Session: C52

iSeries Operations Navigator: Managing System Performance

IBM eserver iSeries

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Overview

Notes: Overview

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Management Central is a suite of systems management functions that began to appear with OS/400 Version 4 Release 3 (V4R3). It provided management capabilities built into base OS/400 and integrated into the iSeries Graphical interface, Operations Navigator at no additional cost. The first functions included system monitors and system groups. In V4R4, it was greatly enhanced to enable long running, batch, scheduled or unattended operations for commands, packages, fix management and inventory. V4R5 ushered in the wireless and web enablement with Pervasive functions which included system availability and system monitors.

Today, it has expanded with enhancements to existing applications along with new applications. The new applications include functions for user administration, system value management, job monitoring, message monitoring and historical performance graphical interface. The pervasive devices have also be expanded to include Commands, Job monitors and Message monitors.

Management Central uses the basic system operations on each of the endpoints (e.g., APIs for performance monitoring, system commands, etc.). Management Central does not place any limitation on the number of endpoint systems used by its functions. There will be practical limits determined by your environment, networks, management policies, etc.. In addition, there is no limit to the number of endpoint systems that can be in a group Endpoints do not need to be at the same level as the Central System, nor does the Central System need to be at the same level as the Client, HOWEVER, Management Central is only as good as the client and Central System combination.

Basics

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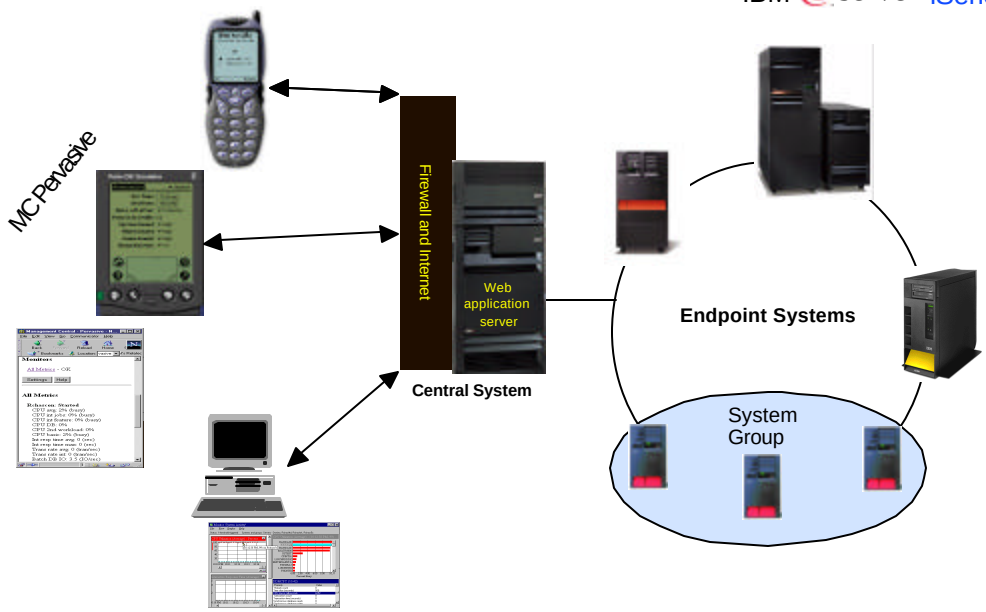

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Notes: Basics

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PC provides the graphical interface (i.e., view) both input and output of management activities. **Operations Navigator** is in installed on the PC so the user can have a rich graphical interface to interact with the systems.

MC Pervasive is a companion to Operations Navigator which provides the user with a mechanism to manage their systems from a web browser, Internet enabled phone or personal data assistance (PDA). The initial functions, System Monitors and System status, were introduced in V4R5. In V5R1, the functionality has been expanded to include message monitors, job monitors and commands.

- Firewall - A firewall is optional but is recommended to accessing the functions via the wireless devices.
- Web Application Server - Used to run the servlet for MC Pervasive functions. Examples would include Domino and Websphere.

Central System connects to other systems (called endpoints) and store most management information.

Endpoints are just systems which your PC does not need to be in direct contact with in order to "manage".

Source System is from which objects, files and information are sent within Management Central's send tasks. The Source System is the source of the objects, files and information being sent.

Model System has all and only desired fixes installed or has all system values set properly for the targets.

Target Systems is where objects, files and information are sent within Management Central's send tasks. The Target Systems are the destinations of the objects, files and information being sent. Target Systems are often grouped into System Groups.

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Basics

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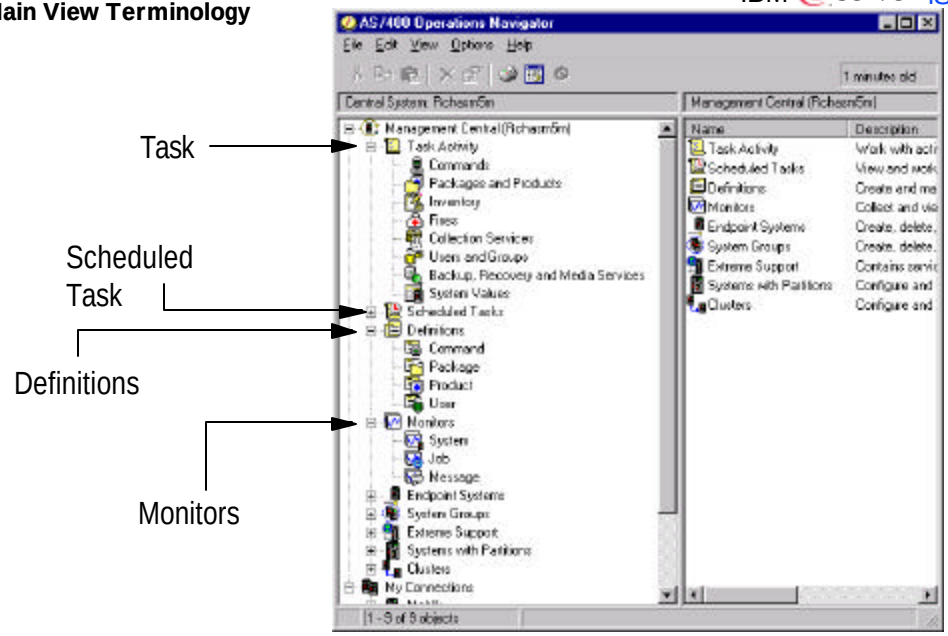
Main View Terminology



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Notes: Main View Terminology

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Task - Asynchronous activity distributed over a group of endpoints that performs an specific action. A task is explicitly started or scheduled to start through user interaction and then runs through completion. It can only be explicitly changed while it is scheduled. It can also be explicitly canceled through user interaction.

- Commands
- Object and Product Package Distributions
- Collection Services
- Inventory Collections
- Software Fix - iSeries Fix Operations
- Users and Groups
- System Values

Scheduled Task - This is a regular task which the user wanted to run at a specified date and time. Once the scheduled task as run, it will be moved in with the other base Tasks.

Definition - Data and/or activity description that can be constructed, viewed and managed.

- Command Definition - description and parameters of a command operation.
- Packages Definition - a collection of objects and/or files grouped together for the purpose of distribution
- Product Definition - a collection of objects and/or files grouped and formed as an installable product.
- User Definition - a predefined user with attributes predefined. Other users can be created based on these user.

Monitor - Activity distributed over a group of endpoints that collects, presents and warns the user. A monitor can be explicitly started, changed and stopped through user interaction.

- System - original monitors for performance
- Job - monitors a specific criteria of jobs or servers
- Message - monitors a specified message queue for a criteria of messages.

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Packaging and Installation

Where Do I Get It?

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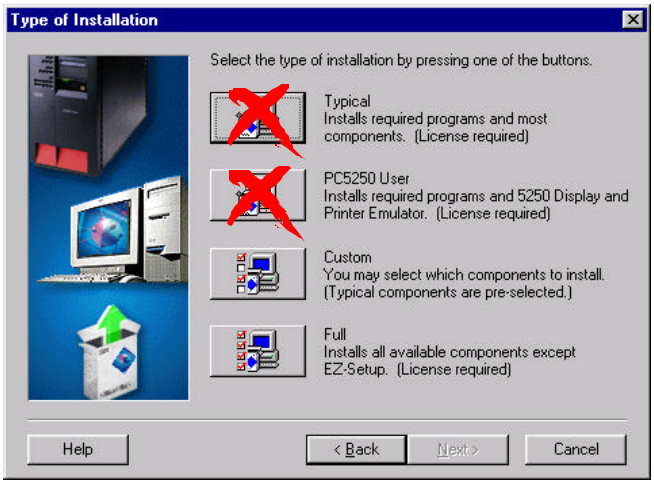
Packaging

- Server - 5722SS1 options *BASE and 0003
- Client - Client Access Express for Windows

Client Installation

- Windows
  - 95
  - 98
  - NT 4.0
  - 2000 Professional Client
- iSeries NetServer or CD
- CA/400 Directory
- Custom or Full Option



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Notes: Where Do I Get It?

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Management Central is included with OS/400 at no additional cost. The host AS/400 function is integrated into base OS/400. The client function is integrated into Operations Navigator which ships as part of Client Access (V4R3) and Client Access Express (V4R4 and later).

The connectivity general rule of thumb is that N-2 and N+2 releases are supported. There is an exception with Management Central if you are using V4R3. Management Central DOES NOT support a V4R3 client connected to a V4R4 (or later) central system. If you do attempt to connect a V4R3 client to a V4R4 (or later) central system, it may work, but only V4R3 function is available (monitors).

It's recommended to use V4R3 clients with V4R3 hosts, and V4R4 (and later) clients with V4R4 (and later) hosts. The limitation to remember here is the client-to-server configuration. It is supported to mix these releases as endpoints or between central systems and endpoints. This limitation stems from the fact that from V4R3 to V4R4, Management Central went from its own window to being fully integrated into Operations Navigator, which created some backward incompatibilities. Based on customer demand, it was decided to focus on delivering additional function rather than supporting the V4R4 (and later) to V4R3 configuration.

Management Central is a technology integrated into Operations Navigator and is NOT directly installed. When installing Client Access Express, choose 'Custom Install'. Expand the Operations Navigator tree and select the appropriate components such as Monitors, Commands.....

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Packaging and Installation

What Components Do I Need?

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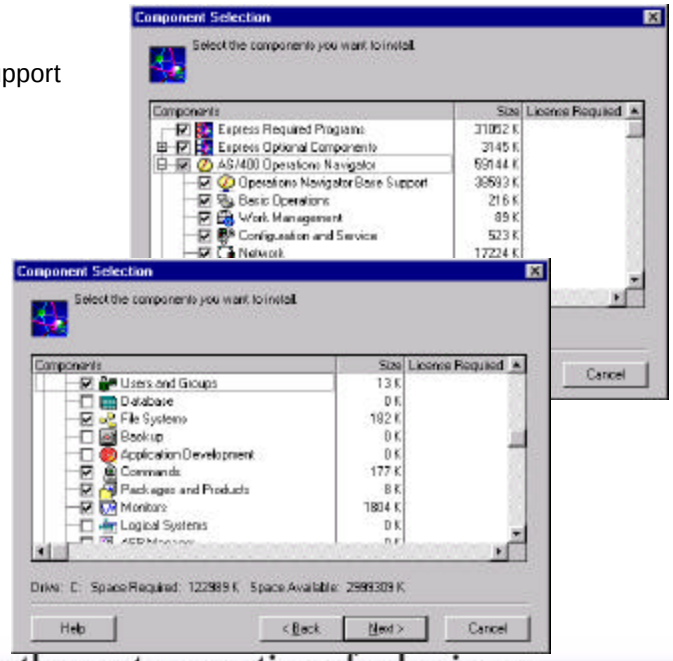
Basic support Options
- Operations Navigator Base Support
- Basic Operations
- Work Management
- Configuration and Services
- Network
- File Systems

Expanded Options
- Users and Groups
- Command
- Packages and Products
- Monitors

MY WAY
- Select EVERYTHING!!



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Notes: What components do I need?

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Basic support Options
- Operations Navigator Base Support - Many things are included here for underlying support such as common dlls and jar files.
- Basic Operations - Message actions and ability to view spooled files
- Work Management - Job actions for job and system monitor menus
- Configuration and Services - Ability to view inventory directly, directly launch graph history from management collection objects
- Network - View, start and stop servers such as Management Central
- File Systems- Ability to view and select items from the file system such as files and programs.

Expanded Options
- Users and Groups - Edit and send user profiles.
- Command - Create command definitions and run across a set of endpoint systems
- Packages and Products - Ability to package object and files and create installable products/fixes
- Monitors- watches information about a system along with threshold notification and automation
  - System - performance and system information such as CPU utilization and DASD
  - Job - jobs performance information including individual and totals summary information such as CPU Utilization and number of jobs
  - Message - messages on message queues for specified messages

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System Monitors

Notes: System Monitors

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Management Central System Monitors gather and present real-time performance data for your iSeries systems. You can use System Monitors to see your performance data as it happens. In contrast, you should use Management Central's Graph History to see historical data saved on the system for more analysis. The data displayed in System Monitors and Graph History are both gathered from the data collected through Collection Services.

Management Central System Monitors graph present system performance data in an easy-to-use graphical interface that you can directly manipulate to get more detailed data. Monitors allow you to collect performance data simultaneously for a wide variety of system metrics, for any system or system group, and specific time intervals. Once you start a monitor, you are free to do other tasks. In fact, you could turn your PC off! It will continue to monitor your systems and perform any threshold commands or actions you specified. Your monitor will run until you decide to stop it. To effectively monitor real-time iSeries system performance, create a Management Central monitor.

At the first level of detail the performance data is manipulated to provide a graphical representation of the performance information. The second level of detail provides a list of items that account for the first level (ex. list of jobs). The third level of detail provides properties of a specific item in the second level.

Define A Monitor

Select 'New Monitor...' and specify General properties

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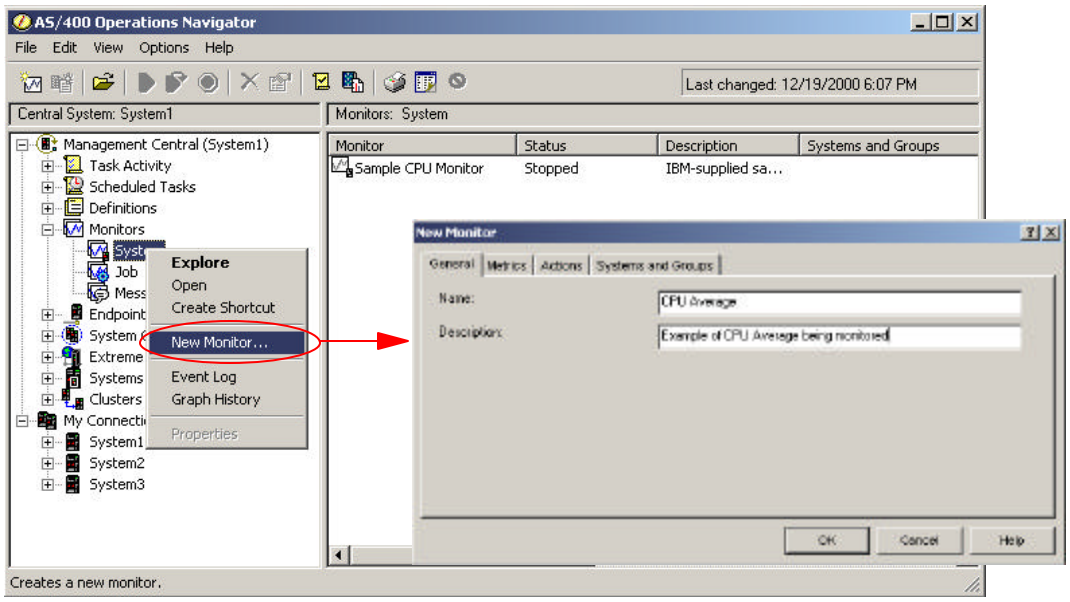

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Notes: Define A Monitor

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Key items on this panel
You need to name your monitor, suggest it be something very specific
You can select one or multiple metrics in a single monitor
Question: How many metrics do you put in a single monitor?
Answer: It depends

1. do you like to see all monitors on a single screen?
2. do you prefer to have more granular monitor notifications

There is no limit on the number of endpoint systems that a monitor can be started on. However you do get into usability issues when displaying the graph, too many systems on a graph and it might get to difficult to view.

General - The General page for New Monitor or Monitor Properties allows you to view and change general information about the monitor. The general information includes the name of the monitor, a brief description of the monitor.

Name - The unique name of the monitor. You can change the name, using up to 64 characters for the new name. Do not use any of the following characters: asterisk (*), backslash (\), colon (:), greater than (>), less than (<), question mark (?), quotation mark (“), slash (/), or vertical bar (|).

Description - A brief description to help you identify this monitor in a list of monitors. You can change the description, using up to 64 characters for the new description. This field is optional.

You should notice the property pages have changed from V4R5 to V5R1. They are still compatible but should be easier to use in the new format.

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Define A Monitor

Select 'Metrics to monitor' and press OK to create

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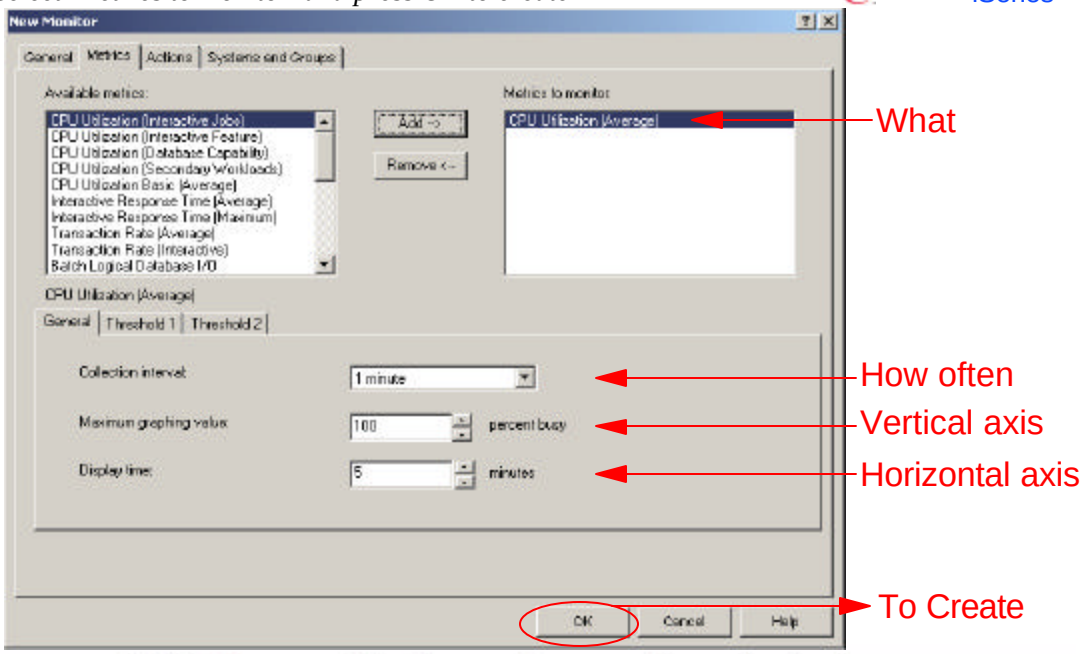

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Notes: Define A Monitor

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The Metrics page for New Monitor or Monitor Properties allows you to select the metrics that you want to monitor. You can view and change information about the collection interval, the maximum graphing value, and the display time for each metric. You can also click Threshold 1 or Threshold 2 to specify information about the thresholds for each metric.

Metrics is the piece of information to collect. Possible values are:

- CPU Utilization (Average)
- CPU Utilization (Interactive Jobs)
- CPU Utilization (Interactive Feature)
- CPU Utilization Basic (Average)
- CPU Utilization (Secondary Workloads)
- CPU Utilization (Database Capability)
- Interactive Response Time (Average)
- Interactive Response Time (Maximum)
- Transaction Rate (Average)
- Transaction Rate (Interactive)
- Batch Logical Database I/O
- Disk Arm Utilization (Average)
- Disk Arm Utilization (Maximum)
- Communications IOP Utilization (Average)
- Communications IOP Utilization (Maximum)
- Communications Line Utilization (Average)
- Communications Line Utilization (Maximum)
- LAN Utilization (Average)
- LAN Utilization (Maximum)
- Machine Pool Faults
- User Pool Faults (Average)
- User Pool Faults (Maximum)
- Disk Storage (Average)
- Disk Storage (Maximum)
- Disk IOP Utilization (Average)
- Disk IOP Utilization (Maximum)

Collection Interval is the time to wait in-between each collection of data.

Maximum graphing value is the highest value to be displayed on the vertical axis of the graph.

Display time is how many minutes you want displayed on the horizontal axis of the graph.

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Start A Monitor

Select the monitor, then the start button to select systems/groups

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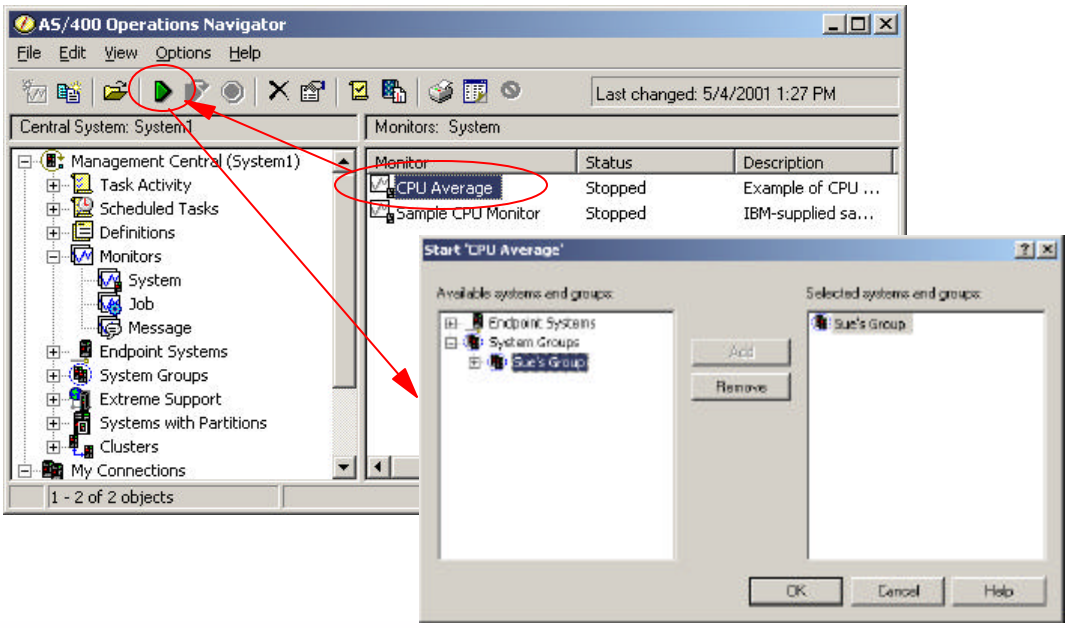

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Notes: Start A Monitor

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The Start Monitor dialog allows you to select the endpoint systems and system groups on which you want to start the monitor.

To add a system or group to the Selected systems and groups list, select it in the Available systems and groups list, and then click Add.

To remove a system or group from the Selected systems and groups list, select it in the list, and then click Remove.

Available systems and groups - A list of endpoint systems and system groups from which you can select a system or group. Click the plus sign (+) next to any group to see the systems that are included in the group.

Monitor data is collected and stored on the endpoint system. A minimum amount of data is actually sent back to the client when viewing the graph, The more specific, detailed data is only sent to the client when the graphs are open

PC is not required to be connected once monitor is started. The graph window can also minimized and the monitor will still be active.

The data shown in the graph is obtained from Collection Services. Collection Services houses the data in management collection objects. This data is used by system monitors, job monitors and other performance tools.

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View A Monitor

Status

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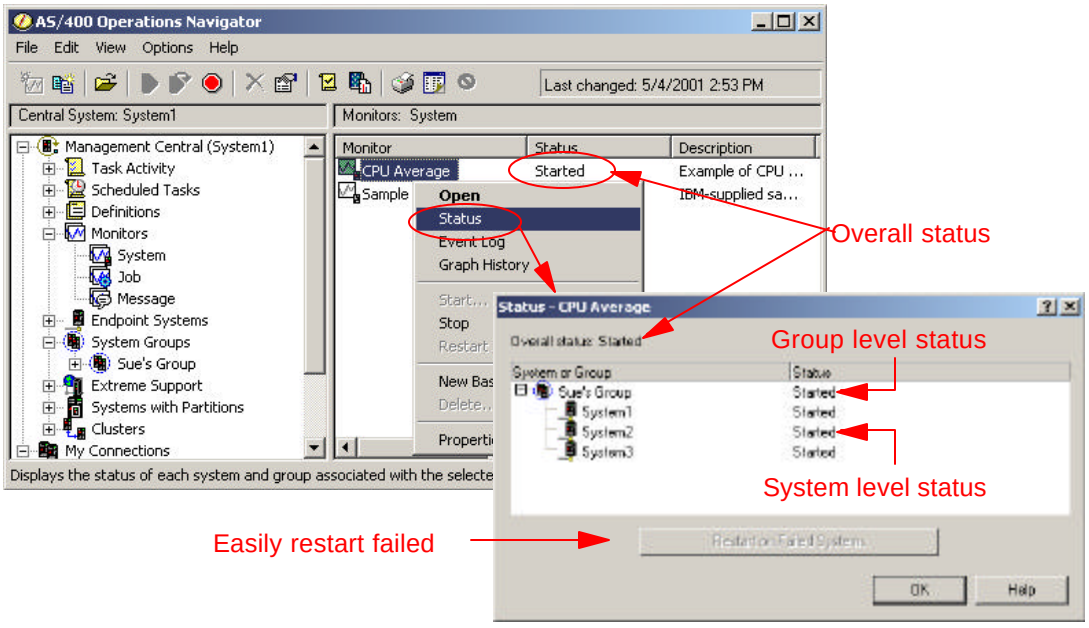

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Notes: View A Monitor - Status

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The Status dialog allows you to see the current status of each endpoint system and system group associated with a monitor. The status of each system and group is updated automatically as changes occur. You can expand any group in the System or Group list to see the status of individual systems in the group. By clicking the Restart button, you can restart the monitor on any systems on which it has failed.

Overall status - The current status of the monitor. Possible values are:

x thresholds triggered - The number of thresholds that are currently active for the monitor (that is, x represents the number of thresholds that have been triggered, but have not been reset).

Started on x of y systems - The monitor is collecting data on x of y endpoint systems, where x represents the number of systems where the monitor is running and y represents the number of systems where you requested to start the monitor. The monitor is in the process of starting on the remaining systems.

Started - The monitor is collecting data on all endpoint systems where you requested to start the monitor.

Starting - The monitor is in the process of starting.

Stopping - The monitor is in the process of stopping.

Stopped - The monitor is no longer collecting data.

Failed - An attempt was made to start the monitor on the specified systems or groups, but the monitor was not started on any systems. The failure may have occurred because the systems were not running when you tried to start the monitor, or it may be because a connection was lost or a server was not started. (See Starting the Management Central server.) Click Restart to try starting this monitor again.

Failed on x of y systems - The monitor has failed to start or unexpectedly stopped work on x of y systems (where x is the number of systems on which work has stopped and y is the total number of systems on which the monitor is to be run). The monitor is starting or started on the remaining systems. The failure may have occurred because the systems were not running when you tried to start the monitor, or it may be because a connection was lost or a server was not started. (See Starting the Management Central server.) Click Restart to try starting this monitor again. See the System or Group Status for a list of the endpoint systems and system groups associated with the monitor and the current status of each system and group.

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View A Monitor

Metric data

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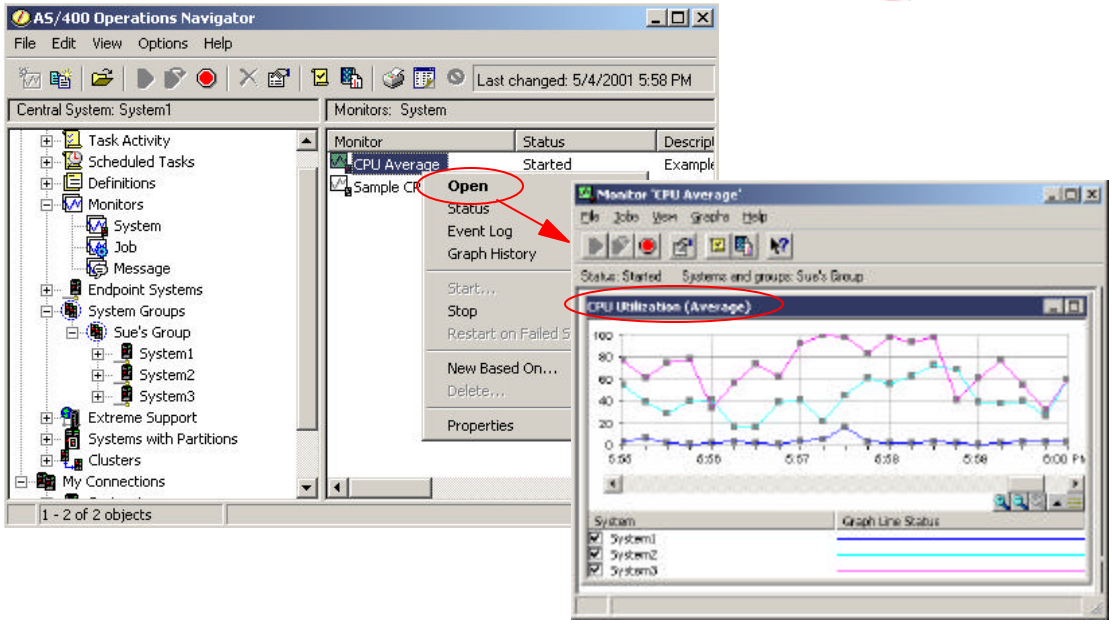

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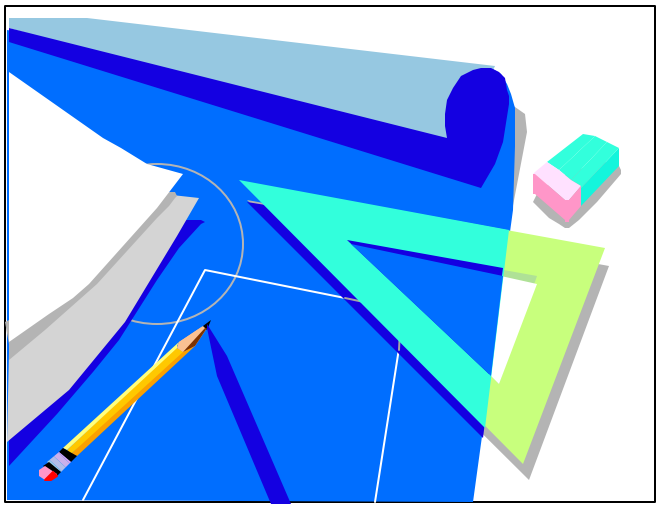

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View A Monitor

Metric details

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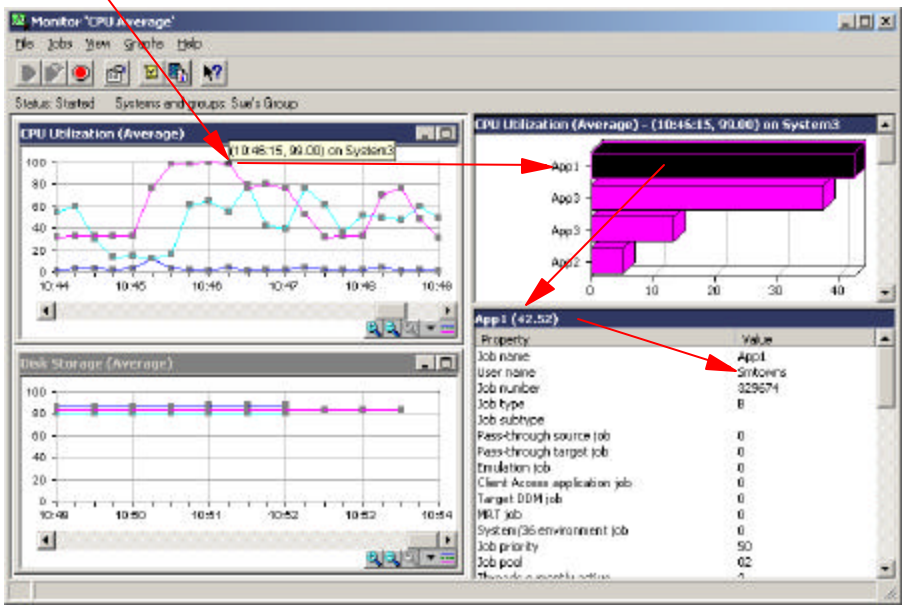

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Notes: View A Monitor - Metric data

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Monitor window shows a graphical view of the metrics for a monitor as they are being collected. You can have more than one Monitor window open at the same time, and you can work with other windows while the Monitor windows are open. You can minimize the Monitor window and be informed by an audible or visible alarm when important thresholds are reached. The Monitor window contains three panes.

Graphs - Each endpoint system is represented by a unique graph line. Click the legend icon in the lower right corner of any graph to see which system is represented by each line. You can change the color, width, or style of the line for each system in the User Preferences dialog by clicking Options from the menu bar on the AS/400 Operations Navigator window.

You can change the size of the Graphs pane, and you can change the size of any Monitor graph. You can arrange the Monitor graphs to suit your needs.

Click the icon in the right-hand corner of the title bar of any Monitor graph to minimize the graph to just the title bar. Click the icon again to restore the graph to its previous size.

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Setting Threshold

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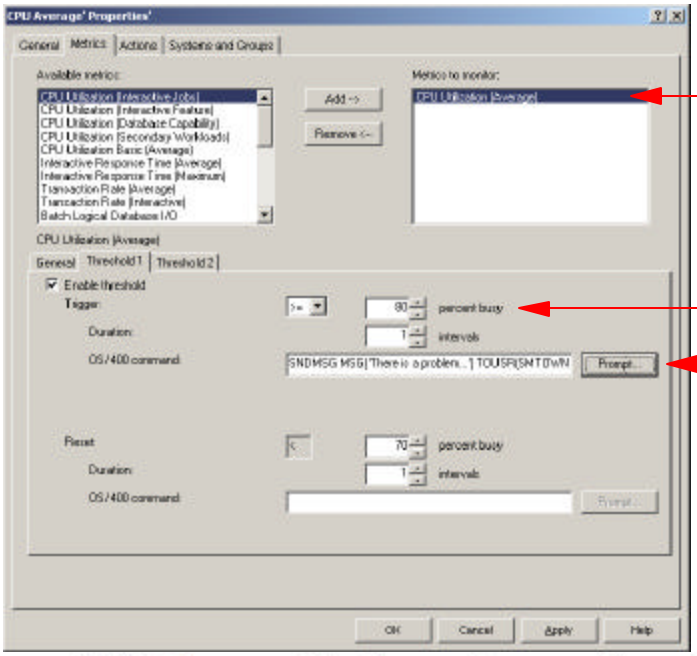

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Notes: Setting Threshold

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Threshold - A threshold is a setting for a metric that is being collected by a monitor. This setting allows you to specify actions to be taken when a specified value (called the trigger value) is reached. You can also specify actions to be taken when a second value (called the reset value) is reached. For example, you can specify an OS/400 command that stops any new jobs from starting when CPU utilization reaches 90% and another OS/400 command that allows new jobs to start when CPU utilization falls to less than 70%. You can also choose to add an event to the Event Log whenever the trigger value or the reset value is reached. You can set up to two thresholds for each metric that the monitor is collecting. Trigger - considered bad (usually high but can be low), reset - consider good (opposite of trigger)

The two Thresholds tabs on the metrics page provide a place for you to specify whether or not you want to monitor this metric for a particular threshold. You must check the Enable threshold box before you can specify the conditions to trigger and to reset this threshold. You can also specify the action to be taken when the threshold is triggered and when it is reset. The action that you specify must be an OS/400 command. When you click OK, this metric will be actively monitored for this threshold if the monitor is currently running. If the monitor is not currently running, this metric will be monitored for this threshold the next time the monitor is started

You can specify the following conditions and commands for Threshold trigger and for Threshold reset:
Value - Specifies the condition that must be met to trigger or to reset this threshold.
Duration - Specifies the number of consecutive collection intervals that the value must meet the criterion to cause a threshold trigger or reset event. Specifying a higher number of collection intervals for Duration helps to avoid unnecessary threshold activity due to frequent spiking of values.
OS400 command - Specifies the command to be run on the AS/400 host system when the threshold is triggered or reset.

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Notes: Setting Threshold (cont.)

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You can use the following parameters with OS400 commands:

$DATE	Date
$MON	Monitor name
$RDUR	Reset duration
$RVAL	Reset value
$INTVL	Collection interval
$SEQ	Sequence number
$TIME	Time
$TDUR	Trigger duration
$TVAL	Trigger value
$VAL	Current value

(Note: In addition to $, you may also use & for special values, ex. &DATE)

Examples:

1 The following host command uses the $TIME and $TVAL parameters to pass to the program the time that the threshold was triggered and the trigger value:

CALL LIB01/PROG02 PARM('$TIME' '$TVAL').

2 The following command uses the $MON, $TVAL, $TDUR, and $VAL parameters on the Send Message command to send a message to the system operator when the threshold has been triggered:

SNDMSG MSG('Monitor $MON exceeded threshold $TVAL for $TDUR interval(s) current value is $VAL.') TOUSR(*SYSOPR)

The message displayed to the system operator is:

Monitor MyMonitor exceeded threshold 50 for 1 interval(s); current value is 61.

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Viewing Thresholds

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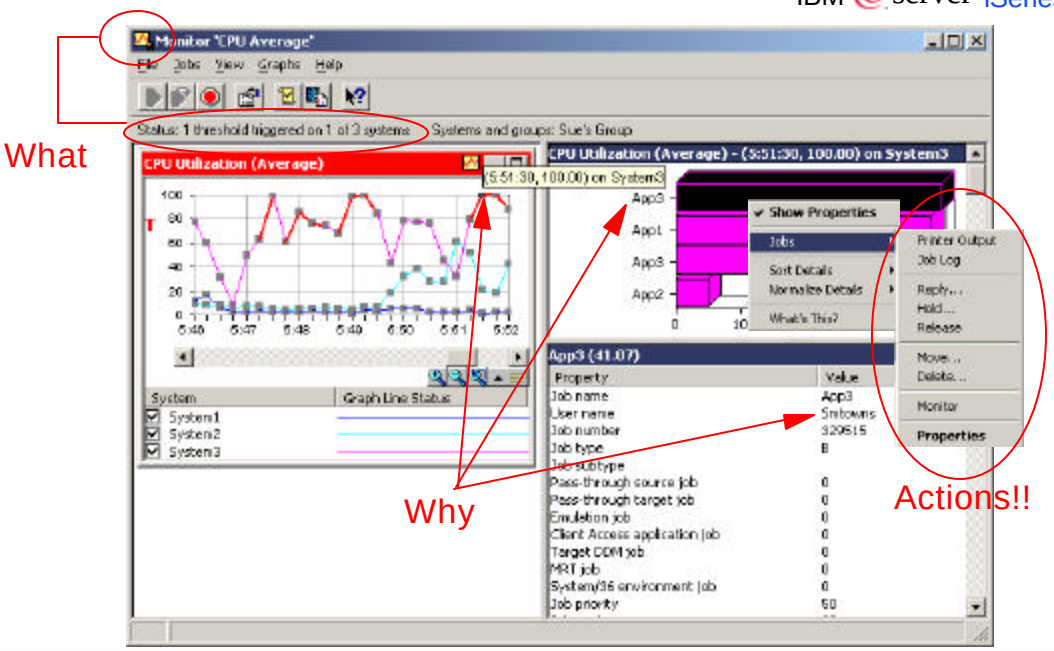

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Changing Thresholds

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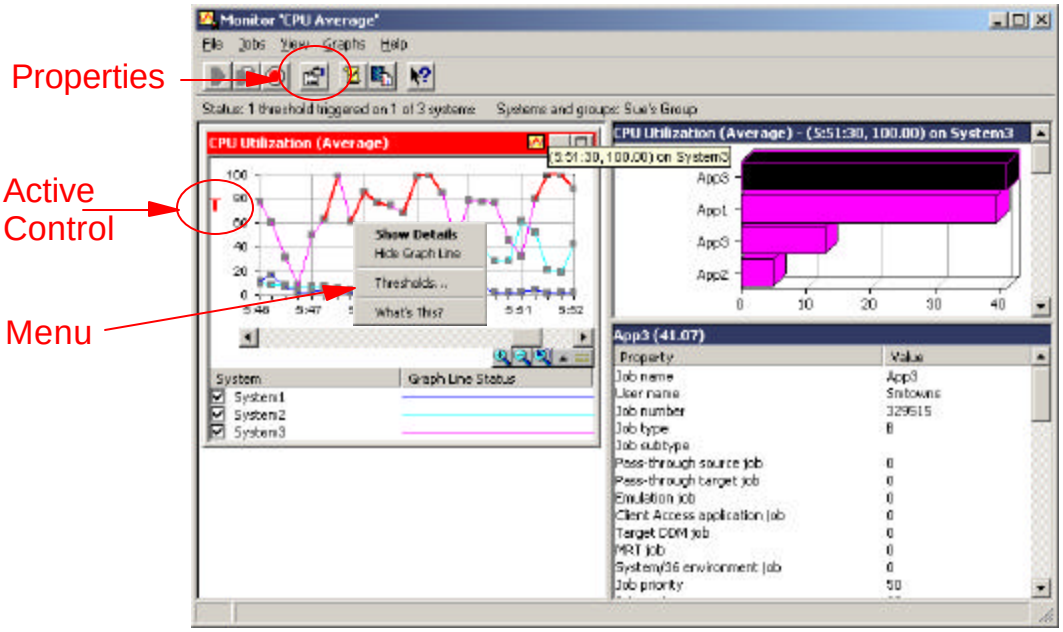

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Notes: Changing Thresholds

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You can change the thresholds several ways.

- Properties
- Active graphical control
- Menu items

You can change thresholds while a monitor is started, eg, you do not need to stop the monitor to change the thresholds. The general properties of the monitor can be accesses view the toolbar or menu items for making any changes or additions to the thresholds and values.

To change the trigger value or the reset value for a threshold using the active graphical control, place the mouse pointer on the threshold indicator. When the ToolTip indicates Trigger, hold the mouse button down and move up or down to change the trigger value. The changing values are shown in the ToolTip. When the ToolTip indicates Reset, hold the mouse button down and move up or down to change the reset value . Click any collection point on a Monitor graph line to see Details of the data associated with the collection point.

By accessing the menu items, you will taken directly to the thresholds page in properties to make any changes. There are several visual indicators when a threshold occurs:

- Status in the toolbar area.
- Upper Left corner icon will change.
- Line in the graph will change to red.
- Metric graph title will change to red with icon indicator

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Threshold Actions

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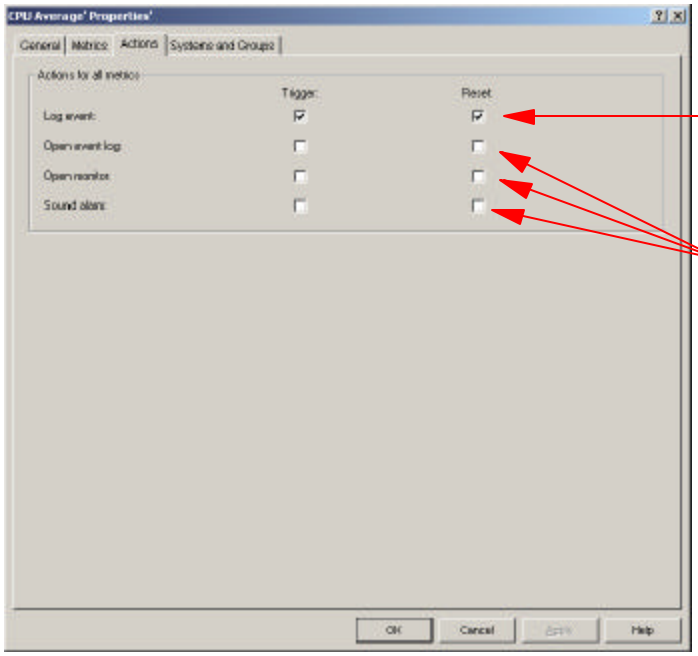

OS400

PC Client

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Notes: Threshold Actions

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The Actions page for Monitor Properties allows you to specify the actions to occur when a threshold is triggered and when a threshold is reset which apply to all metrics.

Log event - Adds an entry to the Event Log on the central system indicating that the threshold was triggered. The entry also includes the date and time the event occurred, the endpoint system being monitored, the metric being collected, and the monitor that logged the event.
Open Event Log - Displays the Event Log, which is a list of threshold trigger and reset events that have occurred.
Open monitor - Displays a graphical view of the metrics as they are being collected.
Sound alarm - Sounds an alarm on the PC.

Threshold commands will be run under the monitor's owner's user profile. The threshold command is submitted either as a job or a thread from the Management Central server.

When a threshold gets triggered/reset, your PC client does not need to be up and running to run the OS400 command.

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Viewing Events From Thresholds

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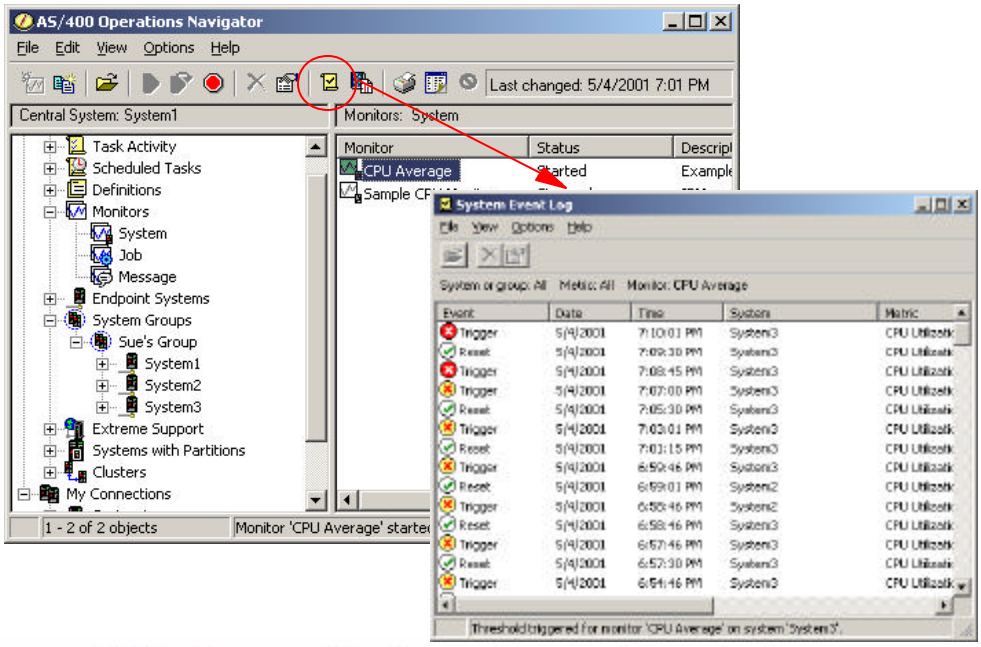

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Notes: Event Logs

IBM eserver iSeries

The Event Log window displays a list of threshold trigger and reset events for all of your monitors. You can specify on the Properties page for each monitor whether or not you want events added to the Event Log. To see the Properties page for any monitor, select the monitor in the Monitors window and then select Properties from the File menu. The list of events is arranged in order by date and time by default, but you can change the order by clicking on any column heading. For example, to sort the list by the endpoint system where the event occurred, click on System.

An icon to the left of each event indicates the type of event::

A red circle with white x - indicates that this event is a trigger event for which you did not specify a host command to be run when the threshold was triggered.

A yellow circle with red x - Indicates that this event is a trigger event for which you specified a host command to be run when the threshold was triggered.

A white check with a check mark -indicates that this event is a threshold reset event.

You can customize the list of events to include only those that meet specific criteria by selecting Options from the menu bar and then selecting Include. You can have more than one Event Log window open at the same time, and you can work with other windows while the Event Log windows are open. Event Log windows are updated continuously as events occur.

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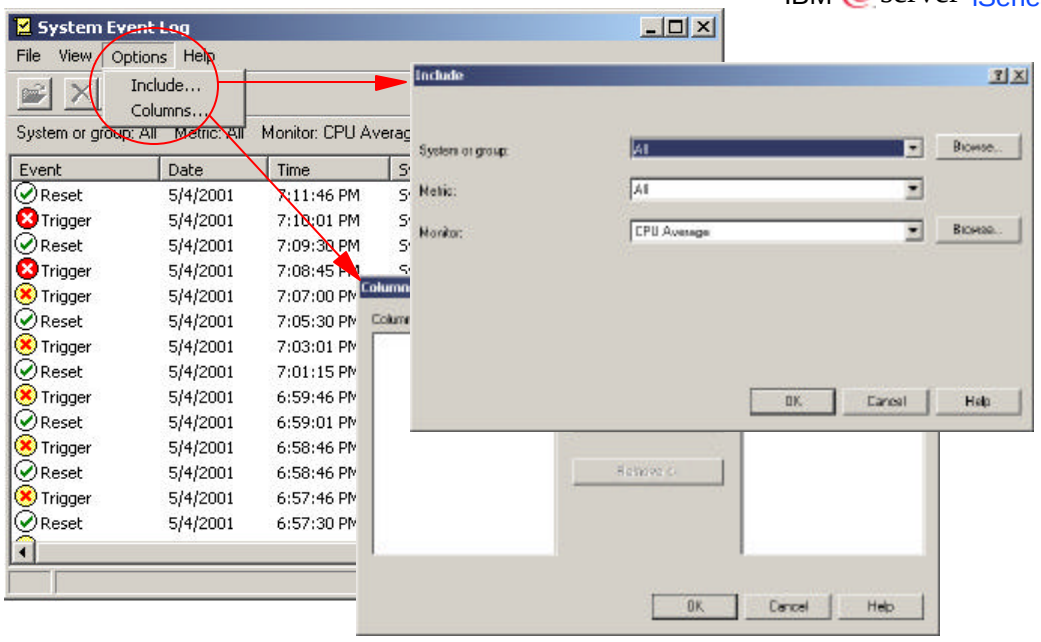
Customize Event Log Information

IBM eserver iSeries



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Notes: Options - Include

IBM eserver iSeries

Options menu choices

Click Options on the menu bar to display the actions you can perform to change what information is displayed. The possible choices are:

Include...

Displays the Include dialog, which allows you to specify which events you want to display in the list.

Columns...

Displays the Columns dialog, which allows you to specify which columns of information you want to display in the list. You can also specify the order in which you want the columns to be displayed.

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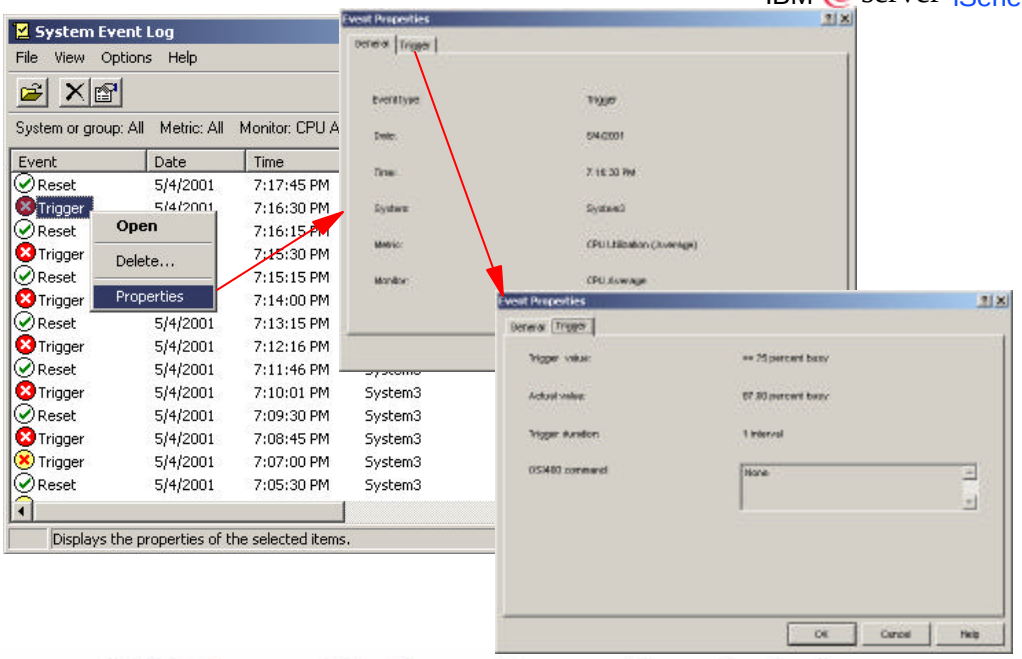
Event Properties - Trigger

IBM @server iSeries



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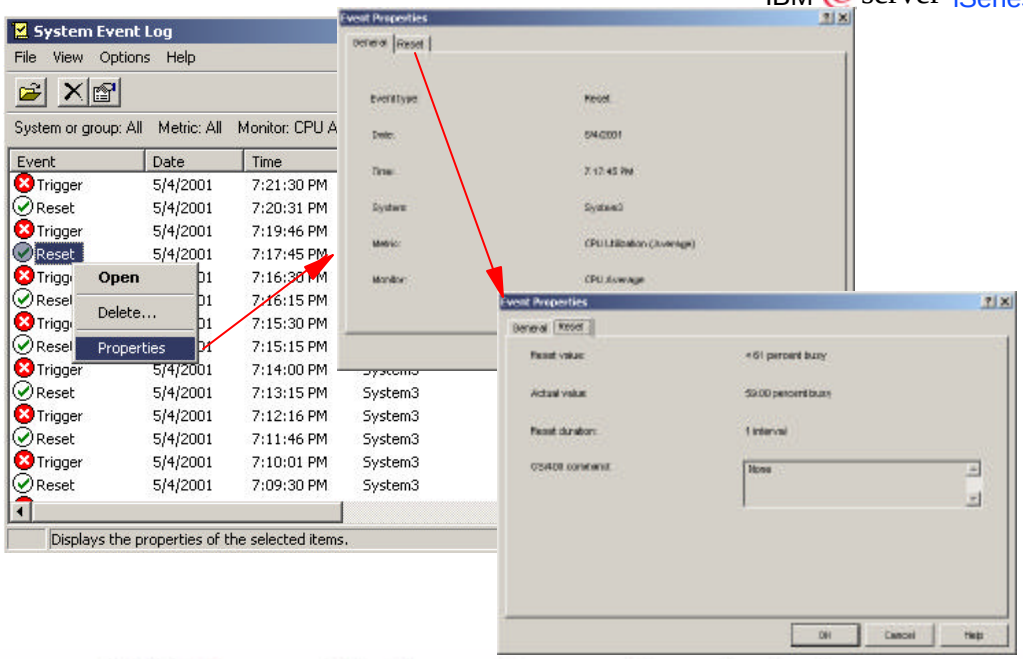
Event Properties - Reset

IBM @server iSeries



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Notes: Event Properties

IBM eserver iSeries

The Trigger/Reset page for Event Properties allows you to view additional information about the event. This information includes the value, the duration, the OS400 command and the sequence number of the event.

Trigger/Reset value - The value specified in the monitor properties.
Actual value - The actual value that exceeded the trigger value and caused the trigger event.
Duration - The number of collection intervals specified for the duration in the monitor properties.
OS400 command - The command that was run on the endpoint system when the event occurred.

The General page for Event Properties allows you to view general information about the event. The general information includes the type of event (trigger or reset), the date and time the event occurred, the endpoint system that the event occurred on, the metric that was being collected, and the name of the monitor that logged the event.
For more information, select the following:

- Event type
- Date
- Time
- System
- Metric
- Monitor

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Other Monitors items

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Changing Endpoints and System Groups

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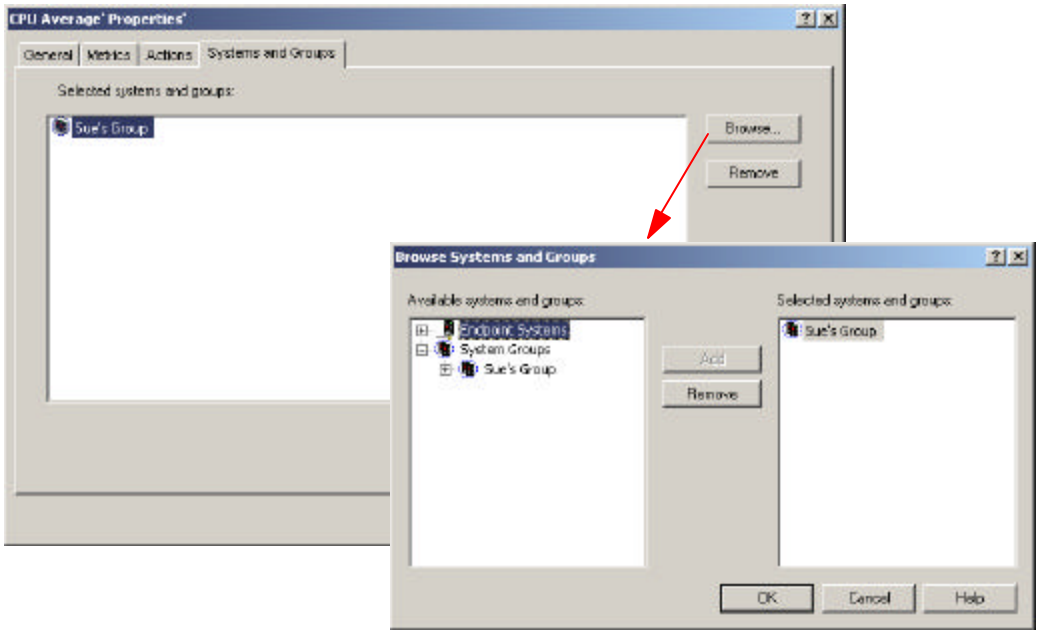

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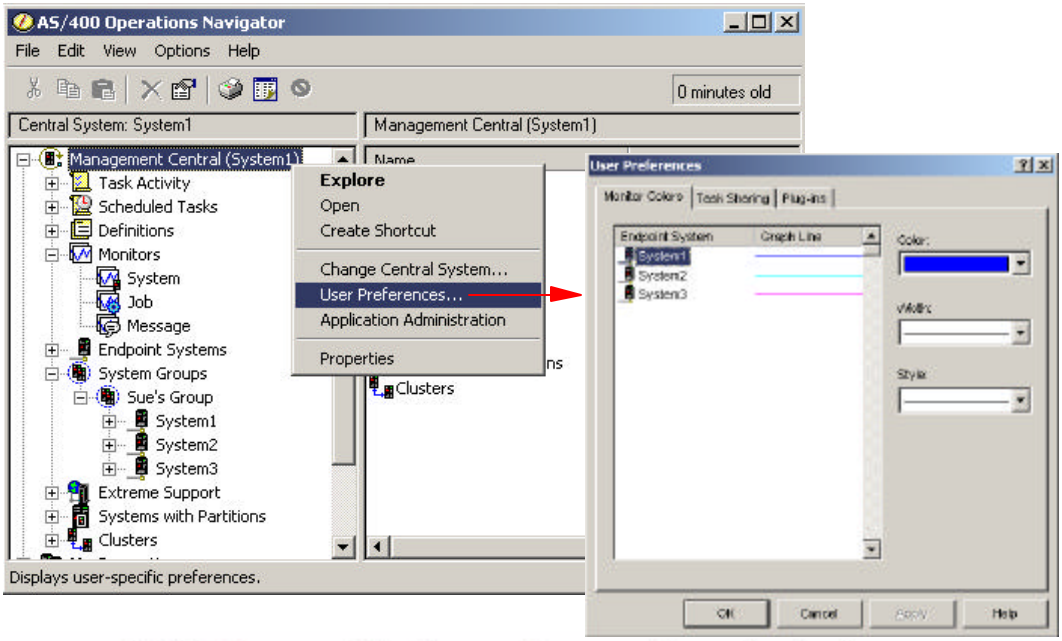
Changing the Monitor Graph Characteristics

IBM @server iSeries



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Collection Services

Notes: Collection Service

IBM @server iSeries

With Management Central's Collection Services you can collect performance data for future analysis by the Performance Tools for AS/400 licensed program (5722-PT1) or other performance report applications. You can also used the data collected through Collection Services to create graph and summary data that is displayable through Management Central's Graph History. To collect and store performance data for future analysis, you can start Collection Services on a single system or you can start Collection Services on system groups.

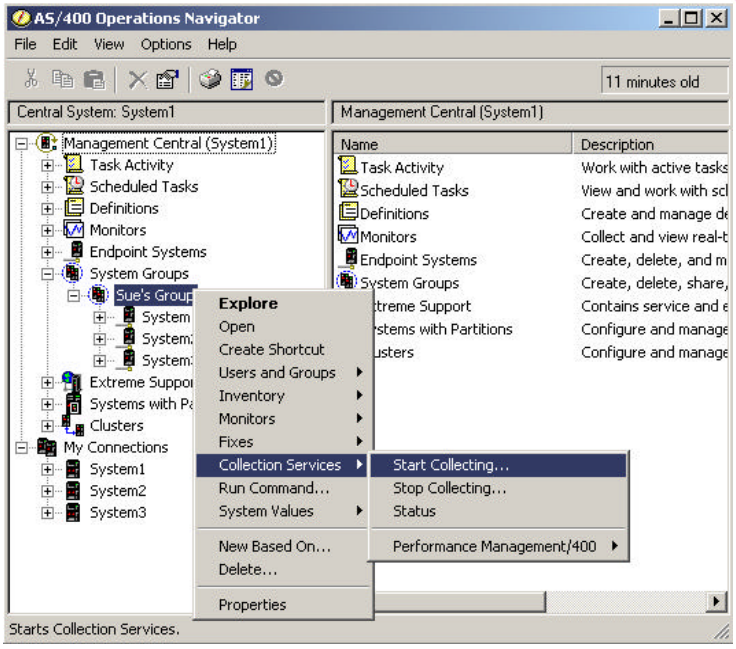
You can use performance data to make adjustments to programs and operations. These adjustments can improve response times and throughputs and help your systems reach their peak performance.

Collection Services collects data that identifies the relative amount of system resource used by different areas of your system. When you collect and analyze this information on a regular basis, you help balance your resources better, which in turn gets you the best performance from your system. You can customize your data collections so you collect only the data you want.

You can use Collection Services instead of the OS400 performance monitor function (STRPFRMON command) to collect your data and create database files. When you use OS400 performance monitor, your data is collected into as many as 30 database files. Collection Services stores your data for each collection in a single collection object, from which you can create as many different sets of database files as you need. You can use the database files with the Performance Tools for AS/400 licensed program (5722-PT1) or other applications to produce performance reports. Collection Services deletes only cycled collection objects. A status of Cycled means that Collection Services has stopped collecting data and storing it in the object. You can specify Permanent if you do not want Collection Services to delete your collection objects for you.

Start Collection Services

IBM @server iSeries



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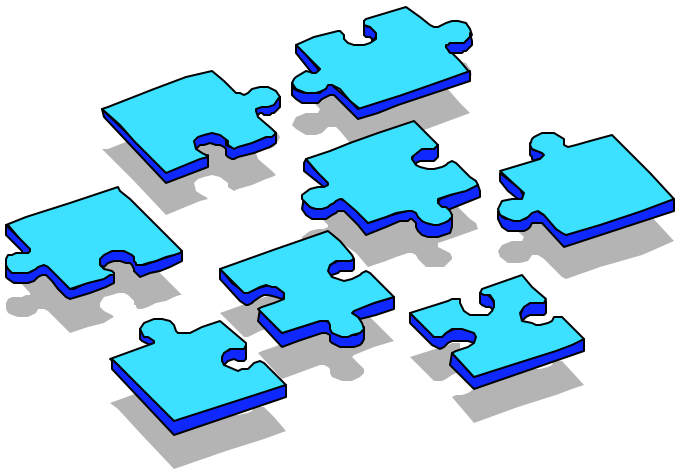
IBM @server iSeries



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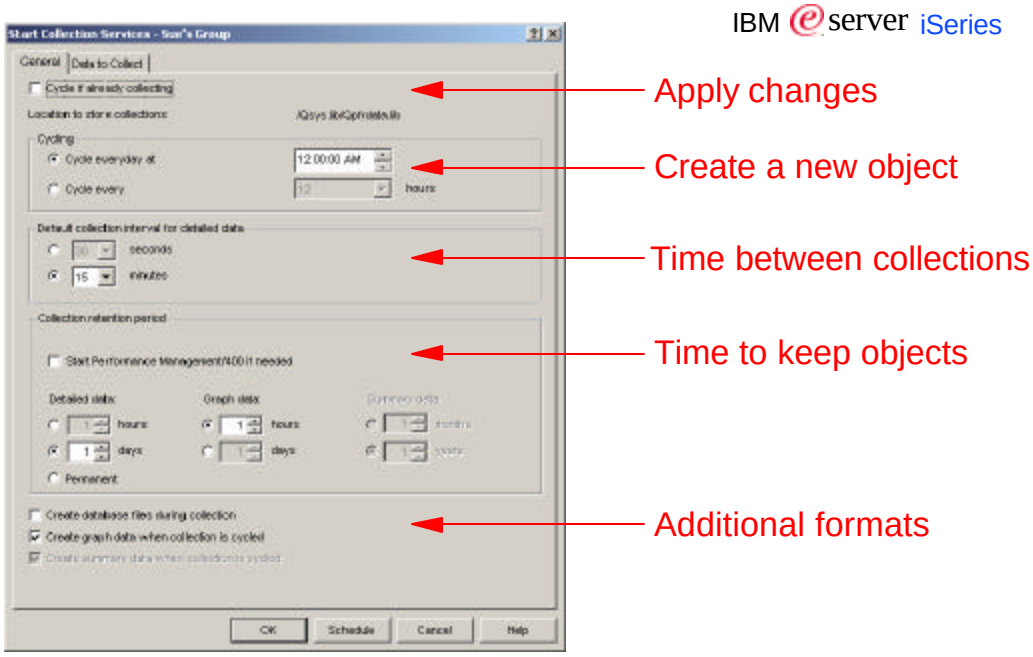
Start Collection Services - General

IBM eserver iSeries



Apply changes

Create a new object

Time between collections

Time to keep objects

Additional formats

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Notes: Start Collection Services - General

IBM eserver iSeries

General properties to specify general information about the collection of iSeries performance data. The values shown on this page are the values stored on the iSeries. Changes made to the values on this page will change the values stored on the iSeries. Changes to the Default collection interval and the Collection retention period become effective immediately (that is, they are applied to the current collection of data). Other changes become effective when you cycle collection. When you change any Collection Services Properties and click OK, you will be asked if you want to cycle collection at that time.

Cycle if already collecting - Select this if you want to cycle the collection on systems where Collection Services is started.

Location to store collections - The path where the collection objects are stored on the system. Normally, the objects are stored in /QSYS.LIB/QPFRDATA.LIB.

Cycling - When a collection is cycled, no more data is added to the collection object and a new collection object is created to store newly collected data.

Default collection interval for detailed data - The value that determines the collection interval for any category that does not have a specific collection interval defined.

Collection retention period - The length of time that collection objects remain in the file system before they are deleted.

Default Retention Period - Length of time raw performance collection object data will remain on the system

Graph Retention Period - Length of time detailed performance data is available to be viewed through Graph History

Summary Retention Period - Length of time summarized performance data is available to be viewed through Graph History

Create database files during collection - Select this to generate database files automatically as data is collected.

Create graph data when collection is cycled - Select this to generate detailed graph data automatically when data is collected.

Create summary data when collection is cycled - Select this to generate summary data automatically when data is collected.

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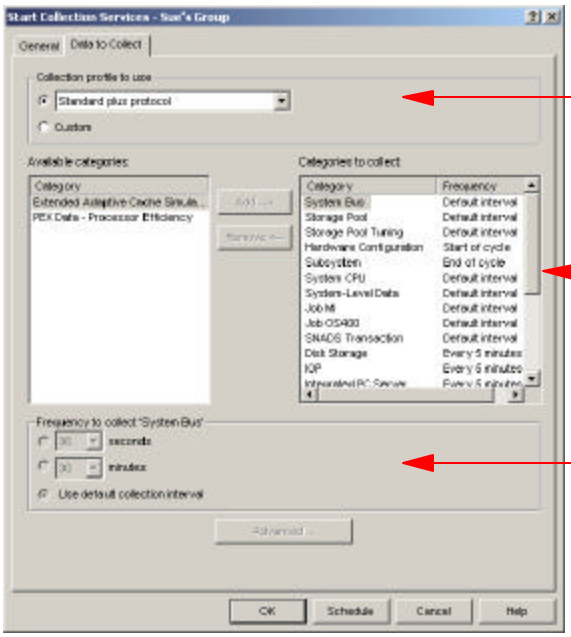
Start Collection Services - Data to Collect

IBM eserver iSeries



Data profile needed

Specific data categories

Frequency (per category)

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Notes: Start Collection Service - Data To Collect

IBM eserver iSeries

When you click OK, a Start Collection Services task is created. You can select the task under Task Activity in the Operations Navigator window and view the status of the task on any system or group. When the start task has completed, Collection Services begins collecting performance data and storing it in the collection object specified.

When you click Schedule, you can specify how often you want to run the Start Collection Services task and when you want the task to start. A Start Collection Services task is scheduled. You can select the task under Scheduled Tasks in the Operations Navigator window and view the status of the task on any system or group. When the start task has completed, Collection Services begins collecting performance data and storing it in the collection object specified.

Management Central Collection Services provides an easy, new way to collect performance data. Collection Services, on the other hand, stores your data for each collection in a single collection object. This means lower system overhead when collecting data. The database files can be created as needed.

Note: In order to run a Management Central System Monitor, you do not need to start Collection Services. System Monitors are tied in to the data collected through Collection Services, but the System Monitor will start Collection Services and have it collect the data necessary for that System Monitor

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Collection Object

Options

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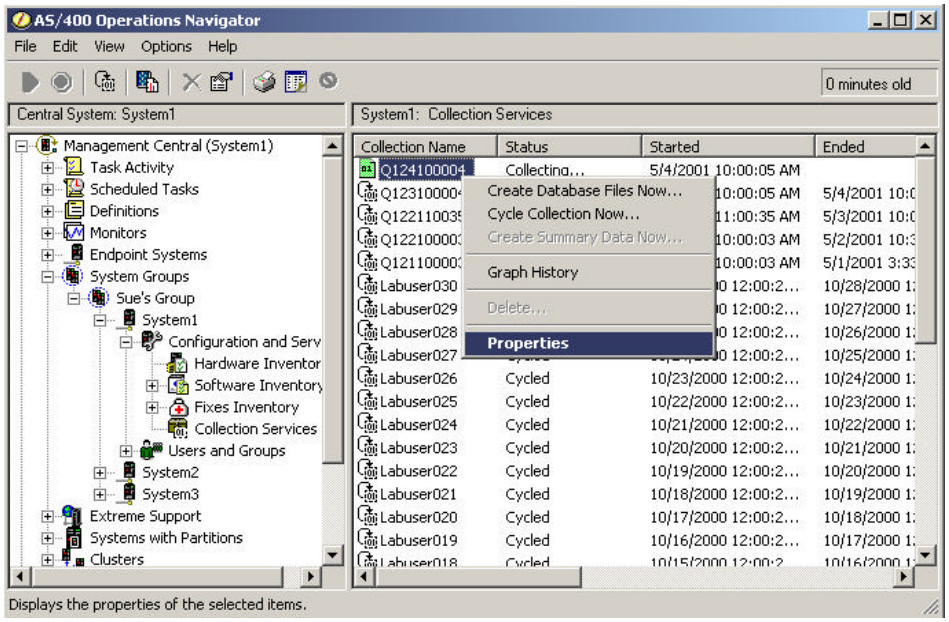

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Notes: Collection Object - Options

IBM eserver iSeries

Create Database Files Now

Use the Create Database Files dialog to generate database files from a collection. You can use these database files with the Performance Tools for AS/400 licensed program and other applications to produce performance reports.

Cycle Collection Now

Use the Cycle Collection Dialog to cycle the current collection object. This will cause it so that a new collection object is created and data will start being put in this new object and will stop being put in the previous collection object

Create Summary Data Now

Use the Create Summary Data Now dialog to generate summary data from a collection. You use the summary data to display the graphs for the Graph History window. If you create the summary data from a collection object, you can delete the collection object and still see the data in the Graph History window.

Graph History

The Graph History window shows a graphical view of the metrics that have been collected for an extended period of time for a particular monitor. You can contrast the Graph History window with the Monitor window.

Delete

Use the Confirm Delete dialog to delete the selected collection objects. The collection objects are deleted when you click Delete.

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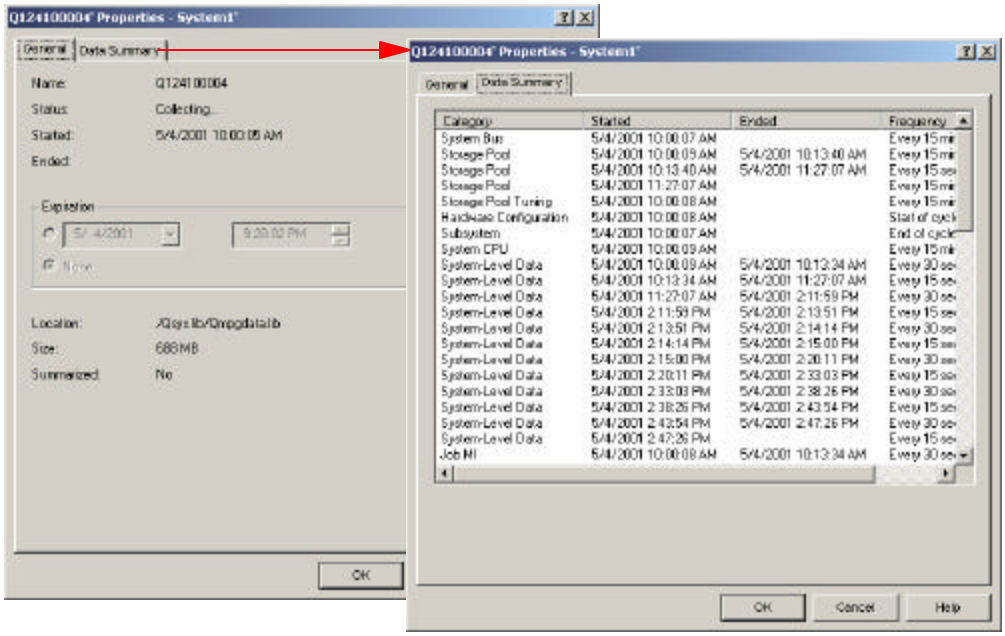
Collection Object

Properties

IBM eserver iSeries



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Notes: Collection Object - Properties

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The General page of Collection Properties contains general information about the collection object, including its name, location, and size. The status of the collection object is shown, along with the date and time that data collection started and ended.

When the status of the collection object is Cycled, you can change the expiration date, which specifies the date and time this collection object will be deleted from the AS/400 system.

Name - The name of the collection object which identifies when the collection object was created.
Status - The current status of the collection object. Possible Values are Collecting or Cycled.
Started - The date and time Collection Services started collecting data and storing it in this object
Ended - The date and time Collection Services stopped storing data in this object
Expiration - The date and time after which this collection object may be deleted from the AS/400 system.
Location - The path where this object is stored in the file system.
Size - The current size of the collection object, in megabytes.
Summarized - Indicates whether or not you requesting to have the collection object provide summary data.

Collection Properties - Data Summary

The Data Summary page of Collection Properties contains a detailed list of the data categories stored in this collection object. The list includes the date and time when the collection of each category started and ended, and how frequently data was collected.

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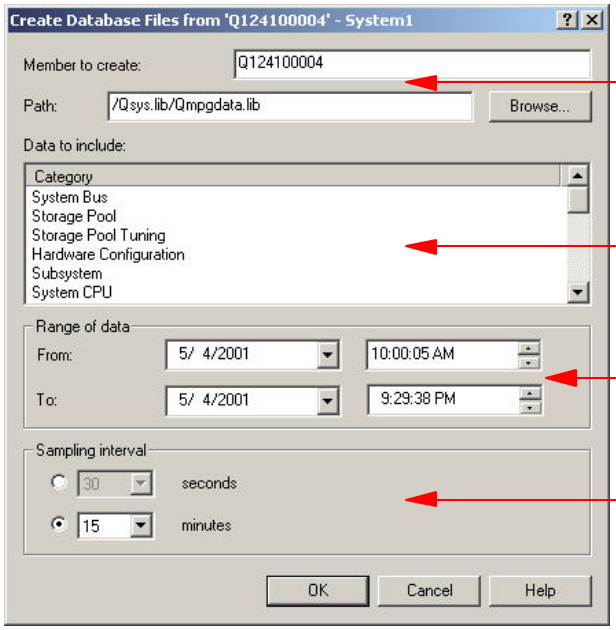
Collection Object

Create Database Files Now...

IBM @server iSeries



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Notes: Collection Object - Create Database Files Now...

IBM @server iSeries

Use the Create Database Files dialog to generate database files from a collection. You can use these database files with the Performance Tools for AS/400 licensed program and other applications to produce performance reports.

You can create database files and file members from the same collection object multiple times. If you specify the name of a database file member that already exists, the new data will overwrite the old data.

Member to create - The name of the database file member to create. If you specify the name of a database file member that already exists, the member will be removed from all the database files associated with this collection object. The new data will then be written to the member.

Path - The path where the database files are stored in the file system. Click Browse to select a folder to store the database files.

Data to include - Categories of data for which database files will be generated. All categories are selected by default. If you deselect any category, data will still be collected for that category and stored in the collection object, but it will not be stored in a database file.

Range of data - Date and time range of the data to include in the database files.

Sampling interval - The time interval at which data is extracted from the collection object to be included in the database files.

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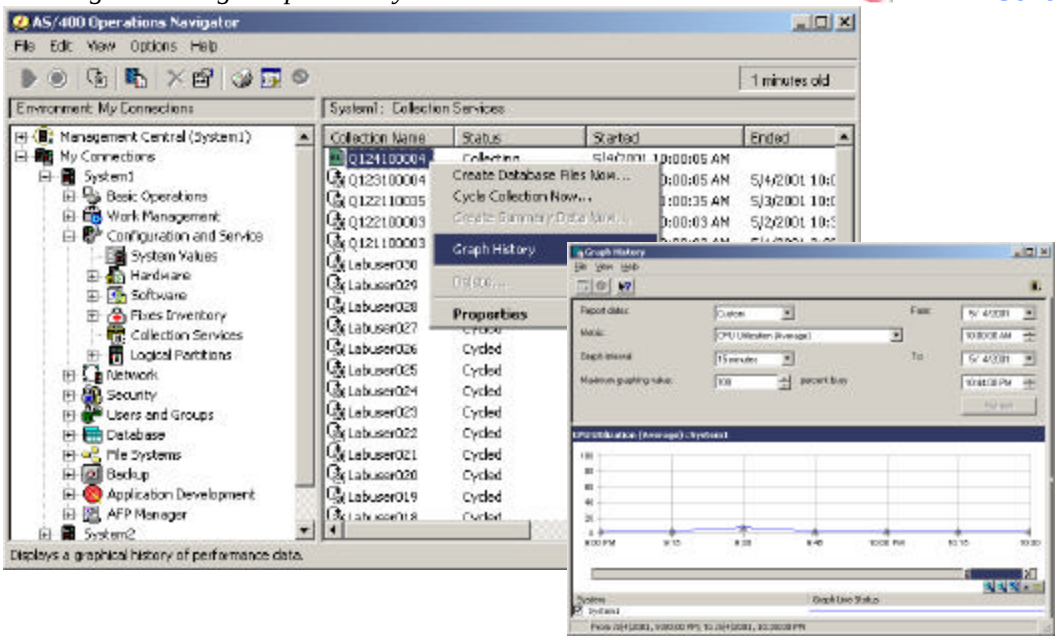
Collection Object

Viewing data using Graph History

IBM @server iSeries



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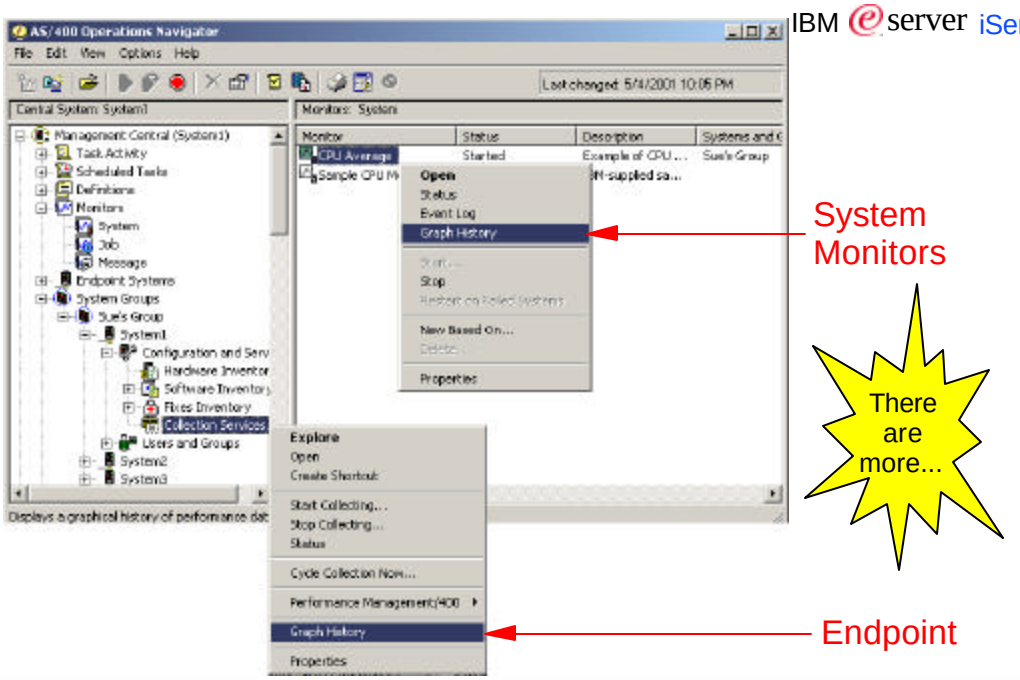
Location

IBM @server iSeries



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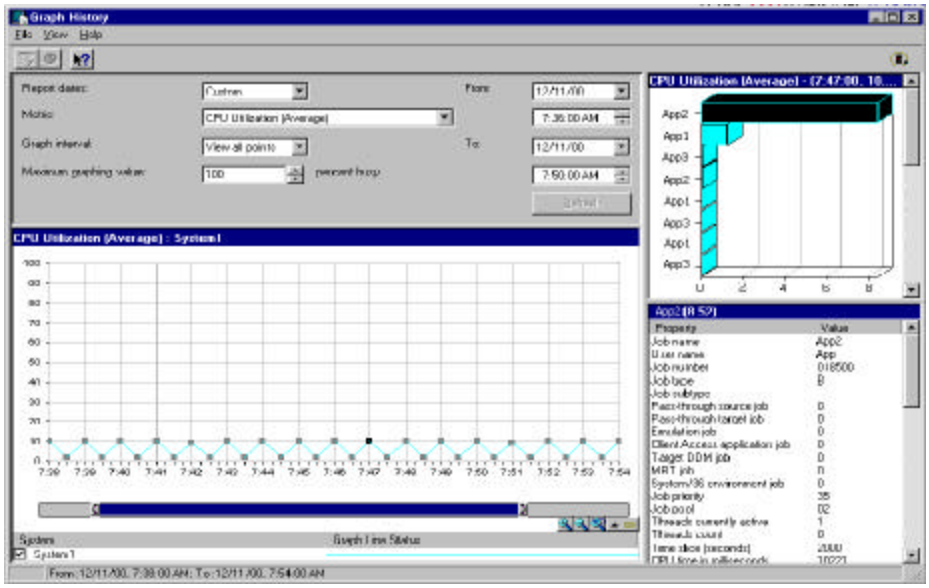
Layout

IBM eserver iSeries



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Notes: Layout

IBM eserver iSeries

The Graph History window shows a graphical view of the metrics that have been collected for an extended period of time for a particular monitor. You can contrast the Graph History window with the Monitor window.

The Monitor window shows real-time data for the last hour and automatically updates the data. The Graph History window displays the metrics that you are monitoring over a longer period of time, for example, a day, a week, a month, or a year. You can view performance data in two ways; one, as real-time data, and two, as historical data.

You can display only one graph at a time. However, you can display multiple Graph History windows to make comparisons, if needed. Initially, no graph is created until you click Refresh.

The Graph History window contains four panes.

Options
Graphs
Details
Properties

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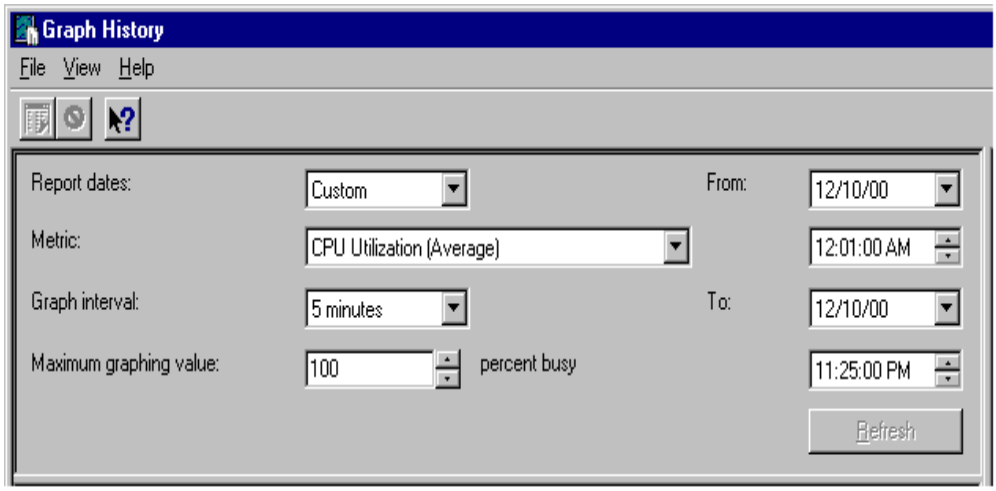
Options

IBM eserver iSeries



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Notes: Options

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The Options pane of the Graph History window allows you to change or confirm the selections that you previously made. You can change the date of the report, the metric that you want to display, and the intervals that you want to view for the graph.

Click Refresh to redraw the graph based on the information specified in the date, time, and metric fields.

Report dates - The to and from time to display data for

Metric - The name of the metric that is to be graphed

Graph interval - The time period that elapses after a new graph point appears

Maximum graphing value - The highest value to appear on the vertical axis of the graph for this metric

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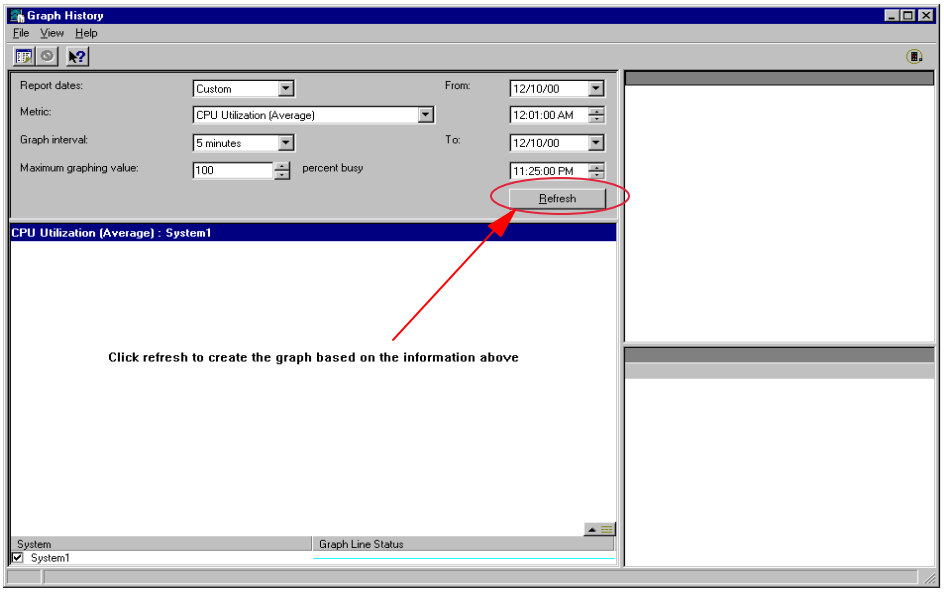
Viewing Data

Getting the data using refresh

IBM @server iSeries



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Notes: Viewing Data

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A request will be made to each system chosen to retrieve data for the specified time range.

If detailed data is available for part of the specified time range it will be returned.

If detailed data is not available but the raw data is available, and the period is within the graph retention period, detailed data will be dynamically converted from the raw data and returned.

If no detailed data is available for a period in the time range, summary data will returned, if it is available.

To make sure detailed data and/or summary data is previously created, select the check boxes on the Collection Services Property Page to create graph data and summary data when Collection Services cycles.

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Viewing Data

Summarized information

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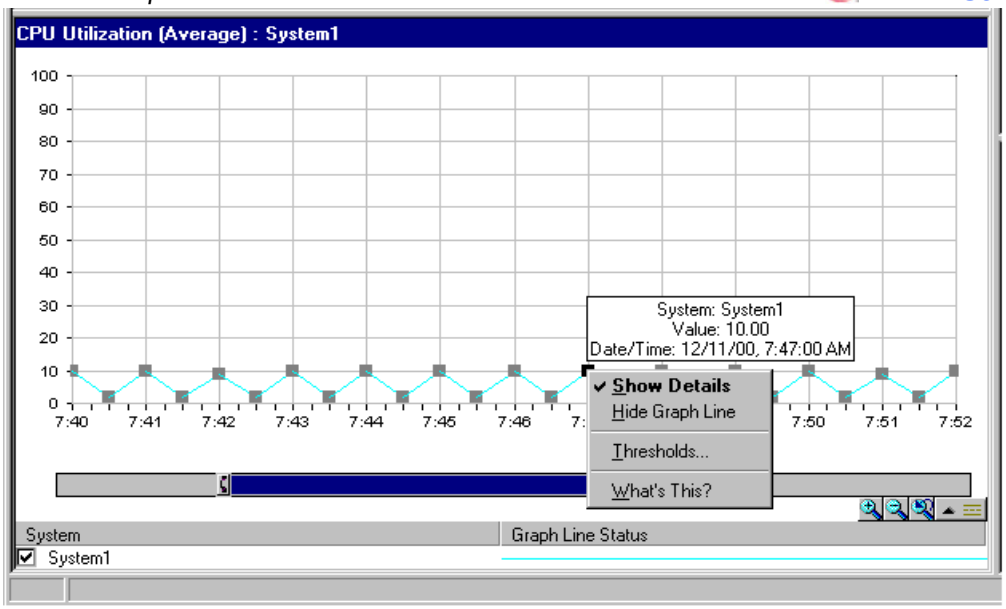

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Notes: Viewing Data

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Each endpoint system is represented by a unique graph line. Click the legend icon in the lower right corner of any graph to see which system is represented by each line. Here are some actions that you can perform:

To change the color, width, or style of the line for each system, click Options from the menu bar on the AS/400 Operations Navigator window and select User Preferences.
To change the size of the Graphs pane, click the icon in the right-hand corner of the title bar of any graph to minimize the graph to just the title bar. Click the icon again to restore the graph to its previous size.
To see the Details of the data associated with the collection point, click any collection point on a graph line.

Collection points on the graph line are shown by three different graphics that correspond to the three levels of data that are available:

A square collection point means the data includes both the detailed information and properties information.
A triangular collection point represents summarized data that contains detailed information.
A circular collection point represents data that contains no detailed information or properties information.

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Viewing Data

Export to PC format

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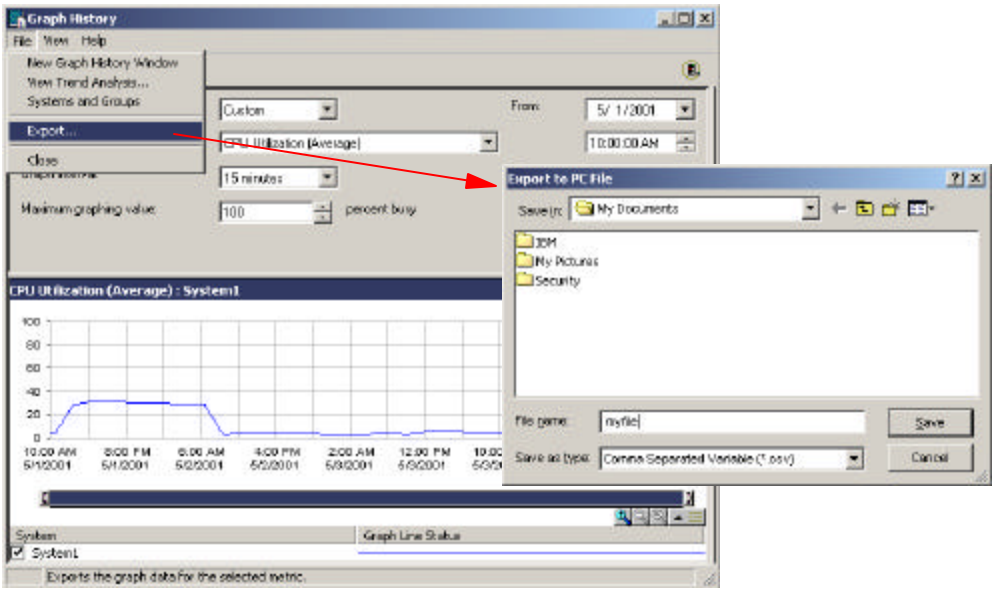

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Notes: Exporting Data

IBM eserver iSeries

Export

Exports all of the data displayed for the selected metric for the systems and groups for the date and time range specified into a file on your PC. These PC files provide a history of your data and allow you to work with the data in a spreadsheet program or other application.

You can export your data in any of the following formats: HTML, TXT (text), CSV (comma separated variable), or XLS (Microsoft Excel 97).

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Summary

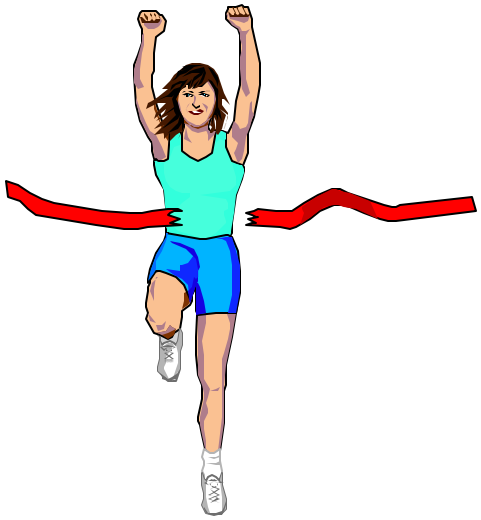
IBM @server iSeries

System Monitors

- Define
- Start
- View
- Thresholds
- Event Log

Collection Services

- Start
- Using data
- Creating databases
- Viewing graphs



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Other Information

IBM @server iSeries

iSeries Home Page

- ibm.com/eserver/iseries

iSeries Systems Management

- ibm.com/eserver/iseries/sftsol
- ibm.com/eserver/iseries/sftsol/MgmtCentral.htm
- ibm.com/eserver/iseries/oper_nav/

Redbooks - www.redbooks.ibm.com

- Management Central - A Smart Way to Manage AS/400 Systems SG24-5407-00
- Managing AS/400 V4R4 with Operations Navigator SG24-5646-00

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