Fujitsu Technology Solutions

DPRINTCL (BS2000 / OSD)
Version 1.2A
June 2012

Release Notice

1   General

Distributed Print Services (BS2000) (referred to in this document as Dprint) is an optional product
for Distributed Printing Support with CLIENT-SERVER architecture providing inter
operability with Xprint and Windows environments.
It allows distributed services inside a cluster configuration or between cluster onfigurations.
It runs from BS2000/OSD-BC *) V6.0.

To satisfy the client-server architecture, the Dprint product is split into two delivery units :

- DPRINT-CL containing the DPRINTCL and the DPRINTCM subsystems.

- DPRINT-SV containing the DPRINTSV subsystem.

This Release Notice contains outline descriptions of the major expansions, interdependencies and
application notes pertaining to DPRINT-CL V1.2A under the operating system BS2000.

The contents correspond to release status: June 2012.

The Release Notice is supplied as a text file. The typographical conventions for uppercase and
lowercase are observed in the file. Updated versions of the file will be supplied as and when
modifications to the product are registered.

This release notce is, like all other release notices concerning BS2000 products, available on the
Internet under the URL

http://manuals.ts.fujitsu.com/mainframes.html

1.1   Ordering

DPRINT-CL V1.2A is available through your local sales organization.

The general conditions of the Contract for the Use and Maintenance of Software Products apply for
DPRINT-CL V1.2.

*) BS2000/OSD-BC is a trademark of Fujitsu Technology Solutions.

1.2   Delivery

The files for DPRINT-CL V1.2A are distributed through the SOLIS system.

The valid file and volume attributes are listed in the SOLIS2 delivery statement.

The delivery information is presented per subsystem.

1. DPRINTCM V1.2 subsystem

The following release items are needed independent of the HSI:

```
Release Item                    Description
-------------------------------------------------------------------------------------------------------

SIPLIB.DPRINTCM.012             Restricted macro library
SYSLIB.DPRINTCM.012              user macro library
SYSMES.DPRINTCM.012             Message file
SYSRMS.DPRINTCM.012             RMS delivery set for  DPRINTCM
SYSSDF.DPRINTCM.012             DPRINTCM syntax file
SYSSII.DPRINTCM.012             IMON installation information
SYSSSC.DPRINTCM.012             SSCM catalog declaration
                                for DPRINTCM V1.2 subsystem
SYSSSI.DPRINTCM.012              DPRINTCM information file
SYSDAT.DPRINTCM.012.BCAM        Naming convention template for Dprint
                                 applications
SYSPRC.DPRINTCM.012.NOTIF       Notification registration procedure
```


The following release items are only needed on /390 hardware:

```
Release Item                    Description
---------------------------------------------------------------------------------------

SYSLNK.DPRINTCM.012             Load module library for DPRINTCM
```


The following release items are only needed on SPARC64 hardware (SX product line):

```
Release Item                    Description
---------------------------------------------------------------------------------------

SPMLNK.DPRINTCM.012             Load module library for DPRINTCM
```

The following release items are only needed on X86 hardware

```
Release Item                    Description
---------------------------------------------------------------------------------------

SKMLNK.DPRINTCM.012             Load module library for  DPRINTCM
```

2. DPRINTCL V1.2 subsystem

The following release items are needed independent of the HSI:

Release Item	Description
SIPLIB.DPRINTCL.012	Restricted macro library
SPCDAT.DPRINTCL.012.EXE	Installation package for the Windows driver and its related files
SYSFGM.DPRINTCL.012.D	DPRINT-CL Release notice (German)
SYSFGM.DPRINTCL.012.E	DPRINT-CL Release notice (English)
SYSLIB.DPRINTCL.012	user macro library
SYSMES.DPRINTCL.012	Message file
SYSRMS.DPRINTCL.012	RMS delivery set for DPRINTCL
SYSSDF.DPRINTCL.012	DPRINTCL syntax file
SYSSII.DPRINTCL.012	IMON installation information
SYSSSC.DPRINTCL.012	SSCM catalog declaration for DPRINTCL V1.2 subsystem
SYSSSI.DPRINTCL.012	DPRINTCL information file

The following release items are only needed on /390 hardware:

Release Item	Description
SYSLNK.DPRINTCL.012	Load module library for DPRINTCL
SINLIB.DPRINTCL.012 gateway	Load module library for BSD/LPD client component
SYSLIB.DPRINTCL.012.PML2X	Converters library for IDOM conversion

The following release items are only needed on SPARC64 hardware (SX product line):

Release Item	Description
SPMLNK.DPRINTCL.012	Load module library for DPRINTCL

The following release items are only needed on X86 hardware (SX product line):

Release Item	Description
SKMLNK.DPRINTCL.012	Load module library for DPRINTCL

1.3   Documentation

The BS2000/OSD documentation is available in German and English on DVD with the title BS2000/OSD Softbooks

The documentation is also available in the form of online manuals at
http://manuals.ts.fujitsu.com or can be ordered at extra cost at
http://manualshop.ts.fujitsu.com . In the manual shop only manuals are available for products which are still orderable.

The product Adobe Reader is required to read or print the manuals in PDF format.

These manuals may be supplemented by README files. These files contain changes and additions to the product manual.
The name of these files are structured as follows:

SYSRME.DPRINTCL.012.D
SYSRME.DPRINTCL.012.E
SYSRME.DPRINTCL.012.PDF.D
SYSRME.DPRINTCL.012.PDF.E

2   Software extensions

This section describes the new functionalities provided in Dprint V1.2A:

Support of OPENFT V10.

3   Technical information

3.1   Resource requirements

1. Virtual Address Space.

About 0.7 Mbytes

2. Static Disc Space

Less than 10 Mbytes

3. Dynamic Disc Space

Less than 10 Mbytes depending on the configuration and the number of print-jobs.

Note that the minimal size of the resource files transferred is 18 pam pages.

4. Special hardware/firmware/processor type/Real memory.

Not applicable.

3.2   Software configuration

1. Necessary environment

BS2000/OSD-BC V6.0 or higher is required for DPRINT V1.2.

2. Other necessary products

Dprint V1.2 is a software product loadable from the BS2000/OSD-BC V6.0, together with SPOOL V4.4, SPSERVE V2.7 and PRMMAN V1.3.

For the communication aspects, Dprint requires CMX V1.3 which is provided by DCAM (BS2000 transport system).

For the transfer of data, Dprint requires at least FT-BS2000 V7.0 and FTAC V7.0.

  3. For special function, necessary product

The support of Show-output in S-variables requires SDF-P.

Dprint provides inter-operability with Xprint >= V7.0. Please refer to this product,
for the additional software requirements on the UNIX platform.

Dprint provides inter-operability with BSD/LPD clients as Wprint from V3.0,....
Please refer to this product, for the additional software requirements on the PCplatform.
For the BSD/LPD clients gateway component, Dprint requires a POSIX
environment. Printing on an AFPDS or EXCCW printer requires a specific Windows driver
which is included in both the DPRINT product and the WPRINT product. A platform where
only DPRINTCL is installed can only be used as a Dprint gateway redirecting the print jobs
to a Dprint server.

The support of virtual hosts requires BCAM V16.0.

The support of notifications for print jobs requires SNRTP from version V1.0.

4. Compatibility with exotic platform

- BSD-LPD gateway

Up to now, the BSD clients that have been tested with DPRINT V1.2 are :

Sun Release V4.1
RSO V3.1
RSO V3.2
RSO V3.3
RSO V3.4
WPRINT V3.0 for NT
WPRINT V3.1 for NT,2000
Xprint V7.0

- Windows drivers

Dedicated drivers are provided to run on Windows >= 95, Windows NT, 2000, XP
and 2003 server.

3.3   Product installation

In all versions installation of the product with the installation monitor IMON is mandatory, as the
execution of the product requires a consistent Software Configuration Inventory (SCI).

The information concerning installation in the delivery cover letter and in the product
 documentation must be followed as well as the information given below.

1. Before IMON installation

Before IMON is started the following actions have to be performed:

- Name of the product files

The product is compliant with the IMON installation conventions.

- Exchange of product

Only after stopping the preceding version.

- Coexistence with other version of the product

Different versions of the product can run on different hosts of a cluster or of different clusters. In case of heterogeneous interoperability, at least Dprint V1.0J is required on the BS2000 gateway host.

- Necessary Privileges

Spool & Print administration functions are only allowed for the users with PRINT-SERVICE-ADMINISTRATION privilege.

The system administrator (or the responsible for join management) of the host has to define a new userid SYSDPRNT (/ADD-USER command). He has also to define a profile (mandatory for FTAC) associated to this userid. This one can be created with the /CREATE-FT-PROFILE command and its 'transfer admission' value must correspond to the 'transfer-admission' parameter of the //MODIFY-SPOOL-PARAMETERS statement of SPSERVE program
(the initial value is 'FTDPRINT').
No profile creation is required on the BS2000 gateway host for the transfer of the files to be printed from the UNIX platforms.

The SYSDPRNT userid is a USER userid and not a SYSTEM userid i.e. it must be created manually by the responsible of the join management, with the specific account number SYSACC, and not at system startup. If the SYSDPRNT userid is not yet created at Dprint startup, the DPRINTCM subsystem loading will be aborted.

As this SYSDPRNT userid will receive all the files coming from Dprint clients (the file transfer is initiated under the TSOS client userid to the SYSDPRNT server userid), the "File Transfer Admission Set" linked to these userids must be configured to allow such a transfer. This should be done by the File Transfer administrator. It is also recommended to assign the correct protections to this userid. Do not forget to allocate enough space for the files reception.

On the SYSDPRNT userid, a File Transfer configuration file must be defined, when the BCAM name of the host to be reached is different from its FT-partner name. This file is a SAM file, named $SYSDPRNT.SYSPAR.DPRINT.012. Each record in the file contains 8 characters (left-justified, blank padded) for the logical host name (BCAM name), followed by 2 blanks (separator), and 8 characters (left-justified, blank padded) for the partner-name, as known by File Transfer.

- Necessary Privileges for notifications support
If notifications for print jobs are to be supported, the SYSDPRNT userid has to be provided with the "*PRINT-SERVICE-ADMINSTRATION" privilege.

2. IMON installation

After these actions have been executed the product has to be installed with IMON. The necessary Inputs and the sequence of the installation are described in the IMON documentation.

3. After IMON installation

After successful installation the following actions have to be performed:

- Configuration for notification support

If SNS product (>= V1.0) is available on the system, notifications for print jobs may be provided. At first, check if the SNRTP susbsystem is ready; otherwise start it (/START-SUBSYSTEM). Then run the SYSPRC.DPRINTCM.012.NOTIF procedure under TSOS, in order to register the Dprint objects and events in the notification service.

Extensions have been done in order to handle Notification subscription issued from other Spoolers

(Xprint, Wprint, BSD client). They are limited to the job submission. No extension has been foreseen to display subscription information to the foreign system. Only the mail notification method is supported. A mail method, defined in the Notification services resources file, must be associated to the generic MAIL method selection.
For this purpose a new parameter has been defined in the SYSSSI.DPRINTCM.012 file: INTEROP-DEFAULT-MAIL-METHOD, which allows tuning the mail method.

- High Availability context with virtual hosts

If Dprint is used on a virtual host, this virtual host name must be defined in the SYSSSI file of both DPRINTCM and DPRINTCL subsystems (operand VIRTUAL-HOST-NAME).

Should the name of the virtual host be changed, both SYSSSI files have to be updated and Dprint must be started again.

The same name MUST be used when defining the host in the Dprint configuration with SPSERVE later on.

On a given host, to respect the dependencies between SPOOL, DPRINTCM, DPRINTCL and DPRINTSV subsystems,

1.they must be loaded in a specific order :

 (1) /START-SUBSYSTEM SPOOL,VERSION='04.4',SYNCHRONOUS=YES

 (2) /START-SUBSYSTEM DPRINTCM,VERSION='01.2',SYNCHRONOUS=YES

 (3) /START-SUBSYSTEM DPRINTCL,VERSION='01.2' [,SYNCHRONOUS=YES]
or
/START-SUBSYSTEM DPRINTSV,VERSION='01.2' [,SYNCHRONOUS=YES]

The loading of DPRINTCM is allowed only if SPOOL is "created". The loading of DPRINTCL and DPRINTSV is allowed only if DPRINTCM subsystem is "created".

The parameter "SYNCHRONOUS=YES" guarantees that SPOOL will be "created" before starting DPRINTCM, that DPRINTCM will be "created" before starting DPRINTCL or DPRINTSV.

2.they must be unloaded in a specific order :

 (1) /STOP-SUBSYSTEM DPRINTCL,SYNCHRONOUS=YES
     and   /STOP-SUBSYSTEM DPRINTSV,SYNCHRONOUS=YES

 (2) /STOP-SUBSYSTEM DPRINTCM,SYNCHRONOUS=YES

 (3) /STOP-SUBSYSTEM SPOOL,[SYNCHRONOUS=YES]

The unloading of DPRINTCL and DPRINTSV are independent. The unloading of DPRINTCM is allowed only if DPRINTCL and DPRINTSV subsystems are "not created".
The unloading of SPOOL subsystem is allowed only if the DPRINTCM subsystem is "not created".

The parameter "SYNCHRONOUS=YES" guarantees that DPRINTCL and DPRINTSV will be "not created", before stopping DPRINTCM and that DPRINTCM will be "not created" before stopping SPOOL.

Between hosts, the loading order is not important.
Nevertheless, it is recommended to start with the loading of the master host in order to avoid useless master switchings and configuration transfers (not relevant at the very first time).

- The DPRINTCL subsystem being loaded, the user is provided with the "client" functionality. The DPRINTSV subsystem being loaded, the "server" functionality is available. DPRINTCL and DPRINTSV subsystems are loaded, the full functionality of Dprint is available.

- High Availability context with virtual hosts

(1) If Dprint is used on a virtual host, the Dprint configuration file, managed by SPSERVE, has to contain references to virtual host names, instead of real BCAM host names.
For that purpose, the configuration objects have to be defined with that name.
The concerned SPSERVE statements are:
//ADD-DPRINT-HOST, //MODIFY-DPRINT-HOST,
//ADD-DPRINT-REMOTE-CLUSTER,
//MODIFY-DPRINT-REMOTE-CLUSTER,
//MODIFY-DPRINT-ACCESS-CONTROL.
In those statements, the Host name can be virtual as well as real. The other objects (server, printers, printer-pools) implicitly follow from the host definition.

(2) The virtual host name and the corresponding FT partner-name may be defined in the $SYSDPRNT.SYSPAR.DPRINT.012 file, if the virtual host name is different from the FT partner-name.

(3) The Dprint applications must be defined, using the virtual host name, in the SYSDAT.BCAM.APPLICATIONS file of BCAM. For that purpose, a template (SYSDAT.DPRINTCM.012.BCAM) containing all the Dprint applications is released with DPRINTCM; the records must be stored into the BCAM file, once the virtual host name has been modified :

VIRTHOST must be replaced by the virtual host name in upper cases; the hexadecimal value of c'VIRTHOST' - first 2 lines, column 25- must be replaced by the hexadecimal value of the virtual host name in uppper case.

- The BSD/LPD clients gateway component and related files are stored in the SINLIB.DPRINTCL.01& library (/390) (/Sparc). To install it you need to start the POSIX ubsystem. The POSIX installation program can then be started by the command /START-POSIX-INSTALLATION. In the administration file system option you append to the POSIX file system a BSD gateway file system. This action is not mandatory but offers the advantage that BSD gateway works in his proper space. Then choose the packet installation option. Enter the name (DPRINTCL) and the version (012 for example).
The procedures end and you leave the POSIX installation menu.

PAY ATTENTION:

Reinstalling the gateway does not overwrite the configuration files and bs2bincp shell script. The bs2bincp shell script must be copied manually from the /var/spool/SBSD/util directory and edited in order to re-introduce the customization if any.
Deinstalling the BSD gateway package via the same POSIX installation utility (option delete package)will not remove the files/directory created by the gateway runs.

- The Windows drivers are provided via the release unit of DPRINT V1.2. Such drivers are provided by means of the SPCDAT.DPRINTCL.012.EXE file. This one must be copied by file transfer or ftp for instance in binary under the target platform (i.e. PC) in a directory (not the Windows directory), under the same name. In the directory where the file has been copied, execute it by clicking on the file. Refer to the install document to process the driver installation under Windows.
To start the BSD/LPD clients gateway :

- Load the BS2000-POSIX subsystem
 (this can be done either before or after the DPRINT loading).

- Start a BS2000-POSIX shell (/START-POSIX-SHELL).

- Update the clients and servers files of the /var/spool/SBSD directory.

- Start the server with the spchg command in the /var/spool/SBSD/bin directory :
 spchg -n <gateway_name>

Dependencies

- The allowed configurations are :

BS2000	SPOOL	RSO	SPSERVE	*SDF*
>=OSD-BC V6.0	>=V4.4	>=V3.2	>=V2.7	V4.1
>=OSD/XC V2.1	>=V4.4	>=V3.2	>=V2.7	V4.5

The SPOOL >= V4.4 must be loaded before the loading of Dprint.

- To allow the management of Dprint objects, the SPSERVE product must be first installed.

- Dependency with BCAM.

The connections between the entities must be generated by means of BCAM. Within a Dprint cluster, BCAM must be configured to allow a connection from any host to any host. For the inter-cluster communication, it must exist a BCAM connection between the client host and the entry point of the external cluster.

- CMX, FT and FTAC subsystems need to be completely created at Dprint startup time (if not differently specified in the SYSSSI.DPRINTCM.012). If at least one of them is not created, the DPRINTCM subsystem loading will be aborted. If they are unloaded during a Dprint session, the appropriate message is sent to the console. After the restarting of FT and FTAC, Dprint processes the pending requests.
If the unloading of CMX is detected by the DNET task, this task ends after sending a warning message to the console. In this case, the Dprint subsystems must be unloaded and reloaded.

- Dependency with FT-BS2000 and FTAC.

The File Transfer Network Description File must contain all the remote systems defined in the Dprint Configuration as well as the local system.
This must be done by the FT administrator (using the FJADM administration program) with the associated security levels, if any. The FT system has to be activated (using the command /START-FT).
All these conditions have to be fulfilled in all remote systems.

Concerning the definition of the profile used by Dprint to issue a file transfer, some settings are required. As the post-processings are used by Dprint, the SUCCESS-PROCESSING and FAILURE-PROCESSING parameters must be set to '*NOT-RESTRICTED'.
 Keep also in mind that, as the Dprint configuration may be dynamically modified,
Dprint must be able to send and receive files on any host.

- Dprint uses ISO applications for the communications between BS2000 hosts whatever the connectivity may be (WAN, LAN-ISO, LAN-TCP/IP).

The following naming convention is used for the applications names :

for the DPRINTCL subsystem : $DC<#><tsn> where <#> is a sequence number (from 0 to 9) and <tsn> is the TSN of the task starting the privileged application.

for the DPRINTSV subsystem : $SDDSISO.

3.4 Product use

Complete description is to be found in the manual.

Remark about distributed printers management

It is strongly recommended not to name a local printer and a distributed printer with the same logical name. Indeed, when Dprint is loaded, the printer is first searched in the configuration file and the local printer is no more manageable.

Remark about the inter-operability with Xprint

Before being able to issue and/or process inter-operability requests both the BS2000 cluster and the Xprint domain must be properly configured. Please refer to the Dprint and Xprint manuals for more details about these definitions.

Remark about the BSD/LPD clients gateway

Before being able to issue and/or process any request both the BS2000 cluster, the BSD server and the BSD/LPD client must be properly configured. Please refer to the Dprint-Client readme file and BSD/LPD client manuals for more details about these definitions.

In DS2000 context, the optional processing SAP-R3-JOBS-DS2000 must be set to *DS2000-SYSTEM in the corresponding DPRINTCM SYSSSI file.

3.5 Discontinued functions (and functions to be discontinued)

Not applicable.

3.6 Incompatibilities

As more and more customers need using long host names and long user identification names when submitting print jobs from remote Wprint clients, the initial value of the optional parameter has been changed in the SYSSSI.DPRINTCM.012 file:
             LONGUSER=*YES
             LONGHOST=*YES

The effect of the change is the following: instead of being rejected, the print job submission will be accepted, but the information corresponding to the host and user will be truncated.

Back to the previous situation simply occurs by changing the initial value to *NO for both parameters and start DPRINTCM again.

3.7 Restrictions

Print-jobs with START-PROCESS <> *IMMEDIATE can only be printed locally.

The distribution in inter-cluster of print-jobs with start-processing, processing-admission, family-processing, post processing (MONJV, EAM), UFS files is not supported.

The "lock" and "erase" options are allowed but ignored for inter-cluster print jobs.

The family processing is only supported by the local SPOOL.
In order to allow the printing with family processing on systems where no server is located (print jobs are thus sent to remote servers), an optional correction is provided (ENFORCE.FAMILY.PARAMETER.TO.NO) in the SYSSSI file of SPOOL.
When this correction is installed, the /PRINT-DOCUMENT command with family processing is no more rejected but the files are processed as individual print-jobs. Pay attention to the fact that once the option is set, the family processing is no more realized, even by the local spooler.

In intra-cluster, SYSLST/SYSOUT files are printed with server resources. However, an optional processing (SYSTEM-FILE-RESOURCE-CLIENT in the SPOOL SYSSSI file) allows printing such files with the client resources.

From Dprint V1.2, temporary/SYSLST/SYSOUT files may be sent to remote clusters (BS2000 or UNIX), provided SPOOL V4.4 or higher is available.

However (as far as BS2000 remote clusters are concerned), the full support is reached if the target cluster runs Dprint V1.2 or higher.

Remark about BSD/LPD clients

1. The Windows drivers for Windows NT 4.0 (version 3.21) supports the Windows-to-BS2000-Printing extensions such as Custom Tone, all resolutions in drivers and compressed graphics.

2. For more details about the restrictions please refer to the manual.

3.8 Procedure in the event of errors

If an error occurs, the following error information is required for diagnosis:

- Detailed description of the situation. Is error reproductible (yes/no)?

- SLED, system dump or user dump of the affected task.

- Terminal log or CONSLOG file.

- log of the /PRINT-DOCUMENT command, of the SHOW command and of the device, form and characters set defined from the SPOOL parameters file.

- log of the GEN record of the SPOOL parameters file.

- The Dprint logging file.

- Correction files SYSREP.DPRINTCM.012 and SYSREP.DPRINTCL.012 of the client host, Correction files SYSREP.DPRINTCM.012 and SYSREP.DPRINTSV.012 of the server host, Correction files SYSREP.DPRINTCM.012 and SYSREP.DPRINTCL.012 of the gateway host in case of intercluster printing.

- The SBSD logging and debugging files, if any.

- The converter error file, if any.

- If the messages SDC7000, SDC7001 or SDC7003 occur, when processing one of the
  /MODIFY-MULTIPLE-PRINT-JOBS or /CANCEL-MULTIPLE-PRINT-JOBS commands,
  it is advised to execute respectively the /MODIFY-PRINT-JOB-ATTRIBUTES or
  /CANCEL-PRINT-JOB command to get a more precise error information.

- Furthermore, according to the current context, refer to the 'Procedure in error events' section of
  running SPOOL Version or RSO Version in order to provide additional specific information.

4   Hardware support

DPRINT-CL V1.2 can be used on all mainframes supported by BS2000/OSD V6.0.