sequence of the RMXA start parameters.

&RTAANZ Number of recovered transactions.

K204 XA(&TSNPID) precommit requires global rollback - reason: &XATXT USER: &USER TAC: &TAC
TA=&INTTAID

Precommit failed, global transaction will be rolled back.

The inserts have the following meanings:

&XATXT Reason for precommit failure. The following values are possible:

| &XATXT | Meaning |
|----------------|--|
| XA_RBROLLBACK | Rollback for unspecified reason |
| XA_RBCOMMFAIL | Rollback due to a internal communication error in the Resource Manager |
| XA_RBDEADLOCK | Rollback due to a deadlock |
| XA_RBINTEGRITY | Rollback due to a resource inconsistency |
| XA_RBOTHER | Rollback for unspecified reason |
| XA_RBPROTO | Rollback due to an internal protocol error in the Resource Manager |
| XA_RBTIMEOUT | Rollback due to transaction period timeout |
| XA_RBTRANSIENT | Rollback due to a temporary error |

&INTTAID Description of the UTM transaction which triggered the global rollback of the other transactions.

Byte 0 contains the instance number of the Resource Manager.

If the XID (= XA transaction identifier) was created in an OSI-TP job-receiver transaction then the AAID (Atomic Action IDentifier) is added here.

&USER User-Id of the current transaction

&TAC Transaction code of the current transaction

K205 XA(&TSNPID) transaction committed - reason: &XATXT USER: &USER TAC: &TAC TA=&INTTAID

The inserts have the following meanings:

&XATXT Reason for committing the transaction. Possible reasons: "Recovery" or "Int.Event".

&INTTAID Description of the UTM transaction that was committed (for contents, see [K204](#)).

&USER User-Id of the current transaction

&TAC Transaction code of the current transaction

K206 XA(&TSNPID) transaction rolled back - reason: &XATXT USER: &USER TAC: &TAC
TA=&INTTAID

The inserts have the following meanings:

- &XATXT Reason for the rollback. Possible reasons: "Recovery" or "Int.Event".
- &INTTAID Description of the UTM transaction that was committed (for contents, see [K204](#))
- &USER User-Id of the current transaction
- &TAC Transaction code of the current transaction

K207 XA(&TSNPID) transaction is unknown to the RM&INSTNUM USER: &USER TAC: &TAC
TA=&INTTAID

The inserts have the following meanings:

- &INSTNUM Instance number of the Resource Manager, see [K203](#) .
- &INTTAID Description of the UTM transaction that is unknown to the RM (for contents, see [K204](#))
- &USER User-Id of the current transaction
- &TAC Transaction code of the current transaction

K210 XA(&TSNPID) Error: &XATXT - open RM: &TEXT32,&INSTNUM

K211 XA(&TSNPID) Error: &XATXT - close RM: &TEXT32,&INSTNUM

The inserts in the messages K210, K211 and K216 have the following meanings:

- &TEXT32 Name of the Resource Manager.
- &INSTNUM Instance number of the Resource Manager, see [K203](#) .
- &XATXT Keyword for the return code from the called XA function.
Possible values:

| &XATXT | Meaning |
|-------------------|---|
| XA_OK | Normal execution |
| XA_NOMIGRATE | The transaction was suspended but the context cannot be migrated and the transaction can only be continued in the sametask. |
| XA_HEURHAZ | The transaction may have been heuristically terminated due to a possible internal RM error. |

| | |
|----------------|---|
| XA_HEURRB | The transaction has been internally rolled back due to a heuristic Resource Manager decision. |
| XA_HEURMIX | The transaction has been internally partially committed and partially rolled back due to a heuristic Resource Manager decision. |
| XA_RETRY | The call to the routine must be repeated |
| XA_RDONLY | The transaction was "read_only" and was committed |
| XA_RBROLLBACK | Rollback for unspecified reason |
| XA_RBCOMMFAIL | Rollback due a communication error |
| XA_RBDEADLOCK | Rollback due to a deadlock |
| XA_RBINTEGRITY | Rollback due to a resource inconsistency |
| XA_RBOTHER | Rollback for unspecified reason |
| XA_RBPROTO | Rollback due to an internal RM protocol error |
| XA_RBTIMEOUT | Rollback due to a transaction period timeout |
| XA_RBTRANSIENT | Rollback due to a temporary error |
| XAER_ASYNC | An asynchronous operation is still outstanding |
| XAER_RMERR | A non-recoverable error has occurred in the Resource Manager. Possible cause: The Resource Manager was not initialized or was incorrectly initialized |
| XAER_NOTA | The transaction identifier is invalid or is unknown to the Resource Manager |
| XAER_INVALID | Invalid function arguments were specified. It is possible that the Open or Close strings contain incorrect parameters. |
| XAER_PROTO | The routine was called internally in the RM in the wrong context. |
| XAER_RMFAIL | The Resource Manager is no longer available |
| XAER_DUPID | The transaction identifier already exists in the Resource Manager. openUTM terminates the service. To eliminate this residual XID left by XAER_DUTSNPID from the Resource Manager, the database administrator should remove this transaction. Possible action: shut down and restart the database. |
| XAER_OUTSIDE | The Resource Manager is operating outside of the transaction. |

-
- K212** XA(&TSNPID) xa_start(&XAFLAG) - return code: &XATXT USER: &USER TAC:
&TAC
TA=&INTTAID
- K213** XA(&TSNPID) xa_end(&XAFLAG) - return code: &XATXT USER: &USER TAC: &TAC
TA=&INTTAID
- K214** XA(&TSNPID) xa_commit() - return code: &XATXT USER: &USER TAC: &TAC
TA=&INTTAID
- K215** XA(&TSNPID) xa_rollback() - return code: &XATXT USER: &USER TAC: &TAC
TA=&INTTAID

The inserts in the messages K212 to K215 have the following meanings:

- &XATXT Keyword for the return code from the called XA function. Possible values, see [K211](#).
- &XAFLAG Keyword that describes the flags on an xa_start() or xa_end() call.
- &INTTAID Description of the UTM transaction during which the return code occurred (for contents, see [K204](#))
- &USER User-Id of the current transaction
- &TAC Transaction code of the current transaction

- K216** XA(&TSNPID) return code: &XATXT - recover PTC list, RM: &TEXT32,&INSTNUM

For the meaning and content of the inserts, see [K211](#).

- K217** XA(&TSNPID) xa_prepare() - return code: &XATXT USER: &USER TAC: &TAC
TA=&INTTAID

For the meaning of the inserts, see [K211](#) (&XATXT) and [K215](#) (&INTTAID).

- K218** XA(&TSNPID) xa_forget() - return code: &XATXT USER: &USER TAC: &TAC
TA=&INTTAID

For the meaning of the inserts, see [K211](#) (&XATXT) and [K215](#) (&INTTAID).

- K220** XA(&TSNPID) Error: xa_switch definition not found for specified RM: &TEXT32

A Resource Manager (RM) for which the RMXA start parameter was specified was not defined in the KDCDEF generation.

&TEXT32 contains the name Resource Manager.

K221 XA(&TSNPID) Error: Start parameters not found for defined RM: &TEXT32

No start parameters are specified for a Resource Manager (RM) present in the KDCDEF generation. &TEXT32 contains the name Resource Manager.

K222 XA(&TSNPID) Error: Linked RM is not &XASPEC compatible: &TEXT32

The Resource Manager (RM) does not use the XA interface that was specified during KDCDEF UTM generation. &TEXT32 contains the name of the Resource Managers and &TEXT32 the XA interface specified during generation.

K223 XA(&TSNPID) Syntax error in start parameters:

The following line contains the incorrect line from the start parameter file.

K224 XA(&TSNPID) &XACALL - return code &XATXT from RM instance &INSTNUM, &TEXT32 is not XA(CAE) compliant

The Resource Manager (RM) returns an unexpected return code.

The inserts have the following meanings:

&XACALL Name of the call to the XA interface, e.g. xa_start().

&XATXT Keyword for the return code from the called XA function (see [K211](#)).

&INSTNUM Instance number of the Resource Manager, see [K203](#) .

&TEXT32 Name of the Resource Manager.

K225 XA(&TSNPID) recursive call of XA module: function: &XADBC1 - error/signal in DB/XA connection for &XADBC2

The meaning of the inserts is as follows:

&XADBC1 Name of the called function in the UTM/XA connection module.

&XADBC2 Name of the function in which an error was detected in the UTM/XA connection module.

K230 XA(&TSNPID) Int. error: &TEXT32

&TEXT32 Specifies an internal error.

K231 XA(&TSNPID) Int. error: PETA not supported

Preliminary end of transaction not supported.

K232 XA(&TSNPID) Int. error: DBSTAT secondary opcode inconsistent

The secondary operation code of the primary operation code DBSTAT is inconsistent.

K233 Heur. decision in task / process &TSNPID, RM=&INSTNUM in
&XACALL(&DBCALL), xa-rc=&XATXT, LTHGTRID=<HGTRID, GTRID=>RID

The meaning of the inserts is as follows:

&INSTNUM Instance number of the Resource Manager (RM), see [K203](#) .

&XACALL Name of the call to the XA interface, e.g. xa_start().

&DBCALL Name of the called UTM-DB interface function

&XATXT Keyword for the return code from the called XA function (see [K211](#)).

>RID Global transaction ID (gtrid) of the UTM transaction in accordance with the XA/CAE specification (for contents, see [K204](#)).

<HGTRID Length of the global transaction ID.

K234 LMS error (PLA&PLARC, DMS&DMSRC) for
library: &FNAM
element: &ELEM
version: &EVER
type: &LMSTYPE

The meaning of the inserts is as follows:

&PLARC PLAM return code.
The help text can also be queried using /HELP PLA&PLARC.
0000 means that the PLAM call was successful.

&DMSRC DMS return code.
The help text can also be queried using /HELP
DMS&DMSRC.
0000 means that the DMS call was successful.

&FNAM Name of the PLAM library to which the message refers.

&ELEM Name of the LMS element to which the message refers.

&EVER LMS version of the LMS element.

&LMSTYPE LMS type of the LMS element.

K235 Name resolution for &PRNM lasts &TCPMS milliseconds (socket call: &TCPCL, returncode: &TCPRC, IP
address: &IPADDR).

K236 Address resolution for IP address: &IPADDR lasts &TCPMS milliseconds (socket call: &TCPCL, returncode: &TCPRC, hostname: &PRNM).

The meaning of the inserts is as follows:

&IPADDR IPv4 or IPv6 addresses

&TCPMS Number of milliseconds

&TCPCL Socket function (see description of message [K154 \(Messages K147 - K189\)](#))

&TCPRC Diagnostic Word (see description of message [K154 \(Messages K147 - K189\)](#))

&PRNM Host name

K237 XA(&TSNPID) Error at &DBCALL: Oracle-Password and -User have to be specified by KDCDEF-Generation.

&TSNPID is the TSN and &DBCALL always has the value DBSTPA (DB start parameter analysis). The start of the application is aborted.

K238 XA(&TSNPID) Warning at &DBCALL: Clear-text User or Password for Oracle-DB in start parameter.

K239 Asynchronous message from &GNUSER to &LPAP could not be delivered because of permanent error and was deleted.

K251 Version V&IMPVER of filebase &FBASUPD does not match current version V&DEFVER.

K252 &UPDERR error

One of the following errors has occurred:

- An error has occurred during online import while requesting the memory space.
- Error in the KDCUPD service program.

If &UPDERR is set to the value PARAM, then this points to a syntax error. KDCUPD aborts and sets switch 3 to ON.

Response: enter the correct command!

Otherwise an error will occur when requesting memory, when reading in data, etc.

Response: write a problem report with documentation.

K255 DMS error &DMSE on file &FNAM

Error in file processing.

Response: according to DMS error code

K256 File type of &FNAM is not a valid UTM type.

Action: Make correct file available.

K257 Application run was not terminated correctly

K258 File &FNAM has already been used

K260 Unknown version &DEFVER of filebase &FBASUPD

K261 Inconsistent file &FNAM

The file is not consistent in itself
Response: restore the file or repeat generation.

K262 Wrong file &FNAM

Response: make correct file available or repeat generation.

K263 No start-up has yet been performed with the file &FNAM.

K269 &OBJ1 &OST1 and &OBJ3 &OST2 are not compatible

K273 Error &TRMA in module &UPDMODULThe KDCUPD run was aborted. The error code &TRMA provides information on the cause.

| &TRMA | Cause | Action |
|------------------|---|---|
| BFMMER | Error initializing buffer management (cluster) | if necessary, increase virtual address space or PM |
| CFGERR | Error processing the cluster configuration file | previous diagnostic messages, or if there are none: inconsistent node name sequence |
| CONSER | Internal error | Write PR and provide documentation |
| DMSERR | A DMS error has occurred | See message K255 |
| DxxxRD | DMS error xxx on reading the first page | Depends on DMS error code |
| DxxxWR | DMS error xxx on writing the first page | |
| xxxx01 | DMS error xxxx on reading the first KAA page | |
| GMDTER | Error checking the cluster GSSB file | See previous diagnostic messages |
| INCONS | Error during consistency checks | See messages K261/K262 |
| LOOKLT | Error searching for LTERM | Write PR and provide documentation |

| | | |
|------------------|--|--|
| LOOKFL LOOKFU | Error searching for initiator (LTERM, USER) | Write PR and provide documentation |
| LOOKLT | Error searching for LTERM | Write PR and provide documentation |
| LOOKTC | Error searching for TAC | Write PR and provide documentation |
| LOOKUS | Error searching for USER | Write PR and provide documentation |
| OPWRON | Internal error | Write PR and provide documentation |
| PPMMER | Cluster page pool management file incorrect. | See previous diagnostic messages |
| READxx *) | DMS error | See start error code xx in K049 |
| REQKTA | 'Request memory' error for KTA | Insufficient storage space available, try again with reduced system load |
| REQM01 | 'Request memory' error for 1st page | Regenerate system if necessary |
| REQM02 | Insufficient memory when creating memory pool for UTM cache | Check operation BS2000 generation or reduce the CACHESIZE operand |
| SHM002 **) | Cause: UTM application is running at the moment. A KDCUPD run is therefore not possible. | Response: terminate the application. |
| UMDTER | Error checking the cluster ULS file | See previous diagnostic messages |

| | | |
|------------------|---|--|
| UPDSTA | File has already been processed with KDCUPD | Assign correct file |
| USFERR | Error opening the cluster user file | See previous diagnostic messages |
| WRDB01 *) | Abort in KDCUPD write module. Cause: The number of DB systems in the new KDCFILE is smaller than in the old KDCFILE. Can occur only if old and new KDCFILE are generated with UTM-S. K307 is also output. | Modify the generation of the new KDCFILE |
| WRDB02 *) | Abort in KDCUPD write module. Cause: The type of database(s) in the new KDCFILE is different from the type in the old KDCFILE. Can occur only if old and new KDCFILE are generated with UTM-S. K307 is also output. | Modify the generation of the new KDCFILE |
| WRDB03 *) | Abort in the KDCUPD write module. Cause: at least 1 DB system is in the old KDCFILE and there are more DB systems in the new KDCFILE than in the old KDCFILE. Can occur only if old and new KDCFILE are generated with UTM-S. K307 is also output. | Modify the generation of the new KDCFILE |
| WRFORM *) | Abort in the KDCUPD write module. Cause: the old KDCFILE was generated with formatting and the new KDCFILE without formatting, both KDCFILEs are generated with the variant UTM-S. | Modify the generation of the new KDCFILE |
| WRITxx *) | DMS error | See start error code xx in K049 |
| ...GSBGB | Error during GSSB handling | Write PR and compile documentation |
| ...TLSTL | Error during TLS handling | Write PR and compile documentation |
| ...ULSUL | Error during ULS handling | Write PR and compile documentation |
| ..DIAL | Error during transfer of chained services | Write PR and compile documentation |
| ...ASYAS | Error handling FPUTs or DPUTs to LTERM | Write PR and compile documentation |

| | | |
|------------------|--|---|
| ...IMSIM | Error handling FPUTs or DPUTs to TAC | Write PR and compile documentation |
| ...UPIUP | Error while processing a dialog message for UPIC | Write problem report and create documentation |
| ...SOCSO | Error while processing a dialog message for SOCKET | Write problem report and create documentation |
| ...UMSUM | Error while processing a user queue message | Write problem report and create documentation |
| ...QMSQM | Error while processing a queue message | Write problem report and create documentation |
| ...LSB | Error in LSSB handling | Write PR and compile documentation |
| xxxx99 *) | Internal error in KDCUPD | Write PR and compile documentation |

The values marked with *) only appear on BS2000 systems and the values marked with **) only appear on Unix, Linux and Windows systems.

In addition, the error codes indicating abnormal termination of UTM may be output (for description see K060 in section [Messages K049 - K070](#)). In this case, you should always write a PR and compile relevant documentation.

K274 Terminated with a dump

K277 At least one node application was not terminated correctly.

For more details, see SYSOUT protocol.

K278 At least one node application has already been started.

K279 Error in cluster-handling, see (possible) diagnostic message before

K300 &UPDPRO percent of &PGPOOL used.

K303 &UKCOP data transferred. KCRN = &UKCRN, type = &UPDTYP, KCLM = &UKCLM.

K304 Service data transferred for user &USER. Service type = &TACTYPE, height of stack = &UKCHSTA

K305 Used pages of &PGPOOL for &UPDTYP: &PGS1 overall, &PGS2 for &UKCRN.

K306 Used pages of &PGPOOL for &UPDTYP: &PGS1.

Note

The data could not be transferred for the following KDCUPD messages in which the text begins with a "*" (asterisk).

K310 * &UPDTYP &UKCRN not found

See [Note](#), above.

K311 * &UPDTYP &UKCRN not found. No data transferred

See [Note](#), above.

K314 * Warning: LPUT data cannot be transferred

See [Note](#), above.

K317 * &UKCOP data not transferred. KCRN= &UKCRN, Type = &UPDTYP, KCLM = &UKCLM, KCRCCC = &RCCC, KCRCDC = &RCDC . Caused by LTERM = <RM , user = &USER

See [Note](#), above.

K318 * &UPDTYP &UKCRN : sender of asynchronous message not found. LTERM = <RM, user = &USER

See [Note](#), above.

K320 * Service data for user &USER not transferred. Service type = &TACTYPE, reason: &UERRCODE, &UERRINFO, &RCDC

See [Note](#), above.

The insert &UERRCODE indicates why the service data for USER &USER was not transferred. The insert &UERRINFO contains additional information.

| &UERRCODE | &UERRINFO | Meaning |
|----------------------|----------------------|---|
| EDIT *) | name | The edit profile name is not generated. |
| KBLTH | bytes | The generation parameter MAX KB in the new KDCFILE is too small. The service requires the number of bytes specified for "bytes". |
| LOCK ERR *) | tac | The user does not have the necessary key for the transaction code "tac" in his/her key set |
| LSSBS | number | The number "number" of LSSBs in a service of the user is larger than the generation value (MAX LSSBS =). |
| LTERM | lterm | The sender LTERM "lterm" is not defined. |
| MISSMATCH | | The user is generated in the new KDCFILE with RESTART=NO or the user type has changed (connection user ID yes/no). |
| NRCONV | number | The number "number" of stacked services of the user is larger than the generation value (MAX NRCONV =). |
| PAGEPOOL | | The page pool is too small (MAX PAGEPOOL =). |
| RESSHORT | | The UTM table entries for administrating service data are not sufficient. More user IDs, sessions and/or tasks were generated in the new KDCFILE than in the old or the value of ASYNTASKS is less than in the old KDCFILE. |
| TAC | name | The transaction code "name" is invalid. |
| TRMSGLTH | | The message for a continuation program is too large (MAX TRMSGLTH =). |
| VGMSIZE *) | size | The service memory (size in KB) is larger than the generation value in the new KDCFILE (MAX VGMSIZE=). |

*) values only appear on BS2000 systems.

5.2 Messages of the XAP-TP provider

The messages from the XAP-TP provider all start with the letter “P”. The values for the inserts are either described following the message or (if the insert occurs a number of times) in [section “General inserts for the XAP-TP messages”](#).

P001 Error on OSS call (&XPFUNC): &ACPNT, &XPRET, &XPERR, &XP1INFO, &XP2INFO

This message is output if a call to an OSS function (&XPFUNC) returns an error. If the error has been reported by the transport system, message P012 is also output.

The inserts have the following meaning:

| | |
|----------|--|
| &XPFUNC | Name of the OSS function |
| &ACPNT | Name of the local ACCESS-POINT |
| &XPRET | See table on "General inserts for the XAP-TP messages" |
| &XPERR | See table on "General inserts for the XAP-TP messages" |
| &XP1INFO | Supplementary OSS information |
| &XP2INFO | Supplementary OSS information |

P002 Error on association establishment (&XPFUNC): &ACPNT, &OSLPAP, &XPRET, &XPERR, &XP1INFO, &XP2INFO

This message is issued if the call to an OSS function (&XPFUNC) required to establish an association returns an error. If the error has been reported by the transport system, message P012 is also output. If the error has not been reported by the transport system, the application is terminated with “Termapplication”.

The inserts have the following meaning:

| | |
|----------|--|
| &XPFUNC | Name of the OSS function |
| &ACPNT | Name of the local ACCESS-POINT |
| &OSLPAP | Name of the partner in the local application |
| &XPRET | See table on "General inserts for the XAP-TP messages" |
| &XPERR | See table on "General inserts for the XAP-TP messages" |
| &XP1INFO | Supplementary OSS information |
| &XP2INFO | Supplementary OSS information |

P003 Association rejected (a_assin()):&ACPNT, reason: &XPRJCT, length: &XPLTH

This message is issued if a request to establish an association was rejected from outside.

The inserts have the following meaning:

&ACPNT Name of the local ACCESS-POINT

&XPLTH Incorrect length

&XPRJCT See table on "[General inserts for the XAP-TP messages](#)"

P004 Association rejected (a_assin()):&ACPNT, &OSLPAP, reason: &XPRJCT

This message is issued if a request to establish an association was rejected from outside.

The inserts have the following meaning:

&ACPNT Name of the local ACCESS-POINT

&OSLPAP Name of the partner in the local application

&XPRJCT See table on "[General inserts for the XAP-TP messages](#)"

Possible causes in the case of &XPRJCT = 34 or &XPRJCT = 35 (NO_MORE_CONTENTION_LOSER / WINNER_ASSOCIATIONS, "[General inserts for the XAP-TP messages](#)"):

- Associations have been disconnected without the local UTM application being informed of this. The local UTM application considers that these associations still exist. The OSI-TP partner application attempts to re-establish these associations. However, these cannot be re-established until either the affected associations have been disconnected due to the expiry of the idle timer or all associations to the relevant partner have been disconnected at the administrative level.
- More associations are generated in the OSI-TP partner application than in the local UTM application.
- Different numbers of contention losers/winners in the local and partner applications

P005 Association rejected (a_assin()):&ACPNT, reason: unknown partner

N-SEL: &XPNSEL, T-SEL: &XPTSEL

S-SEL: (&XPLSSEL,&XPCSSEL,&XPHSSEL)

P-SEL: (&XPLPSEL,&XPCPSEL,&XPHPSEL)

This message is issued if a request to establish an association was rejected from outside because the remote partner is not known to the local application.

The inserts have the following meaning:

&ACPNT Name of the local ACCESS-POINT

&XPNSEL Network selector (BCAM processor name) of the remote partner

&XPTSEL Transport selector (BCAM application name) of the remote partner

&XPLSSEL Length of the session selector of the remote partner

&XPCSSEL Session selector (printable) of the remote partner

&XPHSSEL Session selector (hexadecimal) of the remote partner

&XPLPSEL Length of the presentation selector of the remote partner

&XPCPSEL Presentation selector (printable) of the remote partner

&XPXPSEL Presentation selector (hexadecimal) of the remote partner

P006 Association rejected (a_assin()): &ACPNT, &OSLPAP, reason: wrong application context name (&XP0OBID, &XP1OBID, &XP2OBID, &XP3OBID, &XP4OBID, &XP5OBID, &XP6OBID, &XP7OBID, &XP8OBID, &XP9OBID)

This message is issued if a request to establish an association was rejected from outside. The application context name for the remote partner does not match the application context name generated for this partner in the local application.

The inserts have the following meaning:

&ACPNT Name of the local ACCESS-POINT

&OSLPAP Name of the partner in the local application

&XP0OBID - &XP9OBID These are (up to) ten elements of the object identifier which form the application context name of the remote partner.

 -1 is output for elements which do not have a value assigned.

P007 Error on association establishment (*a_assrs()*): &ACPNT, &OSLPAP, &XPRET, &XPERR, &XP1INFO, &XP2INFO

This message is output when a call to the OSS function *a_assrs()* to respond to a request to establish an association from outside returns an error. If the error has been reported by the transport system, message P012 is also output.

The inserts have the following meaning:

&ACPNT Name of the local ACCESS-POINT
&OSLPAP Name of the partner in the local application
&XPRET See table on "[General inserts for the XAP-TP messages](#)"
&XPERR See table on "[General inserts for the XAP-TP messages](#)"
&XP1INFO Supplementary OSS information
&XP2INFO Supplementary OSS information

P008 Association (&XPOSAS) established: &ACPNT, &OSLPAP

This message is issued when an association has been established.

The inserts have the following meaning:

&XPOSAS Index of the relevant association
&ACPNT Name of the local ACCESS-POINT
&OSLPAP Name of the partner in the local application

P009 Association (&XPOSAS) rejected (*a_asscf()*): &ACPNT, &OSLPAP, reason: &XPRJCT, length: &XPLTH

This message is issued when active establishment of an association is rejected because the confirmation from the partner cannot be accepted.

The inserts have the following meaning:

&XPOSAS Index of the relevant association
&ACPNT Name of the local ACCESS-POINT
&OSLPAP Name of the partner in the local application
&XPRJCT See table on "[General inserts for the XAP-TP messages](#)"
&XPLTH Possible incorrect length

P010 Association (&XPOSAS) rejected (a_asscf()): &ACPNT, &OSLPAP, reason: unknown partner
N-SEL: &XPNSEL, T-SEL: &XPTSEL
S-SEL: (&XPLSSEL,&XPCSSEL,&XPHSSEL)
P-SEL: (&XPLPSEL,&XPCPSEL,&XPHPSEL)

This message is issued when active establishment of an association is rejected, because the remote partner confirms establishment of an association with an address (&XPADDR) which is unknown to the local application.

The inserts have the following meaning:

&XPOSAS Index of the relevant association
&ACPNT Name of the local ACCESS-POINT
&OSLPAP Name of the partner in the local application
&XPNSEL Network selector (BCAM processor name) of the remote partner
&XPTSEL Transport selector (BCAM application name) of the remote partner
&XPLSSEL Length of the session selector of the remote partner
&XPCSSEL Session selector (printable) of the remote partner
&XPHSSEL Session selector (hexadecimal) of the remote partner
&XPLPSEL Length of the presentation selector of the remote partner
&XPCPSEL Presentation selector (printable) of the remote partner
&XPHPSEL Presentation selector (hexadecimal) of the remote partner

P011 Association (&XPOSAS) rejected (a_asscf()): &ACPNT, &OSLPAP, reason: wrong application context name (&XP0OBID, &XP1OBID, &XP2OBID, &XP3OBID, &XP4OBID, &XP5OBID, &XP6OBID, &XP7OBID, &XP8OBID, &XP9OBID)

This message is issued when active establishment of an association is rejected, because the remote partner confirms establishment of an association with an application context name other than the one configured for this partner in the local application.

The inserts have the following meaning:

&XPOSAS Index of the relevant association
&ACPNT Name of the local ACCESS-POINT
&OSLPAP Name of the partner in the local application
&XP0OBID - &XP9OBID

These are (up to) ten elements of the object identifier which form the application context name of the remote partner.

-1 is output for elements which do not have a value assigned.

P012 CMX diagnostic information: &XPCTYPE, &XPCCLS, &XPCVAL, &XPBCAM

This message is issued if a preceding message is issued as a result of an error reported by the transport system. The diagnostic code of the transport system is print-edited. The following table describes a number of values for &XPCTYPE, &XPCCLS and &XPCVAL. The CMX header file `cmx.h` contains a complete list.

| XPCTYPE | Meaning (CMX error type) |
|----------------|---|
| 0 | T_CMXTYPE: CMX error detected by the CMX library |
| 2 | T_DSTEMPERR: Temporary TNS error |
| 3 | T_DSCALL_ERR: TNS call error |
| 4 | T_DSPERM_ERR: Permanent TNS error |
| 5 | T_DSWARNING: TNS warning |
| >15 | CMX error on the basis of error codes from the transport system |

| XPCCLS | Meaning (CMX error class, valid for &XPCTYPE < 15) |
|---------------|--|
| 0 | T_CMXCLASS: CMX class |
| 2 | T_DSNOT_SPEC: TNS class not specified |
| 3 | T_DSPAR_ERR: TNS parameter error |
| 4 | T_DSILL_VERS: Invalid TNS version |
| 5 | T_DSSYS_ERR: TNS system error |
| 6 | T_DSINT_ERR: Internal TNS error |
| 7 | T_DSMESSAGE: TNS note |

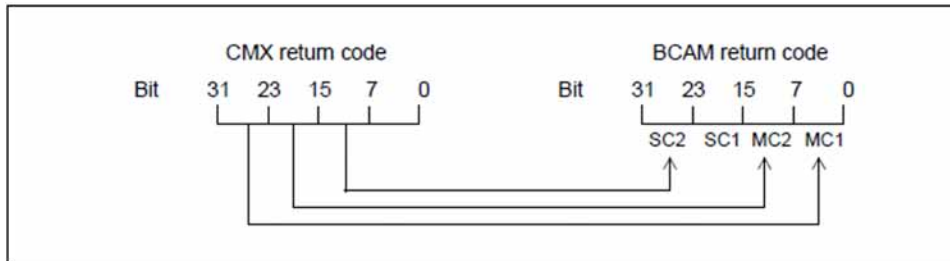
| XPCVAL | Meaning (CMX error value) |
|---------------|---|
| 0 | T_NOERROR: No error |
| 5 | T_EIO: Temporary bottleneck or error in the transport system |
| 14 | T_EFAULT: IO_Area not allocated |
| 100 | T_UNSPECIFIED: Unspecified error, generally a system call error |
| 101 | T_WSEQUENCE: Invalid call sequence |
| 103 | T_WPARAMETER: Invalid parameter |
| 104 | T_WAPPLICATION: The application is not known to TNS or the task is not authorized to sign on to the application or the application has already been opened by this task. |
| 105 | T_WAPP_LIMIT: The limit for the number of simultaneously active applications has already been reached. |
| 106 | T_WCONN_LIMIT: The limit for the number of simultaneously active connections has already been reached. |
| 107 | T_WTREF: Invalid transport reference or the transport connection has already been established. |
| 111 | T_NOCCP: The transport system does not support the requested application or connection. |
| 114 | T_CCP_END: The transport system has been terminated or the application was closed by the administrator. |
| 255 | T_WLIBVERSION: No connection to the CMX subsystem possible. |
| -100 | T_INVREF: Invalid evid. CMX cannot assign the call to a wait point. |

&XPBCAM if the value of &XPCTYP is greater than 15, the BCAM info word is output with &XPBCAM.

CMX return code

Refer to the appendix of the CMX manual for details on the structure of the CMX return code. Two different situations must be taken into account when evaluating the CMX return code:

1. The CMX error type has a value less than 15: a system error has occurred.
2. The CMX error type has a value larger than 15: the transport system has reported an error and the BCAM return code is contained in the CMX return code. Bits 0 through 7 of the CMX return code contain the CMX error value (refer to the CMX manual for the value). The BCAM return code can be derived from the rest of the CMX return code using the following method. SC1 of the BCAM return code (S-RTC1) must always be set to 00.



Where:

SC1/2 = S-RTC1/2 (Subcodes) MC1/2 = M-RTC1/2 (Maincodes)

Bits 24 through 31 of the CMX return code are passed in the field MC1 of the BCAM return code.

Bits 16 through 23 of the CMX return code are passed in the field MC2 of the BCAM return code.

Bits 8 through 15 of the CMX return code are passed in the field SC2 of the BCAM return code.

Refer to the appendix of the CMX manual for the meaning of the diagnostic code.

P013 Association (&XPOSAS) rejected (a_asscf()): &ACPNT, &OSLPAP, reason:
&XPCRES, &XPSRC, &XPNDIA
CCR V2 = &XP1BOOL, Version Incompatibility = &XP2BOOL
ContWin Assignment rejected = &XP3BOOL
Bid mandatory rejected = &XP4BOOL, No reason = &XP5BOOL

This message is issued when active establishment of an association is rejected by the remote partner.

The inserts have the following meaning:

&XPOSAS Index of the relevant association

&ACPNT Name of the local ACCESS-POINT

&OSLPAP Name of the partner in the local application

&XPCRES Specifies whether the rejection is temporary or permanent:
0= permanent reject
1= transient reject

&XPCSRC Specifies who has rejected establishment of the association:
0 = ACSE service user
1 = ACSE service provider
2 = Presentation service provider

&XPNDIA See table on ["General inserts for the XAP-TP messages"](#)

&XP1BOOL - &XP5BOOL

These inserts can take the values TRUE or FALSE. Values of TRUE indicate the reasons the partner reported for rejecting the request to establish an association:

&XP1BOOL: CCR Version 2 is not available
&XP2BOOL: The TP protocol versions are not compatible
&XP3BOOL: The contention winner assignment has been rejected
&XP4BOOL: The specification "Bidding is mandatory" or "Bidding is not mandatory" has been rejected
&XP5BOOL: No reason is specified

Possible causes for the rejection of the contention winner assignment (&XP3BOOL=TRUE):

- Fewer associations are generated in the OSI-TP partner application than in the local UTM application.
- Different number of contention losers/winners in the local and the partner application.
- Associations have been disconnected without the OSI-TP partner application being informed of this. The OSI-TP partner application rejects the establishment of associations since it considers that they are still established.

In this situation, the message P004 with &XPRJCT = 34 or &XPRJCT = 35 is generated in the OSI-TP partner application (NO_MORE_CONTENTION_LOSER / WINNER_ASSOCIATIONS, ["General inserts for the XAP-TP messages"](#)).

P014 Error on association disconnection (&XPOSAS) (&XPFUNC): &ACPNT, &OSLPAP, &XPRET, &XPERR, &XP1INFO, &XP2INFO

This message is issued if the call to an OSS function (*&XPFUNC*) required to establish an association returns an error. If the error has been reported by the transport system, message P012 is also output. If the error has not been reported by the transport system, the application is terminated with "Termapplication".

The inserts have the following meaning:

&XPOSAS Index of the relevant association

&XPFUNC Name of the OSS function

&ACPNT Name of the local ACCESS-POINT

&OSLPAP Name of the partner in the local application

&XPRET See table on "[General inserts for the XAP-TP messages](#)"

&XPERR See table on "[General inserts for the XAP-TP messages](#)"

&XP1INFO Supplementary OSS information

&XP2INFO Supplementary OSS information, currently always set to zero.

P015 Association (&XPOSAS) disconnected (&XPFUNC): &ACPNT, &OSLPAP, &XPLNK, &XPSRC, &XPNDIA, &XPINI, &XP1INFO, &XP2INFO

This message is issued when an association is cleared. The inserts have the following meaning:

- &XPOSAS Index of the relevant association
- &XPFUNC Name of the OSS function
- &ACPNT Name of the local ACCESS-POINT
- &OSLPAP Name of the partner in the local application
- &XPLNK Represents the internal status of the association
- 0 = Association not linked
 - 1 = Association linked to channel
 - 2 = Association linked to instance
- &XPCSRC Originator of clear-down
- 0 = ACSE service user
 - 1 = ACSE service provider
 - 2 = Presentation service provider
- &XPNDIA See table on "[General inserts for the XAP-TP messages](#)"
- &XP1INFO Supplementary OSS information
- &XP2INFO Supplementary OSS information
- &XPINI See table below

| XPINI | Meaning |
|-------|---|
| 0 | Association was cleared internally. |
| 401 | O_LOC_TRAN The originator is the local transport system. &XP1INFO contains the CMX return code. This is output in detail in the subsequent message P012. |
| 402 | O_REM_TRAN The originator is the remote transport system. &XP1INFO contains the reason for the CMX event t_disin. The values are defined in <code>cmx.h</code> . Some of the possible values for &XP1INFO and their meaning are contained in the list below. The following abbreviations are used: <ul style="list-style-type: none"> • CCP (Communication Control Program) for the application program that controls communication • TSAP (Transport Service Access Point) for the access point to the transport service, • NSAP (Network Service Access Point) for the access point to the network service. • PDU (Protocol Data Unit) for data elements in a protocol layer. &XP1INFO can, for example, take on the following values: |
| | 0 (T_USER) The communication partner cleared the association, possibly as a result of a user error on the partner side. |

1 (T_RTIMEOUT)

The connection was cleared locally by CMX because the connection had been inactive for too long according to the t_timeout parameter.

2 (T_RADMIN)

The connection was cleared locally by CMX because the administrator closed down CCP.

3 (T_CCPEND)

The connection was cleared locally by CMX because CCP failed.

256 (T_RUNKOWN)

Either the partner or CCP cleared the connection. No reason was given.

257 (T_RSAP_CONGEST)

The partner CCP cleared the connection because of a TSAP-specific bottleneck.

258 (T_RSAP_NOTATT)

The partner CCP cleared the connection because the addressed TSAP was not registered there.

259 (T_RUNSAP)

The partner CCP cleared the connection because the addressed TSAP was not known there.

261 (T_RPERMLOST)

The connection was cleared by the network administrator or the partner CCP administrator.

262 (T_RSYSERR)

Error in the network

385 (T_RCONGEST)

The partner CCP cleared the connection as a result of a resource bottleneck.

386 (T_RCONNFAIL)

No connection could be established. The partner CCP aborted the attempt due to failure.

387 (T_RDUPREF)

The partner CCP cleared the connection because a second connection reference was assigned for an NSAP pair (system error).

388 (T_RMISREF)

The partner CCP cleared the connection because a connection reference could not be assigned (system error).

389 (T_PROTERR)

The partner CCP cleared the connection because of a protocol error (system error).

391 (T_PREFOFLOW)

The partner CCP cleared the connection because of a connection reference overflow.

392 (T_RNOCONN)

The partner CCP rejected the request to establish a network connection.

394 (T_RINLNG)

The partner CCP cleared the connection because of an incorrect length header or parameter (system error).

448 (T_RLCONGEST)

The local CCP cleared the connection because of a resource bottleneck.

449 (T_RLNOQOS)

The local CCP cleared the connection because the "quality of service" could not be maintained.

451 (T_RILLPWD)

Invalid connection password.

452 (RNETACC)

Access to the network was refused.

464 (T_RLPROTERR)

The local CCP cleared the connection because of a transport protocol error (system error).

465 (T_RLINTIDU)

The local CCP cleared the connection because it received an interface data unit which was too long (system error).

466 (T_RLNORMFLOW)

The local CCP cleared the connection because of an infringement of the flow control rules for normal data (system error).

467 (T_RLEXFLOW)

The local CCP cleared the connection because of an infringement of the flow control rules for expedited data (system error).

468 (T_RLINSAPID)

The local CCP cleared the connection because it received an invalid TSAP identification (system error).

469 (T_RLINCEPID)

The local CCP cleared the connection because it received an invalid TCEP identification (system error). TCEP = **T**ransport **C**onnection **E**nd **P**oint.

470 (T_RLINPAR)

The local CCP cleared the connection because of an invalid parameter value (e.g. user data too long or expedited data not permitted).

480 (T_RLNOPERM)

The administrator of the local CCP prevented establishment of a connection.

481 (T_RLPERMLOST)

The administrator of the local CCP cleared the connection.

482 (T_RLNOCONN)

The local CCP could not establish the connection because no network connection is available.

| | |
|-----|---|
| | <p>483 (T_RLCONNLOST) The local CCP cleared the connection because the network connection was lost. Most common cause: generation error on the CCP and PDN side, e.g. incorrect link addresses. Other possible causes: partner is not available, modem is faulty or has been set incorrectly, data transfer connection not plugged in, data transfer card faulty.</p> |
| | <p>484 (T_RLNORESP) The local CCP cannot establish the connection, because the partner did not respond to the CONRQ.</p> |
| | <p>485 (T_RLIDLETRAF) The local CCP cleared the connection because the connection was lost (Idle Traffic Timeout).</p> |
| | <p>486 (T_RLRESYNC) The local CCP cleared the connection because the resynchronization was not successful (more than three attempts were made).</p> |
| | <p>487 (T_RLEXLOST) The local CCP cleared the connection because the expedited data channel is faulty (more than three attempts were made).</p> |
| 403 | <p>O_LOC_SESS The originator is the local session provider. &XP1INFO can take the following values:</p> |
| | <p>4 (S_PROTERROR) Protocol error: Incorrect establishment of the session PDU or incorrect SPDU parameter</p> |
| | <p>16 (S_PICSREST) Violation of implementation-specific restrictions.</p> |
| 404 | <p>O_REM_SESS The originator is the remote session provider. &XP1INFO can take the following values:</p> |
| | <p>1 (S_TCDISCON) transport disconnect</p> |
| | <p>4 (S_PROTERROR) protocol error</p> |
| | <p>8 (S_UNDEFINED) undefined</p> |
| | <p>16 (S_PICSREST) violation against restriction stated in PICS</p> |
| 405 | <p>O_LOC_PRES The originator is the local presentation provider. &XP1INFO can take the following values:</p> |

| | |
|-----|--|
| | <p>0 (P_ARRNO) reason not specified</p> <ul style="list-style-type: none"> • A decoding buffer requested internally cannot be provided due to a lack of memory. • Overflow of the internal data buffer when reassembling fragmented messages • An unknown session event was reported. • System bottleneck or system error. |
| | <p>1 (P_ARNRPDU) unrecognized PPDU</p> <ul style="list-style-type: none"> • No session user data is available or the presentation part of the session user data cannot be decoded (system error). |
| | <p>4 (P_ARNRPAR) unrecognized PPDU parameter</p> <ul style="list-style-type: none"> • Error on decoding the ACSE, presentation or user syntax. |
| | <p>5 (P_ARNEPAR) unexpected PPDU parameter</p> <ul style="list-style-type: none"> • PPDU parameter not in normal mode. |
| | <p>6 (P_ARNIPAR) invalid PPDU parameter</p> <ul style="list-style-type: none"> • Invalid context identifier on decoding. • Invalid PPDU parameter, e.g. incorrect length. <p>This “abort” can be triggered by the UTM user by specifying invalid presentation or session selectors.</p> |
| 406 | <p>O_REM_PRES The originator is the remote presentation provider. &XP1INFO can take the following values:</p> |
| | <p>-1 (O_NOVALUE) Optional parameter is not present</p> |
| | <p>0 (P_ARRNO) Reason not specified</p> |
| | <p>1 (P_ARNRPDU) Unrecognized PPDU</p> |
| | <p>2 (P_ARNEPDU) Unexpected PPDU</p> |

| | |
|-----|---|
| | 3 (P_ARNESSP) Unexpected session service primitive |
| | 4 (P_ARNRPAR) Unrecognized PPDU parameter |
| | 5 (P_ARNEPAR) Unexpected PPDU parameter |
| | 6 (P_ARNIPAR) Invalid PPDU parameter value |
| 407 | O_LOC_ACSE The originator is the local ACSE provider &XP1INFO always has the following value: |
| | 1 (A_ABSASP) ACSE service provider initiated the abort The instance is specified which initiated the abort ("abort source") from the point of view of ACSE. |
| 408 | O_REM_ACSE The originator is the ACSE service provider. &XP1INFO can take the following values: |
| | 0 (A_ABSASU) ACSE service user initiated the abort |
| | 1 (A_ABSASP) ACSE service provider initiated the abort |

P016 Association (&XPOSAS) disconnected (a_relin()): &ACPNT, &OSLPAP, &XPLNK, &XPNDIA

This message is issued if an association is cleared because a "release indication" was received. The inserts have the following meaning:

&XPOSAS Index of the relevant association

&ACPNT Name of the local ACCESS-POINT

&OSLPAP Name of the partner in the local application

&XPLNK Represents the internal status of the association

0 = Association not linked

1 = Association linked to channel

2 = Association linked to instance

&XPNDIA See table on ["General inserts for the XAP-TP messages"](#)

P017 OSS decoding error: &XPPDU, &XP1DIA, &XP2DIA, &XP3DIA

This message is issued if OSS detects an error on decoding a TP PDU, CCR PDU or user data PDU. The insert &XPPDU indicates the type of PDU in question.

The inserts have the following meanings:

| XPPDU | Meaning |
|--------------|--------------------------------|
| 0 | PDU_UNKNOWN (unknown PDU type) |
| 1 | TP_BEGIN_DIALOGUE_RI |
| 2 | TP_BEGIN_DIALOGUE_RC |
| 3 | TP_BID_RI |
| 4 | TP_BID_RC |
| 5 | TP_END_DIALOGUE_RI |
| 6 | TP_END_DIALOGUE_RC |
| 7 | TP_U_ERROR_RI |
| 8 | TP_U_ERROR_RC |
| 9 | TP_ABORT_RI |
| 10 | TP_GRANT_CONTROL_RI |
| 11 | TP_REQUEST_CONTROL_RI |
| 12 | TP_HANDSHAKE_RI |
| 13 | TP_HANDSHAKE_RC |
| 14 | TP_HSK_AND_GRT_CTRL_RI |
| 15 | TP_HSK_AND_GRT_CTRL_RC |
| 16 | TP_DEFER_RI |
| 17 | TP_PREPARE_RI |
| 18 | TP_HEURISTIC_REPORT_RI |
| 19 | TP_TOKEN_GIVE_RI |
| 20 | TP_TOKEN_PLEASE_RI |
| 21 | TP_RECOVER_RI |
| 22 | TP_INITIALIZE_RI |
| 23 | TP_INITIALIZE_RC |

| | |
|----|-------------------|
| 24 | CCR_INITIALIZE_RI |
| 25 | CCR_INITIALIZE_RC |
| 26 | CCR_BEGIN_RI |
| 27 | CCR_BEGIN_RC |
| 28 | CCR_PREPARE_RI |
| 29 | CCR_READY_RI |
| 30 | CCR_COMMIT_RI |
| 31 | CCR_COMMIT_RC |
| 32 | CCR_ROLLBACK_RI |
| 33 | CCR_ROLLBACK_RC |
| 34 | CCR_RECOVER_RI |
| 35 | CCR_RECOVER_RC |
| 50 | PDU_ANY |
| 51 | PDU_UASE_RI |

| XP1DIA / XP2DIA | Meaning |
|------------------------|---|
| 1 | not supported parameter was received and skipped |
| 2 | received data truncated |
| 4 | required transfer syntax name missing in user data or not specified in AVX list, error codes in &XP2DIA |
| 6 | no transfer syntax name in user data though presentation negotiation was not completed |
| 7 | transfer syntax name encoded in user data not found in AVX list |
| 10 | invalid value in data structure |
| 11 | invalid object identifier in data structure |
| 12 | invalid length or count in data structure |
| 13 | invalid index in data structure (EXTERNAL, CHOICE) |
| 14 | invalid value of ax_typtag in corresponding syntax table |

&XP3DIA Corresponding index in the syntax table

P018 FSM protocol error: &ACPNT, &OSLPAP, &XPPTYP, &XPFSMN

This message is issued when the finite state machine reports an error.

The inserts have the following meaning:

&ACPNT Name of the local ACCESS-POINT

&OSLPAP Name of the partner in the local application

&XPPTYP Type of the service protocol element

&XPFSMN Name of the finite state machine

P019 APDU contains invalid value: &ACPNT, &OSLPAP, &XPAPDU, &XP3INFO

This message is issued if an invalid APDU is received.

The inserts have the following meanings:

&ACPNT Name of the local ACCESS-POINT

&OSLPAP Name of the partner in the local application

&XPAPDU Type of the APDU

&XP3INFO Supplementary information on the error

P020 OTRACE implicitly switched off. Reason: &XPTRFAIL

This message is issued when an attempt to write a trace record fails. The OSS trace is deactivated implicitly as a result of the error. After the error has been corrected, the administrator can reactivate the OSS trace.

The inserts have the following meaning:

| XPTRFAIL | Meaning |
|-----------------|--|
| 1 | The OSS function o_wutr() issued the return code O_ERROR. The preceding P001 message provides further information on the error. |
| 2 | The OSS function o_wutr() issued the return code O_INVEREF. |
| 3 | The OSS function o_wutr() issued an unknown return code. |

P021 Unexpected event &XPEVT occurred for association (&XPOSAS), event discarded: &ACPNT, &OSLPAP, &XPOSAS, &XPASST

This message is output if an event occurs which is incompatible with the current status of the association. XATP does not take account of this event.

The inserts in the message have the following meanings:

&XPEVT Type of event that has occurred.

&ACPNT Name of the local access point (KDCDEF statement ACCESS- POINT).

&OSLPAP Name of the OSI-LPAP partner in the local application.

&XPOSAS Index of the relevant association.

&XPASST Status of the relevant association.

5.2.1 General inserts for the XAP-TP messages

| XPRET | Meaning |
|--------------|---|
| 2 | Not first process of application |
| -1 | Function call not successful due to permanent error. |
| -2 | Function call not successful due to transient error. Retry the call later |
| -3 | Function call not successful, data flow stopped Continue after event GO |
| -4 | Session call: Expedited function call stopped due to expedited data flow control shortage Continue after event S_XGO/S_GO |
| | Presentation call: Function call not successful, apref invalid |
| | Local function call: Invalid connection reference |
| | ACSE call: Function call not successful, apref resp. aref invalid |
| -5 | Invalid waiting point reference |
| -6 | Invalid application reference |
| -7 | Waiting period to obtain a lock on a shared association expired |

| XPERR | Meaning |
|--------------|--|
| 1 | No memory available (temporary) |
| 100 | Call sequence error |
| 101 | Application not attached |
| 102 | Sending of data not allowed; wait for GO event |
| 103 | Internal error |
| 104 | Shared association is not locked |
| 200 | Missing ACSE/presentation reference |
| 201 | Invalid ACSE/presentation reference |
| 202 | Presentation call: missing AVX list (o_attach) ACSE call: missing application reference |

| | |
|-----|---|
| 203 | Presentation call: invalid AVX list ACSE call: invalid application reference |
| 204 | Presentation call: invalid abstract syntax name in AVX ACSE call: missing ACSE parameters |
| 205 | Presentation call: invalid decoding mode in AVX ACSE call: missing presentation parameters |
| 206 | Presentation call: invalid user data length ACSE call: missing session parameters |
| 207 | Presentation call: invalid context id in p_udl ACSE call: missing application context name |
| 208 | Presentation call: invalid next parameter in p_udl ACSE call: invalid application context name |
| 209 | Presentation call: invalid pdv parameter in p_udl ACSE call: invalid calling AP Title |
| 210 | Presentation call: invalid chaining parameter ACSE call: invalid calling AE Qualifier |
| 211 | Presentation call: missing token parameter ACSE call: invalid called AP Title |
| 212 | Presentation call: invalid token parameter ACSE call: invalid called AE Qualifier |
| 213 | Presentation call: missing rtype parameter ACSE call: invalid responding AP Title |
| 214 | Presentation call: invalid rtype parameter ACSE call: invalid responding AE Qualifier |
| 215 | Presentation call: missing type parameter ACSE call: missing called p_address |
| 216 | Presentation call: invalid type parameter ACSE call: invalid called p_address |
| 217 | Presentation call: invalid syncp parameter ACSE call: missing calling p_address |
| 218 | Presentation call: missing syncp parameter ACSE call: missing responding p_address |
| 219 | Presentation call: invalid ctxlst parameter ACSE call: no mode parameter |

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| 220 | Presentation call: invalid number of abstract syntaxes passed to OSS ACSE call: invalid mode parameter |
| 221 | Presentation call: invalid transfer syntax name ACSE call: missing result |
| 222 | Presentation call: invalid number of transfer syntaxes ACSE call: invalid result |
| 223 | Presentation call: invalid number of abstract syntaxes ACSE call: missing result source |
| 224 | Presentation call: same abstract syntax occurred already in transparent or non-transparent mode ACSE call: invalid result source |
| 225 | Presentation call: invalid data separation parameter ACSE call: invalid diagnostic |
| 226 | ACSE call: missing reason |
| 227 | ACSE call: invalid reason |
| 228 | ACSE call: missing provider reason |
| 229 | ACSE call: invalid provider reason |
| 230 | ACSE call: missing abort source |
| 231 | ACSE call: invalid p-requirements |
| 232 | ACSE call: invalid s-requirements |
| 233 | ACSE call: invalid syntax identifier |
| 234 | ACSE call: invalid p-context identifier |
| 235 | ACSE call: invalid p-context definition list |
| 236 | ACSE call: invalid p-context definition result list |
| 237 | ACSE call: invalid result in p-context definition result list |
| 238 | ACSE call: invalid default p-context result |
| 239 | ACSE call: invalid default p-context name |
| 240 | ACSE call: invalid user data length |
| 241 | ACSE call: invalid quality of service |
| 242 | ACSE call: invalid sync point serial number |
| 243 | ACSE call: invalid tokens |

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|-----|---|
| 244 | ACSE call: invalid SS-user reference |
| 245 | ACSE call: invalid SS-common reference |
| 246 | ACSE call: invalid SS-additional reference |
| 250 | Presentation call: ASN encoding error ACSE call: ASN encoding error |
| 251 | Presentation call: ASN decoding error ACSE call: ASN decoding error |
| 252 | Presentation call: ASN: invalid value in data struct ACSE call: ASN: invalid value in data struct |
| 253 | Presentation call: ASN: invalid object id in data struct ACSE call: ASN: invalid object id in data struct |
| 254 | Presentation call: ASN: invalid length in data struct ACSE call: ASN: invalid length in data struct |
| 255 | Presentation call: ASN: invalid index in data struct ACSE call: ASN: invalid index in data struct |
| 256 | Presentation call: ASN: invalid tag in syntax table ACSE call: ASN: invalid tag in syntax table |
| 300 | Presentation call: invalid protocol state ACSE call: invalid protocol state Local function call: error on system call |
| 301 | Presentation call: protocol error ACSE call: protocol error Local function call: error on transport system call |
| 302 | Local function call: error on local function call |
| 305 | Local function call: error on session call |
| 306 | Local function call: error on presentation call |
| 307 | Local function call: error on ACSE call |

| XPRJCT | Meaning |
|---------------|---|
| 0 | NO_REJECT |
| 1 | APPLICATION_CONTEXT_NAME_TOO_LONG The object identifier received from the partner, which forms the application context name, contains more elements than supported by openUTM. |

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| 2 | <p>CALLING_APT_TOO_LONG</p> <p>A length was specified for the application process title in the association indication which is not supported by openUTM.</p> |
| 3 | <p>CALLING_AEQ_TOO_LONG</p> <p>A length was specified for the application entity qualifier in the association indication which is not supported by openUTM.</p> |
| 4 | <p>CALLED_APT_TOO_LONG</p> <p>The application process title which was called is longer than that supported by openUTM.</p> |
| 5 | <p>CALLED_AEQ_TOO_LONG</p> <p>The application entity qualifier which was called is longer than that supported by openUTM.</p> |
| 6 | <p>CONTEXT_DEFINITION_LIST_TOO_LONG</p> <p>More abstract syntaxes were passed for the association indication than are supported by openUTM.</p> |
| 7 | <p>CONTEXT_RESULT_LIST_TOO_LONG</p> <p>The list of supported abstract syntaxes passed when establishing an association (association indication or confirmation) contains more elements than are supported by openUTM.</p> |
| 9 | <p>ADDRESS_NO_PSAPINFO</p> <p>The address passed for association indication or confirmation does not contain any information on PSAP.</p> |
| 10 | <p>ADDRESS_NO_INFOVERS_0_PSAP</p> <p>The address passed for association indication or confirmation contains an incorrect version for the PSAP information.</p> |
| 11 | <p>ADDRESS_INVALID_P_SEL_LENGTH</p> <p>The address passed for association indication or confirmation contains an invalid length for the presentation selector.</p> |
| 12 | <p>ADDRESS_NO_SSAPINFO</p> <p>The address passed for association indication or confirmation does not contain any information on SSAP.</p> |
| 13 | <p>ADDRESS_NO_INFOVERS_0_SSAP</p> <p>The address passed for association indication or confirmation contains an incorrect version for the SSAP information.</p> |
| 14 | <p>ADDRESS_INVALID_S_SEL_LENGTH</p> <p>The address passed for association indication or confirmation does not contain a valid part for the session selector.</p> |
| 15 | <p>ADDRESS_NO_PARTNER_MODE</p> <p>The address passed for association indication or confirmation does not contain a valid part for the network and transport selector.</p> |
| 16 | <p>ADDRESS_TNSX_ERROR</p> <p>The address passed for association indication or confirmation has been rejected by TNS.</p> |

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| 17 | UNKNOWN_PARTNER The address passed for association indication or confirmation is not known in the local application. |
| 18 | WRONG_APPLICATION_CONTEXT_NAME The application context passed for association indication or confirmation does not correspond to the application context name generated in the local application. |
| 19 | ABSTRACT_SYNTAX_MISSING The association indication or confirmation supports less abstract syntaxes than are generated in the local application. |
| 20 | OSITP_SYNTAX_MISSING The association indication or confirmation does not support the abstract syntax for OSI-TP. |
| 21 | NO_TP_INITIALIZE No TP-INITIALIZE-RI/RC PDU was passed with the association indication or confirmation. |
| 22 | OSITP_NO_VERSION_1 The partner does not support Version 1 of the OSI-TP protocol. |
| 23 | OSITP_RCH_WRONG_LENGTH The recovery context handle passed with the TP-INITIALIZE-indication or TP-INITIALIZE-confirmation is of a length not supported by openUTM. |
| 24 | NO_CCR_INITIALIZE The CCR-INITIALIZE-RI PDU is missing. |
| 25 | CCR_NOT_VERSION_2 The partner does not support Version 2 of the CCR protocol. |
| 26 | SESSION_NO_FDX Session functionality "full duplex" has not been set. |
| 27 | SESSION_NO_DATA_SEPARATION Session functionality "data separation" has not been set although CCR is in the context. |
| 28 | SESSION_NO_TYPED_DATA Session functionality "typed data" has not been set although CCR is in the context. |
| 29 | SESSION_NO_MINOR_SYNCHRONIZE Session functionality "minor synchronize" has not been set although CCR is in the context. |
| 30 | SESSION_NO_RESYNCHRONIZE Session functionality "resynchronize" has not been set although CCR is in the context. |
| 31 | TOKEN_CONTENTION_WINNER_AND_NO_TOKEN The local application is the contention winner, but does not possess the "token" (only if CCR is in the context). |
| 32 | TOKEN_CONTENTION_LOSER_AND_TOKEN The local application is the contention loser, but possesses the "token" (only if CCR is in the context). |

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| 33 | INITIAL_SYNC_POINT_SERIAL_NUMBER_NOT_SET The initial syncpoint serial number is not set, although CCR is in the context. |
| 34 | NO_MORE_CONTENTION_LOSER_ASSOCIATIONS The request to establish an association from outside is rejected because all the contention loser associations have already been established in the local application. |
| 35 | NO_MORE_CONTENTION_WINNER_ASSOCIATIONS Request to establish an association from outside is rejected because all the contention winner associations have already been established in the local application. |
| 36 | CCR_BUT_NO_PARTNER_AET Partner did not specify an application entity title, although CCR is in the context. |
| 37 | CCR_BUT_NO_OWN_AET No application entity title is specified in the local application, although CCR is in the context. |
| 38 | RESPONDING_APT_TOO_LONG The application process title specified in the association confirmation is longer than that supported by openUTM. |
| 39 | RESPONDING_AEQ_TOO_LONG The application entity qualifier specified in the association confirmation is longer than that supported by openUTM. |
| 40 | ASS_ESTABLISHMENT_TIMEOUT The establishment of an association started by the local application cannot be completed in the specified time. |
| 41 | PARTNER_IS_IN_QUIET_STATE The request for establishment of an association will be rejected because the partner in the local application has been set to Quiet. |
| 42 | NO_SPACE_FOR_RCH The PutElement call for storing the recovery context handle returned a bad value. |
| 43 | REMOTE_AET_2_BIG The application entity title of the partner is longer than that supported by openUTM. |
| 44 | REMOTE_AET_CHANGED When establishing parallel associations to a partner the partner did not provide the same application entity title as for the first association established. |
| 45 | NO_SPACE_FOR_REMOTE_AET The PutElement call for storing the application entity title of the partner returned a bad value. |
| 46 | PARTNER_HAS_STATUS_OFF The establishment of the association is rejected because the partner is locked in the local UTM application (STATUS=OFF is set). |

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| XPNDIA | Meaning |
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| 0 | NO_REASON_GIVEN |
| 1 | NO_COMMON_ACSE_VERSION The partner rejected the request to establish an association because there is no common ACSE version. |
| 2 | APPL_CONXT_NAM_NOT_SUPPORTD The partner rejected the request to establish an association because it does not support the application context name. |
| 3 | CALLING_AP_TITLE_NOT_RECON The partner rejects the request to establish a connection because the partner has not been generated correctly at the sender (e.g. incorrect N-SEL). or (only for heterogeneous links): The partner rejects the request to establish a connection because it does not know the Calling Application Process Title |
| 4 | CALLING_AE_QUALI_NOT_RECON The partner rejected the request to establish an association because it does not know the calling application entity qualifier. |
| 5 | CALLING_AP_INVOC_ID_NOT_RECON The partner rejected the request to establish an association because it does not know the calling application process invocation identifier. |
| 6 | CALLING_AE_INVOC_ID_NOT_RECON The partner rejected the request to establish an association because it does not know the calling application entity invocation identifier. |
| 7 | CALLED_AP_TITLE_NOT_RECON The partner rejected the request to establish an association because it does not know the called application process title. |
| 8 | CALLED_AE_QUALI_NOT_RECON The partner rejected the request to establish an association because it does not know the called application entity qualifier. |
| 9 | CALLED_AP_INVOC_ID_NOT_RECON The partner rejected the request to establish an association because it does not know the called application process invocation identifier. |
| 10 | CALLED_AE_INVOC_ID_NOT_RECON The partner rejected the request to establish an association because it does not know the called application entity invocation identifier. |
| 11 | PERMANENT_FAILURE The partner cleared the association because a permanent error occurred. |
| 12 | BEGIN_TRANSACTION_REJECT The partner cleared the association because it rejected the start of a transaction. |

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| 13 | TRANSIENT_FAILURE The partner cleared the association because a temporary error occurred. |
| 14 | PROTOCOL_ERROR The partner cleared the association because a protocol error occurred. |
| 15 | UNRECOGNIZED_PDU The association was cleared from outside with P-ABORT because the presentation layer received an unknown presentation PDU. |
| 16 | UNEXPECTED_PDU The association was cleared from outside with P-ABORT because the presentation layer received an unexpected presentation PDU. |
| 17 | UNEXPECTED_SESSION_SERVICE_PRIMITIVE The association was cleared from outside with P-ABORT because the session layer received an unexpected session service primitive. |
| 18 | UNRECOGNIZED_PDU_PARAMETER The association was cleared from outside with P-ABORT because the presentation layer received an unknown PDU parameter. |
| 19 | UNEXPECTED_PPDU_PARAMETER The association was cleared from outside with P-ABORT because the presentation layer received an unexpected PDU parameter. |
| 20 | INVALID_PPDU_PARAMETER_VALUE The association was cleared from outside with P-ABORT because the presentation layer received an invalid PDU parameter value. |
| 21 | RELEASE_NORMAL The association was cleared by the partner with release. The partner specified release normal as the reason. |
| 22 | RELEASE_URGENT The association was cleared by the partner with release. The partner specified release urgent as the reason. |
| 23 | RELEASE_USER_DEFINED The association was cleared by the partner with release. The partner specified user defined as the reason |
| 24 | IDLE_TIMEOUT_ABORT The association was cleared by the local application because the association was not used in the time generated with IDLETIME. |
| 25 | ABORT_BY_ASS_INDICATION The association was terminated by the local UTM application because a request to establish an association was received and no suitable, non-established association was available. |

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ABORT_BY_ADM_OR_SHUT

The association was cleared by the local application using administration facilities or because the application was shut down.

5.3 Messages of the KDCDEF generation tool

- K400** KDCDEF &DEFTYP &VERS started
- K401** Please enter control statements
- K402** Syntax error: &SYNERR.
- K403** Illegal value entered for parameter &PARAM15.
- K404** DMS error &ERROR for file &FNAM.
- K405** &ERROR error.
- K406** Illegal value entered for operand &PARAM15. &PARVAL8 assumed
- K407** Unable to create entry for user "&PARVAL8" in cluster user-file
- K408** &STMTNAME name &UTMNAME must not start with "KDC".
- K409** LTERM parameter is mandatory for PTERM statements with PTYPE=APPLI, SOCKET or UPIC-R.
- K410** Warning: LTERM is assigned to a PTERM with PTYPE=APPLI, SOCKET or UPIC-R and an illegal USER or USAGE=O was specified.
- K411** Mandatory parameter &PARAM15 has not been declared in any &PARAM15 control statement.
- K412** DESTADM &UTMNAME is not defined as asynchronous TAC or as LTERM. No DESTADM assumed
- K413** Ambiguous definition of &STMTNAME &OPERAN32 &STRING64
- K414** No LSES control statement assigned to LPAP &UTMNAME.
- K415** Illegal parameter for MAX DPUTLIMIT1 or DPUTLIMIT2. Default assumed
- K416** &PARAM30 defined more than once.
- K417** &PARAM10 but type is not "&PARAM30".
- K418** CID parameter is mandatory for a PTERM controlled by a printer control terminal.
- K419** Printer pool defined but type is not "OUTPUT".
- K420** LTERM with USAGE=D must not be assigned to a PTERM with USAGE=O.
- K421** &PARAM30 and &PARAM50 are mutually exclusive.
- K422** Mandatory parameter &PARAM10 has not been specified.
- K423** Warning: size page pool (PGPOOL) is not greater than size LPUT buffer (LPUTBUF).
- K424** Invalid key value: &KEYVALUE. Valid key values are: 0 <= key <= MAX KEYVALUE.
- K425** &STMTNAME name &PARAM32 has not been defined.
- K426** &STMTNAME control statement missing

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- K427** Event exit &EXITNAME has already been defined.
- K428** Invalid CARD parameter: &CARDINFO or POSITION = 0.
- K429** Too many database types
- K430** Too many &STMTNAME control statements
- K431** User "&PARVAL8" from cluster user-file is missing in KDCFILE.
- K432** No &STMTNAME with &PARAM32 .
- K433** Filebase name is too long. The configuration run will be aborted.
- K434** Minimum length of buffer for recovery data, RECBUF parameter, is 1024. 1024 assumed
- K435** The event exit &PARAM8 must be assigned to an ASSEMBLER program unit.
- K436** MAX statement is missing. The configuration run will be aborted.
- K437** Program error in KDCDEF; reason: &TERMREAS.
- TERMREAS describes the cause that lead to the abnormal termination of the utility.
- The description of UTM message K060 also helps to clear the error.
- Action: Proceed as described for K060.
- In the other cases, there is an error in KDCDEF. Store the documents and write a PR.
- K438** More LSES statements than CON statements have been assigned to LPAP &UTMNAME.
- K439** In parameter KDCFILE the file base name was specified with a catalogue ID.
- K440** &PARAM8 is not allowed in &STMTNAME statements with &PARAM10.
- K441** SHARE table &UTMNAME is empty.
- K442** Inclusion of &PARAM8 is only meaningful if the &STMTNAME is assigned to a &PARVAL8 program unit.
- K443** Inclusion of ULS control statements is only meaningful if USER statements were generated.
- K444** OPTION control statement is only effective when reading from SYSDTA.
- K445** &PARAM30 no longer supported.
- K446** Parameter ignored.
- K447** Control statement ignored.
- K448** KDCFILE generated with warnings; KAA size: &KAASIZE K
- K449** There was at least one ERROR. Configuration run aborted.
- K450** KDCFILE generated; KAA size: &KAASIZE K
- K451** File &FNAM generated.

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- K452** Too many &PARAM10 names. The configuration run will be aborted.
- K453** BCAMAPPL name different from APPLINAME is only allowed for a &STMTNAME with PTYPE=APPLI, SOCKET or UPIC-R.
- K454** Length of LTERM parameter &UTMNAME incompatible with NUMBER parameter.
- K455** TAC assigned to STACK parameter may not be defined with TYPE=A or CALL=NEXT.
- K456** It is not possible to assign a group-LTERM to a PTERM
- K457** Warning: &PARAM10 larger than &PARAM10A
- K458** LTERM &PARAM8 has been assigned as CTERM for LTERM &PARAM8A.
"USAGE = OUTPUT" is not meaningful.
- K459** The LTERM specified at GROUP must not be a group-LTERM itself.
- K460** File &FNAM processed.
- K461** &STMTTP30 &STMTNM30 not supported by &UTMVAR
- K462** Only one OSI-CON connection group is allowed to be active with local partner application &PARAM8.
- K463** &PARAM30 set to &PARAM30.
- K464** Length of session names + length of associations > 8.
- K465** &STMTNAME control statement is mandatory if &PARAM30 is generated.
- K466** Parameter &PARAM30 is mandatory if &PARAM30 is generated.
- K467** Error: Multiple entries for user "&PARAM8" found in cluster user-file
- K468** Password parameter does not fit security level.
- K469** Parameter &PARAM32 only allowed if &PARAM32.
- K470** No user is able to call KDCSHUT.
- K471** &OPERAND&PARAM10 already set.
- K472** &PARAM32 too long.
- K473** Parameter &PARAM10 used more than once for &PARAM30
- K474** Parameter &PARAM30 is illegal if &PARAM30 is generated.
- K475** Parameter &PARAM30 not needed if &PARAM30 is generated.
- K476** In &STMTNAME control statements &OPERAND is given more than once for PRONAM=&PARAM8 and BCAMAPPL=&PARAM8 .
- K477** Parameter &PARAM30 is illegal if any &PARAM30 is given.

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- K478** Control statement &STMTNAME is illegal if &PARAM30 is given.
- K479** &STMTNAME &PARAM50 not used.
- K480** Too many &STMTNAME control statements for this &PARAM30.
- K481** The primary LTERM of a group must not be slave of a bundle.
- K482** EXIT and TAC must be in the same LOAD-MODULE if the exit program is referencing a LOAD-MODULE with LOAD-MODE=ONCALL.
- K483** &PARAM32 must not reference a &STMTNAME with &PARAM32 .
- K484** &PARAM32 with &PARAM32 not generated.
- K485** Control statement too long.
- K486** Different libraries given for same DATABASE TYPE.
- K487** Cannot assign a master LTERM of bundle to PTERM.
- K488** All slave LTERMs of bundle must be assigned to PTERMs with identical PTYPE (APPLI or SOCKET).
- K489** Master LTERM of bundle must not be a slave itself.
- K490** Master LTERM must be generated with QAMSG=YES and RESTART=YES.
Parameters changed.
- K491** &OPERAND &PARAM32 &PARAM20 will not be supported in the next UTM version.
- K492** Note: multiple ACCESS-POINT statements may cause problems.
- K494** Operand &PARAM30 is mandatory if &STMTNAME control statement is given more than once.
- K495** Standard message module not found in any MESSAGE control statement or not defined by MAX control statement.
- K496** File &FNAM corrupted or not a KDCFILE.
- K497** KDCDEF &VER1 / &OST1cannot read KDCFILE &VER2 / &OST2
- K498** There are no &STMTNAME control statements to be created.
- K499** &PARAM30 in &STMTNAME control statement and &PARAM30 do not match.
- K500** No file(s) generated.
- K501** Illegal character "&CHAR1" in string: &STRING64
- K502** Number of free &PARAM10 entries:&PARAM11
- K503** The referenced ACCESS-POINT &PARAM8 must include an APPLICATION-ENTITY-QUALIFIER because the referenced OSI-LPAP &PARAM8 includes an APPLICATION-CONTEXT with the ABSTRACT-SYNTAX CCR.

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- K504** OSI-CON &PARAM8 references same OSI-LPAP but different ACCESS-POINT.
- K505** The operand &PARAM32 is mandatory if the referenced APPLICATION-CONTEXT includes the ABSTRACT-SYNTAX CCR.
- K506** An APPLICATION-CONTEXT including the ABSTRACT-SYNTAX CCR must not be used because the UTMD control statement does not specify an APPLICATION-PROCESS-TITLE.
- K507** Too many &PARAM32
- K508** Error occurred during generation of RSA-Keys.
- K509** OSI-CON &PARAM8 references same LOCAL-ACCESS-POINT and an OSI-LPAP with identical APPLICATION-ENTITY-QUALIFIER and APPLICATION-PROCESS- TITLE.
- K510** Operand &PARAM32 requires at least &PARAM8 parameters.
- K511** At most &PARAM11 concurrent stacked services will be possible.
- K512** At most &PARAM11 concurrent sign on and/or stacked services will be possible.
- K513** KDCDEF will now generate new RSA-Keys. Depending on key length and system configuration this process can take a considerable amount of time.
Please wait ...
- K514** Generation of RSA-Keys completed
- K515** Warning: For proper operation the application needs RSA-keys. However, no RSA-keys have been generated.
- If objects are generated with encryption levels, the application requires RSA keys in order to run correctly. If no RSA keys are available in the application, the application can be operated but with certain restrictions. TACs with encryption levels cannot be called and no connection can be set up to PTERMs or TPOOLS with encryption levels. Three responses are possible.
- The RSA keys can be transferred from an old KDCFILE to the new KDCFILE using KDCUPD before the application is started, or
 - the KDCDEF run can be repeated with the GEN-RSA-KEYS=YES operand in the OPTION statement, or
 - the application can be started and the required RSA keys can be created and activated by administration (e.g. using WinAdmin/WebAdmin).

K516 Error &DIAG1 for cluster user-file &STRING64

The insert &DIAG1 describes the cause of the error; the insert &STRING64 contains the file name.

The insert &DIAG1 can have the following values:

| Value | Meaning |
|-------|---|
| 1 | OPEN_ERROR Error opening the file. |
| 2 | CLOSE_ERROR Error closing the file. |
| 3 | FILE_ERROR The file is inconsistent. |
| 4 | LOCK_ERROR Error requesting the file lock. |
| 5 | UNLOCK_ERROR Error releasing the file lock. |
| 6 | USER_NOT_FOUND KCCUFUE sends an incorrect return code on an update to a user entry; the second insert contains the name of the user |
| 7 | UNEXPECTED_RETURNCODE An unexpected return code was returned by a called function; the second insert contains the value of the return code |
| 8 | KDCDEF_RUNNING The cluster user file is already locked by a KDCDEF run |
| 9 | FILE_IS_EMPTY The cluster user file is cataloged but empty |
| 10 | Error on getLocalHostName call The second insert contains the error code. |
| 11 | NO_XCS_GROUP The computer does not belong to an XCS cluster; the "distributed lock" function is not therefore available. |

K517 &PARAM30 not supported for &PARAM30

K518 File &FNAM already exists. The configuration run will be aborted.

K519

LMS library element generated

library: &FNAM

element: &ELEM

version: &EVER

type: &LMSTYPE

Meaning of the inserts:

&FNAM Name of the PLAM library to which the message refers.

&ELEM Name of the LMS element to which the message refers.

&EVER LMS version of the LMS element.

&LMSTYPE LMS type of the LMS element.

K520

LMS error (PLA&PLARC, DMS&DMSRC) for

library: &FNAM

element: &ELEM

version: &EVER

type: &LMSTYPE

Meaning of the inserts:

&PLARC PLAM return code. The help text can also be queried using /HELP PLA&PLARC.

&DMSRC DMS return code. The help text can also be queried using /HELP DMS&DMSRC.

&FNAM Name of the PLAM library to which the message refers.

&ELEM Name of the LMS element to which the message refers.

&EVER LMS version of the LMS element.

&LMSTYPE LMS type of the LMS element.

K521 MAX PRIVILEGED-LTERM=&UTMNAME is not defined as Dialog-LTERM.

K522 Note: No privileged LTERM generated (see MAX PRIVILEGED-LTERM=)

5.4 Messages of the UTM tools KDCCSYSL and KDCPSYSL

- K600** Program &PRGNMSG &VERS started.
- K601** Program KDCCSYSL terminated normally - SYSLOG file converted
- K602** Program KDCPSYSL terminated normally - SYSLOG file edited
- K603** Program KDCCSYSL terminated abnormally - SYSLOG file not converted
- K604** Program KDCPSYSL terminated abnormally - SYSLOG file not edited
- K605** &ERROR error
- K606** File with link name &LINK is not a SYSLOG file.
- K607** DMS error &DMSE on file with link name &LINK
- K608** Please enter name of user message module, a blank, or /EOF.
- K609** User message module assumed
- K610** System message module assumed
- K611** Program error in &PRGNMSG; reason: &TRMA
- K612** Incorrect number of messages in user message module
- K613** Incorrect message &MSGNR in user message module

5.5 Messages of the UTM tools KDCMMOD / KDCMTXT

- K650** Program &PRGNMSG terminated abnormally.
- K651** Program error (&TRMA).
Action: Write PR.
- K652** DMS error &DMSE on file &FNAM.
- K653** Line &LINENR: mandatory operand missing.
- K654** Line &LINENR: syntax error.
- K655** Line &LINENR: insert &INSMMSG is not permitted for message &IDMSG.
- K656** Line &LINENR: constant &CONMSG not defined.
- K657** EOF reached on SYSDTA. END statement generated.
- K658** * * * * * Statement ignored. * * * * *
- K659** File &FNAM is not a valid message definition file.
- K660** Program &PRGNMSG &VERS started.
- K661** Program &PRGNMSG terminated normally.
- K662** Line &LINENR: function unit &FUMSG not defined.
- K663** Line &LINENR: language &LANGMSG not defined for function unit &FUMSG.
- K664** Line &LINENR: message &IDMSG is not permitted for function unit &FUMSG.
- K665** Line &LINENR: GEN statement already entered.
- K666** Line &LINENR: message destination &DESTMSG is not permitted for message &IDMSG.
- K667** Line &LINENR: message destination &DESTMSG is required for message &IDMSG.
- K668** Line &LINENR: GEN statement missing.
- K669** Line &LINENR: function unit &FUMSG may not be modified.
- K670** Source file &FNAM for message module created.
- K671** Source file for message module not created.
- K672** Line &LINENR: constant &CONMSG already defined.
- K673** Wrong version &VERS of message definition file &FNAM.

K686 Line &LINENR: length &MSGLTH of text for message &IDMSG longer than &MSGMAXL.

The text of the message including the insert is longer than 512 characters. The utilities KDCMMOD and KDCMTXT cannot process the text. KDCMMOD does not generate a source for a new message module. KDCMTXT does not amend the message definition file.

K687 Line &LINENR: warning - length &MSGLTH of text for message &IDMSG (SYSLINE) longer than &MSGMAXL.

The text of the message (&IDMSG) with the destination SYSLINE including the insert is longer than 80 characters. The utilities KDCMMOD and KDCMTXT accept the message text. On subsequent output of the message in the system line, UTM outputs only the first 80 characters of the message text.

K688 Line &LINENR: message number > 999 not allowed.

A message number greater than 999 was specified. The utilities KDCMMOD and KDCMTXT reject this. KDCMMOD does not generate a source for a new message module. KDCMTXT does not amend the message definition file.

K690 Message text for message &IDMSG in language &LANGMSG and function unit &FUMSG not defined.

K691 Message definition file &FNAM generated.

K692 Message definition file not generated.

K693 Message definition file &FNAM modified.

K694 Message definition file not modified.

K695 Line &LINENR: insert &INSMSG not defined.

K696 Line &LINENR: FU/constant/insert &CONMSG already defined.

K697 Line &LINENR: illegal value for SOURCE length, default value assumed.

K698 Line &LINENR: range already used for another function unit.

5.6 Messages of the UTM tool KDCDUMP

K700 KDCDUMP &VERS started.

K701 Difference between the number of existing UTM tables and the number of UTM tables which are known by KDCDUMP.

UTM area(s): &UTMA1&UTMA2&UTMA3&UTMA4&UTMA5&UTMA6&UTMA7

K702 Abnormal end

K703 Term application reason &TRMA

K704 Table entry index not valid.

K705 UTM dump &FNAM or part of it read in memory.

K706 This type of preparation is not allowed for table &TABNAM.

K707 Error on calling EDT. EDT call : &EDTINT Return code: &EDTRET

This message is issued when EDT reports an error. The insert EDTINT shows which subprogram interface of EDT reported the error (INF=IEDTINF or CMD = IEDTCMD).

The insert EDTRET contains the EDT return code in the following sequence: subreturn code 1 (1 byte), sub-return code 2 (1 byte), main return code (2 bytes).

Refer to the EDT documentation for a description of the return codes.

K708 EDT version not supported by KDCDUMP. EDT version: &EDTVER

K709 Only one entry of a slot table can be prepared.

K710 Error on command

K711 No UTM dump in memory.

K712 Requested address X'&SADDR' not in present UTM dump or selected domain.

K713 Requested address X'&SADDR' is present in table &TABNAM, but not within one table entry.

K714 Error on link &LNAM: DMS return code &DMSE.

K716 Open error on file &FNAM. DMS return code : &DMSE.

K717 Request memory error

K718 File &FNAM does not contain a UTM dump.

K719 KDCDUMP &VER1 cannot prepare a UTM dump &VER3.

K720 Only the directory of the UTM dump exists.

K721 &UTMA1 is not present in UTM-dump or in selected domain.

K722 &NUM1 bourse cycle with the criterias CREF=&CREF and ANNO=&ANNO1 is found.

K723 Write error on file &FNAM. DMS return code: &DMSE.

K724 Command not allowed at present time.

K725 Table index is too low or too high.

K726 Address is too low or too high.

K727 FSTAT: Error on file &FNAM. DMS return code: &DMSE.

K728 Normal end

K729 Output file &FNAM is written.

K730 Read error on file &FNAM. DMS return code: &DMSE.

K731 The name &DEFTYPE is not a valid UTM type.

K732 UTM dump does not contain UTM type &DEFTYPE.

K733 Table name &TABNAM does not exist.

K734 The UTM dump &FNAM could not be written completely. Last written UTM area is &UTMA1.

This message indicates that the UTM dump could not be written completely. There may have been insufficient space available for the User-Id.

The UTM areas are dumped in the following order:

KAA, SLOT, CACHE, MPGP, XAPTP-GLOBAL, KTA, XAPTP-LOCAL, STACK, ROOT, REP.

In the case of a PENDER dump, only ROOT dumped.

The individual tables for the UTM areas can be output by means of the KDCDUMP statement `HELP TABLE-NAMES ("HELP Help about KDCDUMP")`; they appear in the dump order.

The XAPTP sections form a block.

K735 Table &TABNAM does not exist in UTM dump or in selected domain.

K736 Index out of range - index is set to lowest or highest allowed table index.

K737 End-index lower than start-index - end-index is given the value of the start-index.

K738 No REP file is contained in UTM dump.

K739 No REP records (PM-NO: &PMNO) found.

K740 Abbreviation of table name ambiguous with regard to &TABNAM &TABNAM1 &TABNAM2 &TABNAM3 &TABNAM4 &TABNAM5.

K741 Information not available. Table name: &TABNAM

This message indicates that a UTM area or a table could not be dumped by the UTM dump creator because the area or the table was not fully accessible.

-
- K742** The KDCDUMP version on the hardware &HW1 with &OS1 as operating system cannot read a UTM dump written on the hardware &HW2 with the operating system &OS2.
- K743** For the table &TABNAM no displacement is possible.
- K744** Offset lower than 0 or higher than the no. of bytes for one table entry.
- K745** No symbolic preparation for this table &TABNAM possible.
- K746** Error on symbolic preparation.
- K747** Command has no result.
- K753** The name &FIRES is not a UTM resource of UTM type &DEFTYPE.
- K754** No further entry with this UTM type in this dictionary table.
- K755** Input error: No further command can be read.
- K756** False value for DB operand. Only &DBMAX database(s) are generated.
- K757** The version of &UTMA1 (&VER1) is not compatible with the version of KDCDUMP (&VER2).
- K758** No summary was written.
- K759** Input string is longer than the permitted length (256 char).
- K760** No entry with the name &FIRES found.
- K761** No further entry with the name &FIRES found.
- K770** Error detect while checking compression of file &FNAM. Error code: &ERRC.
- K771** Error detect while creating temporary file for &FNAM. Error code: &ERRC.
- K772** Error detect while decompressing file &FNAM. Error code: &ERRC.
- K773** Requested information can not be found in the selected domain.
- K774** Requested domain for command SFIND not read from dump file.
Recommendation: Read domain with `FILE=<dumpfile>,DOMAIN=<domain>` and repeat SFIND command.
- K780** No dump file was closed.
- K781** Compressed dump file could not be uncompressed.
- K782** No hit found.
- K783** Value of HITS is neither ALL nor between 0 and 32767.
- K784** Size of address greater than 32 bit is forbidden.

5.7 Messages of the UTM tool KDCUPD

The UTM tool KDCUPD outputs both transaction monitor messages and its own messages. With all KDCUPD messages where the text begins with an asterisk (*), it was not possible to transfer the data.

In addition to the messages listed in this section, KDCUPD also outputs messages K184 and K251 to K320, see sections "[Messages K147 - K189](#)" and "[Messages K191 - K320](#)".

- K800** KDCUPD &VERS started
- K801** Please enter parameters
(This message is **only displayed on SYSOUT!**)
- K802** Control statement KDCFILE: parameter &UPDCMD is not specified
- K803** Base names of old and new &PARAM17 must be different
- K804** Transfer from UTM &UPDVERS to UTM &UPDVERS not supported
- K805** Consistency check for filebase &FBASUPD okay
- K806** All requested data transferred
- K807** Requested data partially transferred
- K808** No data to transfer from &FNAM!
- K809** Control statement KDCFILE/CHECK: base name &FBASUPD is too longAction: rename file
- K810** CHECK and KDCFILE commands cannot be combined
- K811** Control statement KDCFILE: file base must be specified without a cat ID if CATID control statement is used
- K812** KDCUPD abnormal end
- K813** KDCUPD normal end
- K814** &TRANSFER -Transfer of different versions not supported
- K816** Notice: Database generation changed, open service data will not be transferred

- K851** &UPDTYP data transferred. KCRN = &UKCRN,&PARAM4 = &UKCLA.
- K852** &PARAM3 data transferred. KCRN = &UKCRN, &PARAM4 = &UKCLT, KCLA = &UKCLA
- K853** Database configuration. number: &DBCOUNT FILEOLD: &DBOLD FILENEW: &DBNEWThe configuration of FILEOLD and FILENEW are are inconsistent regarding the configuration of the databases. This message will occur once for every generated database.

K854 Warning: Security level of user &USER increased. Password may be invalid.

Meaning: The complexity level of the password for the USER &USER is higher in the new KDCFILE than in the old KDCFILE, see USER statement in the KDCDEF generation. If the password transferred does not satisfy this condition, the USER can then no longer sign on.

Action: The administrator must then issue a new password.

K855 * &UPDTYP data not transferred. KCRN = &UKCRN, &PARAM4 = &UKCLA, KCRCCC = &RCCC, KCRCDC = &RCDC.

K856 * &PARAM3 data not transferred. KCRN = &UKCRN, &PARAM4 = &UKCLT, KCLA = &UKCLA, KCRCCC = &RCCC, KCRCDC = &RCDC

K857 * Load module &PROG not found. Current version &PVER not transferred.

K858 Current version &PVER of load module &PROG transferred.

5.8 Standard message definition file

- Constants of the standard message definition file
- Inserts in K and P messages
- Destinations of UTM messages

5.8.1 Constants of the standard message definition file

| Constant name | Constant value | Remark |
|---------------|----------------|----------------------|
| DAR | 12 | DARK LAYOUT |
| DEL | 07 | DELETE |
| EM3 | 13 | EMPHASIZED LAYOUT |
| EPA | 08 | END PROTECTED AREA |
| NL | 15 | NEW LINE |
| NOR | 1E | NORMAL LAYOUT |
| NP | 0C | NEW PAGE |
| SPA | 36 | START PROTECTED AREA |

5.8.2 Inserts in K and P messages

The "Length" column contains the output length of the individual inserts in bytes, i.e. on output of the message text the insert occupies as many characters as specified in the "Length" column. The length of the inserts is significant particularly for the creation of message texts using KDCMMOD and KDCMTXT.

The abbreviations in the 'Data type' column have the following meanings:

Char printable characters

Int numeric field

Hexa hexadecimal information

| Insert-Name | Datentyp | Länge | Bedeutung |
|-------------|----------|-------|---|
| AAID | Hexa | 128 | FIRST 64 BYTE OF ATOMIC ACTION IDENTIFIER |
| AAIS | Int | 4 | ATOMIC ACTION IDENTIFIER SIZE |
| ACPNT | Char | 8 | ACCESS-POINT-NAME |
| ACTION | Char | 6 | SYSTEM ACTION |
| ADTC | Char | 8 | ADMINISTRATION TAC |
| AGUS | Char | 8 | JOB-SUBMITTING USER |
| AMOD | Char | 1 | APPLICATION MODE |
| ANNO *) | Hexa | 64 | ANNO RECEIVED |
| APPL | Char | 8 | APPLICATION NAME |
| ATAC1 | Char | 8 | ASYNCHRONOUS TAC |
| ATAC2 | Char | 10 | NUMBER OF UNPROCESSED ASYNCHRONOUS TACS |
| ATTR | Char | 11 | ATTRIBUT OF LOAD-MODULE/PROGRAM |
| ATYP | Char | 1 | APPLICATION TYPE (STANDALONE/CLUSTER) |
| BCAP | Char | 8 | BCAM APPLICATION NAME |
| BCMOPCD | Hexa | 8 | BCMM-OPCODE |
| BCMRTCD | Hexa | 8 | BCMM-RETURNCODE |
| BMD1 | Char | 8 | BIT MODE OF SYSTEM |
| BMD2 | Char | 8 | BIT MODE OF SYSTEM |
| CAMODE *) | Hexa | 2 | CONTXT MACRO: ADDRESS MODE |

| | | | |
|----------|------|----|--|
| CBRC | Hexa | 8 | VTSUCB RETURN CODE |
| CCC *) | Hexa | 2 | CONXTT MACRO: CONDITION CODE IN PCR FORMAT |
| CCSN *) | Char | 8 | CCSNAME |
| CDSPL *) | Char | 19 | CONTEXT MODULE + DISPLACEMENT |
| CHAIN | Char | 3 | CHAINED MESSAGE INFORMATION |
| CID | Char | 8 | PRINTER CONTROL ID |
| CILC *) | Hexa | 2 | CONXTT MACRO: INSTRUCTION LENGTH IN PCR FORMAT |
| CIW *) | Hexa | 2 | CONTEXT INTERRUPT WEIGHT |
| CLSIGT | Int | 2 | CLUSTER COMMUNICATION SIGNAL TYPE |
| CMD | Char | 8 | COMMAND NAME |
| CNTR | Char | 6 | NUMBER OF LPUT RECORDS |
| CON | Char | 8 | CONNECTION NAME |
| COND | Char | 3 | CONDITION |
| CONU | Char | 10 | NUMBER OF CONNECTED USERS |
| COTM | Int | 10 | ELAPSED CONNECTION TIME IN SECONDS |
| CPC *) | Hexa | 8 | CONTEXT PROGRAM COUNTER |
| CPM *) | Hexa | 2 | CONXTT MACRO: PROGRAM MASK IN PCR FORMAT |
| CPTM | Int | 10 | CPU TIME SINCE SIGN-ON IN MILLISECONDS |
| CPUBEGIN | Hexa | 8 | CPU TIME AT TAC START IN MILLISECONDS |
| CPUCLNT | Hexa | 8 | CPU TIME USED OF THIS CLIENT |
| CPUEND | Hexa | 8 | CPU TIME AT TAC END IN MILLISECONDS |
| CPUREAS | Char | 1 | INTERNAL REASON |
| CPUTEXT | Char | 8 | TEXT: OVERFLOW OR NEGATIV |
| CPUUSED | Hexa | 8 | CPU TIME USED OF THIS TAC IN MILLISECONDS |
| CRYP *) | Char | 1 | CRYPTO PACKAGE |
| CR0 *) | Hexa | 8 | CONXTT MACRO: REGISTER R0 |
| CR1 *) | Hexa | 8 | CONXTT MACRO: REGISTER R1 |
| CR10 *) | Hexa | 8 | CONXTT MACRO: REGISTER R10 |
| CR11 *) | Hexa | 8 | CONXTT MACRO: REGISTER R11 |

| | | | |
|-----------|------|----|-----------------------------------|
| CR12 *) | Hexa | 8 | CONXTT MACRO: REGISTER R12 |
| CR13 *) | Hexa | 8 | CONXTT MACRO: REGISTER R13 |
| CR14 *) | Hexa | 8 | CONXTT MACRO: REGISTER R14 |
| CR15 *) | Hexa | 8 | CONXTT MACRO: REGISTER R15 |
| CR2 *) | Hexa | 8 | CONXTT MACRO: REGISTER R2 |
| CR3 *) | Hexa | 8 | CONXTT MACRO: REGISTER R3 |
| CR4 *) | Hexa | 8 | CONXTT MACRO: REGISTER R4 |
| CR5 *) | Hexa | 8 | CONXTT MACRO: REGISTER R5 |
| CR6 *) | Hexa | 8 | CONXTT MACRO: REGISTER R6 |
| CR7 *) | Hexa | 8 | CONXTT MACRO: REGISTER R7 |
| CR8 *) | Hexa | 8 | CONXTT MACRO: REGISTER R8 |
| CR9 *) | Hexa | 8 | CONXTT MACRO: REGISTER R9 |
| CTYP | Char | 4 | TYPE OF PROGRAM EXCHANGE |
| DBCALL | Char | 12 | FUNCTION-CALL OF IUTMDB INTERFACE |
| DBCON | Char | 8 | DATABASE CONNECTION MODULE |
| DBTRAC *) | Hexa | 8 | DB TRACE INFO |
| DBV1 | Char | 8 | VERSION OF DB CONNECTION MODULE |
| DBV2 | Char | 8 | VERSION OF KDCDB MACRO |
| DEFVER | Char | 5 | VERSION NUMBER IN KAA |
| DEST | Char | 8 | DESTINATION OF ASYNCHRONOUS MSG |
| DEVC | Hexa | 2 | DEVICE TYPE |
| DIA1 | Int | 11 | DIAGNOSTIC INFORMATION |
| DIA2 | Int | 11 | DIAGNOSTIC INFORMATION |
| DIA3 | Int | 11 | DIAGNOSTIC INFORMATION |
| DIA5 | Char | 80 | INTERNAL DIAGNOSTIC INFORMATION |
| DLDATE | Char | 3 | DAY OF KDCS CALL PADM DL/DA |
| DLTIME | Char | 8 | TIME OF KDCS CALL PADM DL /DA |
| DMSE | Char | 4 | DMS ERROR CODE |
| DMSRC *) | Hexa | 4 | DMS RETURN CODE |

| | | | |
|----------|------|----|---|
| DPID | Char | 8 | ASYNCHRONOUS MESSAGE ID |
| DTM2 | Char | 18 | TIME STAMP 2 |
| DTTM | Char | 18 | TIME STAMP |
| EBSR | Char | 4 | ACTUAL BRACKET STATE |
| EBSS | Char | 4 | SAVED BRACKET STATE |
| ELEM *) | Char | 64 | ELEMENT NAME |
| ENCPW | Hexa | 32 | ENCRYPTED PASSWORD |
| ERCD1 | Hexa | 4 | ERROR CODE (IUTMHLL) |
| ERCD2 | Hexa | 4 | INFO RETURN CODE (IUTMHLL) |
| ERCD3 | Char | 4 | ERROR CODE (IUTMDB) |
| ERCD4 *) | Char | 4 | ERROR CODE (IUTMFORM) |
| ERCD5 *) | Char | 4 | INFO RETURN CODE (IUTMFORM) |
| ERCD6 | Char | 4 | ERROR CODE (ROOT) |
| ERPRT | Char | 1 | PRINT ERROR CODE |
| ERRCODE | Char | 16 | RETURN CODE OF FAULTY FUNCTION |
| ERRNAME | Char | 8 | NAME OF FAULTY FUNCTION |
| ESQR | Hexa | 10 | ACTUAL REQUEST SEQUENCE NUMBER |
| ESQS | Hexa | 8 | SAVED SEQUENCE NUMBER |
| ESRR | Hexa | 10 | ACTUAL RESPONSE SEQUENCE NUMBER |
| EVER *) | Char | 24 | ELEMENT VERSION |
| EXIT | Char | 10 | CURRENT ACTIVE EXIT |
| FBASUPD | Char | 42 | FILE BASE NAME KDCUPD |
| FIL1A | Hexa | 2 | APPLICATION STATE |
| FIL1B | Hexa | 2 | BCAM REQUEST OR ANNO TYPE / UTM ANNO TYPE |
| FIL2A | Hexa | 2 | LTERM STATE |
| FIL2B | Hexa | 8 | DIAGNOSTIC WORDBCAM INFOWORD |
| FIL3 | Hexa | 4 | PTERM STATE |
| FMH7 | Char | 80 | ERROR RECOVERY PROCEDURE MESSAGE |
| FMTN *) | Char | 8 | FORMAT NAME |

| | | | |
|----------|------|-----|--|
| FNAM | Char | 54 | FILE NAME |
| FNKT | Char | 6 | FUNCTION |
| FNOD | Char | 1 | FIRST NODE (Y/N) IN CLUSTER APPLICATION |
| FORM *) | Char | 8 | FORMAT NAME (FOR K015 ONLY) |
| FORMATID | Int | 1 | FORMATID OF THE XID |
| GBLNBR | Int | 11 | NUMBER OF LOCKED GSSB |
| GLOBALSG | Char | 1 | CLUSTER GLOBAL SIGNON/SIGNOFF |
| GNDATE | Char | 3 | GENERATION DATE ASYNCHRONOUS MESSAGE |
| GNTIME | Char | 8 | GENERATION TIME ASYNCHRONOUS MESSAGE |
| GNUSER | Char | 8 | USER NAME OF ASYNCHRON. MESSAGE GENERATION |
| GTRID | Hexa | 128 | FIRST 64 BYTE OF GLOBAL TRANSACTION ID |
| HITR | Char | 3 | CACHE HIT RATE |
| HST1 | Char | 64 | HOST NAME |
| HST2 | Char | 64 | HOST NAME |
| HST3 | Char | 64 | HOST NAME |
| HSTACK | Int | 2 | HEIGHT OF STACK |
| IDEFRC | Hexa | 16 | RETURNCODE OF INVERSE KDCDEF |
| IDX1 | Char | 4 | CLUSTER NODE INDEX |
| IDX2 | Char | 4 | CLUSTER NODE INDEX |
| IDX3 | Char | 4 | CLUSTER NODE INDEX |
| IMPVER | Char | 5 | VERSION NUMBER IN KAA OF KDCFILE TO IMPORT |
| IMSG1 | Char | 10 | NUMBER OF TERMINAL INPUT MESSAGES |
| IMSG2 | Hexa | 64 | FIRST PART OF INPUT MESSAGE |
| IMSLTH | Int | 5 | LENGTH OF INPUT MESSAGE |
| INF1 | Char | 65 | ADDITIONAL INFORMATION |
| INF2 | Char | 65 | ADDITIONAL INFORMATION |
| INSTNUM | Int | 2 | RM-INSTANCE NUMBER |
| INTTAID | Hexa | 130 | INTERNAL TRANSACTION ID |
| IOMS | Int | 11 | DURATION OF IO IN MILLISECONDS |

| | | | |
|------------|------|-----|---|
| IOPG | Int | 11 | NUMBER PAGES OF IO |
| IPADDR | Char | 39 | IPV4 (123.456.789.012) OR IPV6 (1234:5678:9ABC:DEF0:1234:5678:9ABC:DEF0) ADDRESS |
| KRACT *) | Int | 1 | ACTION CODE OF KERBEROS INTERFACE KRBGSS |
| KRLH *) | Int | 4 | LENGTH OF KERBEROS PRINCIPAL |
| KRPR *) | Char | 100 | KERBEROS CLIENT OR SERVER PRINCIPAL |
| KRRC *) | Hexa | 8 | RETURN CODE OF KERBEROS INTERFACE KRBGSS |
| LMSTYPE *) | Char | 8 | LMS TYPE |
| LPAP | Char | 8 | LPAP NAME |
| LSES | Char | 8 | LSES NAME |
| LTAC | Char | 8 | TAC OR LTAC |
| LTACINDX | Hexa | 8 | LTAC INDEX |
| LTHGTRID | Int | 2 | LENGTH OF GLOBAL TRANSACTION ID |
| LTRM | Char | 8 | LTERM NAME |
| LWRT | Char | 5 | NUMBER OF USLOG FILE WRITES |
| MOD | Char | 7 | MODULE NAME |
| MSG | Char | 80 | MESSAGE TEXT |
| MSG2 | Char | 100 | MESSAGE TEXT |
| MSTACK | Int | 2 | MAXIMUM STACK HEIGHT |
| MTYPE | Char | 4 | MESSAGE TYPE |
| MXLT | Char | 8 | MUX LTERM |
| MXP1 | Char | 4 | MUX PROTOCOL VERSION (LOWER BOUNDARY) |
| MXP2 | Char | 4 | MUX PROTOCOL VERSION (UPPER BOUNDARY) |
| MXPR | Char | 8 | MUX PROCESSOR |
| MXPT | Char | 8 | MUX PTERM |
| NCVST | Char | 1 | NEW CONVERSATION STATE |
| NMSG | Int | 11 | NUMBER OF MESSAGES |
| NNM1 | Char | 8 | CLUSTER NODE NAME |
| NNM2 | Char | 8 | CLUSTER NODE NAME |

| | | | |
|----------|------|-----|--|
| NNM3 | Char | 8 | CLUSTER NODE NAME |
| NTAST | Char | 1 | NEW TRANSACTION STATE |
| NUMDAYS | Char | 2 | NUMBER DAYS PASSWORD VALID |
| NUMMSGS | Int | 11 | NUMBER OF WAITING OUTPUT MESSAGES |
| OBJ1 | Char | 10 | OBJECT NAME |
| OBJ2 | Char | 10 | OBJECT NAME |
| OBJ3 | Char | 54 | OBJECT OR FILENAME |
| OCVST | Char | 1 | OLD CONVERSATION STATE |
| OMSG1 | Char | 10 | NUMBER OF TERMINAL OUTPUT MESSAGES |
| OMSG2 | Char | 74 | BROADCAST MESSAGE |
| OMSG3 *) | Hexa | 64 | FIRST PART OF OUTPUT MESSAGE |
| OPCD1 | Char | 4 | OPCODE |
| OPCD2 | Char | 35 | OPCODE (IUTMHLL) |
| OPCD3 *) | Char | 5 | OPCODE (IUTMFORM) |
| OSLPAP | Char | 8 | OSI-LPAP NAME |
| OST1 | Char | 24 | TYPE OF OPERATING SYSTEM |
| OST2 | Char | 24 | TYPE OF OPERATING SYSTEM |
| OTAST | Char | 1 | OLD TRANSACTION STATE |
| PALTRM | Char | 8 | LTERM NAME PRINT ADMIN STATION |
| PAS1 | Char | 35 | SPACE FOR PASSWORD |
| PAS2 | Char | 35 | SPACE FOR PASSWORD |
| PAS3 | Char | 35 | SPACE FOR PASSWORD |
| PGPOOL | Char | 16 | (NODE/CLUSTER) PAGEPOOL |
| PGS1 | Int | 11 | NUMBER OF UTM PAGES |
| PGS2 | Int | 11 | NUMBER OF UTM PAGES |
| PHAXAPTP | Char | 14 | INIT or START/RESTART of XAP-TP |
| PID | Int | 11 | UNIX/NT PROCESS IDBS2000 TASK ID (ITN) |
| PLARC *) | Char | 4 | PLAM RETURN CODE |
| PRCN | Char | 200 | PROCEDURE/SCRIPT/COMMAND-FILE NAME |

| | | | |
|-------------|------|-----|---|
| PRGVERS **) | Int | 11 | PROGRAM VERSION IN CASE OF PROGRAM EXCHANGE |
| PRNM | Char | 64 | PROCESSOR NAME |
| PROG | Char | 32 | PROGRAM OR LOAD MODULE NAME |
| PSQN | Hexa | 8 | SAVED PET SEQUENCE NUMBER |
| PTCID | Char | 27 | PTC IDENTIFICATION |
| PTRM | Char | 8 | PTERM NAME |
| PVER | Char | 24 | PROGRAM VERSION |
| RBCAUSER | Char | 14 | CAUSER OF ROLLBACK |
| RCCC | Char | 3 | KCRCCC |
| RCCC2 | Char | 4 | STARTUP ERROR CODE |
| RCDC | Char | 4 | KCRCDC |
| RCF1A *) | Char | 4 | KCRCDC |
| RCF1B | Char | 3 | RETURN CODE 1 |
| RCF1C | Char | 4 | RETURN CODE 1 |
| RCF2A | Char | 4 | INTERNAL RETURN CODESECONDARY FHS/VTSU RET CODE |
| RCF2B | Char | 4 | RETURN CODE 2 |
| RCHX | Hexa | 8 | RETURNCODE IN HEX-FORM |
| RCOSTS | Int | 3 | RETURNCODE KCDOSTS |
| RCVDANNO | Hexa | 8 | FIRST 4 BYTES OF RECEIVED ANNO |
| RCXAPTP | Int | 11 | RETURNCODE XAP-TP STARTFUNCTIONS |
| REA1 | Hexa | 2 | REASON |
| REA2 | Char | 2 | REASON |
| REA3 | Char | 136 | ERROR MESSAGE |
| REA4 | Char | 1 | DIAGNOSTIC INFORMATION |
| REA6 | Hexa | 2 | DIAGNOSTIC INFORMATION (DISCONNECT USER REASON) |
| REA7 | Int | 2 | DIAGNOSTIC INFORMATION (REJECT USER REASON) |
| REST | Char | 1 | RESTART INDICATOR OF LTERM |
| RMSTAT | Char | 8 | CONNECTION STATUS OF AN RM |
| ROOTTRMR | Int | 11 | ROOT-Termination-Reason |

| | | | |
|-------------|------|----|-----------------------------------|
| RQM | Int | 11 | REQUESTED NUMBER OF BYTES |
| RSES | Char | 8 | RSES NAME |
| RSLT | Char | 1 | RESULT |
| RSOANNO *) | Hexa | 64 | RSO ANNO |
| RSOMSG *) | Char | 7 | RSO ERROR MESSAGE |
| RSOOPC *) | Hexa | 2 | RSO ACTION |
| RSORC *) | Hexa | 8 | RSO RETURNCODE |
| RSO2RC *) | Hexa | 8 | RSO ASYN RETURNCODE |
| RSPTC | Char | 1 | RESET-PTC (Y/N) FOR NODE RECOVERY |
| RTAANZ | Int | 2 | NUMBER OF RECOVERED TRANSACTIONS |
| RTCD | Hexa | 8 | RETURN CODE |
| SATRC | Hexa | 8 | SAT RETURNCODE |
| SESSCNTR | Int | 3 | SESSION COUNTER OF ACTUAL SERVICE |
| SGNT | Char | 19 | SIGNON TIME YYYY-MM-DD HH:MM:SS |
| SNLT *) | Char | 8 | MUX SESSION LTERM NAME |
| SNPR *) | Char | 8 | MUX SESSION PROCESSOR NAME |
| SNPT *) | Char | 8 | MUX SESSION PTERM NAME |
| SRFG | Hexa | 8 | SAVED SESSION STATE |
| SSINCID *) | Hexa | 8 | SSO CALL CID |
| SSLENNAM *) | Hexa | 4 | SSO NAME LENGTH |
| SSORC *) | Hexa | 2 | SSO RETURNCODE |
| SSOUTCID *) | Hexa | 8 | SSO RETURN CID |
| SSTYPNAM *) | Hexa | 8 | SSO NAME TYPE |
| STA2 | Char | 1 | STATE |
| STATE | Char | 1 | STATE |
| STDHEAD | Hexa | 16 | BS2000 STANDARDHEADER |
| STDRC *) | Hexa | 8 | BS2000 STANDARDHEADER-RETURNCODE |
| STMT | Char | 11 | STATEMENT OF KDCDEF |
| STRTPAR1 | Char | 20 | STRTPAR1 LTH = 20 |

| | | | |
|------------|------|----|---|
| STRTPAR2 | Char | 10 | STRTPAR2 LTH = 8 |
| STS1 | Hexa | 4 | STSN-REQ SEQUENCE NUMBER RCV-CNT |
| STS2 | Hexa | 4 | STSN-REQ SEQUENCE NUMBER SEND-CNT |
| STS3 | Hexa | 4 | STSN-RSP SEQUENCE NUMBER SLU-PLU |
| STS4 | Hexa | 4 | STSN-RSP SEQUENCE NUMBER PLU-SLU |
| STSK | Char | 1 | SYSTEM TASK (Y/N) |
| SUFF | Char | 5 | FILE SUFFIX |
| SWNR | Int | 11 | NUMBER OF JOURNAL SWITCHES |
| SYN | Char | 50 | SYNTAX ERROR |
| SYSD | Hexa | 4 | SYSTEM SENSE DATA |
| SYSFILE *) | Char | 6 | SYSOUT/SYSLST |
| SYST | Char | 4 | SYSTEM |
| TAC | Char | 8 | TRANSACTION CODE |
| TACINDX | Hexa | 8 | TAC INDEX |
| TACNTR | Int | 5 | TA CNTR OF ACTUAL SERVICE |
| TACTYPE | Char | 1 | TAC TYPE |
| TASK | Char | 4 | PID (MAX. 4 DIGITS) OF UTM PROCESSTSN OF UTM TASK |
| TCPCL | Char | 18 | SOCKET FUNCTION |
| TCPMS | Int | 11 | DURATION OF SOCKET FUNCTION IN MILLISECONDS |
| TCPRC | Hexa | 8 | SOCKET DIAGNOSTIC WORD |
| TCVG | Char | 8 | CONVERSATION TAC |
| TERM | Char | 1 | TERMINATION TYPE |
| TEXT32 | Char | 32 | STANDARD-TEXTPUFFER |
| TPRIO | Int | 3 | EXTERNAL TASK-PRIORITY |
| TRMA | Char | 6 | TERM APPLICATION REASON |
| TRMTYP | Char | 4 | ROOT-TERM-TYP STEP OR PROG |
| TSNPID | Char | 10 | TSN (BS2000) / PID (UNIX/WIN) |
| TTY *) | Hexa | 2 | TERMINAL TYPE |
| UERCODE | Char | 8 | ERROR CODE |

| | | | |
|----------|------|----|--|
| UERINFO | Char | 8 | ERROR INFORMATION |
| UKCHSTA | Int | 5 | HEIGHT OF STACK |
| UKCLM | Int | 10 | LENGTH OF KCLM USED BY KDCUPD |
| UKCOP | Char | 4 | OPCODE OF KDCS CALL USED BY KDCUPD |
| UKCRN | Char | 8 | REFERENCE NAME USED BY KDCUPD |
| ULLNBR | Int | 11 | NUMBER OF LOCKED ULS |
| UPCPROT | Hexa | 16 | UPIC PROTOCOLL |
| UPCREAS | Hexa | 2 | UPIC ERROR REASON |
| UPCSTAT | Hexa | 4 | USRTNSR UPIC STATE |
| UPDERR | Char | 5 | UPD ERROR CODE |
| UPDMODUL | Char | 8 | UPD MODULE READxxxx/WRITxxxx |
| UPDPRO | Int | 3 | PERCENT USED PAGES IN NEW FILE |
| UPDTYP | Char | 6 | TYPE OF KCRN FOR UPDATE (LTERM, TAC, LPAP) |
| UPPENC2 | Hexa | 4 | UPIC ENCRYPTION PTRMDYN INFO |
| UPVENC1 | Hexa | 4 | UPIC ENCRYPTION VGTDYN INFO |
| USER | Char | 8 | USER/LSES/OSI-ASS NAME |
| USRTYPE | Char | 10 | USER-TYP: CLIENT/CONNECTION |
| USSD | Hexa | 4 | USER SENSE DATA |
| USTYPPTC | Char | 1 | TYPE OF USER IN PTC |
| UTMDEVT | Char | 7 | UTM-D EVENT |
| VER1 | Char | 6 | VERSION NUMBER |
| VER2 | Char | 6 | VERSION NUMBER |
| VERS | Char | 8 | UTM VERSION |
| VGCNTR | Int | 11 | SERVICE COUNTER OF ACTUAL SERVICE |
| VTRC | Hexa | 8 | VTSU OR ASECO RETURN CODE |
| WLEV | Char | 1 | WARN LEVEL OF PAGE POOL |
| WTBF | Char | 3 | CACHE WAITS FOR BUFFER |
| XACALL | Char | 12 | FUNCTION-CALL OF XA-CAE INTERFACE |
| XADBC1 | Char | 8 | TEXT FOR DB-XA-CALLS |

| | | | |
|---------|------|----|--|
| XADBC2 | Char | 8 | TEXT FOR DB-XA-CALLS |
| XAFLAG | Char | 8 | FLAGS FOR XA-CALLS |
| XASPEC | Char | 12 | VERSION OF XA-SPECIFICATION |
| XATXT | Char | 16 | READABLE XA-RETURNCODE |
| XCS1 *) | Char | 8 | NAME OF XCS GROUP |
| XCS2 *) | Char | 8 | NAME OF XCS GROUP |
| XP0OBID | Int | 11 | OSI-TP OBJECT IDENTIFIER 0 |
| XP1BOOL | Char | 5 | OSI-TP CCR V2 NOT AVAILABLE |
| XP1DIA | Int | 11 | OSI-TP DIAGNOSTIC INFORMATION 1 |
| XP1INFO | Int | 11 | OSI-TP ADDITIONAL INFORMATION 1 |
| XP1OBID | Int | 11 | OSI-TP OBJECT IDENTIFIER 1 |
| XP2BOOL | Char | 5 | OSI-TP PROTOCOL VERSION INCOMPATIBILITY |
| XP2DIA | Int | 11 | OSI-TP DIAGNOSTIC INFORMATION 2 |
| XP2INFO | Int | 11 | OSI-TP ADDITIONAL INFORMATION 2 |
| XP2OBID | Int | 11 | OSI-TP OBJECT IDENTIFIER 2 |
| XP3BOOL | Char | 5 | OSI-TP CONTENTION WINNER ASSIGNMENT REJECTED |
| XP3DIA | Int | 11 | OSI-TP DIAGNOSTIC INFORMATION 3 |
| XP3INFO | Char | 40 | OSI-TP ADDITIONAL INFORMATION 3 |
| XP3OBID | Int | 11 | OSI-TP OBJECT IDENTIFIER 3 |
| XP4BOOL | Char | 5 | OSI-TP BID MANDATORY REJECTED |
| XP4OBID | Int | 11 | OSI-TP OBJECT IDENTIFIER 4 |
| XP5BOOL | Char | 5 | OSI-TP NO REASON GIVEN |
| XP5OBID | Int | 11 | OSI-TP OBJECT IDENTIFIER 5 |
| XP6OBID | Int | 11 | OSI-TP OBJECT IDENTIFIER 6 |
| XP7OBID | Int | 11 | OSI-TP OBJECT IDENTIFIER 7 |
| XP8OBID | Int | 11 | OSI-TP OBJECT IDENTIFIER 8 |
| XP9OBID | Int | 11 | OSI-TP OBJECT IDENTIFIER 9 |
| XPAPDU | Char | 20 | OSI-TP APDU TYPE |
| XPASST | Char | 20 | ASSOCIATION STATE |

| | | | |
|-----------|------|----|--------------------------------------|
| XPBCAM *) | Hexa | 8 | BCAM INFOWORD |
| XPCCLS | Int | 11 | CMX ERROR CLASS |
| XPCORR | Int | 11 | MESSAGE CORRELATOR NUMBER |
| XPCPSEL | Char | 16 | OSI-TP P-SEL OF PARTNER (CHAR) |
| XPCRES | Int | 4 | OSI-TP NEGATIVE CONFIRMATION RESULT |
| XPCSSEL | Char | 16 | OSI-TP S-SEL OF PARTNER (CHAR) |
| XPCTYPE | Int | 11 | CMX ERROR TYPE |
| XPCVAL | Int | 11 | CMX ERROR VALUE |
| XPERR | Int | 11 | OSI-TP ERROR CODE |
| XPEVT | Char | 10 | XAPTP EVENT |
| XPFSMN | Char | 10 | OSI-TP FSM NAME |
| XPFUNC | Char | 20 | CALLED OSI-TP FUNCTION |
| XPHPSEL | Hexa | 32 | OSI-TP P-SEL OF PARTNER (HEX) |
| XPHSSEL | Hexa | 32 | OSI-TP S-SEL OF PARTNER (HEX) |
| XPINI | Int | 11 | OSI-TP INITIATOR |
| XPLNK | Int | 11 | OSI-TP LINK |
| XPLPSEL | Int | 2 | OSI-TP LENGTH P-SEL OF PARTNER |
| XPLSSEL | Int | 2 | OSI-TP LENGTH S-SEL OF PARTNER |
| XPLTH | Int | 11 | OSI-TP INVALID LENGTH |
| XPNDIA | Int | 4 | OSI-TP NEGATIVE DIAGNOSTICS |
| XPNSEL | Char | 8 | OSI-TP N-SEL OF PARTNER |
| XPOSAS | Int | 8 | OSI-TP ASSOCIATION REFERENCE |
| XPPDU | Int | 11 | OSI-TP PDU TYPE |
| XPPTYP | Int | 11 | OSI-TP PRIMITIVE TYPE |
| XPRET | Int | 11 | OSI-TP RETURN CODE |
| XPRJCT | Int | 4 | OSI-TP ASSOCIATION REASON FOR REJECT |
| XPSRC | Int | 4 | OSI-TP RESULT SOURCE FROM PARTNER |
| XPTRFAIL | Int | 11 | OSI-TP WRITE TRACE FAILURE REASON |
| XPTSEL | Char | 8 | OSI-TP T-SEL OF PARTNER |

*) values appear only on BS2000 systems

**) values appear only on Unix, Linux and Windows systems.

5.8.3 Destinations of UTM messages

The table below shows which options are available for each message. Only the K messages are considered which the user can modify.

For the individual messages, the meanings of the entries in the columns of the table are as follows:

- R (Required) The destination is assigned permanently to the message; it cannot be modified.
- + The destination is permitted for this destination.
- D (Default) The destination is specified for this message; it may be canceled.
- The destination cannot be defined for this message.

in the COMPRESS column:

- Y (Yes) Superfluous blanks are removed from the message.
- N (No) Superfluous blanks are left in the message.

in the column EXTEND:

- Y (yes): The message can be output in EXTENDED LINE MODE.
- N (no): The message cannot be output in EXTENDED LINE MODE.

in the column BELL:

- Y (yes): Acoustic signal output with message.
- N (no): No acoustic signal can be output with the message.

All K messages from openUTM that appear in the start phase are output to SYSLST and SYSOUT, regardless of which message destination was specified for these messages, so that you can more easily diagnose errors when starting a UTM application or a follow-up task.

The function unit can be modified for the user.

| MSG Id | Inserts | S | S | P | S | M | S | S | C | U | C | E | B |
|-------------------|----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| | | t | Y | a | Y | S | Y | Y | o | S | o | x | e |
| | | a | S | r | S | G | S | S | n | E | m | t | l |
| | | t | L | t | L | T | O | L | s | R | p | e | l |
| | | i | I | n | O | A | U | S | o | D | r | n | |
| | | o | N | e | G | C | T | T | I | E | e | d | |
| | | n | E | r | | | | | e | S | s | | |
| | | | | | | | | | T | s | | | |
| K001 ¹ | PTRM , PRNM , BCAP , LTRM , APPL | R | - | + | + | + | + | + | + | - | Y | N | N |

| | | | | | | | | | | | | | | | |
|-------------------|--|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| K002 ¹ | PTRM , PRNM , BCAP , LTRM , APPL | R | - | - | + | + | + | + | + | + | + | + | Y | N | N |
| K003 | PTRM , PRNM , BCAP , LTRM , CMD | R | D | - | + | + | + | + | + | + | + | + | N | N | N |
| K004 ¹ | PTRM , PRNM , BCAP , LTRM , USER , REA7 | R | + | - | + | + | + | + | + | + | + | + | N | N | N |
| K005 ¹ | PTRM , PRNM , BCAP , LTRM , USER | R | + | - | + | + | + | + | + | + | + | + | N | N | N |
| K006 ¹ | PTRM , PRNM , BCAP , LTRM , USER | R | + | - | + | + | + | + | + | + | + | + | N | N | N |
| K007 ¹ | PTRM , PRNM , BCAP , LTRM , USER , REA7 | R | + | - | + | + | + | + | + | + | + | + | N | N | N |
| K008 ¹ | PTRM , PRNM , BCAP , LTRM , USER , SGNT | R | - | - | + | + | + | + | + | + | + | - | Y | N | N |
| K009 | PTRM , PRNM , BCAP , LTRM , USER , TAC , RCDC | R | D | D | + | + | + | + | + | + | + | + | N | N | N |
| K010 | PTRM , PRNM , BCAP , LTRM , USER , TAC | R | D | D | + | + | + | + | + | + | + | + | N | N | N |
| K011 | PTRM , PRNM , BCAP , LTRM , USER , ATAC1 | R | + | + | + | + | + | + | + | + | + | + | N | N | N |
| K012 | NUMMSGs | R | R | - | - | - | - | - | - | - | - | - | N | N | N |
| K013 | PTRM , PRNM , BCAP , LTRM , CMD | R | D | - | + | + | + | + | + | + | + | + | N | N | N |
| K014 | PTRM , PRNM , BCAP , LTRM , USER | R | + | - | + | + | + | + | + | + | + | + | N | N | N |
| K015 | PTRM , PRNM , BCAP , LTRM , USER , TAC , FORM , RCDC , RCF2A | R | + | - | + | + | + | + | + | + | + | + | N | N | N |
| K016 | PTRM , PRNM , BCAP , LTRM , USER | R | D | + | + | + | + | + | + | + | + | + | N | N | N |
| K017 | PTRM , PRNM , BCAP , LTRM , USER , TCVG , RCCC , RCDC , RCF2A , TAC | R | - | D | D | + | + | + | + | + | + | + | Y | N | N |
| K018 | PTRM , PRNM , BCAP , LTRM , APPL | R | + | - | + | + | + | + | + | + | + | + | N | N | N |
| K019 | PTRM , PRNM , BCAP , LTRM , APPL | R | D | - | + | + | + | + | + | + | + | + | N | N | N |
| K020 | PTRM , PRNM , BCAP , LTRM , USER | R | D | - | + | + | + | + | + | + | + | + | N | N | N |
| K021 | PTRM , PRNM , BCAP , LTRM | R | D | D | + | + | + | + | + | + | + | + | N | N | N |
| K022 | PTRM , PRNM , BCAP , LTRM | R | - | + | + | + | + | + | + | + | + | + | Y | N | N |
| K023 | OMSG2 | R | D | + | - | - | - | - | - | - | - | - | N | N | N |
| K024 | PTRM , PRNM , BCAP , LTRM , USER | R | + | D | + | + | + | + | + | + | + | + | N | N | N |
| K025 | PTRM , PRNM , BCAP , LTRM | R | - | D | D | + | + | + | + | + | + | + | Y | N | N |
| K026 | PTRM , PRNM , BCAP , LTRM , USER | R | + | + | + | + | + | + | + | + | + | + | N | N | N |
| K027 | PTRM , PRNM , BCAP , LTRM | R | + | D | + | + | + | + | + | + | + | + | N | N | N |
| K029 | PTRM , PRNM , BCAP , LTRM , USER | R | - | - | + | + | + | + | + | + | + | - | N | N | N |
| K030 | PTRM , PRNM , BCAP , LTRM , USER | R | + | - | + | + | + | + | + | + | + | + | N | N | N |
| K031 ¹ | PTRM , PRNM , BCAP , LTRM , USER | R | + | - | + | + | + | + | + | + | + | + | N | N | N |
| K032 ¹ | CON , PRNM , BCAP , LPAP , USER , RCF1B , RCF2B | - | - | - | D | + | D | + | + | + | + | + | N | N | N |

| | | | | | | | | | | | | | |
|------|--|---|---|---|---|---|---|---|---|---|---|---|---|
| K033 | PTRM , PRNM , BCAP , LTRM , USER , REST , GLOBALSG | - | - | - | D | + | + | + | + | + | N | N | N |
| K034 | | R | R | + | - | - | - | - | - | - | N | N | N |
| K035 | | R | R | + | - | - | - | - | - | - | N | N | N |
| K036 | PTRM , PRNM , BCAP , LTRM , RSLT , REA1 | - | - | - | D | + | + | + | + | + | N | N | N |
| K037 | HST1 , HST2 , RSLT , RCHX | - | - | - | D | + | + | + | + | + | Y | N | N |
| K038 | SYN | - | - | - | - | - | R | + | - | - | Y | N | N |
| K039 | STRTPAR1, STRTPAR2 | - | - | - | - | - | R | + | - | - | Y | N | N |
| K040 | WLEV , PGPOOL | - | - | - | D | + | R | + | + | + | Y | N | N |
| K041 | WLEV , PGPOOL | - | - | - | D | + | R | + | + | + | Y | N | N |
| K042 | | - | - | - | - | - | R | + | - | - | Y | N | N |
| K043 | DMSE , FNAM | - | - | - | D | + | R | D | + | + | Y | N | N |
| K044 | | - | - | - | - | - | R | + | - | - | Y | N | N |
| K045 | PTRM , PRNM , BCAP , LTRM , PALTRM , CID | - | - | - | - | + | - | - | - | + | N | N | N |
| K046 | PTRM , PRNM , BCAP , LTRM , PALTRM , CID , DPID , ERPRT , IMSG2 , GNDATE , GNTIME | - | - | - | + | + | + | + | + | + | N | N | N |
| K047 | OPCD1 , RTCD | - | - | - | - | - | R | + | - | - | Y | N | N |
| K048 | | - | - | - | - | - | R | + | - | - | Y | N | N |
| K049 | RCCC2 | - | - | - | - | - | D | D | - | - | Y | N | N |
| K050 | APPL , VERS , AMOD , TERM , OST1 , BMD1 , ATYP , FNOD | - | - | - | D | + | R | + | + | + | Y | N | N |
| K051 | APPL , VERS , AMOD , TERM , OST1 , BMD1 , ATYP , FNOD | - | - | - | D | + | R | + | + | + | Y | N | N |
| K052 | TASK , APPL , PID , STSK | - | - | - | D | + | R | + | + | + | Y | N | N |
| K053 | CNTR | - | - | - | D | + | R | + | + | + | Y | N | N |
| K054 | | - | - | - | D | + | R | + | + | + | Y | N | N |
| K055 | ATAC1 , RCCC , RCDC , USER , LTRM | - | - | - | D | + | R | + | + | + | Y | N | N |
| K056 | TASK , PID | - | - | - | D | + | D | + | + | + | Y | N | N |
| K057 | | - | - | - | D | - | D | + | + | - | Y | N | N |
| K058 | TASK , PID | - | - | - | + | + | D | + | + | + | Y | N | N |
| K059 | | - | - | - | + | - | D | + | + | - | Y | N | N |
| K060 | TRMA | - | - | - | D | - | R | D | + | - | Y | N | N |
| K061 | FNAM | - | - | - | D | - | R | D | + | - | Y | N | N |

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| K062 | | - | - | - | D | - | R | D | + | - | Y | N | N |
| K063 | PTRM , PRNM , BCAP , LTRM , FMTN , RCF1A , RCF2A | - | - | - | D | + | R | + | + | + | Y | N | N |
| K064 | PTRM , PRNM , BCAP , LTRM , DEVC , FIL1A , FIL2A , FIL3 , VTRC , IMSG2 , REA1 , CBRC , IMSLTH | - | - | - | D | + | + | + | + | + | Y | N | N |
| K065 | PTRM , PRNM , BCAP , LTRM , FIL1B , FIL2B | - | - | - | D | + | + | + | + | + | N | N | N |
| K066 | | - | - | - | - | - | R | + | - | - | Y | N | N |
| K067 | MOD , ERCD1 , ERCD2 , OPCD2 | - | - | - | - | - | R | + | - | - | Y | N | N |
| K068 | DBCON , DBV1 , DBV2 | - | - | - | - | - | R | + | - | - | Y | N | N |
| K069 | PTRM , PRNM , BCAP , LTRM , COTM , REA4 , REA6 | - | - | - | D | + | + | + | + | + | N | N | N |
| K070 | PTRM , PRNM , BCAP , LTRM , USER , COTM , CPTM , GLOBALSG | - | - | - | D | + | + | + | + | + | N | N | N |
| K071 | OPCD1 , ERCD3 , DBTRAC , DBCON | - | - | - | - | - | R | + | - | - | Y | N | N |
| K072 | STMT | - | - | - | - | - | D | D | - | - | Y | N | N |
| K073 | ATTR , STMT , PROG | - | - | - | - | - | D | D | - | - | Y | N | N |
| K074 | CTYP , PROG , PVER | - | - | - | D | + | R | + | + | + | Y | N | N |
| K075 | CTYP , PROG , PVER , TASK , PID | - | - | - | D | + | D | + | + | + | Y | N | N |
| K076 | RCCC , RCDC , ADTC , USER , LTRM | - | - | - | D | + | R | + | + | - | Y | N | N |
| K077 | PTRM , PRNM , BCAP , LTRM , CLSIGT | - | - | - | D | - | D | D | - | - | Y | N | N |
| K078 | ERRNAME , ERRCODE , REA3 | - | - | - | - | - | R | D | - | - | Y | N | N |
| K079 | REA2 | - | - | - | D | + | + | + | + | + | Y | N | N |
| K080 | | - | - | - | D | + | + | + | + | + | Y | N | N |
| K081 | IMSG1 , OMSG1 , CONU , ATAC2 , LWRT , HITR , WTBF | - | - | - | D | + | + | + | + | + | N | N | N |
| K082 | FNAM | - | - | - | - | - | R | D | - | - | Y | N | N |
| K083 | FNAM | - | - | - | - | - | R | D | - | - | Y | N | N |
| K084 | OBJ1 , VER1 , OBJ2 , VER2 , OST1 , BMD1 , OST2 , BMD2 | - | - | - | - | - | R | D | - | - | Y | N | N |
| K085 | FNKT | - | - | - | - | - | R | D | - | - | Y | N | N |
| K086 | PTRM , PRNM , BCAP , LTRM , USER , SYSD , USSD ,FMH7 , AGUS | - | - | - | D | + | + | + | + | + | N | N | N |
| K087 | OPCD3 , ERCD4 , ERCD5 | - | - | - | - | - | R | + | - | - | Y | N | N |
| K088 | LSES , RSES , LPAP , SRFG , PSQN , ESQS , EBSS ,ESQR , ESRR , EBSR | - | - | - | D | + | + | + | + | + | N | N | N |

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|-------------------|--|---|---|---|---|---|---|---|---|---|---|---|---|
| K089 | GNDATE , GNTIME , DEST , GUSER , USER , DLDATE , DLTIME , CHAIN , DPID | - | - | - | D | + | + | + | + | + | N | N | N |
| K090 | DEST , USER , DLDATE , DLTIME | - | - | - | D | + | + | + | + | + | N | N | N |
| K091 | PTRM , PRNM , BCAP , LTRM , USER , REA7 | R | + | + | + | + | + | + | + | + | N | N | N |
| K092 | PTRM , PRNM , BCAP , LTRM , USER , PAS1 , PAS2 , PAS3 | R | - | - | + | + | + | + | + | - | N | Y | N |
| K093 | PTRM , PRNM , BCAP , LTRM , USER , HSTACK , MSTACK | R | D | + | + | + | + | + | + | + | Y | N | N |
| K094 | PTRM , PRNM , BCAP , LTRM , USER , RCF1B , REA4 | - | - | - | D | + | + | + | + | + | N | N | N |
| K095 | | D | R | - | - | - | - | - | - | - | N | N | N |
| K096 | | R | R | - | - | - | - | - | - | - | N | N | N |
| K097 ¹ | PTRM , PRNM , BCAP , LTRM , USER | R | - | - | + | + | + | + | + | + | Y | N | N |
| K098 | PTRM , PRNM , BCAP , LTRM , USER , RCF1C , RCF2B | R | D | - | + | + | + | + | + | + | N | N | N |
| K099 | MSG | - | - | - | - | - | R | + | - | - | Y | N | N |
| K101 | PTRM , PRNM , BCAP , LTRM , USER , REA1 , DEST | R | D | + | D | + | D | + | + | + | Y | N | N |
| K102 | CIW , CPC , CILC , CPM , CCC , CR0 , CR1 , CR2 , CR3 , CR4 , CDSPL , CAMODE | - | - | - | - | - | R | + | + | - | N | N | N |
| K103 | CR5 , CR6 , CR7 , CR8 , CR9 , CR10 , CR11 , CR12 , CR13 , CR14 , CR15 | - | - | - | - | - | R | + | + | - | N | N | N |
| K104 | UTMDEVT , LSES , LPAP , AGUS , OCVST , OTAST , ACTION , NCVST , NTAST , SESSCNTR , VGCNTR , TACNTR , RCVDANNO , TACINDX , LTACINDX | - | - | - | D | + | + | + | + | + | N | N | N |
| K105 | LSES , LPAP , AGUS , SYST | - | - | - | D | + | + | + | + | + | N | N | N |
| K106 | PTRM , PRNM , BCAP , LTRM , USER , DEVC , FIL1A , FIL2A , FIL3 , VTRC , CBRC , OMSG3 , FMTN , CCSN | R | + | - | D | + | + | + | + | + | Y | N | N |
| K107 | TTYP | - | - | - | D | - | R | + | + | + | Y | N | N |
| K108 | PTRM , PRNM , BCAP , LTRM , USER , KRRC , KRLH , KRPR , KRACT | - | - | - | D | + | + | + | + | + | Y | N | N |
| K109 | PTRM , PRNM , BCAP , LTRM , USER , KRRC , KRLH , KRPR , KRACT | R | - | - | D | + | + | + | + | + | Y | N | N |
| K110 | PTRM , PRNM , BCAP , LTRM , USER , KRRC , KRLH , KRPR | R | - | - | D | + | + | + | + | + | Y | N | N |
| K111 | PTRM , PRNM , BCAP , LTRM , USER | R | - | - | + | + | + | + | + | + | Y | N | N |

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|------|--|---|---|---|---|---|---|---|---|---|---|---|---|
| K112 | PTRM , PRNM , BCAP , LTRM , USER | + | R | - | - | - | - | - | - | - | Y | N | N |
| K115 | PTRM , PRNM , BCAP , LTRM , SNPT , SNPR , SNLT , CCC , REA1 , ANNO | - | - | - | R | + | + | + | + | + | N | N | N |
| K116 | PTRM , PRNM , BCAP , LTRM , SNPT , SNPR , SNLT , USER , REA1 | - | - | - | + | + | + | + | + | + | N | N | N |
| K117 | PTRM , PRNM , BCAP , LTRM , SNPT , SNPR , SNLT , USER , REA1 | - | - | - | + | + | + | + | + | + | N | N | N |
| K118 | FORMATID, LTHGTRID, GTRID , AAIS , AAID | - | - | - | D | + | + | + | + | + | Y | N | N |
| K119 | OSLPAP , USER , TAC , DIA1 , DIA2 , DIA3 , SESSCNTR, VGCNTR , TACNTR , AAIS , AAID | - | - | - | D | + | + | + | + | + | Y | N | N |
| K120 | PTRM , PRNM , BCAP , LTRM , USER | R | + | - | D | + | + | + | + | + | N | N | N |
| K122 | PTRM , PRNM , BCAP , LTRM , USER , NUMDAYS | + | R | - | - | - | - | - | - | - | Y | N | N |
| K123 | LTRM , TAC , USER | R | + | - | D | + | + | + | + | + | N | N | N |
| K124 | RCXAPTP , PHAXAPTP, PHAXAPTP | - | - | - | D | - | D | D | + | - | Y | N | N |
| K125 | PTRM , PRNM , BCAP , LTRM , USER | R | + | - | D | + | + | + | + | + | Y | N | N |
| K126 | SATRC | - | - | - | D | + | D | D | + | + | N | N | N |
| K127 | ERCD6 | - | - | - | - | - | R | + | - | - | Y | N | N |
| K128 | CON , PRNM , BCAP , LPAP , LSES , REA1 , RCDC , TAC | - | - | - | D | + | + | + | + | + | N | N | N |
| K129 | CMD | - | - | - | - | - | R | + | - | - | Y | N | N |
| K130 | TPRIO , TASK | - | - | - | D | + | + | + | + | + | Y | N | N |
| K132 | OBJ1 , OBJ2 | - | - | - | - | - | R | + | - | - | Y | N | N |
| K133 | EXIT | - | - | - | - | - | R | + | - | - | Y | N | N |
| K134 | DEST , NMSG , DPID , GNDATE , GNTIME | - | - | - | D | + | + | + | + | + | Y | N | N |
| K135 | PTRM , PRNM , BCAP , LTRM , UPCREAS , UPCSTAT , UPCPROT , UPVENC1 , UPPENC2 | - | - | - | D | + | + | + | + | + | N | N | N |
| K136 | FNAM | - | - | - | - | - | D | + | + | + | Y | N | N |
| K137 | FNAM | - | - | - | + | + | D | + | + | + | Y | N | N |
| K138 | FNAM | - | - | - | - | + | D | + | + | + | Y | N | N |
| K139 | FNAM | - | - | - | + | + | D | + | D | + | Y | N | N |
| K140 | PTRM , PRNM , BCAP , LTRM , MXP1 , MXP2 | - | - | - | D | + | + | + | + | + | Y | N | N |
| K141 | PTRM , PRNM , BCAP , LTRM , MXP1 | - | - | - | D | + | + | + | + | + | Y | N | N |
| K142 | PTRM , PRNM , BCAP , LTRM , MXPT , MXPR , MXLT | - | - | - | D | + | + | + | + | + | Y | N | N |

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| K143 | PTRM , PRNM , BCAP , LTRM , STS1 , STS2 , STS3 , STS4 | - | - | - | D | + | + | + | + | + | Y | N | N |
| K144 | PTRM , PRNM , BCAP , LTRM , DEVC , FIL1A , FIL2A , FIL3 , VTRC , CBRC , OMSG3 , FMTN , CCSN | - | - | - | D | + | R | + | + | + | Y | N | N |
| K145 | PTRM , PRNM , BCAP , LTRM , USER | R | + | + | + | + | + | + | + | + | N | N | N |
| K146 | BCMOPCD , BCMRTCD , STDHEAD , TASK , BCAP | - | - | - | D | + | + | + | + | + | Y | N | N |
| K147 | PTRM , PRNM , BCAP , LTRM , USER , REA7 , USRTYPE | - | - | - | D | + | D | + | + | + | Y | N | N |
| K149 | DIA5 | - | - | - | - | - | R | + | + | - | Y | N | N |
| K150 | PTRM , PRNM , BCAP , LTRM , RSOANNO , RSOOPC , RSOMSG , RSORC , RSO2RC , STDHEAD | - | - | - | D | + | + | + | + | + | Y | N | N |
| K151 | IDEFRC , DMSE , FNAM | - | - | - | D | + | D | D | + | + | Y | N | N |
| K152 | COND , MTYPE , OSLPAP , USER , LTAC , AAIS , AAID , SESSCNTR , VGCNTR , TACNTR | - | - | - | D | + | + | + | + | + | Y | N | N |
| K153 | PTRM , PRNM , BCAP , LTRM , USER | - | - | - | - | - | + | + | - | - | N | N | N |
| K154 | PTRM , PRNM , BCAP , LTRM , TCPCL , TCPRC | - | - | - | D | + | D | + | + | + | N | N | N |
| K155 | PTRM , PRNM , BCAP , LTRM , USER , PAS1 , PAS2 , PAS3 | R | - | - | + | + | + | + | + | - | N | Y | N |
| K156 | RSLT | - | - | - | D | + | + | R | + | + | N | N | N |
| K157 | PTRM , PRNM , BCAP , ANNO , STDRC , SSORC , STDHEAD , SSINCID , SSOUTCID, SSTYPNAM, SSLENNAM | - | - | - | D | + | + | + | + | + | Y | N | N |
| K158 | PTRM , PRNM , BCAP , LTRM , USER , CPUTEXT , CPUBEGIN, CPUEND , CPUUSED , CPUCLNT , CPUREAS | - | - | - | D | + | + | + | + | + | Y | N | N |
| K159 | USER , ENCPW | - | - | - | + | + | + | + | + | - | Y | N | N |
| K160 | PTRM , PRNM , BCAP , LTRM , USER , TCVG , TAC , TACNTR , RBCAUSER, RCCC , RCDC , TASK , SESSCNTR , VGCNTR , LTHGTRID, GTRID , PID | - | - | - | D | + | + | + | + | + | Y | N | N |
| K161 | TASK , PID | - | - | - | + | + | + | + | + | - | N | N | N |
| K162 | TASK , IOPG , IOMS , PID | - | - | - | D | - | R | D | + | - | Y | N | N |
| K163 | TASK , IOPG , IOMS , PID | - | - | - | D | + | R | D | + | - | Y | N | N |
| K164 | FNAM | - | - | - | + | + | D | + | + | + | N | N | N |
| K165 | FNAM | - | - | - | + | + | + | D | + | + | N | N | N |
| K166 | FNAM , RCHX , SYSFILE | - | - | - | R | + | D | D | + | + | N | N | N |

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| K167 | | - | - | - | + | + | D | D | + | + | Y | N | N |
| K169 | ACTION , IDX1 , HST1 , STATE , IDX2 , HST2 , IDX3 , HST3 , NNM1 , NNM2 , NNM3 | - | - | - | R | - | R | D | + | - | Y | N | N |
| K170 | DTTM , STATE | - | - | - | R | - | R | D | + | - | Y | N | N |
| K171 | HST1 , XCS1 , XCS2 | - | - | - | R | - | R | D | + | - | Y | N | N |
| K174 | DIA1 | - | - | - | R | - | R | D | + | - | Y | N | N |
| K175 | FNAM | - | - | - | R | - | R | D | + | - | Y | N | N |
| K176 | PRCN , MSG2 , RCHX | - | - | - | R | + | R | D | + | + | Y | N | N |
| K178 | ACTION , STATE , STA2 , PGS1 , PGS2 , SWNR | - | - | - | R | - | R | D | + | - | Y | N | N |
| K179 | | - | - | - | R | + | D | D | + | + | Y | N | N |
| K180 | | - | - | - | R | + | D | D | + | + | Y | N | N |
| K181 | FNAM | - | - | - | R | + | D | D | + | + | Y | N | N |
| K182 | FNAM | - | - | - | R | + | D | D | + | + | Y | N | N |
| K183 | FNAM | - | - | - | R | + | D | D | + | + | Y | N | N |
| K185 | | - | - | - | R | + | D | D | + | + | Y | N | N |
| K186 | | - | - | - | R | + | D | D | + | + | Y | N | N |
| K187 | FNAM | - | - | - | R | + | D | D | + | + | Y | N | N |
| K188 | OBJ1 , DTTM , OBJ2 , DTM2 | - | - | - | R | - | R | D | + | - | Y | N | N |
| K189 | PTRM , PRNM , BCAP , LTRM , USER , HST1 | R | + | - | D | + | + | + | + | + | Y | N | N |
| K191 | SUFF , RQM | - | - | - | D | - | D | D | + | - | Y | N | N |
| K195 | MSG2 | + | + | + | + | + | + | + | + | + | N | N | N |
| K196 | MSG2 | + | + | + | + | + | + | + | + | + | N | N | N |
| K197 | MSG2 | + | + | + | + | + | + | + | + | + | N | N | N |
| K198 | MSG2 | + | + | + | + | + | + | + | + | + | N | N | N |
| K199 | TRMTYP , ROOTTRMR | - | - | - | - | - | R | D | - | - | Y | N | N |
| K200 | MSG2 | - | - | - | + | + | + | + | + | + | N | N | N |
| K201 | TSNPID , XASPEC | - | - | - | - | - | R | D | - | - | Y | N | N |
| K202 | TSNPID , INSTNUM , TEXT32 , RMSTAT | - | - | - | - | - | R | D | - | - | Y | N | N |
| K203 | TSNPID , TEXT32 , INSTNUM , RTAANZ | - | - | - | - | - | R | D | - | - | Y | N | N |
| K204 | TSNPID , INTTAID , XATXT , USER , TAC | - | - | - | - | - | R | D | - | - | Y | N | N |
| K205 | TSNPID , INTTAID , XATXT , USER , TAC | - | - | - | - | - | R | D | - | - | Y | N | N |
| K206 | TSNPID , INTTAID , XATXT , USER , TAC | - | - | - | - | - | R | D | - | - | Y | N | N |

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| K207 | TSNPID , INTTAID , INSTNUM , USER , TAC | - | - | - | - | - | R | D | - | - | Y | N | N |
| K210 | TSNPID , XATXT , TEXT32 , INSTNUM | - | - | - | - | - | R | D | - | - | Y | N | N |
| K211 | TSNPID , XATXT , TEXT32 , INSTNUM | - | - | - | - | - | R | D | - | - | Y | N | N |
| K212 | TSNPID , XATXT , XAFLAG , INTTAID , USER , TAC | - | - | - | - | - | R | D | - | - | Y | N | N |
| K213 | TSNPID , XATXT , XAFLAG , INTTAID , USER , TAC | - | - | - | - | - | R | D | - | - | Y | N | N |
| K214 | TSNPID , XATXT , INTTAID , USER , TAC | - | - | - | - | - | R | D | - | - | Y | N | N |
| K215 | TSNPID , XATXT , INTTAID , USER , TAC | - | - | - | - | - | R | D | - | - | Y | N | N |
| K216 | TSNPID , XATXT , TEXT32 , INSTNUM | - | - | - | - | - | R | D | - | - | Y | N | N |
| K217 | TSNPID , XATXT , INTTAID , USER , TAC | - | - | - | - | - | R | D | - | - | Y | N | N |
| K218 | TSNPID , XATXT , INTTAID , USER , TAC | - | - | - | - | - | R | D | - | - | Y | N | N |
| K220 | TSNPID , TEXT32 | - | - | - | - | - | R | D | - | - | Y | N | N |
| K221 | TSNPID , TEXT32 | - | - | - | - | - | R | D | - | - | Y | N | N |
| K222 | TSNPID , XASPEC , TEXT32 | - | - | - | - | - | R | D | - | - | Y | N | N |
| K223 | TSNPID | - | - | - | - | - | R | D | - | - | Y | N | N |
| K224 | TSNPID , XACALL , XATXT , TEXT32 , INSTNUM | - | - | - | - | - | R | D | - | - | Y | N | N |
| K225 | TSNPID , XADBC1 , XADBC2 | - | - | - | - | - | R | D | - | - | Y | N | N |
| K230 | TSNPID , TEXT32 | - | - | - | - | - | R | D | - | - | Y | N | N |
| K231 | TSNPID | - | - | - | - | - | R | D | - | - | Y | N | N |
| K232 | TSNPID | - | - | - | - | - | R | D | - | - | Y | N | N |
| K233 | TSNPID , INSTNUM , XACALL , DBCALL , XATXT , LTHGTRID, GTRID | - | - | - | - | - | R | D | - | - | Y | N | N |
| K234 | FNAM , ELEM , EVER , LMSTYPE , PLARC , DMSRC | - | - | - | D | + | D | D | + | + | Y | N | N |
| K235 | TCPCL , PRNM , TCPRC , TCPMS , IPADDR | - | - | - | D | + | D | + | + | + | Y | N | N |
| K236 | TCPCL , IPADDR , TCPRC , TCPMS , PRNM | - | - | - | D | + | D | + | + | + | Y | N | N |
| K237 | TSNPID , DBCALL | - | - | - | - | - | R | D | - | - | Y | N | N |
| K238 | TSNPID , DBCALL | - | - | - | - | - | R | D | - | - | Y | N | N |
| K239 | LPAP , DPID , GNUSER , LTRM , GNDATE , GNTIME | - | - | - | D | + | + | + | + | + | Y | N | N |
| K251 | IMPVER , FBASUPD , DEFVER | - | - | - | D | + | D | D | + | + | Y | N | N |
| K252 | UPDERR | - | - | - | D | + | D | D | + | + | Y | N | N |
| K255 | DMSE , FNAM | - | - | - | D | + | D | D | + | + | Y | N | N |
| K256 | FNAM | - | - | - | D | + | D | D | + | + | Y | N | N |
| K257 | | - | - | - | D | + | D | D | + | + | Y | N | N |

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|------|--|---|---|---|---|---|---|---|---|---|---|---|---|
| K258 | FNAM | - | - | - | D | + | D | D | + | + | Y | N | N |
| K260 | DEFVER , FBASUPD | - | - | - | D | + | D | D | + | + | Y | N | N |
| K261 | FNAM | - | - | - | D | + | D | D | + | + | Y | N | N |
| K262 | FNAM | - | - | - | D | + | D | D | + | + | Y | N | N |
| K263 | FNAM | - | - | - | D | + | D | D | + | + | Y | N | N |
| K269 | OBJ1 , OST1 , BMD1 , OBJ3 , OST2 , BMD2 | - | - | - | D | + | D | D | + | + | Y | N | N |
| K273 | TRMA , UPDMODUL | - | - | - | D | + | D | D | + | + | Y | N | N |
| K274 | | - | - | - | D | + | D | D | + | + | Y | N | N |
| K277 | | - | - | - | D | + | D | D | + | + | Y | N | N |
| K278 | | - | - | - | D | + | D | D | + | + | Y | N | N |
| K279 | | - | - | - | D | + | D | D | + | + | Y | N | N |
| K300 | UPDPRO , PGPOOL | - | - | - | D | + | D | D | + | + | Y | N | N |
| K303 | UKCOP , UKCRN , UPDTYP , UKCLM | - | - | - | D | + | D | D | + | + | N | N | N |
| K304 | USER , TACTYPE , UKCHSTA | - | - | - | D | + | D | D | + | + | N | N | N |
| K305 | UPDTYP , PGS1 , PGS2 , UKCRN , PGPOOL | - | - | - | D | + | D | D | + | + | Y | N | N |
| K306 | UPDTYP , PGS1 , PGPOOL | - | - | - | D | + | D | D | + | + | Y | N | N |
| K310 | UPDTYP , UKCRN | - | - | - | D | + | D | D | + | + | N | N | N |
| K311 | UPDTYP , UKCRN | - | - | - | D | + | D | D | + | + | N | N | N |
| K314 | | - | - | - | D | + | D | D | + | + | N | N | N |
| K317 | UKCOP , UKCRN , UPDTYP , UKCLM , RCCC , RCDC , LTRM , USER | - | - | - | D | + | D | D | + | + | N | N | N |
| K318 | UPDTYP , UKCRN , LTRM , USER | - | - | - | D | + | D | D | + | + | N | N | N |
| K320 | USER , TACTYPE , UERCODE , UERINFO , RCDC | - | - | - | D | + | D | D | + | + | N | N | N |
| P001 | XPFUNC , ACPNT , XPRET , XPERR , XP1INFO , XP2INFO , XPCORR | - | - | - | D | + | + | + | + | + | Y | N | N |
| P002 | XPFUNC , ACPNT , OSLPAP , XPRET , XPERR , XP1INFO , XP2INFO , XPCORR | - | - | - | D | + | + | + | + | + | Y | N | N |
| P003 | ACPNT , XPRJCT , XPLTH | - | - | - | D | + | + | + | + | + | Y | N | N |
| P004 | ACPNT , OSLPAP , XPRJCT | - | - | - | D | + | + | + | + | + | Y | N | N |
| P005 | ACPNT , XPNSEL , XPTSEL , XPLSSEL , XPCSSEL , XPHSSEL , XPLPSEL , XPCPSEL , XPHPSEL | - | - | - | D | + | + | + | + | + | Y | N | N |

| | | | | | | | | | | | | | |
|------|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P006 | ACPNT , OSLPAP , XP0OBID , XP1OBID , XP2OBID , XP3OBID , XP4OBID , XP5OBID , XP6OBID , XP7OBID , XP8OBID , XP9OBID | - | - | - | D | + | + | + | + | + | Y | N | N |
| P007 | ACPNT , OSLPAP , XPRET , XPERR , XP1INFO , XP2INFO , XPCORR | - | - | - | D | + | + | + | + | + | Y | N | N |
| P008 | ACPNT , OSLPAP , XPOSAS | - | - | - | D | + | + | + | + | + | Y | N | N |
| P009 | ACPNT , OSLPAP , XPRJCT , XPLTH , XPOSAS | - | - | - | D | + | + | + | + | + | Y | N | N |
| P010 | ACPNT , OSLPAP , XPNSEL , XPTSEL , XPLSSEL , XPCSSEL , XPHSSEL , XPLPSEL , XPCPSEL , XPHPSEL , XPOSAS | - | - | - | D | + | + | + | + | + | Y | N | N |
| P011 | ACPNT , OSLPAP , XP0OBID , XP1OBID , XP2OBID , XP3OBID , XP4OBID , XP5OBID , XP6OBID , XP7OBID , XP8OBID , XP9OBID , XPOSAS | - | - | - | D | + | + | + | + | + | Y | N | N |
| P012 | XPCTYPE , XPCCLS , XPCVAL , XPBCAM , XPCORR | - | - | - | D | + | + | + | + | + | Y | N | N |
| P013 | ACPNT , OSLPAP , XPCRES , XPSRC , XPNDIA , XP1BOOL , XP2BOOL , XP3BOOL , XP4BOOL , XP5BOOL , XPOSAS | - | - | - | D | + | + | + | + | + | Y | N | N |
| P014 | XPFUNC , ACPNT , OSLPAP , XPRET , XPERR , XP1INFO , XP2INFO , XPOSAS , XPCORR | - | - | - | D | + | + | + | + | + | Y | N | N |
| P015 | XPFUNC , ACPNT , OSLPAP , XPLNK , XPSRC , XPNDIA , XPINI , XP1INFO , XP2INFO , XPOSAS , XPCORR | - | - | - | D | + | + | + | + | + | Y | N | N |
| P016 | ACPNT , OSLPAP , XPLNK , XPNDIA , XPOSAS | - | - | - | D | + | + | + | + | + | Y | N | N |
| P017 | XPPDU , XP1DIA , XP2DIA , XP3DIA | - | - | - | + | + | + | + | + | + | Y | N | N |
| P018 | ACPNT , OSLPAP , XPPTYP , XPFSMN | - | - | - | D | + | + | + | + | + | Y | N | N |
| P019 | ACPNT , OSLPAP , XPAPDU , XP3INFO | - | - | - | D | + | + | + | + | + | Y | N | N |
| P020 | XPTRFAIL | - | - | - | D | + | + | + | + | + | Y | N | N |
| P021 | XPEVT , ACPNT , OSLPAP , XPOSAS , XPASST | - | - | - | D | + | + | + | + | + | Y | N | N |

¹If you are working with a sign-on service in a UTM application, then these messages are not generated, i.e. they are also not output to the message destinations MSGTAC or SYSLOG.

6 Appendix

- KDCS return codes in KCRCCC
- Internal return code KCRCDC
- HTTP Status Codes
- STXIT events
- Codes from openUTM CDUMP calls
- UTM dump error codes

6.1 KDCS return codes in KCRCCC

The error categories are as follows:

| Code | Category | Response |
|-----------|-------------------------|--|
| 000 | No error | Operation carried out without errors |
| 01Z - 09Z | Comments | Operation carried out |
| 10Z - 19Z | Warning or minor errors | Once suitable action has been taken, the program unit run can be continued. The operation was not carried out. |
| 20Z - 39Z | Special functions | A KDCS special function is signaled. Otherwise as for warnings. |
| 40Z - 69Z | Errors | The operation was not carried out. In most cases it will be pointless to continue the program run. Communication with the dialog terminal is still possible. |
| 70Z - 99Z | | |

Please note the following:

- For a detailed explanation of the return codes in KCRCCC see the openUTM manual „Programming Applications with KDCS” under each individual KDCS call.
- If more than one error occurs at any one time, the errors from the highest category are displayed. If an operation was not carried out (return code > 09Z) the contents of <parm2> are not modified.
- Evaluation of a UTM-DUMP is described in [chapter “The UTM dump”](#).

The following return codes are defined (field name specifications: COBOL name/C name):

| Code | Meaning |
|------|--|
| 000 | The operation was carried out successfully. |
| 01Z | Length conflict in KCLA/kcla or KCLKBPRG/kclcapa. |
| 02Z | Length conflict in KCLPAB/kclspa. |
| 03Z | Name in KCRN/kcrn invalid. |
| 04Z | Name in KCRN changed. |
| 05Z | Input formatting not carried out with the format identifier specified in KCMF/kcfn. Line mode: 1st character of KCMF/kcfn not space. |
| 06Z | Time entry changed within message (DPUT call). |
| 07Z | Length conflict regarding KCLI/kcli. For DADM MA: Not all messages from the dead letter queue could be moved because the process-specific buffer area generated for restart information is too small. Repeat the DADM call. |

| | |
|--------------|--|
| 08Z | When reading with waiting in the DGET call: There is currently no message. |
| 09Z *) | For INFO CD: The Kerberos dialog has returned an error or the Kerberos information was returned in truncated form. |
| 10Z | Message already read completely. |
| 11Z | When reading without waiting in the DGET call: There is no message. |
| 12Z | No (more) messages from specified service ID or no service stack with the specified number available. |
| 14Z | Name in KCRN/kcrn not found. |
| 16Z | Operation is illegal and was not performed. |
| 19Z | Function key or special function not generated. |
| 20Z - 39Z | KDCS special functions (short messages). |
| 40Z | System cannot perform operation (UTM generation error, system error, deadlock, longterm locks). |
| 41Z | Operation illegal at this point. |
| 42Z | Operation modifier invalid. |
| 43Z | Length entry in KCLM/kclm, KCLI/kcli or KCLA/kcla or KCWTIME/kcwtim invalid. |
| 44Z | Name in KCRN/kcrn invalid. |
| 45Z | Format identifier KCMF/kcfn or creation time (DGET) invalid. |
| 46Z | Name in KCLT/kclt or KCPA/kcpa or KCLANGID/kclangid, KCTERRID/kcterrid, KCCSNAME/kccsname or KCQMODE/kcqmode is invalid. |
| 47Z | Storage area <parm2> missing or invalid area address or area cannot be read/written in the specified length. |
| 48Z | Invalid interface version. |
| 49Z | Unused parameters are not equal to binary zero. |
| 51Z | Sequence not maintained in DPUT call. |
| 52Z | Message destination is not permitted in KCRN (DPUT call). |
| 53Z | Value in KCDPID/kcdpid or KCGTM/kcgtm is invalid (DGET call). |
| 54Z | Value in KCNORPLY/kcnoreply is invalid (in the case of CTRL PR or PE: Value not equal Y or binary zero). |
| 55Z | Name in KCPI/kcpi is invalid (APRO call). |
| 56Z | Value of KCMOD or time entry in KCTAG/kcday,....,KCSEK/kcsec is invalid (DADM, DPUT call). |

| | |
|--------|---|
| 57Z | Value in KCPOS/kcpos is invalid (MCOM call). |
| 58Z | Value in KCOF/kcof (APRO call) is invalid or the value in KCNEG/kcneg is invalid (MCOM call). |
| 70Z | System cannot perform operation (UTM generation error, system error). |
| 71Z | Operation not permitted at this stage, e.g. because INIT has not yet been issued. |
| 72Z | Operation modifier invalid. |
| 73Z | Length entry in KCLM/kclm, KCLA/kcla or KCLI/kcli invalid. |
| 74Z | Name in KCRN/kcrn invalid. |
| 75Z | Format ID KCMF/kcfn invalid. |
| 77Z | Storage area <parm2> missing or invalid area address. |
| 78Z *) | FORMAT exit reports error (MGET call). |
| 79Z | Operation code cannot be interpreted. |
| 80Z | UTM generation error prior to start of program. |
| 81Z | Destination in PEND conflicts with destination in MPUT. |
| 82Z | PEND variant conflicts with operand KCOM/kcom or KCRN/kcrn in the MPUT call. |
| 83Z | MPUT not issued prior to a PEND KP,RE,FI,ER,FR in a dialog program or an MPUT was not issued prior to a PEND KP,RE in an asynchronous program or an MPUT was issued prior to a PGWT PR. |
| 84Z | PEND missing |
| 86Z | A message complex was not terminated or no FPUT/DPUT was issued after APRO AM for the addressed job-receiving service. |
| 87Z | Operation modifier is illegal. |
| 88Z | Invalid interface version. |
| 89Z | Unused parameters are not equal to binary zero. |

*) the values appear only on BS2000 systems.

6.2 Internal return code KCRCDC

The incompatible KDCS return code KCRCDC consists of four printable characters and contains more detailed information on the cause of the error than the compatible return code KCRCCC.

The incompatible return code can be set in the following situations:

- if the KDCS call returns the compatible return code 40Z
- if openUTM terminates a service abnormally with PEND ER (KCRCCC >= 70Z)
- if a transaction is implicitly reset by openUTM.

The return code KCRCDC has the following structure:

s###

The first character (s) of KCRCDC specifies which part of openUTM reported the error:

- A Administration
- F Formatting component
- H HTTP functions
- K UTM system code or ROOT code.
- U UPIC (server part)

The following table describes the error causes and, where applicable, the required recovery action. If TESTMODE=OFF, the PEND ER dump is suppressed in cases marked with (1). Dynamic loading is also suppressed. At the same time, loading is suppressed unless PGWT calls are permitted for the current TAC and the KDCS call in which the error occurred was not a PEND call.

| Code | Module | Cause of error and action (if any) |
|---------|---------|---|
| A010 *) | KCSSADM | User is no SAT administrator. |
| A011 *) | KCSSADM | TAC has no SAT admission. |
| A012 *) | KCSSADM | SAT subsystem is not available. |
| A013 *) | KCSSADM | SAT version is not compatible. |
| A015 *) | KCSSADM | An inverse KDCDEF is running or is to be started. |
| A100 | KCSADMI | When calling the program interface for administration, the address specified for the parameter area is either inaccessible or cannot be accessed for the length of the parameter area or it is not on a word boundary. Action: Check the address specified for the parameter area in the program unit. |
| A101 | KCSADMI | An invalid return code was issued internally when calling the programming interface for administration. System error. Action: Contact System Support. The PEND ER dump is required for diagnosis. |

| | | |
|----------|---------|--|
| ABTR *) | KCSENDE | The code is reported in UTM messages K017 or K055. It occurs whenever after an abnormal task termination (cp. ABNORMAL TASK TERMINATION in batch or TIAM timesharing mode) a service is terminated abnormally by UTM system code because UTM-STXIT handling has not run (STXIT switched off or STXIT code overwritten). Generally, this does not adversely affect application execution. |
| EXIT **) | KDCROOT | <ul style="list-style-type: none"> - The exit() function was called illegally in a C program. - The statement STOP RUN was executed in a COBOL program. - The COBOL runtime system has detected a data error, an index error or similar in COBOL. Hints on the causer can be found by analyzing the calling stack in the corresponding core. |
| FH01 *) | KDCRTFH | Error occurred during formatting. See additional return code from FHSCON or FHS in KCRMF field. ¹ |
| FH02 *) | KDCRTFH | Warning: hardware function not available. ¹ |
| FH04 *) | KDCRTFH | Serious error when initializing FHS Format Handling System UTM aborts start of application. |
| FR00 *) | KDCRTFH | Error occurred during FORMAT-Exit-Function "CHECK_FOR_DOWNLOAD" |
| FR01 *) | KDCRTFH | - A format ID with "-" was specified although the application was generated without FORMAT exit, or- a "*" or "+" format was specified but the utm generation does not contain a FORMSYS statement. ¹ |
| FR02 *) | KDCRTFH | KDCFOR not allowed for partial format. ¹ |
| FR98 *) | KDCRTFH | '-' Format, i.e. user-own formatting; the length of the input message was illegally set by the FORMAT EXIT (< 0). The return code is set by KDCRTFH. |
| FR99 *) | KDCRTFH | '-' Format, i.e. user-own formatting; the length of the restart area was illegally changed by FORMAT EXIT. The return code is set by KDCRTFH. |
| FRxx *) | KDCRTFH | Format in '-' Format, i.e. user-own formatting: xx is the return code entered in the MCRF field in the user-own control area MDCBL. The entry comes from the FORMAT exit. The values X'01' , x'02' , X'03' , X'04' , X'08' , X'10' , X'98' and X'99' are not permitted for the format exit, because these return codes are reserved for UTM and FHS. |
| HT01 | KDCHTPF | Program for HTTP exit is missing. The service aborts with PEND ER. |
| HT02 | KDCHTPF | Language connection error when calling HTTP exit program. |
| HT03 | KDCHTPF | The HTTP exit program split the input message in more message parts than allowed. |
| HT04 | KDCHTPF | The total length of the accumulated input message parts is longer than the buffer for the input message. |
| HTxy | KDCHTPF | The user-specific HTTP exit program returned with error code xy (X'00' < xy <= X'FF'). Therefore the service is abnormally terminated with PEND ER. |

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| K300 | KCSPEND | Invalid operation modification was used in the PEND call. |
| K301 | KCSPEND | (see KA00) The buffer is too small for the input message. Action: Specify larger buffer length with MAX TRMSGLTH=length in KDCDEF generation. |
| K302 | KCSPEND | The task-specific buffer area for restart information is too small (see UTM manual Generating applications: restart area). Action: Define larger buffer area with MAX RECBUF=(...,length) in KDCDEF generation. ¹ |
| K303 | KCSPEND | An invalid operation modification was used in the PGWT call. |
| K304 | KCSPEND | The DB system requests a CLOSE DB call prior to END RE/FI, but the call was not given. |
| K305 | KCSPEND | A PEND KP or a PEND PA/PR with process switch was called, although the DB system with which the transaction was opened does not permit a PEND KP. |
| K306 | KCSPEND | The transaction had to be rolled back and the service had to be terminated abnormally because the DB system has rolled back the DB transaction when closing down. |
| K307 | KCSPEND | PEND PS is only permitted in the first part of the sign-on service. |
| K308 | KCSPEND | The DB transaction was closed prior to PEND KP or PEND PA/PR with process switch. |
| K309 | KCSPEND | The TAC specified in KCRN is not permitted as a follow-up TAC. |
| K310 | KCSPEND | Error when storing the MPUT message during PEND PA/PR with process switch. |
| K311 | KCSPEND | A temporary end of transaction (PTC) was reached with PEND RE/FI, but the DB system where the transaction is open does not permit the transaction status. |
| K312 *) | KCSPEND | A formatted message cannot be output because it is too long. Action: create a simpler format. |
| K313 | KCSPEND | A SIGN OF/OB was issued in a program unit run, but the output message is for the job-receiver or the program run was terminated with an PEND variant that is not permitted. |
| K314 | KCSPEND | A program unit run of a sign-on service was not terminated with PEND PS following a successful SIGN ON. |
| K315 | KCSPEND | With service stacking, an MPUT PM was issued with KCLM/kclm > 0 prior to PEND FI. The last output from the preceding service was a LINEMODE message and can only be output in unmodified form. |

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|---------|---------|--|
| K316 | KCSPEND | <p>PEND RS was called in the program unit or a situation (e.g. loss of connection) has occurred which requires UTM to roll back the transaction. However, PEND RS is not permitted because no service restart is possible. This is the case if:</p> <ul style="list-style-type: none"> • the service was started by a UPIC client or an OSI TP job submitter which has not selected the Functional Unit Commit and no user with the restart attribute is signed on at the connection/association and no local service restart is possible because the last synchronization point was not set with PEND SP or PEND FC (UPIC only) • or the last synchronization point was set with PGWT CM. <p>No PENDER dump is written.</p> |
| K317 *) | KCSPEND | <p>The actual size of the service memory (SQL) to be saved is greater than the permitted maximum value limited by VGMSIZE.</p> |
| K318 | KCSPEND | <p>PGWT was called in a program unit where for this TAC</p> <ul style="list-style-type: none"> • no TAC class is generated or • if TAC classes are generated: PGWT=YES is not specified for the TAC class • if TAC-PRIORITIES are generated: the TAC was not generated with PGWT=YES <p>Action: Correct generation with KDCDEF.</p> |
| K319 | KCSPEND | <p>There are not enough processes to use the PGWT or PGWT was called from an UTM system process (only possible via a privileged LTERM).</p> <p>Action: Increase number of processes</p> |
| K320 | KCSPEND | <p>After a RSET in a distributed transaction, the transaction was not rolled back, although UTMD RSET = GLOBAL was generated</p> |
| K321 *) | KCSPEND | <p>The edit profile name of the saved message of the stacked service is not generated.</p> |
| K322 | KCSPEND | <p>The operation modification FC is not permitted in asynchronous services or job-receiving services.</p> |
| K323 | KCSPEND | <p>The operation modification FC is not permitted in the sign-on service if a service restart is required.</p> |
| K324 | KCSPEND | <p>KCRN does not contain blanks when calling PEND RS or PEND FR.</p> |
| K325 | KCSPEND | <p>The operation modification RS is not permitted in the sign-on service or in the MSGTAC program, or the Resource Manager of the XA connection requires a rollback of the transaction in the case of an xa_end of the sign-on service or the MSGTAC service.</p> |
| K326 | KCSPEND | <p>Switch between dialog transaction code and asynchronous transaction code is not permitted, or the follow-up TAC in PEND FC is not a service TAC, or the follow-up TAC in PEND PA/PR, PS, KP, RE or SP is not a follow-up TAC.</p> |
| K327 | KCSPEND | <p>The operation modification FC is not allowed in the sign-on service if the last sign-on attempt failed.</p> |

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|----------|---------|---|
| K328 | KCSPEND | The sign-on service cannot be terminated normally when the validity period of the password has expired but the password has not been changed. |
| K329 | KCSPEND | The sign-on service cannot be terminated normally when the password transferred with KDCUPD does not meet the complexity level requirement or is too short and the password has not been changed with SIGN CP. |
| K330 | KCSPEND | A SIGN OB in the sign-on service for terminals is only allowed in conjunction with an MPUT NT/NE. |
| K331 | KCSPEND | If a sign-on service with a service restart is terminated without the user signing off, then no MPUT NT/NE is allowed. |
| K332 | KCSPEND | If a sign-on service with a service restart is terminated with PEND FI without a preceding MPUT, then UTM terminates the open service. |
| K333 | KCSPEND | The service should wait for a DGET message, but the follow-up program unit is not in a TAC class. Action: Generate follow-up TAC with TAC class |
| K334 | KCSPEND | The service should wait for a DGET message; only PEND PA/PR/RS/ER/FR and PGWT RB are permitted. |
| K335 | KCSPEND | The process waiting in PGWT is terminated abnormally because it was noted that not enough processes are active to continue the service. No PENDER dump is written. |
| K336 | KCSPEND | Although required, no MPUT call was made prior to PEND KP/RE/FI/FR/ER or PGWT KP. |
| K337 | KCSPEND | An MPUT call was made prior to PGWT PR. |
| K338 | KCSPEND | The transaction was rolled back because the application is being terminated. |
| K339 | KCSPEND | The MSGTAC program unit was terminated without reading a message with FGET. |
| K340 | KCSPEND | On transaction rollback, the database reported an error which makes it necessary to dynamically load the application program. |
| K341 **) | KCSPEND | Only in UTM cluster applications: A user was generated or deleted in the current transaction. The user file could not be locked because it is currently being accessed by a KDCDEF run. |
| K342 **) | KCSPEND | Only in UTM cluster applications: A user was generated or deleted in the current transaction. The cluster user file could not be locked because another process belonging to the same node application or another node application has locked the cluster user file. |
| K343 **) | KCSPEND | Only in UTM cluster application: PTC state rejected because the service is locked by administration. |
| K344 **) | KCSPEND | Only in UTM cluster applications: CR could not be written because a global ADM lock is set. |

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|----------|---------|--|
| K345 | KCSPEND | The page pool in KDCFILE is full.Action: Change generation with KDCDEF, enlarge page pool with MAX PGPOOL=(number,...). ¹ |
| K346 | KCSPEND | The sign-on service is not permitted to terminate an open service if a transaction in the open service is in the "prepare to commit" (PTC) state. The sign-on service is terminated abnormally. |
| K347 **) | KCSPEND | Only in UTM cluster applications: The transaction has to go to the status "prepare to commit" (PTC) but an error occurred while writing the status to the cluster user file. |
| K348 **) | KCSPEND | The cluster page pool in the KDCFILE is full. Action: Generation with KDCDEF; increase size of cluster page pool with CLUSTER PGPOOL=(number,...). |
| K349 | KCSPEND | The connection to the partner has been terminated. |
| K350 | KCSPEND | Invalid operation modification after the abnormal termination with CTRL AB of a OSI TP dialog in which the functional unit commit was selected. |
| K351 | KCSPEND | The transaction is marked to be rolled back but a PEND/PGWT call was used to commit the transaction. |
| K360 | KCSPEND | The transaction was rolled back with PGWT RB because KCSPEND was called from KDCROOT with PGWT RB. |
| K361 | KCSPEND | The transaction was rolled back with PEND RS because KCSPEND was called by KDCROOT with PEND RS. |
| K362 | KCSPEND | The transaction was rolled back and the service terminated abnormally with PEND ER because KCSPEND was called by KDCROOT with PEND ER. |
| K363 | KCSPEND | The transaction was rolled back with RSET because KCSPEND was called by KDCROOT with RSET. |
| K370 | KCSPEND | A service initiated by an HTTP client must issue an MPUT call to a job-receiving service before issuing a PEND call that does not end the service. |
| K601 | KCSMPUT | Buffer for dialog messages generated too small. Action: Modify utm generation, define larger buffer with MAX NB=length. ¹ |
| K602 *) | KCSMPUT | MPUT call requires format output but formatting was not generated. ¹ |
| K603 *) | KCSMPUT | MPUT with screen function KCCARD, but terminal does not have an ID card reader. Action: Change utm generation or program unit ¹ |
| K604 *) | KCSMPUT | MPUT with screen function KCCARD and user ID has operand CARD=(position, string): the ID card reader cannot be used for KDCSIGN checks and data input at the same time. Action: Change utm generation or program unit |
| K605 *) | KCSMPUT | MPUT with screen function KCCARD and output in formatted mode. Action: Change program |

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|---------|---------|---|
| K606 *) | KCSMPUT | Caused by a MPUT call with KCDF not equal to binary zero and one of the following conditions:- follow-up partial message in formatted mode- KCMF = name of an #-format- KCMF = name of an edit profile. Action: Change program unit |
| K607 | KCSMPUT | The MPUT message specified by address and length partly covers an internal ROOT buffer area (the MPUT buffer) Action: Change program (length of MPUT too large) |
| K608 | KCSMPUT | (see K345) The page pool in KDCFILE is full. Action: Change generation with KDCDEF, enlarge page pool with MAX PGPOOL=(number,...). ¹ |
| K609 *) | KCSMPUT | With a follow-up message segment, the edit profile name is different to that entered for the first message segment. Action: Change program unit. |
| K610 | KCSMPUT | The ES operation modification of the MPUT call is only permitted for UPIC and SOCKET partners. |
| K611 | KCSMPUT | In the case of the MPUT ES call, the KCRN field is not filled with blanks. |
| K612 | KCSMPUT | MPUT was called in the MSGTAC program unit. |
| K613 | KCSMPUT | Operation modification illegal. |
| K614 | KCSMPUT | MPUT PM in the asynchronous service. |
| K615 | KCSMPUT | MPUT PM in the first part of the sign-on service. |
| K616 | KCSMPUT | MPUT PM with KCLM/kclm not equal to 0 in the sign-on service. |
| K617 | KCSMPUT | MPUT PM, but the service is neither inserted nor a sign-on service. |
| K618 | KCSMPUT | MPUT PM in the sign-on service for a UPIC connection user. |
| K701 | KCSFPUT | UTM refuses an asynchronous message because level 2 has already been reached in the page pool. Action: See K345 |
| K702 | KCSFPUT | The name of a dialog TAC was specified in KCRN. Action: new utm generation or change the program. |
| K703 *) | KCSFPUT | (see K602) MPUT call requires format output but formatting was not generated. ¹ |
| K704 | KCSFPUT | (see K302) The task-specific buffer area for restart information is too small (see UTM manual Generating applications: restart area). Action: Define larger buffer area with MAX RECBUF=(...,length) in KDCDEF generation. ¹ |

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| K705 | KCSFPUT | An asynchronous message is to be sent with FPUT to an LTERM or (OSI-)LPAP partner, for which LTERM ...,QAMSG=N is specified in the KDCDEF generation. UTM therefore rejects the message. Action: Set up connection |
| K706 | KCSFPUT | An asynchronous line mode message is to be sent to an dialog terminal with FPUT /DPUT. The message is longer than the buffer area defined in the MAX NB= parameter in the generation. UTM does not accept the message. Action: Specify a higher value for MAX NB= or short message segments. |
| K707 | KCSFPUT | The target time specified in a DPUT call exceeds the limits set by the generation (MAX DPUTLIMIT1=, DPUTLIMIT2=). Action: Change time entry in DPUT call or in utm generation. |
| K708 | KCSFPUT | An asynchronous message is to be sent to an LTERM or (OSI-)LPAP partner, an asynchronous TAC, a TAC queue, a user queue, a temporary queue or an (OSI) LPAP with FPUT/DPUT. The number of asynchronous messages for this LTERM partner or TAC has already reached the maximum value defined at generation (parameter QLEV of KDCDEF statement LTERM, TAC, USER, QUEUE, LPAP oder OSI-LPAP). |
| K709 *) | KCSFPUT | With a follow-up message segment, the edit profile name is different to that entered for the first message segment. Action: Change program unit. |
| K710 *) | KCSFPUT | Caused by FPUT/DPUT call with KCDF not equal to 0 and one of the following conditions:- KCMF/kcfn = name of an #-format- KCMF/kcfn = name of an edit profile. Action: Change program unit. |
| K711 | KCSFPUT | A DPUT was issued with a new destination in KCRN although the preceding DPUT to another destination is not yet completed. |
| K712 | KCSFPUT | The name of a UTM-D partner, a MUX connection, a UPIC client or a HTTP client was specified in KCRN. Response: Correct utm generation or program. |
| K713 *) | KCSFPUT | Caused by an FPUT/DPUT call to an ID card reader Action: Change program unit. |
| K714 | KCSFPUT | The name of a message complex was specified in KCRN in an FPUT call. Action: Change program. |
| K715 | KCSFPUT | The name of a message complex was specified in KCRN, but this name does not match the message complex currently open. Action: Change program. |
| K716 | KCSFPUT | The name of a message complex was specified in KCRN, but no message complex is currently open. Action: Correct program. |

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| K717 | KCSFPUT | The name of a TAC was specified in KCRN, but the specification is incompatible with the specification in KCOM. Action: Change program. |
| K718 | KCSFPUT | An asynchronous service running under a deleted LTERM partner attempted to issue an FPUT or DPUT. |
| K719 | KCSFPUT | An asynchronous service running under a deleted user attempted to issue an FPUT or DPUT. |
| K720 | KCSFPUT | In case of a DPUT call to a USER queue: There is no USER with the name specified in KCRN, or the USER was deleted. |
| K721 | KCSFPUT | In case of a DPUT call to a USER queue: The KSET of the user and the write ACL of the USER queue do not have a common key. |
| K722 | KCSFPUT | Time-controlled DPUT calls for USER queues are not possible (KCMOD not, equal to blank). |
| K723 | KCSFPUT | In case of a DPUT call to a QUEUE object: There is no QUEUE object with the name specified in KCRN. |
| K724 | KCSFPUT | In case of a DPUT call to a USER queue: The KSET of the LTERM and the write ACL of the USER queue do not have a common key. |
| K725 | KCSFPUT | Time-controlled DPUT calls are not possible for QUEUE objects. (KCMOD not equal to blank) |
| K726 | KCSFPUT | Invalid value in KCQTYP. |
| K727 *) | KCSFPUT | The current RSO version does not support this function. |
| K728 *) | KCSFPUT | The message target is not a RSO printer. |
| K729 *) | KCSFPUT | The message target is not a LTERM. |
| K730 *) | KCSFPUT | A message for which a message segment has already been written may not be extended with an FPUT RP or DPUT RP. |
| K731 | KCSFPUT | No asynchronous messages can be sent to a TAC generated with CALL=NEXT. |
| K732 | KCSFPUT | No asynchronous messages may be sent to KDCMSGLT. |
| K733 **) | KCSFPUT | No asynchronous message may be sent to an LTERM that has been implicitly generated for the internal cluster communication. |
| K801 | KCSSSB | (see K345) The page pool in KDCFILE is full. Action: Change generation with KDCDEF, enlarge page pool with MAX PGPOOL=(number,...). ¹ |

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| K802 | KCSSSB | (see K302) The task-specific buffer area for restart information is too small (see UTM manual Generating applications: restart area). Action: Define larger buffer area with MAX RECBUF=(...,length) in KDCDEF generation. ¹ |
| K804 | KCSSSB | No GSSBs were generated or more GSSBs were created than permitted in the utm generation. |
| K805 | KCSSSB | SPUT created more LSSBs than specified in the utm generation. |
| K810 | KCSSSB | When accessing a GSSB, TLS or ULS: The storage area cannot be accessed by the transaction following a certain wait period. Action: Increase wait period by increasing RESWAIT=(time1,...) parameter in KDCDEF generation. |
| K811 | KCSSSB | When accessing a GSSB, TLS or ULS: The storage area is currently locked by another transaction for an "indeterminate" period, i.e. it has locked the area and then issued PEND KP or PGWT KP call. |
| K812 | KCSSSB | When accessing a ULS: The user ID for the user whose ULS is to be accessed is being deleted. |
| K813 | KCSSSB | The application is being terminated. |
| K820 | KCSSSB | Waiting for a global secondary storage area would lead to a deadlock. |
| K822 **) | KCSSSB | (see K348) The cluster page pool in the KDCFILE is full. Action: Generation with KDCDEF; increase size of cluster page pool with CLUSTER PGPOOL=(number,...). |
| K823 **) | KCSSSB | Only in UTM cluster applications: A timeout occurred on a request for a file lock for the administration file for GSSB or ULS. |
| K824 | KCSSSB | When accessing a GSSB, TLS or ULS: The storage area is currently locked and the task cannot wait for the lock to be released because there are already too many tasks waiting. Action: <ul style="list-style-type: none"> • Start more tasks. • Limit the number of tasks for the TACs that access GSSB or ULS and then start more tasks than the specified limit value. For information on how to distribute UTM services that use GSSB or ULS memory areas to the tasks in a UTM cluster application, see openUTM manual "Using openUTM Applications under BS2000 Systems". |
| K825 **) | KCSSSB | Only in UTM cluster applications when accessing a GSSB or ULS: The queue at the requested area has already reached the maximum length; the service cannot currently wait for this storage area. |

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| K826 **) | KCSSSB | Only in UTM cluster applications when accessing a GSSB or ULS: A transient error occurred on a request for an internal resource; access to the requested area is not currently possible. |
| K827 **) | KCSSSB | Only in UTM cluster applications when accessing a GSSB or ULS: The area is currently locked by a failed node; there is at present no point in waiting for this area. |
| K901 | KCSLPUT | K901 KCSLPUT UTM rejects an LPUT call because level 2 has already been reached in the page pool. Action: Change program or increase page pool in the utm generation. |
| K902 | KCSLPUT | (see K302) The task-specific buffer area for restart information is too small (see UTM manual Generating applications: restart area). Action: Define larger buffer area with MAX RECBUF=(...,length) in KDCDEF generation. ¹ |
| K903 | KCSLPUT | UTM rejects an LPUT call because a DMS error occurred during the last write procedure to the user log file(s). The DMS error was output with message K043. The records buffered in the page pool remain. Action: Analyse the K043 message and the DMS error code, restore or recreate the user log file(s) and then continue with the KDCLOG administration command (or via the corresponding program interface). The LPUT records in the page pool are then output. The lock for the LPUT call is removed. |
| KA00 | KCSWAIT | The buffer is too small for the input message. Action: Specify larger buffer length with MAX TRMSGLTH=length in KDCDEF generation. |
| KA01 | KCSWAIT | A serious error occurred during communication between job submitter and job receiver (UTM-D). Communication cannot be continued; UTM aborts the jobreceiving service with PEND ER. Possible cause: <ul style="list-style-type: none"> • PEND ER by the job submitter • timeout on the connection to the job submitter. Diagnostic aids: <ul style="list-style-type: none"> • analyze UTM-D error message K086 • for PEND ER in job-submitting service, look for cause in dump. |
| KA02 | KCSWAIT | The page pool in the KDCFILE is full, consequently the messages could not be passed to the task waiting in the PGWT. Action: Generation in KDCDEF: increase page pool using MAX PGPOOL=(number,...) |
| KA03 | KCSWAIT | UTM has received an unencrypted message although an encrypted message was expected. |
| KA04 | KCSWAIT | The connection to the partner was disconnected. |

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| KA05 | KCSWAIT | A transaction in PTC state was rolled back following an administration request. |
| KB01 | KCSDGET | DGET calls are not permitted in the first part of the sign-on service. |
| KB02 | KCSDGET | A DGET message must be waited for; no further DGET calls are therefore permitted. |
| KB03 | KCSDGET | Invalid value of KCQTYP. |
| KB04 | KCSDGET | There is no object for the name of the type KCQTYP specified in KCRN, or this object has been deleted. |
| KB05 | KCSDGET | Messages to dialog or asynchronous TACs cannot be read by means of a DGET call. |
| KB06 | KCSDGET | The read ACL or the TAC or USER queue and the KSET of the user's LTERM do not have a common key. |
| KB07 | KCSDGET | The read ACL or the TAC or USER queue and the KSET of the user do not have a common key. |
| KB08 | KCSDGET | (see K302) The task-specific buffer area for restart information is too small (see UTM manual Generating applications: restart area). Action: Define larger buffer area with MAX RECBUF=(...,length) in KDCDEF generation. ¹ |
| KB10 | KCSDGET | Negative wait time in case of a DGET FT /BF call, or wait time is not equal to zero in case of a DGET NT/BN/PF/PN call. |
| KB11 | KCSDGET | DGET calls with waiting are not permitted for the MSGTAC program. |
| KB12 | KCSDGET | In case of the call DGET NT/BN/PN, the name or type of the specified queue does not suit the previous DGET call of the current program unit run. |
| KB13 | KCSDGET | An attempt was made to read from a USER queue although the application was generated without any users. |
| KB14 | KCSDGET | An attempt was made to read from a TAC queue with STATUS = HALT or KEEP. |
| KB15 | KCSDGET | An attempt was made to read from a TAC queue with ADMIN=Y, but the user is not an administrator. |
| KB16 | KCSDGET | Operation modifier in KCOM is invalid. |
| KB17 | KCSDGET | For DGET BF/PF: Value in KCDPID does not contain a valid DPUT ID. |
| KB18 | KCSDGET | For DGET FT/NT: KCMF/kcfn does not contain blanks. |
| KB19 | KCSDGET | For DGET NT/BN/PN (next): KCOM does not match the preceding DGET call, or no DGET FT/BF/PF (first) has been issued yet in this program run, or a PGWT call was made in the intervening period. |
| KB20 | KCSDGET | For DGET NT/BN/PN: Since the last DGET call the DGET queue deleted and regenerated. |

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| KB21 | KCSDGET | For DGET BN/PN (next): Since the last DGET call the USER specified in the KCRN and KCQTYP or the temporary queue was deleted and regenerated. |
| KB22 | KCSDGET | For DGET BN: There is no message with the creation time specified in KCGTM, or processing has taken place in the meantime. |
| KB23 | KCSDGET | For DGET PF: There is no message with the creation time specified in KCGTM, or processing has taken place in the meantime. |
| KB24 | KCSDGET | For DGET BF/PF: KCDPID does not match the specifications in KCRN and KCQTYP. |
| KB25 | KCSDGET | DGET calls with waiting are not permitted in the sign-on service. |
| KB26 | KCSDGET | Attempts were made with DGET FT/NT/PF/PN to read from the dead letter queue KDCDLETQ. |
| KC01 | KCDCTRL | UTM-D has not been generated. |
| KC02 | KCDCTRL | The first character in the service ID specified in KCRN is not '>'. |
| KC03 | KCDCTRL | The call was issued for an asynchronous service, i.e. the service ID specified in KCRN was defined with an APRO AM call. |
| KC04 | KCDCTRL | The VGID specified in KCRN is invalid. |
| KC06 | KCDCTRL | The CTRL call was addressed to a partner which is not communicated with via the OSI TP protocol |
| KC07 | KCDCTRL | CTRL PR was intended for a partner for which the functional unit commit has not been selected. |
| KC08 | KCDCTRL | CTRL PE was intended for a partner for which the functional unit commit has not been selected. |
| KC09 | KCDCTRL | CTRL AB was intended for a partner to whom a message has already been sent with MPUT. |
| KC10 | KCDCTRL | The operation modification OM is nether PR nor PE nor AB. |
| KC11 | KCDCTRL | KCLA/kcla is not zero. |
| KC12 | KCDCTRL | KCLM/kclm is not zero. |
| KC13 | KCDCTRL | KCMF/kcfn is not filled with spaced (blanks). |
| KC14 | KCDCTRL | KCDF/kcdf does not contain binary zeros. |
| KC15 | KCDCTRL | The extended parameter area (EXTENT) does not contain binary zeros. |
| KC16 | KCDCTRL | The call was intended for a partner for whom an MPUT HM has already been issued. |
| KC17 | KCDCTRL | The call CTRL PR was intended for a partner in a middle node, but the local service had not already received a Prepare from its job submitter. |

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| KC18 | KCDCTRL | The call CTRL PE was intended for a partner in a middle node, but the local service had not already received a Prepare from its job submitter. |
| KC19 | KCDCTRL | The CTRL AB call was intended for a partner for which the functional unit commit has not been selected and the service status is not O. |
| KC20 | KCDCTRL | The CTRL AB call was intended for a partner for which the functional unit commit has not been selected and the service status is neither O nor C. |
| KC21 | KCDCTRL | The CTRL PR call is not permitted because the service status is not O. |
| KC22 | KCDCTRL | The CTRL PE call is not permitted because the service status is not O. |
| KC23 | KCDCTRL | The CTRL PR call is not permitted because the transaction status is P. |
| KC24 | KCDCTRL | The CTRL PE call is not permitted because the transaction status is P. |
| KC25 | KCDCTRL | Binary zeros have not been entered for the unused part of the extended parameter area (EXTENT). |
| KC26 | KCDCTRL | The KCNORPLY field does not have either the value Y or binary zero. |
| KD00 | KCDAPRO | KCRN does not contain a valid service ID (MGET, MPUT, FPUT, DPUT). |
| KD01 | KCDAPRO | LTAC is not defined. |
| KD02 | KCDAPRO | LTAC cannot be used; LTAC is locked. |
| KD03 | KCDAPRO | User does not have a key in his/her key set for the lock on the LTAC. |
| KD04 | KCDAPRO | APRO DM was called, but the LTAC is generated as an asynchronous LTAC, or APRO AM was called and LTAC is generated as a dialog LTAC. |
| KD05 | KCDAPRO | APRO created more job-receiving services than specified at generation time (KDCDEF generation: UTMD MAXJR=). |
| KD06 | KCDAPRO | MPUT to job-receiving service and KCDF not binary 0. |
| KD08 | KCDAPRO | (see K345) The page pool in KDCFILE is full. Action: Change generation with KDCDEF, enlarge page pool with MAX PGPOOL=(number,...). ¹ |
| KD09 | KCDAPRO | APRO DM was called, but the virtual connections to the remote application were cleared down with the administration command KDCLPAP ACT=QUIET. |
| KD10 | KCDAPRO | APRO DM was called, but no virtual connection was set up to the remote application. |
| KD11 | KCDAPRO | APRO DM was called, but the remote application was generated as "contention winner" and the wait period for session occupancy is 0 (only for LU6.1). |
| KD12 | KCDAPRO | Following an MPUT NE/HM to a job-receiving service, another MPUT was issued to the job-receiving service. |

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| KD13 | KCDAPRO | No connection exists to the remote application with FPUT (or DPUT with KCMOD='_') to a job-receiving service and the wait period for session or association occupancy is 0. |
| KD14 | KCDAPRO | An asynchronous service in another application is to be addressed with APRO. The number of asynchronous jobs for this application has already reached the maximum value defined at generation (LPAP QLEV= or OSILPAP QLEV=). |
| KD15 | KCDAPRO | With an MPUT EM or MPUT HM the destination in KCRN/kcrn is not an OSI TP communication partner. |
| KD16 | KCDAPRO | No MPUT NT was given prior to an MPUT HM. |
| KD17 | KCDAPRO | The RTAC was generated for an OSI TP partner. |
| KD18 | KCDAPRO | A selected functional unit is not supported by this UTM version. |
| KD22 | KCDAPRO | The functional unit commit was selected, but the abstract syntax CCR was not generated for the partner. |
| KD23 | KCDAPRO | Mixed operation of LU6.1 and OSI TP within a distributed transaction. |
| KD24 | KCDAPRO | (see KD23) Mixed operation of LU6.1 and OSI TP within a distributed transaction. |
| KD25 | KCDAPRO | More than one ACCESS-POINT was used in a distributed transaction with OSI TP. |
| KD26 | KCDAPRO | An abstract syntax which has not been generated was specified for an OSI/TP partner for MPUT/FPUT/DPUT in KCMF/kcfn. The syntax names "CCR" and "OSITP" are not permitted. |
| KD27 | KCDAPRO | KCLM/kclm must be 32. |
| KD28 | KCDAPRO | KCLM/kclm must be zero. |
| KD29 | KCDAPRO | KCLM/kclm must be equal to the length of the data structure in COPY KCAPROC or include kcapro.h. |
| KD30 | KCDAPRO | Illegal values in the APRO data area. |
| KD31 | KCDAPRO | KCFUCHN must contain blanks for KCFUCOM = 'N'. |
| KD32 | KCDAPRO | Security type "Same" or "Program" was selected, but the abstract syntax UTMSEC has not been generated for the partner. |
| KD33 | KCDAPRO | An invalid length was specified for the user ID or the password with the security type "Program". |
| KD34 | KCDAPRO | Error on encoding the security data. |
| KD35 | KCDAPRO | KCFUHSH = 'Y' is only permitted in the case of dialog partners. |
| KD36 | KCDAPRO | After a CTRL PR or PE, an MPUT HM was issued to the same partner. |

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| KD37 | KCDAPRO | After a CTRL AB, an MPUT was issued to the same partner. |
| KD38 | KCDAPRO | MPUT to job submitter, but KCSEND = NO. |
| KD39 | KCDAPRO | The unused fields for the security function when KCSECTYP is not equal to 'P' are not deleted. (CHAR fields to blank, numeric fields to 0). |
| KD40 | KCDAPRO | There is no active connection assigned to the OSI-LPAP in the APRO call. |
| KD41 | KCDAPRO | The master (OSI-)LPAP is locked. |
| KD42 **) | KCDAPRO | (see K348) The cluster page pool in the KDCFILE is full. Action: Generation with KDCDEF; increase size of cluster page pool with CLUSTER PGPOOL=(number,...). |
| KE01 | KCSPADM | No authorization for the call: The user is not an administrator and the terminal is not a printer control station or is different from the terminal specified in the KDCS parameter area (KCLT/kclt). |
| KE02 | KCSPADM | No printer (PTERM) is assigned to the printer control terminal. Check utm generation. |
| KE03 | KCSPADM | A PADM call for printer acknowledgment or print repeat (KCOM = OK/PR) was issued even though there was no printout to be acknowledged for the specified printer. |
| KE04 | KCSPADM | (see K302) The task-specific buffer area for restart information is too small (see UTM manual Generating applications: restart area). Action: Define larger buffer area with MAX RECBUF=(...,length) in KDCDEF generation. ¹ |
| KE05 | KCSPADM | A printer is to be assigned to another LTERM (KCOM = CA), but is linked with the application. |
| KE06 | KCSPADM | Connection to a printer is to be set up, but the printer is locked. |
| KE07 | KCSPADM | An inverse KDCDEF is running or is to be started. |
| KE08 **) | KCSPADM | Administration applying globally to the cluster is not currently possible because node applications with different utm generations are running. |
| KF01 | KCSINFO | The user has been generated without an ID card and no Kerberos dialog was executed for the LTERM client (INFO CD). |
| KF02 *) | KCSINFO | The information is no longer available, e.g. because of a loss of connection (INFO CD). |
| KF03 *) | KCSINFO | The Kerberos dialog returned an error, but Kerberos information is possibly transferred anyway (INFO CD). |
| KF04 *) | KCSINFO | The Kerberos information is not complete because it exceeds the length generated in MAX PRINCIPAL-LTH (INFO CD). |

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| KG01 | KCSDADM | No authorization for the call: The user is not an administrator and the terminal is not a printer control terminal or is different from the terminal specified in the KDCS parameter area (KCLT/kclt) |
| KG02 | KCSDADM | (see K302) The task-specific buffer area for restart information is too small (see UTM manual Generating applications: restart area). Action: Define larger buffer area with MAX RECBUF=(...,length) in KDCDEF generation. ¹ |
| KG03 | KCSDADM | A DADM call to delete all asynchronous messages was made (KCOM = DA) even though messages were being processed for the specified destination. |
| KG04 | KCSDADM | An attempt was made to administer a message currently being processed. |
| KG05 | KCSDADM | A call to delete messages (KCOM = DL/DA) was followed by another delete job or a job to modify concatenation of a message (KCOM = DL/DA/CS). |
| KG06 | KCSDADM | An attempt was made to modify the concatenation of a time-driven message (KCOM = CS), although its start time had not yet been reached. |
| KG07 | KCSDADM | A call to read information about messages was issued (KCOM = RQ), although there were no messages for the specified destination (or only messages currently being processed). |
| KG08 | KCSDADM | KCQTYP invalid |
| KG09 | KCSDADM | In the case of DADM MV with blanks in KCLT/kclt, the original destination of the message in the dead letter queue no longer exists. This message must be assigned a new destination. |
| KG10 | KCSDADM | In the case of DADM MV, the destination specified in KCLT/kclt no longer exists. |
| KG11 | KCSDADM | In the case of DADM MV, the type of destination specified in KCLT/kclt does not match the type of the original destination of the message. |
| KH01 | KCSSIGN | (see K302) The task-specific buffer area for restart information is too small (see UTM manual Generating applications: restart area). Action: Define larger buffer area with MAX RECBUF=(...,length) in KDCDEF generation. ¹ |
| KH02 | KCSSIGN | With SIGN CP: The new password does not satisfy the requested complexity level. |
| KH03 | KCSSIGN | With SIGN CP: The new password is too short. |
| KH04 | KCSSIGN | With SIGN CP: The new password is identical to the old password or to a password in the password history. |
| KH05 *) | KCSSIGN | With SIGN CL: The specified language identifier is invalid. |
| KH06 *) | KCSSIGN | With SIGN CL: The specified territorial identifier is invalid |

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| KH07 *) | KCSSIGN | With SIGN CL: The specified character set name is invalid |
| KH08 | KCSSIGN | An inverse KDCDEF is running or is to be started. |
| KH09 | KCSSIGN | With SIGN CP: The password may not be changed because the minimum validity period has not been exceeded yet. |
| KH10 *) | KCSSIGN | With SIGN CP: A password cannot be assigned or changed for a user generated with a Kerberos authentication. |
| KH11 **) | KCSSIGN | The service was terminated abnormally because the page list for the cluster service data could not be written when the user signed off due to the fact that the cluster page pool was full. |
| KH12 **) | KCSSIGN | An open cluster service cannot be continued because the sequence of TAC statements has changed following a regeneration of the node KDCFILE, or the properties of the follow-up TAC have been changed, or the follow-up TAC or the service TAC no longer exist. |
| KI01 *) | KCSISLP | VTSU recognizes that editing of dialog output message with format exit contains an error.. |
| KI02 *) | KCSISLP | VTSU reports invalid edit options for the dialog output message. |
| KI03 *) | KCSISLP | VTSU recognizes that a dialog output message is to be sent with an invalid character set or one which is not supported by the terminal. |
| KJ01 | KCCUSF | The service was terminated abnormally because it was marked for abnormal termination by another node application. This may have been performed via the administration functions or could be due to the fact that, even though there is a service bound to this node application, the user has signed on at another node application. |
| KK01 | KCSSVCS | The second parameter in the KDCS call is missing. |
| KK02 | KCSSVCS | Address validation of the second parameter in the KDCS call failed. |
| KK03 | KCSSVCS | The KDCS call was issued from a program unit in an asynchronous service. |
| KK04 | KCSSVCS | The KDCS operation code is unknown. |
| KK07 | KCSSVCS | The KDCS operation code APRO is not permitted. |
| KK08 **) | KCSSVCS | The call is not permitted in UTM cluster applications. |
| KL00 | KCSSTRT | During warm start of the application no job-receiver session in the PTC state was found. |
| KL01 | KCSSTRT | During warm start of the application no valid NODE table entry was found for the OSI TP service. |
| KL02 | KCSSTRT | The user who started this service has been deleted. |

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| KL03 | KCSSTRT | During warm start it was determined that the service cannot be continued. OSI TP job receiving services are possibly terminated only after the association to the OSI TP partner has been established and the subsequent recovery has been processed. |
| KL04 | KCSSTRT | PEND ER triggered by KCSSTRT |
| KL05 | KCSSTRT | PEND ER triggered by KCSSTRT |
| KL06 | KCSSTRT | PEND ER triggered by KCSSTRT |
| KL07 | KCSSTRT | PEND ER triggered by KCSSTRT |
| KL08 | KCSSTRT | PEND ER triggered by KCSSTRT |
| KM01 | KCSTRHD | TAC is not defined. ¹ |
| KM02 | KCSTRHD | TAC cannot be used, TAC locked. ¹ |
| KM03 | KCSTRHD | There is no key in the key set of the LTERM or (OSI-)LPAP partner for the lock on the TAC. ¹ |
| KM04 | KCSTRHD | The user does not have a key in his/her key set for the lock on the TAC. ¹ |
| KM05 | KCSTRHD | The TAC is generated as an administration TAC, but the user is not an administrator. ¹ |
| KM07 | KCSTRHD | The program unit associated with the transaction code is not linked or could not be loaded. ¹ |
| KM08 | KCSTRHD | The transaction code is completely locked. It cannot be specified as a following TAC in a PEND call, nor can new jobs be specified for this TAC. ¹ |
| KM09 | KCSTRHD | The transaction code is protected by an encryption level and the caller does not support this encryption level or the input message was not encrypted with the appropriate level. |
| KM99 | KCSTRHD | A TAC which is generated with XOPEN-API may only be used by a job submitter with whom communication takes place via the OSI TP, LU6.1 or UPIC protocol. |
| KN01 | KCSDLO | The user who started the service has been deleted. |
| KQ01 | KCSCRO | For a QCRE WN call the name in KCRN starts with a digit. |
| KQ02 | KCSCRO | For a QCRE NN call KCRN does not contain blanks. |
| KQ03 | KCSCRO | (see K302) The task-specific buffer area for restart information is too small (see UTM manual Generating applications: restart area). Action: Define larger buffer area with MAX RECBUF=(...,length) in KDCDEF generation. ¹ |

| | | |
|---------|---------|--|
| KQ04 | KCSCRO | The tables for temporary queues reserved at utm generation by means of the QUEUE statement have been used up. Action: Delete QUEUE objects that are no longer required or generate application newly. |
| KQ05 | KCSCRO | For a QCRE WN call KCRN contains an invalid character or is not filled with blanks. |
| KR01 | KDCRTMM | A dialog program unit with which a service was meant to continue is missing (not linked). ¹ |
| KR02 | KDCRTMM | An asynchronous program unit for which a message is awaiting processing is missing (not linked). ¹ |
| KR04 | KDCRTMM | A program unit run prior to the last KDCS call continued writing beyond the end of the KB. Action: Change program unit or utm generation. |
| KR05 | KDCRTMM | A program unit run prior to the last KDCS call continued writing beyond the end of the SPAB. Action: Change program unit or utm generation. |
| KR06 | KDCRTMM | A KDCS call was made by the VORGANG exit program. The service aborts with PEND ER. |
| KR07 *) | KDCRTMM | A KDCS call was issued by the FORMAT exit program unit. The service aborts with PEND ER. |
| KR08 *) | KDCRTMM | Illegal DB USER call in sign-on service. The service aborts with PEND ER. |
| KR09 | KDCRTMM | Error when loading a program unit. The service aborts with PEND ER. |
| KR10 | KDCRTMM | Program for VORGANG exit is missing. The service aborts with PEND ER. |
| KR12 | KDCRTMM | Program for HTTP exit is erroneous. The service aborts with PEND ER. |
| KR13 | KDCRTMM | A KDCS call was issued by the HTTP exit program. The service aborts with PEND ER. |
| KS00 | KCDSEFU | Prior to a transaction end request MPUTs were issued to two or more partners. |
| KS01 | KCDSEFU | At the time of a transaction end request at least one partner has an illegal transaction or service status. |
| KS02 | KCDSEFU | At the time of a transaction end request at least one session was not used (too many APRO calls). |
| KS03 | KCDSEFU | The job submitter issued a MPUT call to a service ID and the transaction was subsequently terminated with PEND RE even though not all job submitters have yet reported PEND RE/FI. |
| KS04 | KCDSEFU | PEND KP has been issued after a message was sent to an LU6.1 partner which has already initiated end transaction. |

| | | |
|------|---------|---|
| KS05 | KCDSEFU | If a session is both job receiver and job submitter, then it may not send PEND RE to its job receiver until after receiving a PEND RE message from its job submitter. |
| KS06 | KCDSEFU | Following an APRO AM no asynchronous message was issued for the addressed service. |
| KS07 | KCDSEFU | PEND SP was issued even though there is at least one partner with an open transaction. |
| KS08 | KCDSEFU | The OSI TP client sent a message to the OSI TP server without terminating the transaction, or has requested the OSI TP server to terminate the transaction although the server has already initiated transaction termination. |
| KS09 | KCDSEFU | The OSI TP server has not terminated the transaction even though it was requested to do so by the OSI TP client. |
| KS10 | KCDSEFU | Contrary to the request of the OSI TP client, the OSI TP server terminated the transaction with PEND SP. |
| KS11 | KCDSEFU | The OSI TP client sent a message to the OSI TP server and terminated the transaction, although it does not have the right to send at transaction termination, since it is itself an OSI TP server on a different dialog and its OSI TP client has not transferred the right to send at transaction termination. |
| KS12 | KCDSEFU | Contrary to the request of the OSI TP client, the OSI TP server terminated the transaction with PEND RE. |
| KS13 | KCDSEFU | The OSI TP client terminated the service with PEND FI although it still has an open server conversation without functional unit commit. |
| KS14 | KCDSEFU | Contrary to the request of the OSI TP client, the OSI TP server terminated the transaction with PEND FI. |
| KS15 | KCDSEFU | The OSI TP client terminated the service with PEND FC although it still has an open server conversation without functional unit commit. |
| KS16 | KCDSEFU | The OSI TP server sent a message to the OSI TP client although it does not possess the right to send to this dialog. |
| KS17 | KCDSEFU | The OSI TP server terminated the dialog step, but did not send a message to the OSI TP client although it possesses the right to send on this dialog. |
| KS18 | KCDSEFU | The OSI TP client transferred the right to send at transaction termination to more than one OSI TP server. |
| KS19 | KCDSEFU | The OSI TP client issued CTRL PR or PE to request the OSI TP server to terminate the transaction or service, sent a message to this partner, but then initiated transaction termination itself. |
| KS20 | KCDSEFU | The local service has called PGWT CM or PGWT RB although a partner is involved in the distributed transaction for whom the LU6.1 protocol is used for communication. |

| | | |
|------|---------|---|
| KS21 | KCDSEFU | The OSI TP server has terminated the transaction with PGWT CM contrary to the request of the OSI TP client. |
| KS22 | KCDSEFU | The OSI TP client terminated the service with PEND FI although it had issued CTRL PR before to request a server conversation to just terminate the transaction. |
| KS23 | KCDSEFU | The OSI TP client terminated the service with PEND FC although it had issued CTRL PR before to request a server conversation to just terminate the transaction. |
| KS24 | KCDSEFU | The OSI TP client issued CTRL PR/PE to request a server to terminate the transaction or service, even though no message has been sent to this server. |
| KS25 | KCDSEFU | Session restart has failed. |
| KT01 | KCDOSTM | (see K302) The task-specific buffer area for restart information is too small (see UTM manual Generating applications: restart area). Action: Define larger buffer area with MAX RECBUF=(...,length) in KDCDEF generation. ¹ |
| KT02 | KCDOSTM | (see K345) The page pool in KDCFILE is full. Action: Change generation with KDCDEF, enlarge page pool with MAX PGPOOL=(number,...). ¹ |
| KT03 | KCDOSTM | (see K306) The transaction had to be rolled back and the service had to be terminated abnormally because the DB system has rolled back the DB transaction when closing down. |
| KT04 | KCDOSTM | A log record is too large for the input buffer. Action: address fewer OSI TP job-receivers in this service ¹ |
| KT05 | KCDOSTM | The transaction must be rolled back because the database transaction was rolled back. |
| KT06 | KCDOSTM | The database reported that the transaction was rolled back when the transaction was rolled terminated after a Prepare statement. |
| KT07 | KCDOSTM | An OSI TP server reported a heuristic decision (heuristic mixed). |
| KT08 | KCDOSTM | An OSI TP server reported a heuristic decision (heuristic hazard). |
| KU04 | KDCRTDB | The DB transaction had to be rolled back. UTM also rolls back the UTM transaction: Control is returned to the program unit run, as with the UTM call RSET. In VORGANG exit program before start of service UTM has to terminate the service with PEND ER (70Z/KU04). In VORGANG exit program after end of service a PENDER dump is written. |
| KU08 | KDCRTDB | UTM has to terminate the service with PEND ER. The message K017 or K055 includes the first 4 bytes of the DB error message. |
| KU0C | KDCRTDB | The DB system (the DBH) is not or no longer available. UTM terminates the application abnormally or aborts application start-up. |

| | | |
|----------|---------|---|
| KU10 | KDCRTDB | The DB system is no longer available due to DB administrator action. UTM terminates application abnormally. |
| KU14 | KDCRTDB | The DB system is currently not available. A new attempt to set up the connection is made after 5 seconds. ¹ |
| KU18 | KDCRTDB | A (possibly recoverable) DB system error occurred. |
| KU1C | KDCRTDB | An unrecoverable DB system error occurred. UTM terminates the application abnormally. |
| KU20 | KDCRTDB | The DB system detected a user error. The error occurs at application start-up when the DB-specific start parameters are checked. The DB error message is output to stderr. |
| KU24 | KDCRTDB | UTM behavior unexpected by the DB system. The application is terminated with PEND06. |
| KU99 *) | KDCRTDB | With multi-DB systems: After a PETA call, the DB system cannot execute the FITA call. |
| KV02 | KCSTUTM | (see K345) The page pool in KDCFILE is full. Action: Change generation with KDCDEF, enlarge page pool with MAX PGPOOL=(number,...). ¹ |
| KV03 **) | KCSTUTM | (see K348) The cluster page pool in the KDCFILE is full. Action: Generation with KDCDEF; increase size of cluster page pool with CLUSTER PGPOOL=(number,...). |
| KW01 | KCDOSSF | TP-HANDSHAKE-IND received. |
| KW02 | KCDOSSF | TP-BEGIN-DIALOGUE-CNF received (negative). |
| KW03 | KCDOSSF | TP-U-ERROR-IND received from a partner which does not have the right to send. |
| KW04 | KCDOSSF | Timer expired. |
| KW05 | KCDOSSF | TP-U-ABORT-IND or TP-P-ABORT-IND received. |
| KW06 | KCDOSSF | TP-ROLLBACK-IND received. |
| KW07 | KCDOSSF | openUTM does not support reception of TP-END-DIALOGUE-IND from a client. |
| KW08 | KCDOSSF | The dialog with the client was not terminated with the first transaction in the functional unit unchained functions. |
| KY00 | KCDSYPM | A negative acknowledgment was received from the partner. |
| KY01 | KCDSYPM | Timeout when reserving a session. |
| KY02 | KCDSYPM | The job-receiving service was terminated with PEND ER. |

| | | |
|----------|---------|---|
| KY03 | KCDSYPM | The job-submitting service was terminated with PENDER. |
| KY04 | KCDSYPM | Mismatch with the partner, or the local service is in the PTC status. |
| KY05 | KCDSYPM | Mismatch with the partner. |
| KY06 | KCDSYPM | Mismatch with the database. |
| KY07 | KCDSYPM | Loss of connection to the partner. |
| NOTA | KCDRTDB | Transaction is unknown at the XA Resource Manager. (May occur, for example, after timeouts with the Oracle database). |
| UPCP **) | KCSUPIC | (see K348) The cluster page pool in the KDCFILE is full. Action: Generation with KDCDEF; increase size of cluster page pool with CLUSTER PGPOOL=(number,...). |
| UPDE | KCSUPIC | The UPIC partner has required a service abort. |
| UPPG | KCSUPIC | (see K345) The page pool in KDCFILE is full. Action: Change generation with KDCDEF, enlarge page pool with MAX PGPOOL=(number,...). ¹ |
| UPRS | KCSUPIC | The UPIC partner has suppressed a service restart. This occurs when a service restart would have been possible, but was not required by the UPIC partner. UTM then terminates the service abnormally. |
| UPXC | KCSUPIC | In a program unit using the X/OPEN-API, the message to the UPIC job submitter is to be completed even though a message to a job receiver service has already been completed. |
| UPXM | KCSUPIC | In a program unit using the X/OPEN-API, the message to the UPIC job submitter is to be completed even though a message to the UPIC job submitter has already been completed. |
| XTnn | KDCROOT | The STXIT routine was called in KDCROOT, nn = event code of the STXIT macro. For reason XT80 see footnote ¹ |

¹When TESTMODE=OFF, these PENDER dumps are suppressed. Dynamic loading is suppressed at the same time unless for the current TAC, PGWT calls are permitted and the KDCS call at which the error occurred was not a PENDER call.

*) the values appear only on BS2000 systems.

**) the values appear only on Unix, Linux and Windows systems.

6.3 HTTP Status Codes

In the communication between HTTP clients and UTM as HTTP server the server may return error information via the status code of the HTTP protocol.

Some possible values of the status codes are defined in RFC7231 "HTTP 1.1 - Semantics and Content". The specific description of the status codes when used by openUTM is contained in the reason phrase of an HTTP response – see column „UTM reason phrase“ in the table below.

Please find the description of the reason phrases set by openUTM in the following table.

| Status-Code | Standard Reason Phrase | UTM Reason Phrase | Description |
|----------------------|------------------------|-------------------------------|--|
| client errors | | | |
| 400 | bad request | too many HTTP headers | The HTTP request contains more than 125 HTTP header fields |
| | | invalid HTTP header format | Invalid or unsupported format of the Authorization Header: <ul style="list-style-type: none"> - does not begin with "BASIC" - invalid length of Userid and/or password - separator ":" missing |
| | | error on parsing HTTP headers | Error when parsing the HTTP headers: <ul style="list-style-type: none"> - header not terminated with CRLF |
| | | Host header missing | Error when parsing the HTTP headers: <ul style="list-style-type: none"> - HOST header missing |
| 401 | unauthorized | user not authorized | <ul style="list-style-type: none"> - Authentication error; see message K147 - Requesting the client to supply authentication data |
| 403 | forbidden | TAC not allowed | <ul style="list-style-type: none"> - Authorization missing for the called TAC: - LTERM does not have a key for the TAC - USER does not have a key for the TAC - USER does not have administration rights - TAC has status OFF - PTERM does not have the necessary encryption level for the TAC |

| | | | |
|----------------------|----------------------------|-----------------------------------|--|
| 404 | not found | TAC not found | No matching HTTP Descriptor found for the URL path and one of the following conditions applies: - the path (without training "/") is of size null or larger than 8 - for a path with a size not larger than 8 no matching TAC was found - the TAC is not a service TAC - the TAC is no dialogue TAC - the TAC has no program assigned to it - the TAC is an Xopen TAC |
| 405 | method not allowed | method not found or invalid | The input message does not start with GET / PUT / POST / HEAD / TRACE / DELETE / OPTIONS / CONNECT followed by a blank |
| 408 | request timeout | request timeout | The input message was not completely received within the expected time period. This error may also occur if the value in the Content-Length header is larger than the message body of the HTTP request. |
| 413 | request entity too large | header section too long | The combined length of all header fields of the HTTP request is larger than 8192 |
| | | HTTP body too long | The value of the Content-Length header is larger than 32000 |
| 414 | URL too long | request line too long | The total length of the request line is larger than 2048 |
| server errors | | | |
| 500 | internal server error | internal server error | - Pagepool full: message can not be stored - Service terminated abnormally; see message K017 sent to the client |
| 501 | not implemented | transfer encoding rejected | HTTP header TRANSFER-ENCODING is not supported |
| | | method not supported | The methods HEAD / TRACE / OPTIONS / CONNECT are not supported |
| 503 | service unavailable | URL path not valid | - Invalid path: - Does not start with "/" - Contains one of the characters ":", "*", "#", "/" - Error during normalization of the path - Error during normalization of the query |
| | | TAC locked | TAC is locked (HALT) or tagged for deletion |
| 505 | HTTP version not supported | HTTP version not found or invalid | No (valid) HTTP version found in the request line |
| | | HTTP version not supported | Version is different from 1.1 |

6.4 STXIT events

The table below shows the assignment of event codes to possible STXIT events. They have been taken from the "Executive Macros" manual.

| STXIT event class | STXIT operand | Interrupt error | Event code in R3 | Type of queue | Max. nesting depth |
|-----------------------------|---------------|---|------------------|---------------|--------------------|
| Program error | PROCHK | Illegal SVC | X' 04' | LIFO | 127 |
| | | Illegal operation code | X' 58' | | |
| | | Data error | X' 60' | | |
| | | Exponent overflow | X' 64' | | |
| | | Division error | X' 68' | | |
| | | Mantissa = 0 | X' 6C' | | |
| | | Exponent underflow | X' 70' | | |
| | | Decimal overflow | X' 74' | | |
| | | Fixed point overflow | X' 78' | | |
| Interval timer CPU time | TIMER | "SETIC interval" expired for CPU time | X' 20' | FIFO | 127 |
| Interval timer real time | RTIME | "SETIC interval" expired for real time | X' A0' | FIFO | 127 |
| End of program run time | RUNOUT | CPU time limit for task or program exceeded | X' 80' | FIFO | 0 |
| Unrecoverable program error | ERROR | Privileged SVC | X' 08' | LIFO | 127 |
| | | Access to non-existent memory page | X' 48' | | |
| | | Privileged operation | X' 5C' | | |
| | | Address error | X' 9C' | | |
| | | XA error (incorrect addressing mode) | X' A4' | | |
| | | Real timer (condition error) | X' AC' | | |
| | | Alignment error | X' B0' | | |
| | | Validation error | X' C4' | | |
| | | Invalid UNIT number in | X' 08' | | |

| | | | | | |
|---|---------|--|--------|------|-----|
| | | standard header | X' 48' | | |
| Notification to program | INTR | INFORM-PROGRAM-command | X' 44' | LIFO | 127 |
| ESCPBRK | ESCPBRK | BREAK/ESCAPE (using keys) | X' 84' | LIFO | 127 |
| Program terminated by asynchronous events | ABEND | System error, disconnection | X' 88' | LIFO | 0 |
| | | START-EXECUTABLE-PROGRAM, LOAD-EXECUTABLE-PROGRAM, ABEND, EXIT-JOB, CANCEL JOB | X' 8C' | | |
| | | Address translation error due to hardware error | X' 94' | | |
| | | Hardware error (CPU) | X' A8' | | |
| | | Forced unloading of a subsystem (system admin.) | X' B8' | | |
| | | Unrecoverable DMS error | X'BC' | | |
| Program terminated by synchronous events | TERM | TERM | X' 90' | LIFO | 0 |
| | | Program terminated by CMD / LOGOFF macro | X' 98' | | |
| SVC interrupt | SVC | Call of a specified SVC | X' 50' | LIFO | 127 |
| Hardware error | HWERROR | I/O error in data in virtual technique | X' 28' | LIFO | 0 |

6.5 Codes from openUTM CDUMP calls

Some errors, e.g. errors in return codes from the language connection modules, FHS, the DB connection module, or openUTM errors, result in the generation of a CDUMP. A prerequisite for this is that the generation of dumps has not been deactivated by the user with /MODIFY-JOB-OPTIONS. A message with the insert 'CODE' is output to SYSOUT. This insert helps to identify the cause of the error which initiated the CDUMP.

CDUMPs are stored under the user ID under which the UTM application was started.

This return code, together with the openUTM version and the ROOTDATA address, is contained in the edited dump obtained using a program for dump editing.

If the UTM application was started with TESTMODE=OFF, then the CDUMP is suppressed with reason KDCCK02, depending on the return code KCRRCDC (see [Internal return code KCRRCDC](#)).

If the dump occurs following a STXIT event, then the address at which the CONTXT area is located is also output.

The CONTXT area has the following structure:

| | |
|--------------------------------------|---------|
| contents of registers R0 through R15 | |
| program counter | 1 byte |
| instruction length count | 1 byte |
| condition code | 1 byte |
| program mask | 1 byte |
| address mode | 1 byte |
| interrupt weight | 4 bytes |

KDCCK..

| CODE | Error cause | openUTM response |
|----------------------|---|---|
| KDCCK01 | The UTM SVC supplied an incorrect return code. | Terminates the task with TERM UNIT=STEP |
| KDCCK02 ¹ | Upon returning from the UTM system code, the UTM linkage program ROOT detected that KCRCCC >= 70Z | The task concerned is stopped by PEND ER. If it is a batch task, the program is subsequently unloaded; with a dialog task it remains loaded and continues |
| KDCCK03 | The language connection module supplied an incorrect return code at the start of the program unit ' INPUT-EXIT' | The task concerned is stopped by PEND ER. If it is a batch task, the program subsequently unloaded; with a dialog task it remains loaded and continues |
| KDCCK04 | CALL „KDCS“ called from START, SHUT or INPUT exit. | The relevant task is terminated with TERM UNIT=STEP. |

| | | |
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| KDCCK05 | openUTM detects an error in the INPUT exit: output parameters are inconsistent. | |
| KDCCK07 | Invalid call of program unit at the format system. | Terminates the task with TERM UNIT=STEP |
| KDCCK08 | Possible causes: <ul style="list-style-type: none"> • start error • database is called but is not connected; • formatting system is called but is not generated. | Terminates the task with TERM UNIT=STEP |
| KDCCK09 | This CDUMP occurs after a PENDING (provided a CDUMP did not occur already). | A batch task is terminated with TERM UNIT=PROG. A dialog task continues. |
| KDCCK10 | The language connection module supplied an incorrect return code at the start of a program unit. | The task concerned is stopped by PENDING. If it is a batch task, the program is subsequently unloaded; with a dialog task it remains loaded and continues. |
| KDCCK11 | The language connection module supplied an incorrect return code at the end of a program unit. | Terminates the task with TERM UNIT=STEP. |
| KDCCK13 | This CDUMP occurs if an incorrect return code is issued in the START EXIT by the corresponding language module. | Terminates the task with TERM UNIT=STEP |
| KDCCK14 | An invalid load module index is specified when exchanging an individual load module. | Terminates the task with TERM UNIT=STEP |
| KDCCK16 | Error in ILCS reinitialization; occurs after loading STARTUP or ONCALL programs or after program exchange | Terminates the task with TERM UNIT=STEP |
| KDCCK17 | Error in the language connection module while starting the logging exit | The task continues. |
| KDCCK99 | Internal error in UTM root: structural error in KDCRTMM | Terminates the task with TERM UNIT=STEP |

¹With TESTMODE=OFF, the CDUMP is suppressed, depending on the return code KERRCDC and dynamic loading is not carried out.

KDCRT..

| CODE | Error cause | openUTM response |
|-------------|--|---|
| KDCRT04 | Internal error in UTM root: incorrect ACT_INDEX in KDCRTMM | Terminates the task with TERM UNIT=STEP |

KDCLD..

| CODE | Error cause | openUTM response |
|-------------|--|---|
| KDCLD01 | Internal error in UTM root. Invalid load mode for a load module on starting the application. | After the dump, the task concerned is terminated with TERM UNIT=STEP. |
| KDCLD02 | Internal error in UTM root. Invalid opcode on calling KDCRTLD. | After the dump, the task concerned is terminated with TERM UNIT=STEP. |
| KDCLD03 | Internal error in UTM root. Invalid load status for a load module. | The task is terminated with TERM UNIT=STEP |
| KDCLD04 | The end mark of the linkage section (AREAs) has been overwritten (DEF - ROOT possibly inconsistent). | The task is terminated with TERM UNIT=STEP |
| KDCLD05 | The load module in which AREAs should be loaded has not been loaded. See message K078. | The task is terminated with TERM UNIT=STEP |
| KDCLD99 | Faulty return code for BIND / ASHARE call and DEQAR (with Term). See message K078. | The task is terminated with TERM UNIT=STEP |

KDCAF.. , KDCST..

| CODE | Error cause | openUTM response |
|-------------|---|--|
| KDCAF01 | Stack management error with ILCS in openUTM. See message K078. | The task is terminated with TERM UNIT=STEP |
| KDCST01 | Error on initializing ILCS or SPL or timeout waiting for connection to a memory pool. See message K078. | The task is terminated with TERM UNIT=STEP |

KDCDI..

| CODE | Error cause | openUTM response |
|-------------|---|--|
| KDCDI01 | The STXIT exit of the language connection module supplied an incorrect return code during STXIT processing. | The task concerned is stopped by PEND ER and is subsequently terminated with TERM UNIT=STEP. |
| KDCDI02 | The language connection module supplied an error in conjunction with the SHUT-EXIT call. | The task continues. |

| | | |
|---------|--|--|
| KDCDI03 | The language connection module supplied an incorrect return code in conjunction with ENDE handling in the STXIT routine. | SHUTEXIT is called; the language connection modules are deactivated and the task is then terminated with TERM UNIT=STEP. |
| KDCDI04 | Error when initializing the language connection modules | Terminates the task with TERM UNIT=STEP |
| KDCDI05 | Error when deactivating the language connection modules | The task continues. |
| KDCDI07 | A STXIT event has arisen in the start phase (the KTA address is incorrect). | Terminates the task with TERM UNIT=STEP |
| KDCDI09 | A STXIT event has arisen in the start phase (DB-INIT has not been run) | Terminates the task with TERM UNIT=STEP |

KDCDB..

| CODE | Error cause | openUTM response |
|---------|--|--|
| KDCDB01 | Error of DB connection module (=dBCON) when transferring the start parameters | Terminates the task with TERM UNIT=STEP |
| KDCDB02 | ADMINISTRATION-ERROR or DBMS-DOWN when setting up database connection | Terminates the task with TERM UNIT=STEP |
| KDCDB03 | ECOVERABLE or UNRECOVERABLE ERROR when disconnecting the database | The task continues |
| KDCDB04 | DBMS-DOWN but KTA still available after DB transaction 'DELETE DB STATUS' | Application termination with PEND03 |
| KDCDB05 | DB return code = TA-CHAIN-RSET | The task continues with PEND ER |
| KDCDB06 | DB return code = DBMS-DOWN | Application termination with PEND03 |
| KDCDB07 | The DB return code supplied is not permitted with this DB function (see interface IUTMDB). | Terminates the task with TERM UNIT=STEP; or terminates the application with PEND04 With OPCODE=STAT (see K071 message), start aborted with error code 74 or 82 |
| KDCDB08 | UNRECOVERABLE ERROR in DB call | Terminates application with PEND05 |
| KDCDB09 | USER CALL in sign-on service, although not allowed by UTM generation | The task continues to run after PEND ER |
| KDCDB10 | USER CALL in INPUT exit, although not allowed | The task terminates with TERM UNIT=STEP |
| KDCDB11 | Illegal USER CALL in START or SHUT exit | The task continues to run |
| KDCDB12 | Error reported by the DB system (diagnostic dump) during task | The task continues termination |

| | | |
|---------|--|---|
| KDCDB99 | Error when communicating with the DB system (with multi-DB system): The DB system cannot execute the FITA call after a PETA call (= temporary transaction end). | The task continues running afterPEND ER |
|---------|--|---|

KDCFH..

| CODE | Error cause | openUTM response |
|---------|---|--|
| KDCFH01 | The FORM return code supplied is not permitted with this FORM funct. | Terminates with TERM UNIT=STEP |
| KDCFH02 | Initialization of the formatting system could not be executed properly | Terminates with TERM UNIT=STEP |
| KDCFH03 | Negative return code from format system, not FORM_ADMINISTRATION_ERR or FORM_ERR | The task continues. |
| KDCFH04 | The language connection module supplied an incorrect return code at the start of the 'FORMAT EXIT' program unit | The task concerned is stopped by PEND ER. If it is a batch task, the program is subsequently unloaded; with a dialog task it remains loaded and continues. |
| KDCFHxx | Error when initializing the format system xx = error code supplied by the format system | Terminates with TERM UNIT=STEP |

KDCMOVE, KCSMOVE

| CODE | Error cause | openUTM response |
|--------------------------|---|---|
| KDCMOVE or KCSMOVE | This CDUMP corresponds to the TRMA reasons MOVExx. It is produced if a TRMA call cannot be issued (e.g. in the TU section of the administration). | Terminates the task with TERM UNIT=STEP |

KDCIL60

| CODE | Error cause | openUTM response |
|---------|------------------------------------|---------------------|
| KDCIL32 | Error in the cooperation with ILCS | The task continues. |
| KDCIL33 | Error in the cooperation with ILCS | The task continues. |
| KDCIL35 | Error in the cooperation with ILCS | The task continues. |
| KDCIL36 | Error in the cooperation with ILCS | The task continues. |

| | | |
|---------|--|---------------------------------------|
| KDCIL60 | This CDUMP is created in the ILCS error handling routine. Possible cause: insufficient memory | Terminates the task with UNIT=PROGRAM |
|---------|--|---------------------------------------|

KDCIW..., KDCSTXT, KDCSTRT

| CODE | Error cause | openUTM response |
|---------|--|---|
| KDCIW.. | This CDUMP is produced by the ASSEMBLER, COBOL and SPL language connection modules and the KDCRTDI module (with RUNOUT, NORMAL PROGR. TERMINATION and ABEND) whenever an STXIT occurs. Insert '..' = interrupt weight | A batch task is terminated with PENDER, a dialog task with TERM UNIT=STEP |
| KDCIW88 | Possible cause: The task was terminated due to UTM system coding. The PC then points to the command after the SVC 134 | |
| KDCSTRT | A STXIT event before or during the initialization of ILCS. Possible cause: installation error | Terminates the task with TERM UNIT=STEP |
| KDCSTXT | A STXIT event occurred in a loop(number > 3) under ISRKEY E. | Terminates the task with TERM UNIT=STEP |

KCSDTTM

| CODE | Error cause | openUTM response |
|---------|---|---|
| KCSDTTM | This CDUMP is produced if the condition code is not equal to 0 following the STCK command for system time checks. The time received is in this case not suited for openUTM to continue processing (only occurs with hardware errors). | Terminates the task with TERM UNIT=STEP |

KCSEN...

| CODE | Error cause | Action |
|---|--------------------|------------------------|
| KCSEN01 KCSEN02 KCSEN03 KCSEN04 KCSEN05 | UTM internal error | System error: write PM |

KCSST..

| CODE | Error cause | Action |
|---------|---------------------------|------------------------|
| KCSST01 | UTM internal system error | System error: write PM |

KCSSW..

| CODE | Error cause | Action |
|-------------------------------|-------------------------------|------------------------|
| KCSSW01 KCSSW02 KCSSW03 | UTM internal error in F2 mode | System error: write PM |

KCSWT..

| CODE | Error cause | Action |
|-------------|-----------------------------|------------------------|
| KCSWT02 | Invalid timer announcement | System error: write PM |
| KCSWT03 | Invalid market announcement | System error: write PM |

6.6 UTM dump error codes

The **Group** column in the table below describes to which reason group the dump code error code belongs. The following groups exist:

- A The cause is a user error, e.g. an error in
 - generating and administering UTM applications
 - generating the system (e.g. division of the address space)
 - programming a format exit

- U The cause is an error in the UTM code.

- S The cause is an error in another system component (software or hardware).

- F The dump is a continuation dump, another task has caused the application to terminate abnormally.

- D The UTM dump was created for diagnostic purposes. The UTM work task continues running.

- M The cause is a memory bottleneck.

- X The cause is an error in the XAP-TP code (OSI TP).

Multiple classifications are possible, e.g. ADS.

You must write a problem report for error diagnosis for all errors of groups U and S and all error codes **not** listed in the table below. A number of different documents are required for diagnosis. For detailed information and a list of the required documents, refer to section [“Producing error documentation”](#).

In the following table, the values marked with *) appear only on BS2000 systems and the values marked with **) appear only on Unix, Linux and Windows systems.

| Code | Group | Meaning |
|------------|-------|---|
| ADMI98 | D | The local data area is too small. |
| AHQA00 | MX | XAP-TP component. KCOCOTA module, QueueAnno() function. The mGetBufferSize() macro issued the return code LB_NOMEM. |
| AHSA02 | SUX | XAP-TP component. Module KCOCOTA, function SendAnno(). The system interfaces call KCOBRSE supplied a bad return code. |
| AINF01 | S | The return code is not equal X'00' after the AINFcall. |
| ALAxxx **) | ASU | Error number xxx when calling shmat() in KCSALME. |

| | | |
|------------|-----|---|
| ALGxxx **) | ASU | <p>Error number xxx when calling shmget() in KCSALME.</p> <p>For possible cause, see start error 33, or KDCREM was not called before application start or shared-memory bottleneck due to overly large CACHESIZE</p> <p>Note: ALG022 can occur when the shared-memory to be allocated is larger than the machine-specific maximum (tuning parameter SHMMAX).</p> <p>Note: ALG028 can occur when the maximum number of possible shared-memory [X] segments was reached.</p> <p>Action: Modify the KDCDEF generation or tune the UNIX kernel.</p> |
| ALME01 *) | ASU | <p>Illegal system return code during KCSALME call.</p> <p>If this error occurs in a tool, it generally means that the virtual storage is insufficient for the request to be processed.</p> <p>Action: Extend the address space for the ID.</p> <p>For KDCDUMP an estimation of uses virtual storage is given in the chapter "KDCDUMP messages".</p> |
| ALME02 *) | ASU | <p>UTM tried to create a memory pool for KAA tables, but the memory pool already exists.</p> <p>Possible cause: a task of the 'old' UTM application has not completed program/task termination.</p> <p>Action: check whether all tasks of the 'old' application have left the system. A task may, for instance, still be present in the system because a console message has not been answered. Then restart.</p> |
| ALME03 *) | AMS | <p>Error when creating or connecting a data space. For detailed information see BS2000 return code in diagnostic message on SYSOUT or SYSLST.</p> |
| AREC01 *) | SU | <p>Error during \$AREC call for the writing of a record by the BS2000 Accounting Routine</p> |
| ASA006 | SUX | <p>XAP-TP component.</p> <p>Module KCOASAM was called with the operation code ASAM_ATTACH. Bad return code from bBuildPAddr.</p> |
| ASA007 | SUX | <p>XAP-TP component.</p> <p>Module KCOASAM was called with the operation code ASAM_ATTACH. First task of the application, but OSS issued return code NOTFIRST.</p> |
| ASA009 | SX | <p>XAP-TP component.</p> <p>Module KCOASAM was called with the operation code ASAM_ATTACH. OSS returned the return code "INVEREF" for an "attach" call.</p> |
| ASA010 | SX | <p>XAP-TP component.</p> <p>Module KCOASAM was called with the operation code ASAM_ATTACH. OSS returned a bad return code for an "attach" call.</p> |
| ASA011 | FSX | <p>XAP-TP component.</p> <p>The module "KCOASAM" was called with the opcode "ASAM_DETACH". On the "detach" call, OSS returned the return code "ERROR".</p> <p>The task is already in the termination phase after another task has abnormally terminated the application. OSS returned an incorrect error code because openUTM still has to fetch an event from OSS.</p> |

| | | |
|--------|----|---|
| ASA012 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_DETACH". On the "detach" call, OSS returned the return code "INVAREF". |
| ASA013 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_DETACH". On the "detach" call, OSS returned a bad return code |
| ASA033 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_IND". The returned application context name is too long. |
| ASA034 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_IND". OSS returns the return code "ERROR" on the "assin" call. |
| ASA035 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_IND". OSS returns the return code "INVREF" on the "assin" call. |
| ASA036 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_IND". OSS returns a bad return code on the "assin" call. |
| ASA043 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_IND". OSS returns the return code "ERROR" on a positive "assrs" call. |
| ASA044 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_IND". Bad return code from "PutElement". |
| ASA045 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_IND". OSS returns a bad return code on a positive "assrs" call. |
| ASA046 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_IND". OSS returned the return code "ERROR" on the negative "assrs" call. |
| ASA048 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_IND". OSS returned a bad return code on the negative "assrs" call. |
| ASA049 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_IND". Bad return code from "PutElement". |
| ASA051 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF". The returned Application Context Name is too long. |

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| ASA052 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF". OSS returned the return code "ERROR" on the "asscf" call. |
| ASA053 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF". OSS returned the return code "INVREF" on the "asscf" call. |
| ASA054 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF". OSS returned a bad return code for an "asscf" call. |
| ASA060 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF". OSS returned the return code "ERROR" on the "aborq" call. |
| ASA062 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF". OSS returned a bad return code for an "aborq" call. |
| ASA064 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF". OSS returned an invalid diagnostic value on a negative confirmation. |
| ASA065 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF". OSS returned an invalid "result source" value on a negative association confirmation. |
| ASA066 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF_TIMEOUT". OSS returned the return code "ERROR" on the "aborq" call. |
| ASA068 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF_TIMEOUT". OSS returned a bad return code on the "aborq" call. |
| ASA071 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ABORT_IND". OSS returned the return code "ERROR" on the "aboind" call. |
| ASA072 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ABORT_IND". OSS returned the return code "INVREF" on the "aboind" call. |
| ASA073 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ABORT_IND". OSS returned a bad return code on the "aboind" call. |
| ASA080 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_P_ABORT_IND". OSS returned the return code "ERROR" on the "paboind" call. |

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| ASA081 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_P_ABORT_IND". OSS returned the return code "INVREF" on the "paboin" call. |
| ASA082 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_P_ABORT_IND". OSS returned a bad return code on the "paboin" call. |
| ASA083 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF". Bad return code from "PutElement". |
| ASA084 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF". Bad return code from "PutElement". |
| ASA085 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ASS_CNF_TIMEOUT". Bad return code from "PutElement". |
| ASA088 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_RELEASE_IND". OSS returned the return code "ERROR" on the "relin" call. |
| ASA089 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_RELEASE_IND". OSS returned the return code "INVREF" on the "relin" call. |
| ASA090 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_RELEASE_IND". OSS returned a bad return code on the "relin" call. |
| ASA091 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_RELEASE_IND". OSS returned an invalid value for "release reason". |
| ASA092 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_RELEASE_IND". OSS returned the return code "ERROR" on the "aborq" call. |
| ASA094 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_RELEASE_IND". OSS returned a bad return code on the "aborq" call. |
| ASA095 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_RELEASE_IND". OSS returned the return code "ERROR" on the "relrs" call. |
| ASA097 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_RELEASE_IND". OSS returned a bad return code on the "relrs" call. |

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| ASA099 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ABORT_REQ". OSS returned an invalid value for "abort diagnostic". |
| ASA100 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ABORT_REQ". OSS returned the return code "ERROR" on the "aborq" call. |
| ASA101 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ABORT_IND". Bad return code from "PutElement". |
| ASA102 | SX | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_ABORT_REQ". OSS returned a bad return code on the "aborq" call. |
| ASA104 | AX | XAP-TP component. The function "bBuildPAddr" of the module KCOASAM was called. The presentation selector of a local access point or of a remote partner is too long. |
| ASA105 | AX | XAP-TP component. The function "bBuildPAddr" of the module KCOASAM was called. The session selector of a local access point or of a remote partner is too long. |
| ASA116 | SX | XAP-TP component. The function "BuildRemoteAet" of the module KCOASAM was called. The APT has "form2" format, but the AEQ doesn't have "form2" format. |
| ASA120 | SX | XAP-TP component. The function "BuildRemoteAet" of the module KCOASAM was called. The APT has the "form1" format, but the AEQ doesn't have "form1" format. |
| ASA122 | SX | XAP-TP component. The function "BuildRemoteAet" of the module KCOASAM was called. The APT has neither the "form1" format nor the "form2" format. |
| ASA128 | M | XAP-TP component. The "CopyDefinedContext" function of the module KCOASAM was called. Bad return code of "PutElement". |
| ASA137 | M | XAP-TP component. The module "KCOASAM" was called with the opcode "ASAM_GO_IND". The association is not locked. |
| ASA139 | SX | XAP-TP component. KCOASAM was called with the operation code ASAM_P_ABORT_IND. Bad return code from "PutElement". |
| ASA151 | SX | XAP-TP component. KCOASAM was called with the operation code ASAM_RELEASE_IND. Bad return code from "PutElement". |

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| ASA152 | SX | XAP-TP component. KCOASAM was called with the operation code ASAM_ABORT_REQ. Bad return code from "PutElement". |
| ASA153 | SX | XAP-TP component. KCOASAM was called with the operation code ASAM_ABORT_REQ. Bad return code from "SacSeparator". |
| ASA155 | SX | XAP-TP component. KCOASAM was called with the operation code ASAM_ABORT_IND. Bad return code from "SacSeparator". |
| ASA156 | SX | XAP-TP component. KCOASAM was called with the operation code ASAM_P_ABORT_IND. Bad return code from "SacSeparator". |
| ASA157 | SX | XAP-TP component. KCOASAM was called with the operation code ASAM_RELEASE_IND. Bad return code from "SacSeparator". |
| ASIO01 | AU | File is not identified as open during KCSASIO call. |
| ASIO02 **) | AU | Invalid (i.e. too large) position for writing into file detected when calling KCSASIO. Additional information: The file name and the current position are output in an additional message "K078 KCSASIO ...". |
| ASIO03 **) | AU | Invalid (i.e. too large) write request for writing to file detected when calling KCSASIO. Additional information: See ASIO02 |
| ASIO04 **) | AU | Invalid (i.e. too large) position for reading from file detected when calling KCSASIO. Additional information: See ASIO02 |
| ASIO05 **) | AU | Invalid (i.e. too large) read request for reading from file detected when calling KCSASIO. Additional information: See ASIO02 |
| ASIO06 **) | AU | Generic Error on positioning in file when calling KCSASIO. |
| ASIS99 | D | Normal execution of command "KDCSHUT KILL" or the call to the program interface for administration with the opcode KC_SHUTDOWN and the subopcode1 KC-KILL. |
| ATAxxx **) | AU | Error on connecting a shared-memory to the work process. If xxx is the value for EINVAL, there is a conflict between a shared-memory of the user and a shared-memory of the UTM application. If a shared object is generated and used with LOADMODE=ONCALL, this can also cause an error with the value EINVAL. Action: In these cases, the error can be avoided by deactivating the shared-memory monitoring facility on starting the application. |
| BFMM05 | M | UTM cluster application It was not possible to request another buffer segment. The virtual address space may be too small. |

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| BFMM21 | ASU | UTM cluster application A timeout occurred while releasing a file lock. Action: See CCFG19. |
| BFMM22 | SU | UTM cluster application A bad return code was returned when releasing a file lock. |
| BRSREM **) | F | UTM application was terminated with the KDCREM utility. |
| BRSE01 *) | S | Invalid parameter QUEUE_DISCIPLINE when creating a bourse or when sending or receiving an announcement. Invalid parameter LENGTH_OF_ANNO when sending an announcement. Bad return code returned from bourse interface. |
| BRSE02 *) | S | Error on enqueueing of the task at WORK bourse (chamber 1) |
| BRSE03 *) | S | Error on enqueueing of the task at task specific bourse (chamber 1). |
| CACHT1 | F | Another task has terminated the application abnormally (=continuation dump) |
| CACHT2 | F | (See CACHT1) Another task has terminated the application abnormally (=continuation dump) |
| CACHT3 | F | (See CACHT1) Another task has terminated the application abnormally (=continuation dump) |
| CACHT4 | F | (See CACHT1) Another task has terminated the application abnormally (=continuation dump) |
| CACHT5 | F | (See CACHT1) Another task has terminated the application abnormally (=continuation dump) |
| CC-... | D | Diagnostic dump generated on the basis of a primary KDCCS return code. The prefix CC- is followed by the primary KDCCS return code (e.g. CC-84Z). Activation and deactivation via the message dump function. |
| CCFG07 | SU | UTM cluster application Module KCCCFG, entry KCCCGFB Bad return code from KCSGLHN. |
| CCFG19 | ASU | UTM cluster application Module KCCCFG, opcode CCFG_READ_CLUSTER_FILE Timeout when requesting shared lock. Action: See section "Actions when locking UTM cluster files" . |
| CCFG20 | SU | UTM cluster application Module KCCCFG, opcode CCFG_READ_CLUSTER_FILE Bad return code when requesting shared lock. |

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| CCFG21 | ASU | UTM cluster application Module KCCCFG, Timeout when requesting exclusive lock. Action: See CCFG19. |
| CCFG22 | SU | UTM cluster application Module KCCCFG Bad return code when requesting the exclusive lock. |
| CCFG29 | ASU | UTM cluster application Module KCCCFG, timeout when releasing file lock. Action: See CCFG19. |
| CCFG30 | SU | UTM cluster application Module KCCCFG, opcode CCFG_READ_CLUSTER_FILE Bad return code when releasing the file lock. |
| CCFG32 | ASU | UTM cluster application Module KCCCFG, opcode CCFG_REGISTER_COMPLETE Invalid version of cluster configuration file. |
| CCFG33 | ASU | UTM cluster application Module KCCCFG, opcode CCFG_REGISTER_COMPLETE Corrupt cluster configuration file. |
| CCFG34 | ASU | UTM cluster application Module KCCCFG, opcode CCFG_REGISTER_COMPLETE Invalid application name in cluster configuration file. |
| CCFG35 | ASU | UTM cluster application Module KCCCFG, opcode CCFG_REGISTER_COMPLETE The cluster configuration file was regenerated during operation. |
| CCFG41 | ASU | UTM cluster application Module KCCCFG, opcode CCFG_OPEN_CLUSTER_FILE Timeout when initializing global lock. Action: See CCFG19. |
| CCFG42 | SU | UTM cluster application Module KCCCFG, opcode CCFG_OPEN_CLUSTER_FILE Bad return code when initializing the global lock. |
| CCFG43 | ASU | UTM cluster application Module KCCCFG, opcode CCFG_CLOSE_CLUSTER_FILE Timeout when destroying global lock. Action: See CCFG19. |
| CCFG44 | SU | UTM cluster application Module KCCCFG, opcode CCFG_CLOSE_CLUSTER_FILE Bad return code when destroying the global lock. |

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| CCFG45 | SU | UTM cluster application Module KCCCFG, opcode CCFG_INIT_KAA Bad return code from KCSGLHN |
| CCFG49 | S | UTM cluster application Module KCCCFG, opcode READ_CLUSTER_FILE Bad return code when reading the cluster file. |
| CCFG50 | A | UTM cluster application Module KCCCFG, opcode READ_CLUSTER_FILE Corrupt cluster file. |
| CCFG51 | A | UTM cluster application Module KCCCFG, opcode READ_CLUSTER_FILE Invalid version of cluster configuration file. |
| CCFG52 | A | UTM cluster application Module KCCCFG, opcode READ_CLUSTER_FILE Invalid application name in cluster configuration file. |
| CCFG53 | A | UTM cluster application Module KCCCFG, opcode READ_CLUSTER_FILE The cluster configuration file was regenerated during operation. |
| CCFG55 | A | UTM cluster application Module KCCCFG, opcode NODE_FAILURE Corrupt cluster configuration file. |
| CCFG56 | A | UTM cluster application Module KCCCFG, opcode NODE_FAILURE Invalid version of cluster configuration file. |
| CCFG57 | A | UTM cluster application Module KCCCFG, opcode NODE_FAILURE Invalid application name in cluster configuration file. |
| CCFG58 | A | UTM cluster application Module KCCCFG, opcode NODE_FAILURE The cluster configuration file was regenerated during operation. |
| CCFG62 | ASU | UTM cluster application Module KCCCFG, opcode CCFG_RESET_START_SERIALIZATION Timeout when releasing lock. Action: See CCFG19. |
| CCFG63 | SU | UTM cluster application Module KCCCFG, opcode CCFG_RESET_START_SERIALIZATION Bad return code when releasing lock. |

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| CCFG64 | ASU | UTM cluster application Module KCCCFG, opcode CCFG_RESET_START_SERIALIZATION Timeout when destroying lock. Action: See CCFG19. |
| CCFG65 | SU | UTM cluster application Module KCCCFG, opcode CCFG_RESET_START_SERIALIZATION Bad return code when destroying lock. |
| CCFG71 | AU | UTM cluster application KCCCFG module, opcode READ_CLUSTER_FILE or CHECK_CLUSTER_FILE The local node is marked as failed in the cluster configuration file. |
| CCFG72 | AU | UTM cluster application KCCCFG module, opcode CCFG_NODE_FAILURE The local node is marked as failed in the cluster configuration file. |
| CCKF02 | SU | UTM cluster application Module KCCCKF Unexpected return code from KCCFILA when opening the KDCFILE. |
| CCKF03 **) | SU | UTM cluster application Module KCCCKF Unexpected return code from KCCGFLK on unlock. |
| CCKF04 | SU | UTM cluster application Module KCCCKF Unexpected return code from KCCFILA when closing the KDCFILE. |
| CCTR17 | AU | The node application is registered but the journal file could not be opened. Possibly the journal files were deleted. The abnormal termination may also occur after a previous start error. |
| CDTN02 | M | XAP-TP component. Module KCOCOHF, function CheckDtnidTtnid(). The macro mGetBufferSize() issued the return codeLB_NOREM. |
| CFMM05 | D | On send, the length in DCF does not match that specified in the letter header. |
| CLREST | D | UTM cluster application The dump is only generated during a node application warm start with test mode enabled. It is used for diagnostic purposes following possible errors during the warm start of the cluster. |
| COBOL6 **) | A | The internal NETCOBOL function CBL_SETJMP was called within libwork.so although NETCOBOL is not supported on AIX. |
| COBOL7 **) | A | The internal NETCOBOL function CBL_LONGJMP was called within libwork.so although NETCOBOL is not supported on AIX. |

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| COBOL8 **) | A | The internal function coblongjmp was called within libwork.so although no COBOL program is generated. |
| COBOL9 **) | A | The internal function cobsavenv2 was called within libwork.so although no COBOL program is generated. |
| CONS03 | A | The KDCFILE was overwritten during operation. Possible cause: KDCDEF run in current application. Action: Check start procedure |
| CSND04 | MX | XAP-TP component. Invalid return code after calling PutElement() to request a dynamic buffer for concatenator send data. |
| CSND05 | SX | XAP-TP component. Invalid return code after calling an OSS presentation function. |
| CTPF04 | M | XAP-TP component: The return code of PutElement was not equal to DM_OK. |
| DC.... | D | Diagnostic dump generated on the basis of a secondary KDCS return code. The prefix DC is followed by the secondary KDCS return code (e.g. DCKS17). Activation and deactivation via the message dump function. |
| DIAGCL | D | UTM cluster application A node application has been terminated abnormally. Before termination, all the other node applications were informed of the abnormal termination if this was still possible. The informed node applications write a diagnostic dump. |
| DIAGDP | D | A diagnostic dump has been generated by means of the administration command "KDCDIAG DUMP=YES" or by calling the program interface for administration with the opcode KC_CREATE_DUMP. |
| DMCA00 | M | XAP-TP component. Module KCOCODM, function ConnectDynMemArea(). The function ConnectSharedMem() issued the return code MEM_NOMEM. |
| EDITER *) | ADS | Error in conjunction with the edit profile used. |
| EHP00 | M | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The return code from mGetBufferSpace() was not equal to LB_OK. |
| EHP01 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_datain() returned the return code P_ERROR. |
| EHP02 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_datain() returned the return code P_INVREF. |

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| EHHP03 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_datain() returned an unknown return code |
| EHHP04 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_typein() returned the return code P_ERROR. |
| EHHP05 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_typein() returned the return code P_INVREF. |
| EHHP06 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_typein() returned an unknown return code. |
| EHHP07 | SX | XAP-TP function. Module KCOXFEH, function HandlePresEvent(). The function CalcUserDataLth() returns 0 for length of user data after calling the OSS function p_typein(). |
| EHHP08 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_synin() returned the return code P_ERROR. |
| EHHP09 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_synin() returned the return code P_INVREF. |
| EHHP10 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_synin() returned an unknown return code. |
| EHHP12 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The function CalcUserDataLth() returns zero for length of user data after calling the OSS function p_synin(). |
| EHHP13 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_syncf() returned the return code P_ERROR. |
| EHHP14 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_syncf() returned the return code P_INVREF. |
| EHHP15 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_syncf() returned an unknown return code. |

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| EHHP17 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The function CalcUserDataLth() returns zero for length of user data after calling the OSS function p_synfcf(). |
| EHHP18 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_tkgin() returned the return code P_ERROR. |
| EHHP19 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_tkgin() returned the return code P_INVREF. |
| EHHP20 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_tkgin() returned an unknown return code. |
| EHHP21 | S | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_tkgin() did not return the token S_T_MINOR. |
| EHHP22 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_tkpin() returned the return code P_ERROR. |
| EHHP23 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_tkpin() returned the return code P_INVREF. |
| EHHP24 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_tkpin() returned an unknown return code. |
| EHHP25 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_tkpin() did not return the token S_T_MINOR. |
| EHHP26 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The function CalcUserDataLth() returns zero for length of user data after calling the OSS function p_tkpin(). |
| EHHP27 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_minin() returned the return code P_ERROR. |
| EHHP28 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_minin() returned the return code P_INVREF. |

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| EHHP29 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_minin() returned an unknown return code. |
| EHHP30 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The function CalcUserDataLth() returns zero for length of user data after calling the OSS function p_minin(). |
| EHHP31 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_minicf() returned the return code P_ERROR. |
| EHHP32 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_minicf() returned the return code P_INVREF. |
| EHHP33 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function p_minicf() returned an unknown return code. |
| EHHP34 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The function CalcUserDataLth() returns zero for length of user data after calling the OSS function p_minicf(). |
| EHHP35 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The function o_event() returned the unexpected event P_MAJIN. |
| EHHP36 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The function o_event() returned the unexpected event P_MAJCF. |
| EHHP37 | SX | XAP-TP component. Module KCOXFEH, function HandlePresEvent(). The OSS function o_event() returned an unexpected event type. |
| EHRP01 | MX | XAP-TP component. Module KCOXFEH, function ReloadPresEvent(). The macro mGetBufferSpace() issued a return code not equal to LB_OK. |
| EHSP00 | SX | XAP-TP component. Module KCOXFEH, function StorePresEvent(). StorePresEvent() is to store a presentation event in DynMem. However, an event is already stored for the corresponding association (mValLth(g, &pAss->PendingEvt.h) > 0). |

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| EHSP01 | M | XAP-TP component. Module KCOXFEH, function StorePresEvent(). The function PutElement() issued the return code DM_NOMEM. Action: Increase the value for the size of the OSI scratch area in the KDCDEF generation (parameter MAX OSI-SCRATCH-AREA). |
| EKAA11 | S | UTM cluster application Timeout when releasing the file lock for the JKAA file. Action: See CCFG19. |
| EKAA12 | S | Incorrect return code from KCCGFLK when releasing the file lock for the JKAA file. |
| EKAA13 | S | UTM cluster application Timeout when destroying the file lock for the JKAA file. Action: See CCFG19. |
| EKAA14 | S | Incorrect return code from KCCGFLK when destroying the file lock for the JKAA file. |
| ENCERR | DSU | UTM expected an encrypted message, but received an unencrypted message. There is no application abort pending. The dump is only for diagnostic purposes. |
| ENDE01 | SU | The KAA pointer in KTA doesn't point to a KAA. |
| ENDE02 | AU | Interrupt with locked KAA. |
| ENDE03 | ASU | Abnormal task termination between writing a confirmatory record and the (temporary) end of the UTM transaction. Possible cause: System shut down with UTM application running or RUNOUT-STXIT or FORCE-JOB-CANCEL during this period. |
| ENDE04 | SU | The cache cannot be released. |
| ENDE05 | SU | The KAA cannot be released. |
| ENDE06 | ASU | Error when opening the SYSLOG file. This error may occur after abnormal termination of a UTM task (e.g. by CANCEL-JOB /FORCE-JOB-CANCEL) if the user accesses the SYSLOG file before the application has terminated. It causes 1 PAM page (at most) with SYSLOG messages to be lost. Action: Check start procedure (access to SYSLOG) |
| ENDE07 *) | AS | A task was terminated abnormally (e.g. CANCEL-JOB/FORCE-JOB-CANCEL, TERM macro) and at this time it was the only task connected to a SLOT memory pool. At termination of this task the memory pool is disabled by the operating system. As a consequence the UTM-application becomes inoperable. Action: Avoid abnormal termination of UTM-tasks |
| ENDE10 *) | ASU | A task was terminated abnormally while it had already completed the start-up phase (possible reasons: system dump, FORCE-JOB-CANCEL, etc.). As a consequence the application is terminated abnormally as well. |

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| ENDE11 | DSU | The application was terminated normally, but on disconnect from the OSS access point, OSS delivered a return code other than OK. If test mode is activated, a UTM diagnostic dump is initiated. |
| ENDE12 | ASU | A task terminated (either normally or abnormally). Not enough tasks remain to continue processing the application (e.g. because there are tasks in the PGWT). |
| ENDE14 | F | A task terminated (either normally or abnormally) and the task has still not called KCSTRMA. However, the status of the application is TERM_APPL. KCSTRMA was called with ENDE14 to ensure that all tasks generate a UTM dump if the application terminates abnormally. |
| ENDE15 *) | ADU | A task was terminated abnormally while in state TPR (possible reasons: system dump, FORCE-JOB-CANCEL, etc.). As the termination occurred during the start of the task and it was not the first task of the application only a diagnostic dump of this task is initiated. The application run is not terminated. |
| ENDE16 *) | AD | Abnormal termination of the application run caused by abnormal termination of a task in state TU (possible reasons: TERM-STXIT, CANCEL-JOB, LOGOFF, etc.). If test mode is switched on, then at each abnormal termination of a task in state TU a diagnostic dump with reason ENDE16 is initiated. |
| ENDE19 | ASU | Only UTM system processes are running for the application. All normal processes were terminated. The reason may be an error in the start procedure or a start error when restarting the tasks after PEND ER or program exchange. |
| ENDPET | A | An UTM-D application cannot be terminated normally, because services still exist with the transaction status PTC (prepare to commit) or because no acknowledgments have been received for asynchronous messages sent to other applications. In this case no UTM dump is generated. openUTM will perform a warm start at the next application start. |
| EVGE00 | M | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| EVGE01 | S | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The return parameter <o_echain> contained an invalid value after calling the OSS function o_event(). |
| EVGE03 | SX | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The OSS function o_event() returned the return code O_ACS and the user data were not yet received completely on the call. |
| EVGE05 | ASX | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The OSS function o_event() returned the return code O_ERROR. This can also happen when BCAM is terminated (BCEND). |

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| EVGE06 | SX | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The OSS function o_event() returned the return code O_INVEREF. |
| EVGE07 | SX | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The OSS function o_event() returned the return code O_TIMEINT. |
| EVGE08 | SX | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The OSS function o_event() returned the return code O_WAKEINT. |
| EVGE09 | SX | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The OSS function o_event() returned the return code O_SYSTEM. |
| EVGE10 | SX | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The OSS function o_event() returned the return code O_LOOK. |
| EVGE11 | SX | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The OSS function o_event() returned the return code O_TRANSPORT. |
| EVGE12 | SX | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The OSS function o_event() returned the return code O_SESSION. |
| EVGE13 | SX | XAP-TP component. Module KCOXFEV, function GetOssEvent(). The OSS function o_event() returned an unknown return code. |
| EVNT03 | ASX | XAP-TP component. Module KCOXFEV, function aputm_event(). The OSS function o_event(O_EVALLOOK) returned the return code O_ERROR. This can also occur when BCAM is terminated (BCEND).The error also occurs if a UTM application with OSI TP has been started and terminated again in the dialog with two tasks and another UTM application with the same ACCESS-POINT is then started in the dialog as a follow-up task in one of the two tasks. |
| EVNT04 | SX | XAP-TP component. Module KCOXFEV, function aputm_event(). The OSS function o_event(O_EVALLOOK) returned the return code O_INVEREF. |
| EVNT05 | SX | XAP-TP component. Module KCOXFEV, function aputm_event(). The OSS function o_event(O_EVALLOOK) returned the return code O_TIMEINT. |

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| EVNT06 | SX | XAP-TP component. Module KCOXFEV, function aputm_event(). The OSS function o_event(O_EVALLOOK) returned the return code O_WAKEINT. |
| EVNT07 | SX | XAP-TP component. Module KCOXFEV, function aputm_event(). The OSS function o_event(O_EVALLOOK) returned the return code O_SYSTEM. |
| EVNT08 | SX | XAP-TP component. Module KCOXFEV, function aputm_event(). The OSS function o_event(O_EVALLOOK) returned the return code O_TRANSPORT. |
| EVNT09 | SX | XAP-TP component. Module KCOXFEV, function aputm_event(). The OSS function o_event(O_EVALLOOK) returned the return code O_SESSION. |
| EVNT10 | SX | XAP-TP component. Module KCOXFEV, function aputm_event(). The OSS function o_event(O_EVALLOOK) returned the return code O_PRESENTATION. |
| EVNT11 | SX | XAP-TP component. Module KCOXFEV, function aputm_event(). The OSS function o_event(O_EVALLOOK) returned the return code O_ACSE. |
| EVNT12 | SX | XAP-TP component. Module KCOXFEV, function aputm_event(). The OSS function o_event(O_EVALLOOK) returned an unknown return code. |
| EXIT00 **) | AU | Illegal exit() call recognized during execution of UTM system coding. |
| EXPI32 | ASU | UTM cluster application Bad return code from KCCGFLK when locking the cluster GSSB file. Action: See CCFG19. |
| EXPI34 | ASU | UTM cluster application Bad return code from KCCGFLK when locking the cluster ULS file. Action: See CCFG19. |
| EXPI35 | ASU | UTM cluster application Bad return code from KCCGFLK when locking the cluster ULS file. Action: See CCFG19. |
| EXPI36 | ASU | Bad return code from KCCGFLK when locking the cluster GSSB file. Action: See CCFG19. |

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| EXPI51 | A | <p>A periodic write was called by a task because the restart area of the task has become full. The task wishes to write another page of the restart area but no pages have become free through periodic write.</p> <p>The cause may be a restart area which was generated too small, with the result that restart information of a single transaction is longer than the restart area (e.g. transaction with access to "numerous" page pool pages).</p> <p>Action: Increase the number parameter in the generation statement "MAX RECBUF=(number,...)".</p> |
| EXPI95 | A | See EXPI51, but occurs in RESET_TA_RTN. |
| FHCV03 **) | S | Formatting system is not supported. |
| FILE00 **) | AU | <p>Invalid file name / invalid file number of fgg-file when calling KCSFILE()</p> <p>Possible cause: fgg-file(s) copied or deleted.</p> <p>Action: Write PR or create a new fgg.</p> |
| FMMM10 | A | <p>AN input message cannot be stored because the page pool is full.</p> <p>Action: Increase page pool by increasing MAX PGPOOL=(number,...) in KDCDEF generation.</p> |
| FMSM05 | DSU | KCDFMSM was called with opcode PRSP_BID even though the session status is not WAIT_OF_BID_RSP. |
| FMSM12 | S | Illegal LSES_WORK_STATE when receiving RTR. |
| FMterr *) | ADS | The dump serves to diagnose the formatting error. It only contains KDCROOT data and is output in test mode only. |
| FREE01 | AX | <p>XAP-TP component.</p> <p>Module KCOXFFO, function ap_free().</p> <p>More than APFREE_MAX_TO_REL storage areas are to be released.</p> |
| GETR00 **) | AU | <p>Record length less than 0 when calling KCSGETR.</p> <p>Possible cause: invalid input file.</p> |
| GETR01 **) | AU | <p>On reading the record length field of a record, fewer than 4 bytes were read in KCSGETR.</p> <p>Possible cause: invalid input file</p> |
| GETR02 **) | AU | <p>Record read has a record length < 5 after reading of the record length field in KCSGETR.</p> <p>Possible cause: invalid input file.</p> |
| GETR03 **) | AU | <p>On reading a record, fewer bytes were read in than expected after reading of the record length field in KCSGETR.</p> <p>Possible cause: invalid input file.</p> |
| GETR04 **) | AU | <p>On reading a record with KCSGETR an invalid record was found.</p> <p>Possible cause: invalid input file.</p> |
| GFLKT1 | F | <p>UTM cluster application</p> <p>Lock hierarchy infringed after Term Application (continuation dump).</p> |

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| GFLKT2 | F | (see GFLKT1) UTM cluster application Lock hierarchy infringed after Term Application (continuation dump). |
| GLHN03 **) | A | Length of local hostname is greater than 64. |
| GMDT11 | SU | UTM cluster application Module KCCGMDT, opcode UPDATE_AND_UNLOCK_GSSB. unexpected return code from KCCGFLK (lock GSSB file). Action: See CCFG19. |
| GSYS00 **) | S | XAP-TP component. Module KCOCOHF, function GetSystemInfo(). The function uname() issued a negative return code. |
| INPERR | AD | Error in INPUT exit was detected. |
| IOyxxx **) | ASU | ASIO return code: An unrecoverable error has occurred during file processing, yxxx = DMS error code. Action: See section "Error codes during file processing" Note: IOW009 from READ module of KDCUPD can occur if LPAP or OSI-LPAP messages of dead letter queue shall be transferred and the old kdcfile or old pagepool files are read only. Action: Set write access for old kdcfile or old page pool files and repeat KDCUPD run. |
| IODxxx *) | ASU | ASIO return code: DMS error occurred and could not be corrected, Dxxx=DMS error code. Note: IOD991 from READ module of KDCUPD can occur if LPAP or OSI-LPAP messages of dead letter queue shall be transferred and the old kdcfile or old page pool files are read only. Action: Set write access for old kdcfile or old page pool files and repeat KDCUPD run. |
| IPC000 **) | ASU | IPC shared memory segment has been overwritten. A check takes place with every KDCS call. |
| IPC035 **) | A | Error on locking the IPC shared memory segment, this may be caused by KDCREM being called while the application is still running. |
| IPC037 **) | FU | IUTMIPC indicates that the application is terminated abnormally (= continuation dump). See also U306 with insert UERRNO=37. |
| IPCEND **) | F | A work process terminated outside of the control of openUTM. The application is therefore terminated. Possible cause: see note for message U231 |
| IPCREM **) | F | UTM application was terminated with the KDCREM utility. |
| ISLP00 *) | A | The subsystem VTSU is not started. |
| ISLP01 *) | S | The maximum SCB length is larger than expected by UTM. Possible reason: A new version of subsystem VTSU is started and requires larger SCBs. |

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| ISLP02 *) | ASU | Bad return code from VTSU when initializing a dynamic SCB. Possible reason: Subsystem VTSU is not started or already deactivated. |
| ISLP03 *) | ASU | Bad return code from VTSU when analyzing first 8 characters of message. Possible reason: The function key is not known by VTSU. |
| ISLP04 *) | SU | VTSU error when analyzing the UTM command. |
| ISLP05 *) | ASU | VTSU error when editing a dialog input message. Possible reason: s. ISLP03. |
| ISLP06 *) | SU | VTSU detects a faulty output message. |
| ISLP09 *) | AU | Task-specific buffer for restart information too small. Action: Increase MAX RECBUF=(...,length) specification in KDCDEF generation |
| ISLP11 *) | AU | (see ISLP09) Task-specific buffer for restart information too small. Action: Increase MAX RECBUF=(...,length) specification in KDCDEF generation |
| ISLP12 *) | AU | (see ISLP09) Task-specific buffer for restart information too small. Action: Increase MAX RECBUF=(...,length) specification in KDCDEF generation |
| ISLP13 *) | AU | Buffer for asynchronous output message is too small. Action: Increase MAX TRMSGLEN=<length> specification in KDCDEF generation |
| ISLP42 *) | ASU | Bad return code from VTSU when requesting length of SCB during start of UTM task. Possible reason <ul style="list-style-type: none"> • Terminal type not supported. • Subsystem VTSU not started. |
| ISLPT1 *) | F | Another task has terminated the application abnormally (= follow-up dump) |
| ISLPT4 *) | F | (see ISLPT1) Another task has terminated the application abnormally (= follow-up dump) |
| JFC011 | ASU | UTM cluster application Timeout on KCCGFLK call in KCCJFCT with opcode CLOSE_FILES. Action: See CCFG19. |
| JFC012 | ASU | UTM cluster application Timeout with opcode CLOSE_FILES. Action: See CCFG19. |
| JFC016 | SU | UTM cluster application Error on the first readControlPage call in KCCJFCT with opcode CHECK_UNPROC_ENTRIES. |

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| JFC018 | SU | UTM cluster application Error on the 2nd readControlPage call in KCCJFCT with opcode CHECK_UNPROC_ENTRIES. |
| JFC055 | SU | UTM cluster application Error on the first readControlPage call in KCCJFCT with opcode SET_NODE_PROCESSING_STATE. |
| JFC058 | SU | UTM cluster application Error on the 2nd readControlPage call in KCCJFCT with opcode SET_NODE_PROCESSING_STATE. |
| JFC067 | SU | UTM cluster application Error when reading the administration page in KCCJFCT with opcode SET_NODE_CR_SEQNR. |
| JFC071 | SU | UTM cluster application Error on the first readControlPage call in KCCJFCT with opcode GET_NODE_CR_SEQNR. |
| JFC072 | SU | UTM cluster application Error on the 2nd readControlPage call in KCCJFCT with opcode GET_NODE_CR_SEQNR. |
| JFC076 | SU | UTM cluster application Error on the readControlPage call in KCCJFCT with opcode RESET_NODE_CR_SEQNR. |
| JFC082 | SU | UTM cluster application Error on the 2nd readControlPage call in KCCJFCT with opcode RESET_DYNADM_LOCK. |
| JFC083 | SU | UTM cluster application Error on the first readControlPage call in KCCJFCT with opcode RESET_DYNADM_LOCK. |
| JFC400 | ASU | UTM cluster application Timeout on KCCGFLK call (lock) in KCCJFCT, internal function setFileLock. Action: See CCFG19. |
| JFC401 | ASU | UTM cluster application Error on KCCGFLK call (lock) in KCCJFCT, internal function setFileLock. Action: See CCFG19. |
| JFC402 | SU | UTM cluster application Error on KCCGFLK call (lock) in KCCJFCT, internal function setFileLock. |
| JFC404 | SU | UTM cluster application Timeout on KCCGFLK call (unlock) in KCCJFCT, internal function releaseFileLock. |

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| JFC405 | ASU | UTM cluster application Error on KCCGFLK call (unlock) in KCCJFCT, internal function releaseFileLock. Action: See CCFG19. |
| JFC420 | SU | UTM cluster application Error on KCCFILA call (write), first administration page in the journal file in KCCJFCT, internal function initControlPages. |
| JFC421 | SU | UTM cluster application Error on KCCFILA call (write) in KCCJFCT, internal function initControlPages. |
| JFC430 | SU | UTM cluster application Error on the first readControlPage call in KCCJFCT, internal function switchFiles. |
| JFC431 | SU | UTM cluster application Error on the 2nd readControlPage call in KCCJFCT, internal function switchFiles. |
| JFC460 | SU | UTM cluster application Error on the first readControlPage call in KCCJFCT, the first readControlPage call in KCCJFCT, internal function checkControlPages. |
| JFC501 | SU | UTM cluster application Error on KCCFILA call in KCCJFCT, internal function readPages. |
| JFC507 | SU | UTM cluster application Error on KCCFILA call in KCCJFCT, internal function writePages. |
| JFC512 | SU | UTM cluster application Error on KCCFILA call in KCCJFCT, internal function writeControlPage. |
| JFC550 | SU | UTM cluster application Error when reading an administration page in KCCJFCT with opcode GET_JOURNAL_FILE_INFO. |
| JFC561 | SU | UTM cluster application Error on readControlPage call in KCCJFCT with opcode SET_COPY_STATE. |
| JFC570 | SU | UTM cluster application Error on readControlPage call in KCCJFCT with opcode SET_KAA_INFO. |
| JFC572 | SU | UTM cluster application Error on the 2nd readControlPage call in KCCJFCT with opcode SET_KAA_INFO. |
| JFC580 | SU | UTM cluster application Error on readControlPage call in KCCJFCT with opcode GET_KAA_INFO. |
| JFC581 | SU | UTM cluster application Error on the 2nd readControlPage call in KCCJFCT with opcode GET_KAA_INFO. |
| JFC583 | SU | UTM cluster application Error on the 3rd readControlPage call in KCCJFCT with opcode GET_KAA_INFO. |

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| JFC584 | SU | UTM cluster application Error on the 4th readControlPage call in KCCJFCT with opcode GET_KAA_INFO. |
| JFC590 | SU | UTM cluster application Error on the first readControlPage call in KCCJFCT with opcode SET_GLOBAL_ADM_LOCK. |
| JFC591 | SU | UTM cluster application Error on the 2nd readControlPage call in KCCJFCT with opcode SET_GLOBAL_ADM_LOCK. |
| JFC594 | SU | UTM cluster application Error on the 3rd readControlPage call in KCCJFCT with opcode GET_GLOBAL_ADM_LOCK. |
| JFC595 | SU | UTM cluster application Error on the first readControlPage call in KCCJFCT with opcode RESET_GLOBAL_ADM_LOCK. |
| JFC596 | SU | UTM cluster application Error on the 2nd readControlPage call in KCCJFCT with opcode RESET_GLOBAL_ADM_LOCK. |
| JFC598 | SU | UTM cluster application Error on the first readControlPage call in KCCJFCT with opcode GET_GLOBAL_ADM_LOCK. |
| JFC599 | SU | UTM cluster application Error on the 2nd readControlPage call in KCCJFCT with opcode GET_GLOBAL_ADM_LOCK. |
| JFC611 | SU | UTM cluster application Error on the 2nd readControlPage call in KCCJFCT, routine checkAllProcessed. |
| JFC613 | SU | UTM cluster application Error on the first readControlPage call in KCCJFCT, routine checkAllProcessed. |
| JFC626 | SU | UTM cluster application Error on readControlPage call in KCCJFCT, routine checkAndRepair. |
| LATC01 **) | FSU | The lock mechanism is not functioning at the time when KCSLATC is called. See LATC02 |
| LATC02 **) | ASU | Error when calling KCXLOCK of the ATC lock bourse. Because the locks are implemented with semaphores in openUTM for Unix, Linux and Windows systems, an error code was returned for a semaphore operation. The cause may be that the user deleted a semaphore of the application (either by means of a Unix, Linux or Windows system function or KDCREM). |
| LATC03 **) | SU | Max. number of locks per task exceeded. |
| LATC04 **) | SU | KCSLATC called under IPC lock. |

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| LATCT1 | F | During a request for a lock, the status of an application is set to TERM APPLICATION. The task is also terminated (= continuation dump). |
| LCAC01 **) | FSU | The lock mechanism is not functioning at the time when KCSLKAA / KCSLCAC / KCSPCMM is called. See LCAC02. |
| LCAC02 **) | ASU | Error on calling KCXLOCK of the KAA/CACH/PCMM lock bourse. Since in openUTM for Unix, Linux and Windows systems the locks are implemented by means of semaphores, as error code was reported with a semaphore operation. The reason may be that the user has deleted a semaphore for the application (either through a Unix, Linux or Windows system function or through KDCREM). |
| LCAC03 **) | SU | Max. number of locks per task exceeded. |
| LCAC04 **) | SU | KCSLCAC called under IPC lock. |
| LCACT1 | F | During a request for a lock, the status of an application is set to TERM APPLICATION. The task is also terminated (= continuation dump). |
| LKAA01 **) | FSU | The lock mechanism is not functioning at the time when KCSLKAA is called. See LKAA02. |
| LKAA02 **) | ASU | Error on calling KCXLOCK of the KAA/CACH/PCMM lock bourse. Since in openUTM for Unix, Linux and Windows systems the locks are implemented by means of semaphores, as error code was reported with a semaphore operation. The reason may be that the user has deleted a semaphore for the application (either through a Unix, Linux or Windows system function or through KDCREM). |
| LKAA03 **) | SU | Max. number of locks per task exceeded. |
| LKAA04 **) | SU | KCSLKAA called under IPC lock. |
| LKAAT1 | F | During a request for a lock, the status of an application is set to TERM APPLICATION. The task is also terminated (= continuation dump). |
| LKLC26 | FU | During locking of an entry, a situation is detected where the service is already entered in a queue chaining facility. System error or continuation dump if the application is currently being abnormally terminated (through error or KDCSHUT KILL). The case of a continuation dump may be recognized from the fact that the reason for the abort in message K060 is not LKLC26, and that a further dump has already been generated. |
| LKLC42 | AU | Bourse wait time elapsed. Action: Change KDCDEF generation, increase the RESWAIT=(...,time2) parameter in the MAX statement. This may also be caused by a hardware error that results in an operator message that needs to be answered but the answer was not sent or it was sent too late. Check the console protocol in this case. |
| LKLC51 | AU | See LKLC42 |

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| LKLC64 | AU | See LKLC42 |
| LKLCT1 | F | Another task has terminated the application abnormally (=continuation dump) |
| LKLCT2 | F | See LKLCT1 |
| LKLCT3 | F | See LKLCT1 |
| LKLCT4 | F | See LKLCT1 |
| LKMTC0 | F | Another task has abnormally terminated the application (= Continuation dump before KCSBRSE call) |
| LKMTC1 | F | Another task has abnormally terminated the application (= Continuation dump after KCSBRSE call) |
| LKMTKP | D | This diagnostic dump is generated if TESTMODE=ON provided that the PEND KP flag is not reset in the lock field when the unlock is performed. |
| LPCM01 **) | FSU | The lock mechanism is not functioning at the time when KCSPCMM is called. See LPCM02. |
| LPCM02 **) | ASU | Error when calling KCXLOCK of the ATC lock bourse. Because the locks are implemented with semaphores in openUTM for Unix, Linux and Windows systems, an error code was returned for a semaphore operation. The cause may be that the user deleted a semaphore of the application (either by means of a Unix, Linux or Windows system function or KDCREM). |
| LPCM03 **) | SU | Max. number of tasks exceeded. |
| LPCM04 **) | SU | KCSLPCM called under IPC lock. |
| LPCMT1 | F | During a request for a lock, the status of an application is set to TERM APPLICATION. The task is also terminated (= continuation dump). |
| LWRT02 | SU | Error when opening the user log file <filebase>.USLA (copy A). |
| LWRT03 | SU | Error when opening the user log file <filebase>.USLB (copy B). |
| LWRT04 | ASU | Error on SETL call for user log file <filebase>.USLA. Write manipulations may have been performed to the current file generation or the base may have been modified. Use the KDCLOG command to switch while the application is running. Action: If the next UTM application start is also aborted with LWRT04: Delete the user log file (i.e.the entire FGG) and regenerate it. |
| LWRT05 | ASU | Error on SETL call for user log file <filebase>.USLB. The reason may be as described for LWRT04. |
| LWRT06 | SU | Error on SETL call for user log file <filebase>.USLB during positioning back to beginning of file following an unsuccessfully concluded write job (e.g. due to disk storage bottleneck). |

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| LWRT07 | SU | Error on SETL call for user log file <filebase>.USLA during positioning back to beginning of file following an unsuccessfully concluded write job (e.g. due to disk storage bottleneck). |
| LWRT08 | SU | Error with PUT call for writing an LPUT record to the user log file <filebase>.USLA. |
| LWRT09 | SU | Error with PUT call for writing an LPUT record to the user log file <filebase>.USLB. |
| LWRT10 | SU | Error with CLOSE call for the user log file <filebase>.USLB. |
| LWRT11 | SU | Error with CLOSE call for the user log file <filebase>.USLA |
| LWRT17 | A | KCSLWRT requested a buffer via KCSALME for writing to the user log file, and the buffer cannot be made available. Action: Check memory requirements and operating system generation. |
| LWRT19 | SU | Faulty RELSE call for copy A of user log file. |
| LWRT20 | SU | Same as LWRT19, but for copy B. |
| MACF02 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MACF03 | M | XAP-TP component. The return code of SetTimer() was not equal to TI_OK. |
| MACF04 | M | XAP-TP component. The return code of GetLogRecord was not equal to MACF_OK. |
| ME.... | D | Diagnostic dump generated on the basis of a specific UTM message. The prefix ME is followed by the message number of the UTM message (e.g. MEK135). Activation and deactivation via the message dump function. |
| MFCR04 | M | XAP-TP component. The return code of GetLogRecord was MACF_NO_MEM. |
| MFCR07 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFCR08 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFCR09 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFCR10 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFCR11 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFCR16 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |

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| MFCR17 | M | XAP-TP component. The return code of the macro mGetBufferSpace() was not equal to LB_OK. |
| MFCR18 | M | XAP-TP component. The return code of the macro mGetBufferSpace() was not equal to LB_OK. |
| MFCR19 | M | XAP-TP component. The return code of the macro mGetBufferSpace() was not equal to LB_OK. |
| MFCR20 | M | XAP-TP component. The return code of the macro mGetBufferSpace() was not equal to LB_OK. |
| MFCR21 | M | XAP-TP component. The return code of the macro mGetBufferSpace() was not equal to LB_OK. |
| MFCR24 | M | XAP-TP component. The return code of the macro mGetBufferSpace() was not equal to LB_OK. |
| MFDM03 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFDM04 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFDM05 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFDM06 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM05 | AX | XAP-TP component. On TP_RECOVER_REQ, no free dialog table entry for a transaction branch is available. Possible cause: the number of associations in the previous application run was greater than the number of associations in the current run. |
| MFRM06 | AX | (see MFRM05) XAP-TP component. On TP_RECOVER_REQ, no free dialog table entry for a transaction branch is available. Possible cause: the number of associations in the previous application run was greater than the number of associations in the current run. |
| MFRM07 | AX | (see MFRM05) XAP-TP component. On TP_RECOVER_REQ, no free dialog table entry for a transaction branch is available. Possible cause: the number of associations in the previous application run was greater than the number of associations in the current run. |
| MFRM08 | M | XAP-TP component. The return code of the macro mGetBufferSpace() was not equal to LB_OK. |
| MFRM09 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |

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| MFRM10 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM11 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM12 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM13 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM14 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM15 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM16 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM17 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM18 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM19 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM21 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM24 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFRM25 | AX | XAP-TP component. No free table entry available for a log damage record. Action: Delete log damage records with TP_UPDATE_LOG_DAMAGE_REQ or increase the value of nMaxLogDamRec. |
| MFT102 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFT103 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT104 | M | XAP-TP component. The return code of ChangeDescriptor was not equal to DM_OK. |
| MFT105 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |

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| MFT106 | M | XAP-TP component. The return code of CopyElement was not equal to DM_OK. |
| MFT107 | M | XAP-TP component. The return code of CopyElement was not equal to DM_OK. |
| MFT108 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFT109 | M | XAP-TP component. The return code of CopyElement was not equal to DM_OK. |
| MFT110 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT111 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT113 | M | XAP-TP component. The return code of ChangeDescriptor was not equal to DM_OK. |
| MFT114 | M | XAP-TP component. The return code of CopyElement was not equal to DM_OK. |
| MFT115 | M | XAP-TP component. The return code of ChangeDescriptor was not equal to DM_OK. |
| MFT119 | M | XAP-TP component. The return code of GetLogRecord() was not equal to MACF_OK. |
| MFT120 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT121 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT122 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT123 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT124 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT126 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT127 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |

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| MFT128 | M | XAP-TP component. The return code of CopyElement was not equal to DM_OK. |
| MFT129 | M | XAP-TP component. The return code of CopyElement was not equal to DM_OK. |
| MFT130 | M | XAP-TP component The return code of PutElement was not equal to DM_OK. |
| MFT131 | M | XAP-TP component The return code of PutElement was not equal to DM_OK. |
| MFT132 | M | XAP-TP component The return code of PutElement was not equal to DM_OK. |
| MFT133 | M | XAP-TP component. The return code of CopyElement was not equal to DM_OK. |
| MFT134 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT135 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT138 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT139 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT141 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFT142 | M | XAP-TP component. The function CopyElement issued a return code other than DM_OK. |
| MFT147 | M | XAP-TP component. The function PutElement issued a return code other than DM_OK. |
| MFT151 | M | XAP-TP component. The function PutElement issued a return code other than DM_OK. |
| MFTP03 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFTP04 | M | XAP-TP component. The return code of the macro mGetBufferSpace() was not equal to LB_OK. |
| MFTP05 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |

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| MFTP06 | M | XAP-TP component. The return code of PutElement was not equal to DM_OK. |
| MFTP07 | M | XAP-TP component. The return code of SetTimer was not equal to TI_OK. |
| MFTP10 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFTP11 | M | XAP-TP component. The return code of RequestBuffer() was not equal to LB_OK. |
| MFTP12 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFTP15 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFTP16 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFTP17 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFTP18 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFTP19 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFTP20 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MFTP24 | M | XAP-TP component. The return code of the macro mGetBufferSize() was not equal to LB_OK. |
| MOVE03 | AU | Invalid overlapping of destination and source area in KCSMOVE or KCSMOVEP. |
| MSCFER *) | DSU | Diagnostic dump following an error on an MSCF call when a task signs on or signs off at MSCF. |
| MSG000 | DU | KCSCRMS was called with an invalid message ID. A diagnostic dump is written and the message "K000 MESSAGE NOT DEFINED" is output. |
| MUX001 *) | DS | Incorrect length specification in protocol header. Possible reason: partner is not a MUX partner. |
| MUX003 *) | DSU | Unexpected return code from KCSLKLC. Possibly due to protocol error in partner application. |
| MUX004 *) | DS | Incorrect operation code in protocol header. Possible reason: partner is not a MUX partner. |

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| NDRCVY | D | The dump is only generated at the end of a node recovery with test mode enabled. It is used for diagnostic purposes following possible errors after a node recovery. |
| NET001 **) | M | Error when requesting memory area for the table of the local application names in the net process. |
| NET002 **) | M | Error when requesting memory area for the connection table in the net process. |
| NET003 **) | M | Error when requesting memory area for the application table in the net process. |
| NET006 **) | ASU | In the net process, at least one Bcamappl could not attached to the transport system. |
| NET011 **) | SU | Error when registering the CMX callback routine in utmnet. |
| NET014 **) | SU | Error when calling t_conin() in the net process. |
| NET019 **) | SU | In the net process, an invalid DATAGO event received from the transport system. |
| NET020 **) | SU | Error when calling t_event() in the net process. |
| NET022 **) | SU | Error when calling t_info() in the net process. |
| NET023 **) | SU | Error when calling t_datarq() in the net process. |
| NET031 **) | SU | Error when initializing the thread attributes in the net process. |
| NET032 **) | SU | Error when setting the detach attributes for the thread in the net process. |
| NET033 **) | SU | Error when creating the threads for the shared waiting point in the net process. |
| NET034 **) | SU | Error when creating the receive socket for the shared waiting point in the net process. |
| NET035 **) | SU | Error when setting the socket attribute REUSEADDR for the receive socket in the net process. |
| NET036 **) | SU | Error on bind() call for the receive socket in the net process. |
| NET037 **) | SU | Error when detecting the listener port for the receive socket in the net process. |
| NET038 **) | SU | Error when initializing the socket environment in the net process. |
| NET039 **) | A | On the computer there is not installed the socket library version that is necessary for the net process. |
| NMTE00 | M | XAP-TP component. Module KCOCOHF, function NewMemTabEntry(). The function RequestBuffer() issued the return code LB_NOMEM. |
| NMTE02 | M | XAP-TP component. Module KCOCOHF, function NewMemTabEntry(). The macro mGetBufferSpace() issued the return code LB_NOMEM. |

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| NQATT1 *) | F | The status of the application is TERM APPLICATION. The task is thus also terminated (= continuation dump). |
| NQCAT1 *) | F | (see NQATT1) The status of the application is TERM APPLICATION. The task is thus also terminated (= continuation dump). |
| NQKAT1 *) | F | (see NQATT1) The status of the application is TERM APPLICATION. The task is thus also terminated (= continuation dump). |
| NQPCT1 *) | F | (see NQATT1) The status of the application is TERM APPLICATION. The task is thus also terminated (= continuation dump). |
| NRDBER | A | Cluster application. The node recovery needs to be terminated abnormally due to an error during database recovery. No UTM-dump is initiated. |
| ODIA00 | SX | XAP-TP component. Module KCOCOHF, function OssDiagInfo(). The OSS function o_error() returned the return code O_ERROR. |
| ODIA01 | SX | XAP-TP component. Module KCOCOHF, function OssDiagInfo(). The OSS function o_error() returned the return code O_INVEREF. |
| ODIA02 | SX | XAP-TP component. Module KCOCOHF, function OssDiagInfo(). The OSS function o_error() returned the return code O_INVEREF. |
| OREA00 | SX | XAP-TP component. The OSS function o_reason() returned the return code O_ERROR. |
| OREA01 | SX | XAP-TP component. The OSS function o_reason() returned the return code O_INVEREF. |
| OREA02 | SX | XAP-TP component. The OSS function o_reason() returned an invalid return code. |
| OSAFT2 | F | Return code APEXT_TERMAPPL from XAP-TP. |
| OSGO01 | SX | XAP-TP component. Module KCOCOHF, function OssGo(). The OSS function o_go() returned the return code O_INVCREF. |
| OSGO02 | SX | XAP-TP component. Module KCOCOHF, function OssGo(). The OSS function o_go() returned the return code O_ERROR. |

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| OSGO03 | SX | XAP-TP component. Module KCOCOHF, function OssGo(). The OSS function o_go() returned an unexpected return code. |
| OSS002 **) | ASU | Error number nnn when calling shmget() in s_rqshm(). Error nnn: See message K078. Note: See ALGxxx. |
| OSS003 **) | ASU | Error number nnn when calling shmat() in s_rqshm(). Error nnn: See message K078. |
| OSTM01 | AS | Serious error during interaction with database system. |
| OSTM05 | AU | Task-specific buffer for restart information is too small. Action: Increase the size of MAX RECBUF=(...,length) in the KDCDEF generation. |
| OSTM06 | AS | Serious error during interaction with database system. |
| OSTM07 | A | A log record cannot be backed up, since the page pool is full. Action: Increase the size of the page pool. Do this by increasing MAX PGPOOL=(number,...) in the KDCDEF generation. |
| OSTP01 | SX | XAP-TP component. Module KCOCOHF, function OssStop(). The OSS function o_stop() returned the return code O_INVCREF. |
| OSTP02 | SX | XAP-TP component. Module KCOCOHF, function OssStop(). The OSS function o_stop() returned the return code O_ERROR. |
| OSTP03 | SX | XAP-TP component. Module KCOCOHF, function OssStop(). The OSS function o_stop() returned an unexpected return code. |
| PCMM05 | AU | For KCSPCMM with the opcode Get Pagechain, the NR_PAGES parameter is invalid or larger than the number of all page pool pages. Action: Increase MAX PGPOOL=number in KDCDEF generation. |
| PCTR00 | M | XAP-TP component. Module KCOCOHF, function PrepareCtrlReq(). The macro mGetBufferSpace() issued the return code LB_NOMEM. |
| PEND02 | A | No further TACB can be written for "System PEND ER" because the page pool on KDCFILE is full. Action: Increase page pool by increasing MAX PGPOOL=(number,...) in KDCDEF generation. |
| PEND03 | AS | The DB system has reported a serious error, see DB-DIAGAREA in UTM dump. |
| PEND04 | S | The DB system supplied an impermissible return code, see DB-DIAGAREA in UTM dump. |

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| PEND05 | AS | (see PEND03) The DB system has reported a serious error, see DB-DIAGAREA in UTM dump. |
| PEND07 | ASU | STXIT between writing of a confirmatory record and the (temporary) end of the UTM transaction (KCSEXPI call END_TA). Possible cause: error in the DB connection module. A timer STXIT during this period is ignored. |
| PEND11 | S | Inconsistent XID |
| PEND26 | A | in case of "System PEND ER" for a socket application, it is not possible to write a K017 message for a KDCDISP that may be required later, since the page pool on KDCFILE is full. Action: Increase page pool by increasing MAX PGPOOL=(number,...) in KDCDEF generation. |
| PEND97 | A | (see PEND26) in case of "System PEND ER" for a socket application, it is not possible to write a K017 message for a KDCDISP that may be required later, since the page pool on KDCFILE is full. Action: Increase page pool by increasing MAX PGPOOL=(number,...) in KDCDEF generation. |
| PEND98 | A | (see PEND02) No further TACB can be written for "System PEND ER" because the page pool on KDCFILE is full. Action: Increase page pool by increasing MAX PGPOOL=(number,...) in KDCDEF generation. |
| PENDER | ADU | Dump is not caused by the application being aborted, but by a user-specified PEND ER, or a UTM-internal PEND ER following KCRCCC >= 70Z or STXIT |
| PENDT1 | F | Another task has terminated the application abnormally (= follow-up dump before KCSBRSE call). |
| PENDT2 | F | (see PENDT1) Another task has terminated the application abnormally (= follow-up dump before KCSBRSE call). |
| PENDT3 | F | Another task has terminated the application abnormally (= follow-up dump after call by KDCROOT with PEND ER). |
| PIPE39 **) | AU | Error setting up an instance of a named pipe to the Windows system. Possible cause: There are two UTM applications of the same name on the system..(on Windows systems only) |

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| PLCA00 | SX | XAP-TP component. Module KCOXFPL, function ActivateCmxCallback(). The CMX function t_callback() returned the return code T_ERROR. |
| PLCC00 | SX | XAP-TP component. Module KCOXFPL, function CmxCallback(). The system function select() returned an unexpected return code. |
| PLCC01 | S | XAP-TP component. Module KCOXFPL, function CmxCallback(). The system function select() returned an unknown return code. |
| PLCD00 | SX | XAP-TP component. Module KCOXFPL, function DeactivateCmxCallback(). The CMX function t_callback() returned the return code T_ERROR. |
| PMIO20 | ASU | Integrity IDs of page inconsistent both in original and also in duplicate file. Possible cause: KDCFILE files were overwritten during live operation by copying in the start procedure. Action in this event: Correct start procedure. If this is not the cause, write PR. The following documentation is required for diagnosis: UTM dump, KDCFILE files, start procedure and task/process log. In the case of cluster applications, the cluster page pool files are also required. |
| PMIO22 | ASU | The page type specified in the cache control table and the page type in the header of the scanned page do not match. Possible cause: see PMIO20 Action in this case: As for PMIO20 |
| PMIO23 | ASU | The page pool page to be read or written is not allocated. Cause and action: As for PMIO20 |
| POLL03 | MX | XAP-TP component. Module KCOXFPL, function ap_poll(). The return code of the macro mGetBufferSpace() was not equal to LB_OK. |
| POLL05 | SX | XAP-TP component. Module KCOXFPL, function ap_poll(). The OSS function o_event() reports an ACSE event and the user data were not yet received completely on the o_event() call. |
| POLL07 | SX | XAP-TP component. Module KCOXFPL, function ap_poll(). The OSS function o_event() returned the return code O_ERROR. |
| POLL08 | SX | XAP-TP component. Module KCOXFPL, function ap_poll(). The OSS function o_event() returned the return code O_INVEREF. |

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| POLL09 | SX | XAP-TP component. Module KCOXFPL, function ap_poll(). The OSS function o_event() returned the return code O_TIMEINT. |
| POLL10 | SX | XAP-TP component. Module KCOXFPL, function ap_poll(). The OSS function o_event() returned the return code O_WAKEINT. |
| POLL11 | SX | XAP-TP component. Module KCOXFPL, function ap_poll(). The OSS function o_event() returned the return code O_SYSTEM. |
| POLL12 | SX | XAP-TP component. Module KCOXFPL, function ap_poll(). The OSS function ap_poll() returned the return code O_LOOK. |
| POLL13 | SX | XAP-TP component. Module KCOXFPL, function ap_poll(). The OSS function o_event() returned the return code O_TRANSPORT. |
| POLL14 | SX | XAP-TP component. Module KCOXFPL, function ap_poll(). The OSS function o_event() returned the return code O_SESSION. |
| POLL15 | SX | XAP-TP component. Module KCOXFPL, function ap_poll(). The OSS function o_event() returned the return code O_SHUTDOWN. |
| POLL16 | SX | XAP-TP component. Module KCOXFPL, function ap_poll(). The OSS function o_event() returned an unexpected return code. |
| PPMM10 | ASU | UTM cluster application Timeout in the lockFile routine during attempt to lock a cluster page pool file. Action: See CCFG19. |
| PPMM12 | SU | UTM cluster application Timeout in the unlockFile routine during attempt to unlock a cluster page pool file. Action: See CCFG19. |
| PPMM14 | SU | UTM cluster application Bad return code from KCSBFMM in routine readControlPage. |
| PPMM15 | ASU | UTM cluster application Control page of the cluster page pool has an invalid page header in the readControlPage routine. |
| PPMM41 | SU | UTM cluster application Error when reading or writing the first CONS page of a cluster page pool file. |

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| PPMM42 | SU | UTM cluster application Bad return code from KCSBFMM when requesting a buffer. |
| PRIV02 *) | SU | The attempt to set a system privilege failed. |
| PRIV03 *) | SU | The attempt to reset a system privilege failed. |
| PUTR01 **) | AU | Not enough bytes could be written in KCSPUTR. Possible cause: disk storage bottleneck. |
| PWRT03 | AMU | KCSPWRT has requested memory (via KCSALME), but did not get it. Action: Check memory requirements operating system generation. |
| PWRT06 | F | With KCSPWRT, term application was called during the Periodic Write by another UTM task of the application (= continuation dump). |
| RALC01 | AU | Index is outside the permitted range when KCSRALC is called |
| RCV009 | MX | XAP-TP component. Module KCOXFRV, function ap_rcv(). The return code of the function CopyElement() was not equal to DM_OK. |
| RCV012 | MX | XAP-TP component. Module KCOXFRV, function ap_rcv(). Inconsistency in the Boolean variables <bSwitchToNextTtnid> and <bClearTtnid>. |
| REME01 **) | SU | Illegal system return code on KCSREME call. |
| RESTRT | D | The dump is only created during a warm start and in the debugging mode. It is used to diagnose any eventual errors in the warm start. |
| RQOB00 | M | XAP-TP component. Module KCOCOHF, function ReqOssInBuff(). The function RequestBuffer() issued the return code LB_NOMEM. |
| RTXA01 **) | A | Error using dynamic XA registration in function ax_reg(). The Version of libwork does not match to rootdata version of the utmwork process. Check registry key "HKEY_LOCAL_MACHINE\SOFTWARE\ORACLE\OraClientnnHome1" |
| RVCS03 | M | XAP-TP component. Module KCOXFRV, function CheckSaRetc(). The return code issued by the function SetAttribute() was SA_NOMEM. |
| SACT14 | MX | XAP-TP component. Invalid return code after calling PutElement() to request a dynamic memory area for the SACF action COPY. |
| SACT27 | M | XAP-TP component. Invalid return code after calling PutElement() to perform save in SACF action FLUSHALL or FLUSHPAR. |

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| SACT28 | M | XAP-TP component. Invalid return code after call of ReAllocElement() or PutElement() in SACF action QUEUE. Action: Increase the value of the KDCDEF parameter MAX OSI-SCRATCHAREA. |
| SAT002 *) | S | Internal SAT error. |
| SAT003 *) | A | Subsystem SATCP not available. Please inform the BS2000 security officer. |
| SAT004 *) | A | SAT function not currently executable. Please inform the BS2000 security officer. |
| SAT005 *) | A | SAT record not written. Please inform the BS2000 security officer. |
| SC0005 | SU | The half session is generated as PLU. An RU request arrived but the request code is not SDT, STSN or CLEAR. |
| SC0006 | SU | The half session is generated as PLU. An RU response arrived but the request code is not RQR. |
| SC0007 | SU | #FSM.SESSION is not in "ACTIVE" status. |
| SC0008 | SU | The half session is generated as SLU. An RU request arrived but the request code is not RQR. |
| SC0009 | SU | The half session is generated as SLU. An RU response but the request code is not SDT, STSN or CLEAR. |
| SC0010 | SU | Protocol error for at least one of the FSMs #FSM_DT, #FSM_STSN or #FSM_RQR. |
| SC0011 | SU | Sense code is set by at least one of the FSMs #FSM_DT or #FSM_CNTL_IMMEDIATE. |
| SC0014 | SU | FSM_SESSION_LU_LU returned an invalid return code. |
| SC0019 | ADU | Protocol error reported by FSM. Action: Check whether both partners are generated as DTP partners in the KDCDEF generation. |
| SC0020 | ADU | The status of the PLU-FSM is not permitted. Action: Check whether both partners are generated as DTP partners in the KDCDEF generation. |
| SC0021 | ADU | The status of the SLU-FSM is not permitted. Action: Check whether both partners are generated as DTP partners in the KDCDEF generation. |
| SC0023 | DSU | When checking UNBIND-RSP for FSM_SESSION_LU_LU an error has been found |
| SC0024 | DSU | When switching UNBIND-RSP for FSM_SESSION_LU_LU an error has occurred |
| SC0025 | DSU | When checking UNBIND Request for FSM_SESSION_LU_LU an error has been found |

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| SC0026 | DSU | When switching UNBIND Request for FSM_SESS_LU_LU an error has occurred (diagnostic dump) |
| SC0027 | DSU | FSM_STSN_SEND returns S,RQ,STSN |
| SC0028 | DSU | Unauthorized STSN-REQ for PLU_TO_SLU |
| SC0029 | DSU | Unauthorized STSN-REQ for SLU_TO_PLU |
| SC0030 | DSU | ACT_SC_RECEIVE could not set any return code |
| SC0032 | A | The session cannot be activated since there are no connections available. Action: Change KDCDEF generation, include more CON statements. |
| SC0034 | DSU | The partner has made a protocol error on setting STSN response |
| SDCS02 | M | XAP-TP component. Module KCOXFSD, function CheckSaRetc(). The SetAttribute() return code was SA_NOMEM. |
| SDUI01 | M | XAP-TP component. Module KCOXFSD, function UserDataIn(). The macro mGetBufferSpace() issued the return code LB_NOMEM. |
| SEND05 | SU | Severe BCAM error when processing a BCAM SENDLET calls. Error when cancelling a timer for output terminals. |
| SENDT1 | F | Another task has terminated the application abnormally (= follow-up dump). |
| SG-nnn | D | Diagnostic dump generated on the basis of a KCRSIGN1/2 return code after a SIGN ON call. The prefix SG- is followed by the return code (e.g. SG-U17). Activation and deactivation via the message dump function. |
| SHCxxx **) | SU | Error number xxx when calling shmctl() in KCSSHMF. |
| SHM002 **) | A | An attempt was made to generate a shared memory area that already exists. Action: Check UTM generation. |
| SIGxxx **) | AU | Signal with signal number xxx has occurred. Note: If the application terminates with SIG010/SIG011 (SIGBUS/SIGSEGV), the reason may be incorrect or missing parameters with KDCS call. Whether this is case can be ascertained by way of the Stack Traces in the gcore dump or Automatic Storages in the UTM dump. In this situation the function KCSAVAL may be found on the stack. |
| SIGND1 *) | DU | The call of the Kerberos interface returned an unexpected return code. Only if test mode is active. |
| SIGND2 *) | DU | (see SIGND1) The call of the Kerberos interface returned an unexpected return code. Only if test mode is active. |

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| SIGND3 *) | DU | (see SIGND1) The call of the Kerberos interface returned an unexpected return code. Only if test mode is active. |
| SIGND4 *) | DU | (see SIGND1) The call of the Kerberos interface returned an unexpected return code. Only if test mode is active. |
| SLOG05 | SU | KCSLKLC returned a bad return code when attempting to lock the message buffers (possibly TIMEOUT). |
| SLOG06 | SU | KCSLKLC returned a bad return code when attempting to unlock the message buffers. |
| SLOG07 | SU | KCSLKLC returned a bad return code when attempting to lock the SYSLOG file (possibly TIMEOUT). |
| SLOG08 | SU | KCSLKLC returned a bad return code when attempting to unlock the SYSLOG file. |
| SLOG09 | SU | Attempt to write message buffer to current SYSLOG file failed (the DMS error code in the preceding K043 message may provide information about the cause of the error). |
| SLOG10 | SU | The attempt by a follow-up task to switch to the current SYSLOG file generation failed (please refer to any preceding K043 message). |
| SLOG21 | ASU | In the administration call KDCSLOG INFO or in the call to the program interface for administration with the opcode KC_SYSLOG and the subopcode1 KC_INFO, KCSSLOG called the component KCSFST in order to determine the attributes of the file generation group of the SYSLOG (only when the SYSLOG is created as a FGG).KCSFST gave a DMS error (also take note of preceding K043 message). |
| SLOT07 | AM | The address of a slot must be calculated in KCSSLOT. The task does not yet know the shared memory that contains the slot. The attempt to link up with Memory Pool failed due to insufficient address space. Action: Check memory requirements and ADDRESS-SPACE-LIMIT of the BS2000 userid. |
| SM2001 *) | SU | Call of KCSSM2 with incorrect opcode. |
| SM2002 *) | SU | Call of KCSSM2 with opcode SM2_CONNECT when KAA.STATE.SM2 = SM2_OFF |
| SM2003 *) | SU | Call of KCSSM with write data opcode, but KAA.SM2.RECORD_ADDR = NULL. |
| SM2004 *) | SU | Incorrect parameters with DSSM call CONNECT_SS. |
| SM2005 *) | SU | Incorrect parameters with DSSM call DISCONNECT_SS |
| SM2006 *) | SU | DSSM call CONNECT_SS, but task is already connected. |
| SM2007 *) | SU | Call of KCSSM2 when KAA.STATE.SM2 = SM2_N |

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| SMSG00 | AUD | SMSG00 is a diagnostic dump and does not lead to the end of the application run; a SMSG00 dump is only taken when test mode is activated. An SMSG dump is created if KCSSMSG wants to send a message to a message destination of the type MSG-DEST and receives a bad return code from KCSFPUT. The return code can be taken from the NKB table of the UTM dump; the CC and DC codes of the DPUT call are at distance X'5C' in this table. One possible reason is that the queue/TAC is locked. |
| SMSG03 | ASU | The component KCSSLOG supplied a bad return code on writing a message to the SYSLOG. Cause: See DMS return code in K043 message |
| SMSG09 | D | SMSG09 is a diagnostic dump and does not cause the application run to terminate; an SMSG09 dump is only created if test mode is enabled. |
| SND005 | M | XAP-TP component. Module KCOXFSD, function ap_snd(). The UserDataIn() function returned the UDIN_NOMEM return code. |
| SND007 | MX | XAP-TP component. Module KCOXFSD, function ap_snd(). The return code of the function GetVarLthAttr() was not equal to GA_OK. |
| SSO002 *) | DSU | Diagnostic dump; created after a serious error when the SRPMSSO subsystem is called. |
| STnnnn | ADSU | Error when processing the start of a UTM task, where nnnn is the number indicating the error cause in the UTM message "K049 Error <nnnn> during application startup". |
| STPF10 | SX | XAP-TP component. Invalid indicator for HeurRep parameter in TP-HEUR-REP-RI. |
| STPF11 | SX | XAP-TP component. Invalid indicator for FuUnits parameter in TP-BEG-DIAL(dialogue)-RC. |
| STPF12 | SX | XAP-TP component. Invalid indicator for Result parameter in TP-BEG-DIAL(dialogue)-RC. |
| STPF13 | SX | XAP-TP component. Invalid indicator for Diagnostic parameter in TP-BEG-DIAL(dialogue)-RC. |
| STPF14 | SX | XAP-TP component. Invalid indicator for user data parameter in TP-BEG-DIAL(dialogue)-RC. |
| STPF15 | SX | XAP-TP component. Invalid indicator for Result parameter in TP-BEG-DIAL(channel)-RC. |
| STPF16 | SX | XAP-TP component. Invalid indicator for Diagnostic parameter in TP-BEG-DIAL(channel)-RC. |
| STPF17 | SX | XAP-TP component. Invalid indicator for HeurRep parameter in TP-(ABORT-AND-)HEUR-REP-RI. |

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| STPT02 | SX | XAP-TP component. Invalid value for p_udt.p_udtnxt. |
| STPT10 | SX | XAP-TP component. Invalid indicator for InitTPSUT parameter in TP-BEG-DIAL(dialogue)-RI. |
| STPT11 | SX | XAP-TP component. Invalid indicator for RecTPSUT parameter in TP-BEG-DIAL(dialogue)-RI. |
| STPT12 | SX | XAP-TP component. Invalid indicator for FuUnits parameter in TP-BEG-DIAL(dialogue)-RI. |
| STPT13 | SX | XAP-TP component. Invalid indicator for BegTrans parameter in TP-BEG-DIAL(dialogue)-RI. |
| STPT14 | SX | XAP-TP component. Invalid indicator for Conf parameter in TP-BEG-DIAL(dialogue)-RI. |
| STPT15 | SX | XAP-TP component. Invalid indicator for LastPartId parameter in TP-BEG-DIAL(dialogue)-RI. |
| STPT16 | SX | XAP-TP component. Invalid indicator for user data parameter in TP-BEG-DIAL(dialogue)-RI. |
| STPT17 | SX | XAP-TP component. Invalid indicator for FuUnits parameter in TP-BEG-DIAL(channel)-RI. |
| STPT18 | SX | XAP-TP component. Invalid ChanUtil parameter in TP-BEG-DIAL(channel)-RI. |
| STPT19 | SX | XAP-TP component. Invalid indicator for LastPartId parameter in TP-BEG-DIAL(channel)-RI. |
| STPT20 | SX | XAP-TP component. Invalid indicator for CcrTokReq parameter in TP-BID-RI. |
| STPT21 | SX | XAP-TP component. Invalid indicator for LastPartId parameter in TP-BID-RI. |
| STPT22 | SX | XAP-TP component. Invalid indicator for Result parameter in TP-BID-RC. |
| STPT23 | SX | XAP-TP component. Invalid indicator for Conf parameter in TP-END-DIAL-RI. |
| STPT24 | SX | XAP-TP component. Invalid indicator for ConfUrg parameter in TP-HSK-RI. |
| STPT25 | SX | XAP-TP component. Invalid indicator for ConfUrg parameter in TP-HSK-AND-GRT-CTRL-RI. |

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| STPT26 | SX | XAP-TP component. Invalid indicator for Type parameter in TP-DEFER-RI. |
| STPT27 | SX | XAP-TP component. Invalid indicator for Reason parameter in TP-TOKEN-GIVE-RI. |
| STPT28 | SX | XAP-TP component. Invalid indicator for Correlator parameter in TP-TOKEN-GIVE-RI. |
| STRT01 | DU | When changing the application program the number of processes which still are to be changed is less than zero, i.e. the counter is inconsistent. The application is terminated abnormally if debug mode is activated, otherwise a diagnostic dump is written. |
| SYPM01 | AU | Task-specific buffer for restart information is too small. Action: Enlarge MAX RECBUF=(...,length) in KDCDEF generation. |
| SYPM03 | AS | Serious error in communication with DB system (FITA). |
| SYPM11 | AU | Task-specific buffer for restart information is too small. Action: Enlarge MAX RECBUF=(...,length) in KDCDEF generation. |
| TADR03 | SU | The so-called Application Reference in the announcement is invalid. |
| TC0040 | DSU | The input message length supplied by the transport system does not match the length contained in the message. |
| TC0041 | DSU | The input message length supplied by the transport system is shorter than the value in the Data Count Field (DCF) in the Transmission Header (TH). |
| TCPI13 *) | SU | Invalid length of the IP address (TCP_GET_HOST_BY_ADDR). |
| TCPI14 *) | SU | Invalid length of the IP address (TCP_CONNECTION_REQUEST). |
| TIEV19 | DS | Inconsistence between the announced length and the actual length of data. |
| TIMR02 | SU | Error on \$NCANTI. |
| TIMR03 | SU | Error on \$NCHNGTI. |
| TIMR05 **) | AU | utmtimer process not present when sending to IUTMIPC in KCSTIMR |
| TINF01 *) | SU | Error when reading the task priority |
| TINF02 *) | SU | Error when setting the task priority |
| UATC02 **) | SU | (see UKAA02) Unlock failed. |
| UATC03 **) | SU | (see UKAA03) Maximum number of locks per task exceeded. |
| UCAC02 **) | SU | (see UKAA02) Unlock failed. |

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| UCAC03 **) | SU | (see UKAA03) Maximum number of locks per task exceeded. |
| UKAA02 **) | SU | Unlock failed. |
| UKAA03 **) | SU | Maximum number of locks per task exceeded. |
| UMDT12 | SU | KCCUMDT opcode UMDT_LOCK_ULS Bad return code from KCSBFMM when reading a ULS administration file. |
| UMDT13 | SU | KCCUMDT opcode UMDT_LOCK_ULS Bad return code from KCCLKMT. |
| UMDT15 | ASU | UTM cluster application KCCUMDT opcode UMDT_UNLOCK_ULS: Error on locking the ULS file. Action: See section "Actions when locking UTM cluster files" . |
| UMDT32 | SU | UTM cluster application KCCUMDT function readHdrPage Bad return code from KCSBFMM when requesting a buffer. |
| UMDT33 | ASU | UTM cluster application KCCUMDT releaseFileLock function: Timeout while unlocking the cluster ULS file. Action: See UMDT15. |
| UMDT34 | SU | UTM cluster application KCCUMDT releaseFileLock function: Incorrect return code from KCCGFLK when unlocking the cluster ULS file. Action: See UMDT15. |
| UMDT42 | SU | UTM cluster application KCCUMDT function addrUlsEntry Bad return code from KCSBFMM when requesting a buffer. |
| UMDT44 | SU | UTM cluster application KCCUMDT setFileLock function: Incorrect return code from KCCGFLK when locking the cluster ULS file. Action: See UMDT15. |
| UMDT52 | ASU | UTM cluster application KCCUMDT allocateUlsEntry function: Incorrect return code from KCCUSF when locking the cluster user file. Action: See UMDT15. |
| UMDT63 | ASU | UTM cluster application CUMDT entry KCCUGLI: The cluster ULS file cannot be locked. Action: See UMDT15. |

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| UMDT73 | SU | UTM cluster application KCCUMDT function checkFile Bad return code from KCSBFMM when requesting a buffer. |
| UMDT74 | SU | UTM cluster application KCCUMDT function checkFile Bad return code from KCSBFMM when requesting a buffer. |
| UMDT77 | SU | UTM cluster application KCCUMDT function checkFile Bad return code from KCSBFMM when requesting a buffer. |
| UMES02 *) | DSU | System error. For meaning see message K146. |
| UPCM02 **) | SU | (see UKAA02) Unlock failed. |
| UPCM03 **) | SU | (see UKAA03) Maximum number of locks per task exceeded. |
| USF002 | ASU | UTM cluster application. Module KCCUSF, opcode OPEN_FILE. Timeout when initializing global file lock. Action: Increase the value of the FILE-LOCK-TIMER-SEC or FILE-LOCKRETRY parameter in the CLUSTER statement of the KDCDEF generation. |
| USF003 | SU | UTM cluster application Module KCCUSF, opcode OPEN_FILE. Invalid return code when initializing the global file lock. |
| USF009 | ASU | UTM cluster application. Module KCCUSF, opcode CUSF_RESET_PTC_FLAG. Five timeouts on locking the cluster user file. Action: See USF002. |
| USF013 | ASU | UTM cluster application. Module KCCUSF, opcode CUSF_SIGNOFF_USER_WITH_CONTEXT. Five timeouts on locking the cluster user file. Action: See USF002. |
| USF018 | ASU | UTM cluster application. Module KCCUSF, opcode CLOSE_FILE. Timeout when destroying file lock. Action: See USF002. |
| USF019 | SU | UTM cluster application Module KCCUSF, opcode CLOSE_FILE. Invalid return code from KCCGFLK when destroying the file lock. |

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| USF021 | SU | UTM cluster application Module KCCUSF, function setFileLock Invalid return code from KCCGFLK when requesting the exclusive lock. |
| USF023 | ASU | UTM cluster application. Module KCCUSF, function releaseFileLock. Timeout when releasing file lock. Action: See USF002. |
| USF024 | SU | UTM cluster application Module KCCUSF, function releaseFileLock Invalid return code from KCCGFLK when releasing the file lock. |
| USF025 | ASU | UTM cluster application. Module KCCUSF, function readPage. Timeout when requesting shareable file lock. Action: See USF002. |
| USF026 | SU | UTM cluster application Module KCCUSF, function readPage Invalid return code from KCCGFLK when requesting the shareable file lock. |
| USF027 | ASU | UTM cluster application. Module KCCUSF, function readPage. Timeout when releasing file lock. Action: See USF002. |
| USF028 | SU | UTM cluster application Module KCCUSF, function readPage. Invalid return code from KCCGFLK when releasing the file lock. |
| USF051 | SU | UTM cluster application Module KCCUSF, function writePage Error when writing the cluster user file. |
| USF052 | SU | UTM cluster application Module KCCUSF, function readPage. Error when reading the cluster user file. |
| VTSUER *) | ADS | VTSU-B reports an error connected with the applied character set or the encryption. The application is not aborted. The Dump serves the diagnosis of the error reported by VTSU-B. The Dump contains only KDCROOT and KTA data. |
| WAI102 | DU | Diagnostic Dump |
| WAI112 *) | DU | When switching the system protocol file the number of processes which still are to be switched is less than zero, i.e. the counter is inconsistent. The application is terminated abnormally if test mode is activated, otherwise a diagnostic dump is written. |

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| WAI113 | DU | When changing the application program the number of processes which still are to be changed is less than zero, i.e. the counter is inconsistent. The application is terminated abnormally if test mode is activated, otherwise a diagnostic dump is written. |
| WAI114 | DU | see WAI113 |
| WAI120 | DU | When administering the diagnostic trace settings the number of processes which still have to update the settings is less than zero, i.e. the counter is inconsistent. The application is terminated abnormally if debug mode is activated, otherwise a diagnostic dump is written. |
| WAIT01 | SU | Bad return code when calling KCSBRSE for the work bourse in action block ENQUEUE_WORKBOURSE of KCSWAIT. |
| WAIT02 | DS | Invalid timer announcement type (action block ENQUEUE_WORKBOURSE). |
| WAIT03 | DS | Invalid type in announcement and no timer announcement (action block ENQUEUE_WORKBOURSE). |
| WAIT55 | SU | Invalid code for an internal timer announcement (action block ANALYSE_INTERNAL_TIMER). |
| WAIT78 | ASU | Severe error when calling the BCAM socket functionality. |
| WAITT1 | F | Another task has terminated the application abnormally (= follow-up dump before calling KCSBRSE). |
| WAITT2 | F | Another task has terminated the application abnormally (= follow-up dump after calling KCSBRSE). |
| XATT02 | F | XAP-TP component. Module KCOXFEX, function apext_att(). The function bCheckAndSetState() issued a bad return code and the application status was WAITING_DUMP_APPL. A different task had already caused the application to abort. |
| XATT04 | MX | XAP-TP component. Module KCOXFEX, function apext_att(). The return code of the function EstablishBuffer() was not equal to LB_OK. |
| XATT12 | MX | XAP-TP component. Module KCOXFEX, function apext_att(). The return code of the function EstablishBuffer() was not equal to LB_OK. |
| XATT13 | MX | XAP-TP component. Module KCOXFEX, function apext_att(). The return code of the function RequestBuffer() was not equal to LB_OK. |

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| XFGA07 | SUX | XAP-TP component. Module KCOXFHF, function GetAttribute(). The function AllocUserMem() returned an unexpected return code when reading the attribute AP_DTNID in the single task mode. |
| XFGA11 | M | XAP-TP component. Module KCOXFHF, function GetAttribute(). The macro mGetBufferSpace() issued the return code LB_NOMEM. |
| XFGE01 | F | XAP-TP component. Module KCOXFHF, function bCheckAndGetCallEnv(). The function bCheckAndSetState() issued a bad return code and the application status was WAITING_DUMP_APPL. A different task had already caused the application to abort. |
| XFSA07 | MX | XAP-TP component. Module KCOXFHF, function SetAttribute(). The function PutElement() issued a return code other than DM_OK when setting the AP_DTNID attribute. |
| XFTM01 | SX | XAP-TP component. Module KCOXFHF, function TraceMgmt(). The OSS function o_tron() returned the return code O_ERROR. |
| XFTM02 | SX | XAP-TP component. Module KCOXFHF, function TraceMgmt(). The OSS function o_tron() returned the return code O_INVEREF. |
| XFTM03 | SX | XAP-TP component. Module KCOXFHF, function TraceMgmt(). The OSS function o_tron() returned an unknown return code. |
| XFTM04 | SX | XAP-TP component. Module KCOXFHF, function TraceMgmt(). The OSS function o_troff() returned the return code O_ERROR. |
| XFTM05 | SX | XAP-TP component. Module KCOXFHF, function TraceMgmt(). The OSS function o_troff() returned an unknown return code. |

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| XINI06 | ASX | <p>XAP-TP component. Module KCOXFEX, function apex_init(). The OSS function o_create() returned the return code O_ERROR. Possible causes:</p> <ul style="list-style-type: none"> • If the in insert XPFUNC has the value o_create() and the insert XPRET the value -1 in the corresponding UTM message P001, then the error may be that the OSS subsystem has not been started. • A further OSI TP application was started in the dialog in the same task. However, OSS is still reserving resources of a previously terminated application and this is the reason for termination. Occurs in particular if the application has previously been started in two tasks in the dialog and then terminated again. Remedy: The resources are freed after a LOGOFF BUT. |
| XINI07 | SX | <p>XAP-TP component. Module KCOXFEX, function apex_init(). The OSS function o_create() returned an unknown return code.</p> |

*) the values appear only on BS2000 systems.

***) the values appear only on Unix, Linux and Windows systems.

Actions when locking UTM cluster files

The following workaround is recommended for all errors that occur when requesting or releasing locks for UTM cluster files.

- > In the CLUSTER statement of the KDCDEF generation, increase the value of the FILE-LOCK-TIMER-SEC parameter or FILE-LOCK-RETRY parameter.

7 Glossary

A term in *italic* font means that it is explained somewhere else in the glossary.

abnormal termination of a UTM application

Termination of a *UTM application*, where the *KDCFILE* is not updated. Abnormal termination is caused by a serious error, such as a crashed computer or an error in the system software. If you then restart the application, openUTM carries out a *warm start*.

abstract syntax (OSI)

Abstract syntax is defined as the set of formally described data types which can be exchanged between applications via *OSI TP*. Abstract syntax is independent of the hardware and programming language used.

acceptor (CPI-C)

The communication partners in a *conversation* are referred to as the *initiator* and the acceptor. The acceptor accepts the conversation initiated by the initiator with *Accept_Conversation*.

access list

An access list defines the authorization for access to a particular *service*, *TAC queue* or *USER queue*. An access list is defined as a *key set* and contains one or more *key codes*, each of which represent a role in the application. Users or LTERMs or (OSI) LPAPs can only access the service or *TAC queue* or *USER queue* when the corresponding roles have been assigned to them (i.e. when their *key set* and the access list contain at least one common *key code*).

access point (OSI)

See *service access point*.

ACID properties

Acronym for the fundamental properties of *transactions*: atomicity, consistency, isolation and durability.

administration

Administration and control of a *UTM application* by an *administrator* or an *administration program*.

administration command

Commands used by the *administrator* of a *UTM application* to carry out administration functions for this application. The administration commands are implemented in the form of *transaction codes*.

administration journal

See *cluster administration journal*.

administration program

Program unit containing calls to the *program interface for administration*. This can be either the standard administration program *KDCADM* that is supplied with openUTM or a program written by the user.

administrator

User who possesses administration authorization.

AES

AES (Advanced Encryption Standard) is the current symmetric encryption standard defined by the National Institute of Standards and Technology (NIST) and based on the Rijndael algorithm developed at the University of Leuven (Belgium). If the AES method is used, the UPIC client generates an AES key for each session.

Apache Axis

Apache Axis (Apache eXtensible Interaction System) is a SOAP engine for the design of Web services and client applications. There are implementations in C++ and Java.

Apache Tomcat

Apache Tomcat provides an environment for the execution of Java code on Web servers. It was developed as part of the Apache Software Foundation's Jakarta project. It consists of a servlet container written in Java which can use the JSP Jasper compiler to convert JavaServer pages into servlets and run them. It also provides a fully featured HTTP server.

application cold start

See *cold start*.

application context (OSI)

The application context is the set of rules designed to govern communication between two applications. This includes, for instance, abstract syntaxes and any assigned transfer syntaxes.

application entity (OSI)

An application entity (AE) represents all the aspects of a real application which are relevant to communications. An application entity is identified by a globally unique name ("globally" is used here in its literal sense, i.e. worldwide), the *application entity title* (AET). Every application entity represents precisely one *application process*. One application process can encompass several application entities.

application entity qualifier (OSI)

Component of the *application entity title*. The application entity qualifier identifies a *service access point* within an application. The structure of an application entity qualifier can vary. openUTM supports the type "number".

application entity title (OSI)

An application entity title is a globally unique name for an *application entity* ("globally" is used here in its literal sense, i.e. worldwide). It is made up of the *application process title* of the relevant *application process* and the *application entity qualifier*.

application information

This is the entire set of data used by the *UTM application*. The information comprises memory areas and messages of the UTM application including the data currently shown on the screen. If operation of the UTM application is coordinated with a database system, the data stored in the database also forms part of the application information.

application process (OSI)

The application process represents an application in the *OSI reference model*. It is uniquely identified globally by the *application process title*.

application process title (OSI)

According to the OSI standard, the application process title (APT) is used for the unique identification of applications on a global (i.e. worldwide) basis. The structure of an application process title can vary. openUTM supports the type *Object Identifier*.

application program

An application program is the core component of a *UTM application*. It comprises the main routine *KDCROOT* and any *program units* and processes all jobs sent to a *UTM application*.

application restart

see *warm start*

application service element (OSI)

An application service element (ASE) represents a functional group of the application layer (layer 7) of the *OSI reference model*.

application warm start

see *warm start*.

association (OSI)

An association is a communication relationship between two application entities. The term "association" corresponds to the term *session* in *LU6.1*.

asynchronous conversation

CPI-C conversation where only the *initiator* is permitted to send. An asynchronous transaction code for the *acceptor* must have been generated in the *UTM application*.

asynchronous job

Job carried out by the job submitter at a later time. openUTM includes *message queuing* functions for processing asynchronous jobs (see *UTM-controlled queue* and *service-controlled queue*). An asynchronous job is described by the *asynchronous message*, the recipient and, where applicable, the required execution time. If the recipient is a terminal, a printer or a transport system application, the asynchronous job is a *queued output job*. If the recipient is an *asynchronous service* of the same application or a remote application, the job is a *background job*. Asynchronous jobs can be *time-driven jobs* or can be integrated in a *job complex*.

asynchronous message

Asynchronous messages are messages directed to a *message queue*. They are stored temporarily by the local *UTM application* and then further processed regardless of the job submitter. Distinctions are drawn between the following types of asynchronous messages, depending on the recipient:

- In the case of asynchronous messages to a *UTM-controlled queue*, all further processing is controlled by openUTM. This type includes messages that start a local or remote *asynchronous service* (see also *background job*) and messages sent for output on a terminal, a printer or a transport system application (see also *queued output job*).
- In the case of asynchronous messages to a *service-controlled queue*, further processing is controlled by a *service* of the application. This type includes messages to a *TAC queue*, messages to a *USER queue* and messages to a *temporary queue*. The USER queue and the temporary queue must belong to the local application, whereas the TAC queue can be in both the local application and the remote application.

asynchronous program

Program unit started by a *background job*.

asynchronous service (KDCS)

Service which processes a *background job*. Processing is carried out independently of the job submitter. An asynchronous service can comprise one or more program units/transactions. It is started via an asynchronous *transaction code*.

audit (BS2000 systems)

During execution of a *UTM application*, UTM events which are of relevance in terms of security can be logged by *SAT* for auditing purposes.

authentication

See *system access control*.

authorization

See *data access control*.

Axis

See *Apache Axis*.

background job

Background jobs are *asynchronous jobs* destined for an *asynchronous service* of the current application or of a remote application. Background jobs are particularly suitable for time-intensive processing or processing which is not time-critical and where the results do not directly influence the current dialog.

basic format

Format in which terminal users can make all entries required to start a service.

basic job

Asynchronous job in a *job complex*.

browsing asynchronous messages

A *service* sequentially reads the *asynchronous messages* in a *service-controlled queue*. The messages are not locked while they are being read and they remain in the queue after they have been read. This means that they can be read simultaneously by different services.

bypass mode (BS2000 systems)

Operating mode of a printer connected locally to a terminal. In bypass mode, any *asynchronous message* sent to the printer is sent to the terminal and then redirected to the printer by the terminal without being displayed on screen.

cache

Used for buffering application data for all the processes of a *UTM application*. The cache is used to optimize access to the *page pool* and, in the case of UTM cluster applications, the *cluster page pool*.

CCR (Commitment, Concurrency and Recovery)

CCR is an Application Service Element (ASE) defined by OSI used for OSI TP communication which contains the protocol elements (services) related to the beginning and end (commit or rollback) of a *transaction*. CCR supports the two-phase commitment.

CCS name (BS2000 systems)

See *coded character set name*.

client

Clients of a *UTM application* can be:

- terminals
- UPIC client programs
- transport system applications (e.g. DCAM, PDN, CMX, socket applications or UTM applications which have been generated as *transport system applications*).

Clients are connected to the UTM application via LTERM partners.

Note: UTM clients which use the OpenCPIC carrier system are treated just like *OSI TP partners*.

client side of a conversation

This term has been superseded by *initiator*.

cluster

A number of computers connected over a fast network and which in many cases can be seen as a single computer externally. The objective of clustering is generally to increase the computing capacity or availability in comparison with a single computer.

cluster administration journal

The cluster administration journal consists of:

- two log files with the extensions JRN1 and JRN2 for global administration actions,
- the JKAA file which contains a copy of the KDCS Application Area (KAA). Administrative changes that are no longer present in the two log files are taken over from this copy.

The administration journal files serve to pass on to the other node applications those administrative actions that are to apply throughout the cluster to all node applications in a UTM cluster application.

cluster configuration file

File containing the central configuration data of a *UTM cluster application*. The cluster configuration file is created using the UTM generation tool *KDCDEF*.

cluster filebase

Filename prefix or directory name for the *UTM cluster files*.

cluster GSSB file

File used to administer GSSBs in a *UTM cluster application*. The cluster GSSB file is created using the UTM generation tool *KDCDEF*.

cluster lock file

File in a *UTM cluster application* used to manage cross-node locks of user data areas.

cluster page pool

The cluster page pool consists of an administration file and up to 10 files containing a *UTM cluster application's* user data that is available globally in the cluster (service data including LSSB, GSSB and ULS). The cluster page pool is created using the UTM generation tool *KDCDEF*.

cluster start serialization file

Lock file used to serialize the start-up of individual node applications (only on Unix, Linux and Windows systems).

cluster ULS file

File used to administer the ULS areas of a *UTM cluster application*. The cluster ULS file is created using the UTM generation tool *KDCDEF*.

cluster user file

File containing the user management data of a *UTM cluster application*. The cluster user file is created using the UTM generation tool *KDCDEF*.

coded character set name (BS2000 systems)

If the product *XHCS* (eXtended Host Code Support) is used, each character set used is uniquely identified by a coded character set name (abbreviation: "CCS name" or "CCSN").

cold start

Start of a *UTM application* after the application terminates normally (*normal termination*) or after a new generation (see also *warm start*).

communication area (KDCS)

KDCS *primary storage area*, secured by transaction logging and which contains service-specific data. The communication area comprises 3 parts:

- the KB header with general service data
- the KB return area for returning values to KDCS calls
- the KB program area for exchanging data between UTM program units within a single *service*.

communication end point

see *transport system end point*

communication resource manager

In distributed systems, communication resource managers (CRMs) control communication between the application programs. openUTM provides CRMs for the international OSI TP standard, for the LU6.1 industry standard and for the proprietary openUTM protocol UPIC.

configuration

Sum of all the properties of a *UTM application*. The configuration describes:

- application parameters and operating parameters
- the objects of an application and the properties of these objects. Objects can be *program units* and *transaction codes*, communication partners, printers, *user IDs*, etc.
- defined measures for controlling data and system access.

The configuration of a UTM application is defined at generation time (*static configuration*) and can be changed dynamically by the administrator (while the application is running, *dynamic configuration*). The configuration is stored in the *KDCFILE*.

confirmation job

Component of a *job complex* where the confirmation job is assigned to the *basic job*. There are positive and negative confirmation jobs. If the *basic job* returns a positive result, the positive confirmation job is activated, otherwise, the negative confirmation job is activated.

connection bundle

see *LTERM bundle*.

connection user ID

User ID under which a *TS application* or a *UPIC client* is signed on at the *UTM application* directly after the connection has been established. The following applies, depending on the client (= LTERM partner) generation:

- The connection user ID is the same as the USER in the LTERM statement (explicit connection user ID). An explicit connection user ID must be generated with a USER statement and cannot be used as a "genuine" *user ID*.
- The connection user ID is the same as the LTERM partner (implicit connection user ID) if no USER was specified in the LTERM statement or if an LTERM pool has been generated.

In a *UTM cluster application*, the service belonging to a connection user ID (RESTART=YES in LTERM or USER) is bound to the connection and is therefore local to the node. A connection user ID generated with RESTART=YES can have a separate service in each *node application*.

contention loser

Every connection between two partners is managed by one of the partners. The partner that manages the connection is known as the *contention winner*. The other partner is the contention loser.

contention winner

A connection's contention winner is responsible for managing the connection. Jobs can be started by the contention winner or by the *contention loser*. If a conflict occurs, i.e. if both partners in the communication want to start a job at the same time, then the job stemming from the contention winner uses the connection.

conversation

In CPI-C, communication between two CPI-C application programs is referred to as a conversation. The communication partners in a conversation are referred to as the *initiator* and the *acceptor*.

conversation ID

CPI-C assigns a local conversation ID to each *conversation*, i.e. the *initiator* and *acceptor* each have their own conversation ID. The conversation ID uniquely assigns each CPI-C call in a program to a conversation.

CPI-C

CPI-C (**C**ommon **P**rogramming **I**nterface for **C**ommunication) is a program interface for program-to-program communication in open networks standardized by X/Open and CIW (**C**PI-C **I**mplementor's **W**orkshop).

The CPI-C implemented in openUTM complies with X/Open's CPI-C V2.0 CAE Specification. The interface is available in COBOL and C. In openUTM, CPI-C can communicate via the OSI TP, LU6.1 and UPIC protocols and with openUTM-LU62.

Cross Coupled System / XCS

Cluster of BS2000 computers with the *Highly Integrated System Complex Multiple System Control Facility* (HIPLEX[®] MSCF).

data access control

In data access control openUTM checks whether the communication partner is authorized to access a particular object belonging to the application. The access rights are defined as part of the configuration.

data space (BS2000 systems)

Virtual address space of BS2000 which can be employed in its entirety by the user. Only data and programs stored as data can be addressed in a data space; no program code can be executed.

dead letter queue

The dead letter queue is a TAC queue which has the fixed name KDCDLETQ. It is always available to save queued messages sent to transaction codes, TAC queues, LPAP or OSI-LPAP partners but which could not be processed. The saving of queued messages in the dead letter queue can be activated or deactivated for each message destination individually using the TAC, LPAP or OSI-LPAP statement's DEAD-LETTER-Q parameter.

DES

DES (Data Encryption Standard) is an international standard for encrypting data. One key is used in this method for encoding and decoding. If the DES method is used, the UPIC client generates a DES key for each session.

dialog conversation

CPI-C conversation in which both the *initiator* and the *acceptor* are permitted to send. A dialog transaction code for the *acceptor* must have been generated in the *UTM application*.

dialog job, interactive job

Job which starts a *dialog service*. The job can be issued by a *client* or, when two servers communicate with each other (*server-server communication*), by a different application.

dialog message

A message which requires a response or which is itself a response to a request. The request and the response both take place within a single service. The request and reply together form a dialog step.

dialog program

Program unit which partially or completely processes a *dialog step*.

dialog service

Service which processes a *job* interactively (synchronously) in conjunction with the job submitter (*client* or another server application). A dialog service processes *dialog messages* received from the job submitter and generates dialog messages to be sent to the job submitter. A dialog service comprises at least one *transaction*. In general, a dialog service encompasses at least one dialog step. Exception: in the event of *service chaining*, it is possible for more than one service to comprise a dialog step.

dialog step

A dialog step starts when a *dialog message* is received by the *UTM application*. It ends when the UTM application responds.

dialog terminal process (Unix , Linux and Windows systems)

A dialog terminal process connects a terminal of a Unix, Linux or Windows system with the work processes of the *UTM application*. Dialog terminal processes are started either when the user enters utmdtp or via the LOGIN shell. A separate dialog terminal process is required for each terminal to be connected to a UTM application.

distributed processing

Processing of *dialog jobs* by several different applications or the transfer of *background jobs* to another application. The higher-level protocols *LU6.1* and *OSI TP* are used for distributed processing. openUTM-LU62 also permits distributed processing with LU6.2 partners. A distinction is made between distributed processing with *distributed transactions* (transaction logging across different applications) and distributed processing without distributed transactions (local transaction logging only). Distributed processing is also known as server-server communication.

distributed transaction

Transaction which encompasses more than one application and is executed in several different (sub-)transactions in distributed systems.

distributed transaction processing

Distributed processing with *distributed transactions*.

dynamic configuration

Changes to the *configuration* made by the administrator. UTM objects such as *program units*, *transaction codes*, *clients*, *LU6.1 connections*, printers or *user IDs* can be added, modified or in some cases deleted from the configuration while the application is running. To do this, it is necessary to create separate *administration programs* which use the functions of the *program interface for administration*. The WinAdmin administration program or the WebAdmin administration program can be used to do this, or separate *administration programs* must be created that utilize the functions of the *administration program interface*.

encryption level

The encryption level specifies if and to what extent a client message and password are to be encrypted.

event-driven service

This term has been superseded by *event service*.

event exit

Routine in an application program which is started automatically whenever certain events occur (e.g. when a process is started, when a service is terminated). Unlike *event services*, an event exit must not contain any KDCS, CPI-C or XATMI calls.

event function

Collective term for *event exits* and *event services*.

event service

Service started when certain events occur, e.g. when certain UTM messages are issued. The *program units* for event-driven services must contain KDCS calls.

filebase

UTM application filebase

On BS2000 systems, filebase is the prefix for the *KDCFILE*, the *user log file* USLOG and the *system log file* SYSLOG.

On Unix, Linux and Windows systems, filebase is the name of the directory under which the *KDCFILE*, the user log file USLOG, the system log file SYSLOG and other files relating to the UTM application are stored.

Functional Unit (FU)

A subset of the *OSI TP* protocol providing a particular functionality. The OSI TP protocol is divided into the following functional units:

- Dialog
- Shared Control
- Polarized Control
- Handshake
- Commit
- Chained Transactions
- Unchained Transactions
- Recovery

Manufacturers implementing OSI TP need not include all functional units, but can concentrate on a subset instead. Communications between applications of two different OSI TP implementations is only possible if the included functional units are compatible with each other.

generation

See *UTM generation*.

global secondary storage area

See *secondary storage area*.

hardcopy mode

Operating mode of a printer connected locally to a terminal. Any message which is displayed on screen will also be sent to the printer.

heterogeneous link

In the case of *server-server communication*: a link between a *UTM application* and a non-UTM application, e.g. a CICS or TUXEDO application.

Highly Integrated System Complex / HIPLEX[®]

Product family for implementing an operating, load sharing and availability cluster made up of a number of BS2000 servers.

HIPLEX® MSCF

(MSCF = **M**ultiple **S**ystem **C**ontrol **F**acility)

Provides the infrastructure and basic functions for distributed applications with HIPLEX®.

homogeneous link

In the case of *server-server communication*, a link between two *UTM applications*. It is of no significance whether the applications are running on the same operating system platforms or on different platforms.

inbound conversation (CPI-C)

See *incoming conversation*.

incoming conversation (CPI-C)

A conversation in which the local CPI-C program is the *acceptor* is referred to as an incoming conversation. In the X/Open specification, the term “inbound conversation” is used synonymously with “incoming conversation”.

initial KDCFILE

In a *UTM cluster application*, this is the *KDCFILE* generated by *KDCDEF* and which must be copied for each node application before the node applications are started.

initiator (CPI-C)

The communication partners in a *conversation* are referred to as the initiator and the *acceptor*. The initiator sets up the conversation with the CPI-C calls Initialize_Conversation and Allocate.

insert

Field in a message text in which openUTM enters current values.

inverse KDCDEF

A function which uses the dynamically adapted configuration data in the *KDCFILE* to generate control statements for a *KDCDEF* run. An inverse KDCDEF can be started “offline” under *KDCDEF* or “online” via the *program interface for administration*.

IUTMDB

Interface used for the coordinated interaction with resource managers on BS2000 systems. This includes data repositories (LEASY) and data base systems (SESAM/SQL, UDS/SQL).

JConnect client

Designation for clients based on the product openUTM-JConnect. The communication with the UTM application is carried out via the *UPIC protocol*.

JDK

Java Development Kit

Standard development environment from Oracle Corporation for the development of Java applications.

job

Request for a *service* provided by a *UTM application*. The request is issued by specifying a transaction code. See also: *queued output job*, *dialog job*, *background job*, *job complex*.

job complex

Job complexes are used to assign *confirmation jobs* to *asynchronous jobs*. An asynchronous job within a job complex is referred to as a *basic job*.

job-receiving service (KDCS)

A job-receiving service is a *service* started by a *job-submitting service* of another server application.

job-submitting service (KDCS)

A job-submitting service is a *service* which requests another service from a different server application (*job-receiving service*) in order to process a job.

KDCADM

Standard administration program supplied with openUTM. KDCADM provides administration functions which are called with transaction codes (*administration commands*).

KDCDEF

UTM tool for the *generation* of *UTM applications*. KDCDEF uses the configuration information in the KDCDEF control statements to create the UTM objects *KDCFILE* and the ROOT table sources for the main routine *KDCROOT*.

In UTM cluster applications, KDCDEF also creates the *cluster configuration file*, the *cluster user file*, the *cluster page pool*, the *cluster GSSB file* and the *cluster ULS file*.

KDCFILE

One or more files containing data required for a *UTM application* to run. The KDCFILE is created with the UTM generation tool *KDCDEF*. Among other things, it contains the *configuration* of the application.

KDCROOT

Main routine of an *application program* which forms the link between the *program units* and the UTM system code. KDCROOT is linked with the *program units* to form the *application program*.

KDCS message area

For KDCS calls: buffer area in which messages or data for openUTM or for the *program unit* are made available.

KDCS parameter area

See *parameter area*.

KDCS program interface

Universal UTM program interface compliant with the national DIN 66 265 standard and which includes some extensions. KDCS (compatible data communications interface) allows dialog services to be created, for instance, and permits the use of *message queuing* functions. In addition, KDCS provides calls for *distributed processing*.

Kerberos

Kerberos is a standardized network authentication protocol (RFC1510) based on encryption procedures in which no passwords are sent to the network in clear text.

Kerberos principal

Owner of a key.

Kerberos uses symmetrical encryption, i.e. all the keys are present at two locations, namely with the key owner (principal) and the KDC (Key Distribution Center).

key code

Code that represents specific access authorization or a specific role. Several key codes are grouped into a *key set*.

key set

Group of one or more *key codes* under a particular a name. A key set defines authorization within the framework of the authorization concept used (lock/key code concept or *access list* concept). A key set can be assigned to a *user ID*, an *LTERM partner* an *(OSI) LPAP partner*, a *service* or a *TAC queue*.

linkage program

See *KDCROOT*.

local secondary storage area

See *secondary storage area*.

Log4j

Log4j is part of the Apache Jakarta project. Log4j provides information for logging information (runtime information, trace records, etc.) and configuring the log output. *WS4UTM* uses the software product Log4j for trace and logging functionality.

lock code

Code protecting an LTERM partner or transaction code against unauthorized access. Access is only possible if the *key set* of the accesser contains the appropriate *key code* (lock/key code concept).

logging process

Process in Unix, Linux and Windows systems that controls the logging of account records or monitoring data.

LPAP bundle

LPAP bundles allow messages to be distributed to LPAP partners across several partner applications. If a UTM application has to exchange a very large number of messages with a partner application then load distribution may be improved by starting multiple instances of the partner application and distributing the messages across the individual instances. In an LPAP bundle, openUTM is responsible for distributing the messages to the partner application instances. An LPAP bundle consists of a master LPAP and multiple slave LPAPs. The slave LPAPs are assigned to the master LPAP on UTM generation. LPAP bundles exist for both the OSI TP protocol and the LU6.1 protocol.

LPAP partner

In the case of *distributed processing* via the *LU6.1* protocol, an LPAP partner for each partner application must be configured in the local application. The LPAP partner represents the partner application in the local application. During communication, the partner application is addressed by the name of the assigned LPAP partner and not by the application name or address.

LTERM bundle

An LTERM bundle (connection bundle) consists of a master LTERM and multiple slave LTERMs. An LTERM bundle (connection bundle) allows you to distribute queued messages to a logical partner application evenly across multiple parallel connections.

LTERM group

An LTERM group consists of one or more alias LTERMs, the group LTERMs and a primary LTERM. In an LTERM group, you assign multiple LTERMs to a connection.

LTERM partner

LTERM partners must be configured in the application if you want to connect clients or printers to a *UTM application*. A client or printer can only be connected if an LTERM partner with the appropriate properties is assigned to it. This assignment is generally made in the *configuration*, but can also be made dynamically using terminal pools.

LTERM pool

The TPOOL statement allows you to define a pool of LTERM partners instead of issuing one LTERM and one PTERM statement for each *client*. If a client establishes a connection via an LTERM pool, an LTERM partner is assigned to it dynamically from the pool.

LU6.1

Device-independent data exchange protocol (industrial standard) for transaction-oriented *server-server communication*.

LU6.1-LPAP bundle

LPAP bundle for *LU6.1* partner applications.

LU6.1 partner

Partner of the *UTM application* that communicates with the UTM application via the *LU6.1* protocol. Examples of this type of partner are:

- a UTM application that communicates via LU6.1
- an application in the IBM environment (e.g. CICS, IMS or TXSeries) that communicates via LU6.1

main process (Unix /Linux / Windows systems)

Process which starts the *UTM application*. It starts the *work processes*, the *UTM system processes*, *printer processes*, *network processes*, *logging process* and the *timer process* and monitors the *UTM application*.

main routine KDCROOT

See *KDCROOT*.

management unit

SE Servers component, in combination with the *SE Manager*, permits centralized, web-based management of all the units of an SE server.

message definition file

The message definition file is supplied with openUTM and, by default, contains the UTM message texts in German and English together with the definitions of the message properties. Users can take this file as a basis for their own message modules.

message destination

Output medium for a *message*. Possible message destinations for a message from the openUTM transaction monitor include, for instance, terminals, *TS applications*, the *event service* MSGTAC, the *system log file* SYSLOG or *TAC queues, asynchronous TACs, USER queues, SYSOUT/SYSLST* or *stderr/stdout*.

The message destinations for the messages of the UTM tools are SYSOUT/SYSLST and *stderr/stdout*.

message queue

Queue in which specific messages are kept with transaction management until further processed. A distinction is drawn between *service-controlled queues* and *UTM-controlled queues*, depending on who monitors further processing.

message queuing

Message queuing (MQ) is a form of communication in which the messages are exchanged via intermediate queues rather than directly. The sender and recipient can be separated in space or time. The transfer of the message is independent of whether a network connection is available at the time or not. In openUTM there are *UTM-controlled queues* and *service-controlled queues*.

MSGTAC

Special event service that processes messages with the message destination MSGTAC by means of a program. MSGTAC is an asynchronous service and is created by the operator of the application.

multiplex connection (BS2000 systems)

Special method offered by *OMNIS* to connect terminals to a *UTM application*. A multiplex connection enables several terminals to share a single transport connection.

multi-step service (KDCS)

Service carried out in a number of *dialog steps*.

multi-step transaction

Transaction which comprises more than one *processing step*.

Network File System/Service / NFS

Allows Unix systems to access file systems across the network.

network process (Unix / Linux / Windows systems)

A process in a *UTM application* for connection to the network.

network selector

The network selector identifies a service access point to the network layer of the *OSI reference model* in the local system.

node

Individual computer of a *cluster*.

node application

UTM application that is executed on an individual *node* as part of a *UTM cluster application*.

node bound service

A node bound service belonging to a user can only be continued at the node application at which the user was last signed on. The following services are always node bound:

- Services that have started communications with a job receiver via LU6.1 or OSI TP and for which the job-receiving service has not yet been terminated
- Inserted services in a service stack
- Services that have completed a SESAM transaction

In addition, a user's service is node bound as long as the user is signed-on at a node application.

node filebase

Filename prefix or directory name for the *node application's KDCFILE*, *user log file* and *system log file*.

node recovery

If a node application terminates abnormally and no rapid warm start of the application is possible on its associated *node computer* then it is possible to perform a node recovery for this node on another node in the UTM cluster. In this way, it is possible to release locks resulting from the failed node application in order to prevent unnecessary impairments to the running *UTM cluster application*.

normal termination of a UTM application

Controlled termination of a *UTM application*. Among other things, this means that the administration data in the *KDCFILE* are updated. The *administrator* initiates normal termination (e.g. with KDCSHUT N). After a normal termination, openUTM carries out any subsequent start as a *cold start*.

object identifier

An object identifier is an identifier for objects in an OSI environment which is unique throughout the world. An object identifier comprises a sequence of integers which represent a path in a tree structure.

OMNIS (BS2000 systems)

OMNIS is a "session manager" which lets you set up connections from one terminal to a number of partners in a network concurrently. OMNIS also allows you to work with multiplex connections.

online import

In a *UTM cluster application*, online import refers to the import of application data from a normally terminated node application into a running node application.

online update

In a *UTM cluster application*, online update refers to a change to the application configuration or the application program or the use of a new UTM revision level while a *UTM cluster application* is running.

open terminal pool

Terminal pool which is not restricted to clients of a single computer or particular type. Any client for which no computer- or type-specific terminal pool has been generated can connect to this terminal pool.

OpenCPIC

Carrier system for UTM clients that use the *OSI TP* protocol.

OpenCPIC client

OSI TP partner application with the *OpenCPIC* carrier system.

openSM2

The openSM2 product line offers a consistent solution for the enterprise-wide performance management of server and storage systems. openSM2 offers the acquisition of monitoring data, online monitoring and offline evaluation.

openUTM cluster

From the perspective of UPIC clients, **not** from the perspective of the server: Combination of several node applications of a UTM cluster application to form one logical application that is addressed via a common symbolic destination name.

openUTM-D

openUTM-D (openUTM distributed) is a component of openUTM which allows *distributed processing*. openUTM-D is an integral component of openUTM.

OSI-LPAP bundle

LPAP bundle for *OSI TP* partner applications.

OSI-LPAP partner

OSI-LPAP partners are the addresses of the *OSI TP partners* generated in openUTM. In the case of *distributed processing* via the *OSI TP* protocol, an OSI-LPAP partner for each partner application must be configured in the local application. The OSI-LPAP partner represents the partner application in the local application. During communication, the partner application is addressed by the name of the assigned OSI-LPAP partner and not by the application name or address.

OSI reference model

The OSI reference model provides a framework for standardizing communications in open systems. ISO, the International Organization for Standardization, described this model in the ISO IS7498 standard. The OSI reference model divides the necessary functions for system communication into seven logical layers. These layers have clearly defined interfaces to the neighboring layers.

OSI TP

Communication protocol for distributed transaction processing defined by ISO. OSI TP stands for Open System Interconnection Transaction Processing.

OSI TP partner

Partner of the UTM application that communicates with the UTM application via the OSI TP protocol. Examples of such partners are:

- a UTM application that communicates via OSI TP
- an application in the IBM environment (e.g. CICS) that is connected via openUTM-LU62
- an *OpenCPIC client*
- applications from other TP monitors that support OSI TP

outbound conversation (CPI-C)

See *outgoing conversation*.

outgoing conversation (CPI-C)

A conversation in which the local CPI-C program is the *initiator* is referred to as an outgoing conversation. In the X/Open specification, the term “outbound conversation” is used synonymously with “outgoing conversation”.

page pool

Part of the *KDCFILE* in which user data is stored.

In a *standalone application* this data consists, for example, of *dialog messages*, messages sent to *message queues*, *secondary memory areas*.

In a UTM cluster application, it consists, for example, of messages to *message queues*, *TLS*.

parameter area

Data structure in which a program unit passes the operands required for a UTM call to openUTM.

partner application

Partner of a UTM application during *distributed processing*. Higher communication protocols are used for distributed processing (*LU6.1*, *OSI TP* or *LU6.2* via the openUTM-LU62 gateway).

postselection (BS2000 systems)

Selection of logged UTM events from the SAT logging file which are to be evaluated. Selection is carried out using the SATUT tool.

prepare to commit (PTC)

Specific state of a distributed transaction

Although the end of the distributed transaction has been initiated, the system waits for the partner to confirm the end of the transaction.

preselection (BS2000 systems)

Definition of the UTM events which are to be logged for the *SAT audit*. Preselection is carried out with the UTM-SAT administration functions. A distinction is made between event-specific, user-specific and job-specific (TAC-specific) preselection.

presentation selector

The presentation selector identifies a service access point to the presentation layer of the *OS/ reference model* in the local system.

primary storage area

Area in main memory to which the *KDCS program unit* has direct access, e.g. *standard primary working area, communication area*.

print administration

Functions for *print control* and the administration of *queued output jobs*, sent to a printer.

print control

openUTM functions for controlling print output.

printer control LTERM

A printer control LTERM allows a client or terminal user to connect to a UTM application. The printers assigned to the printer control LTERM can then be administered from the client program or the terminal. No administration rights are required for these functions.

printer control terminal

This term has been superseded by *printer control LTERM*.

printer group (Unix systems)

For each printer, a Unix system sets up one printer group by default that contains this one printer only. It is also possible to assign several printers to one printer group or to assign one printer to several different printer groups.

printer pool

Several printers assigned to the same *LTERM partner*.

printer process (Unix / Linux systems)

Process set up by the *main process* for outputting *asynchronous messages* to a *printer group*. The process exists as long as the printer group is connected to the *UTM application*. One printer process exists for each connected printer group.

process

The openUTM manuals use the term “process” as a collective term for processes (Unix / Linux / Windows systems) and tasks (BS2000 systems).

processing step

A processing step starts with the receipt of a *dialog message* sent to the *UTM application* by a *client* or another server application. The processing step ends either when a response is sent, thus also terminating the *dialog step*, or when a dialog message is sent to a third party.

program interface for administration

UTM program interface which helps users to create their own *administration programs*. Among other things, the program interface for administration provides functions for *dynamic configuration*, for modifying properties and application parameters and for querying information on the configuration and the current workload of the application.

program space (BS2000 systems)

Virtual address space of BS2000 which is divided into memory classes and in which both executable programs and pure data are addressed.

program unit

UTM *services* are implemented in the form of one or more program units. The program units are components of the *application program*. Depending on the employed API, they may have to contain KDCS, XATMI or CPIC calls. They can be addressed using *transaction codes*. Several different transaction codes can be assigned to a single program unit.

queue

See *message queue*.

queued output job

Queued output jobs are *asynchronous jobs* which output a message, such as a document, to a printer, a terminal or a transport system application.

Queued output jobs are processed by UTM system functions exclusively, i.e. it is not necessary to create program units to process them.

Quick Start Kit

A sample application supplied with openUTM (Windows systems).

redelivery

Repeated delivery of an *asynchronous message* that could not be processed correctly because, for example, the *transaction* was rolled back or the *asynchronous service* was terminated abnormally.

The message is returned to the message queue and can then be read and/or processed again.

reentrant program

Program whose code is not altered when it runs. On BS2000 systems this constitutes a prerequisite for using *shared code*.

request

Request from a *client* or another server for a *service function*.

requestor

In XATMI, the term requestor refers to an application which calls a service.

resource manager

Resource managers (RMs) manage data resources. Database systems are examples of resource managers. openUTM, however, also provides its own resource managers for accessing message queues, local memory areas and logging files, for instance. Applications access RMs via special resource manager interfaces. In the case of database systems, this will generally be SQL and in the case of openUTM RMs, it is the KDCS interface.

restart

See *screen restart*.

see *service restart*.

RFC1006

A protocol defined by the IETF (Internet Engineering Task Force) belonging to the TCP/IP family that implements the ISO transport services (transport class 0) based on TCP/IP.

RSA

Abbreviation for the inventors of the RSA encryption method (Rivest, Shamir and Adleman). This method uses a pair of keys that consists of a public key and a private key. A message is encrypted using the public key, and this message can only be decrypted using the private key. The pair of RSA keys is created by the UTM application.

SAT audit (BS2000 systems)

Audit carried out by the SAT (Security Audit Trail) component of the BS2000 software product SECOS.

screen restart

If a *dialog service* is interrupted, openUTM again displays the *dialog message* of the last completed *transaction* on screen when the service restarts provided that the last transaction output a message on the screen.

SE manager

Web-based graphical user interface (GUI) for the SE series of Business Servers. SE Manager runs on the *management unit* and permits the central operation and administration of server units (with /390 architecture and/or x86 architecture), application units (x86 architecture), net unit and peripherals.

SE server

A Business Server from Fujitsu's SE series.

secondary storage area

Memory area secured by transaction logging and which can be accessed by the KDCS *program unit* with special calls. Local secondary storage areas (LSSBs) are assigned to one *service*. Global secondary storage areas (GSSBs) can be accessed by all services in a *UTM application*. Other secondary storage areas include the *terminal-specific long-term storage (TLS)* and the *user-specific long-term storage (ULS)*.

selector

A selector identifies a service access point to services of one of the layers of the *OSI reference model* in the local system. Each selector is part of the address of the access point.

semaphore (Unix / Linux / Windows systems)

Unix, Linux and Windows systems resource used to control and synchronize processes.

server

A server is an *application* which provides *services*. The computer on which the applications are running is often also referred to as the server.

server-server communication

See *distributed processing*.

server side of a conversation (CPI-C)

This term has been superseded by *acceptor*.

service

Services process the *jobs* that are sent to a server application. A service of a UTM application comprises one or more transactions. The service is called with the *service TAC*. Services can be requested by *clients* or by other servers.

service access point

In the OSI reference model, a layer has access to the services of the layer below at the service access point. In the local system, the service access point is identified by a *selector*. During communication, the *UTM application* links up to a service access point. A connection is established between two service access points.

service chaining (KDCS)

When service chaining is used, a follow-up service is started without a *dialog message* specification after a *dialog service* has completed.

service-controlled queue

Message queue in which the calling and further processing of messages is controlled by *services*. A service must explicitly issue a KDCS call (DGET) to read the message. There are service-controlled queues in openUTM in the variants *USER queue*, *TAC queue* and *temporary queue*.

service restart (KDCS)

If a service is interrupted, e.g. as a result of a terminal user signing off or a *UTM application* being terminated, openUTM carries out a *service restart*. An *asynchronous service* is restarted or execution is continued at the most recent *synchronization point*, and a *dialog service* continues execution at the most recent *synchronization point*. As far as the terminal user is concerned, the service restart for a dialog service appears as a *screen restart* provided that a dialog message was sent to the terminal user at the last synchronization point.

service routine

See *program unit*.

service stacking (KDCS)

A terminal user can interrupt a running *dialog service* and insert a new dialog service. When the inserted *service* has completed, the interrupted service continues.

service TAC (KDCS)

Transaction code used to start a *service*.

session

Communication relationship between two addressable units in the network via the SNA protocol *LU6.1*.

session selector

The session selector identifies an *access point* in the local system to the services of the session layer of the *OSI reference model*.

shared code (BS2000 systems)

Code which can be shared by several different processes.

shared memory

Virtual memory area which can be accessed by several different processes simultaneously.

shared objects (Unix / Linux / Windows systems)

Parts of the *application program* can be created as shared objects. These objects are linked to the application dynamically and can be replaced during live operation. Shared objects are defined with the KDCDEF statement SHARED-OBJECT.

sign-on check

See *system access control*.

sign-on service (KDCS)

Special *dialog service* for a user in which *program units* control how a user signs on to a UTM application.

single-step service

Dialog service which encompasses precisely one *dialog step*.

single-step transaction

Transaction which encompasses precisely one *dialog step*.

SOA

(Service-Oriented Architecture)

SOA is a system architecture concept in which functions are implemented in the form of re-usable, technically independent, loosely coupled *services*. Services can be called independently of the underlying implementations via interfaces which may possess public and, consequently, trusted specifications. Service interaction is performed via a communication infrastructure made available for this purpose.

SOAP

SOAP (Simple Object Access Protocol) is a protocol used to exchange data between systems and run remote procedure calls. SOAP also makes use of the services provided by other standards, XML for the representation of the data and Internet transport and application layer protocols for message transfer.

socket connection

Transport system connection that uses the socket interface. The socket interface is a standard program interface for communication via TCP/IP.

standalone application

See *standalone UTM application*.

standalone UTM application

Traditional *UTM application* that is not part of a *UTM cluster application*.

standard primary working area (KDCS)

Area in main memory available to all KDCS *program units*. The contents of the area are either undefined or occupied with a fill character when the program unit starts execution.

start format

Format output to a terminal by openUTM when a user has successfully signed on to a *UTM application* (except after a *service restart* and during sign-on via the *sign-on service*).

static configuration

Definition of the *configuration* during generation using the UTM tool *KDCDEF*.

SYSLOG file

See *system log file*.

synchronization point, consistency point

The end of a *transaction*. At this time, all the changes made to the *application information* during the transaction are saved to prevent loss in the event of a crash and are made visible to others. Any locks set during the transaction are released.

system access control

A check carried out by openUTM to determine whether a certain *user ID* is authorized to work with the *UTM application*. The authorization check is not carried out if the UTM application was generated without user IDs.

system log file

File or file generation to which openUTM logs all UTM messages for which SYSLOG has been defined as the *message destination* during execution of a *UTM application*.

TAC

See *transaction code*.

TAC queue

Message queue generated explicitly by means of a KDCDEF statement. A TAC queue is a *service-controlled queue* that can be addressed from any service using the generated name.

temporary queue

Message queue created dynamically by means of a program that can be deleted again by means of a program (see *service-controlled queue*).

terminal-specific long-term storage (KDCS)

Secondary storage area assigned to an *LTERM*, *LPAP* or *OSI-PAP partner* and which is retained after the application has terminated.

time-driven job

Job which is buffered by openUTM in a *message queue* up to a specific time until it is sent to the recipient. The recipient can be an *asynchronous service* of the same application, a *TAC queue*, a partner application, a terminal or a printer. Time-driven jobs can only be issued by KDCS *program units*.

timer process (Unix / Linux / Windows systems)

Process which accepts jobs for controlling the time at which *work processes* are executed. It does this by entering them in a job list and releasing them for processing after a time period defined in the job list has elapsed.

TLS termination proxy

A TLS termination proxy is a [proxy server](#) that is used to handle incoming [TLS](#) connections, decrypting the data and passing on the unencrypted request to other servers.

TNS (Unix / Linux / Windows systems)

Abbreviation for the Transport Name Service. TNS assigns a transport selector and a transport system to an application name. The application can be reached through the transport system.

Tomcat

see *Apache Tomcat*

transaction

Processing section within a *service* for which adherence to the *ACID properties* is guaranteed. If, during the course of a transaction, changes are made to the *application information*, they are either made consistently and in their entirety or not at all (all-or-nothing rule). The end of the transaction forms a *synchronization point*.

transaction code/TAC

Name which can be used to identify a *program unit*. The transaction code is assigned to the program unit during *static* or *dynamic configuration*. It is also possible to assign more than one transaction code to a program unit.

transaction rate

Number of *transactions* successfully executed per unit of time.

transfer syntax

With *OSI TP*, the data to be transferred between two computer systems is converted from the local format into transfer syntax. Transfer syntax describes the data in a neutral format which can be interpreted by all the partners involved. An *Object Identifier* must be assigned to each transfer syntax.

transport connection

In the *OSI reference model*, this is a connection between two entities of layer 4 (transport layer).

transport layer security

Transport layer security is a hybrid encryption protocol for secure data transmission in the Internet.

transport selector

The transport selector identifies a service access point to the transport layer of the *OSI reference model* in the local system.

transport system access point

See transport system end point.

transport system application

Application which is based directly on a transport system interface (e.g. CMX, DCAM or socket). When transport system applications are connected, the partner type APPLI or SOCKET must be specified during *configuration*. A transport system application cannot be integrated in a *distributed transaction*.

transport system end point

Client/server or server/server communication establishes a connection between two transport system end points. A transport system end point is also referred to as a local application name and is defined using the BCAMAPPL statement or MAX APPLINAME.

TS application

See *transport system application*.

typed buffer (XATMI)

Buffer for exchanging typed and structured data between communication partners. Typed buffers ensure that the structure of the exchanged data is known to both partners implicitly.

UPIC

Carrier system for openUTM clients. UPIC stands for Universal Programming Interface for Communication. The communication with the UTM application is carried out via the *UPIC protocol*.

UPIC Analyzer

Component used to analyze the UPIC communication recorded with *UPIC Capture*. This step is used to prepare the recording for playback using *UPIC Replay*.

UPIC Capture

Used to record communication between UPIC clients and UTM applications so that this can be replayed subsequently (*UPIC Replay*).

UPIC client

The designation for openUTM clients with the UPIC carrier system and for *JConnect clients*.

UPIC protocol

Protocol for the client server communication with *UTM applications*. The UPIC protocol is used by *UPIC clients* and *JConnect clients*.

UPIC Replay

Component used to replay the UPIC communication recorded with *UPIC Capture* and prepared with *UPIC Analyzer*.

user exit

This term has been superseded by *event exit*.

user ID

Identifier for a user defined in the *configuration* for the *UTM application* (with an optional password for *system access control*) and to whom special data access rights (*system access control*) have been assigned. A terminal user must specify this ID (and any password which has been assigned) when signing on to the UTM application. On BS2000 systems, system access control is also possible via *Kerberos*.

For other clients, the specification of a user ID is optional, see also *connection user ID*.

UTM applications can also be generated without user IDs.

user log file

File or file generation to which users write variable-length records with the KDCS LPUT call. The data from the KB header of the *KDCS communication area* is prefixed to every record. The user log file is subject to transaction management by openUTM.

USER queue

Message queue made available to every user ID by openUTM. A USER queue is a *service-controlled queue* and is always assigned to the relevant user ID. You can restrict the access of other UTM users to your own USER queue.

user-specific long-term storage

Secondary storage area assigned to a *user ID*, a *session* or an *association* and which is retained after the application has terminated.

USLOG file

See *user log file*.

UTM application

A UTM application provides *services* which process jobs from *clients* or other applications. openUTM is responsible for transaction logging and for managing the communication and system resources. From a technical point of view, a UTM application is a process group which forms a logical server unit at runtime.

UTM client

See *client*.

UTM cluster application

UTM application that has been generated for use on a cluster and that can be viewed logically as a **single** application.

In physical terms, a UTM cluster application is made up of several identically generated UTM applications running on the individual cluster *nodes*.

UTM cluster files

Blanket term for all the files that are required for the execution of a UTM cluster application on Unix, Linux and Windows systems. This includes the following files:

- *Cluster configuration file*
- *Cluster user file*
- Files belonging to the *cluster page pool*
- *Cluster GSSB file*
- *Cluster ULS file*
- Files belonging to the *cluster administration journal**
- *Cluster lock file**
- Lock file for start serialization*

The files indicated by * are created when the first node application is started. All the other files are created on generation using KDCDEF.

UTM-controlled queue

Message queues in which the calling and further processing of messages is entirely under the control of openUTM. See also *asynchronous job*, *background job* and *asynchronous message*.

UTM-D

See *openUTM-D*.

UTM-F

UTM applications can be generated as UTM-F applications (UTM fast). In the case of UTM-F applications, input from and output to hard disk is avoided in order to increase performance. This affects input and output which *UTM-S* uses to save user data and transaction data. Only changes to the administration data are saved.

In UTM cluster applications that are generated as UTM-F applications (APPLI-MODE=FAST), application data that is valid throughout the cluster is also saved. In this case, GSSB and ULS data is treated in exactly the same way as in UTM cluster applications generated with UTM-S. However, service data relating to users with RESTART=YES is written only when the relevant user signs off and not at the end of each transaction.

UTM generation

Static configuration of a UTM application using the UTM tool KDCDEF and creation of an application program.

UTM message

Messages are issued to *UTM message destinations* by the openUTM transaction monitor or by UTM tools (such as *KDCDEF*). A message comprises a message number and a message text, which can contain *inserts* with current values. Depending on the message destination, either the entire message is output or only certain parts of the message, such as the inserts).

UTM page

A UTM page is a unit of storage with a size of either 2K, 4K or 8 K. In *standalone UTM applications*, the size of a UTM page on generation of the UTM application can be set to 2K, 4K or 8 K. The size of a UTM page in a *UTM cluster application* is always 4K or 8 K. The *page pool* and the restart area for the KDCFILE and *UTM cluster files* are divided into units of the size of a UTM page.

utmpath (Unix / Linux / Windows systems)

The directory under which the openUTM components are installed is referred to as *utmpath* in this manual.

To ensure that openUTM runs correctly, the environment variable UTMPATH must be set to the value of *utmpath*. On Unix and Linux systems, you must set UTMPATH before a UTM application is started. On Windows systems UTMPATH is set in accordance with the UTM version installed most recently.

UTM-S

In the case of UTM-S applications, openUTM saves all user data as well as the administration data beyond the end of an application and any system crash which may occur. In addition, UTM-S guarantees the security and consistency of the application data in the event of any malfunction. UTM applications are usually generated as UTM-S applications (UTM secure).

UTM SAT administration (BS2000 systems)

UTM SAT administration functions control which UTM events relevant to security which occur during operation of a *UTM application* are to be logged by *SAT*. Special authorization is required for UTM SAT administration.

UTM socket protocol (USP)

Proprietary openUTM protocol above TCP/IP for the transformation of the Socket interface received byte streams in messages.

UTM system process

UTM process that is started in addition to the processes specified via the start parameters and which only handles selected jobs. UTM system processes ensure that UTM applications continue to be reactive even under very high loads.

UTM terminal

This term has been superseded by *LTERM partner*.

UTM tool

Program which is provided together with openUTM and which is needed for UTM specific tasks (e.g for configuring).

virtual connection

Assignment of two communication partners.

warm start

Start of a *UTM-S* application after it has terminated abnormally. The *application information* is reset to the most recent consistent state. Interrupted *dialog services* are rolled back to the most recent *synchronization point*, allowing processing to be resumed in a consistent state from this point (*service restart*). Interrupted *asynchronous services* are rolled back and restarted or restarted at the most recent *synchronization point*.

For *UTM-F* applications, only configuration data which has been dynamically changed is rolled back to the most recent consistent state after a restart due to a preceding abnormal termination.

In UTM cluster applications, the global locks applied to GSSB and ULS on abnormal termination of this node application are released. In addition, users who were signed on at this node application when the abnormal termination occurred are signed off.

WebAdmin

Web-based tool for the administration of openUTM applications via a Web browser. WebAdmin includes not only the full function scope of the *administration program interface* but also additional functions.

Web service

Application which runs on a Web server and is (publicly) available via a standardized, programmable interface. Web services technology makes it possible to make UTM program units available for modern Web client applications independently of the programming language in which they were developed.

WinAdmin

Java-based tool for the administration of openUTM applications via a graphical user interface. WinAdmin includes not only the full function scope of the *administration program interface* but also additional functions.

work process (Unix / Linux / Windows systems)

A process within which the *services* of a *UTM application* run.

workload capture & replay

Family of programs used to simulate load situations; consisting of the main components *UPIC Capture*, *UPIC Analyzer* and *Upic Replay* and - on Unix, Linux and Windows systems - the utility program *kdcsort*. Workload Capture & Replay can be used to record UPIC sessions with UTM applications, analyze these and then play them back with modified load parameters.

WS4UTM

WS4UTM (**WebServices** for open**UTM**) provides you with a convenient way of making a service of a UTM application available as a Web service.

XATMI

XATMI (X/Open Application Transaction Manager Interface) is a program interface standardized by X/Open for program-program communication in open networks.

The XATMI interface implemented in openUTM complies with X/Open's XATMI CAE Specification. The interface is available in COBOL and C. In openUTM, XATMI can communicate via the OSI TP, *LU6.1* and UPIC protocols.

XHCS (BS2000 systems)

XHCS (Extended Host Code Support) is a BS2000 software product providing support for international character sets.

XML

XML (eXtensible Markup Language) is a metalanguage standardized by the W3C (WWW Consortium) in which the interchange formats for data and the associated information can be defined.

8 Abbreviations

Please note: Some of the abbreviations used here derive from the German acronyms used in the original German product(s).

| | |
|-------|--|
| ACSE | Association Control Service Element |
| AEQ | Application Entity Qualifier |
| AES | Advanced Encryption Standard |
| AET | Application Entity Title |
| APT | Application Process Title |
| ASCII | American Standard Code for Information Interchange |
| ASE | Application Service Element |
| Axis | Apache eXtensible Interaction System |
| BCAM | Basic Communication Access Method |
| BER | Basic Encoding Rules |
| BLS | Binder - Loader - Starter (BS2000 systems) |
| CCP | Communication Control Program |
| CCR | Commitment, Concurrency and Recovery |
| CCS | Coded Character Set |
| CCSN | Coded Character Set Name |
| CICS | Customer Information Control System |
| CID | Control Identification |
| CMX | Communication Manager in Unix, Linux and Windows Systems |
| COM | Component Object Model |
| CPI-C | Common Programming Interface for Communication |
| CRM | Communication Resource Manager |
| CRTE | Common Runtime Environment (BS2000 systems) |
| DB | Database |
| DBH | Database Handler |
| DC | Data Communication |
| DCAM | Data Communication Access Method |
| DES | Data Encryption Standard |

| | |
|---------|--|
| DLM | Distributed Lock Manager (BS2000 systems) |
| DMS | Data Management System |
| DNS | Domain Name Service |
| DP | Distributed Processing |
| DSS | Terminal (Datensichtstation) |
| DTD | Document Type Definition |
| DTP | Distributed Transaction Processing |
| EBCDIC | Extended Binary-Coded Decimal Interchange Code |
| EJB | Enterprise JavaBeans™ |
| FGG | File Generation Group |
| FHS | Format Handling System |
| FT | File Transfer |
| GCM | Galois/Counter Mode |
| GSSB | Global Secondary Storage Area |
| HIPLEX® | Highly Integrated System Complex (BS2000 systems) |
| HLL | High-Level Language |
| HTML | Hypertext Markup Language |
| HTTP | Hypertext Transfer Protocol |
| HTTPS | Hypertext Transfer Protocol Secure |
| IFG | Interactive Format Generator |
| ILCS | Inter-Language Communication Services (BS2000 systems) |
| IMS | Information Management System (IBM) |
| IPC | Inter-Process Communication |
| IRV | International Reference Version |
| ISO | International Organization for Standardization |
| Java EE | Java Platform, Enterprise Edition |
| JCA | Java EE Connector Architecture |
| JDK | Java Development Kit |
| KAA | KDCS Application Area |
| KB | Communication Area |

| | |
|---------|---|
| KBPRG | KB Program Area |
| KDCADMI | KDC Administration Interface |
| KDCS | Compatible Data Communication Interface |
| KTA | KDCS Task Area |
| LAN | Local Area Network |
| LCF | Local Configuration File |
| LLM | Link and Load Module (BS2000 systems) |
| LSSB | Local Secondary Storage Area |
| LU | Logical Unit |
| MQ | Message Queuing |
| MSCF | Multiple System Control Facility (BS2000 systems) |
| NB | Message Area |
| NEA | Network Architecture for BS2000 Systems |
| NFS | Network File System/Service |
| NLS | Native Language Support |
| OLTP | Online Transaction Processing |
| OML | Object Module Library |
| OSI | Open System Interconnection |
| OSI TP | Open System Interconnection Transaction Processing |
| OSS | OSI Session Service |
| PCMX | Portable Communication Manager |
| PID | Process Identification |
| PIN | Personal Identification Number |
| PLU | Primary Logical Unit |
| PTC | Prepare to commit |
| RAV | Computer Center Accounting Procedure |
| RDF | Resource Definition File |
| RM | Resource Manager |
| RSA | Encryption algorithm according to Rivest, Shamir, Adleman |
| RSO | Remote SPOOL Output (BS2000 systems) |

| | |
|--------|---|
| RTS | Runtime System |
| SAT | Security Audit Trail (BS2000 systems) |
| SECOS | Security Control System |
| SEM | SE Manager |
| SGML | Standard Generalized Markup Language |
| SLU | Secondary Logical Unit |
| SM2 | Software Monitor 2 |
| SNA | Systems Network Architecture |
| SOA | Service-oriented Architecture |
| SOAP | Simple Object Access Protocol |
| SPAB | Standard Primary Working Area |
| SQL | Structured Query Language |
| SSB | Secondary Storage Area |
| SSL | Secure Socket Layer |
| SSO | Single Sign-On |
| TAC | Transaction Code |
| TCEP | Transport Connection End Point |
| TCP/IP | Transport Control Protocol / Internet Protocol |
| TIAM | Terminal Interactive Access Method |
| TLS | Terminal-Specific Long-Term Storage |
| TLS | Transport Layer Security |
| TM | Transaction Manager |
| TNS | Transport Name Service |
| TP | Transaction Processing (Transaction Mode) |
| TPR | Privileged Function State in BS2000 systems (Task Privileged) |
| TPSU | Transaction Protocol Service User |
| TSAP | Transport Service Access Point |
| TSN | Task Sequence Number |
| TU | Non-Privileged Function State in BS2000 systems (Task User) |
| TX | Transaction Demarcation (X/Open) |

| | |
|---------|--|
| UDDI | Universal Description, Discovery and Integration |
| UDS | Universal Database System |
| UDT | Unstructured Data Transfer |
| ULS | User-Specific Long-Term Storage |
| UPIC | Universal Programming Interface for Communication |
| USP | UTM Socket Protocol |
| UTM | Universal Transaction Monitor |
| UTM-D | UTM Variant for Distributed Processing in BS2000 systems |
| UTM-F | UTM Fast Variant |
| UTM-S | UTM Secure Variant |
| UTM-XML | openUTM XML Interface |
| VGID | Service ID |
| VTSU | Virtual Terminal Support |
| WAN | Wide Area Network |
| WS4UTM | Web-Services for openUTM |
| WSDD | Web Service Deployment Descriptor |
| WSDL | Web Services Description Language |
| XA | X/Open Access Interface (X/Open interface for access to the resource manager) |
| XAP | X/OPEN ACSE/Presentation programming interface |
| XAP-TP | X/OPEN ACSE/Presentation programming interface Transaction Processing extension |
| XATMI | X/Open Application Transaction Manager Interface |
| XCS | Cross Coupled System |
| XHCS | eXtended Host Code Support |
| XML | eXtensible Markup Language |

9 Related publications

You will find the manuals on the internet at <https://bs2manuals.ts.fujitsu.com>.

openUTM documentation

openUTM Concepts and Functions

User Guide

openUTM Programming Applications with KDCS for COBOL, C and C++

Core Manual

openUTM Generating Applications

User Guide

openUTM Using UTM Applications on BS2000 Systems

User Guide

openUTM Using UTM Applications on Unix, Linux and Windows Systems

User Guide

openUTM Administering Applications

User Guide

openUTM Messages, Debugging and Diagnostics on BS2000 Systems

User Guide

openUTM Messages, Debugging and Diagnostics on Unix, Linux and Windows Systems

User Guide

openUTM Creating Applications with X/Open Interfaces

User Guide

openUTM XML for openUTM

openUTM Client (Unix systems) for the OpenCPIC Carrier System Client-Server Communication with openUTM

User Guide

openUTM Client for the UPIC Carrier System Client-Server Communication with openUTM

User Guide

openUTM WinAdmin
Graphical Administration Workstation for openUTM

Description and online help system

openUTM WebAdmin
Web Interface for Administering openUTM

Description and online help system

openUTM, openUTM-LU62
Distributed Transaction Processing between openUTM and CICS, IMS and LU6.2 Applications

User Guide

openUTM (BS2000)
Programming Applications with KDCS for Assembler
Supplement to Core Manual

openUTM (BS2000)
Programming Applications with KDCS for Fortran
Supplement to Core Manual

openUTM (BS2000)
Programming Applications with KDCS for Pascal-XT
Supplement to Core Manual

openUTM (BS2000)
Programming Applications with KDCS for PL/I
Supplement to Core Manual

WS4UTM (Unix systems and Windows systems)
WebServices for openUTM

Documentation for the openSEAS product environment

BeanConnect

User Guide

openUTM-JConnect
Connecting Java Clients to openUTM

User documentation and Java docs

WebTransactions
Concepts and Functions

WebTransactions
Template Language

WebTransactions
Web Access to openUTM Applications via UPIC

WebTransactions
Web Access to MVS Applications

WebTransactions
Web Access to OSD Applications

Documentation for the BS2000 environment

AID Advanced Interactive Debugger Core Manual

User Guide

AID Advanced Interactive Debugger Debugging of COBOL Programs

User Guide

AID Advanced Interactive Debugger Debugging of C/C++ Programs

User Guide

BCAM **BCAM Volume 1/2**

User Guide

BINDER
User Guide

BS2000 OSD/BC **Commands Volume 1 - 7**

User Guide

BS2000 OSD/BC **Executive Macros**

User Guide

BS2IDE
Eclipse-based Integrated Development Environment for BS2000
User Guide and Installation Guide
Web page: <https://bs2000.ts.fujitsu.com/bs2ide/>

BLSSERV
Dynamic Binder Loader / Starter in BS2000/OSD

User Guide

DCAM
COBOL Calls

User Guide

DCAM
Macros

User Guide

DCAM
Program Interfaces

Description

FHS
Format Handling System for openUTM, TIAM, DCAM

User Guide

IFG for FHS

User Guide

HIPLEX AF
High-Availability of Applications in BS2000/OSD

Product Manual

HIPLEX MSCF
BS2000 Processor Networks

User Guide

IMON
Installation Monitor

User Guide

MT9750 (MS Windows)
9750 Emulation under Windows

Product Manual

OMNIS/OMNIS-MENU
Functions and Commands

User Guide

OMNIS/OMNIS-MENU
Administration and Programming

User Guide

OSS (BS2000)

OSI Session Service

User Guide

openSM2
Software Monitor

User Guide

RSO
Remote SPOOL Output

User Guide

SECOS
Security Control System

User Guide

SECOS
Security Control System

Ready Reference

SESAM/SQL
Database Operation

User Guide

TIAM
User Guide

UDS/SQL
Database Operation

User Guide

Unicode in BS2000/OSD
Introduction

VTSU
Virtual Terminal Support

User Guide

XHCS
8-Bit Code and Unicode Support in BS2000/OSD

User Guide

Documentation for the Unix, Linux and Windows system environment

CMX V6.0 (Unix systems)

Betrieb und Administration (only available in German)

User Guide

CMX V6.0

Programming CMX Applications

Programming Guide

OSS (UNIX)

OSI Session Service

User Guide

PRIMECLUSTER™

Concepts Guide (Solaris, Linux)

openSM2

The documentation of openSM2 is provided in the form of detailed online help systems, which are delivered with the product.

Other publications

CPI-C

X/Open CAE Specification

Distributed Transaction Processing:

The CPI-C Specification, Version 2

ISBN 1 85912 135 7

Reference Model

X/Open Guide

Distributed Transaction Processing:

Reference Model, Version 2

ISBN 1 85912 019 9

REST

Architectural Styles and the Design of Network-based Software Architectures

Dissertation Roy Fielding

TX

X/Open CAE Specification

Distributed Transaction Processing:

The TX (Transaction Demarcation) Specification

ISBN 1 85912 094 6

XATMI

X/Open CAE Specification

Distributed Transaction Processing

The XATMI Specification

ISBN 1 85912 130 6

XML

W3C specification (www consortium)

Web page: <http://www.w3org/XML>