

iSeries Operations Navigator

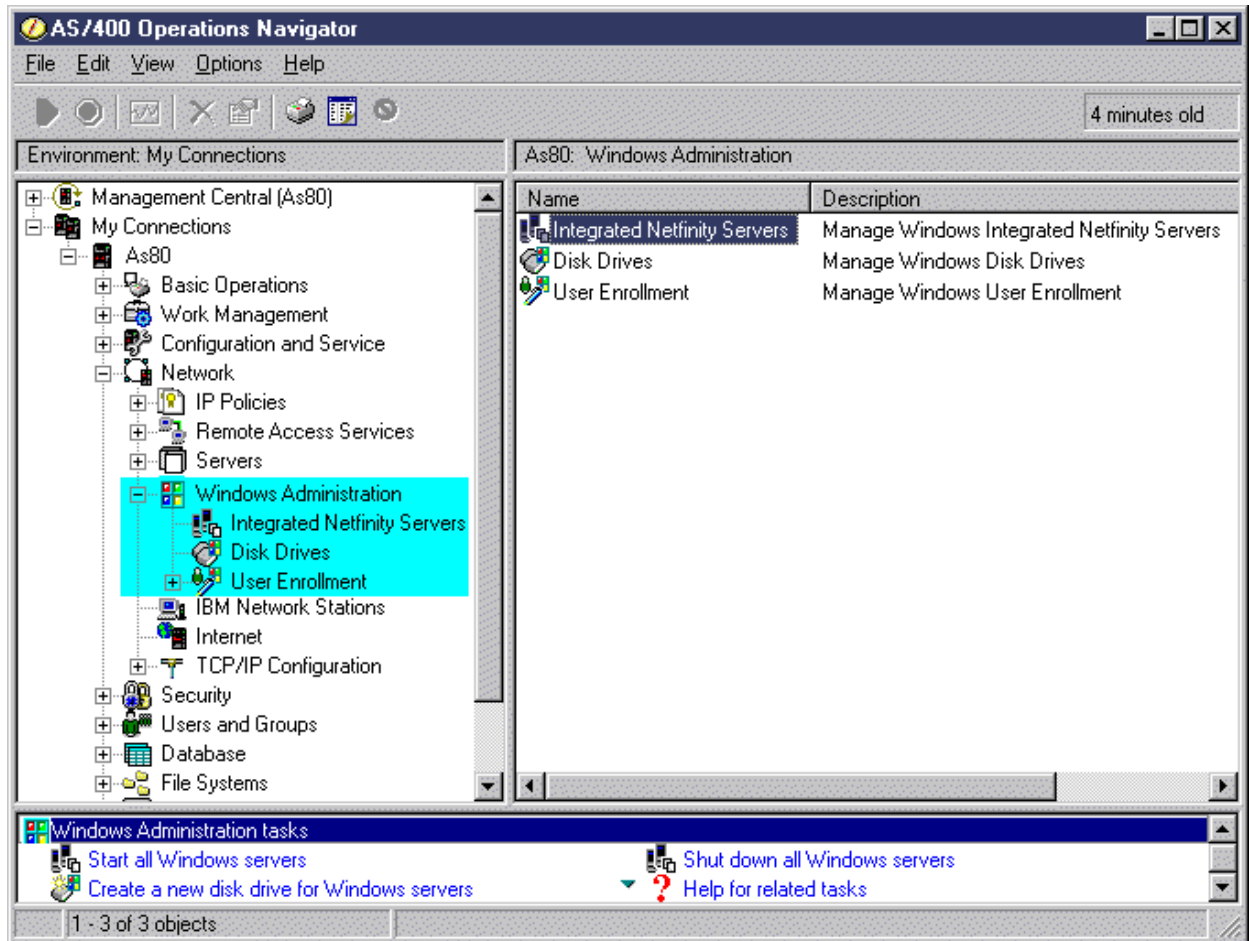
2001 Announcements
ITSO Technical Overview
May 2001
Part 2 of 2

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Operations Navigator: Windows Administration

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- Manage your Windows server (Windows NT or Windows 2000) on an Integrated Netfinity Server*
- Manage Disk Drives for Windows Server
- Manage Users and Groups Enrollment on Windows Server
- Taskpad Support



*Operations Navigator uses the term "Integrated Netfinity Server" to represent both the Integrated Netfinity Servers and Integrated xSeries Servers (internal and externally attached via Machine Type 1519)

Operations Navigator now has a section under Network call Windows Administration to Manage your Windows Server (Windows NT or Windows 2000) on the Integrated Netfinity Server. You can now use this interface to manage the following areas of the Windows Server.

1. Manage the Windows Server
2. Manage Disk Drives for Windows Server
3. Manage User Enrollment to Windows Server



Integrated Netfinity Servers

This section has been enhanced from V4R5 of Operations Navigator to allow the following CL commands Work with NWS Status (WRKNWSSTS), and Work with Network Servers (WRKNWSD). It also shows information in more grouped form and some places show more information than the CL commands does. The Integrated Netfinity Server section allows you to do Start, Shutdown, Start All, Shutdown All Windows Servers. It also allows you to view the Status and Properties of the Servers

Disk Drives

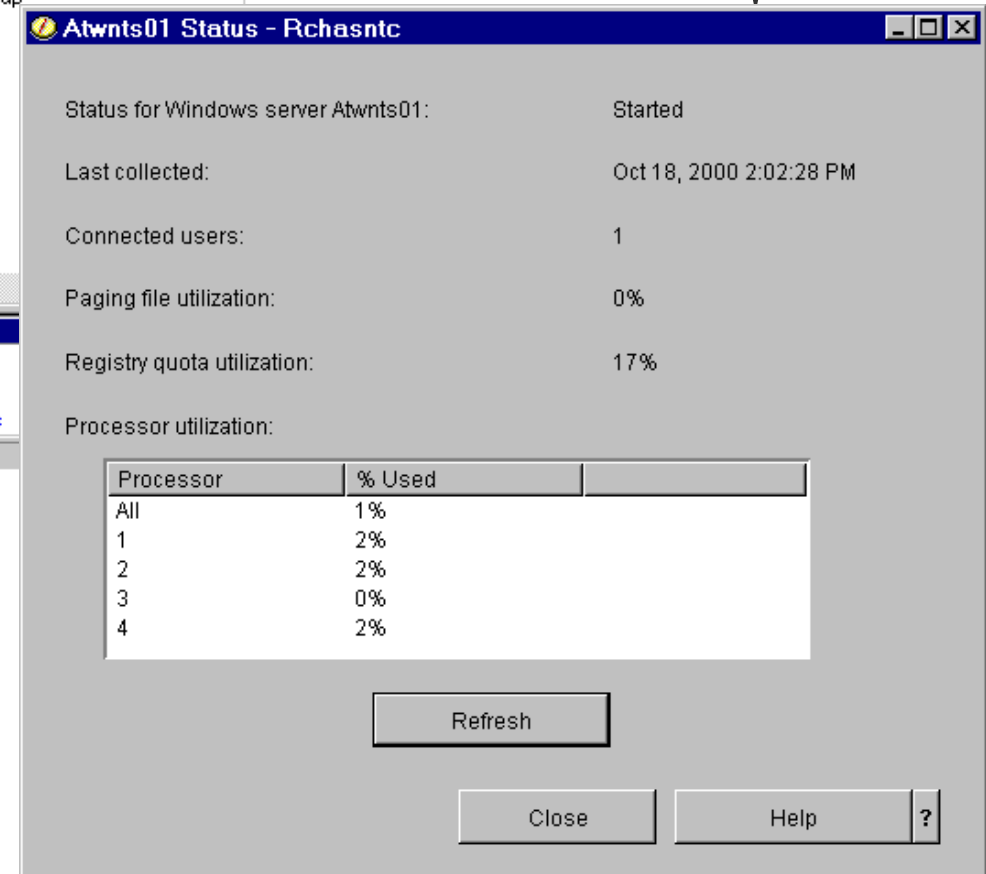
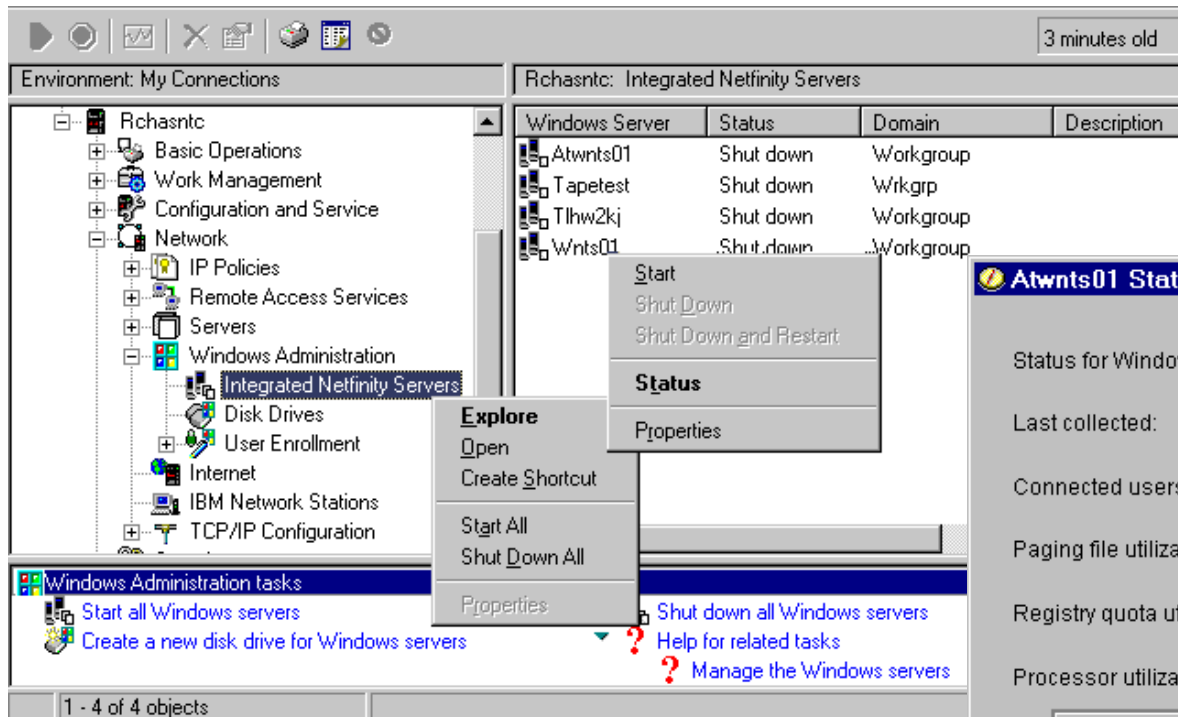
You can now Create, Delete, Link, Unlink and view Properties of Disk Drives associated to the windows Server. V5R1 now allows Dynamic Disk Drives linking.



User Enrollment

Managing User and Group enrollment has been made much easier. The following CL commands Work with NWS User Enrollment (WRKNWSENR) and Change NWS User Attributes (CHGNWSUSRA) can now be utilized directly through the GUI interface. Users can now see valid Domain.

The Windows Administration container is packaged and installed with the Network component. You need to select Network component during Custom Install to see the Windows Administration. This component is not part of Typical install.



You can now do the following actions for the Windows Server

- Start
- Shutdown and Restart
- Start All
- Shutdown All
- Status
- Properties

In V4R5 Operation Navigator had a new branch under the main Network branch for Windows Administration and you could do the following

- Start the Windows Server
- Shutdown the Windows Server
- Shutdown and Restart Windows Server
- Start All Windows Servers
- Shutdown All Windows Servers
- View the Status on the Server
- Display the properties of the Windows Server

With V5R1 of Operation Navigator you can now do additional functions and the previous functions have been modified. The new functions are

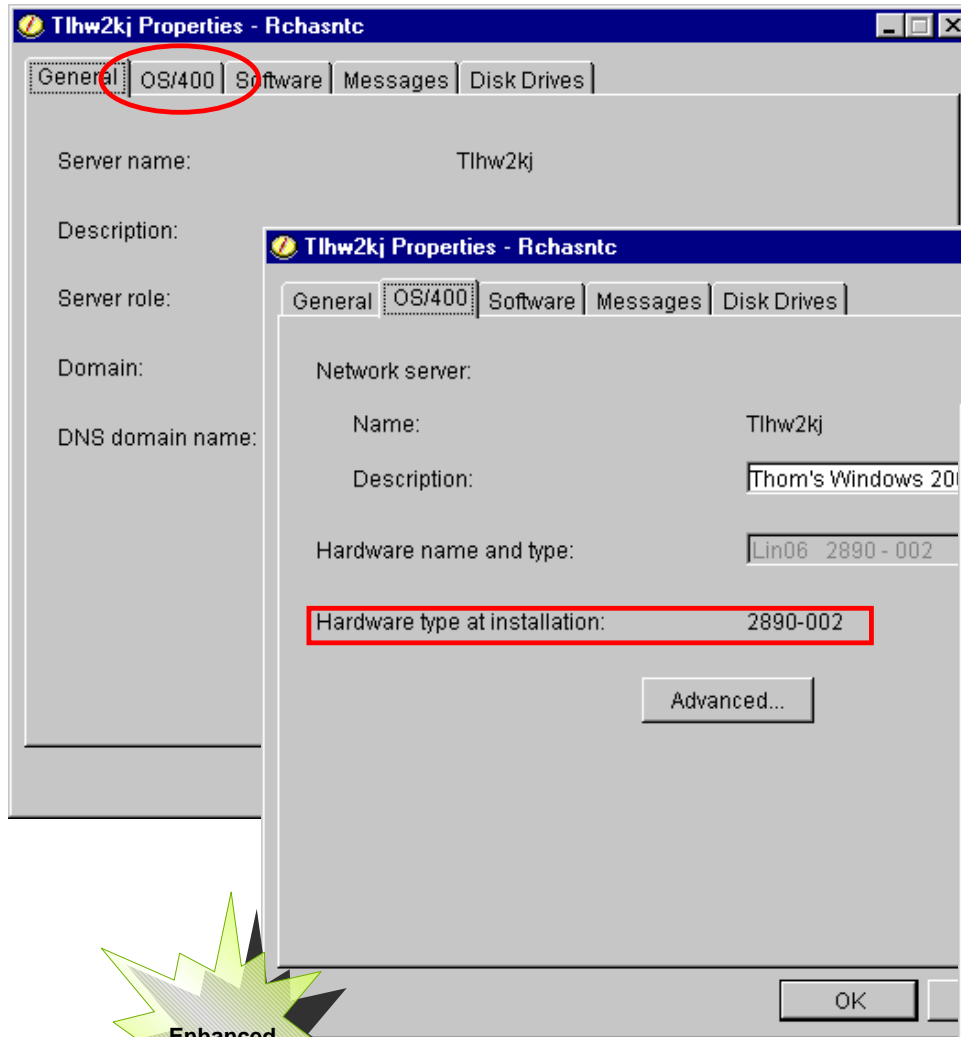
- Display Disk Drives linked to the Server
- User Enrollment

The status window for the Server has been modified to show the new 4 way externally connected Netfinity Servers. It shows in realtime the status of each processor on the Netfinity Server. It also shows the status of the Windows Registry Utilization and Number of users Connected.

Start and Shutdown of All Servers allows an administrator to either Start or Shutdown all the Integrated Netfinity Servers on the System. This operation is done in separate threads and hence all the servers either start or shutdown simultaneously rather than doing the operation sequentially. This would be a handy function to use if preparing for a IPL or resuming a system from a previous shutdown.

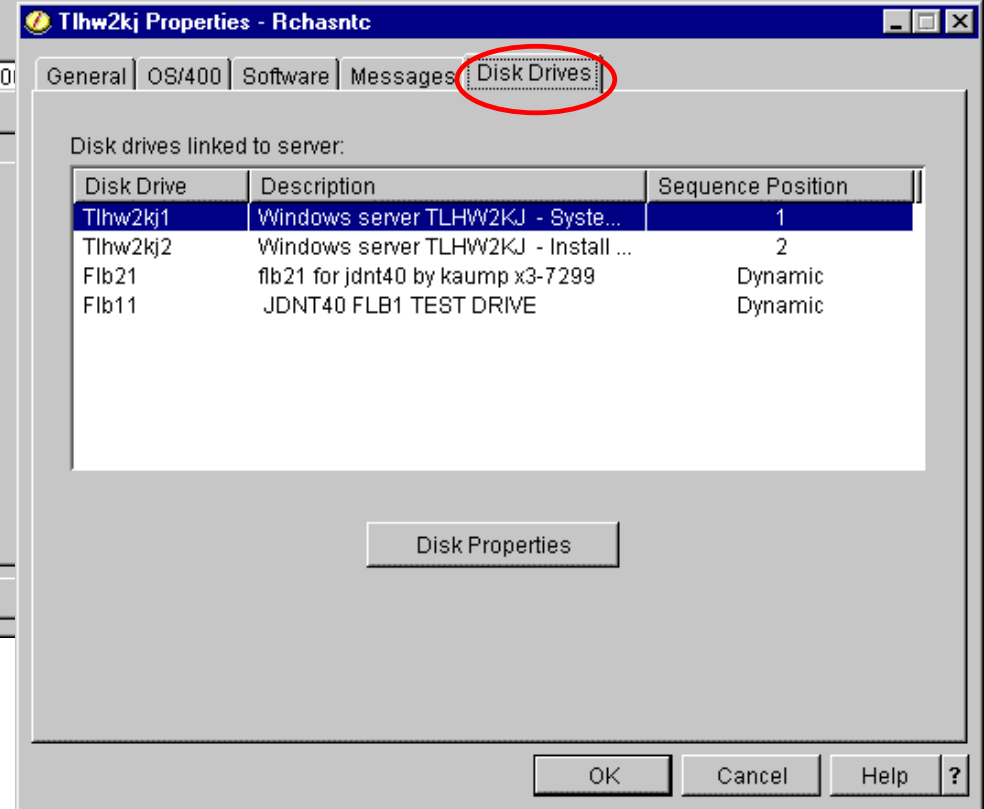
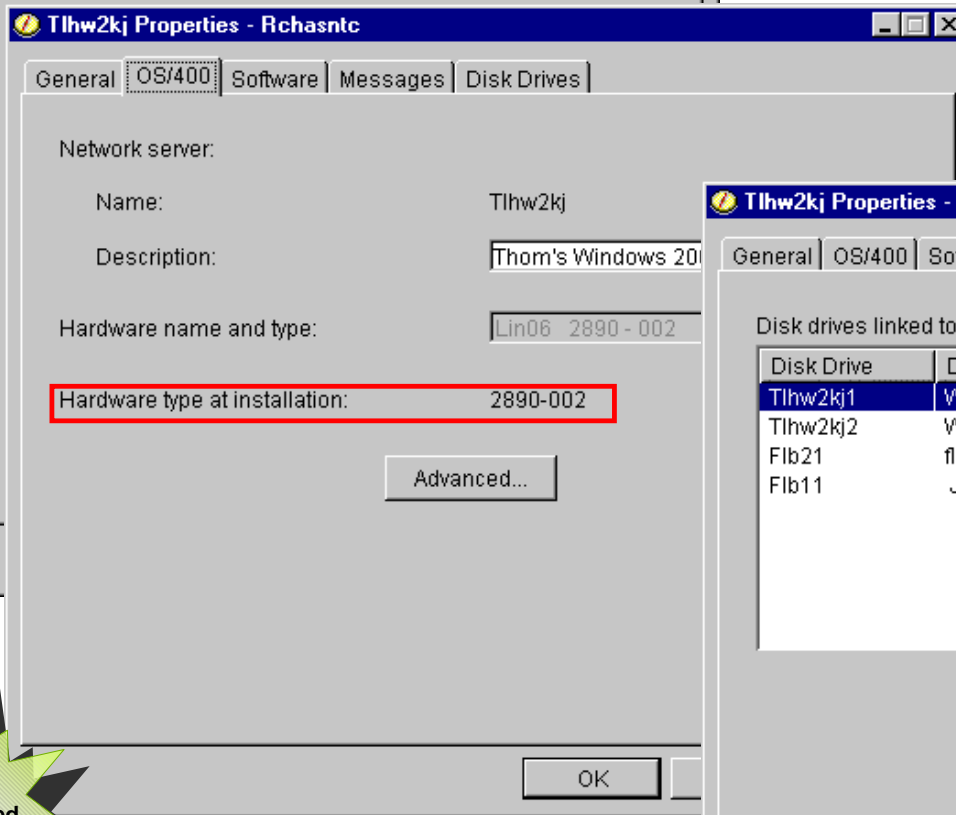
You can now Start All Servers directly from the Taskpad as well.

Windows Server - Properties



Server Properties Windows Enhanced

- OS/400 tab shows Hardware Type
- Disk Drives Tab added
 - ▶ Linked Drives
 - ▶ Disk Properties



Display Windows server properties was enhanced for V5R1 of Operations Navigator from V4R5 where it was introduced. You still get to the properties by doing the following

1. Expand **Network**
2. Expand **Windows Administration**
3. Select **Integrated Netfinity Servers**
4. **Right-click** the server
5. Select **Properties**

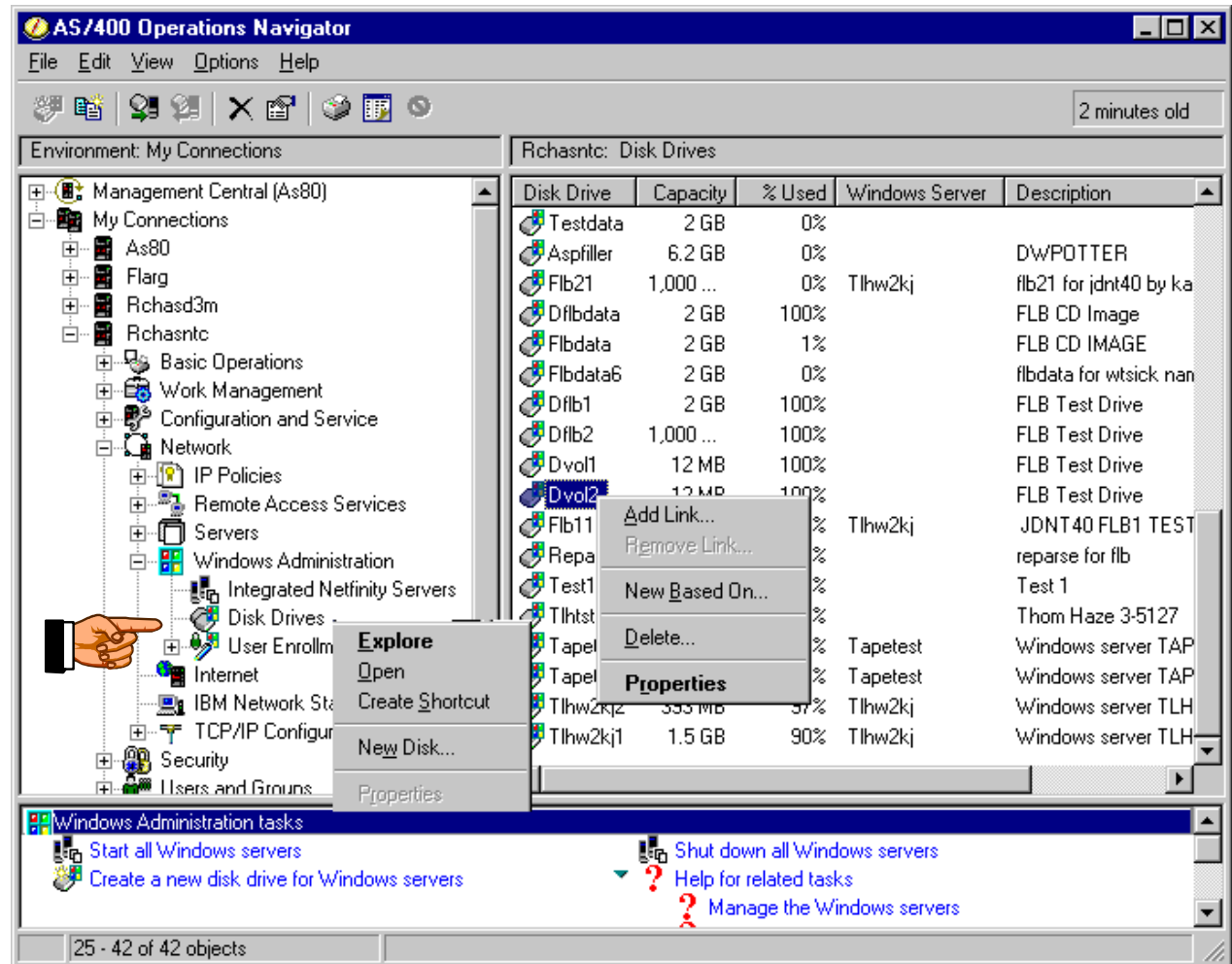
In V5R1 the Properties Tab named '**AS/400**' has been named '**OS/400**' and all information shown is related to the Network Server Description (*NWSD) on the AS/400 and its properties. This is different from the Windows Server Properties shown in the General Tab. The OS/400 properties tab of the Windows Server also shows a new field called '**Hardware type at installation**'. This field specifies the type of Integrated Netfinity Server for AS/400 hardware that was used to install the Windows server.

There is a New Tab called '**Disk Drives**' which shows

1. Disk Drives Linked to the Server. The table shows the name of the Drive associated to the Server, Description, and the Sequence Number to which the drive is attached to on the NT side.
2. It also has a button called '**Disk Properties**' which takes you directly to the Disk Properties for the selected Disk drives.

Windows Administration - Disk Drives

- Create Disk
- Delete Disk
- Link Disk to Server
- Unlink Disk from Server
- Display Properties of Disk
- Display Properties of a Server



V5R1 of Operations Navigator provides a new interface under Windows Administration called Disk Drives for Disk Management on the Windows Server (Windows NT and Windows 2000) on a AS/400 Integrated Netfinity Server.

You can now do the following functions from this interface.

Create Disk

Make a brand new disk for the Windows Server or copy from an existing disk. It also shows the name, description, format, capacity, disk pool, disk to copy from, etc.

Delete Disk

Deletes existing unlinked Windows Server Disk.

Link Disk to Server.

Adds a link to Windows Server Disk to be used by the Windows Server. Link to a particular sequence position or do Dynamic link

Unlink Disk from Server

Removes existing link from the Windows Server Disk. It also allows you to reuse the freed sequence number from Compress link Sequence

Display Disk Properties

Shows the name, description, format, capacity, disk pool, percent used, formatting status, etc. . it also allows you to view the Server properties directly from this window.

Additional columns can viewed by clicking Options, Column's and then include the additional columns. Available columns are Disk Drive, Capacity, %Used, Windows Server, Description, Disk Pool, Format, Formatting Status, and Free Space

Create New Disk

- Brand New Disk
- New Disk based on previous data
- Different Format types
- Capacity in MB or GB
- Disk Pool



Disk drive name:

Description:

Initialize disk with data from another disk

Source disk:

Format:

Windows NT file system (NTFS)

32-bit File Allocation Table (FAT-32) file system

File Allocation Table (FAT) file system

Capacity:

Disk pool:

Add Link to Windows Server - Rchasntc

Disk drive name:

Description:

Windows server to link to:

When to add link:

Any time

Only while server is shut down

Link sequence position:

Add Link

- Server Selection
- When to Link
- Sequence position



You can now create a Windows Server Disk directly from Operations Navigator. This interface allows you to do functions supported by the CL command WRKNWSSTG. One can create disk in two ways for the Windows Server. You can either Right click on the Disk Drives and then click **New Disk** or Right Click on a existing Disk Drive and click **New Based On**. Both the options creates a new disk drive but the second method automatically fills the drive details and checks the option to initialize the drive and copy existing drive data into the new drive. This option is helpful if you need to create additional space for existing drive or simply create a image.

Format option allows you specify the format to be used for the disk. Possible options include:

1. Windows NT file system (NTFS)
2. 32-bit File Allocation Table (FAT-32) file system
3. File Allocation Table (FAT) file system

Capacity option specifies the size of the disk to be created. The capacity of the disk can be measured in megabytes (MB) or gigabytes (GB). Possible values include:

1. FAT: 1 - 2048 MB (0.1 - 2.0 GB)
2. FAT-32: 512 - 32000 MB (0.5 - 31.2 GB)
3. NTFS: 2 - 64000 MB (0.1 - 62.5 GB)

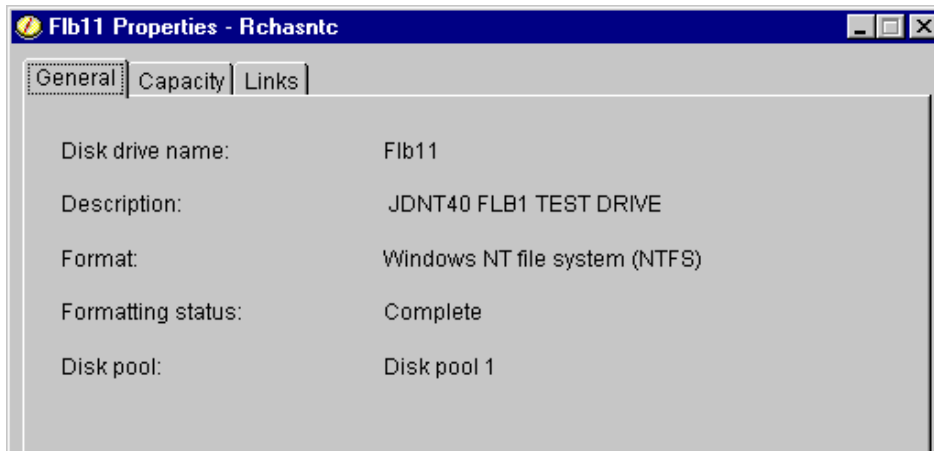
Disk pool option specifies the disk pool (also known as an auxiliary storage pool or ASP) that contains the disk. Possible values include:

1. Disk pool 1: The disk is in the system disk pool.
2. Disk pool 2-32: The disk is in a user disk pool.
3. Disk pool 33-99: The disk is in an independent user disk pool.

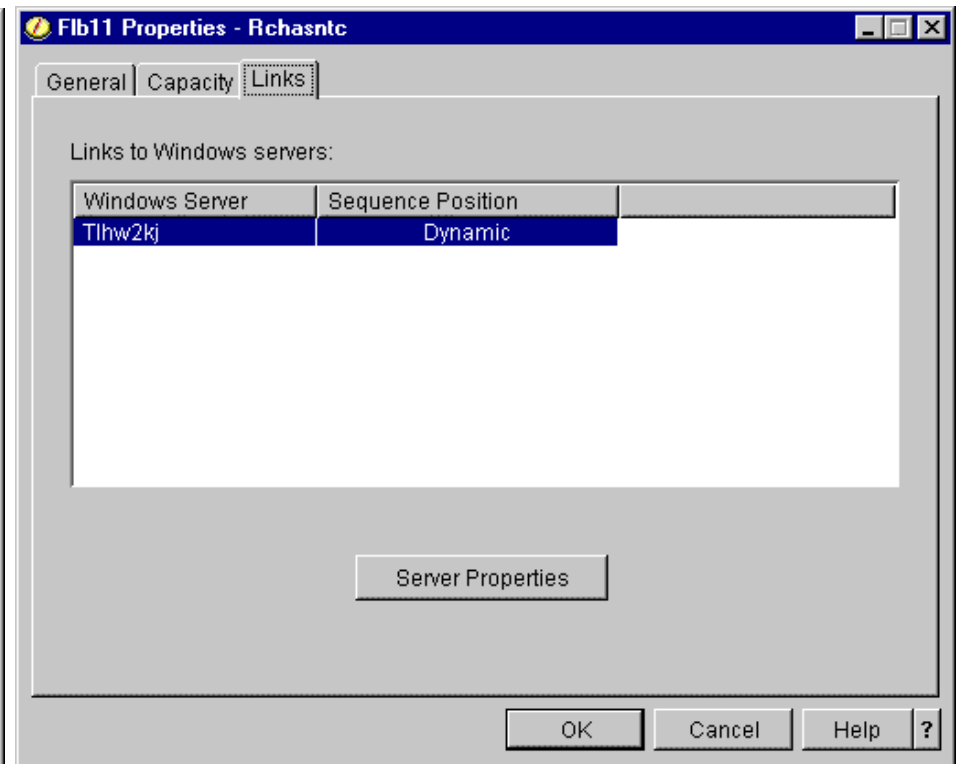
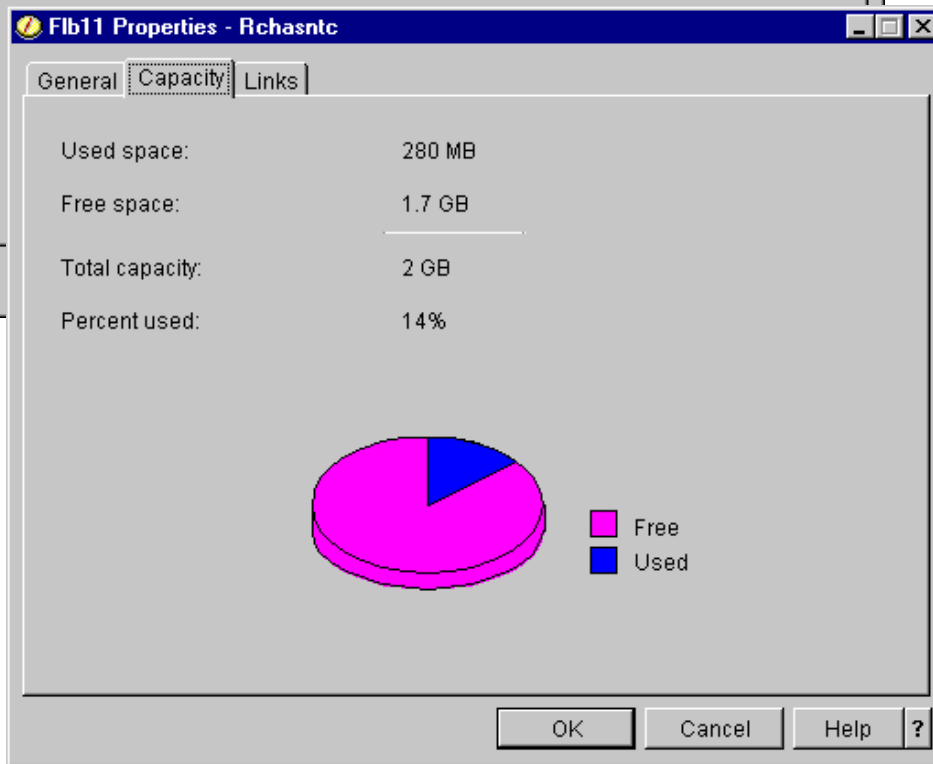
Note: When the disk drive is initially created, it is not formatted by the AS/400 system and must be formatted by the Windows operating system. Only Disk pools that are valid to the AS/400 will be listed. Disk creation process is a long-running operation. Therefore, when the user presses **OK** a separate thread is created to perform the disk creation processing and control is returned to the user immediately. While a Disk is being created , the disk cannot be linked to a server and the disk format will be shown as **Creating Disk...**

Add and Remove link options allows you to Link and Unlink the Drives from a Windows Server. You can view the sequence to see the disks that are already linked to the server and link sequence number. With V5R1 for Windows 2000 Server you can link a drive as Dynamic by selecting 'Any Time', for Windows NT4.0 the 'When to Link' attribute will be grayed. Compress link sequence, removes gaps in the link sequence position list.

Disk Drives Properties



- General Details
- Capacity
- Link
- Server properties



Disk properties allows you to view the following

- General Tab

- ▶ Disk Drive name: The name of the Disk
- ▶ Description: Text that Describes the Disk
- ▶ Format: Disk format type
- ▶ Formatting Status: Explains if the disk formatting has completed or not
- ▶ Disk Pool: The Disk Pool the disk is in.

- Capacity Tab

- ▶ Used Space: The used capacity of the disk, in megabytes (MB) or gigabytes (GB)
- ▶ Free Space: The unused capacity of the disk, in megabytes (MB) or gigabytes (GB)
- ▶ Total capacity: The capacity of the disk, in megabytes (MB) or gigabytes (GB)
- ▶ Percent Used: The percent of the disk space that is occupied by Data
- ▶ Pie Chart: A visual a representation of the used and free space on the disk, represented as a pie chart.

- Links Tab: Links to the Windows Server to which the disk is linked to.

- Server properties: Allows the user to view the server properties of the server the disk is linked to.

Note: Anything under 1024 MB is shown as a MB value with no decimal point. Anything 1024 MB or over is shown as a GB value with one digit decimal point.

Windows Administration - User Enrollment

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- Enroll User from AS/400 to Windows Domain/Server
- Unenroll a user from Windows Domain/Server
- Enroll Group of users from AS/400 to Windows Domain/Server
- Unenroll a group of Users from Windows Domain/Server
- Details of enrolled Users/Groups
- Retry Enrollment



The screenshot shows the AS/400 Operations Navigator window. The left pane displays a tree view of enrollment objects, with 'Tlh2kj Enrollment' selected. The right pane shows a table of enrolled users with a context menu open over the 'Tlhaze' user. The table has columns for 'Windows User', 'Enrollment Status', 'Enrolled Groups', and 'Description'. The context menu includes options like 'Explore', 'Open', 'Create Shortcut', 'Enroll Users...', 'Enroll Groups...', 'Paste', and 'Properties'.

Windows User	Enrollment Status	Enrolled Groups	Description
Ataufner	Enrolled		Andrew Tauferner
Dwpotter	Enrolled		'douglas potter 3-4
Itscid63	Enrolled		Murtuza Choilawal flb 3-5127
Sav			
Savadn			FLB Test User 3-5
Savbk			FLB 3-5127
Tlhaze			Thom Haze 3-512

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The "User Enrollment" container will contain all of the users and groups that are being propagated from this AS/400 to a Windows domain or server.

Enroll a user from AS/400 to Windows Domain/Server

- a. Explicit enrollment to domain(s) or server(s)
- b. Choice of user template to use when creating the user

Unenroll a user from Windows Domain/Server

Enroll a group of users from AS/400 to Windows Domain/Server

- a. Explicit enrollment to domain(s) or server(s)
- b. Choice of user template to use when creating the users

Unenroll a group of users from Windows Domain/Server

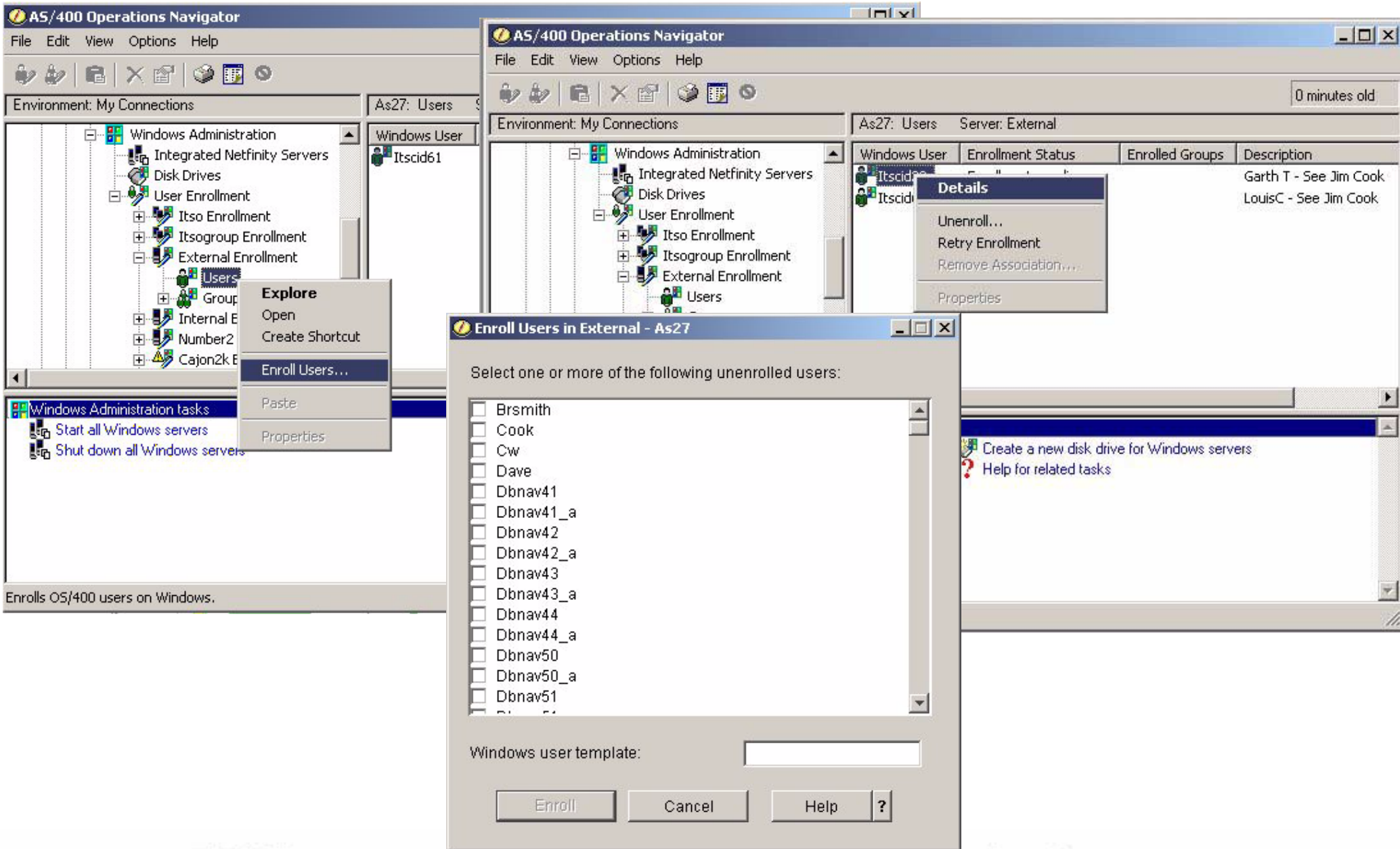
Display status of enrolled users/groups

- Enrollment status
- Error details shown, if appropriate
- Enrolled group shown, if appropriate

Retry Enrollment

When selected, the AS/400 will try to enroll the Windows user/group if they aren't already enrolled. If the user/group is already enrolled, it will update the Windows user/group with the AS/400 user data.

Enrolling Users



The screenshot displays the AS/400 Operations Navigator interface. The main window shows a tree view of 'My Connections' with 'Users' selected. A context menu is open over the 'Users' folder, with 'Enroll Users...' highlighted. A dialog box titled 'Enroll Users in External - As27' is open, showing a list of unenrolled users with checkboxes. Below the list is a 'Windows user template' field and buttons for 'Enroll', 'Cancel', and 'Help'. In the background, another window shows a table of enrolled users.

Windows User	Enrollment Status	Enrolled Groups	Description
Itsclid61			Garth T - See Jim Cook
Itsclid61			LouisC - See Jim Cook

Enrolls OS/400 users on Windows.

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Enrolling Users

The screenshot displays the AS/400 Operations Navigator interface. On the left, a tree view shows the 'Users' folder under 'User Enrollment'. A context menu is open over the 'Users' folder, with 'Enroll Users...' selected. A red arrow points from this menu to the 'Enroll Users in External - As27' dialog box. This dialog box contains a list of unenrolled users with checkboxes, including Brsmith, Cook, Cw, Dave, and various Dbnav users. Below the list is a 'Windows user template' field and buttons for 'Enroll', 'Cancel', and 'Help'. On the right, another window shows a table of enrolled users. A red arrow points from the 'Details' menu item in this table to the text 'Existing Windows user'. The table has columns for 'Windows User', 'Enrollment Status', 'Enrolled Groups', and 'Description'. The 'Description' column contains entries like 'Garth T - See Jim Cook' and 'LouisC - See Jim Cook'.

New user

Existing Windows user

Windows User	Enrollment Status	Enrolled Groups	Description
Itsctid61			Garth T - See Jim Cook
Itsctid61			LouisC - See Jim Cook

The current state of the user or group enrollment to the particular domain or server. Possible values are:

- **Enrolled:** Indicates that the user or group profile has been enrolled successfully to the domain or server.
- **Enrollment pending...:** Indicates that the user or group profile has changed on the AS/400 but the updates have not yet been propagated to the domain or server.
- **Enrollment retry pending...:** Indicates that the AS/400 user or group profile has changed on the AS/400 but the updates have not yet been successfully propagated to the domain or server. The system has encountered a recoverable error while trying to update the user or group on the domain or server. The system will retry the update request.
- **Enrollment failed:** Indicates that the user or group profile has changed on the AS/400 but the updates have not been successfully propagated to the domain or server. The system has encountered a non-recoverable error while trying to update the user or group on the domain or server. The system will not retry the update request. Once the error situation has been resolved, the update can be retried by selecting **Retry Enrollment** from the menu.
- **Unenrollment pending...:** Indicates that the AS/400 user or group profile has been unenrolled from the AS/400. The OS/400 user enrollment support has yet to successfully delete the user or group from the domain or server.
- **Unenrollment retry pending...:** Indicates that the user or group profile has been unenrolled on the AS/400 but the profile has not been successfully deleted on the domain or server. The system has encountered a recoverable error while trying to delete the user or group on the domain or server. The system will retry the delete request.
- **Unenrollment failed...:** Indicates that the user or group profile has been unenrolled on the AS/400 but the profile has not been successfully deleted on the domain or server. The system has encountered a non-recoverable error while trying to delete the user or group from the domain or server. The system will not retry the delete request. Once the error situation has been resolved, the delete can be retried by selecting **Retry Unenrollment** from the menu.
- **Only users in group enrolled:** Indicates that the group profile is not enrolled to the domain or server. Only the members of the group are enrolled to the domain or server.

Enhanced Java Integration

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Enhanced Java Integration

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File System - Java classes, jar files, program Properties

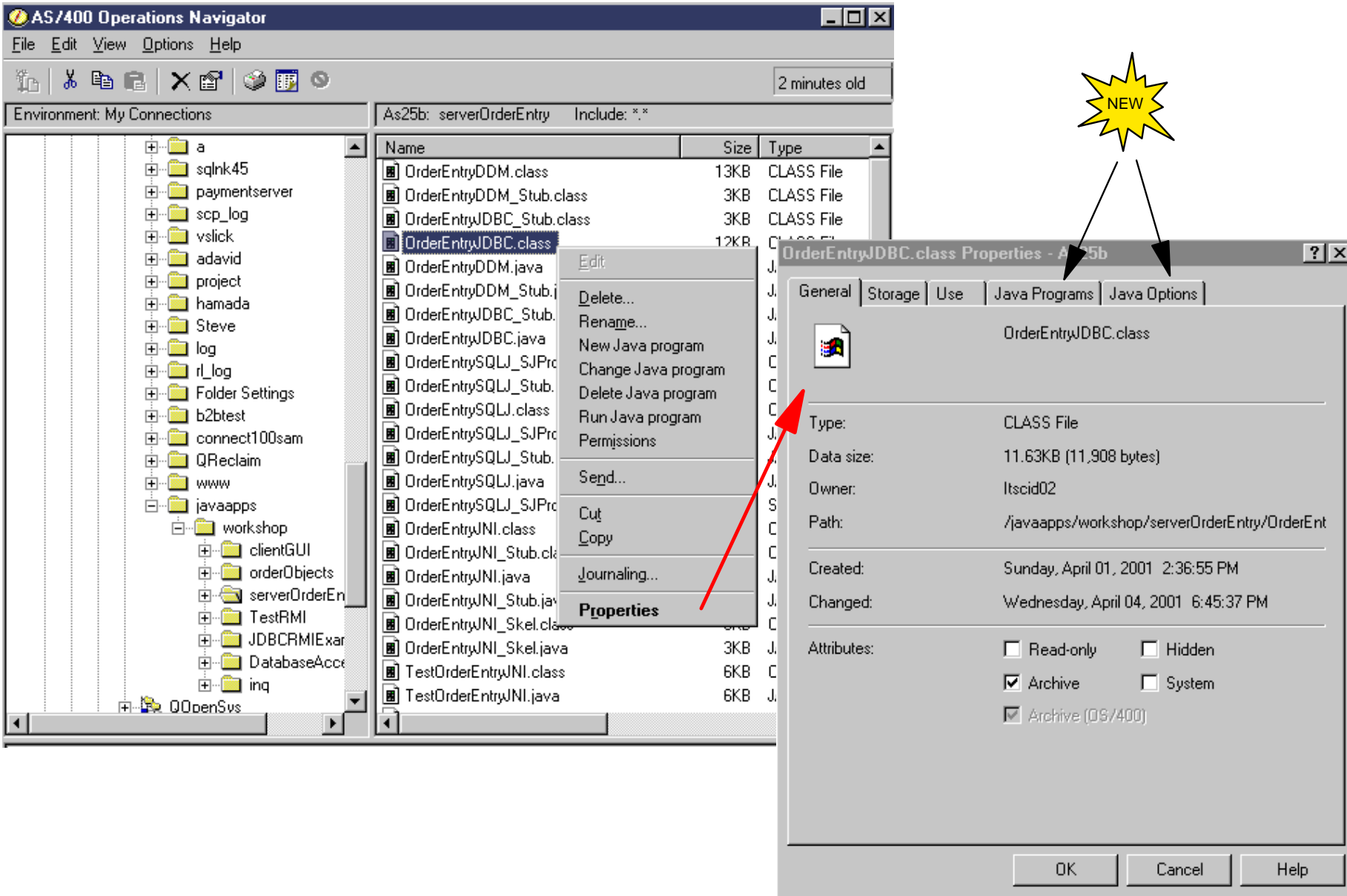
Compile Java Programs

Interactive Input and Output

Automated Remote Abstract Windowing Tool (RAWT) when launching Java programs

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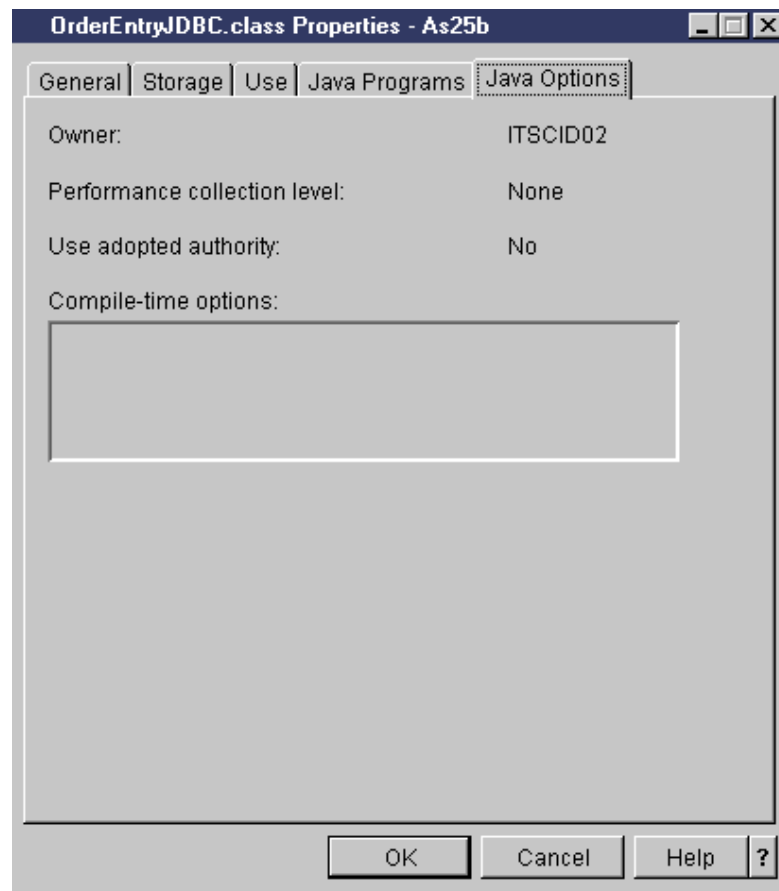
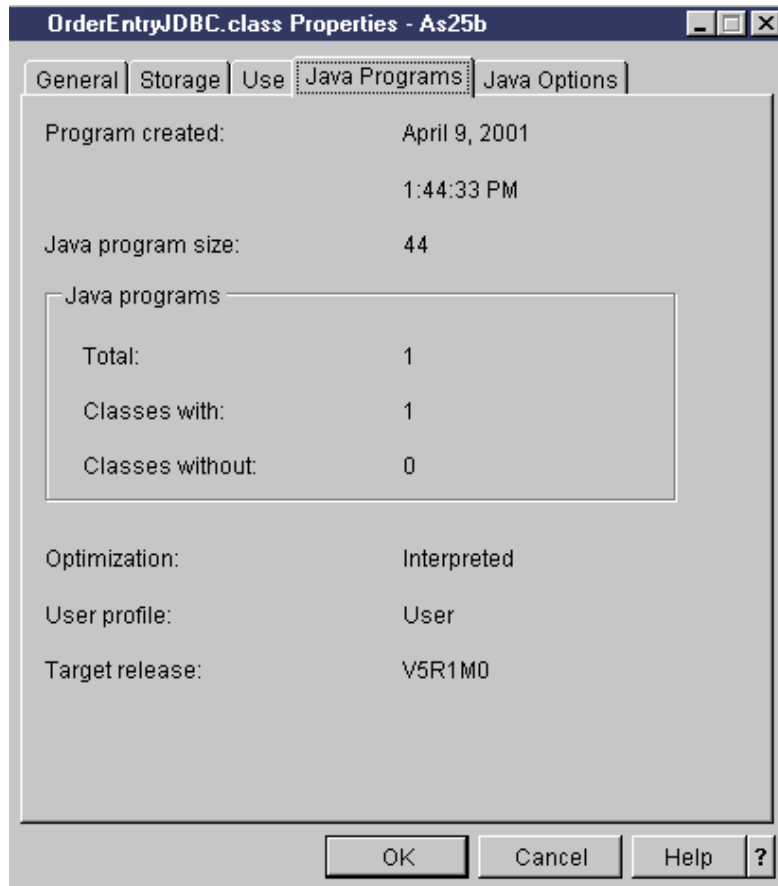
Java Properties Example



The screenshot shows the AS/400 Operations Navigator interface. On the left is a tree view of the file system. The main pane displays a list of files in the directory 'As25b: serverOrderEntry'. The file 'OrderEntryJDBC.class' is selected, and a context menu is open with 'Properties' highlighted. A yellow starburst labeled 'NEW' points to the file. A red arrow points to the 'Properties' menu item. The 'Properties' dialog is open, showing the 'General' tab with the following details:

Property	Value
Name	OrderEntryJDBC.class
Type	CLASS File
Data size	11.63KB (11,908 bytes)
Owner	Itscid02
Path	/javaapps/workshop/serverOrderEntry/OrderEnt
Created	Sunday, April 01, 2001 2:36:55 PM
Changed	Wednesday, April 04, 2001 6:45:37 PM
Attributes	<input type="checkbox"/> Read-only <input type="checkbox"/> Hidden <input checked="" type="checkbox"/> Archive <input type="checkbox"/> System <input checked="" type="checkbox"/> Archive (OS/400)

Java Programs, Java Options



The new tabs of information are shown:

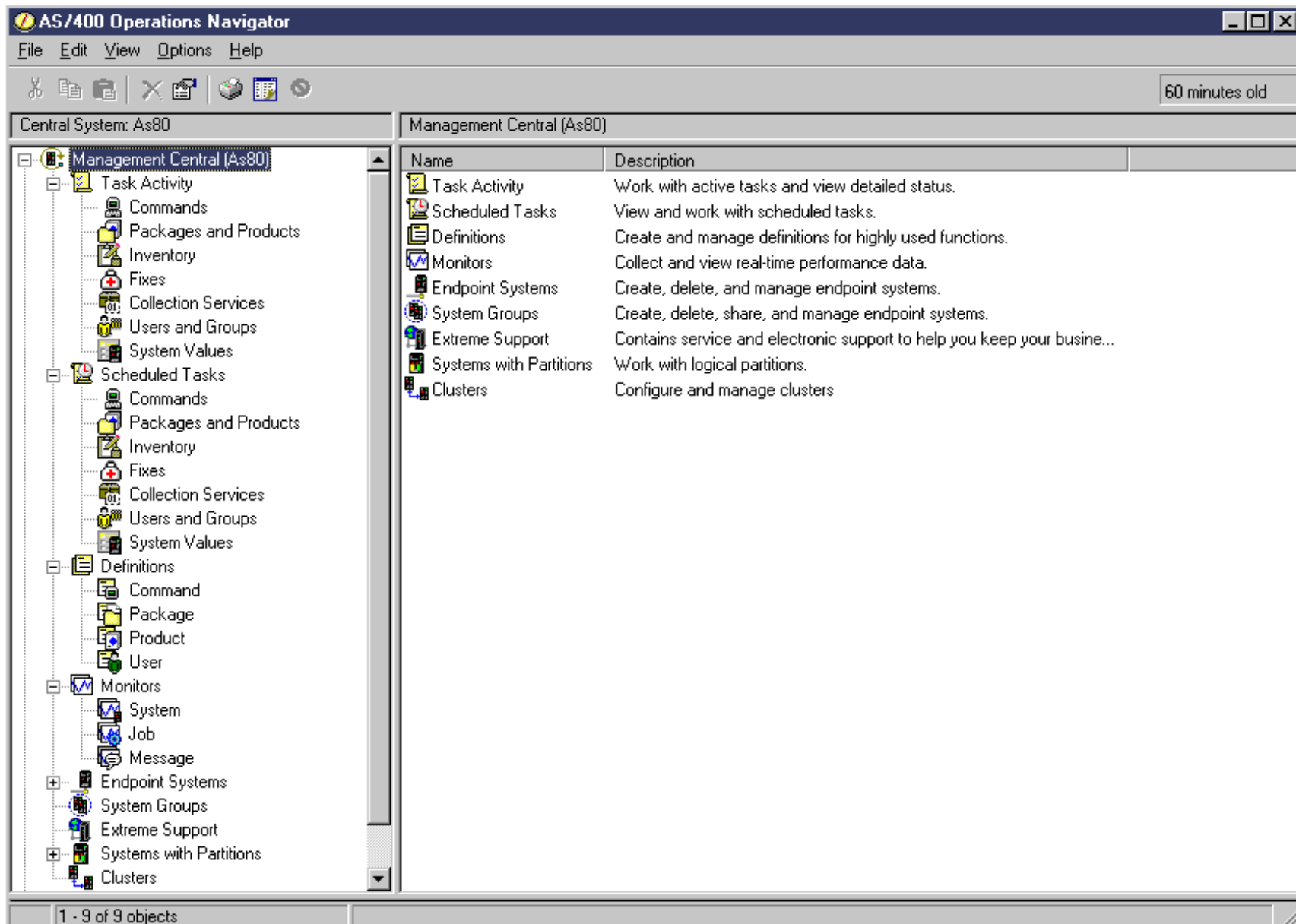
- Java Programs:
 - Java program size: Specifies the size of the Java program associated with the Java class file, ZIP file, or JAR file.
 - Java Program values:
 - ✓ Specifies the number of Java programs associated with the class file, ZIP file, or JAR file.
 - ✓ Specifies the total number of class files located inside the ZIP file or JAR file that are part of the associated Java program.
 - ✓ Specifies the total number of class files located inside of the ZIP file or JAR file that are not part of the associated Java program.
 - Optimization: Specifies the optimization level that the Java program was created at.
 - Specifies whether the authority checking that is done while the program is running should include only the user who is running the program (user) or both the user who is running the program and the program owner (owner)
 - ✓ User: The program runs under the user profile of the program user.
 - ✓ Owner: You use the user profiles of both the program owner and program user when processing the program. You can use the collective sets of object authority in both user profiles to find and access objects during program processing. Authority from the group profile of the owning user profile is not used.
- Java Options: Specifies the licensed internal code (LIC) compile-time optimization options for this Java program.

Management Central: General Features

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Management Central - General Features

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The screenshot shows the AS/400 Operations Navigator interface. The title bar reads "AS/400 Operations Navigator" and the menu bar includes "File", "Edit", "View", "Options", and "Help". A toolbar with various icons is located below the menu bar. The main window is divided into two panes. The left pane, titled "Central System: As80", displays a tree view of the "Management Central (As80)" structure. The right pane, titled "Management Central (As80)", displays a table with two columns: "Name" and "Description". The table lists various management functions and their descriptions. At the bottom of the window, a status bar indicates "1 - 9 of 9 objects".

Name	Description
Task Activity	Work with active tasks and view detailed status.
Scheduled Tasks	View and work with scheduled tasks.
Definitions	Create and manage definitions for highly used functions.
Monitors	Collect and view real-time performance data.
Endpoint Systems	Create, delete, and manage endpoint systems.
System Groups	Create, delete, share, and manage endpoint systems.
Extreme Support	Contains service and electronic support to help you keep your busine...
Systems with Partitions	Work with logical partitions.
Clusters	Configure and manage clusters

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Management Central

A general discussion of Management Central is placed here because most of the functions described after this foil require a Management Central central server to be configured, if not for all sub-functions, for most of them. For example, pre-V5R1 the Collection Services function required a Management Central central server to be configured and "signed on to." In V5R1 some new functions also require this.

The design of the Management Central interface has changed significantly to support the various new features throughout Operations Navigator. Some of the new functions may be configured under "My Connections," but other related functions are performed under the central server.

Improvements/enhancements have been added to the following: Management Central central server at V5R1:

- Task Activities
- Scheduled Tasks
- Definitions
- Monitors
- Collection Services - new Graph History support

The following new features have been added to Management Central central at V5R1:

- Extreme Support configuration
- Systems with Partitions configuration and management
- Clusters configuration and management

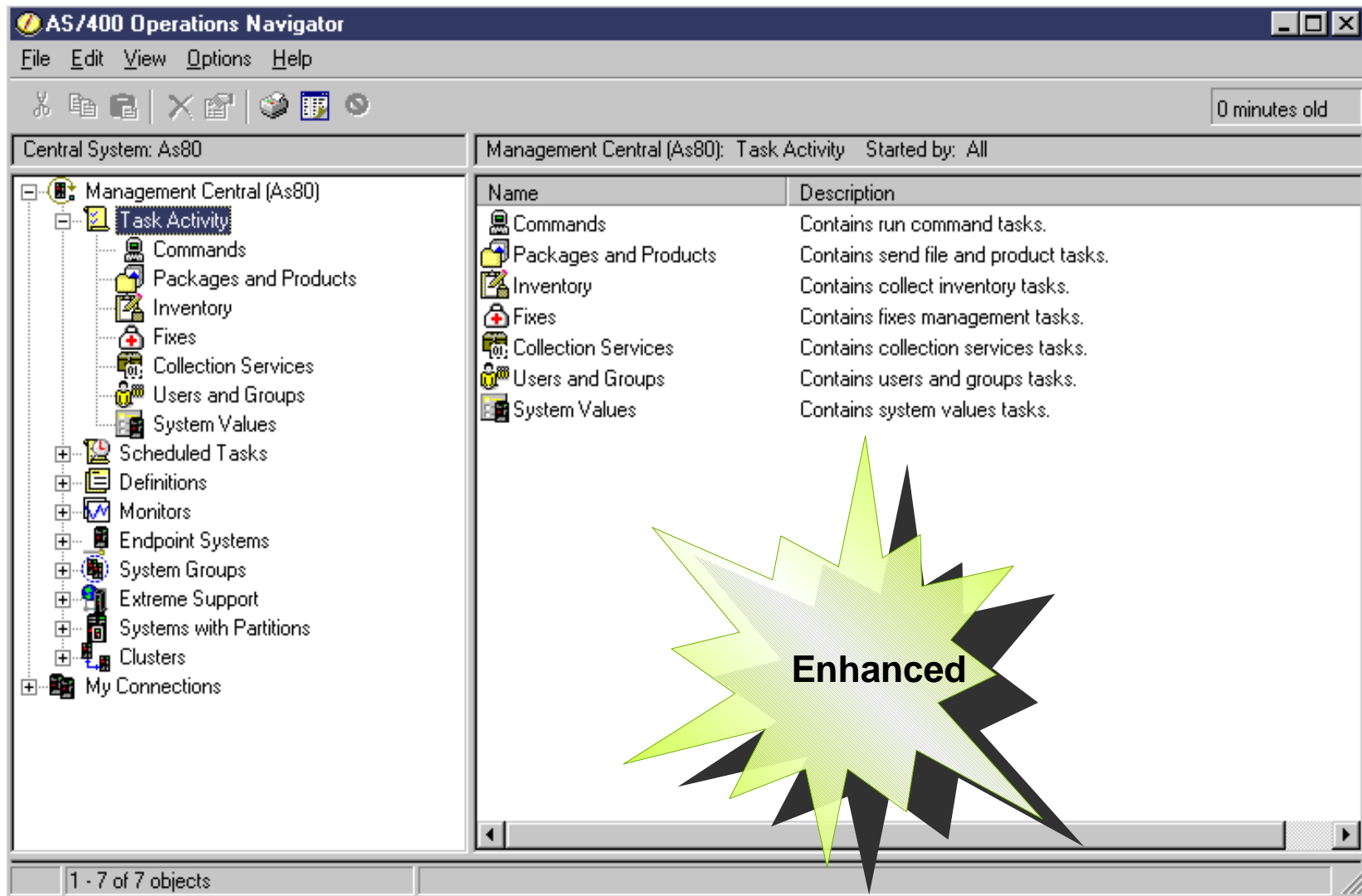
Management Central continued

The next two foils review Management Central Task Activity and Scheduling. Following those foils begin the set of new functions requiring a central server.

Note: Management Central still requires the system value QUTCOFFSET to be set appropriately on each system being serviced by the central server. For example, when three systems in different time zones (one in Rochester, Minnesota, one in New York city, one in Los Angeles, California s) are in the same system group, the proper time values will be shown on various screens when both cities are using US Daylight Savings as follows:

- QUTCOFFSET in Rochester: -05:00
- QUTCOFFSET in New York: -04:00
- QUTCOFFSET in Rochester: -07:00

Task Activity



The screenshot shows the AS/400 Operations Navigator interface. The title bar reads "AS/400 Operations Navigator". The menu bar includes "File", "Edit", "View", "Options", and "Help". A toolbar with various icons is located below the menu bar. The main window is divided into two panes. The left pane shows a tree view of the system structure, with "Management Central (As80)" expanded to show "Task Activity". The right pane displays a table of task activity details.

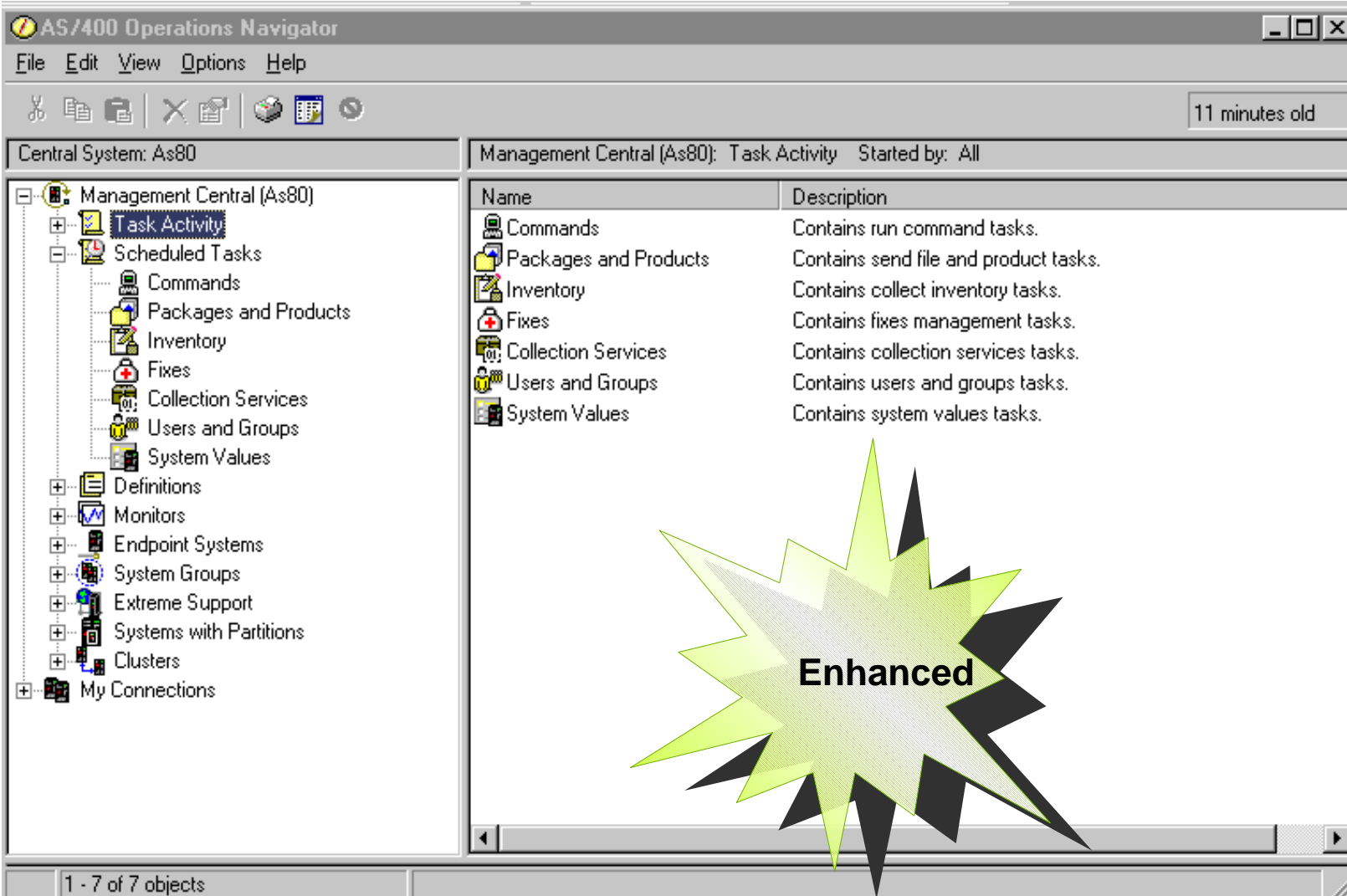
Name	Description
Commands	Contains run command tasks.
Packages and Products	Contains send file and product tasks.
Inventory	Contains collect inventory tasks.
Fixes	Contains fixes management tasks.
Collection Services	Contains collection services tasks.
Users and Groups	Contains users and groups tasks.
System Values	Contains system values tasks.

A large, stylized starburst graphic with the word "Enhanced" in the center is overlaid on the bottom right of the screenshot.

There are a number of changes to the Task Activity component. In prior releases, all nonscheduled tasks were displayed within this area. With the release of V5R1, the various tasks (inventories, collections, etc.) are separated into individual containers. The containers now include:

- Commands
- Packages and Products
- Inventory
- Fixes
- Collection Services
- Users and Groups
- System Values

Scheduled Tasks



AS/400 Operations Navigator

File Edit View Options Help

11 minutes old

Central System: As80

Management Central (As80): Task Activity Started by: All

Name	Description
Commands	Contains run command tasks.
Packages and Products	Contains send file and product tasks.
Inventory	Contains collect inventory tasks.
Fixes	Contains fixes management tasks.
Collection Services	Contains collection services tasks.
Users and Groups	Contains users and groups tasks.
System Values	Contains system values tasks.

1 - 7 of 7 objects

Enhanced

There are a number of changes to the Scheduled Task component. In prior releases, all scheduled tasks were displayed within this area. With the release of V5R1, the various tasks (inventories, collections, etc.) are separated into individual containers. The containers now include:

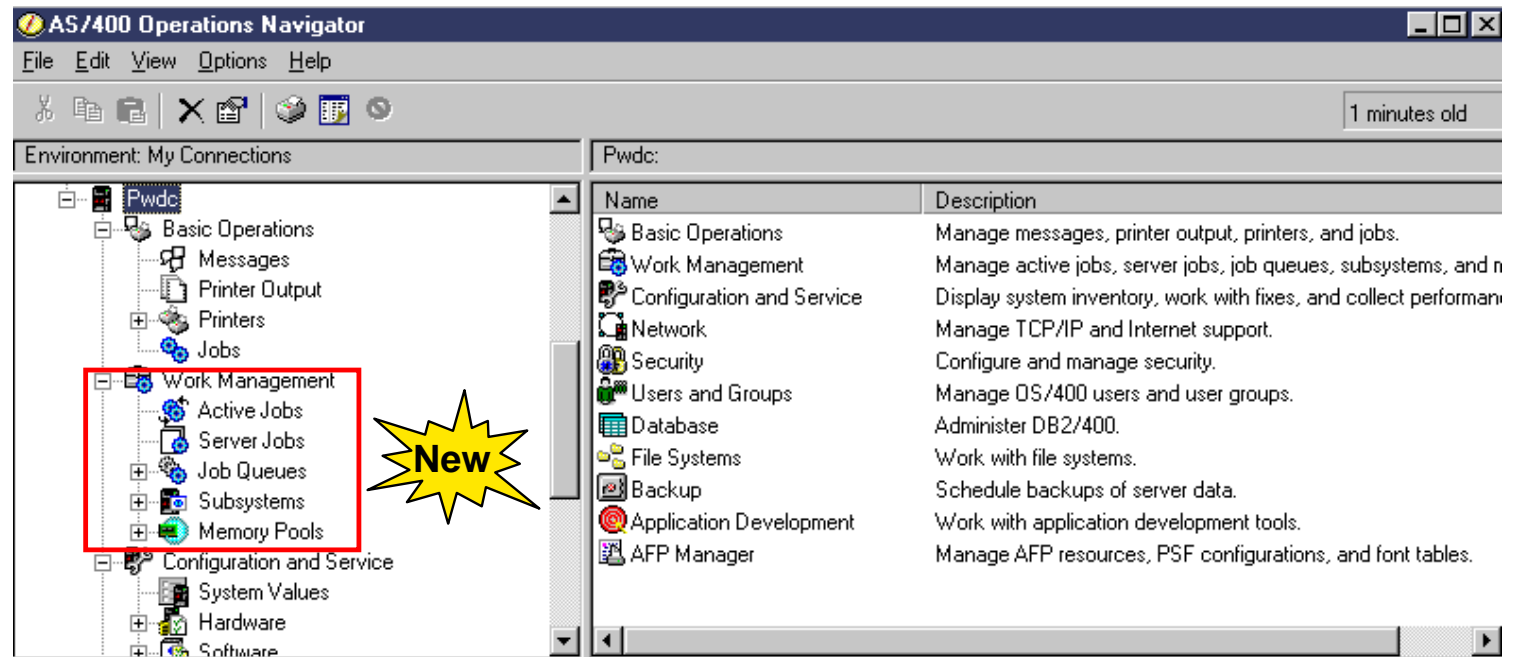
- Commands
- Packages and Products
- Inventory
- Fixes
- Collection Services
- Users and Groups
- System Values

Operations Navigator: Work Management

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A graphical interface for common System Operator tasks!

- Active Jobs
- Server Jobs
- Job Queues
- Subsystems
- Memory Pools



A Work Management component has been added to Operations Navigator to help the System Operator keep the system running smoothly from a GUI. Most of the functionality mimics common CL commands the operator runs on a 5250 screen, such as Work with Active Jobs (WRKACTJOB), Work with Job Queues (WRKJOBQ), Work with Subsystems (WRKSBS), and Work with Subsystem Jobs (WRKSBSJOB). In V5R1, work management tasks are geared toward the day-to-day routine of the System Operator in controlling jobs and monitoring the system. In future releases, support will gradually be added for more set up and administrative tasks of work management, such as creating job queues and subsystem descriptions.

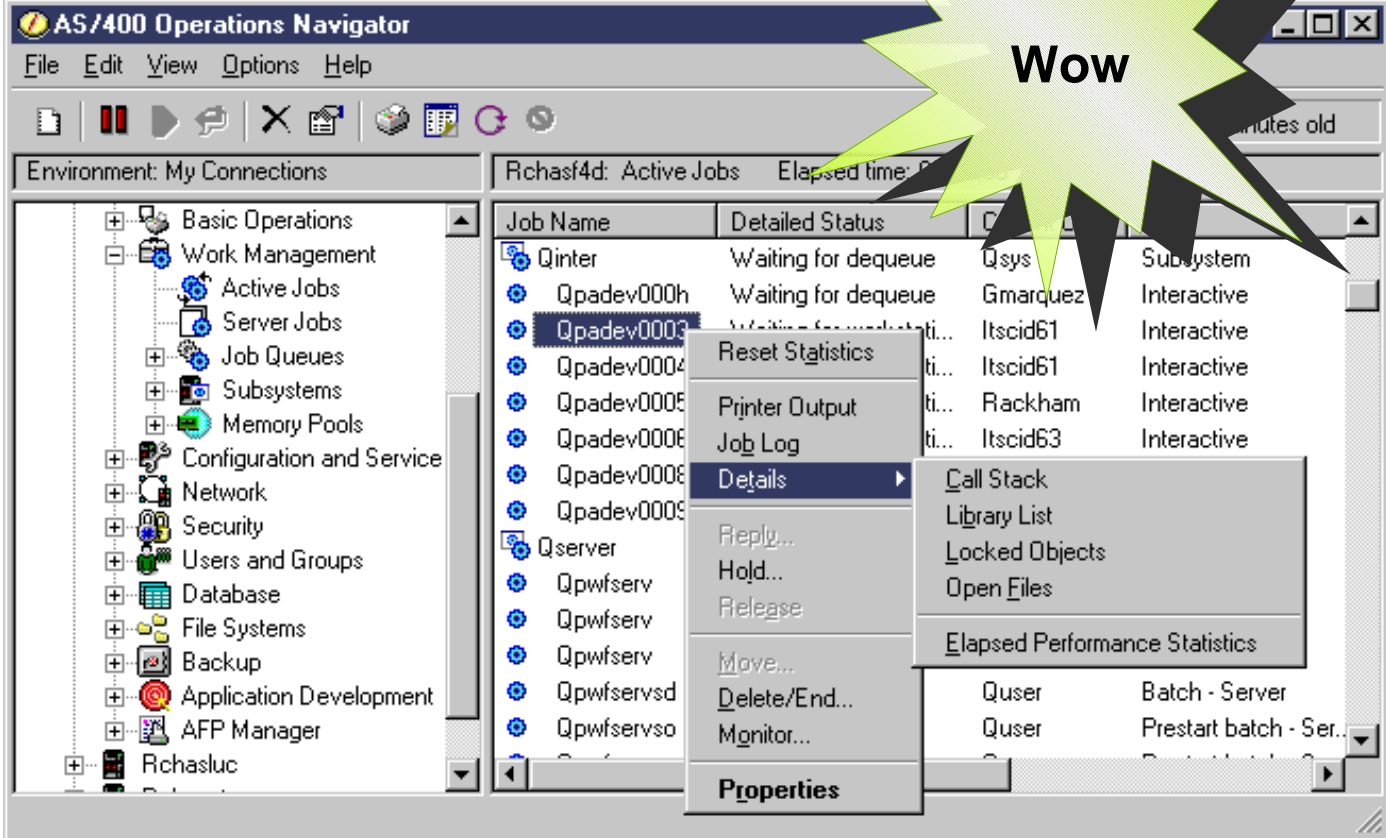
Previous to V5R1, there was a "Job Management" item in the tree under each AS/400. In V5R1, the name "Job Management" has been changed to "Work Management". Along with this change, the "Jobs" function has been moved to "Basic Operations," the "Server Jobs" function is under "Work Management," and new functions have been added. The new Work Management container enables the operator to do the following tasks from a GUI. A central server is not required for the functions listed below.

- Work with the jobs for a user (under Basic Operations)
- Work with active and server jobs
- Work with the jobs waiting on a job queue, jobs running in a subsystem, and jobs using a memory pool
- Move jobs between job queues using drag and drop
- Change priority of a job waiting on a queue using drag and drop
- Customize each list of jobs
- Hold, release, and clear job queues
- View subsystem status/activity
- Start and stop subsystems
- Work with job queues defined to a subsystem
- View all shared and private pools on a system
- Change pool size and activity level
- Work with the subsystems using a pool and jobs running in a pool

The new Work Management functions are described in detail on the following slides.

The WRKACTJOB command transformed!

- Customize the job list
- Measure statistics over elapsed time period
- Reset statistics
- View job logs
- Hold/release/end jobs
- View job details
 - For example, job's library list
- Monitor jobs*
 - For example, CPU usage




The screenshot shows the AS/400 Operations Navigator interface. The main window displays a table of active jobs. A context menu is open over one of the jobs, showing options like 'Reset Statistics', 'Printer Output', 'Job Log', 'Details', 'Repl...', 'Hold...', 'Release', 'Move...', 'Delete/End...', 'Monitor...', and 'Properties'. The 'Details' option is expanded, showing a sub-menu with 'Call Stack', 'Library List', 'Locked Objects', 'Open Files', and 'Elapsed Performance Statistics'. A starburst graphic with the word 'Wow' is overlaid on the right side of the screenshot.

Job Name	Detailed Status	Qsys	Subsystem
Qinter	Waiting for dequeue	Qsys	Subsystem
Qpadev000h	Waiting for dequeue	Gmarquez	Interactive
Qpadev0003	Waiting for dequeue	Itscid61	Interactive
Qpadev0004	Waiting for dequeue	ti...	Interactive
Qpadev0005	Waiting for dequeue	ti...	Rackham
Qpadev0006	Waiting for dequeue	ti...	Itscid63
Qpadev0008	Waiting for dequeue	ti...	Interactive
Qpadev0009	Waiting for dequeue	ti...	Interactive
Qserver	Waiting for dequeue	Quser	Batch - Server
Qpwfserv	Waiting for dequeue	Quser	Prestart batch - Ser...
Qpwfserv	Waiting for dequeue	Quser	Prestart batch - Ser...
Qpwfserv	Waiting for dequeue	Quser	Prestart batch - Ser...
Qpwfservsd	Waiting for dequeue	Quser	Prestart batch - Ser...
Qpwfservso	Waiting for dequeue	Quser	Prestart batch - Ser...

*Central server required

You can now work with active jobs for a selected AS/400 within Operations Navigator. Use the Active Jobs folder to work with active jobs on the AS/400 system. All active jobs on the system are displayed. The list is organized much like the 5250 display when running the Work with Active Jobs (WRKACTJOB) command--with the jobs indented under their subsystem.

You can easily customize the list by working with the selections on the Options menu, right-clicking on Active Jobs, or clicking on the column headings (in the right pane) to sort the information differently. For example, you could create a shortcut to only a subset of information you have customized using Include and Columns (Options menu). This might be useful if you want to quickly be able to view just the jobs running in a particular subsystem, such as all interactive jobs in QINTER. For large systems that have thousands of jobs, it may be necessary to take some of these customization steps for performance reasons. You will receive a message with recommended actions if a list is too large to be processed.

Statistical data shown in the columns is calculated over the time interval identified in the "Elapsed time" indicator, which appears above the columns in the right pane. The data can be updated by extending the time interval (using the Refresh menu choice) or by resetting the time interval (using the Reset Statistics menu choice). "Reset Statistics" is also available as a toolbar button . Just like pressing F10 on the Work with Active Jobs 5250 screen, this button refreshes list information and sets the elapsed time to 00:00:00.

Holding, ending, and releasing jobs; viewing job logs and printer output; and viewing properties of a job are all functions supported in previous versions of Operations Navigator with user jobs (which are now located under Basic Operations). These functions work the same with active jobs. Properties, however, are grouped in a more useable fashion for active jobs. For example, all performance-related properties are grouped together on the Performance tab.

You can use a job monitor to monitor a job or list of jobs based on job name, job user, job type, subsystem, or server type. For example, you might want to monitor a job's CPU usage, job status, or job log messages. The job monitor allows you to define commands to run when a specified threshold is met. The Monitors component must be installed to monitor jobs. Also, since job monitoring is a function of Management Central, a central system must be defined.

From the Details option, you are able to:

- View the Call Stack for a specific active job
- View the properties of programs and procedures on the call stack
- View the Library List for a specific active job
- Search the library list for an object
- View the properties and contents of libraries in the library list
- View the Locked Objects for a specific active job
- View the properties of a locked object
- Work with the jobs that have locks on an object
- View the Open Files for a specific active job
- View the properties of an open file
- View the Elapsed Performance Statistics for a specific active job

To perform actions on a job's call stack, library list, locked objects, and open files, you must have *JOBCTL special authority or your user profile must match the profile the job is running under. An error message is displayed if you attempt to perform these actions without proper authority.

More information about each of these options is available on the following slides.

In addition to the Active Jobs container, you can work with jobs in the following lists:

- Server jobs
- Jobs waiting on a job queue
- Jobs running in a subsystem
- Jobs running in a memory pool
- Jobs with locks
- Job monitor dialog in Management Central

The same menu actions are supported for all jobs, regardless of their location in the user interface. The status of each job determines which actions are available at any given time.

Keep in mind that the options available for Jobs in Basic Operations vary from those available for Jobs lists in the Work Management container. This is because the end-user has no need to perform certain job actions (such as viewing a job's library list) that an operator would need. Jobs was moved to Basic Operations because it is primarily an end-user function, which by default shows the jobs for the current user. Again, the Work Management container is for the operator; therefore, end-users would not need access to this component of Operations Navigator.

Elapsed Performance Statistics

150710/Qpgmr/Chainupcw Elapsed Performance Statistics

Job: Chainupcw User: Qpgmr Number: 150710

Elapsed time: 00:00:55

Performance statistics calculated over elapsed time

CPU:

Percentage:	21.8	%
Time:	24223	milliseconds
Database percentage:	285.9	%
Database time:	317586	milliseconds

Disk I/O rate:

Synchronous:	33	per second
Asynchronous:	21	per second

Disk I/O count:

Synchronous:	1843
Asynchronous:	1170

Page fault rate: 21 per second

Average response time: 0 seconds

Interactive transactions: 0

Refresh Now Timed Refresh... Reset Statistics

Close Help ?

150710/Qpgmr/Chainupcw Elapsed Performance Statistics

Job: Chainupcw User: Qpgmr Number: 150710

Elapsed time: 00:21:51

Performance statistics calculated over elapsed time

CPU:

Percentage:	9.0	%
Time:	236361	milliseconds
Database percentage:	20.1	%
Database time:	529724	milliseconds

Disk I/O rate:

Synchronous:	42	per second
Asynchronous:	38	per second

Disk I/O count:

Synchronous:	56234
Asynchronous:	50555

Page fault rate: 5679 per second

Average response time: 37 seconds

Interactive transactions: 0

Refresh Now Timed Refresh... Reset Statistics

Close Help ?

Notes: Elapsed Performance Statistics

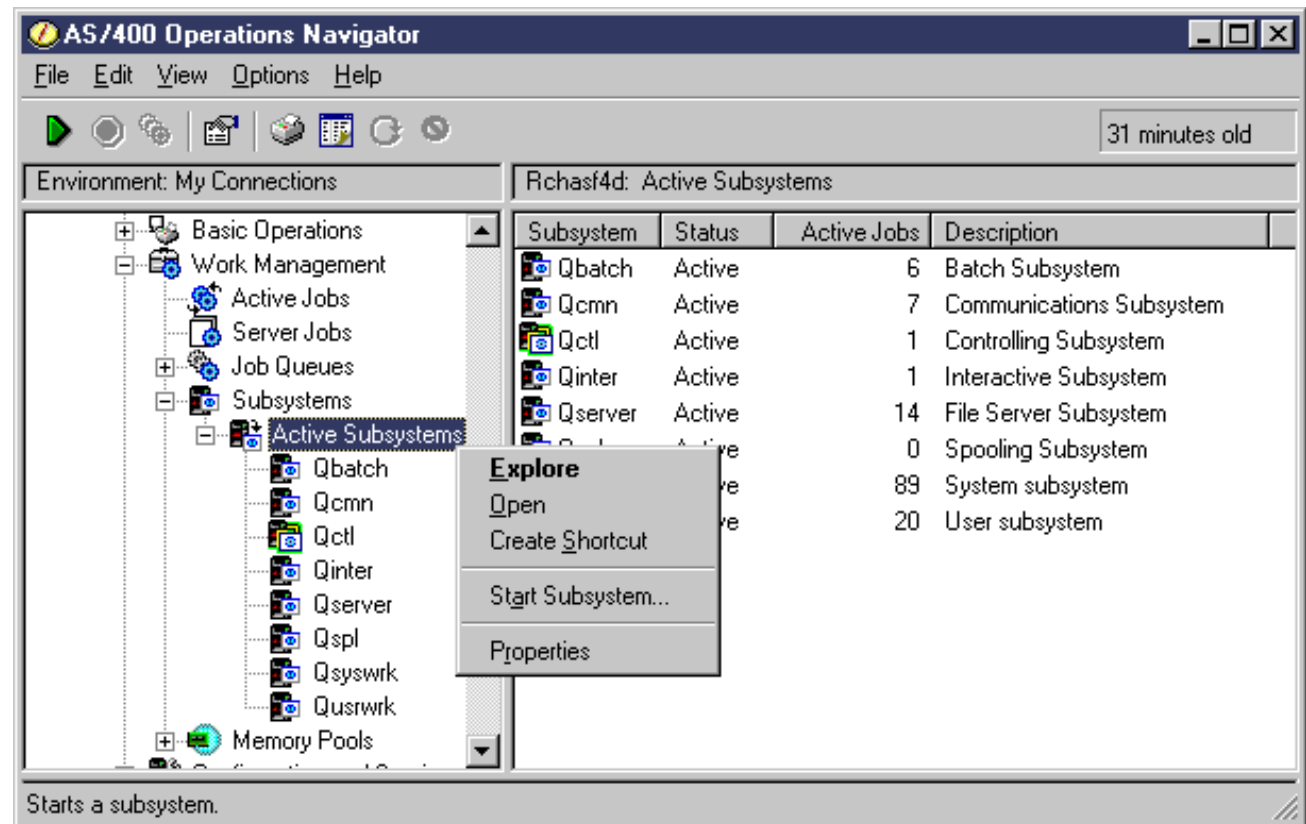
This dialog allows you to view detailed performance information for an active job. This dialog is displayed when you select Elapsed Performance Statistics from the Details menu for an active job. It can also be displayed from job properties (Performance tab), which are discussed in the following slides, for an active job.

This dialog contains statistical performance data that is calculated over the time interval identified in the "Elapsed time" field. The data can be updated by extending the time interval (clicking the Refresh Now or Timed Refresh... buttons), or by resetting the time interval (using the Reset Statistics button).

In this example, CPU usage for the same job was measured over an elapsed time period of about 21 minutes.

The WRKSBS command transformed!

- Start and stop subsystems
- View subsystem status/activity
- Work with jobs running in a subsystem
- Work with job queues defined to a subsystem
- Customize subsystem lists
- View subsystem properties



You can now work with subsystems for a selected AS/400 within Operations Navigator. Use the Subsystems folder to work with subsystems on the AS/400 system. The Active Subsystems container allows an operator to manage subsystems that have been started. The operator is also able to work with the jobs running in a subsystem, work with the job queues defined to a subsystem, and start and stop subsystems. Moreover, the operator can work with the subsystems that are using a memory pool, as described later in these slides.

A future release will include support for subsystem descriptions, including prestart job entries, autostart job entries, workstation entries, communications entries, job queue entries, and memory pool definitions. At that point, you will be able to view all subsystems defined on the system, including the ones that haven't been started.

In the right pane of the Active Subsystems list, you can easily determine how many jobs are active in a particular subsystem. Additional columns of information, such as Maximum Active Jobs, for subsystems are also available for viewing. Just select the Columns item on the Options menu. Also, the controlling subsystem is distinguishable from other subsystems because of its unique icon.

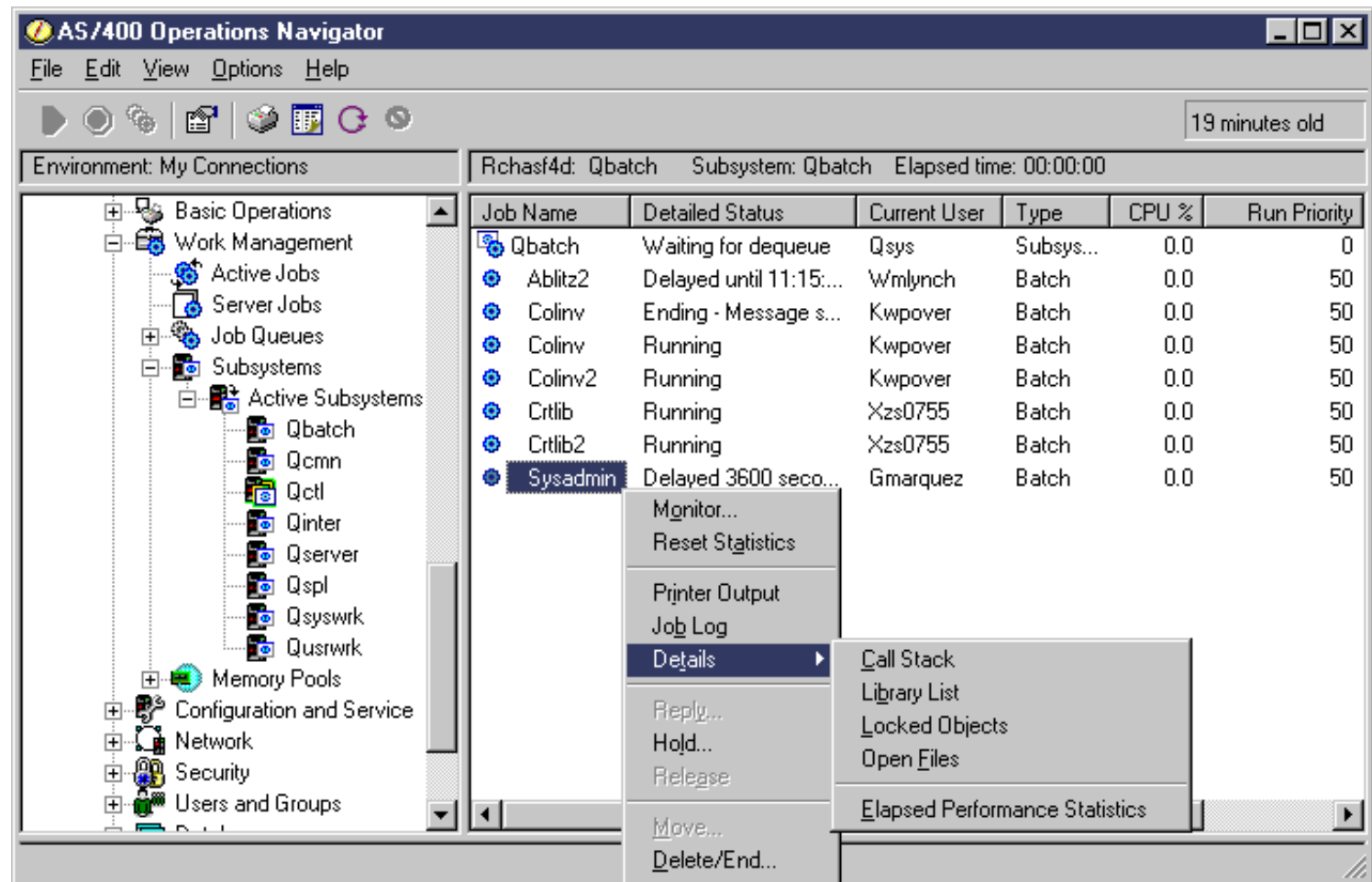
Tasks for starting and stopping subsystems, displaying the jobs running in a subsystem, and looking at the job queues defined to a subsystem are all described on the following slides.

You can easily customize the subsystem list by working with the selections on the Options menu, right-clicking on a Subsystems container or an individual subsystem, or clicking on the column headings (in the right pane) to sort the information differently. For example, you could create a shortcut to only a subset of information you have customized using Include and Columns (Options menu). This might be useful if you want to quickly be able to view just the jobs running in a particular subsystem, such as QBATCH. This may also help alleviate any performance hits your system may take if you were to retrieve all subsystems.

Unlike job properties, subsystem properties are viewable only.

Jobs Running in a Subsystem

- Work with individual jobs in the subsystem
- Work with the subsystem monitor job itself



AS/400 Operations Navigator

File Edit View Options Help

19 minutes old

Environment: My Connections Rchaf4d: Qbatch Subsystem: Qbatch Elapsed time: 00:00:00

Job Name	Detailed Status	Current User	Type	CPU %	Run Priority
Qbatch	Waiting for dequeue	Qsys	Subsys...	0.0	0
Ablitz2	Delayed until 11:15:...	Wmlynch	Batch	0.0	50
Colinv	Ending - Message s...	Kwpover	Batch	0.0	50
Colinv	Running	Kwpover	Batch	0.0	50
Colinv2	Running	Kwpover	Batch	0.0	50
Crtlib	Running	Xzs0755	Batch	0.0	50
Crtlib2	Running	Xzs0755	Batch	0.0	50
Sysadmin	Delayed 3600 seco...	Gmarquez	Batch	0.0	50

Context menu for Sysadmin:

- Monitor...
- Reset Statistics
- Printer Output
- Job Log
- Details
 - Call Stack
 - Library List
 - Locked Objects
 - Open Files
 - Elapsed Performance Statistics
- Reply...
- Hold...
- Release
- Move...
- Delete/End...

Notes: Jobs Running in a Subsystem

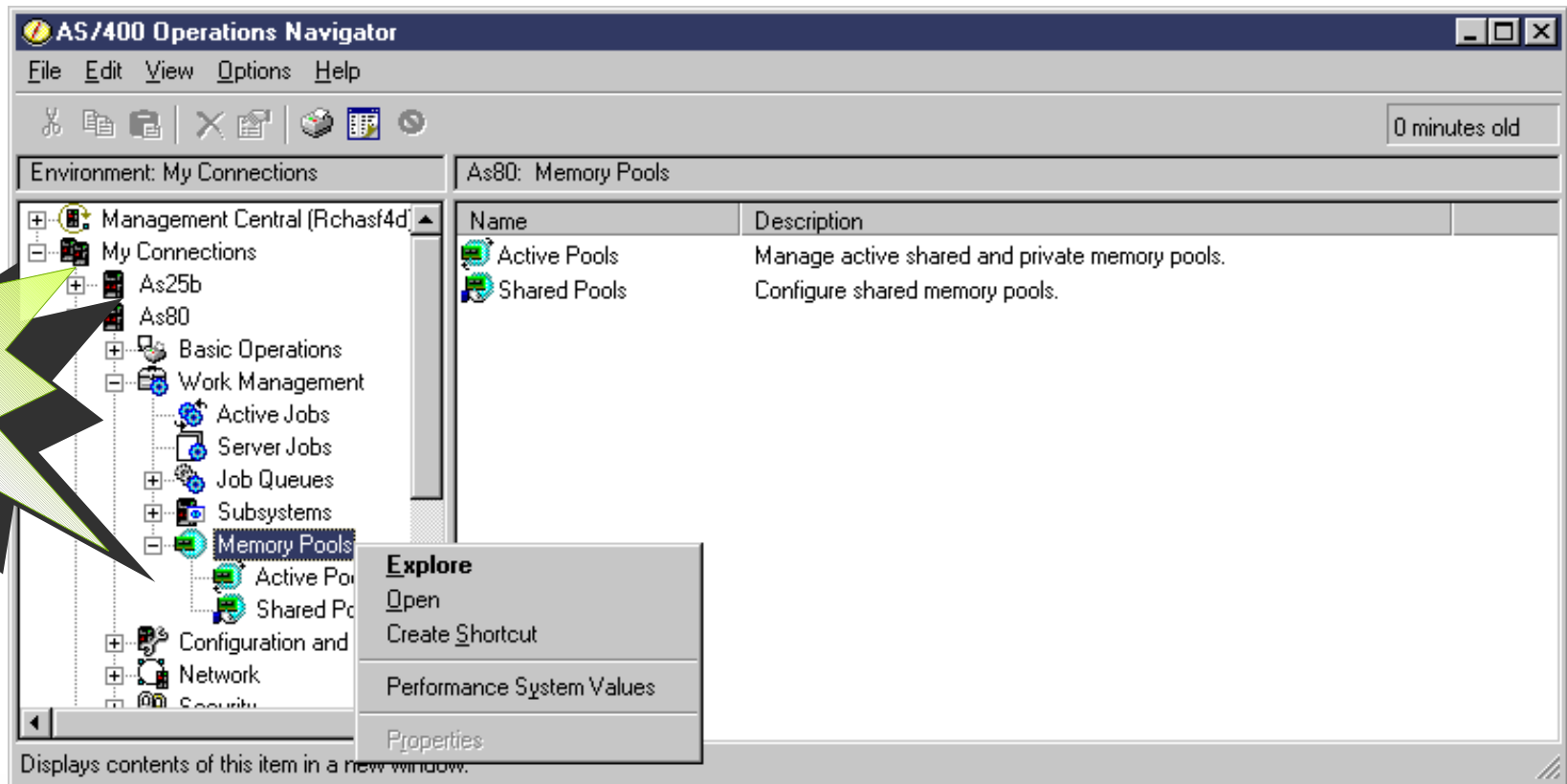
Selecting a subsystem in the left pane of Operations Navigator retrieves all the jobs running in that subsystem. The jobs running in the subsystem are indented under the subsystem monitor job, and the jobs are sorted alphabetically by job name. You can also display this information in a separate window by choosing Open on a selected subsystem.

In the job list view, you can work with any job, including the subsystem monitor job itself. When you select the subsystem in the right pane of this view, you can look at the subsystem monitor job's call stack, library list, open files, and locked objects (from the Details menu). You can also Reset Statistics for all the jobs running in the subsystem. For example, just right-click on the subsystem and select Reset Statistics. This refreshes the list of jobs running in that subsystem and sets the elapsed time to 00:00:00.

Memory Pools

The WRKSYSSTS/WRKSHRPOOL commands transformed!

- View all active shared and private pools
- View all shared pools
- Change pool size and activity level
- View/change performance system values
- Work with jobs running in a pool
- Work with subsystems using a pool
- Customize memory pool list



You can now work with memory pools for a selected AS/400 within Operations Navigator. Use the Memory Pools folder to work with memory pools on the AS/400 system. Two memory pools containers appear in the Operations Navigator hierarchy: one which lists all active pools (similar to Work with System Status, WRKSYSSTS) and another which lists all shared pools (similar to Work with Shared Pools, WRKSHRPOOL). Pools are referred to by name, not by pool ID.

All attributes provided on the WRKSYSSTS and WRKSHRPOOL 5250 screens are available in the GUI, with the exception of the top portion of the WRKSYSSTS display, which contains overall system level performance information. However, you can view some of that information (e.g., % CPU used and % system ASP* used) by creating and starting a System Monitor in Management Central. The System Monitor contains metrics such as CPU Utilization and Disk Storage that you can monitor on a single system or group of systems.

Future enhancements being considered include working with the pools defined to a subsystem, as well as moving memory between pools.

From within the Active Pools and Shared Pools containers, operators are able to change pool size and activity level, work with the jobs running in a pool and subsystems using a pool, and view performance-related system values. These tasks are described on the following slides.

You can easily customize a memory pool list by working with the selections on the Options menu, right-clicking on a pool container, or clicking on the column headings (in the right pane) to sort the information differently. For example, there are many more columns for Active Pools than are shown by default (e.g., Database Faults and Tuning - Maximum Faults). You can modify which columns you want to view on a regular basis and then create a shortcut to the custom view you created. That way, you go directly to the data you want, when you want it. To see all columns available and change which ones get displayed, select Active Pools or Shared Pools and then on the Options menu, select Columns.

***Note:** ASP stands for auxiliary storage pool, the term used on the 5250 screen for disk space on the AS/400. In Operations Navigator, this term is simply referred to as "disk pool."

Memory Pool System Values

- Configure system-wide performance settings right here
- Accessible in Operations Navigator from:
 - Memory Pools
 - Configuration and Service

The screenshot shows a dialog box titled "Performance System Values - As80" with a tabbed interface. The "Memory Pools" tab is selected. The dialog contains the following settings:

- Automatically adjust memory pools and activity levels:
 - At system restart
 - Periodically after restart
- Maximum eligible threads: [] threads
- Machine memory pool:
 - Size: [] MB
- Base memory pool:
 - Minimum size: [] MB
 - Maximum eligible threads: [] threads
- Move interactive jobs to base pool at end of time slice

At the bottom right, there are buttons for "OK", "Cancel", "Help", and a question mark icon.

Notes: Memory Pool System Values

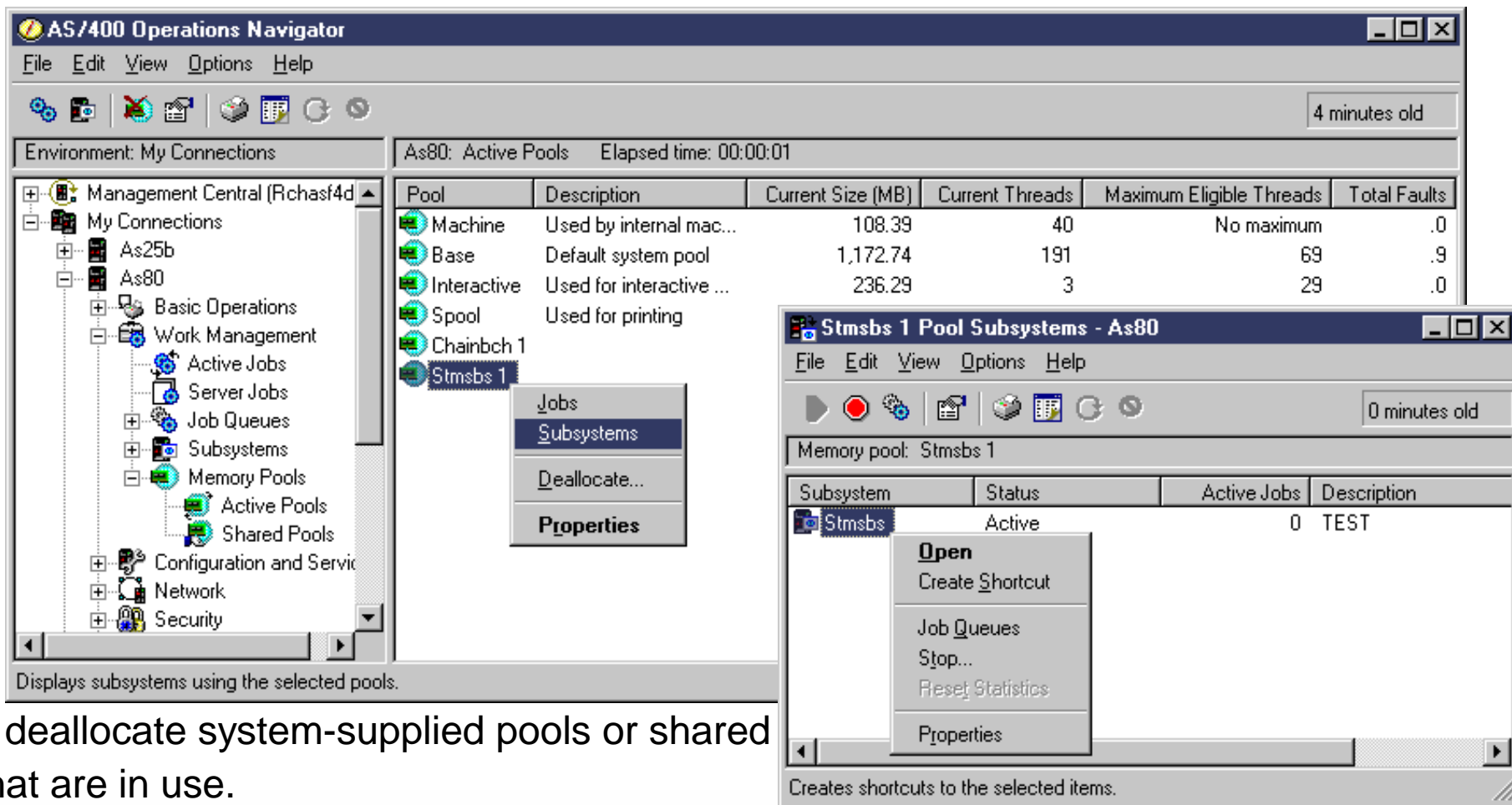
You can view and/or change performance-related system values right within the Memory Pools container. Just right-click Memory Pools, Active Pools, or Shared Pools. The fields on the Memory Pools page map to the following system values that you're used to working with on a 5250 screen:

- QPFRADJ
- QMAXACTLVL
- QMCHPOOL
- QBASPOOL
- QBASACTLVL
- QTSEPOOL

Note: You can access all system values by expanding Configuration and Service in the Operations Navigator hierarchy. Moreover, you can compare and update system values across multiple systems in Management Central.

Active Pools

- Contains all shared and private pools being used
- Work with a pool's jobs or subsystems
- Deallocate a pool (sets pool size to 0 & returns storage to Base pool)*
- Change pool size and activity level via Properties



The screenshot displays the AS/400 Operations Navigator interface. The main window, titled "AS/400 Operations Navigator", shows a tree view on the left with "My Connections" expanded to "As80". The "Active Pools" section is selected, showing a table of active pools. A context menu is open over "Stmsbs 1", with "Properties" highlighted. A secondary window, "Stmsbs 1 Pool Subsystems - As80", is also open, showing a table of subsystems with "Stmsbs" selected and its context menu open, with "Properties" highlighted.

Pool	Description	Current Size (MB)	Current Threads	Maximum Eligible Threads	Total Faults
Machine	Used by internal mac...	108.39	40	No maximum	.0
Base	Default system pool	1,172.74	191	69	.9
Interactive	Used for interactive ...	236.29	3	29	.0
Spool	Used for printing				
Chainbch 1					
Stmsbs 1					

Subsystem	Status	Active Jobs	Description
Stmsbs	Active	0	TEST

*Cannot deallocate system-supplied pools or shared pools that are in use.

The Active Pools container contains all shared and private memory pools that are currently in use. In essence, an active pool means that main storage has been allocated to it. The information displayed in the right pane is similar to what you typically see at the bottom of the WRKSYSSTS display. The list of active pools is shown in the following predefined order by default:

- Machine
- Base
- Interactive
- Spool
- Shared 1 - Shared 60
- Private pools, in alphabetical order by subsystem name

Pools are referred to by name, not by pool ID. Private pool names consist of the subsystem name followed by a space and the subsystem pool ID. Pools that do not have main storage allocated to them do not appear in the list. Up to 64 pools can be active (allocated) at one time.

Available columns include fields from both WRKSYSSTS and WRKSHRPOOL displays. You can customize the data you want to see. To see all columns available and change which ones get displayed, select Active Pools and then on the Options menu, select Columns. This is a usability enhancement compared to the 5250 interface, which requires you to press the F11 key multiple times to get the information you need. See the online help for Work Management if you need a description of any column. **Note:** The "No Maximum" value in the Maximum Eligible Threads column is the equivalent of "+++++" on the WRKSYSSTS and WRKSHRPOOL displays.

Selecting the Jobs or Subsystem action on a pool opens a separate window in which you can see all jobs currently running in the pool or all active subsystems currently using the pool, respectively. You can then perform the usual job and subsystem control tasks.

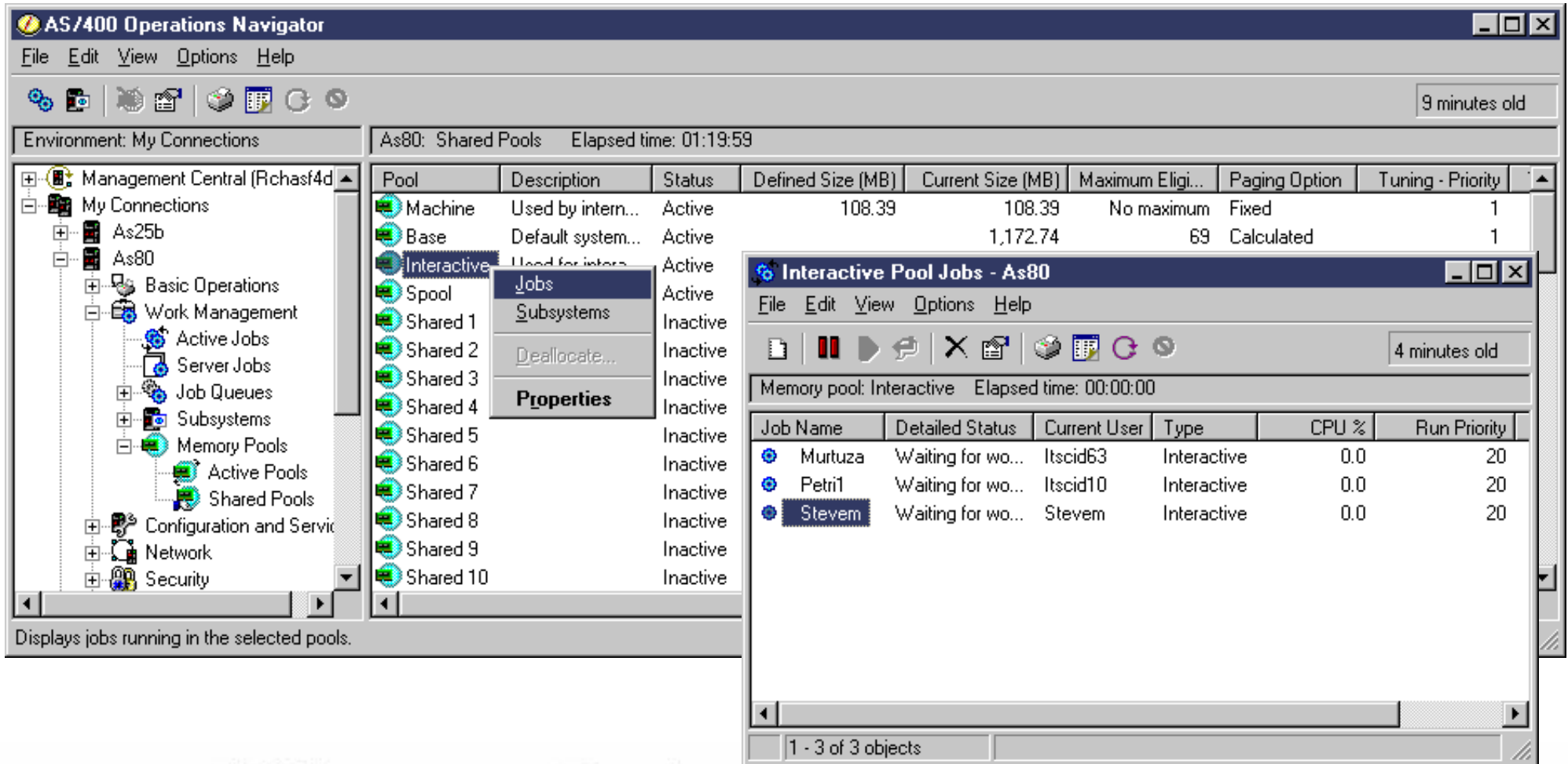
The Active Pools container contains all shared and private memory pools that are currently in use--that is, pools to which main storage has been allocated. This information is similar to what you would see at the bottom of the Work With System Status display when you run the WRKSYSSTS command. The list of active pools is shown in the following predefined order by default:

With the Deallocate option, you can select one or more memory pools if you need to set the pool size to 0 and return the pool's storage to the system (Base pool). Note that the Deallocate option is only supported for private pools and inactive shared pools. You cannot deallocate the Machine, Base, Interactive, and Spool memory pools, as well as shared pools that are in use on the system.

The Properties for a pool varies depending on whether the pool is shared or private. For example, a Tuning page appears only for shared pools in order to tune data like priority and page faults per second, as well as automatically adjust memory pools and activity levels. Automatically adjusting memory pools and activity pools can also be changed via the Performance System Values task in the Memory Pools container, or the System Values container in Configuration and Service. For both shared and private pools, you can change their size and activity level via the Configuration page of the Properties dialog.

Shared Pools

- Contains all shared pools
 - Machine, Base, Interactive, Spool
 - Shared pools 1 to 60
- Perform similar tasks as with Active Pools



The screenshot displays the AS/400 Operations Navigator interface. The main window shows a tree view of the system configuration under 'My Connections' > 'As80'. The 'Shared Pools' folder is expanded, showing a list of pools. The 'Interactive' pool is selected, and a context menu is open with 'Jobs' highlighted. A secondary window titled 'Interactive Pool Jobs - As80' is open, displaying a table of jobs running in the Interactive pool.

Pool	Description	Status	Defined Size (MB)	Current Size (MB)	Maximum Eligi...	Paging Option	Tuning - Priority
Machine	Used by intern...	Active	108.39	108.39	No maximum	Fixed	1
Base	Default system...	Active		1,172.74	69	Calculated	1
Interactive	Used for intern...	Active					
Spool		Active					
Shared 1		Inactive					
Shared 2		Inactive					
Shared 3		Inactive					
Shared 4		Inactive					
Shared 5		Inactive					
Shared 6		Inactive					
Shared 7		Inactive					
Shared 8		Inactive					
Shared 9		Inactive					
Shared 10		Inactive					

Job Name	Detailed Status	Current User	Type	CPU %	Run Priority
Murtuza	Waiting for wo...	Itscid63	Interactive	0.0	20
Petri1	Waiting for wo...	Itscid10	Interactive	0.0	20
Stevem	Waiting for wo...	Stevem	Interactive	0.0	20

The Shared Pools container contains all shared pools on the system: machine, base, interactive, spool, and shared pools 1 through 60. The information displayed in the right pane is similar to what you typically see at the bottom of the WRKSHRPOOL display. The list of shared pools is shown in the following predefined order by default:

- Machine
- Base
- Interactive
- Spool
- Shared 1 - Shared 60

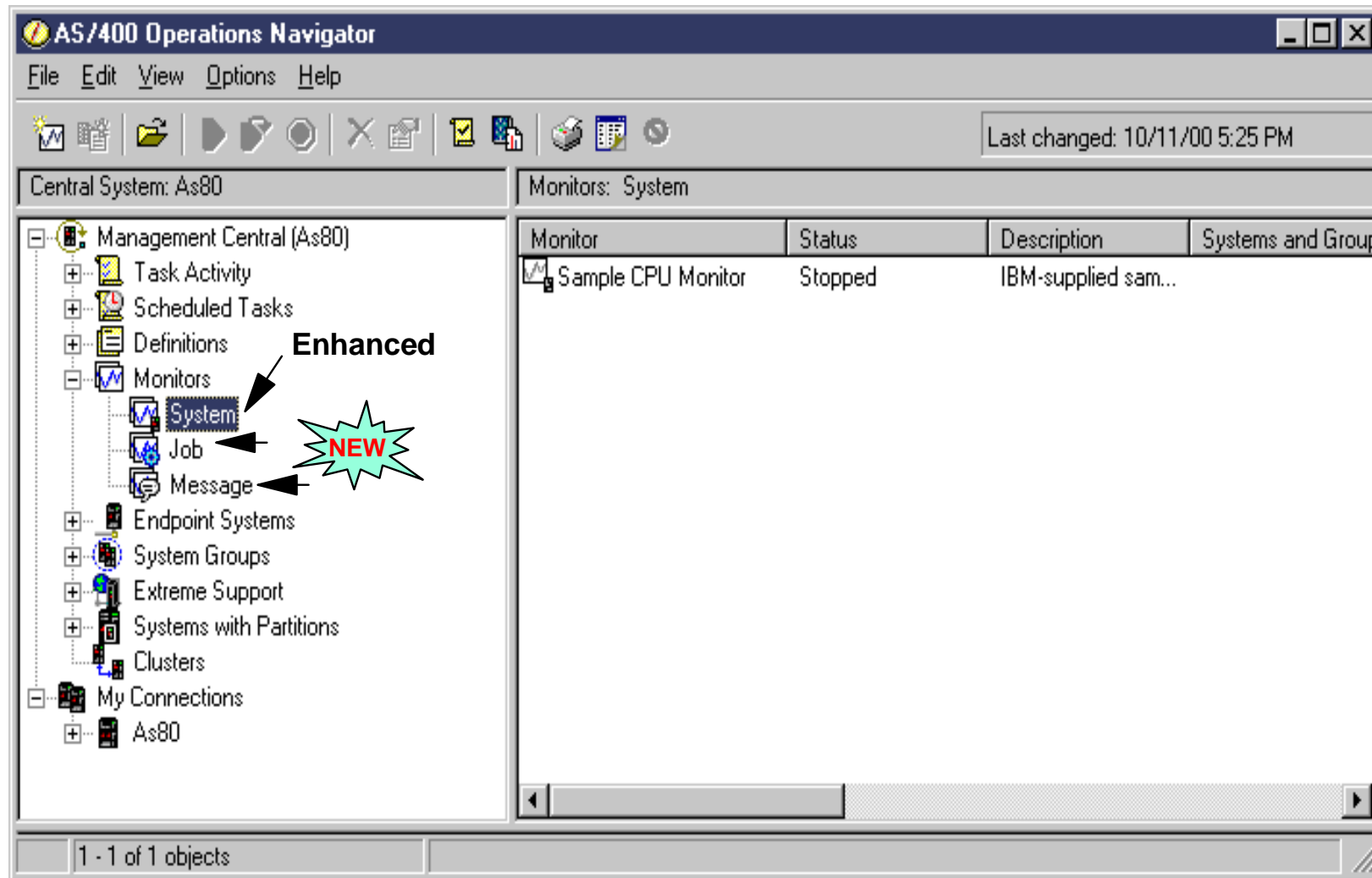
Pools are referred to by name, not by pool ID. Available columns include fields from both WRKSYSSTS and WRKSHRPOOL displays. You can customize the data you want to see. To see all columns available and change which ones get displayed, select Shared Pools and then on the Options menu, select Columns. This is a usability enhancement to having to press F11 numerous times on the WRKSYSSTS or WRKSHRPOOL display in order to get the information you need. See the online help for Work Management if you need a description of any column. **Note:** The "No Maximum" value in the Maximum Eligible Threads column is the equivalent of +++++ on either of the 5250 displays.

Selecting the Jobs or Subsystem action on a pool opens a separate window in which you can see all jobs currently running in the pool or all active subsystems currently using the pool, respectively. You can then perform the usual job and subsystem control tasks.

Notes:

- You can change the size and activity level of a shared pool, as well as tuning data, via the Configuration page of the Properties dialog.
- You cannot deallocate the Machine, Base, Interactive, and Spool memory pools, as well as shared pools that are in use on the system.

Monitors



AS/400 Operations Navigator

File Edit View Options Help

Last changed: 10/11/00 5:25 PM

Central System: As80

Monitors: System

Monitor	Status	Description	Systems and Group
Sample CPU Monitor	Stopped	IBM-supplied sam...	

1 - 1 of 1 objects

The Monitors function has been enhanced at V5R1. Previous versions only permitted the creation and viewing of real-time system performance monitors using any combination of the 26 defined metrics. With V5R1, you now have the ability to create and monitor system performance, jobs, and messages.

System Monitors (Prev-V5R1 "Monitors")

The Monitor window shows a graphical view of the metrics for a monitor as they are being collected. You can have more than one monitor window open at the same time, and you can work with other windows while the Monitor windows are open. You can use detailed graphs to monitor the real-time performance of multiple AS/400 systems by using a system monitor. In the Graph History window, see a graphical view of the metrics that have been collected for an extended period of time by a particular monitor. You can contrast this data with the real-time data for the last hour shown in a system monitor window.

You can use the Command Prompt and take an action from, such as holding a job by clicking on a graph line.

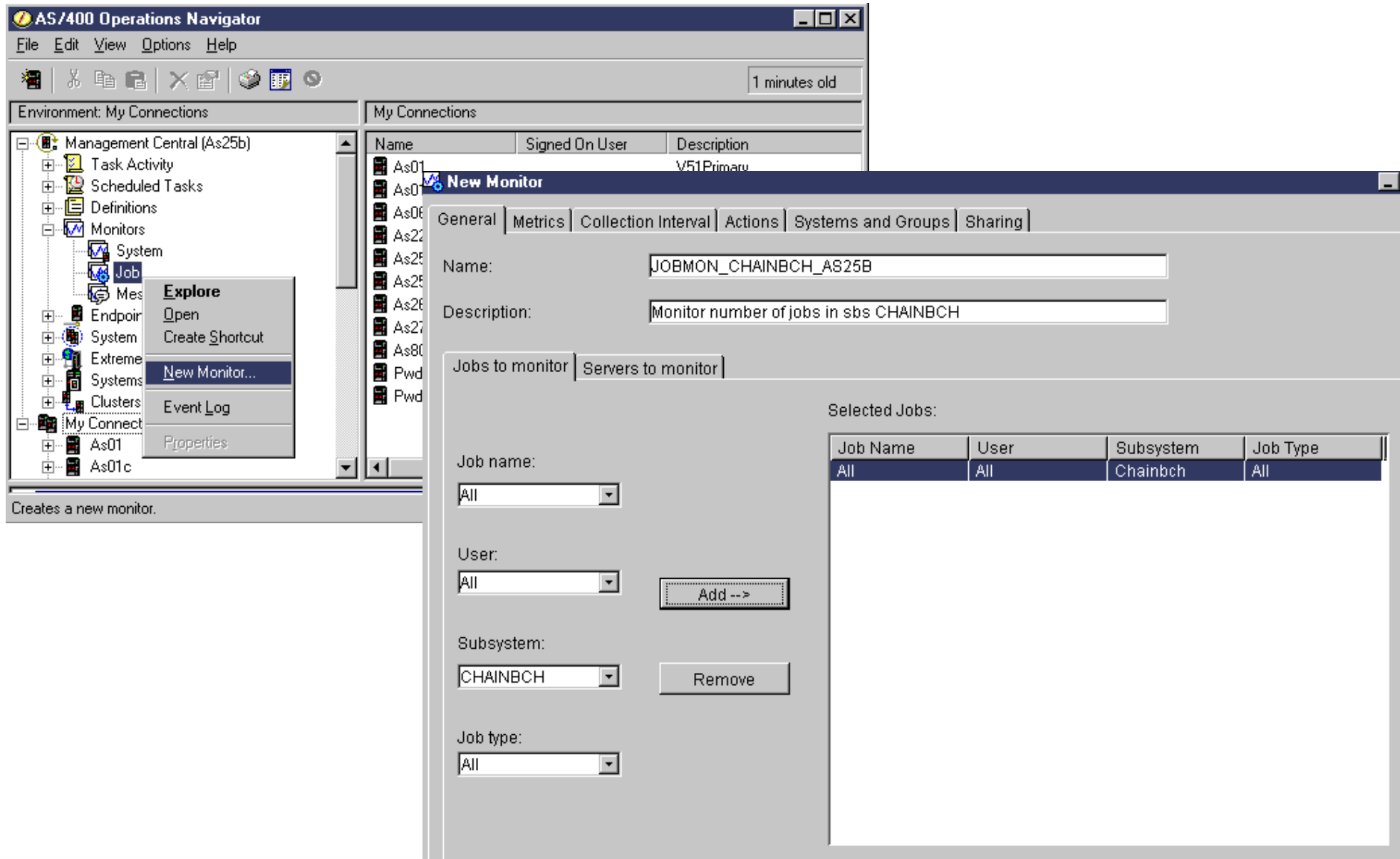
Job Monitors

You can use a job monitor to monitor a job or list of jobs based on job name, job user, job type, subsystem, or server type. For example, you might want to monitor a job's CPU usage, job status, or job log messages. The job monitor allows you to define commands to run when a specified threshold is met, such as percent of CPU used.

Message Monitors

You can create a message monitor to monitor any message queue for any group of messages you select. The monitor can run on one or more systems. The message monitor also allows you to specify a command to run on the AS/400 when the message count exceeds a specified level. You can also see the details of a message, reply to a message, send a message, delete a message, and see or change the properties of a message.

Subsystem Jobs Monitor Example



AS/400 Operations Navigator

File Edit View Options Help

Environment: My Connections

My Connections

Name	Signed On User	Description
As01		V51Primary

New Monitor

General Metrics Collection Interval Actions Systems and Groups Sharing

Name:

Description:

Jobs to monitor Servers to monitor

Job name:

User:

Subsystem:

Job type:

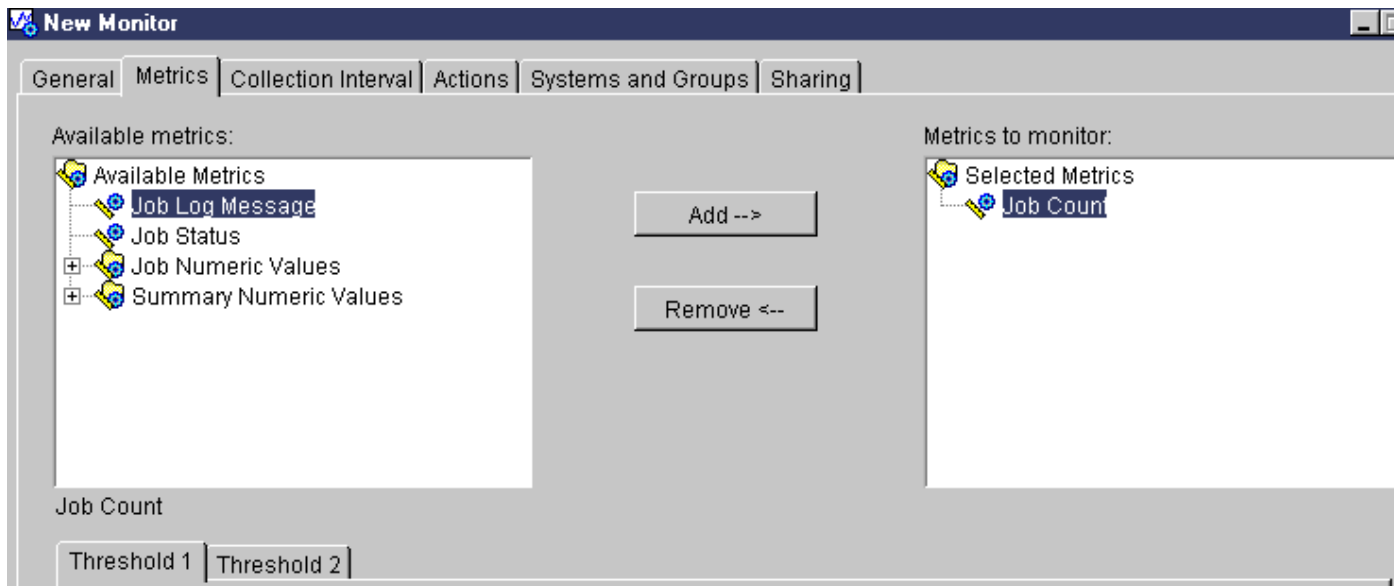
Add --> Remove

Selected Jobs:

Job Name	User	Subsystem	Job Type
All	All	Chainbch	All

Creates a new monitor.

Jobs Monitor Example: Metrics, Start



New Monitor

General | **Metrics** | Collection Interval | Actions | Systems and Groups | Sharing

Available metrics:

- Available Metrics
 - Job Log Message
 - Job Status
 - Job Numeric Values
 - Summary Numeric Values

Metrics to monitor:

- Selected Metrics
 - Job Count

Add -->

Remove <--

Job Count

Threshold 1 | Threshold 2

Enable trigger > 3 jobs

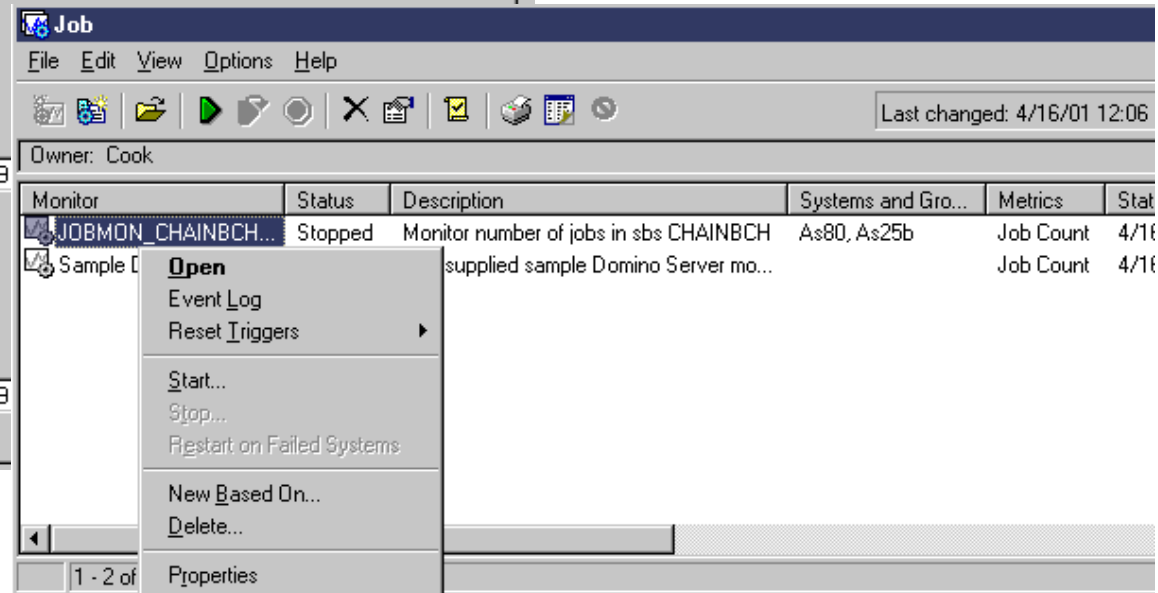
Duration: 1 intervals

OS/400 trigger command: ("More than 3 jobs in CHAINB

Enable reset <= 2 jobs

Duration: 1 intervals

OS/400 reset command: ("More than 3 jobs in CHAINB



Job

File Edit View Options Help

Last changed: 4/16/01 12:06

Owner: Cook

Monitor	Status	Description	Systems and Gro...	Metrics	Stat
JOBMON_CHAINBCH...	Stopped	Monitor number of jobs in sbs CHAINBCH	As80, As25b	Job Count	4/16
Sample D		supplied sample Domino Server mo...		Job Count	4/16

Open

Event Log

Reset Triggers

Start...

Stop...

Restart on Failed Systems

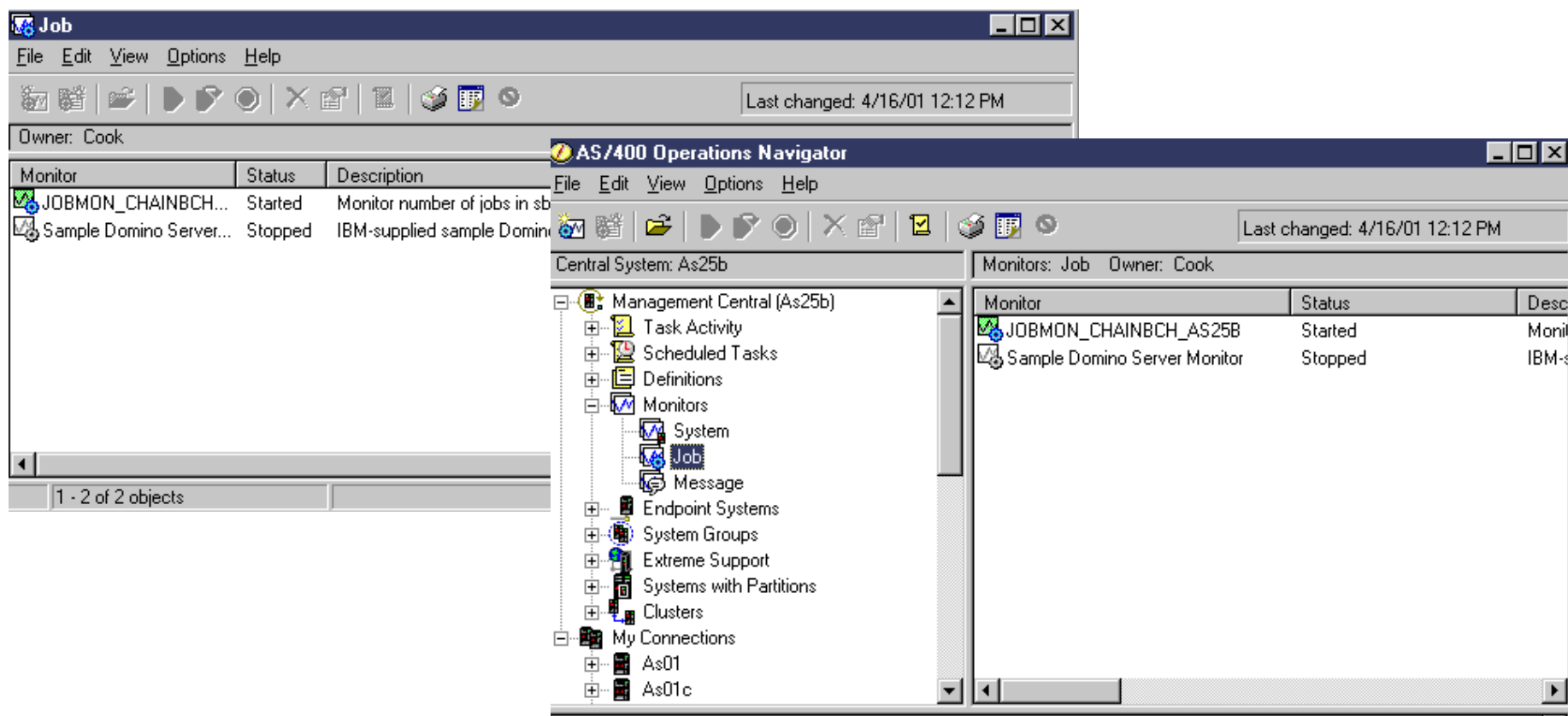
New Based On...

Delete...

Properties

Command Prompt used

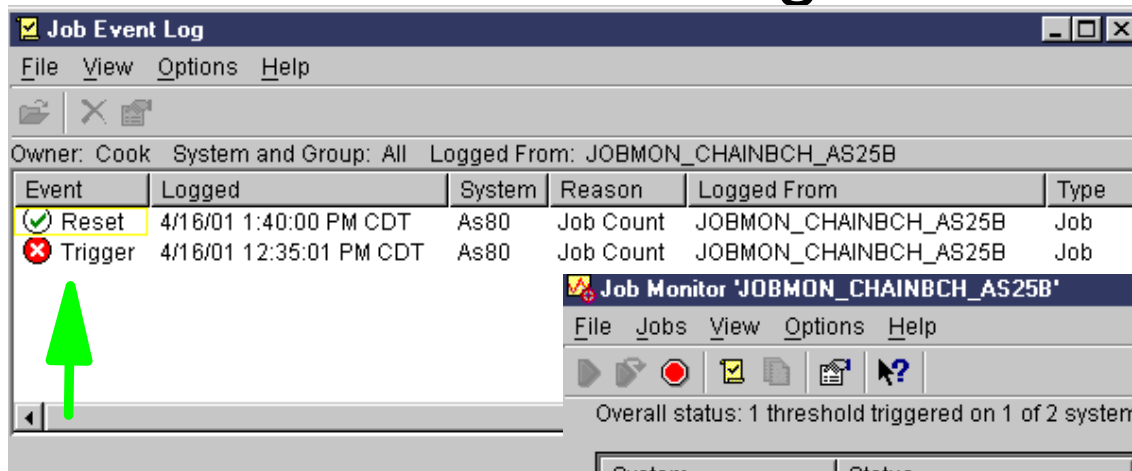
During Start Process



General View of Job Monitors

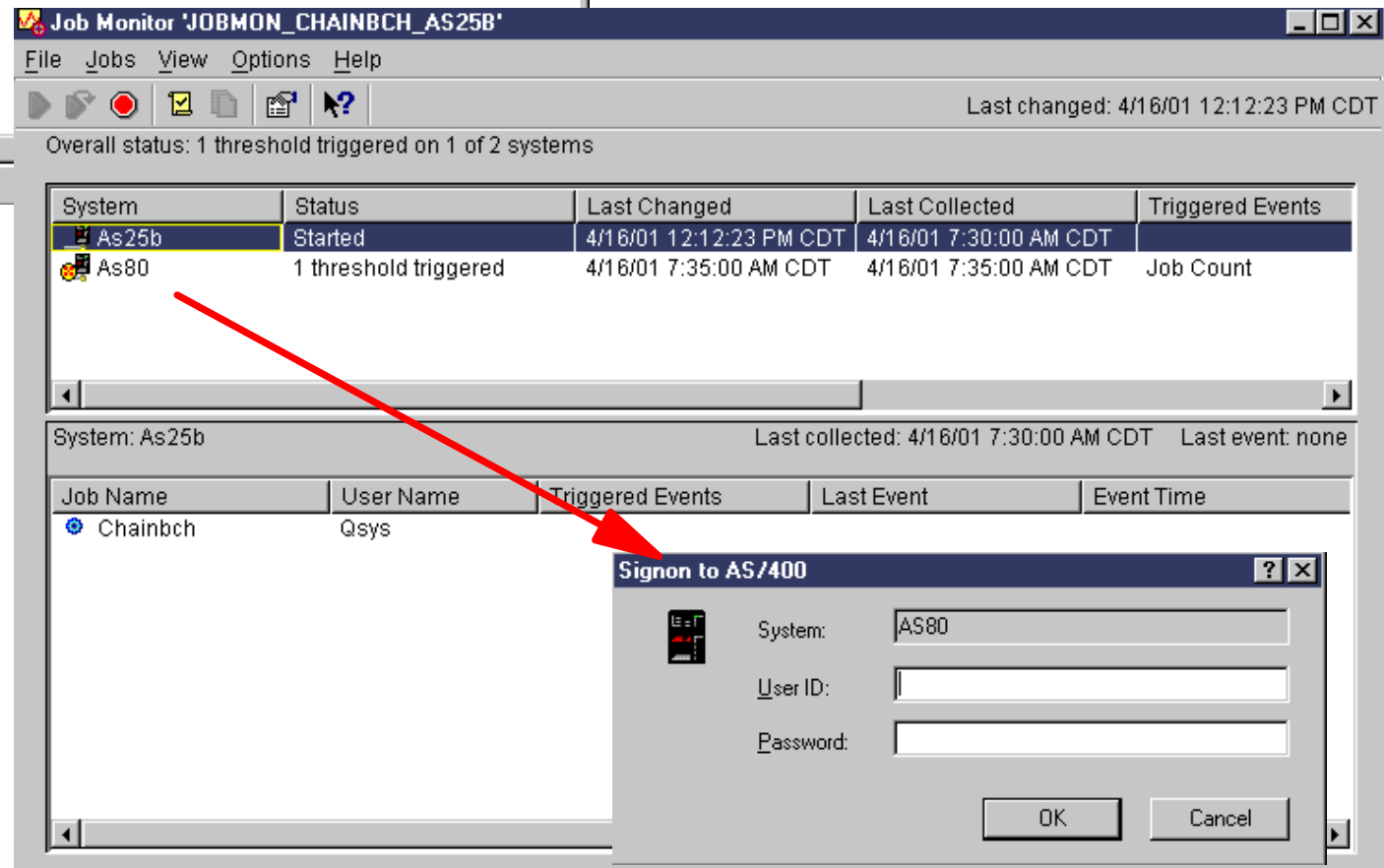
Jobs Monitor Example: Status Changed

Job Monitor Event Log



Job Event Log window showing event history. The 'Trigger' event is highlighted with a red 'X' icon, and a green arrow points to it.

Event	Logged	System	Reason	Logged From	Type
✓ Reset	4/16/01 1:40:00 PM CDT	As80	Job Count	JOBMON_CHAINBCH_AS25B	Job
✗ Trigger	4/16/01 12:35:01 PM CDT	As80	Job Count	JOBMON_CHAINBCH_AS25B	Job



Job Monitor 'JOBMON_CHAINBCH_AS25B' window showing overall status and system details. A red arrow points from the 'Triggered Events' column of the system table to the 'Chainbch' job in the job details table. A 'Signon to AS/400' dialog box is open over the job details.

Overall status: 1 threshold triggered on 1 of 2 systems

System	Status	Last Changed	Last Collected	Triggered Events
As25b	Started	4/16/01 12:12:23 PM CDT	4/16/01 7:30:00 AM CDT	
As80	1 threshold triggered	4/16/01 7:35:00 AM CDT	4/16/01 7:35:00 AM CDT	Job Count

System: As25b Last collected: 4/16/01 7:30:00 AM CDT Last event: none

Job Name	User Name	Triggered Events	Last Event	Event Time
Chainbch	Qsys			

Signon to AS/400 dialog box:
System: AS80
User ID:
Password:
OK Cancel

Job Monitor Triggered

Notes: Jobs Monitor Example: Status Changed

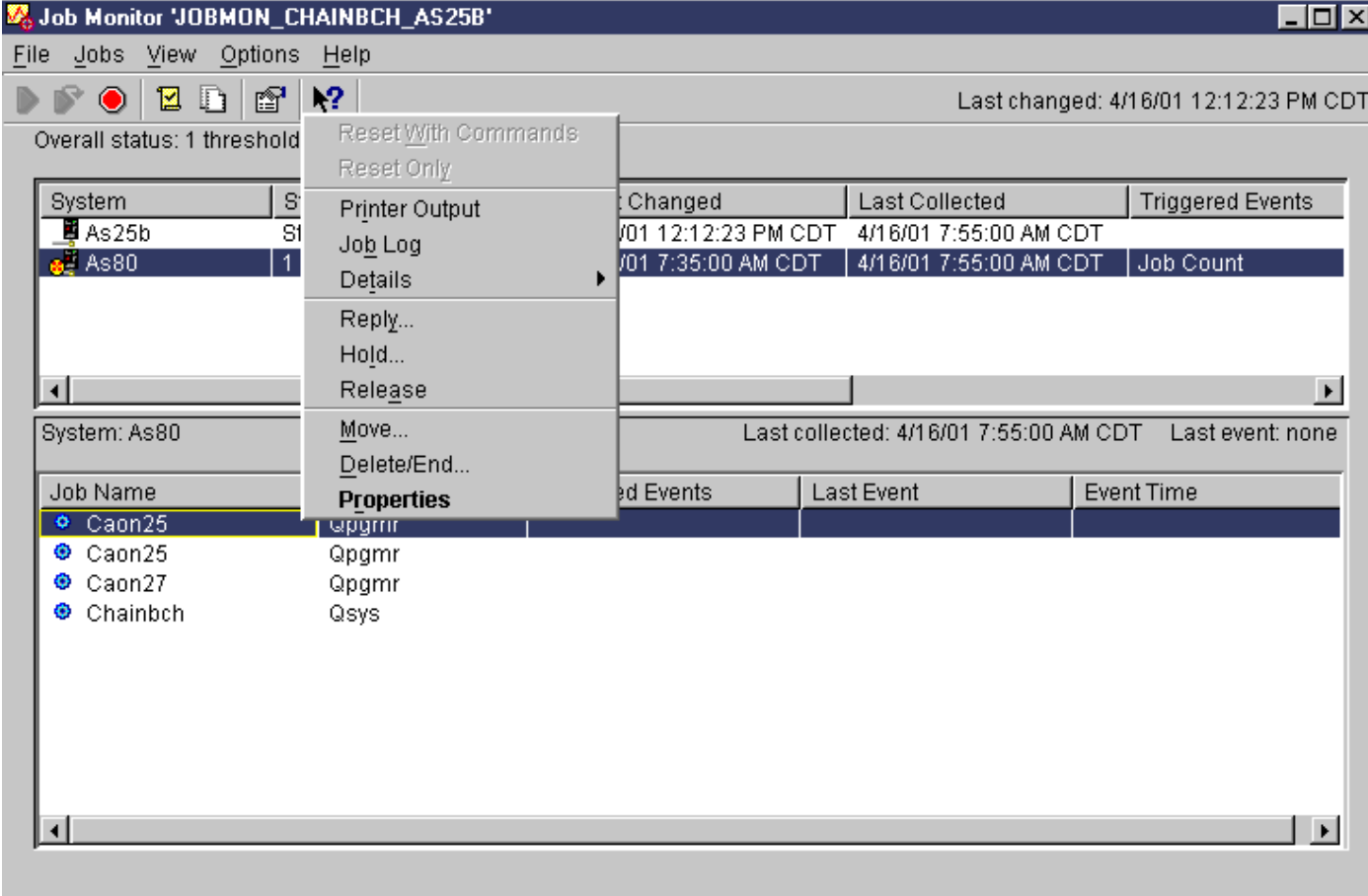
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During the definition of the Job Monitor we selected to automatically show the Event Log (top window) and the status window. In each of these windows you see that the specific monitor "trigger has occurred.."

We right clicked on the AS80 system name in the lower window and selected Output. This causes a sign on to that system so you can look at the jobs as shown in the next foil.

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Jobs Monitor Example: Job Details



The screenshot shows the 'Job Monitor' application window titled 'JOBMON_CHAINBCH_AS25B'. The interface includes a menu bar (File, Jobs, View, Options, Help), a toolbar, and a status bar. The main area is divided into several sections:

- Overall status:** 1 threshold
- System List:** A table with columns 'System' and 'S'. It lists 'As25b' and 'As80' (selected).
- System: As80**
- Job List:** A table with columns 'Job Name' and 'S'. It lists 'Caon25', 'Caon25', 'Caon27', and 'Chainbch'.
- Context Menu:** Open over the 'As80' system, showing options like 'Reset With Commands', 'Reset Only', 'Printer Output', 'Job Log', 'Details', 'Reply...', 'Hold...', 'Release', 'Move...', and 'Delete/End...'. The 'Properties' option is highlighted.
- Job Details Table:** A table with columns 'Changed', 'Last Collected', and 'Triggered Events'. It shows data for 'Caon25' with 'Job Count' as the triggered event.
- Event Log Table:** A table with columns 'ed Events', 'Last Event', and 'Event Time'. It shows 'Qpgmr' as the last event.

Notes: Jobs Monitor Example: Job Details

We get the list of jobs in the monitored subsystem (listed in the lower pane at the bottom of the list).

We right clicked to get the list of actions, which includes many job actions.

There are many Job Monitoring capabilities in V5R1. This ends the coverage in this presentation.

Management Central - Collection Services: Graph History

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Notes: Collection Services Graph History

Starting with V5R1 Collection Services optionally provides "graph history" of performance data collected within a Management Collection Object. You have options to graphically display each of the different performance metrics collected while running Collection Services.

In V5R1 when you start your collection, you have new options to collect graph history data and how long to save that history data. If you want to save the data longer than 7 days you are requested to activate PM/400e.

The following charts give insight into how to use the new Graph History support.

Mgt Cntl Graph History: Start Collection

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V5R1

V4R4, V4R5

Start Collection Services - As25b

General | Data to Collect

Cycle collection if already started

Location to store collections:
/QSYS.LIB/PFRV45CS.LIB

Cycling

Time to synchronize cycle: 12:00:00 A

Frequency to cycle collections: 24

Default collection interval

15 seconds
 5 minutes

Collection retention period


1 hours
 1 days
 Permanent

Create database files during collection

Start Collection Services - As80

General | Data to Collect

Cycle if already collecting

Location to store collections: /Qsys.lib/Qpfrdata.lib 


Cycling

Cycle everyday at 12:00:00 AM

Cycle every 2 hours

Default collection interval for detailed data

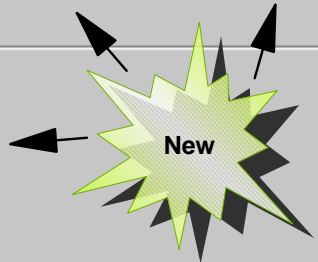
30 seconds
 5 minutes

Collection retention period 

Performance Management/400 status: Stopped

Start Performance Management/400 if needed

Detailed data:	Graph data:	Summary data:
<input type="radio"/> 1 hours	<input type="radio"/> 1 hours	<input type="radio"/> 1 months
<input type="radio"/> 1 days	<input checked="" type="radio"/> 6 days	<input type="radio"/> 1 years
<input checked="" type="radio"/> Permanent		

Create database files during collection
 Create graph data when collection is cycled
 Create summary data when collection is cycled 

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Prior to V5R1

In the left (background) window you see the V4R5 primary Start Collection Services window where you can specify collection options such as:

- When to cycle (end and start a new collection) a collection and the OS/400 library to contain the Management Collection object (library PFRV45CS, in our example).
- The default collection interval (how frequently to retrieve performance data from the microcode)
- How long to save the Management Collection object
- Whether to create the QAPMxxx database files (from the data in the collection object) during a collection. By specifying no (uncheck the check box), you can later use either Operations Navigator to create the QAPMxxx files or run the Create Performance Data (CRTPFRDTA) command against the appropriate collection object.

V5R1

With V5R1, as shown on the right panel there are new Start Collection Services options:

Library for Management Collection object

Starting with V5R1 the only library that may be used is the one provided by IBM - QPFRDAT, which was also provided in previous releases as a default library.

Cycling

New prompt text for equivalent "when to cycle a collection" from previous OS/400 releases

Default collection interval of detailed performance data

Collection retention period

The length of time that collection objects remain in the file system before they are deleted. You can get maximum use from the collection retention period if you enable Performance Management/400. You may set the status of PM/400 and optionally request it to be started, if needed.

The status field for Performance Management/400 indicates whether PM/400 is started (Started), is not started (Stopped), or if there was a problem (Failed). To start PM/400, select Start Performance Management/400.

- Detailed data: The length of time that collection objects remain in the file system before they are deleted. You can select a specific time period in hours or days, or you can select Permanent. If you select Permanent, the collection objects will not be automatically deleted.
- Graph data: The length of time that the data for the details and properties data that are shown in the Graph History window remain in the system before they are deleted. If you do not start Performance Management/400 (PM/400), you can specify one to seven days. If you do start PM/400, you can specify one to thirty days. The default is one hour.
Note: The Graph data field is not available to central systems or endpoint systems that do not have Version 5 Release 1 Modification 0 or later (V5R1M0) installed.
- Summary data: The length of time that the data points of a graph can be displayed in the Graph History window or remain in the system before they are deleted. No details or properties data is available. You must start PM/400 to enable the summary data fields. The default is one month.

Create graph data when collection is cycled

If you do not check this and want to later do "Graph History" you have then click "create summary data now" on the collection object.

Notes: Mgmt Central - Start Collection

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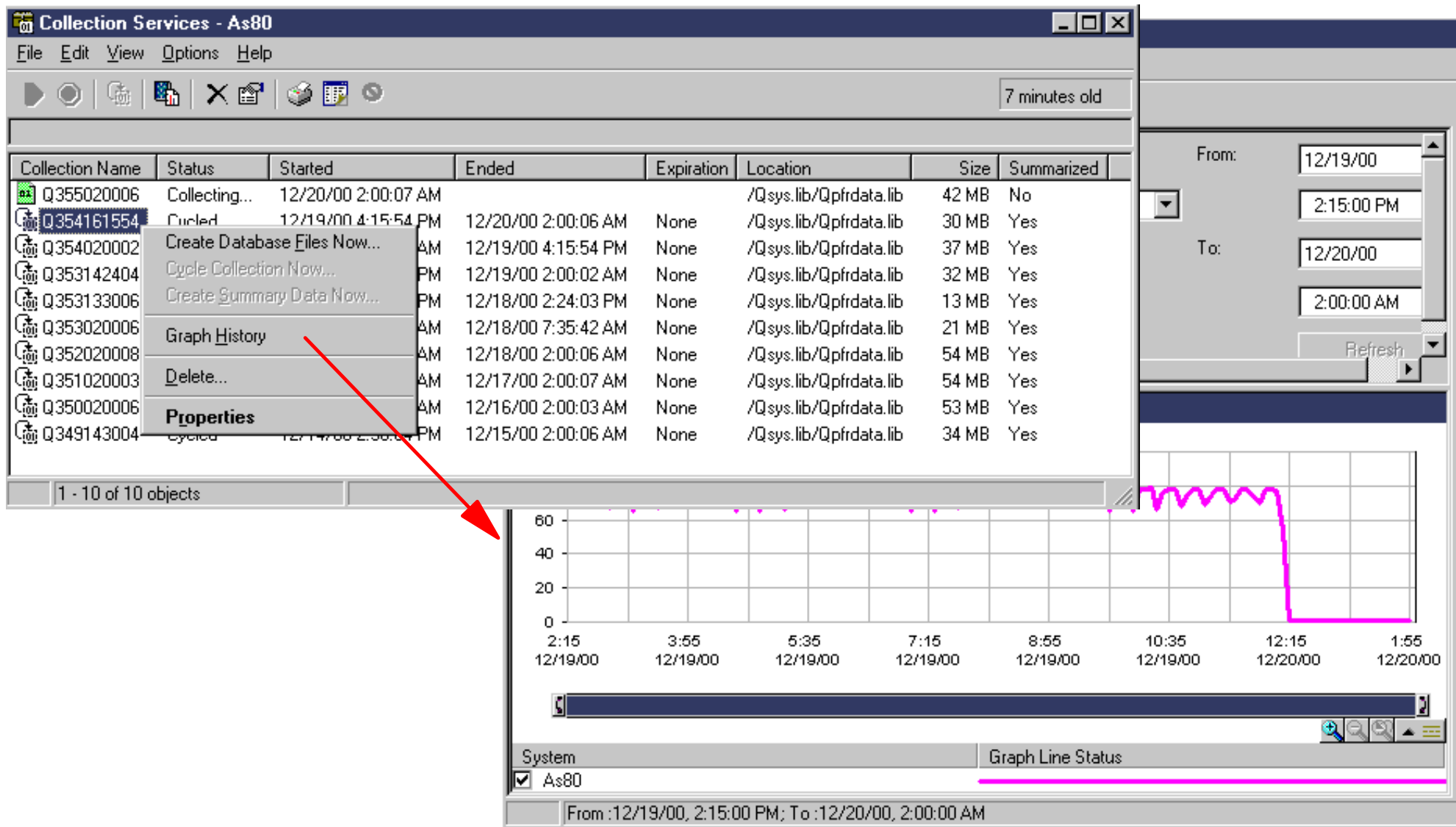
The status field for Performance Management/400 indicates whether PM/400 is started (Started), is not started (Stopped), or if there was a problem (Failed). To start PM/400, select Start Performance Management/400.

Note: The Summary data field is not available to central systems or endpoint systems that do not have Version 5 Release 1 Modification 0 or later (V5R1M0) installed.

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Collection Services - Starting Graph History

Start by clicking a specific collection



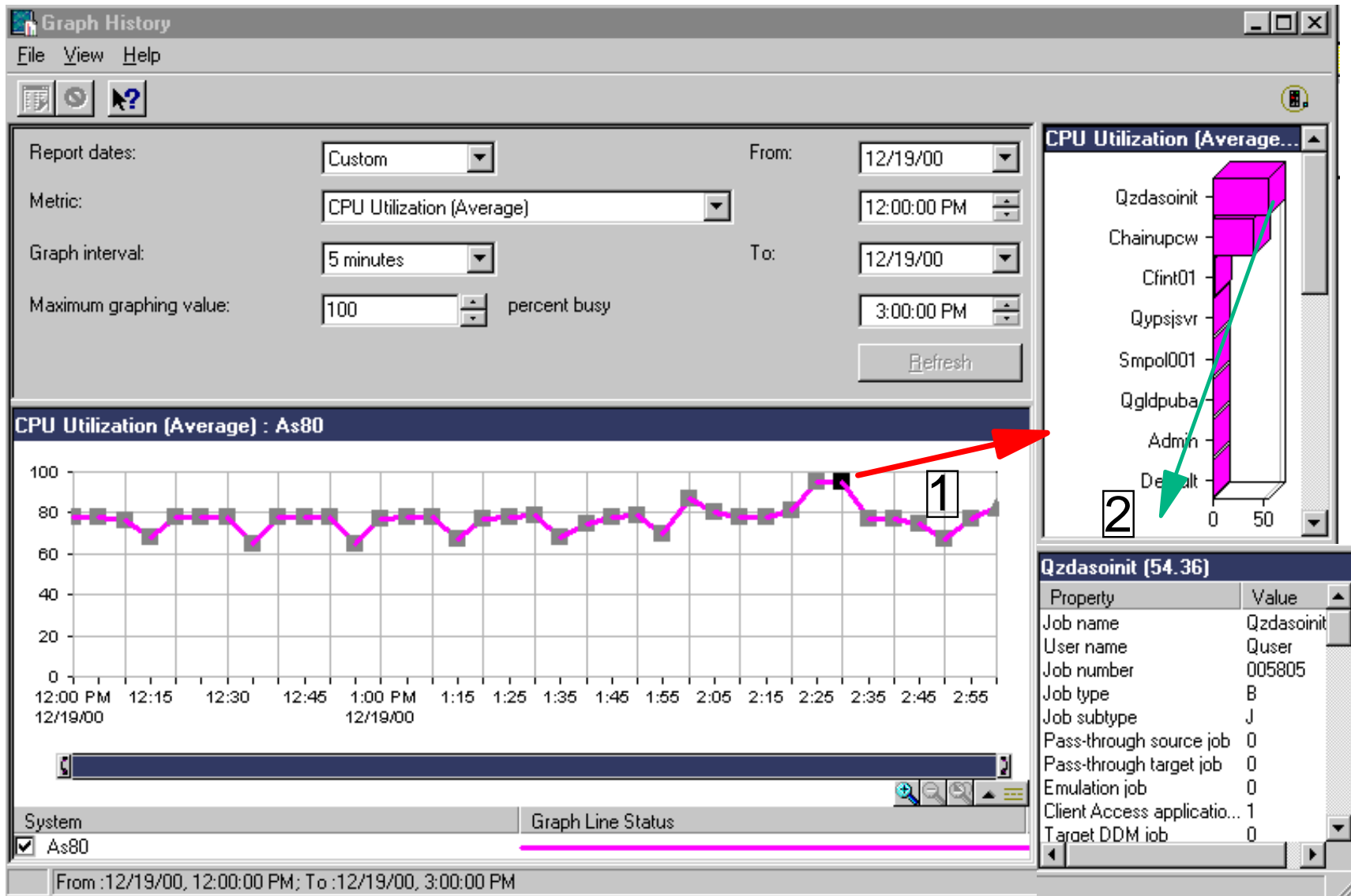
The screenshot shows the 'Collection Services - As80' application window. The main area contains a table with the following data:

Collection Name	Status	Started	Ended	Expiration	Location	Size	Summarized
Q355020006	Collecting...	12/20/00 2:00:07 AM			/Qsys.lib/Qpfrdata.lib	42 MB	No
Q354161554	Cycled	12/19/00 4:15:54 PM	12/20/00 2:00:06 AM	None	/Qsys.lib/Qpfrdata.lib	30 MB	Yes
Q354020002	Create Database Files Now...	AM	12/19/00 4:15:54 PM	None	/Qsys.lib/Qpfrdata.lib	37 MB	Yes
Q353142404	Cycle Collection Now...	PM	12/19/00 2:00:02 AM	None	/Qsys.lib/Qpfrdata.lib	32 MB	Yes
Q353133006	Create Summary Data Now...	PM	12/18/00 2:24:03 PM	None	/Qsys.lib/Qpfrdata.lib	13 MB	Yes
Q353020006	Graph History	AM	12/18/00 7:35:42 AM	None	/Qsys.lib/Qpfrdata.lib	21 MB	Yes
Q352020008	Delete...	AM	12/18/00 2:00:06 AM	None	/Qsys.lib/Qpfrdata.lib	54 MB	Yes
Q351020003	Properties	AM	12/17/00 2:00:07 AM	None	/Qsys.lib/Qpfrdata.lib	54 MB	Yes
Q350020006		AM	12/16/00 2:00:03 AM	None	/Qsys.lib/Qpfrdata.lib	53 MB	Yes
Q349143004	Cycled	12/14/00 2:30:00 PM	12/15/00 2:00:06 AM	None	/Qsys.lib/Qpfrdata.lib	34 MB	Yes

A red arrow points from the 'Graph History' row in the table to a graph window. The graph window displays a line graph with a y-axis from 0 to 60 and an x-axis from 12/19/00 2:15 to 12/20/00 1:55. The graph shows a purple line that fluctuates between 40 and 60 until approximately 12:15 on 12/20/00, where it drops sharply to 0. The graph window also includes a 'From:' field (12/19/00 2:15:00 PM), a 'To:' field (12/20/00 2:00:00 AM), and a 'Refresh' button. The status bar at the bottom of the graph window reads 'From :12/19/00, 2:15:00 PM; To :12/20/00, 2:00:00 AM'.

Graph History - CPU Util Details, Properties

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Notes: CPU Util Details, Properties

On this foil you can see the "second level" pane of information in the upper right. This information is the result of clicking on the "square as noted" by the arrow by 1.

This second level of information (for example top 20 CPU consuming jobs) is similar to that available with the real time Performance Metrics monitors (now called System Monitors) available with pre V5R1 releases under Management Central.

Clicking on one of the jobs in the right pane shows the "third level" information for that job (in this CPU utilization example)

Management Central - Pervasive

See: Performance presentation


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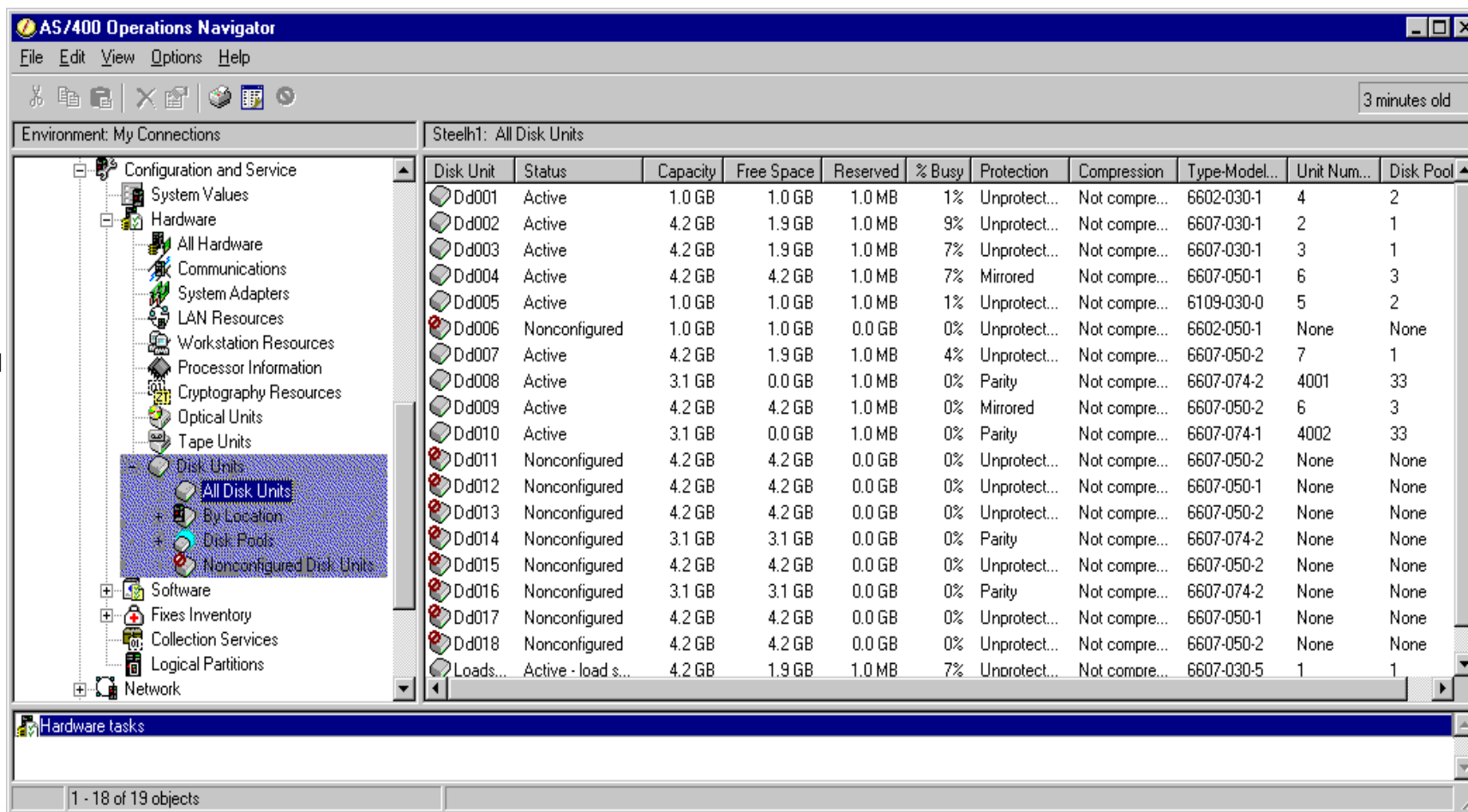
Operations Navigator: DASD Management

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DASD Management

Application Administration required - Service Tools Server DST authority for

- Complete DASD Management
- DST Support (subset)
- View and Add Disk Units
- Disk Balancing
- Create, manage ASPs and Disk Units
- Create, manage Independent Auxiliary Storage Pools (Disk Pools=Private Pools) 
- Compression



AS/400 Operations Navigator

Environment: My Connections

Steel1: All Disk Units

Disk Unit	Status	Capacity	Free Space	Reserved	% Busy	Protection	Compression	Type-Model...	Unit Num...	Disk Pool
Dd001	Active	1.0 GB	1.0 GB	1.0 MB	1%	Unprotect...	Not compre...	6602-030-1	4	2
Dd002	Active	4.2 GB	1.9 GB	1.0 MB	9%	Unprotect...	Not compre...	6607-030-1	2	1
Dd003	Active	4.2 GB	1.9 GB	1.0 MB	7%	Unprotect...	Not compre...	6607-030-1	3	1
Dd004	Active	4.2 GB	4.2 GB	1.0 MB	7%	Mirrored	Not compre...	6607-050-1	6	3
Dd005	Active	1.0 GB	1.0 GB	1.0 MB	1%	Unprotect...	Not compre...	6109-030-0	5	2
Dd006	Nonconfigured	1.0 GB	1.0 GB	0.0 GB	0%	Unprotect...	Not compre...	6602-050-1	None	None
Dd007	Active	4.2 GB	1.9 GB	1.0 MB	4%	Unprotect...	Not compre...	6607-050-2	7	1
Dd008	Active	3.1 GB	0.0 GB	1.0 MB	0%	Parity	Not compre...	6607-074-2	4001	33
Dd009	Active	4.2 GB	4.2 GB	1.0 MB	0%	Mirrored	Not compre...	6607-050-2	6	3
Dd010	Active	3.1 GB	0.0 GB	1.0 MB	0%	Parity	Not compre...	6607-074-1	4002	33
Dd011	Nonconfigured	4.2 GB	4.2 GB	0.0 GB	0%	Unprotect...	Not compre...	6607-050-2	None	None
Dd012	Nonconfigured	4.2 GB	4.2 GB	0.0 GB	0%	Unprotect...	Not compre...	6607-050-1	None	None
Dd013	Nonconfigured	4.2 GB	4.2 GB	0.0 GB	0%	Unprotect...	Not compre...	6607-050-2	None	None
Dd014	Nonconfigured	3.1 GB	3.1 GB	0.0 GB	0%	Parity	Not compre...	6607-074-2	None	None
Dd015	Nonconfigured	4.2 GB	4.2 GB	0.0 GB	0%	Unprotect...	Not compre...	6607-050-2	None	None
Dd016	Nonconfigured	3.1 GB	3.1 GB	0.0 GB	0%	Parity	Not compre...	6607-074-2	None	None
Dd017	Nonconfigured	4.2 GB	4.2 GB	0.0 GB	0%	Unprotect...	Not compre...	6607-050-1	None	None
Dd018	Nonconfigured	4.2 GB	4.2 GB	0.0 GB	0%	Unprotect...	Not compre...	6607-050-2	None	None
Loads...	Active - load s...	4.2 GB	1.9 GB	1.0 MB	7%	Unprotect...	Not compre...	6607-030-5	1	1

Hardware tasks

1 - 18 of 19 objects

 New for V5R1

With V4R5 many DASD management functions including defining user ASPs, viewing the disk hardware configuration details and disk balancing and compression became available. With V5R1 more - most of the commonly used disk management functions available under the traditional Start Service Tools (STRSST command) interface are now supported in Operations Navigator in V5R1. Some additional disk management functions available when your system is started or changed to DST (dedicated service tools) mode are also supported in V5R1 through the Configuration and Services -> Hardware -> Disk units functions.

Here is a quick summary of the DASD management functions.

View and manipulate large disk configurations. This includes the ability to view subsets of all disk units, view disk units in a physical and logical hierarchical layout, and sort the disk units by various criteria such as size, resource name, or associated controller.

Use a graphical view to see where all the disk units on your system are located. From the graphical view, you can perform all the same actions on a disk unit that you can perform from the list of all disk units in the Operations Navigator window. These actions include start or stop compression, include the disk unit in a parity set (or exclude it), add a disk unit to a disk pool (or remove it), replace a disk unit, rename a disk unit, and more.

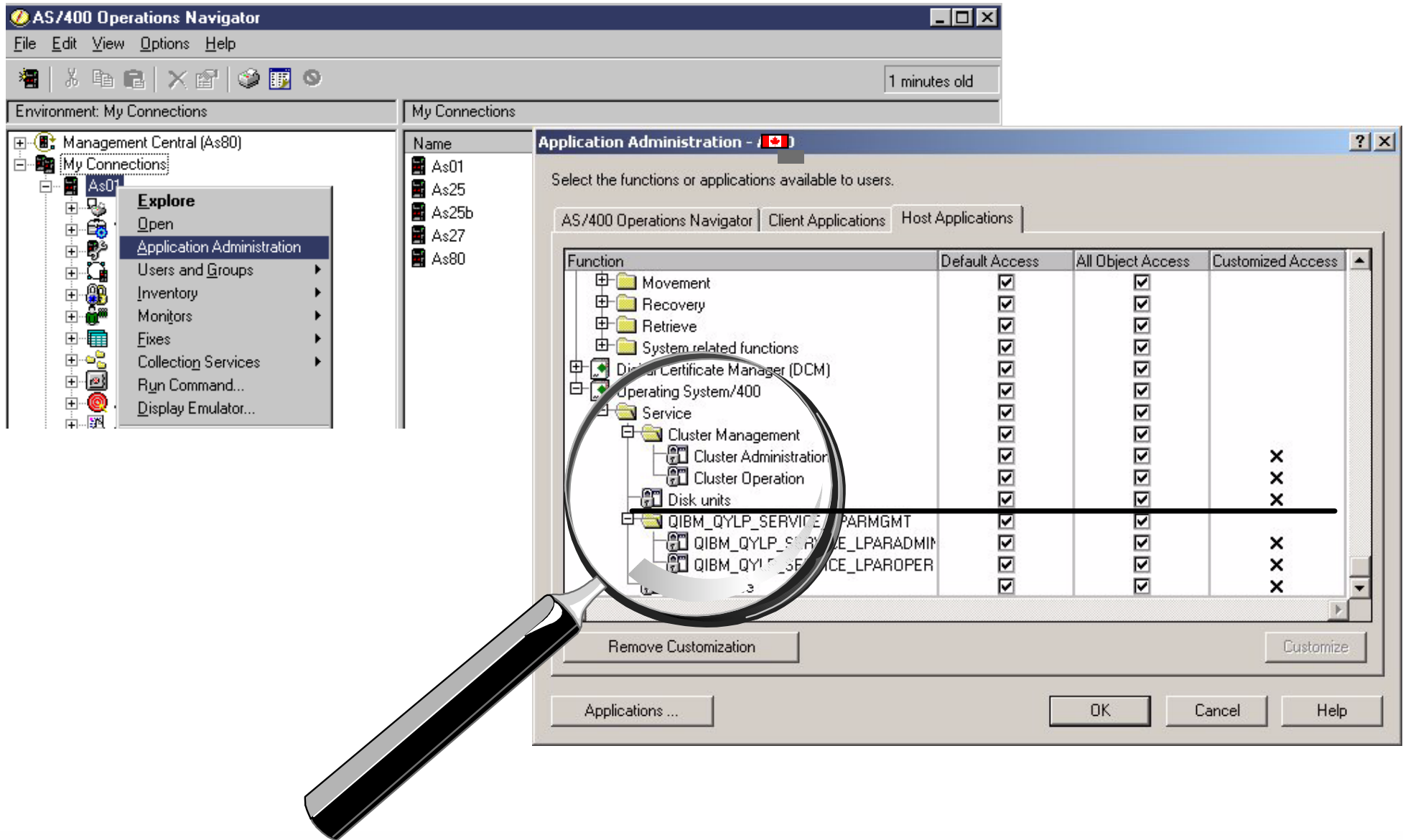
Wizards provide streamlined disk maintenance procedures for performing the functions listed here. Note that on an LPAR system, you would be defining the disk units through the LPAR 5250 Dedicated Service Tools (DST) interface or, in V5R1 through the Operations Navigator Logical Partition interface - if properly authorized to do this.

During Client Access Express installation on your PC you must selected justfiring

Before proceeding to foils discussing some of the disk management functions, we have some foils discussing "security requirements" to perform disk management functions.

Application Administration - Disk Units

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The screenshot displays the AS/400 Operations Navigator interface. On the left, a tree view shows the hierarchy: Management Central (As80) > My Connections > As0. A context menu is open over As0, with 'Application Administration' selected. The main window shows the 'Application Administration' dialog box, which is used to select functions and applications available to users. The dialog has tabs for 'AS/400 Operations Navigator', 'Client Applications', and 'Host Applications'. A table lists various functions with columns for 'Default Access', 'All Object Access', and 'Customized Access'. A magnifying glass is positioned over the 'Disk units' section of the table.

Function	Default Access	All Object Access	Customized Access
Movement	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Recovery	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Retrieve	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
System related functions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Digital Certificate Manager (DCM)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Operating System/400	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Service	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Cluster Management	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Cluster Administration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X
Cluster Operation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X
Disk units	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X
QIBM_QYLP_SERVICE_PARMGMT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
QIBM_QYLP_SERVICE_LPARADMIN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X
QIBM_QYLP_SERVICE_LPAROPER	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X

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You must have the appropriate service authority to administer disk units. Before you will even see the "Disk Units" branch under Hardware, your system administrator must have first "enabled Disk Units to be managed."

The DASD management support ships with a no access default for each system.

To enable view and work with (manage) Disk Units your system administrator must have done the following for your "connection" system. This needs to be done only once.

- The user has to have *SERVICE Special Authority.
- Install the Configure and Service Installable function for Operations Navigator. This is selectable under Custom Install or gets automatically installed when you select Full Install.
- Right click the AS/400 system and select Application Administration.
- Click on Host Applications
- Expand Operating System/400
- Expand Service
- Check Disk Units authorization as you have previously determined.

Note: You have to similarly do this to perform Cluster LPAR management functions - as shown "checked" in this graphic.

Each client work station that will do Disk Unit management must also have:

- Configure and Service function for Operations Navigator installed.
- Service Tools authorization: When clicking Disk Units, a Service Tools security window will appear, requesting an explicit Service Tools Server user profile and password. This user profile and password and user profile authorizations are specified through the Dedicated Service Tools (DST) interface (5250 console or Operations Console device).

See the next foil for more information on signing on with a Service Tools user profile.

In IPL - DST or run time DST Mode:

- Work with DST Environment
 - Service Tools Security: Define additional service tools user profiles, grant/revoke privileges

Add Service Table entry

- ADDSRVTBLE SERVICE('as-sts') PORT(3000) PROTOCOL('tcp')
TEXT('Service Tools Service') ALIAS('AS-STS')
- End TCP (ENDTCP) and then Start TCP (STRTCP)

Service Tools user profiles shipped with OS/400 are QSECOFR, 111111, 222222, and QSRV. Each has different levels of authority (privileges). It is recommended the user create one or two additional service tools user profiles with specific privileges. This way the capabilities of the QSECOFR service tools profile are not compromised.

Note the service tools user profiles and associated passwords are separate and independent of OS/400 user profiles and associated passwords. For example, OS/400 user profiles QSECOFR and JIMC passwords are SCY1OFR and myos4usr. Service tools user profiles QSECOFR and JIMC (you created this) have passwords of sts1sofor and back2you. Attempting to sign on as JIMC as shown in the example screen on the next foil with password myos4usr for JIMC 3 times successively will disable your service tools user profile.

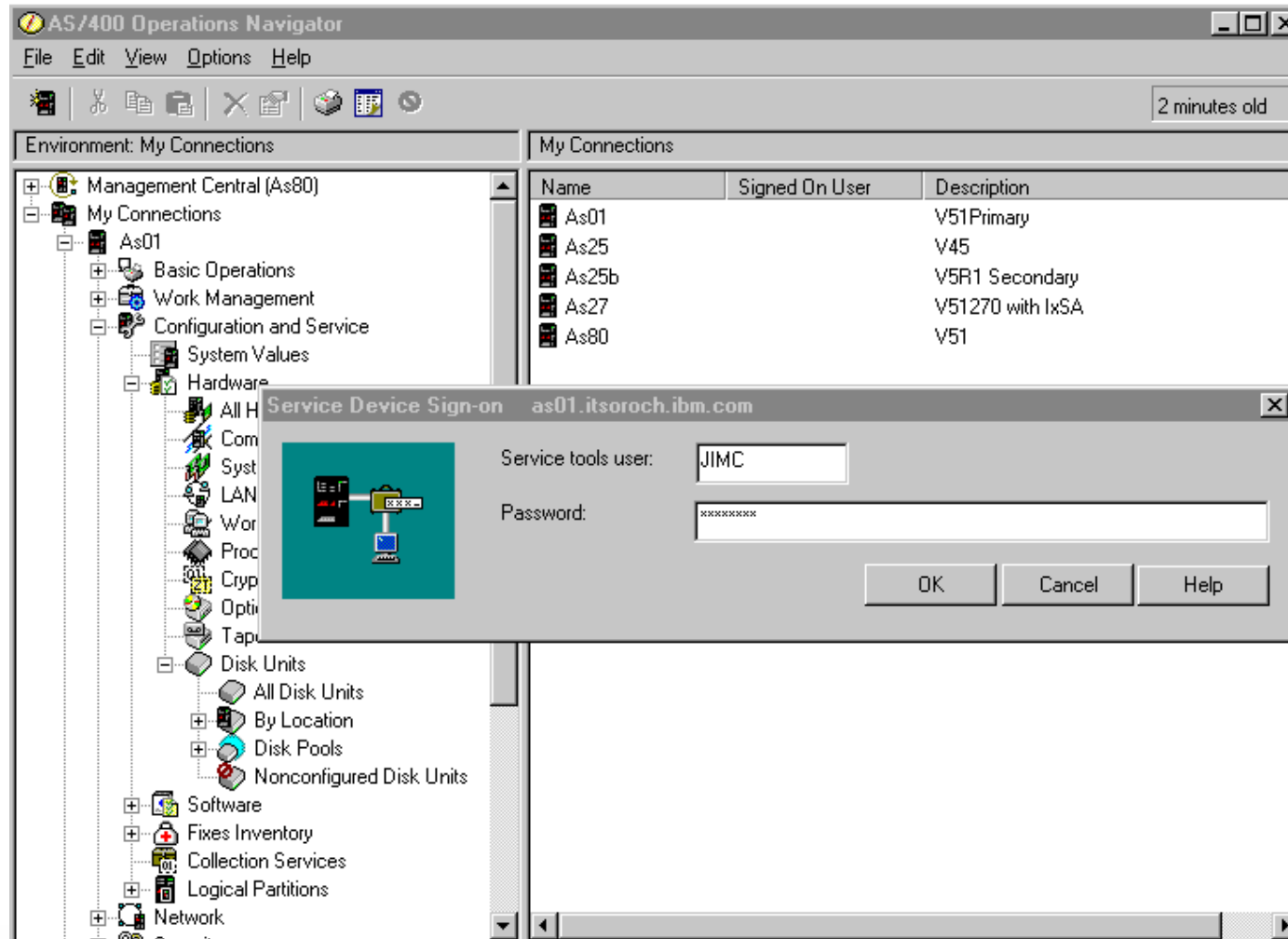
If you have not previously performed the Add Service Tools Entry command as shown and afterwards stopped and started TCP/IP, when selecting either "Disk Units" or "Logical Partitions" under Operations Navigator an error screen will be displayed that indicates there is no server listening on an IP port.

For more information in this area, refer to the V5R1 manual: Tips and Tools for Securing Your iSeries, SC41-5300-05. On V5R1 Information Center, you can find this book by:

- V5R1 Information Center (<http://www.ibm.com/eserver/iseriess/inforcenter>)
- Click Supplemental Manuals in the Navigation bar
- Click System Management
- Scroll to find Security heading

Disk Management - Sign on

- Operations Navigator Disk Management User must have Application Administration - Disk Management authorization
- Operations Navigator Disk Management User must have Service Tools user profile/authority



Notes: Disk Management - Sign on

Presuming Application Administration has specified Disk Units can be managed and your workstation has Configuration and Service installed, you see "Disk Units" branch at the bottom of the Configuration and Service-Hardware tree structure.

To perform disk unit functions click on the + character to the right Disk Units. This expands the Disk Units sub branches but before you can do any function you must sign on with a Service Tools security user profile and password as shown on this foil.

The Service Tools user profile and password and proper authorizations are specified via the Dedicated Service Tools (DST) interface options available to the system console device (twinax 5250, Operations Console Direct Attach, or new for V5R1, Operations Console LAN Attach. The DST configuration for the Service Tools user profile used here must be explicitly granted the capabilities to manage disk units.

Similarly, for the Operations Navigator user to do Logical Partitioning or Cluster Management functions the Service Tools user profile must be granted authority to do these functions as well as generally be enabled through Operations Navigator Application Administration.

The Service Tools user profile and password/authorizations are separate and independent of OS/400 user profile password/authorizations. That is, user JIMC may be defined under Service Tools security but need not be defined under OS/400. If the user id is defined both under OS/400 and Service Tools security, the password and specific authorizations are completely independent.

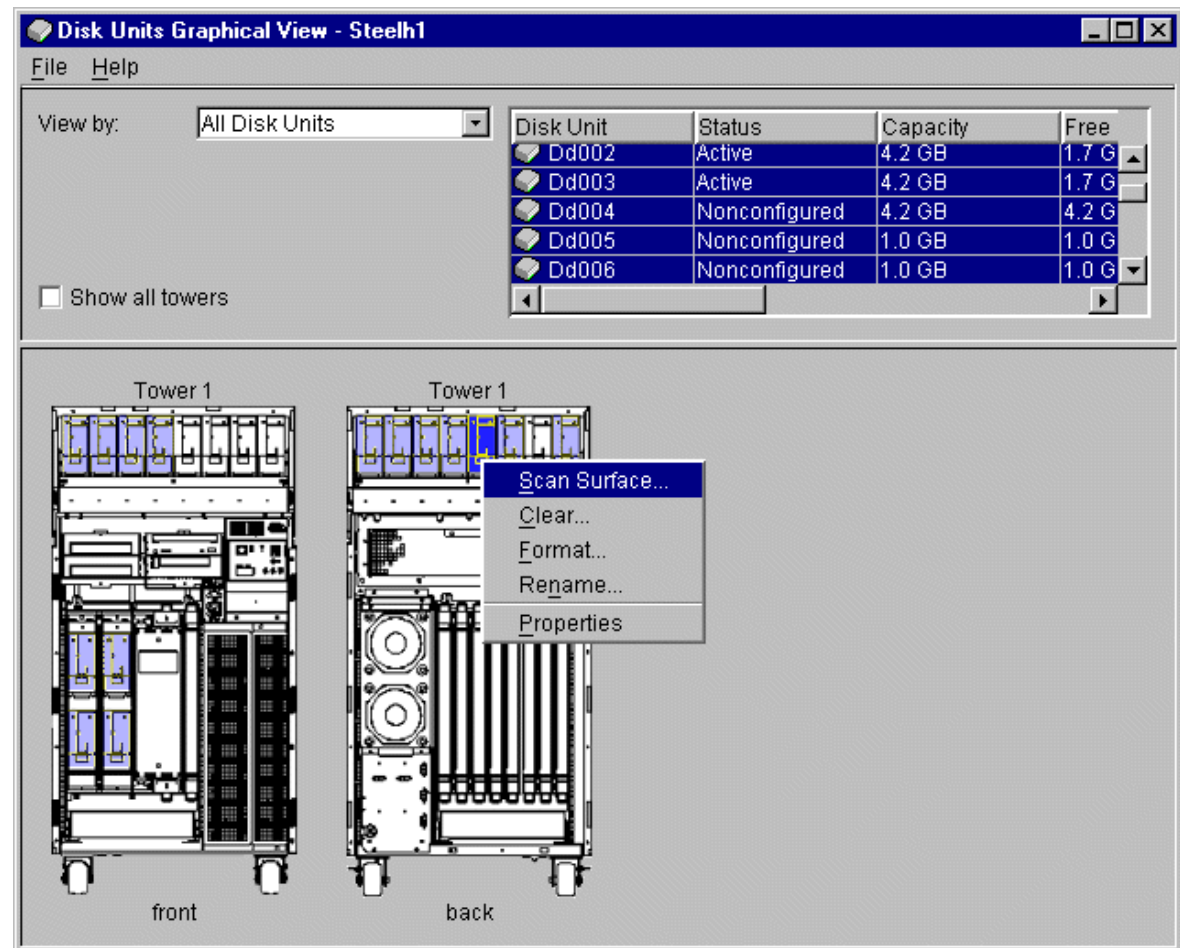
See the OS/400 presentation for more information on this Service Tools security.

For Operations Console LAN Attach security information see the OS/400 presentation and for associated client workstation configuration, see the Hardware presentation.

Disk Units - Graphical View

Manage Disk Hardware Graphically View By:

- All Disk Units
- Disk Pool
- I/O Processor
- Parity Set
- Mirrored pairs
- Nonconfigured Disk Units
- Active Disk Units
- Empty Slots



All valid sides of the Tower Tool Tip

Notes: Disk Units - Graphical View

Graphical View lets the user see the Disk Management hardware graphically, and also allows actions to be taken.

The View by option allows the user to select how to view the hardware by. The legend will alter to show types of things that are color coded. The different views that a user can have are

- All Disk Units: Show all the disk units. (V4R5 function)
- Disk Pool: Show the list of Disk Pools on the system (V4R5 function, except for V5R1 Independent ASP - Private Disk Pool)
- I/O Processor: Show the list of IOPs on the system
- Parity Set: Show the list of parity sets on the system
- Mirrored Pairs: Show the mirrored pairs in the system DDxxx/DDyyy (Disk resource names)
- Nonconfigured disk units: Show all the nonconfigured disk units (V4R5)
- Active Disk units: Show all the Active Disk Units (V4R5 function)

When the mouse moves over a disk unit, a tool tip says what the name of the disk unit is, and the status of it. It also will say if it's an empty slot.

All valid sides of a tower will be shown. If a tower can have disk units on the Front and Back, then both views of the same tower will be shown. If "Show all towers" is clicked off, then only the view that has an item with a hit to the view by field will be shown.

When right clicked, the context menu for a disk unit is displayed. You can then select from a list of actions to perform on the disk unit. For example, you can select

- Start or Stop Compression on a disk unit
- Include the disk unit in a parity set (or exclude it)
- Rename the disk unit.

If the disk unit has mirrored protection (that is, it is one of a mirrored pair), you can suspend or resume mirroring on the disk unit.

When ctrl-click is done on multiple disk units, these multiple disk units can be selected, and actions can be performed on them at once (add, remove, clear, ...). Doing a Ctrl-A allows a user to select all disk units easily in the list.

Independent Disk Pools and Simple Clustering IBM server iSeries

Objective: relieve the current system from work and give that work to another system

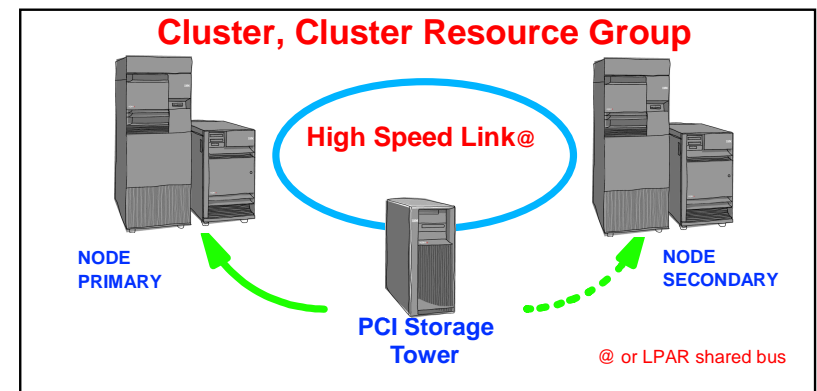
- Controlled switch over of data within a set of disk units attached to an I/O Processor to another system

Accomplished by using OS/400 Cluster Management Support (licensed option 41) commands or Operations Navigator interface to:

- Cluster (of 2 nodes)
- Independent Disk Pool

Steps:

- Plan application environment and associated disk hardware configuration for "switching"
- Ensure planned nodes are "active"
- Configure Cluster and Cluster Resource Groups (nodes/systems in the group)
- Configure Independent Disk Pool
- Associate a Cluster with an Independent Disk Pool
- Control application or system shutdown
- Switch the Independent Disk Pool to a "secondary node"
- Start up the application on the "switched to node"



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OS/400 clustering support includes grouping of S/400 or iSeries systems (nodes) into an environment that provides availability that approaches 100% for critical applications and critical data.

A cluster consists of a set of nodes that are defined to share resources (a Device Cluster Resource Group) and an Application Cluster Resource Group, along with heartbeat services, configurations, IP address takeover and so on. Under Cluster Management, our continuous availability and data resilience software and solutions come from IBM's AS/400 High Availability Business Partners (HABP).

To get the full range of automated take over, typically requires the services of a product from one of the HABPs.

V5R1 Independent Disk Pools can be added to the HABP solutions.

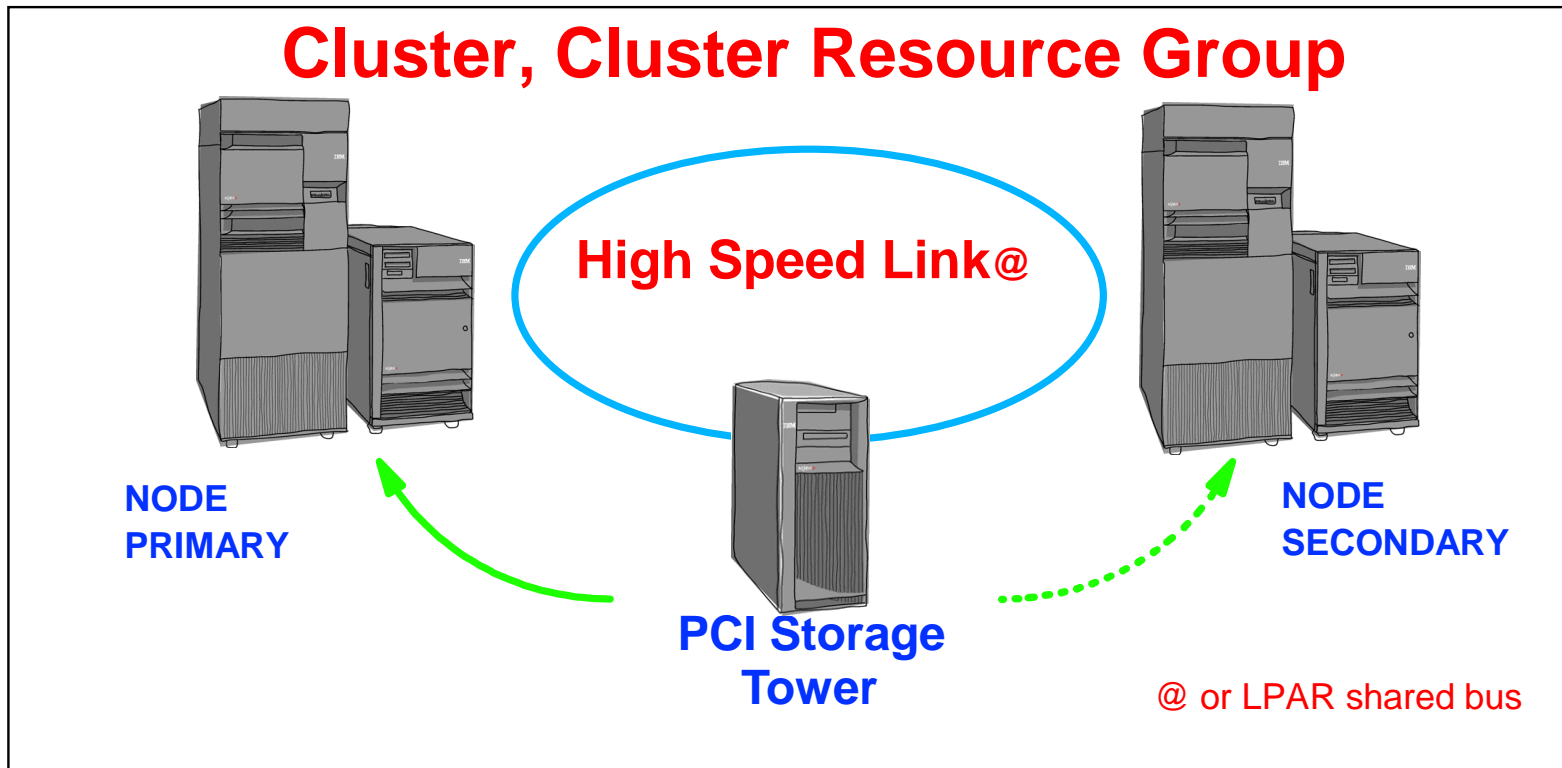
However, with V5R1 and the use of Independent Disk Pools and a minimum configuration of a Cluster and a Device Cluster Resource Group simple clustering support can be used. Essentially simple clustering supports 2 nodes in a cluster and use of an Independent Disk Pool that can be switched between the nodes in a controlled manner.

In a controlled shutdown process the applications using the data within an IASP are shutdown. Either through OS/400 commands or the Operations Navigator interface highlighted in this next set of foils the IASP can be switched to another node within the same Cluster Resource Group. The application can be restarted on the "switched to system" and the original system can be used for other applications or system maintenance or backup.

The Availability presentation contains more details on Clustering support and how to set up IASPs and associated Cluster and Cluster Resource Groups and switching the IASP between nodes. This section of Operations Navigator uses some screen examples to give a flavor on how the graphical user interface makes configuration and management easier than using OS/400 commands.

Switchable Disks* - Simple Clustering

IBM @server iSeries



- Data placement
 - Addresses planned outages
 - Hosts must be physically close
 - Not for Disaster Recovery or Save Window Reduction
- Supports IFS (except OS/400 QSYS.LIB) objects in 2001
 - Requires V5R1 and Option 41 (HA Switchable Resources) of OS/400

*Independent ASP
(Private Disk Pool)

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This foil gives a high level view of the simple clustering configuration.

In the lower portion of the foils you see the "definition" of what simple clustering is and "switchable disks" (switching Independent Disk Pools).

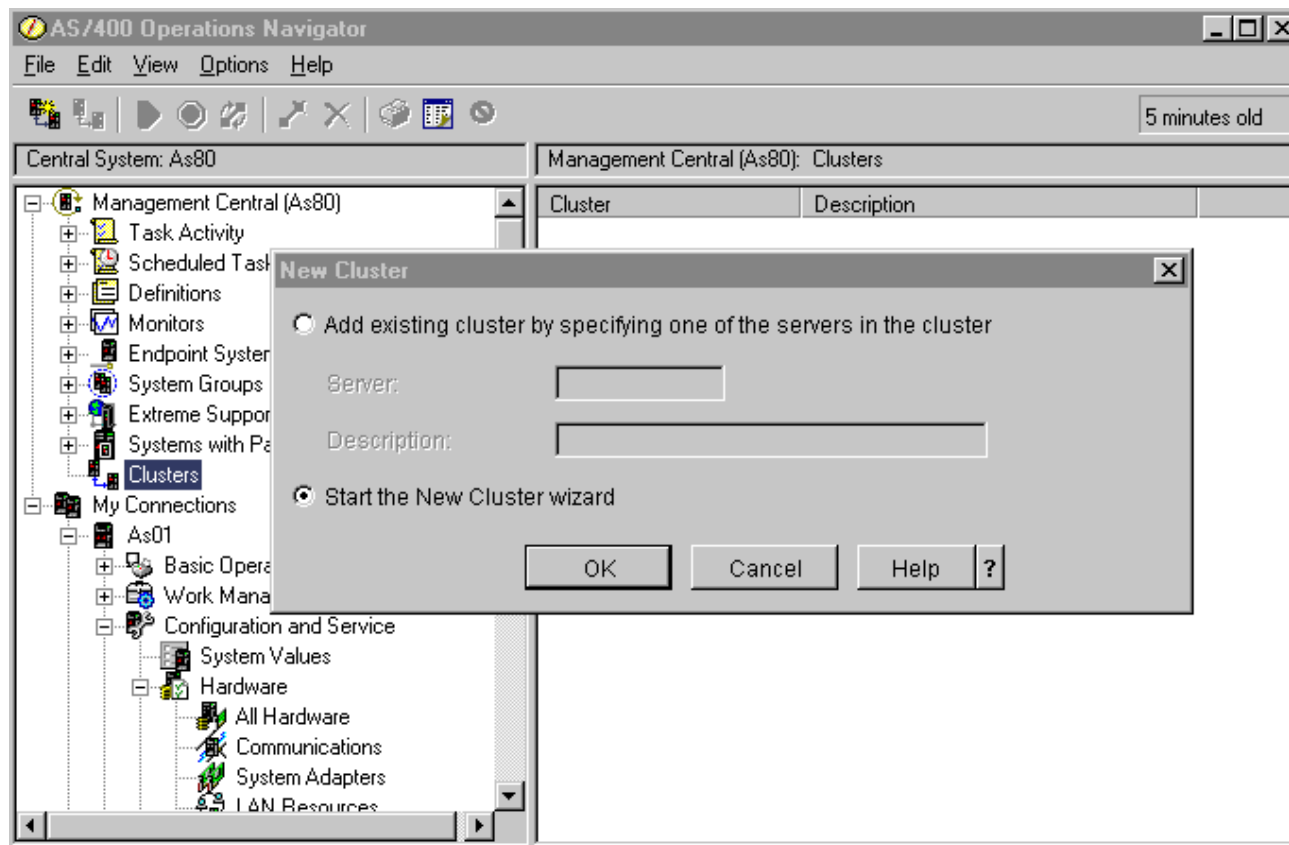
As you can see all nodes must be at V5R1 and have OS/400 option 41 - HA Switchable Resources, installed. This is a licensed, additional cost option.

The term "Independent Auxiliary Storage Pool" (IASP) is also used for this "Independent Disk Pool" term. In fact, Operations Navigator uses "Independent (Private) Disk Pool" terminology.

The next set of foils give an overview of the sequence of Operations Navigator interfaces for configuring Clusters, Independent Disk Pools, and switching the resource to the second node - "Node-Secondary."

Cluster Configuration Example

- Operations Navigator Cluster Management User must have Application Administration - Clusters authorization
- Cluster Configuration done under Management Central central server system
- Create new cluster or add a node to an existing cluster



Notes: Cluster Configuration Example

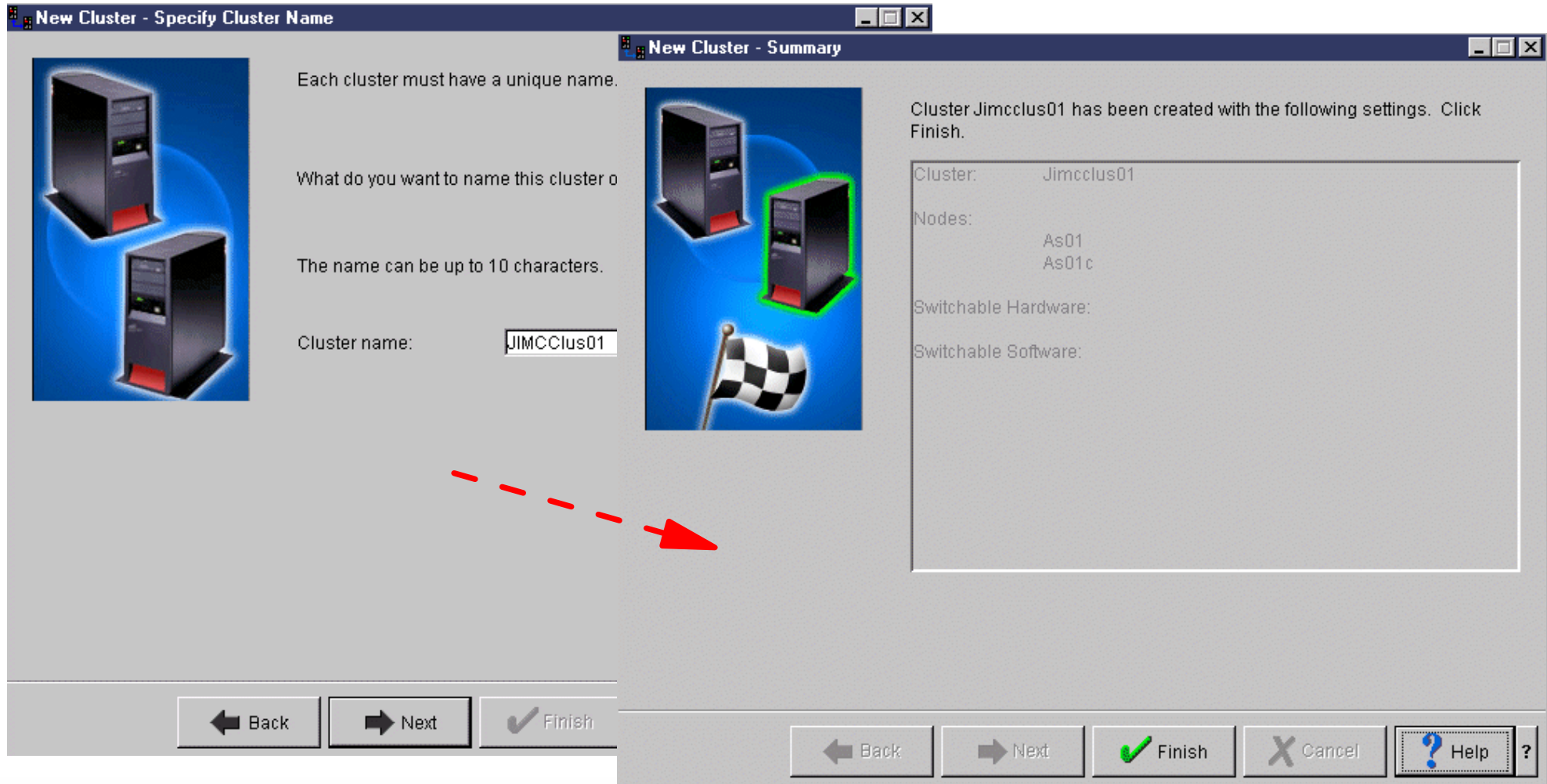
Similar to LPAR and Disk Unit configuration and management you must have enabled Cluster configuration and management under Operations Navigator Application Administration. See the Application Administration - Disk Units foil.

You do not need Service Tools security authority. However, you do need a valid user id and password on the central server and each node in the Cluster.

As this foil shows the wizard help you configure either a new cluster or add a node to an existing cluster. In this example we define a new cluster.

Cluster Configuration Example...

- Specify nodes and IP addresses
- Both nodes must be active with proper Cluster environment active
- Complete the Cluster configuration



The screenshot displays two windows from the IBM Cluster Configuration Wizard. The left window, titled "New Cluster - Specify Cluster Name", contains the following text: "Each cluster must have a unique name.", "What do you want to name this cluster o", "The name can be up to 10 characters.", and "Cluster name: JIMCclus01". It features an image of two server racks. The right window, titled "New Cluster - Summary", contains the text: "Cluster Jimcclus01 has been created with the following settings. Click Finish." and a list of settings: "Cluster: Jimcclus01", "Nodes: As01, As01c", "Switchable Hardware:", and "Switchable Software:". A red dashed arrow points from the "Finish" button in the left window to the "Finish" button in the right window. Both windows have "Back", "Next", and "Finish" buttons at the bottom.

All the nodes in the cluster definition process must be active and have the proper "Cluster environment" active:

- Node system's Network Attributes " **Allow add to cluster**" set to *ANY or *RQSAUT. *RQSAUT requires Secure Sockets Layer (SSL) configuration and activation. In our example we used *ANY.
- The TCP/IP server INETD must be in "started" state on both nodes.

As part of the Cluster configuration through Operations Navigator, Management Central creates a System Group of the nodes in the Cluster. The System Group name is the Cluster name. This System Group is tied to the Cluster and cannot be changed or deleted, except under the Management Central Cluster interface.

During the configuration of a simple cluster, you specify node names and IP addresses. You also will get some error messages if one or more nodes are not active or do not have the "Cluster environment" active as described above.

You will also get some "error messages" indicating, for example, there is no Switchable software (Application Cluster Resource Group) found. If you are configuring for full HABP availability or have a "Cluster Proven" application that can use the simple clustering support, the wizard will find these and you will not get that error message.

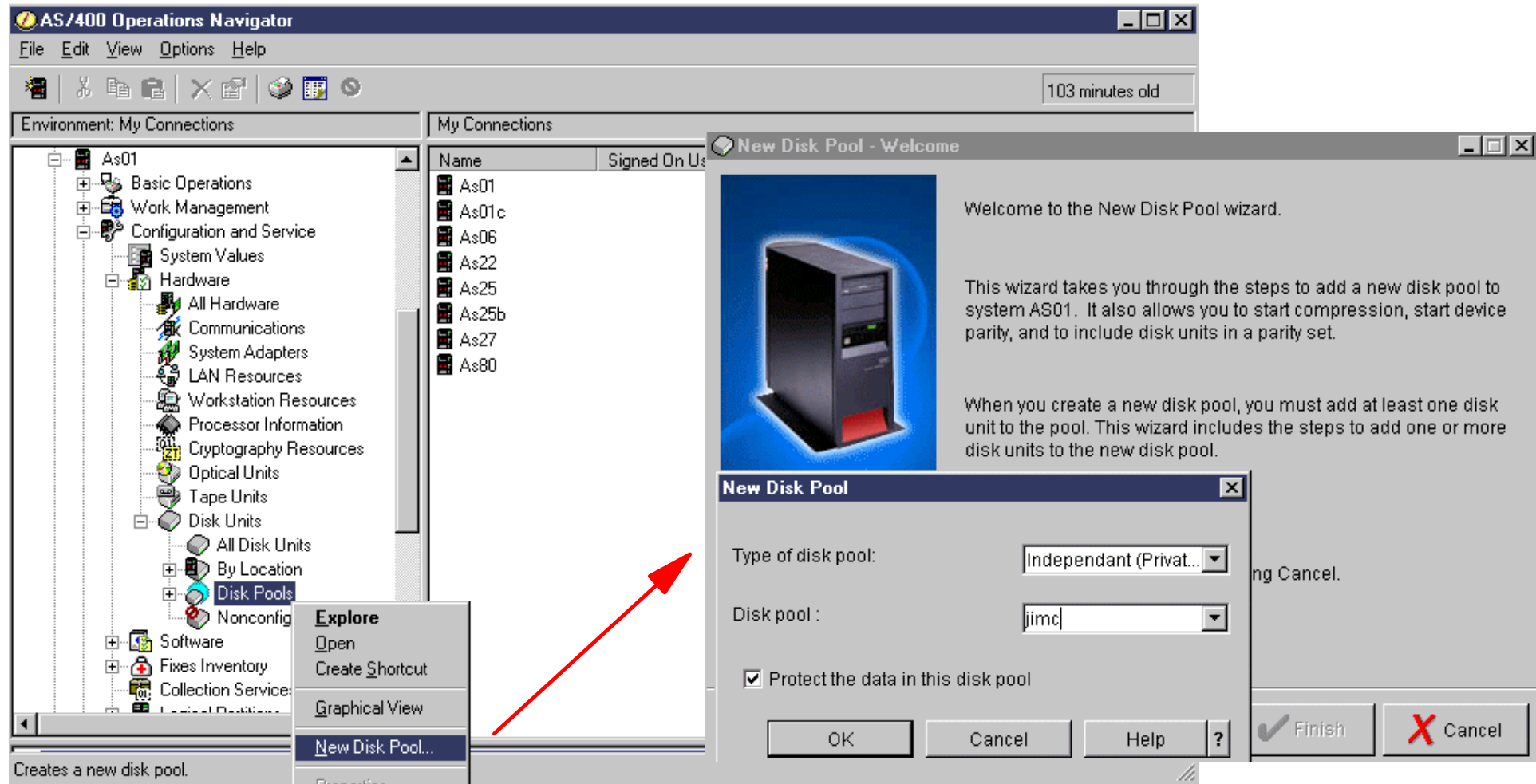
Keep going until finished - as shown on the wizard window on the right of this foil. As you can see there are no "Switchable Hardware" or "Switchable Software" identified. When we complete the next steps we will have "Switchable Hardware" - the IASP.

Since we are doing simple clustering, you now need to create an independent ASP and then go back to the Clustering interface to assign the IASP to Cluster, which then becomes a Device Cluster Resource Group.

Note: By using Operations Navigator, you do not go through as many configurations steps as you would if you were using clustering OS/400 commands. Operations Navigator does them for you.

Independent Disk Pools

- Need IOP and Disk Devices unassigned to System ASP or existing User/Independent ASP on Node 1
- Assign a meaningful name



AS/400 Operations Navigator

File Edit View Options Help

103 minutes old

Environment: My Connections

My Connections

As01

- Basic Operations
- Work Management
- Configuration and Service
 - System Values
 - Hardware
 - All Hardware
 - Communications
 - System Adapters
 - LAN Resources
 - Workstation Resources
 - Processor Information
 - Cryptography Resources
 - Optical Units
 - Tape Units
 - Disk Units
 - All Disk Units
 - By Location
 - Disk Pools
 - Nonconfig
- Software
- Fixes Inventory
- Collection Service

Creates a new disk pool.

Explore

- Open
- Create Shortcut
- Graphical View
- New Disk Pool...
- Properties

New Disk Pool - Welcome

Welcome to the New Disk Pool wizard.

This wizard takes you through the steps to add a new disk pool to system AS01. It also allows you to start compression, start device parity, and to include disk units in a parity set.

When you create a new disk pool, you must add at least one disk unit to the pool. This wizard includes the steps to add one or more disk units to the new disk pool.

New Disk Pool

Type of disk pool: Independent (Privat...

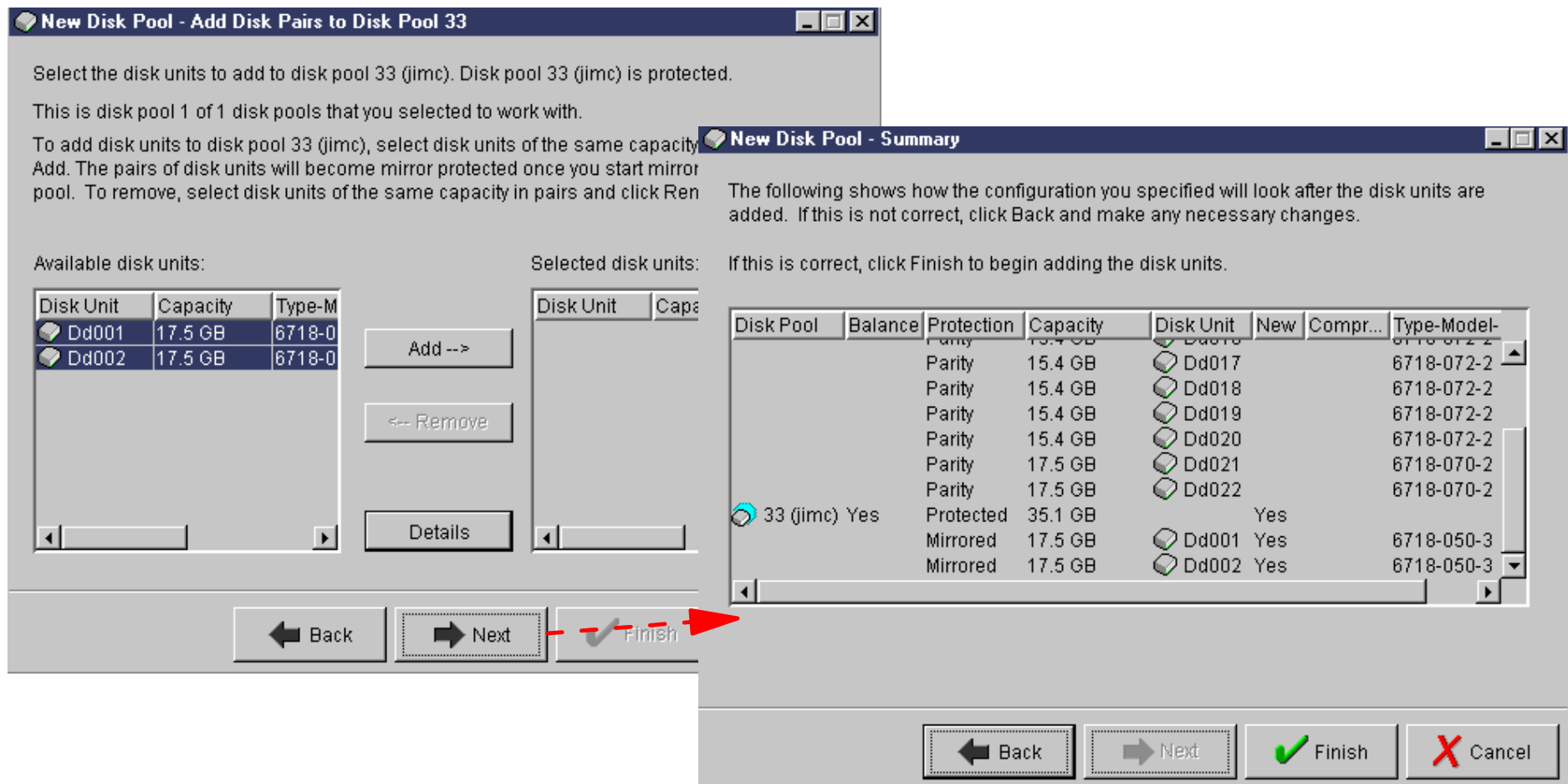
Disk pool: jimc

Protect the data in this disk pool

OK Cancel Help ? Finish Cancel

Independent Disk Pools ...

- Let the wizard find the available Disk Devices
- Add the devices to the pool
- Specify if balancing and/or compression, and/or protection (RAID or mirroring)



The screenshot shows two overlapping windows from the 'New Disk Pool' wizard. The background window is 'New Disk Pool - Add Disk Pairs to Disk Pool 33'. It contains instructions: 'Select the disk units to add to disk pool 33 (jimc). Disk pool 33 (jimc) is protected. This is disk pool 1 of 1 disk pools that you selected to work with. To add disk units to disk pool 33 (jimc), select disk units of the same capacity. Add. The pairs of disk units will become mirror protected once you start mirror pool. To remove, select disk units of the same capacity in pairs and click Remove.' It features two tables: 'Available disk units' and 'Selected disk units'. The 'Available disk units' table has two rows: Dd001 (17.5 GB, 6718-0) and Dd002 (17.5 GB, 6718-0). Buttons for 'Add -->', '<-- Remove', and 'Details' are present. The foreground window is 'New Disk Pool - Summary'. It contains instructions: 'The following shows how the configuration you specified will look after the disk units are added. If this is not correct, click Back and make any necessary changes. If this is correct, click Finish to begin adding the disk units.' It features a table with columns: Disk Pool, Balance, Protection, Capacity, Disk Unit, New, Compr..., and Type-Model-. The table shows the configuration for disk pool 33 (jimc) with a capacity of 35.1 GB, protected, mirrored, and balanced. It lists disk units Dd001 and Dd002, each with a capacity of 17.5 GB. At the bottom of the wizard, there are 'Back', 'Next', and 'Finish' buttons. A red arrow points to the 'Finish' button.

Available disk units:	Selected disk units:											
<table border="1"><thead><tr><th>Disk Unit</th><th>Capacity</th><th>Type-M</th></tr></thead><tbody><tr><td>Dd001</td><td>17.5 GB</td><td>6718-0</td></tr><tr><td>Dd002</td><td>17.5 GB</td><td>6718-0</td></tr></tbody></table>	Disk Unit	Capacity	Type-M	Dd001	17.5 GB	6718-0	Dd002	17.5 GB	6718-0	<table border="1"><thead><tr><th>Disk Unit</th><th>Capa</th></tr></thead><tbody></tbody></table>	Disk Unit	Capa
Disk Unit	Capacity	Type-M										
Dd001	17.5 GB	6718-0										
Dd002	17.5 GB	6718-0										
Disk Unit	Capa											

Disk Pool	Balance	Protection	Capacity	Disk Unit	New	Compr...	Type-Model-
33 (jimc)	Yes	Protected	35.1 GB		Yes		
		Mirrored	17.5 GB	Dd001	Yes		6718-050-3
		Mirrored	17.5 GB	Dd002	Yes		6718-050-3

Notes: Independent Disk Pools ...

This foil, on the left side, shows the available disks. Click Add to add them to the pool.

Along the way you specify what kind of protection and if disk balancing and/or compression is to be used.. If you select to do balancing it is done "now."

If you select Protect Disk Pool" then, if it is an IASP, when the Add Disk wizard is finished, a Start Mirroring dialog appears prompting you to Start or Cancel.

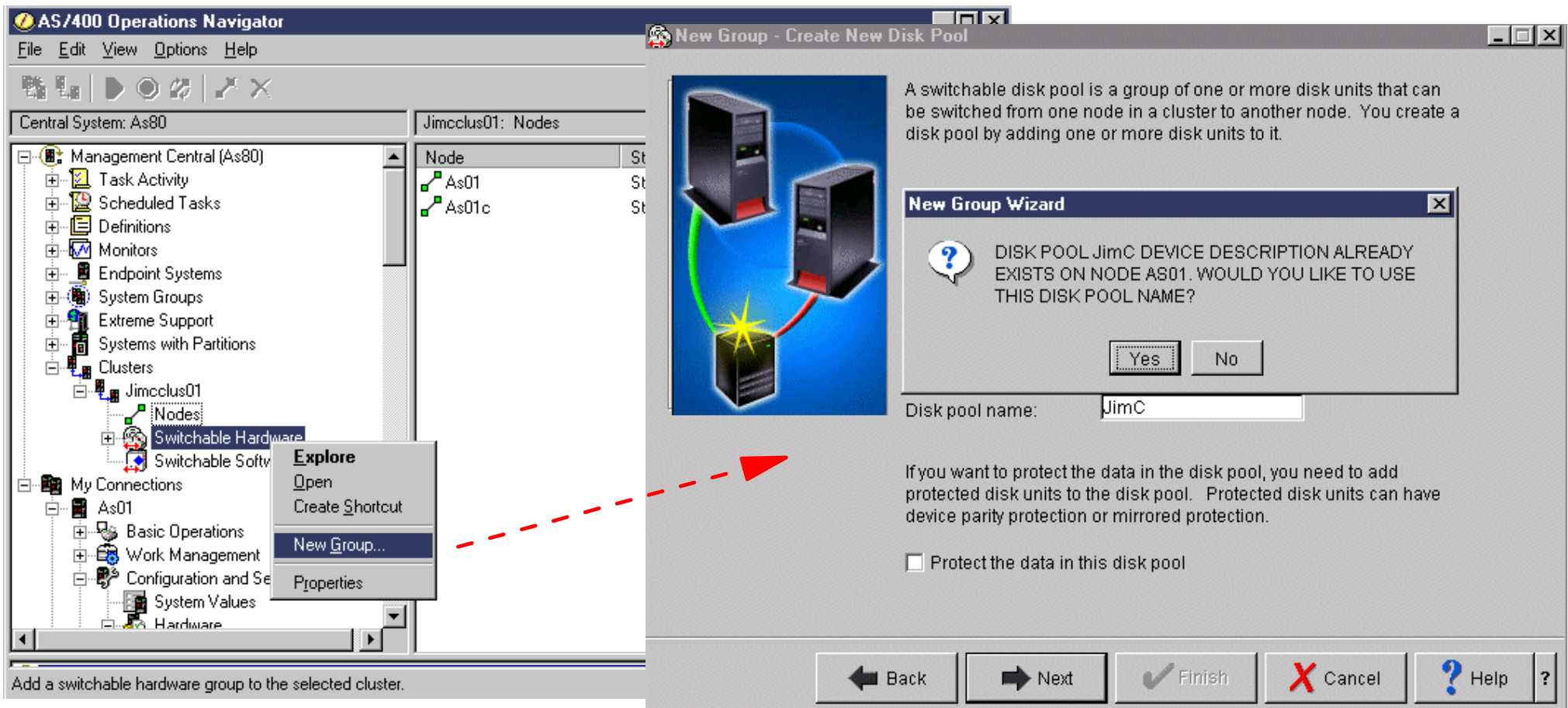
If the disk pool is the System ASP or a user (not an IASP) ASP, then a dialogue is presented telling you "Your pool is now ready for you to perform Start Mirroring" When you select to continue mirroring it will be started.

Please note that the time taken to complete mirroring can take quite a long time, the more disks and the more storage per disk, the longer it takes.

Mirroring does not require an IPL for IASPs. For system and user ASPs, the user can only start mirroring at DST. The system will perform a forced IPL as part of the Start Mirroring function.

Cluster Configuration Example, Assign IASP

- Select to create a new Cluster Resource Group
- Give "Device Cluster Resource Group" a name
- Assign the Device CRG to the IASP



AS/400 Operations Navigator

File Edit View Options Help

Central System: As80

Jimclus01: Nodes

Management Central (As80)

- Task Activity
- Scheduled Tasks
- Definitions
- Monitors
- Endpoint Systems
- System Groups
- Extreme Support
- Systems with Partitions
- Clusters
 - Jimclus01
 - Nodes
 - Switchable Hardware
 - Switchable Software

My Connections

- As01
 - Basic Operations
 - Work Management
 - Configuration and Security
 - System Values
 - Hardware

Explore

- Open
- Create Shortcut
- New Group...**
- Properties

New Group - Create New Disk Pool

A switchable disk pool is a group of one or more disk units that can be switched from one node in a cluster to another node. You create a disk pool by adding one or more disk units to it.

New Group Wizard

DISK POOL JimC DEVICE DESCRIPTION ALREADY EXISTS ON NODE AS01. WOULD YOU LIKE TO USE THIS DISK POOL NAME?

Yes No

Disk pool name: JimC

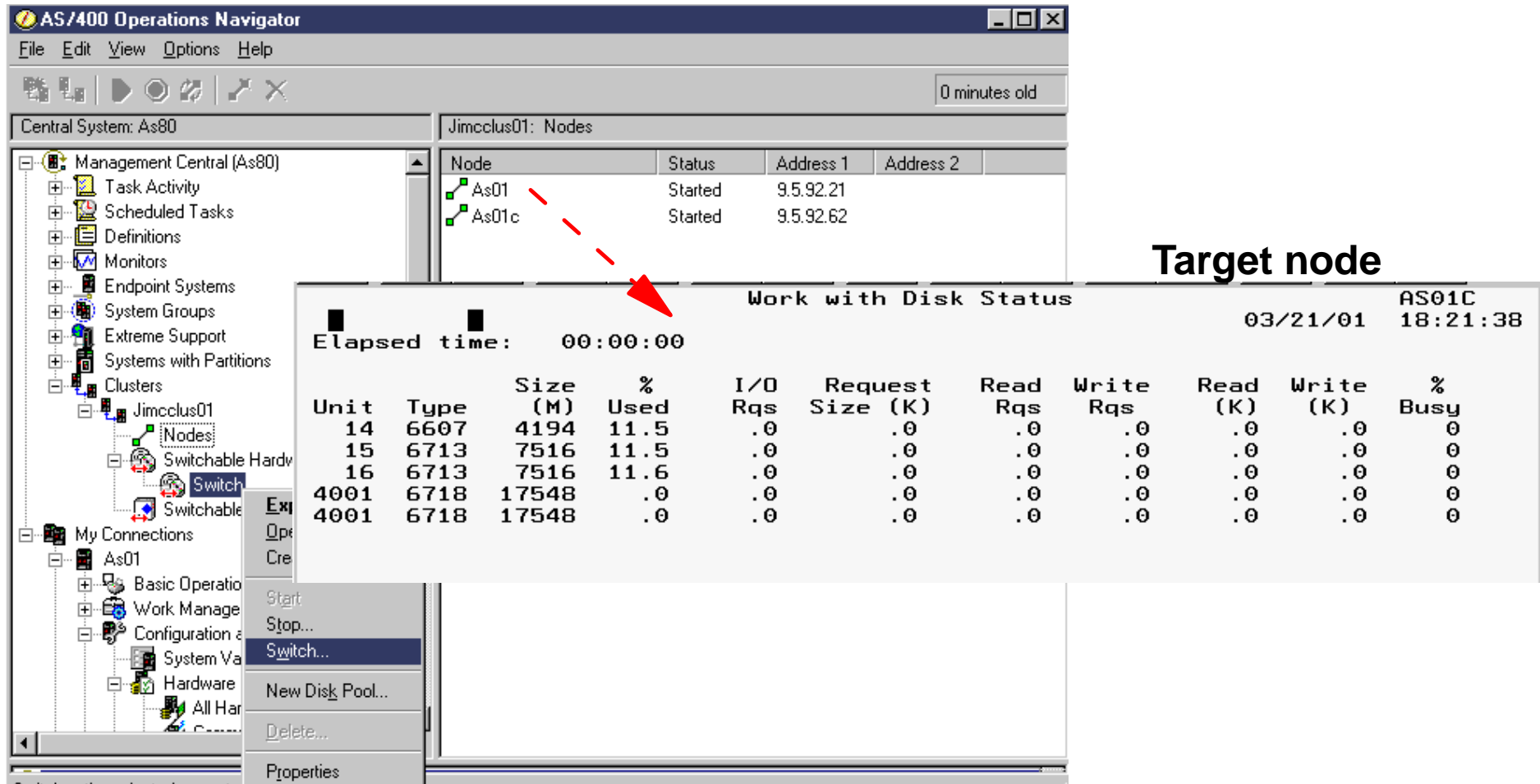
If you want to protect the data in the disk pool, you need to add protected disk units to the disk pool. Protected disk units can have device parity protection or mirrored protection.

Protect the data in this disk pool

Back Next Finish Cancel Help

Cluster Configuration Example- Start, Switch

- Select Start for each node
- At the appropriate time, Switch the IASP to the second node
- Server INETD must be active on both nodes



The screenshot displays the AS/400 Operations Navigator interface. The main window shows the 'Jimccclus01: Nodes' table with two nodes: As01 and As01c, both with a 'Started' status. A red dashed arrow points from the 'As01c' node to a 'Work with Disk Status' dialog box. The dialog box shows a table of disk units and their status, with a 'Switch...' option highlighted in the context menu.

Node	Status	Address 1	Address 2
As01	Started	9.5.92.21	
As01c	Started	9.5.92.62	

Target node

Work with Disk Status 03/21/01 AS01C 18:21:38

Elapsed time: 00:00:00

Unit	Type	Size (M)	% Used	I/O Rqs	Request Size (K)	Read Rqs	Write Rqs	Read (K)	Write (K)	% Busy
14	6607	4194	11.5	.0	.0	.0	.0	.0	.0	0
15	6713	7516	11.5	.0	.0	.0	.0	.0	.0	0
16	6713	7516	11.6	.0	.0	.0	.0	.0	.0	0
4001	6718	17548	.0	.0	.0	.0	.0	.0	.0	0
4001	6718	17548	.0	.0	.0	.0	.0	.0	.0	0

Under Management Central click Clusters to see the active defined clusters.

On the Switchable Hardware branch, right click to display the menu that includes starting the nodes so they are "actively aware of each other.

At the appropriate time (for example, no applications are using the objects in the IASP, switch from the first node (AS01 in our example) to a another node (AS01C in our example)

In the right window, we used the 5250 command Work with Disk Status on the target system (node). This example show the disk units (4001) already switched. Since these disk units are mirrored, only 4001 is used for the disk unit value.

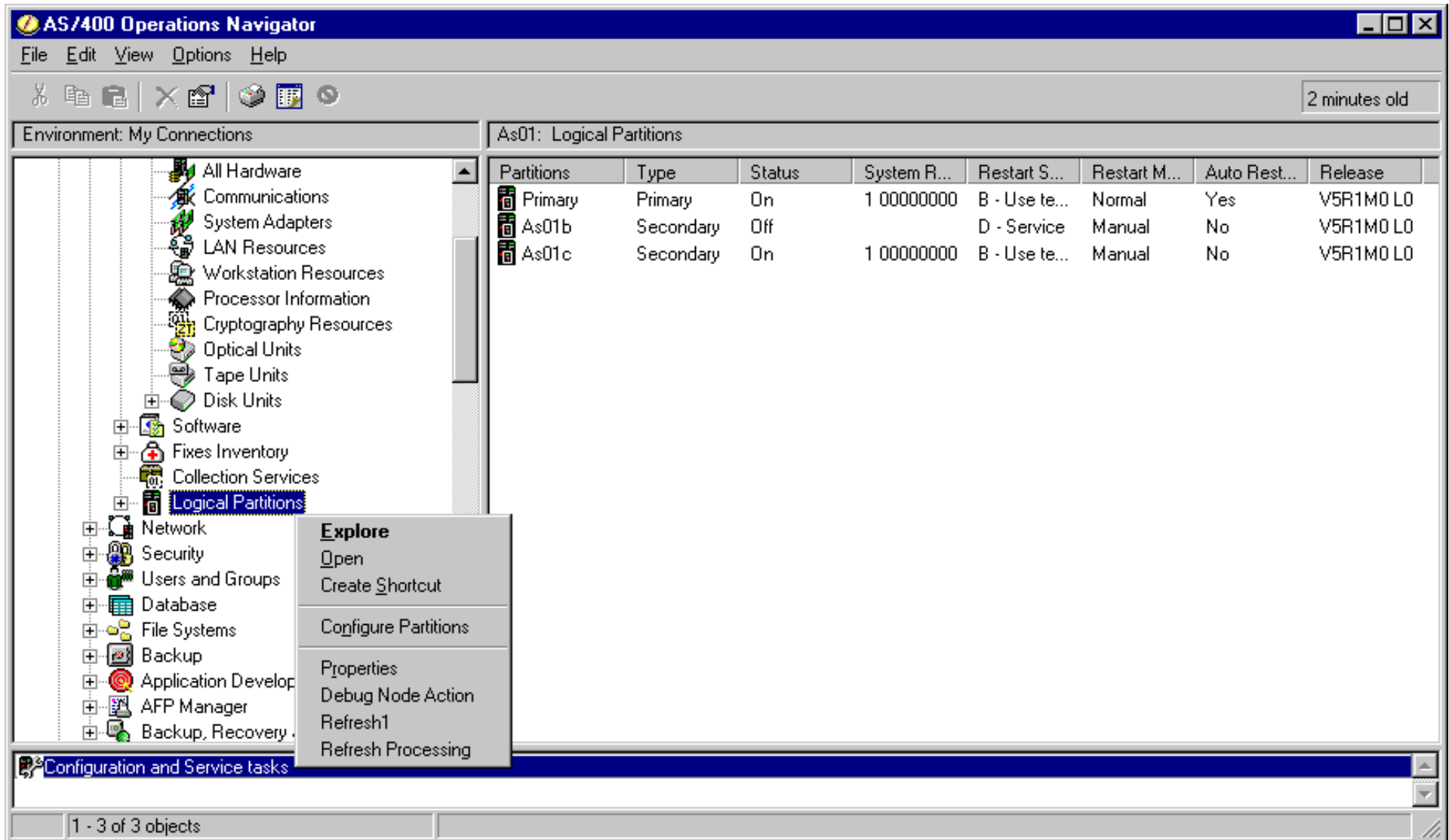
Note: Disk units in a switchable IASP, start with the 40nn numbering scheme, so they can be easily distinguished from disk units in "normal" ASPs.

Operations Navigator: Logical Partitioning

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Logical Partitioning - Configuration

- Operations Navigator LPAR user must have Application Administration - LPAR authorization
- Operations Navigator LPAR User must have Service Tools user profile authority



The screenshot displays the AS/400 Operations Navigator interface. The left pane shows a tree view of system resources, with 'Logical Partitions' selected. A context menu is open over 'Logical Partitions', listing actions such as 'Explore', 'Open', 'Create Shortcut', 'Configure Partitions', 'Properties', 'Debug Node Action', 'Refresh1', and 'Refresh Processing'. The right pane shows a table of logical partitions for environment 'As01'.

Partitions	Type	Status	System R...	Restart S...	Restart M...	Auto Rest...	Release
Primary	Primary	On	1 00000000	B - Use te...	Normal	Yes	V5R1M0 L0
As01b	Secondary	Off		D - Service	Manual	No	V5R1M0 L0
As01c	Secondary	On	1 00000000	B - Use te...	Manual	No	V5R1M0 L0

Notes: Logical Partitioning - Configuration

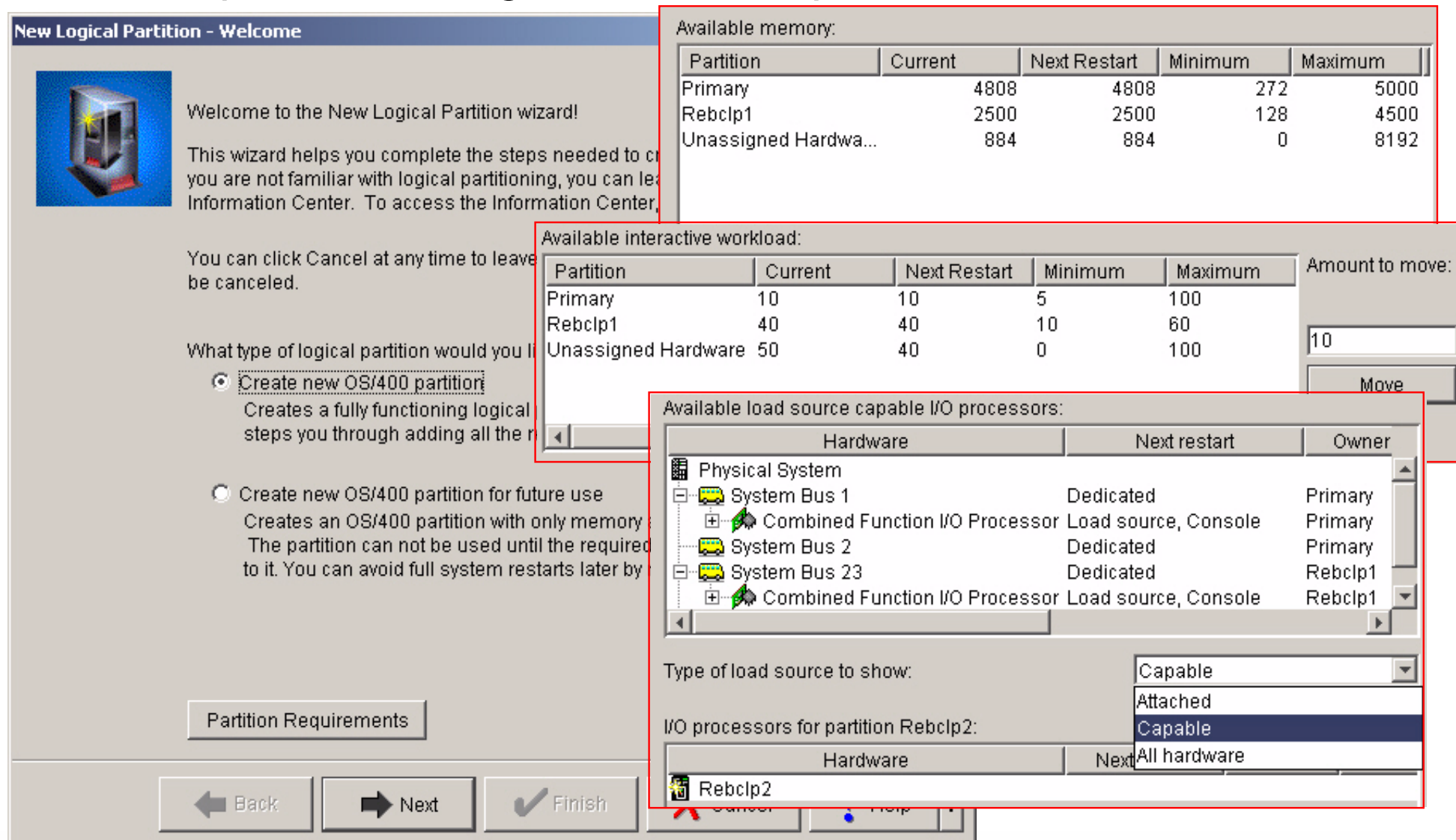
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See the Disk Management section foils "Application Administration - Disk Units," and "Disk Management - Sign on" for more information on authority and Service Tools Security. The setup for LPAR management has similar requirements.

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LPAR Configuration Wizards

Guided steps for creating new OS/400 partitions



New Logical Partition - Welcome

Welcome to the New Logical Partition wizard!

This wizard helps you complete the steps needed to create a new logical partition. If you are not familiar with logical partitioning, you can learn more about it in the Information Center. To access the Information Center, click on the Information Center link.

You can click Cancel at any time to leave the wizard. The wizard will be canceled.

What type of logical partition would you like to create?

- Create new OS/400 partition**
Creates a fully functioning logical partition. The wizard guides you through adding all the required resources to the partition.
- Create new OS/400 partition for future use
Creates an OS/400 partition with only memory. The partition can not be used until the required resources are added to it. You can avoid full system restarts later by using the Partition Requirements wizard.

Partition Requirements

Back Next Finish Cancel Help

Available memory:

Partition	Current	Next Restart	Minimum	Maximum
Primary	4808	4808	272	5000
Rebclp1	2500	2500	128	4500
Unassigned Hardwa...	884	884	0	8192

Available interactive workload:

Partition	Current	Next Restart	Minimum	Maximum
Primary	10	10	5	100
Rebclp1	40	40	10	60
Unassigned Hardware	50	40	0	100

Amount to move:

Move

Available load source capable I/O processors:

Hardware	Next restart	Owner
Physical System		
System Bus 1	Dedicated	Primary
Combined Function I/O Processor	Load source, Console	Primary
System Bus 2	Dedicated	Primary
System Bus 23	Dedicated	Rebclp1
Combined Function I/O Processor	Load source, Console	Rebclp1

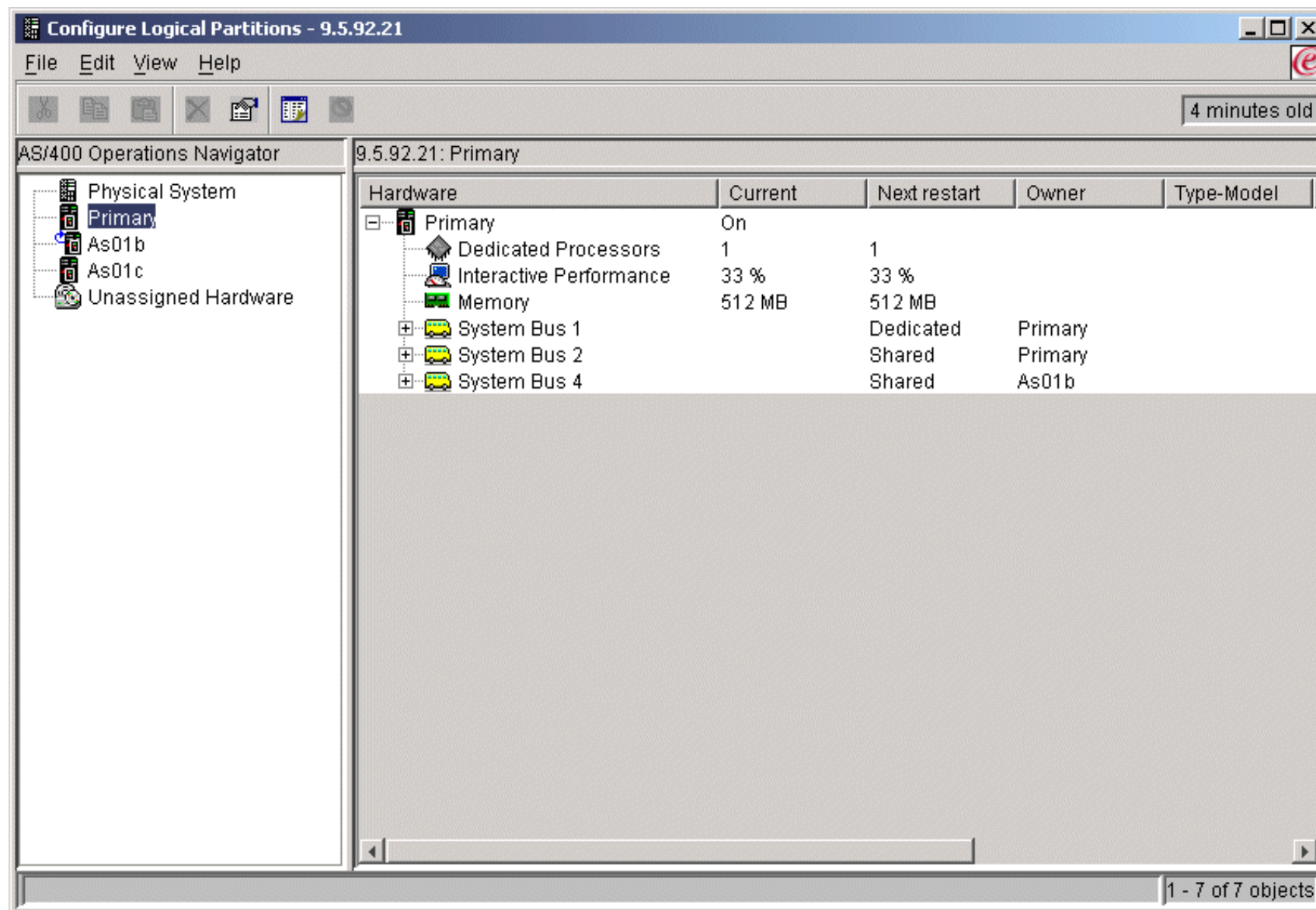
Type of load source to show:

I/O processors for partition Rebclp2:

Hardware	Next restart
Rebclp2	

Logical Partitioning - Viewing the Resources

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The screenshot shows the 'Configure Logical Partitions - 9.5.92.21' application window. The left pane, titled 'AS/400 Operations Navigator', displays a tree view with 'Physical System' expanded to show 'Primary', 'As01b', 'As01c', and 'Unassigned Hardware'. The right pane, titled '9.5.92.21: Primary', displays a table of hardware resources. The table has columns for 'Hardware', 'Current', 'Next restart', 'Owner', and 'Type-Model'. The resources listed are: Primary (On), Dedicated Processors (1), Interactive Performance (33%), Memory (512 MB), System Bus 1 (Dedicated, Primary), System Bus 2 (Shared, Primary), and System Bus 4 (Shared, As01b). A status bar at the bottom right indicates '1 - 7 of 7 objects'.

Hardware	Current	Next restart	Owner	Type-Model
Primary	On			
Dedicated Processors	1	1		
Interactive Performance	33 %	33 %		
Memory	512 MB	512 MB		
System Bus 1		Dedicated	Primary	
System Bus 2		Shared	Primary	
System Bus 4		Shared	As01b	

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Logical Partitioning - Moving Resources

Move Resources without an IPL

Supported on both iSeries and AS/400 models with OS/400 V5R1

Processor movement

- 100th of a processor for iSeries
- 1 processor for AS/400

Memory movement

- 1 MB

Interactive performance

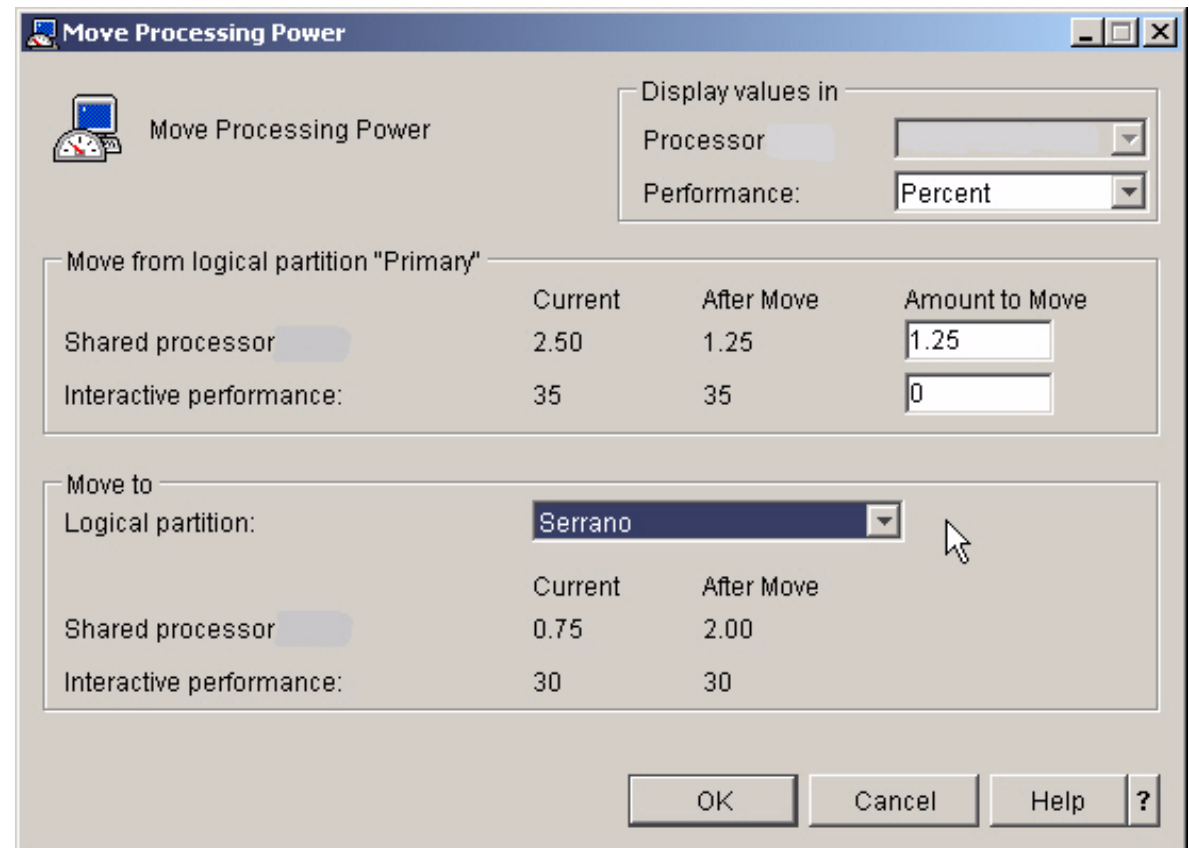
- 1%

Bus ownership

- Enablement per partition

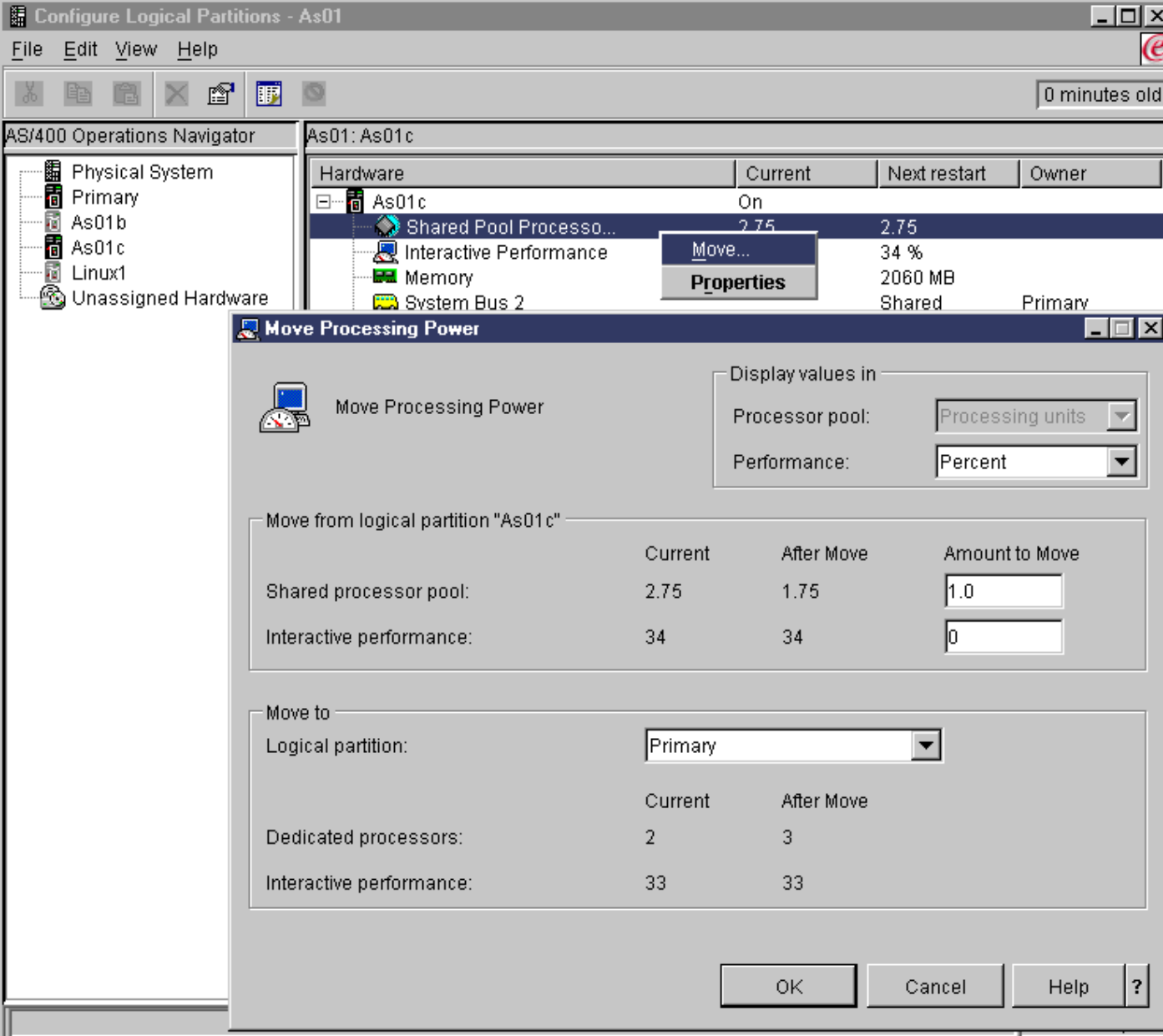
Virtual LAN and Virtual OptiConnect

- Enablement per partition



Moving Processing Resource Example

Secondary Partition
to
Primary Partition



The screenshot shows the 'Configure Logical Partitions - As01' window. On the left is the 'AS/400 Operations Navigator' tree with 'As01c' selected. The main pane shows the configuration for 'As01c: As01c', including a table of resources and their current/next restart values. A 'Move Processing Power' dialog box is open, showing the process of moving resources from 'As01c' to the 'Primary' partition.

Hardware	Current	Next restart	Owner
As01c	On		
Shared Pool Processo...	2.75	2.75	
Interactive Performance	34 %		
Memory	2060 MB		
System Bus 2	Shared		Primary

Move from logical partition "As01c"	Current	After Move	Amount to Move
Shared processor pool:	2.75	1.75	1.0
Interactive performance:	34	34	0

Move to	Current	After Move
Dedicated processors:	2	3
Interactive performance:	33	33

Moving Processing Resource Example Results

Primary Partition

The screenshot shows the 'Configure Logical Partitions - As01' window. The left pane, 'AS/400 Operations Navigator', shows a tree view with 'Physical System' expanded to 'Primary'. The right pane, 'As01: Primary', displays a table of hardware resources.

Hardware	Current	Next restart	Owner
Primary	On		
Dedicated Processors	3	3	
Interactive Performance	185 CPW	185 CPW	
Memory	1942 MB	1942 MB	
System Bus 1		Dedicated	Primary
System Bus 2		Shared	Primary
System Bus 4		Shared	As01 b
System Bus 5		Shared	As01 b

Refreshing logical partition information. 1 - 8 of 8 objects

Secondary Partition

The screenshot shows the 'Configure Logical Partitions - As01' window. The left pane, 'AS/400 Operations Navigator', shows a tree view with 'Physical System' expanded to 'As01c'. The right pane, 'As01: As01c', displays a table of hardware resources.

Hardware	Current	Next restart	Owner
As01c	On		
Shared Pool Processors	1.75	1.75	
Interactive Performance	190 CPW	190 CPW	
Memory	2060 MB	2060 MB	
System Bus 2		Shared	Primary
System Bus 4		Shared	As01 b
System Bus 5		Shared	As01 b

Refreshing logical partition information. 1 - 7 of 7 objects

Operations Navigator: System Values

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System Values

- Single repository of all System Values under Configuration and Service
- Components that currently contain system values will integrate with new system value interface
- Integration with Management Central
- 16 easier-to-manage categories

- ▶ Auditing
- ▶ Date and Time
- ▶ Devices
- ▶ International
- ▶ Jobs
- ▶ Library Lists
- ▶ Messages and Service
- ▶ Password
- ▶ Performance
- ▶ Power Control
- ▶ Printing
- ▶ Restart
- ▶ Security
- ▶ Sign-on
- ▶ Storage
- ▶ System Control

AS/400 Operations Navigator

File Edit View Options Help

Environment: My Connections

As80: System Values

55 minutes old

Category	Description
Auditing	Changes auditing values
Date and Time	Changes date, time, and time zone information
Devices	Changes device auto-configuration and recovery values
International	Changes locale settings and format of numbers, currency, c
Jobs	Changes system level job limits and default job properties
Library Lists	Changes the default library lists
Messages and Service	Changes message, logging, and service information
Password	Changes password expiration and validation
Performance	Changes performance values for processing, memory pools
Power Control	Changes power supply values
Printing	Changes basic printing values and format of printer output
Restart	Changes initial setup values and settings that affect restart
Security	Changes object, user, and system security values
Sign-On	Changes sign-on values
Storage	Changes values for system storage
System Control	Displays system identification information and changes syst

Configuration and Service tasks

1 - 16 of 16 objects

V5R1 provides a single repository of all System Values under Configuration and Service. You can now change all system values directly from Operations Navigator. The System Value support is integrated into the install component "Base Operations Navigator". This has been done so that it can be used under Configuration and Service as well as by other components, such as Security or Job Management. However, the integration of the categories under "Configuration and Service" are only available to the end-user if the user has installed the "Configuration and Service" install components during the IBM Client Access Express for Windows installation.

Integration of System Values with Management Central now allows you to

- ▶ Compare values across systems
- ▶ Change system values on other AS/400s to the value of the model system
- ▶ Collect Inventory will now have System value as a item to collect
- ▶ Export System values

All of the existing AS/400 system values have been separated into easier-to-manage "categories". These new categories have no relation to the existing system values categories used through the 5250 interface. An Advisor site has been created to help you map the current AS/400 system values to the GUI categories and where they reside within the GUI interface.

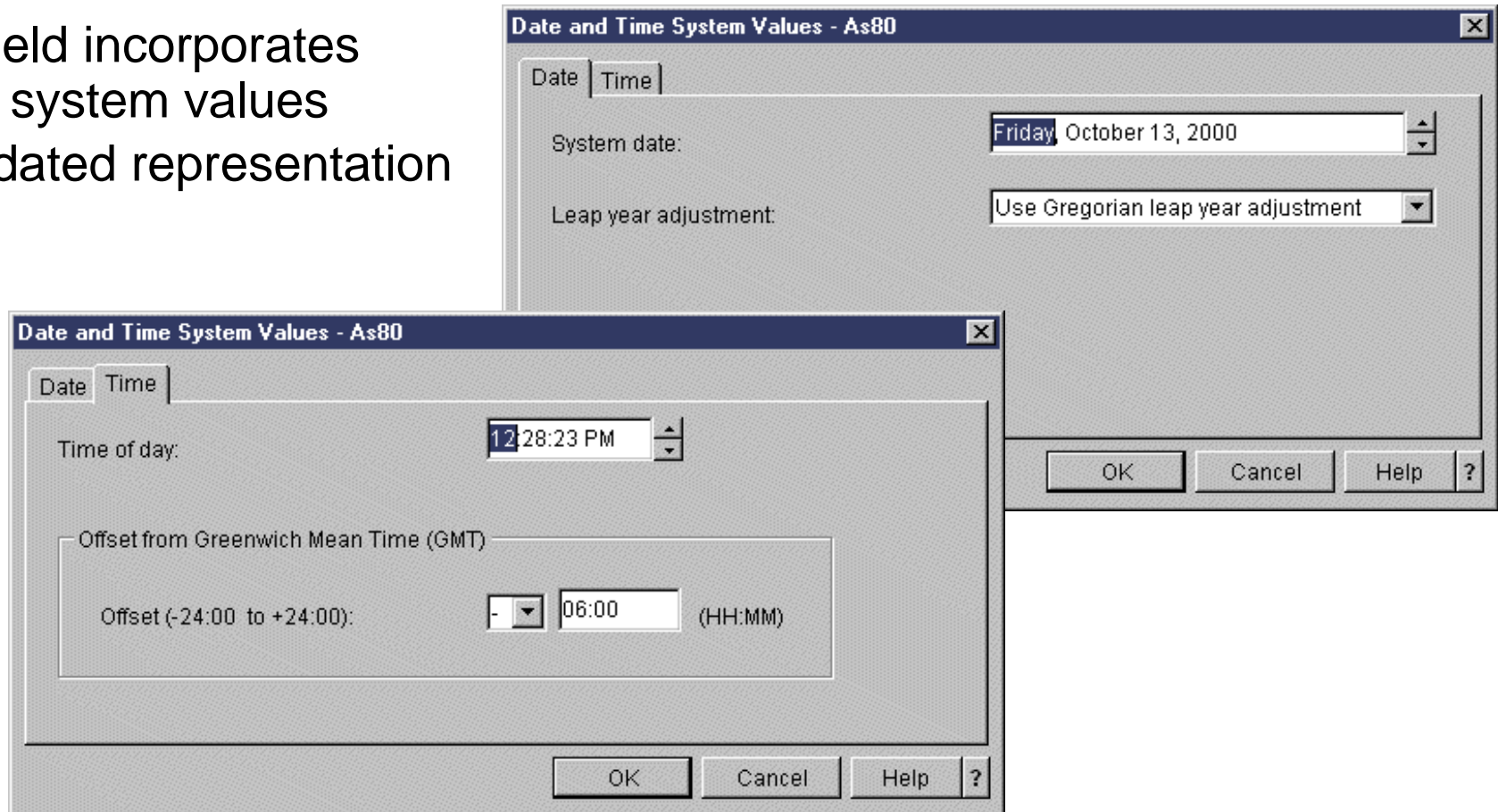
<http://w3pclan.rchland.ibm.com/idweb/v5r1/ic2924/info/index.htm?rzakz/rzakzfinder.htm>

Only users with *USE authority to the CHGSYSVAL command can change any of the system values

The Password Validation Program (QPWDVLDPGM) System Value will not be supported by the GUI interface.

Date and Time System Value Category

- Ease of use
- Single field incorporates multiple system values
- Consolidated representation



Note: We will cover only one category to give you the feel of the new function.

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Notes: Date and Time Category

Date and Time category is one of the 16 categories under the System Value container. Each category in the System Value Container has a collection of objects that represent different values the user can change on the AS/400.

The Date and Time category will change the systems date, time, and time zone information:

System Value	Type	Description	Properties Tab
QDATE	*DATTIM	Date	Date
QDAY	*DATTIM	Day	Date
QDAYOFWEEK	*DATTIM	Day of the week	Date
QHOUR	*DATTIM	Hour of the day	Time
QLEAPADJ	*DATTIM	Leap year adjustment	Date
QMINUTE	*DATTIM	Minute of the hour	Time
QMONTH	*DATTIM	Month of the year	Date
QSECOND	*DATTIM	Second of the minute	Time
QTIME	*DATTIM	Time of the day	Time
QUTCOFFSET	*DATTIM	Coordinated Universal Time Offset	Time
QYEAR	*DATTIM	Year	Date

Note: QCENTURY is not used in the Date and Time category because the GUI determines the value from the QYEAR which is inputted in the System Date field.

Compare and Update System Values

- ▶ Schedule Inventory collection; View status under Task Activity
- ▶ Read only system values will show with disabled checkbox
- ▶ Compare and Update System Values against a model system
- ▶ Schedule an Update; View status under Task Activity



AS/400 Operations Navigator - Compare and Update System Values - FOR01_FOR02

Model system: Forum01.lahulpe.ibm.com

Model system settings - 2 minutes old

Category: Jobs Show only differences

Update	Item to Compare	Value
<input type="checkbox"/>	Inactive job time-out action	End job
<input type="checkbox"/>	Maximum job message queue size action	Do not wrap message queue. ...
<input type="checkbox"/>	Maximum job message queue size	16 MB
<input type="checkbox"/>	Initial printer output block size per job	3516 bytes
<input checked="" type="checkbox"/>	Maximum jobs allowed on system	485000 jobs

Target systems - Last Collected: 05/27/01 07:07

Target System	Maximum jobs allowed on system
Forum02.lahulpe.ib...	163520 jobs
Forum01.lahulpe.ib...	485000 jobs

2 system values to update on the target systems.

OK Schedule Close Help ?

Notes: Compare and Update System Values

Before using Compare, Update or any Management Central based functions, you need to start the Management Central Servers on the AS/400s which will be used during the compare. This includes the Model system and the Target Systems. With V5R1 there are two server jobs start under QSYSWRK Subsystem when Management Central server is started, QYPSSRV and the new server job QYPSJSRV for Java. Management Central Server can be started within Operations Navigator by doing the following

1. Expand **Networks**
2. Expand **Servers** within Networks
3. Click on **TCP/IP**
4. Right Click on **Management Central** and select **Start**.

You could also click on **Properties** for Management Central Server and Check the box **Start when TCP/IP is started**. This will automatically start the Management Central Server when TCP is started on the AS/400. You can also start the Management Central Server from 5250 CL using the Start TCP/IP Server (STRTCPSRV SERVER(*MGTC)).

Use the Compare and Update System Values dialog to display, compare, and update system values for a single system or for a group of systems. When selected, it filters both the system value view and the target system view. Any system values that are the same across all target systems and model system will be hidden. Also, target system which matches the model system will be hidden. Select a model system to which you would like to compare selected target systems. The model system would be the system with the most ideal system value settings. Select the **category** of system values that you would like to display, compare, and update. Select a value to compare, and the associated value on the target systems appears in the target systems list.

Model system

Any endpoint system in your network with the most ideal system value settings that you want to compare with the selected target systems.

Model system settings

The current system value settings of the model system. Select a category of system values. You then see the system values to compare and their current values on the model system. You can view the system values by category or select the Summary category to view all system values that have been selected to be updated. Click the Summary button to show all the system values that you selected to be updated. Select Show differences only to view only target systems where the value of the system value differs from the model system. Select the model system's value to compare with the Target systems. You can update the target system's values by selecting the box next to the system value that you would like to update.

Target systems

You can select to compare the system values of the model system with one or more AS/400 target systems. The current value of the system value that is selected in the Model system settings will be displayed. The system values for the target systems are retrieved from the central system. You need to collect the system value inventory from the target systems to see this data. If some of the system values were not collected, the last collected description will state Some inventory never collected, and the value will state Value not collected. If none of the system values for the target system were collected, the last collected description will state Last collected: never

To add a target system, click the Browse button to display a list of available systems from the Browse Systems and Groups dialog. Select the systems you want to add, and then click Add. To remove a target system from the list, click the Remove from list button.

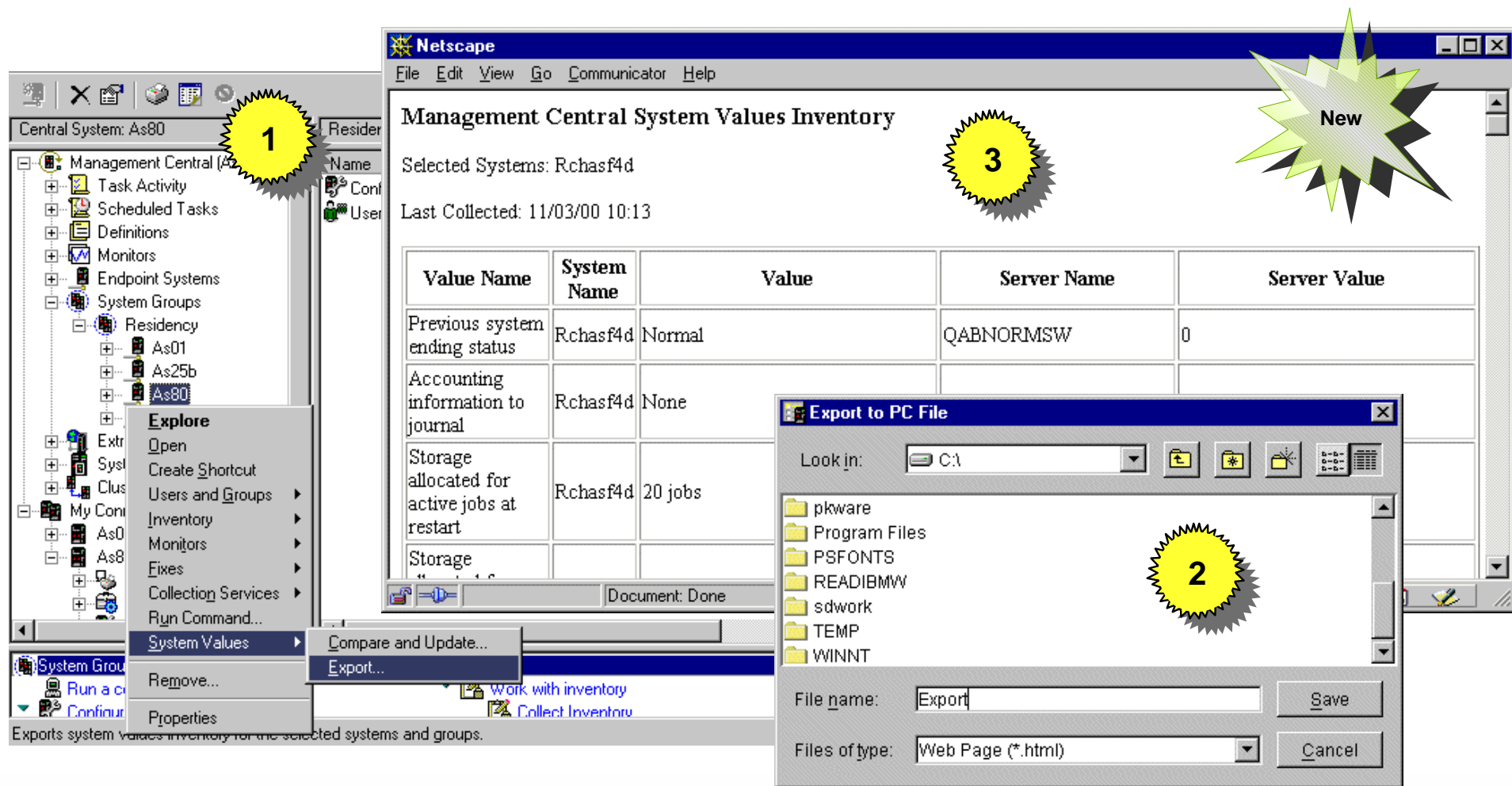
Some system values are read-only, which means that you will not be able to select and update the value. The values that you see for the model system are real-time data, and the values for the target systems are data that was collected when you last collected inventory.

You must have job control (*JOBCTL) special authority to change a system value and to view the job logs or spooled files. Some system values require additional authority.

You can click Schedule to specify when you want the task to start, or you can click OK to start the updates immediately.

Export System Values

- ▶ Export System Values and save it to a PC file.
- ▶ All categories of System Values are exported to a single file.
- ▶ Allows you to work with the data in a spreadsheet program or other application.



The screenshot shows the Management Central System Values Inventory interface in Netscape. The interface includes a tree view on the left, a main content area with a table of system values, and a file explorer dialog for saving the export.

1 (Yellow starburst) points to the 'System Values' menu item in the left tree view.

2 (Yellow starburst) points to the 'Export to PC File' dialog box.

3 (Yellow starburst) points to the 'Management Central System Values Inventory' title bar.

New (Green starburst) points to the 'New' button in the top right corner of the main window.

Value Name	System Name	Value	Server Name	Server Value
Previous system ending status	Rchasf4d	Normal	QABNORMSW	0
Accounting information to journal	Rchasf4d	None		
Storage allocated for active jobs at restart	Rchasf4d	20 jobs		
Storage				

Export to PC File dialog box details:

- Look in: C:\
- File name: Export
- Files of type: Web Page (*.html)
- Buttons: Save, Cancel

Exporting system values inventory to your PC

You can export the system values inventory and save it into a file on your PC. These PC files provide a history of the inventory and allow you to work with the data in a spreadsheet program or other application. Even though you view a single category of values, all the values for all the categories are written to the PC file when you click Export.

To export the system values inventory, follow these steps:

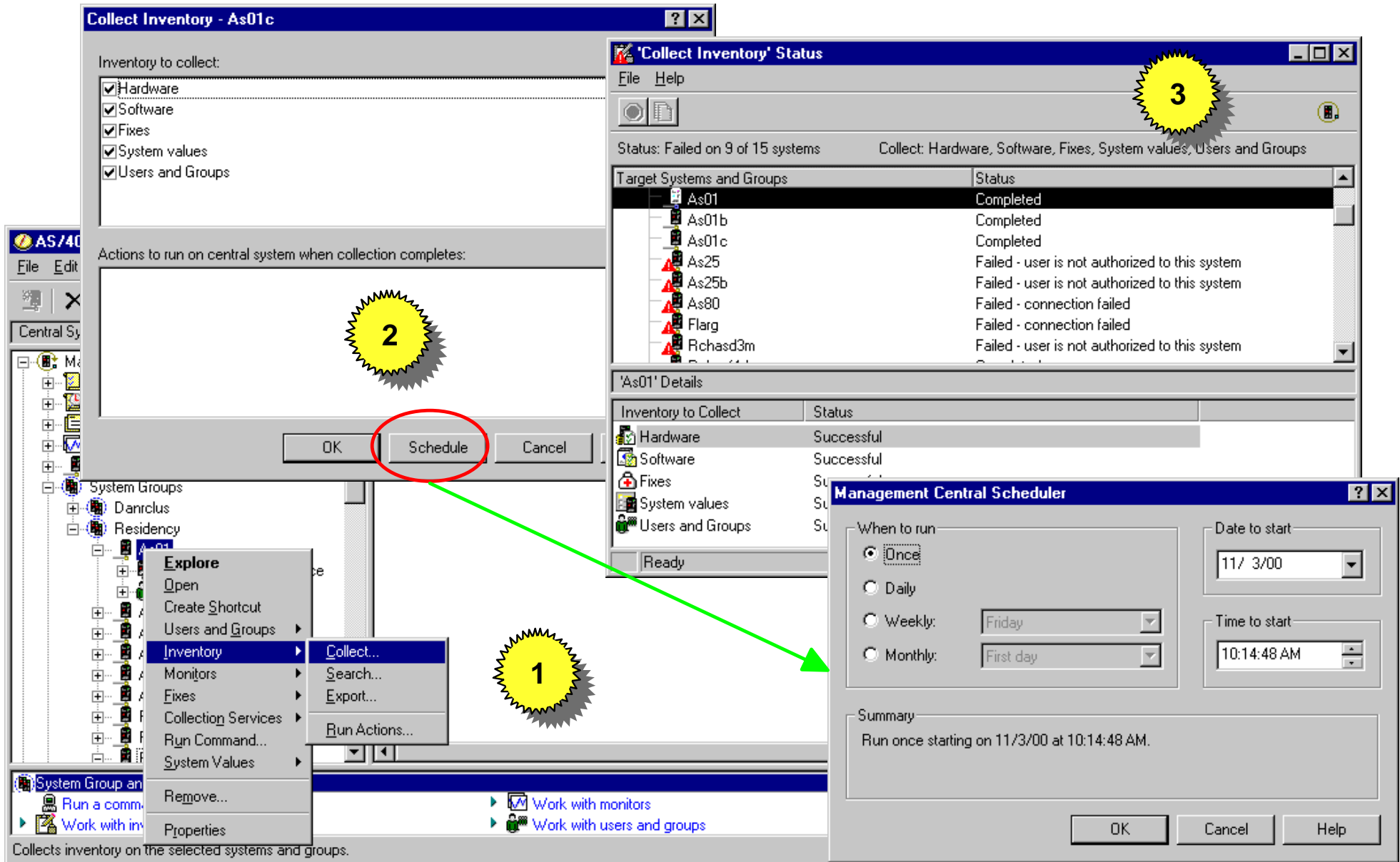
1. In AS/400 Operations Navigator, expand **Management Central**.
2. **Expand AS/400 Endpoint Systems** or **AS/400 System Groups**.
3. Right-click a system or a group, select **System Values**, and then select **Export**.

You can also export System values from the Compare and Update window by clicking the Export button ()

The Types of file which can be created with the Export function are:

1. ASCII Tab Delimited Text (*.txt)
2. Comma Separated Variable (*.csv)
3. Web Page (*.html)

The export function works independently from the compare and update function. Regardless of what you do on the **Compare and Update** dialog, you can still export the system values for each target system.



The screenshot illustrates the process of collecting inventory on an IBM iSeries system. It features three main windows:

- Collect Inventory - As01c**: Shows a list of items to collect (Hardware, Software, Fixes, System values, Users and Groups) and a 'Schedule' button circled in red.
- 'Collect Inventory' Status**: A window with a yellow starburst callout '3' showing the status of the collection across various systems. It includes a table of 'Target Systems and Groups' and their status.
- Management Central Scheduler**: A window with a yellow starburst callout '1' showing scheduling options (Once, Daily, Weekly, Monthly) and start dates/times. A green arrow points from the 'Schedule' button in the first window to this window.

Callout '2' is placed on the 'Actions to run on central system when collection completes' section of the 'Collect Inventory' window.

Target Systems and Groups	Status
As01	Completed
As01b	Completed
As01c	Completed
As25	Failed - user is not authorized to this system
As25b	Failed - user is not authorized to this system
As80	Failed - connection failed
Flarg	Failed - connection failed
Rchasd3m	Failed - user is not authorized to this system

Inventory to Collect	Status
Hardware	Successful
Software	Successful
Fixes	Successful
System values	Successful
Users and Groups	Successful

Inventory section within V5R1 has now been enhanced to collect

- Hardware
- Software
- Fixes
- System Values
- Users and Groups

You can now select a system or a group of systems and chose what components of inventory you would like to do for a system or a group of systems from the above list.

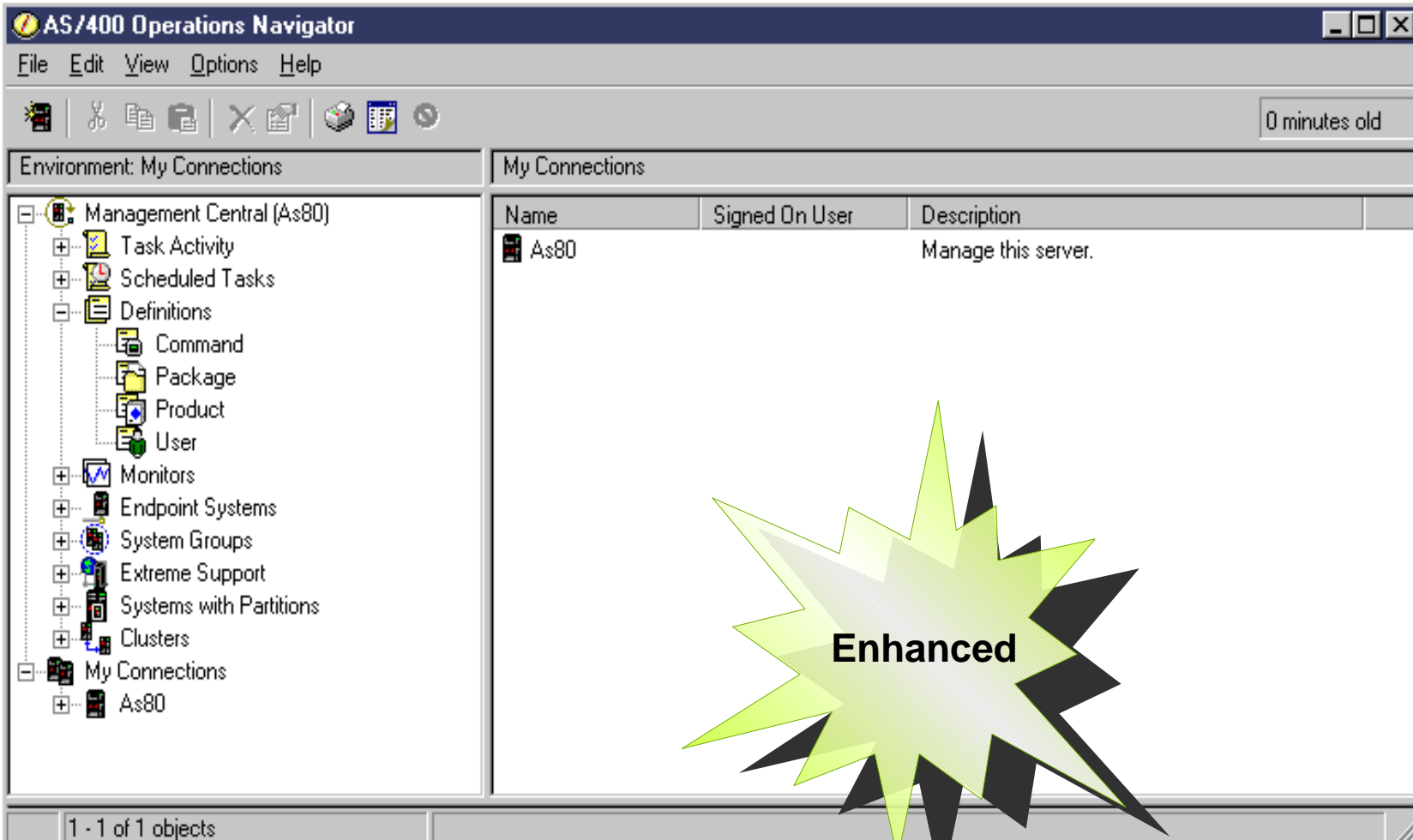
Inventory on a system can be invoked in various ways.

- Right click Endpoints system within the Endpoint Systems group and select Inventory
- Right Click System Name in the Connections Hierarchy and select Inventory
- Right click System Name within the Systems Group and select Inventory

Once the inventory has been started you could view the status of the inventory by Clicking Management Central, than Task Activity and then click on Inventory.

Before doing a System Value comparison one should take a fresh inventory of the involved boxes before doing the Compare and Update .

Definitions



AS/400 Operations Navigator

File Edit View Options Help

0 minutes old

Environment: My Connections

My Connections

Name	Signed On User	Description
As80		Manage this server.

1 - 1 of 1 objects

Enhanced

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Use Definitions to define complex or frequently performed tasks and store those definitions for later use. For example, you can package (that is, group together) a set of AS/400 objects or Integrated File System (IFS) files for distribution over and over again. You can 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.

You can use a command definition to save a complex CL command and schedule it to run on different systems or system groups at different times.

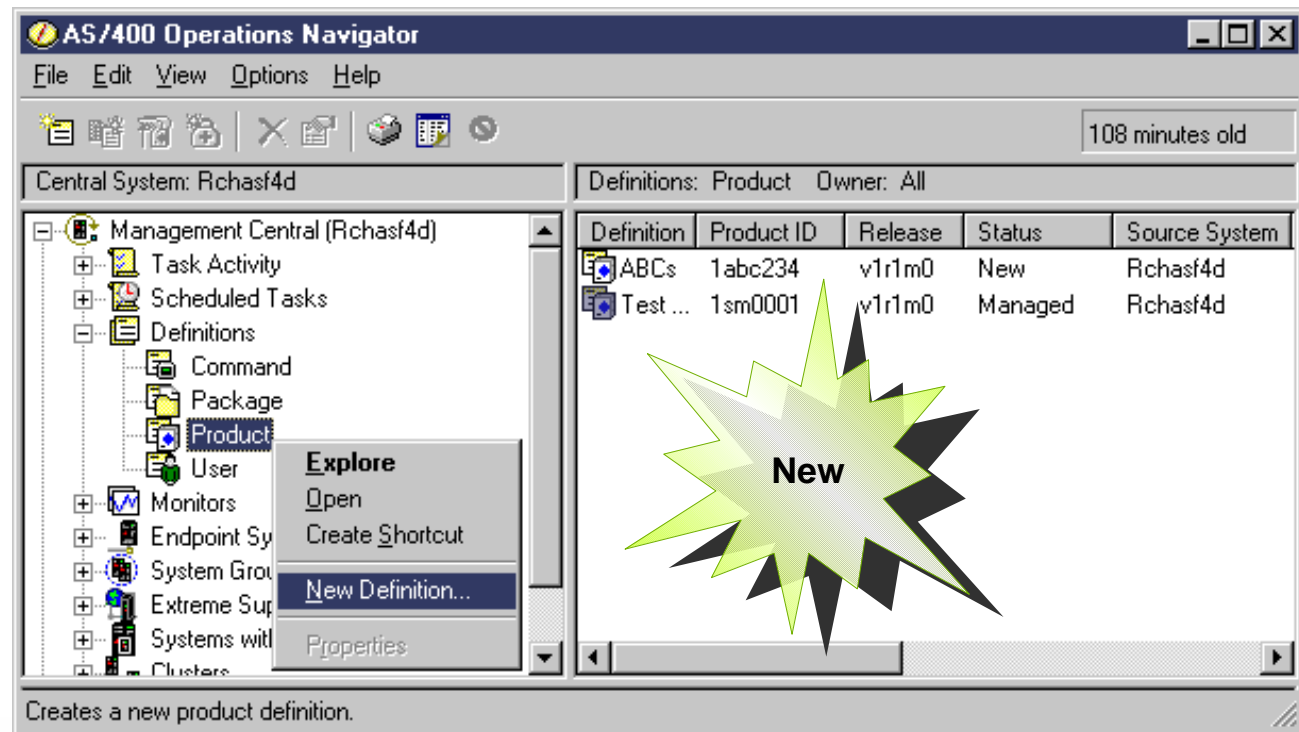
The Products and User subcomponents are new features that have been added to the Definitions component.

You can create and store definitions of products, which allow you to send and install products you create or specific product options on multiple endpoint systems. You can schedule these tasks to run at the date and time you select.

When you create and store a user definition, you can then schedule a task to create new users based on that definition across multiple endpoint systems.

Manage Your Products across Multiple Systems with Management Central!

- Create product definitions to send your products across multiple systems
 - Includes product ID, version/release, multiple options and languages, licensing control
 - Install definition on test system to test product before sending it to other systems
- Send and install your products immediately or delay installs to a later time
 - Specify a command or program to run automatically after your products are installed
- Your installed products are listed under Software Inventory along with IBM products
- Generate fixes (PTFs) for your installed products
 - Select exit programs to run before & after installing fixes
 - Select requisite fixes
- Delete product definitions without affecting products being managed by them



Managing a product is easy with the Management Central product function. A product can be one or more application programs that have been packaged by using either the Management Central packaging function or the System Manager licensed program (SM1). OS/400 provides management functions for software that is identified as a product. To use the management functions for your own software, the software must be identified to OS/400 as a product.

You need to create a product definition before you can convert your application into a product that OS/400 identifies as a product. A product definition contains all the information that you need to send and install a product across multiple systems, including product ID, version/release, multiple options and languages, and licensing control. A product definition also gives you the ability to manage fixes for your installed products. This includes the ability to select exit programs to run before and after installing fixes, as well as select prerequisite and co-requisite fixes that you determine need to be installed before or concurrently with your product's fixes.

The source system on which you create the product definition is used to manage the product. Once you create a product definition, you can install and generate fixes on the source system. After testing the product on the source system, you can send and install the product on other systems where it is required.

Easy-to-use wizards are provided for most product packaging tasks, including creating product definitions, installing product definitions, and sending and installing products. An advanced install option allows you to send a product that you created to selected endpoint systems and specify a later date and time for the product to be installed on those systems. This option is referred to as a Send and Delayed Install.

Your installed products are listed along with IBM products in the Software Inventory view for a system. From the Software Inventory view for an endpoint system in Management Central, you can select a product to Send and Install to other systems. Moreover, fixes you create for a product are listed in the Fixes Inventory for a system. You can then use Management Central to manage your fixes, just like you do with IBM fixes.

Note: Product Definitions are installed when you select the Packages and Products component during a Custom install of Client Access Express. Moreover, a central system in Management Central must be defined to work with product definitions.

Fixes - Management Central

Compare:

- Missing fixes
- Extra fixes



There are two types of fixes that can be found when the compare is performed:

Missing fixes - Fixes that are installed on the model system, but not installed on the target system.

Extra fixes - Fixes that are installed on the target system, but not installed on the model system.

Which types of fixes would you like the compare to find?

Missing fixes

Extra fixes

< Back Next > Cancel

Last collected: 10/18/00 5:43:17 AM

Status: Completed Model system: As80

Target Systems	Comparison Status
Flarg	Completed

Fix	Type	Product	Release
L382072	Missing	5722ss1 - Operating System/400	v5r1m0
P361700	Extra	5700nt1 - Native Tools (NATT) - IBM Intern...	v5r1m0
P361923	Missing	5722999 - AS/400 Licensed Internal Code	v5r1m0
P362035	Missing	5722999 - AS/400 Licensed Internal Code	v5r1m0
P362036	Missing	5722999 - AS/400 Licensed Internal Code	v5r1m0
P362037	Missing	5722999 - AS/400 Licensed Internal Code	v5r1m0
P362038	Missing	5722999 - AS/400 Licensed Internal Code	v5r1m0
P362041	Missing	5722999 - AS/400 Licensed Internal Code	v5r1m0
P382068	Missing	5700nt1 - Native Tools (NATT) - IBM Intern...	v5r1m0
P382122	Missing	5722ss1 - Operating System/400	v5r1m0
P382123	Missing	5722ss1 - Operating System/400	v5r1m0
P382229	Missing	5722ss1 - Operating System/400	v5r1m0
P382230	Missing	5722ss1 - Operating System/400	v5r1m0

32 missing fixes and 4 extra fixes for 'Flarg' compared to model system 'As80'

Use Management Central to compare the fixes currently installed on one or more systems – or target systems – to those on a model system. You can either generate a list of differences between the fixes on the target and model systems, or compare systems and then update the target systems. In V5R1 of Management Central the Update function has been enhanced to now compare "Extra" Fixes along with "Missing" Fixes

Missing Fixes

Fixes that are installed on the model system, but not installed on the target system

Extra Fixes

Fixes that are installed on the target system, but not installed on the model system

Note: Only those fixes identified as missing can be sent and installed. You cannot remove or uninstall extra fixes. You can only display them.

The Compare and Update Wizard is also enhanced to now remember the selections done under the Select products. Next time when the user comes into the wizard they can directly get to the page and the values for selected products will be retrieved. Refresh button is now added to make new selections

The summary page has also been modified to include a new column called Type to show:

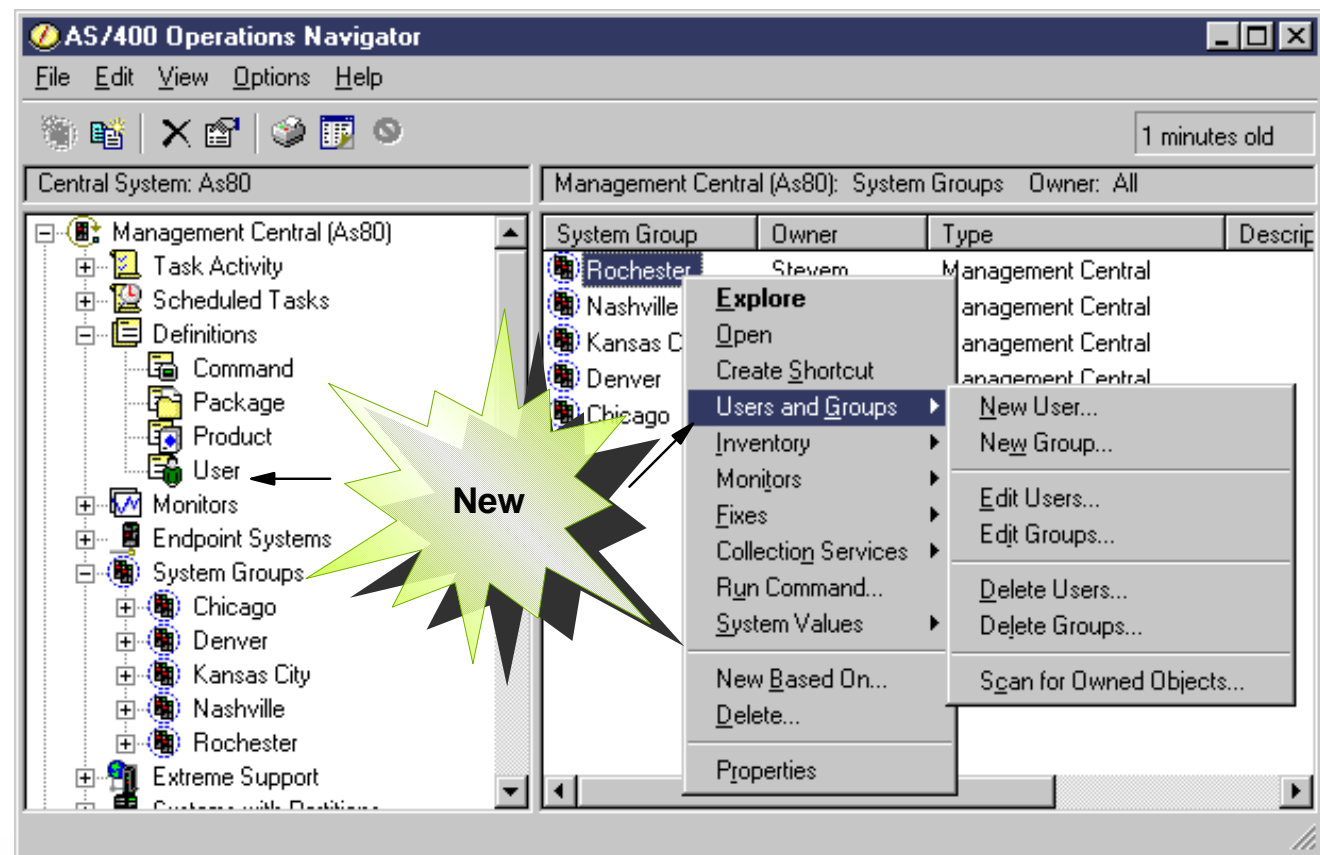
- Missing fixes only
- Extra fixes only
- Missing and Extra fixes

Management Central: Users and Groups

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Users and Groups

- Create a user definition, then create multiple users based on that definition
- Create, edit, and delete users and groups, and even schedule those actions
- Scan for owned objects to find out what objects a user owns
- Collect and search inventory of users and groups
 - For example, see all users who have Security Officer privileges on one or more systems
 - Export inventory to PC file
- Send users and groups from one system to multiple systems
 - Names, passwords, authorities, and other profile properties are sent



You can now manage your users and groups across multiple systems using Management Central. You can do tasks such as:

- Create a user definition and then create multiple users across multiple systems based on the definition. Create user definitions for the types of users on your system. Then, when a request comes in for a new user, all authorities, groups, attributes, and other information common to that type of user will already be set. So all you have to do is provide the user ID and password.
- 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. This is useful if, for example, you need to change the authority level for several users on multiple systems, or if a user who has access to multiple systems changes their name, you can easily edit that information and apply the change to all systems.
- Scan for owned objects to find out what objects a user owns across multiple endpoint systems or system groups, and even scan owned objects for multiple users simultaneously.
- 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. For example, you can search that inventory to see who has Security Officer privileges, as well as query other profile properties. Also, columns are sortable, so when you view user or group inventory, you can click on the column headings in the right pane of Operations Navigator to organize the information how you want it.
- Send users and groups from one system to multiple endpoint systems or system groups. Unlike the Copy action, the Send function sends as many user properties as possible to the target system(s), including the user name and password, security settings, authorities, and mail options. The Copy action for Users and Groups in My Connections functions the same as in prior releases.

continued on next page...

..continued from previous page

Each of these tasks is explained in more detail on the following slides.

The following tasks can be run immediately or scheduled using the Management Central scheduler:

- Create, edit, and delete users and groups. These actions can be done at a system group level on multiple systems, as well as from user and group lists in Management Central.
- Send users and groups
- Collect inventory for users and groups

Note: All OS/400 special authorities and other authorities that are needed when working with users and groups through a 5250 emulation screen are honored when managing users and groups with Management Central. This includes security administration (*SECADM) privileges and authority to the profiles with which you're working.

- A template for users with similar attributes
- Create one for each department in your company
 - Security and permissions likely the same for each user in department
 - Change ID, password, & personal information per user
- Specify a command or program in definition
 - Runs after a user based on definition has been successfully created
- Create users based on that definition
 - On a single system or
 - Across multiple systems
- When creating users, edit user properties
 - On a user-by-user basis or
 - Use settings defined in the user definition

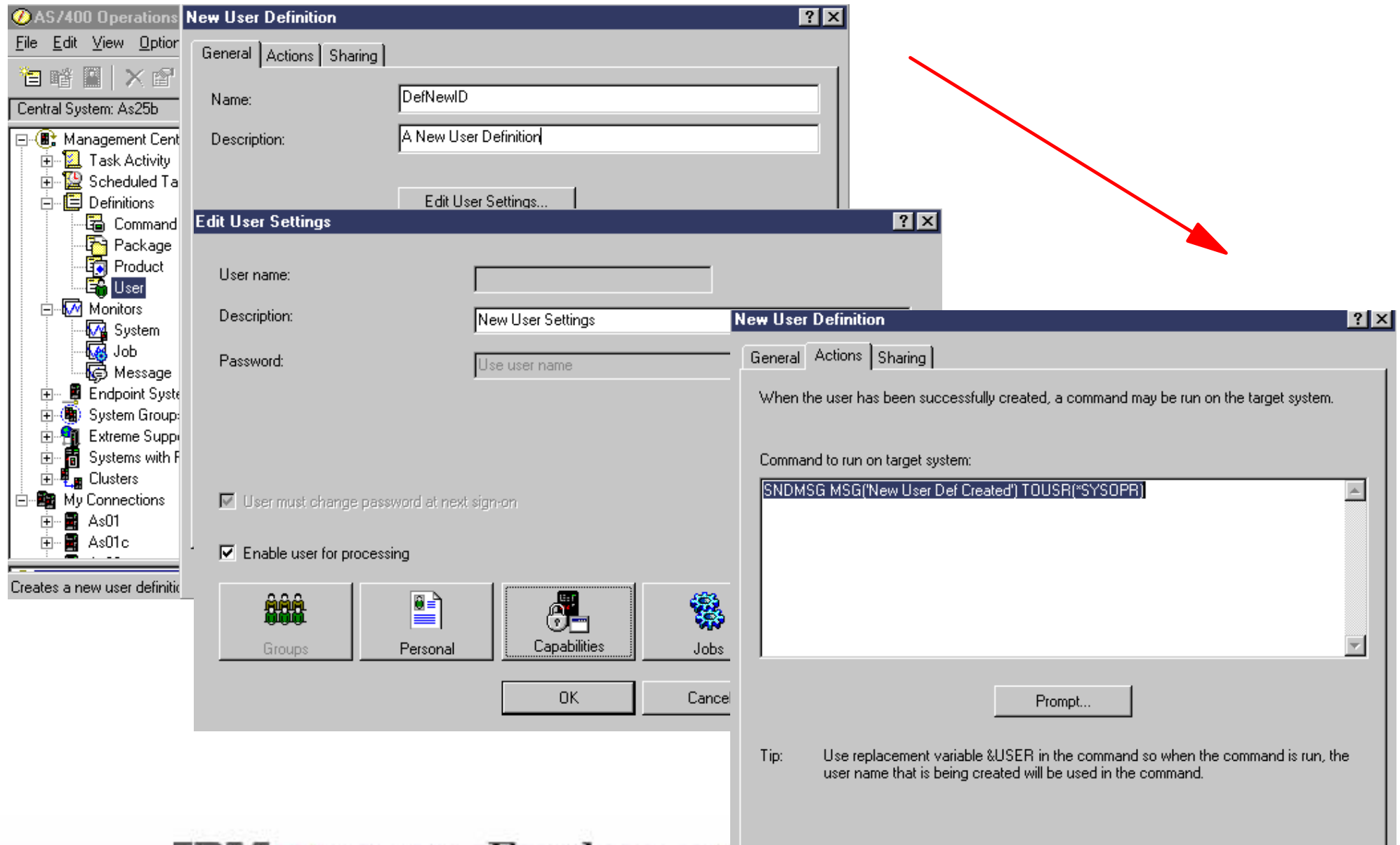
A user definition allows you an easier way to create a new user on multiple endpoint systems or system groups. Create user definitions for the various types of users on your system. Then, when a request comes in for a new user, all authorities, groups, attributes, and other information common to that type of user will already be set. So all you have to do is specify a user name, password, and an optional description of 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 can create the new user immediately or you can schedule a later time when you want the task to begin. For example, you can create a user definition named Accounting Users, which specifies all the authorities, groups, and other properties that the users in your accounting department need. Then, at any time, you can create one or more new users based on that definition on any endpoint system or system group.

In the user definition, you can specify a command or program to run on the target system immediately after a user is created successfully on the system. The command or program is run when a user is created from the definition. This can be any command that can be used in the AS/400 batch environment. You cannot run an interactive command. You can use the replacement variable &USER any place in the command where you want the command to substitute the name of the user that is being created. For example, you could specify the command CRTLIB &USER to create a library with the user name as the name of the library. This will create a library each time the definition is used to create a user.

When creating a new user from a definition, you can change properties of the new user, and this does not affect the properties defined in the user definition. Or you can simply use the definition properties for each new user you create, and then just specify an name and password for the user.

User Definition Example



The screenshot displays the AS/400 Operations console interface. On the left is a tree view of the system hierarchy, including Management Center, Task Activity, Scheduled Tasks, Definitions, Command, Package, Product, User, Monitors, System, Job, Message, Endpoint System, System Group, Extreme Support, Systems with F, Clusters, My Connections, and As01/As01c. The main area shows three overlapping windows:

- New User Definition (top):** The 'General' tab is active. The 'Name' field contains 'DefNewID' and the 'Description' field contains 'A New User Definition'. An 'Edit User Settings...' button is visible below the description field.
- Edit User Settings (middle):** The 'User name' field is empty. The 'Description' field contains 'New User Settings'. The 'Password' field contains 'Use user name'. There are two checked checkboxes: 'User must change password at next sign-on' and 'Enable user for processing'. At the bottom are icons for 'Groups', 'Personal', 'Capabilities', and 'Jobs', along with 'OK' and 'Cancel' buttons.
- New User Definition (bottom):** The 'General' tab is active. It contains a text area for 'Command to run on target system:' with the text 'SNDDMSG MSG('New User Def Created') TOUSR(*SYSOPR)'. A 'Prompt...' button is located below the text area. A tip at the bottom reads: 'Tip: Use replacement variable &USER in the command so when the command is run, the user name that is being created will be used in the command.'

A red arrow points from the top right towards the 'New User Definition' window at the bottom.

Notes: User Definition Example

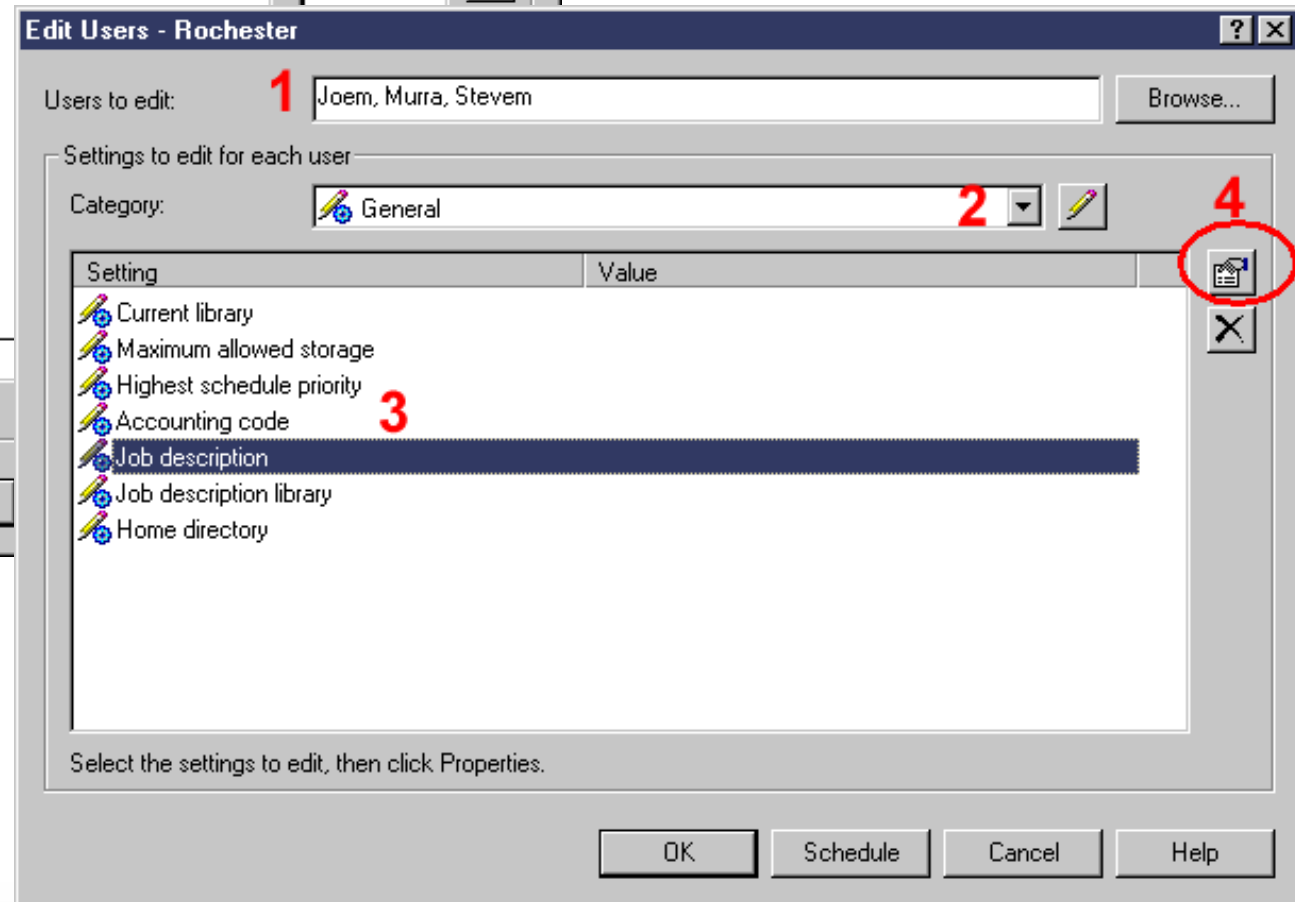
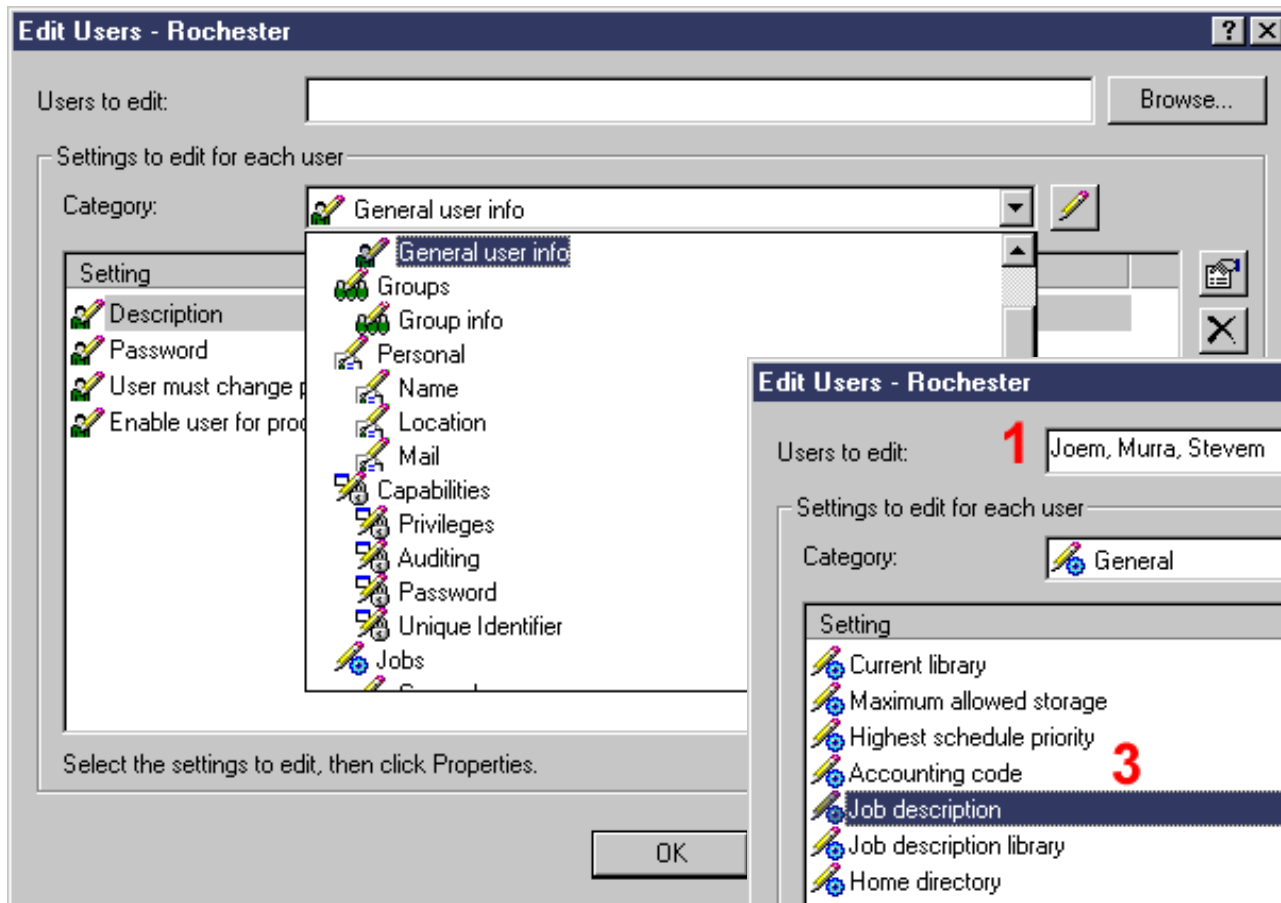
Use the General page of the New User Definition dialog to specify the name of the user definition and a brief description to help you identify this definition in a list of user definitions.

You can click Edit User Settings to change the user properties of the new user definition. For example, when you create a user definition for all users in your accounting department, you can change the user settings so that all users created from this definition will have the same department name, the same initial program, and the same auditing settings.

You can define a command to run after the new definition is created on a target system.

You should also specify if the new user definition can be shared with anyone other than the creator of this definition.

Edit Users and Groups



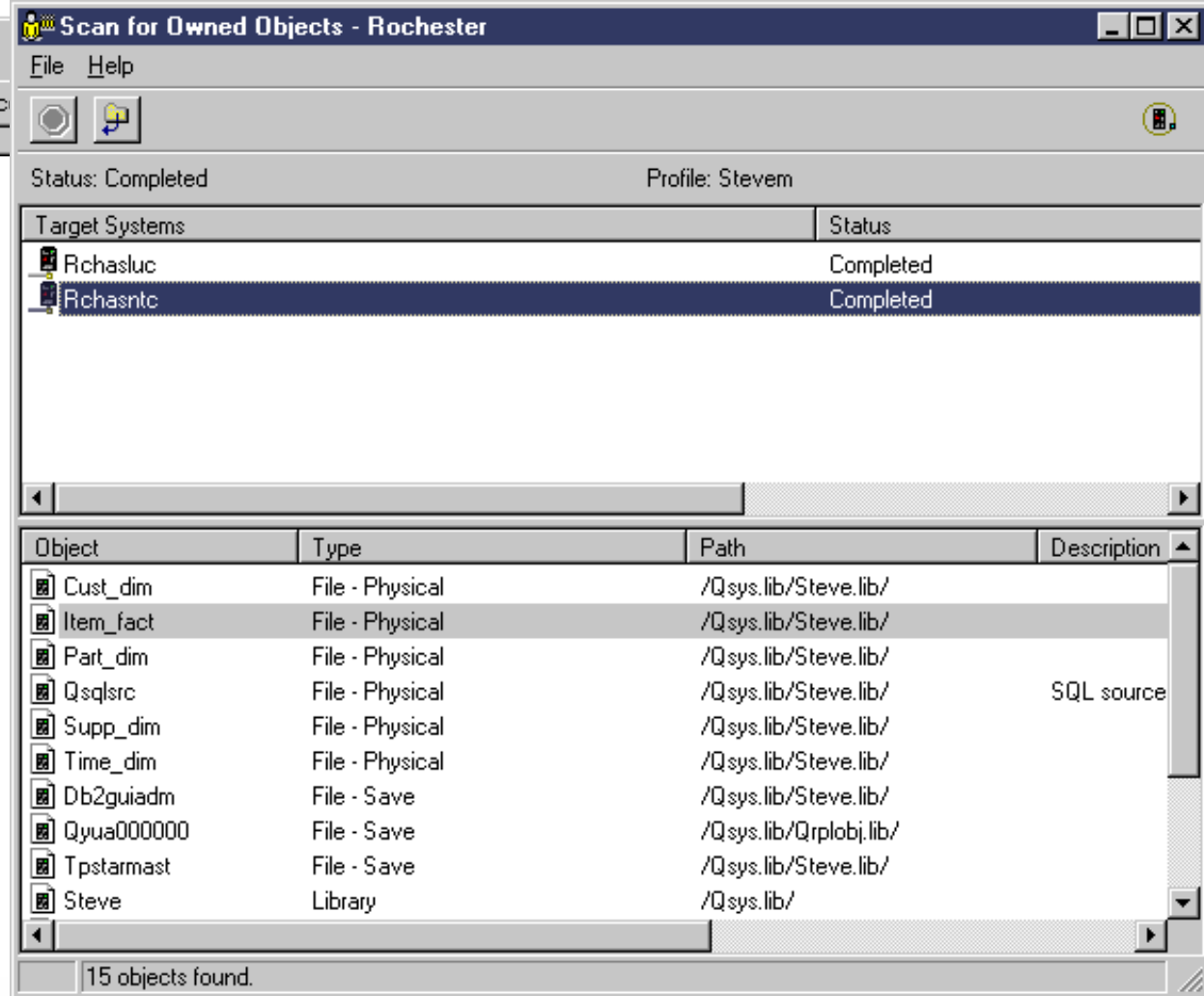
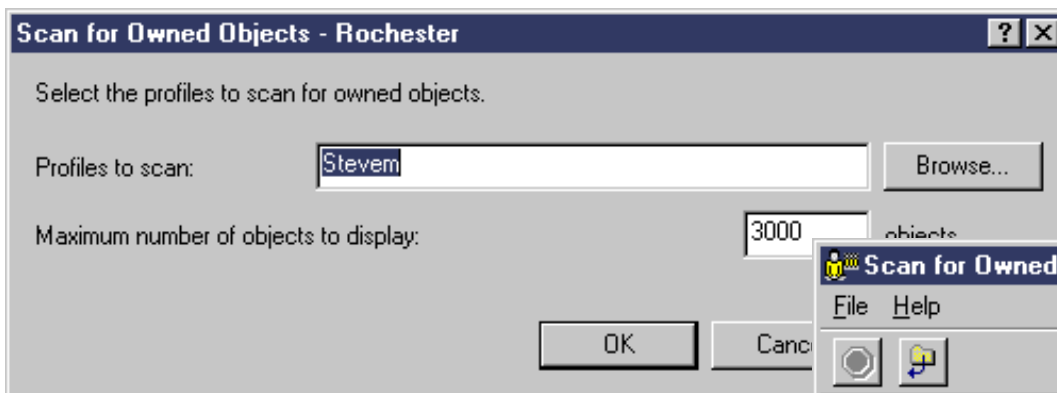
You can now edit one or more users or groups on an endpoint system or on all the systems in a system group using Management Central. Changing user and group settings across multiple systems can save significant time for a system administrator. For example, you could quickly and easily change the authority level for several users or groups across multiple systems. You can specify this editing task and then schedule it to run at a convenient time.

The example dialogs shown here are for editing users, but the process for editing groups is similar, with the exception being the categories are different. You can see all the user or group categories available to edit by selecting the Category drop-down arrow. The numbers on the dialogs in this slide and succeeding one represent the sequence you would take to edit user settings. In this example, the administrator is specifying the job description to be used by users in payroll.

- **1** Specify one or more names of users that you want to edit. You can click Browse to see a list of available user names in the central system inventory for the selected endpoint systems or system groups. Note: System-defined users cannot be edited; these users typically start with a Q, like QSECOFR.
- **2** Select the category of settings that you want to edit.
- **3** Select the settings that you want to edit in that category.
- Click the Properties button (or double-click the setting) to change the settings.
- Make the changes to the selected settings and click OK. Notice that only the settings you have selected are enabled.
- **4** Click the Summary button to see a list of all changes across categories you want to make. To undo a change, select the changed setting and click the Clear button (under the Properties button).

Continue selecting categories and settings until you have made all your changes. When you are finished and have verified the settings to be changed, click OK to start the editing task immediately or click Schedule to specify when you want the task to start.

Scan for Owned Objects



Notes: Scan for Owned Objects

You can now scan for owned objects for one or more user or group profiles on the selected endpoint systems or system groups. For multiple profiles, separate them with commas, or click Browse to select from a list of all profiles in the central system inventory for the selected systems and system groups. You may specify a maximum number of objects to show in the results list. The number you specify is the maximum number of objects shown for each profile on each system. Keep in mind that the larger the number you specify, performance may suffer.

The Scan for Owned Objects - Results window shows you the overall status of the scan operation and a list of systems that are being scanned (target systems). You can also see the status of the scan operation on each system. The results window opens immediately after the scan is initiated; therefore, this action is not listed as a task under Management Central's Task Activity.

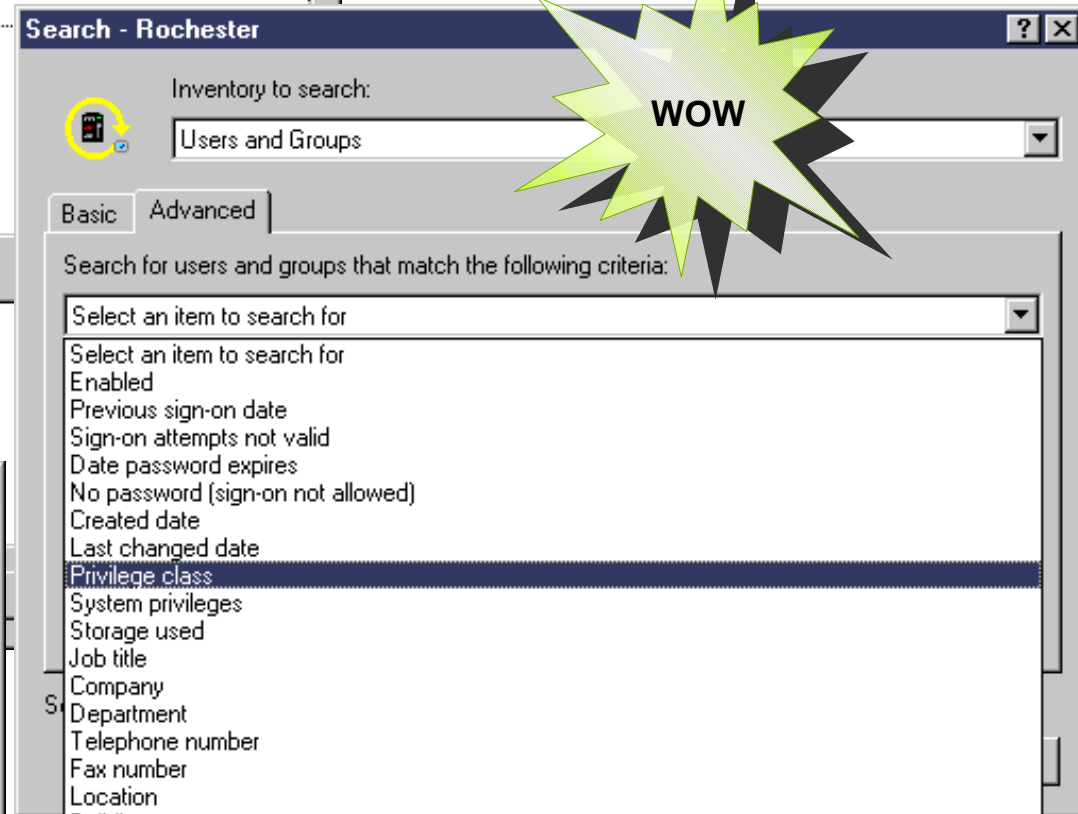
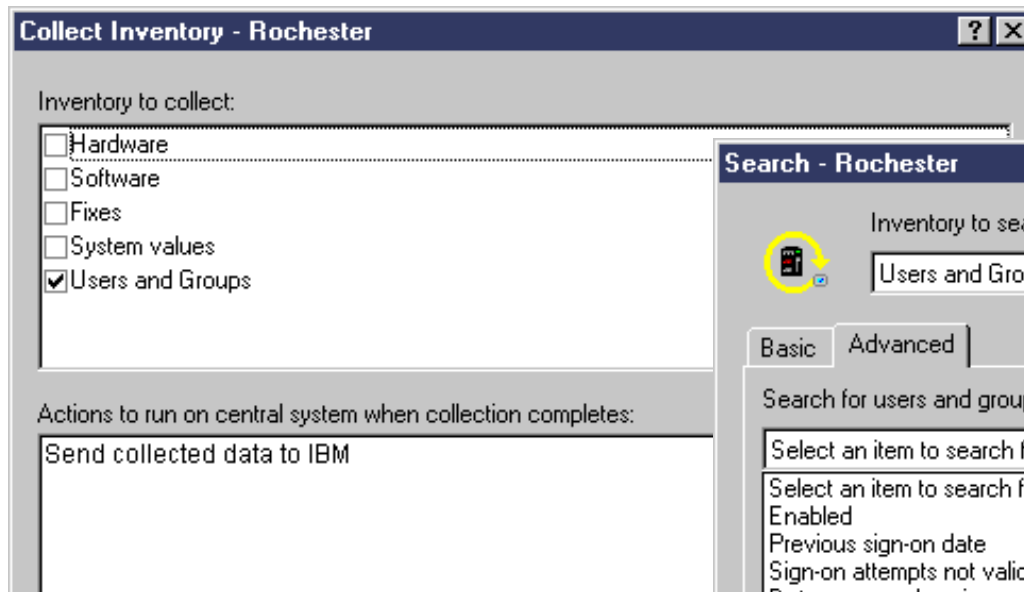
After the scan operation finishes, you can see the list of objects that are found for each system and profile that is scanned. Click on a target system to see the list of objects found on that system. You can export the scan results into a spreadsheet, text file, or HTML (web) page.

A Scan for Owned Objects button is also available on dialogs for deleting users or groups. That way, you can see what objects the profiles own to help you decide what action to take with the delete. The possible actions to take if the user or group owns objects are as follows: do not delete user/group, delete objects that user/group owns, and transfer objects to another user/group.

Scan for owned objects is also available for users and groups located within the Users and Groups component of a system under My Connections. However, a central system must be defined in Management Central, and you must be signed on to the central system, to use this feature from user and group lists in My Connections.

Users and Groups Inventory

- Collect
- Search
- Export



You can now collect inventory of users and groups from endpoint systems and system groups. Just like with hardware, software, fixes, and system values (which is also new), you can do things like search on users and groups or export profile information into different formats. (System values is not supported under the Inventory Search and Export options, but it instead has its own menu item from which you can compare and update system values and export them.) It is recommended that you schedule collection of users and groups inventory on a recurring basis to keep your systems current.

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. You may use the asterisk (*) as a "wildcard" to search for all items containing a specified string; for example, to find all profiles beginning with S, type S*. The Basic search finds the following fields in the users and groups inventory for the selected systems and groups:


- AS/400 user name
- Description
- First name
- Preferred name
- Middle name
- Last name
- Full name

The Advanced search page gives you the flexibility to search on additional profile properties, as described in the next slide.

Note: On the Collect Inventory dialog, you can select one or more actions from the list of actions to be run on the central system when the inventory has been collected. (The actions in the list were defined by application programs that are currently installed on the selected system(s).) For example, if you are collecting an inventory of your system's hardware, software, and fixes, and you want to receive this data in a series of reports that show your system's growth and maintenance, you would select "Send collected data to IBM." This function is part of Extreme Support, a new feature for V5R1. See the slides on Extreme Support for more details.

Advanced Search on Users and Groups

Search - Rochester

Inventory to search:
 Users and Groups

Basic | **Advanced**

Search for users and groups that match the following criteria:

Privilege class: [Security officer]

Security officer


And Or

Previous sign-on date: [After] [12/31/99]

Search

December 1999

Sun	Mon	Tue	Wed	Thu	Fri	Sat
28	29	30	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

 Today: 10/27/00

Search Users and Groups For "" On Rochester

File Help

Privilege class: Security officer And Previous sign Last collected: 10/27/00 10:35:56 AM

Profile	System	Type	Enabled	Privilege Class	Previous Sign-On	Password Expires	D
Aarona	Rchasluc	User	X	Security officer	4/4/00 2:45:27 PM	Expired (based ...	A
Adc	Rchasluc	User	X	Security officer	8/9/00 10:49:34 AM	2/10/01 (based...	T
Aitestluc	Rchasluc	User	X	Security officer	1/17/00 12:40:12 PM	Expired (based ...	A
Andrews	Rchasluc	User	X	Security officer	7/21/00 2:28:57 PM	1/1/01 (based ...	A
A		User Objects					
A		Printer Output			1/13/00 3:48:50 PM	Expired (based ...	A
A		Jobs			7/31/00 3:56:55 PM	2/1/01 (based ...	A
A		Server Jobs			10/18/00 7:46:49 AM	3/18/01 (based...	A
B		Messages			8/22/00 10:44:00 AM	2/9/01 (based ...	B
B		Scan for Owned Objects			9/6/00 12:55:49 PM	3/10/01 (based...	B
B					10/13/00 8:24:51 AM	4/17/01 (based...	D
B		User	X	Security officer	7/26/00 10:03:49 AM	1/18/01 (based...	M

Click the Advanced tab to search on additional fields for users and groups. No advanced search is available for other inventories. When you specify advanced search criteria, the search results include all items that meet both the basic criteria and the advanced criteria. When you select a field to search on, you can specify the value for that field. For example, you can search for all users on an endpoint system(s) or system group with Security Officer authority by selecting Privilege class, and then selecting Security officer.

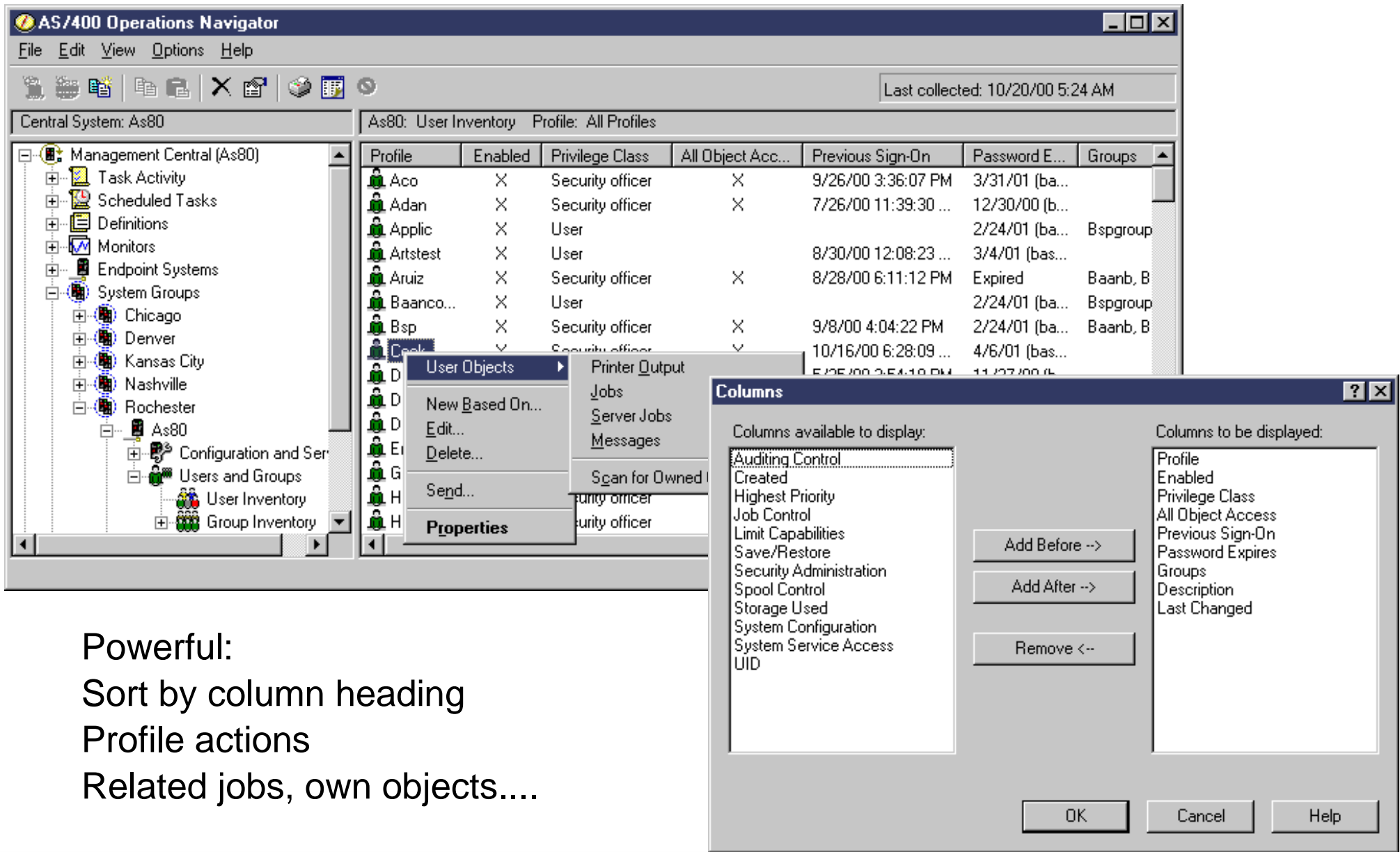
Optionally click And or Or to search on additional fields. For example, if you were searching for all users on the selected systems with Security Officer authority, you could enhance the search criteria to include the last time each user signed-on. In this case, you would click And and select Previous Sign-On Date.

From the Search Results window, you can perform many of the actions that you can perform on a user or group elsewhere within Operations Navigator. For example, you can delete a user or group, edit the profile (e.g., 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.

Tip: To search on fields that are not available in the advanced search criteria, you can export the inventory and then perform your own queries. All profile attributes are stored in the inventory. To export user and group inventory:

1. Right-click the endpoint systems or system groups to export from and select Inventory. Select Export.
2. Select the Users and Groups inventory to export.
3. Click Export, and then select the PC folder where you want to save the inventory.
4. Specify the type of file in which you want to save the inventory. You can select any of the following formats for your inventory data: ASCII Tab Delimited Text (*.txt), Comma Separated Variable (*.csv), Web Page (*.html), or Lotus 123 compatible (*.csv).
5. Specify the name of the file in which you want to save the inventory.
6. Click Save. The Exporting Inventory dialog (as shown in the previous slide) appears. Be patient, depending on the size of inventory you are exporting.

Viewing User Inventory



The screenshot shows the AS/400 Operations Navigator interface. The main window displays the 'User Inventory' for 'Central System: As80'. The interface includes a menu bar (File, Edit, View, Options, Help), a toolbar, and a navigation pane on the left showing a tree view of system components. The main area contains a table of user profiles with columns for Profile, Enabled, Privilege Class, All Object Acc..., Previous Sign-On, Password E..., and Groups. A context menu is open over the table, and a 'Columns' dialog box is overlaid on the right, allowing users to customize the columns displayed in the table.

Profile	Enabled	Privilege Class	All Object Acc...	Previous Sign-On	Password E...	Groups
Aco	X	Security officer	X	9/26/00 3:36:07 PM	3/31/01 (ba...	
Adan	X	Security officer	X	7/26/00 11:39:30 ...	12/30/00 (b...	
Applic	X	User			2/24/01 (ba...	Bspgroup
Artstest	X	User		8/30/00 12:08:23 ...	3/4/01 (bas...	
Aruiz	X	Security officer	X	8/28/00 6:11:12 PM	Expired	Baanb, B
Baanco...	X	User			2/24/01 (ba...	Bspgroup
Bsp	X	Security officer	X	9/8/00 4:04:22 PM	2/24/01 (ba...	Baanb, B
Ceak		Security officer		10/16/00 6:28:09 ...	4/6/01 (bas...	
D		Security officer		5/25/00 2:54:18 PM	11/27/00 (b...	
D						
D						
Ei						
G						
H						
H						

Columns Dialog Box:

Columns available to display:

- Auditing Control
- Created
- Highest Priority
- Job Control
- Limit Capabilities
- Save/Restore
- Security Administration
- Spool Control
- Storage Used
- System Configuration
- System Service Access
- UID

Columns to be displayed:

- Profile
- Enabled
- Privilege Class
- All Object Access
- Previous Sign-On
- Password Expires
- Groups
- Description
- Last Changed

Buttons: Add Before -->, Add After -->, Remove <--

Buttons: OK, Cancel, Help

Powerful:
Sort by column heading
Profile actions
Related jobs, own objects....

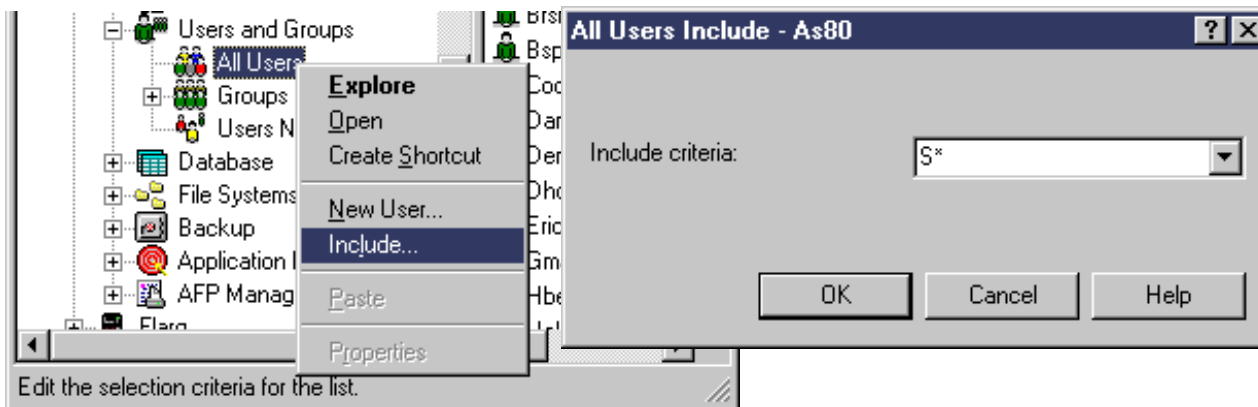
Notes: Viewing User Inventory

The previous page shows an example of user inventory on a selected endpoint system. Notice that you can perform actions on a user. 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.

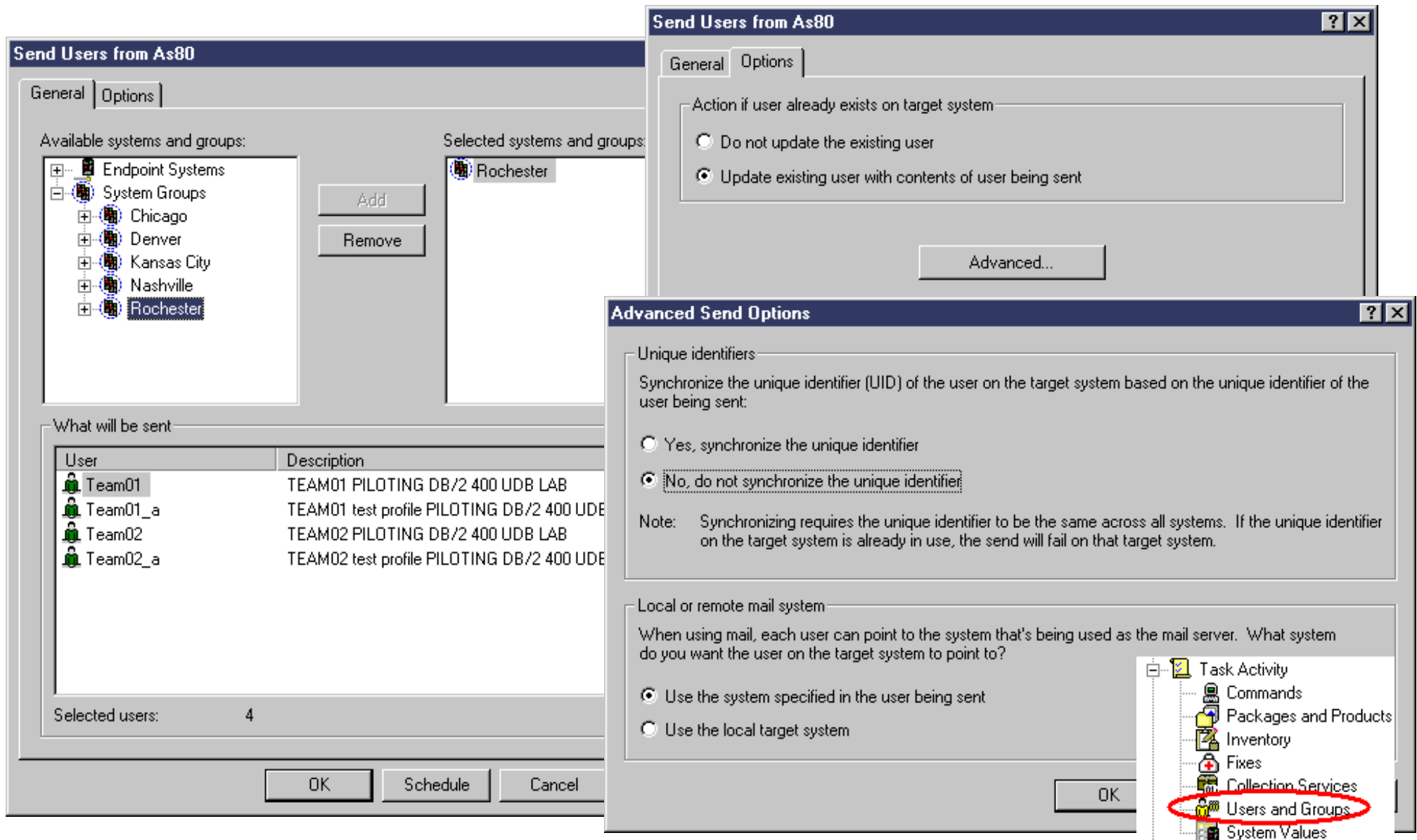
Note: The Edit function is only available for users and groups in Management Central lists. To change a user or group on a single system under My Connections, select Properties as in releases prior to V5R1. The Properties function for users and groups in Management Central lists is for viewing purposes only.

A feature is the ability to click on any column heading in the right pane to organize the information how you want it. For example, if you want to group together all users in the inventory who have Security Officer privileges, you can sort that by clicking the Privilege Class heading. You can easily customize what you want to see in the list by adding or removing any of the columns shown on the Columns dialog for users. The Columns item is available from the Options menu. Groups, of course, have different columns to choose from.

For previous releases, In the Users and Groups component of a system under My Connections, you did not have the capability to sort on columns when viewing users or groups. All you see is the Name and Description. However, in V5R1, you have the ability to filter what users or groups you want to view. Use this to find users and groups more quickly and efficiently. This can be particularly useful for large systems with a large number of users. Remember that more information is shown in Management Central lists because inventory is collected, and so the information is based on a prior collection. With user and group lists in My Connections, only a subset of information is shown because the list is dynamic, and so retrieving all kinds of profile data could impact performance.



Sending Users or Groups



Send Users from As80

General Options

Available systems and groups:

- Endpoint Systems
- System Groups
 - Chicago
 - Denver
 - Kansas City
 - Nashville
 - Rochester

Selected systems and groups:

- Rochester

What will be sent:

User	Description
Team01	TEAM01 PILOTING DB/2 400 UDB LAB
Team01_a	TEAM01 test profile PILOTING DB/2 400 UDB LAB
Team02	TEAM02 PILOTING DB/2 400 UDB LAB
Team02_a	TEAM02 test profile PILOTING DB/2 400 UDB LAB

Selected users: 4

OK Schedule Cancel

Send Users from As80

General Options

Action if user already exists on target system:

- Do not update the existing user
- Update existing user with contents of user being sent

Advanced...

Advanced Send Options

Unique identifiers:

Synchronize the unique identifier (UID) of the user on the target system based on the unique identifier of the user being sent:

- Yes, synchronize the unique identifier
- No, do not synchronize the unique identifier

Note: Synchronizing requires the unique identifier to be the same across all systems. If the unique identifier on the target system is already in use, the send will fail on that target system.

Local or remote mail system:

When using mail, each user can point to the system that's being used as the mail server. What system do you want the user on the target system to point to?

- Use the system specified in the user being sent
- Use the local target system

Task Activity

- Commands
- Packages and Products
- Inventory
- Fixes
- Collection Services
- Users and Groups**
- System Values

OK

Notes: Sending Users or Groups

You can send one or more users groups to another system, selected endpoint systems, or system groups. A central system must be defined in Management Central, and you must be signed on to the central system, to use this feature. The Send option is available from user and group lists in Management Central and in the Users and Groups component of a system under My Connections. Regardless of where you initiate this action, a Management Central task is started when you send users or groups. Look under Task Activity (then Users and Groups) to view status and work with the task.

We talk about sending users in this presentation, but the concepts apply to groups as well. When you send a user to another system, as many user properties as possible are copied to the new system, including the user name and password, security settings, authorities, and mail options that are not copied when you select to copy a user to another system. An entry in the system distribution directory is created or updated for each user that is sent. Several of the system-defined users cannot be sent; these users typically start with a Q, like QSECOFR.

Use the Options page to specify or view 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 viewing the properties for a send users task, you cannot change the selected action. Click Advanced to specify advanced send options, including 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.

It is important to note this UID, because when you are sending users across systems, Management Central must look for an available UID number on the target systems. The UID number is another way of identifying a user to a program. For example, the UID number is used by programming interfaces in the Integrated File Systems environment. When you are working with systems in a clustering environment or a system with logical partitions, it is often important to keep the unique identifiers synchronized. If you are simply moving users from one system to another (not in a clustering or logical partitions environment), you may save a significant amount of time by choosing not to synchronize the unique identifiers of the users being sent. Keep in mind that synchronizing requires UID numbers to be the same across all systems. If the UIDs on the target system are already in use, the send will fail on that target system.

Notes: Sending Users or Groups cont.

The Local or Remote Mail System option on the Advanced Send Options page allows you to specify the system that will be used as the mail server. If you want your users to receive all their mail on the same system, regardless of how many systems they are signed onto in the network, select to use the system specified in the properties of the user being sent. If you are moving users to a new system and plan to delete them from the original system, you can select to use the local target system as the mail server.

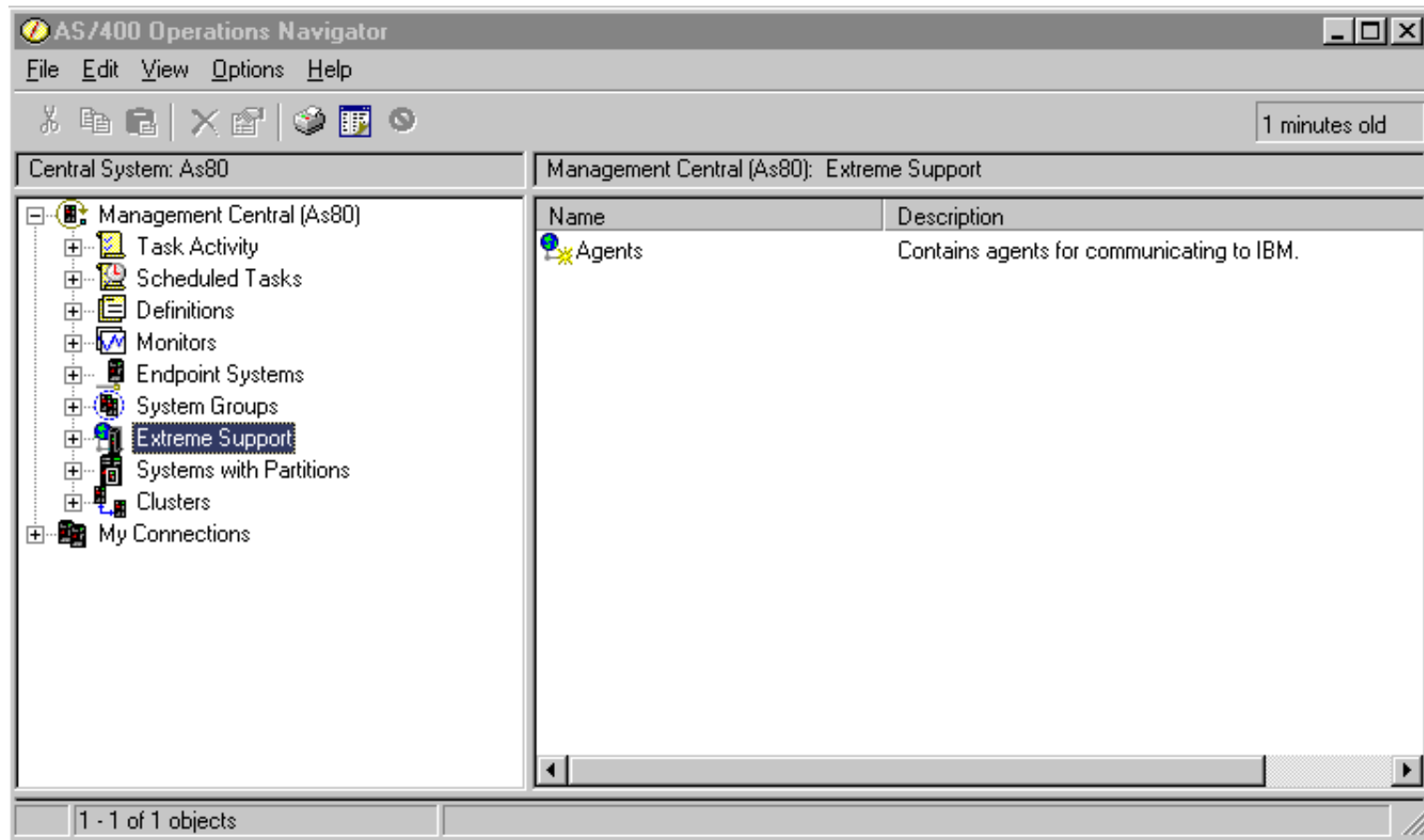
Note: To send users or groups across systems, the user doing the send must have a matching user ID on the target systems, as well as the usual OS/400 *SECADM special authority.

Management Central Extreme Support

IBM @server. For the next generation of e-business.

Management Central Extreme Support

IBM  server iSeries



IBM  server. For the next generation of e-business.

Management Central Extreme Support

Management Central Extreme Support (V5R1) is a merging of technologies involving Management Central's inventory collection support, PM/400 data, and IBM Electronic Services infrastructure. This merger enables customers to perform the necessary configuration and setup to get a connection to IBM, send collected data, and receive IBM fixes for multiple systems / groups from the Management Central Central System. This precludes requiring customers sending data and receiving IBM fixes from each individual system as the process is today.

In V4R5, customers only had the ability to collect and send data to IBM. The process involved:

Agree to License and Data Usage Agreements

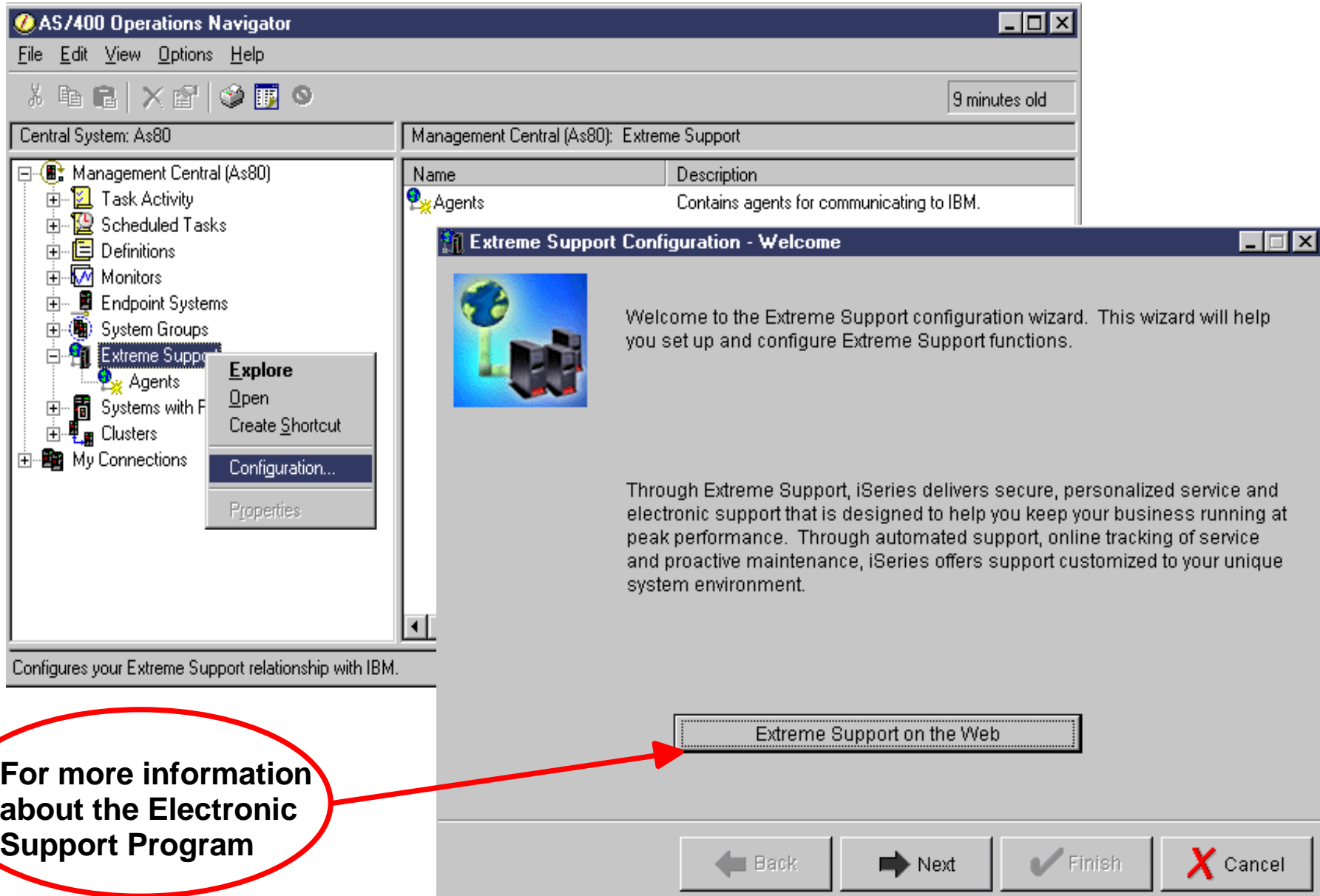
Configure your connection to IBM with the Universal Connection Wizard

Schedule Collecting and Sending Data using Management Central

Register Systems on the Web

With V5R1, the Management Central Extreme support automates all these processes, enables customizing what information will be sent, and includes the ability to receive IBM fixes into one wizard.

Configuration



The screenshot shows the AS/400 Operations Navigator interface. The main window displays a tree view on the left with 'Management Central (As80)' expanded to show 'Agents'. A context menu is open over 'Agents', with 'Configuration...' selected. The main pane shows a table with one entry: 'Agents' with the description 'Contains agents for communicating to IBM.' An 'Extreme Support Configuration - Welcome' dialog box is overlaid on top. The dialog contains a globe icon and text: 'Welcome to the Extreme Support configuration wizard. This wizard will help you set up and configure Extreme Support functions.' Below this is a paragraph: 'Through Extreme Support, iSeries delivers secure, personalized service and electronic support that is designed to help you keep your business running at peak performance. Through automated support, online tracking of service and proactive maintenance, iSeries offers support customized to your unique system environment.' At the bottom of the dialog is a button labeled 'Extreme Support on the Web' and a row of navigation buttons: 'Back', 'Next', 'Finish', and 'Cancel'.

Central System: As80

Management Central (As80): Extreme Support

Name	Description
Agents	Contains agents for communicating to IBM.

Extreme Support Configuration - Welcome

Welcome to the Extreme Support configuration wizard. This wizard will help you set up and configure Extreme Support functions.

Through Extreme Support, iSeries delivers secure, personalized service and electronic support that is designed to help you keep your business running at peak performance. Through automated support, online tracking of service and proactive maintenance, iSeries offers support customized to your unique system environment.

Extreme Support on the Web

Back Next Finish Cancel

For more information about the Electronic Support Program

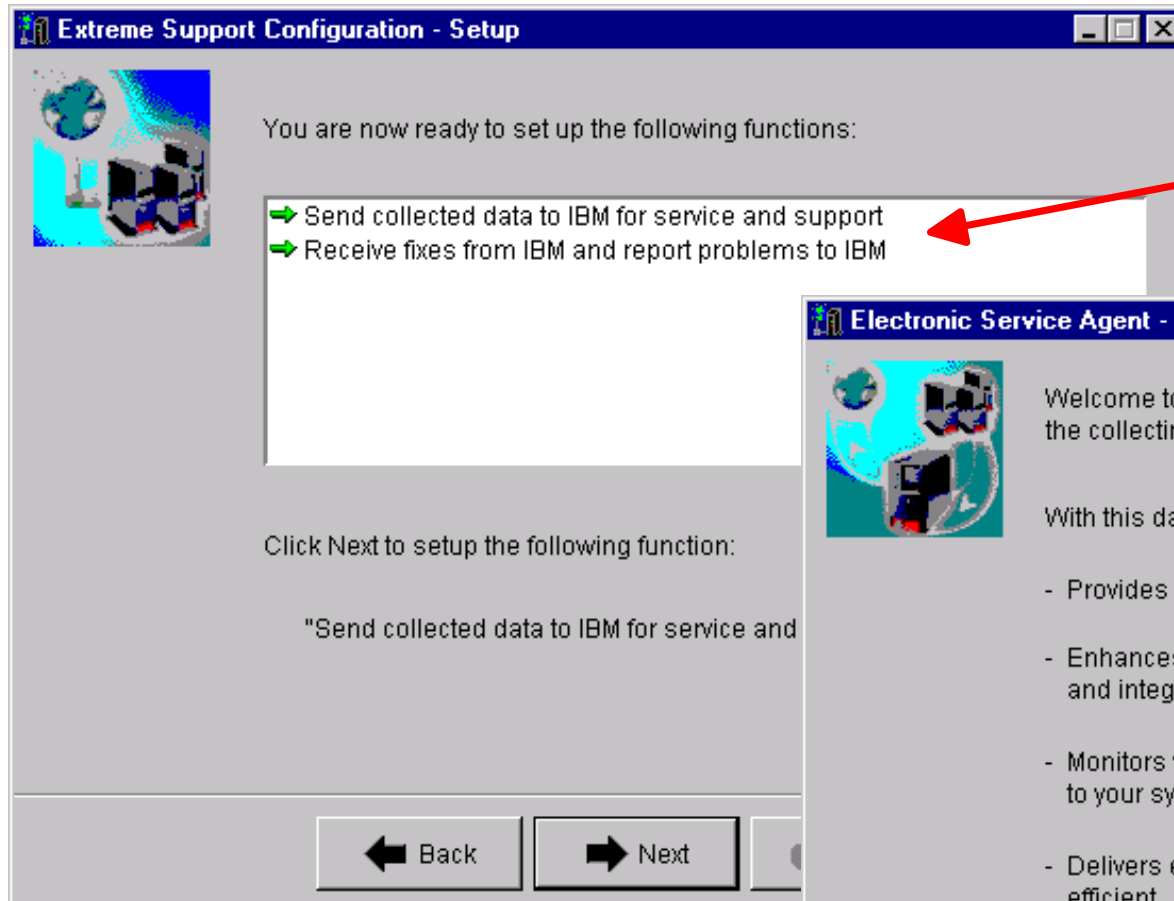
Extreme Support Configuration Wizard

To access the configuration wizard, right click Extreme Support and select Configuration from the context menu.

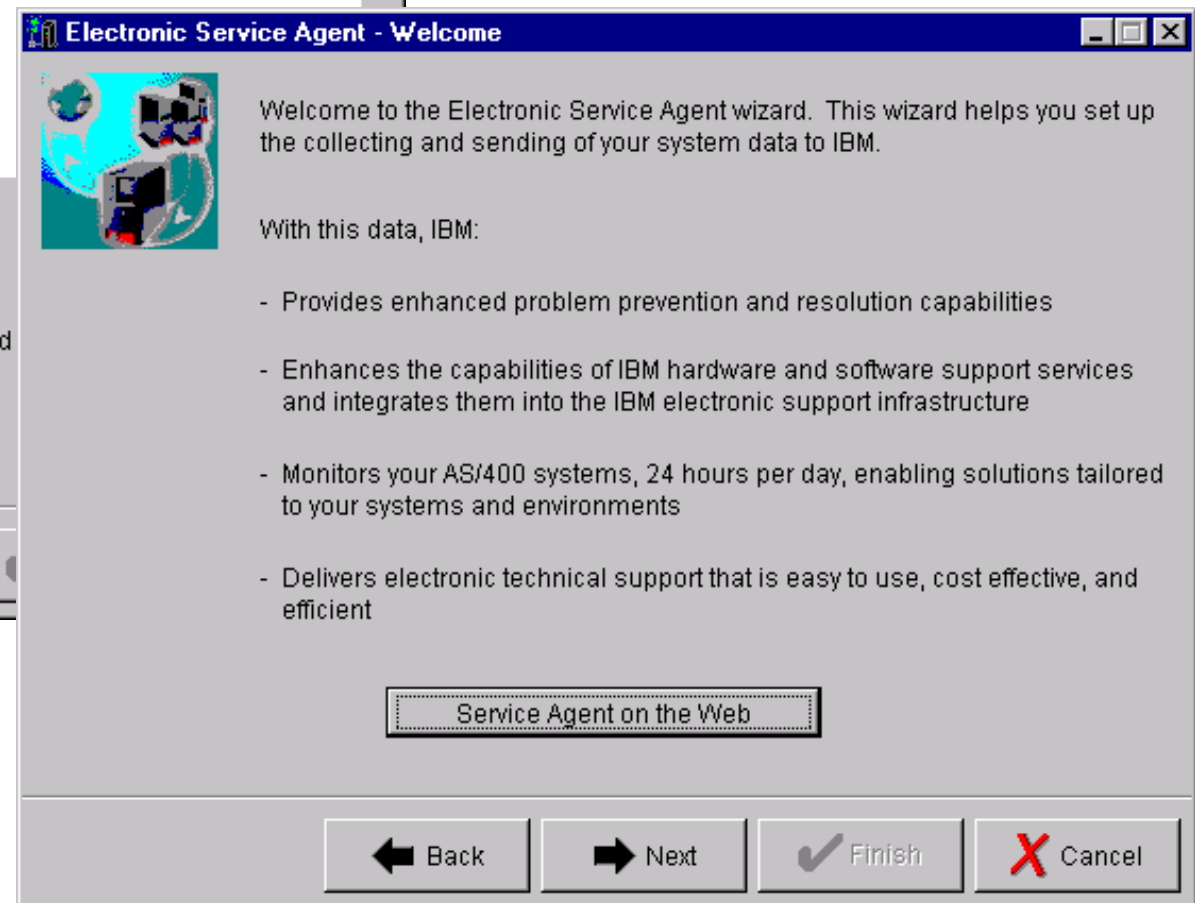
The Extreme Support Configuration Wizard - Welcome windows will display. The wizard will guide you through the configuration and setup. This process involves:

- What functions do you want to enable: Sending collected data and / or Receiving fixes from IBM
- If a connection is not exist you will be prompted to create a new connection using the Universal Connection Wizard. Some of the information required includes:
 - Contact information
 - Type of connection: ECS or IBM Electronic Service Agent for AS/400
 - Interface, hardware resource, and line information
 - User Id and Password
 - Configuring what information and systems / system groups you want to collect
 - Scheduling the collection
 - Receiving fixes

Electronic Service Agent



Select which services to configure



As part of the Extreme Support setup wizard, the user will select what services to configure:

- Send collected data to IBM for service and support
- Receive fixes from IBM and report problems to IBM

After selecting which services to configure, the Electronic Service Agent welcome window appears, providing additional information about the services provided. If you choose the send collected data function, selecting Next will result in the license agreement being displayed. You have two choices:

- Accept the agreement (if accepted, any collected and sent data is covered by this agreement)
- Do not accept the agreement (if NOT accepted, the wizard ends and the Send Collected Data feature is not configured.)

You will then configure Send Collected Data and setup Receiving Fixes.

You may review the Electronic Service Agent History at any time which details the information being sent to IBM from the Agents Object in MC.

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PCOM	WebSphere Commerce Suite	Payment Manager
WebSphere	WebSphere Standard Edition	WebSphere Advanced Edition
MQSeries	MQSeries Integrator	Host Integration Series
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