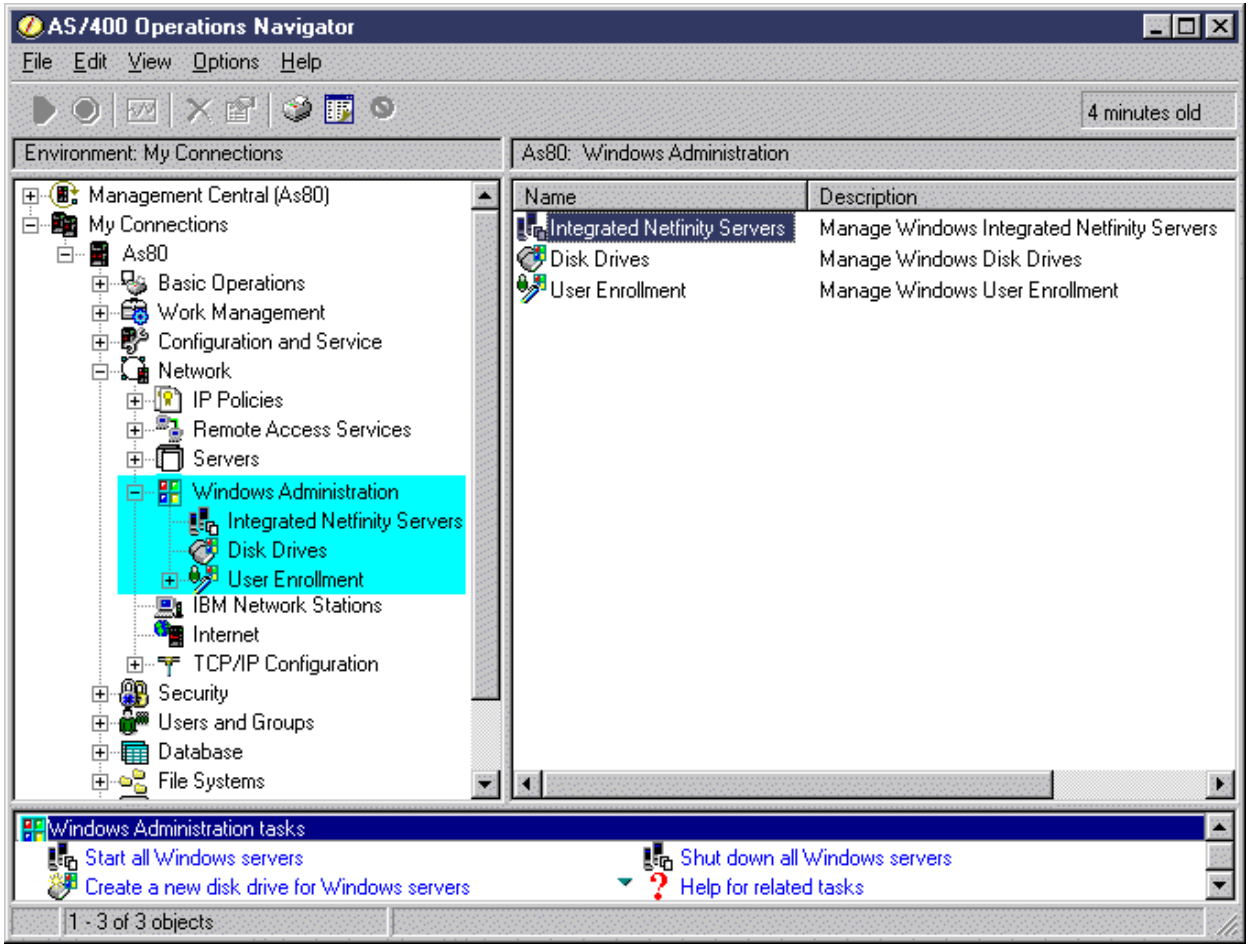
iSeries Operations Navigator

2001 Announcements
ITSO Technical Overview
May 2001
Part 2 of 2

Operations Navigator: Windows Administration

Windows Administration

- 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)

Notes: Windows Administration

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

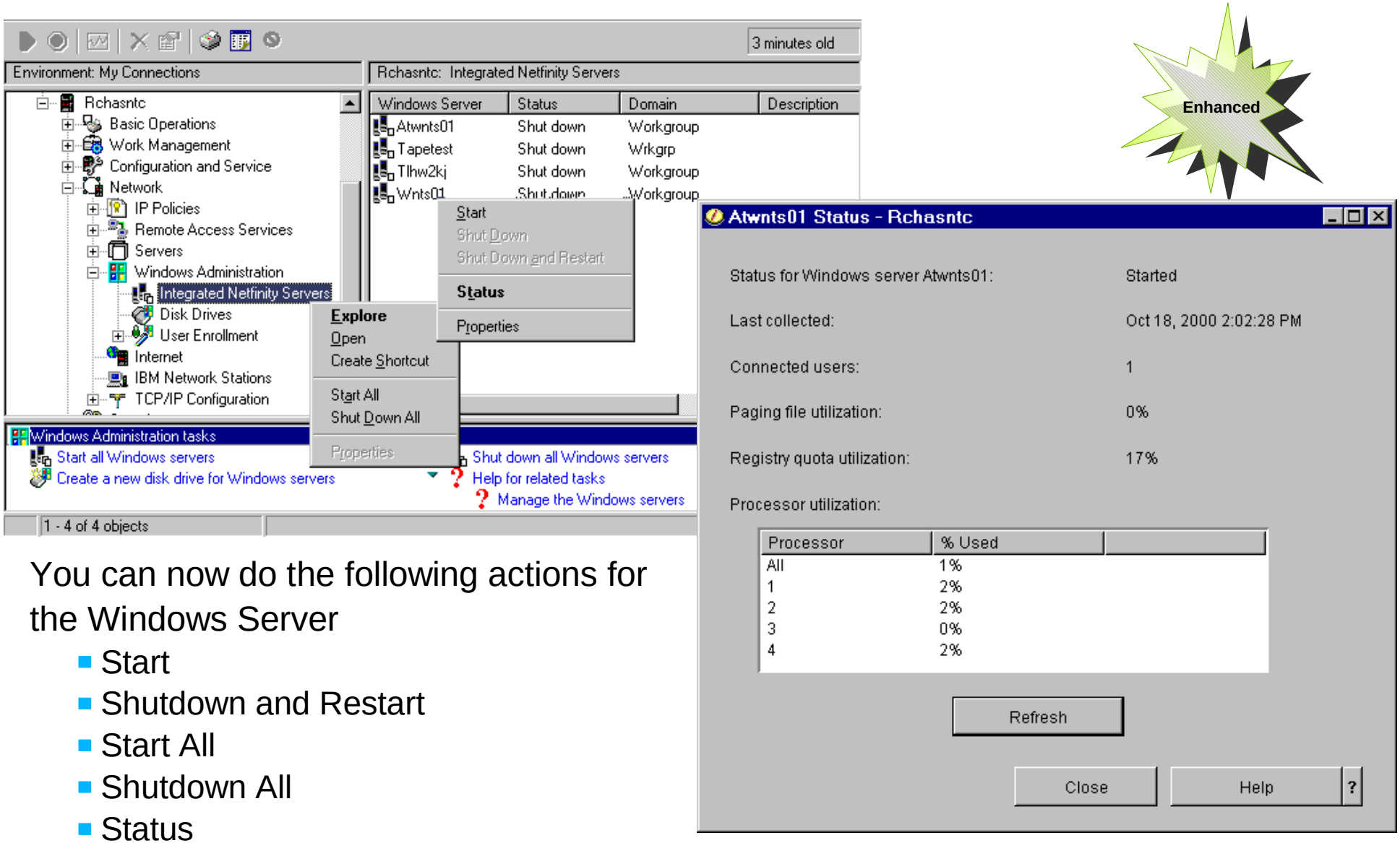
You can now Create, Delete, Link, Unlink and view Properties of Disk Drives associated to the windows Server. V5R1 now allows Dynamic Disk Drives linking.

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.

Windows Administration - Servers



You can now do the following actions for the Windows Server

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

Notes: Manage Windows Server

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

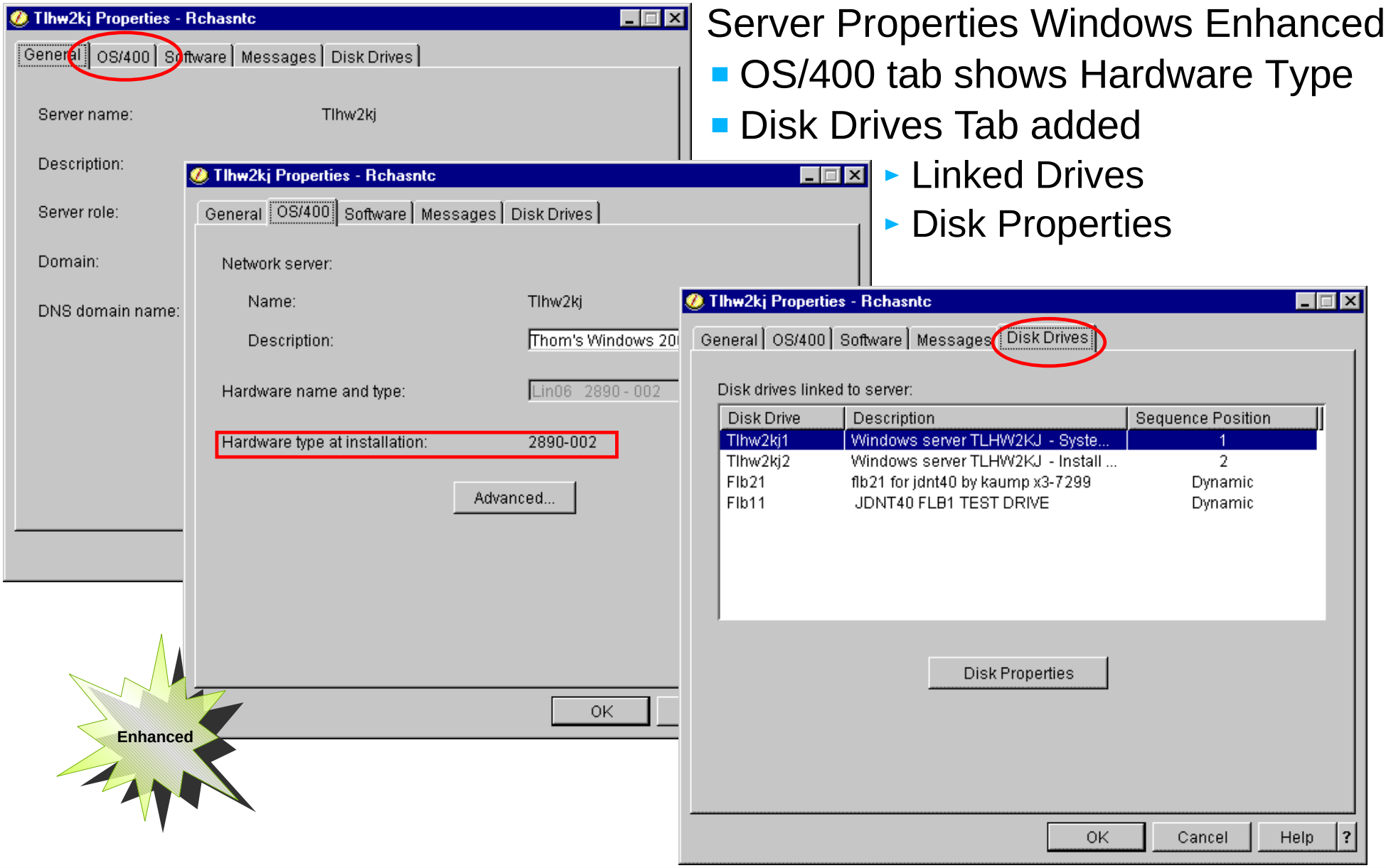
- Display Disk Drives linked to the Server
- User Enrollment

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 is 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

Notes: Server 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.

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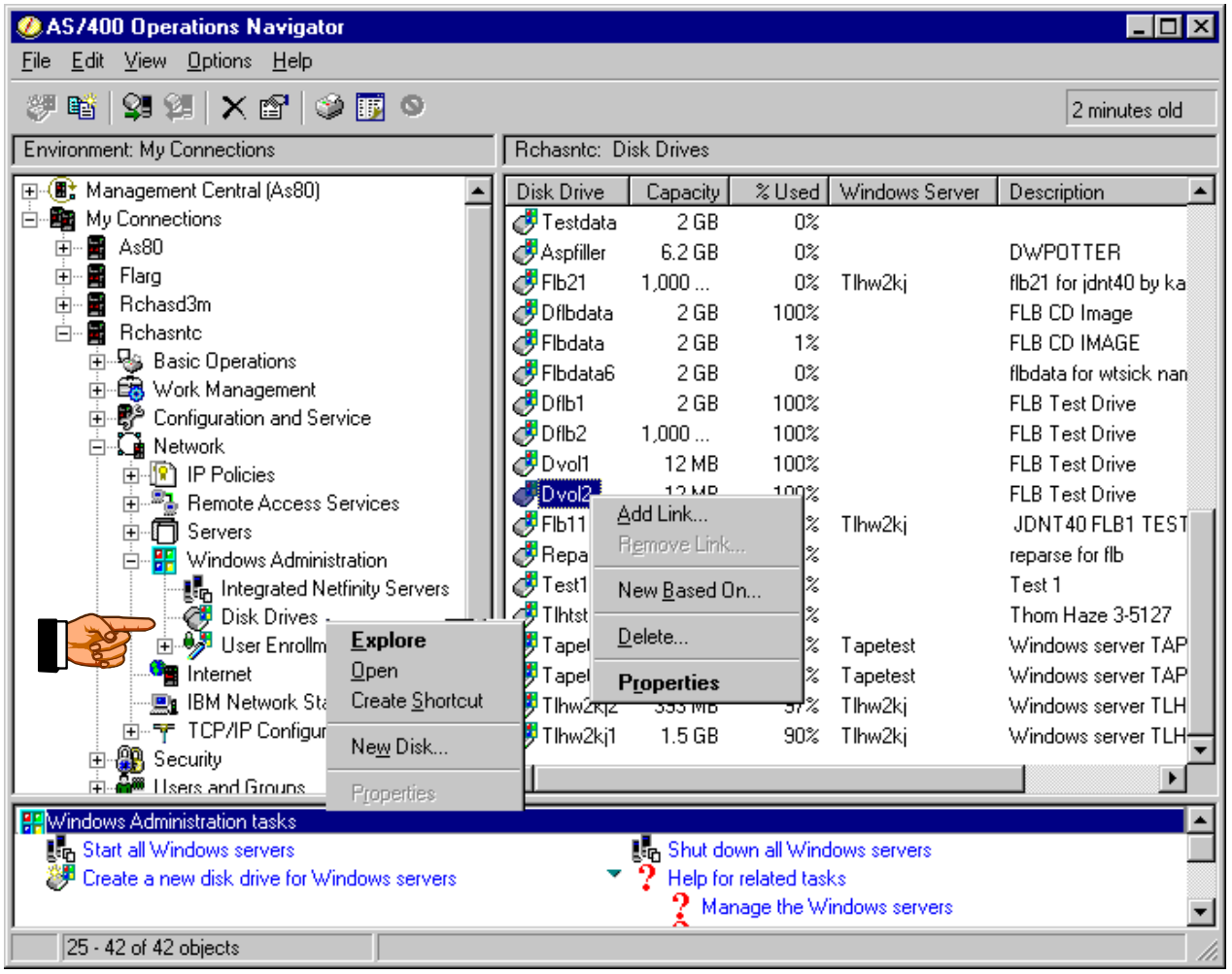
Windows Administration - Disk Drives

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



Notes: Disk Drives

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

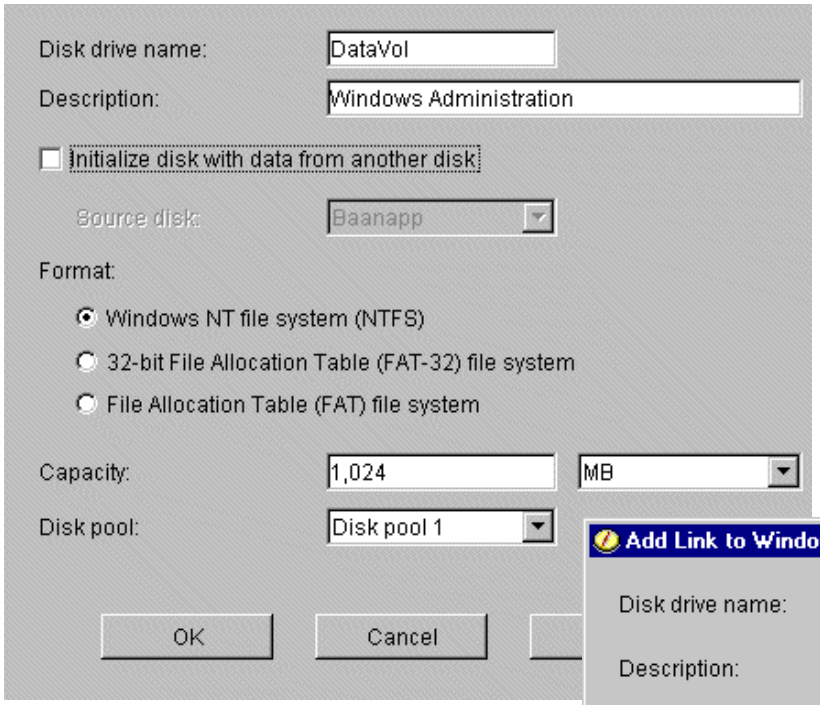
Removes existing link from the Windows Server Disk. It also allows you to reuse the freed sequence number from Compress link Sequence

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.

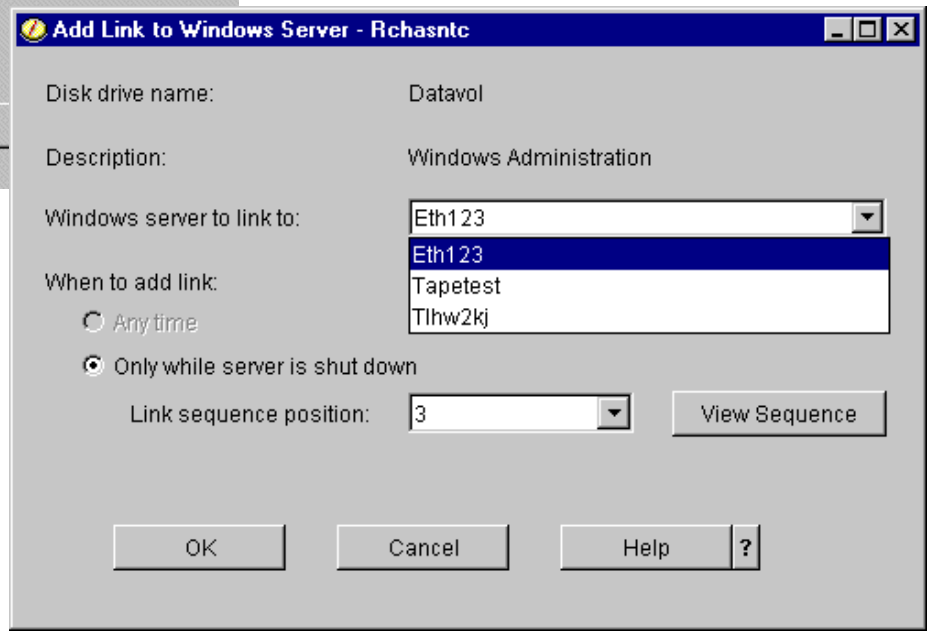
Additional columns can viewed by clicking Options, Column's and then include the additional columns. Available columns are Disk Drive, Capacity, %Used, Windows Server, Description, Disk Pool, Format, Formatting Status, and Free Space

Disk Drives



Create New Disk

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



Add Link

- Server Selection
- When to Link
- Sequence position

Notes: Disk Drives

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)

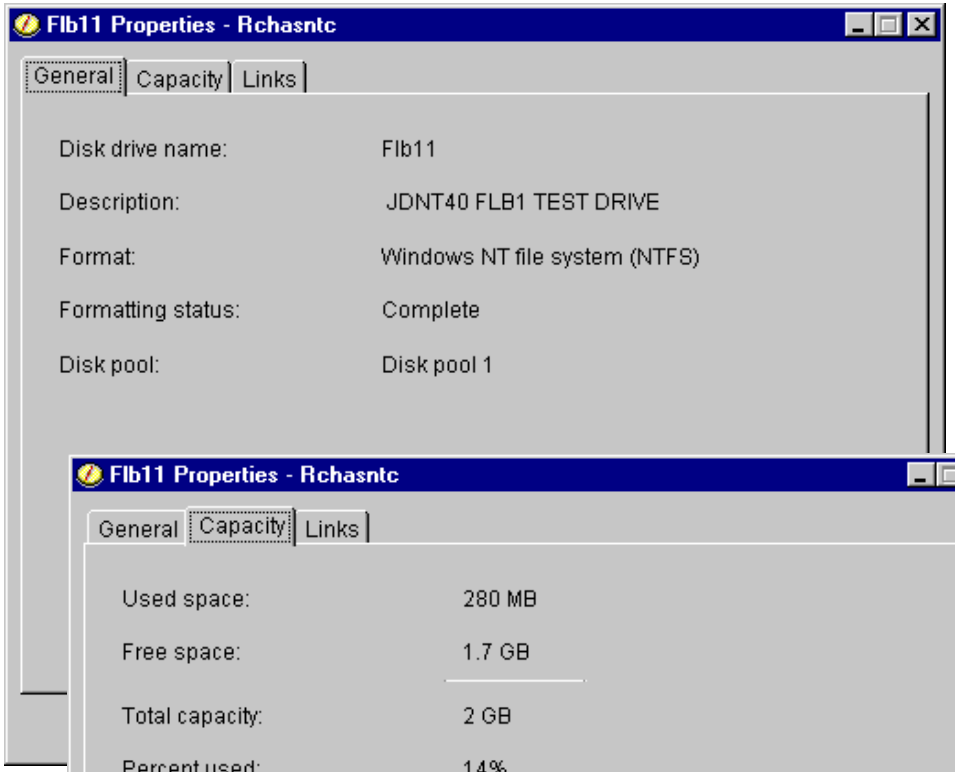
Disk pool option specifies the disk pool (also known as an auxiliary storage pool or ASP) that contains the disk. Possible values include:

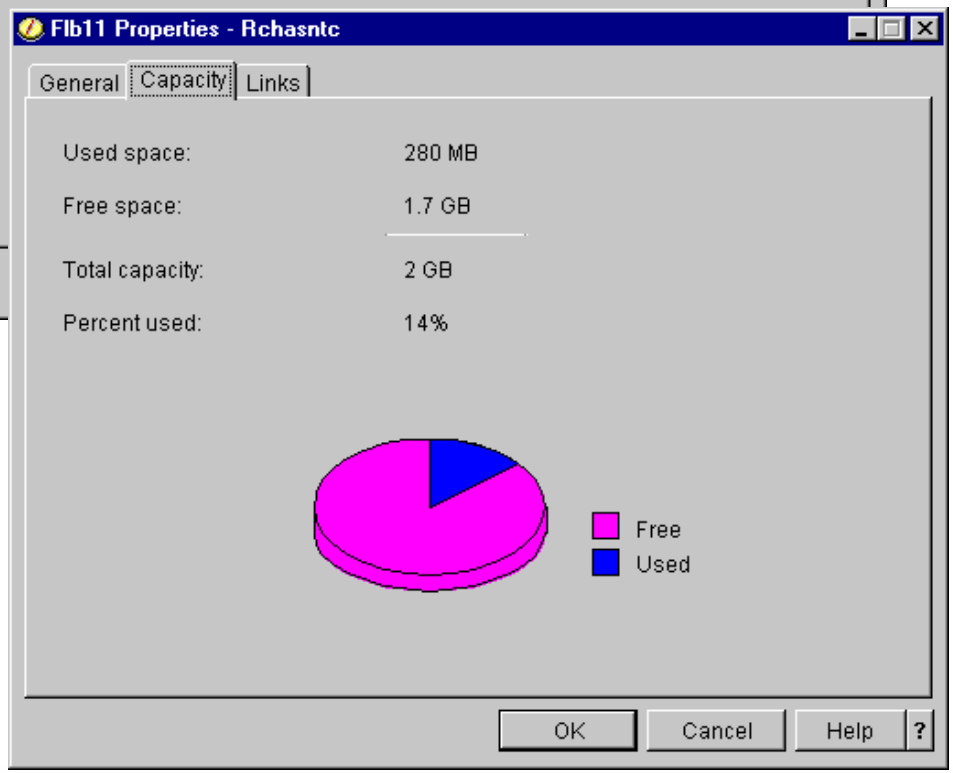
1. Disk pool 1: The disk is in the system disk pool.
2. Disk pool 2-32: The disk is in a user disk pool.
3. Disk pool 33-99: The disk is in an independent user disk pool.

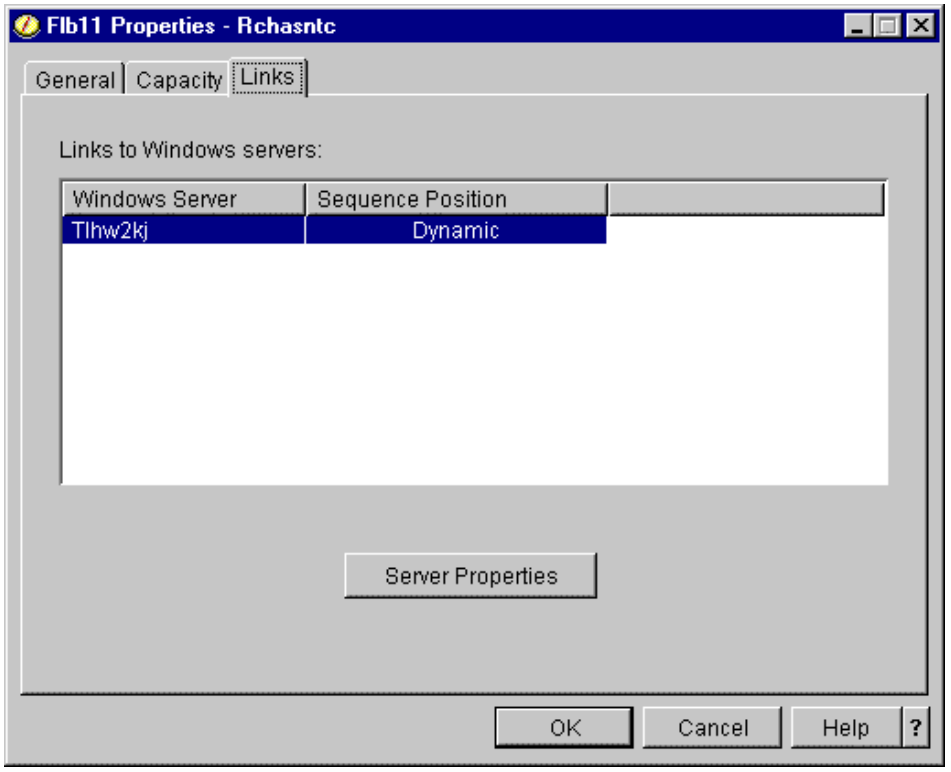
Note: When the disk drive is initially created, it is not formatted by the AS/400 system and must be formatted by the Windows operating system. Only Disk pools that are valid to the AS/400 will be listed. Disk creation process is a long-running operation. Therefore, when the user presses ***OK*** a separate 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

Notes: Disk Drive 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.

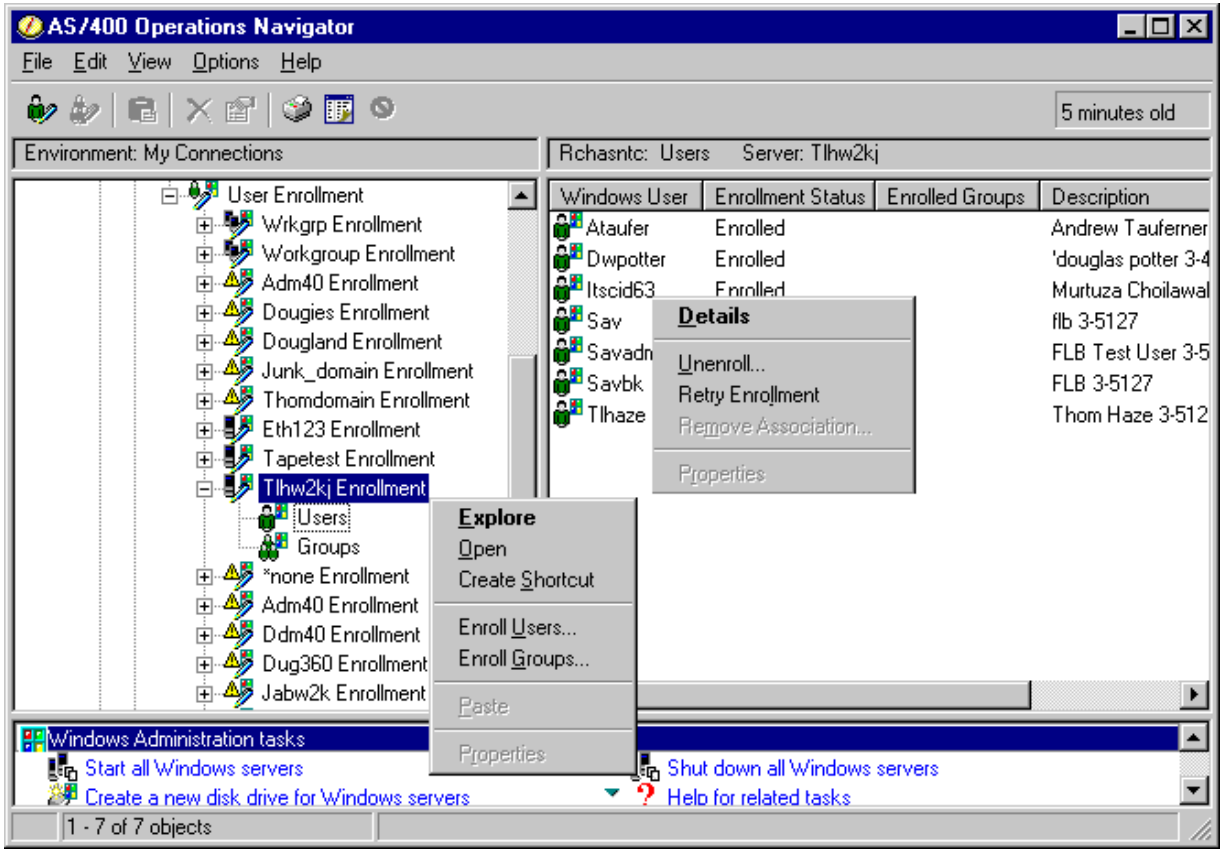
- Capacity Tab
  - Used Space: The used capacity of the disk, in megabytes (MB) or gigabytes (GB)
  - Free Space: The unused capacity of the disk, in megabytes (MB) or gigabytes (GB)
  - Total capacity: The capacity of the disk, in megabytes (MB) or gigabytes (GB)
  - Percent Used: The percent of the 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

- 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



Notes: User Enrollment

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

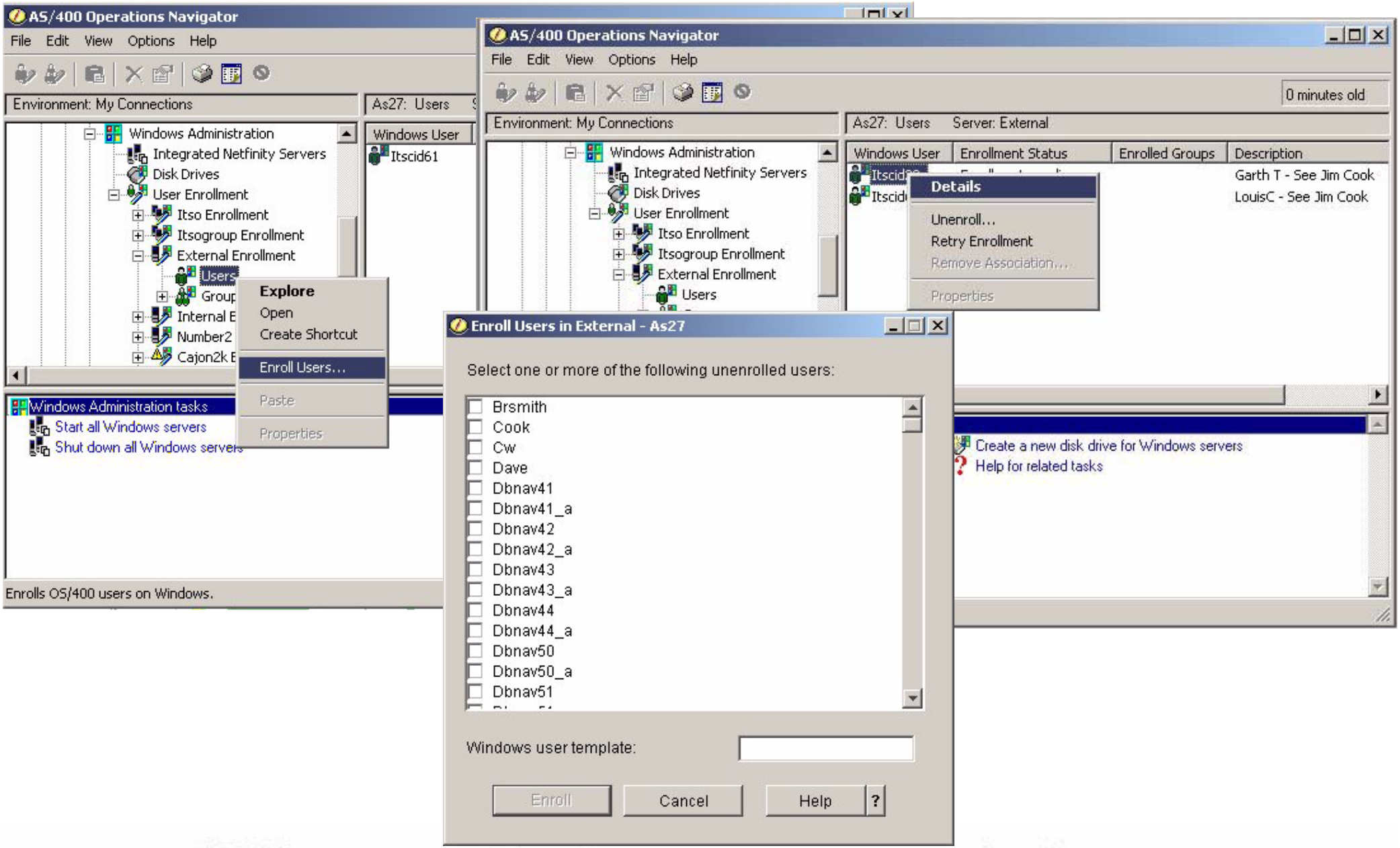
Display status of enrolled users/groups

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

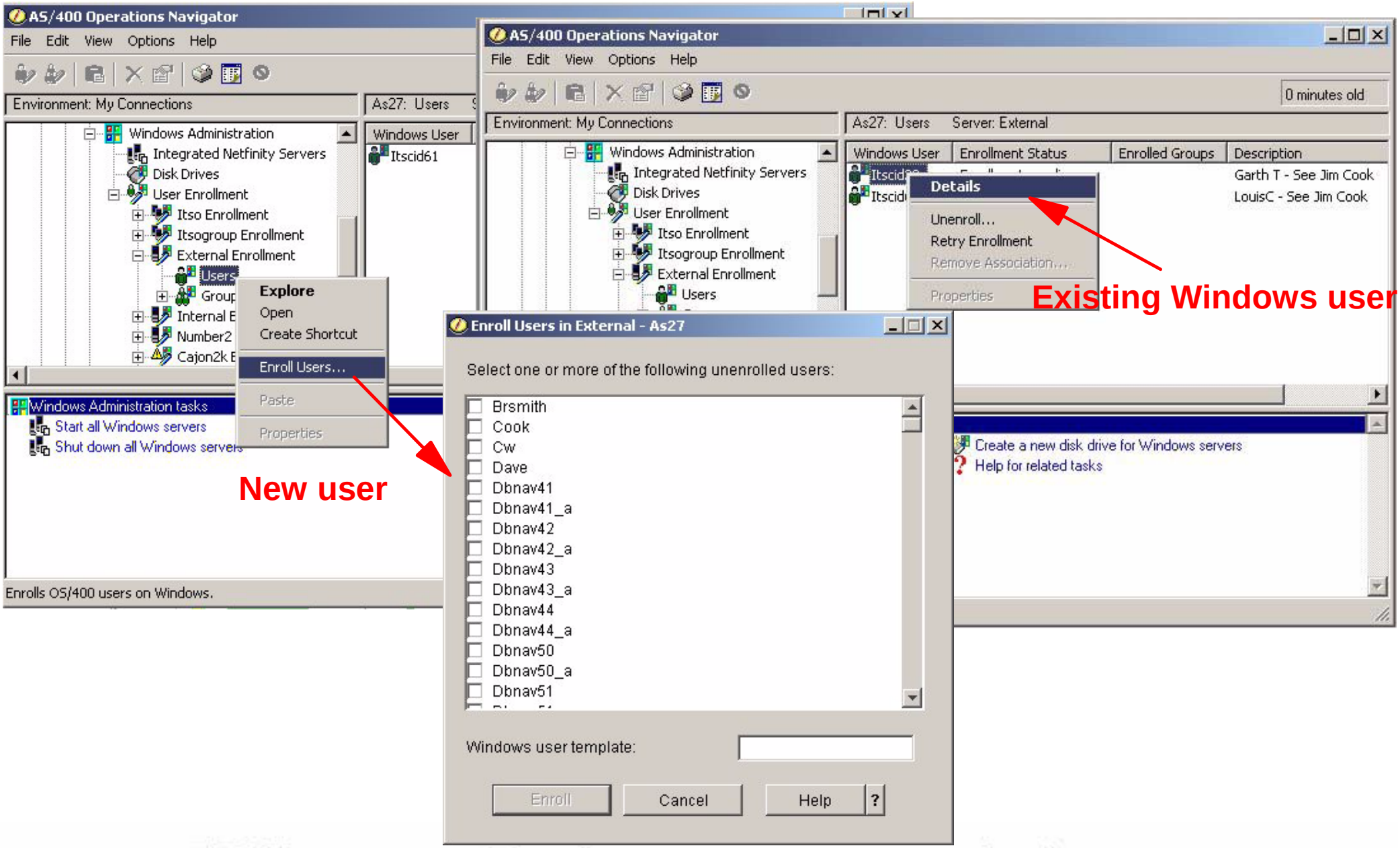
Retry Enrollment

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



Enrolling Users



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Notes: Enrollment Status

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

Enhanced Java Integration

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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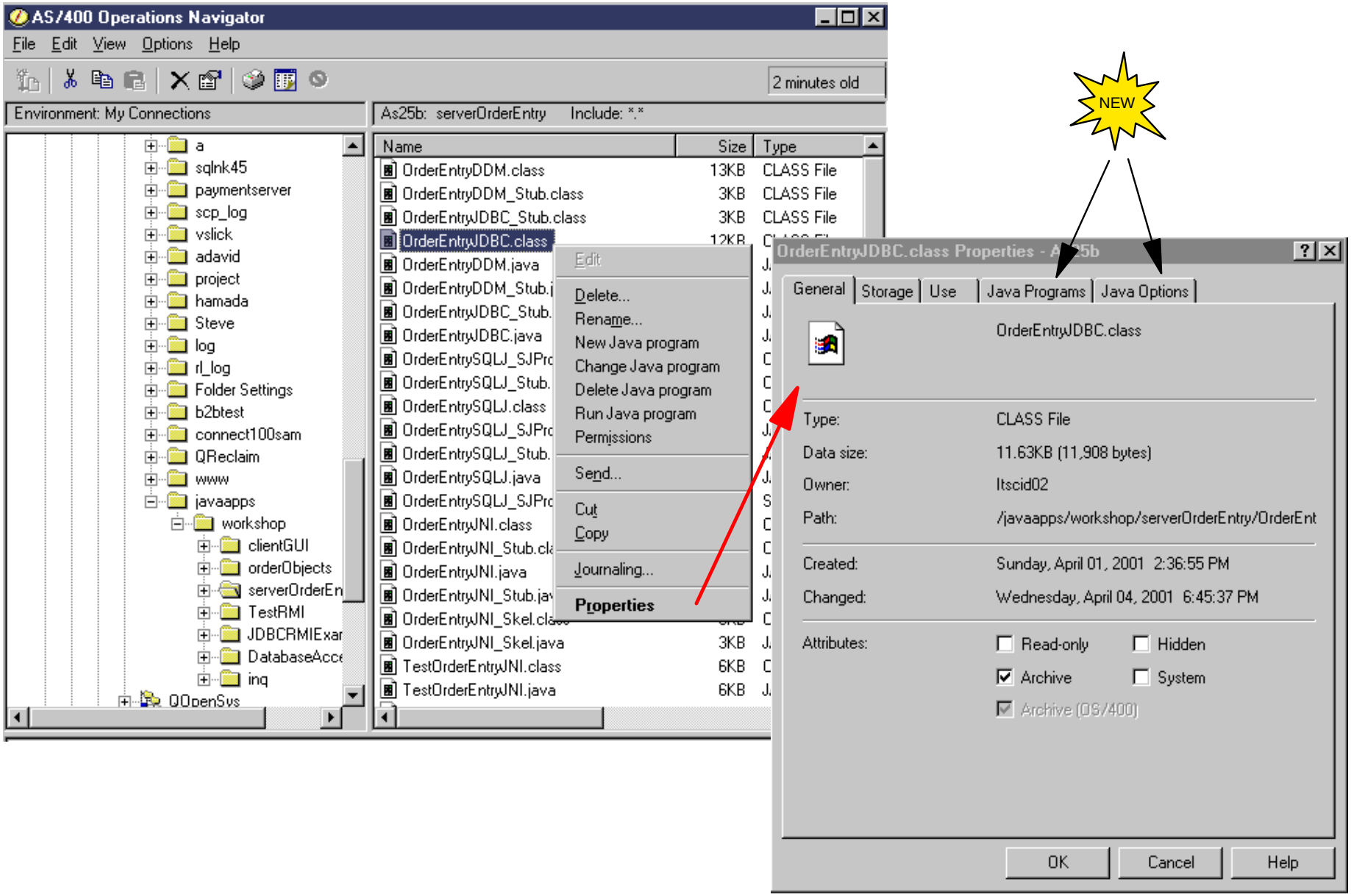
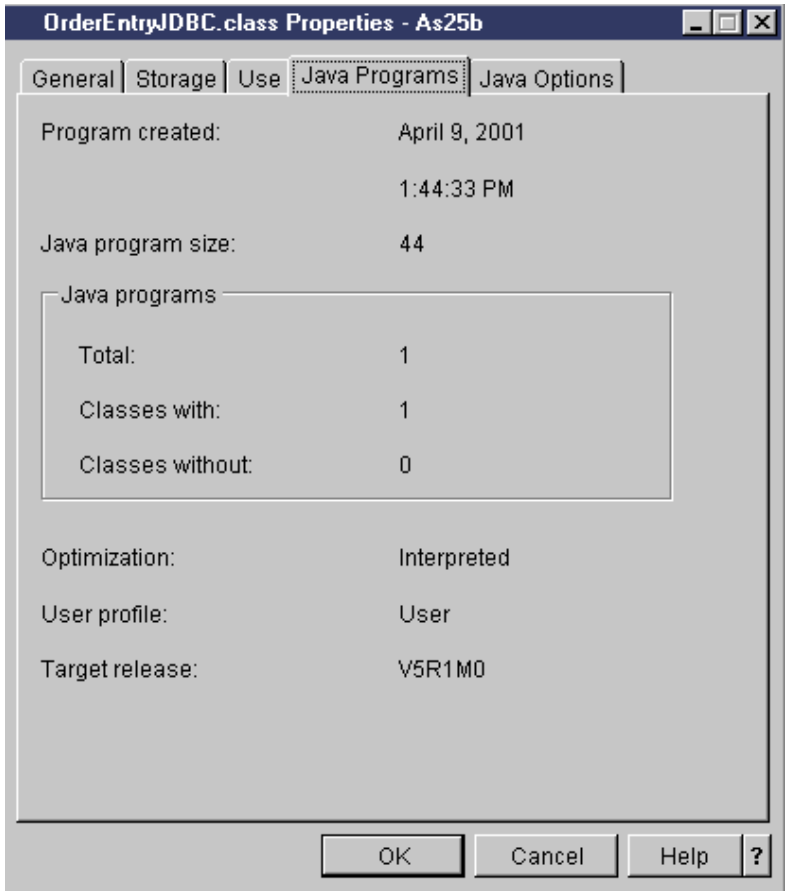
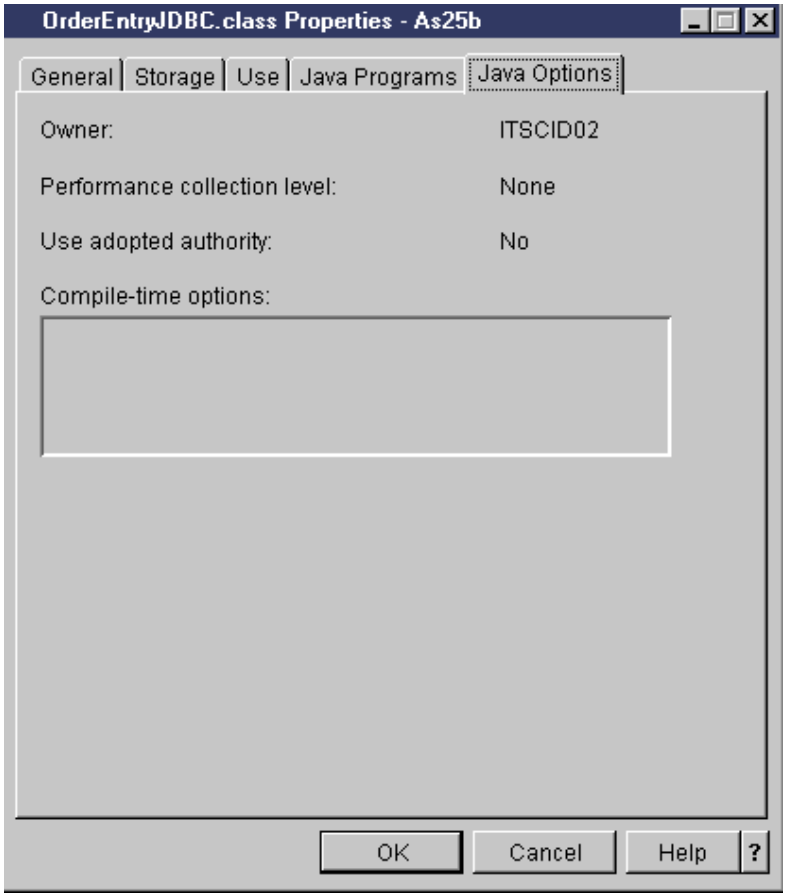
Java Properties Example



Java Properties Example ...

Java Programs, Java Options





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Notes: 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.

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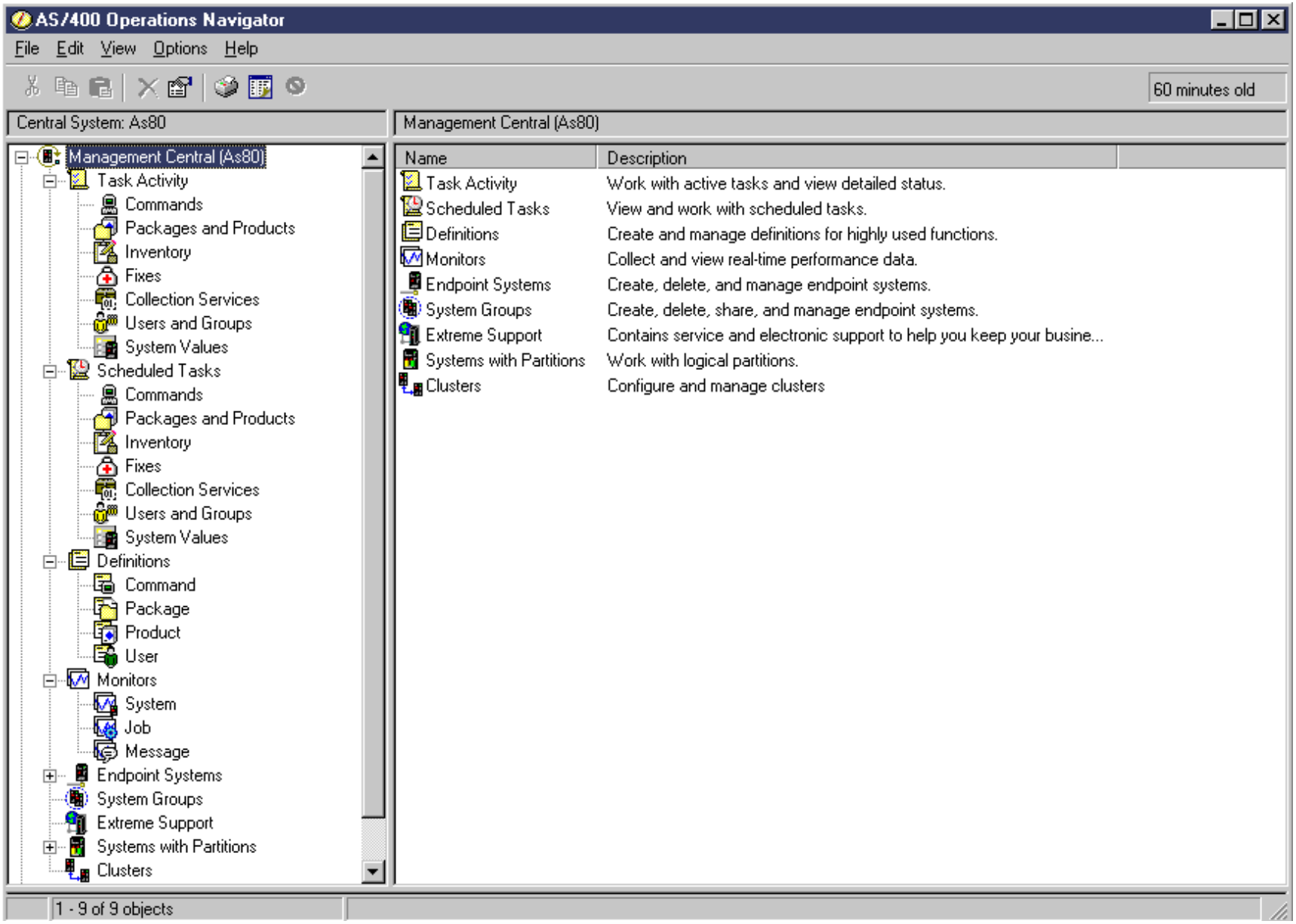
Management Central: General Features

Management Central - General Features



Notes: Management Central

Management Central

A general discussion of Management Central is place 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

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Notes: Management Central-2

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

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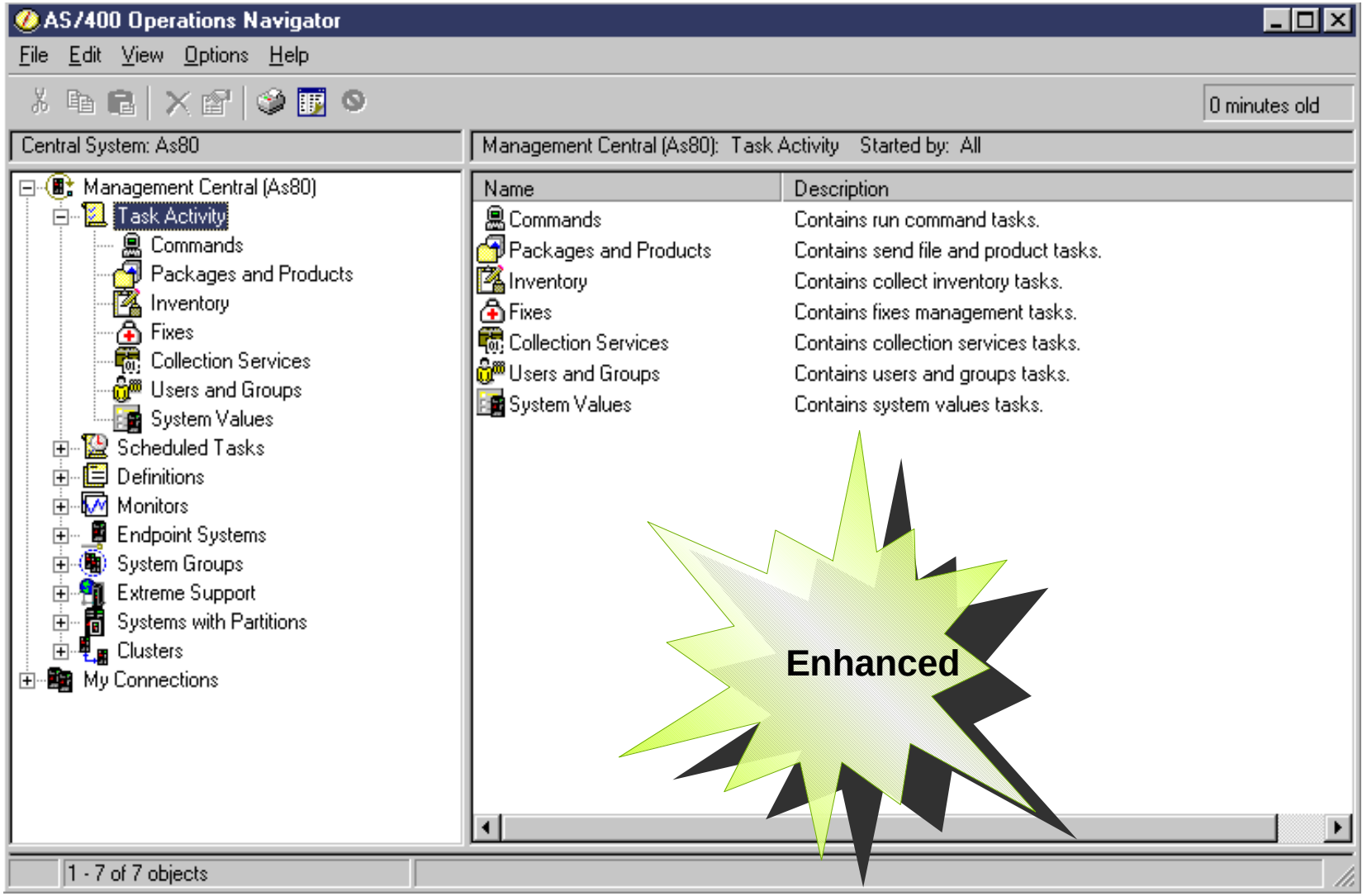
Task Activity

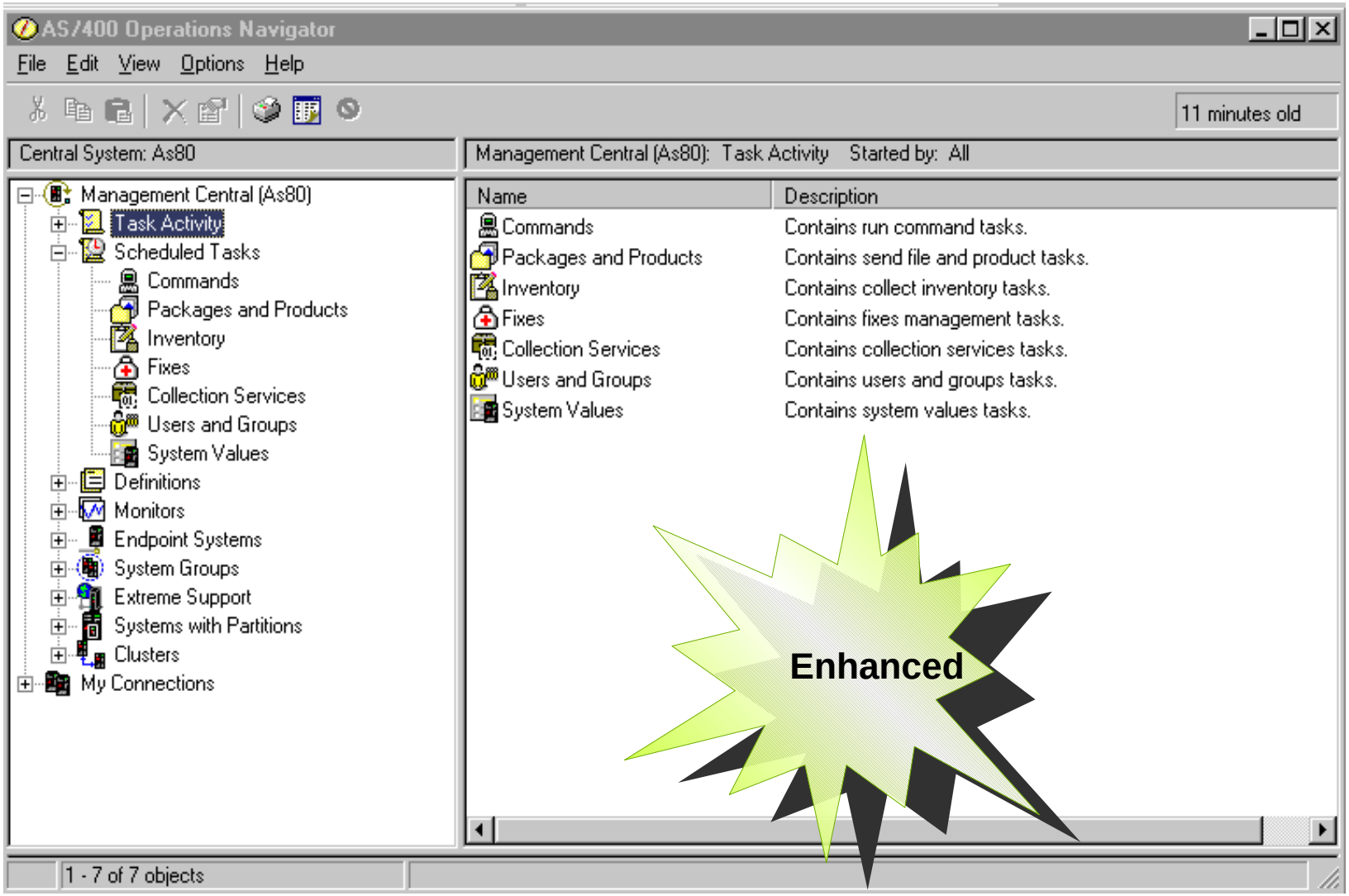


Notes: Task Activity

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



Notes: Scheduled Tasks

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:

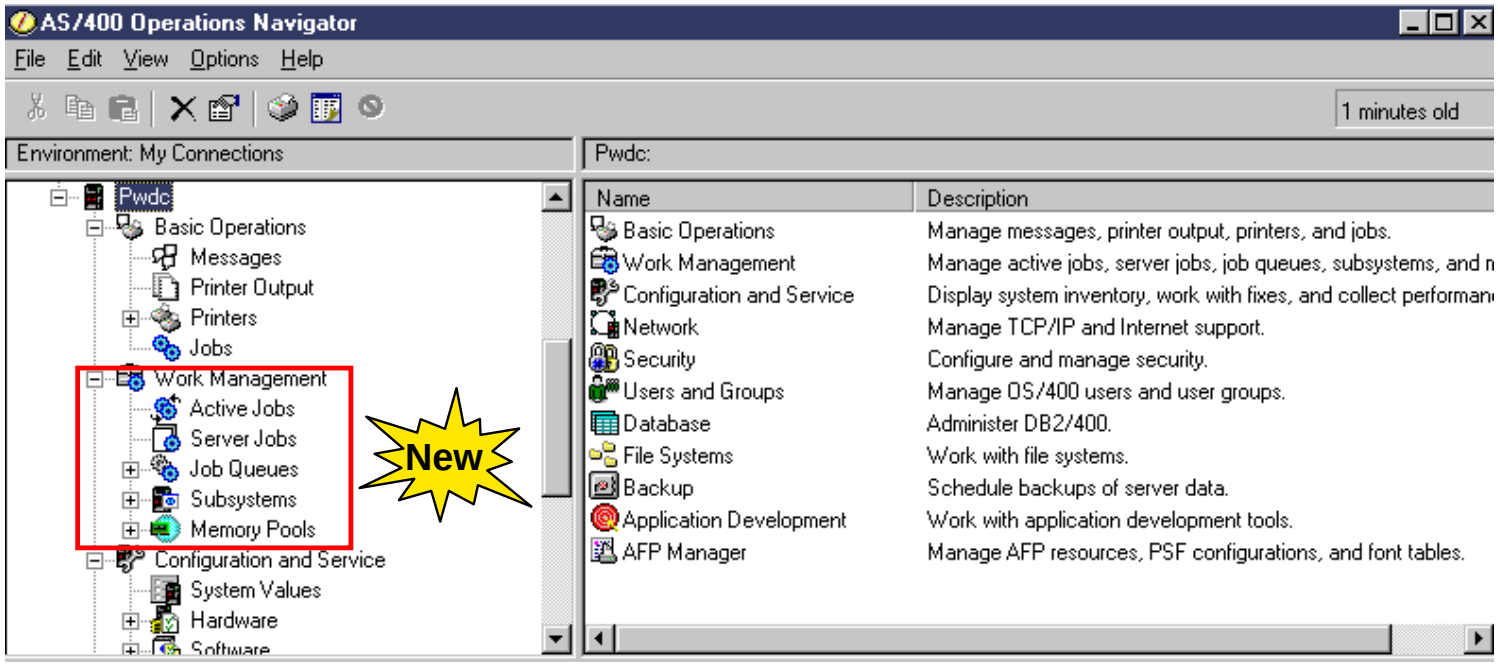
- Commands
- Packages and Products
- Inventory
- Fixes
- Collection Services
- Users and Groups
- System Values

Operations Navigator: Work Management

Work Management

A graphical interface for common System Operator tasks!

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



Notes: Work Management

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.

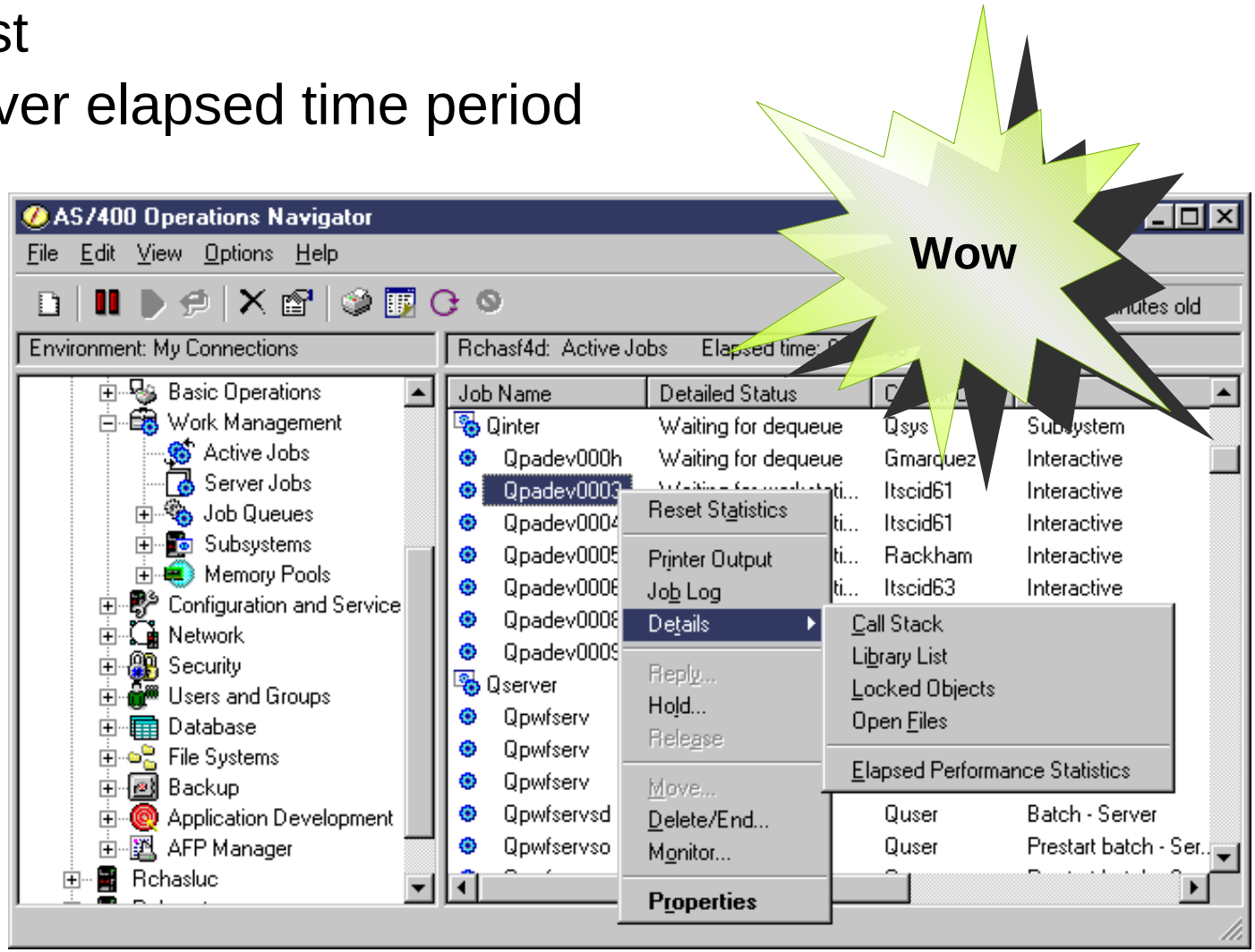
- Work with the jobs for a user (under Basic Operations)
- Work with active and server jobs
- Work with the jobs waiting on a job queue, jobs running in a subsystem, and jobs using a memory pool
- Move jobs between job queues using drag and drop
- Change priority of a job waiting on a queue using drag 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.

Active Jobs

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



*Central server required

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Notes: Active Jobs

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.

Notes: Active Jobs cont.

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.

Notes: Active Jobs cont.

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.

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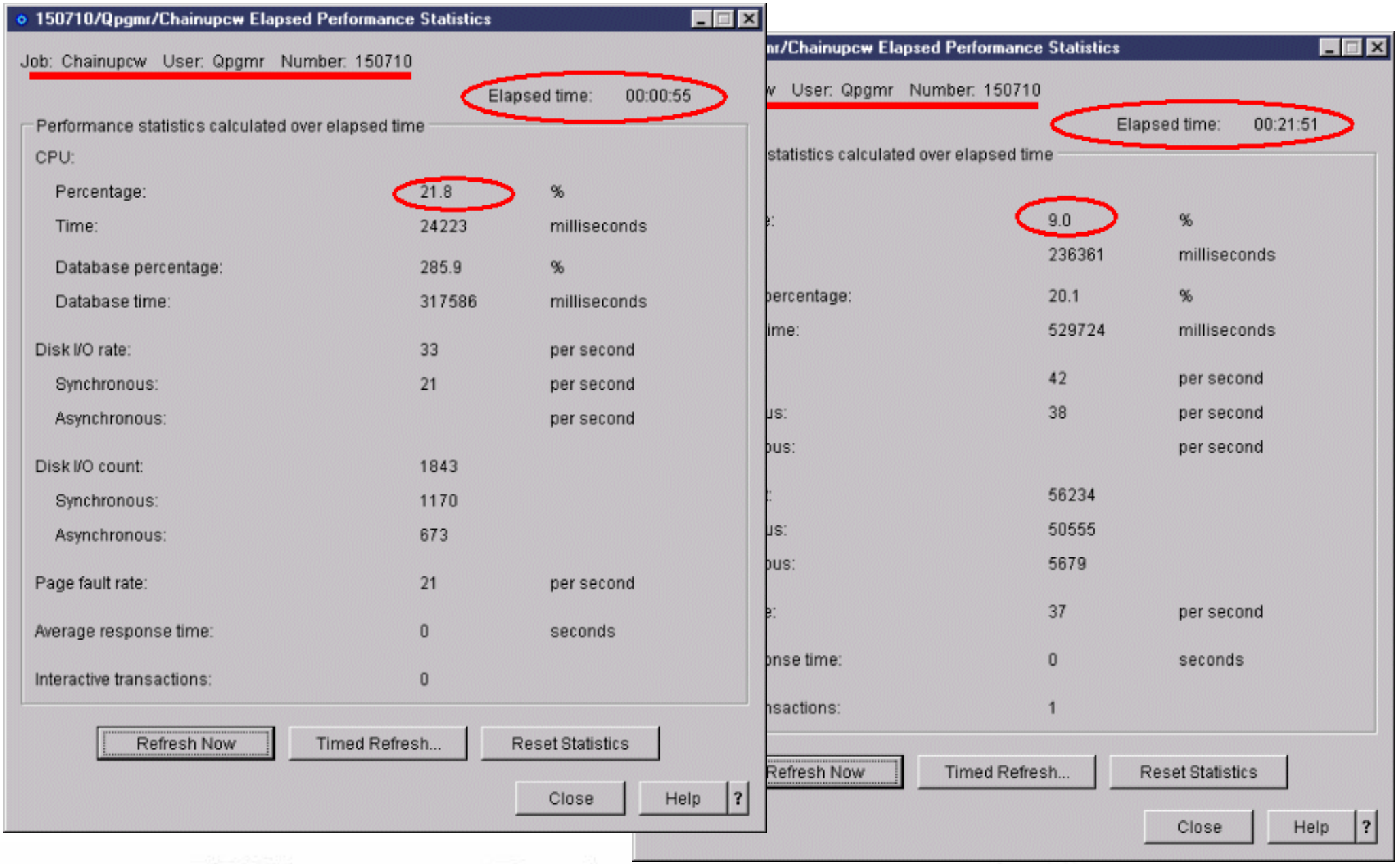
Elapsed Performance Statistics



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.

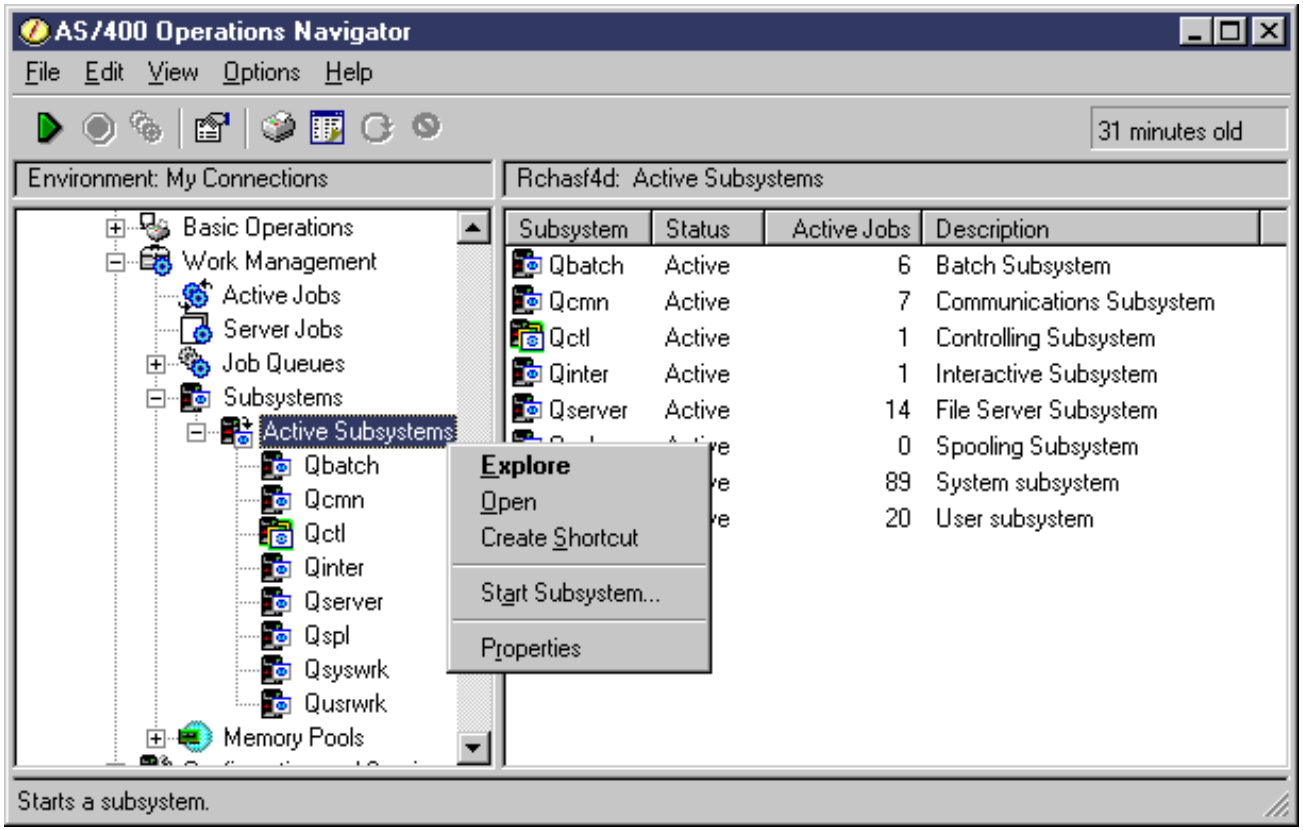
This dialog contains statistical performance data that is calculated over the time interval identified in the "Elapsed time" field. The data can be updated by extending the time interval (clicking the Refresh Now or Timed Refresh... buttons), or by resetting the time interval (using the Reset Statistics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

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

Subsystems

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



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Notes: Subsystems

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.

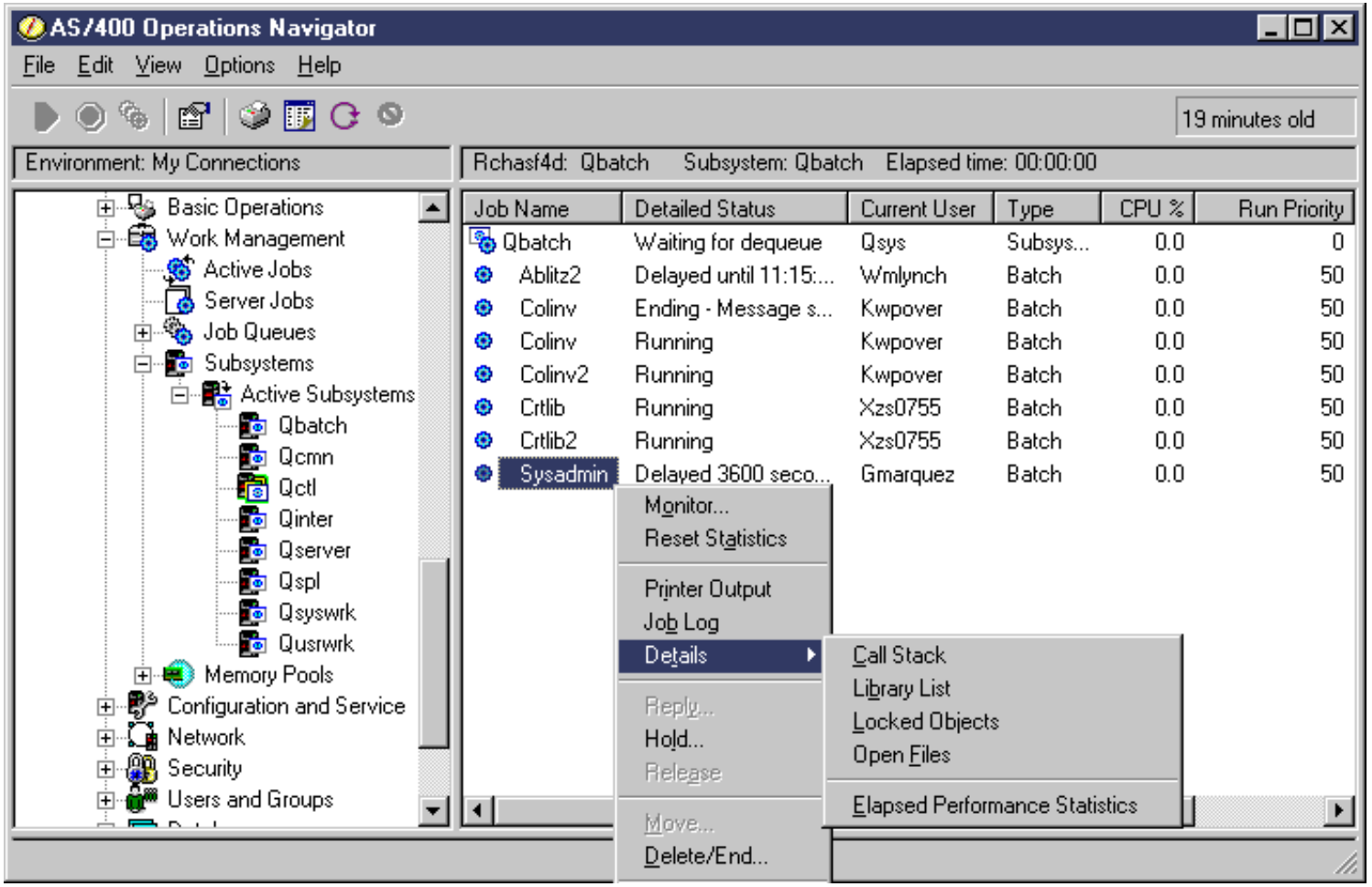
Tasks for starting and stopping subsystems, displaying the jobs running in a subsystem, and looking at the job queues defined to a subsystem are all described on the following slides.

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



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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.

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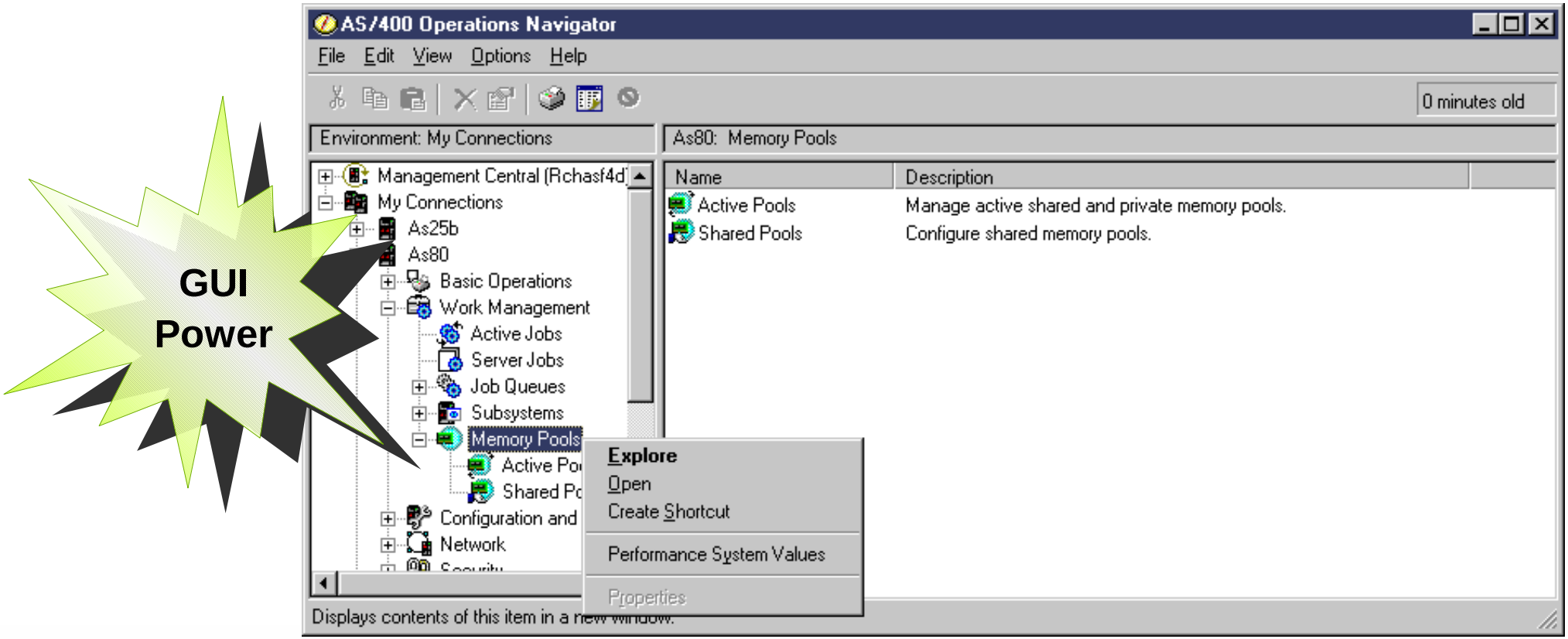
Memory Pools

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



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Notes: Memory Pools

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."

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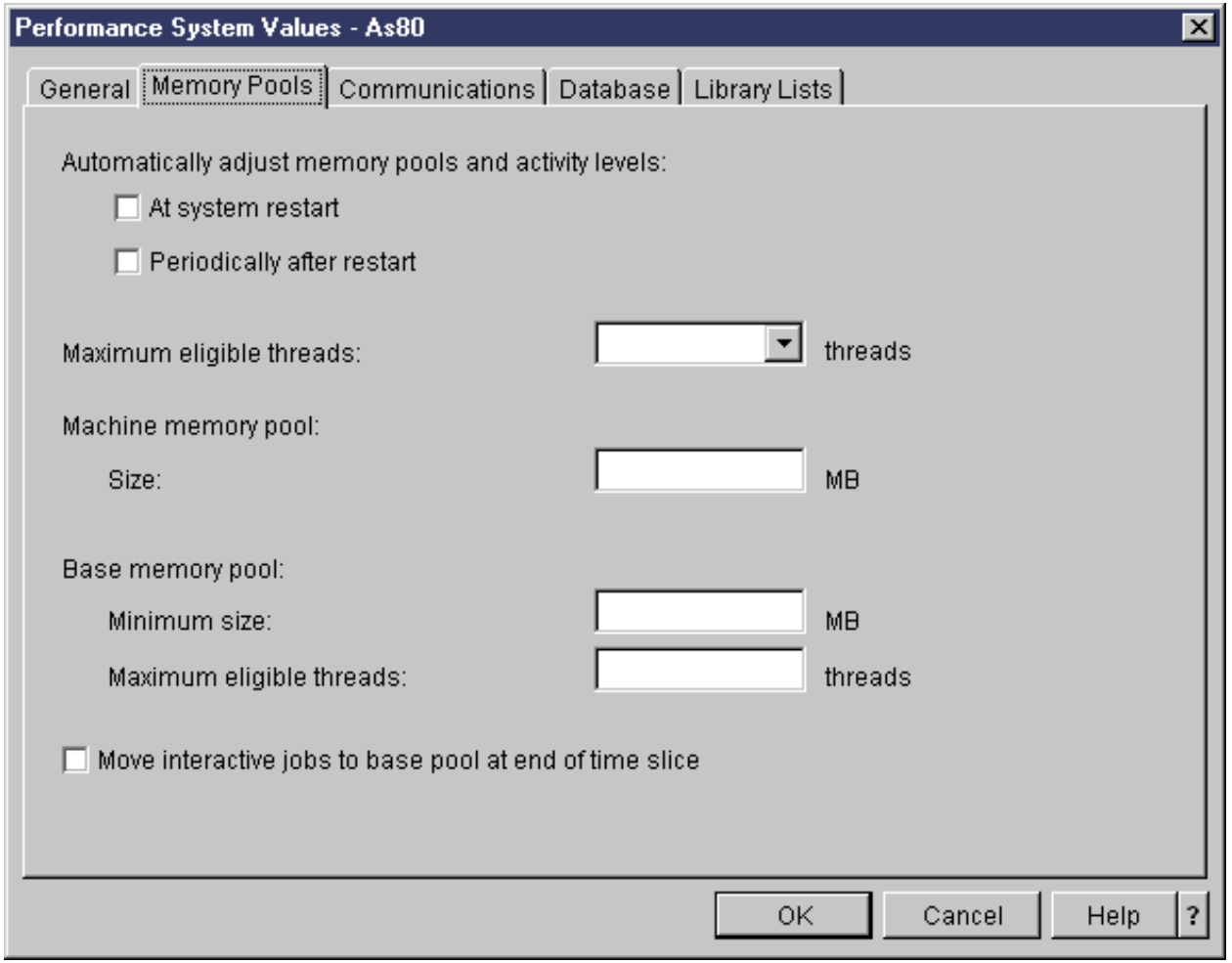
Memory Pool System Values

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



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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.

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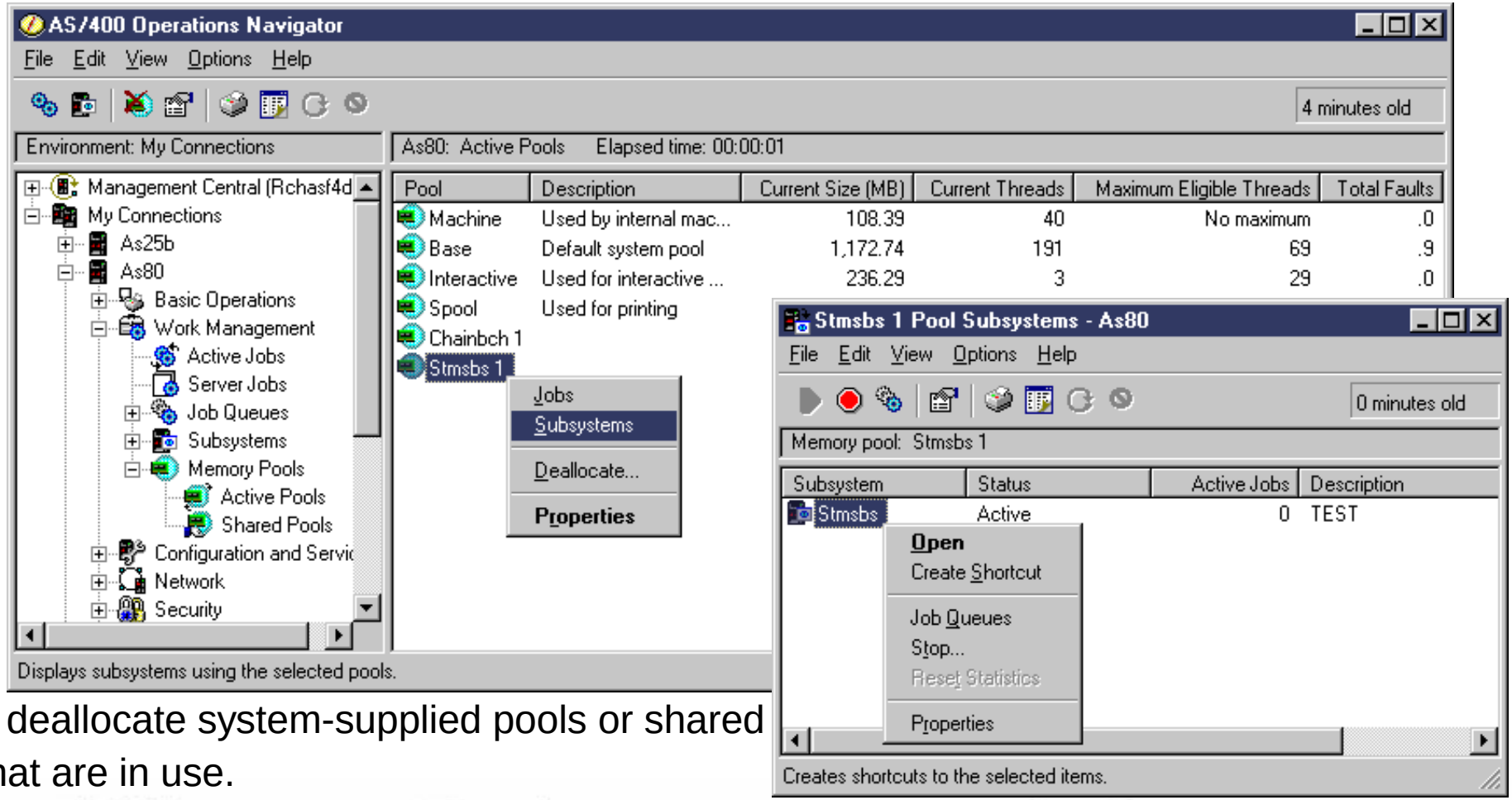
Active Pools

- 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



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

Notes: Active Pools

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.

Notes: Active Pools cont.

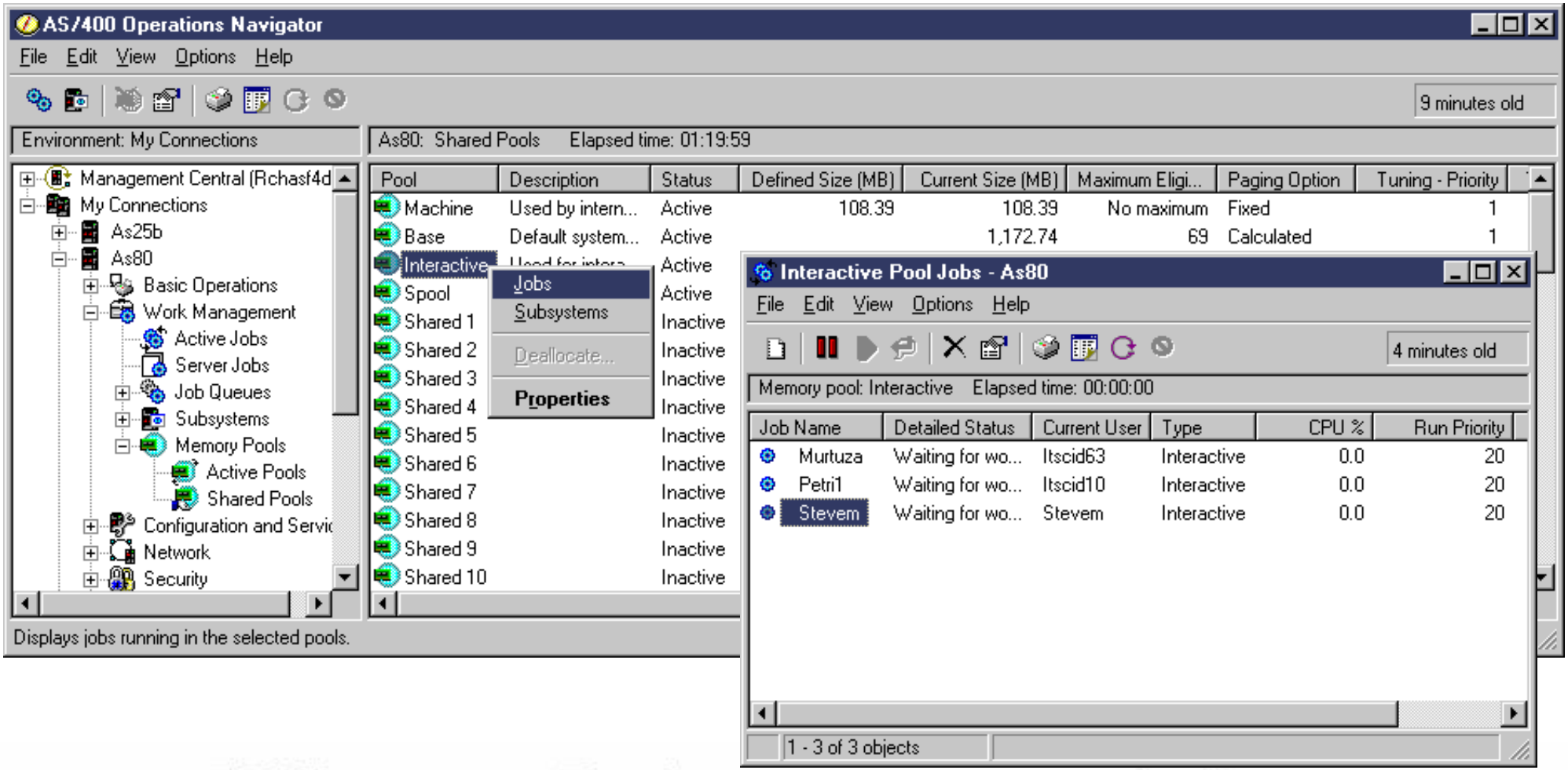
The Active Pools container contains all shared and private memory pools that are currently in use--that is, pools to which main storage has been allocated. This information is similar to what you would see at the bottom of the Work With System Status display when you run the WRKSYSSTS command. The list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



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Notes: Shared Pools

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

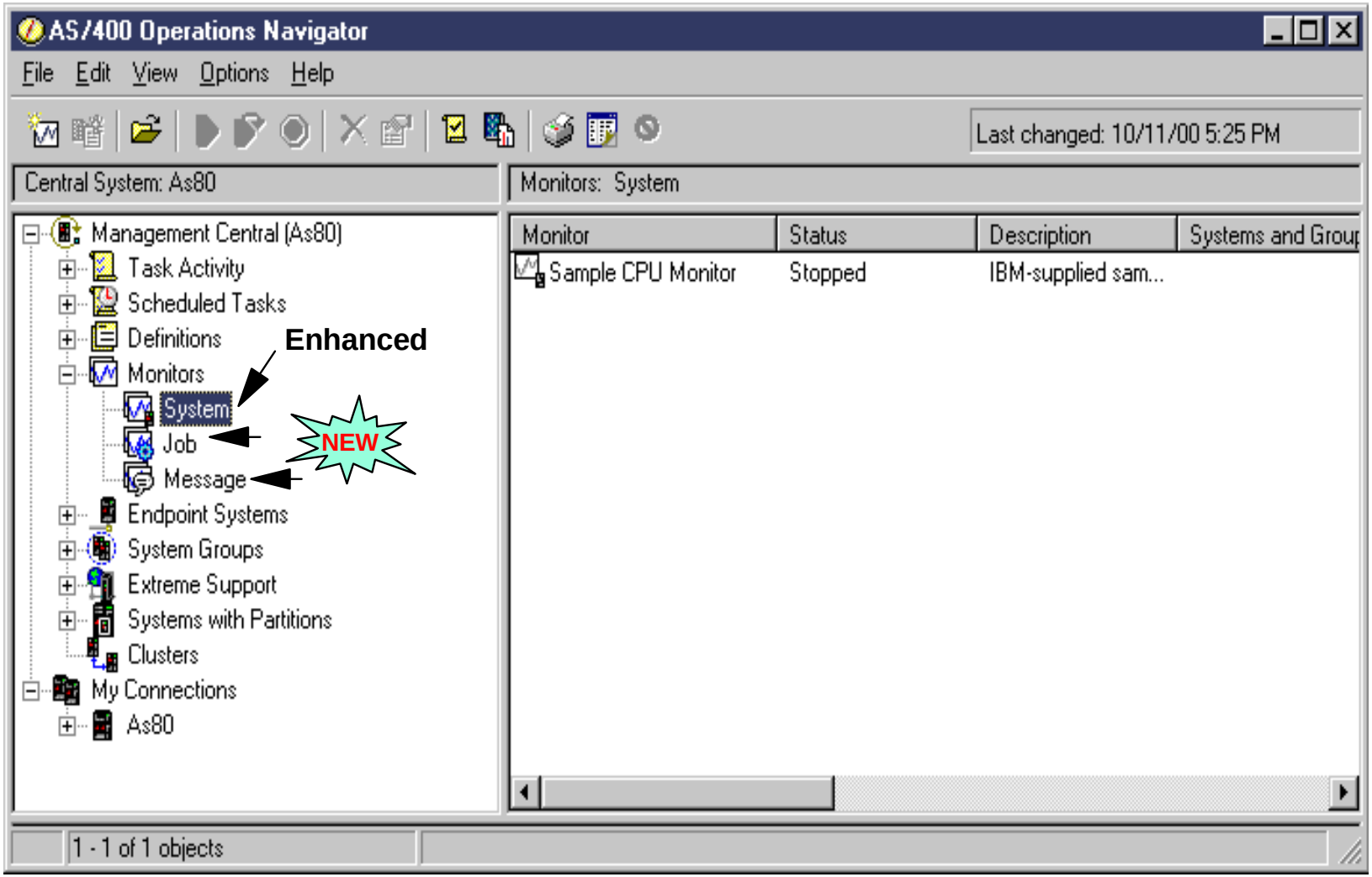
Pools are referred to by name, not by pool ID. Available columns include fields from both WRKSYSSTS and WRKSHRPOOL displays. You can customize the data you want to see. To see all columns available and change which ones get displayed, select Shared Pools and then on the Options menu, select Columns. 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
Management Central (As80)
Task Activity
Scheduled Tasks
Definitions
Monitors
System
Job
Message
Endpoint Systems
System Groups
Extreme Support
Systems with Partitions
Clusters
My Connections
As80
Enhanced
NEW
Monitor
Status
Description
Systems and Group
Sample CPU Monitor
Stopped
IBM-supplied sam...
1 - 1 of 1 objects

Notes: Monitors

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.

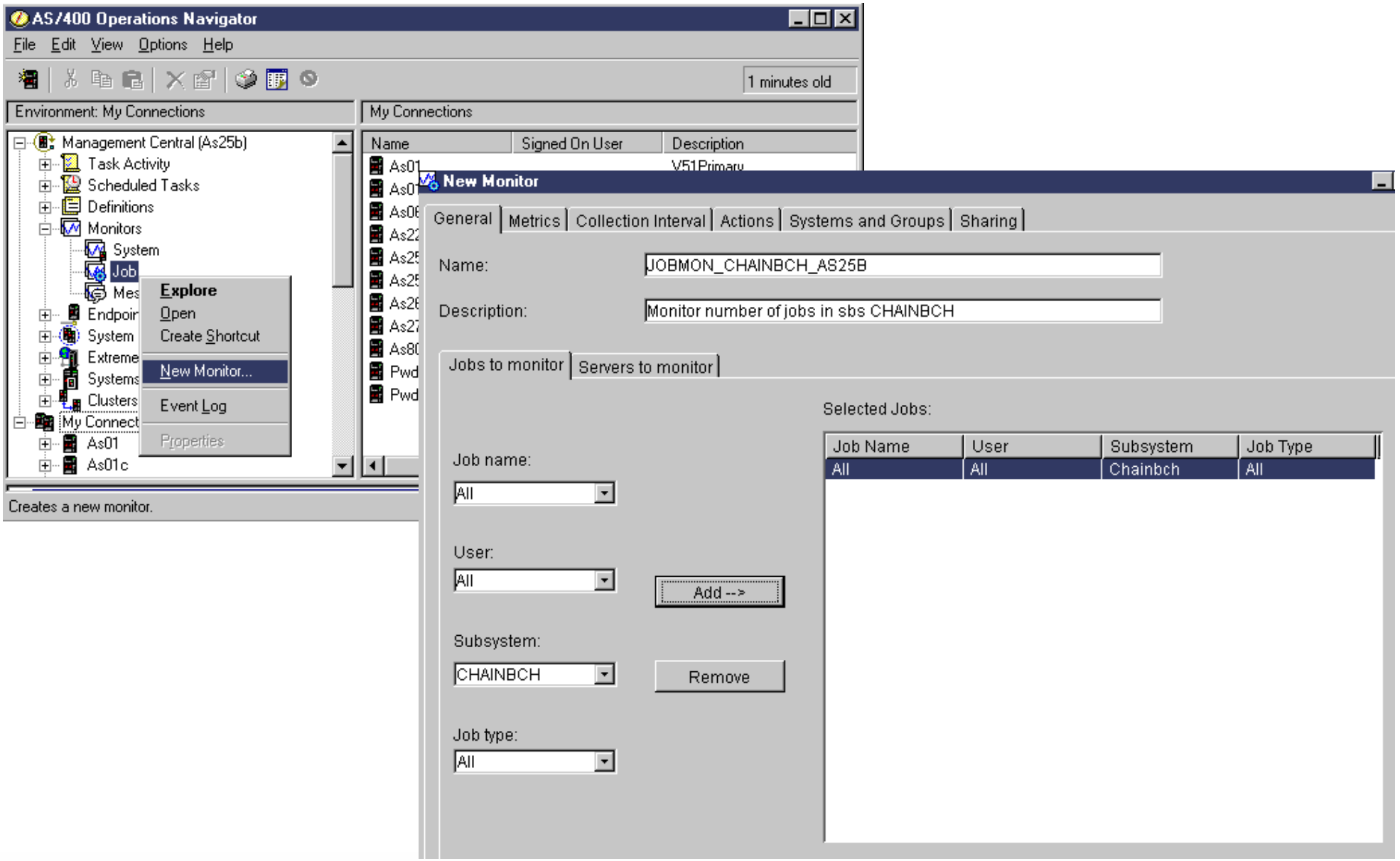
Job Monitors

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.

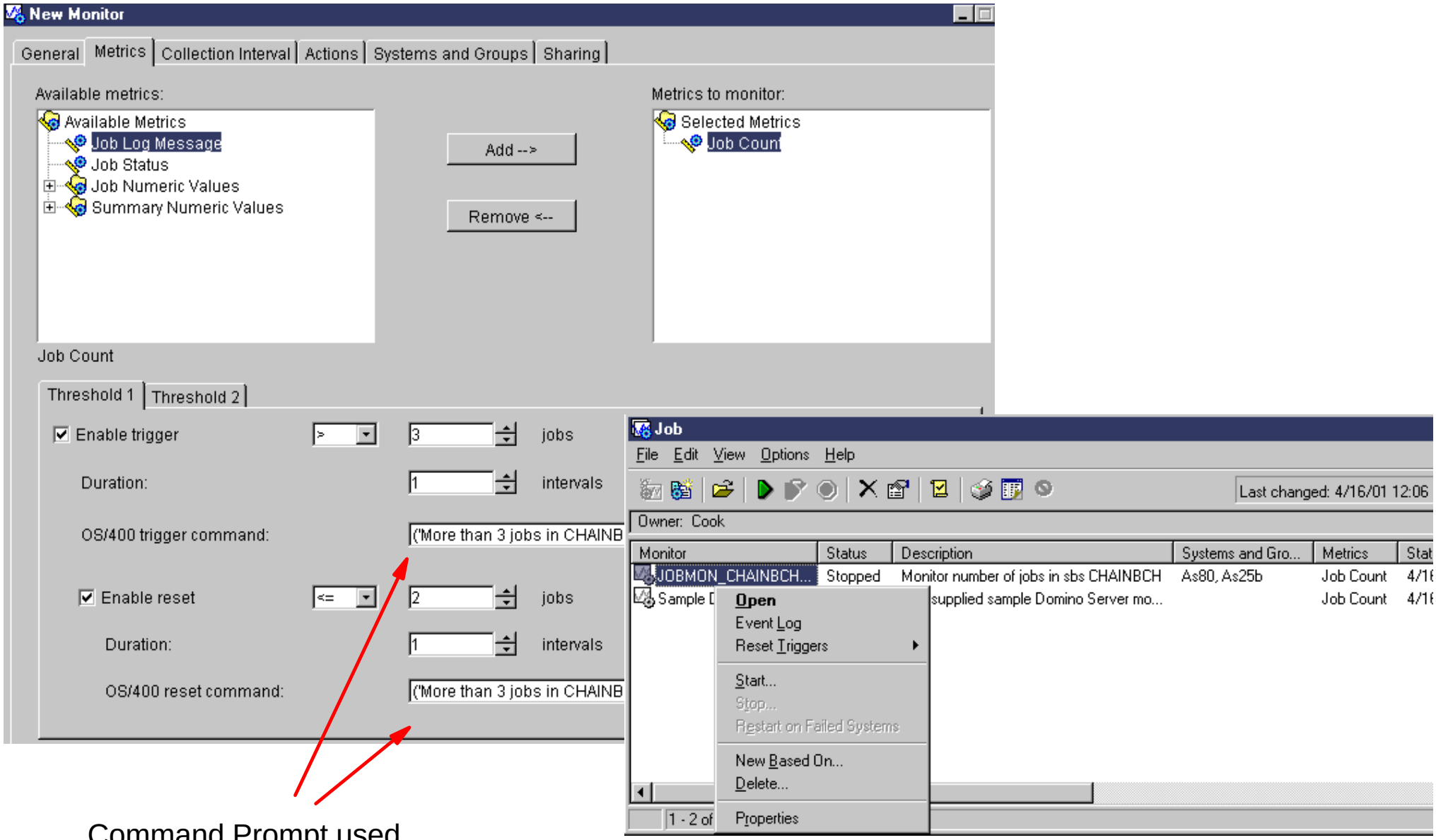
Message Monitors

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



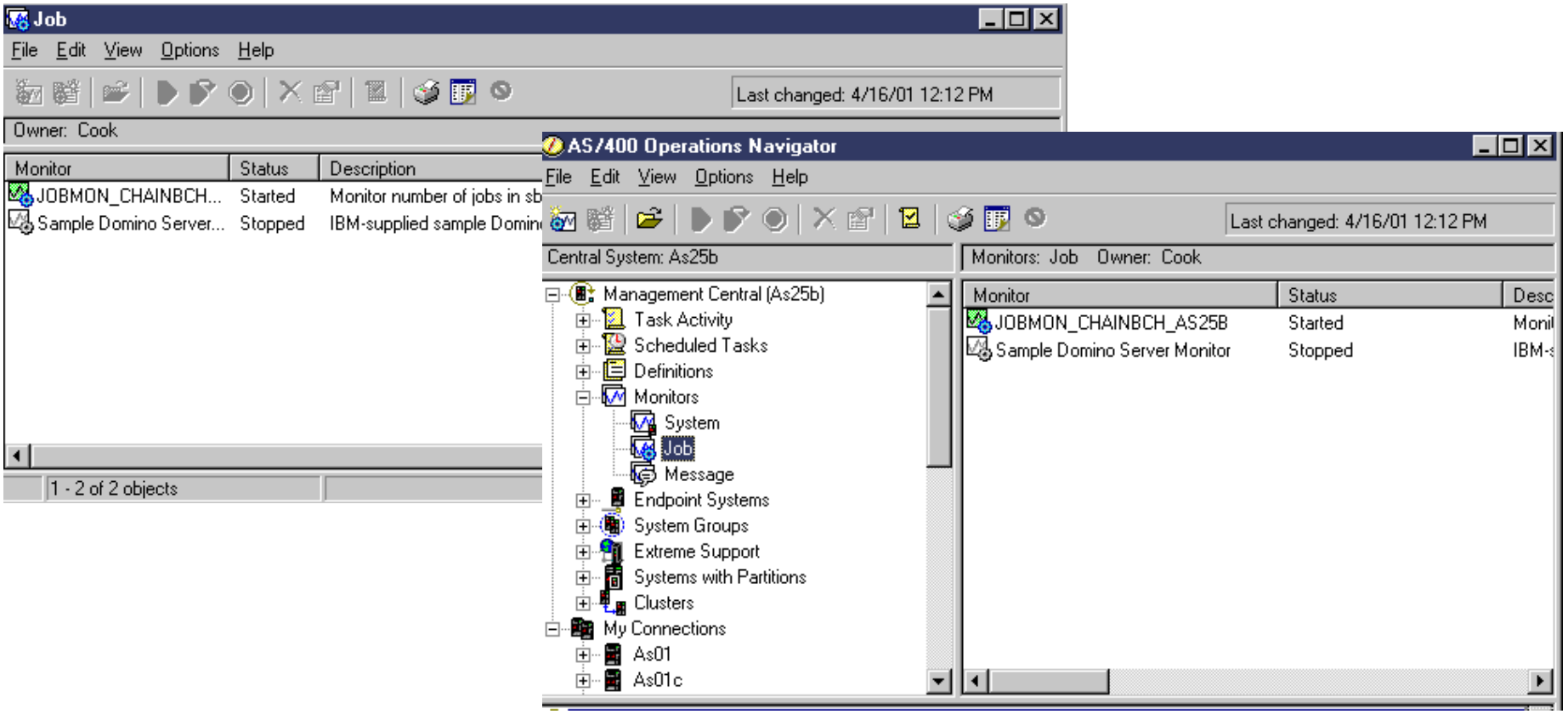
Jobs Monitor Example: Metrics, Start



Command Prompt used

Jobs Monitor Example: Started Views

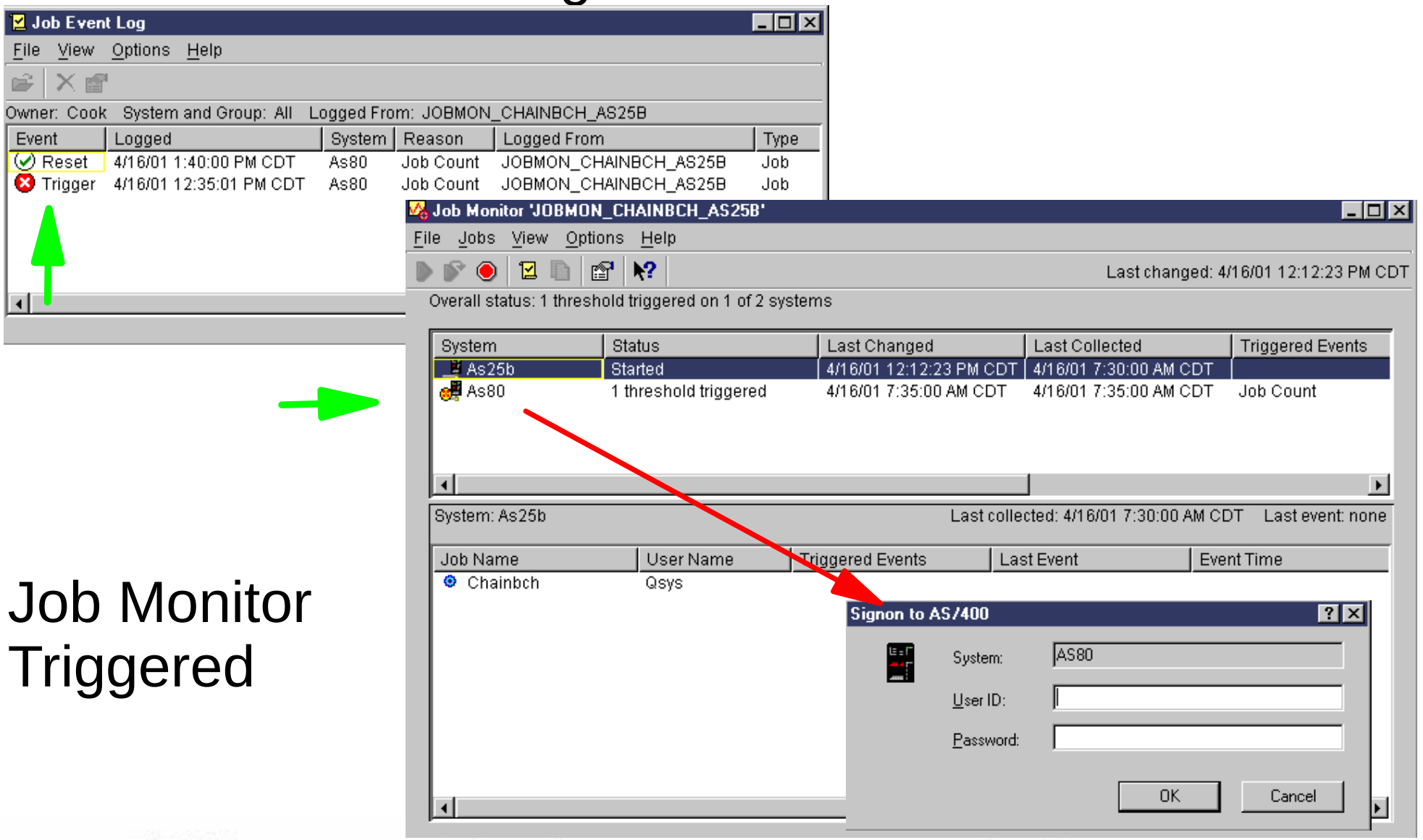
During Start Process



General View of Job Monitors

Jobs Monitor Example: Status Changed

Job Monitor Event Log



Job Monitor Triggered

Notes: Jobs Monitor Example: Status Changed

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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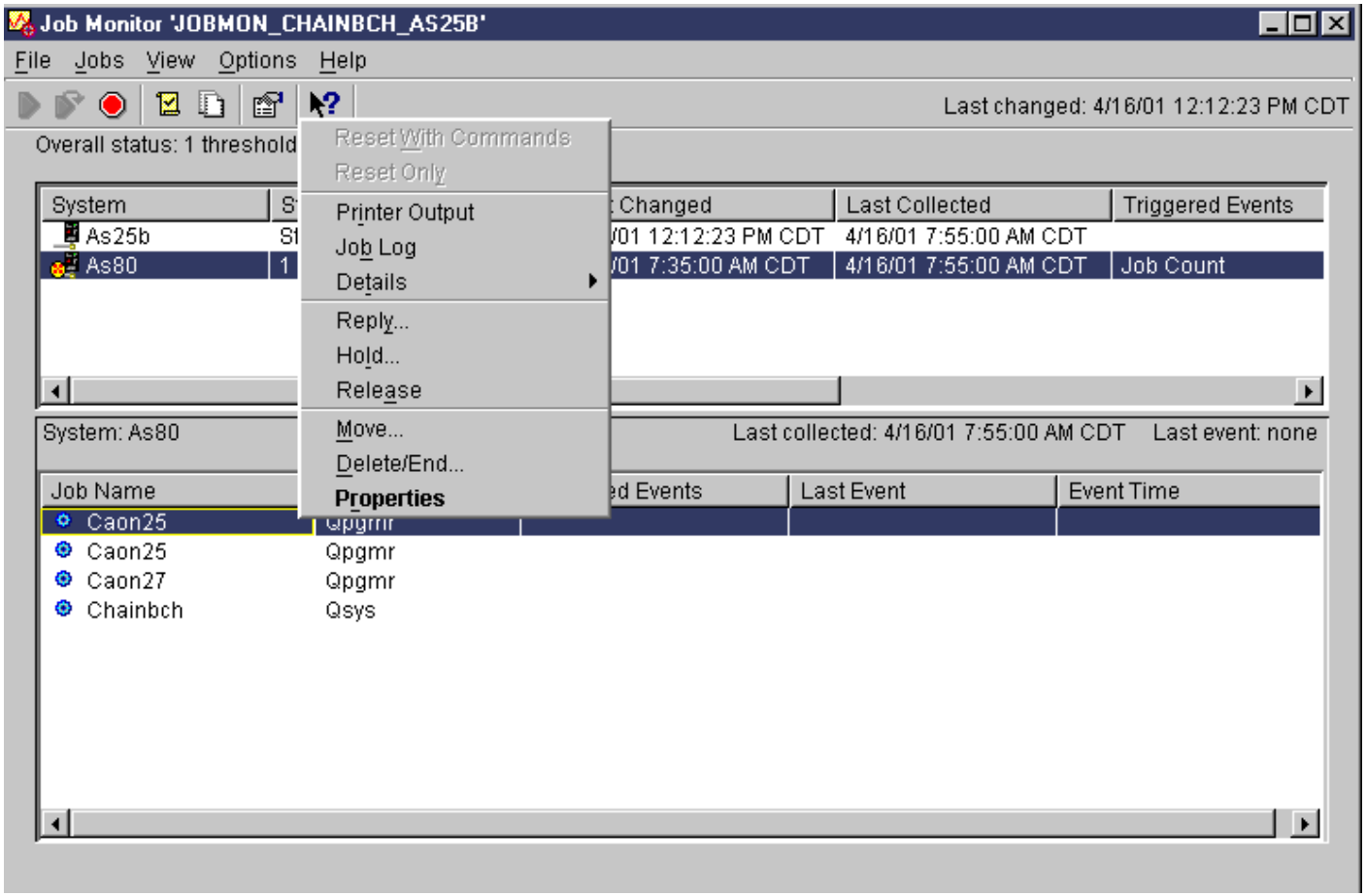
Jobs Monitor Example: Job Details



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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.

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Management Central - Collection Services: Graph History

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 your are requested to activate PM/400e.

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

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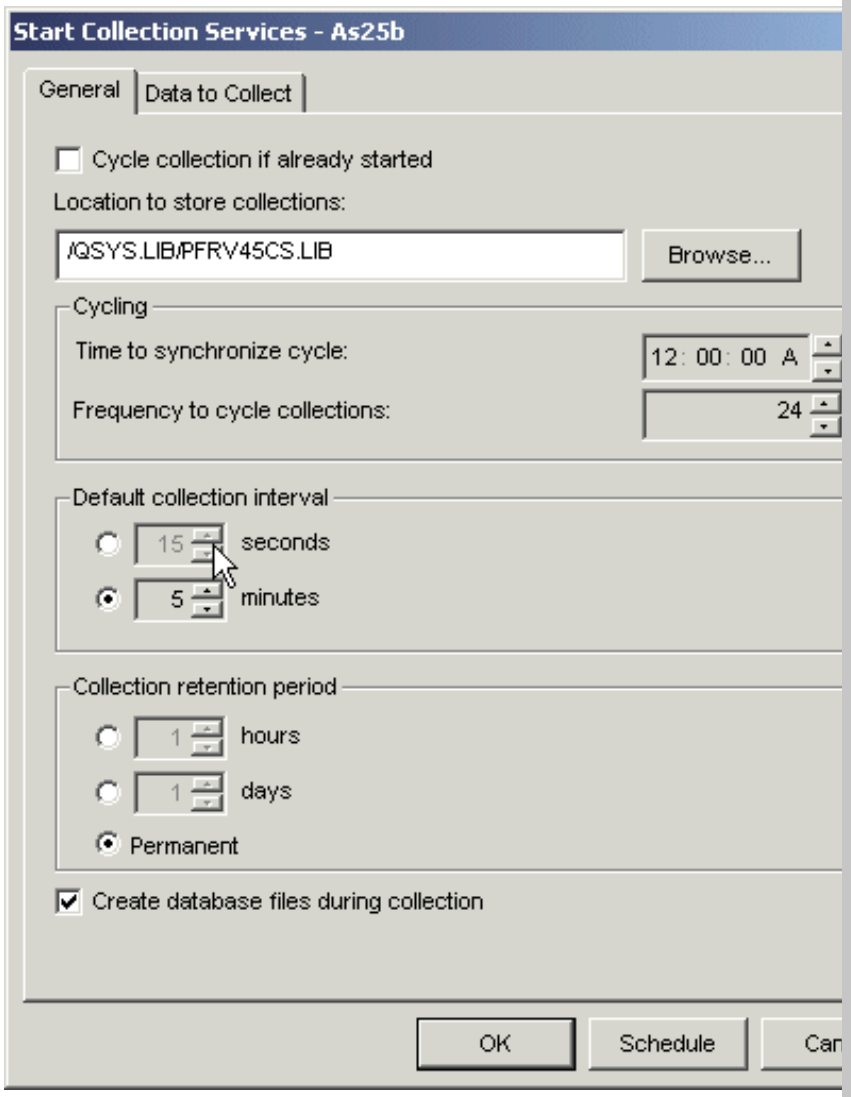
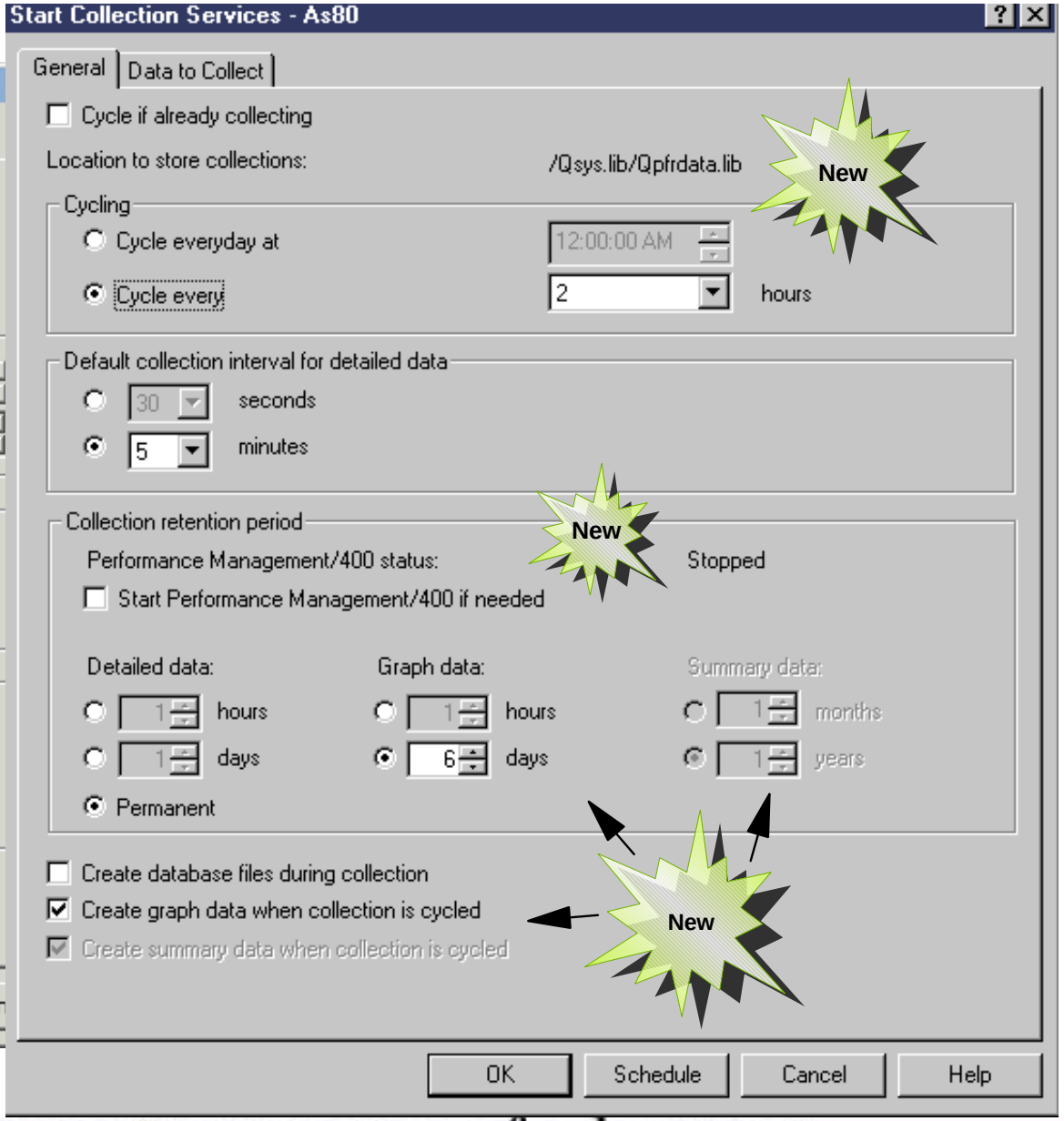
Mgt Cntl Graph History: Start Collection

V4R4, V4R5



V5R1



Notes: Mgmt Central - Start Collection

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

Notes: Mgmt Central - Start Collection

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.

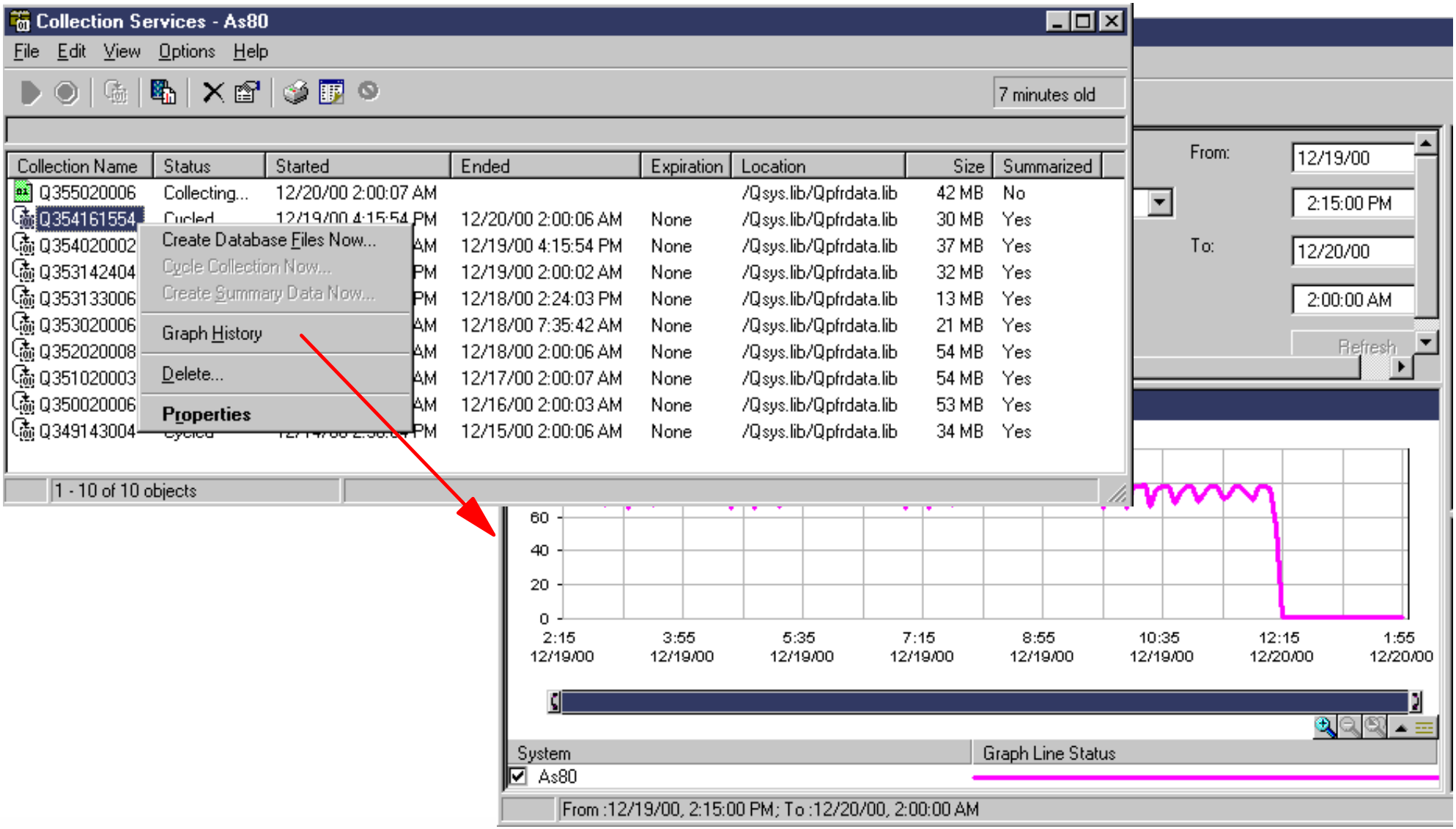
Notes: Mgmt Central - Start Collection

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.

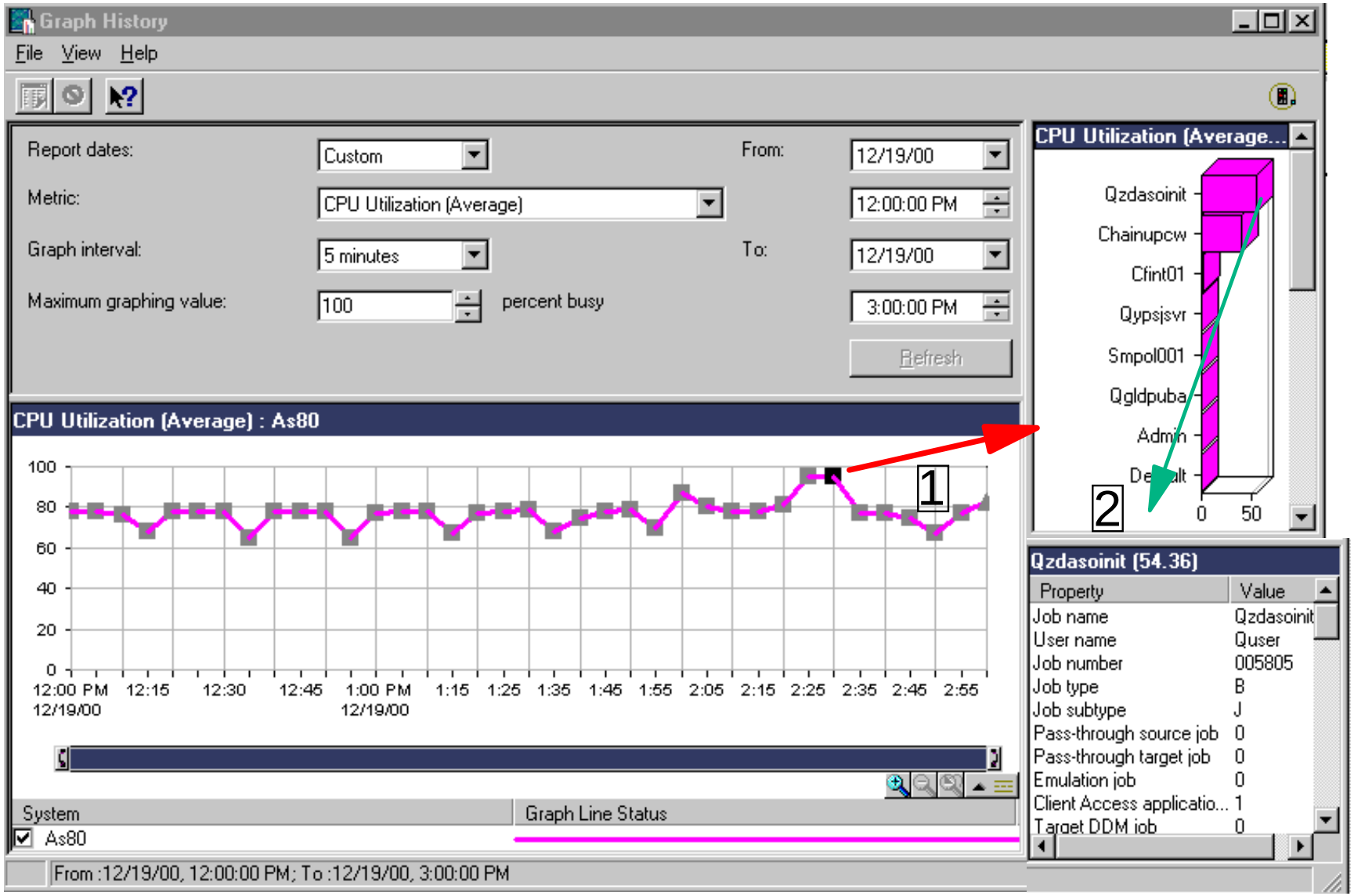
Note: The Summary data field is not available to central systems or endpoint systems that do not have Version 5 Release 1 Modification 0 or later (V5R1M0) installed.

Collection Services - Starting Graph History

Start by clicking a specific collection



Graph History - CPU Util Details, Properties



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)

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Management Central - Pervasive
See: Performance presentation

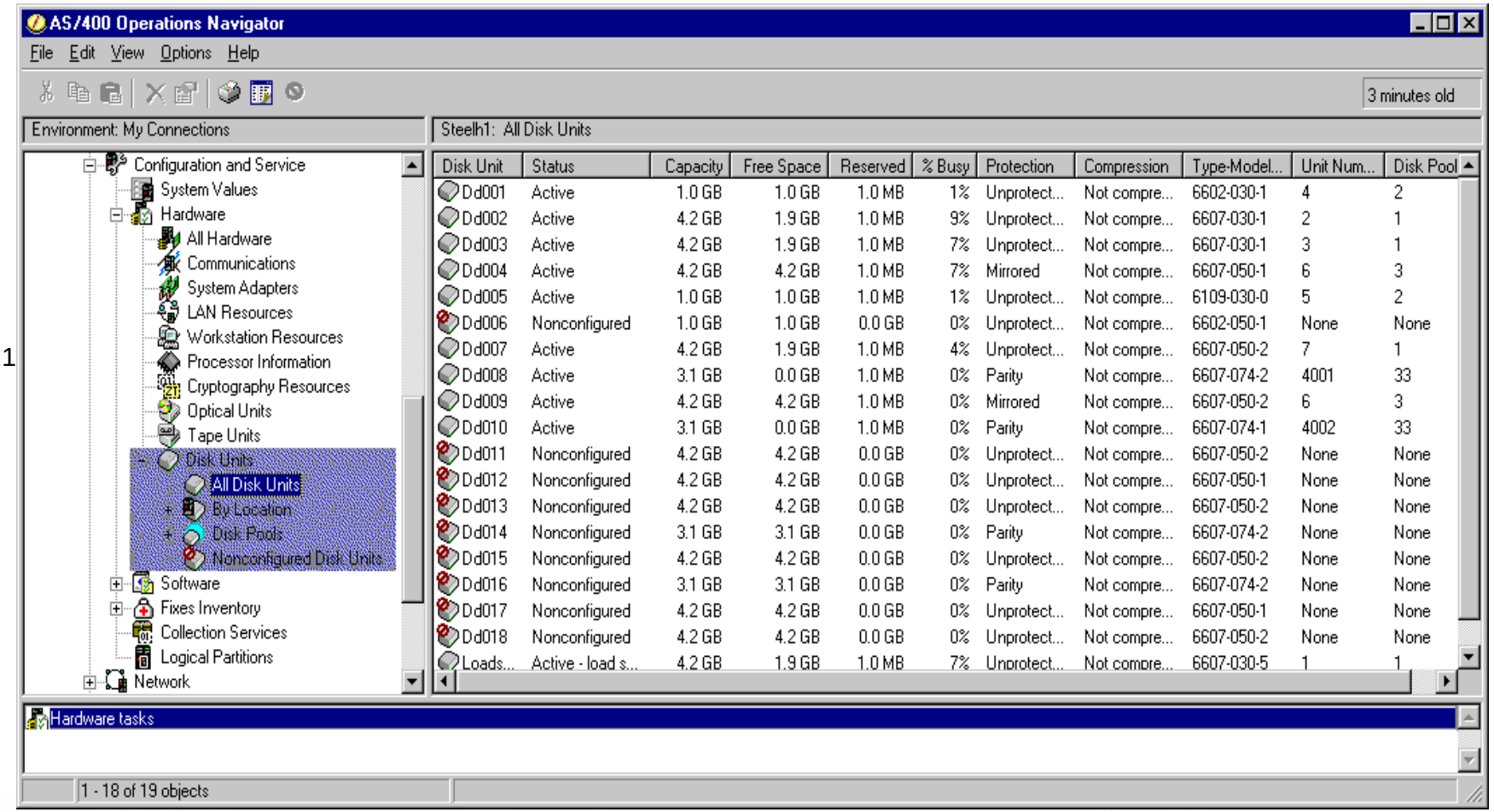
Operations Navigator: DASD Management

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

New for V5R1



Notes: DASD Management

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.

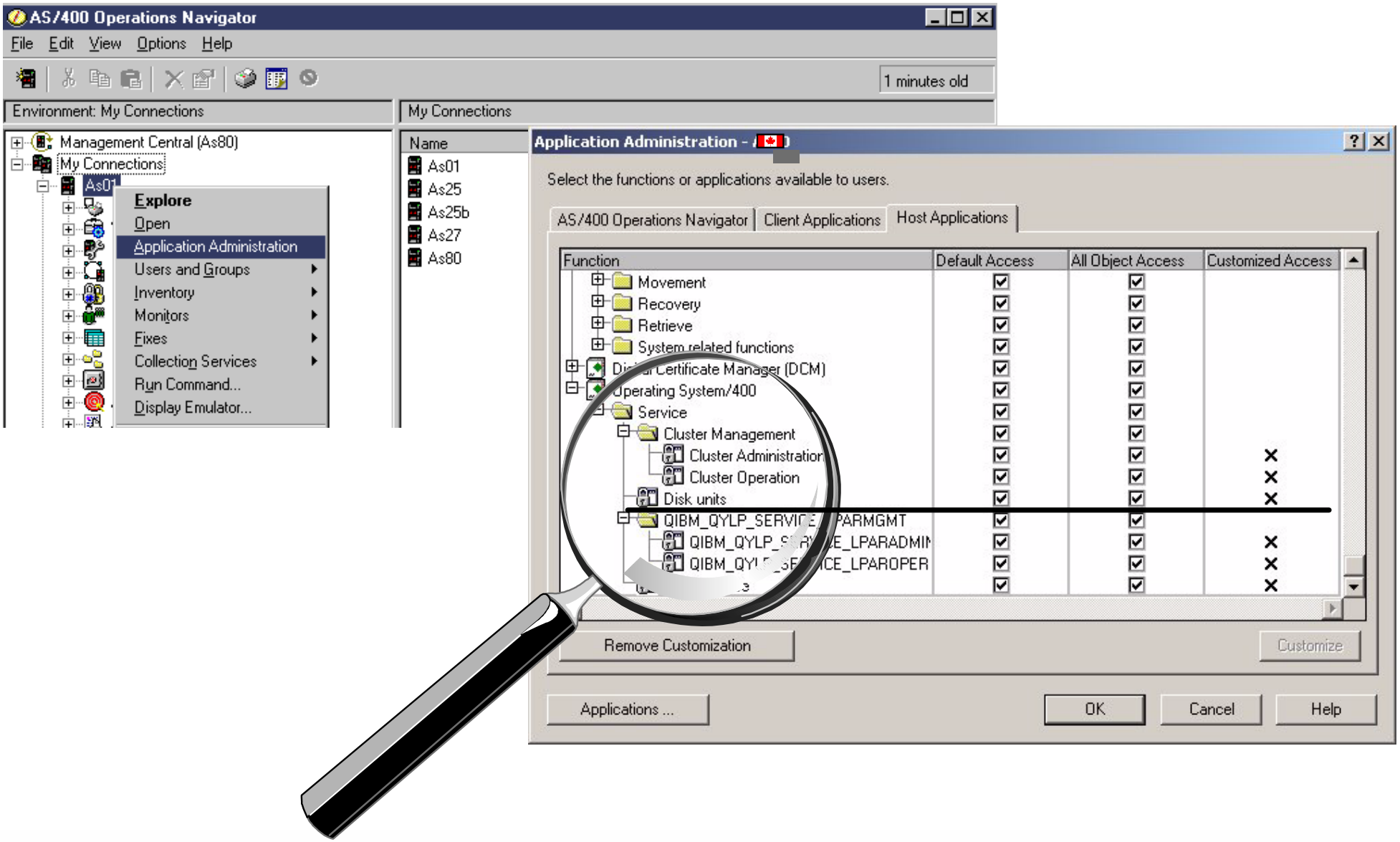
Use a graphical view to see where all the disk units on your system are located. From the graphical view, you can perform all the same actions on a disk unit that you can perform from the list of all disk units in the Operations Navigator window. These actions include start or stop compression, include 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 jusfirng

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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Notes: Application Administration - Disk units

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.

Service Tools User Profiles, Service Table

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)

Notes: Service Tools User Profiles, Service Table

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.

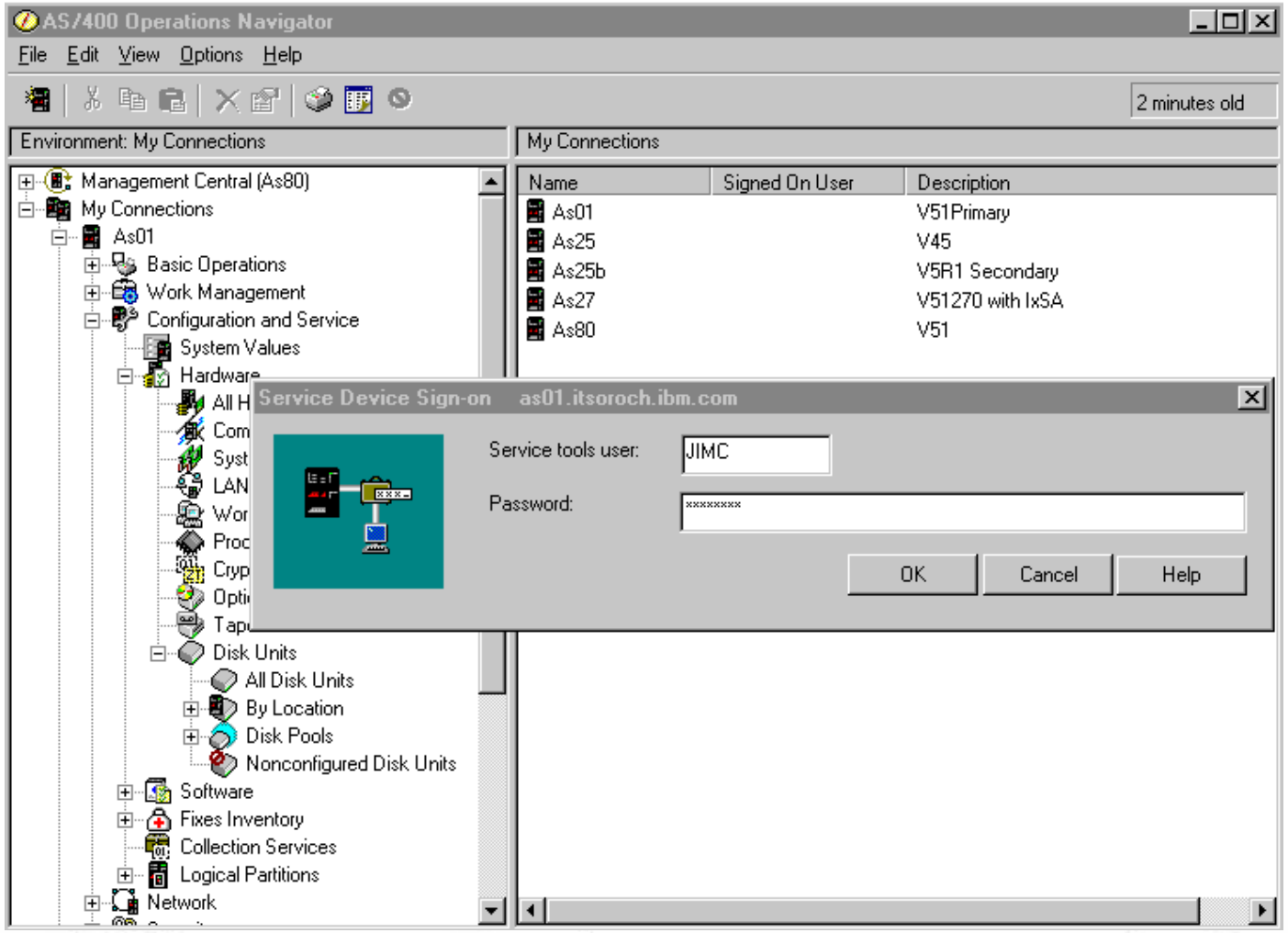
If you have not previously performed the Add Service Tools Entry command as shown and afterwards stopped and started TCP/IP, when selecting either "Disk Units" or "Logical Partitions" under Operations Navigator an error screen will be displayed that indicates there is no server listening on an IP port.

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/iseries/infocenter
- 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.

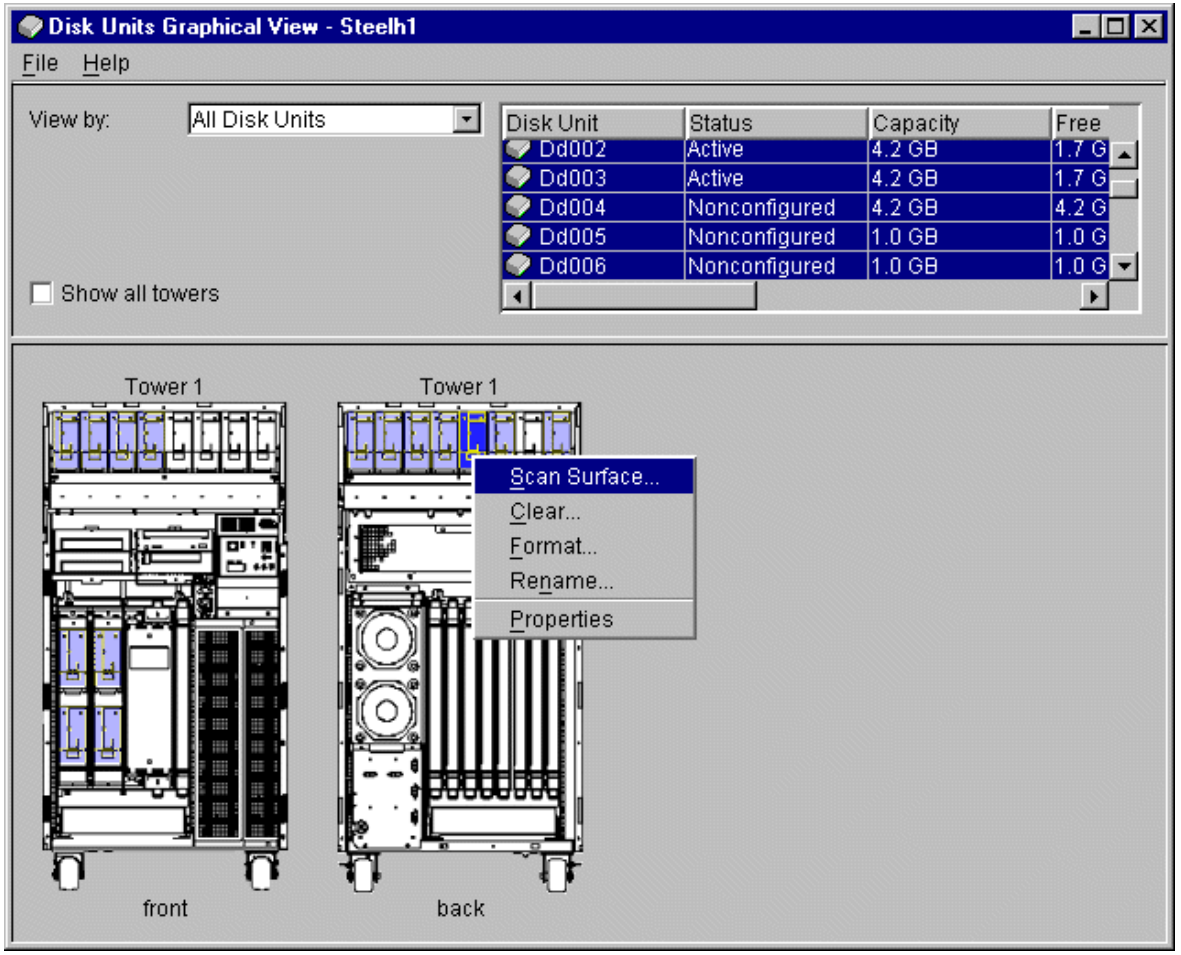
The Service Tools user profile and password/authorizations are separate and independent of OS/400 user profile password/authorizations. That is, user JIMC may be defined under Service Tools security but need not be defined under OS/400. If the user id is defined both under OS/400 and Service Tools security,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

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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 than 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

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

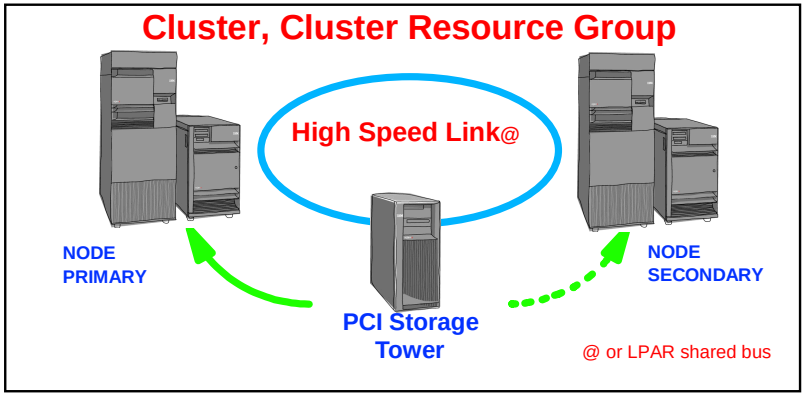
- Controlled switch over of data within a set of disk units attached to an I/O Processor to another system

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"



Notes: Independent Disk Pools, Simple Clustering

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.

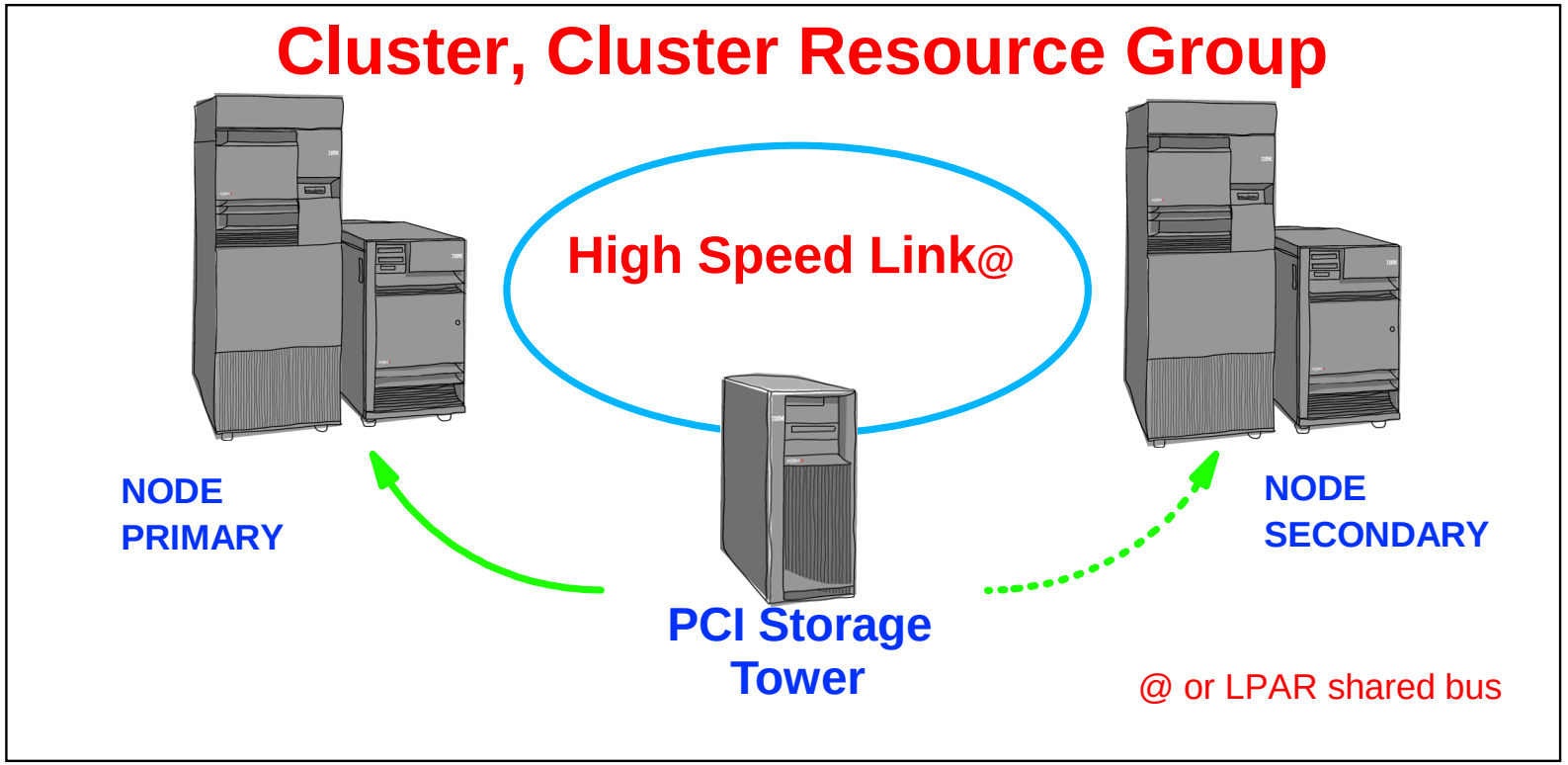
V5R1 Independent Disk Pools can be added to the HABP solutions.

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



- 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)

Notes: Switchable Disks - Simple Clustering

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."

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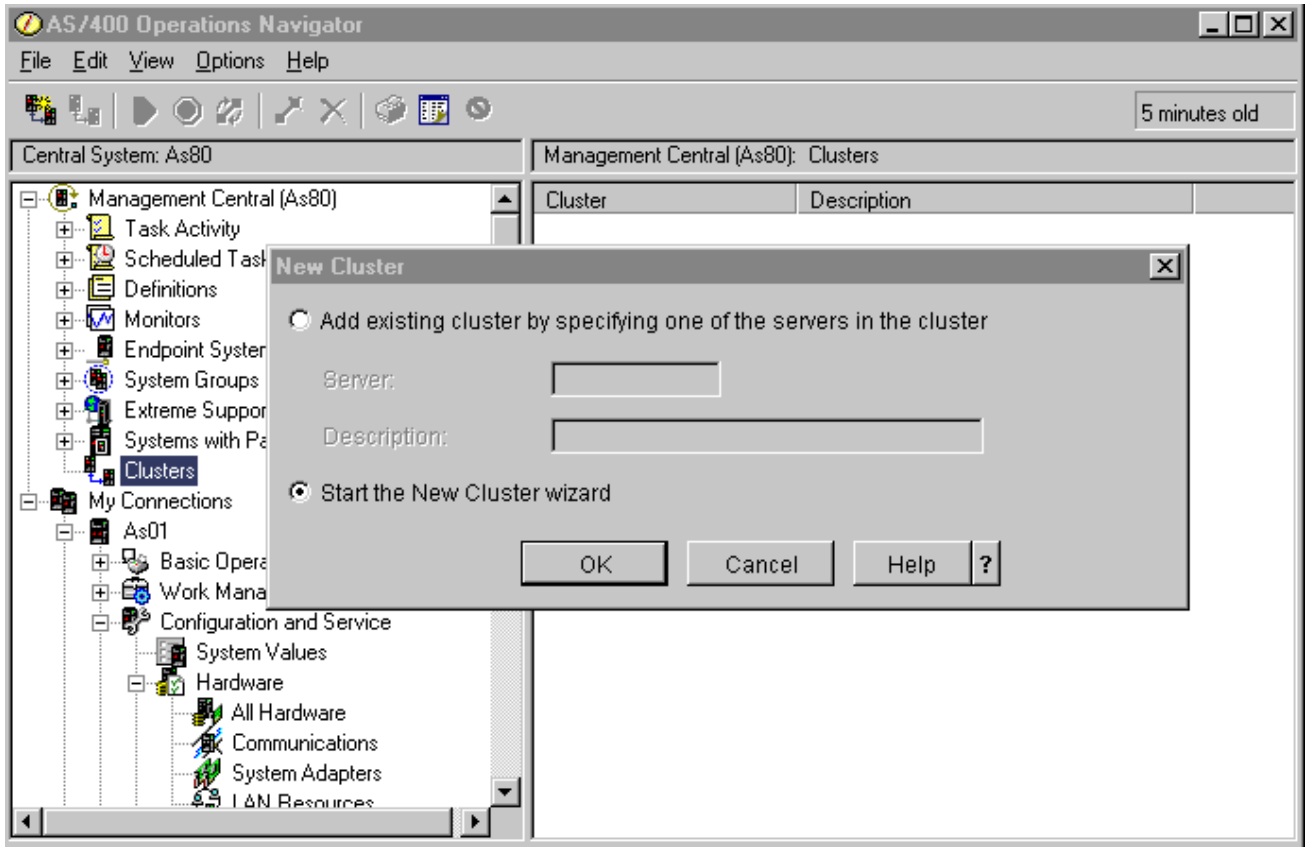
Cluster Configuration Example

- 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



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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.

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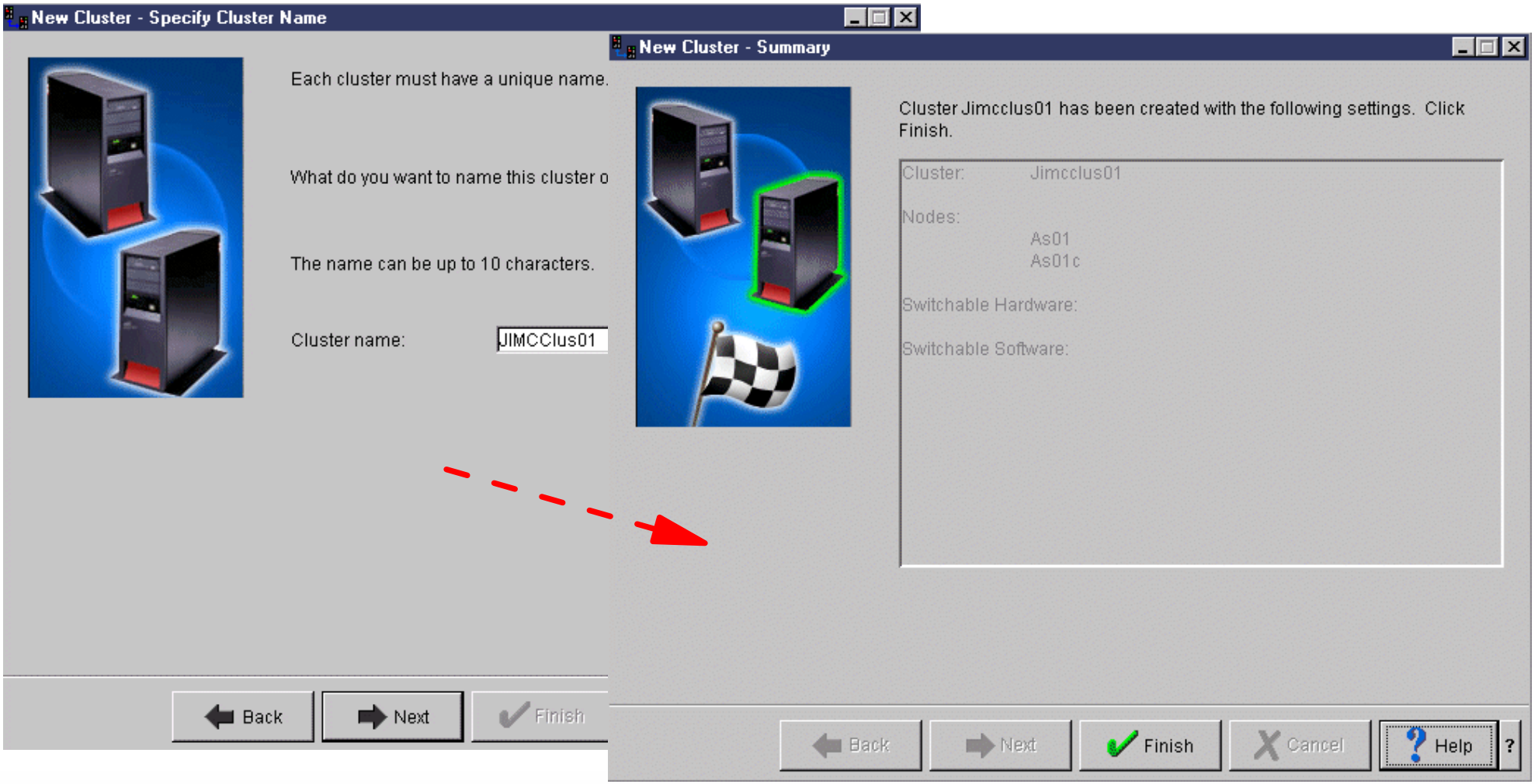
Cluster Configuration Example...

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



Notes: Cluster Configuration Example...

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.

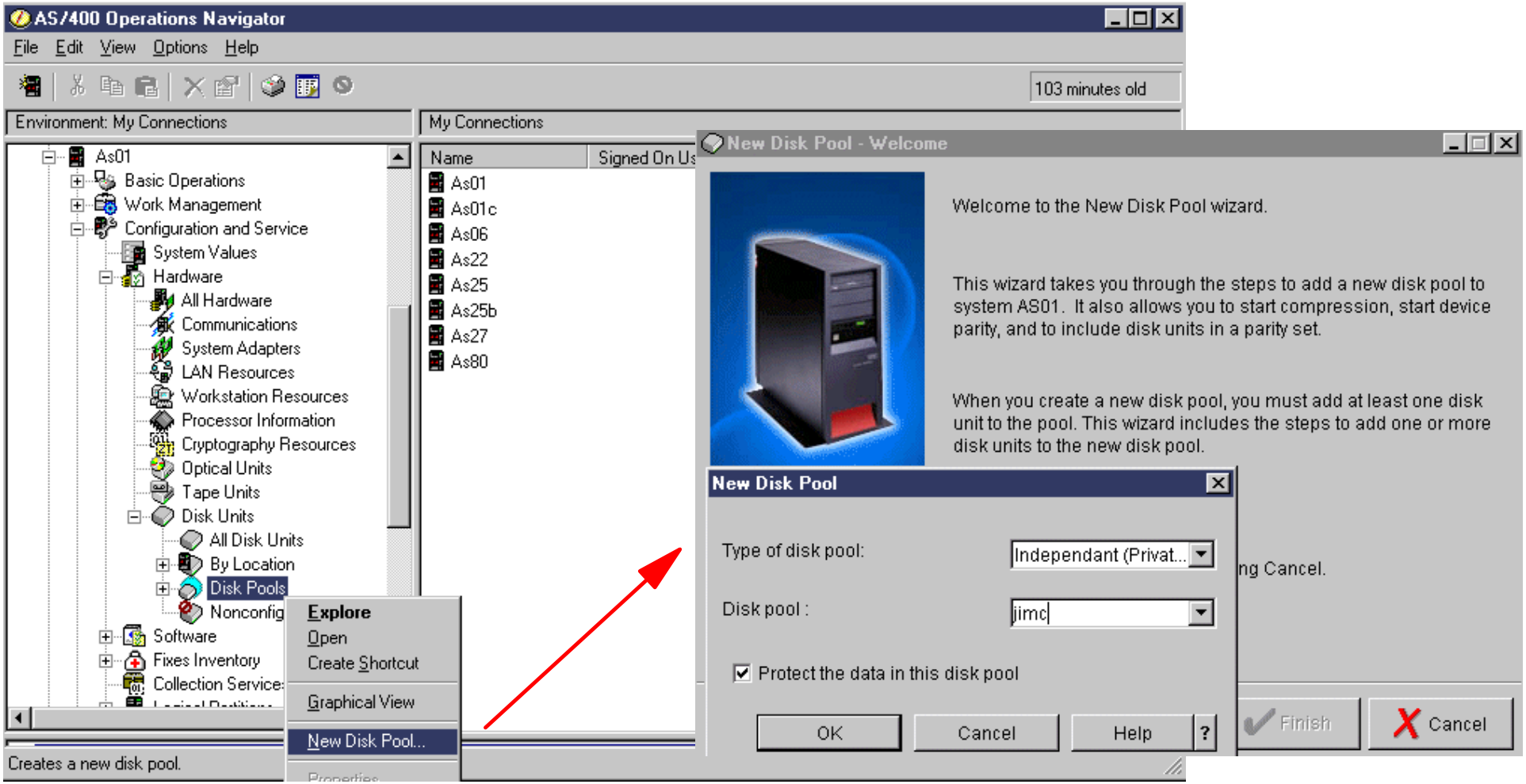
Keep going until finished - as shown on the wizard window on the right of this foil. As you can see there are no "Switchable Hardware" or "Switchable Software" identified. When we complete the next steps we will have "Switchable Hardware" - the IASP.

Since we are doing simple clustering, you now need to create and 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.

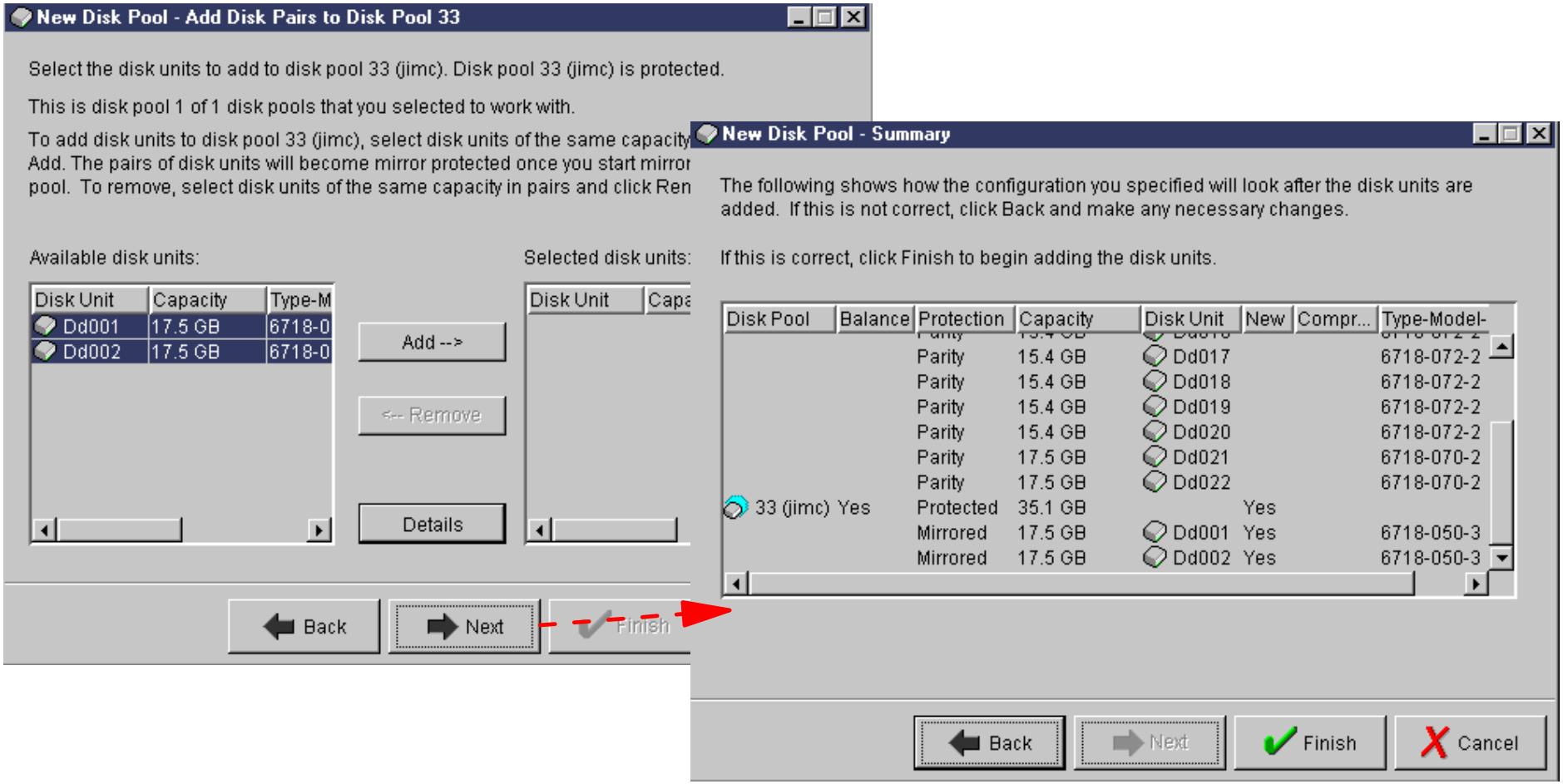
Independent Disk Pools

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



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)



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.

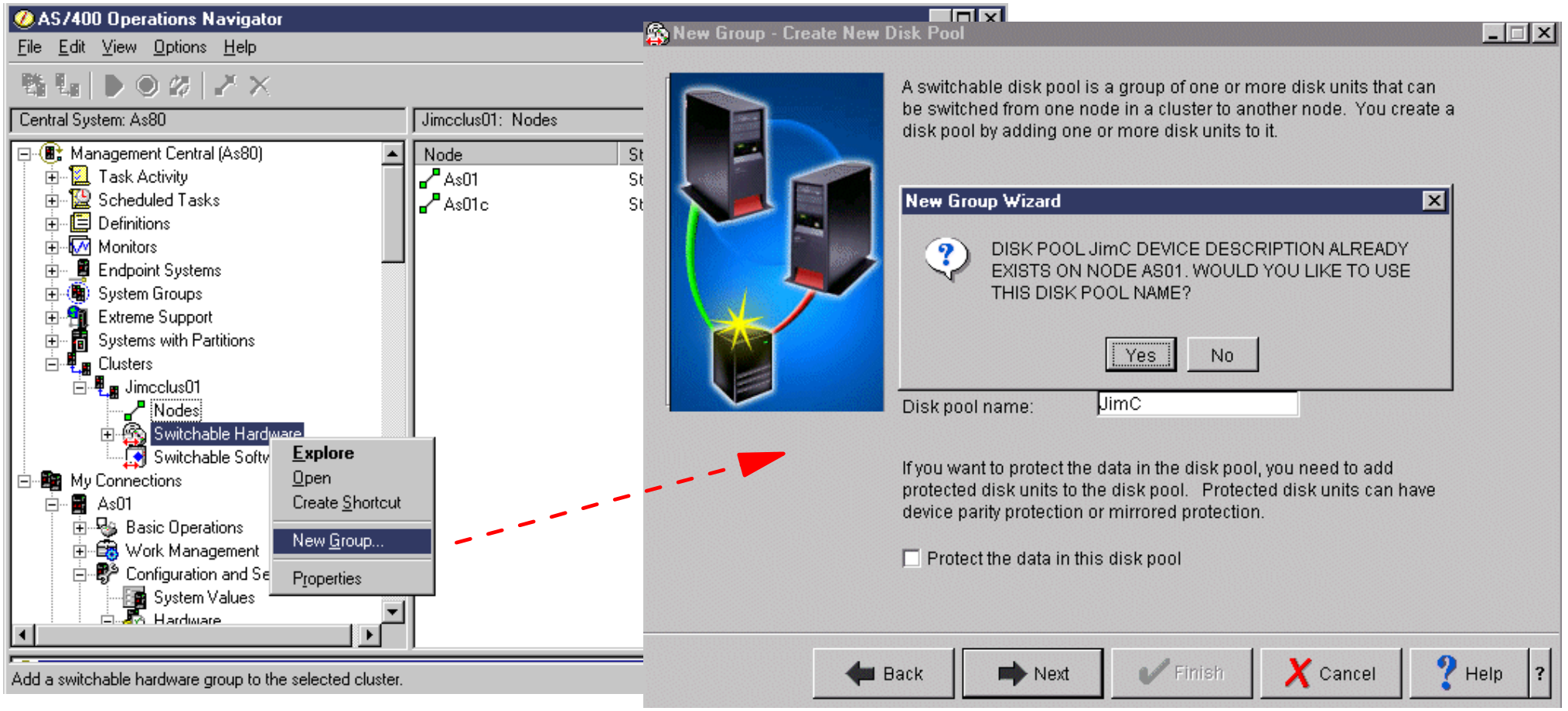
If the disk pool is the System ASP or a user (not an IASP) ASP, then a dialogue is presented telling you "Your pool is now ready for you to perform Start Mirroring" When you select to continue mirroring it will be started.

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.

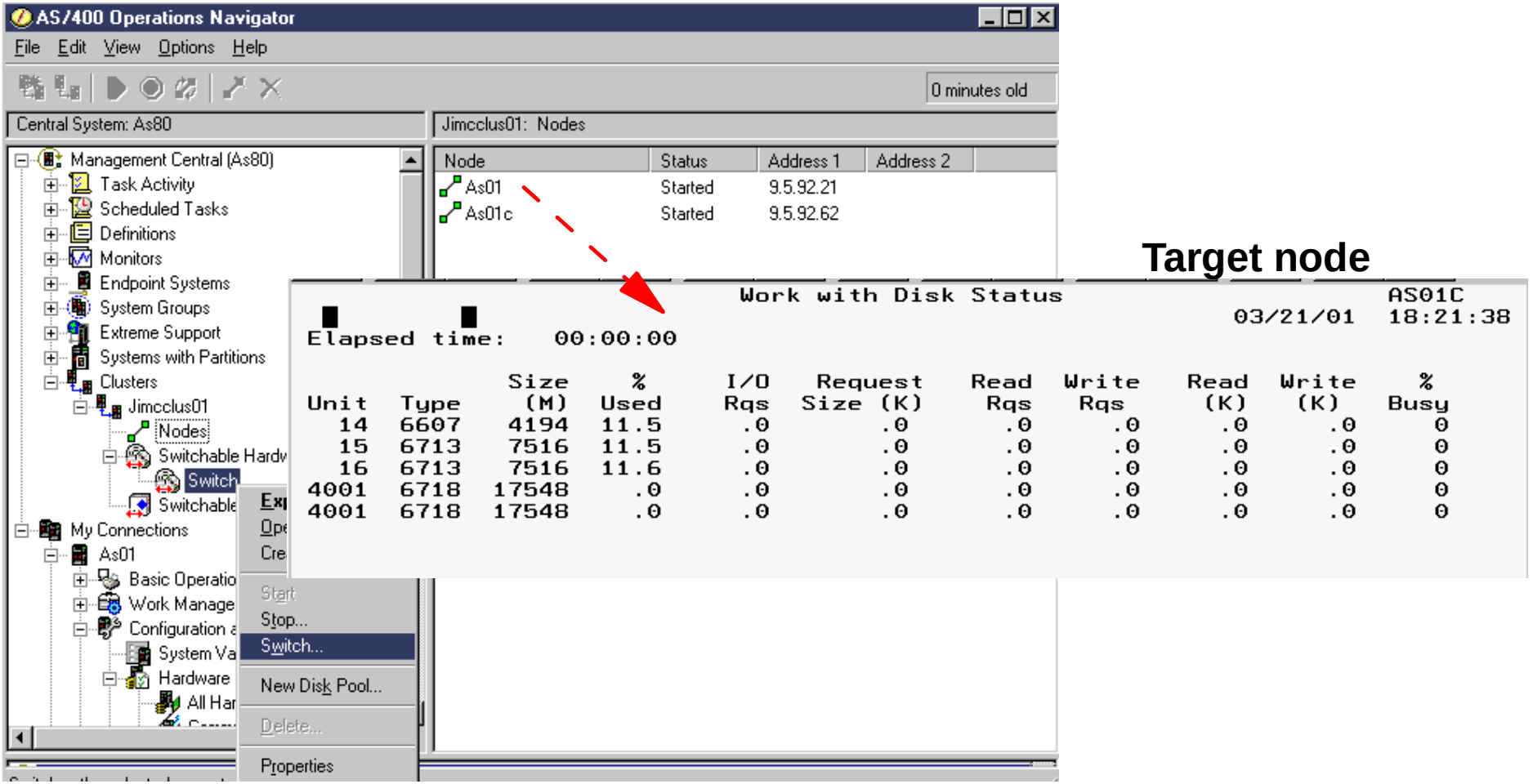
Cluster Configuration Example, Assign IASP

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



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



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Notes: Cluster Configuration Example- Start, Switch

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.

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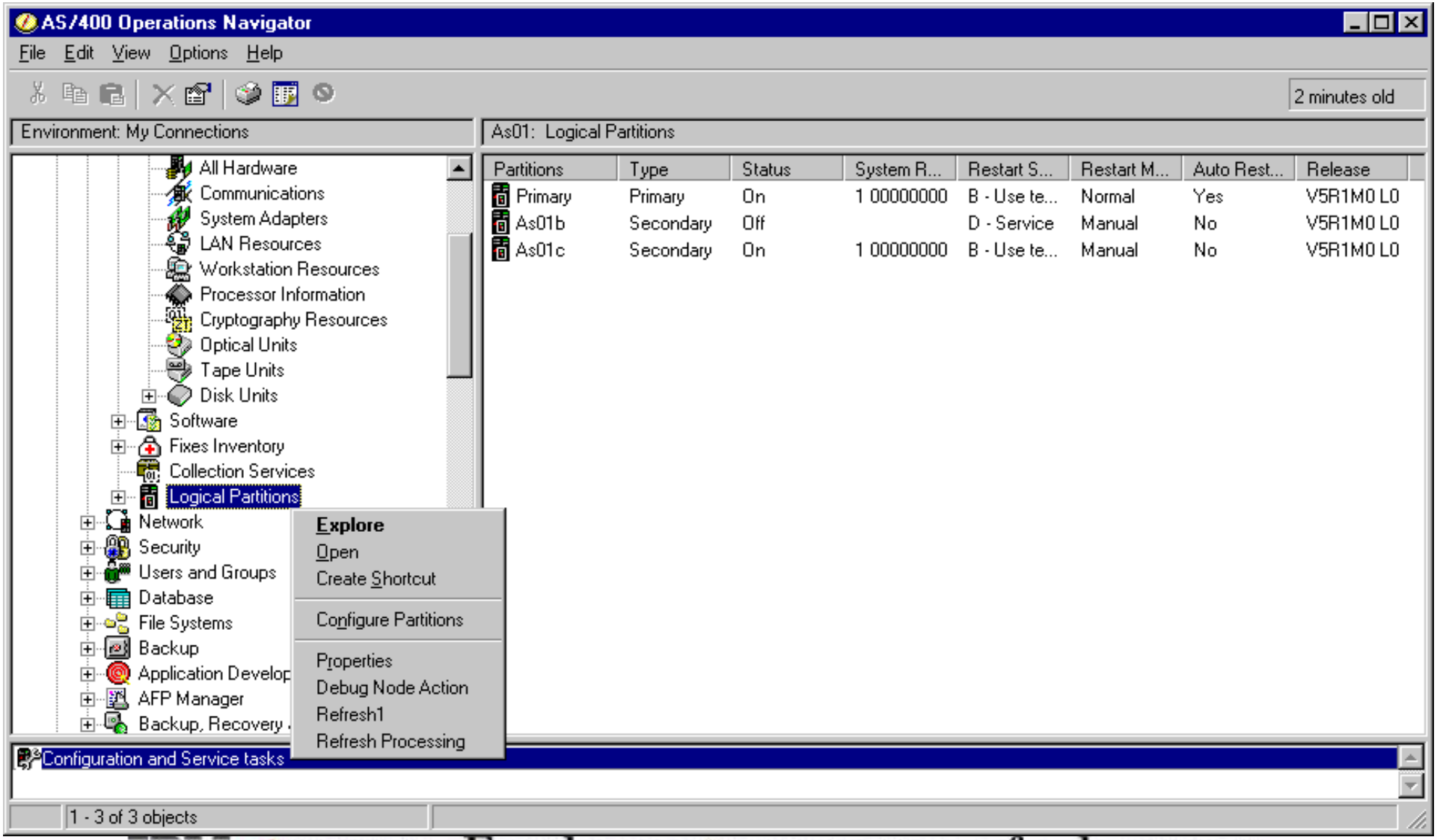
Operations Navigator: Logical Partitioning

Logical Partitioning - Configuration

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

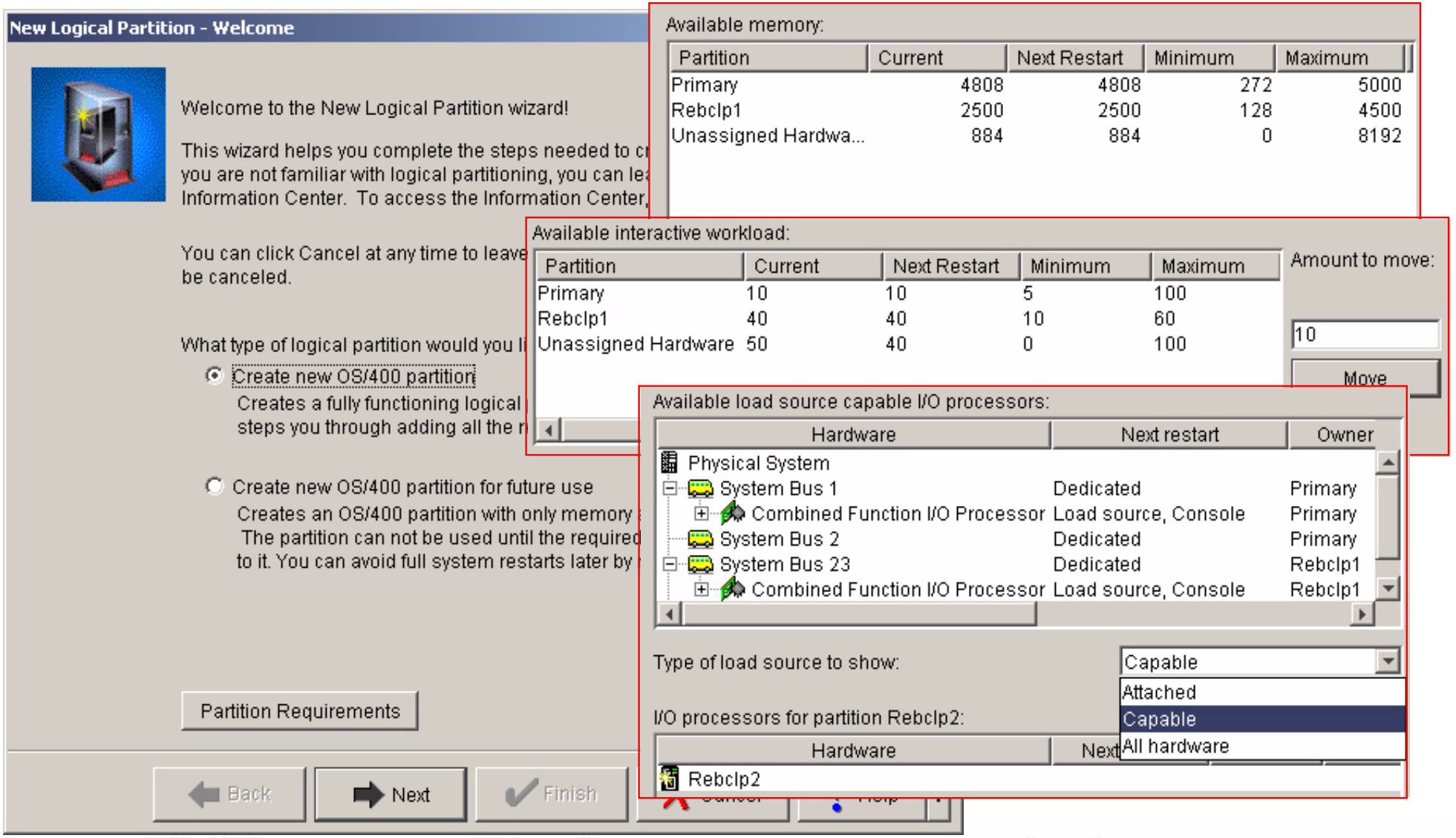


Notes: Logical Partitioning - Configuration

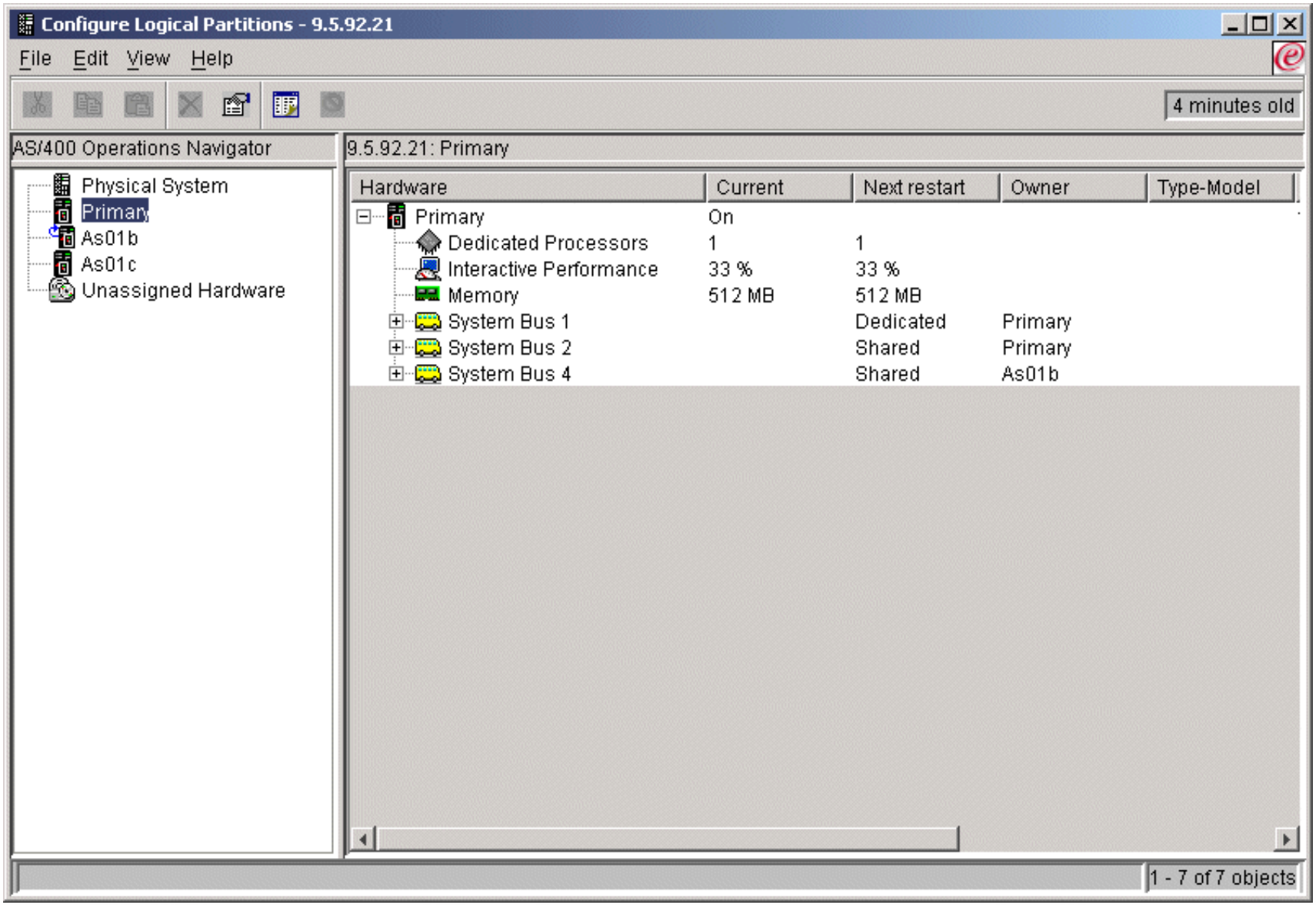
See the Disk Management section foils "Application Administration - Disk Units," and "Disk Management - Sign on" for more information on authority and Service Tools Security. The setup for LPAR management has similar requirements.

LPAR Configuration Wizards

Guided steps for creating new OS/400 partitions



Logical Partitioning - Viewing the Resources



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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

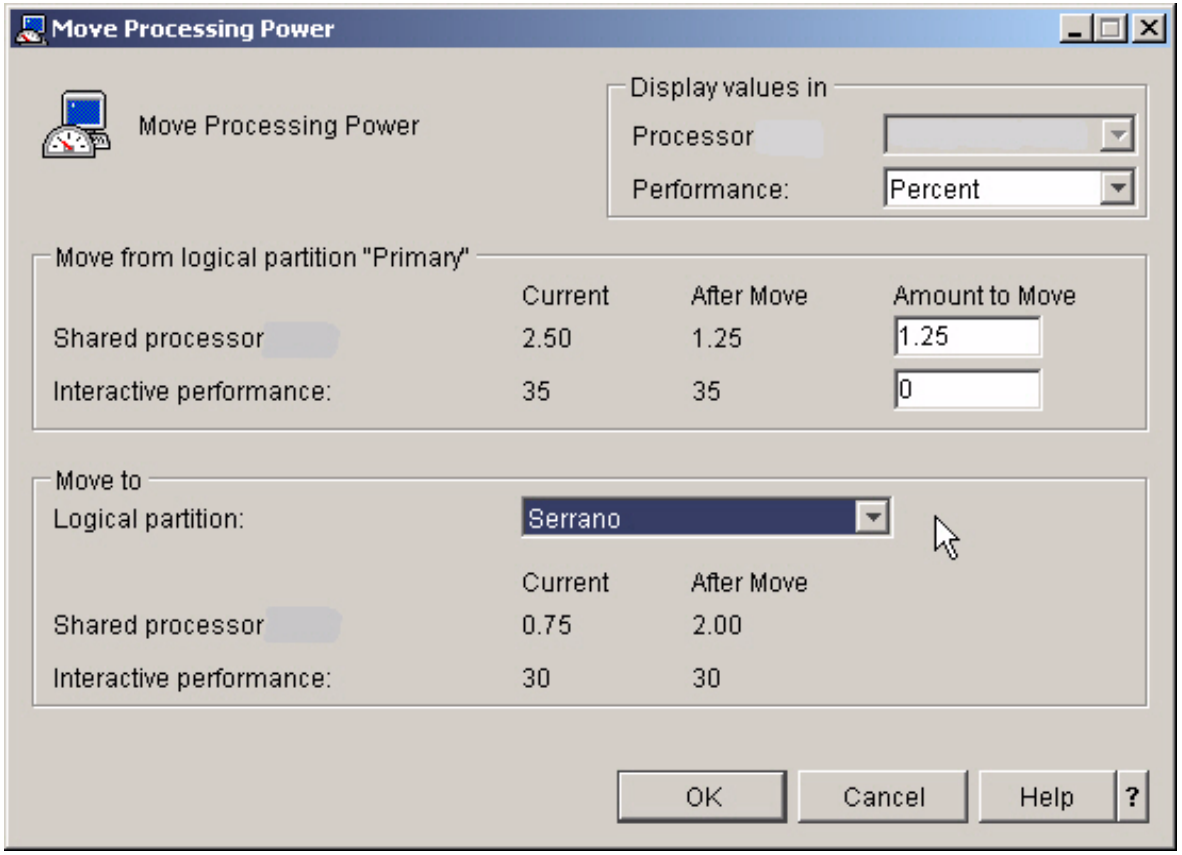
- 1 MB

Interactive performance

- 1%

Bus ownership

- Enablement per partition

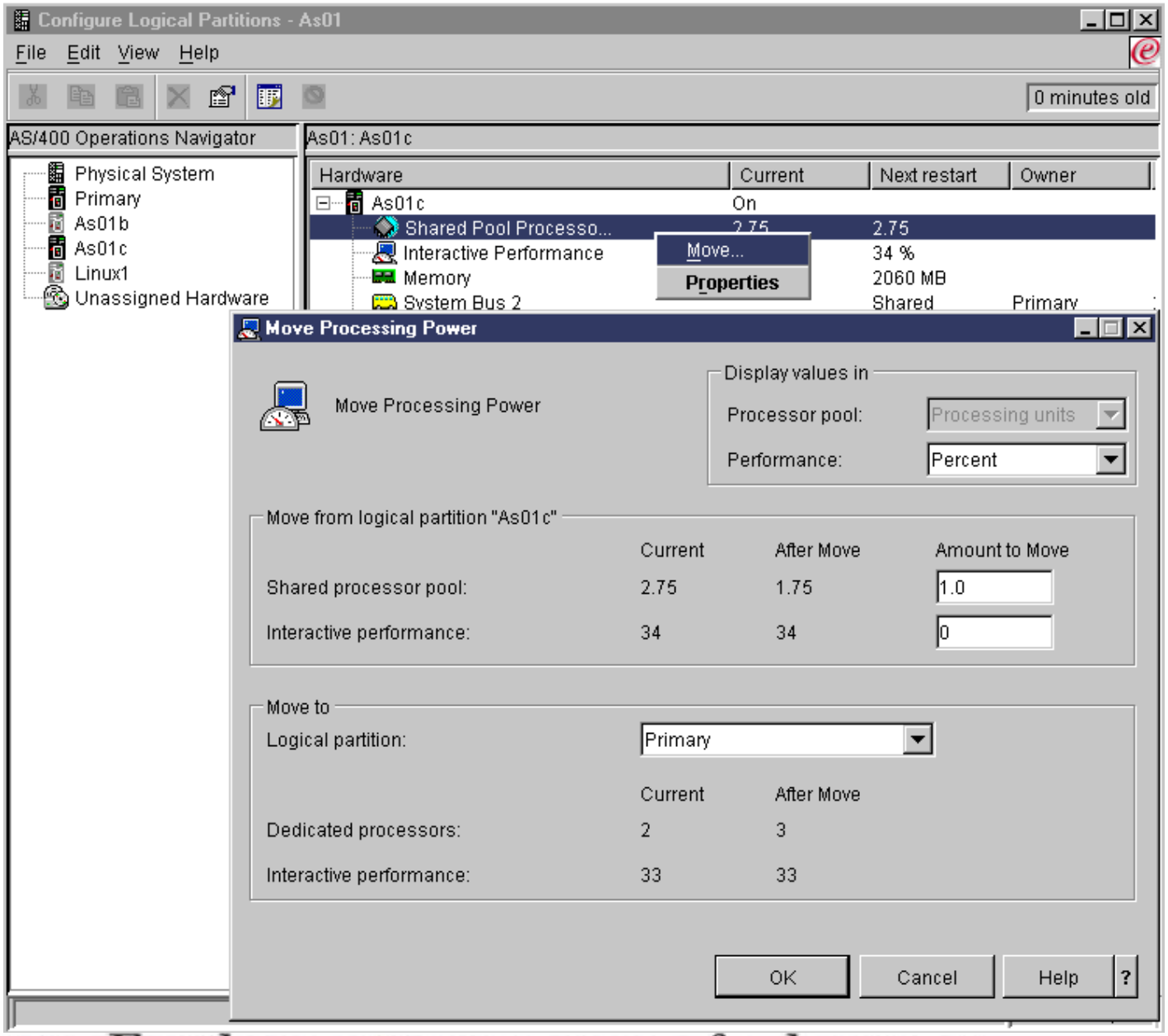


Virtual LAN and Virtual OptiConnect

- Enablement per partition

Moving Processing Resource Example

Secondary Partition
to
Primary Partition



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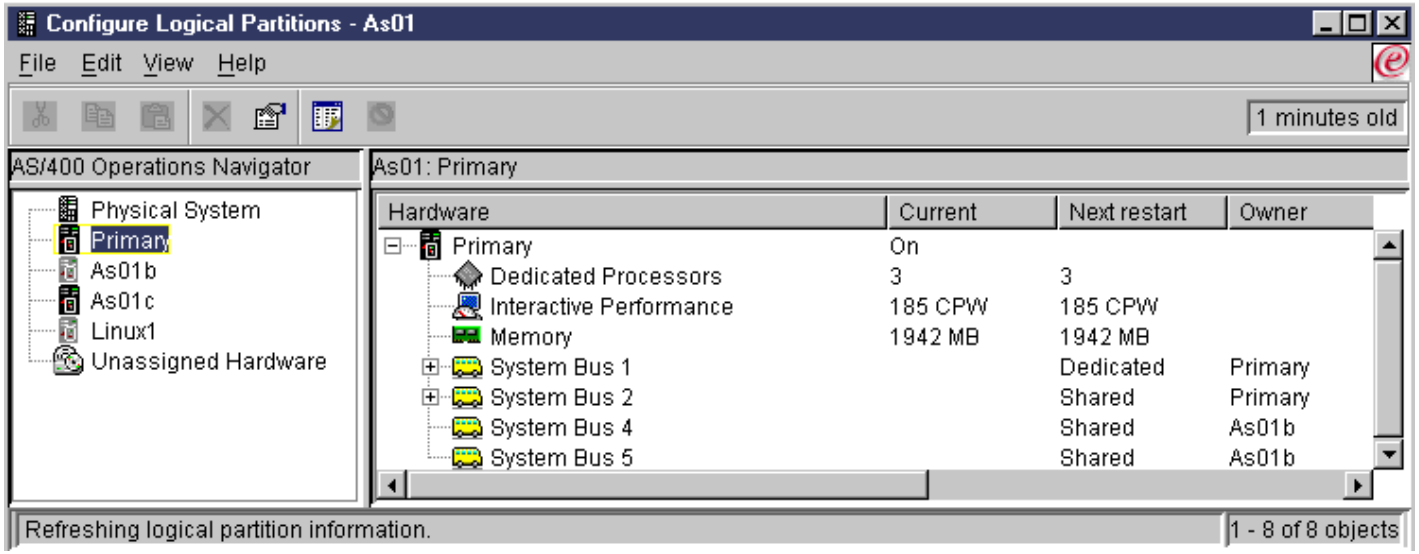
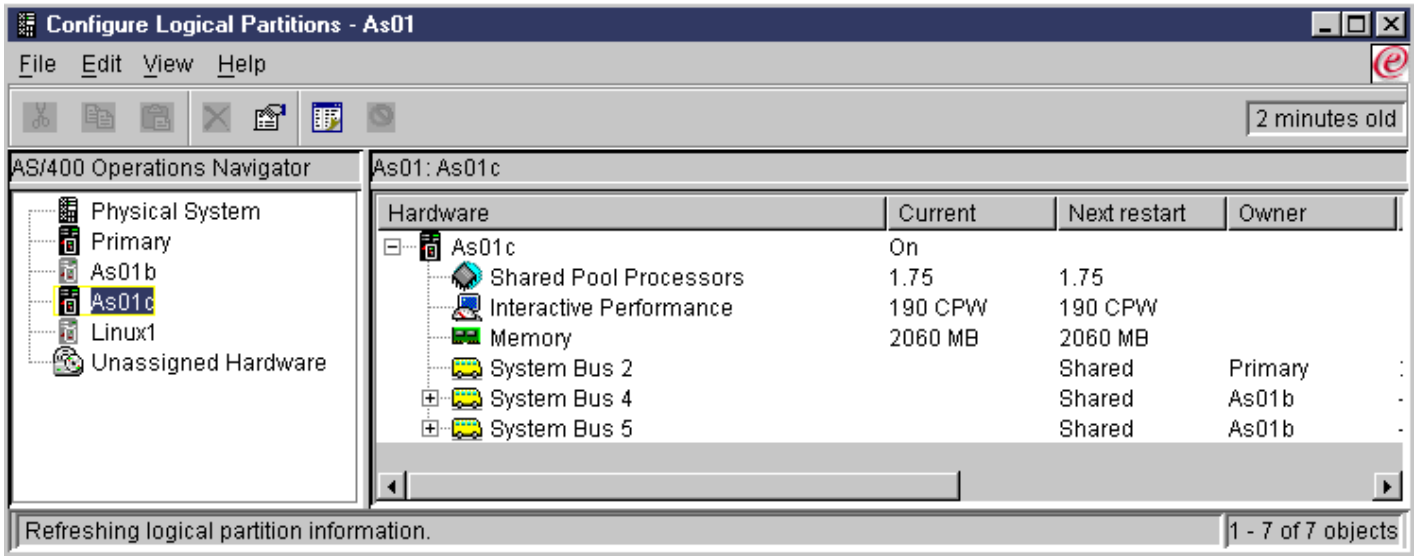
Moving Processing Resource Example Results

Primary Partition



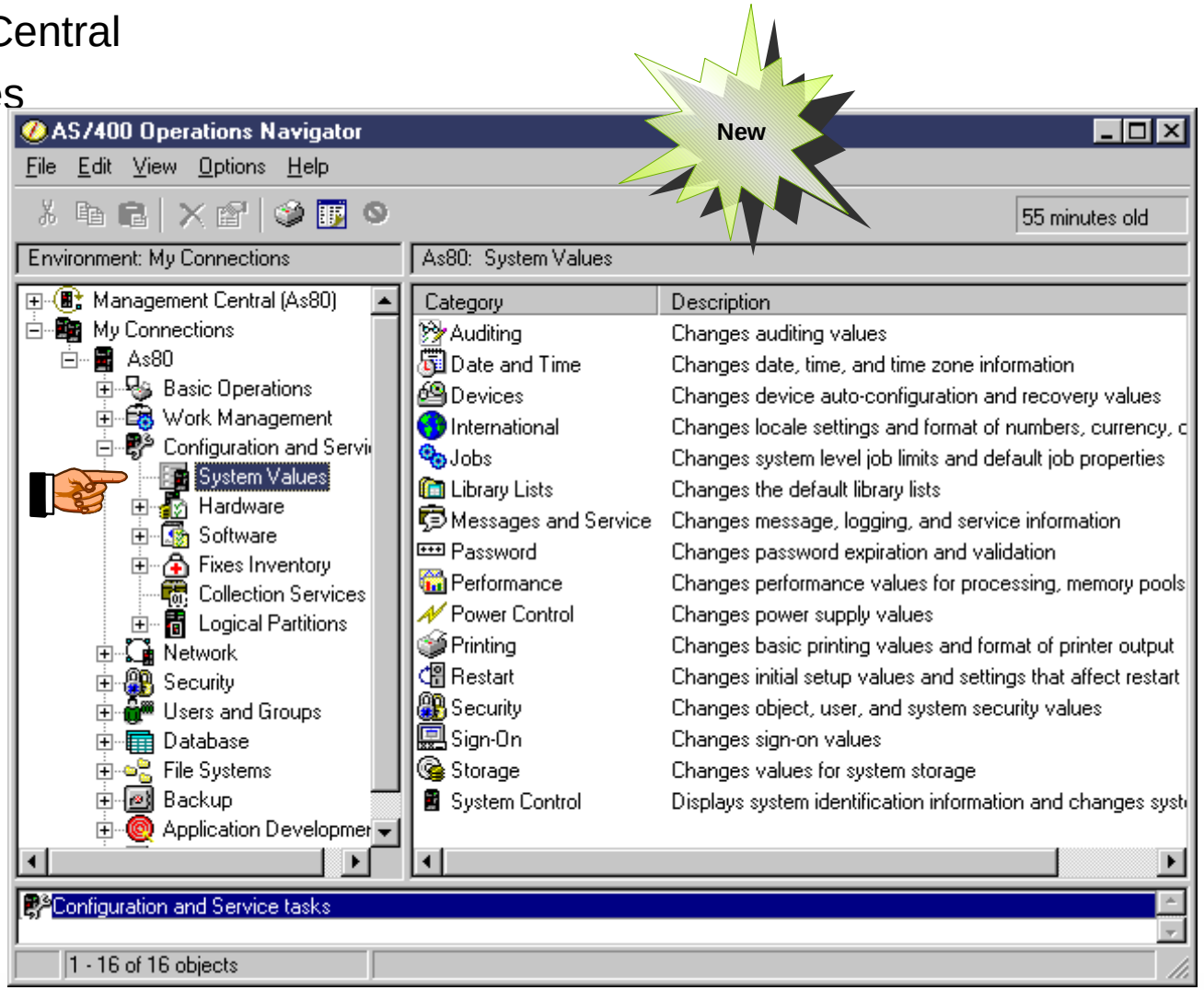
Secondary Partition



Operations Navigator: System Values

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



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Notes: System Values

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.

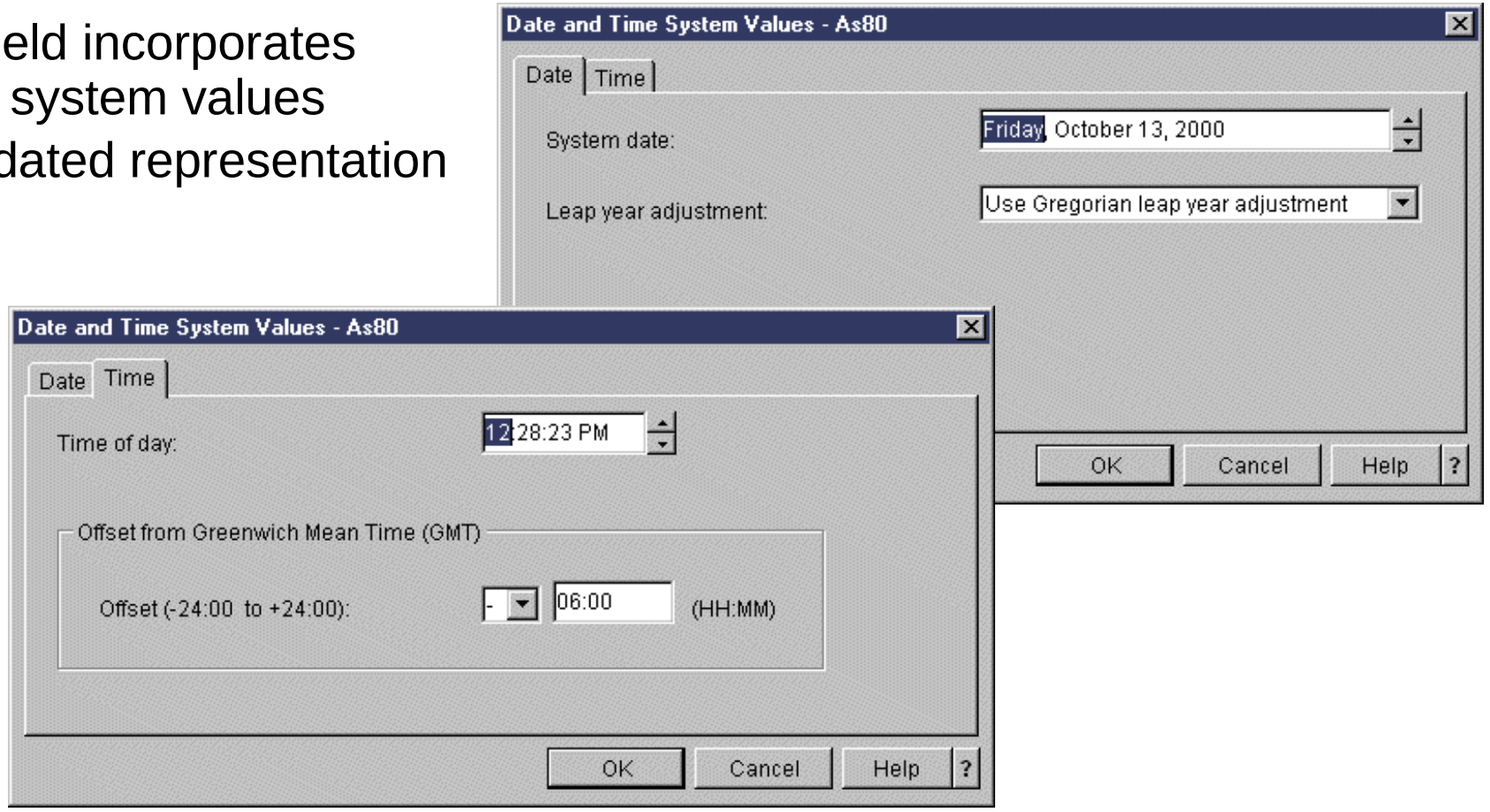
http://w3pclan.rchland.ibm.com/idweb/v5r1/ic2924/info/index.htm?rzakz/rzakzfinder.htm

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.

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.

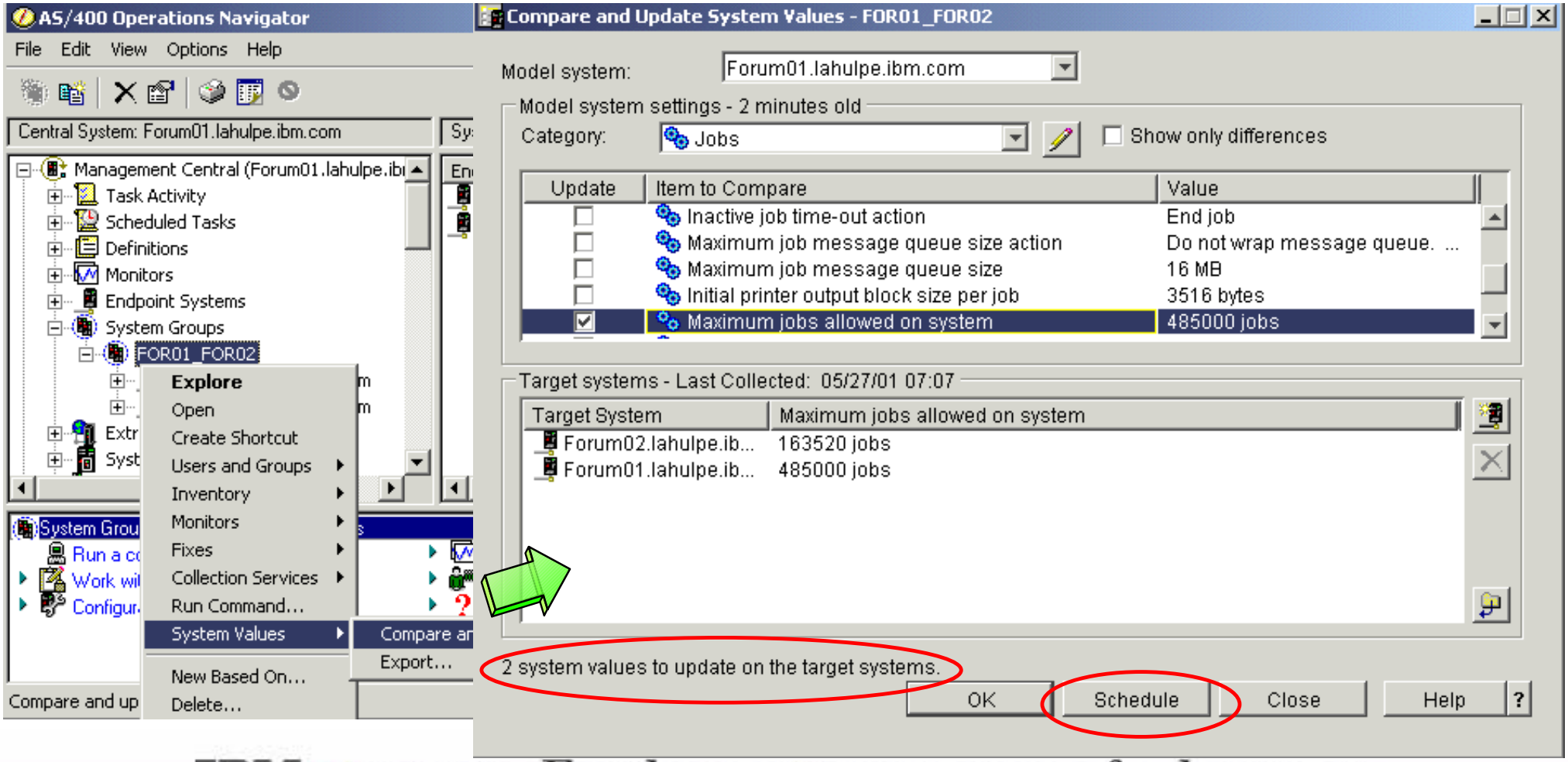
The Date and Time category will change the systems date, time, and time zone information:

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



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.

Notes: Compare and Update System Values

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.

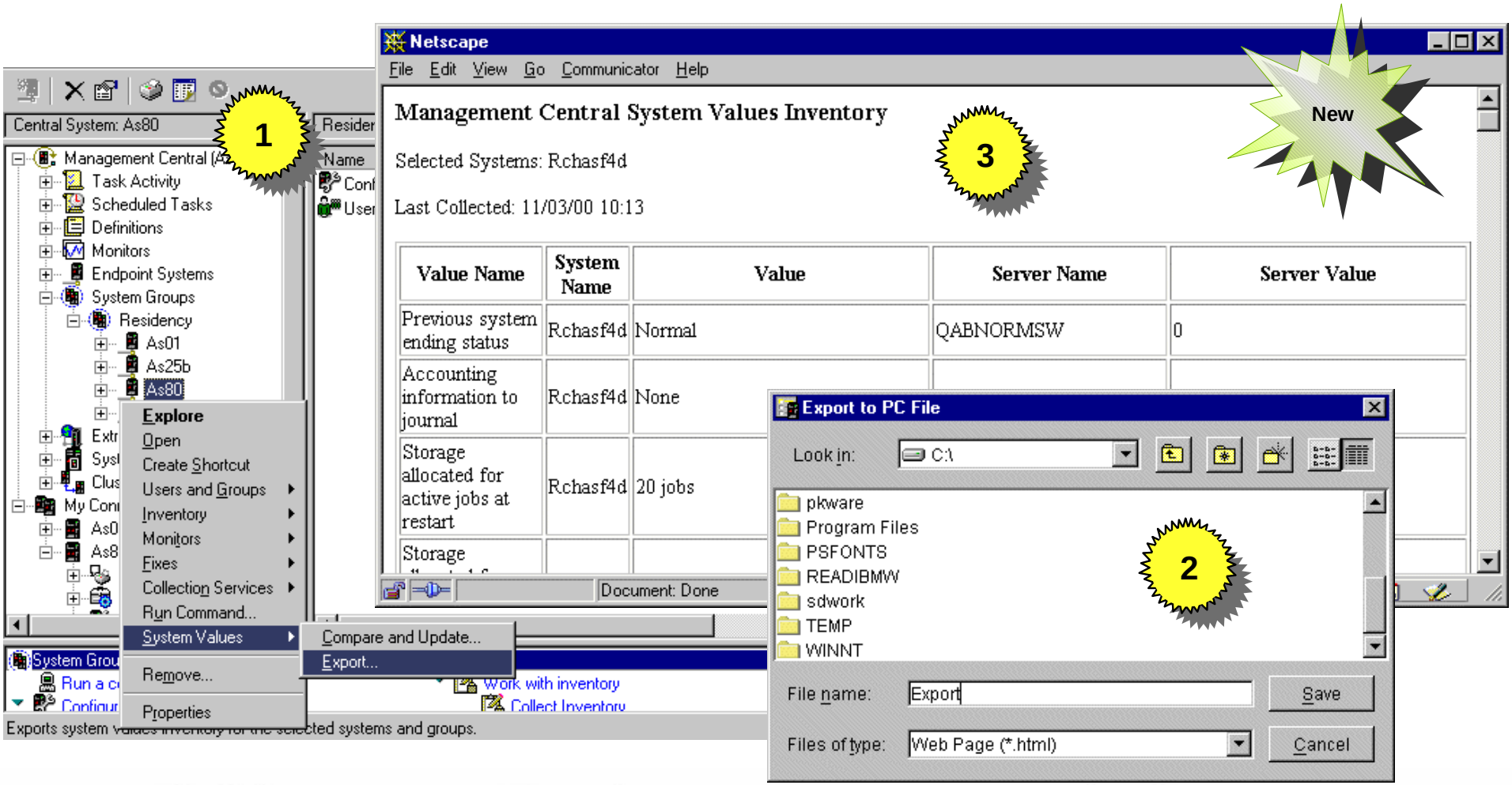
Some system values are read-only, which means that you will not be able to select and update the value. The values that you see for the model system are real-time data, and the values for the target systems are data that was collected when you last collected inventory.

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.



Notes: Exporting System Values

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.

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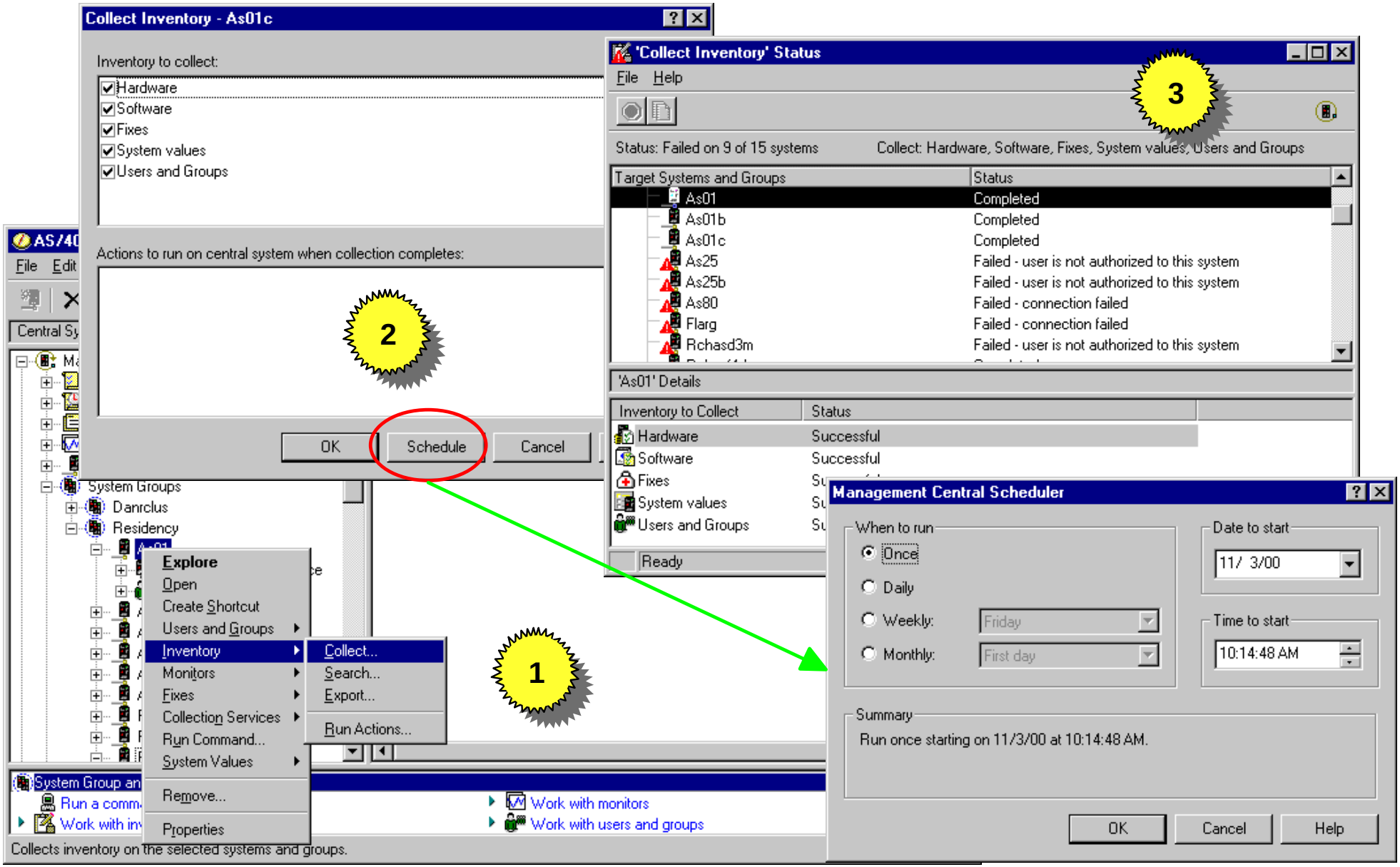
Inventory


Collect Inventory - As01c
Inventory to collect:
Hardware
Software
Fixes
System values
Users and Groups
Actions to run on central system when collection completes:
OK
Schedule
Cancel
2
'Collect Inventory' Status
File Help
3
Status: Failed on 9 of 15 systems
Collect: Hardware, Software, Fixes, System values, Users and Groups
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
'As01' Details
Inventory to Collect
Status
Hardware Successful
Software Successful
Fixes
System values
Users and Groups
Ready
AS/400
File Edit
Central Sy
System Groups
Danrclus
Residency
Explore
Open
Create Shortcut
Users and Groups
Inventory
Monitors
Fixes
Collection Services
Run Command...
System Values
Remove...
Properties
Collect...
Search...
Export...
Run Actions...
1
Management Central Scheduler
When to run
Once
Daily
Weekly:
Friday
Monthly:
First day
Date to start
11/ 3/00
Time to start
10:14:48 AM
Summary
Run once starting on 11/3/00 at 10:14:48 AM.
OK
Cancel
Help
System Group an
Run a comm
Work with inv
Work with monitors
Work with users and groups
Collects inventory on the selected systems and groups.

Notes: Inventory

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 .

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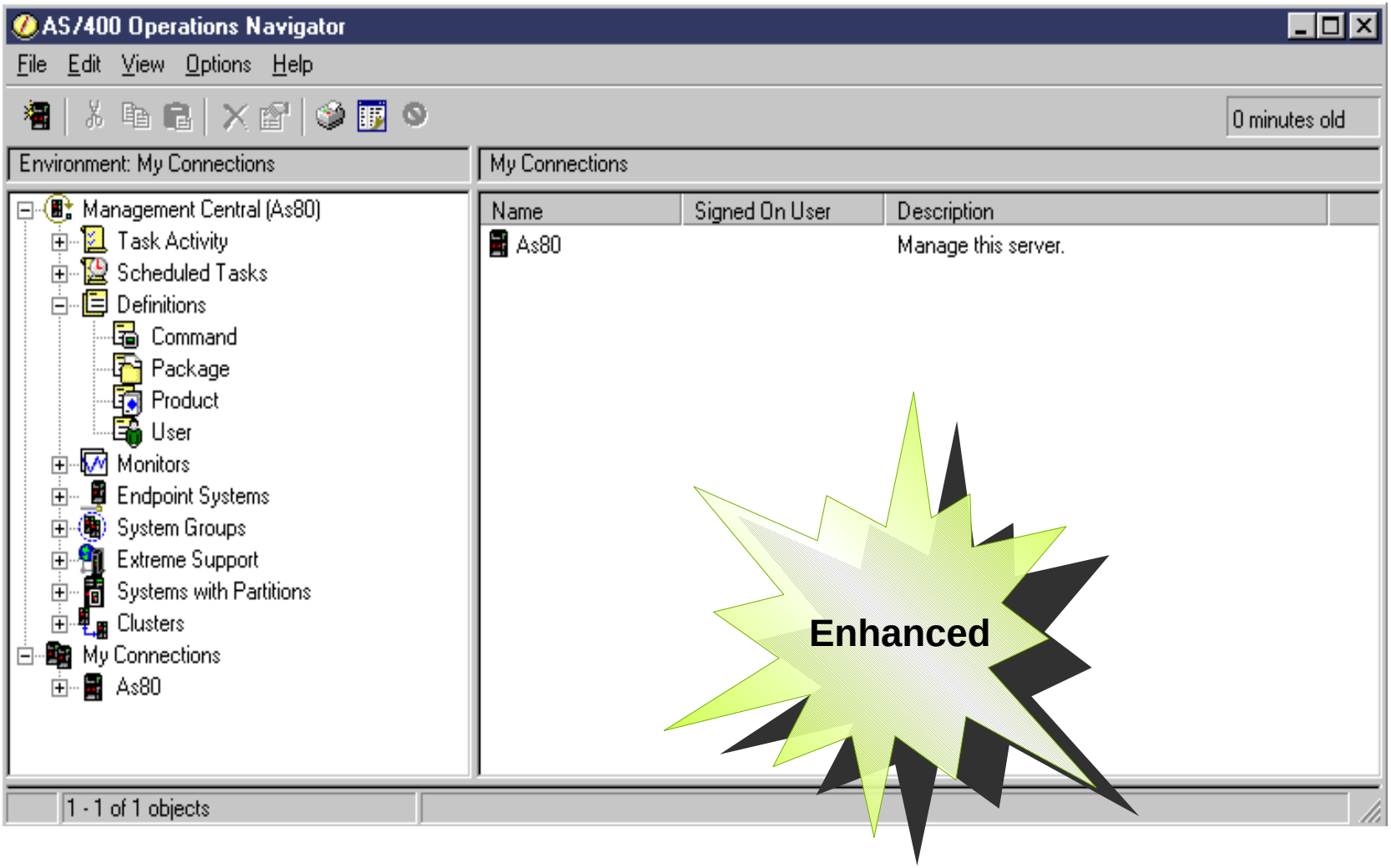
Definitions



Notes: Definitions

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.

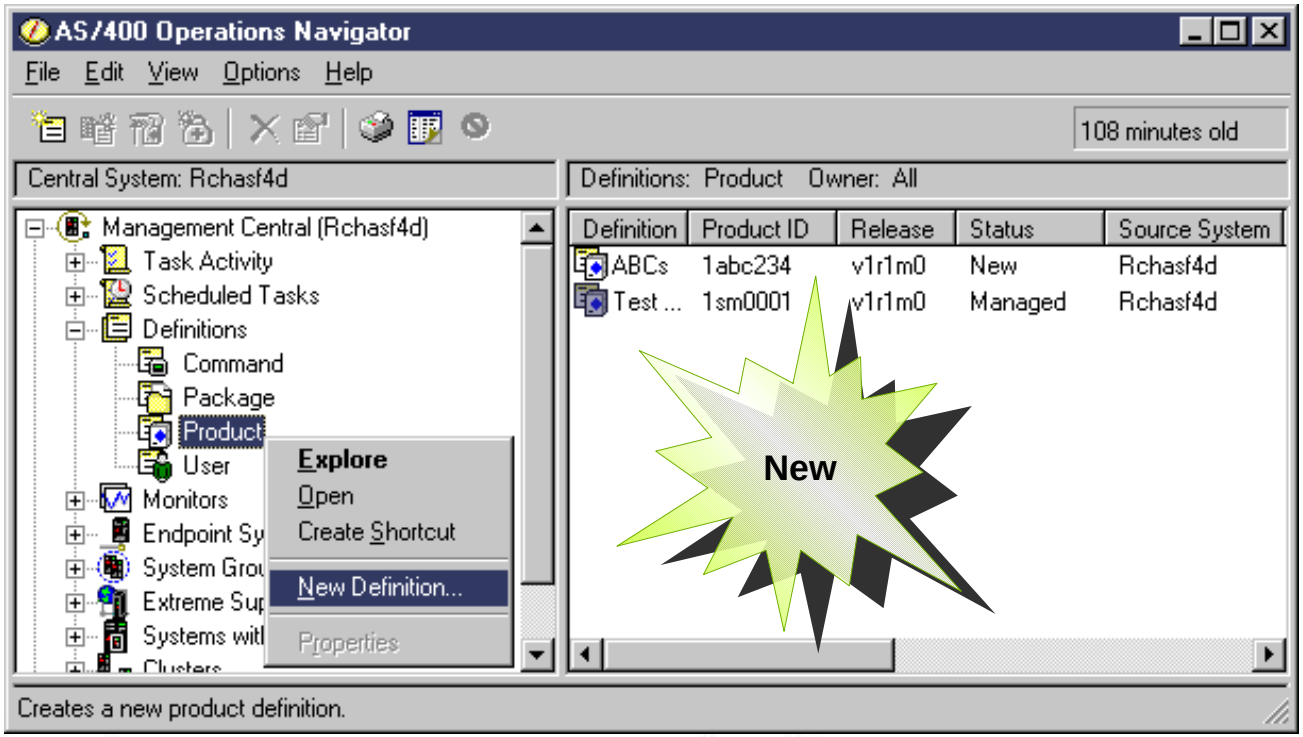
You can create and store definitions of products, which allow you to send and install products you create or specific product options on multiple endpoint systems. You can schedule these tasks to run at the date and time you select.

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.

Product Definitions

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



Notes: Product Definitions

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.

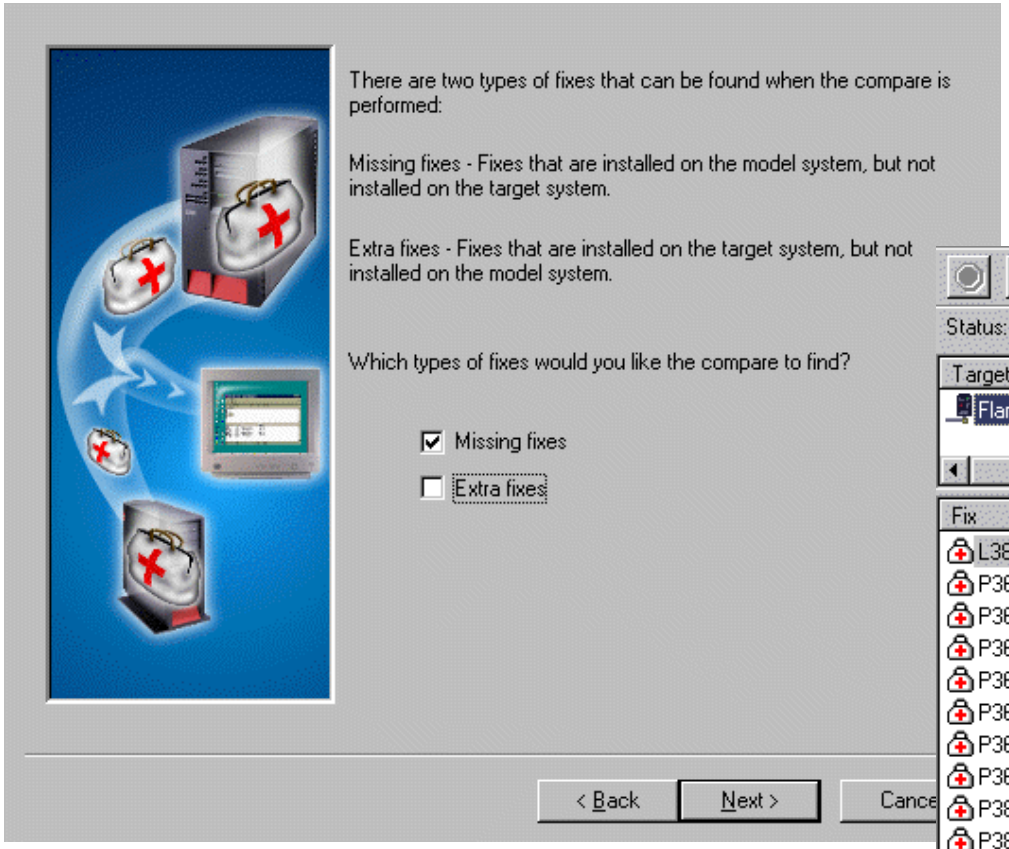
Your installed products are listed along with IBM products in the Software Inventory view for a system. From the Software Inventory view for an endpoint system in Management Central, you can select a product to Send and Install to other systems. Moreover, fixes you create for a product are listed in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

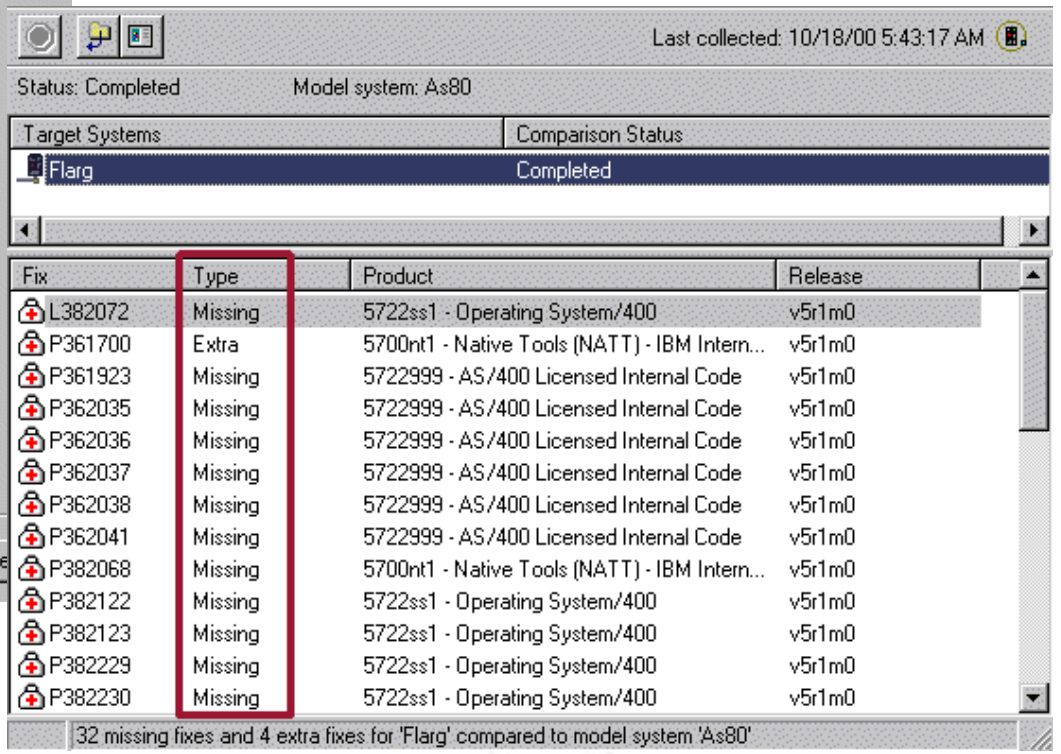
Note: Product Definitions are installed when you select the Packages and Products component during a Custom install of Client Access Express. Moreover, a central system in Management Central must be defined to work with product definitions.

Fixes - Management Central

Compare:

- Missing fixes
- Extra fixes





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Notes: Management Central - Fixes

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

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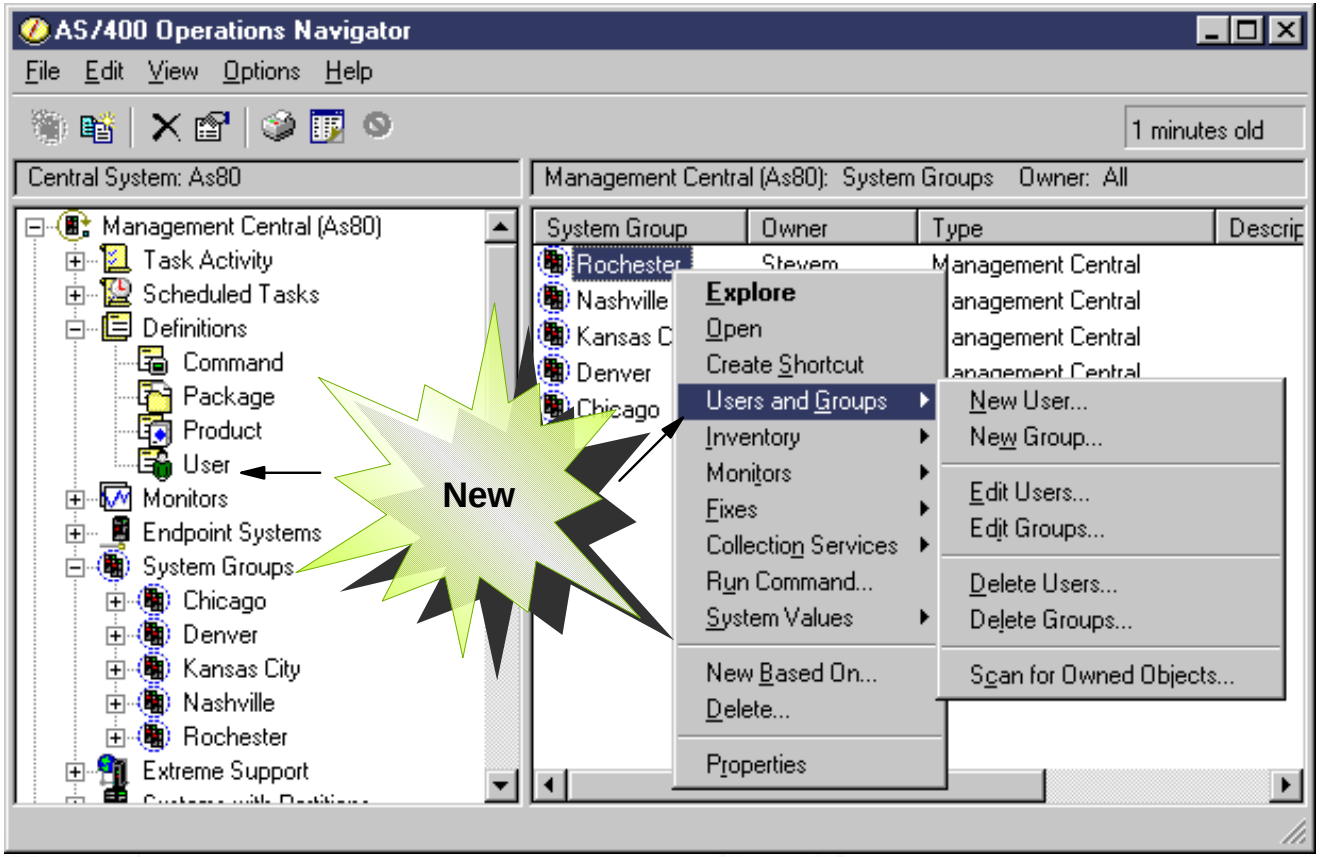
Management Central: Users and Groups

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



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Notes: Users and Groups

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...

Notes: Users and Groups

..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.

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User Definition

- 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

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Notes: User Definition

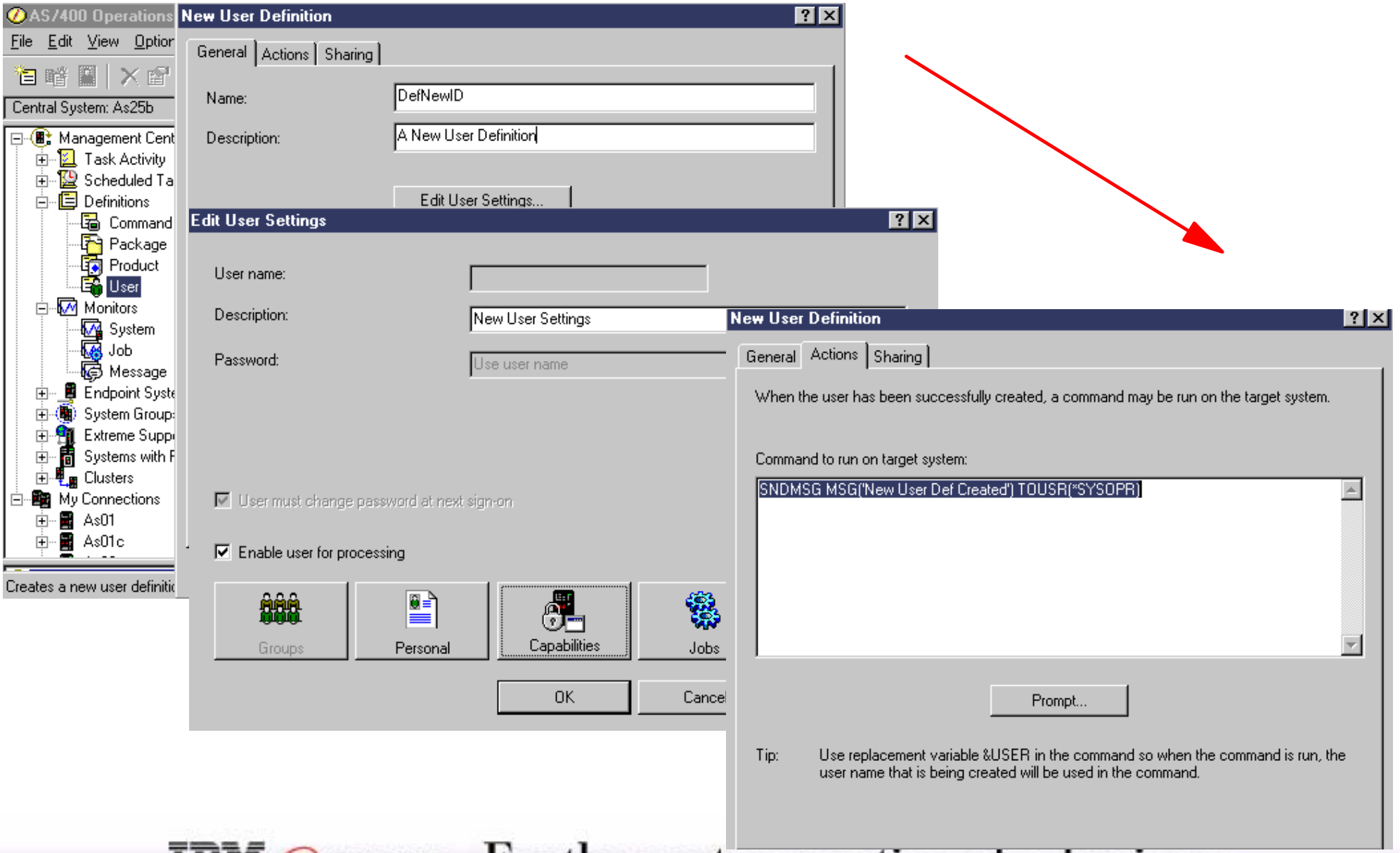
A user definition allows you an easier way to create a new user on multiple endpoint systems or system groups. Create user definitions for the various types of users on your system. Then, when a request comes in for a new user, all authorities, groups, attributes, and other information common to that 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



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.

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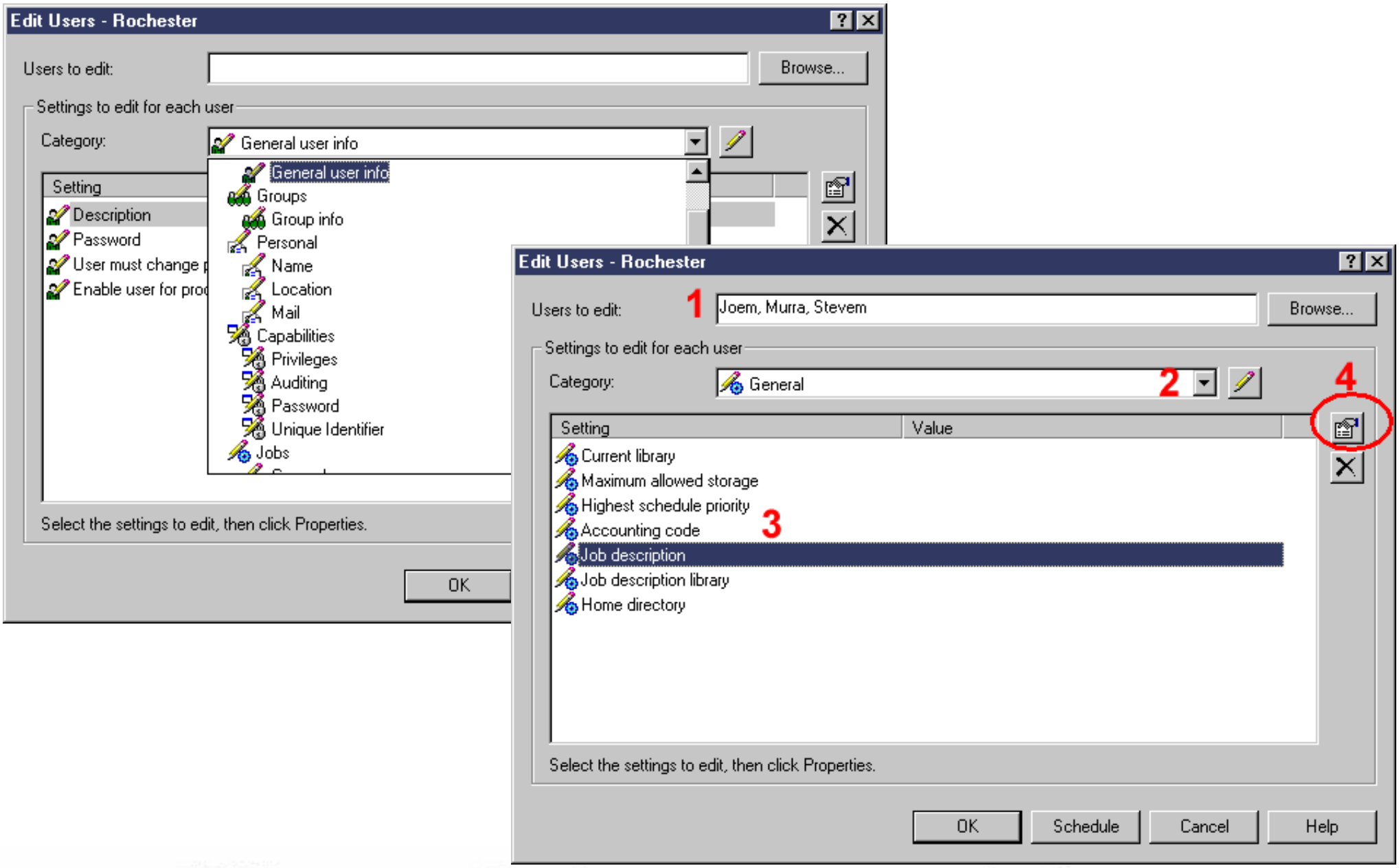
Edit Users and Groups



Notes: 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.

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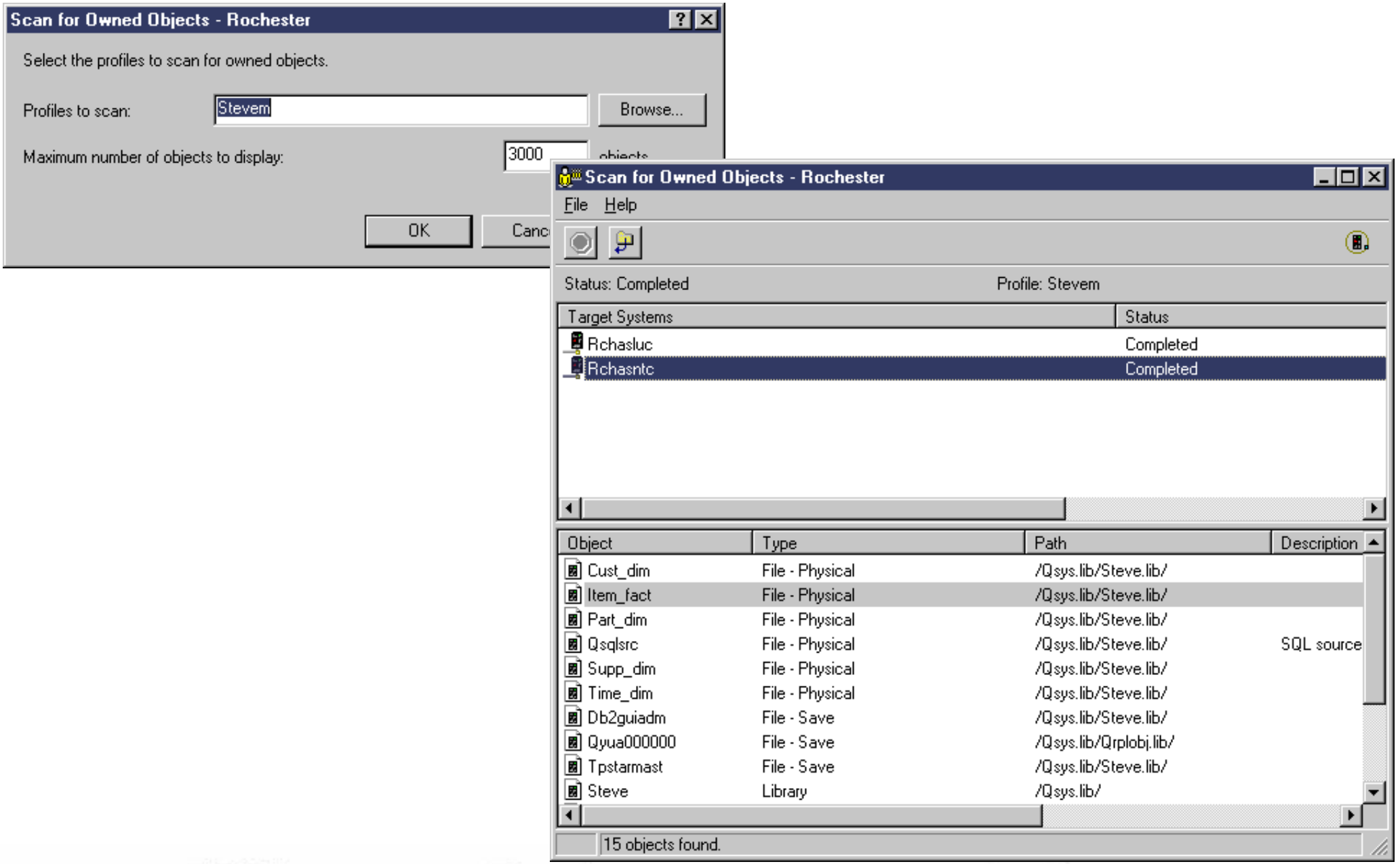
Scan for Owned Objects



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.

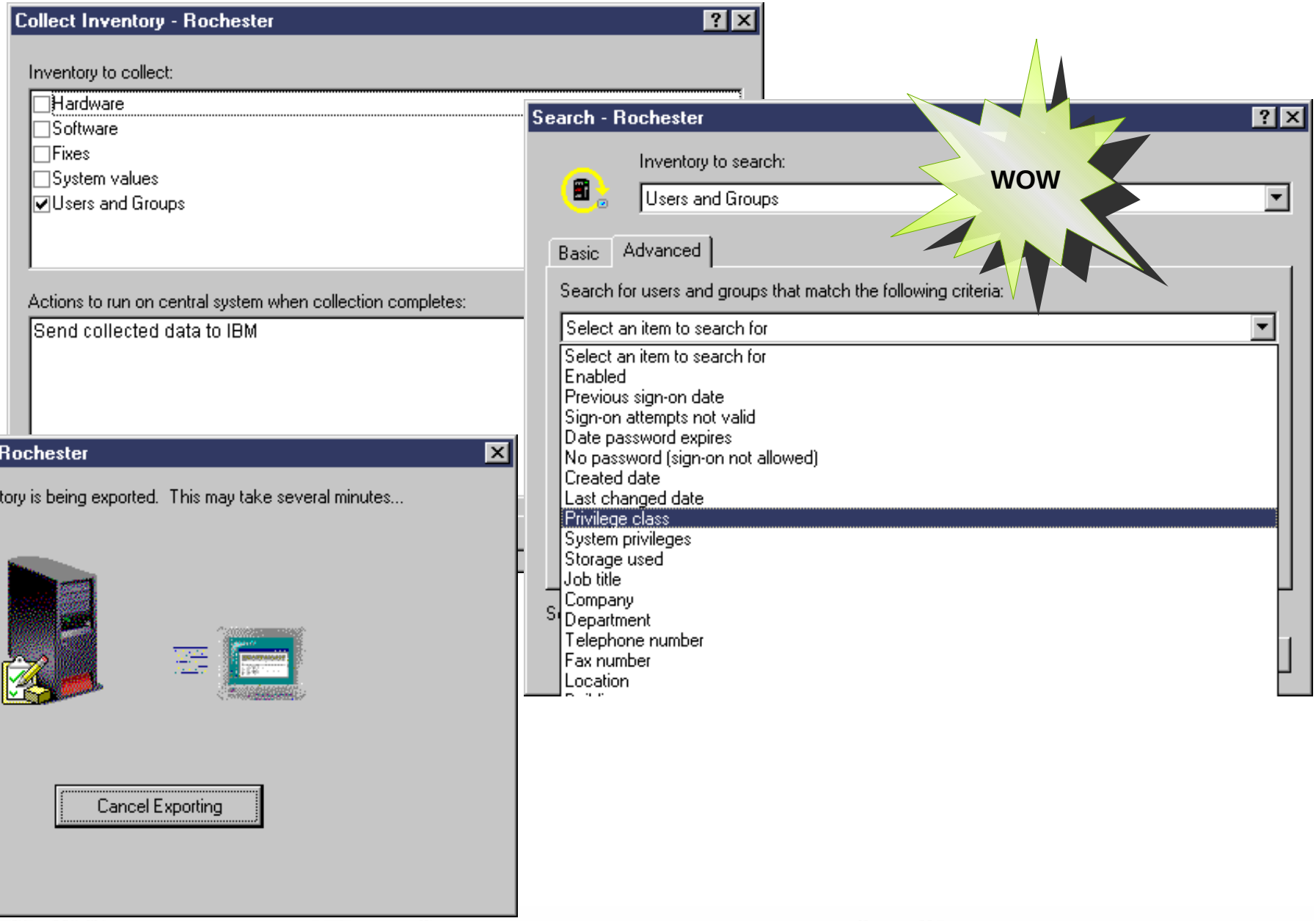
After the scan operation finishes, you can see the list of objects that are found for each system and profile that is scanned. Click on a target system to see the list of objects found on that system. You can export the scan results into a spreadsheet, text file, or HTML (web) page.

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



Notes: Users and Groups Inventory

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.

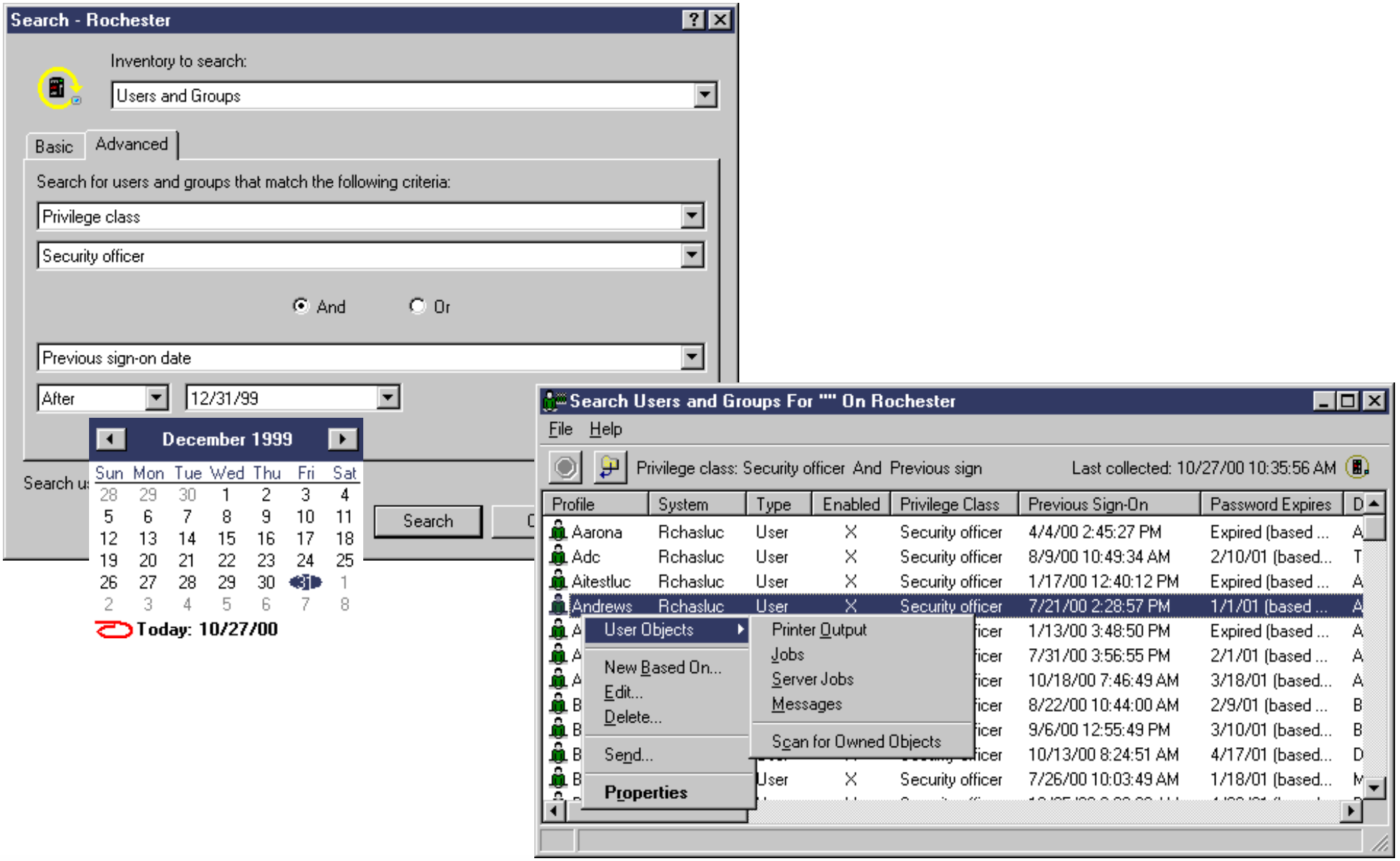
Searching on users and groups provides you with a lot of flexibility to query the user and group inventory for the information you want. The Basic search is for quick searches to find a particular user. You may use the asterisk (*) as a “wildcard” to search for all items containing a specified string; 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



Notes: Advanced Search on Users & Groups

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.

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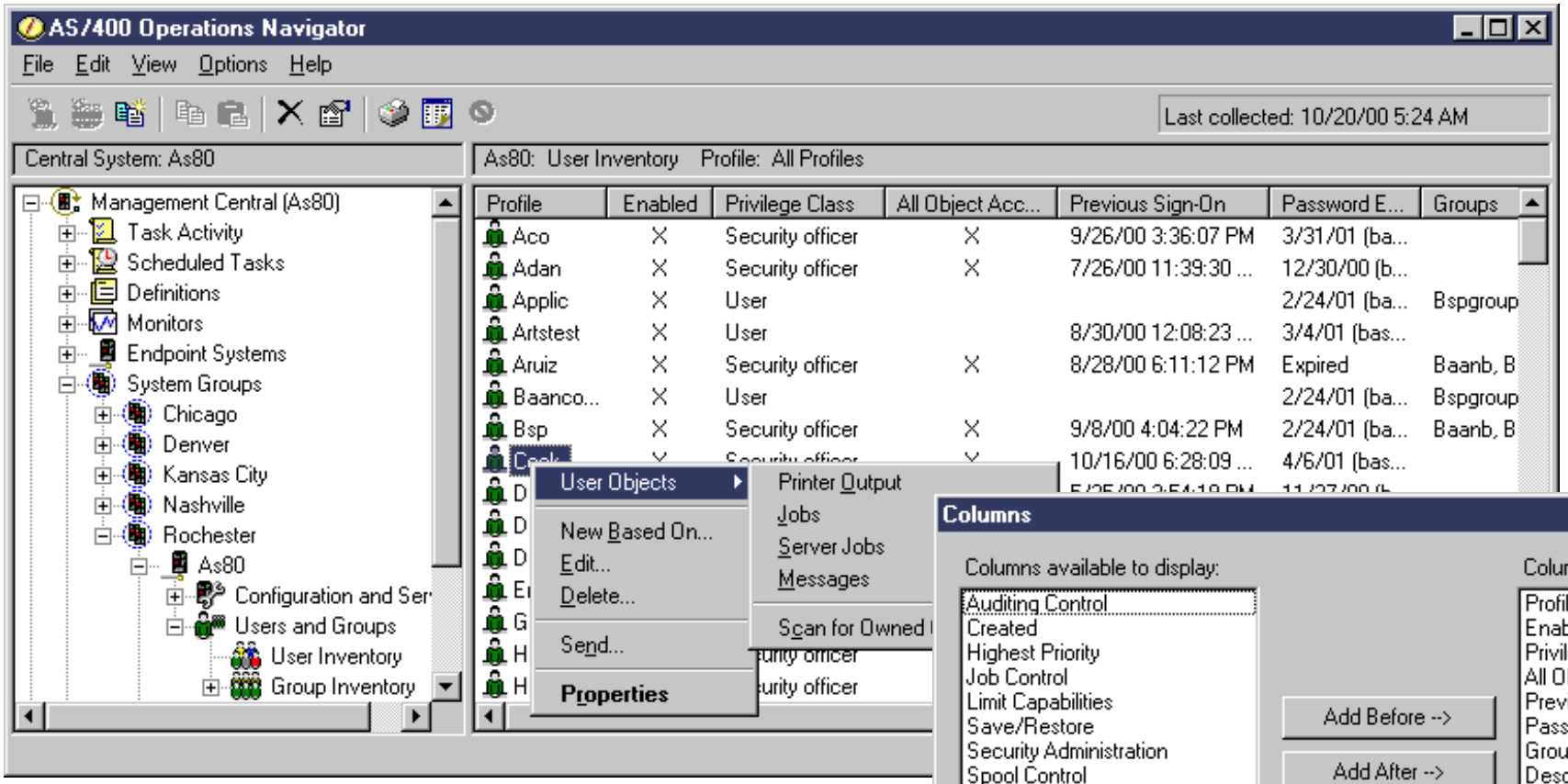
Viewing User Inventory



Powerful:

Sort by column heading

Profile actions

Related jobs, own objects....

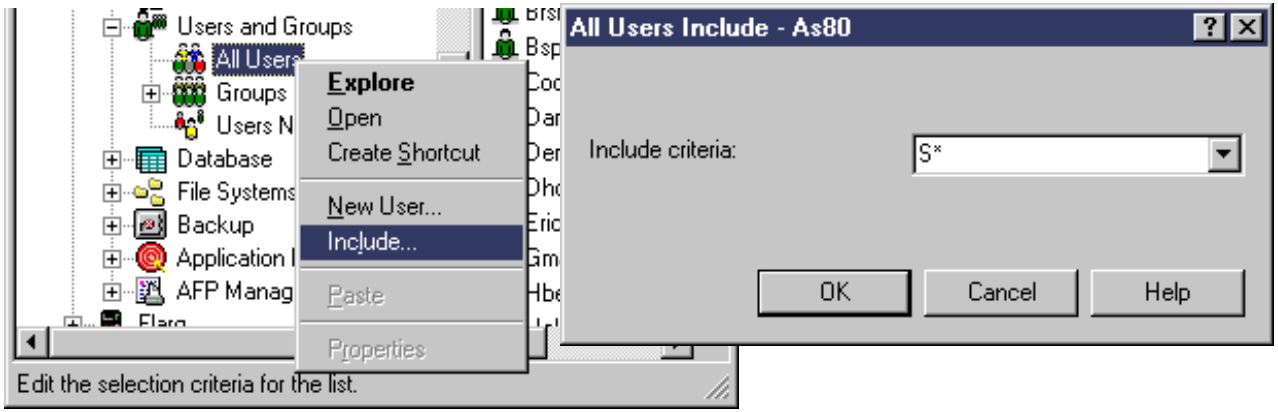
Notes: Viewing User Inventory

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.

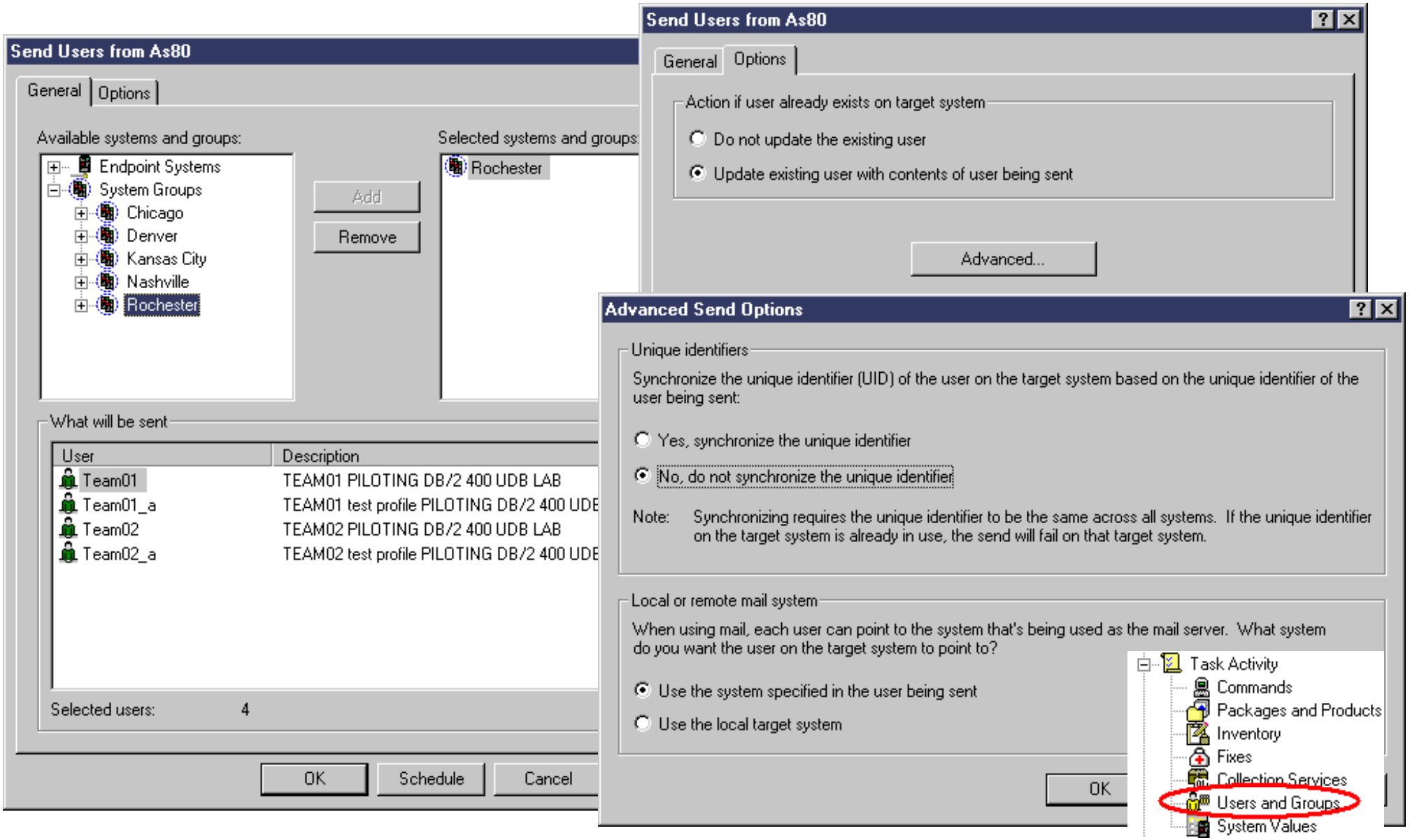
Note: The Edit function is only available for users and groups in Management Central lists. To change a user or group on a single system under My Connections, select Properties as in releases prior to V5R1. The Properties function for users and groups in Management Central lists is for viewing purposes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



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 the be 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.

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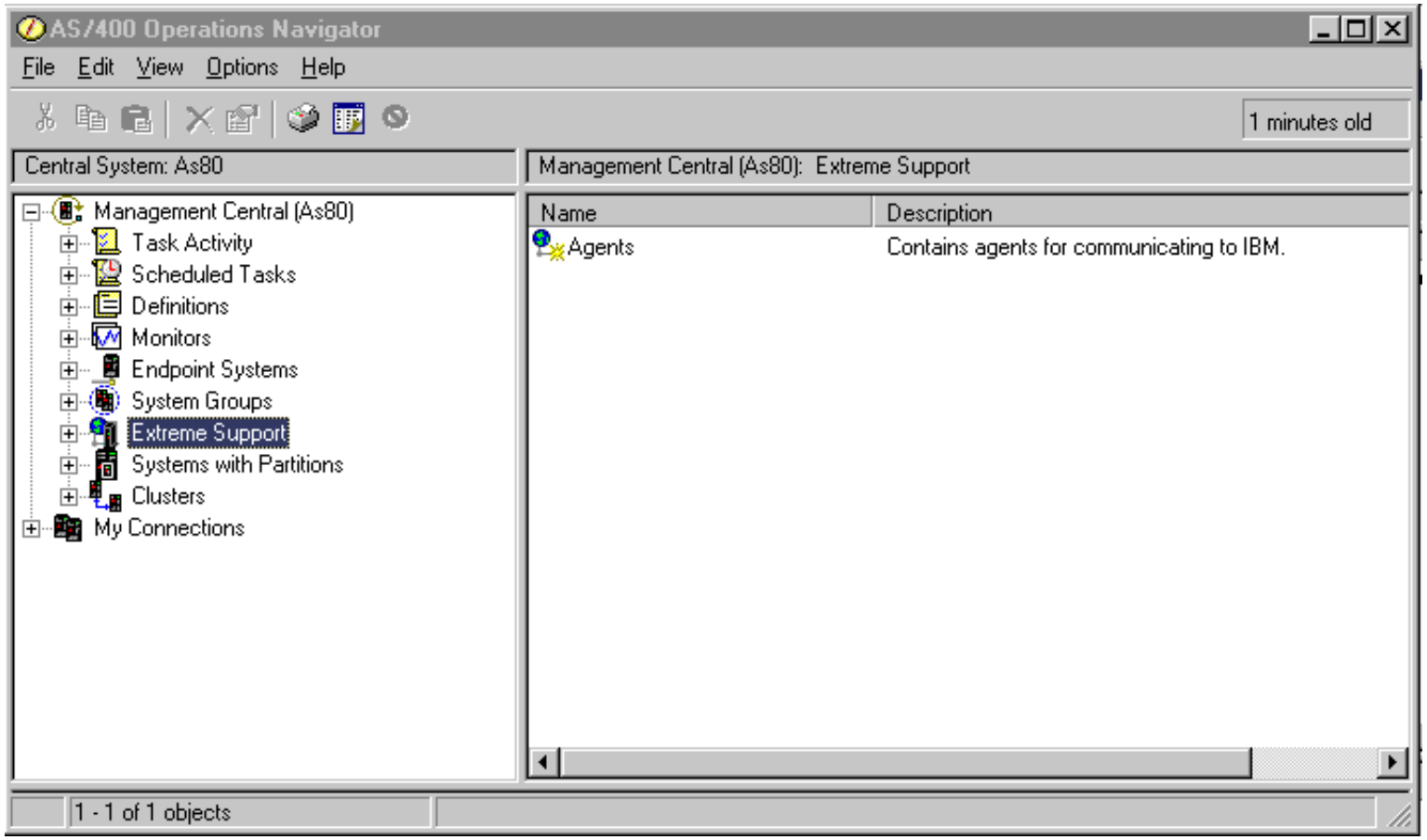
Management Central Extreme Support

Management Central Extreme Support



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Notes: Management Central Extreme Support

Management Central Extreme Support

Management Central Extreme Support (V5R1) is a merging of technologies involving Management Cental'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

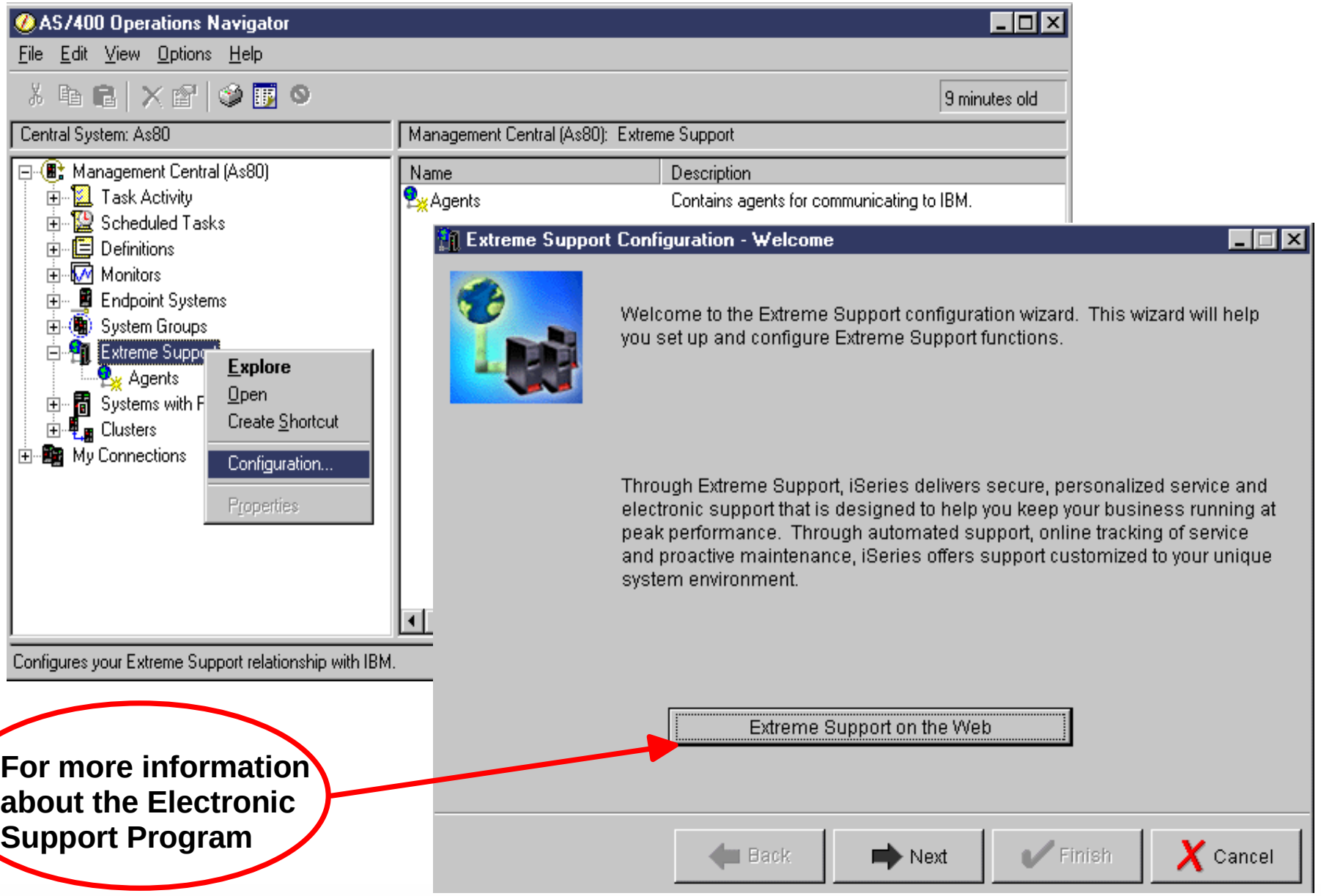
Configure your connection to IBM with the Universal Connection Wizard

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



For more information about the Electronic Support Program

Notes: Configuration

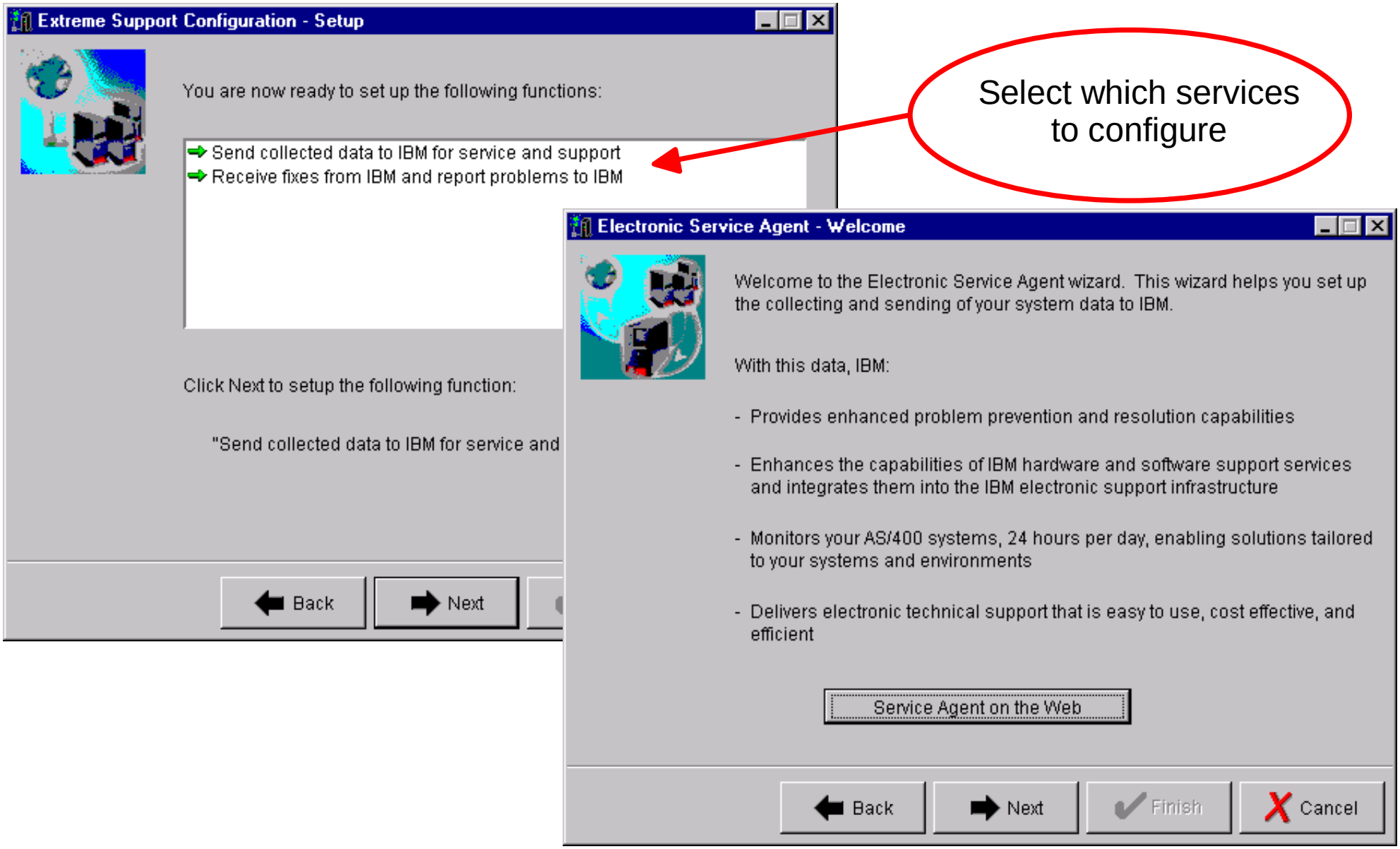
Extreme Support Configuration Wizard

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



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Notes: Electronic Service Agent

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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