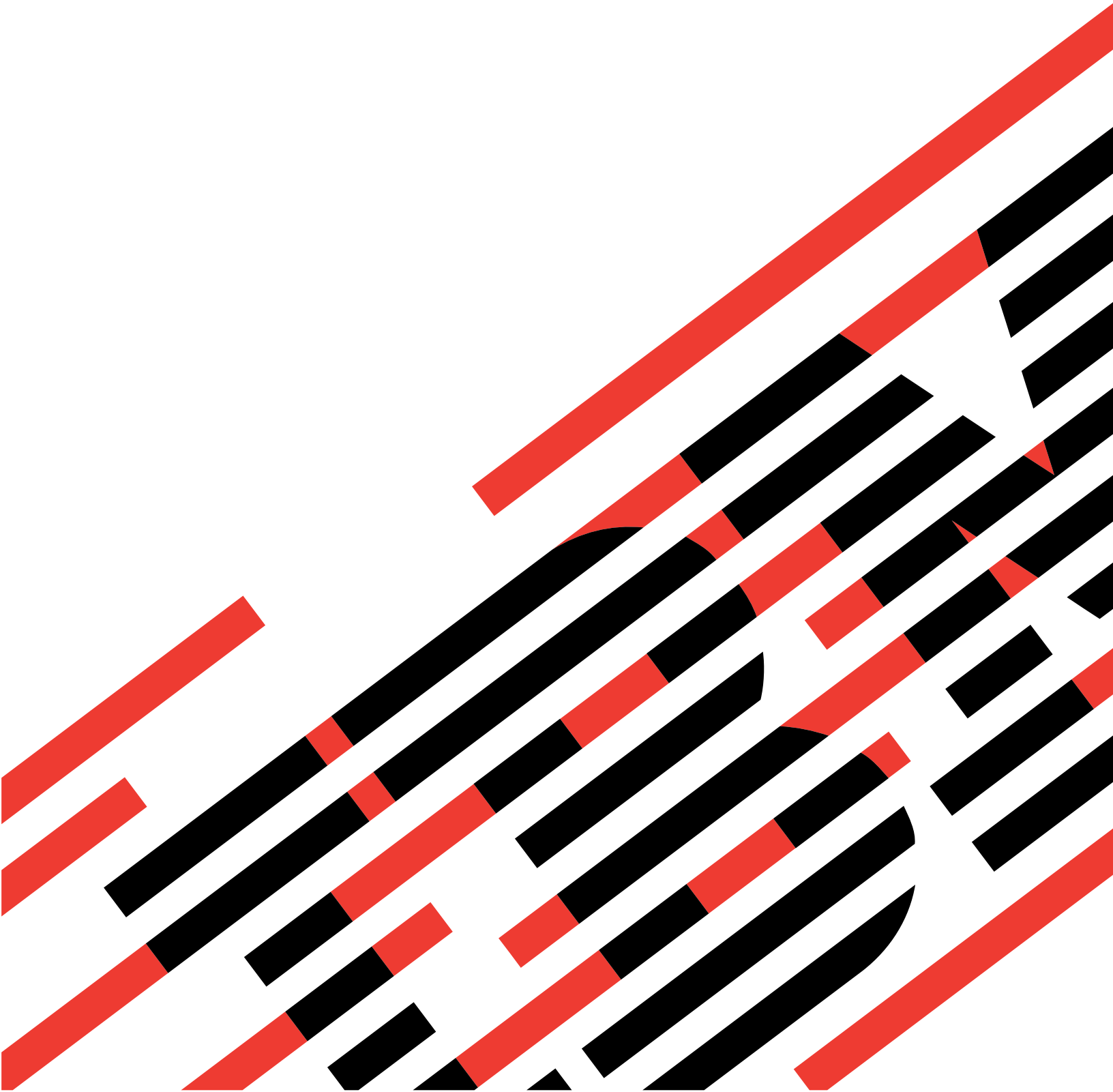
IBM

eserver

Management Central



Management Central

© Copyright International Business Machines Corporation 1998, 2002. All rights reserved.
US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Chapter 1. Management Central 1

Chapter 2. What's new in Management Central for V5R2 3
New functions 3
Enhancements to existing functions: 3
How to see what's new or changed 4
What's new in Advanced Job Scheduler for V5R2 4

Chapter 3. Print this topic 7

Chapter 4. Get started with Management Central 9
Install and access Management Central. 9
Set up your central system 10
Add endpoint systems to your Management Central network 11
Create system groups in your Management Central network. 12

Chapter 5. Working with Management Central 13
Running commands with Management Central. 14
Manage users and groups with Management Central 15
Working with inventory 18
Viewing an inventory 19
What can I do with an inventory?. 19
Running actions on an inventory 19
Searching a Management Central users and groups inventory 20
Working with monitors. 20
Creating a new monitor 21
Selecting metrics for monitors 21
Specifying threshold values for a monitor. 23
Specifying the collection interval for a monitor 25
Running commands for monitors 25
Logging events for a monitor 26
Applying thresholds and actions for a monitor 27
Viewing monitor results 27
Reset triggered threshold for a monitor 28
Event Log 28
Packaging and sending objects with Management Central 29
Sharing with other users in Management Central 30
What can I do with sharing and Management Central? 31
Scheduling tasks or jobs with Management Central scheduler 32
Management Central Scheduler 33
Advanced Job Scheduler. 33
Installing Advanced Job Scheduler 34
Customizing the Advanced Job Scheduler 35
Assigning the general properties for the Advanced Job Scheduler. 35
Creating and working with applications/job controls for the Advanced Job Scheduler 36
Setting up a calendar for the Advanced Job Scheduler. 37
Setting up a holiday calendar for the Advanced Job Scheduler 37
Working with library lists for the Advanced Job Scheduler. 38
Working with command variables for the Advanced Job Scheduler 38
Scheduling jobs with the Advanced Job Scheduler 39
Create and schedule a job 39
Create and schedule a job group. 39
Create a temporary scheduled job 40

© Copyright IBM Corp. 1998, 2002

Create predefined schedules 40
Job dependencies 41
Monitoring job activity for the Advanced Job Scheduler. 42
Monitoring for messages with Advanced Job Scheduler 43
Troubleshooting the Advanced Job Scheduler 43
Comparing the Advanced Job Scheduler to OS/400 scheduler 44

Chapter 6. Related information for Management Central 47

Chapter 1. Management Central

Are you interested in making your system administration tasks simpler, easier, less time-consuming, and much less repetitive? Are you looking to lower your overall total cost of server ownership? Then pay attention to Management Central! Management Central provides the technology you need to do systems management tasks across one or more servers simultaneously.

Management Central is a suite of easy-to-use systems management functions that come to you as part of your base operating system. You can use Management Central to manage one or more systems through a single central system. Simply select a server to use as your central system, then add endpoint systems to your Management Central network. You can create groups of similar or related endpoint systems to make managing and monitoring your systems even easier. Your central system will handle the communications for you. You can even take advantage of such options as scheduling and unattended operations. You'll find that Management Central is flexible and easily manipulated to suit your needs.

With iSeries Navigator for Wireless, administrators have even more flexibility in how they access and interact with Management Central. See the iSeries Navigator for Wireless overview for tips on which devices to use, how to install and configure the required elements, and a comprehensive overview of the functions.

To make the most of Management Central's flexibility and function, read about the overview of the functions, and see what's new:

What's new?
Find out what's new for the current release!

Print this
Download and print a PDF of this topic and other related topics.

Get started with Management Central
Start using Management Central! To get the most out of Management Central, set up your central system and endpoint systems in a way that makes sense for your business environment.

Work with Management Central
Find out about all the ways Management Central can help you streamline your server administration tasks, such as managing fixes, monitoring performance, and administering users and groups on one or more servers in your network.

© Copyright IBM Corp. 1998, 2002

Chapter 2. What's new in Management Central for V5R2

The Management Central topic contains information specific to the Management Central functions of iSeries Navigator — information you need to effectively manage multiple iSeries and AS/400 servers.

To find out what functions are available for each OS/400 release, check out the iSeries Navigator web site

.

In V5R2, Management Central offers you new and improved ways to manage the servers in your network.

New functions

- **B2B activity monitors**
  If you have an application like Connect for iSeries configured, you can use a B2B activity monitor to monitor your B2B transactions. You can view a graph of active transactions over time, and you can run commands automatically when thresholds are triggered. You can search for and display a specific transaction as well as view a bar graph of the detailed steps of that specific transaction.
- **File monitors**
  You can use a file monitor to notify you whenever a selected file has changed. Or, you can monitor for a specified size or for a specified text string.
- **Synchronize date and time**
  In V5R1, you could compare and update system values across a network of iSeries servers by using Management Central's Compare and Update System Values dialog. Now, you can also synchronize date and time system values across a network of iSeries servers, allowing for differences in time zones. You simply choose a model system that has the most accurate date and time values, and then use that system to update one or more endpoint systems or system groups.

Enhancements to existing functions:

- **iSeries for Wireless** (formerly known as Management Central - Pervasive)
  From an Internet-ready phone or personal digital assistant (PDA), you can manage multiple iSeries servers; work with monitors for files, jobs, messages, and system performance; run commands on multiple iSeries servers; and work with Integrated xSeries Servers. For more detailed information, see the iSeries Navigator for Wireless overview topic.
- **Users and Groups**
  When you send users and groups from one system to multiple endpoint systems or system groups, any Enterprise Identity Mapping (EIM) associations are sent along with the other attributes of the user or group. EIM associations are sent only when the source system and the target system are in the same EIM domain.
- **Package products**
  When you create and install a product that you have defined, you can now digitally sign all product and fix objects, which can protect the files of the product that you defined. You can also include license documents when you create your product, which will require users to agree to the license terms before they can install the product.
- **Collection Services**
  A new category now contains data for an application-defined transaction rather than IBM-defined transactions. To use this category you must define your own transactions with the Start Transaction (QYPESTRT,qypeStartTransaction) API and End Transaction (QYPEENDT,qypeEndTransaction) API.

© Copyright IBM Corp. 1998, 2002

You can also add your own category to one or more collector definitions in Collection Services. Use the Register Collector Data Category (QypsRegCollectorDataCategory) API.

- **System monitors**
  The system monitor metrics now include information associated with the Point-to-Point Protocol. Several metrics were added to the CPU utilization properties. These new metrics relate to file systems, stream files, journal operations, and counter sets.
- **Inventory**
  You can now collect inventory for network attributes, service attributes, and contact information, as well as hardware, software, fixes, system values, and users and groups. In addition, the support for fixes inventory has been enhanced to include the following:
  - You can select and deselect individual missing fixes with the Compare and Update wizard. This enhancement allows you to exclude fixes from the update that are missing their save files.
  - You can choose to do a compare and update or only an update with the Compare and Update wizard. This enhancement allows you to update the target system directly from the model system without viewing the compare results.
  - You can distribute more than 300 fixes.
  - When you collect fixes inventory, you also collect fix group inventory. You can now use fix groups to manage fixes as well as the fix groups themselves on multiple systems.
  - In Management Central properties, you can specify whether to collect fixes only when changes have occurred to the fixes data or to collect fixes even when no changes have occurred since the last collection. This setting does not affect the collection of fix group data, which is always collected.
- **Advanced Job Scheduler**
  This separate licensed program offers you new and improved ways to schedule jobs as well as enhancements when accessing your jobs from iSeries Navigator. For more information, see What's New in Advanced Job Scheduler.

How to see what's new or changed

To help you see where technical changes have been made, this information uses:

- The

  image to mark where new or changed information begins.
- The

  image to mark where new or changed information ends.

To find other information about what's new or changed this release, see the Memo to Users

.

What's new in Advanced Job Scheduler for V5R2

In V5R2, Advanced Job Scheduler offers you new and improved ways to schedule jobs as well as enhancements when accessing your jobs from iSeries Navigator.

- **Predefined schedules**
  You can create schedules that contain information needed to schedule a job or calculate exception dates within a holiday calendar.

- **Monitoring for messages**
  You can enter message identifiers for any command within the command list of a job for monitoring.
- **Applications and Job Controls combined**
  In iSeries Navigator, Applications and Job Controls tabs are now combined. You can now update the job control information when adding a new application.
- **Job authorities**
  You can print job authorities with the detail information of a job with the DSPJOBJS command. Changes to the CHGAUTJS command allow more ways to globally change authorities for one or more jobs.
- **Specify starting and ending commands**
  The SBMJOBJS command allows you to specify starting and ending command sequences when you submit a temporary version of a scheduled job.
- **Schedule days increased**
  The number of days per month and dates per year to schedule a job is increased to 30. Before this increase, scheduled jobs had a maximum of 13 dates for specific dates of the year, specific dates every year, and days of every month. You can now specify up to 30 dates for **On selected dates**, up to 30 dates for **Yearly**, and up to 30 days for **Monthly**. Jobs with more than 13 selected dates or days can be changed only with iSeries Navigator.
- **Holiday dates**
  Holiday dates are now displayed with a red border on the scheduling calendar in iSeries Navigator.

Chapter 3. Print this topic

To view or download the PDF version, select **Management Central** (about 250 KB or 55 pages)

These topics tell you how to set up your Management Central network of endpoint systems and system groups as well as perform a variety of tasks. They also include information about all the ways Management Central can help you streamline your server administration tasks, such as:

- Manage users and groups
- Collect inventory and performance data
- Manage system values
- Package and send objects
- Run commands
- Schedule your tasks or jobs

You can view or download these related topics:

- Performance (about 350 KB or 85 pages) contains the following topics:
  - Collection Services
  - System monitors, job monitors, message monitors, B2B monitors, file monitors
- Software and licensed programs (about 280 KB or 75 pages) contains the following topics:
  - Fixes
  - Product packaging
  - Licensing

Other information

You can also view or print any of the redbook PDFs:

- Managing AS/400 V4R4 with iSeries Navigator

  (about 500 pages)
- Management Central: A Smart Way to Manage AS/400 Systems

  (about 240 pages)

Saving PDF files

To save a PDF on your workstation for viewing or printing:

1. Right-click the PDF in your browser (right-click the link above).
2. Click **Save Target As...**
3. Navigate to the directory in which you would like to save the PDF.
4. Click **Save**.

Downloading Adobe Acrobat Reader

© Copyright IBM Corp. 1998, 2002

If you need Adobe Acrobat Reader to view or print these PDFs, you can download a copy from the Adobe Web site (www.adobe.com/products/acrobat/readstep.html)

.

Chapter 4. Get started with Management Central

Start using Management Central! Follow a few simple steps to configure Management Central:

1. **Install and access Management Central**
   Some of the Management Central functions that you will want to use are optionally installable components of iSeries Navigator. Be sure you choose to install them when you install iSeries Navigator. Find and open Management Central in your iSeries Navigator window.
2. **Set up your central system**
   You choose your central system when you first start iSeries Navigator. You can also change your central system easily at any time.
3. **Add endpoint systems**
   Endpoint systems are the systems in your network that you manage with your single central system. Find out how to add the endpoint systems that you want to manage.
4. **Create system groups**
   Make the most of Management Central's ability to manage groups of systems. If you are working with multiple systems or multiple logical partitions, creating a system group allows you to perform tasks on all the systems without selecting each endpoint system. Just select the system group you created and start your task!

When you have finished this preliminary work with Management Central, you're ready to start working with Management Central.

Install and access Management Central

Some functions of Management Central are optionally installable components of iSeries Navigator, the graphical user interface (GUI) for iSeries servers. When you install iSeries Access for Windows, be sure to select iSeries Navigator in the Component Selection window. When you select iSeries Navigator, iSeries Navigator Base Support is automatically selected. iSeries Navigator Base Support includes some of the Management Central functions. To get all of the Management Central functions, be sure you also select Configuration and Service, Users and Groups, Commands, Packages and Products, and Monitors.

If you did not install all the components you need when you installed iSeries Navigator, do the following:

1.

   From the menu bar in iSeries Navigator, select **File** -> **Install Options** -> **Selective Setup**.

2. Use the Selective Setup wizard to install the additional components that you need for Management Central functions. To get all the Management Central functions, select Configuration and Service, Users and Groups, Commands, Packages and Products, and Monitors.

   When you use the Selective Setup wizard, the components you select will be installed. Any components you deselect during the selective setup will be uninstalled. Be careful not to accidentally uninstall anything while you use the Selective Setup wizard.

When iSeries Navigator has been installed, just double-click the desktop icon to start iSeries Navigator. Now you're ready to set up your central system.

© Copyright IBM Corp. 1998, 2002

Set up your central system

Management Central allows you to manage multiple servers from a single system in a TCP/IP network environment. Some aspects of your TCP/IP environment may require changes to your Management Central configuration. For example, if you are using a firewall or if you want to use SSL encryption for Management Central communications, you may need to change some of your Management Central settings. For more information about these and other special cases, see Management Central FAQs

.

To manage multiple servers from a single system, you need to have a central system. The servers in your network are called **endpoint systems**. You select one of these endpoint systems as your central system. Once you add endpoint systems to your network and select your central system, you only need to do your system administration tasks once. Your central system will initiate your tasks and store Management Central data.

Setting up your central system for the first time

To start using iSeries Navigator, double-click the desktop icon and select an iSeries server to connect to. The first server you connect to is assigned as your central system. Management Central appears automatically in the tree hierarchy in the left pane of your iSeries Navigator window. All you need to do is expand **Management Central** to access its functions. If your central system is running OS/400 V5R2 or later, you can simply right-click **Management Central** and select **Verify Connection** to verify that the central system connection is configured properly. To see detailed information about any Failed message, you can select the message and click **Details** (or just double-click the message).

Changing your central system

You can select a different system as your central system at any time. The central system must be a system that you are directly connected to, and it must be running the OS/400 operating system Version 4, Release 5 (V4R5) or later. For the latest iSeries Navigator functions, your central system should be running OS/400 Version 5, Release 2 (V5R2).

If your PC is running V5R2 iSeries Navigator, and you want to select a central system that is running OS/400 V5R1, you must have the following fixes (also known as PTFs) installed on the V5R1 system: SI01375, SI01376, SI01377, SI01378, and SI01838. Without these fixes, you will not be able to connect to the V5R1 system as a central system.

To change your central system, do this:

1. Right-click Management Central and select **Change Central System**.
2. Use the **Change Central System** dialog to choose a system from your list of connected systems.
3. If the system you want to use as your central system is not currently connected to your iSeries Navigator network, right-click **My Connections** and select **Add connection**. When the new system is connected, you may change your central system to the new system.

For more information about these and other Management Central tasks and topics, refer to the

detailed task help that is available from the iSeries Navigator window. Just click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . .?** to find out what you can do and where you need to be in the iSeries Navigator window to make it happen.

Once you have set up your central system, you are ready to do the other tasks necessary for setting up Management Central.

After you have added endpoint systems and created system groups, those endpoint systems and system groups will appear under Management Central as well. For more information about these and other Management Central tasks and topics, refer to the

detailed task help that is available from the iSeries Navigator window. Just click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . .?** to find out what you can do and where you need to be in the iSeries Navigator window to make it happen.

Add endpoint systems to your Management Central network

An endpoint system is any system or logical partition in your TCP/IP network that you choose to manage through your central system.

If you are adding endpoint systems that are running OS/400 V5R1, you must have the following fixes (also known as PTFs) installed on the V5R1 system: SI01375, SI01376, SI01377, SI01378, and SI01838. Without these fixes, you will not be able to use all the Management Central functions on the endpoint system.

To add endpoint systems for a large network, do the following:

1. Right-click **Endpoint Systems** and select **Discover Systems**.
2. Specify the TCP/IP subnets that you want to search.
3. When you click **OK**, any connected OS/400 systems that are found are added to your network as endpoint systems and the IP addresses of all your endpoint systems are updated.

To manually add one or more endpoint systems, do the following:

1. Right-click **Endpoint Systems** and select **New Endpoint System**.
2. Enter the name of the system and click **OK**.

That is all there is to it. The endpoint systems that you added appear automatically under **Endpoint Systems** in your iSeries Navigator window. Next, you can create system groups to help you manage different sets of endpoint systems. The new system groups will appear in iSeries Navigator as well. For more information about these and other Management Central tasks and topics, refer to the

detailed task help that is available from the iSeries Navigator window. Just click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . .?** to find out what you can do and where you need

to be in the iSeries Navigator window to make it happen.

Create system groups in your Management Central network

A system group is a collection of endpoint systems that you define. Remember, an endpoint system is any system or logical partition in your TCP/IP network that you choose to manage through your central system.

Endpoint systems can belong to several system groups at the same time. Once you have created a system group, you can manage the entire group from your central system as if it were a single system.

To create a system group, follow these quick steps:

1. Open **Management Central** from your **iSeries Navigator** window.
2. Right-click **System Groups** and select **New System Group**.
3. On the **New System Group** dialog, specify a unique name for the new system group. You can also enter a brief description that will help you later identify this group in a list of system groups.
4. From the **Available systems** list, select the endpoint systems that you want to include in this new group. Click the **Add** button to add the systems to the **Selected systems** list.
5. If you want to give other users the ability to view or change this system group, use sharing. Click the **Sharing** tab and specify **Read-only** or **Full** sharing. If you specify **None**, other users will not be able to view or change this system group.
6. Click **OK** to create the new system group.

The system group you create will include all the endpoint systems you entered. You may decide later that you want to edit that list of endpoint systems. You can always add more endpoint systems or remove endpoint systems from your system group. You can even delete system groups from Management Central. When you delete a system group or remove endpoint systems from a system group, only the system group is changed. The endpoint systems that were in the system group are still listed under **Endpoint Systems** in the iSeries Navigator window.

For more information about these and other Management Central tasks and topics, refer to the

detailed task help that is available from the iSeries Navigator window. Just click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . .?** to find out what you can do and where you need to be in the iSeries Navigator window to make it happen.

Chapter 5. Working with Management Central

Use Management Central to streamline your system administration tasks in iSeries Navigator. To make the most of Management Central, first plan your Management Central configuration. Then you can efficiently complete the tasks required to manage your system. To learn about configuring Management Central, see the getting started topic. To learn how Management Central can help you manage your system administration tasks easily and efficiently, keep reading.

You can use Management Central's powerful suite of functions to handle all your system administration tasks.

Run commands

You can use Management Central to run commands on multiple systems. For commands that you want to run on a regular basis, simply create a command definition and schedule it to run on any endpoint systems in your network. For assistance anytime you are entering or selecting an OS/400 command, just click the **Prompt** button to see a complete list of the parameters and values for the command.

Manage users and groups

Keep track of the users, groups, and their privileges on multiple systems using Management Central's user administration function. You can also create, send, edit, and delete users across multiple systems.

Collect inventory

You can collect and manage various inventories on a regular basis and store the data on a designated central system. For example, you can collect the inventory for users and groups, fixes, system values, hardware resources, software resources, service attributes, contact information, or network attributes. You may have other applications installed that allow you to collect lists of other types of resources.

You can search the hardware, software, fixes, and users and groups inventories for criteria that you specify. You can export the results of the search or an entire inventory to a PC file to use with PC applications and to perform other queries.

Monitor system performance and resources

Use Management Central monitors to track what your systems are doing. You can monitor

jobs, messages, files, B2B activity, and system performance.

Using the event log, you can also track events created by these monitors. You can view all your monitors, as well as all your Management Central tasks, remotely with

iSeries Navigator for Wireless.

© Copyright IBM Corp. 1998, 2002

Manage fixes	Keep your fixes (or program temporary fixes, PTFs) current across multiple systems. Use Management Central to efficiently manage fixes on one or more endpoint systems. You can send, install, and compare and update fixes. Use fix groups to manage multiple fixes as a single item. A fix group simply defines a list of fixes and related fix groups.
Collect performance data	Use Collection Services to collect system performance data that you can use for later analysis (for example, using Performance Tools for iSeries). See a graphical view of the metrics that you collected for an extended period of time with the Graph History window. You can use the Graph History function as long as you collect data with Collection Services; you do not need to have a system monitor running.
Manage system values	Management Central lets you view, compare, and update system values—everything required to efficiently manage system values and maintain consistency across multiple systems in your network.
Manage software products	You can use Management Central to package and send software products to the systems in your network. You simply create a product definition to identify your application as a product to the iSeries server. The product definition contains all the information that you need to send and install a product across multiple systems, just like you would install an IBM licensed program. You can also generate fixes for these user-defined software products. You can also send any software product from the software inventory.
Package and send objects	You can package and send objects to systems in your network using Management Central. You can create snapshots of your data to preserve more than one version of the data.
Schedule unattended tasks or jobs	Use Management Central's integrated scheduler to automate recurring tasks. You can choose to run a task immediately, or you can use the scheduler to select a later time. You can schedule a task to run just once, or you can schedule it to run daily, weekly, or monthly at a convenient time. You can also use the Advanced Job Scheduler, a separate licensed program that provides more calendar features and offers greater control over scheduled events.

Finally, Management Central makes system administration even easier by allowing you to share Management Central resources with other users. Do not forget to use the online help available to you in Management Central. The online help offers tips and techniques for making the most of Management Central, including "What's This?" help, how-to information, and extended examples.

Running commands with Management Central

Management Central enables you to define an action or a task and then perform that action or task on multiple endpoint systems or system groups. You can select one or more endpoint systems or system groups and then specify a command to run on those systems. You can click **Prompt** for assistance in entering or selecting

an OS/400 command.

You can choose to run the command immediately or schedule it to run at a later time.

You can create a command definition to save a command that you want to run over and over on multiple endpoint systems and system groups. Storing a command definition on the central system allows you to share commonly used or complex commands with other users. When a command is run, a task is created.

Why should I perform commands with Management Central?

Running commands on one or more endpoint systems is a simple point-and-click operation in iSeries Navigator. And, if your day-to-day operations require you to perform repetitive tasks, you can take advantage of the Management Central command definition. For example, you could use a command definition to do any of the following tasks:

- Set network attributes on multiple endpoint systems or system groups
- Set up your own help desk or operations “run book” to handle customer and system needs.

In fact, any control language (CL) command that you can run in batch, you can now send to multiple systems at the same time. Just create the command definition, and then run the command on endpoint systems or system groups.

Detailed task help is available from the iSeries Navigator window. Just click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . .?** to find out what you can do and where you need to be in the iSeries Navigator window to make it happen.

Use Management Central to do more than run commands. You can do many of the tasks required to manage your systems quickly and efficiently with this powerful tool.

Manage users and groups with Management Central

Management Central can help you as a system administrator to keep track of the users, groups, and their level of privileges on one or more endpoint systems.

Detailed task help is available from the iSeries Navigator window. Just click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . .?** to find out what you can do and where you need to be in the iSeries Navigator window to make it happen.

The following list gives you an idea of the many ways in which Management Central can make your job easier.

Create a user definition

You can create a user definition and then create multiple users across multiple systems based on the definition. First, create user definitions for the types of users on your systems. Then, when a request comes in for a new user, all special authorities, attributes, and other information common to that type of user are already stored in the user definition. You can even specify a command to be run after a user is created from a user definition! If you need assistance in entering or selecting

an OS/400 command

, you can click **Prompt** to select appropriate parameters and values.

When you create a new user from the user definition, you just specify the name for the user, a brief description to help you identify this user in a list of users, and a new password for the user. All other properties of the new user are based on the properties stored in the user definition, unless you choose to change them. You may also select the groups the user should belong to and provide personal information about the user at the time the user is created.

Create, edit, and delete users and groups

You can create, edit, and delete users and groups across multiple endpoint systems or system groups—and even schedule these actions. For example, use the Edit Users function to change the properties for one or more users on the selected endpoint systems or system groups. If you need to change the authority level for several users on multiple systems, or if a user who has access to multiple systems changes his or her name, you can easily edit that information and apply the change to all systems.

When you use Management Central to delete users, you can select an action to be taken if any of the selected users owns objects on any system from which that user is being deleted. You can click **Scan for Owned Objects** to see what objects the selected users own on the selected endpoint systems or across the selected system groups.

Collect an inventory

You can collect an inventory of the users and groups on one or more endpoint systems, and then view, search, or export that inventory to a PC file. Extensive advanced search capabilities are provided for easy searching. For example, you can search the inventory to see who has Security Officer privileges, as well as query other profile properties. Also, you can sort these inventory lists by clicking on any column heading. For example, you can group together all users in the inventory who have Security Officer privileges by clicking the Privilege Class heading.

You can perform various actions from the inventory list by right-clicking one or more users and selecting an action from the menu. For example, you can delete a user, edit a user, view its properties, or scan for objects owned by a user. You can do similar actions with groups by selecting Group Inventory for an endpoint system.

It is recommended that you schedule collection of users and groups inventory on a recurring basis to keep your central system's inventory current. Changes that you make to the user or group inventory on an endpoint system or system group under Management Central are automatically updated in the central system inventory.

Send users and groups

You can send users and groups from one system to multiple endpoint systems or system groups.

All the user properties you need are sent to the target systems, including the user name and passwords (LAN server password as well as the OS/400 password), security settings, private authorities, Enterprise Identity Mapping (EIM) associations, and mail options. If the user has an entry in the system distribution directory on the source system, an entry is created (or updated) for that user on the target system.

You can also specify the action to be taken if any user in the list that you are sending already exists on the target system. When you are sending users, you can select not to change the user that already exists, or you can select to update the existing user with the settings from the user you are sending. When you are sending users, you can click Advanced to specify advanced send options. The advanced send options include specifying the mail system for the user and synchronizing the unique identifier (UID) of the user on the target system based on the UID of the user being sent.

Scan for owned objects

You can scan for owned objects to find out what objects a user or group owns across multiple endpoint systems or system groups, and you can even scan for objects owned by multiple users simultaneously.

Synchronize unique identifiers

You can synchronize the unique identifiers of users and groups (UID and GID) across multiple endpoint systems to ensure that each of these numbers points to the same user on every system. This is especially important when you are working with systems in a clustering environment or a system with logical partitions. The UID and GID numbers are another way of identifying a user or group to a program. For example, the UID and GID numbers are used by programming interfaces in the Integrated File Systems environment.

You can choose to synchronize unique identifiers when you create new users or groups, when you edit users or groups, or when you send users or groups from one system to another. Be sure to keep your user and group inventories current if you are synchronizing unique identifiers when you create or edit users or groups.

Note: All OS/400 special authorities and other authorities that are needed when working with users and groups in the character-based interface are honored when managing users and groups with Management Central. This includes security administration (*SECADM) privileges, all object (*ALLOBJ) privileges, and authority to the profiles with which you are working.

However, even a user with the most restricted set of system privileges (*USER) can view, search, or export a user or group inventory that has been collected by another user with the proper authorities. The user with *USER authority cannot create or delete users, edit existing users, or send users to another system.

To **send** users or groups from one system to another, you must also have save/restore (*SAVSYS) authority.

Working with inventory

Use Management Central inventory functions to collect and manage various inventories on a regular basis and store the data on the iSeries server you have selected as your central system. For example, you can collect the inventory for users and groups, fixes, system values, hardware resources, software resources, service attributes, contact information, or network attributes. You may have other applications installed that allow you to collect lists of other types of resources.

You can either collect an inventory immediately or schedule it to be collected at a later time. You can schedule the inventory collection to occur daily, weekly, or monthly to keep your inventory current.

For more information about specific inventories, see the following topics:

Display an inventory of fixes
Find out how to manage your fixes inventory using iSeries Navigator wizards.

Manage users and groups with Management Central
Find out how to collect an inventory of the users and groups on one or more endpoint systems, and then view, search, or export that inventory to a PC file.

Work with system values inventory
Find out how you can use your inventory to compare and update system values on your target systems.

For information about how to collect an inventory or schedule an inventory collection, see the detailed task help that is available from the iSeries Navigator window. Just click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . .?** to find out what you can do and where you need to be in the iSeries Navigator window to make it happen.

Viewing an inventory

After you have collected the inventory, you can view the inventory list and right-click any item in the list to see the actions you can perform on the item.

For example, to display the inventory of all installed products on an endpoint system, select Software Inventory (**Management Central** —> **Endpoint Systems** —> *any endpoint system* —> **Configuration and Service** —> **Software Inventory** —> **Installed Products**). This is a very easy way to see what software is installed on the endpoint system. The **Status** column reflects the current status of the software (Installed or Installed and supported) at the time of the last inventory collection (which is shown above the list).

It is recommended that you schedule collection of all your system inventories on a recurring basis to keep your central system's inventory current.

What can I do with an inventory?

When you view an inventory on an endpoint system, you can right-click any item in the inventory list to see the actions you can perform on the item. For example, here are just a few of the exciting ways you can use inventories to manage your servers:

- After you have collected **fixes inventory**, you can compare fixes on one or more endpoint systems to the fixes on a model system. You can then send the missing fixes to the target endpoint systems and install them on those systems. You can also export the fixes inventory to a PC file, which you can use to work with the data in a spreadsheet program or other application.
- When you are viewing a **software inventory**, you can select any software product in the list, send it to one or more target endpoint systems, and install it on those systems. You can also export the software inventory to a PC file, which you can use to work with the data in a spreadsheet program or other application.
- Display a **hardware inventory** list to see the resource, status, and description of all hardware on the endpoint system. This is a very easy way to check the operational status of your hardware. The **Status** column reflects the operational status at the time of the last inventory collection (which is shown above the list). You can right-click on any hardware listed and select **Properties**. You can review a great deal of information under the General, Physical location, and Logical address tabs. You can use this information for upgrades as well as problem analysis. You can also export the hardware inventory to a PC file, which you can use to work with the data in a spreadsheet program or other application.
- When you display the list for a **user inventory**, you can right-click one or more users and select any of the following actions: delete, edit, view the properties, or scan for objects owned by a user. You can do similar actions with groups by selecting Group Inventory for an endpoint system.

  You can search these inventories for criteria that you specify. Additional search function is available when you search a Management Central users and groups inventory. You can export the results of the search or an entire inventory to a PC file to work with the data in a spreadsheet program or other application.

Running actions on an inventory

You may have applications installed that define actions that you can run against the collected inventory. If you have installed an application program that offers an action, you will see that action in the **Available actions** list on the Run Actions dialog. To see the Run Actions dialog, right-click any system in the iSeries Navigator window, select **Inventory**, and then select **Run Actions**. When you select an action from the **Available actions** list, a list of related inventories is shown under **Inventory for selected action**. You should select all the recommended inventories and then click **Add** to add this information to the **Selected**

actions to run list. For example, if you have installed the IBM Electronic Service Agent application, you could select **Send Electronic Service Agent inventory to IBM** from the **Available actions** list to receive your inventory data in a series of reports that show your system's growth and maintenance.

Searching a Management Central users and groups inventory

Searching on users and groups provides you with a lot of flexibility to query the user and group inventory for the information you want. The Basic search is for quick searches to find a particular user or group. The Advanced search page gives you the flexibility to search on additional profile properties. For example, you can search for all users on this endpoint system or system group with security officer authority by selecting Privilege class, and then selecting Security officer.

You can click **And** or **Or** to search on additional fields. For example, if you were searching for all users on this endpoint system or system group with security officer authority, you could narrow the search to users in your Accounting department with security officer authority by clicking **And** and selecting **Department** and **Accounting**.

From the Search Results window, you can perform many of the actions that you can perform on a user or group elsewhere within Management Central. For example, you can delete a user or group, edit the profile (for example, remove its Security Officer authority), view its properties, or scan for objects owned by a user or group. Also from the results window, you can export the search results into a spreadsheet, text file, or HTML (Web) page.

Advanced search is available only for user and group inventories, which require that both the central system and the endpoint systems are running OS/400 V5R1 or later.

Working with monitors

Use Management Central monitors to check on your system performance, your jobs and servers, your message queues, changes to selected files, and B2B transaction activity.

You can use a **system monitor** to see detailed graphs that monitor the real-time performance of multiple iSeries servers. In the Graph History window, you can see a graphical view of the metrics that have been collected for an extended period of time by Collection Services. You can contrast this data with the real-time data for the last hour shown in a system monitor window.

You can monitor your jobs and servers with a **job monitor**. For example, you might want to monitor a job's CPU usage, job status, or job log messages.

You can create a **message monitor** to take action on a list of messages that are important to you. For example, when the message monitor detects CPI0953 (threshold of a disk pool is exceeded), you could specify to run a command that would delete objects that you no longer need from the disk pool.

You can use a **file monitor** to monitor for a specified text string or for a specified size. Or, you can monitor for any modification to one or more selected files.

You can use a **B2B activity monitor** to view a graph of active transactions over time, and you can run commands automatically when thresholds are triggered. You can search for and display a specific transaction as well as view a bar graph of the detailed steps of that specific transaction.

You can start any Management Central monitor, and then turn to other tasks on your server, in iSeries Navigator, or on your PC. You can choose to be informed by an audible or visible alarm on your PC when

important thresholds are reached. In fact, you could even turn your PC off! The monitor will continue to run and perform any threshold commands or actions you specified. Your monitor will run until you decide to stop it. You can view all your monitors, as well as all your Management Central tasks, remotely with iSeries Navigator for Wireless.

The steps to create and run a monitor are basically the same for whichever type of monitor you choose to run. For an example, see Creating a new job monitor.

Creating a new monitor

Management Central monitors are powerful tools that you can use to stay on top of activity on your endpoint systems. Creating a new monitor is a quick and easy process that begins at the New Monitor window. In iSeries Navigator, expand Management Central, expand **Monitors**, right-click the type of monitor you want to create (for example, **Job**), and then select **New Monitor**.

Once you have given your new monitor a name, the next step is to specify what you want to monitor. If you are creating a job monitor, you will select which jobs you want to monitor.

Be careful to monitor the smallest number of jobs that will give you the information you need. Monitoring a large number of jobs may have a performance impact on your system. You can specify the jobs to monitor in two ways:

- **Jobs to monitor**
  You can specify jobs by their job name, job user, job type and subsystem. When specifying job name, job user and subsystem, you can use an asterisk (*) as a wild card to represent one or more characters.
- **Servers to monitor**
  You can specify jobs by their server names. Select from the list of **Available servers** on the **Servers to monitor** tab. You can also specify a custom server by clicking the **Add custom server** button on the New Monitor or Monitor Properties - General page under the **Servers to monitor** tab. To create a custom server, use the Change Job (QWTCHGJB) API.

When multiple job selection criteria are specified, all jobs matching any of the criteria are monitored.

Use the online help to assist you in creating your new monitor. Read about selecting metrics to find out about the different aspects of system activity that you can measure with Management Central monitors.

Selecting metrics for monitors

When you create a monitor, you must decide which aspects of system activity you want to monitor. For each type of monitor, Management Central offers several measurements, known as **metrics**, to help you pinpoint different aspects of system activity. A metric is a measurement of a particular characteristic of a system resource or the performance of a program or a system.

For a **system monitor**, you can select from a wide range of available metrics, such as CPU utilization, interactive response time, transaction rate, disk arm utilization, disk storage, disk IOP utilization, and more.

For a **job monitor**, available metrics include job count, job status, job log messages, CPU utilization, logical I/O rate, disk I/O rate, communications I/O rate, transaction rate, and more.

For a **message monitor**, you can specify one or more message IDs, message types, severity levels. You can also select from a list of predefined sets of messages that would be associated with a specific type of problem, such as a communications link problem, a cabling or hardware problem, or a modem problem.

For a **file monitor**, you can select to monitor files across multiple endpoint systems for a specified text string or for a specified size. Or, you can select to trigger an event whenever a specified file has been modified.

For a **B2B activity monitor**, available metrics include active transaction count and active transaction duration.

The **Metrics** page in the **New Monitor** window allows you to view and change the metrics that you want to monitor. To access this page, select **Monitors**, right-click the type of monitor you want to create (for example, **Job**), and then select **New Monitor**. Fill in the required fields, and then click the **Metrics** tab.

You can use any metric, a group of metrics, or all the metrics from the list to be included in your monitor. Metrics you can use in a job monitor include the following:

Job count

Monitor for a specific number of jobs matching the job selection.

Job status

Monitor for jobs in any selected status, such as Completed, Disconnected, Ending, Held while running, or Initial thread held.

Job log messages

Monitor for messages based on any combination of Message ID, Type, and Minimum severity.

Job numeric values

CPU utilization

The percentage of available processing unit time used by each job that is being monitored on this system.

Logical I/O rate

The number of logical I/O actions, per second, by each job that is being monitored on this system.

Disk I/O rate

The average number of I/O operations, per second, performed by each job that is being monitored on this system. The value in this column is the sum of the asynchronous and synchronous disk I/O operations.

Communications I/O rate

The number of communications I/O actions, per second, by each job that is being monitored on this system.

Transaction rate

The number of transactions per second by each job that is being monitored on this system.

Transaction time

The total transaction time for each job that is being monitored on this system.

Thread count

The number of active threads in each job that is being monitored on this system.

Page fault rate	The average number of times, per second, that an active program in each job that is being monitored on this system refers to an address that is not in main storage.
Summary numeric values	
CPU utilization	The percentage of available processing unit time used by all jobs monitored on this system. For multiple-processor systems, this is the average percent busy for all processors.
Logical I/O rate	The number of logical I/O actions, per second, by all jobs monitored on this system.
Disk I/O rate	The average number of I/O operations, per second, performed by all jobs monitored on this system. The value in this column is the sum of the asynchronous and synchronous disk I/O operations.
Communications I/O rate	The number of communications I/O actions, per second, by all jobs monitored on this system.
Transaction rate	The number of transactions per second by all jobs monitored on this system.
Transaction time	The total transaction time for all jobs monitored on this system.
Thread count	The number of active threads for all jobs monitored on this system.
Page fault rate	The average number of times, per second, that active programs in all jobs monitored on this system refer to an address that is not in main storage.

Use the online help to assist you in selecting your metrics. Don't forget to specify threshold values that will allow you to be notified and to specify actions to be taken when a certain value (called the trigger value) is reached.

Specifying threshold values for a monitor

When you have selected the metrics for your monitor, you should consider setting a threshold for each metric. Setting a threshold for a metric that is being collected by a monitor allows you to be notified and optionally to specify actions to be taken when a certain 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, when you create a system monitor, 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 set up to two thresholds for each metric that the monitor is collecting. Thresholds are triggered and reset based on the value at the time the metric collection is made. Specifying a higher number of collection intervals for duration helps to avoid unnecessary threshold activity due to frequent spiking of values.

You can also choose to add an event to the Event Log whenever the trigger value or the reset value is reached.

On the **New Monitor - Metrics** page, the threshold tabs provide a place for you to specify a threshold value for each metric that you have selected to monitor. For example, if you are creating a job monitor, you can set your threshold values in the following ways depending on the type of metric you have selected:

Job count

When you define a threshold, you can specify a command to run on the endpoint system when the threshold is triggered. For example, selecting **> 25 jobs** will trigger the threshold whenever the monitor detects more than 25 jobs running during the number of collection intervals you specify for **Duration**.

You can then specify a command to be run on the endpoint system when the monitor detects more than 25 jobs. Enter the command name and click **Prompt** (or press F4) for assistance in specifying the parameters for the command.

Enable reset is optional, and cannot be selected until a trigger is defined. You can also specify a command to be run on the endpoint system when the threshold is reset.

Job log message

You must select **Trigger when any of the following messages are sent to the job log** before you can specify the conditions to trigger a threshold. You can specify messages to monitor for based on any combination of Message ID, Type, and Minimum severity. Each row in the Job Log Message table shows a combination of criteria that must be met for a message to trigger a threshold. A threshold will be triggered if it meets the criteria in at least one row. Use the online help to specify the conditions to trigger a threshold.

Be careful to monitor the smallest number of jobs that will give you the information you need. Monitoring a large number of jobs for job log messages may have a performance impact on your system.

You can specify a command to be run on the endpoint system when the threshold is triggered. Enter the command name and click **Prompt** (or press F4) for assistance in specifying the parameters for the command.

Be sure to click the Collection Interval tab to specify how often you want the monitor to check for job log messages.

A message trigger can only be manually reset. You can specify a command to be run on the endpoint system when the threshold is reset. When you reset the monitor, you always have the option to reset without running the specified command.

Job status

On the **General** tab, select the statuses that you want to monitor for. Click the **Status Threshold** tab to specify the conditions to trigger a threshold. You must select **Trigger when job is in any selected status** before you can specify the conditions to trigger a threshold. The threshold is triggered whenever the monitor detects that the job is in any selected status for the number of collection intervals you specify for **Duration**.

You can then specify a command to be run on the endpoint system when the threshold is triggered. Enter the command name and click **Prompt** (or press F4) for assistance in specifying the parameters for the command.

Reset when job is not in selected statuses is optional, and cannot be selected until a trigger is defined. You can specify a command to be run on the endpoint system when the threshold is reset.

Job numeric values

When you define the threshold, you can specify a command to run on the endpoint system when the threshold is triggered. For example, selecting **> 101 transactions per second** for the Transaction Rate metric will trigger the threshold whenever the monitor detects more than 101 transactions per second on any of the selected jobs during the number of collection intervals you specify for **Duration**.

You can then specify a command to be run on the endpoint system when the monitor detects more than 101 transactions per second. Enter the command name and click **Prompt** (or press F4) for assistance in specifying the parameters for the command.

Enable reset is optional, and cannot be selected until a trigger is defined. You can also specify a command to be run on the endpoint system when the threshold is reset.

Summary numeric values (total for all jobs)

When you define a threshold, you can specify a command to run on the endpoint system when the threshold is triggered. For example, selecting **> 1001 transactions per second** for the Transaction Rate metric will trigger the threshold whenever the monitor detects more than 1001 transactions per second on all of the selected jobs during the number of collection intervals you specify for **Duration**.

You can then specify a command to be run on the endpoint system when the monitor detects more than 1001 transactions per second. Enter the command name and click **Prompt** (or press F4) for assistance in specifying the parameters for the command.

Enable reset is optional, and cannot be selected until a trigger is defined. You can also specify a command to be run on the endpoint system when the threshold is reset.

Use the online help to assist you in setting your threshold values. Next, you will want to find out about running commands when a threshold is triggered or reset.

Specifying the collection interval for a monitor

When you are setting thresholds for the metrics you have selected to monitor, you should consider how often you want the data to be collected. Click the **Collection Interval** tab to select whether to use the same collection interval for all metrics, or to use different collection intervals for each metric type. For example, you may want to collect job count data every 30 seconds, but you may want to collect the job log message data every 5 minutes because job log message data typically takes longer to collect than job count data.

If you want to monitor numeric and status metrics for less than 5 minutes, you must select **Use different collection interval**.

Note: The job count, job numeric values, and summary numeric values metrics must have an equal or lesser collection interval than the collection interval for the job status metric.

Click the **Metrics** tab to specify the number of collection intervals for each threshold.

Running commands for monitors

When you create a new monitor, you can choose to run commands on endpoint systems when thresholds are triggered or reset. A **threshold** is a setting for a metric that is being collected by a monitor. **Threshold commands** run automatically on your endpoint system when threshold events occur.

Threshold commands are different from any threshold actions you may have set. Threshold actions happen on your PC or central system, while threshold commands run on your endpoint systems.

What can I do with threshold commands?

Use threshold settings to automate any

OS/400

command you want to run when thresholds are triggered or reset. For example, suppose you are running a job monitor and a certain batch job that is supposed to complete before the first shift begins is still running at 6:00 a.m. You could set up Threshold 1 to send a page command to a system operator to look at it. You could also set up Threshold 2 to send a command to end the job if it is still running at 7:00 a.m.

In another situation, you may want to notify your operators with a page command when the job monitor detects that the wait time values for the FTP and HTTP servers have reached a median level. If the FTP server jobs end, you could restart the server with a start server command (such as STRTCPSVR *FTP). You can set thresholds and specify commands to automatically handle many different situations. In short, you can use threshold commands in any way that makes sense for your environment.

How do I set threshold commands?

On the **New Monitor-Metrics** page, click the **Thresholds** tab to enable your thresholds. Before you can set any threshold commands, you must turn your thresholds on by selecting the **Enable trigger** option. You can then use this window to enter any commands you want to run when the threshold trigger value is reached. Select the **Enable reset** option if you want to specify a command to run when the threshold reset value is reached.

Management Central monitors allow you to specify any batch commands to run on the server when the threshold is triggered or reset. You can enter

an OS/400

command name and click **Prompt** (or press F4) for assistance in specifying the parameters for the command. You can even use replacement variables (such as &TIME or &NUMCURRENT) to pass information to the command, such as the time and actual value of the metric.

Next, you will want to find out about logging events when a threshold is triggered or reset.

Logging events for a monitor

When you have specified the threshold values for your monitor, you can click the **Actions** tab to select event logging and PC actions to be taken when a threshold is triggered or reset. Some of the actions you can select are:

Log event	Adds an entry to the event log on the central system when the threshold is triggered or reset. The entry 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 when an event occurs.
Open monitor	Displays a list of systems that are being monitored for the specified metrics and a list of the values for the specified metrics as they are collected for each system.
Sound alarm	Sounds an alarm on the PC when the threshold for the monitor is triggered.

Run OS/400 command

If you have specified a server command to run when the threshold for this monitor is triggered or reset, those commands run only during times that actions are applied. This option cannot be changed from the Actions page. If you do not want the command to run, you can remove the command from the Metrics page. Whenever you manually reset a threshold, you can select whether or not to run the specified reset command.

When you have specified the actions that you want to take when a threshold value is reached, you are ready to specify when to apply the thresholds and actions you have selected.

Applying thresholds and actions for a monitor

When you have specified your threshold values and chosen to log events, you can select whether to always apply these thresholds and actions, or to apply them only on the days and times you choose.

If you select to apply thresholds and actions during specified times, you must select the starting time and the stopping time. If the central system is in a different time zone from the endpoint system, you should be aware that the thresholds and actions will be applied when the starting time is reached on the endpoint system that you are monitoring. You must also select at least one day that you want the thresholds and actions to apply. The thresholds and actions apply from the selected starting time on the selected day until the next occurrence of the stopping time on the endpoint system.

For example, if you wanted to apply your thresholds and actions overnight on Monday night, you could select 11:00 p.m. as the **From** time and 6:00 a.m. as the **To** time. You would check Monday. The actions you specified would occur whenever the specified thresholds were reached at any time between 11:00 p.m. on Monday and 6:00 a.m. on Tuesday.

Use the online help to finish creating your monitor. The online help also contains instructions on starting your monitor. Then you will be ready to view your monitor results.

Viewing monitor results

When you have specified when to apply the thresholds and actions you have defined for your monitor, you are ready to view your monitor results.

Double-click the monitor name to open the Monitor window. In the Monitor window, you can see the overall status of the monitor and a list of the target systems that the monitor is running on.

A list of the target systems (Summary Area) in the upper pane shows the status of the monitor on each system and the date and time that the monitor data was last collected. The Summary Area also shows additional information related to the specific metrics being collected.

When you select a system, detailed information about what is being monitored on that system is shown in the lower pane. For example, if you are viewing a Job Monitor window, the list of jobs in the lower pane shows the triggered events, the last event that occurred, and the actual values for the specified metrics.

You can select **Columns** from the **Options** menu to display additional columns of information. Click Help on the Columns dialog to see a description of each column.

From the list in the lower pane, you can right-click any item and select from a menu of actions that can be performed. For example, if you select a job, you can select reset triggered events, display job properties, hold, release, or end a job.

You can view all your monitors, as well as all your Management Central tasks, remotely with iSeries Navigator for Wireless.

Remember to use other Management Central functions to manage your multiple servers easily and efficiently!

Reset triggered threshold for a monitor

When you are viewing the job monitor results, you can reset a triggered threshold.

You can choose to run the server command that was specified as the reset command for this threshold, or you can choose to reset the threshold without running the command.

You can also choose to reset thresholds at the job level, the summary level, the system level, or the monitor level:

Job level
Select one or more jobs in the Job Area of the Job Monitor window. Select **File**, select **Reset with Command** or **Reset Only**, and then select **Jobs**. The thresholds for the selected jobs will be reset. Other thresholds that have been triggered for this monitor remain in the triggered state.

Summary level
Select one or more systems in the Summary Area of the Job Monitor window. Select **File**, select **Reset with Command** or **Reset Only**, and then select **Summary**. The thresholds for job count, job numeric values metrics, and summary numeric values metrics will be reset. Other thresholds that have been triggered for this monitor remain in the triggered state.

System level
Select one or more systems in the Summary Area of the Job Monitor window. Select **File**, select **Reset with Command** or **Reset Only**, and then select **System**. All thresholds for this monitor on the selected systems will be reset. Thresholds for this monitor that have been triggered on other systems remain in the triggered state. Any selections you have made in the Job Area are ignored.

Monitor level
Select **File**, select **Reset with Command** or **Reset Only**, and then select **Monitor**. All thresholds for this monitor on all systems will be reset. Any selections you have made in the Summary Area or the Job Area are ignored.

Remember to use other Management Central functions to manage your multiple servers easily and efficiently!

Event Log

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 list 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:

Indicates that this event is a trigger event for which you did not specify a server command to be run when the threshold was triggered.

Indicates that this event is a trigger event for which you specified a server command to be run when the threshold was triggered.

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 specify which columns of information you want to display in the list and the order in which you want the columns to be displayed by selecting **Options** from the menu bar and then selecting **Columns**.

You can view the properties of an event to get more information about what triggered the event log entry.

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.

Packaging and sending objects with Management Central

Use Management Central to package and send files and programs!

You can specify whether or not to include subfolders in the package. You can also specify whether to keep or replace any file that already exists on the target system. You can start the send task immediately or click **Schedule** to specify when you want the task to start.

You can simply select and send files and folders without creating a package definition. However,

a package definition allows you to group together a set of OS/400 objects or Integrated File System (IFS) files. The package definition also allows you to view this same group of files as a logical set, or as a physical set, by taking a snapshot of the files to preserve them for later distribution.

Why should I use Management Central to package and send objects?

Sending files to another system or group of systems is a simple point-and-click operation in iSeries Navigator. If you expect to send the same files again at a later date, you can create a package definition, which can be saved and

reused at any time to send the defined set of files and folders to multiple endpoint systems or system groups. If you choose to create a snapshot of your files, you can keep more than one version of copies of the same set of files. Sending a snapshot ensures that no updates are made to the files during the distribution, so that the last target system receives the same objects as the first target system.

Another benefit of

using Management Central to package and send objects

is that you can run a command when the distribution of the package is complete. This means that you can:

- Distribute a batch input stream and run it.
- Distribute a set of programs and start your application.
- Distribute a set of data files and run a program that acts on that data.

Detailed task help is available from the iSeries Navigator window. Just click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . .?** to find out what you can do and where you need to be in the iSeries Navigator window to make it happen.

Use Management Central to do more than package and send objects. You can do many of the tasks required to manage your systems quickly and efficiently with this powerful tool.

Sharing with other users in Management Central

Sharing saves you time, makes system administration easier, and reduces the number of redundant tasks you need to do. Sharing allows users to use (or share) the same items —

monitors, monitor events,

system groups, definitions, and system administration tasks. You can even set your user preferences to share **all** the new tasks you create.

A user may be given special authority (administered under Host Applications in Application Administration) to view all Management Central tasks, definitions, job monitors, message monitors, file monitors, B2B activity monitors, and system groups.

Only the owner of an item can change the level of sharing. The owner can specify any of the following levels of sharing:

None Other users cannot view this item. Only the owner of the item or a user with special authority administered under Host Applications in Application Administration can view this item. Users with this special authority, called Management Central Administration Access, can view all Management Central tasks, definitions, job monitors, message monitors, and system groups.

Read-Only Other users can view this item and use it. Other users can create a new item based on this one and make changes to the new one as needed. However, other users cannot delete or change this item in any way. If you are the owner of a monitor and have specified actions (such as opening the event log window or sounding an alarm on the PC), these actions occur for all users of the monitor whenever a threshold is triggered or reset. The other users cannot change these actions. If the item (a task

or a monitor

) is running, other users cannot stop it.

Controlled Other users can start and stop this

task or monitor.

Only the owner can delete the item or change any properties of this item, including the level of sharing. Other users can also view this item and use it to create a new item based on this one. If you are the owner of a monitor and have specified actions (such as opening the event log window or sounding an alarm on the PC), these actions occur for all users of the monitor whenever a threshold is triggered or reset. The other users cannot change these actions. Any actions that are associated with running a monitor that was created by another user (the owner) runs under the authority of the owner. Therefore, as the owner, you could be sharing a monitor with someone who does not have the same level of authority as you.

Full Other users can change and delete this

definition or system group.

Other users can also view this item and use it to create a new definition or system group.

What can I do with sharing and Management Central?

What you can do with sharing depends on the needs of your work environment. Consider these examples:

-

  You can share job monitors, message monitors, file monitors, and B2B activity monitors. Only system monitors cannot be shared.

  When you share monitors, others can use the monitors that you set up to measure

  the monitored activity

  on the systems in your network. If you choose **Read-Only** sharing, others can open the monitor and its event log, and they can view the properties of the monitor. If you choose **Controlled** sharing, others can also start or stop the monitor. The level of sharing that you specify when you create a monitor also applies to any events that are logged when a threshold is triggered or reset. You can change the level of sharing for events after they have been logged. For more information about using monitors to track what your systems are doing, see Management Central monitors.
- **You can share system groups.**
  When you share system groups, other users can view the system groups and use them to perform authorized actions. Unless you specify **Full** sharing, you control the endpoint systems in the system group for all authorized users. This ensures that the system group is always up to date. Suppose you created a system group called “West Coast Systems.” If you chose to share that group, all system operators could use that system group to work with the West Coast systems. If you specify **Full** sharing, other users may update the contents of that group.
- **You can share definitions.**
  Part of your job may include maintaining a “run book” of commonly used commands. You can share the command definitions in that run book to ensure that the commands your system operators run are accurate. If you need to make a change to one of those commands, you would only need to do it once. Your users can share that one set of accurate commands.

You can also share package definitions, product definitions, and user definitions. By sharing definitions, you save other users the time it would take to create their own definitions.

- **You can share tasks.**
  Tasks are long-running actions in Management Central. You can share any actions that have been created and allow users to see the status of tasks. For example, suppose you needed to install 50 fixes on a system group containing 50 systems. If you shared that task, you could start the task and then go home. Let the second shift operator see the status on her PC while you relax at home!
- **You can use global sharing to share all tasks.**
  Use global sharing to specify the level of sharing for all your system administration tasks — None, Read-Only, or Controlled sharing. You access global sharing through the User Preferences dialog by right-clicking on Management Central. When you specify a value other than None, the sharing value applies to all future tasks. Existing tasks are not affected. For example, suppose you are in an environment where you are part of a five-person team that works around the clock. If you chose to globally share your tasks at the Controlled level, your team could see what you did and work with the tasks you started — even when you are not there.

Remember, you can use Management Central to do many of the tasks required to manage your systems quickly and efficiently.

Scheduling tasks or jobs with Management Central scheduler

iSeries Navigator provides two different tools you can use to schedule tasks or jobs: an integrated scheduler (the **Management Central Scheduler**) and the **Advanced Job Scheduler**. To find out about these two tools, keep reading.

What is the Management Central Scheduler and why should I use it?

iSeries Navigator provides an integrated scheduler, the Management Central scheduler, to organize when you want your tasks to occur. You have the option of choosing to perform a task immediately or choosing a later time.

You can use the Management Central scheduler to schedule a variety of tasks. For example, you could automate the process of collecting an inventory (for example, of hardware, software, or fixes) on whichever day fits your operating schedule. You might schedule such a collection to occur every Saturday night at 10 PM. You could also schedule to clean up the save files and cover letters of the fixes from your systems on the first of every month. Or you might simply want to install a set of fixes once. Using the scheduler function gives you the flexibility to do your work when it's convenient for you to do it. In addition, you can use the Management Central scheduler to do almost any task in Management Central. For example, you can schedule when to do any of the following tasks:

- Create, delete, edit, and send users and groups across multiple endpoint systems
- Collect inventory on selected endpoint systems and system groups
- Collect system values inventory on selected endpoint systems and system groups; then compare and update system values to those on a model system
- Run commands on selected endpoint systems and system groups
- Delete the save files and cover letters for selected fixes on selected endpoint systems and system groups
- Send fixes or packages of files and folders to selected endpoint systems and system groups
- Start installing fixes, uninstalling fixes, or installing fixes permanently
- Start and stop Collection Services on selected endpoint systems and system groups

To get started using this tool, see the Management Central Scheduler topic

or the detailed task help that is available from the iSeries Navigator window. (Just click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . .?** to find out what you can do and where you need to be in the iSeries Navigator window to make it happen.)

What is the Advanced Job Scheduler and why should I use it?

The Advanced Job Scheduler is a separate licensed program (5722-JS1) that you can install and use to schedule tasks and jobs. This scheduling tool provides more calendar features and offers greater control over scheduled events. If you have Advanced Job Scheduler installed, you simply click the Schedule button from any iSeries Navigator dialog to schedule tasks and jobs. To find more information about installing and using this tool, see the Advanced Job Scheduler topic.

Don't forget to use Management Central to do more than schedule tasks. You can do many of the tasks required to manage your systems quickly and efficiently with this powerful tool.

Management Central Scheduler

iSeries Navigator lets you choose which scheduler you want to use for scheduling your tasks. Scheduling a task with Management Central is as easy as clicking a button — the **Schedule** button! To schedule a later time to perform a task, click **Schedule** from the appropriate dialog. Your scheduling information is stored on the central system and submitted from there. No scheduling function is needed at the endpoint system.

You can schedule a task to run just once, in which case the task runs a single time beginning at the specified date and time. Or, you can select any of the following options:

- **Daily**
  The task runs every day at the specified time beginning on the specified date.
- **Weekly**
  The task runs every week at the specified time beginning on the specified date. You may either accept the default (today's date) or specify the day of the week when you want the task to run.
- **Monthly**
  The task runs every month at the specified time beginning on the specified date. You may either accept the default (today's date) or specify a day of the month (1-31), First day, or Last day.

You can schedule any task for which a Schedule button is available. For example, you can schedule a specific time to collect inventory. If you want full calendar management, you should choose Advanced Job Scheduler.

Advanced Job Scheduler

The Advanced Job Scheduler licensed program (5722-JS1) is a robust scheduler that allows unattended job processing 24 hours a day, 7 days a week. Choose standard, fiscal, or user-defined calendars to quickly describe and set up any job scheduling scenario that you need in the Advanced Job Scheduler. You may also view job completion history and manage notification of a job's status.

It is not necessary to install the Advanced Job Scheduler licensed program on each endpoint system in your Management Central network. When you install the Advanced Job Scheduler on the central system, jobs or tasks that you define on an endpoint system will gather job information that is needed from the central system. However, you must set up all job definition information on the central system.

If systems in your network have the Advanced Job Scheduler installed locally, you may schedule tasks outside of the Management Central network. Under **My Connections** in iSeries Navigator, you have access to the Advanced Job Scheduler on that local system when you expand **Work Management**.

The following information will help you manage the Advanced Job Scheduler. You first need to install the licensed program, and then read about the tasks that allow you to customize the Advanced Job Scheduler. Finally, the remainder of the tasks allow you to work with and manage this scheduler.

- **Install the Advanced Job Scheduler**
  Follow these steps to install the Advanced Job Scheduler.
- **Customize the Advanced Job Scheduler**
  If you have installed the program and this is your first time using the Advanced Job Scheduler, customizing is your next step. See how to specify the general properties that are used by the Advanced Job Scheduler, according to your needs.
- **Schedule job dependencies**
  Set up jobs or groups of jobs that are dependent on each other. You can select the type of dependency that reflects how jobs are processed in your environment.
- **Monitor job activity**
  View a job or a job group's history or status. You can also set up the activity retention, which is how long you want to retain the activity records for a job.
- **Monitor messages**
  Add message identifiers to any command within the command list of a job to monitor messages.
- **Schedule jobs**
  Use Advanced Job Scheduler to create, schedule, and work with jobs. Find out how to set up and schedule a series of jobs that run consecutively in a specified order. Jobs within a job group require completion before the next job is submitted for processing.
- **Troubleshoot the Advanced Job Scheduler**
  When a job does not run at the scheduled time, find out what you can do.
- **Compare the Advanced Job Scheduler to the OS/400 scheduler**
  Find out the differences between the Advanced Job Scheduler and the OS/400 scheduler.
- **Job Scheduler frequently asked questions**

  homepage.
  Read about the commonly asked questions that identify how to do certain functions with Advanced Job Scheduler.

Installing Advanced Job Scheduler

To install the Advanced Job Scheduler you must have previously installed iSeries Access. Then, follow these steps to install the Advanced Job Scheduler:

1. From your **iSeries Navigator** window, click **File** from the menu bar.
2. Select **Install Plug-Ins**.
3. Select the source system where the Advanced Job Scheduler is installed and click **OK**. Check with the system administrator if you are not sure what source system to use.
4. Enter your OS/400 **User ID** and **Password**, and click **OK**.
5. Select **Advanced Job Scheduler** from the Plug-in selection list.
6. Click **Next** and then click **Next** again.
7. Click **Finish** to complete and exit the setup.

You have now installed the Advanced Job Scheduler.

To locate the scheduler, follow these steps:

1. Expand **Management Central**.
2. Click **Scan Now** in response to the message that iSeries Navigator has detected a new component. You may see this message again when you access systems from **My Connections**.

3. Expand **My Connections** —> the iSeries server that has the Advanced Job Scheduler licensed program installed —> **Work Management** —> **Advanced Job Scheduler**.

When you have finished this preliminary work with the Advanced Job Scheduler, you are ready to begin customizing the Advanced Job Scheduler. See Advanced Job Scheduler to choose another task.

Customizing the Advanced Job Scheduler

To customize the Advanced Job Scheduler, select from the following tasks:

- **Assign the general properties**
  Specify how long to retain activity and log entries for the Advanced Job Scheduler, as well as the period that jobs will not be allowed to run. You may specify the working days that jobs will process, and whether an application is required for each scheduled job. If you have a paging product installed, you can also set up the command that will be used to send a page whenever a job completes or fails.
- **Create and work with applications/job controls**
  Applications are jobs that are grouped for processing. They are broader than job groups and do not necessarily process sequentially. Jobs in applications can process simultaneously and one job does not have to wait for another to process. All jobs within the application can be worked with and can have their own set of job defaults. Job controls are the defaults assigned to a job as you add it to the job scheduler as well as defaults used when the job is submitted.
- **Set up a calendar**
  Set up a calendar of selected days for scheduling a job or job group. This calendar can specify the dates to be used for scheduling a job, or it can be used in conjunction with other schedules.
- **Set up a holiday calendar**
  Set up a calendar for days that you do not want to allow processing for a job. Alternate days may be specified for each exception day, or processing can be skipped completely for that day. You can also add a holiday calendar to a scheduled job.
- **Work with library lists**
  Library lists are user defined lists of libraries that are used by the Advanced Job Scheduler when a job is processing.
- **Work with command variables**
  A command variable (previously known as a parameter) is a variable you may store and use in jobs submitted through the Advanced Job Scheduler. Examples of command variables include the beginning of each month, a division number, a company number, and so on.

For more information about these and other properties, refer to the online help for the Advanced Job Scheduler in iSeries Navigator. When you have finished this preliminary work with the Advanced Job Scheduler, you are ready to begin scheduling jobs. See Advanced Job Scheduler to choose another task.

Assigning the general properties for the Advanced Job Scheduler: Assign the General properties used by Advanced Job Scheduler. You may specify how long to retain activity records for jobs, as well as the period that jobs will not be allowed to run. You may specify the working days that jobs are allowed to process, and whether an application is required for each submitted job. You may have a paging product installed which allows you to receive a page (message) when a job ends. You can define the paging command that will send a page whenever a job completes or fails.

To set up the General properties for the Advanced Job Scheduler, follow these steps:

1. Expand **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler** and select **Properties**.
3. Specify the **Activity Retention**. The activity retention is how long you want to retain the activity records for jobs. The possible values are 1 to 999 days or occurrences. Click **Days** to specify if you want to keep activity for a certain number of days, or click **Occurrences per job** if you want to keep activity for a certain number of occurrences per job.
4. Specify the **Log retention**. The log retention specifies, in days, how long you want to retain Advanced Job Scheduler log entries.

5. You may specify a **Reserved period**.
   Jobs will not run during this time.
6. Specify the working days from the list.
   If a day is selected, it is designated as a working day and may be referenced when scheduling jobs.
7. Click **Application required for scheduled job** to designate whether an application is required for each scheduled job.
   Applications are jobs that have been grouped together for processing. This cannot be selected if existing jobs do not contain an application.
8. Click **Base periodic frequency on start time** to base the next run time on the start time for jobs that are scheduled to run periodically. For instance, a job is to run every 30 minutes, starting at 8:00 am. (For a job to run around the clock, you would also specify 7:59 am as the ending time.) The job runs for a total of 20 minutes. With this field checked, the job would run at 8:00 am, 8:30 am, 9:00 am, and so on. If this field is not checked, the job would run at 8:00 am, 8:50 am, 9:40 am, 10:30 am, and so on.
9. You may specify the values for the **paging command**. This step only pertains if you have a paging product installed. The paging command is specified by your paging software and is used to send a pager message to a recipient that you specify. The command you specify is used to send pager messages for normal and abnormal completions of job scheduled entries.

If you chose to have an application required for certain jobs, go to working with applications. If your job will not require applications, go to setting up a calendar, or see customizing the Advanced Job Scheduler to choose another task.

Creating and working with applications/job controls for the Advanced Job Scheduler: **Applications** are jobs that have been grouped together for processing. For example, you might have a series of jobs that you use for payroll that you want to group together for an accounting process.

Job Controls are the defaults assigned to a job as you add it to the job scheduler as well as defaults used when the job is submitted. Job control defaults include such things as calendar, holiday calendar, job queue, job description and so on.

You can display all the existing applications/job controls on your system. You can add a new application/job control, add a new application/job control based on an existing one, or remove an application/job control. You can also select an application/job control and display its properties to make changes.

To create a new application/job control, follow these steps:

1. Expand **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler** and select **Properties**.
3. Click the **Applications/Job Controls** tab.
4. Click **New** and type a name for the application.
5. You may type a description for the application.
6. Choose the contacts for the application.
   Contacts are the names of users who are contacted if you have a problem with a job within the application. You may specify up to 5 contacts per application. You may also choose to add or remove contacts from the contact list.
7. You may type additional information to help you identify the application.
   The information is associated with the new application. This information may be useful if any problems occur.

See customizing the Advanced Job Scheduler to choose another task.

Setting up a calendar for the Advanced Job Scheduler: A **scheduling calendar** is a calendar of selected days that you may use for scheduling a job or job group. You may display scheduling calendars, add a new scheduling calendar, add a new scheduling calendar based on an existing one, or remove an existing calendar, provided it is not in use by a currently scheduled job.

You may select a calendar and display its properties to make changes. When you select a calendar, the details of the calendar are displayed under Details.

To set up a scheduling calendar, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler** and select **Properties**.
3. Click the **Scheduling Calendars** tab.
4. Click **New** and type a name for the calendar.
5. You may type a description for the calendar.
6. Choose a **Reference calendar** if applicable.
   This is a calendar that was previously set up, and its properties will be applied to the new calendar as if you merged the two calendars. You will not have reference calendars if this is your first time using the Advanced Job Scheduler.
7. Select the dates that you want to include on your calendar.
   You must specify whether each date you have selected is for the current year or for every year, before you can add another date to the calendar. Otherwise, any date you select will be unselected when you click a different date.
8. Specify if you want certain days of the week to be included on the calendar.

See customizing the Advanced Job Scheduler to choose another task.

Setting up a holiday calendar for the Advanced Job Scheduler: A **holiday calendar** is an exception calendar for days that you do not want to process an Advanced Job Scheduler job. Alternate days may be specified for each exception day that you specify in a holiday calendar. You may display holiday calendars, add a new holiday calendar, add a new holiday calendar based on an existing one, or remove an existing calendar, provided it is not in use by a currently scheduled job.

Predefined schedules can be used in holiday calendars. You could create a schedule THIRDFRI that has a frequency of the third Friday of each month. When you use THIRDFRI in a holiday calendar, you cause all jobs that use this holiday calendar to not run on the third Friday of each month. One or more schedules can be used in a holiday calendar. Dates that are generated by the schedule will be shown on the calendar with a black border.

You may select a calendar and display its properties to make changes. When you select a calendar, the details of the calendar are displayed under Details.

Setting up a holiday calendar

To set up a holiday calendar, follow these steps:

1. Expand **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler** and select **Properties**.
3. Click the **Holiday Calendars** tab.
4. Click **New** and type a name for the calendar.
5. You may type a description for the calendar.
6. Choose a **Reference calendar** if applicable.
   This is a calendar that was previously set up, and its properties will be applied to the new calendar as if you merged the two calendars. You will not have reference calendars if this is your first time using the Advanced Job Scheduler.

7. Select the dates that you want to include on your calendar.
   You must specify whether each date you have selected is for the current year or for every year, before you can add another date to the calendar. Otherwise, any date you select will be unselected when you click a different date.
8. Select an alternate day for the job to run. You may choose the previous working day, next working day, a specific date or not at all. To select a specific date, click **Specific alternate date**, and type the date.
9. Select specific days of the week to be included on the calendar.

Adding a schedule to a holiday calendar

To add a holiday calendar to a scheduled job, follow these steps:

1. Expand **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler** and select **Properties**.
3. Click **Holiday Calendars** tab.
4. Select the holiday calendar and click **Properties**.
5. From the lower lefthand corner of the tab, click **Schedules**.
6. Select the appropriate schedule and click **Add**.
7. To change the **Alternate day**, right-click the schedule from the **Selected Schedules** list and select the correct **Alternate Day**.

See customizing the Advanced Job Scheduler to choose another task.

Working with library lists for the Advanced Job Scheduler: A **library list** is a user-defined list of libraries that is used by the Advanced Job Scheduler job to search for information it needs while processing. You may display library lists, add a new library list, add a new library list based on an existing one, or remove a library list, provided that it is not being used by a currently scheduled job.

You may select a list and display its properties to make changes. You may place up to 250 libraries on the library list.

To add a new library list, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler** and select **Properties**.
3. Click the **Library Lists** tab.
4. Click **New** and type a name for the library list.
5. You may type a description for the library list.
6. Click **Browse** to see a list of existing libraries, and select a library.
7. Click **Add** to add the list of selected libraries.

See customizing the Advanced Job Scheduler to choose another task.

Working with command variables for the Advanced Job Scheduler: **Command variables** (previously known as parameters) are variables that you store in the Advanced Job Scheduler and use in jobs submitted through the Advanced Job Scheduler. Command variables contain information that will be replaced inside the command string of a scheduled job. Examples of command variables include the beginning of each month, a company division number, a company number and so on. You may display command variables, add a new command variable, add a new command variable based on an existing one, or remove a command variable, provided it is not currently in use by a scheduled job.

You may select an existing command variable and display its properties to make changes.

To add a new command variable, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler** and select **Properties**.
3. Click the **Command Variables** tab.
4. Click **New** and type a name for the command variable.
5. You may type a description for the command variable.
6. Type the length of the command variable. The length can range from 1 to 90.
7. Choose how you want to supply the replacement value:
   a. Specify the data to use for the command variable. You may use any character in this field. The number of characters in the data cannot be greater than the length specified in the Length field.
   b. Type a formula to calculate the date. (For examples, see the online Help.)
   c. Type the program name that you use to retrieve the replacement value.
   d. Type the library that you use to retrieve the replacement value.
   e. Choose whether you want the replacement value retrieved from the system operator at run time.

See customizing the Advanced Job Scheduler to choose another task.

Scheduling jobs with the Advanced Job Scheduler

The following information will help you manage the Advanced Job Scheduler when you want to create, schedule, and work with jobs.

- **Create and schedule a job**
  Schedule a job and specify the commands that are associated with the job. You can also specify starting and ending commands to run a special version of a scheduled job.
- **Create and schedule job groups**
  Set up and schedule a series of jobs that run consecutively in a specified order. Jobs within a job group require completion before the next job is submitted for processing.
- **Create a temporary scheduled job**
  Run a scheduled job now or in the future in addition to its normal schedule.
- **Create predefined schedules**
  Create schedules that contain information needed to schedule a job or calculate exception dates within a holiday calendar.

See Advanced Job Scheduler to choose another task.

When a job does not run at the scheduled time, you can troubleshoot specific areas to find out why.

Create and schedule a job: To create and schedule a new scheduled job, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler**.
3. Right-click **Scheduled Jobs** and select **New Scheduled Job**.

Refer to the online help for more information as you fill in details for the new job. See scheduling jobs with the Advanced Job Scheduler or Advanced Job Scheduler to choose another task.

Create and schedule a job group: Job groups are jobs that are grouped together to run consecutively in the order specified. A normal completion is required for each job in the group before the next job in the group is submitted for processing. If any job in the group does not complete normally, the processing stops for that group.

To create and schedule a new job group, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler**.

3. Right-click **Job Groups** and select **New Job Group**.

Refer to the online help for more information as you fill in details for the new job group. See scheduling jobs with the Advanced Job Scheduler to choose another task.

Create a temporary scheduled job: At times it may be necessary to run a scheduled job now or in the future in addition to its normal schedule. Use the Submit Job using Job Scheduler (SBMJOBJS) command, option 7 from Work with Jobs display, or the **Run** option from iSeries Navigator. It may also be necessary to process only a portion of the commands in the command list when setting up this special run.

The SBMJOBJS command allows you to specify the Starting and Ending command sequences. For instance, JOBA has 5 commands, sequences 10 through 50. You can specify on the SBMJOBJS command to start with sequence 20 and end with sequence 40. This would bypass sequence 10 and 50.

iSeries Navigator allows you to select a starting command within the command list and an ending command.

To run a special version of a scheduled job with iSeries Navigator, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler**.
3. Click **Scheduled Jobs** to list jobs.
4. Right-click on the scheduled job and select **Run**.
5. Specify whether to run the job now or in the future.
6. Select the starting and ending commands.

See scheduling jobs with the Advanced Job Scheduler to choose another task.

Create predefined schedules: You can create schedules that contain information needed to schedule a job or calculate exception dates within a holiday calendar.

For instance, you can create an ENDOFWEEK schedule that contains the day of the week to run, along with any additional calendars. The ENDOFWEEK schedule can then be used by all the jobs that match that scheduling frequency. You can access this feature only through iSeries Navigator.

You can use those same predefined schedules that are used in a job with your holiday calendars. You can create a schedule THIRDFRI that has a frequency of the third Friday of each month. When you use THIRDFRI in a holiday calendar, you cause all jobs that use this holiday calendar to not run on the third Friday of each month. You can use one or more schedules in a holiday calendar. Dates that are generated by the schedule will be shown on the calendar with a black border.

To set up a schedule, follow these steps:

1. Expand **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler** and select **Properties**.
3. Click the **Schedules** tab.
4. Click **New** and type a name for the schedule.
5. You may type a description for the schedule.
6. Select the frequency and dates that you want to include in your schedule, as well as any additional calendars.

Refer to the online help for more information as you fill in details for the new schedule.

To add a schedule to a scheduled job, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.

2. Right-click **Advanced Job Scheduler**.
3. Click **Scheduled Jobs** to list jobs.
4. Right-click the scheduled job and select **Properties**.
5. Click the **Schedule** tab.
6. From the upper right hand corner of the tab, select the appropriate Schedule option.

To add a schedule to a holiday calendar, follow these steps:

1. Expand **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler** and select **Properties**.
3. Click the **Holiday Calendars** tab.
4. Select the holiday calendar and click **Properties**.
5. From the lower left hand corner of the tab, click **Schedules**.
6. Select the appropriate schedule and click **Add**
7. To change the **Alternate day**, right-click the schedule from the **Selected Schedules** list and select the correct **Alternate Day**.

See scheduling jobs with the Advanced Job Scheduler to choose another task.

Job dependencies

The Advanced Job Scheduler allows you to set up dependencies that reflect how jobs are processed in your environment. Dependencies determine when a job or group of jobs can run. You can select to have all dependencies met before a job can run, or you can have at least one dependency met before the job can run. Dependencies include the following:

- **Job dependencies**
  Job dependencies refer to predecessor and successor relationships for jobs. Predecessor jobs are those that must run before the successor job will run. A successor job is a job that runs after all the predecessor jobs have been processed. There can be multiple successor jobs for a single predecessor job as well as multiple predecessor jobs for a single successor job.
- **Active dependencies**
  Active dependencies are lists of jobs that cannot be active when the selected job is to be submitted. If any of the jobs are active, the Advanced Job Scheduler will not let the specified job run. The selected job will be delayed until all the jobs in the list are inactive.
- **Resource dependencies**
  Resource dependencies are based on several things. Each type that follows describes the areas that are checked. Following are the types of resource dependencies:

  File
  The job is dependent on the existence or non-existence of a file and whether it meets the specified allocation level to be processed. It can also check whether records are present before the job is processed. For instance, JOBA can be set up so that it will only run when file ABC exists, and the file can be allocated exclusively and if records are present in the file.

  Object
  The job is dependent on the existence or non-existence of an object and whether it meets the specified allocation level to be processed. For instance, JOBA can be set up so that it will only run when data area XYZ exists.

  Hardware configuration
  The job is dependent on the existence or non-existence of a hardware configuration and its status to be processed. For instance, JOBA can be set up so that it will only run when device TAP01 exists and has a status of Available.

Network file
The job is dependent upon the status of a network file in order to be processed.

Subsystem
The job is dependent upon the status of a subsystem in order to be processed.

To work with job dependencies, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Expand **Advanced Job Scheduler**.
3. Click **Scheduled Jobs**.
4. Right-click the **Job Name** whose dependencies you want to work with.
5. Select one of the following: **Job Dependencies, Active Dependencies or Resource Dependencies**. Refer to the online help for more information.

See Advanced Job Scheduler to choose another task.

Monitoring job activity for the Advanced Job Scheduler

The Advanced Job Scheduler allows you to view your jobs activity through the following:

Scheduled Job Activity

The scheduled job activity allows you to specify how long the Advanced Job Scheduler activity records are to be retained. The possible values are 1 to 999 days or occurrences. You can specify to keep activity for a certain number of days, or for a certain number of occurrences per job. The following details about a scheduled job are displayed:

- Name
  The name of the scheduled job.
- Group
  The name of the job group for the job.
- Sequence
  The sequence number of the job within the group, if the job is in a job group.
- Completion Status
  The status of the job.
- Started
  When the job started running.
- Ended
  When the job ended.
- Elapsed Time
  The amount of time in hours and minutes the job took to process.

To specify the activity retention, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Expand **Advanced Job Scheduler**.
3. Right-click **Scheduled Job Activity** and select **Properties**.

To view the scheduled job activity details, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Expand **Advanced Job Scheduler**.
3. Double-click **Scheduled Job Activity**.

To view the scheduled job activity for a specific job, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Expand **Advanced Job Scheduler**.
3. Click **Scheduled jobs**.
4. Right-click the **Job Name** whose activity you want to display and select Activity.

Activity Log

The activity log displays activity within the scheduler such as a job added, changed, or submitted. Security violations, sequences processed by a scheduled job, and any errors received are displayed. The dates and times for the previous activities are also displayed. To view detailed message information, double-click on a date and time.

To view the activity log details, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Expand **Advanced Job Scheduler**.
3. Click **Activity Log**. The current day's entries are shown. To change the selection criteria, select **Include** from the Options menu.

To view the activity log for a specific job, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Expand **Advanced Job Scheduler**.
3. Click **Scheduled jobs**.
4. Right-click the **Job Name** whose activity log you want to display and select **Activity log**.

See Advanced Job Scheduler to choose another task.

Monitoring for messages with Advanced Job Scheduler

Each command in the command list of a job can have message identifiers that will be used for monitoring. When the job runs and an error message is issued that matches one of the messages entered for the selected command, the job logs the error but continues processing with the next command in the list.

If zeros are specified in either two or all four of the rightmost positions, such as ppmm00, a generic message identifier is specified. For example, if CPF0000 is specified, all the CPF messages are monitored.

To add message identifiers to a command, follow these steps:

1. Open **Work Management** from your **iSeries Navigator** window.
2. Right-click **Advanced Job Scheduler**.
3. Click **Scheduled Jobs** to list jobs.
4. Right-click the scheduled job and select **Properties**.
5. Select the command from the list and click **Properties**.
6. Click **Messages**.
7. Enter the message identifiers to monitor and click **Add**.

See Advanced Job Scheduler to choose another task.

Troubleshooting the Advanced Job Scheduler

Here are a list of items that you can review when a job does not run at the scheduled time:

Current fix level
The first thing you should verify is that your fixes are current. When you request fixes, be sure to request a list of all fixes. Not all fixes are included in the cumulative packages.

Check job monitor

- Job QIJSSCD should be active in the QSYSWRK subsystem. If it is not, process the STRJS command.
- The job monitor can be in a loop if the status of the job is RUN for over ten minutes. If it is in a loop, end the job with *IMMED, and start the job monitor again (STRJS command).
- If there is a message to answer, reply with a C (Cancel). The job monitor will go into a 90-second delay and then start monitoring again. Print the job log for the monitor job. This will contain the error messages.

Check the Advanced Job Scheduler log
Process the DSPLOGJS command for the job. Press F18 to go to the end of the list. Entries exist to explain why the job did not run. Examples of the entries include a resource failure, active or job dependency situation, or submission error.

Dependency on another job
If the job is dependent on another job, take option 10 from the Work with Jobs display to display job dependencies. Press F8 to list all predecessor jobs. A dependent job cannot run unless all the predecessor jobs show *YES in the Complete column.

Collecting these data samples will help in your problem analysis:

Error message conditions
Print the joblog for the interactive session, monitor job or scheduled job, depending where the error occurred.

Job schedule date is not correct
Process the DSPJOBJS command for the job with OUTPUT(*PRINT). Print a calendar report if a calendar is used within the job. Print a holiday calendar report if a holiday calendar is used within the job. Press the Print key to print the display of each fiscal calendar entry for the fiscal calendar used within the job.

Advanced Job Scheduler log
Always print the Advanced Job Scheduler log for the time period in question.

Files QAIJSMST and QAIJSHST
Files QAIJSMST and QAIJSHST in library QUSRIJS may need to be journaled before trying to reproduce the problem. Also, the QUSRIJS library may be needed by IBM support.

See Advanced Job Scheduler to choose another task.

Comparing the Advanced Job Scheduler to OS/400 scheduler

Features to look for when selecting a job scheduler product:

Automated job scheduling

- Flexibility in scheduling jobs
- Unattended (or attended) job processing 24 hours a day, 7 days a week, with total compliance to the schedules you set
- Natural extension of the iSeries operating system
- Complete control of how, when, and where a job is submitted
- Extensive job dependencies such as objects (existence of a file or records within a physical file), the activity or inactivity of other jobs, or the status of a line, controller, or subsystem
- Complete calendaring functions, including fiscal and holiday calendars
- Multiple runs per day

System and user-defined parameters

- Current date, submission date, previous date, and current time can be passed into application programs
- User-defined parameter values can be created, changed, and passed into application programs

Workload/history forecasting

- Forecasts all scheduled jobs to be run next week, next month, or next day
- Optimize production requirements
- Historical tracking and logging of all Advanced Job Scheduler activity

Network management

- Jobs can be set up on any iSeries server in the network to run on any other iSeries server on the network
- Provides complete job history of the job on the submitting system
- Group and dependent jobs can be submitted through the network

Report distribution and management

- Routing, monitoring, and controlling of all output reports generated by Advanced Job Scheduler or OS/400 operating system
- Spooled file distribution to multiple output queues or to remote systems with optional banner pages
- Spooled output can be duplicated or sent to any user on the iSeries network

Security

- Existing iSeries security may be utilized within Advanced Job Scheduler
- Specify who in your organization has authority to set up or change information about scheduled jobs
- Authority can be specified for either the individual functions of Advanced Job Scheduler or for specific jobs

Graphical user interface

- Point and click capabilities when scheduling a job
- Manage jobs
- Maintain dependencies
- Track scheduler activity and log information

Other key features

- Multiple commands per job
- Definition for job LDA (Local Data Area)
- Console monitor to run jobs in restricted state
- Check maximum run time for each job
- Interface directly to a message-based third-party paging system
- Submission and monitoring of System/36 procedures
- Provisions for full online documentation of each job
- Extensive cursor-sensitive help text on all displays

See Advanced Job Scheduler versus standard OS/400 scheduler

for comparison information.

See Advanced Job Scheduler to choose another task.

Chapter 6. Related information for Management Central

Listed below are the iSeries manuals and IBM Redbooks(TM) (in PDF format), Web sites, and Information Center *(categories or)* topics that relate to the Management Central topic. In addition to these resources, you can find more information about Management Central tasks and topics in the detailed task help in iSeries Navigator. Just click **Help** from the menu bar and select **Help Topics**. Select **What can I do with . . .?** to find out what you can do and where you need to be in the iSeries Navigator window to make it happen.

Redbooks

You can view the following Redbooks published by the IBM International Technical Support Organization (ITSO) to find out more information about Management Central:

- Managing AS/400 V4R4 with Operations Navigator

  Operations Navigator brings a Windows-like graphical interface to configuring, monitoring, and managing the OS/400 environment. This book gives you insight into the wide range of AS/400 functions available through the AS/400 iSeries Navigator graphical interface that comes packaged with AS/400 Client Access Express for Windows V4R4M0. It provides you with a moderate level overview of the AS/400 Operations Navigator's interface and functionality, correlates Operations Navigator functions with corresponding OS/400 command functions, and, in many cases, gives tips on how to use these functions. This publication is intended to help two sets of AS/400 users who have some level of management responsibilities for an AS/400 system: those familiar with the OS/400 command level interface to system facilities and those new to the OS/400, but who are familiar with Windows-like graphical interfaces to system facilities. Though Operations Navigator changed its name to iSeries Navigator at V5R2, the V4R4-level information in this Redbook is still a valuable overview of Management Central function.
- Management Central: A Smart Way to Manage AS/400 Systems

  Discover the benefits of Management Central and more. Management Central is a key component of Operations Navigator that provides AS/400 administrators with the ability to manage multiple AS/400 systems that are interconnected across a TCP/IP network. It provides several constructs, which help to manage groups of systems and their associated resources. This redbook discusses the capabilities of each of the functions that are available in V4R4, and introduces you to the graphical user interface way of managing the systems in your network. Find out how easy it is to manage your network with the click of a mouse!

Websites

There are a variety of Web sites you can use to find more information about Management Central. These include:

- iSeries Navigator

  In addition to Management Central function, iSeries Navigator provides a wide variety of tools to simplify iSeries management. Go to the iSeries Navigator homepage to find information about iSeries Navigator, including functional release overviews, news about technical conferences, and other hot topics. Click the link to Management Central for a variety of information including release updates, functional overviews, FAQs, and more. For information about installing and getting started with iSeries Navigator, be sure to see the iSeries Navigator topic in the Information Center.

© Copyright IBM Corp. 1998, 2002

- iSeries Navigator for Wireless

  Access Management Central functions on the go! The iSeries Navigator for Wireless homepage gives you more information about this exciting solution for pervasive computing. This homepage covers V4R5 and V5R1 releases. For V5R2 information, see the iSeries Navigator for Wireless topic in the Information Center.

To save a PDF on your workstation for viewing or printing:

1. Right-click the PDF in your browser (right-click the link above).
2. Click **Save Target As...**
3. Navigate to the directory in which you would like to save the PDF.
4. Click **Save**.

If you need Adobe Acrobat Reader to view or print these PDFs, you can download a copy from the Adobe Web site (www.adobe.com/products/acrobat/readstep.html)

.

Printed in U.S.A.