

SYBASE®

Sybase Control Center for Sybase IQ

Sybase Control Center 3.1

DOCUMENT ID: DC01267-01-0310-01

LAST REVISED: February 2010

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Contents

About Sybase® Control Center for Sybase IQ	1
Configure	3
Registering a Sybase IQ Server	4
Importing Resources	5
Creating a Perspective	6
Adding a Resource to a Perspective	6
Authenticating a Login Account for a Monitored Resource	7
Setting Up Statistics Collection	8
About Statistics	9
Sybase IQ Data Collections	10
Key Performance Indicators for Sybase IQ	13
Changing Update Frequency for Statistics and Charts	17
Creating an Alert	18
Sybase IQ Alert Templates	21
Alert Types and Severities for Sybase IQ	24
Optional Configuration Steps	24
Manage and Monitor	27
Heat Chart	27
Displaying Resource Availability	27
Historical Performance Monitoring	28
Graphing Performance Counters	28
Manage and Monitor Sybase Control Center for Sybase IQ	29
Viewing the Sybase Control Center for Sybase IQ Log	29
Modifying Sybase IQ Log Configuration	29
Monitor the Sybase IQ Environment	30
Monitoring a Single Node	30
Monitoring a Multiplex Server	41

Troubleshoot Sybase Control Center for Sybase IQ.....	51
Error Message is Displayed When Trying to	
Authenticate a Multiplex Server	51
Authenticating a Chinese or Japanese Sybase IQ	
Server Fails	51
Glossary: Sybase Control Center for Sybase IQ.....	53
Index	57

About Sybase® Control Center for Sybase IQ

Sybase Control Center for Sybase IQ is a Web-based tool for monitoring the availability and performance of Sybase IQ servers.

Sybase Control Center supports Sybase IQ version 15.1 ESD2.1 and later versions in single-node and multiplex configurations.

The Sybase Control Center client/server architecture allows multiple clients to monitor all Sybase IQ servers in an enterprise using a small number of Sybase Control Center servers. Sybase Control Center for Sybase IQ provides availability monitoring, historical monitoring, and real-time monitoring in a scalable Web application that is integrated with management modules for other Sybase products. It offers shared, consolidated management of heterogenous resources from any location, real-time notification of availability and performance, and intelligent tools for spotting performance and usage trends, all via a thin-client, rich Internet application delivered through your Web browser.

Configure

Configure Sybase Control Center for Sybase IQ.

1. *Registering a Sybase IQ Server*

Make Sybase Control Center aware of a Sybase IQ resource (for example, a server that can be monitored) and its connection information by registering the resource.

2. *Importing Resources*

Import and register multiple servers from an interfaces or sql.ini file.

3. *Creating a Perspective*

Create a perspective in which you can add and manage resources.

4. *Adding a Resource to a Perspective*

Add a resource to the current perspective.

5. *Authenticating a Login Account for a Monitored Resource*

Specify the login account Sybase Control Center will use when it connects to your server or other resource to collect monitoring data.

6. *Setting Up Statistics Collection*

Use the Properties view of your managed resource to create a data collection job and add a schedule to the job.

7. *Changing Update Frequency for Statistics and Charts*

The frequency with which statistics are collected can give you a general or more specific view of server performance.

8. *Creating an Alert*

Use the Add Alert wizard to create an alert instance for your resource.

9. *Optional Configuration Steps*

Perform additional configuration, including user authorization, alerts, data collection scheduling, backups, and setting purging options for the repository.

See also

- *Setting Up Security*
- *Logins, Roles, and Groups*
- *Assigning a Role to a Login or a Group*

Registering a Sybase IQ Server

Make Sybase Control Center aware of a Sybase IQ resource (for example, a server that can be monitored) and its connection information by registering the resource.

1. In the Resource Explorer, select **Resources > Register**.
2. Specify:

Table 1. New resource type details

Field	Description
Resource Name	(Required) Name of the resource to register. Enter the actual name of the server, including uppercase and lowercase letters. If the name registered in Sybase Control Center does not exactly match the server name, some monitoring functions may not work.
Resource Type	IQ Server (15.1.0.0) – monitor Sybase IQ server.
Description	A brief description to help you identify the resource.

3. Click **Next**.
4. Specify the connection information for your resource:

Table 2. New resource connection details

Field	Description
Host Name	Host name of the Sybase IQ server
Port Number	Local host port number

5. Click **Finish**.

See also

- *Importing Resources* on page 5
- *Error Message is Displayed When Trying to Authenticate a Multiplex Server* on page 51
- *Common Display Options*
- *Importing Resources* on page 5
- *Resources*

Importing Resources

Import and register multiple servers from an `interfaces` or `sql.ini` file.

Prerequisites

Copy the `interfaces` or `sql.ini` file to a location on or accessible from the machine that hosts your web browser.

An `interfaces` (UNIX) or `sql.ini` file (Windows) is a list of Sybase servers and their ports; it may contain other connection information as well. The file is created during the installation of a Sybase server:

- Windows: %SYBASE%\ini\sql.ini
- Unix: \$SYBASE/interfaces

For more information on `interfaces` files, see the appendix on configuration files in *Configuration Guide Open Client and Open Server 15.0 for UNIX*.

For more information on `sql.ini` files, see the chapter on network communications using `sql.ini` in the *Adaptive Server Enterprise 15.0 Configuration Guide for Windows*.

Note: The Import Resources wizard imports servers in batches of a single type (Adaptive Server, Sybase IQ, or Replication Server, for example). If your `interfaces` or `sql.ini` file includes resources of more than one type, you must perform this procedure for each resource type.

1. In the application menu, select **View > Open > Resource Explorer**.
2. In the Resource Explorer, select **Resources > Import**.
The Import Resources wizard opens; **Interfaces file** is already selected.
3. Click **Next**.
The Directory Service Connection page appears.
4. Click **Browse** and navigate to the `interfaces` file you want to import from.
You cannot type in the **File name** field.
5. Click **Next**.
6. On the Import Resource Type page, select the type of server you want to import.
7. On the Resource Selection page, click to select the servers you want to import.
Select only servers of the type you chose on the Import Resource Type page. If you import servers with incorrect types, Sybase Control Center will not be able to monitor or manage them properly.

8. Resources of your chosen type may require connection parameters in addition to those present in the file—RSSD host name and port for Replication Server, for example, or character set and language for Adaptive Server. Enter any required connection parameters.
9. Click **Next**.
The Confirmation page displays a list of the resources you have selected.
10. Click **Finish** if you are ready to import, or click **Back** to return to the previous screen and change your selections.
When you click **Finish**, Sybase Control Center imports and registers the resources and displays a summary page.
11. Click **Close** to finish the wizard.

The newly imported resources appear in the Resource Explorer.

Next

Add the new resources to a perspective so you can monitor and manage them.

See also

- *Registering a Sybase IQ Server* on page 4
- *Creating a Perspective* on page 6
- *Registering a Sybase IQ Server* on page 4
- *Resources*

Creating a Perspective

Create a perspective in which you can add and manage resources.

1. From the application menu bar, select **Perspective > Create**.
2. Enter a name for your perspective. The name can contain up to 255 characters.
3. Click **OK**.

See also

- *Importing Resources* on page 5
- *Adding a Resource to a Perspective* on page 6
- *Perspectives*

Adding a Resource to a Perspective

Add a resource to the current perspective.

Add a server or other resource to a perspective so you can monitor and manage it along with other resources in the same perspective.

1. From the Sybase Control Center toolbar, click the **Launch resource explorer** icon.
2. Select the resources to add to your perspective. Select multiple resources by pressing the **Ctrl** key while you select. Then perform one of these actions:
 - Select **Resources > Add Resources to Perspective**.
 - Drag and drop resources from the Resource Explorer onto the Perspective Resources view. You can select and drag multiple resources.

See also

- *Creating a Perspective* on page 6
- *Authenticating a Login Account for a Monitored Resource* on page 7

Authenticating a Login Account for a Monitored Resource

Specify the login account Sybase Control Center will use when it connects to your server or other resource to collect monitoring data.

Perform this task for each resource registered with Sybase Control Center.

Note: You can also authenticate a server when you create a collection job.

1. Connect a browser to Sybase Control Center and log in.
2. In the Perspective Resources view, right-click the icon for your resource and select **Authenticate**.
3. Select **Use my current SCC login** or **Specify different credentials**.
4. If you chose **Specify different credentials**, enter the login and password for Sybase Control Center to use to connect to your resource.
5. If the selected server is a Replication Server, also enter the RSSD user name and password.
6. Click **OK** to exit the dialog.

See also

- *Adding a Resource to a Perspective* on page 6
- *Setting Up Statistics Collection* on page 8
- *Error Message is Displayed When Trying to Authenticate a Multiplex Server* on page 51
- *Setting Up Security*
- *User Authorization*

Setting Up Statistics Collection

Use the Properties view of your managed resource to create a data collection job and add a schedule to the job.

For best performance, Sybase recommends these guidelines for scheduling data collection jobs:

- Schedule only one collection job for each collection.
 - Set the collection interval to 60 seconds or more.
1. In the Perspective Resources view, select a resource and select **Resource > Properties**.
 2. Select **Collection Jobs**.
 3. Click **Create Job**.
The Create Collection Job window opens.
 4. If this resource has not been authenticated yet, the Authentication page appears. Enter a user name and password that Sybase Control Center can use to log in to the resource. Then click **Authenticate** to allow Sybase Control Center to verify your credentials.
 5. Select the data collection that this job will run and click **Next**.
 6. (Optional) If you do not want to create a schedule yet, click to uncheck **Create a schedule for this job**.
 7. Specify details for the new schedule:

Table 3. New schedule details

Field	Description
Name	A name for this schedule
Description	A description of the schedule
Start date	The day when the schedule will take effect
Time	The time when the schedule will take effect

Note: Enter dates and times using the server's local time.

8. Choose an option to specify the duration of this schedule:
 - **Run once**
 - **Repeat until**
For **Repeat until**, specify these details:

Field	Description
Repeat interval	Interval, in seconds, between recurrences to be added to the schedule
Repeat until	End date
Time	Time when the job is to end

- **Repeat indefinitely**

For **Repeat indefinitely**, specify these details:

Field	Description
Repeat interval	Interval, in seconds, between recurrences to be added to the schedule

9. Click **Finish**.

See also

- *Authenticating a Login Account for a Monitored Resource* on page 7
- *Changing Update Frequency for Statistics and Charts* on page 17
- *Graphing Performance Counters* on page 28
- *Job Scheduling*

About Statistics

Understand availability and performance statistics in Sybase Control Center.

The statistics you work with in Sybase Control Center can be divided into two types:

- Availability statistics are concerned with present conditions; they help you determine whether a resource you are monitoring (a server or an agent, for example) is running and functioning properly.
- Performance statistics are concerned with behavior of the same resources over time. They describe the flow of data through your environment. You can use performance statistics to spot trends, identify problems like resource bottlenecks, and make plans.

Sybase Control Center includes predefined key performance indicators (KPIs) for each product module; these KPIs are grouped into collections. KPIs such as server status, which serves as an availability statistic when it is fresh, have long-term value as historical performance statistics.

Availability statistics appear on the heat chart and on resource monitoring screens in each product module.

Performance statistics appear on the statistics chart and on resource monitoring screens in each product module.

Some KPIs are included in the default collection for each product module. To make other KPIs available to the heat chart, statistics chart, and resource monitoring views, you must set up

collection jobs in the scheduler. See the data collections help topic for your Sybase Control Center product module for information on data collections and the KPIs contained in them.

Several configuration options affect the collection and display of data in Sybase Control Center:

- Collection repeat interval—The frequency of data collection. Set this on the collection job in the scheduler.
- Screen refresh interval—The period between screen refreshes. Refreshing the screen redraws it with the newest available data. Set the screen refresh interval in the product module. (May not be settable in all product modules.)
- Chart trend period—The period over which data is displayed in historical charts. Set the trend period in the product module. (May not be settable in all product modules.)

Sybase IQ Data Collections

Lists and describes predefined data collections you can use to create jobs for Sybase IQ.

Table 4. Data collections for Sybase IQ

Collection	Description
All statistics collection	Contains all statistics, including server availability and performance statistics.
Availability statistics collection	<p>Contains server availability statistics used in the heat chart.</p> <p>This is the default collection, and is automatically created at login. By default, the statistics are collected every 60 seconds.</p>
Engine statistics collection	<p>Contains performance statistics and includes the following KPIs:</p> <ul style="list-style-type: none"> • IQ maximum memory allocated • IQ memory allocated • IQ server system CPU usage • IQ server total CPU usage • IQ server user CPU usage • IQ threads available • IQ threads in use

Collection	Description
Connection statistics collection	Contains performance statistics and includes the following KPIs: <ul style="list-style-type: none"> • Number of active connections • Number of active INC incoming connections • Number of active INC outgoing connections • Number of active user connections • Number of connections available • Number of user connections per minute • Number of user disconnections per minute
Transaction statistics collection	Contains performance statistics and includes the following KPIs: <ul style="list-style-type: none"> • Number of active INC transactions • Number of active load table statements • Number of active transactions • Number of active user transactions
DBSpace statistics collection	Contains dynamic statistics for each dbspace, including: <ul style="list-style-type: none"> • dbspace size in use • percentage of available dbspace
DBSpace file statistics collection	Contains dynamic statistics for each dbspace file, including: <ul style="list-style-type: none"> • dbspace file size in use • percentage of available dbspace File
Store I/O statistics collection	Contains performance statistics and includes the following KPIs: <ul style="list-style-type: none"> • Catalog store disk reads • Catalog store disk writes • Main store disk reads • Main store disk writes • Temp store disk reads • Temp store disk writes

Configure

Collection	Description
Caches statistics collection	<p data-bbox="650 218 1181 274">Contains performance statistics and includes the following KPIs:</p> <ul data-bbox="650 305 1181 1052" style="list-style-type: none"><li data-bbox="650 305 865 326">• Catalog cache hits<li data-bbox="650 340 878 361">• Catalog cache reads<li data-bbox="650 374 865 395">• Catalog cache size<li data-bbox="650 409 959 430">• Catalog cache in use percent<li data-bbox="650 444 892 465">• Catalog cache pinned<li data-bbox="650 479 973 499">• Catalog cache pinned percent<li data-bbox="650 513 1013 534">• Catalog cache dirty pages percent<li data-bbox="650 548 838 569">• Temp cache hits<li data-bbox="650 583 865 604">• Temp cache reads<li data-bbox="650 618 852 638">• Temp cache size<li data-bbox="650 652 946 673">• Temp cache in use percent<li data-bbox="650 687 878 708">• Temp cache pinned<li data-bbox="650 722 959 743">• Temp cache pinned percent<li data-bbox="650 756 999 777">• Temp cache dirty pages percent<li data-bbox="650 791 838 812">• Main cache hits<li data-bbox="650 826 852 847">• Main cache reads<li data-bbox="650 861 838 881">• Main cache size<li data-bbox="650 895 946 916">• Main cache in use percent<li data-bbox="650 930 878 951">• Main cache pinned<li data-bbox="650 965 946 986">• Main cache pinned percent<li data-bbox="650 999 986 1020">• Main cache dirty pages percent
Op/Req statistics collection	<p data-bbox="650 1086 1181 1142">Contains performance statistics and includes the following KPIs:</p> <ul data-bbox="650 1173 905 1295" style="list-style-type: none"><li data-bbox="650 1173 878 1194">• IQ active operations<li data-bbox="650 1208 892 1229">• IQ waiting operations<li data-bbox="650 1242 878 1263">• Requests per second<li data-bbox="650 1277 892 1298">• Unscheduled requests

Collection	Description
Network statistics collection	<p>Contains performance statistics and includes the following KPIs:</p> <ul style="list-style-type: none"> • Available communication buffers • Bytes received • Bytes received uncompressed • Bytes sent • Bytes sent uncompressed • Total communication buffers

See also

- *Creating an Alert* on page 18

Key Performance Indicators for Sybase IQ

Lists and describes the key performance indicators (KPIs) that provide the statistics displayed on Sybase IQ screens and charts in Sybase Control Center.

Each Sybase IQ data collection includes a subset of the KPIs listed here.

KPI	Description
Active INC incoming connections	Number of internode communication (INC) incoming connections.
Active INC outgoing connections	Number of INC outgoing connections.
Active INC transactions	Number of active INC transactions.
Active load table statements	Number of active load table statements.
Active transactions	Total number of active transactions including user and INC transactions.
Active user connections	Number of active user connections.
Active user transactions	Number of active user transactions.
Available communication buffers	Number of available network communication buffers.
Bytes received	Number of bytes per second received during client/server communications.

Configure

KPI	Description
Bytes received uncompressed	Number of bytes per second that would have been received during client/server communications if compression was disabled.
Bytes sent	Number of bytes per second sent during client/server communications.
Bytes sent uncompressed	Number of bytes per second that would have been sent during client/server communications if compression was disabled.
Catalog cache dirty pages percent	Percentage of pages in the catalog cache where data has been modified and stored in the buffer cache and has not yet been written to disk.
Catalog cache hits	Number of catalog cache hits per second.
Catalog cache size	Current catalog cache size in megabytes.
Catalog cache in use percent	Percentage of the catalog cache in use.
Catalog cache pinned	Number of pinned catalog cache pages.
Catalog cache pinned percent	Percentage of the catalog cache pinned.
Catalog cache reads	Number of catalog cache page lookups per second.
Catalog store disk reads	Number of kilobytes per second that have been read from the catalog store.
Catalog store disk writes	Number of kilobytes per second that have been written to the catalog store.
CPU total usage	Percentage of the Sybase IQ server CPU in use, including both system and user usage.
CPU system usage	Percentage of the CPU being used by the system.
CPU user usage	Percentage of the CPU being used by the users.
DbSPACE size in use	Amount of space being used in the dbSPACE, in kilobytes.
DbSPACE space available percent	Percentage of dbSPACE available.
DbSPACE file size in use	Amount of space being used in the dbSPACE file, in kilobytes.
DbSPACE file space available percent	Percentage of the dbSPACE file available for use.
IQ active operations	Number of active concurrent operations admitted by Sybase IQ resource governor.

KPI	Description
IQ threads in use	Number of threads used by the Sybase IQ server.
IQ waiting operations	Number of IQ operations waiting for the resource governor.
Main cache dirty pages percent	Percentage of pages in the main cache where data has been modified and stored in the buffer cache and has not yet been written to disk.
Main cache hits	Number of main cache hits per second.
Main cache in use percent	Percentage of the main cache in use.
Main cache pinned	Number of pinned main cache pages.
Main cache pinned percent	Percentage of the main cache pinned.
Main cache reads	Number of main cache page lookups per second.
Main cache size	Current main cache size in megabytes.
Main store disk reads	Number of kilobytes per second that have been read from the main store.
Main store disk writes	Number of kilobytes per second that have been written to the main store.
Maximum memory allocated	Maximum memory allocated by the Sybase IQ server in megabytes.
Memory allocated	Memory allocated by the Sybase IQ server in megabytes.
Number of active connections	Total number of active connections, including user and internode communication connections.
Number of connections available	Number of concurrent connections available.
Number of IQ threads available	Number of threads available in the IQ server.
Requests per second	Number of times per second the server has been accessed to handle a new request or continue processing an existing request.

KPI	Description
Server availability	State of the Sybase IQ server. Valid values are: <ul style="list-style-type: none"> • UNKNOWN(0) • STOPPED(1) • PENDING(2) • RUNNING(3) • WARNING(4) • ERROR(5)
Temp cache dirty pages percent	Percentage of pages in the temporary cache where data has been modified and stored in the buffer cache and has not yet been written to disk.
Temp cache hits	Number of temporary cache hits per second.
Temp cache in use percent	Percentage of the temporary cache in use.
Temp cache pinned	Number of pinned temporary cache pages.
Temp cache pinned percent	Percentage of the temporary cache pinned.
Temp cache reads	Number of temporary cache page lookups per second.
Temp cache size	Current temporary cache size in megabytes.
Temp store disk reads	Number of kilobytes per second that have been read from the temporary store.
Temp store disk writes	Number of kilobytes per second that have been written to the temporary store.
Total communication buffers	Total number of network communication buffers.
Unscheduled requests	Number of requests that are currently queued up waiting for an available server thread.
User connections per minute	Number of user connections per minute.
User disconnections per minute	Number of user disconnections per minute.

See also

- *Graphing Performance Counters* on page 28
- *Creating an Alert* on page 18

Changing Update Frequency for Statistics and Charts

The frequency with which statistics are collected can give you a general or more specific view of server performance.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.

For a multiplex resource, select **Monitor Multiplex**.

2. In the left pane of the IQ Node Level Monitor view, select **Settings**.
3. For **Screen Refresh Interval**, enter the number of seconds between statistic collections. You can also use the up and down arrows to select the appropriate number of seconds. The default is 30 seconds.
4. For **Chart Trend Period**, enter the number of minutes of data to appear in charts. The minimum number of minutes is 5, and the maximum number is 999999999. The default is 30 minutes.

Because data is collected only when a chart view is open, a chart contains data starting from when you open that chart. Each refresh interval adds new data to the end of the graph. A chart trend of 30 minutes shows the statistics trend over the last 30 minutes, even if the view has been open longer than 30 minutes.

5. For multiplex-level monitoring:
 - a) For **Maximum Number of Nodes to Show in Chart**, enter the maximum number of nodes to include in any monitoring charts. The default is 10 nodes.
 - b) Click **Select Nodes**, then choose the nodes to include in the monitoring charts. You cannot select more than the maximum number of nodes.
 - c) Click **OK**.
6. Click **Apply**.

See also

- *Setting Up Statistics Collection* on page 8
- *Creating an Alert* on page 18

Creating an Alert

Use the Add Alert wizard to create an alert instance for your resource.

Prerequisites

- You must have administrative privileges (sccAdminRole) to perform this task.
- Specify an e-mail server for Sybase Control Center to use for alerts. If an e-mail server is not configured, you cannot create alert subscriptions.
- Schedule data collections. Alerts for each product module are based on one or more data collections. If the correct collection or collections are not scheduled to run, the alert system cannot function and no alerts are generated. See the data collections topic for your product module for information on which collections you need to schedule to enable alerts.
- (Optional) If you want this alert to trigger the execution of a shell script, copy the script to a location on or accessible from the machine that hosts your Sybase Control Center server.

Warning! Use caution in writing scripts. A poorly designed script can cause a blocking situation, creating a lock-up in your Sybase Control Center server.

Note: Only alerts on Adaptive Server or Replication Server resources can trigger script execution.

1. In the Perspective Resources view, click the server or other resource and select **Resource > Properties** in the view's menu bar.
2. Select **Alerts** in the left pane and click **Add**.
The Add Alert Wizard opens. If the selected resource supports child alerts, the wizard opens to the Resource page. If the resource does not support child alerts, the wizard opens to the Type page.
3. On the Resource page of the wizard, select the object on which you want to set the alert. Expand the folder representing the server or agent to select lower-level child objects.
4. Click **Next**.
The Type page of the wizard appears.
5. Select the alert type and click **Next**.
For this step and the next one, see the topic on key performance indicators for information on what this alert monitors and how it is triggered. (Each alert is based on a KPI.)
6. Based on the type of alert you selected, do one of the following:
 - For a state-based alert: Select a severity level for each alert state.

Note: You can associate only one severity level with each state.

- For a threshold-based alert: Review and if necessary adjust the range of values that defines each severity.

7. Click Next.

The Storm Suppression page of the wizard appears.

8. Enter the storm suppression period, which suppresses redundant alerts resulting from the same condition (an alert storm) for the specified period of time. (The default is 60 seconds.) Enter this value in seconds, minutes, or hours in **Storm Suppression Period and click **Next**.****9. (Optional; not available for alerts on Sybase IQ servers) To configure this alert to trigger the execution of a script:****a) Type Configuration** specifies the alert severity level that triggers the script. Select **Critical**, **Warning**, or both.

Critical is more serious than Warning.

b) Enter or browse to the location of the script.**c) Enter parameter values in the **Execution Parameters** box.**

The string you enter is passed on the command line to the script. You can include a number of predefined substitution parameters, which are replaced by values from the alert. See the example (below) and the substitution parameters topic (linked below) for more information.

d) Click **Next.**

If the selected resource has sibling resources (databases or devices of the same type, for example) that support this alert type, the Duplicates page appears. If the selected resource has no identical siblings, the Subscription page appears.

10. (Optional) On the Duplicates page, select any resources that should use this alert definition as a template for their own alerts. Click the box at the top of the list to select all the resources listed. Then click **Next.**

This step saves time when you need to configure similar alerts for several resources of the same type.

11. (Optional) On the Subscription page, specify e-mail addresses if you want this alert to issue e-mail notifications when it fires.

The e-mail addresses default to the address in your user profile, but you can override the defaults.

For both critical and warning alerts:

Table 5. Alert subscription details

Option	Description
E-mail Message	To send an e-mail notification when this alert fires, click the E-mail Message box and enter the e-mail address of one user or list.

Option	Description
Escalation E-mail	To escalate this alert (by sending an e-mail notification to another address when this alert has not been responded to after a specified period of time), click the Escalation E-mail box and enter the e-mail address of one user or list. Note that you cannot enter an escalation address unless you enter an address for primary notification first.
Time Period	Enter the amount of time to wait, following the initial alert notification, before Sybase Control Center sends an e-mail notification to the escalation address.

12. Click Finish.

Example: An alert-triggered script

This sample script is a Windows .bat file:

```
@echo off
@echo. >> stest.txt
@echo %date% %time% >> stest.txt
@echo arg0: %0 >> stest.txt
@echo arg1: %1 >> stest.txt
@echo arg2: %2 >> stest.txt
@echo arg3: %3 >> stest.txt
@echo arg4: %4 >> stest.txt
@echo arg5: %5 >> stest.txt
@echo arg6: %6 >> stest.txt
@echo arg7: %7 >> stest.txt
@echo arg8: %8 >> stest.txt
@echo arg9: %9 >> stest.txt
@echo. >> stest.txt
```

This is a sample execution parameter string for the script above:

```
Time:%Time%
Severity:%Severity%
Resource:%Resource%
Server:%Top_resource%
KPI:%KPI%
State:%Current_state%
URL:%SCC_URL%
```

The script's output might look like this:

```
Tue 12/15/2009 14:54:45.58
arg0: C:\project\sccmain\script-test.bat
arg1: Time:"Mon Dec 21 21:30:04 2009"
arg2: Severity:CRITICAL
arg3: Resource:"SCC Tester 1"
arg4: Server:"SCC Tester 1"
arg5: KPI:kpi_scc_mostate_primary
arg6: State:ERROR
arg7: HYPERLINK "http://ik-scc.sybase.com:8282/scc"URL:http://ik-
scc.sybase.com:8282/scc
arg8:
arg9:
```


See also

- *Changing Update Frequency for Statistics and Charts* on page 17
- *Optional Configuration Steps* on page 24
- *Sybase IQ Data Collections* on page 10
- *Key Performance Indicators for Sybase IQ* on page 13
- *Assigning a Role to a Login or a Group*
- *Configuring the E-mail Server*
- *Alerts*

Sybase IQ Alert Templates

Lists and describes alert templates you can use to create alert instances for Sybase IQ.

The alert templates are based on the same key performance indicators (KPIs) that are collected for the Sybase IQ node level monitor displays, and for the Statistics Chart.

Alert Template	Description	Alert Type
Active INC incoming connections	Number of internode communication (INC) incoming connections.	Threshold
Active INC outgoing connections	Number of INC outgoing connections.	Threshold
Active INC transactions	Number of active INC transactions.	Threshold
Active load table statements	Number of active load table statements.	Threshold
Active transactions	Total number of active transactions, including user and INC transactions.	Threshold
Active user connections	Number of active user connections.	Threshold
Active user transactions	Number of active user transactions.	Threshold
Available communication buffers	Number of available network communication buffers.	Threshold
Bytes received	Number of bytes per second received during client/server communications.	Threshold
Bytes received uncompressed	Number of bytes per second that would have been received during client/server communications if compression was disabled.	Threshold
Bytes sent	Number of bytes per second sent during client/server communications.	Threshold

Configure

Alert Template	Description	Alert Type
Bytes sent uncompressed	Number of bytes per second that would have been sent during client/server communications if compression was disabled.	Threshold
Catalog cache dirty pages percent	Percentage of pages in the catalog cache where data has been modified and stored in the buffer cache and has not yet been written to disk.	Threshold
Catalog cache hits	Number of catalog cache hits per second.	Threshold
Catalog cache in use percent	Percentage of the catalog cache in use.	Threshold
Catalog cache pinned	Number of pinned catalog cache pages.	Threshold
Catalog cache pinned percent	Percentage of the catalog cache pinned.	Threshold
Catalog cache reads	Number of catalog cache page lookups per second.	Threshold
Catalog store disk reads	Number of kilobytes per second that have been read from the catalog store.	Threshold
Catalog store disk writes	Number of kilobytes per second that have been written to the catalog store.	Threshold
CPU total usage	Percentage of the Sybase IQ server CPU in use, including both system and user usage.	Threshold
IQ active operations	Number of active concurrent operations admitted by the Sybase IQ resource governor.	Threshold
IQ threads in use	Number of threads used by the Sybase IQ server.	Threshold
Main cache hits	Number of main cache hits per second.	Threshold
Main cache in use percent	Percentage of the main cache in use.	Threshold
Main cache pinned	Number of pinned main cache pages.	Threshold
Main cache pinned percent	Percentage of the main cache pinned.	Threshold
Main cache reads	Number of main cache page lookups per second.	Threshold
Main cache size	Current main cache size in megabytes.	Threshold

Alert Template	Description	Alert Type
Main store disk reads	Number of kilobytes per second that have been read from the main store.	Threshold
Main store disk writes	Number of kilobytes per second that have been written to the main store.	Threshold
Number of active connections	Total number of active connections, including user and internode communication connections.	Threshold
Number of connections available	Number of concurrent connections available.	Threshold
Number of IQ threads available	Number of threads available in the Sybase IQ server.	Threshold
Requests per second	Number of times per second the server has been accessed to handle a new request or continue processing an existing request.	Threshold
Server availability	Status of the Sybase IQ server.	State
Temp cache dirty pages percent	Percentage of pages in the temporary caches where data has been modified and stored in the buffer cache and has not yet been written to disk.	Threshold
Temp cache hits	Number of temporary cache hits per second.	Threshold
Temp cache in use percent	Percentage of the temporary cache in use.	Threshold
Temp cache pinned	Number of pinned temporary cache pages.	Threshold
Temp cache pinned percent	Percentage of the temporary cache pinned.	Threshold
Temp cache reads	Number of temporary cache page lookups per second.	Threshold
Temp cache size	Current temporary cache size in megabytes.	Threshold
Temp store disk reads	Number of kilobytes per second that have been read from the temporary store.	Threshold
Temp store disk writes	Number of kilobytes per second that have been written to the temporary store.	Threshold
Total communication buffers	Total number of network communication buffers.	Threshold

Alert Template	Description	Alert Type
Unscheduled requests	Number of requests that are currently queued up waiting for an available server thread.	Threshold
User connections per minute	Number of user connections per minute.	Threshold
User disconnections per minute	Number of user disconnections per minute.	Threshold

Alert Types and Severities for Sybase IQ

Learn about the properties that define and control alerts.

An alert's type determines what causes it to fire.

Table 6. Alert types

Type	Description
State	A state alert fires when the metric on which it is based changes to a particular state. The possible states are running, pending, stopped, warning, error, and unknown.
Threshold	A threshold alert fires when the metric on which it is based passes a preset level.

Alert severities control when an alert is issued. You can configure the states or threshold values for each alert.

Table 7. Alert severities

Severity	Description
Normal	No alert is issued.
Warning	A problem has given cause for concern. An alert is issued; you can subscribe to alerts that fire at the Warning level.
Critical	A serious problem exists. An alert is issued; you can subscribe to alerts that fire at the Critical level.

Optional Configuration Steps

Perform additional configuration, including user authorization, alerts, data collection scheduling, backups, and setting purging options for the repository.

Table 8. Configuration areas

Configuration area	Description	Topic
User authorization	Set up groups of users or assign roles. Make sure there are users with administrative privileges (sccAdminRole).	<i>User Authorization</i>
Authentication	Add authentication modules to allow Windows, UNIX, or LDAP users to log in to Sybase Control Center.	<i>Setting Up Security</i>
Alerts	Modify alert thresholds and subscriptions and delete alerts.	<i>Alerts</i>
Data collection	Modify collection intervals and schedules, suspend and resume the schedule, and delete collection jobs.	<i>Job Scheduling</i>
Resources	Unregister resources, add them to perspectives, or remove them.	<i>Resources</i>
Perspectives	Create, remove, and rename perspectives.	<i>Perspectives</i>
Repository	Set purging options and schedule backups of the repository database.	<i>Repository</i>

See also

- *Creating an Alert* on page 18

Configure

Manage and Monitor

Sybase Control Center allows you to manage and monitor resource availability status, view performance statistics, and provides various log information for system administrators to debug application errors.

Heat Chart

The heat chart displays status and availability statistics for managed resources in the current perspective.

The heat chart displays the state of resources in your perspective—whether the resources are running, suspended, or down. In addition, the heat chart lists the type of each resource and provides statistical data, including the start time of the last data collection.

In the Perspective Heat Chart view, you can filter the resources that you want to see. You can also search and sort the results by column. From within the Perspective Heat Chart, you can right-click a resource to see a menu of monitoring and administrative options that vary based on the resource type.

Heat chart data is collected directly from managed servers, tagged with the date and time when it was collected, and stored in the Sybase Control Center repository.

Displaying Resource Availability

Use the heat chart to view availability information on the servers in the current perspective.

1. From the application menu bar, select **View > Open > Heat Chart**.
2. (Optional) To display tools for filtering (narrowing the list of resources in the heat chart) or changing the columns, select **View > Filter** from the Perspective Heat Chart menu bar. The Filter and Column tools appear in the left pane.
3. (Optional) To use filtering, select **View > Filter** from the view's menu bar and enter a search term in the **Filter string** field.
The search term can be any string that appears in the tabular portion of the heat chart, such as the name, or part of the name, of a server or a resource type (ASE Server, for example).
4. (Optional) Select a filtering setting:
 - **Match case** – search for resources whose displayed data includes the search term, including uppercase and lowercase letters; or
 - **Exact match** – search for resources whose displayed data includes an item identical to the search term.
5. (Optional) Select a column from the **Filter on** list to restrict your search to that column.

6. (Optional) Click **Columns** to customize your heat chart.
7. (Optional) Unselect any column that should not appear in your heat chart.
8. (Optional) Click the sorting arrow in the column headers to sort the column values in either ascending or descending order.
9. (Optional) Right-click the resource's row to view a menu of options for the selected resource.
10. (Optional) To resize the Filter and Columns tools pane, move your mouse over the border between the tools pane and the resource table. When the mouse cursor changes to a resize icon, click and drag the border to the left or the right.
11. (Optional) To hide the Filter and Columns tools, unselect **View > Filter**.

Historical Performance Monitoring

Monitor performance data to determine whether your environment is working efficiently.

Obtain detailed information about the status of the resources in your environment. You can create performance graphs that illustrate resource performance over a specified period of time.

Graphing Performance Counters

Generate a graph for any set of performance counters to show performance trends.

Prerequisites

Verify that statistical data to be graphed has been collected. To verify data collection, go to the Collection Jobs page of the Resource Properties view and check the History tab for a collection job. You can also look at the resource monitor: if data is displayed, data is being collected.

1. In the Perspective Resources view, click a resource and select **Resource > Launch Statistics Chart** in the view menu bar.
2. Expand the folders in the Statistics tab and select the key performance indicator (KPI) you want to graph.
3. Click **Graph Statistic** or drag the KPI onto the Chart tab.
The Chart tab displays the graphed data, while the KPI with its corresponding value and the date and time it was collected appear in the Data tab.
4. (Optional) Repeat to add additional KPIs to the graph.
5. (Optional) Use the slider at the bottom of the Chart tab to control the amount of time covered by the graph, ranging from a minute to a year.
6. (Optional) Use <<, <, >, and >> to move the displayed graph to an earlier or later time, depending on how the slider is set.

7. (Optional) You can click the date/time that appear above the slider. Use these to change the start and end date/time and the chart time span.
8. (Optional) Click **Clear Graph** to remove all the graphed statistics and start anew.

Note: You can graph a maximum of five statistics with no more than two distinct units of measure. By default, only 24 hours of statistics are available; change the repository purge options to save statistics for a longer period.

See also

- *Key Performance Indicators for Sybase IQ* on page 13
- *Setting Up Statistics Collection* on page 8
- *Configuring Repository Purging*

Manage and Monitor Sybase Control Center for Sybase IQ

Manage and monitor Sybase Control Center for Sybase IQ through the activity logs.

Viewing the Sybase Control Center for Sybase IQ Log

View event logs for Sybase Control Center for Sybase IQ.

Sybase Control Center for Sybase IQ uses Log4J for message logging. The Sybase Control Center for Sybase IQ log files are located at:

- Windows – %SYBASE%\SCC-3_1\plugins\IQMAP\log\iqmap.log
- UNIX – \$SYBASE/plugins/IQMAP/log/iqmap.log

1. Display one of the log files using a log viewer or a method of your choice.
2. Look for entries of interest such as login attempts or the failure of a service to start.

See also

- *Logging*

Modifying Sybase IQ Log Configuration

Change the log level or logging configuration settings for Sybase IQ.

1. Navigate to %SYBASE%\SCC-3_1\plugins\IQMAP.
2. Open the `IQMapLog4j.properties` file, and modify the settings as needed.
3. Save and close the `IQMapLog4j.properties` file.
4. Restart the SCC server.

IQMAP messages are recorded in the console and the `iqmap.log` file. The `iqmap.log` file is located at %SYBASE%\SCC-3_1\plugins\IQMAP\log.

Monitor the Sybase IQ Environment

Monitor all single-node and multiplex servers in the Sybase IQ environment.

Monitoring a Single Node

Statistics allow you to monitor the availability and performance of a single Sybase IQ server.

See also

- *Monitoring a Multiplex Server* on page 41

Viewing Overview Statistics

Display high-level statistics for the selected Sybase IQ server.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.
2. In the left pane of the IQ Node Level Monitor view, select **Overview**.
3. Select the tab for the desired information.

Note: Click a column header to sort the data by that column.

To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Tab	Description
Server	<p>State – current status of the server. Valid states include:</p> <ul style="list-style-type: none"> • Unknown • Stopped • Running <p>Host – host name where the server is running.</p> <p>Port – port number where the server is running.</p> <p>Server name – name of the server.</p> <p>Database – name of the Sybase IQ database.</p> <p>Server type – type of server the database is on. Server types include Single Server, Coordinator, Reader, and Writer.</p> <p>Server version – version of the Sybase IQ server.</p> <p>Platform – operating system running on the server host.</p>
Activities	<p>CPU total usage (%) – total CPU usage percentage, including both system and user usage.</p> <p>Active connections – total number of active connections, including user and internode communication connections.</p> <p>Connections available – number of connections available for users and internode communication connections.</p> <p>Active requests – number of active requests on the server.</p> <p>IQ threads in use – number of threads being used by the Sybase IQ server.</p> <p>Active transactions – number of active transactions.</p> <p>Number of committed transactions – number of committed transactions.</p> <p>Oldest transaction (minutes) – elapsed age, in minutes, of the oldest transaction.</p>
Caches	<p>Catalog cache reads (per second) – number of catalog cache page lookups per second.</p> <p>Main cache size (MB) – size of the main cache, in megabytes.</p> <p>Temp cache size (MB) – size of the temporary cache, in megabytes.</p> <p>Remaining heap size (MB) – size of the remaining heap allocation, in megabytes.</p>

Tab	Description
Version usage	<p>Number of committed versions – the number of table versions in the server.</p> <p>Total version space used (MB) – total space consumed by all the table versions.</p> <p>Oldest version ID – the oldest version identifier on the server.</p> <p>Number of active versions – total number of active write table versions on the server.</p> <p>Total active version space created (MB) – amount of data created by active write transactions.</p> <p>Total active version space to be destroyed (MB) – amount of data destroyed by active write transactions. If these transactions commit, the destroyed data becomes an old version and is eventually dropped. If the transactions roll back, the created data is released.</p>
Details	<p>Server full version – version of the IQ server software, including the date and time.</p> <p>Platform version – version of the operating system installed on the server host.</p>
Alerts	Any alerts for the selected server. While the monitor is open, alerts are displayed as they are created.
CPU history chart	Percentage of total CPU usage over a period of time.
IQ memory chart	Allocation of the IQ memory between the main cache, temporary cache, and remaining heap.
Disk usage chart	Available and used space for the main and temporary stores.

See also

- *Viewing Multiplex Overview Statistics* on page 42

Viewing All Statistics

Display all the statistics for the selected Sybase IQ server.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.
2. In the left pane of the IQ Node Level Monitor view, select **All statistics**.
For each group of statistics, expand the heading to list the individual key performance indicators (KPIs) in that group. The list shows:
 - Name of the KPI
 - Current value of the KPI

- Unit of the value
- Description of the KPI

Viewing Engine Statistics

Display the engine statistics for the selected Sybase IQ server.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.
2. In the left pane of the IQ Node Level Monitor view, select **Engine**.

Note: To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Area	Description
Engine statistics table	<p>Displays the statistics for the engine. The calculations are continuously updated based on live server information. The engine statistics include:</p> <p>CPU total usage – Percentage of CPU total usage.</p> <p>CPU system usage – Percentage of CPU system usage.</p> <p>CPU user usage – Percentage of CPU user usage.</p> <p>Total memory allocated (MB) – Total amount of memory (in megabytes) allocated for the main cache, temporary cache, and remaining heap.</p> <p>Max memory allocated (MB) – Maximum amount of memory (in megabytes) allocated for the main cache, temporary cache, and remaining heap.</p> <p>Main cache (MB) – Total size of the main cache, in megabytes.</p> <p>Temp cache (MB) – Total size of the temporary cache, in megabytes.</p> <p>IQ threads in use – Number of IQ threads in use.</p> <p>IQ threads available – Number of available IQ threads.</p>
IQ memory chart	Shows the allocation of the IQ memory between the main cache, temporary cache, and remaining heap.
CPU history chart	Displays the percentage of total, system, and user CPU usage over a period of time.

Viewing Connection Statistics

Display the connection statistics for the selected Sybase IQ server.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.
2. In the left pane of the IQ Node Level Monitor view, select **Connections**.
3. Select the tab for the desired information.

Note: To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Area	Description
Connections tab > Active connections	<p>Displays all users currently connected to the server, including:</p> <p>User ID – the ID of the connected user.</p> <p>Name – the name of the connected user.</p> <p>Creation time – the date and time the connection was established.</p> <p>Connection ID – the ID of the connection.</p> <p>Client IP address – the IP address of the client that made the connection.</p>
Connections tab > Connection details	<p>Select a User ID to display that user's specific connection details, including:</p> <p>Statement being executed – the statement executed by the selected user.</p> <p>Last request time – the last time a request was executed on the server by the selected user.</p> <p>Request type – type of request executed by the selected user.</p> <p>Last command time – the last time a command was executed on the server by the selected user.</p> <p>Command type – type of command executed by the selected user.</p> <p>IQ temporary store usage (KB) – number of temporary store kilobytes used during the connection.</p> <p>IQ temporary work space usage (KB) – number of temporary workspace kilobytes used during the connection.</p> <p>Cursor count – number of open Sybase IQ cursors on the connection.</p> <p>Thread in use – number of threads in use by the selected user.</p>

Area	Description
Connections tab > Associated transactions	Displays the transaction ID, creation time, and state of transactions executed by the selected user.
Connection Statistics tab > Active connections	Displays a chart of the number of user, internode incoming, internode outgoing, and other connections to the server.
Connection Statistics tab > User connections/disconnections per minute	Displays the number of user, internode incoming, internode outgoing, and other connections and disconnections per minute.

See also

- *Viewing Multiplex Connections Statistics* on page 47

Viewing Transaction Statistics

Display transaction statistics for the selected Sybase IQ server.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.
2. In the left pane of the IQ Node Level Monitor view, select **Transactions**.
3. Select the tab for the desired information.

Note: Click a column header to sort the data by that column.

To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Area	Description
Transactions tab > Transactions & versions	Displays all transactions that are currently on the server, and their version details.

Area	Description
<p>Transactions tab > Transaction details</p>	<p>Transaction details include:</p> <p>Transaction ID – the unique identification number for the selected transaction.</p> <p>Connection ID – the connection identification number for the selected transaction.</p> <p>Statement being executed – the statement executed by the selected transaction.</p> <p>IQ main store space created by transaction (KB) – the amount of main store space created by the selected transaction.</p> <p>IQ main store space dropped by transaction (KB) – the amount of main store space dropped by the selected transaction.</p> <p>IQ temporary store space created by transaction (KB) – the amount of temporary store space created by the selected transaction.</p> <p>IQ temporary store space dropped by transaction (KB) – the amount of temporary store space created by the selected transaction.</p> <p>Cursor count – number of open Sybase IQ cursors on the transaction.</p> <p>IQ threads – number of threads being used by the transaction.</p> <p>IQ govern priority – numeric priority of the transaction in the queue.</p> <p>Connection or cursor – identifies whether the transaction is a connection or a cursor.</p> <p>Connection or cursor create time – date and time the connection or cursor was created.</p>
<p>Transaction statistics tab > Active transactions</p>	<p>Displays a chart of the number of user, internode communication (identified on the chart as INC), and other transactions on the server.</p>
<p>Transaction statistics tab > Other statistics</p>	<p>Displays additional details on the transaction, including:</p> <p>Number of committed transactions – total number of committed transactions on the server.</p> <p>Number of active load statements – total number of active load statements on the server.</p> <p>Oldest active transaction time (minutes) – elapsed time, in minutes, since the oldest active transaction's creation.</p>

See also

- *Viewing Multiplex Transaction Statistics* on page 48

Viewing Dbspace Statistics

Display dbspace statistics for the selected Sybase IQ server.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.
2. In the left pane of the IQ Node Level Monitor view, select **DBSpaces**.

Note: Click a column header to sort the data by that column.

To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Area	Description
DBSpaces	Displays the dbspaces on the server.
DBSpace details tab	Select a dbspace to display the details for the dbspace, including: DBSpace size – total size of the dbspace, in kilobytes. Size in use – amount of space being used in the dbspace, in kilobytes. Size available – percentage of the dbspace available for use. Reserved size – reserved space for the dbspace. Stripe size – size allowed for the stripe. Number of files – number of files in the dbspace. Number of RW files – number of read/write files in the dbspace. Droppable – indicates whether the dbspace file can be dropped.
DBSpace size Details tab	Displays the total size of the dbspace, as well as the percentages of the dbspace that are in use and available.
DBSpace files	Displays the list of DBSpace files that are part of the selected DBSpace.

Area	Description
DBSpace file details tab	Select the a dbspace file to display details for the dbspace file, including: File size – total size of the dbspace file, in kilobytes. Size in use – amount of space being used in the file, in kilobytes. Size available – percentage of the file available for use. Reserved size – reserved space for the dbspace file. Stripe size – size allowed for the stripe. Droppable – indicates whether the dbspace file can be dropped.
DBSpace file size details tab	Displays the size of the selected dbspace file, as well as the percentages of the dbspace file that are in use and available.

Viewing Store I/O Statistics

Display the store I/O statistics for the selected Sybase IQ server.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.
2. In the left pane of the IQ Node Level Monitor view, select **Store I/O**.

Note: To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Area	Description
Disk Reads	Number of disk reads per second on the catalog store, main store, and temporary store.
Disk Writes	Number of disk writes per second on the catalog store, main store, and temporary store.

Viewing Cache Statistics

Display the cache statistics for the selected Sybase IQ server.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.
2. In the left pane of the IQ Node Level Monitor view, select **Caches**.
3. Select the tab for the desired information.

Note: Hover the mouse pointer over any line or bar graph to display information for that graph.

Tab	Description
Cache size	<p>Catalog cache – the megabyte allocation for the catalog cache, and the number of megabytes in use.</p> <p>Main cache – the megabyte allocation for the main cache, and the number of megabytes in use.</p> <p>Temporary cache – the megabyte allocation for the temporary cache, and the number of megabytes in use.</p>
Cache reads	Number of cache reads per second for a period of time. The cache reads for the catalog, main, and temporary caches appear.
Cache statistics	<p>Displays the cache statistics for the catalog, main, and temporary caches. Each cache type includes statistics for:</p> <p>Size (mb) – total size of the cache, in megabytes.</p> <p>In use (%) – percentage of the cache being used.</p> <p>Reads (per second) – number of cache reads per second.</p> <p>Hits (per second) – number of hits, per second, to the the catalog, main, and temporary caches.</p> <p>Dirty pages (%) – percentage of pages in the catalog, main, and temporary caches where data has been modified and stored in the buffer cache and has not yet been written to disk.</p> <p>Pinned – number of pinned catalog, main, and temporary cache pages.</p> <p>Pinned (%) – percentage of the catalog, main, and temporary caches pinned.</p>

See also

- *Viewing Multiplex Cache Statistics* on page 49

Viewing Table Version Statistics

Display the table version statistics for the selected Sybase IQ server.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.
2. In the left pane of the IQ Node Level Monitor view, select **Table Versions**.

Note: To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Area	Description
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Area	Description
Statistics	<p>Number of committed versions – the number of table versions in the server.</p> <p>Total version space used (MB) – total space consumed by all the table versions.</p> <p>Oldest version ID – the oldest version identifier on the server.</p> <p>Number of active versions – total number of active write table versions on the server.</p> <p>Total active version space created (MB) – amount of data created by active write transactions.</p> <p>Total active version space to be destroyed (MB) – amount of data destroyed by active write transactions. If these transactions commit, the destroyed data becomes an old version and is eventually dropped. If the transactions roll back, the created data is released.</p>
Table versions	<p>Version ID – the table version identifier.</p> <p>Server name – the name of the server.</p> <p>Connection ID – the connection ID using this table version.</p> <p>MinKBRelease – the minimum amount of space returned once this version is no longer in use.</p> <p>MaxKBRelease – the maximum amount of space returned once this version is no longer in use.</p> <p>WasReported – indicates whether the server has received usage information for this version.</p>

Viewing Operation and Request Statistics

Display the operation and request statistics for the selected Sybase IQ server.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.
2. In the left pane of the IQ Node Level Monitor view, select **Operations & Requests**.

Note: To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Area	Description
Operations	<p>Total operations – the total number of IQ operations of any type.</p> <p>Active operations – the number of active IQ operations.</p> <p>Waiting operations – the number of IQ operations waiting for the resource governor.</p>

Area	Description
Requests	<p>Requests – the number of times per second the server has been accessed to handle a new request or continue processing an existing request.</p> <p>Active requests – the number of active requests.</p> <p>Unscheduled requests – the number of requests that are currently in the queue, waiting for an available server thread.</p>

Viewing Network Statistics

Display the network statistics for the selected Sybase IQ server.

1. In the Perspective Resources window, right-click the resource and select **Monitor Node**.
2. In the left pane of the IQ Node Level Monitor view, select **Network**.
3. Select the tab for the desired information.

Note: To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Area	Description
Network usage	<p>Bytes received – amount of data, in bytes, received by the server.</p> <p>Bytes received uncompressed – amount of uncompressed data, in bytes, received by the server.</p> <p>Bytes sent – amount of data, in bytes, sent by the server.</p> <p>Bytes sent uncompressed – amount of uncompressed data, in bytes, sent by the server.</p> <p>Free communication buffers – number of free communication buffers.</p> <p>Total communication buffers – total number of communication buffers.</p>
Data transfer history	Displays the amount of data, in kilobytes, sent and received by the server over time.
Buffer usage	Shows the total number of communication buffers, and a graph displaying the number of used and free communication buffers.

Monitoring a Multiplex Server

Statistics let you monitor the availability and performance of a multiplex.

See also

- *Monitoring a Single Node* on page 30

Viewing Multiplex Overview Statistics

Display the overall health of the Sybase IQ multiplex environment.

1. In the Perspective Resources window, right-click the resource and select **Monitor Multiplex**.
2. In the left pane of the IQ Multiplex Level Monitor view, select **Overview**.
3. Select the tab for the desired information.

Note: Click a column header to sort the data by that column.

To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Area	Description
Multiplex tab > Servers	<p>Server – name of the server.</p> <p>Host – host name where the server is running.</p> <p>Port – port number where the server is running.</p> <p>State – current state of the server. Valid states include:</p> <ul style="list-style-type: none"> • Unknown • Stopped • Running <p>Role – role the server plays in the multiplex configuration. Roles include:</p> <ul style="list-style-type: none"> • Coordinator • Reader • Writer <p>Status – current status of the server in the multiplex. Valid states include:</p> <ul style="list-style-type: none"> • Included • Excluded
Multiplex tab > CPU history	Percentage of total CPU usage over a period of time for each server. The legend below the chart identifies the colored line associated with each server.
Multiplex tab > IQ memory	Allocation of the IQ memory between the main cache and temporary cache for each server in the multiplex.

Area	Description
Disk usage tab	Available and used space for the main and temporary stores on each server in the multiplex.
Version usage tab > Statistics	<p>Number of committed versions – the number of table versions in the servers.</p> <p>Total version space used (MB) – total space consumed by all the table versions.</p> <p>Oldest version ID – the oldest table version identifier on the server.</p> <p>Number of active versions – total number of active write table versions on the servers.</p> <p>Total active version space created (MB) – amount of data created by active write transactions.</p> <p>Total active version space to be destroyed (MB) – amount of data destroyed by active write transactions. If these transactions commit, the destroyed data becomes an old version and is eventually dropped. If the transactions roll back, the created data is released.</p>
Version usage tab > Multiplex version usage	<p>Version ID – the table version identifier.</p> <p>Server name – the name of the server where the table version exists.</p> <p>Connection ID – the connection ID using this table version.</p> <p>WasReported – indicates whether the server has received usage information for this table version.</p> <p>MinKBRelease – the minimum amount of space returned once this table version is no longer in use.</p> <p>MaxKBRelease – the maximum amount of space returned once this table version is no longer in use.</p>

See also

- *Viewing Overview Statistics* on page 30

Viewing Multiplex Topology Statistics

Display the topology view of the Sybase IQ multiplex.

The topology view represents the entire multiplex grid environment, which consists of nodes and links. A node represents a multiplex server, while a link represents the connection between two multiplex nodes. Only one coordinator node appears, and links exist only between the coordinator node and a secondary node. There are no links between two secondary nodes.

1. In the Perspective Resources window, right-click the resource and select **Monitor Multiplex**.
2. In the left pane of the IQ Multiplex Level Monitor view, select **Topology**.
3. To modify the layout of the topology view, click **View Controls**.

Layout options include:

- **Autofit** – rearranges the nodes to ensure all nodes are visible.
 - **Zoom** – increases or decreases the size of the view.
 - **Reset** – restores the topology view to the default layout.
4. To view a list of the all nodes in the multiplex, and a list of the connections between the coordinator node and its secondary nodes within the multiplex, click **Details**.
 5. To monitor a single node within the multiplex, right-click the node in the topology view and select **Monitor Node**.

When monitoring a single node from the topology screen, the IQ Node Level Monitor is displayed, and the node is registered as a single node resource and appears in the Perspective Resources view.

Displaying the Properties of a Multiplex Node

View the server information for a single node in the multiplex environment.

1. In the Perspective Resources window, right-click the resource and select **Monitor Multiplex**.
2. In the left pane of the IQ Multiplex Level Monitor view, select **Topology**.
3. Right-click the node and select **Properties**.

The server properties dialog includes:

- **Server name** – name of the server.
- **Host** – host name where the server is running.
- **Port** – port number where the server is running.
- **State** – current state of the server. Valid states include:
 - Unknown
 - Stopped
 - Running
- **INC state** – state of the internode communication between the secondary node and the coordinator. Valid values include:
 - Active
 - Timed out
 - N/A (not available)
 - Unknown

Note: When viewing the properties of the coordinator node, the INC state always displays N/A.

- **Role** – role of the server within the multiplex. Valid roles include:
 - Coordinator
 - Writer
 - Reader
- **Status** – current status of the server. Valid states include:
 - Included
 - Excluded
- **Database Path** – location of the database file on the server.

Displaying Connection Properties

View the details of the connection between the coordinator node and secondary node.

1. In the Perspective Resources window, right-click the resource and select **Monitor Multiplex**.
2. In the left pane of the IQ Multiplex Level Monitor view, select **Topology**.
3. Right-click the line between the coordinator node and the secondary node and select **Properties**.

The internode communication properties dialog includes:

- **Link** – name of the linked coordinator node and secondary node.
- **INC state** – state of the internode communication between the secondary node and the coordinator. Valid values include:
 - Active
 - Timed out
 - N/A (not available)
 - Unknown
- **Secondary server name** – name of the secondary server.
- **Heartbeat frequency** – number of seconds between polls to ensure the secondary server is connected.
- **Last successful heartbeat** – date and time the last successful heartbeat transmission was received.
- **Time not responding** – amount of time since the first failed heartbeat request.
- **Time until timeout** – amount of time until the server connection times out and the secondary node becomes inactive.
- **Liveness timeout** – amount of time before the connection is terminated.
- **Auto exclude timeout** – amount of time before the secondary node is automatically excluded.
- **Max connection pool size** – maximum number of connections to the server.

- **Current connection pool size** – current number of connections to the server.
- **Number of idle connections** – number of connections to the server without any activity.
- **Number of connections in use** – number of active connections to the server.

Viewing Multiplex Server Statistics

Display the statistics for the servers in the Sybase IQ multiplex.

1. In the Perspective Resources window, right-click the resource and select **Monitor Multiplex**.
2. In the left pane of the IQ Multiplex Level Monitor view, select **Servers**.
3. In the Multiplex Servers area, select the server to display in the Server Details area.

Note: Click a column header to sort the data by that column.

To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Tab	Description
Multiplex Servers	<p>Server – name of the server.</p> <p>Host – host name where the server is running.</p> <p>Port – port number where the server is running.</p> <p>State – current state of the server. Valid states include:</p> <ul style="list-style-type: none"> • Unknown • Stopped • Running <p>Role – role of the server within the multiplex. Valid roles include:</p> <ul style="list-style-type: none"> • Coordinator • Writer • Reader <p>Status – current status of the server. Valid states include:</p> <ul style="list-style-type: none"> • Included • Excluded

Tab	Description
Server Details	<p>Server name – name of the server.</p> <p>State – current state of the server. Valid states include:</p> <ul style="list-style-type: none"> • Unknown • Stopped • Running <p>Database – name of the IQ database.</p> <p>Database path – location of the database file on the server.</p> <p>Server version – version of the IQ server.</p> <p>Platform – operating system running on the server's host.</p>

Viewing Multiplex Connections Statistics

Display the connection statistics for all servers in a Sybase IQ multiplex.

1. In the Perspective Resources window, right-click the resource and select **Monitor Multiplex**.
2. In the left pane of the IQ Multiplex Level Monitor view, select **Connections**.
3. To display a list of connections in the Multiplex connections area, click the arrow beside the desired server name.
4. On the Active Connections tab, click the bar chart for a server to display the active connection details in a pie chart.

Note: To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Area	Description
Connections tab > Multiplex connections	<p>Displays all users currently connected to each server, including:</p> <p>Server – the name of the server.</p> <p>User ID – the ID of the connected user.</p> <p>Connection ID – the ID of the connection.</p> <p>Name – the name of the connected user.</p> <p>Connection create time – the date and time the connection was established.</p> <p>Client IP address – the IP address of the client that made the connection.</p>

Area	Description
Connections tab > User connections/disconnections per minute	Displays the number of user connections and disconnections per minute for each server.
Active connections tab	Displays a chart of the number of user, internode incoming, internode outgoing, and other connections to the selected server.

See also

- *Viewing Connection Statistics* on page 34

Viewing Multiplex Transaction Statistics

Display transaction statistics for all servers in a Sybase IQ multiplex.

1. In the Perspective Resources window, right-click the resource and select **Monitor Multiplex**.
2. In the left pane of the IQ Multiplex Level Monitor view, select **Transactions**.
3. To display a list of transactions, click the arrow beside the desired server name.
4. On the Transaction Statistics tab, click the bar chart for a server to display the transaction details in a pie chart.

Note: To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Area	Description
Transactions tab > MPX Transactions	<p>Transaction ID – the unique identification number for the selected transaction.</p> <p>Version ID – the version identification number for the selected transaction.</p> <p>User ID – the user name of the user that started the selected transaction.</p> <p>State – the current state of the selected transaction. Possible states include:</p> <ul style="list-style-type: none"> • Active – the transaction is being processed. • Committed – the transaction has completed processing. <p>Creation time – the date and time when the selected transaction was created.</p>
Transaction statistics tab	Displays a chart of the number transactions for each server in the multiplex. Selecting a server in the chart displays a pie chart of user and internode communications (identified on the chart as INC) transactions.

See also

- *Viewing Transaction Statistics* on page 35

Viewing Multiplex Cache Statistics

Display the cache statistics for all servers in a Sybase IQ multiplex.

1. In the Perspective Resources window, right-click the resource and select **Monitor Multiplex**.
2. In the left pane of the IQ Multiplex Level Monitor view, select **Caches**.
3. Select the tab for the cache type to show.

Each cache type tab provides a graph with colored lines for each selected server.

Note: To display the information in a chart or table in the full window, select the Maximize icon in the top right of the area.

Hover the mouse pointer over any line or bar graph to display information for that graph.

Chart	Description
Cache reads	Number of cache reads per second for a period of time. The cache reads for the catalog, main, and temporary caches appear. The legend at the right of the chart identifies the colored line associated with each server.
Cache size	The megabyte allocation for the selected cache type on each server in the multiplex, and the number of megabytes in use.

See also

- *Viewing Cache Statistics* on page 38

Troubleshoot Sybase Control Center for Sybase IQ

Troubleshoot problems that occur in Sybase Control Center for Sybase IQ.

Error Message is Displayed When Trying to Authenticate a Multiplex Server

Problem: It is possible to register a multiplex server multiple times, or register multiple servers of the same multiplex set in Sybase Control Center, but only the first authenticated resource allows you to successfully authenticate the login account for the resource. Any attempts to authenticate an additional multiplex server resource of the same multiplex set generates an error and is not successful.

Solution: In the Resource Explorer, remove all but one instance of the registered multiplex resources.

Alternatively, take note of the resource name identified in the error message, and in the Resource Explorer add that resource to the Perspective view.

See also

- *Registering a Sybase IQ Server* on page 4
- *Authenticating a Login Account for a Monitored Resource* on page 7

Authenticating a Chinese or Japanese Sybase IQ Server Fails

Problem: When authenticating a Chinese or Japanese Sybase IQ server, if the login name or password contain Chinese or Japanese characters, the login fails.

Solution:

1. In the Perspective Resources window, right-click the Chinese or Japanese server and select **Properties**.
2. In the Resource Properties window, select **Connection**.
3. Enter the **Character set** used on the Sybase IQ server.
4. Click **OK**.

Glossary: Sybase Control Center for Sybase IQ

Glossary of Sybase Control Center terms related to Sybase IQ.

- **alert** – a mechanism for notifying administrators when a managed resource experiences a status change, or when a performance metric passes a user-specified threshold.
- **alert instance** – a copy of an alert type that has been configured to generate a particular kind of alert for a specific managed resource.
- **alert notification** – an indication that an alert has fired. Alert notifications appear in the Alert Monitor view. If e-mail notification is enabled, alert notifications are also delivered to the specified e-mail address.
- **alert storm** – the result of issuing many redundant alerts associated with a common or root occurrence. See also alert suppression.
- **alert storm suppression** – a Sybase Control Center feature that can be configured to prevent alert storms by suppressing repeat alert notifications for a specified period of time.
- **alert target** – the destination for an alert notification and source of an alert response.
- **alert type** – (1) A template that defines the resource type and the key performance indicator associated with an alert instance. (2) The basis on which an alert fires: state or threshold. Some alerts are triggered by the state of their key performance indicator (for example, running or stopped), while other alerts are triggered when their KPI's numerical value passes a specified threshold.
- **availability** – indicates whether a resource is accessible and responsive.
- **catalog store** – the portion of each Sybase IQ database that contains its metadata. (Metadata describes the layout of the Sybase IQ tables, columns, and indexes.) The catalog store contains the SYSTEM dbspace and up to 12 additional other catalog dbspaces. The default name for this file is *<dbname>.db*.
- **chart trend period** – the period, in minutes, over which data is displayed in historical charts. Set the chart trend period on the Settings screen of the Sybase IQ Monitoring View. Contrast with screen refresh interval.
- **collection repeat interval** – the period, in seconds, between successive repetitions of a statistics collection job. The collection repeat interval determines how often new data on historical monitoring screens is available to be refreshed. Set the collection repeat interval in the scheduler. See also screen refresh interval.
- **collection** – a named, predefined set of key performance indicators for which values are collected from monitored servers at the same time. Collections supply the performance and availability data shown on Sybase Control Center screens and charts. Use the scheduler to view a list of collections and to control which collections run, how often they run, and the length of time for which they run.
- **connection** – a connection from a Sybase IQ server to a database.
- **database** – a collection of tables that are related by primary and foreign keys. The tables hold the information in the database. The tables and keys together define the structure of

the database. IQ databases are specially indexed to take advantage of the query speed of Sybase IQ.

- **dbspace** – an additional database file that creates more space for data. A database can be held in up to 13 separate files (an initial file and 12 dbspaces). Each table, together with its indexes, must be contained in a single database file.
- **event** – an activity in the system, such as a user logging in, a service starting or stopping, or a condition changing. Use the alerts feature to detect and notify you about system events.
- **heat chart** – a graphical view of resource availability in the current perspective.
- **job** – a task performed by the scheduler in Sybase Control Center.
- **key performance indicator (KPI)** – a single metric used to evaluate the status or performance of a monitored resource. A KPI value can be a state (such as running, error, or stopped) or a numerical value. KPIs are grouped into collections (and also, for some product modules, into key performance areas, or KPAs). KPI values are collected by scheduled collection jobs and appear on monitoring screens and in the statistics and heat charts. Examples of KPIs are Server Availability and Number of Blocked Processes.
- **key performance area (KPA)** – a group of related key performance indicators.
- **main store** – the IQ main store is the portion of each Sybase IQ database that contains persistent database structures, such as backup metadata and rollback data for committed transactions.
- **multiplex** – a powerful feature in Sybase IQ that provides application scalability through a clustered server configuration. Sybase IQ multiplex allows concurrent data loads and queries via independent data processing nodes connected to a shared data source. Each multiplex server has its own catalog store and IQ temporary store and all the servers share a common IQ store.
- **node** – a topology object representing a server or other entity type, displayed visually in the form of an icon.
- **perspective** – a named tab in Sybase Control Center that displays information related to a collection of managed resources (such as servers) and a set of views associated with those resources. The views in a perspective are chosen by users of the perspective. You can create as many perspectives as you need, and customize them to monitor and manage your resources. Perspectives allow you to group resources ways that make sense in your environment—for example by location, department, or project.
- **repository** – a database that stores information related to managed resources, along with user preference data, operational data, and performance statistics.
- **resource** – a unique Sybase product component (such as a server) or a subcomponent.
- **SCC-enabled login account** – a user account that has been granted privileges in Sybase Control Center by mapping appropriate Sybase Control Center roles. (Roles are typically mapped to a group to which the account belongs rather than to the account itself.) The user account and group can be native to Sybase Control Center or created in the operating system or the LDAP directory service to which Sybase Control Center authentication is delegated. You must use an SCC-enabled account to log in to Sybase Control Center.

- **schedule** – the definition of a task (such as the collection of a set of statistics) and the time interval at which Sybase Control Center executes the task.
- **screen refresh interval** – the period in seconds between refreshes of screens in the Sybase IQ component of Sybase Control Center. Refreshing a screen redraws it with the most recent available data. Set the screen refresh interval on the Settings screen of the Sybase IQ Monitoring View. See also collection repeat interval.
- **store** – a store is one or more dbspaces that store persistent or temporary data for a special purpose. See catalog store, main store, or temporary store.
- **table version** – the unit of versioning is the table. Table-level versioning structures aggregate data for columns at the table level. With table-level versioning, Sybase IQ can control access to the data at the level where write operations occur, and where query results are focused.
- **temporary store** – the IQ temporary store is the portion of each IQ database that stores temporary tables and temporary scratch space data structures.
- **topology** – a graphical representation of how the servers in a multiplex environment are connected to each other. It is a network diagram that provides a visual map of the availability of the Sybase IQ server environment.
- **transaction** – a set of related SQL statements that are treated as a single unit of work. To ensure consistency, if all the statements in the set cannot be executed, the changes made by the query are rolled back. The tables queried during the transaction are locked until a transaction is completed.
- **transaction log** – the IQ transaction log records changes to the database. The transaction log includes version information, free space, and other information you can use to recover from a system failure. By default, the transaction log is created in the same directory as the catalog store. The default name for this dbfile is *<dbname>.log*.
- **trend period** – See chart trend period.
- **view** – a window in a perspective that displays information about one or more managed resources. Some views also let you interact with managed resources or with Sybase Control Center itself. For example, the Perspective Resources view lists all the resources managed by the current perspective. Other views allow you to configure alerts, view the topology of a replication environment, and graph performance statistics.

Index

A

- alert instances
 - defined 53
- alert notifications
 - defined 53
- alert storm
 - defined 53
- alert storm suppression
 - defined 53
- alert targets
 - defined 53
- alert templates
 - Sybase IQ 21
- alert type
 - defined 53
- alert-triggered scripts
 - example 20
- alerts
 - configuring duplicate alerts 19
 - configuring escalations 19
 - configuring storm suppression 19
 - configuring subscriptions 19
 - configuring to execute scripts 19
 - creating 18
 - defined 53
 - setting triggering states and thresholds 18
- alerts, Sybase IQ
 - types, states, and severities 24
- all statistics, Sybase IQ 32
- authenticating
 - Chinese 51
 - Japanese 51
 - multiplex 51
- availability
 - defined 53
- availability monitoring
 - Sybase IQ 30, 41

C

- cache statistics, Sybase IQ 38, 49
- catalog store
 - defined 53
- changing

- collection frequency 17
- chart trend period
 - defined 53
- Chinese
 - authentication 51
- collection repeat interval
 - defined 53
- collections
 - defined 53
- configuration
 - optional 24
- configuring
 - Sybase IQ 3
- connection statistics, Sybase IQ 34, 47
- connections
 - defined 53
- coordinator node
 - server properties 44, 45

D

- data collection jobs
 - adding 8
 - creating 8
- data collection schedules
 - adding 8
- data collections
 - Sybase IQ 10
- databases
 - defined 53
- dbspace
 - defined 54
- dbspace statistics, Sybase IQ 37

E

- engine statistics, Sybase IQ 33
- events
 - defined 54

F

- frequency
 - changing 17

G

- glossaries
 - Sybase IQ terms 53
- graphing statistics 28

H

- heat chart 27
 - customizing columns 27
 - defined 54
 - displaying 27
 - filtering resources displayed 27
- historical performance monitoring 28

I

- interfaces files, importing resources from 5
- IQ
 - See Sybase IQ
- IQ server
 - engine statistics 33

J

- Japanese
 - authentication 51
- jobs
 - defined 54

K

- key performance areas
 - defined 54
- key performance indicators
 - defined 54
 - Sybase IQ 10, 13
- KPAs
 - defined 54
- KPIs
 - defined 54

L

- login accounts
 - authenticating 7
- logs

- Sybase IQ logs, configuring 29
- Sybase IQ logs, viewing 29

M

- main store
 - defined 54
- managing
 - Sybase IQ 27, 29
- monitoring
 - performance 28
 - Sybase IQ 27, 29, 30
- multiplex
 - authenticating 51
 - defined 54
- multiplex server statistics, Sybase IQ 46
- multiplex, Sybase IQ
 - cache statistics 49
 - connection statistics 47
 - monitoring 41
 - overview statistics 42
 - server statistics 46
 - topology statistics 43
 - transaction statistics 48

N

- network statistics, Sybase IQ 41
- nodes
 - defined 54

O

- operation statistics, Sybase IQ 40
- overview statistics, Sybase IQ 30, 42

P

- performance monitoring
 - Sybase IQ 30, 41
- Perspective Heat Chart view 27
- perspectives
 - adding resources 6
 - creating 6
 - defined 54

R

- refresh interval
 - changing frequency 17
- repository
 - defined 54
- request statistics, Sybase IQ 40
- resources
 - adding to a perspective 6
 - authenticating 7
 - defined 54
 - displaying availability 27
 - importing in batch 5
 - registering with Sybase Control Center, Sybase IQ 4
- RSSD user name, using to authenticate 7

S

- SCC-enabled login account
 - defined 54
- schedules
 - creating for a data collection job 8
 - defined 55
- screen refresh interval
 - defined 55
- scripts
 - example 20
- secondary node
 - server properties 44, 45
- server log, configuring for Sybase IQ 29
- server log, viewing for Sybase IQ 29
- servers
 - authenticating 7
 - displaying availability 27
 - importing in batch 5
 - registering with Sybase Control Center, Sybase IQ 4
- severities for alerts, Sybase IQ 24
- single node, Sybase IQ
 - all statistics 32
 - cache statistics 38
 - connection statistics 34
 - dbspace statistics 37
 - engine statistics 33
 - monitoring 30
 - network statistics 41
 - operation statistics 40
 - overview statistics 30
 - request statistics 40
 - store I/O statistics 38
 - table version statistics 35
 - transaction statistics 35
 - version statistics 39
- sql.ini files, importing resources from 5
- states, Sybase IQ 24
- statistics
 - about 9
 - all, Sybase IQ 32
 - availability 9
 - cache, Sybase IQ 38, 49
 - changing frequency 17
 - connection, Sybase IQ 34, 47
 - dbspace, Sybase IQ 37
 - engine, Sybase IQ 33
 - multiplex servers, Sybase IQ 46
 - network, Sybase IQ 41
 - operation, Sybase IQ 40
 - overview, Sybase IQ 30, 42
 - performance 9
 - request, Sybase IQ 40
 - store I/O, Sybase IQ 38
 - table version, Sybase IQ 39
 - topology, Sybase IQ 43
 - transaction, Sybase IQ 35, 48
 - version, Sybase IQ 39
- statistics chart
 - graphing performance counters 28
- store
 - defined 55
- store I/O statistics, Sybase IQ 38
- storm suppression 19
- Sybase Control Center for Sybase IQ 1
- Sybase IQ
 - all statistics 32
 - authentication 51
 - cache statistics 38, 49
 - configuring log settings 29
 - connection statistics 34, 47
 - dbspace statistics 37
 - log file 29
 - multiplex server statistics 46
 - network statistics 41
 - operation statistics 40
 - overview statistics 30, 42
 - request statistics 40
 - store I/O statistics 38
 - table version statistics 39

- topology statistics 43
- transaction statistics 35, 48
- version statistics 39
- versions supported 1

T

- table version
 - defined 55
- table version statistics, Sybase IQ 39
- templates
 - alert 21
- temporary store
 - defined 55
- terms
 - Sybase IQ 53
- topology

- defined 55
 - link properties 45
- topology statistics, Sybase IQ 43
- transaction logs
 - defined 55
- transaction statistics, Sybase IQ 35, 48
- transactions
 - defined 55
- troubleshooting
 - Sybase IQ 51
- types of alerts, Sybase IQ 24

V

- version statistics, Sybase IQ 39
- views
 - defined 55