IBM

IBM Systems - iSeries

Client Management Support APIs

Version 5 Release 4

IBM

IBM Systems - iSeries
Client Management Support APIs

Version 5 Release 4

IBM

> **Note**
>
> Before using this information and the product it supports, be sure to read the information in
> "Notices," on page 17.

Contents

Client Management Support APIs

The Client Management Support APIs and the related exit programs are provided to act on the client information database found on the iSeries$^{(TM)}$. Functions include adding clients to and removing clients from the server, updating client information, and refreshing the database with directory, hardware, and software information stored on the client.

The **client information database** is a set of physical and logical files enabling the use of iSeries database interfaces or SQL to retrieve client information. The information stored in the database has been retrieved using the Simple Network Management Protocol (SNMP) GET and GETNEXT requests from the client when connected to the iSeries.

The Client Software Management and Configuration APIs can call an exit program if it has been registered with the associated exit point of that API. The exit program can be registered by using the Work with Registration Information (WRKREGINF) command. When the API function is complete, the Add, Refresh, and Update exit programs are called; the associated exit programs notify you when the API functions have been completed. The Remove exit program is called before the API performs the remove function.

The Client Software Management and Configuration APIs are:
- "Add Client (QZCAADDC, QzcaAddClient) API" on page 2 (QZCAADDC, QzcaAddClient) allows applications to make clients known to iSeries.
- "Get Client Handle (QzcaGetClientHandle) API" on page 4 (QzcaGetClientHandle) allows applications to know the assigned client handle if the client ID is known.
- "Refresh Client Information (QZCAREFC, QzcaRefreshClientInfo) API" on page 7 (QZCAREFC, QzcaRefreshClientInfo) allows applications to refresh hardware, software, or all the information stored on the system with the information stored at the client.
- "Remove Client (QZCARMVC, QzcaRemoveClient) API" on page 8 (QZCARMVC, QzcaRemoveClient) allows an application to delete a client from the client database on the system, thereby making a client unknown to the system.
- "Update Client Information (QZCAUPDC, QzcaUpdateClientInfo) API" on page 9 (QZCAUPDC, QzcaUpdateClientInfo) allows applications to update miscellaneous information about the client that is stored on the system.

The Client Software Management and Configuration exit programs are:
- "Add Client Exit Program (XZCADDC" on page 14 allows applications to be notified when clients are made known to the system.
- "Lotus Notes Database Exit Program" on page 5 processes an SQL table of all changes that occurred in the Notes database that is being shadowed from DB2 UDB for iSeries.
- "Refresh Client Information Exit Program" on page 14 allows applications to be notified when information about clients has been refreshed through the Refresh Client Information API from the system.
- "Remove Client Exit Program" on page 15 allows applications to be notified when clients are removed from the system.
- "Update Client Information Exit Program" on page 15 allows applications to be notified when information about clients has been updated through the Update Client Information API from the system.

APIs

These are the APIs for this category.

Add Client (QZCAADDC, QzcaAddClient) API

Required Parameter Group:

1	Client handle assigned	Output	Char(12)
2	Client handle requested	Input	Char(12)
3	Client ID	Input	Char(*)
4	Community name	Input	Char(*)
5	Connectivity information	Input	Char(*)
6	Error code	I/O	Char(*)

Default Public Authority: *EXCLUDE
Service Program: QZCACLT
Threadsafe: No

The Add Client (OPM, QZCAADDC; ILE, QzcaAddClient) API allows applications to make clients known to the server. Use the Refresh Client Information API to retrieve more information about the client.

New clients have a system status of unknown until the Update Client Information (QZCAUPDC, QzcaUpdateClientInfo) API is used to indicate *ACTIVE or *INACTIVE.

Authorities and Locks

API Public Authority
    *EXCLUDE

Required Parameter Group

Client handle assigned
    OUTPUT; CHAR(12)

    A unique key to identify this managed client. This parameter returns either the value of the client handle requested if one was specified, or a generated value for this client if one was not specified.

Client handle requested
    INPUT; CHAR(12)

    A unique key to identify this managed client. For ILE, this parameter can be omitted. If it is omitted a unique key is generated by this API. A NULL-terminated string is required if it is specified. For OPM, this is a required parameter. If this parameter is less than 12 bytes, it is padded with hexadecimal zeros.

Client ID
    INPUT; CHAR(*)

    An administratively assigned system name for this managed client. By convention, this is the client's fully qualified domain name. A NULL-terminated string is required for this parameter. The length of client ID is 1 through 255.

Community name
    INPUT; CHAR(*)

A relationship between an SNMP agent and a set of SNMP managers that is used for authentication, access-control, and proxy. A NULL-terminated string is required for this parameter. The length of the community name is 1 through 255.

Connectivity information
> INPUT; CHAR(*)

> The connection information used to contact the client. For the format of this parameter, see "Format for Connectivity Information Parameter."

Error code
> I/O; CHAR(*)

> The structure in which to return error information. For the format of the structure, see Error Code Parameter.

Format for Connectivity Information Parameter

The connectivity information parameter has the following format. For detailed descriptions of the fields in the table, see "Field Descriptions."

Offset			
Dec	Hex	Type	Field
0	0	CHAR(1)	Node type
1	1	CHAR(3)	Reserved
4	4	BINARY(4)	Length of node name
8	8	CHAR(*)	Node name

Field Descriptions

Length of node name. The length of the node name.

Valid values follow:

Node Type	Description
3	The length is 7 through 15

Node name. The name of the node. The format is dependent on the node type.

Valid values follow:

Node Type	Description
3	An internet address. The internet address is specified in the form nnn.nnn.nnn.nnn, where nnn is an integer ranging from 0 through 255.

> **Note:** An internet address of 000.000.000.000 or 255.255.255.255 is treated as an invalid address.

Node type. The type of connection.

The following values are valid:

Node Type	Description
3	Host address

Reserved. An ignored field.

Error Messages

Message ID	Error Message Text
CPF24B4 E	Severe error while addressing parameter list.
CPF3C1E E	Required parameter &1 omitted.
CPF3C36 E	Number of parameters, &1, entered for this API was not valid.
CPF3C90 E	Literal value cannot be changed.
CPF3CF1 E	Error code parameter not valid.
CPF3CF2 E	Error(s) occurred during running of &1 API.
CPF5E81 E	Client ID already exists.
CPF5E82 E	Client handle already exists.
CPF5E84 E	Node type not valid.
CPF5E85 E	Node name length not valid.
CPF5E88 E	Parameter length not valid.
CPF5E95 E	Internal processing error.
CPF96B8 E	Internet address &1 not valid.
CPF9845 E	Error occurred while opening file &1.
CPF9846 E	Error while processing file &1 in library &2.
CPF9872 E	Program or service program &1 in library &2 ended. Reason code &3.

API introduced: V3R6

Get Client Handle (QzcaGetClientHandle) API

Required Parameter Group:

1	Client handle	Output	Char(12)
2	Client ID	Input	Char(*)
3	Error code	I/O	Char(*)

Service Program: QZCACLT
Default Public Authority: *EXCLUDE
Threadsafe: No

The Get Client Handle (QzcaGetClientHandle) API allows applications to know the client handle assigned if the client ID is known.

Authorities and Locks

API Public Authority
　　　*EXCLUDE

Required Parameter Group

Client handle
　　　OUTPUT; CHAR(12)

　　　A unique key to identify this managed node. This parameter was returned in the client handle assigned parameter on the Add Client API.

Client ID
　　　INPUT; CHAR(*)

An administratively assigned system name for this managed client. By convention, this is the client's fully qualified domain name. A NULL-terminated string is required for this string. The length of the client ID is 1 through 255.

Error code
I/O; CHAR(*)

The structure in which to return error information. For the format of the structure, see Error Code Parameter.

Error Messages

Message ID	Error Message Text
CPF24B4 E	Severe error while addressing parameter list.
CPF3C1E E	Required parameter &1 omitted.
CPF3C36 E	Number of parameters, &1, entered for this API was not valid.
CPF3C90 E	Literal value cannot be changed.
CPF3CF1 E	Error code parameter not valid.
CPF5E88 E	Parameter length not valid.
CPF5E95 E	Internal processing error.
CPF5E96 E	Client ID does not exist.
CPF9845 E	Error occurred while opening file &1.
CPF9846 E	Error while processing file &1 in library &2.
CPF9872 E	Program or service program &1 in library &2 ended. Reason code &3.

API introduced: V3R6

Lotus Notes Database Exit Program

Required Parameter Group:

1	Change table name	Input	Char(10)
2	Notes database name	Input	Char(112)
3	DB2 collection or library name	Input	Char(10)
4	DB2 table name	Input	Char(128)

Note: To use this exit program, you need the IBM OS/400 Lotus Notes Enhanced Integration feature. This feature is not available on releases past V4R3.

The Lotus Notes Database exit program provides the capability for the user to process an SQL table of all changes (updates, insertions, and deletions) that have occurred in the Notes database that is being shadowed from DB2 UDB for iSeries.

The Lotus Notes Database exit program refers to the i5/OS program that the user specifies from the Notes interface to the Register Notes to DB2 UDB for i5/OS Exit Program option.

The input parameters are padded with blanks to the maximum length of each parameter. They are not null-terminated. Therefore, if you need to compare or use the values of these parameters in a C-language program, your exit program may need to remove any trailing blanks before use.

An SQL table is built in the library of the DB2 collection or library where the base table of the import and shadow request resides. This change table contains a row for each change that occurred in the Notes database as a result of a Notes client operation. The row contains the operation, column values, and key values of the operations.

The exit program is submitted as a batch job. Any errors that the exit program generates are sent to the job log of the batch job.

For more information, see the Globalization topic.

Authorities and Locks

None.

Required Parameter Group

Change table name
> INPUT; CHAR(10)
>
> The name of the change table in the base table collection or library (as specified on the original shadow request) that contains the summary of changes to the Notes database.
>
> **Note:** Only changes made by a Notes client will be placed in this table.

Notes database name
> INPUT; CHAR(112)
>
> The name of the Notes database in which the changes have occurred.

DB2 collection or library name
> INPUT; CHAR(10)
>
> The name of the DB2 collection or library where the change table and base table reside.

DB2 table name
> INPUT; CHAR(128)
>
> The name of the DB2 base table that is shadowed to the Notes server. This is the name of the table specified on the original import or shadow SQL statement.

Format of change table

The following table shows the format of the change table. For a description of the fields in this format, see "Field Descriptions."

Offset			
Dec	Hex	Type	Field
0	0	CHAR(1)	OPERATION
1	1	CHAR(26)	TIMESTAMP
27	1B	CHAR(256)	UPDATEDBY
283	11B	CHAR(256)	FORM
539	21B	BINARY(4)	DOCID
...			

Field Descriptions

DOCID. The Notes ID of the document where the operation took place in the Notes database.

FORM. The Notes form name that was used to perform the operation on the Notes database.

OPERATION. The operation flag that indicates whether the imported DB2 UDB for iSeries database data row is inserted, updated, or deleted. Possible values follow:

I	Insert
D	Delete
U	Update

TIMESTAMP. The timestamp in the Notes document of when the operation occurred. The 26-character format is YYYY-MM-DD-HH.MM.SS.ssssss, where:

YYYY	Year
MM	Month
DD	Day
HH	Hour
MM	Minute
SS	Second
ssssss	Microsecond

UPDATEDBY. The Notes user who performed the operation on the Notes database.

... The values and offsets from here on are run-time dependent. The columns included in the change table will be the same as the order and attributes of the columns that were selected in the original SQL statement that was used for the import and shadow request. If no key columns were specified on the original import statement, key columns are placed first in the table. In addition, each key column is preceded by a column that contains the old key value.

Exit program introduced: V3R7

Refresh Client Information (QZCAREFC, QzcaRefreshClientInfo) API

Required Parameter Group:

1	Client handle	Input	Char(12)
2	Information type	Input	Char(10)
3	Time out	Input	Binary(4)
4	Error code	I/O	Char(*)

Service Program: QZCACLT
Default Public Authority: *EXCLUDE
Threadsafe: No

The Refresh Client Information (OPM, QZCAREFC; ILE, QzcaRefreshClientInfo) API allows applications to refresh hardware, software, or all information stored on the server with the information stored at the client.

Authorities and Locks

API Public Authority
      *EXCLUDE

Required Parameter Group

Client handle
      INPUT; CHAR(12)

A unique key to identify this managed node. This parameter was returned in the client handle assigned parameter on the Add Client API.

Information type
INPUT; CHAR(10)

The information that should be refreshed at the server.

*ALL   Client details, hardware, and software information should be refreshed at the server.
*HDW   Only hardware information needs to be refreshed at the server.
*SFW   Only software information needs to be refreshed at the server.

Time out
INPUT; BINARY(4)

The amount of time to wait for a client response. The value specified is in units of seconds. Valid values are 1 through 100.

Note: This is not a time-out value for this API. It is a time-out for each SNMP call that this API makes to the client.

Error code
I/O; CHAR(*)

The structure in which to return error information. For the format of the structure, see Error Code Parameter.

Error Messages

Message ID	Error Message Text
CPFA835 E	Time-out parameter not correct.
CPF24B4 E	Severe error while addressing parameter list.
CPF3C1E E	Required parameter &1 omitted.
CPF3C36 E	Number of parameters, &1, entered for this API was not valid.
CPF3C90 E	Literal value cannot be changed.
CPF3CF1 E	Error code parameter not valid.
CPF5E87 E	Information type not valid.
CPF5E88 E	Parameter length not valid.
CPF5E89 E	Client handle does not exist.
CPF5E8E E	Unable to contact client.
CPF5E94 E	Client information not refreshed.
CPF5E95 E	Internal processing error.
CPF9845 E	Error occurred while opening file &1.
CPF9846 E	Error while processing file &1 in library &2.
CPF9872 E	Program or service program &1 in library &2 ended. Reason code &3.

API introduced: V3R6

Remove Client (QZCARMVC, QzcaRemoveClient) API

Required Parameter Group:

1	Client handle	Input	Char(12)
2	Error code	I/O	Char(*)

Service Program: QZCACLT
Default Public Authority: *EXCLUDE
Threadsafe: No

The Remove Client (OPM, QZCARMVC; ILE, QzcaRemoveClient) API allows applications to make clients not known to the server. All hardware and software information associated with the client is also removed.

Authorities and Locks

API Public Authority
    *EXCLUDE

Required Parameter Group

Client handle
    INPUT; CHAR(12)

    A unique key to identify this managed node. This parameter was returned in the client handle assigned parameter on the Add Client API.

Error code
    I/O; CHAR(*)

    The structure in which to return error information. For the format of the structure, see Error Code Parameter.

Error Messages

Message ID	Error Message Text
CPF24B4 E	Severe error while addressing parameter list.
CPF3C1E E	Required parameter &1 omitted.
CPF3C36 E	Number of parameters, &1, entered for this API was not valid.
CPF3C90 E	Literal value cannot be changed.
CPF3CF1 E	Error code parameter not valid.
CPF5E88 E	Parameter length not valid.
CPF5E89 E	Client handle does not exist.
CPF5E95 E	Internal processing error.
CPF9845 E	Error occurred while opening file &1.
CPF9846 E	Error while processing file &1 in library &2.
CPF9872 E	Program or service program &1 in library &2 ended. Reason code &3.

API introduced: V3R6

Update Client Information (QZCAUPDC, QzcaUpdateClientInfo) API

Required Parameter Group:

1	Client handle	Input	Char(12)
2	Client information list	Input	Char(*)
3	Length of client information list	Input	Binary(4)
4	Error code	I/O	Char(*)

Service Program: QZCACLT
Default Public Authority: *EXCLUDE
Threadsafe: No

The Update Client Information (OPM, QZCAUPDC; ILE, QzcaUpdateClientInfo) API allows applications to update some miscellaneous information stored on the system about a client.

Authorities and Locks

API Public Authority
      *EXCLUDE

Required Parameter Group

Client handle
      INPUT; CHAR(12)

      A unique key to identify this managed node. This parameter was returned in the client handle assigned parameter on the Add Client API.

Client information list
      INPUT; CHAR(*)

      The information that should be updated at the server. For the format of this structure, see "Client Information List."

Length of client information list
      INPUT; BINARY(4)

      The length of the client information list area in bytes. Valid values are 16 through 1016.

Error code
      I/O; CHAR(*)

      The structure in which to return error information. For the format of the structure, see Error Code Parameter.

Client Information List

The client information list will have the following form:

Name	Type	Description
Number of tokens	BINARY(4)	The number of tokens, which is the same number of offsets, in the list. Valid values are 1 through 9.
Array of offsets to tokens	Array of BINARY(4)	Offset to token
...	...	...
Token	BINARY(4)	The field to be changed
Length of value	BINARY(4)	The length of the value
Value	CHAR(*)	The new value for the field to be changed
...	...	...

Notes:

1. Offsets are calculated from the beginning of the client information list.
2. It is the responsibility of the calling application to ensure that all binary fields are aligned on a 4-byte boundary.

Business Location (Token=1): The new value for the business location field.

Offset			
Dec	**Hex**	**Type**	**Field**
0	0	BINARY(4)	Token
4	4	BINARY(4)	Length of business location
8	8	CHAR(*)	Business location

Community Name (Token=2): The new value for the community name field.

Offset			
Dec	**Hex**	**Type**	**Field**
0	0	BINARY(4)	Token
4	4	BINARY(4)	Length of community name
8	8	CHAR(*)	Community name

Description (Token=3): The new value for the description field.

Offset			
Dec	**Hex**	**Type**	**Field**
0	0	BINARY(4)	Token
4	4	BINARY(4)	Length of description
8	8	CHAR(*)	Description

Internet Address (Token=4): The new value for the internet address field.

Offset			
Dec	**Hex**	**Type**	**Field**
0	0	BINARY(4)	Token
4	4	BINARY(4)	Length of internet address
8	8	CHAR(*)	Internet address

Office (Token=5): The new value for the office field.

Offset			
Dec	**Hex**	**Type**	**Field**
0	0	BINARY(4)	Token
4	4	BINARY(4)	Length of office
8	8	CHAR(*)	Office

Owner (Token=6): The new value for the owner field.

Offset			
Dec	**Hex**	**Type**	**Field**
0	0	BINARY(4)	Token
4	4	BINARY(4)	Length of owner
8	8	CHAR(*)	Owner

Owner Telephone (Token=7): The new value for the owner telephone field.

Offset			
Dec	**Hex**	**Type**	**Field**
0	0	BINARY(4)	Token
4	4	BINARY(4)	Length of owner telephone
8	8	CHAR(*)	Owner telephone

Client Access User Profile (Token=8): The new value for the Client Access user profile field.

Offset			
Dec	**Hex**	**Type**	**Field**
0	0	BINARY(4)	Token
4	4	BINARY(4)	Length of Client Access user profile
8	8	CHAR(*)	Client Access user profile

Client Access Status (Token=9): The new value for the Client Access status field.

Offset			
Dec	**Hex**	**Type**	**Field**
0	0	BINARY(4)	Token
4	4	BINARY(4)	Length of Client Access status
8	8	CHAR(*)	Client Access status

Field Descriptions

Business location. The physical location of this client.

Client access status. The status of the Client Access client.

The valid special values follow:

ACTIVE   Client Access has identified this client as active.
INACTIVE   Client Access has identified this client as inactive.

Client Access user profile. An iSeries user profile.

Community name. A relationship between a Simple Network Management Protocol (SNMP) agent and a set of SNMP managers that are used for authentication, access control, and proxy.

Description. A user-defined description for this client.

Internet address. The internet address is specified in the form nnn.nnn.nnn.nnn. Values for nnn range from 0 through 255.

Length of business location. Values are from 0 through 255.

Length of community name. Values are 0 through 255.

Length of Client Access status. Values are from 7 through 10.

Length of Client Access user profile. Values are from 0 through 10.

Length of description. Values are from 0 through 255.

Length of internet address. Values are from 7 through 15.

Length of office. Values are from 0 through 32.

Length of owner. Values are from 0 through 32.

Length of owner telephone. Values are from 0 through 32.

Office. The office of the owner for this client.

Owner. The owner for this client.

Owner telephone. The telephone number of the owner for this client.

Token. An integer value that defines the token you are working with.

Error Messages

Message ID	Error Message Text
CPF24B4 E	Severe error while addressing parameter list.
CPF3C1E E	Required parameter &1 omitted.
CPF3C36 E	Number of parameters, &1, entered for this API was not valid.
CPF3C90 E	Literal value cannot be changed.
CPF3CF1 E	Error code parameter not valid.
CPF5E88 E	Parameter length not valid.
CPF5E89 E	Client handle does not exist.
CPF5E95 E	Internal processing error.
CPF9845 E	Error occurred while opening file &1.
CPF9846 E	Error while processing file &1 in library &2.
CPF9872 E	Program or service program &1 in library &2 ended. Reason code &3.

API introduced: V3R6

Exit Programs

These are the Exit Programs for this category.

Add Client Exit Program (XZCADDC

Required Parameter Group:

1	Client handle	Input	Char(12)

Exit Point Name: QIBM_QZCA_ADDC
Exit Point Format Name: ZCAA0100

The Add Client exit program allows applications to be notified when clients are made known to the server. The client application is called with the client handle parameter.

Authorities and Locks

None.

Required Parameter Group

Client handle
> INPUT; CHAR(12)

> A unique key to identify this managed node. This parameter was returned in the client handle assigned parameter on the Add Client API.

Exit program introduced: V3R6

Refresh Client Information Exit Program

Required Parameter Group:

1	Client handle	Input	Char(12)

Exit Point Name: QIBM_QZCA_REFC
Exit Point Format Name: ZCAF0100

The Refresh Client Information exit program allows applications to be notified when information about clients has been refreshed through the Refresh Client Information API from the server. The client application is called with the client handle parameter.

Authorities and Locks

None.

Required Parameter Group

Client handle
> INPUT; CHAR(12)

> A unique key to identify this managed node. This parameter was returned in the client handle assigned parameter on the Add Client API.

Exit program introduced: V3R6

Remove Client Exit Program

Required Parameter Group:

1	Client handle	Input	Char(12)

Exit Point Name: QIBM_QZCA_RMVC
Exit Point Format Name: ZCAR0100

The Remove Client Exit Program allows applications to be notified when clients are removed from the server. The client application is called with the client handle parameter.

Authorities and Locks

None.

Required Parameter Group

Client handle
> INPUT; CHAR(12)

> A unique key to identify this managed node. This parameter was returned in the client handle assigned parameter on the Add Client API.

Exit program introduced: V3R6

Update Client Information Exit Program

Required Parameter Group:

1	Client handle	Input	Char(12)

Exit Point Name: QIBM_QZCA_UPDC
Exit Point Format Name: ZCAU0100

The Update Client Information exit program allows applications to be notified when information about clients has been updated through the Update Client Information API from the server. The client application is called with the client handle parameter.

Authorities and Locks

None.

Required Parameter Group

Client handle
> INPUT; CHAR(12)

> A unique key to identify this managed node. This parameter was returned in the client handle assigned parameter on the Add Client API.

Exit program introduced: V3R6

Appendix. Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

```
IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.
```

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

```
IBM World Trade Asia Corporation
Licensing
2-31 Roppongi 3-chome, Minato-ku
Tokyo 106-0032, Japan
```

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

17

```
IBM Corporation
Software Interoperability Coordinator, Department YBWA
3605 Highway 52 N
Rochester, MN 55901
U.S.A.
```

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this information and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, IBM License Agreement for Machine Code, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

Each copy or any portion of these sample programs or any derivative work, must include a copyright notice as follows:

(C) IBM 2006. Portions of this code are derived from IBM Corp. Sample Programs. (C) Copyright IBM Corp. 1998, 2006. All rights reserved.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

Programming Interface Information

This Application Programming Interfaces (API) publication documents intended Programming Interfaces that allow the customer to write programs to obtain the services of IBM i5/OS.

Trademarks

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

Advanced 36
Advanced Function Printing
Advanced Peer-to-Peer Networking
AFP
AIX
AS/400
COBOL/400
CUA
DB2
DB2 Universal Database
Distributed Relational Database Architecture
Domino
DPI
DRDA
eServer
GDDM
IBM
Integrated Language Environment
Intelligent Printer Data Stream
IPDS
i5/OS
iSeries
Lotus Notes
MVS
Netfinity
Net.Data
NetView
Notes
OfficeVision
Operating System/2
Operating System/400
OS/2
OS/400
PartnerWorld
PowerPC
PrintManager
Print Services Facility
RISC System/6000
RPG/400
RS/6000
SAA
SecureWay
System/36
System/370
System/38
System/390
VisualAge
WebSphere
xSeries

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, and service names may be trademarks or service marks of others.

Terms and Conditions

Permissions for the use of these Publications is granted subject to the following terms and conditions.

Personal Use: You may reproduce these Publications for your personal, noncommercial use provided that all proprietary notices are preserved. You may not distribute, display or make derivative works of these Publications, or any portion thereof, without the express consent of IBM.

Commercial Use: You may reproduce, distribute and display these Publications solely within your enterprise provided that all proprietary notices are preserved. You may not make derivative works of these Publications, or reproduce, distribute or display these Publications or any portion thereof outside your enterprise, without the express consent of IBM.

Except as expressly granted in this permission, no other permissions, licenses or rights are granted, either express or implied, to the Publications or any information, data, software or other intellectual property contained therein.

IBM reserves the right to withdraw the permissions granted herein whenever, in its discretion, the use of the Publications is detrimental to its interest or, as determined by IBM, the above instructions are not being properly followed.

You may not download, export or re-export this information except in full compliance with all applicable laws and regulations, including all United States export laws and regulations. IBM MAKES NO GUARANTEE ABOUT THE CONTENT OF THESE PUBLICATIONS. THE PUBLICATIONS ARE PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE

IBM ®

Printed in USA