SYBASE®

An **SAP** Company

Release Bulletin

SAP Sybase IQ 16.0

Linux

Contents

Read Me First

Although the SAP® Sybase® IQ 16 New Features Summary describes all new SAP Sybase IQ functionality, some features may require additional action on your part to take advantage of the new architecture.

Important Multiplex Upgrade Issue

If you are upgrading a multiplex database to SAP Sybase IQ 16.0, you must perform the steps in *Database Upgrades* on page 12. Failure to perform these steps may cause server startup failure in SAP Sybase IQ 16.0.

Load Performance Configuration Issues

Customers upgrading from a previous release, for example, may need to change some initial compatibility options or rebuild wide columns to accommodate different datatypes. The new load engine provides better performance, but requires changes to the default memory allocation to use all available hardware resources efficiently.

This topic highlights migration issues and features which impact load performance. See the appropriate topics in the SAP Sybase IQ core documentation set for details. *Migration (Linux and UNIX)* and *Migration (Windows)* are new administration manuals in 16.0, describing the steps for upgrading your database, steps to install maintenance releases, and information on upgrading to the role-based security model. *Administration: Load Management* is also new in 16.0, describing data import and export procedures.

NBit

Continuous `NBit` dictionary compression replaces 1, 2, 3 byte dictionary compression as the default column storage mechanism in 16.0. All datatypes except LOB (character and binary) and BIT datatypes can be `NBit` columns.

The `IQ UNIQUE` column constraint determines whether a column loads as `Flat FP` or `NBit FP`. An `IQ UNIQUE` n value set to 0 loads the column as `Flat FP`. An n value greater than 0 but less than the `FP_NBIT_AUTOSIZE_LIMIT` creates a `NBit` column initially sized to *n*. Columns without an `IQ UNIQUE` constraint implicitly load as `NBit` up to the auto-size limit.

Using `IQ UNIQUE` with an *n* value less than the auto-size limit is not necessary. The load engine automatically sizes all low or medium cardinality columns as `NBit`. Use `IQ UNIQUE` in cases where you want to load the column as `Flat FP` or when you want to load a column as `NBit` when the number of distinct values exceeds the auto-size limits.

Loads and Large Memory

Large memory represents the maximum amount of memory that SAP Sybase IQ can dynamically request from the OS for temporary use. Because some load operations may

require more large memory than the 2GB default provides, adjust the startup options that control large and cache memory allocation based on the total amount of available physical memory.

As a general rule, large memory requirements represent one third of the total available physical memory allocated to SAP Sybase IQ. To ensure adequate memory for the main and temporary IQ stores, set the **–iqlm**, **–iqtc**, and **–iqmc** startup parameters so that each parameter receives one third of all available physical memory allocated to SAP Sybase IQ.

In most cases, you should allocate 80% of total physical memory to SAP Sybase IQ to prevent SAP Sybase IQ processes from being swapped out. Adjust actual memory allocation to accommodate other processes running on the same system. For example, on a machine with 32 cores and 128GB of total available physical memory, you would allocate 100GB (approximately 80% of the 128GB total) to SAP Sybase IQ processes. Following the general rule, you would set the **–iqlm**, **–iqtc**, and **–iqmc** parameters to 33GB each.

See *-iqlm iqsrv16 Server Option* and *-iqmc iqsrv16 Server Option* in the *Utility Guide*.

Index Changes

Changes to FP and HG indexes take advantage of the new column compression mechanism and improve load performance.

Index	Description
New Fast Projection (FP) Indexes	Take advantage of the new continuous NBit dictionary compression, which replaces FP(1), FP(2), and FP(3) byte dictionary compression. FP(1), FP(2), and FP(3) indexes roll over to NBit(8), NBit(16), and NBit(24) respectively.
	If FP_NBIT_IQ15_COMPATIBILITY='OFF', IQ UNIQUE constraints applied to the column determine whether the column loads as Flat FP or NBit.
	See *Fast Projection (FP) Index* in *Administration: Database*.

Index	Description
New tiered HG index structure	Decouples load performance from HG index size. In 15.x, load throughput could degrade as the amount of data in an HG index increased. As the index grew, loading the same amount of data could take more time. The new tiered structure decouples load performance from the HG index size to increase throughput. The CREATE_HG_WITH_EXACT_DISTINCTS option determines whether newly created HG indexes are tiered or non-tiered. This option is ON in all new 16.0 databases and all 16.0 databases migrated from 15.x. To take advantage of the new structure, set this option to OFF. See *CREATE_HG_WITH_EXACT_DISTINCTS Option* in *Reference: Statements and Options*. Use **sp_iqrebuildindex** to convert non-tired HG indexes to tiered HG and vice-versa.

Stored Procedures

New stored procedures return information about column indexes and constraints.

Procedure	Description
sp_iqindexmetadata	Returns details about column indexes, including the index types (Flat FP, NBit, HG, and tiered HG), distinct counts, IQ UNIQUE *n* value, and NBit dictionary size. See *sp_iqindexmetadata Procedure* in *Reference: Building Blocks, Tables, and Procedures*.
sp_iqcolumnmetadata	Returns FP index metadata for one or more user tables or all tables in the database. See *sp_iqcolumnmetadata Procedure* in *Reference: Building Blocks, Tables, and Procedures*.
sp_iqindexrebuildwidedata	Identifies wide columns that you must rebuild before they are available for read/write activities. Output includes statements that you can use with **sp_iqrebuildindex** to rebuild the columns. See *sp_iqindexrebuildwidedata Procedure* in *Reference: Building Blocks, Tables, and Procedures*.

Procedure	Description
sp_iqrebuildindex	Rebuilds FP indexes (`Flat FP as NBit`, or `NBit as Flat FP`) and HG indexes (single HG as tiered HG, or tiered HG as single HG). Before you can insert or update new data, you must rebuild all columns greater than 255 bytes wide.
	The `index_clause` can reset `IQ UNIQUE` n to an explicit value from 0 (to recast an `NBit` column to `Flat FP`) up to the limits defined in the `FP_NBIT_AUTOSIZE_LIMIT` and `FP_NBIT_LOOKUP_MB` options.
	sp_iqrebuildindex also enables read-write access to columns that contain large object (LOB) data. LOB columns migrated from 15.x databases are read-only until you run **sp_iqrebuildindex**. The estimated cardinality for `NBit` columns with an `IQ UNIQUE` value below or equal to the `FP_NBIT_AUTOSIZE_LIMIT` is stored as 0 regardless of the `FP_NBIT_IQ15_COMPAT-IBILITY` setting. This affects the value returned from **sp_iqindexmetadata**.
	See *sp_iqrebuildindex Procedure* in *Reference: Building Blocks, Tables, and Procedures*.

Database Options

Some database options are not enabled to take advantage of 16.0 features. Maintaining limited compatibility after a database upgrade provides some flexibility to transition existing applications.

Database Option	Description
FP_NBIT_IQ15_COMPATIBILITY	Provides tokenized FP support similar to that available in 15.x. This option is ON in all 16 databases upgraded from 15.x and OFF in all newly created databases.
	• If this option is ON, the database engine uses the MINIMIZE_STORAGE, FP_LOOKUP_SIZE, and FP_LOOKUP_SIZE_PPM options to optimize column storage. These options are ignored in 16.0.
	• If this option is OFF, the database engine ignores MINIMIZE_STORAGE, FP_LOOKUP_SIZE, and FP_LOOKUP_SIZE_PPM options and columns conform to SAP Sybase IQ 16.0 NBit storage options.
	Set this option to OFF to take advantage of the new NBit dictionary column compression.
	See *FP_NBIT_IQ15_COMPATIBILITY Option* in *Reference: Statements and Options*.
CREATE_HG_WITH_EXACT_DISTINCTS	Determines whether newly created HG indexes are tiered or non-tiered. This option is ON in databases upgraded from 15.x and all newly created databases.
	Set this option to OFF to take advantage of the new tiered HG index structure.
	See *CREATE_HG_WITH_EXACT_DISTINCTS Option* in *Reference: Statements and Options*.
REVERT_TO_V15_OPTIMIZER	Forces the query optimizer to mimic 15.x behavior. This option is ON in 16.0 databases upgraded from 15.x. and OFF in all newly created 16.0 databases.
	If you plan to use the new 16.0 hash partitioning options, set this to ON.
	See *REVERT_TO_V15_OPTIMIZER Option* in *Reference: Statements and Options*.

Product Summary

This release bulletin provides late-breaking information about SAP Sybase IQ. A more recent version may be available on the Web.

For information about compatible platform and operating system configurations and minimum patch levels, see the *Installation and Configuration Guide*.

For information about new features and behavior changes in this version, see the *SAP Sybase IQ New Features Summary*.

For information about accessibility, see *Accessibility Features* in this release bulletin.

Product Compatibilities

Information about the compatibility of SAP Sybase IQ with other products.

These SAP Sybase products are certified with this version of SAP Sybase IQ:

- jConnect™ for JDBC™ 7.0
- SAP Sybase IQ InfoPrimer 15.3
- Sybase Control Center (SCC) 3.2.8

These SAP Sybase products are certified to work as backends in CIS functionality with this version of SAP Sybase IQ:

- SQL Anywhere® 16.0
- Adaptive Server® Enterprise 15.5

See *Sybase Product and Component Certifications* for instructions on accessing the latest online certification information.

Network Clients and ODBC Kits

SAP Sybase IQ Network Clients and ODBC kits for development are available on the SAP Sybase download site. A Network Client is available for each platform supported by this version of SAP Sybase IQ. A Linux 32-bit client is also available.

The SAP Sybase download site is *http://www.sybase.com/downloads*.

SAP Sybase IQ 16.0 does not require an upgrade of the 32-bit ODBC kits, if you use SAP Sybase IQ 15.2 32-bit ODBC kits.

Installation and Upgrade

This section provides last-minute information about installation and upgrading that was omitted from or incorrect in your installation guide, or that needs special emphasis.

For detailed information about installing and upgrading SAP Sybase IQ, see the *Installation and Configuration Guide*.

Before you run a new version of SAP Sybase IQ, see *Restrictions* for the most current requirements. This section includes installation and migration information that is new for this release or needs emphasis.

SAP Sybase IQ 16.0 Requires a License

SAP Sybase IQ 16.0 uses the SAP Sybase Software Asset Management (SySAM) licensing mechanism that lets system administrators enable and monitor their site's use of SAP Sybase products.

SAP Sybase IQ includes separate SySAM licenses for each product edition and separate licenses for any optional features available for that edition. See *Installation and Configuration Guide > Licensing Your Software*.

Avoid Using Relative Path to Launch Installer [CR #691212]

SAP Sybase IQ installation fails if you launch the installer using a relative path. During GUI installation, the installer fails to prompt for the license file information and does not install properly.

For example, when launched from the console using a command line:

```
Installer files directory :  /system1/users/jones/installdir
$SYBASE dir : /system1/users/jones/IQ160
```

```
cd $SYBASE
../installdir/setup.bin
```

- **Workaround** – Launch the installer from the directory where it is located, or use an absolute path.

Custom Sybase Control Center Install Omits HTTP, HTTPS, and RMI Prompts [CR #688044]

If you perform a custom install and only choose the Sybase Control Center for IQ option, the installer does not display the port configuration panel.

- **Workaround** – To modify the default values, update the port properties in the SCC service configuration files.

  In `$SYBASE/SCC-3_2/services/EmbeddedWebContainer/service-config.xml`, update the http and https properties:

```
<set-property property="http.port" value="8282" />
          <set-property property="https.port" value="8283" />
```

In `$SYBASE/SCC-3_2/services/RMI/service-config.xml`, update RMI port:

```
<set-property property="port" value="9999"/>
```

Sybase Partners with v3 UDFs Must Specify a License Key When Upgrading to v4 [CR #688135]

If you are an SAP Sybase design partner using v3 UDFs, your UDFs will not continue to work after you upgrade your libraries to v4 unless you specify the SAP Sybase-provided license key in the `a_v4_extfn_license_info` structure. You must implement the `extfn_get_license_info` method, and the method must return a valid key. See the *User-Defined Functions* guide for information on upgrading to the v4 API, and adding the `extfn_get_license_info` method.

SySAM Licensing Checkout [CR #628594]

If SAP Sybase IQ was licensed using a per-processor license type in previous releases, the license quantity was determined at startup. In this release, SAP Sybase IQ periodically checks the number of processors it can use and attempts to check-out additional licenses for any increase. SAP Sybase IQ shuts down after 30 days, if additional licenses are not made available within this period. See the *SySAM Users Guide* for details regarding license grace.

ALTER DATABASE UPGRADE PROCEDURE ON Required

To install new system tables, you must run **ALTER DATABASE UPGRADE PROCEDURE ON** on existing databases after installing SAP Sybase IQ 16.0.

For syntax, see *Reference: Statements and Options*.

Using Remote Server Classes for ASE [CR #615420]

Component Integration Services (CIS) connectivity from SAP Sybase IQ to Adaptive Server® Enterprise (ASE) is available using server class aseodbc. The aseodbc server class uses the Adaptive Server ODBC driver. The Adaptive Server ODBC driver requires a separate installation of SDK 15.5 ESD #8 or higher which can be downloaded from the SAP Sybase EBF download site.

Problem Solutions from Earlier Versions

SAP Sybase IQ includes solutions to problems that were solved in post-release updates to earlier versions.

SAP Sybase IQ 16.0 contains solutions to problems fixed up to and including these versions:

- SAP Sybase IQ 15.1 ESD #3 (N off #7 - SAP Sybase IQ 15.1 ESD #3.7)
- SAP Sybase IQ 15.2 ESD #1 (N off #8 - SAP Sybase IQ 15.2 ESD #1.8)

- SAP Sybase IQ 15.2 ESD #2 (N off #3 - SAP Sybase IQ 15.2 ESD #2.3)
- SAP Sybase IQ 15.2 ESD #3
- SAP Sybase IQ 15.3
- SAP Sybase IQ 15.4 ESD #2

Sub-Capacity Licensing

SAP Sybase offers sub-capacity licensing options for SAP Sybase IQ Enterprise Edition. Sub-capacity licensing refers to licensing an SAP Sybase product on a subset of the CPUs available on a physical machine.

Platform Support
Sub-capacity licensing is supported on the following platforms:

Table 1. Sub-Capacity Licensing Vendor Support

Vendor	Product	Platform Support	Virtualization Type
HP	nPar	HP IA 11.31	Physical Partition
	vPar		Virtual Partition
	Integrity Virtual Machines with Resource Manager		Virtual Machine
	Secure Resource Partitions		OS Containers
IBM	LPAR	AIX 6.1, AIX 7	Virtual Partition
	dLPAR		Virtual Partition
SUN	Dynamic System Domains	Solaris 10	Physical Partition
	Solaris Containers/Zones with Solaris Resource Manager		OS Partition
INTEL/AMD	VMWare ESX Server [1]Guest OS: Windows	VMWare ESX Server 3.5, 4.0, and 4.1, ES-Xi4.1, ESXi5.0, Guest OS: Windows 2008 R2, Windows 7	Virtual Machine

Vendor	Product	Platform Support	Virtualization Type
	VMWare ESX ServerGuest OS: Linux, Sun Solaris x64	VMWare ESX Server 3.5, 4.0 and 4.1, ESXi4.1, ESXi5.0, Guest OS: RH 5.5, RH 6.1, SuSE 11, Sun Solaris x64	Virtual Machine
	Xen[2], KVM, DomainU: Windows	Windows 2008 R2, Windows 7	Virtual Machine
	Xen, KVM, DomainU: Linux	RH 5.5, RH 6.1, SuSE 11	Virtual Machine
	Hyper-V	Windows 2008 R2, Windows 7, SuSE 11, RHEL 6.1	Virtual Machine
	[1] VMWare excludes VMWare Workstation and VMWare Server [2] Xen excludes Sun Solaris x64		

How to Enable SAP Sybase Sub-Capacity Licensing

You must have a sub-capacity licensing agreement with SAP Sybase before you can enable sub-capacity licensing. If you choose to use SAP Sybase IQ in a sub-capacity environment, see the *SySAM Quick Start Guide* for instructions for generating your license key.

Note: Keep your license server up-to-date.

Although the installation media includes a copy of the most recent SySAM license server, SAP Sybase recommends that you periodically check for license server updates on the *SySAM Standalone License Server Install site*.

Database Upgrades

Important information about database upgrades.

For detailed information about installing and upgrading SAP Sybase IQ, see the *Installation and Configuration Guide*.

Upgrading a 15.x Multiplex Prevents the Coordinator from Starting [CR #733475]

If you follow the instructions in the *Migration Guide > Upgrading SAP Sybase IQ Databases* to upgrade your 15.x multiplex database, you may encounter known issue CR #733475. To avoid this issue, perform these steps before you upgrade a 15.x multiplex:

---

1. Shut down all multiplex servers.
2. Restart the 15.x coordinator using your 15.x installation with the **-iqmpx_sn 1** server option. This step is required to clear out all multiplex related metadata that can interfere with an upgrade.
3. Shut down the 15.x server.
4. Follow the steps in *Migration Guide > Database Upgrades*.

Omitting these steps may cause server startup failure and an error like `Sybase IQ Abort From:  slib/s_iqstore.cxx:1594`.

If for some reason, you omit the step mentioned above, you may be unable to start your coordinator after upgrade. During startup, if you see a stack trace with the following signature, you have hit CR #733475:

```
pc: 0x7f5455eee3ec
s_iqstore::ReplayCheckpointLog(s_checkpoint_log*,  dbServerType,
s_bm*,
    s_bm*)+0x6c pc: 0x7f545628e274
st_database::OpenDatabase(unsigned long long, int,
   unsigned long long*, unsigned  int*)+0x3134
```

The only way out of this situation is to use forced recovery using your SAP Sybase IQ 16.0 installation. The following is an example of how you can start the coordinator for forced recovery. Just replace *my_db* with the name of your database and `'disk1/work/database/my_db.db'` with the path and name of your database. If the symptoms you encounter are different, please call SAP Sybase Technical Support:

1. Start the coordinator with the **-iqfrec** and **-iqmpx_sn 1** server options:
   ```
   start_iq -n my_server -x 'tcpip{port=9999}' -gd dba -gm 1
   -iqmpx_sn 1 -iqfrec my_db disk1/work/database/my_db.db
   ```
2. Connect to the coordinator and run:
   ```
   sp_iqcheckdb 'dropleaks database';
   checkpoint;
   ```

   Completion returns `Freelist Updated`.
3. Stop the coordinator.
4. Restart the coordinator without the **-iqfrec** and **-iqmpx_sn** server options.
5. Synchronize secondary servers.

Drop Servers of Type asejdbc Before Migrating SAP Sybase IQ 12.7 Databases to SAP Sybase IQ 16.0 [CR #726782]
The `asejdbc` server class is deprecated. Servers of type `asejdbc` must be dropped prior to running iqunload. SAP Sybase IQ 12.7 databases with remote server definitions based on the `asejdbc` driver will not have these definitions migrated to by the **iqunload** tool and will not give an error at the beginning of an unload saying that you need to drop any asejdbc servers (if there are any present).

Cannot Enable Row-level Versioning in Upgraded Database [CR #732621]
If you upgrade a database from 15.x to 16.0, you cannot enable row-level versioning (using the
ALTER TABLE statement), or perform **LOAD**, **INSERT** or **UPDATE** statements on any IQ base
table containing a **CHAR**, **VARCHAR** or **VARBINARY** column of width greater than 255. If your
upgraded database contains a table having a column with these criteria, run the
sp_iqrebuildindex procedure. After you run this procedure, you can enable row-level
versioning and perform DML statements on these large-column tables.

SAP Sybase IQ and Other SAP Sybase Products

Issues you should know when you install SAP Sybase IQ with other SAP Sybase Products.

CR #	Description
727411	• **The SAMPLE_RS will fail to start when installing Replication Server 15.7.1 into the same directory as SAP Sybase IQ 16.0 –** Replication Server startup returns errors: ```CONNECTIVITY ERROR: CT-Library error: 'ct_connect(): protocol specific layer: internal Client Library error: There is a tds login error. The installed encryption handler returned a status that was not CS_SUCCEED.'. CONNECTIVITY ERROR: Login attempt failed: server = 'SAMPLE_RS_ERSSD'. Unable to connect to the RSSD SQL Server 'SAMPLE_RS_ERSSD'.Make sure that the SQL Server is running, and the 'sa' password is correct. Task failed: check the RSSD SQL Server. Terminating configuration.``` • **Workaround –** Install Replication Server in its own directory, separate from SAP Sybase IQ.

CR #	Description
688694	• **Error message for SySAM when you install SAP Sybase IQ 15.4 on Replication Agent™ 15.2** – Installing SAP Sybase IQ 15.4 after Replication Agent 15.2, creates errors in *$SYBASE*/log/sy-sam_server.log and *$SYBASE*/log/sy-sam_util.log. These errors occur because the license files in the *$SYBASE*/SYSAM-2_0/bin directory installed by Replication Agent do not have write permission. • **Workaround** – Before you install SAP Sybase IQ, change the license file permissions in the *$SYBASE*/SYSAM-2_0/bin directory.

668842	• **Incorrect value in response file for START_SCC_SERVER property** – Creating a response file with the GUI installer creates incorrect value in Start SAP Sybase Control Center code block.
	
	• **Workaround** – The code block that contains the error looks like this:
	<pre>#Start Sybase Control Center
	#--------------------------
	START_SCC_SERVER=\"\",\"No\" <---- wrong val-
	ue
	START_SCC_SERVER_1=
	START_SCC_SERVER_2=No
	START_SCC_SERVER_BOOLEAN_1=0
	START_SCC_SERVER_BOOLEAN_2=1</pre>
	The code block should look like this:
	<pre>#Start Sybase Control Center
	#--------------------------
	START_SCC_SERVER=No
	START_SCC_SERVER_1=
	START_SCC_SERVER_2=No
	START_SCC_SERVER_BOOLEAN_1=0
	START_SCC_SERVER_BOOLEAN_2=1</pre>
	To correct the error, change the START_SCC_SERVER line to START_SCC_SERVER=No or START_SCC_SERV-ER=Yes.

Known Issues

Review known issues and workarounds, listed by Change Request (CR) number.

Find issues by Change Request (CR) number.

Note: You can search the Sybase Web site for solved cases. Choose **Support > Solved Cases** or go to *http://search.sybase.com/search/simple.do?mode=sc*. You need a MySybase account to view solved cases in the archive.

Restrictions

Consider information about restrictions to avoid unexpected results from your system.

This information applies to servers and databases of this version of SAP Sybase IQ16.0 that have been upgraded from any earlier version of SAP Sybase IQ, unless specified otherwise.

Database Name Length Restriction [CR #365281]
The **dbbackup** utility truncates the database name to 70 characters and creates a target file with a truncated name. SAP Sybase IQ uses **dbbackup** when synchronizing secondary servers. Due to **dbbackup** restrictions, database names must be less than 70 characters long.

Dbspace Management and File Placement
When you allocate file system files for dbspaces (System, IQ main, or IQ temporary), do not place the files on a file system that is shared over a local area network. Doing so can lead to poor I/O performance and other problems, including overloading the local area network. Do not place IQ dbspace files on network drives or Network File System (NFS) file systems.

To avoid conflicts, Sybase recommends that dbspace management be performed by a single database administrator on a single connection.

Dbspace Naming in RESTORE Command [CR #561366]
If the dbspace name contains a file extension such as `.iq`, `.iqtmp`, or `.iqloc`, you must enclose the dbspace name in double quotation marks when specifying the name in a **RESTORE** command **RENAME** clause. For example:

```
RENAME local1 TO '/work/local1_res.iqloc.iqloc'
DBSPACENAME "local1_res.iqloc"
```

or

```
RENAME "test_prod2.iq" TO '/test/test_prod7.iq'
```

Unexpected Query Results

In a few unusual circumstances, differences in semantics between SQL Anywhere and SAP Sybase IQ may produce unexpected query results. These circumstances are:

* A query is issued from inside a user-defined function
* A **SELECT** statement has no **FROM** clause
* A **FROM** clause contains some tables that were created **IN SYSTEM** and others that were not created **IN SYSTEM**

In these circumstances, subtle differences between the semantics of SQL Anywhere and SAP Sybase IQ may be exposed. These differences include:

* SAP Sybase IQ treats the CHAR and VARCHAR data types as distinct and different; SQL Anywhere treats CHAR data as if it were VARCHAR.
* When the **RAND** function is passed an argument, the behavior is deterministic in SAP Sybase IQ and nondeterministic in SQL Anywhere.

Known Issues for Installation and Configuration

Descriptions of known issues and workarounds for SAP Sybase IQ installation.

Table 2. Installer issues

CR#	Description
691250	• **Wrong link to IBM XL C/C++ Runtime Environment for AIX, V10.1 –** The Installing the IBM XL C/C++ Redistributable Libraries topic in the *Installation and Configuration Guide* includes an incorrect link to *IBM XL C/C++ Runtime Environment for AIX, V10.1*. The correct link is *https://www-304.ibm.com/support/docview.wss? uid=swg24019829*

CR#	Description
690606	• **RH 6.x default setting for max user processes may be too low for starting Sybase IQ servers –** Red Hat 6.x introduced a change that affects the number of threads that the SAP Sybase IQ engine can start. By default, Red Hat 5.x set the limit dynamically based on the machine configuration. (For example, an 8-core system would set the limit at 256693.) In Red Hat 6.x, this limit is hard-coded to 1024 regardless of system size. This change particularly affects systems with high CPU per core counts and systems where the same user account starts multiple IQ servers.

• **Workaround 1 –**

1. Calculate the number of threads needed. For each server started by any single user, use the following formula to calculate the number of threads IQ allocates:

```
numThreads = 60*4 + 50*(numCPUs - 4) + num-
Connections + 3
```

For an 8-core system with 100 users, the *numThreads* is 543 threads per server.

For a 64-core system with 100 users, the *numThreads* is 3343 threads per server.

The formula also works for systems with fewer CPUs, for example, on 2-core systems.

2. To set hard and soft limits, add the following lines to `/etc/security/limits.conf`:

```
sybase soft nproc  7712
-- The soft limit allows for 2 servers on the
64-core system plus 1024 default.
```

```
sybase hard nproc  16384
-- Powers of 16 work well for kernel and en-
gine settings. (1024 * 16) is rounded up for
extra space.
```

You can increase the soft limit, but the hard limit is the threshold for the value unless raised by a privileged user limit.

To set limits for all users instead of the sybase user, replace sybase with `*`, for example:

```
* soft nproc 7712
```

```
* hard nproc 16384
```

3. Set the process number limit in the shell script of the user who starts servers, for example:

For the tcsh or C (csh) shell:

```
limit maxproc 7712
```

CR#	Description

	For the bash or Korn (ksh) shell:
	
	```ulimit -u 7712```
	
	4. Reboot your machine.
	
	• **Workaround 2 –**
	
	1. Return to Red Hat 5.x behavior by commenting out the following line in the file `/etc/security/limits.d/90-nproc.conf`:
	
	```#* soft nproc 1024```
	
	2. Reboot your machine.

684311	• **Install on RH 6.0 fails with java stack trace –** Red Hat Enterprise Linux 6 requires 32-bit compatibility libraries to support Java-based applications in SAP Sybase IQ, including the SAP Sybase IQ installer. • **Workaround –** These libraries are required to install SAP Sybase IQ on Red Hat Enterprise Linux 6: • `libXext-devel.i686` • `libXtst-devel.i686` If you start the SAP Sybase IQ installer in GUI mode without installing these libraries, the installer generates an exception and fails.
669678	• **Uninstaller stops responding –** Clicking the Previous button after the installer indicates that ```All items were successfully deleted``` causes the uninstaller to hang. • **Workaround –** Do not try to return to a previous screen after the installer deletes your files. Click Done to complete the uninstall process.

CR#	Description

668842	• **Incorrect value for Start Sybase Control Center in response file** – Creating a response file for unattended or silent installation with the GUI installer sets an incorrect value for the `START_SCC_SERVER` property in the Start Sybase Control Center code block.
	
	• **Workaround** – An incorrect `START_SCC_SERVER` property looks like this:
	
	```\n#Start Sybase Control Center\n#--------------------------\nSTART_SCC_SERVER=\"\\",\"No\" <---- wrong value\nSTART_SCC_SERVER_1=\nSTART_SCC_SERVER_2=No\nSTART_SCC_SERVER_BOOLEAN_1=0\nSTART_SCC_SERVER_BOOLEAN_2=1\n```
	
	The `START_SCC_SERVER` property should look like this:
	
	```\n#Start Sybase Control Center\n#--------------------------\nSTART_SCC_SERVER=No\nSTART_SCC_SERVER_1=\nSTART_SCC_SERVER_2=No\nSTART_SCC_SERVER_BOOLEAN_1=0\nSTART_SCC_SERVER_BOOLEAN_2=1\n```
	
	To correct the error, change the `START_SCC_SERVER` property to `START_SCC_SERVER=No` or `START_SCC_SERVER=Yes`.

665300	• **Installer stops responding on some UNIX-like platforms** – On some UNIX-like operating systems, a network resource may cause the installer to stop responding and return the error "syntax error near unexpected token 'fi'." The **df** command also stops responding in this situation.
	
	• **Workaround** –
	
	1. Identify the network file system (NFS) mounts that may have problems:
	```\nstrace -e statfs, statfs64 df\n```
	2. Use the **umount** command to unmount an identified NFS mount:
	```\numount -l <path>\n```
	3. Repeat the above steps until there are no more NFS mounts that have stopped responding.
	
	Note: The **umount** command requires root permission. If **umount** unmounts the NFS, you may have to restart your machine.

CR#	Description

664968, 669802	• **Installer returns "Permission denied" error on Red Hat** – The in-staller may return this error on Red Hat, when the installation DVD has been automatically mounted:
	
	`./setup.bin: /bin/sh: bad interpreter: Permis-sion denied`
	
	• **Workaround** – Remount the installation media and run the installation again:
	
	  1. Unmount the installation media.
	  2. Manually mount the DVD drive:
	    Use one of the following commands to remount the drive:
	    • `mount -t iso9660 /dev/hda /mnt/cdrom`
	    • `mount -o exec /dev/cdrom /media`
	  3. Start the installation using the new mounted directory `/mnt/cdrom`.

655963	• **Installer returns error "No filesystem could mount root" on Red Hat** – The installer may return this error on Red Hat when installing on IBM P6 and P7 machines: `rhel6 install error: No filesystem could mount root, tried: iso9660` • **Workaround** – Follow the steps on *http://www.ibm.com/developer-works/forums/thread.jspa?threadID=357314* and re-install.
641873, 652690, 652696, 652866, 643106	• **Do not install SAP Sybase IQ16.0 into the same directory as older Sybase products** – Installing Sybase SAP Sybase IQ16.0 into the same directory with older SAP Sybase Products may render some or all of these products unusable. • **Workaround** – Install SAP Sybase IQ16.0 into a different directory than the one you use for older products.

Known Issues for SAP Sybase IQ Operations

Descriptions of known issues and workarounds for SAP Sybase IQ operations.

Table 3. Open Client issues

CR#	Description

662422	• **Remote query performance degrades with DATETIME column –** SAP Sybase IQ16.0 and the default Open Client/Server included with SAP Sybase IQ16.0 support the TDS BIGDATETIME data type for remote queries.
	
	When an SAP Sybase IQ server executes a remote query using Open Client and fetches a DATETIME column on an IQ/SA remote server, the return data type is BIGDATETIME, instead of DATETIME. This may degrade performance.
	
	This performance degradation may not occur, when the remote server is an ASE server.
	
	To prevent the return of BIGDATETIME values, apply this work-around.
	• **Workaround –** Add these lines to the Open Client and Open Server configuration file $SYBASE/$SYBASE_OCS/config/ocs.cfg to prevent the return of BIGDATETIME values:
	
	`[SAP Sybase IQ]`
	`CS_CAP_RESPONSE = CS_DATA_NOBIGDATETIME`
	
	See also *Open Server 15.0, Open Client 15.0, and SDK 15.0 > Open Client Client-Library/C Reference Manual > Client-Library Topics > Using the runtime configuration file.*

Table 4. Server startup issues

CR#	Description

682890	• **Red Hat 6.0 limits number of threads/processes** – Starting SAP Sybase IQ may return a `Resource temporarily unavailable` message if the user process spawns too many processes.
	• **Workaround** –
	　1. Change the login profile of the user starting SAP Sybase IQ. For example, in the bash shell, enter the following command in the `.bashrc` file:
	　　`ulimit -u 32000`
	　2. If the problem persists, try a stronger approach. As root, edit the file `/etc/security/limits.conf` and add this line:
	　　`sybase -`

663054	• **Database recovery fails if server started with -iqro 1 flag** – A 15.2 database that is archived cannot be recovered if you specify the read-only flag **-iqro 1** on the startup command in SAP Sybase IQ 16.0.

SAP Sybase IQ Operations Known Issues from Previous Versions

Descriptions of known issues and workarounds for SAP Sybase IQ operations from previous versions.

Red Hat 6 Requires Compatibility Libraries [CR #686818]

Installation of SAP Sybase IQ 15.3 on Red Hat 6.0 fails with an `InvocationTargetException` error unless you install the required 32-bit compatibility libraries:

- libXext-devel.i686
- libXtst-devel.i686

PHP Bound Parameters on Big Endian Platforms [CR #627872]

In SAP Sybase IQ 15.2, PHP: Hypertext Preprocessor (PHP) drivers on big endian platforms require bound parameters to be initialized before the call to **sasql_stmt_bind_param** for `INT` and `BIGINT` data types.

This example shows the values properly initialized before the call to
sasql_stmt_bind_param:

```
$stmt = sasql_prepare($conn, "insert into
testdefault(c1, c2, c3, c5) values(?,?,?,?)");
#Binding parameters with statement prepared
$c1=22;  $c2=33;  $c3="col3data";  $c5="col5data";
sasql_stmt_bind_param
($stmt,"iiss", $c1, $c2, $c3, $c5);
```

```
#executing statement
sasql_stmt_execute($stmt);
```

sp_iqstatus Returns Error on Chinese and Japanese Locale Installations [CR #622928]

On SAP Sybase IQ servers that are set up for Chinese and Japanese locales, running `sp_iqstatus` returns an error similar to:

```
Could not execute statement.
Syntax error near '2010' on line 1
SQLCODE=-131, ODBC 3 State="42000"
Line 1, column 1
```

Workaround:

1. Run these commands:

   For Chinese locales:

   ```
   % cd $IQDIR16/res
   % rm dblgzh_iq11_eucgb.res
   % rm dblgzh_iq11_cp936.res
   ```

   For Japanese locales:

   ```
   % cd $IQDIR16/res
   % rm dblgja_iq11_eucjis.res
   % rm dblgja_iq11_sjis.res
   ```

2. Restart SAP Sybase IQ.

After this procedure, certain strings in the `.iqmsg` files and the output of **sp_iqmpxinfo**, **sp_iqstatistics**, and **sp_iqstatus** are in English, instead of Chinese or Japanese.

ASE Connections to SAP Sybase IQ with BIGDATETIME [CR #622007]

When a version 15.5 GA Adaptive Server Enterprise server uses Component Integration Services (CIS) to connect to an SAP Sybase IQ server version that has `BIGDATETIME` and `BIGTIME` capability, any chronological data type sent to the Adaptive Server server using CIS results in the error:

```
Msg 7225, Level 16, State 4:
Line 1:
Unknown datatype token 188 'BIGDATETIME NULL'
encountered.
Exited passthru mode from server 'QA_IQ16_ASECIS'.
```

SAP Sybase IQ sends the data as `BIGDATETIME` and relies on Adaptive Server to convert appropriately. The `BIGDATETIME` data type was implemented in CIS in Adaptive Server Enterprise version 15.5 ESD #1, so this error occurs with Adaptive Server Enterprise 15.5 before any ESDs have been applied.

Workaround:

`SET TEMPORARY OPTION RETURN_DATE_TIME_AS_STRING='ON'` in SAP Sybase IQ for each session. The SAP Sybase IQ server sends all chronological data as strings

and Adaptive Server completes the conversion. This workaround is for Adaptive Server Enterprise 15.5 GA connecting to SAP Sybase IQ in passthrough mode.

You can also use this workaround in the definition of a remote stored procedure, but it is not a solution for proxy tables created on Adaptive Server returning chronological data types from SAP Sybase IQ.

dbisql Does Not Start on Linux Red Hat 5.3 [CR #571993]

The Interactive SQL utility **dbisql** fails to start on Linux Red Hat 5.3, and issues a message similar to:

```
Error! could not load the Java Virtual machine DLL:
/root/users/user1/050509/shared/JRE-
6_0_7_32BIT/lib/i386/client/libjvm.so
```

Workaround: Run:

```
% cd $IQDIR16/bin32
% dbisql -batch  # creates below
% dbisql.sh
```

SELinux Policy Requirement for Sybase IQ 15.x on Linux PowerPC x64 [CR #571627]

You must install selinux-policy-2.4.6-25.e15 or later to use the **java -version** command with SELinux enabled. If the policy version is incorrect, the system displays this message:

```
Errorloading: /libjvm.so: cannot restore segment prot
after reloc: Permission denied
```

This is the preferred method to meet this policy requirement, but alternatively, you can disable SELinux.

RSA Certificate Creation Fails [CR #557702]

RSA certificate creation fails with the error `createcert command not found` because the **createcert** utility is missing. The utility is currently available only on the AIX64, LinuxAMD64, Sun64, Win32, and Win64 platforms. Please contact Technical Support if you need this utility.

FORWARD TO from SAP Sybase IQ to ASE Fails [CR #539484]

Execution of a **FORWARD TO** command from SAP Sybase IQ to Adaptive Server Enterprise using the ASEODBC driver fails with ASA Error -660 "`The identifier that starts with '<identifier>' is too long. Maximum length is 28.`"

Workaround:

To avoid this problem, do one of the following after creating a remote Adaptive Server Enterprise server using either server class `aseodbc` or server class `asejdbc` and before executing a SQL statement that contains a string with double quotes against the remote server using the **FORWARD TO** statement:

1. Change the double quotes to single quotes.
2. Include the database option **SET QUOTED_IDENTIFIER OFF** before the SQL statement to be executed:

```
FORWARD TO <remote server name> {
SET QUOTED_IDENTIFIER OFF
<SQL statement>
}
```

3. Set the QUOTED_IDENTIFIER database option to **OFF** using a separate **FORWARD TO** statement:

```
FORWARD TO <remote server name> {
SET QUOTED_IDENTIFIER OFF }
```

Known Issues for Interactive SQL

Descriptions of known issues for Interactive SQL.

Use **dbisql**, instead of **dbisqlc** , unless instructed to do otherwise for specific tasks. **dbisqlc** is supported, but does not contain all the features of **dbisql**. **dbisqlc** will be deprecated in a future release.

Table 5. Interactive SQL issues

CR#	Description
733451	• **Column order in multi-column UNIQUE index definition on an RLV-enabled table must match order in table definition** – If a multi-column UNIQUE index (including a multi-column primary key) exists on an RLV-enabled table, and the column order in the index definition differs from the column order in the table definition, the server fails on inserts, updates and loads of that table.
732734	• **ALTER TABLE PARTITION BY and ALTER TABLE SUBPARTI-TION BY RANGE statements are unsupported** – Documentation erroneously includes unsupported syntax. See the **ALTER TABLE** statement in *Documentation Changes > Reference: Statements and Options* on page 45. • **Workaround** – For ALTER TABLE PARTITION BY HASH, drop the table and create a new table with a hash partition.

CR#	Description
731331	• **SYSTEM PROCEDURE AS DEFINER ON clause disables FORWARD TO statement** – After you run **ALTER DATABASE UPGRADE** with the SYSTEM PROCEDURE AS DEFINER ON clause, the **FORWARD TO** statement stops working. SAP Sybase IQ attempts to connect as the user who created the system procedure, not the user executing **FORWARD TO**. • **Workaround** – Set the following connection property to re-enable **FORWARD TO**: `SET OPTION public.extern_login_credentials = login-user`
668398	• **XKEYSYMDB environment variable required for dsedit** – Before using **dsedit**, you must set the environment variable XKEYSYMDB to **<path to X11>/XKeysymDB**. For example, for **csh**: `setenv XKEYSYMDB /usr/share/X11/XKeysymDB`
n/a	• **Import option unsupported** – Do not use the Import option on the **dbisql** Data menu (or Command | Options | Input Format in **dbisqlc**). This option is not supported for use with IQ databases. Use the **LOAD TABLE** statement or the **INSERT** statement to load data into IQ tables.
n/a	• **Creating output files in quiet mode** – If you run **dbisql** (Interactive SQL) with the **-q** (quiet mode) option, and the data extraction commands (primarily setting the option TEMP_EXTRACT_NAME1 to an output file) are in a command file, you must first set and make permanent the **dbisql** option "Show multiple result sets." If you do not set this option, the output file is not created.
n/a	• **Show multiple result sets** – To set the option "Show multiple result sets," click Tools | Options in the **dbisql** window, choose "Sybase IQ," and select the "Results" tab. Under "Results Processing" and "For statements that return multiple result sets," select "Show all result sets."
n/a	• **Query plan on the Plan tab** – The query plan in the **dbisql** Plan tab is a SQL Anywhere style query plan. For an SAP Sybase IQ query plan, refer to the IQ `.iqmsg` file.

CR#	Description
n/a	• **Unable to initialize screen routines –** If you set the terminal type on UNIX and Linux systems to "dumb" or "unknown" and then start **dbisqlc**, SAP Sybase IQ returns an error. For example: ``` % setenv TERM dumb % dbisqlc ``` ``` error at line 1 Unable to initialize screen routines ``` • **Workaround –** To avoid problems, run **dbisql** (Interactive SQL) instead, or use an xterm window to run **dbisqlc** on UNIX and Linux systems. For example, to start an xterm window with a scroll bar, enter: ``` % xterm -sb ```

Known Issues for Multiplex Environment

Descriptions of known issues and workarounds for the multiplex environment.

Table 6. Multiplex issues

CR#	Description

733475	• **Before you upgrade a 15.x multiplex** – Perform these steps before you upgrade a 15.x multiplex:
	
	1. Start the 15.x coordinator with the **-iqmpx_sn 1** server option.
	2. Shut down the 15.x server.
	
	Omitting these steps may cause server startup failure and errors like `Sybase IQ Abort  From:  slib/s_iqstore.cxx:1594`.
	• **Workaround** – To resolve this error, use SAP Sybase IQ forced recovery:
	
	1. Start the coordinator with the **-iqfrec** and **-iqmpx_sn 1** server options:
	```\nstart_iq -n my_server -x 'tcpip{port=9999}' -gd\ndba -gm 1\n-iqmpx)sn 1 -iqfrec my_db disk1/work/database/\nmy_db.db\n```
	2. Connect to the coordinator and run:
	```\n sp_iqcheckdb 'dropleaks database';\ncheckpoint;\n```
	Completion returns `Freelist Updated`.
	3. Stop the coordinator.
	4. Restart the coordinator without the **-iqfrec** and **-iqmpx_sn** server options.
	5. Synchronize secondary servers.

CR#	Description
662254	• **Multiplex coordinator could deadlock with insufficient SA worker threads to service freelist requests** – If you use IQ multiplex with DQP, the default setting of **-gn** is not enough to guarantee that some worker threads will always be available to service this request. • **Workaround** – Set the **-gn** server startup flag. Calculate *GNn* considering the number of multiplex servers (*Sn*), the **INC** connection pool size on each secondary server (see database option `Mpx_Max_Connec-tion_Pool_Size`, which defaults to 10 (*INCPn*)), and the number of user connections (*GMn*). The formula is: `GNn = (Sn * INCPn) + GMn + 5` For example, if you have 20 multiplex servers with a `Mpx_Max_Connection_Pool_Size` of 10 and **-gm** is set to 50, then you set **-gn** to 255. If you are running the coordinator on a host that has greater than 32 cores, then you must set **-iqmt**. Make sure that the value of **-iqmt** is less than `(4000 - (GNn + 200))` to ensure that the total number of threads spawned by IQ does not exceed 4000.

611990	• **Emergency shutdown on secondary servers after CREATE TEXT IN-DEX** – A secondary server goes into emergency shutdown, when:
	  • It is started with the **-sf external_library_full_text** flag, which disables loading of external libraries, and
	  • The user issues a **CREATE TEXT INDEX** statement on the coordinator with a text configuration that uses external libraries.
	All other servers replay the DDL successfully.
	• **Workaround** – Start secondary nodes in the multiplex without the **-sf external_library_full_text** flag.

557714	• **Emergency shutdown on secondary servers after creating a proxy table** – A timing problem may cause an emergency server shutdown when a user accesses a new proxy table on a secondary server. • **Workaround** – Either reconnect or wait for some time and start another transaction, before trying to use a newly-created proxy table.

Known Issues for Sybase Control Center

Descriptions of known issues for Sybase Control Center.

Table 7. Sybase Control Center Issues

CR#	Description
732628	**When you create a dbfile with the Create DB File wizard, all secondary nodes shut down, fail to synchronize, and fail to restart.** – You might also see a `java.io.IOException` in the SCC console or in `agent.log`. This problem might be specific to Red Hat Enterprise Linux 6. **Workaround** – None.
731973	**You cannot create an external procedure** – For a 15.3 or 15.4 database, DBA authority is required to create a new external procedure. However, even with DBA authority, an error message appears indicating you do not have privilege/authority to create the object. **Workaround** – Use Interactive SQL to create the external procedure in SAP Sybase IQ 15.3 or 15.4.
731455	**Unexpected behavior when starting or synchronizing a multiplex node** – When starting or synchronizing a node, if any directory name in the node's path or the database name of the node begins with the letter "n" (for example, `c:\database\iq\mpx\node1` or `node1.db`), the commands fail. **Workaround** – Start the node outside of SCC and use Interactive SQL to synchronize the node.
730793	**In the Failover Wizard, if both the coordinator node (CN) and designated failover node (DFO) are stopped, and you select a new failover node, an error message appears, and the failover fails** – This behavior occurs because the CN must be running in order to select a different failover node. **Workaround** – Use interactive SQL to stop the MPX node and restart it using the appropriate flags to bring the node online as the coordinator. Please contact technical support for further assistance.

CR#	Description

729451	• **You cannot grant or revoke permissions on a proxy table** – The functionality to grant and revoke object-level permissions on a proxy table at the table level is not currently implemented in Sybase Control Center.
	• **Workaround –**
	    • Grant the object-level permissions at the user, group (15.3 and 15.4) or role (16.0) level.
	    • Use Interactive SQL to grant the object-level permissions at the table level.

729408	• **You cannot move a partition although you have correct permissions (ALTER permission on the table and CREATE ANY OBJECT system privileges).** – The Move option in **Table Properties** > **Partition** is unavailable. • **Workaround** – Use Interactive SQL to move the partition.
727450	• **You cannot truncate data although you have the correct permissions (TRUNCATE permission on the materialized view).** – The Truncate Data option is unavailable. • **Workaround** – Use Interactive SQL to truncate.
724206	• **User impersonation does not work** – The functionality to configure one user to temporarily assume the roles and system privileges of another user (known as impersonation) is not currently implemented in SCC • **Workaround** – Use Interactive SQL.
724117	• **When you manage a large multiplex, changing authentication in SCC can take a long time** – Wait times may exceed three minutes. • **Workaround** – None.
721981	• **When you use a 64-bit version of Internet Explorer 9 to read SCC online help, graphics may fail to load** – Each missing graphic is replaced with a red X. The problem is most noticeable on the landing page when you first open the online help. • **Workaround** – Use an earlier or a 32-bit version of IE, or use another browser.

CR#	Description
721119	• **Script execution is not logged as expected on UNIX-like operating systems.** – Alert-triggered script executions are not being recorded in `SCC-3_2\log\alert-server.log` as they are supposed to be. Information about the execution from the RemoteShell Service's Process-Runner is appearing in `SCC-3_2\log\agent.log`, but this is not the alert script execution code that we expect to see logged in `alert-server.log`. • **Workaround:** – None.
716431	• **Dual control password management does not work** – When the Change Password Dual Control option is enabled in a user's login policy, an error message appears if you attempt to change the user's password. This functionality is not implemented in Sybase Control Center. • **Workaround** – Use interactive SQL to change the user's password.

697145	• **You cannot use incremental backups of the Sybase Control Center repository to recover the database.** –
	
	• **Workaround:** –
	
	  1. Shut down SCC.
	  2. Open this file in a text editor: `SCC-3_2/services/SccSA-Dataserver/service-config.xml`.
	  3. Delete this line:
	    `<set-property property="com.sybase.asa.database.options" value="-m" />`
	  4. Save the changes and start SCC.
	
	You can restore the repository database using incremental backups taken after this change.

696767	• **Cannot set timeout and row count options in SCC Properties** – Administration Console options in the SCC Properties dialog (**Application > Administration > General Settings > Administration Console**) let you set timeout and row count thresholds for data retrieval. These settings have no effect in Sybase Control Center for SAP Sybase IQ. • **Workaround** – None.

CR#	Description
686963	• **If you use Server Properties to change the server configuration, and you also make changes at Request Logging or Options pages, the server configuration process runs but does not make the additional changes –** • **Workaround –** Make changes in Server Properties from individual pages and click **OK** for each page.

685207	• **The Liveness Timeout value for multiplex secondary servers always appears as 0 seconds in the INC Properties dialog. –** Even if you leave the value at the default (120 seconds) or set it in the Configuration Editor and restart, the INC Properties dialog displays a Liveness Timeout of 0 seconds. The value is correct on the server; only the display is wrong.
	• **Workaround: –** In the SCC Administration Console:
	  1. In the left pane, expand **IQ Servers > Multiplex Management** and select **Multiplex Servers**.
	  2. In the right pane, select a server and click the drop-down arrow that appears to the right.
	  3. Select **Properties**.
	  4. In the left pane of the properties dialog, select **Server Properties**.
	  5. In the right pane, enter `liv` in the filtering field above the **Name** column. This filters out all the properties except Liveness Timeout.

CR#	Description
676665	• **If you change the database location, restart the server, and later try to change back to the previous location, the server fails to start.** – The failure occurs because old database files remain in place when you change to a new location. If you change back to an old location, the server finds out-of-date files. To view or change the path to the database location: 1. In the Administration Console, select **IQ Servers**. 2. Select a server in the right pane and click the drop-down arrow that appears next to the server's name. 3. Select **Properties**. 4. In the left pane of the properties dialog, select **Configuration**. • **Workaround:** – Before changing back to the old location, remove the .db, iqmsg, and .lmp files from the old location. If they exist, also remove params.cfg, start_server.sh, and stop_server.sh. **Note:** Do not remove any other files. Take special care not to remove .iq, .iqtmp, and .log files. Doing so may prevent your server from starting.
676218	• **When you modify the Dbspace Properties dialog in the Administration Console, changes to dbspace properties that should propagate to the DB Files Properties dialog do not automatically do so.** – • **Workaround:** – If your changes to the **Dbspace Properties** dialog do not appear in the DB Files Properties dialog: 1. Close the DB File Properties dialog. 2. Click **DB Files** in the left pane of the Administration Console. 3. In the Folder menu, select **Refresh**. 4. Select the dbfile in the right pane, click the drop-down arrow, and select **Properties**.
676079	• **In the Configuration File Editor, the Maximum Output File Size uses kilobytes as the default. There is no way to specify MB or GB.** – • **Workaround:** – In the params.cfg file in the database directory, set the value with the **-zs** switch. Use K, M or G after the numerical value. For example: -zs 4000K, -zs 240M, or -zs 30G.

CR#	Description
676076	• **In the Debug page of the Configuration File Editor, the following logging levels are missing from the Debug Level drop-down: "other," "procedures," "triggers," "plan," "hostvars," "replace," and "blocks." –** • **Workaround: –** To set the debug level to any of the missing levels, set the **-zr** switch in the `params.cfg` file in the database directory. You can include more than one level. For example: `-zr procedures,triggers,plans`.
670173	• **The Database Options, Group Options, and User Options dialogs do not allow these actions provided in Sybase Central: Create Options, Remove Options, and Mark Options as Permanent. –** • **Workaround: –** None.
669571	• **The Administration Console's Execute SQL window returns no status for successful queries that return no results. –** Interactive SQL users expect a message like `Execution time: 0.01 seconds`. • **Workaround: –** None.
667667	• **Conversion to multiplex disregarded –** If an SAP Sybase IQ simplex server that is registered in Sybase Control Center is converted to a multiplex server using anything other than this instance of SCC (including another instance of SCC, Sybase Central, or the command line), the current SCC does not detect the conversion and continues to display the server as simplex. • **Workaround –** Reauthenticate the simplex resource so that SCC displays it as multiplex.
666382	• **Prolonged authentication –** Authentication can take a very long time, especially when the resource is a multiplex. In some cases, the authentication dialog fails to dismiss. • **Workaround –** You can safely click **Cancel** to dismiss the Authentication dialog at any time after you click **OK**.

CR#	Description
587717	• **Datatips in monitoring views and the statistics chart appear in fixed locations on the browser screen regardless of where the chart is located. If you move the chart on the screen, the datatips do not move with the chart.** – (A datatip is a tooltip that displays the data value for a particular spot on a graph or chart when you mouse over that spot.) This occurs in all product module plug-ins. • **Workaround:** – None. This is an Adobe Flex SDK issue.
576129	• **Pressing F5 to refresh your browser logs you out of Sybase Control Center.** – Browser refresh does not refresh data inside Sybase Control Center, but refreshes the loaded application or pages in the browser—in this case, the Adobe Flash on which Sybase Control Center is built. Consequently, pressing F5 logs you out of any servers you are currently logged in to, including Sybase Control Center. • **Workaround:** – Do not use F5 when you are logged in to Sybase Control Center.

560601	• **Cannot log in because the Sybase Control Center HTTP redirect fails when you use IPv6 format.** – If you use an IPv6 HTTP URL for Sybase Control Center, it does not redirect to HTTPS as it should. For example, this URL does not work:
	`http://myscc64.v6:8282/scc`
	
	• **Workaround:** – Use a URL with the HTTPS format and port to connect to SCC in IPv6 networks. For example:
	`https://myscc64.v6:8283/scc`

Documentation Changes

Updates, corrections, and clarifications to the documentation released with SAP Sybase IQ.

Administration: Globalization Documentation Changes

Read about updates to Administration: Globalization.

These changes affect *About International Language Data*.

Table 8. International Languages and Character Sets

Topic	Section	Correction
What is ICU, and when is it needed?	When is ICU needed on the database server? (all platforms except Windows Mobile)	When is ICU needed on the database server? (all platforms)

These changes affect *About International Language Data*.

Table 9. Locales

Topic	Section	Correction
Locale character set	1. If the SACHARSET environment variable is set, its value is used to determine the character set. The database server uses SACHARSET only when creating new databases, and then only if no collation is specified.	1. If the IQCHARSET environment variable is set, its value is used to determine the character set. The database server uses IQCHARSET only when creating new databases, and then only if no collation is specified.

Administration: In-Memory Row-Level Versioning

Read about updates to Administration: In-Memory Row-Level Versioning.

These changes affect *About In-Memory Row-Level Versioning*.

Table 10. In-Memory Row-Level Versioning Restrictions

Topic	Section	Correction
In-Memory Row-Level Versioning Restrictions	SQL Statements	• The SKIP option of the LOAD TABLE statement will not function if you set the MAX_QUERY_PARALLELISM database option to 1.

These changes affect *Appendix: SQL Reference*.

Table 11. SNAPSHOT_VERSIONING Option

Topic	Section	Correction
Database Options	Scope	Option can be set at the database (PUBLIC) or user level. When set at the database level, the value becomes the default for any new user, but has no impact on existing users. When set at the user level, overrides the PUBLIC value for that user only. No system privilege is required to set option for self or at connection level. System privilege is required to set at database level or at user level for any user other than self. Requires the SET ANY PUBLIC OPTION system privilege to set this option. Takes effect immediately.

Administration: Spatial Data Documentation Changes

Read about updates to Administration: Spatial Data.

Table 12. Tutorial: Experimenting with the spatial features

Topic	Section	Correction
Lesson 1: Install additional units of measure and spatial reference systems	1. Using Interactive SQL, start and connect to the sample database (demo.db). The sample database is located in %IQDIR-SAMP16%.	1. Using Interactive SQL, start and connect to the sample database (iqde-mo.db). The sample database is located in "%ALLUSERPROFILE%"\SybaseIQ \demo.

These changes affect *Spatial data*.

Table 13. SAP Sybase IQ support for spatial data

Topic	Section	Correction
Creating a spatial column (SQL)	Prerequisites: You must be the owner of the table, or have ALTER privilege on the table, or have the ALTER ANY TABLE or ALTER ANY OBJECT system privilege.	Prerequisites: • You must be the owner of the table, or have ALTER privilege on the table, or have the ALTER ANY TABLE or ALTER ANY OBJECT system privilege. • Table must be in the catalog store table created with the "IN SYS-TEM" clause.

New Features Summary Documentation Changes

Read about updates to New Features Summary.

Administration Tool Changes

Topic	Section	Correction
Sybase Control Center Changes	Views	The following bullet should not display: • Unloading materialized view data

Sybase Control Center Changes	Logical Servers	The bullet point:
		
		• Two generated administration scripts include new connection parameters in the connection string:
		  • Stop_server.sh (.bat) includes LS=SERVER
		  • Sync_server.sh (.bat) includes `LS=COORDINATOR`
		
		Should display as:
		
		• Two generated administration scripts include new connection parameters in the connection string:
		  • stop_server.sh (.bat) includes LS=SERVER
		  • sync_server.sh (.bat) includes `LS=COORDINATOR`

Programming Documentation Changes

Read about updates to Programming.

Using In-Database Analytics in Applications

Topic	Section	Correction
Hadoop Integration	• *Reading a File in a Hadoop Distributed File System as an In-Memory Table* • *Starting an External Hadoop MapReduce Job and Using Results in a Query*	These subtopics should include this note: **Note:** This sample code is primarily for illustration purposes and is not intended for production. Although effort was made to ensure reasonable error handling, the examples are not production-grade and will require additional safeguards and testing prior to using in production.

.NET API Reference

Topic	Section	Correction
.NET API Reference	All subtopics under *.NET API Reference* refer to the product as SQL Anywhere.	The product is SAP Sybase IQ. SQL Anywhere and SAP Sybase IQ use the same .NET API.

C/C++ API Reference

Topic	Section	Correction
SAP Sybase IQ Database API for C/C++	All subtopics under *SAP Sybase IQ Database API for C/C++* refer to the product as SQL Anywhere.	The product is SAP Sybase IQ. SQL Anywhere and SAP Sybase IQ use the same C/C++ API.

Reference: Building Blocks, Tables, and Procedures Documentation Changes

Read about updates to Reference: Building Blocks, Tables, and Procedures.

These changes affect *System Procedures*.

Table 14. sp_iqrebuildindex Procedure

Topic	Section	Correction

Alphabetical List of System Stored Procedures	Description	**Note:** A third-party reference document describes an unsupported sp_iqrebuildindex syntax. Please note that specifying the table name in the index clause results in an error:
		
		`sp_iqrebuildindex tb1,`
		`'column tb1.c1'`

Table 15. sp_iqrowdensity Procedure

Topic	Section	Description
Alphabetical List of System Stored Procedures	Description	The **sp_iqrowdensity** `IndexType` column always returns the maximum number of bits required to encode the column. Unlike the FP(1), FP(2), FP(3) dictionary compression in previous releases, which uses the same number of bits for each page, NBit encodes each page dynamically. **sp_iqrowdensity** always returns the largest number of bits used among all of the pages.

These changes affect *Differences from Other SQL Dialects*.

Table 16. Altering Tables

Topic	Section	Correction

Altering Tables	**ALTER TABLE** has been extended.
	
	In addition to changes for entity and referential integrity, the following types of alterations are allowed:
	
	`DELETE column`
	`RENAME new-table-name`
	`RENAME old-column TO`
	`new-column`
	
	You can use **MODIFY** to change the maximum length of a character column, as well as converting from one data type to another.
		ALTER TABLE has been extended.
		
		In addition to changes for entity and referential integrity, the following types of alterations are allowed:
		
		`DELETE column`
		`RENAME new-table-name`
		`RENAME old-column TO`
		`new-column`

These changes affect *Physical Limitations*.

Table 17. Physical Limitations

Item	Limitation	Correction
Number of indexes	2^32 (~4,000,000) per table	2^32 (~4,000,000,000) per table

Reference: Statements and Options

Read about updates to Reference: Statements and Options.

These changes affect *SQL Statements*.

Table 18. ALTER TABLE Statement

Section	Correction
Parameters	Remove PARTITION BY hash-partitioning-scheme and PARTITION BY composite-partitioning-scheme from the alter-clause and create-clause.
Usage	Remove PARTITION BY HASH and SUBPARTITION BY. ALTER TABLE PARTITION BY HASH is unsupported.

Section	Correction
Permissions	Remove PARTITION BY HASH. ALTER TABLE PARTITION BY HASH is unsupported.

These changes affect *Database Options*.

Table 19. QUERY_PLAN_MIN_TIME Option

Section	Correction
Allowed Values	Integer, in milliseconds.
Description	When these options are set, setting a QUERY_PLAN_MIN_TIME query execution threshold prevents the generation of query plans for queries whose execution times does not exceed the specified threshold.

Table 20. SNAPSHOT_VERSIONING Option

Section	Correction
Scope	Option can be set at the database (PUBLIC) or user level. When set at the database level, the value becomes the default for any new user, but has no impact on existing users. When set at the user level, overrides the PUBLIC value for that user only. No system privilege is required to set option for self or at connection level. System privilege is required to set at database level or at user level for any user other than self.
	Requires the SET ANY PUBLIC OPTION system privilege to set this option. Takes effect immediately.

Sybase Control Center 3.2.7 for SAP Sybase IQ plug-in help

Read about updates to plug-in help for Sybase Control Center 3.2.7 for SAP Sybase IQ.

These changes affect *Creating an Alert*.

Table 21. SAP Sybase IQ Alerts

Section	Correction
Dbspace size	Dbspace size[*]
Dbspace file size	Dbspace file size[*]
Dbspace percent available	Dbspace percent available[*]
Dbspace file percent available	Dbspace file percent available[*]
	[*]Do not configure dbspace alerts on secondary nodes in a multiplex--they do not work. Only the coordinator node can gather statistics for dbspaces and fire dbspace alerts.

Multiplex Connection Disallowed by Login Policy
This new sub-section was added to *Troubleshoot Sybase Control Center for SAP Sybase IQ*. This information was omitted from the online help for Sybase Control Center for SAP Sybase IQ but is included in the help on the Product Documentation Web site.

If your login cannot access all nodes, authentication returns the security error `Connection disallowed by login policy for this user`.

To address this issue, use a login account with access to the SERVER logical server to authenticate a multiplex resource. Connection using the SERVER logical server context requires the ACCESS SERVER LS system privilege.

Documentation Changes

Obtaining Help and Additional Information

Use the Product Documentation site and online help to learn more about this product release.

- Product Documentation at *http://sybooks.sybase.com/* – online documentation that you can access using a standard Web browser. You can browse documents online, or download them as PDFs. The Web site also has links to other resources, such as white papers, community forums, and support content.
- Online help in the product, if available.

To read or print PDF documents, you need Adobe Acrobat Reader, which is available as a free download from the *Adobe* Web site.

Note: A more recent release bulletin, with critical product or document information added after the product release, may be available from the Product Documentation Web site.

Technical Support

Get support for Sybase products.

If your organization has purchased a support contract for this product, then one or more of your colleagues is designated as an authorized support contact. If you have any questions, or if you need assistance during the installation process, ask a designated person to contact Sybase Technical Support or the Sybase subsidiary in your area.

Information for Technical Support

Technical Support needs information about your environment to resolve your problem.

Before contacting Technical Support, run the **getiqinfo** script to automatically collect as much information as possible. You may also need to collect some information manually .

In this list, * indicates items collected by **getiqinfo**:

- SAP Sybase IQ version (for example, 16.0 GA or ESD level)
- Type of hardware, amount of memory, number of CPUs*
- Operating system and version (for example, Microsoft Windows 2008 Service Pack 1)*
- Operating system patch level
- Front-end tool used (for example, Business Objects Crystal Reports)
- Connectivity protocol used (for example, ODBC, JDBC, Tabular Data Stream™ (TDS))
- Open Client version
- Configuration type (single user or multiuser)

- (Important) Message log file* – by default, named `dbname.iqmsg` and located in the directory where you started the database server
- Stack trace file for the date and time the problem occurred (if applicable), by default named `stktrc-YYYYMMDD-HHMMSS_#.iq` and located in the directory where you started the database server*
- Command or query that produced the error
- Query plan* (recorded in `.iqmsg` file)

  The query plan is collected automatically by **getiqinfo**. If you manually collect information, enter these commands, then re-run the command that produced the error:

  ```
  SET TEMPORARY OPTION Query_Plan = 'ON'
  SET TEMPORARY OPTION Query_Detail = 'ON'
  SET TEMPORARY OPTION Query_Plan_As_Html= 'ON'
  SET TEMPORARY OPTION Query_Plan_As_Html_Directory=
  'ON'
  ```

  The plan is in the message log file.

  If you have performance problems, set this database option:

  ```
  SET TEMPORARY OPTION Query_Plan_After_Run = 'ON'
  ```

  This enables Technical Support to see which steps in the query processing used the time.

- Server logs
  - For UNIX and Linux: `IQ-16_0/logfiles/<servername>.nnnn.stderr` and `IQ-16_0/logfiles/<servername>.nnnn.srvlog*`
  - On Windows platforms: `%ALLUSERSPROFILE%SybaseIQ\logfiles\<servername>.nnnn.srvlog*`

    For example, on Windows 2003, the server log files are located in `C:\Documents and Settings\All Users\SybaseIQ\logfiles`. On Windows 2008, the server log files are located in `C:\ProgramData\SybaseIQ\logfiles`.

- Startup and connection option settings, from the configuration file (by default, `dbname.cfg`)*
- Database option settings and output from **sa_conn_properties*** (if the server is still running)
- Schema and indexes for the database
- Output from **sp_iqstatus** and **sp_iqcheckdb**
- On multiplex databases, execute **getiqinfo** on each node (coordinator and secondary nodes)
- Screen snapshot of the problem, if possible

A checklist for recording this information for Technical Support is provided in this release bulletin.

See *System Administration Guide: Volume 1 > Troubleshooting Hints > Reporting Problems to Technical Support > Collecting Diagnostic Information Using getiqinfo*.

Checklist: Information for Technical Support

You can run the **getiqinfo** script to collect information.

Information Requested	Value
SAP Sybase IQ version (for example 16.0 GA or ESD number)	
sp_iqlmconfig output	
Type of hardware	
Amount of memory	
Number of CPUs	
Operating system name and version (for example, Microsoft Windows 2008 Service Pack 1)	
Operating system patch level	
Front-end tool used (for example, Business Objects Crystal Reports)	
Connectivity protocol used (for example, ODBC, JDBC, TDS)	
Open Client version	
Configuration type (single node or multiplex)	
Message log file (`dbname.iqmsg`)	
Server log files (`server.nnnn.srvlog` and `server.nnnn.stderr`)	
Stack trace file (`stktrc-YYYYMMDD-HHNNSS_#.iq`)	
Command or query that produced the error	
Start up option settings	
Connect option settings	
Database option settings	
Schema and indexes for the database	
sp_iqstatus output	
Query plan: set options (Query_Plan, Query_Detail, Query_Plan_After_Run, Query_Plan_As_Html, Query_Plan_As_Html_Directory, Query_Timing), re-run command or query	
Screen snapshot of the problem, if possible.	

Downloading Sybase EBFs and Maintenance Reports

Get EBFs and maintenance reports from the Sybase Web site or the SAP® Service
Marketplace (SMP). The location you use depends on how you purchased the product.

- If you purchased the product directly from Sybase or from an authorized Sybase
  reseller:
  a) Point your Web browser to *http://www.sybase.com/support*.
  b) Select **Support > EBFs/Maintenance**.
  c) If prompted, enter your MySybase user name and password.
  d) (Optional) Select a filter, a time frame, or both, and click **Go**.
  e) Select a product.

     Padlock icons indicate that you do not have download authorization for certain EBF/
     Maintenance releases because you are not registered as an authorized support contact.
     If you have not registered, but have valid information provided by your Sybase
     representative or through your support contract, click **My Account** to add the
     "Technical Support Contact" role to your MySybase profile.
  f) Click the **Info** icon to display the EBF/Maintenance report, or click the product
     description to download the software.
- If you ordered your Sybase product under an SAP contract:
  a) Point your browser to *http://service.sap.com/swdc* and log in if prompted.
  b) Select **Search for Software Downloads** and enter the name of your product. Click
     Search.

Sybase Product and Component Certifications

Certification reports verify Sybase product performance on a particular platform.

To find the latest information about certifications:

- For partner product certifications, go to *http://www.sybase.com/detail_list?id=9784*
- For platform certifications, go to *http://certification.sybase.com/ucr/search.do*

Creating a MySybase Profile

MySybase is a free service that allows you to create a personalized view of Sybase Web pages.

1. Go to *http://www.sybase.com/mysybase*.
2. Click **Register Now**.

SAP Sybase IQ Newsgroup

The SAP Sybase IQ newsgroup sybase.public.iq allows users to exchange information over the Internet.

For information on subscribing to Sybase newsgroups, configuring your newsreader or Web browser, and for guidelines on posting, go to *http://www.sybase.com/support/newsgroups*.

SAP Sybase IQ Developer Center

The SAP Sybase IQ Developer Center provides a forum for users to exchange information about SAP Sybase IQ.

You can visit the SAP Sybase IQ Developer Center at *http://scn.sap.com/community/ developer-center/analytic-server*.

Accessibility Features

Accessibility ensures access to electronic information for all users, including those with disabilities.

Documentation for this product is available in an HTML version that is designed for accessibility.

Vision impaired users can navigate through the online document with an adaptive technology such as a screen reader, or view it with a screen enlarger.

HTML documentation has been tested for compliance with accessibility requirements of Section 508 of the U.S Rehabilitation Act. Documents that comply with Section 508 generally also meet non-U.S. accessibility guidelines, such as the World Wide Web Consortium (W3C) guidelines for Web sites.

Note: You may need to configure your accessibility tool for optimal use. Some screen readers pronounce text based on its case; for example, they pronounce ALL UPPERCASE TEXT as initials, and MixedCase Text as words. You might find it helpful to configure your tool to announce syntax conventions. Consult the documentation for your tool.

For information about how Sybase supports accessibility, see the Sybase Accessibility site: *http://www.sybase.com/products/accessibility*. The site includes links to information about Section 508 and W3C standards.

You may find additional information about accessibility features in the product documentation.