



@server®

# @server iSeries

## iSeries Navigator: Overview

Greg Hintermeister  
greg@us.ibm.com

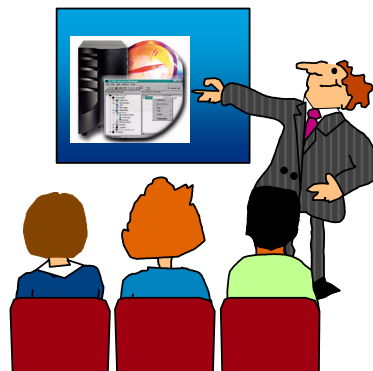
© Copyright IBM Corporation, 2005. All Rights Reserved.  
This publication may refer to products that are not currently available in your country. IBM makes no commitment to make available any products referred to herein.

**ON DEMAND BUSINESS™**



@server®

- Concepts
- Getting Started
- Power Techniques
- Features
  - Using Single Connections
  - Centrally Managing your iSeries Systems
  - New for V5R3
- More information



© 2005 IBM Corporation  
**iSeries**

PAGE 2

**ON DEMAND BUSINESS™**



# Basic Concepts

© 2005 IBM Corporation

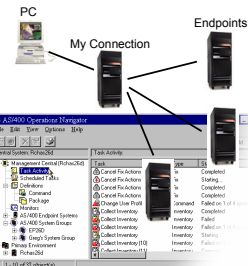
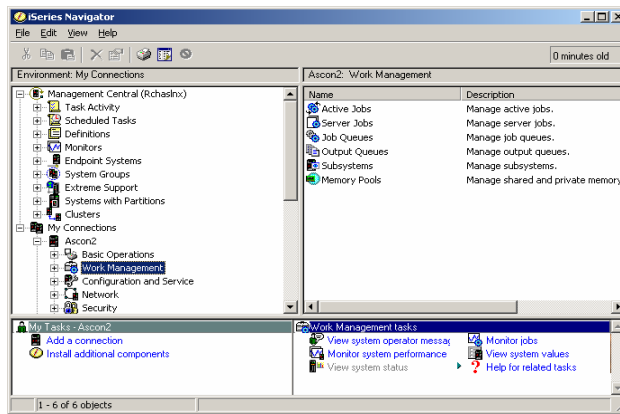


PAGE 3



# Our Goals

- Modernize the user interface
- Leverage the latest user interface technology
- Easy administration across multiple systems



Visit the iSeries Navigator web site!  
[www.ibm.com/eserver/iseries/navigator](http://www.ibm.com/eserver/iseries/navigator)

© 2005 IBM Corporation

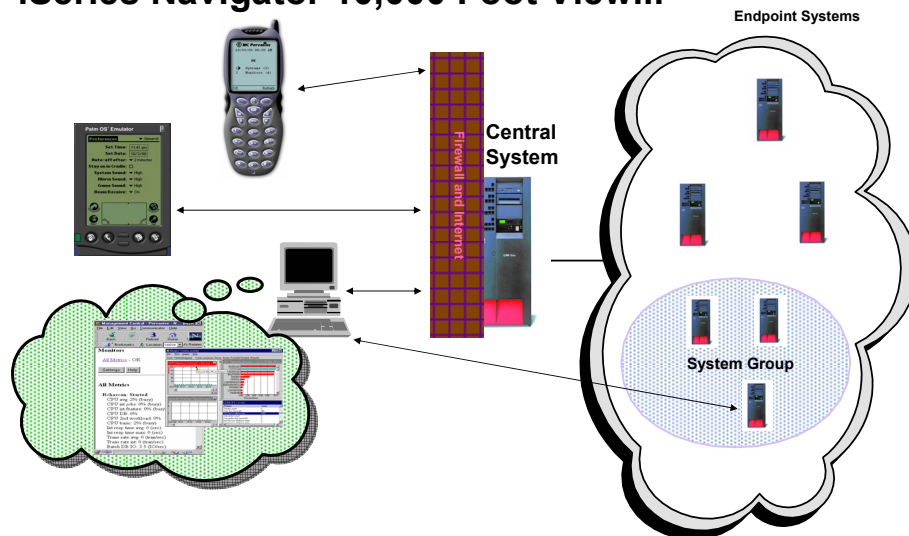


PAGE 4





## iSeries Navigator 10,000 Foot View...



© 2005 IBM Corporation

**iSeries**

PAGE 5

**ON DEMAND BUSINESS™**



## Notes: 10,000 Foot View...

Management Central is a suite of systems management functions that began to appear with OS/400 Version 4 Release 3 (V4R3). It provided management capabilities built into base OS/400 and integrated into Operations Navigator at no additional cost. The first functions included system monitors and system groups. In V4R4, it was greatly enhanced to enable long running, batch, scheduled or unattended operations for commands, packages, fix management and inventory. V4R5 ushered in the wireless and web enablement with Pervasive functions which included system availability and system monitors. In V5R1 it was expanded with enhancements to existing applications along with new applications. The new applications included functions for user administration, system value management, job monitoring, message monitoring and historical performance graphical interface. The pervasive devices were also expanded to include Commands, Job monitors and Message monitors.

In V5R2, iSeries Navigator expanded the Management Central functions by adding file monitors, B2B activity monitors, synchronize date and time, and other inventory enhancements.

Management Central uses the basic system operations on each of the endpoints (e.g., APIs for performance monitoring, system commands, etc.). Management Central does not place any limitation on the number of endpoint systems used by its functions. There will be practical limits determined by your environment, networks, management policies, etc. In addition, there is no limit to the number of endpoint systems that can be in a group.

Endpoints do not need to be at the same level as the Central System, nor does the Central System need to be at the same level as the Client, HOWEVER, Management Central is only as good as the client and Central System combination.

© 2005 IBM Corporation

**iSeries**

PAGE 6

**ON DEMAND BUSINESS™**



## Notes: Management Central Terms

### Management Central basic terms:

- **PC** provides the graphical interface (i.e., view) both input and output of management activities.
- **Central System** connects to other systems (called endpoints).
- **Endpoints** are just systems which your PC does not need to be in direct contact with in order to "manage"
- **Source System** is from which objects, files and information are sent within Management Central's send tasks. The Source System is the source of the objects, files and information being sent.
- **Model System** has all and only desired fixes installed or has all system values set properly for the targets.
- **Target Systems** is where objects, files and information are sent within Management Central's send tasks. The Target Systems are the destinations of the objects, files and information being sent. Target Systems are often grouped into System Groups.
- **Inventory** contains records which contain information about server hardware, software, fixes, users and groups, system values, network attributes, contact information, service attributes, as well as other custom inventory.
- **Fixes** are PTFs.
- **Definitions** are templates used to reuse and create commonly used items.

© 2005 IBM Corporation

**iSeries**

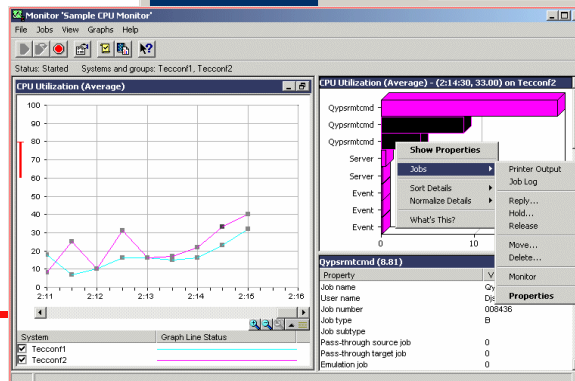
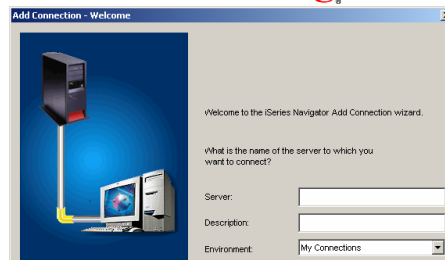
PAGE 7

**ON DEMAND BUSINESS™**



## iSeries Navigator Adds Ease of Use

- Leverage your user's Windows skills
  - Explorer view, properties sheets, context menus, drag and drop
- Reduce need to learn command interface
  - Easier to understand terminology/concepts
  - Graphics - not just icons
  - Wizards
  - High degree of function integration, not standalone utilities



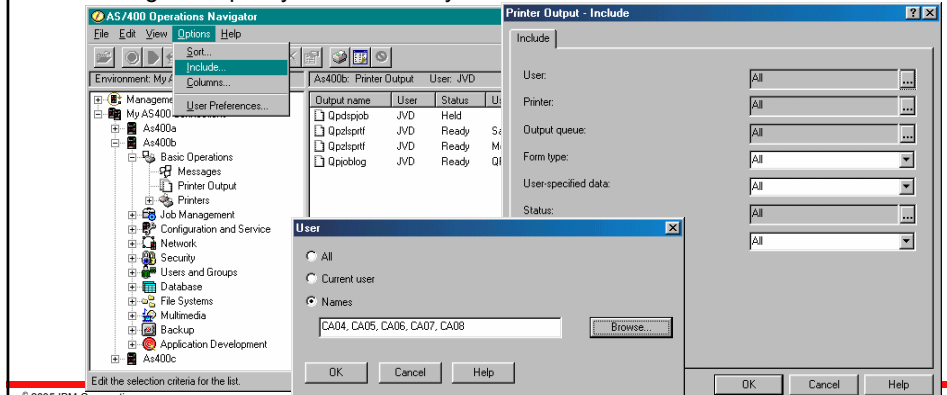
© 2005 IBM Corporation

**iSeries**



## iSeries Navigator Makes Users Productive

- Lists of objects give rich information
- Customized views (Include, Columns, Sort)
- Desktop shortcuts to frequently used functions
- AutoRefresh, list print, find in list, drag and drop capability
- Manage multiple systems as easily as one



© 2005 IBM Corporation

**iSeries**

PAGE 9

**ON DEMAND BUSINESS™**



## Getting Started

© 2005 IBM Corporation

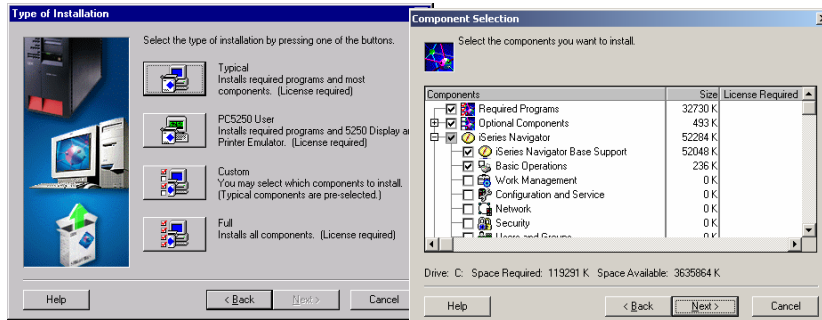
**iSeries**

PAGE 10

**ON DEMAND BUSINESS™**

## Installation

- iSeries Navigator components are selectively installable
- Basic Operations installed with iSeries Access for Windows Typical Install (Messages, Printer output, Printers)
- Additional components installed using iSeries Access for Windows Custom Install or Selective Setup after install



## Using the Main Window

### Function tree

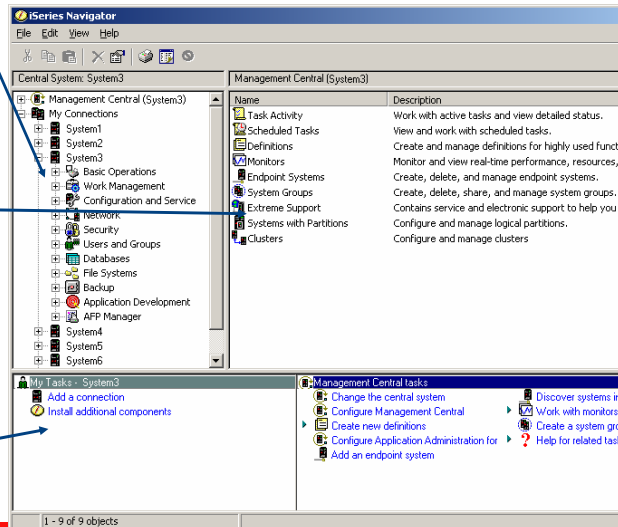
- Folders which can be expanded
  - Click the plus or double click the icon or folder
- Single click to select a folder to see its contents in the right pane

### Details pane

- Contains subfolders or objects
- Defaults to "details" view with columns of additional information
- Can be set to show only large, small icons, or icon list view

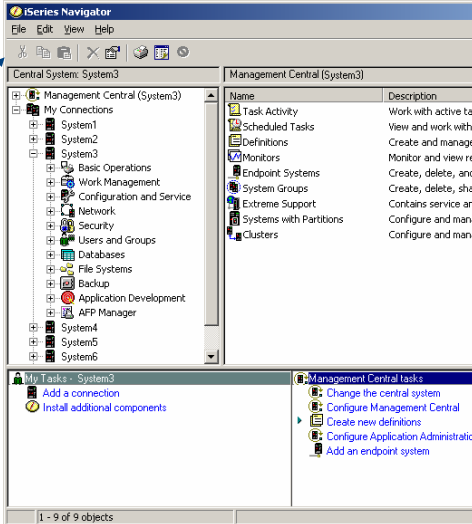
### Taskpad

- Contains common tasks related to the selected folder
- Can be customized to keep your favorite tasks available at all times!



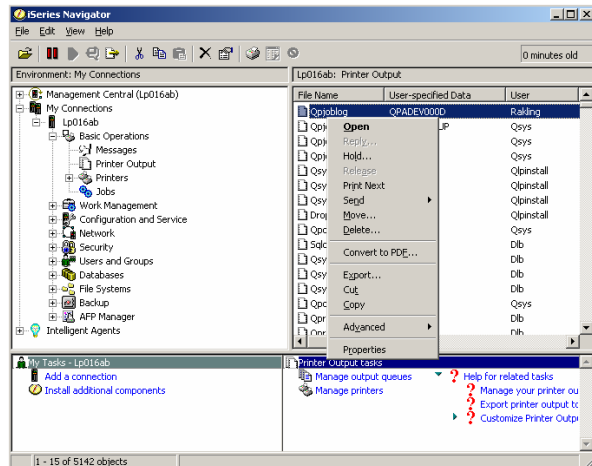
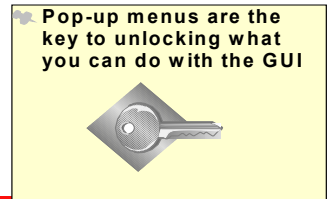
## Using the Main Window

- Pull-down menu system
  - Contains all menu options that pertain to the selected object
  - Contains global menu options that control iSeries Navigator
- Toolbar
  - Fast path to commonly used menu options for the selected object
  - Some items will change depending on the type of object selected
  - Placing mouse pointer over a toolbar button produces a "tool tip" with its name
  - Menu choices and toolbar buttons will be disabled ("grayed out") depending on the state of the object selected
    - E.g., the "Hold" menu choice and toolbar button are disabled when a printer is already held



## Using the Main Window

- Pop-up menus
  - A subset of the pull down menus
  - Right-click on any object in the tree or details pane for the context, or pop-up menu
  - Only contains menu choices for the specific object in its current state
  - Pop-up menu for an object shows what actions you can take on that object



## Using the Main Window

Client Access Connection Environment that's in use or Management Central central system

Data "freshness" indicator

Folder being listed and any options used for "include"

Number of objects in right pane / descriptions of menu choices

- Information / Status Areas
  - Keeps track of what you're looking at
  - Provide quick help
  - Show how old information is
    - How long since the data was retrieved

© 2005 IBM Corporation

**iSeries** PAGE 15 **ON DEMAND BUSINESS™**

## Performance Issues

Performance improves during the course of a session

- More caching, more things loaded in memory

Exceed PC size recommendations provided by Client Access, especially for memory

- Use at least a 400-500 mHz CPU, 128 MB memory; more is better

Keep up to date with Client Access service packs

Use include/filtering where possible to subset a large list, especially in the File Systems folder

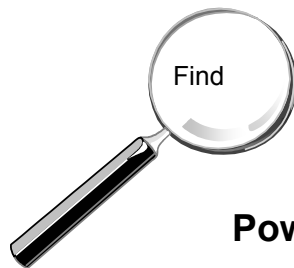
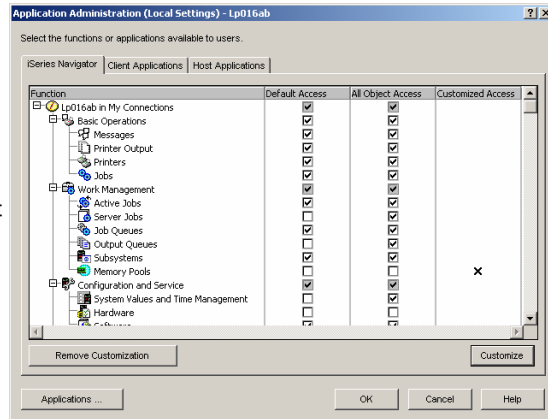
Read the iSeries Navigator web site for:

- Information APARs
- Performance Tips

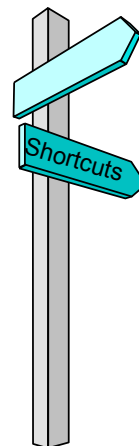
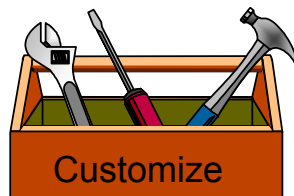
[www.ibm.com/eserver/iseries/navigator/perftips.html](http://www.ibm.com/eserver/iseries/navigator/perftips.html)

## Application Administration

- What does it do?
  - Controls access to iSeries Navigator functions
  - Similar to limited capability for PC5250 interfaces
- When do you use it?
  - When you want to control what functions users see in iSeries Navigator
- How do you use it?
  - iSeries Navigator interface for system defaults and individual users



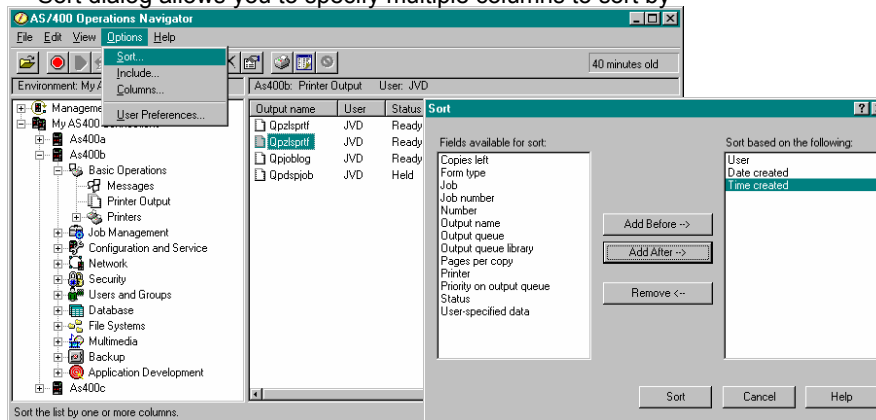
## Power Techniques



## Customizing

### Sort

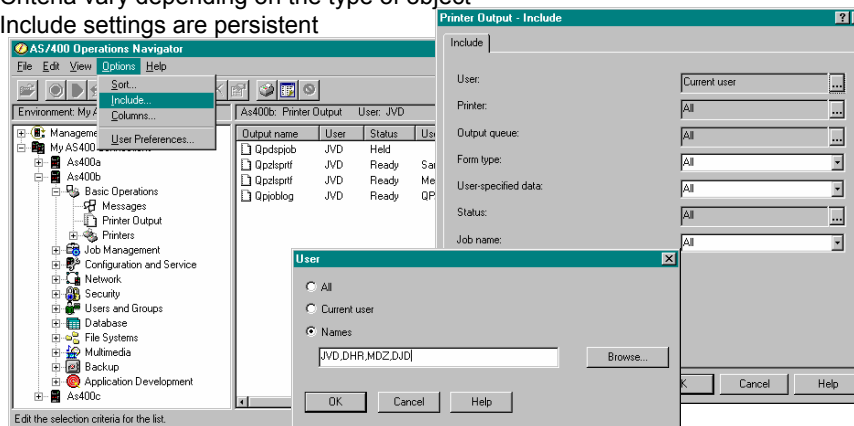
- Click sorting by clicking on the column heading
- Sort dialog allows you to specify multiple columns to sort by



## Customizing

### Include

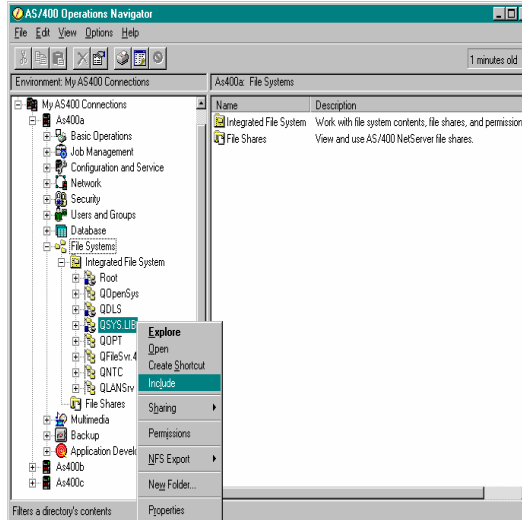
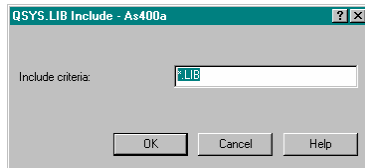
- Include allows you to select just the data you want to see in the list
- Criteria vary depending on the type of object
- Include settings are persistent



## Customizing

### File System Folder - Include

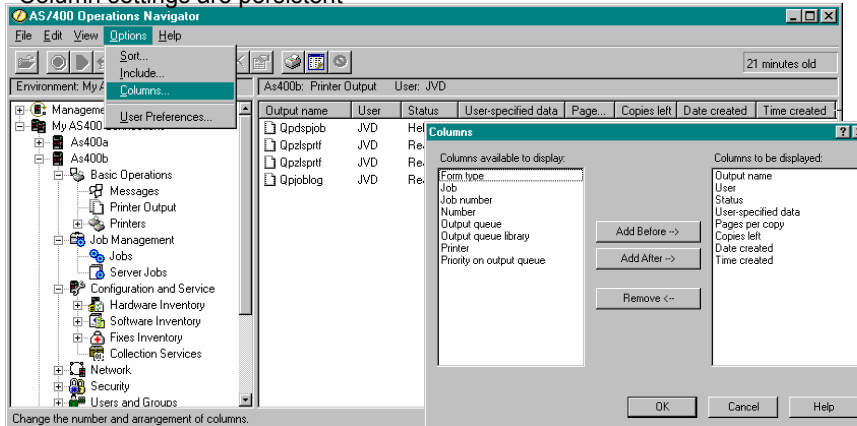
- Include option on Integrated File System folder allows you to enter file criteria to control the contents of the list
- Affects contents of details pane and folder tree (if not expanded)
- Can be used for all file systems



## Customizing

### Columns

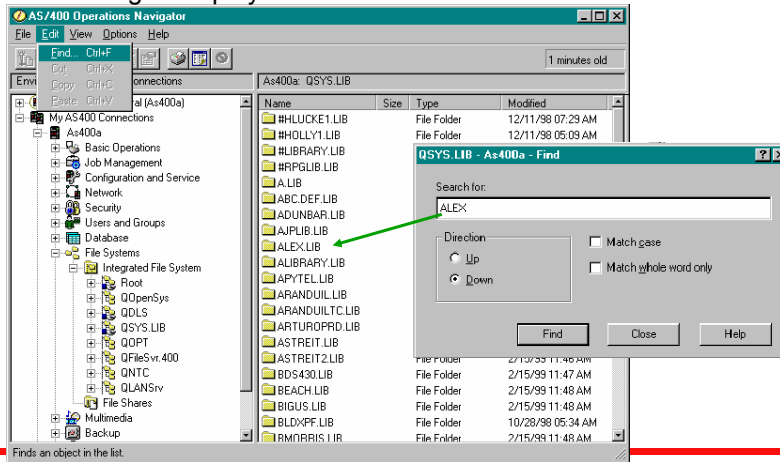
- Select and order content
- Column settings are persistent



## Finding

### Detail Pane

- Locate text string in displayed columns



© 2005 IBM Corporation

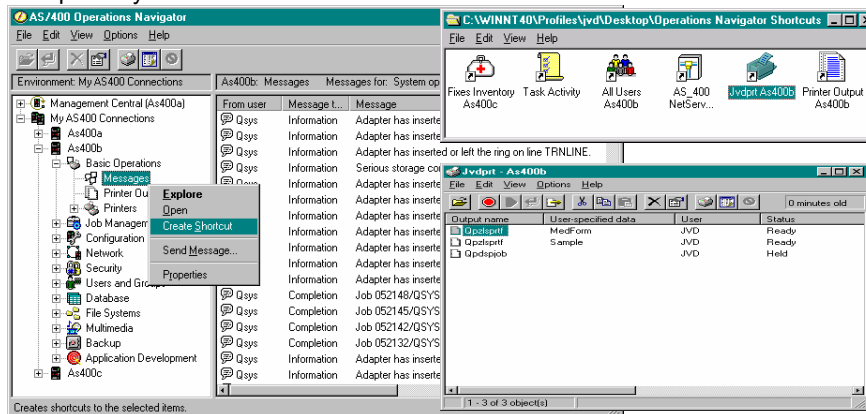
**iSeries**

PAGE 23

**ON DEMAND BUSINESS™**

## Shortcuts

- Quick access to a list of objects
- Drag and drop a folder to the desktop
- Separately customizable via Include and Columns



© 2005 IBM Corporation

**iSeries**

PAGE 24

**ON DEMAND BUSINESS™**

## Drag and Drop

### User Profiles

- ... to other iSeries and system groups
- ... to groups

### Group Profiles

- ... to other iSeries and system groups

### Integrated files system

- ... support OS/400 library system
- ... copy/move to another iSeries
- ... copy/move to pc
- ... send to a system group

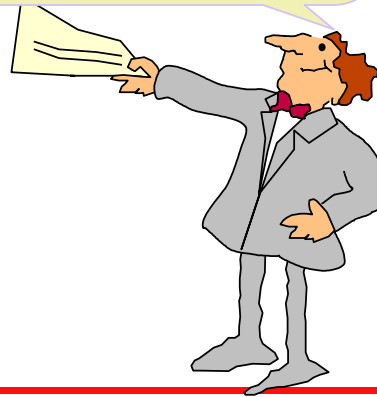
### Database tables

- ... to other libraries
- ... between systems

### Database view

- ... include tables in a joined view
- ... indicate columns to join
- ... add columns in the view

But there is MORE!!!



## Drag and Drop

### Endpoint Systems

- ... to and from system groups
- ... to System Groups container to create group

### Definitions

- ... user definition to create
- ... package definition to send
- ... command definition to run
- ... product definition to send and install

### Products

- ... to system group to send and install

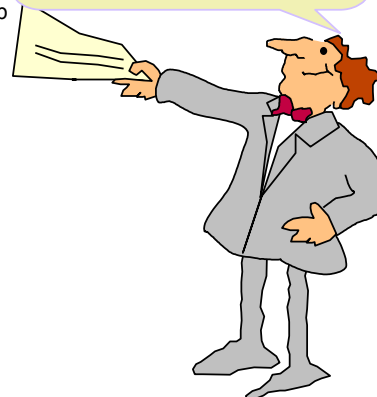
### Jobs

- ... move jobs between job queues
- ... move jobs in position within a job queue

### Fixes and Fix Groups

- ... to send and send and install

Here's More!!!





## Basic Operations

### Messages\*

- Send
- Reply

### Printer Output

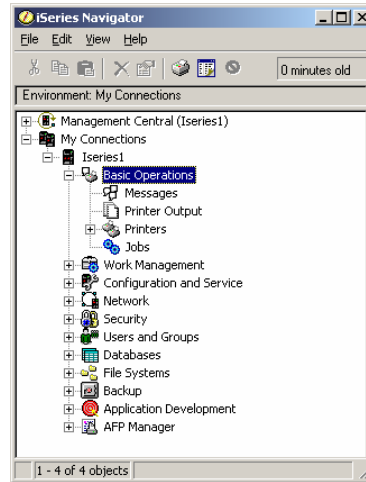
- View
- Manage (hold, release, delete...)

### Printers

- Change
- Manage (start, reply to message...)

### Jobs

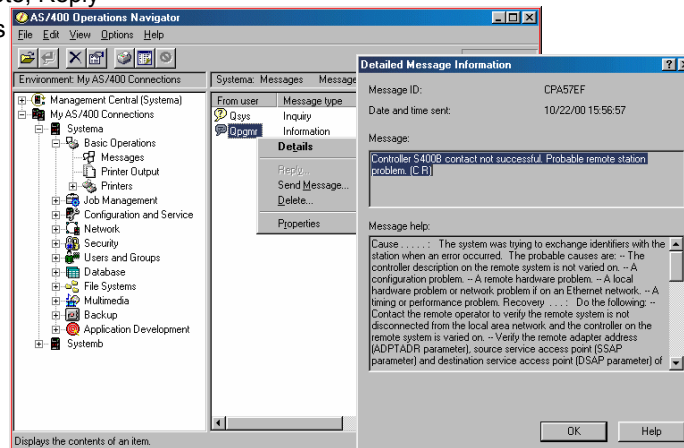
- Manage and View (output, joblog...)



## Messages

### Basic Operations

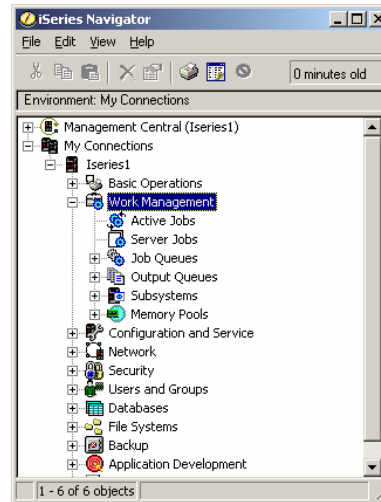
- View details, Delete, Reply
- Display properties



## Work Management

*Manage Work Through the System*

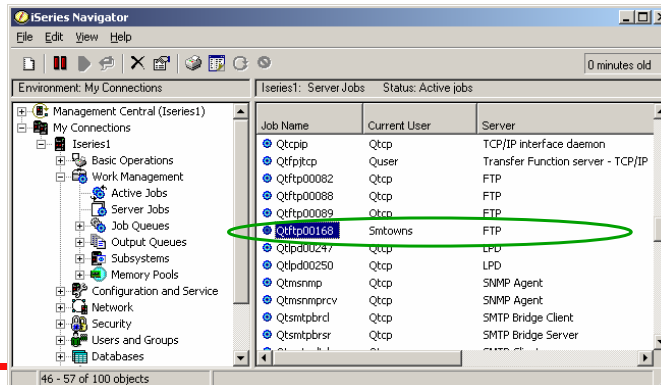
- The WRKACTJOB container
  - Customizable unlike the green screen
- Server jobs shows user\*
  - Not available on the green screen
- Manage the jobs still on job queues
  - Change order or queue
- View the output of jobs
- Work with jobs in a subsystem
- Manage the system's memory pools



## Server Jobs

*Work Management*

- Manage jobs used by server name
- Shows which user is currently using the server
- Server jobs have the same menu options as user jobs



## Configuration and Service

View system information

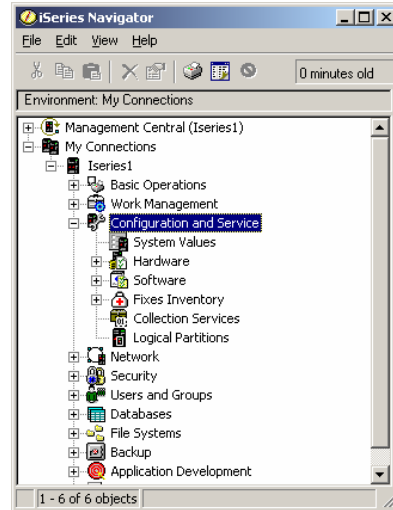
- System Values
- Hardware\*
- Software
- Fixes

Inventory

- ... from Central System
- ... search enabled

Access to

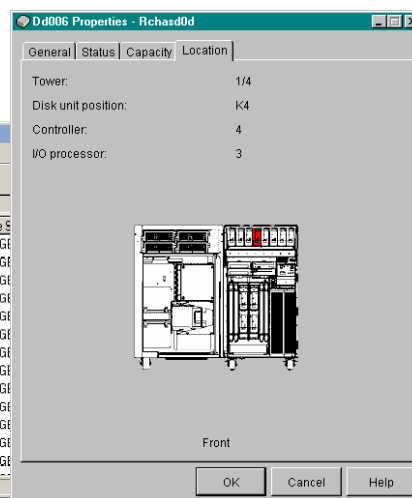
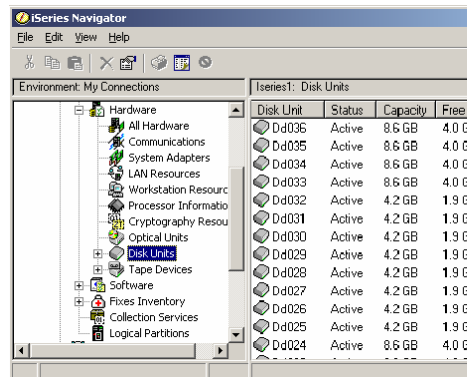
- ... Disk units
- ... Graph History\*



## Disk Units

*Configuration and Service*

- One place for all DASD info and tasks
- Location information via pictures!





## Graph History

Configuration and Service

The screenshot displays the AS/400 Operations Navigator interface. On the left, a tree view shows the system hierarchy under 'My Connections'. The main pane shows a table of 'Collection Services' with columns for 'Collection Name' and 'Status'. A 'Graph History' dialog box is open, showing configuration options for a graph: Report dates (Custom), Metric (CPU Utilization (Average)), Graph interval (15 minutes), and Maximum graphing value (100 percent busy). Below the dialog is a line graph titled 'CPU Utilization (Average) : System1' showing data points over time from 9:00 PM to 10:30 PM.

© 2005 IBM Corporation



PAGE 35



## Network

Setup TCP/IP interfaces, routes...

View and Manager Servers

- TCP/IP, Client Access and DNS
- Create own too!!

Manage Windows users

Enterprise Identity Mapping

Configure your system for the Web

- Such as HTTP...

The screenshot shows the iSeries Navigator interface with the 'Network' folder selected in the left-hand tree view. The tree view includes categories like 'Basic Operations', 'Work Management', 'Configuration and Service', 'Network', 'TCP/IP Configuration', 'Remote Access Services', 'Servers', 'IP Policies', 'Windows Administration', 'Enterprise Identity Mapping', 'Internet', 'IBM Network Stations', 'Security', 'Users and Groups', 'Databases', and 'File Systems'. The status bar at the bottom indicates '1 - 8 of 8 objects'.

© 2005 IBM Corporation



PAGE 36

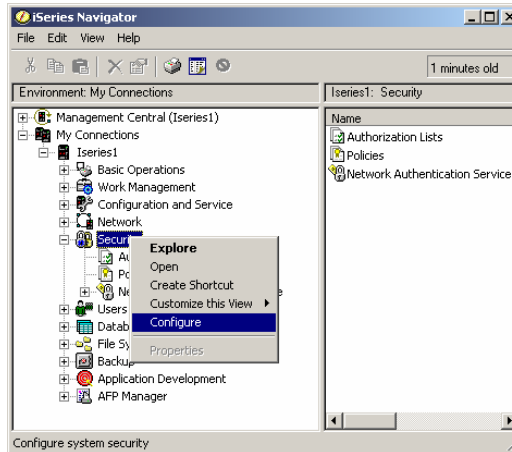


## Security

Secure objects with authorization lists

### Security Wizard!!!!

- Advisor for system values
- Enabled with undo option
- Creates reports for review
- Access from Security Folder



## Users and Groups

### Users

- Create, Change, Delete, Copy
- Edit and Send
- Add users to groups

### Group Profiles

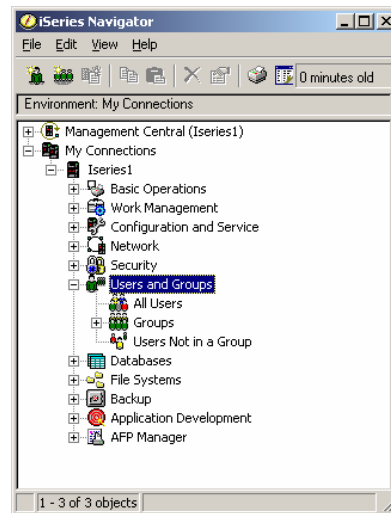
- Create, Change, Delete, Copy

### User Definitions

### Scheduled Tasks

### Inventory

- Search on user attributes



## Databases

Filter search library

Manage database objects

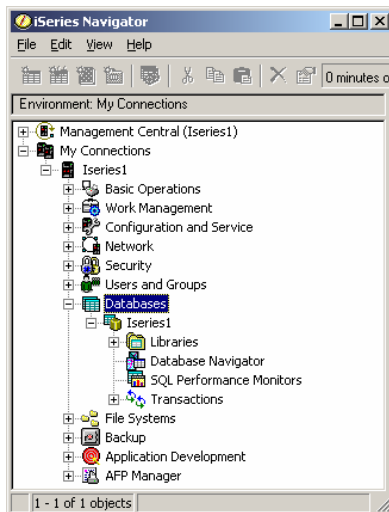
- Tables, Views, etc...

Run SQL Scripts\*

View graphical relationships

View graphical execution flow\*

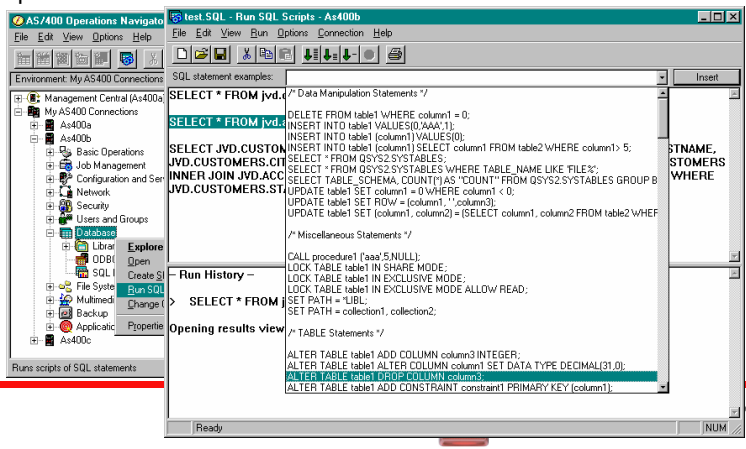
- Find the bottlenecks!!!



## Run SQL Scripts

*Database*

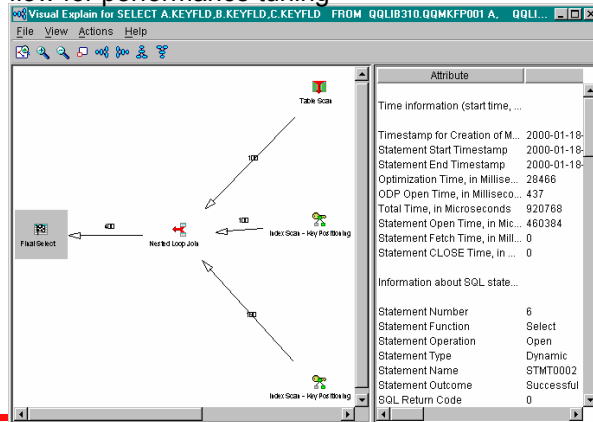
- Create, save, run SQL Scripts
  - Document editor interface associated to files of .SQL
  - Run all, selected, or single statements
  - SQL examples can be inserted and modified



## Visual Explain/Database Navigator

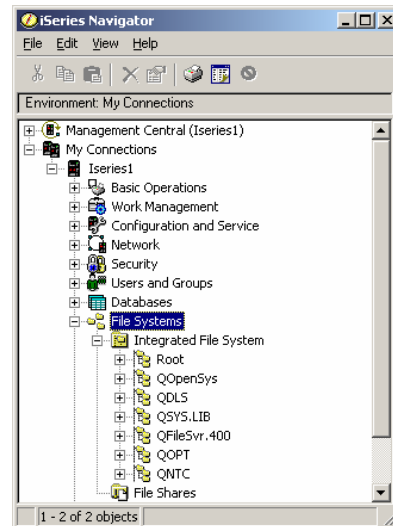
### Database

- Pictorial view of query execution
- Understand execution flow for performance tuning
- Mouse over an icon to get brief info about that step
- Icons represent steps during SQL execution
- Details pane on the right provides detailed info for a selected step



## File Systems

- Cut, Copy, Paste or Drag/Drop
  - ... between systems
  - ... to the PC desktop
  - ... send to multiple systems
- Create, Rename and Delete
  - ... folders
  - ... objects
- Integrated editor for Text
  - Enable through File Systems Properties
- And MORE!!!!

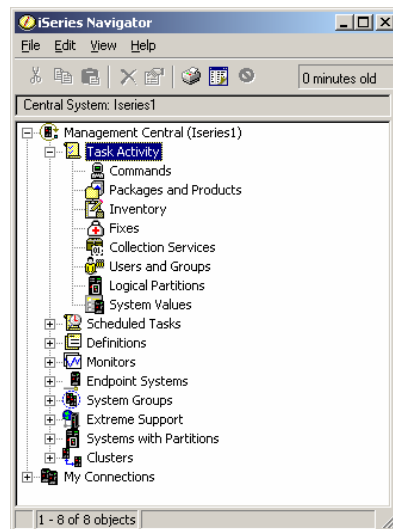


## Managing Multiple Systems

## Task Activity

*Management Central*

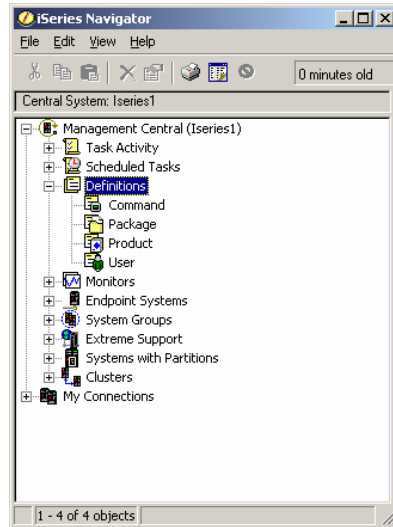
- Run Commands
- Distribute software and files
- Obtain inventory to display, search, export
- Simplify service through fixes and fix groups
- Collect performance information
- Manage user and groups
- Edit system settings
- Scheduling options available



## Definitions

### Management Central

- Do it once and reuse!!!!
- Remember complex commands
- Group objects for distribution
- Make your own products
- Create template for users



## Monitors

Watch your system while away!!!

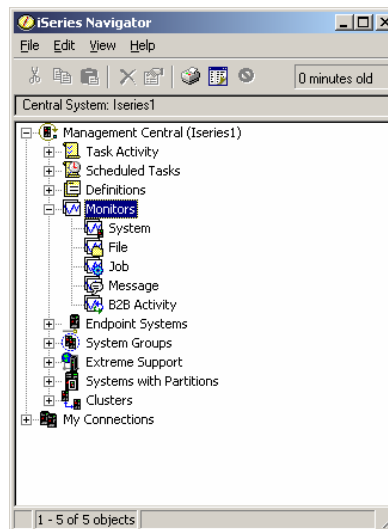
Handle performance issues

Locate troublesome files

Keep control of jobs

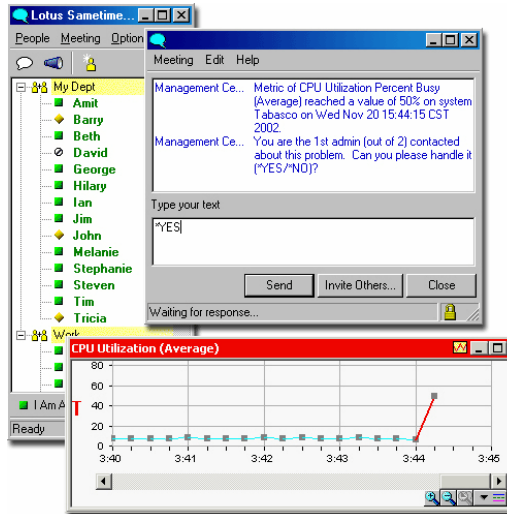
Know immediately about messages

Find bottlenecks with B2B activity





## Lotus Sametime & iSeries Navigator



Improves operator productivity with instant message response to system events

Integrates i5/OS V5R3 monitoring with Sametime instant messaging

Assures response with automatic event delegation through hierarchy of designated operators



[www.alphaworks.ibm.com/tech/eventmonitor](http://www.alphaworks.ibm.com/tech/eventmonitor)

© 2005 IBM Corporation

**iSeries**

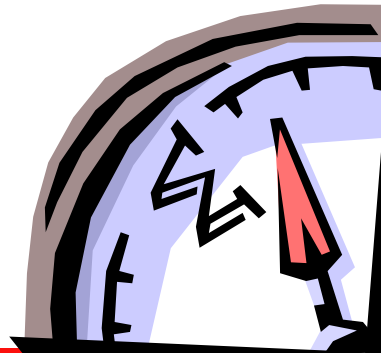
PAGE 47

**ON DEMAND BUSINESS™**



## What's New in V5R3

1. Management Central
2. Configuration and Service
3. Network
4. Databases
5. Integrated File System
6. Intelligent Agents
7. AFP Manager
8. Backup and BRMS
9. Advanced Job Scheduler
10. Usability Enhancements
11. iSeries Navigator tasks from the web



© 2005 IBM Corporation

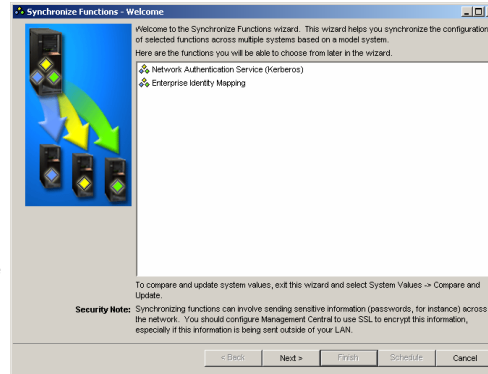
**iSeries**

PAGE 48

**ON DEMAND BUSINESS™**

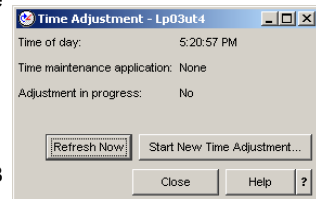
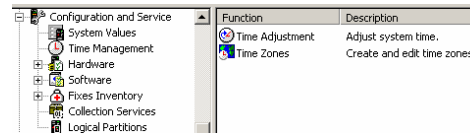
## Management Central

- Synchronize functions
  - Key functions, such as EIM and Network Authentication Service (Kerberos), can be synchronized across a group of endpoint systems.
- New Collection Services categories
  - Two categories were added to the Data to Collect dialog: one for cross partition data and another one for data port services data.
- New System Monitor properties fields
  - Fields related to multipath disk units and remotely mirrored independent auxiliary storage pools were added to these System Monitor metrics: Disk Arm Utilization (Average), Disk Arm Utilization (Maximum), Disk Storage (Average), and Disk Storage (Maximum).
  - New method for calculating CPU utilization in partitions was introduced
- Electronic Service Agent is integrated into the base OS/400 operating system
- Now Highly Available and Scalable



## Configuration and Service

- Additional System Values
  - Auditing, Date and Time, Jobs, Performance, Security, Save and Restore
- Time Management
  - From the Time Management function, you can manage time zones and adjust system time
- Disk Management
  - Configure and manage geographic mirroring for independent disk pools.
  - Print the Graphical View for records and reference.
  - Optimize parity sets for availability.
  - Support Windows disk drive maximum size of 1000 GB
  - Retrieve disk unit logs to gather information about specific disk units.
  - View multi-path disk unit connections from several input/output processors on an iSeries server to a single disk unit in the Enterprise Storage Server.



## Network

Name	Description
Integrated xSeries Servers	Manage Windows Integrated xSeries Servers
Disk Drives	Manage Disk Drives
User Enrollment	Manage Windows User Enrollment

### Windows Administration

- Additional properties
- View information for Windows disk drive volumes
- Support Windows disk drive maximum size of 1000 GB
- Allow enrolled OS/400 users to have a different name on Windows than on OS/400

### Directory Service

- Administer the directory server from one common Web GUI
- The Performance property page allows you to specify cache settings for the server
- New Password property page security enhancements
- The Connect to Directory Server Kerberos authentication
- Search property page allows you to control sorted/paged search results, restricts access to ACL attributes on entries

### SNTP

- Configure an SNTP server to use your iSeries for time synchronization across your network

### iSeries NetServer

- The General > Next Start property page allows you to select both encrypted passwords and Kerberos v5 as the authentication method

### Enterprise Identity Mapping (EIM)

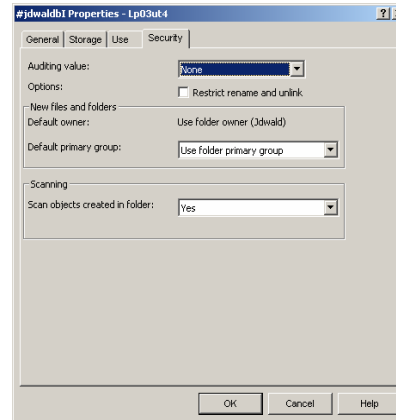
- Work with digital certificates as a type of user identity
- EIM now has mapping policy support for defining many-to-one mappings through policy associations
- EIM now provides the ability to test your EIM mappings

## Databases

- New structure
  - Objects are now organized by container
- Library support supports the SQL object Schema.
  - You can still create simply libraries from the Create Schema dialog.
- Sequence objects.
- Reorganizing tables enhanced to allow stopping and resuming a table reorganization as well as viewing the progress.
- Manage your check pending constraints from iSeries Navigator
- Partitioned tables allows you to more easily manage large amounts of data.
- Materialized query tables speed access to source tables by providing precomputed result sets for specified queries.
- Launch the iSeries Graphical Debugger to debug your SQL statement from Run SQL Scripts.
- View the SQL used to perform a database action

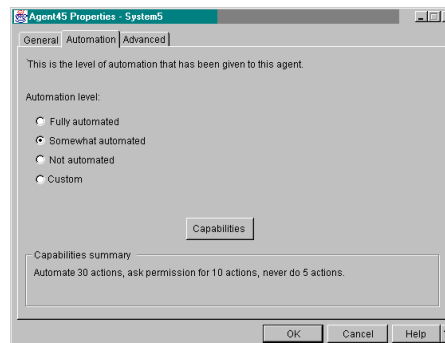
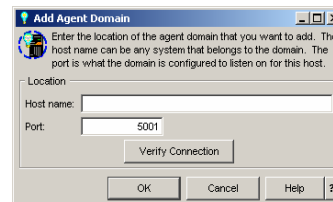
## Integrated File System

- New security page
  - sets scanning settings for objects created in files and folders. Also specify auditing value, change options, user ID, and Primary group ID
- Ability to make objects savable
- Ability to set objects created in a folder to be scanned.
- Restrict rename and unlink
- User Defined File Systems (UDFS) enhancements
  - Setting objects to be scanned
  - Restricting rename and unlink
  - Specify a default file format for UDFS
  - User and group ID settings can now be changed on a mounted UDFS.



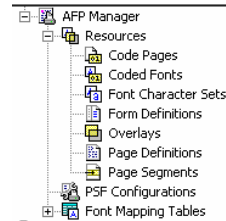
## Intelligent Agents

- Intelligent Agents provides system administrators with an easy way to manage many ABLE (Agent Building and Learning Environment) agents running on different systems.



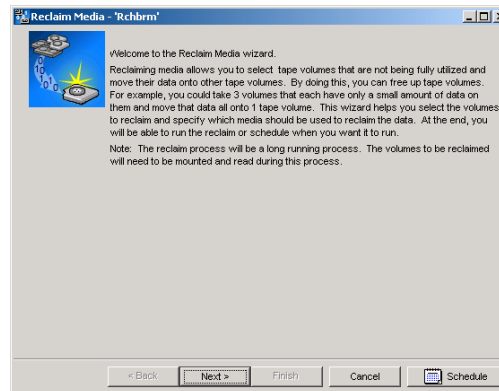
## AFP Manager

- Extended capabilities
  - Intelligent routing lets you specify any combination of stream file, spooled file, or e-mail for the PDF output files.
  - Respool the input file (or a segment of the input file) as AFP for print or fax.
  - Specify a PDF administrator to receive e-mailed failure messages with the PDF file attached for simplified reprocessing
  - Encryption options for the e-mailed PDF
  - PDF mapping objects let you access functions that require a mapping program without having to write a program.



## Backup and BRMS

- Restore printer output and archive objects
- Perform a fully automated backup in BRMS.
- New Global Policy Properties for Maintenance, Retrieval and Network options
- Manage your BRMS devices which include any standalone devices, media libraries, and Tivoli Storage Manager (TSM) servers used by BRMS
- A new Reclaim wizard enables you to reclaim old fragmented tape volumes and make them usable again
- View or save selected BRMS reports in HTML
- Backup policy now allows omits of folders, libraries, and library objects
- Enhanced search of backup history



## Advanced Job Scheduler

- Advanced Job Scheduler for Wireless - Work with Advanced Job Scheduler using a wireless device such as a PDA
- Automatically notify a specified recipient via email, also attach printer output in PDF format to e-mail messages
- New job properties
  - Local data area
  - Command step
  - Create and work with job documentation
- New Advanced Job Scheduler properties
  - Fiscal calendar
  - Data libraries
  - Skip count feature
  - Multiple scheduling environments
  - Skip dependency
  - Monitor jobs not started within time limit
  - Report distribution

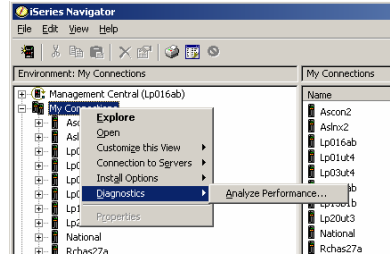
## Other Usability Enhancements

- Choose to automatically open task results window when starting a task
- Connection status dialog for connecting to the central system
- Ability to edit IP address of endpoint system
- Auto reset your file and message monitors after a command has been run
- Exporting inventory to a new format type to support Unicode
- Performance advisor designed to help determine why you're experiencing slow performance (Detailed next page)
- More complete search results when searching for users across systems
- Copy from Media enhancement allowing concurrent copying from different systems
- Printer Output and Messages folder have been overhauled to include many usability enhancements
- TCP/IP Enhancements
  - Enhancements to SNMP & SMTP server support
  - Addition of CIMOM server support
  - Addition of significant new Quality of Service (QoS) function
  - eSupport connectivity enhancements (for setting up connection to IBM electronic support)



## Performance Advisor

- Examines your iSeries Navigator environment and makes recommendations of how your performance may be improved
- Checks the following areas
  - Your PC
  - Your Network
  - Your iSeries Environment



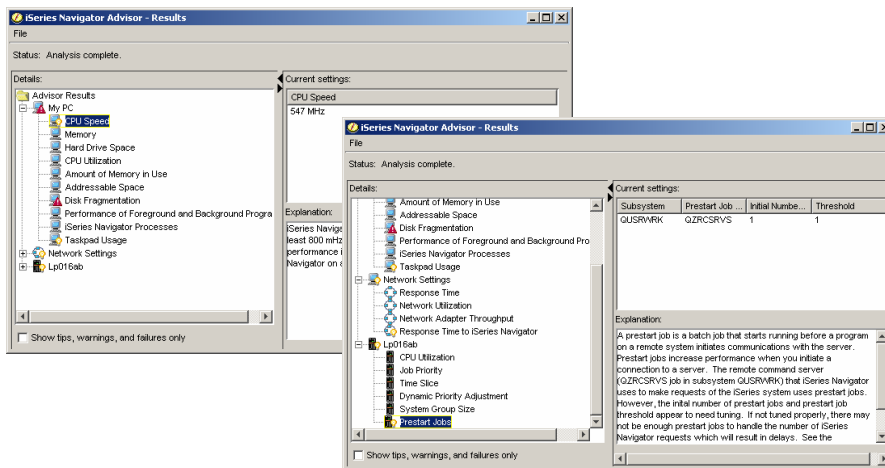
© 2005 IBM Corporation



PAGE 59



## Performance Advisor



© 2005 IBM Corporation

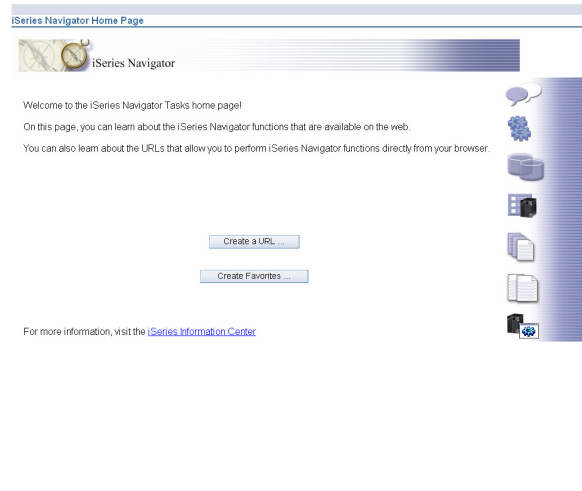


PAGE 60



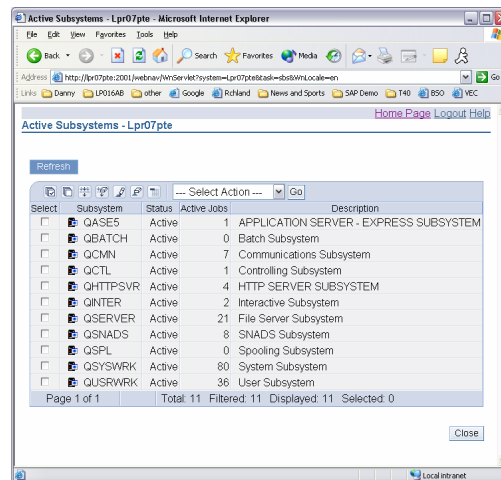
## iSeries Navigator Tasks from the Web

- Access core systems management tasks from your browser
  - Printer output
  - Jobs
  - Messages
  - Work Management
  - System Values
  - Database
- Access multiple systems through one iSeries from a web browser
- Embed these tasks into your Web applications



## Tasks from the Web

- Java servlet application
- Runs same binaries as iSeries Navigator
- Different rendering technology applied
- Straight-forward configuration and setup





## Available Tasks from the Web in V5R3

### Basic Operations

- Send a message
- System operator messages
- Messages
- Printer Output
- User Jobs

### Work Management

- Output Queues
- Hold a job
- Release a job
- Delete a job
- Display job properties
- Move a job
- Display the job log for a job
- Display the call stack for a job
- Display the library list for a job
- Display the locked objects for a job
- Display the open files for a job
- Display the threads for a job
- Display the performance statistics for a job
- Work with a job
- Active Jobs
- Server Jobs
- Active Subsystems

### Configuration and Service

- System Values
- Time Management

### Database

- Database - Create Alias
- Database - Create Index
- Database - Create Schema
- Database - Create Sequence
- Database - Create Table
- Database - Create Distinct Type
- Database - Select Schema
- Database - Aliases
- Database - All Objects
- Database - Constraints
- Database - Manage Constraints
- Database - Functions
- Database - Indexes
- Database - Journals
- Database - Journal Receivers
- Database - SQL Packages
- Database - SQL Procedures
- Database - Sequences
- Database - Tables
- Database - Table Partitions
- Database - Triggers
- Database - Distinct Types
- Database - Views

© 2005 IBM Corporation

**iSeries**

PAGE 63

**ON DEMAND BUSINESS™**



## Where to Get More Information

### iSeries Navigator Web Site

- [www.ibm.com/eserver/series/navigator](http://www.ibm.com/eserver/series/navigator)
  - Articles
  - Presentations
  - Demos
  - Redbooks
  - FAQs
  - Information APARs
  - Performance Tips
  - And more!

### Information Center

- [www.ibm.com/eserver/series/infocenter](http://www.ibm.com/eserver/series/infocenter)

© 2005 IBM Corporation

**iSeries**

PAGE 64

**ON DEMAND BUSINESS™**



## What We Covered

Concepts

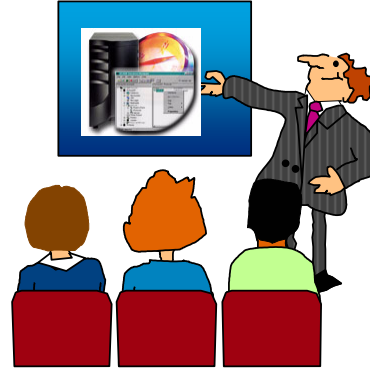
Getting Started

Power Techniques

Features

- Using Single Connections
- Centrally Managing your iSeries Systems
- New for V5R3

More information



© 2005 IBM Corporation

**iSeries**

PAGE 65

**ON DEMAND BUSINESS™**



## Trademarks and Disclaimers

©IBM Corporation 1994-2005. All rights reserved.

References in this document to IBM products or services do not imply that IBM intends to make them available in every country.

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

AS/400	e-business on demand	OS/400
AS/400e	IBM	i5/OS
eServer	IBM (logo)	
	iSeries	

Rational is a trademark of International Business Machines Corporation and Rational Software Corporation in the United States, other countries, or both.

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Intel, Intel Inside (logos), MMX and Pentium are trademarks of Intel Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

SET and the SET Logo are trademarks owned by SET Secure Electronic Transaction LLC.

Other company, product or service names may be trademarks or service marks of others.

Information is provided "AS IS" without warranty of any kind.

All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics may vary by customer.

Information concerning non-IBM products was obtained from a supplier of these products, published announcement material, or other publicly available sources and does not constitute an endorsement of such products by IBM. Sources for non-IBM list prices and performance numbers are taken from publicly available information, including vendor announcements and vendor worldwide homepages. IBM has not tested these products and cannot confirm the accuracy of performance, capability, or any other claims related to non-IBM products. Questions on the capability of non-IBM products should be addressed to the supplier of those products.

All statements regarding IBM future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. Contact your local IBM office or IBM authorized reseller for the full text of the specific Statement of Direction.

Some information addresses anticipated future capabilities. Such information is not intended as a definitive statement of a commitment to specific levels of performance, function or delivery schedules with respect to any future products. Such commitments are only made in IBM product announcements. The information is presented here to communicate IBM's current investment and development activities as a good faith effort to help with our customers' future planning.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput or performance that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput or performance improvements equivalent to the ratios stated here.

Photographs shown are of engineering prototypes. Changes may be incorporated in production models.

© 2005 IBM Corporation

**iSeries**

PAGE 66

**ON DEMAND BUSINESS™**