IBM® Sterling Connect:Express® for Microsoft Windows

Release Notes

Version 3.1.0 FixPack 12

Copyright

This edition applies to the 3.1 Version of IBM® Sterling Connect:Express® for Microsoft Windows and to all subsequent releases and modifications until otherwise indicated in new editions.

Before using this information and the product it supports, read the information in Notices*, on page 22.

Table of Contents

Version 3.1.0 Delivery

The *Sterling Connect:Express for* Microsoft Windows   version 3.1.0 *Release Notes* document supplements Sterling Connect:Express for UNIX version 1.5.0 documentation. Release notes are updated with each release of the product and contain the description of new functionalities and product requirements, as well as other information pertinent to installing and implementing Sterling Connect:Express for Microsoft Windows   version 3.1.0. Read the document in its entirety before installation.

Pre-Requisites

Sterling Connect:Express for Microsoft Window runs on the following Operating Systems :

- Microsoft Windows 7 Professional, SP1 or later
- Microsoft Windows 10 Professional and Enterprise
- Microsoft Windows Server 2008 and 2008 R2
- Microsoft Windows Server 2012 and 2012 R2

- Virtualization software—All of the above options running under VMware Infrastructure 3 (VMware ESX server)

Note:
Depending on the Windows environment, you may be required to change the properties of the files iu_tom.exe, tom.exe and tom_srv.exe, in order to run as Administrator.

Product Delivery

The product is shipped on CD-ROM, along with the related documentation. Sterling Connect:Express for Microsoft Windows   installation procedure is based on the CD-ROM content. For a detailed installation procedure, read *Sterling Connect:Express for Microsoft Windows Installation and Utilities Guide*.

Proceed with those two steps to install Sterling Connect:Express for Microsoft Windows:

- ❖ Read the last minutes information and installation notes

- ❖ Read and proceed with Sterling Connect:Express for Microsoft Windows Installation and Utilities Guide.

Installation Note

The structure of the journal file has changed. If you upgrade from a previous version, the journal is completely reinitialized. Verify that you don't need anymore the information about requests in the current journal before performing an update. The content of the journal can be unloaded into a text file by using the cxcmd command.

Upgrading to Fixpack 07

After upgrade, before starting the monitor, delete the journal files TOMJNL.DAT, TOMJNL.IX1 and TOMJNL.IX2.

New Functionalities in Sterling Connect:Express for Microsoft Windows Version 3.1.0

This version supports the PeSIT message as a new feature. It enables also to send and receive application aknowledgements (EERP) between two adjacent partners.

The following table shows the list of the new functionalities featured in Sterling Connect:Express for Microsoft Windows V3.1.0.001 :

Fonctionality	Description
PeSIT Message and EERP	See the User Guide for a full description
New parameters in transfer commands	New parameters are available to the begin, end and error transfer commands.
	See the Installation and Utilities Guide
C Api	New api functions enabling to create EERP requests.
	See the Programming Guide

The following table lists the enhancements in this version:

Enhancement	Description
PeSIT synchronization window	The size of the PeSIT synchronization window in a session table can now be changed (Values ranging from 0 to 4).

List of Successive Enhancements

This chapter provides the list of successive versions and enhancements of the product.

Version 3.1.0

Monitor tom.exe	Message added when the maximum number of client connections is reached.
Monitor - Apmcli.dll	Management of errors during de-connection phase changed – loop in monitor supressed
Monitor - anmdll.dll	Trace messages added
Monitor - apmdll.dll	Support chaining message-file with PeSIT
Monitor - Tom.exe	Processing journal and notification files during initialization: re-initialization with requested size (from zero to 9999), or no re-initialization.
Graphical Interface iu_tom.exe	Journal and notification files size fields, from zero to 9999.
Monitor - Apmdll.dll	Pi99 not cleared when transfer are chained.
Monitor - Apmdll.dll	TRC=1104 if DTFEND command is concatenated to the last synchronization point.
Monitor - Tom.exe	Request number back to previous value.
Monitor - Tom.exe	New parameter MAXSES= added in the tomnt.ini file. This optionnal parameter, in the range of 1 to 128, determines the maximum number of simultaneous sessions. The default value is 50. If the value of the parameter provided is invalid, the default value is used.
Monitor - Tom.exe	20120222 - Transfer requestor field set to partner name for inbound request.
Monitor - Apmdll.dll	20120224 - Pi61 and Pi62 are set in the PeSIT SELECT command only if provided (no default)
Monitor - Apmdll.dll Tomnt.ini	20120328 RTC320332 – Synchronization Window = 0 supported. Default synchronization window is set to 4 in tomnt.ini
Graphical Interface Iu_tom.exe	Accept extra characters in partner name, password, and file names fields: `: '-',  '_',  '*',  '#',  '$'`
Graphical Interface iu_tomus.dll	The list of transmitters limited to one partner in the transfer request wizard
Monitor – Apmcli.dll	Ascending compatibility with future version.

V3.1.0.006

Monitor , Graphical Interface, Utilities	Identification and passwords fields support extended printable characters set. This applies to client names and their passwords, partner names and their passwords, and file names.
	Passwords are now case sensitive. For identifiers, you can restore the previous upper case profile by adding manually the parameter CAPSON=O in the tomnt.ini file.
	Note : java interface (CXJAI and cxcmd) must be upgraded to fixpack 04, if implemented.
Monitor , Graphical interface	The maximum total sessions number of a partner was controlled equal to the sum of the maximum in and the maximum out. From this fixpack, the maximum total sessions number must be greater equal the greater of In and out, and less equal the total of in and out.
	Example : IN=5, OUT=7 – TOT must be comprised between 7 and 12, included.
Graphical Interface Iu_tom.exe	RTC378263 – Resolved an application error when trying to manage PeSIT sessions tables.
Graphical Interface iu_tom.exe, iu_tom*.dll	RTC378406 – The network message max. size for a PeSIT session table can be in the range from 256 to 9999. Updated error messages accordingly.
Monitor - Apmcli.dll	RTC377955 – Adding Trc field to Statistics output for errors.
Graphical Interface, Installer, Utilities	RTC380247 – Display a proper error message when browsing to a filename that is too long. The application will no longer terminate.

V3.1.0.007

Tom.exe	PMR 58357,999,706 RTC400042-IC97818: http notification is not sent incase of network error during data transfer.
Httpn_configfr.dll	RTC400042: trace configuration problem found in the french interface: the trace level selection was not working properly (none=middle,middle=full).
Monitor , Graphical interface iu_tomfr.dll	PMR 15329,664,706-RTC407730-IC98677: iu_tom stops when launching the CLIENT screen . A field was not valid in the french version.
apmdll.dll	PMR 15678,650,706-RTC407972-IC98657 – added keyword NONE in the label field (Pi37) , to disable sending this PeSIT parameter in CREATE and ASELECT commands.

Enhancements

Graphical Interface iu_tom.exe, iu_tom*.dll	Enhancement RFE39870-RTC408357 – Presentation table parameter added in the partner definition
Session tables management	Connection messages added in the session table definition: IMSG and OMSG fields can be defined through the graphical interface.
Partner definition	Default file name field added in the partner definition. This is used to accept any unknown files with this partner. The file must be defined and enabled
	PeSIT ANY option added to facilitate integration with CFT partners, where the configuration cannot be changed to use standard PeSIT E with Connect:Express (PROF=ANY, check SSERV/RSERV).
	$$PART$$ default partner name is used, if defined and enabled, to accept connection with any unknown partner.
File definition	Inquiry option added in the file definition: this allows partners to read this file without preparing a Hold request for transmission.
	$$FILE$$ default file name is used, if defined and enabled, to accept transfers of any unknown file. This applies to all partners with no specific default file.
Error exit	The error exit process has been reviewed, and aligned on the C:X Unix process. Some situations did not activate the error exit, specially in server mode.

V3.1.0.008

Tom.exe	PMR 16169,650,706 - RTC 412941 – IC99754
	Restart Cold forced, prod version not updated.
Tom.exe	PMR 16171,650,706 - RTC 413058 – IC99736
	Origin and Remote name fields in the File tab of the Journal are not consistent, for partner of type=other.
Monitor , Graphical interface iu_tomfr.dll	The password field is forced to low case in the CLIENT definition in the French interface.
Apmdll.dll	PMR 16277,650,706 - RTC 415014 – IC99986
	TRC=1913 sending a message.
Tom.exe	RFE 45498, 413163
	Transfer identifier displayed in hexadecimal format, aligned with C:X Unix and z/OS, changed to decimal format in user interfaces (commands, and statistics) .
Tom.exe	The timer of the monitor termination is limited, and a new parameter as been added in the tomnt.ini to control it. TIMER STOP=n secondes. Default is 3 seconds.
tom_httpn.exe	RFE 45498, 413163
	Transfer identifier now displayed in decimal format in the xml notifcation.
Apmdll.dll	Origin and destination fields received, pi3 and pi4 respectively, are extracted first 8 characters not blanks.
Tomnt.ini tom.exe	**[MONITEUR] TIMER STOP** : This is a numerical field whose value must be between 1 and 30 seconds.It provides a delay before final termination of the monitor, while system resources are disabled.
	[MONITEUR] TABLE DE PRESENTATION: The name of a PeSIT presentation table that is used as default when no name is provided in both the partne's definition and the file's definition.
	[MONITEUR] PREMIERE PRESENTATION: It indicates in which order presentation the table names provided in the partner's and file's definition are processed. 'P' indicates that the order is : Partner/File/Monitor (Partner's is first), 'F' indicates that the order is : File/Partner/Monitor (File's is first). 'F' is the default.
iu_tom tom.exe apmcli.dll	The Presentation table name can be provided in the Monitor initialization parameters - tomnt.ini [MONITEUR] TABLE DE PRESENTATION - in the partner parameters, and in the file parameters. Another parameter in the monitor initialization file tomnt.ini, [MONITEUR] PREMIERE PRESENTATION, indicates in which order the information is processed: 'P' indicates that the order is Partner/File/Monitor (The partner's has priority), 'F' indicates that the order is File/Partner/Monitor (The file's has priority). For this parameter the default is 'F' . Because these parameters are not required, if this information is not provided the presentation parameters are all considered null.
Tom.exe	PMR 16400,650,706 - RTC 417892 – IT00667
	TRC=2051 receiving a file from a partner whose name is less than 8 characters long, and the file is configured to receive from this partner only.
Tom.exe	PMR 16296,650,706 - RTC 415777 – IT00455
	When installed as a service, on 64bits windows system, if no path is specified for a file received, the default c:\windows\system32 is displayed in the journal, the notification and the statistics record instead of the sysWOW64. The default path is now the installation

folder.

V3.1.0.009

Tom.exe Apmcli.dll	PMR 86926,660,706 – RTC 419780 – IT01495 Additional variables have been added in the statistics for event 11 (NodeError).
Apmcli.dll	PMR 87818,660,706 – RTC 429326 – IT03847 Fixed issue where the / P is omitted from the batch command Tomreq.exe
Tom.exe	PMR 87850,660,706 – RTC 429104 – IT03848 Fixed issue APIRC=0004 and TRC=7601 if monitor started as a service and the full pathname of files .asc and .ebc in the presentation table is not given.

V3.1.0.010

anmdll.dll	PMR 74738,999,706 – RTC 446973 – IT05576
	PMR 89630,660,706 – RTC 445388 – IT05577
	Improvement of the source code to prevent a memory segment violation.

V3.1.0.011

apmdll.dll	PMR 35635,664,706 – RTC 453278 – IT06823
	If Origin and/or Destination are not specified in a transfer request then PI3 and PI4 will not be sent in CREATE or SELECT and ACK SELECT FPDUs.

V3.1.0.012

Tom.exe	PMR 60694,660,706 – RTC 492221 – IT14365
	Resolved a handle leak in Tom when using external command in a FILE definition.
Install.exe	RTC 4934797 IBM License Metric Tool (ILMT)
	During a first installation or an update it is asked which edition is going to be used (*Premium*, *Standard*, *Premium for Non-Production Environment* ou *Standard for Non-Production Environment*)
anmdll.dll	RTC 467914 Adding support for TLS 1.1 TLS 1.2 and multi-protocol. Enabling TLS 1.1 and TLS 1.2 in CX Windows

The UI supports three basic configurations for SSL Client and Server: TLS v1.x (1.0, 1.1 and 1.2), SSLv3 or SSLv2

List of cipher suites

Traditional list of cipher suites in CXW:
TLS_RSA_WITH_RC4_128_MD5   TLS 1.2, TLS 1.1, TLS 1.0, SSL 3.0
TLS_RSA_WITH_RC4_128_SHA   TLS 1.2, TLS 1.1, TLS 1.0, SSL 3.0
TLS_RSA_WITH_3DES_EDE_CBC_SHA TLS 1.2, TLS 1.1, TLS 1.0, SSL 3.0

New cipher suites added to CXW with this enhancement:
TLS_RSA_WITH_AES_256_CBC_SHA256   TLS 1.2
TLS_RSA_WITH_AES_128_CBC_SHA256   TLS 1.2
TLS_RSA_WITH_AES_256_CBC_SHA   TLS 1.2, TLS 1.1, TLS 1.0
TLS_RSA_WITH_AES_128_CBC_SHA   TLS 1.2, TLS 1.1, TLS 1.0

You can configure the SSL/TLS protocol in more detail by manually editing the tomnt.ini file.
Set the PROTOCOL property in the SSL Client or Server definition to a 2-digit value derived from the following table:

```
Protocol Value
-----------------------
SSL2      01
SSL3      02
TLS10      04
TLS11      08
TLS12     10
```

You can also add these hexadecimal values to combine multiple protocols.

For example :
PROTOCOL=04 only enables the TLS 1.0 protocol.
PROTOCOL=08 only enables the TLS 1.1 protocol.
PROTOCOL=10 only enables the TLS 1.2 protocol.
PROTOCOL=1c enables all TLS protocols.
PROTOCOL=1e enables SSL3 and all TLS protocols.

Note : Starting from version 3.1.0.12 for installing or updating a standard exported client the file Anmdll.dll is required.

Important Note – Installing Sterling Connect:Express as a service and SSL certificates:

The name of Connect:Express service has changed from version 304 to version 306 (The monitor name has been added so you can execute several monitors on the same system).

There are two possible configurations:

- You imported certificates in the SYSTEM_STORE_SERVICES certificate store, in the Certificate – Service (Connect:Express) folder. In this case you have to duplicate/import the certificates in the new folder called Certificates – Service (Connect:Express <Nom-Moniteur>) from the new service name.

- You imported certificates in the SYSTEM_STORE_LOCAL_MACHINE certificate store. In this case the certificates are still available.

When upgrading from version 305 to version 306, the name of the service is unchanged.

V3.0.6.001

The following table lists the modifications in Sterling Connect:Express V3.0.6.001.

Modifications	Description
New asset protection key format	New asset protection key format for the monitor and the applications. The authorization key is not anymore obtained from the initialization files tomnt.ini or iutom.ini, but from a file license.key delivered by Sterling Commerce and placed in the execution directory. Keys with old format stay compatible.
SSL client and server definition	Added an option enabling to include 2 bytes length before unencrypted data. This can be used with gateways converting PeSIT/SSL ↔ PeSIT without SSL.
Problem with /L parameter in Tomreq and TomreqWC	The /L parameter was not taken into account for etebac3 requests. This parameter indicates that an HTTP notification must be sent. In addition, the value /L :7 was not authorized in any case.
X509 certificate Api	Server part of the API displaying X509 certificates
NUMBER-SERVERS (Patch P107)	The maximum value for NUMBER-SERVERS in the asset protection key is changed from 50 to 255
Pesit preconnect (Patch P108)	A 26 characters long PESIT preconnect is accepted for compatibility with old CFT versions
Etebac3 (record length error with TRC 3002) (Patch P109)	FF (Ebcdic C6C6) followed by spaces found inside a regular record causes an 'Invalid record length error'

V3.0.6.002

Important Note: After upgrading, perform a cold start of Sterling Connect:Express .

Modifications	Description
Enhancement of performances	Write I/O processes have been changed and performance are increased.
Session parameters	Maximum values of network message size and synchronization size have been increase respectively from 4094 bytes to 9999 bytes and from 32 kbytes to 99 kbytes. Synchronization size can bne null. This modification participates to performance increase. The synchronization window is internally fixed to 4. This value is negociated with the partner, who can lower it (from 0 to 3) or adopt it (setting this parameter from 4 to 16). **A cold start is required: the tomnt.ini parameter** `TYPE DE DEMARRAGE=C` Default values provided in the tomnt.ini file are: `PeSIT session (TCP/IP)=4096,64,*,N,0`
Graphical Interface iu_tom.exe (Patch 110)	Correction of the following problem : If a connected user modifies his password in his client definition, the graphical interface returns an error when reconnecting after timeout in the same session.
Monitor tom.exe (Patch 111)	A bad version number was written in tomnt.ini (306001 instread of 306002).
Batch transfer request tomreq.exe, tomreqwc.exe (Patch 112)	Pi61 (/7) and Pi62 (/8) were not transmitted to the monitor if parameter /L was set to 0 or not present in the command.
Batch transfer request tomreq.exe, tomreqwc.exe (Patch 113)	The label was not transmitted to the monitor if the Pi61 and Pi62 (parameter s/7 and /8) were present in the command.
Monitor - tom.exe	Message added when the maximum number of client connections is reached.
Monitor - Apmcli.dll	Management of errors during de-connection phase changed – loop in monitor supressed
Monitor - anmdll.dll	Trace messages added
Monitor - apmdll.dll	Support chaining message-file with PeSIT
Monitor - Tom.exe	Processing journal and notification files during initialization: re-initialization with requested size (from zero to 9999), or no re-initialization.
Graphical Interface Iu_tom.exe	Journal and notification files size fields, from zero to 9999.
Monitor - Apmdll.dll	Pi99 not cleared when transfer are chained.
Monitor - Tom.exe	Request number back to previous value.

Version 3.0.5

Important Note – Installing Sterling Connect:Express as a service and SSL certificates:

The name of Connect:Express service has changed from version 304 to version 305 (The monitor name has been added so you can execute several monitors on the same system).

There are two possible configurations :

- You imported certificates in the SYSTEM_STORE_SERVICES certificate store, in the Certificate – Service (Connect:Express) folder. In this case you have to duplicate/import the certificates in the new folder called Certificates – Service (Connect:Express <Nom-Moniteur>) from the new service name.

- You imported certificates in the SYSTEM_STORE_LOCAL_MACHINE certificate store. In this case the certificates are still available.

V3.0.5.001

The following table lists the updates in Sterling Connect:Express V3.0.5.001.

Modifications	Description
HTTP Notifications to GIS	This component is delivered separately in the Connect:Express services for GIS installation CD. it requires a specific installation on an already installed monitor.
Extended transfer request (iu_tom, tomreq)	The maximum size of the Sender (Pi61) and Receiver (Pi62) fields of the extended request in PeSIT-E has been changed from 8 characters to 24 characters.
	Sizes of corresponding parameters (/7 and /8) of tomreq.exe have also been modified.
Journal (iu_tom)	Pi61 and PI62 values are displayed in the graphical interface.
&PI61 and &PI62	New parameters in start and end of transfer commands (PeSIT-E): &PI61 and &PI62
Physical file name (iu_tom, tomreq)	Conversion to uppercase of the physical file name has been suppressed.
Chaining of transfers on the same network connection	Problem when chaining multiple transfers on the same network connection with a partner in PeSIT, PeSIT on SSL and Etebac3.
	Scheduling process fixed.
SSL: Control of the remote partner DN	For SSL transfers, control of the DN contained in the certificate sent by the remote partner.
Etebac3 parameter card (Tom.exe)	Problem with Ascii -> Ebcdic translation of the parameter card: Only the ascii characters A-Z and 0-9 were translated to their Ebcdic equivalent. Others characters (for example *) were translated to 0x40.
	All characters are now translated. The translation table is an internal table similar to the original TOMNT.ASC table.

Files with text variable format Null length records (apmdll.dll)	In PeSIT, for files in « Text Variable » format, records with a null length (0x0D0x0A) are now transmitted by setting null length records in the data FPDUs. These records were previously ignored. Compatibility with remote monitors : If compression is used, this is not compatible with Sterling Connect:Express for Microsoft Windows monitors in version **< V305.001**. (Do not use compression in this case or upgrade the remote monitor). If compression is used, this is not compatible with C:X Unix monitors in version **<= V143-119**. (Do not use compression in this case). Sterling Connect:Express OS390 : OK CFT : OK
Graphical interface and Apis	In some cases of error, the protocol is not correctly displayed in the journal. Fixed in : Tom.exe
Graphical interface	Extended request – Origin (Pi3) and Destination (Pi4) accept lowercase characters. Modification : iu_tom.exe
Prc retry table (PeSIT)	Add table config\PesitPrcRetry.txt enabling to filter PeSIT transfer retries depending on selected values of PRC (See User Guide). Modification : Tom.exe
Installation	In case of update, the installation program reinitializes the configuration file of the notification reception service (CeNotMon.ini), even if not asked to reset this file. Fixed in : install.exe
Graphical interface (Patch P105 2008/12/08)	Problem when listing too many symbolic files. Fixed in: ApiCxV3.dll
Graphical interface (Patch P106 2009/06/03)	The password field is not accessible when creating a new client. Fixed in: iu_tomfr.dll

V3.0.4.001

Beta version beta with SSL option.

V3.0.4.002

Version with SSL option (See Documentation).

V3.0.4.003

The following table lists the updates in Sterling Connect:Express V3.0.4.003.

Update	Description
SslUsed and SslparmId fields of a partner description available to CXJAI Patch 101	The api server has been modified to enable the java api CXJAI to access to the "SslUsed" and "SslparmId" fields of a partner. (Tom.exe)
Fields SSLUSED and SSLPARM of a partner (graphical interface and C API) Patch 102	The fields SSLUSED and SSLPARM are incorrectly set in the file tomnt.ini, when the partner is not an SSL partner (SSLUSED=0). This causes errors in transfers for which the non-SSL partner has been created with the graphical interface in V304. This problem doesn't happen with SSL partners, or non-SSL partners created in V303 and not updated in V304. Fixed in : Apmcli.dll and ApiCxV3.dll
Patch 100	See previous versions
Infinite retries for some transfers in error Patch 104 (2008/08/14)	The retries counter stays null. Fixed in Tom.exe

V3.0.4.004

The following table lists the updates in Sterling Connect:Express V3.0.4.004.

Update	Description
TomreqWC (Wild Cards)	For a transfer request with wild cards, Tomreq is limited to the deposit of a request for 100 files maximum. A new executable TomreqWC enables to submit a non-limited number of requests. This executable has the same parameters as Tomreq. It must be able to access directly to the directory containing the files to send and therefore cannot be used in client-server mode.
Transmission of the simple file name to the remote partner in the label	For a transfer request, using &8.3 keyword in the label parameter, enables to transmit automatically the simple name of the file in the pi37 to the remote partner. In this case, the simple name of the file is limited to 80 characters by the size of the Pi37.
Transmission of the simple file name to the remote partner in the label, if the partner is a non Connect:Express monitor	For a transfer request, if the partner type is not Connect:Express monitor (see partner definition), using &8.3 keyword with offset 0 in the Pi99 parameter, enables to transmit automatically the simple name of the file in the pi99 to the remote partner. In this case, the size of the simple name of the file is limited by the size of the physical name (path) which is 127.
API Transfer Submit Request. Notify flag Patch 103	Problem of a program using the C API (ApiCxV3.dll) and not setting (correctly) the value of the Notify flag (which must be 'O','N' or space) in ApiCxNetSubmitReq. In this case, the monitor tries to send a notification while no notification has been requested. Modification: If Notify is not equal to 'O', no notification is requested. Modification : Apmcli.dll

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 character set (DBCS) information, contact the IBM Intellectual

Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing

Legal and Intellectual Property Law

IBM Japan Ltd.

1623-14, Shimotsuruma, Yamato-shi

Kanagawa 242-8502 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:

IBM Corporation

J46A/G4

555 Bailey Avenue

San Jose, CA__95141-1003

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 document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement 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.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information is for planning purposes only. The information herein is subject to change before the products described become available. 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 ficticious 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. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

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

© IBM 2010. Portions of this code are derived from IBM Corp. Sample Programs.
© Copyright IBM Corp. 2010.

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

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at

"[Copyright and trademark information](#)" at www.ibm.com/legal/copytrade.shtml.

Adobe, the Adobe logo, PostScript, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.

IT Infrastructure Library is a registered trademark of the Central Computer and Telecommunications Agency which is now part of the Office of Government Commerce.

Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

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

ITIL is a registered trademark, and a registered community trademark of the Office of Government Commerce, and is registered in the U.S. Patent and Trademark Office.

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

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

Cell Broadband Engine is a trademark of Sony Computer Entertainment, Inc. in the United States, other countries, or both and is used under license therefrom.

Linear Tape-Open, LTO, the LTO Logo, Ultrium and the Ultrium Logo are trademarks of HP, IBM Corp. and Quantum in the U.S. and other countries.

Connect:Express®, Connect Control Center®, Connect:Direct®, Connect:Enterprise, Gentran®, Gentran:Basic®, Gentran:Control®, Gentran:Director®, Gentran:Plus®, Gentran:Realtime®, Gentran:Server®, Gentran:Viewpoint®, Sterling Commerce™, Sterling Information Broker®, and Sterling Integrator® are trademarks or registered trademarks of Sterling Commerce, Inc., an IBM Company.

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