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Introduction

Welcome to this online course, entitled "*Enhance Desktop Access to iSeries Servers with iSeries Access Family.*" This course describes the features and benefits of the connectivity and access products in the iSeries™ Access Family.

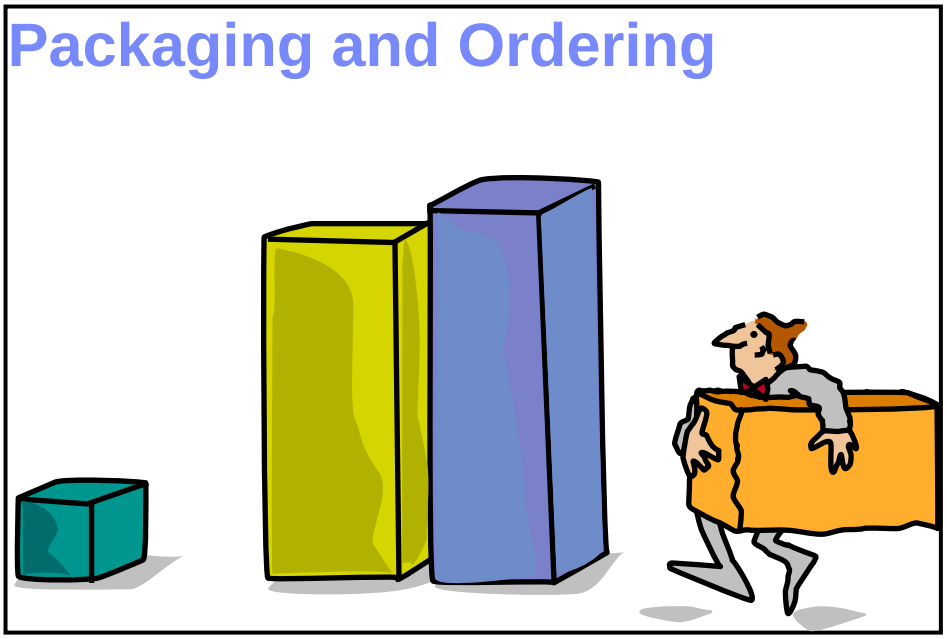
Objectives

- iSeries Access Family
- iSeries Access for Linux
- iSeries Access for Windows
  - .NET: The Next Big Wave
- iSeries Access for Web
- Host Access Transformation Server
- iSeries Access for Wireless
- Summary

Objectives

This course will familiarize you with the highlights of the iSeries Access Family of products.

We start by introducing how to sell the iSeries Access offerings and how they are packaged; and subsequently discuss iSeries Access for Linux®, a robust native Linux connectivity solution. You will also learn about iSeries Access for Windows® and it new .NET support which is the next big wave in Microsoft® technology. We will describe how easily users can now move their IBM® eServer™ iSeries server to the Web using the highly functional iSeries Access for Web product or the Host Access Transformation Server, Limited Edition (HATS LE) solution. These products enable out-of-the-box transitioning of existing 5250-based iSeries applications to e-business or Web-based network environments. Finally, the course describes the variety of connectivity options that iSeries Access provides to help meet the needs of the enterprise.



Packaging and Ordering

Packaging seems a bit tricky to some iSeries users, so let’s belabor the licensing and pricing policies for the iSeries Access Family and its additional supporting client products.

iSeries Access is a 'Must' for iSeries Users

- iSeries Access Family…
  - +80% penetration in iSeries accounts
  - Most users purchase because it is the best end-user connectivity product for iSeries servers in market
- Additional sales of software, iSeries hardware, and peripherals
  - iSeries Access for Web and HATS incite easier moves to e-business and Web application serving.
  - iSeries Access for Linux facilitates non-Windows desktop solutions.
- Learn how iSeries Access relieves user desktop 'pain points'

Know the products in iSeries Access family so you can maximize their use on iSeries and eServer i5 servers!

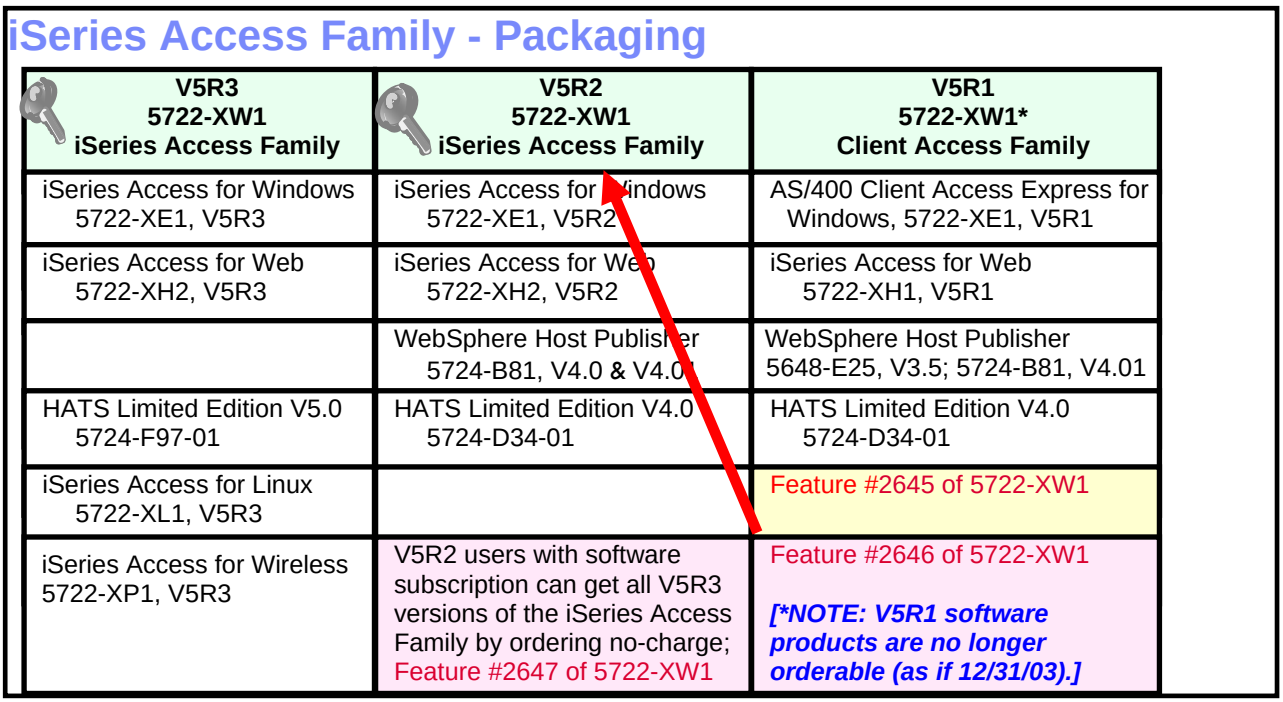
iSeries Access is a 'Must' for iSeries Users

Client Access-branded products, which enjoy more than 80% penetration in iSeries installations, provide the best connectivity choices for iSeries users.

Those who are looking to maximize the use of their iSeries resources will want to use one or more of the iSeries Access clients as they provide tremendous desktop integration functionality, and exploit the new functions available with i5/OS™ and the Windows operating systems. If you are looking for a full-function native Windows solution, then you have the best with iSeries Access for Windows. If you are looking for a solution to minimize network administration by moving to browser-based options, then iSeries Access for Web and Host Access Transformation Services (HATS) offer flexible options that will make you eager to take the plunge into e-business application development and implementation efforts. Another reason you will be attracted to the iSeries Access products is the new native Linux-based iSeries Access product that is already a very well-received, non-Microsoft Windows desktop solution.

We have discussed several reasons why you will be drawn to the iSeries Access Family of solutions, but there are many more. These newer offerings will likely provide the final influence if you are teetering on a decision for the iSeries platform versus another.

This course will also cover points of "pain" you may experience with the various alternatives and help you alleviate these "headaches" before making a decision. You will also learn about the strengths of the various iSeries Access products.



Packaging

Let's look at this chart, because it will be helpful as you order various iSeries Access Family products (or features). Across the top, you will notice that there is only one product number for iSeries Access Family—5722-XW1. This number spans all OS/400® releases: V5R2 and V5R3. However, you should note that this product had a name change with the announcement of V5R2. Its former name was "iSeries Client Access Family." Since then, the word "client" has been removed. The new brand name is simply "iSeries Access Family."

OS/400 V5R1 users can no longer order iSeries software as V5R1 reached end-of-marketing on December 31, 2003. OS/400 V5R1 and Client Access V5R1 products, however, are supported until September 30, 2005. If you have another iSeries server at OS/400 release level V5R2 or V5R3, the iSeries Access client code can be used to access your V5R1 server.

OS/400 V5R2 users who order product number 5722-XW1 would be shipped all the latest V5R2 iSeries Access Family products. OS/400 V5R2 users can also order Feature 2647 and will receive all the V5R3 set of clients. These are supported for installation and connection to V5R2 as well as V5R3.

V5R3 users who order 5722-XW1 receive V5R3 versions of all the iSeries Access Family products. Notice, though, that there is no V5R3 Host Publisher version. IBM Software Group has withdrawn it from marketing. However, it will be supported as long as V5R2 is also supported. The recommended migration path is Host Access Transformation Services (HATS). You can continue using Host Publisher functionality already developed by utilizing the HATS migration tool.

Product Focus...

Description	Product	Product #	Requires 5722-XW1
Family Name	iSeries Access Family	5722-XW1	Yes
Windows Client	• iSeries Access for Windows	5722-XE1	Yes (for 5250 & Data Transfer)
Linux Client	• iSeries Access for Linux	5722-XL1	Yes
Browser Access	• iSeries Access for Web • HATS LE	5722-XH2 5724-F97-01	Yes Yes
Handheld / Wireless	• iSeries Access for Wireless • IBM Toolbox for Java ME	5722-XP1	No
OS/400 UIs	• iSeries Navigator • Operations Console • EZ-Setup	packaged in 5722-XE1	No

Flexible Purchase Options...

- **Processor-based** = purchase price based on software tier, connect unlimited # of users
- **User-based** = purchase only number of users who will be concurrently connected

★ *[NOTE: Can upgrade from user-based to processor-based, but cannot go back to user-based from processor-based option.]*

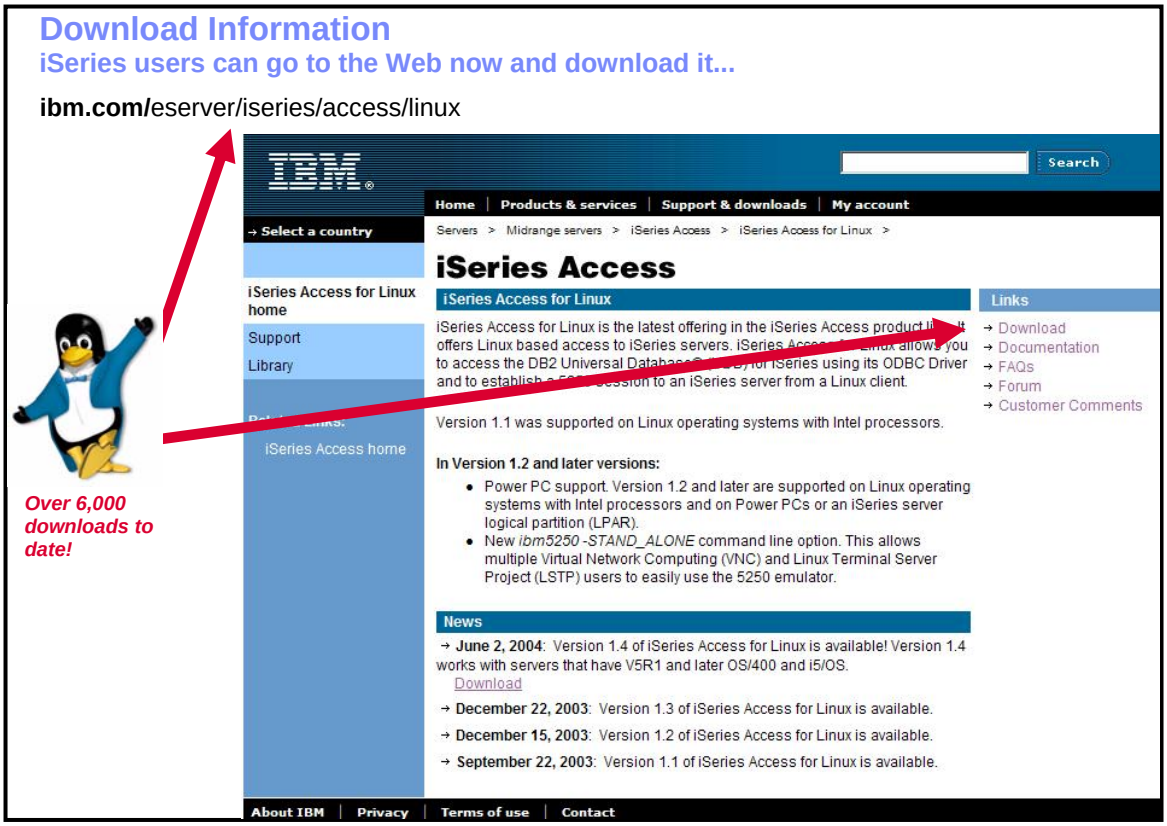
Product Focus

The iSeries Access Family has incorporated the popular platforms and clients, such as: Mircosoft Windows, Linux, browser, wireless, and of course, the OS/400 user interfaces (iSeries Navigator, Operations Console, and EZ-Setup). Each of the products shown on this chart are shipped as part of the iSeries Access Family.

On the right side of this chart are the requirements for iSeries Access. In most cases, you must purchase the iSeries Access Family product to use the other functions shown here. iSeries Access for Windows, the native Windows client, only requires 5722-XW1 if you plan to use 5250 emulation or data transfer. No iSeries Navigator function requires 5722-XW1. Interestingly, none of the iSeries Application Program Interfaces (APIs) require iSeries Access either—this includes the Online Database Connectivity (ODBC) driver, OLE DB, .NET, or other middleware. iSeries Access for Wireless, our wireless offering, contains IBM Management Central function thus it does not require 5722-XW1. However, all functions in iSeries Access for Web and HATS LE do require 5722-XW1.

There are two purchase options for acquiring the iSeries Access Family product. The first option is processor-based, in which you pay different prices based on the processor group, and then can connect unlimited numbers of users. The second option is user-based that lets you purchase a specific number of users—no more than the purchased number of users can connect concurrently.

iSeries Access for Linux has been available since September 2003, and as you will see, has been very well received from “Day one.”



Download Information

iSeries Access for Linux is available for download on the Linux Web page.

The customer response to this has been amazing—with more than 6,000 downloads as of July 2004. This suggests that there is a lot of interest out there in Linux.

Notice on this screen capture that it is easy to get to the Linux client as you simply download it from this Web site. You will also find Linux documentation (the *Installation and Usage Guide* and more), FAQs, a Linux forum, and user comments here as well.

We will talk more about the download options on the next chart.

Linux Download Information

The latest version of iSeries Access for Linux is 1.4 and is downloadable at the iSeries Access for Linux Web site You should always use the latest version of this product unless you have been specifically instructed to use a back-level version because of a compatibility issue.

While the earlier versions worked only on a Linux workstation, the two versions shown here (versions 1.3 and 1.4) run on a Linux partition on iSeries servers as well as on a Linux workstation. This provides that extra edge to our solution developers and other users.

What is iSeries Access for Linux?

iSeries Access for Linux has:

- **ODBC Driver**
  - **Enables Linux PC applications to access information in DB2 UDB for iSeries**
- **Full-function 5250 emulator**
  - **Allows users to work with OS/400 system screens & run 5250 host applications**

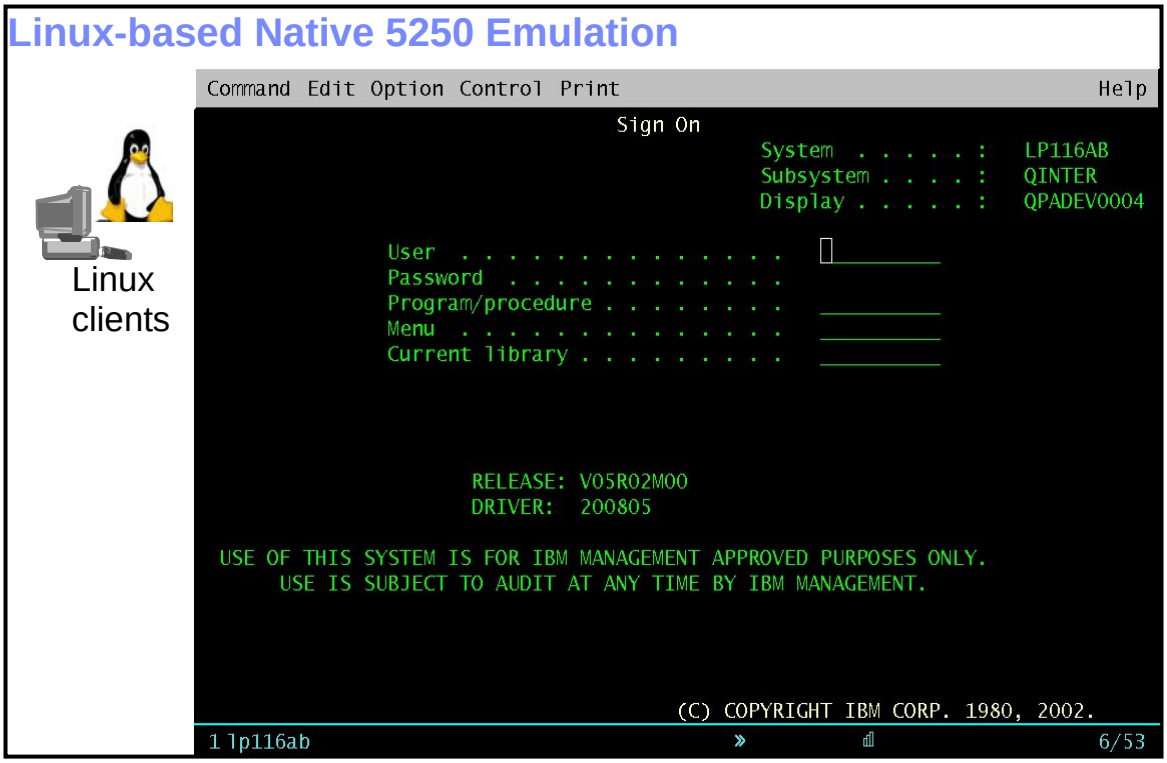
Designed to run natively ***on Linux operating systems***

What is iSeries Access for Linux?

iSeries Access for Linux has two functions: a comprehensive native ODBC driver and a full-function 5250 emulator.

The ODBC driver is important because most Linux developers prefer to use it over a JDBC driver. This driver allows your Linux applications to access information that is stored in DB2® UDB for iSeries databases.

The 5250 emulator lets your users work both with OS/400 system screens (green-screens) and 5250 host applications.



Linux-based 5250 Emulation

The 5250 Emulation in iSeries Access for Linux looks like the screen capture you see here… exactly as you would expect a 5250 emulator to be visually represented! One of the functions it supports is the ability to provide a workstation and device ID—which is widely popular with iSeries users. It will auto-switch to either 80- or 132-character screen sizes. There are also functions to support: keyboard mapping (GUI), macros, record and playback, pop-up and pull-down keypads, and screen printing.

This emulator can asynchronously display server messages in the 5250 interface.

The emulation menus and messages are available in 14 national language versions. *[NOTE: Documentation and other information (such as install instructions, licensing, and help) are provided in the English language only.]*

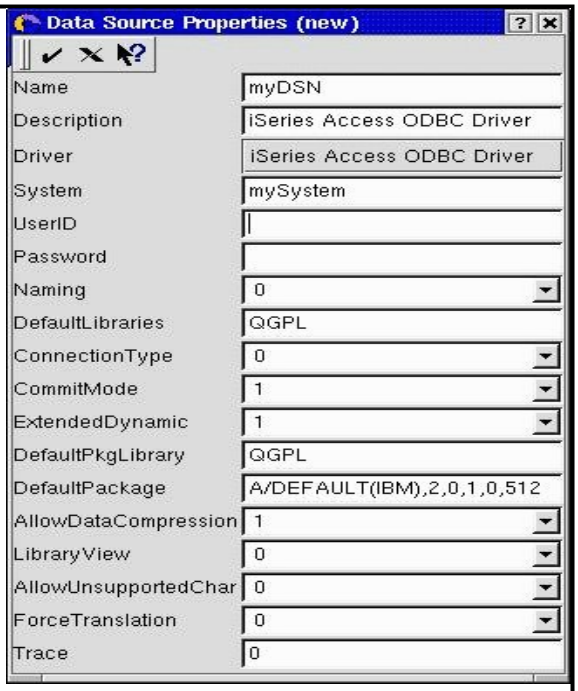
Native Linux ODBC Driver

Extending the Reach to iSeries Data

New Configuration GUI

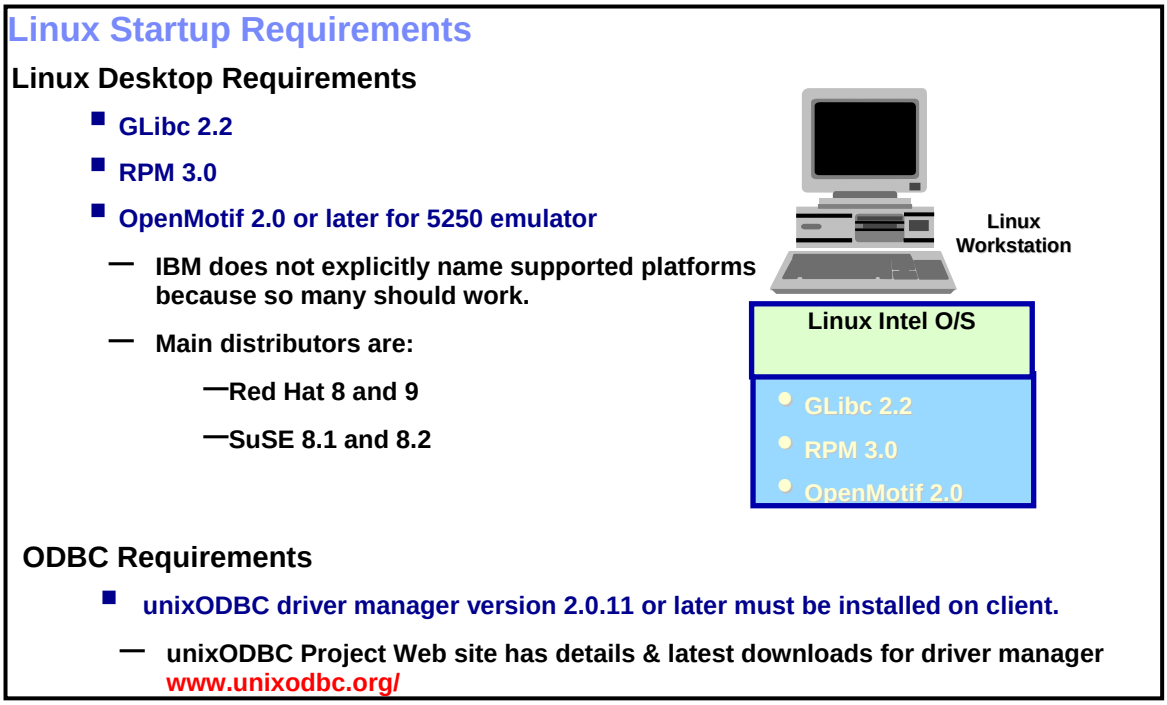
- **Data source can be configured using the ODBC data source GUI.**
- **GUI contains fields to set required and frequently used options.**

The high-function, best-performing iSeries ODBC driver (included in iSeries Access for Windows) was ported to run natively on Linux.



Native Linux ODBC Driver

The ODBC driver is easier to set up than earlier versions because it now includes a new configuration GUI (which is shown here). This GUI displays some of the data source properties that can be set using the ODBC data source GUI.



Linux Startup Requirements

UNIX®-like operating systems need a C library to define system calls and basic facilities (open, malloc, printf, exit, etc.). Linux is UNIX-like, so one of its desktop requirements is the presence of Glibc 2.2 (Glibc stands for GNU Library C).

The Red Hat Package Manager (RPM) is a powerful command line-driven package management system for installing, uninstalling, verifying, querying, and updating software packages. RPM 3.0 is a requirement for the Linux desktop.

OpenMotif 2.0 (or later) for 5250 emulation is also required for the Linux desktop. Open Motif is the public license of Motif, which is an industry standard GUI used as an environment for standardizing application presentation on a wide range of platforms. Motif is the leading user interface toolkit for the UNIX system. *[NOTE: You will notice that IBM no longer specifically states the particular Linux distributions that are supported. This is because there are actually such a large number of them that should work with the iSeries Access for Linux client. However, for informational purposes, we will mention that two broadly distributed Linux implementations include Red Hat 8 (and 9) and SuSE 8.1 (and 8.2).]*

ODBC requirements include the installation on the client of the unixODBC driver manager (V2.0.11 or later). This driver manager is downloaded at the unixODBC Project Web site. *[NOTE: unixODBC Project goals are to develop unixODBC as the definitive standard for ODBC on non-Windows platforms. A hotlink for this Web site is available in the "Links" section of this course.]*

Linux ODBC Driver Restrictions

- **The following are not supported…**
  - **MTS**
  - **APIs that display a GUI**
  - **Translation DLLs**
  - **DSN connection option for user id/password prompting via a sign-on dialog**
  - **DSN option for customizing package settings for an application**
  - **Secure Sockets Layer (SSL) component**
  - **Connection timeout**
  - **Some connection string keywords**

Linux ODBC Driver Restrictions

Let's look at the restrictions in place for the Linux ODBC driver.

Because Microsoft Transaction Services (MTS) uses Windows-specific components that are not available on Linux, MTS is not supported.

Any APIs that display a graphical user interface are not supported. In these cases, the API call will still complete, but will behave as if an attempt to display the GUI failed.

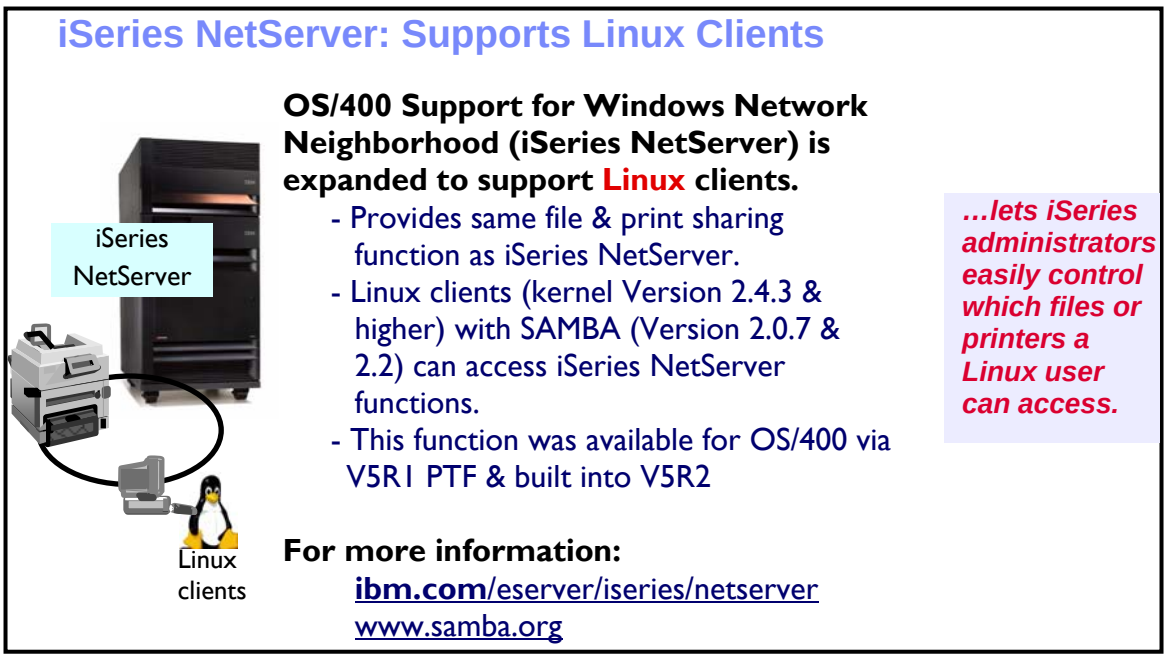
Translation Dynamic Link Libraries (DLLs) are not currently supported and any attempt to use them will be ignored.

The Domain Server Name (DSN) connection option for user id and password prompting via a sign-on dialog is not supported—because GUIs have not been ported to Linux. The DSN option for customizing package settings for an application is also not supported. Only the simple implementation of package settings has been ported to Linux.

The Secure Sockets Layer (SSL) component is not shipped with the Linux driver, so you will need to use a common SSL tunnel or Socks server instead.

The connection timeout option is not supported with the Linux driver.

Some connection string keywords that correspond with options not supported by the Linux ODBC driver are, obviously, also not supported.



iSeries NetServer: Supports Linux Clients

Apart from ODBC and 5250 emulation, there are other functionalities that users may require—for example, the ability to store desktop information in the IFS or to print on iSeries printers.

iSeries NetServer delivers file and print serving to iSeries users as it has implemented capabilities similar to Windows Network Neighborhood (also known as My Network Places) for Windows users. All the iSeries NetServer functions are now available to Linux users as well. This allows Linux users to access and exploit more resources on the eServer i5 servers, while eServer i5 administrators have more control of the files and printers that any particular Linux user can work with. The Linux client must be at kernel Version 2.4.3 and higher and must have installed SAMBA Version 2.0.7 and 2.2. Samba is an open source client and file server that is compatible with Microsoft Networking—it comes with many current distributions of Linux.

[NOTE: Hotlinks for the iSeries NetServer site and for SAMBA are available in the "Links" section of this course.]

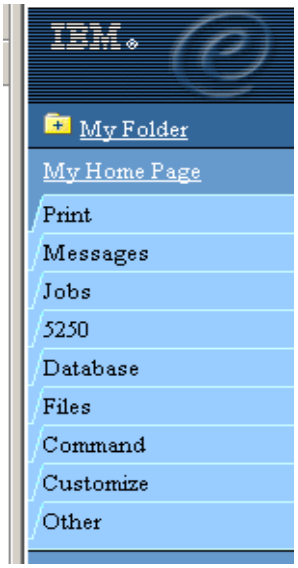
Combine iSeries Access for Web
…for a complete Linux solution

My Personal Folder
Print
- Printer output
- Printers
- Internet Printers
- Printer shares
- Output Queues

Database
- Tables
- My Requests
- Run SQL
- Copy Data to Table
- Import Requests

5250
- Start 5250 Session

Commands
- Run CL commands



Files
- Browse Files (in IFS)
- File Shares (in NetServer)

Messages
- Display Messages
- Send Messages
- Operator Messages
- Message Queue

Jobs
- User Jobs
- Server Jobs

Customize
- Administrator controls functions by user or group of users:
  - Customize front page
  - Limit tasks that can be performed

Complete Linux Solution

For other functions that a Linux user might require, the iSeries Access for Web product will also run in a browser on a Linux desktop.

Take a moment to look at these functions so you can get a sense of the breadth of flexibility you have between the iSeries Access for Linux product and the fact that the iSeries Access for Web product can simultaneously be used on a Linux workstation.

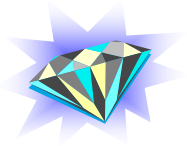
iSeries Access for Windows 5722-XE1

iSeries Access for Windows

iSeries Access for Windows is the product for the native Windows environment. Let's look at this product in more detail now…

Integrating Native Windows with iSeries

Single solution for working with all iSeries resources...



- **Designed for Windows users:**
  - High-function, easy-to-use 5250 emulator for iSeries applications
  - PC print server that receives OS/400 output—runs unattended
  - Access to iSeries database & other resources from Windows applications
  - Ability to use iSeries as file & print server
  - Administer users & monitor/manage network-connected iSeries servers
- **No special Web application server code required**
  - All code runs natively on Windows
- **Contained totally in iSeries Access for Windows**
  - PC5250 emulation, data transfer, ODBC, etc. for end users & Windows developers
  - iSeries Navigator to operate/administer iSeries servers & database
  - Operations Console to work with OS/400 system console
  - EZ-Setup to quickly & easily set up new iSeries servers

…most comprehensive iSeries native Windows connectivity solution in market

80+% of iSeries sites use iSeries Access for Windows

Integrating Windows with iSeries

iSeries Access for Windows is a highly popular product in iSeries and eServer i5 shops. In fact, more than 80% of iSeries installations are already using this client. And even if you want to embrace some of the additional iSeries Access technologies, you will certainly want to retain this Windows client as part of your core heritage.

iSeries Access for Windows is a great solution because, all in one product, it meets the requirements of an iSeries administrator, a user, and a developer. It runs natively on the desktop, which is an advantage because it imposes no additional load on the iSeries server and offers better 5250 emulation capabilities to your heads-down 5250 application users than does a browser-based solution. However, the other side of this coin is that a native client does require effort to manage release levels, keep the desktop operating systems current with the desktop code, etc.

Supported Windows Operating Systems

iSeries Access for Windows V5R3…

Cannot be installed on:

- **Windows 95, 98, & ME**

Can be installed on:

- **Windows NT 4.0, 2000, XP Professional, & 2003 Server**

iSeries Access for Windows V5R2…

Can be installed on:

- **Windows 98, ME, NT 4.0, 2000, XP, & 2003**

iSeries Access for Windows V5R1…

Can be installed on:

- **Windows 95, 98, ME, NT 4.0, 2000, & XP**

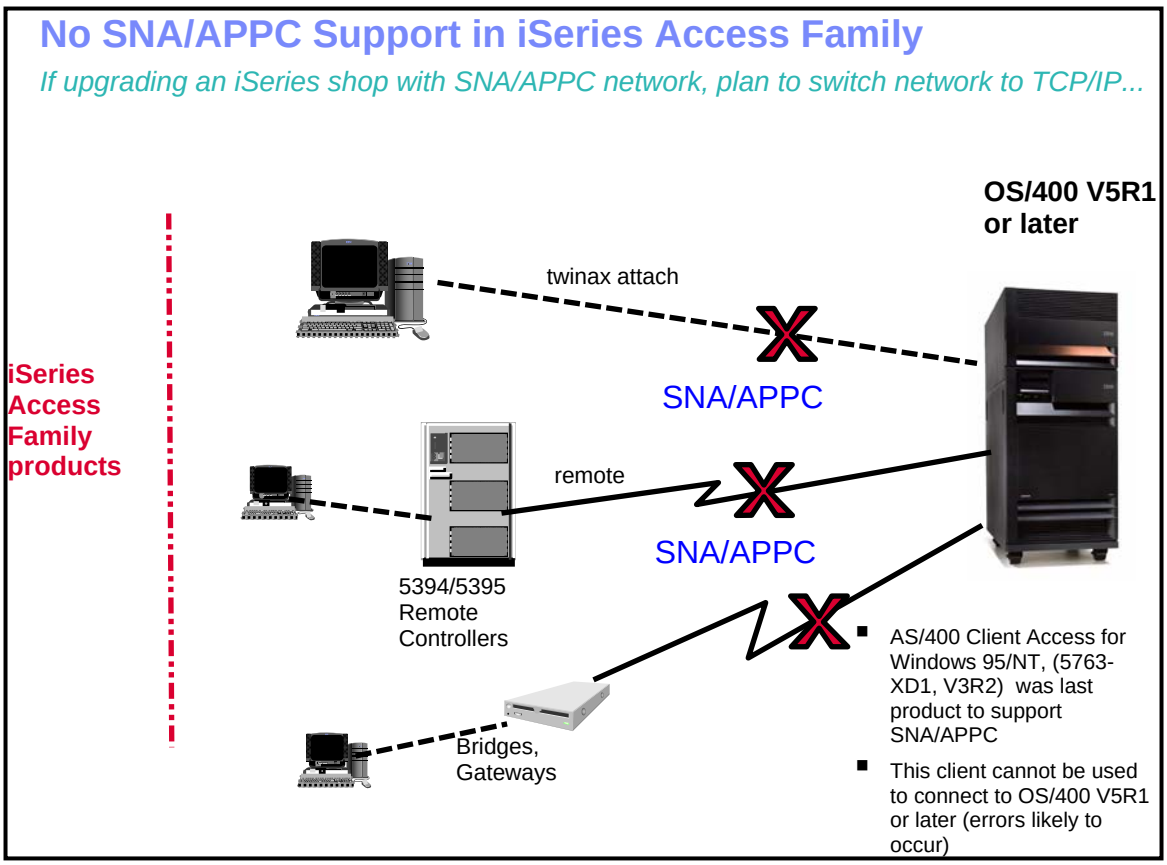
Supported Windows Operating Systems

It is important that you understand which Windows operating system versions are supported by the different releases of iSeries Access for Windows. As you might surmise from looking at this chart, some PCs that still run under older versions of Windows will need to keep using older versions of iSeries Access for Windows.

V5R3 is much more radical in its need for more recent vintage of Windows operating systems. It will not install on Windows 95, Windows 98, and Windows ME. So, when Windows users move to the V5R3 iSeries Access client, they must also move to Windows NT, Windows 2000, Windows XP, or Windows 2003 Server.

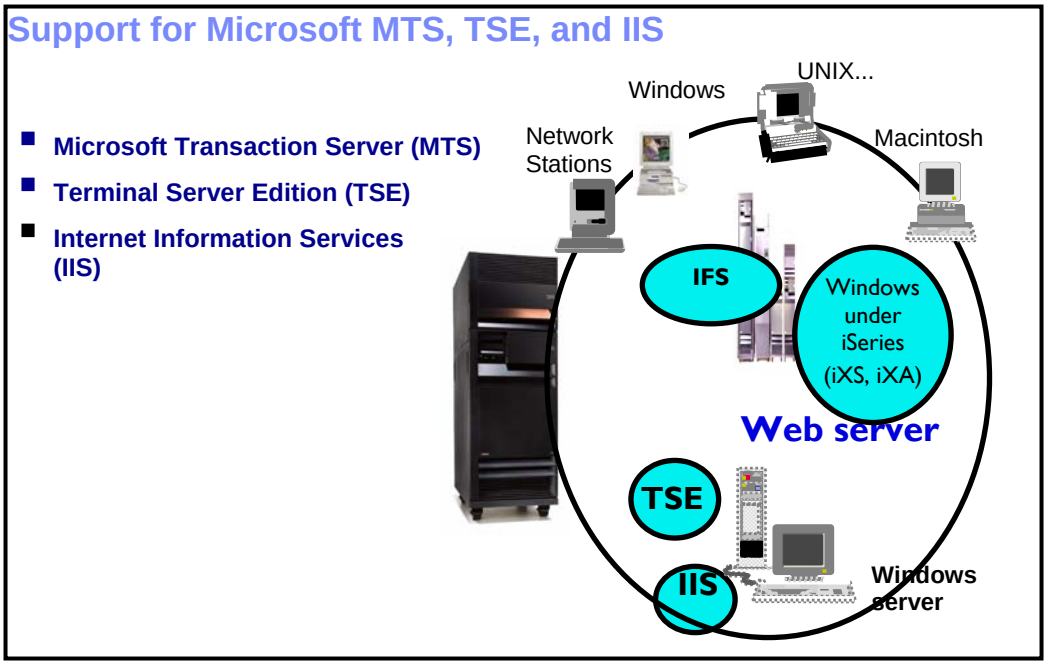
Excluding support for the earlier Windows operating systems helped V5R3 iSeries Access for Windows shift its focus to that of integrating the newer technologies that Microsoft is incorporating in its operating systems. This includes the Itanium hardware, 64-bit Windows, Secure Sockets Layer (SSL), Kerberos, Virtual Private LANs (VPNs), Network Address Translation (NAT), Unicode enablement (which allows national language support), and importantly, .NET. We will talk about most of these in more detail on the following screens.

[NOTE: Microsoft does not support Windows XP Home Edition for a business environment. Instead, the supported operating system is Windows XP Professional. Since iSeries Access for Windows would only be used in a business environment, it therefore cannot support the Windows XP Home Edition either.]



No SNA/APPC Support in iSeries Access Family

The importance of this chart is to ensure you understand that the last iSeries Access product to support Systems Network Architecture (SNA) and Advanced Program-to-Program Communication (APPC) was AS/400® Client Access for Windows (V3R2) which we stopped shipping in V5R1. If you have customers who are still using this network architecture, they must institute a TCP/IP network protocol before moving forward to OS/400 V5R1 or later, and also must move to the later iSeries Access for Windows product to one of the browser-based products or to the native Linux product.



Support for Microsoft MTS, TSE, and IIS

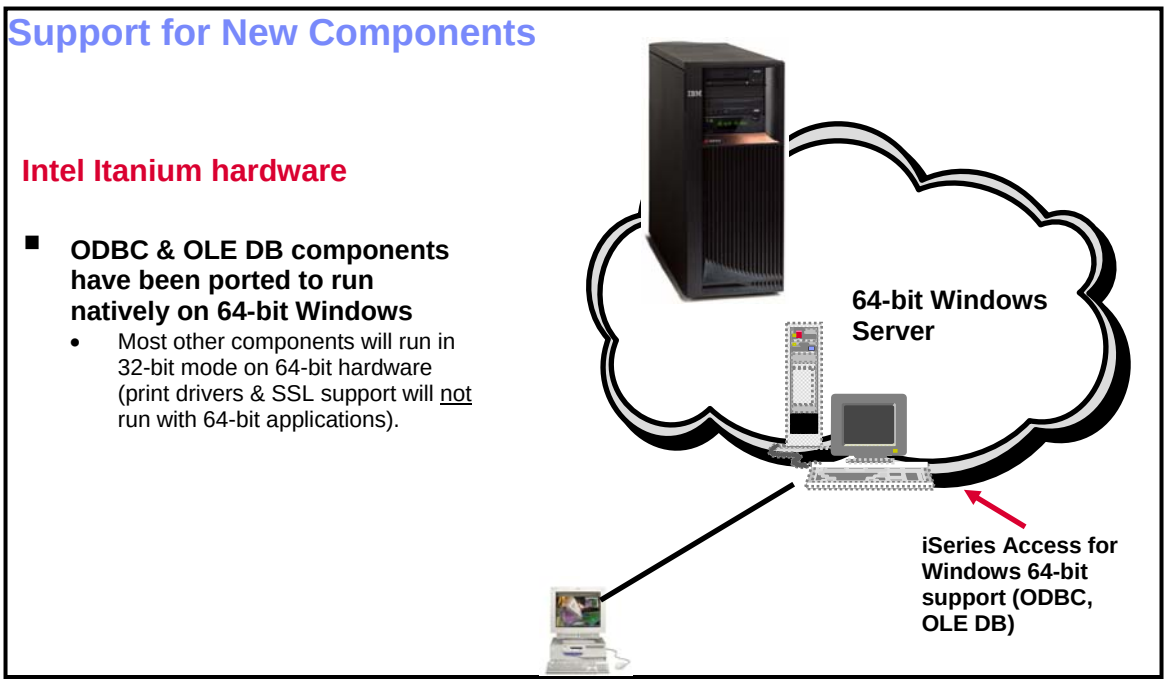
iSeries Access for Windows supports three-tier networks: Microsoft Transaction Server (MTS), Terminal Server Edition (TSE), and Internet Information Servers (ISS).

An example of Microsoft Transaction Server (MTS) might involve an application for an auction house which has the need to support transactions that can be backed out or reversed. This would be referred to as a 2-phase commit transaction.

Terminal services with Citrix are also supported with Terminal Server Edition (TSE). This means that there can be multiple instances of simultaneous client activity from different client platforms, such as network stations, DOS, UNIX, and Macintosh. And all of these clients can have access to iSeries resources.

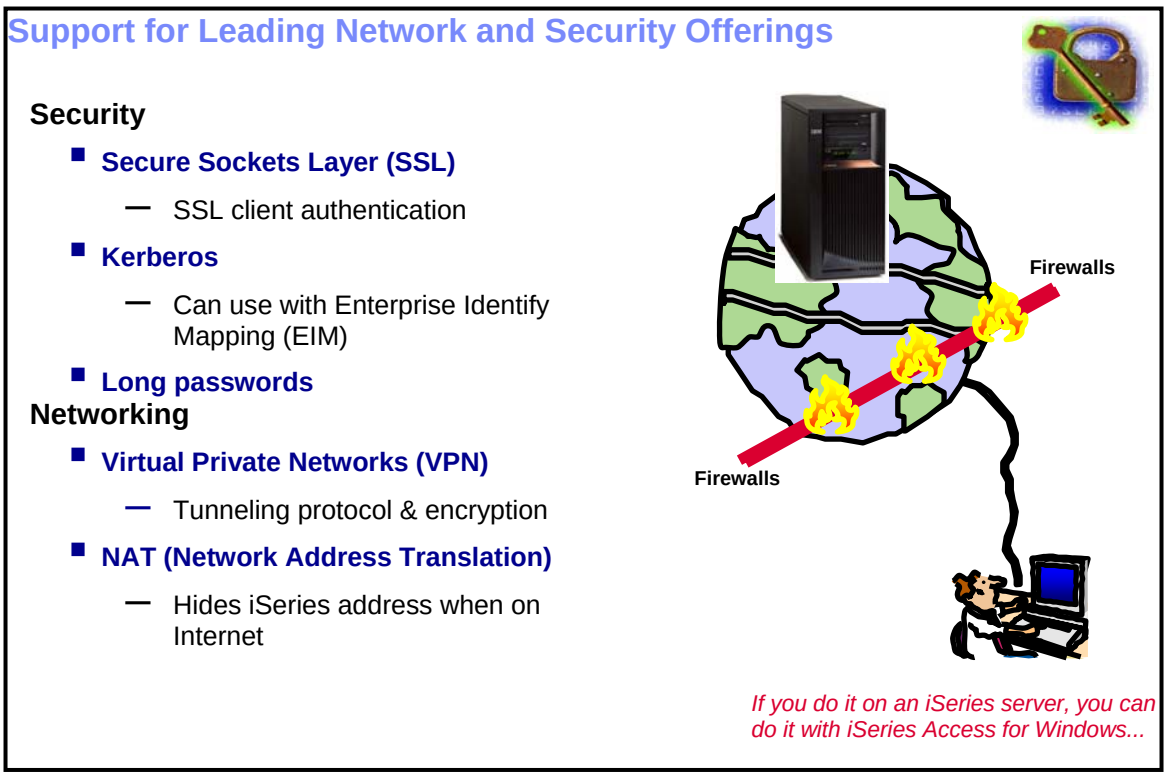
And, Internet-based networks are supported via Internet Information Services (ISS). This protocol provides a Web application infrastructure for Windows servers. That is, iSeries Access runs on the server and fulfills requests for iSeries data (i.e., ODBC, OLE DB, etc.)

This gives you the flexibility of mixing and matching Windows servers with iSeries and eServer i5 servers and knowing that end users and applications can easily access eServer i5 resources when there is a middle-tier in the network.



Support for New Components

As mentioned, iSeries Access for Windows supports the Intel Itanium hardware and 64-bit Windows. This feature delights many users, even though, at present, there are limited numbers who actually need this functionality. For those who are interested in using a 64-bit Windows server to support workstations in the network, iSeries Access for Windows provides its middleware (such as ODBC and OLE DB) to access data on iSeries servers from these Windows servers.

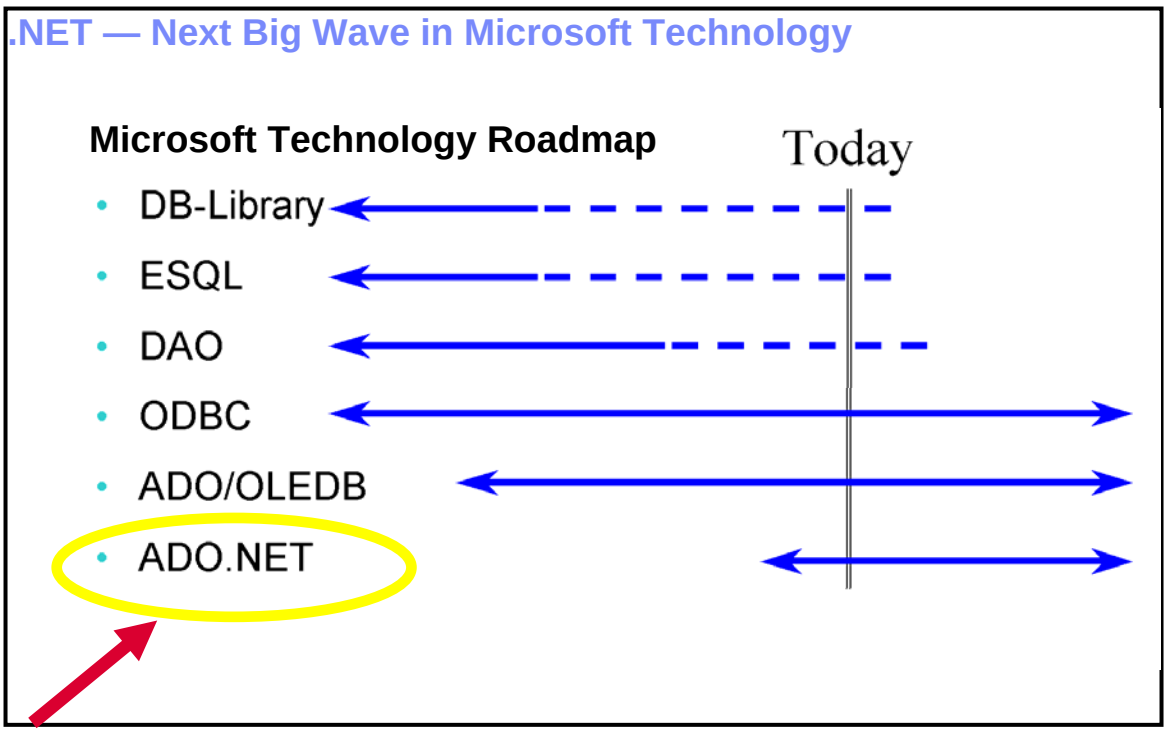


Support for Leading Network and Security Offerings

To provide security for applications that will transact between an iSeries server and Windows clients, you can use Secure Sockets Layer (SSL) and its SSL client authentication processes. Kerberos is also supported which includes the ability to use long passwords and Enterprise Identity Mapping (EIM).

From a network perspective, even more is provided by iSeries Access for Windows than we have already discussed. Virtual Private Networks (VPNs) provides a tunneling protocol and encryption to ensure secure communications. Network Address Translation (NAT) hides iSeries IP addresses when on the Internet. Both VPN and NAT have been, for awhile, part of the existing offerings.

iSeries Access for Windows supports the latest technologies in the industry so that you can benefit from all possible features and capabilities on both i5/OS and on Windows operating systems when using iSeries Access for Windows .



.NET – Next Big Wave in Microsoft Technology

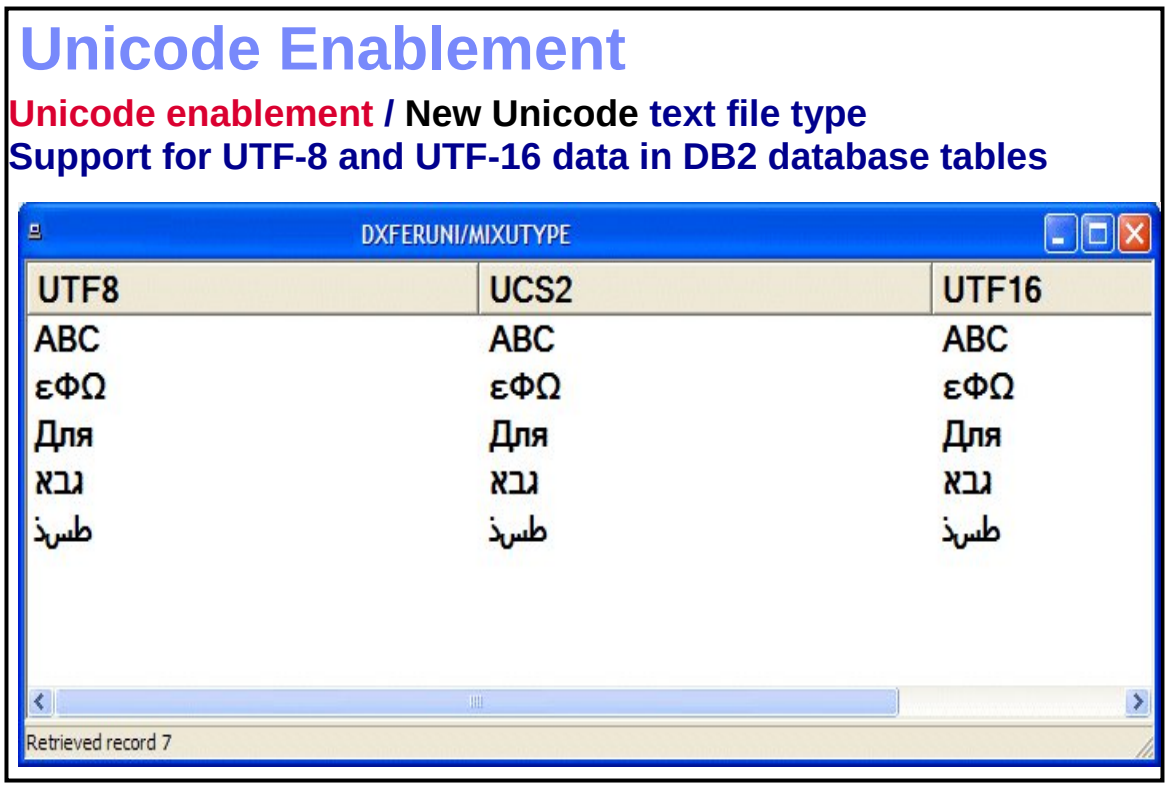
iSeries Access for Windows includes database middleware to support .NET, which as you probably know, is Microsoft's collection of programming support for Web Services. The newest .NET driver to be added to iSeries Access for Windows is the ActiveX Data Objects ADO.NET driver. Other drivers have been available in earlier iSeries Access releases. Let's talk about each of them…

The ODBC driver is the best performing ODBC driver for accessing iSeries database.

The OLE DB Data Provider provides functionally rich access to iSeries databases (including record-level access) and applications. It also has add-ins to Visual Basic to simplify the development of Windows applications that work with iSeries servers and resources.

The .NET Data Provider enables applications that use the .NET framework to access iSeries databases.

Data transfer options include uploading and downloading database information.



Unicode Enablement

All of this middleware is continually enhanced to stay current with new functions in both the iSeries and Windows platforms. A great example of this is the enablement of Unicode with a new Unicode text file type. The effective result is that a product description could be stored in the database in 10 different languages and used during product packaging for all these languages.

Some of the Unicode features added to Data Transfer in V5R3 include:

- True Unicode support in Microsoft Excel Version 8 files
- New Unicode text file format stores data in UTF-8, UTF-16, or Big-endian UTF-16
- Unicode display support
- Unicode print support, including configurable fonts
- Support for UTF-8 and UTF-16 native DB2 column types

Middleware Enhancements—More Details

.NET Data Provider functions

- (INSERT,UPDATE, DELETE)
- Commitment Control
- Connection Pooling
- SQL naming
- Unicode
- Tracing
- Threads
- IASPs (multiple databases)
- Compression
- Limited stored procedure support

.NET unsupported functions

- Large Objects (LOBs)
- System naming (/)
- Package support
- Data links
- User Defined Types
- Record Level Access
- CMD/PGM call
- Data Queues

Database enhancements (ODBC, OLE DB, .NET, Data Transfer)

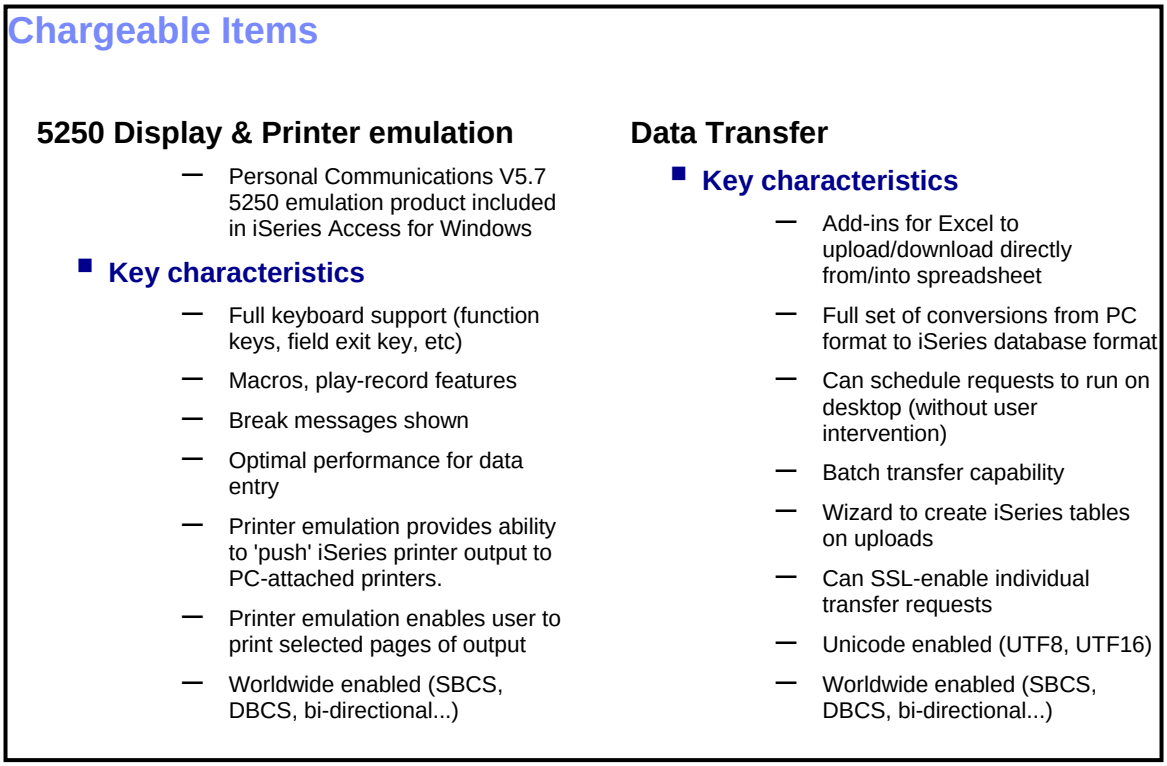
- BINARY and VARBINARY data types
- UTF-8 and UTF-16 data
- Increased precision for decimal numbers
- ANSI/ISO (American National Standards Institute/International Standards Organization) Core Level SQL standard of 1999

Incoming Remote Commands

- A new option, /loadprof, allows commands to have access to the user-specific registry and environment variable settings while they are running.

Middleware Enhancements—More Details

You might want to take a moment to review some of these additional functions that are provided with the V5R3 release of iSeries Access for Windows. You can see that the middleware component of this client is expanding broadly.



Chargeable Items

There are only two chargeable items of the iSeries Access for Windows: 5250 Display and Printer Emulation and Data Transfer.

Each of these items has a long list of robust functions that are shown on this chart.

All other features of the Windows product can be used without purchasing the iSeries Access Family (5722-XW1).

Get rid of those green screens!

A new look on iSeries applications extends their information reach...

Use iSeries Access Family to ease your users onto the Web and e-business

- Can help solve pressing business problems
- Quickly, practically, affordably -- with flexibility for the future

iSeries Access for Web can be an instant 'window' to the iSeries or eServer i5 server

- Completely customizable front-page capability
- Tremendous function and flexibility

Host Access Transformation Services Limited Edition (HATS LE) another instant 'window' to the iSeries

- 5250 access via a browser
- User applications are up within minutes.

The best iSeries browser-based access tools

Get Rid of Those Green Screens!

The repeated frustration we hear from our clients is in regard to the green screen iSeries look. A new user interface for your applications and more productivity is much easier to achieve than you may imagine when you use iSeries Access browser products to ease your users onto the Web and into the world of e-business. ‘Browser’ is the key word here—browser-based user interfaces means there is no need for application software on the client, and the user is always working with the latest level of the software.

The two products we will discuss next will help you eliminate network administration and those green screens forever… and do not require programming to do so.

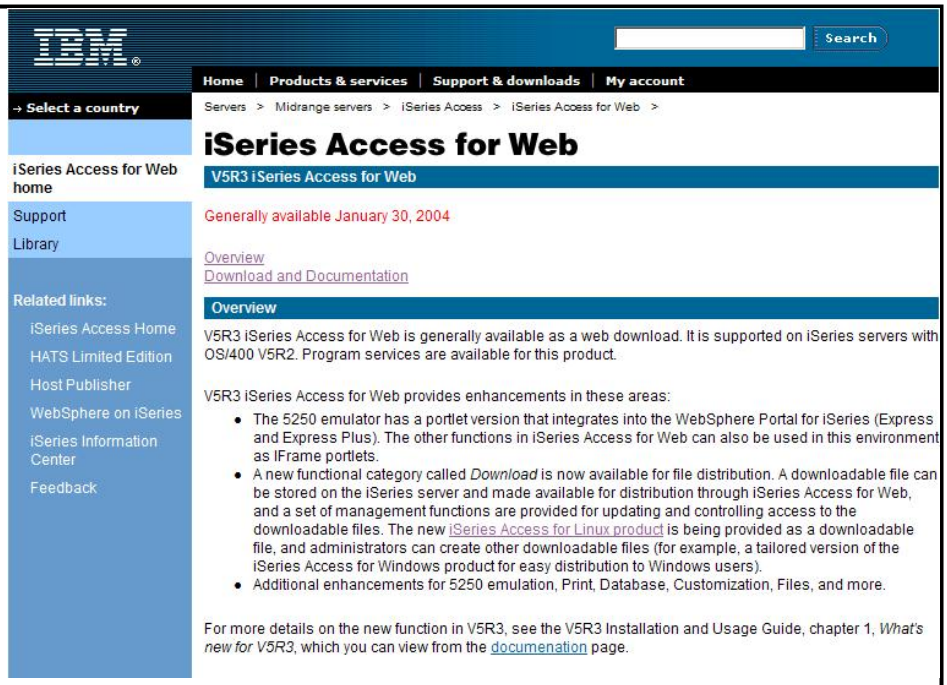
iSeries Access for Web can provide an instant window into the enterprise server. This conversion tool offers completely customizable front-page capability and tremendous function and flexibility in designing the look-and-feel of the new graphical user interfaces.

Host Access Transformation Services Limited Edition (HATS LE) is also a part of the iSeries Access Family and provides a highly GUI-ized 5250 instant window into the iSeries server world.

We will talk in more detail about iSeries Access for Web first…

iSeries Access for Web 5722-XH2

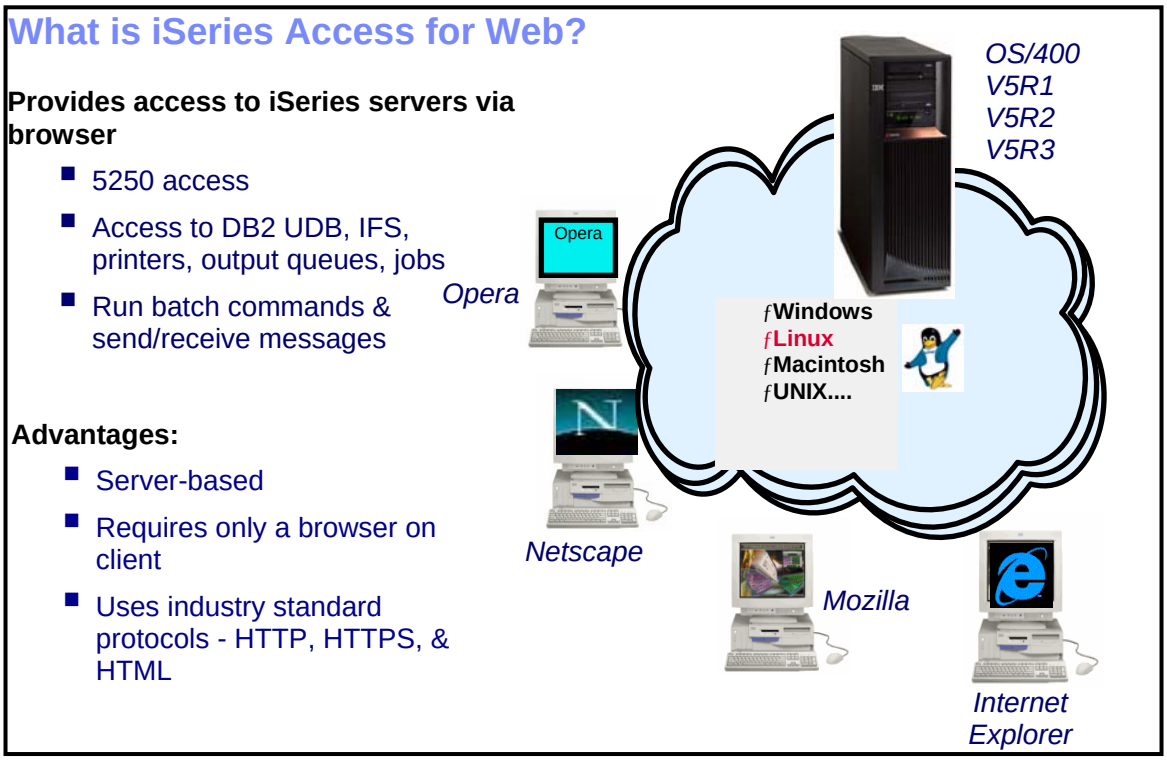
V5R3



***ibm.com**/servers/eserver/iseries/access/web/v5r3.html*

iSeries Access for Web 5722-XH2

The V5R3 version of iSeries Access for Web was made available as a download (along with its related documentation) in January 2004 at the Web site shown here. It is can now be ordered as part of the 5722-XW1 V5R3 deliverables.



What is iSeries Access for Web?

iSeries Access for Web is truly fun to use—and even easier to use than iSeries Access for Windows. This is because everything you need to work with is right on the screen. End users can leverage iSeries business information, applications, and resources across an enterprise to their desktop through a Web browser. There is no configuration needed at the end user's machine nor is there a requirement to load applets on the desktop. The supported browsers include: Netscape, Internet Explorer, Mozilla, and Opera.

You can set up SSL to have a secure browser session. HTTPS is the mechanism to insure a secure connection between the browser and the Web application server. Then additionally, SSL can be used between the Web application server and i5/OS.

iSeries Access for Web provides 5250 access to your iSeries server. It also delivers access to DB2 UDB files, the Interactive File Server (IFS), printers, output print queues, and jobs. You can run batch commands and send and receive messages. This offers an enormous amount of flexibility to end users through a Web interface.

As mentioned, iSeries Access for Web supports all OS/400 and eServer i5 utilities, such as 5250 emulation, database, and printers. No configuration is required because this all runs on the server. iSeries Access for Web follows all industry standards and protocols, which makes it a reliable product.

Why Use iSeries Access for Web?

Start simple, grow fast...

- **Any iSeries user—with any hardware model—can quickly get into a Web environment**
- **Any iSeries user—with little Web experience—can easily do e-business**
  - **iSeries Access for Web is simple to install and configure**
  - **No programming skills required to set it up**
- **Any iSeries user—with no training or setup on the desktop—can extend its reach to new end users**
  - **Use Customize facility to set up view (window) to iSeries server and to control access to iSeries resources (built around OS/400 user profiles**

A great first step to get iSeries into e-business

Use 'out-of-the-box'

Why Use iSeries Access for Web?

You may be resistant to using iSeries Access for Web because it requires the use of a Web application server—which we will discuss in more detail shortly. For now, just trust that this requirement is not a hard task. Since iSeries Access for Web runs on the server with nothing to install on the desktop, you simply must set up your iSeries or eServer i5 server with the iSeries Access for Web software.

When using the 5250 emulator provided with iSeries Access for Web, you need to have the Interactive feature installed. However, this feature is not required for any other function within this product. As a rule, you can assume you will need “Interactive” when using the 5250 data stream.

One could combine the use of the IBM WebFacing for iSeries tool with the use of iSeries Access for Web. WebFaced applications can remove the need for the interactive feature when clients migrate to later iSeries models. However, WebFacing is a tool designed to be used with a specific application and does not provide easy-to-use GUIs to work with other iSeries and eServer i5 resources, such as printers, database, files, running commands, etc. This is where iSeries Access for Web provides a nice complement to the WebFacing tool. This combination can remove the need for the interactive feature and create a win-win situation by eliminating the old green-screen user interfaces.

iSeries Access for Web was designed so the iSeries administrator can decide what functions a user can access. This is an important point—the iSeries administrator is now the controller--which moves your network closer to behaving like a great out-of-the-box solution!

Web Application Server Options

Several Web applications servers can run on eServer i5 servers:

- **WebSphere Portal – Express for Multiplatforms V5.0.2 & WebSphere** – Express Plus for Multiplatforms V5.0.2
  - **750 CPW**
  - **2 GB memory**
- **WebSphere Application Server – Express V5.1**

  - **300 CPW**
  - **512 MB memory**
- **WebSphere Application Server Version 5.1 Base** & **WebSphere Application Server Version 5.1 Network Deployment**
- **WebSphere Application Server Version 5.0 Express for iSeries**

  - **300 CPW**
  - **512 MB memory**
- **WebSphere Application Server Version 5.0 Base** & **WebSphere Application Server Version 5.0 Network Deployment**
- **WebSphere Application Server Advanced Edition Single Server V4** & **WebSphere Application Server Advanced Edition V4**
- **WebSphere Application Server Standard Edition V3.5** & **WebSphere Application Server Advanced Edition V3.5**
- **ASF Tomcat** (included in IBM HTTP Server for iSeries)

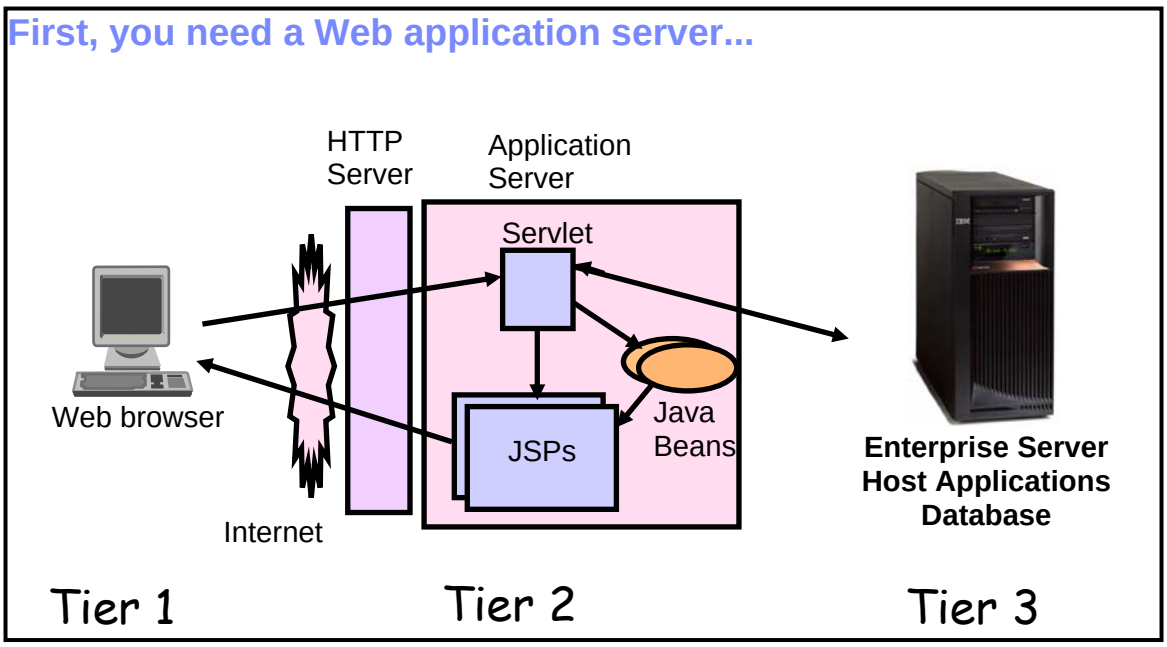
  - **70 CPW**
  - **256 MB memory**
  - ASF Tomcat Web application server is part of the no-charge IBM HTTP Server for iSeries.
  - ASF Tomcat PTFs are delivered within the IBM HTP Server for iSeries Group PTFs.

Web Application Server Options

The Web application servers supported by V5R3 are listed here. iSeries Access for Web runs on all the listed servers. HATS Limited Edition supports all the listed servers except ASF Tomcat and WebSphere Portal.

Using these browser-based products may require the replacement of old AS/400 hardware with newer iSeries or eServer i5 models. If you will be using IBM's WebSphere Application Server, the minimum iSeries configuration requirement is 300 CPW and 512 megabytes of memory.

ASF Tomcat (an open source Web application server) can be an inexpensive solution for iSeries shops that prefer to continue running on older iSeries models (that is, those with 70 CPW and 256 kilobytes of memory). ASF Tomcat is delivered as a part of IBM HTTP Server for iSeries (5722-DG1), a no-charge Licensed Program Product with OS/400 and i5/OS.



Web Application Servers

Since we mentioned the need for Web application servers just a few charts back, let's talk about them now in more detail as you look at the diagram shown here.

One thing that is important to understand is that you do not need to install a Web application server all over the network. Only one instance of it must be installed on one iSeries server (shown here in tier 2). All users who wish to access your host applications and database can go through the one Web application server. The rest of your iSeries server setup remains unaltered.

iSeries Access for Web Performance?

- **iSeries Access for Web does not put much load on a server.**
- **The Web application server can affect performance.**
  - o IBM eServer Workload Estimator
    www-912.ibm.com/wle/EstimatorServlet
  - o Workload Estimator for WebFacing Workloads
    - iSeries Access for Web will be similar
  - o Workload Estimator for HATS Workloads
    - HATS LE will be similar
- **Fine-tuning your Web application server will help.**
  - o Redpaper: WebSphere for IBM eServer Buying and Selling Guide
    - Chapter 3 has tips for optimizing WebSphere Application Server performance.
      ibm.com/servers/eserver/iseries/software/Websphere

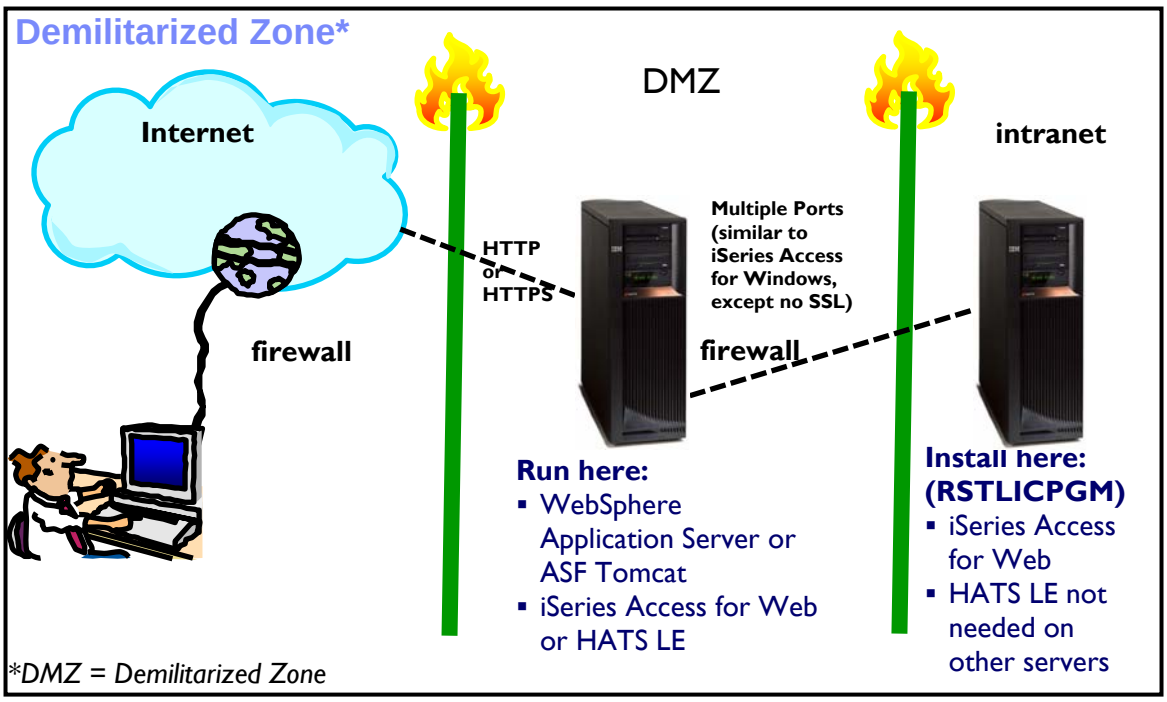
Web Server Performance

Let's talk about the performance of this product for a moment. Products like iSeries Access for Web and HATS LE do not put much strain on the server. However, as alluded to on the previous chart, if you have an older, under-powered AS/400, then performance may not be good, while a newer, bigger iSeries or eServer i5 server will not be significantly affected, performance-wise, unless you already are running your server at maximum capacity.

You can use the IBM eServer Workload Estimator to see what the performance is likely to be if a Web application server is added to a particular iSeries or eServer i5 server. Similarly, there are Workload Estimators for WebFaced and HATS applications that you may want to investigate since you can assume that iSeries Access for Web and HATS LE will be somewhat the same in the demands made on the server.

The red paper, "WebSphere for IBM eServer Buying and Selling Guide" (chapter 3) can be an excellent source for troubleshooting performance issues when using iSeries Access for Web and other applications with the WebSphere Application Server.

[NOTE: Hotlinks for both of the Web sites listed on this chart can be found in the "Links" section of this course.]



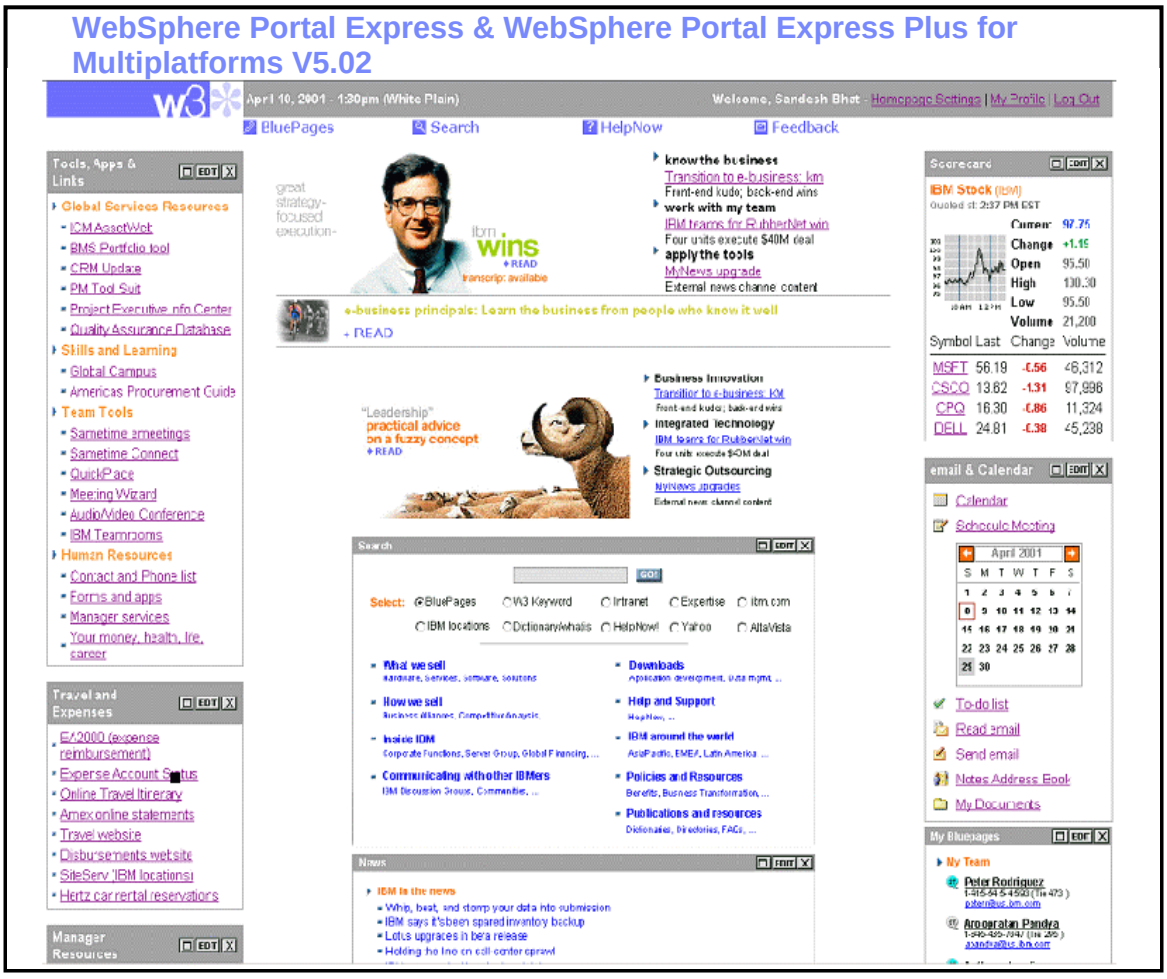
Demilitarized Zone

Look at this screen briefly to understand another key concept regarding Web application servers. You saw the reference to a three-tiered Web application model on two charts previously. This perspective of that same model incorporates the use of a DMZ (demilitarized zone). The DMZ acts as a firewall to protect the enterprise data and host application set from malicious intent that may attempt to come in from the Internet. Yet, this design still allows rightfully authorized browser requests to get through to enterprise server resources.

The HTTPS server acts as the gatekeeper and requires any browser user to start SSL before getting into the Web application server. Next, any user attempting to connect needs a valid OS/400 user id and password. If the user provides multiple incorrect passwords, that user profile will be disabled just as is true for users in an intranet environment.

If you need even tighter security, SSL can also be set up between the Web application server and the i5/OS environment. The time has arrived when it is truly safe to put your iSeries or eServer i5 server in the Web world!

The iSeries Access for Web code is installed in the IFS directory, via the Restore License Program (RSTLICPGM) CL command. To connect to multiple eServer i5 servers or partitions, you must install iSeries Access for Web on each server/partition. You only need to configure and run iSeries Access for Web on the server where the Web application server is running, but its code must be on the other servers/partitions as iSeries Access for Web stores temporary objects and other components in these IFS directories when connecting to various server services.



WebSphere Portal

What if all the applications you want to make available to your customers, employees, or vendors could be set up so that they are as easily accessed—as if the user were at a portal Web site, such as Yahoo. That is what is being exampled in this screen capture. The beauty of a portal is that once it is established, you can easily add access to a new application or set of functionality by simply attaching another portlet along with those already linked to the portal. One portlet may link the user into a sales order worksheet, while another can link to an e-mail and calendaring set of integrated functionality.

Setting up a portal can be much easier than you would think, thanks to IBM WebSphere Portal Express (and WebSphere Portal Express Plus for Multiplatforms). These two versions of this portal package became available on the iSeries platform in January 2004.

WebSphere Portal Express & WebSphere Portal Express Plus for Multiplatforms V5.02

iSeries-specific offerings

Flexible licensing

- per-user & per-CPU pricing
  - Applies to intranets, extranets, & Internet
- iSeries Enterprise Edition for i825/870/890
  - Includes 20 per-user licenses of Express Plus
    - o 20 per-user licenses with Model 520
    - o 60 per-user licenses with Model 570

Simple installation & set-up with wizards

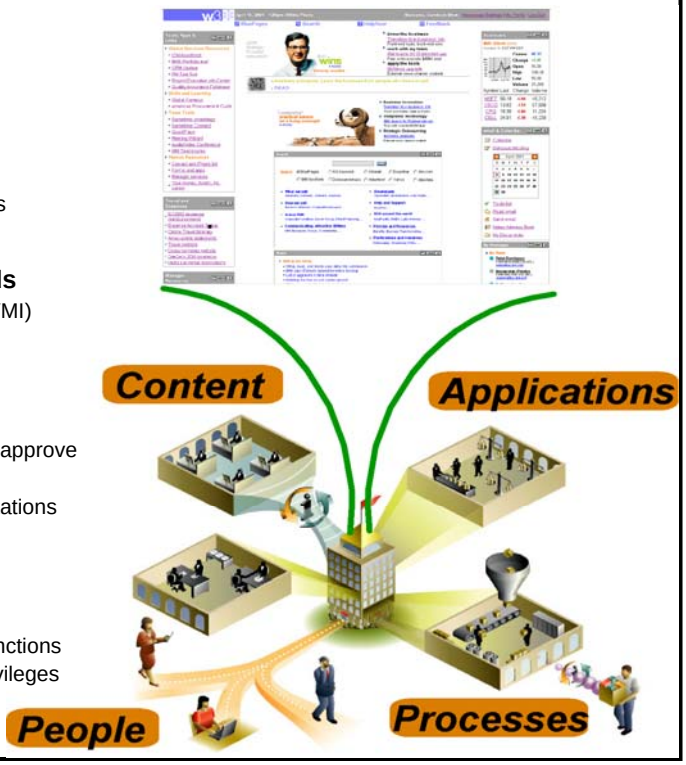
- Portal image included in Virtual Media Image (VMI)
- Creates production-ready portal server

New integrated portal function

- Document management
  - Store, categorize, search, subscribe, review, approve
- Productivity components
  - View/edit documents, spread sheets, presentations
- Collaboration Center
  - Only in WebSphere Portal - Express Plus

Simplified portal administration

- Intuitive interface, fewer steps for often-used functions
  - E.g., adding a user and assigning access privileges



WebSphere Portal

WebSphere Portal is a terrific “pull-it-all-together” vehicle, and IBM offers it in two very flexibly structured pricing scenarios. Either per-user or per-CPU licensing applies to intranet, extranet, and Internet users. And, there is the option to choose iSeries Enterprise Edition for the larger iSeries models.

WebSphere Portal represents a strategic direction for IBM as it provides a single unified workspace in which your employees, trading partners, and customers can easily find and use the applications and information that they need.

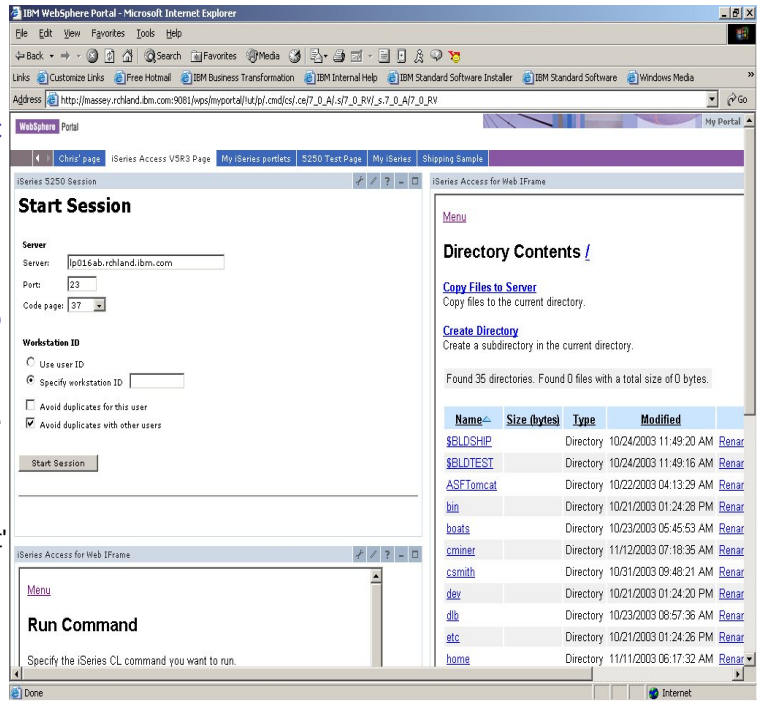
Presentation services let you customize a portal user interface to match your needs and to present content on different device types, such as laptops and mobile phones. WebSphere Portal connectivity services provide you with access to company data, syndicated content, or other external sources, such as your trading partner's applications. An end-user friendly interface allows portal users to select which applications to view and how to view them. A portlet API lets you easily add new function, applications, and data sources to your portal.

Document sharing across your portal community is also supported via a new document manager. Portal users can share, organize, and edit files of all types, including documents and spreadsheets. A built-in function allows editing of a variety of file formats. Or, you can use the document editor of your choice.

iSeries Access for Web runs in WebSphere Portal

Support for WebSphere Portal for iSeries

- **iSeries Access for Web can now run as a portlet when using the WebSphere Portal for iSeries product on your iSeries server.**
- **5250 emulation, database, and access to the IFS and printers can run in a portlet window**
  - For example, one might have the 'Database' function in one window and 'Print' function in another window



iSeries Access for Web Runs in WebSphere Portal

WebSphere Portal for iSeries supports iSeries Access for Web applications as portlets. This means that even your 5250 emulator applications can run as portlets on the portal.

The iSeries Access for Web Portal functionality is available with the latest PTFs and iSeries Access for Web V5R3.

File Portlets

- **iSeries File List: allows you to navigate, list, upload, and delete files**
- **iSeries File List Viewer: displays the file content**
- **iSeries File List Editor: lets you edit text files**
- **iSeries File Viewer: displays file content from an IFS file**

File Portlets

"Simple content publishing" refers to the ability to upload, edit, and ‘publish’ files from IFS. The V5R3 version of iSeries Access for Web, coupled with the latest service pack, has portlets that allows you to display files from IFS, as well as upload and manage files. It is not true content publishing, however, in the sense that there is no version control, approval process, content lifespan, etc.

There are four portlets related to files:

- **iSeries File List portlet** — Allows you to navigate, list, upload, download, and delete files and directories.
- **iSeries File List Viewer portlet** — Displays the file content. For example, it will let you view files when the file path is sent to the iSeries File List Viewer portlet from other portlets. When the File List portlet is on the same page, it can send path information of the file to be displayed.
- **iSeries File List Editor portlet** — Very simple 'edit' portlet that allows you to edit text files. This is done by sending the file path to this portlet from other portlets. When the File List portlet is on the same portal page, it can send path information of the file to be edited.
- **iSeries File Viewer portlet** — Displays file content from an IFS file. That is, it views the file that is configured in Edit mode.

Soon, you will also be able to use the iSeries File Viewer portlet to display HTML files that contain relative references (such as).

Print Portlets

- **Printer Output List portlet: lists spooled files for user or output queues.**
  It allows for holding or releasing, changing, deleting, and moving spooled files.
- **Printer portlet: lists printers.**
  You can start/stop printers.
  You can send the printer name to the Printer Output list portlet, which would cause the Printer Output list portlet to display the spooled files for the specified printer.
- **Printer Output Viewer portlet views spooled files in PDF format.**
  The spooled file information must be sent to it from another portlet.
  When the Printer Output List portlet is on the same page, it can send the spooled file information of the spooled file to display.
- **Printer Output Queues portlet: lists the output queues.**
  It allows you to hold/release the queues.
  It can send output queue information to the Printer Output list portlet, which would cause that portlet to display the list of spooled files in the specified output queue.

Print Portlets

Several print portlets are also available.

- The **Printer Output List portlet** lists spooled files for user or output queues. It allows for holding or releasing, changing, deleting, and moving spooled files.
- The **Printers portlet** lists printers. You can use it to start and stop printers. You can send the printer name to the Printer Output list portlet, which would cause the Printer Output list portlet to display the spooled files for the specified printer.
- The **Printer Output Viewer portlet** views spooled files in PDF format. The spooled file information must be sent to it from another portlet. When the Printer Output List portlet is on the same page, it can send the spooled file information of the spooled file to display.
- The **Printer Output Queues portlet** lists the output queues, allows for holding or releasing the queues. It can send output queue information to the Printer Output list portlet, which would cause that portlet to display the list of spooled files in the specified output queue.

Database Portlets

- **Database Table portlet: Displays data from a database table and allows update/delete/insert of table rows**
- **SQL Query portlet: Displays results of SQL query statement that is set in portlet's edit mode**
- **Dynamic SQL portlet: Runs SQL statements**

Database Portlets

There are some database portlets, too.

- The **Database Table portlet** lets you display data from a database table. It also allows for updating and deleting rows from the table, or inserting rows into the table.
- The **SQL Query portlet** displays the results of an SQL query statement that is set in the portlet's edit mode. Query results can be transformed into a variety of file types.
- The **Dynamic SQL portlet** allows SQL statements to be run. If the statement has a result set (SELECT), the data can be transformed into a variety of file types.

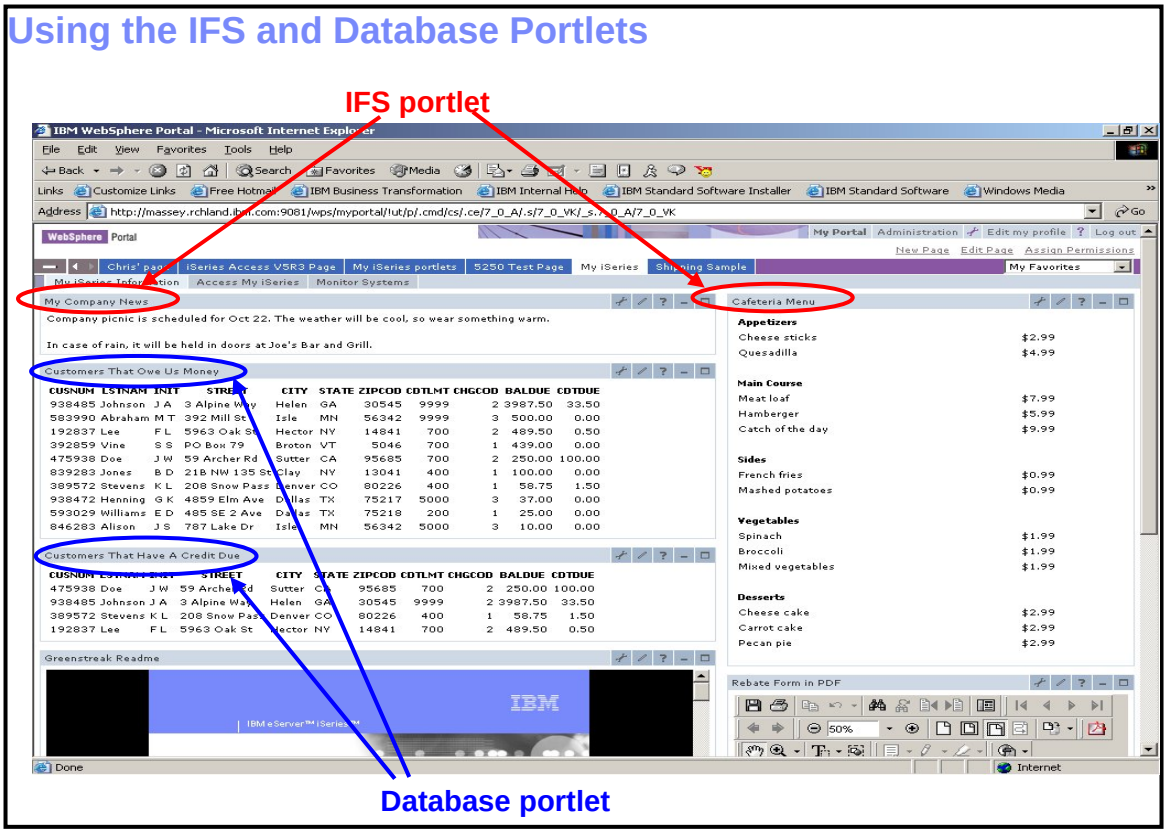
Miscellaneous Portlets

- **IFrame portlet:**
  Allows access to iSeries Access for Web servlet functionality
- **Credentials portlet**
  Allows for creating portal credentials to be used by the other portlets.
- **Welcome portlet:**
  A marketing type of portlet that explains IBM's product functionality.
- **Related links portlet:**
  Shows URL links to content related to the iSeries server family of products.

Miscellaneous Portlets

Finally, there are also a few miscellaneous portlets you might find very useful.

- The **IFrame portlet** allows access to iSeries Access for Web servlet functionality using the URL to the underlying servlet function. This option has some limitations, so if you have a native portlet implementation, it should be the preferred choice.
- The **Credentials portlet** allows for creating portal credentials to be used by the other portlets. This can help hide end user profiles and allows mapping between portal user accounts and iSeries user profiles.
- The **Welcome portlet** is a marketing type of portlet that explains IBM's product functionality.
- The **Related links portlet** shows URL links to content related to the iSeries server family of products.

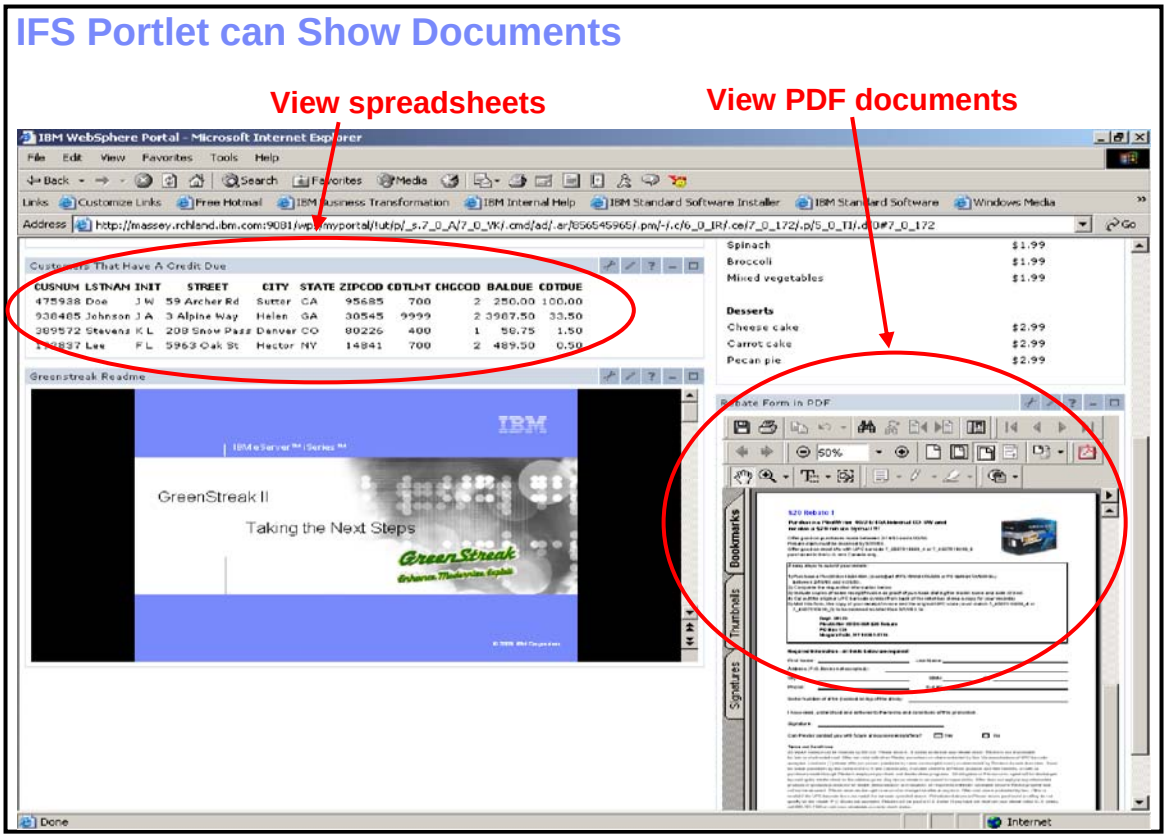


Using the IFS and Database Portlets

Simple content publishing to the WebSphere Portal is easy with the new portlet functions that are embedded within iSeries Access for Web. You can see examples shown on this screen capture that relate to typical ways you might use two of these new portlets: the Integrated File Server (IFS) portlet and the Database portlet.

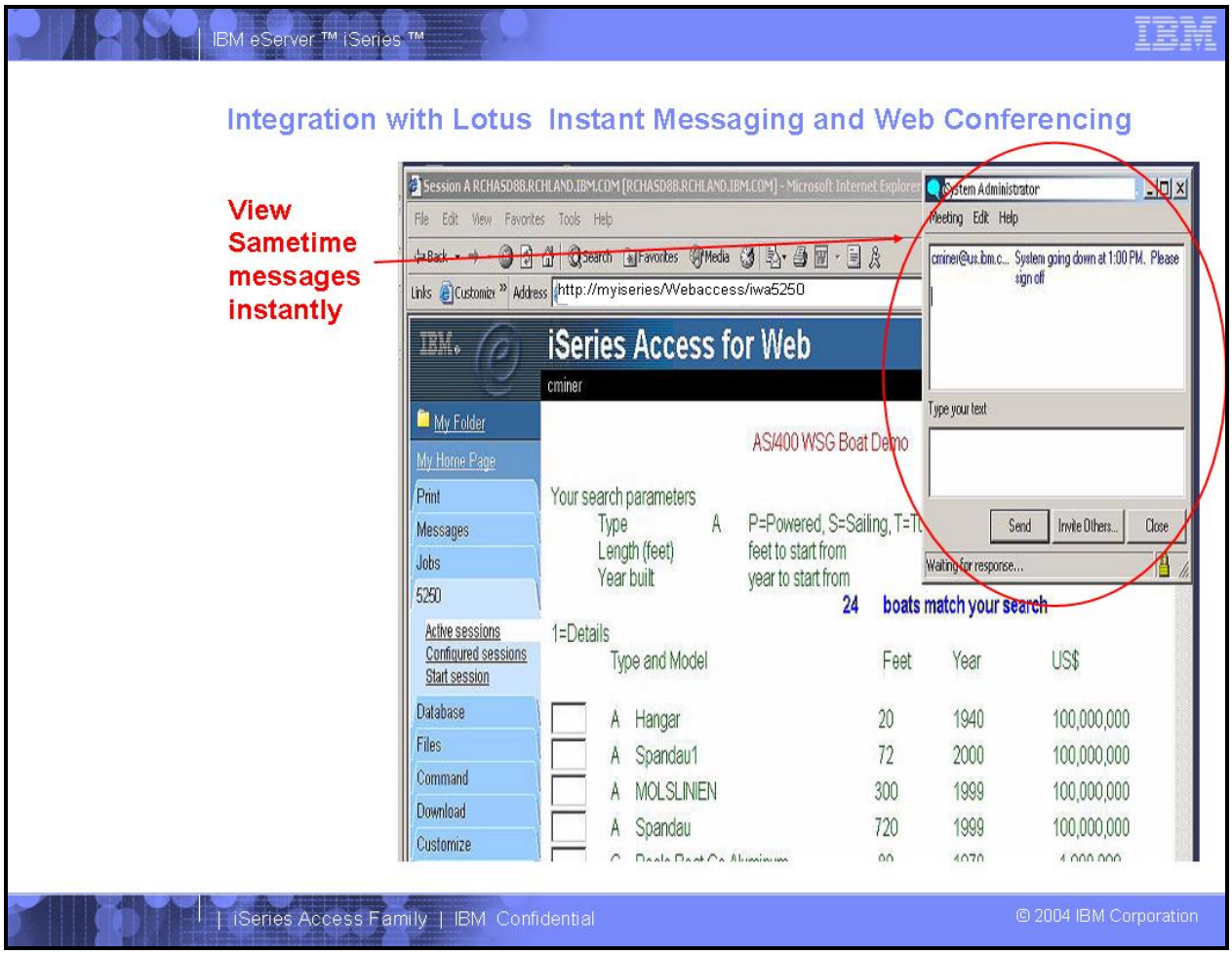
The IFS portlet could present internal news to your employees, such as upcoming meeting details and the all-important cafeteria menu.

The Database portlet can keep your customer service representatives, sales people, and other interested parties apprised of the status of customer account balances.



IFS Portlet Can Show Document

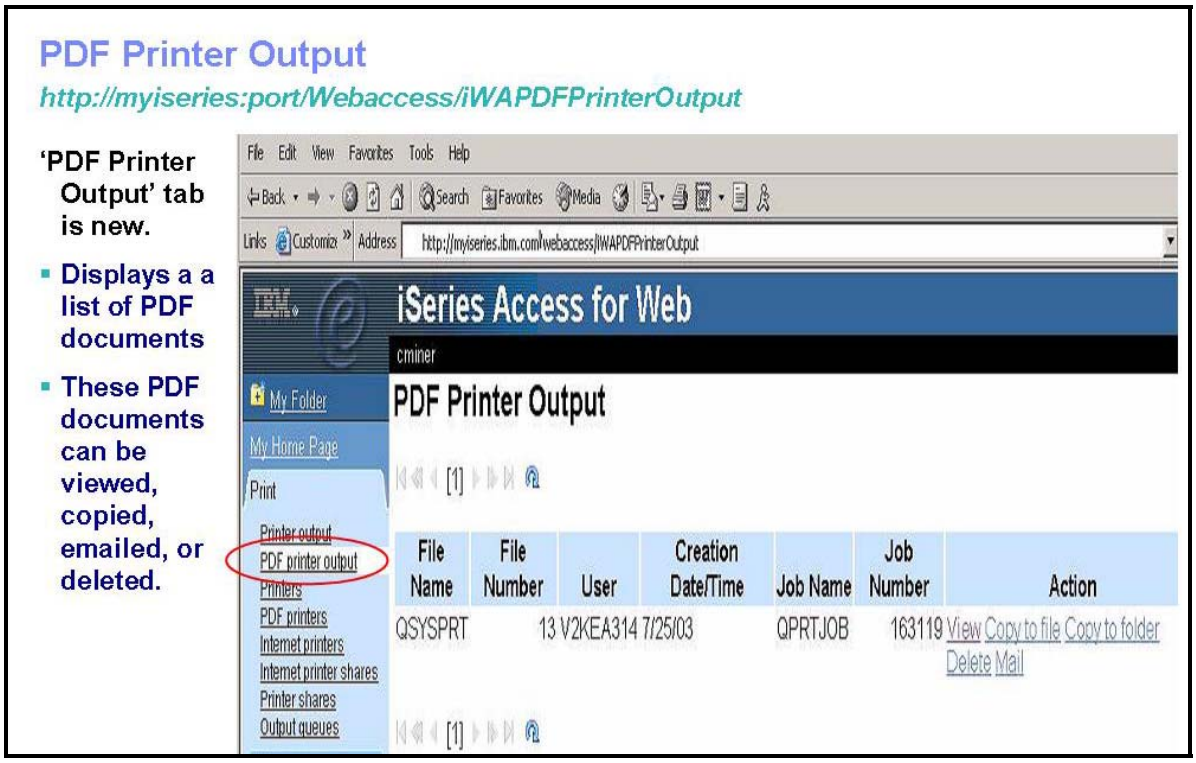
The IFS portlet can also store and show documents in a PowerPoint or PDF format. In this screen capture, you can see how this functionality can be used to show documents and supporting spreadsheets related to customer and inventory information.



Integration with Lotus Instant Messaging and Web Conferencing

For those of you who have Lotus® Instant Messaging and Web Conferencing applications, you will be interested to know the iSeries Access for Web is integrated with this instant-messaging software that is so popular in today's demanding enterprise environments.

For example, when using a native Windows 5250 emulator and the systems administrator sends out a break message, that message will immediately appear on the emulator screen. However, when using a browser-based 5250 emulator, the message would not be displayed on the emulation screen until the end user took some action, such as using the keyboard or mouse. If that user was using Lotus Instant Messaging, though, the message would instantly appear in his/her Lotus Instant Messaging screen.



PDF Printer Output

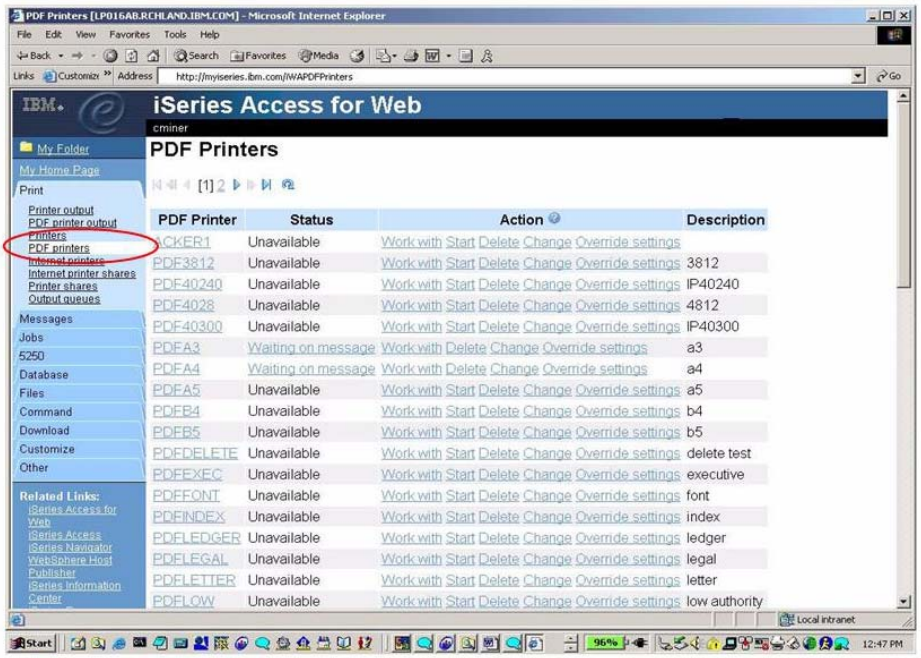
Clearly, one of the things that iSeries users like best about iSeries Access for Web is its flexible spool file support. You can run your host applications and access your printer output spool files via the browser client. You can view the print output and print it locally from any PC. You can even convert it to PDF format—all from iSeries Access for Web.

With the V5R3 release of this iSeries product, the print facilities have been made even simpler. The new “PDF printer output” tab allows you to display a list of PDF documents. From this list, you can click on a particular document to view its output. You can also e-mail it to others. And you can copy it to another folder, or even delete it from the list.

PDF Printers

http://myiseries:port/Webaccess/iWAPDFPrinters

- 'PDF Printers' is a new tab.
- A PDF printer is an iSeries printer that converts spooled files into PDF documents



Requires InfoPrint Server (5722-IP1)

PDF Printers

'PDF Printers' is another new tab within iSeries Access for Web with V5R3. A PDF printer is a logical iSeries printer queue where Advanced Function Presentation Data Stream (AFPDS) or SNA Character String (SCS) spooled files are automatically converted into PDF documents whenever a spooled file is routed to the output queue for that printer.

Both of these new tabs are activated when Infoprint Server for iSeries is installed, so let's talk about that product very briefly.

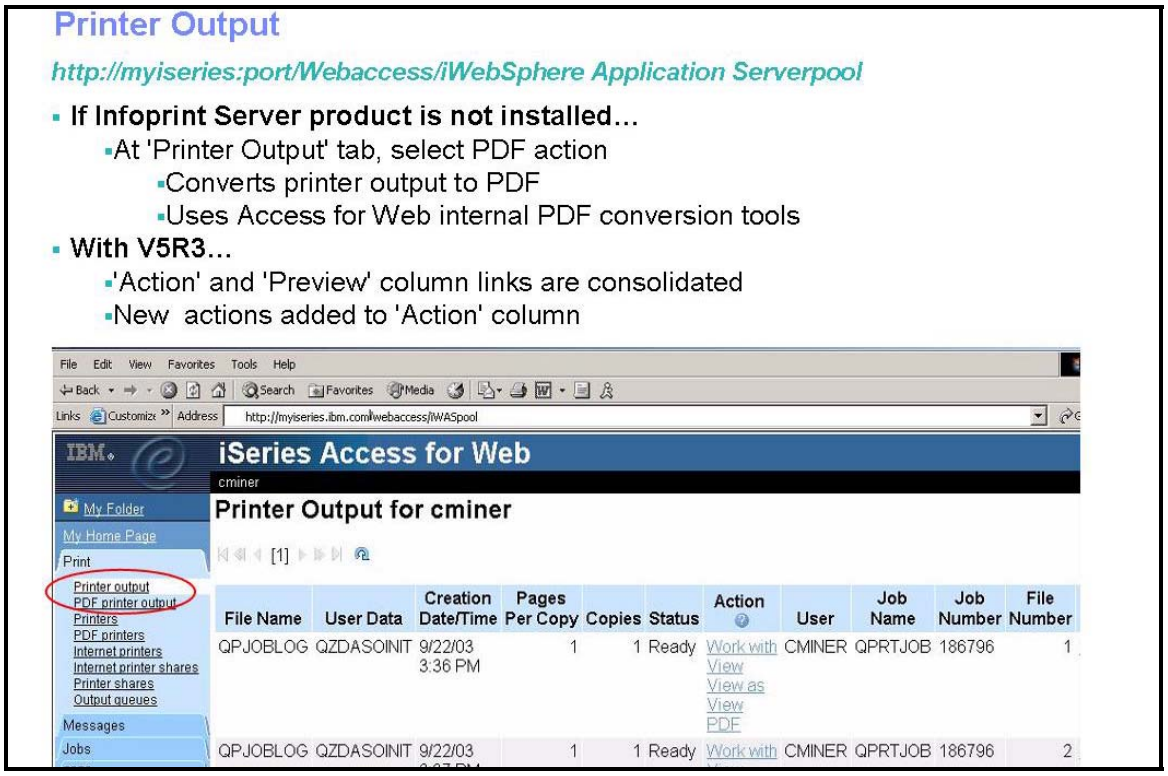
Infoprint Server for iSeries - 5722-IP1

- **Go beyond print-&-distribute.**
- **Manage/present business information electronically.**
  - Improve service levels, decrease transaction costs, reduce paper flow, and enhance competitive advantage with speed and flexibility.
- **Transform standard iSeries output format into Advanced Function Presentation (AFP) or PDF.**
  - Distribute via e-mail, Web, or local printing.
  - Benefit from iSeries management of network output.
- **Convert PCL, PostScript, GIF, TIFF, JPEG and PDF data into AFP.**
  - So iSeries server can efficiently handle these documents
- **Complementary trial**
  - 70-day evaluation
    - Activate/unlock trial from OS/400 Version 5 CDs.

www.printers.ibm.com/internet/wwsites.nsf/vwWebpublished/ipserverhome_i_ww

Infoprint Server for iSeries

This inexpensive offering lets you go beyond the traditional “print and distribute” model, so that you can mange the presentation of business information electronically. The details of the functionality provided by this product are listed on this chart, but I would like to point out that Infoprint Server is available as a 70-day trial evaluation simply by activating it from your OS/400 Version 5 CDs. You can find out more about this highly popular product by visiting the Web site shown here. This Web site is also found in the “Links” section of this course.

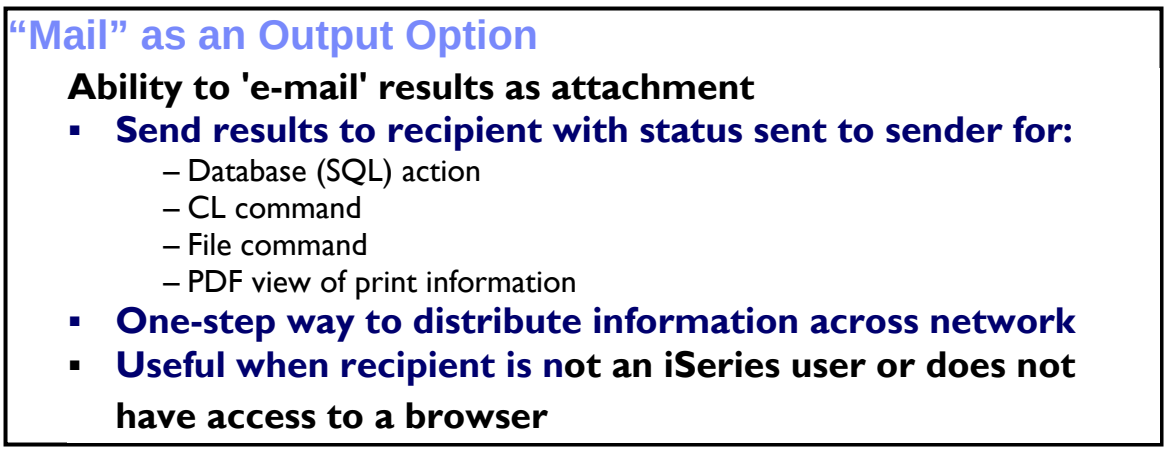


Printer Output

If iSeries users do not have the Infoprint Server product, they can still create PDF output. This is because iSeries Access for Web provides an easy-to-use GUI to work with iSeries printers and printer output (spool file). It also provides the ability for users to view printer output in the browser, and more exciting to users is that with simply a 'click,' the printer output can be converted to a .PDF document and stored or added as an attachment to an e-mail. These functions require no other products to be installed on the iSeries, nor any special configuration -- as this is base function in iSeries Access for Web.

You simply go to the 'Printer Output' tab, and select the ‘PDF’ action to convert printer output into PDF format. This process uses PDF conversion tools that are provided internally within iSeries Access for Web.

Under the ‘Printer Output’ tab, the 'Action' and 'Preview' column links have been consolidated and new actions have been added to the 'Action' column. We will talk about these when we mention the improvements to iSeries Access for Web printing in just a few minutes.



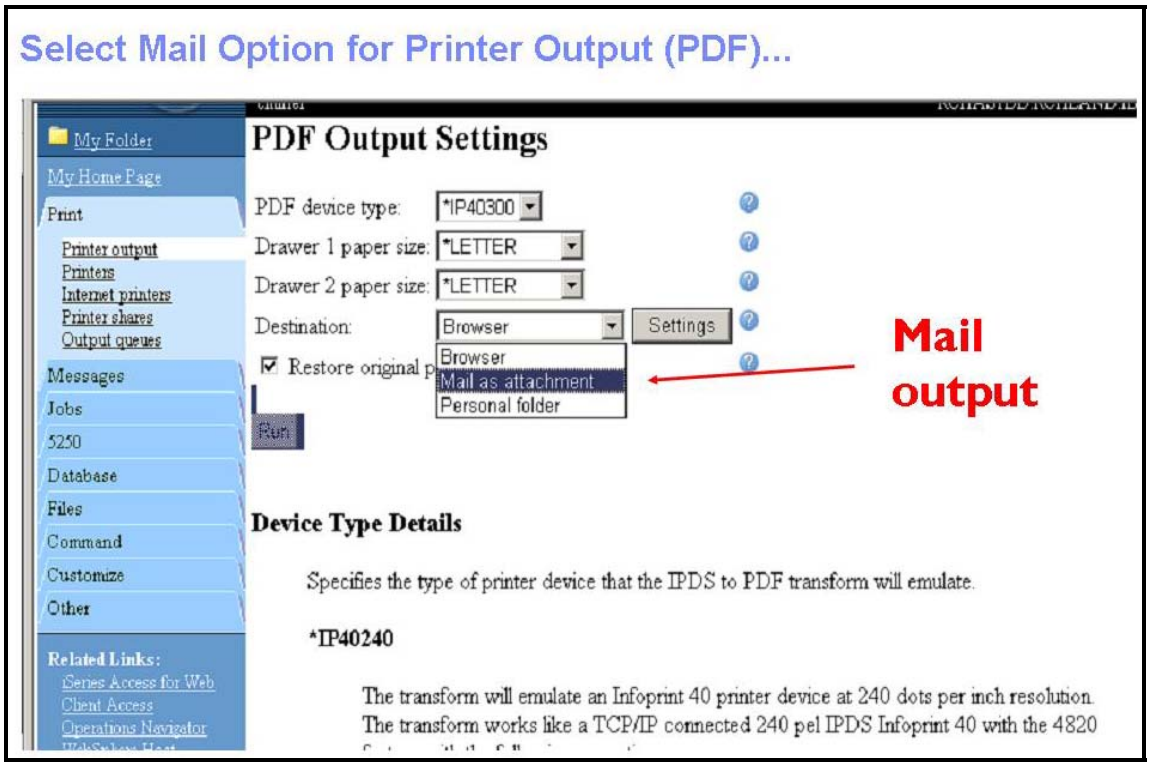
"Mail" as an Output Option

As of V5R2, iSeries Access for Web allows you to e-mail database query results, PDF printer output, command completion notifications, and other types of files. The mail function is available from several places in iSeries Access for Web, including the following tabs: Print, Database, Files, and Commands. For example, you can attach the results from an SQL request or mail a file located in the IFS. You can also send e-mail notifications to users when items are saved in Personal Folders. This provides a one-step way to distribute information across the network, and is particularly useful when recipients are not iSeries users.

You can tell iSeries Access for Web to attach the PDF to an e-mail instead of showing it in your browser. After selecting the e-mail option, the PDF file can be attached to a note. Then you would simply put in an e-mail address, add a message, and send the note along with the PDF attachment. You can also have the PDF sent to your browser or to your 'My Folder' or any other user's 'My Folder.' For users to be able to use the e-mail option, there must be a Simple Mail Transfer Protocol (SMTP) mail server somewhere in the network that the iSeries server can access, and its address has to be defined to iSeries Access for Web.

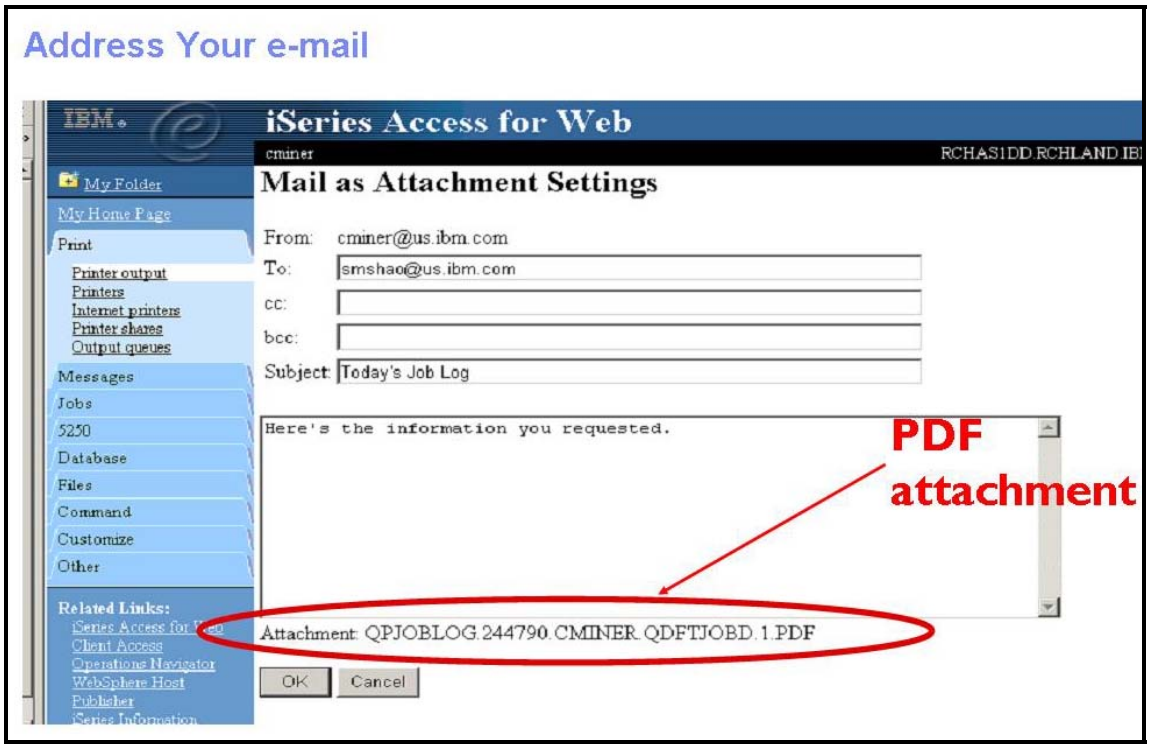
An iSeries administrator can quickly set up the SMTP mail server address for all iSeries Access for Web users. Click on the 'Customize' function and select Group Profiles. Then, on the *PUBLIC group profile, select 'Edit.' Alternatively, since many iSeries shops use the OS/400 System Distribution Directory (SDD) to keep user information (including configured e-mail addresses), iSeries Access for Web will get e-mail addresses from the SDD if the SMTP mail server address is blank.

Additionally, the e-mail function can only be used if a user's e-mail address is included via iSeries Access for Web customization. The administrator enters this information individually for each user, or can allow users to configure their own e-mail addresses in the 'Mail Preferences' portion of the Customize tab on the iSeries Access for Web navigation bar. New in the V5R3, iSeries Access for Web version has the ability to import/export e-mail addresses. If your users' e-mail addresses already exist in the list, this would be a simpler way to import them into iSeries Access for Web.



Select Mail Option for Printer Output (PDF)

To send a PDF as an attachment, users need to select ‘Mail as attachment’ in the PDF Output Settings dialog box.



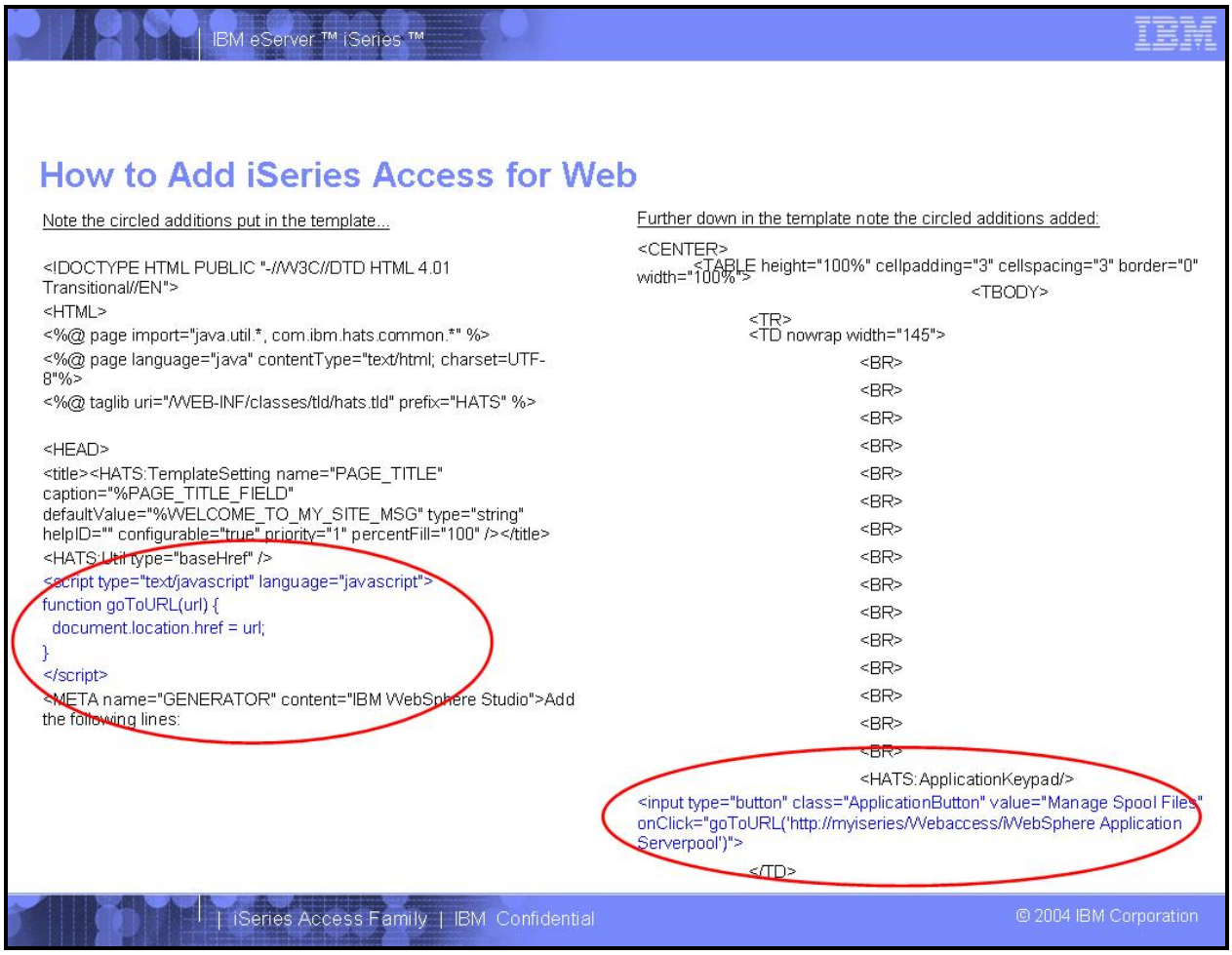
Address Your e-mail

On selecting the ‘Mail as attachment’ option, a form is displayed with the e-mail address, recipient’s e-mail address, and the attachment.

Just click “OK” and your e-mail with a PDF attachment is on its way.

iSeries Printer Output from Other Applications

The additional elegance of the Print Spool functionality that is provided with iSeries Access for Web is that other applications can use it. Here you can see an example of a HATS LE application that contains a link to "Manage Spool Files." When you click on this button, you are brought into the iSeries Access for Web print spool functionality we just reviewed. This same linking could be done from the IBM WebFacing Tool or from a HATS application as well.

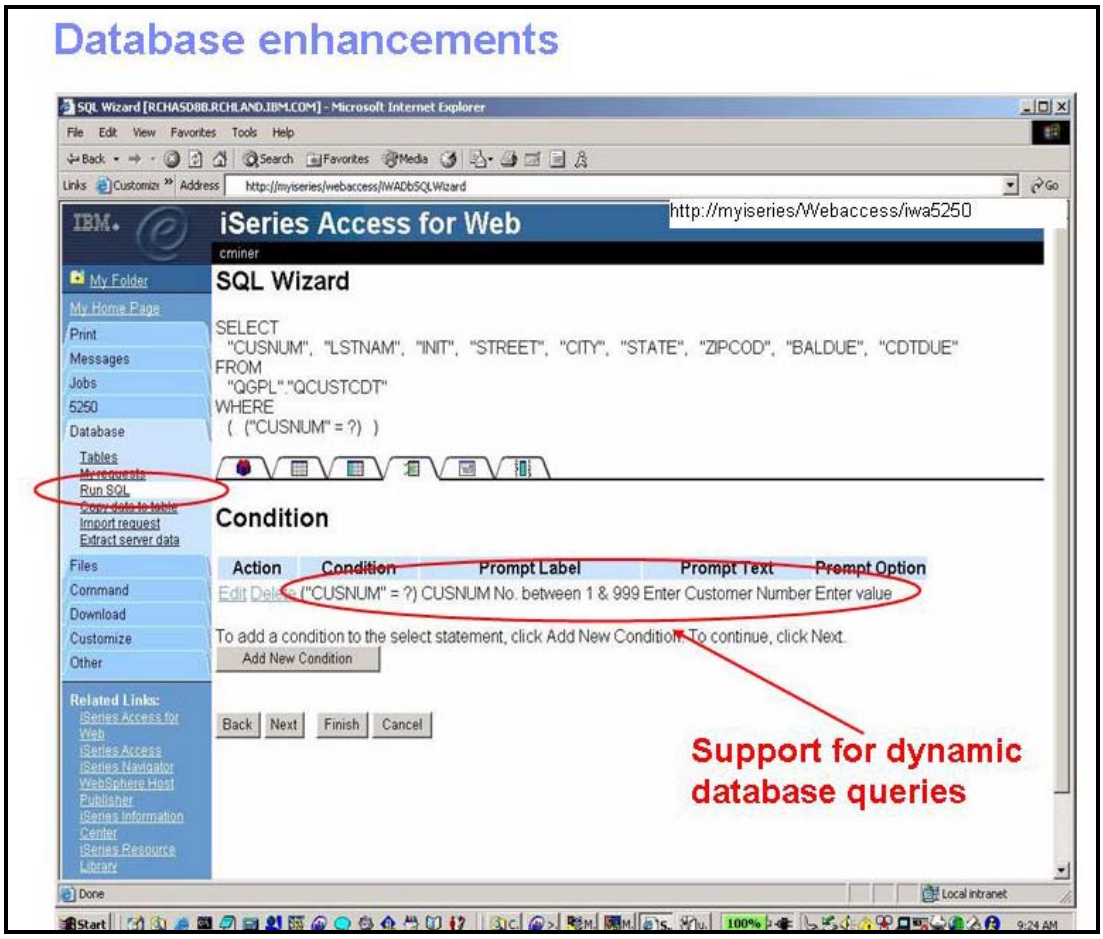


How to Add iSeries Access for Web

Let's look at how you would bring the iSeries Access for Web functionality into your HATS LE application.

Edit your template to include linking to iSeries Access for Web "Printer Output" so the users can see and print their jobs. The easiest way to modify your template is to open the HATS LE Administrative Console, click "Advanced," select your template, and click "Edit."

The additions that you would need to make to your HATS LE code are shown here on, circled in red. This is done using the Advanced Administration XML tools for HATS LE XML.

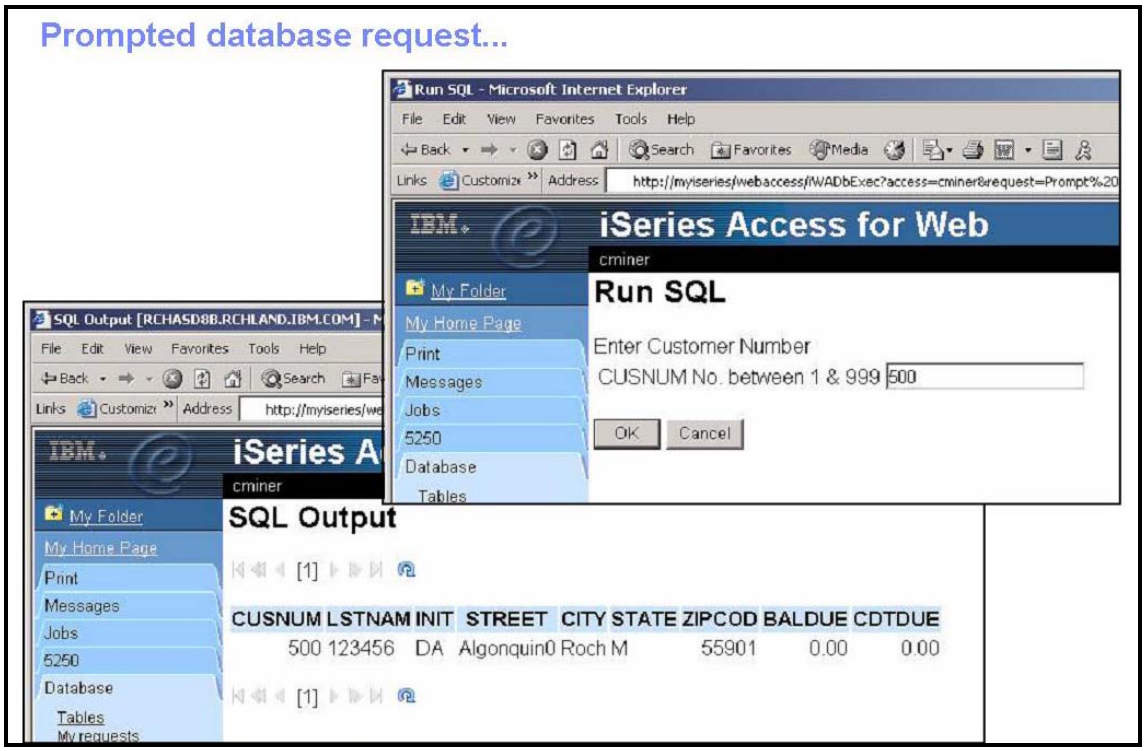


Database Enhancements

V5R3 supports dynamic database queries. Previously, you could build and save a database request, and a user could run the same request over and over. The SQL Wizard now can generate SQL requests with markers for conditional values. An administrator might build a query to retrieve some particular customer information, and then the users can enter some unique customer field and get specific information. You can see an example of this query on this screen.

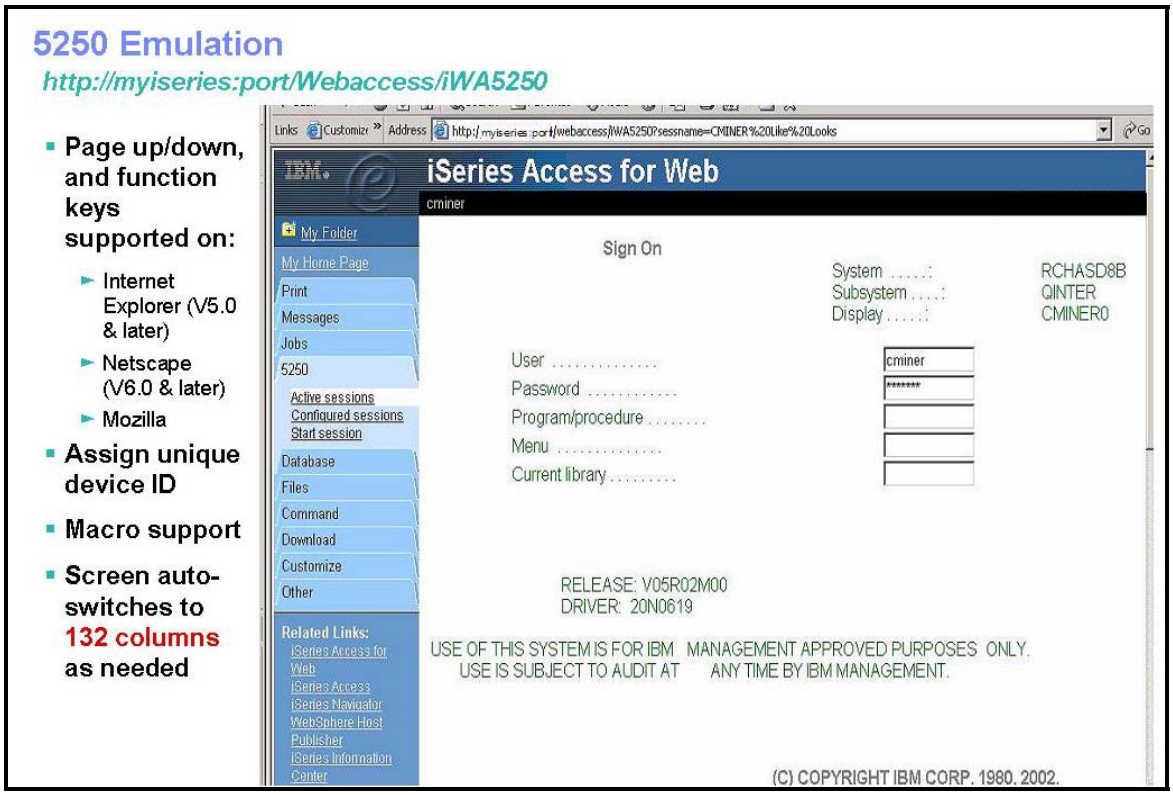
iSeries Access for Web also provides other database functions. The 'Run SQL' action enables you to manually create statements. Since iSeries Access for Web uses pure SQL, you could copy and paste any SQL request into here and run it, save it, and make it available for yourself or others to run again. Both 'Run SQL' and 'Copy Data to Table' support the XML spreadsheet format used by Microsoft Excel 2002.

'Extract Server Data' is a new action under the 'Database' tab that retrieves information about objects on the iSeries server which is then stored in a database table. General object information can be retrieved for any iSeries object type. Object-specific information can be retrieved for: directory entries, messages, software fixes, software products, system pool, and user profiles.



Prompted Database Request

Then, when the end user runs the query, a prompt would appear to key in 'customer name,' 'customer number,' etc. (See the top right screen, shown here.) The results of the request can be viewed in the user's browser, attached to an e-mail message, shown in an Excel spreadsheet, or added into a file or Personal Folder.



5250 Emulation

As mentioned already in this course, 5250 emulation is available with iSeries Access for Web. Let's talk about it in more detail now. Here you can see a screen capture that shows what a 5250 active session would look like. The 'page up,' 'page down,' and all function keys are supported on: Microsoft Internet Explorer (version 5.0 and later), Netscape Navigator (version 6.0 and later), Opera, and Mozilla. There is also support for unique device IDs, macros, and the automatic switching of the screen to 132 columns, whenever needed.

5250 enhancements

iSeries administrator sets 5250 policies and preferences for end users

- **5250 sessions are also customizable via 'Preferences' and 'Policies' functions.**
- **New 'initial macro' can be played immediately after a session is started.**
  - **Allows users to bypass OS/400 sign-on screen**
  - **Initiates a host application on user's behalf**
- **Shortcuts to session configurations and macro definitions can now be created.**
- **Active sessions can now be shared with other users and groups.**
  - **Useful for Help Desk (to view end-user experience)**

5250 Enhancements with V5R3

In the V5R2 version of iSeries Access for Web, the iSeries administrator could control and customize all functions, except 5250 emulation. Now in V5R3, the 5250 sessions are also fully customizable by the administrator by invoking the 'Preferences' and 'Policies' functions.

Shortcuts to session configurations and macro definitions can be created so that users or specific groups of users can connect only to the session specified by the administrator. To create a shortcut, a name and an access value is specified. The access value identifies the user or the group profile that can access the shortcut.

Another new function, called initial macro, can be set up to be played immediately after a session starts. By utilizing this function, once users have provided a valid user id and password, they can bypass the OS/400 sign-on screen and have a specific host application started on their behalf. The initial macro can be specified on the Start Session page or as a configured session setting.

These preconfigured sessions allow sharing configuration and definitions with users and groups, thus enabling the preconfiguration of macro definitions for other users or groups to use for sessions and macros.

Active sessions can now be shared with other users and groups—a feature primarily for use to Help Desk personnel who can see what the user is viewing. The user who starts the session maintains its complete control, including the ability to enter input or change session settings. Help Desk personnel can restart the session with the user in view mode, and then make changes to the shared session.

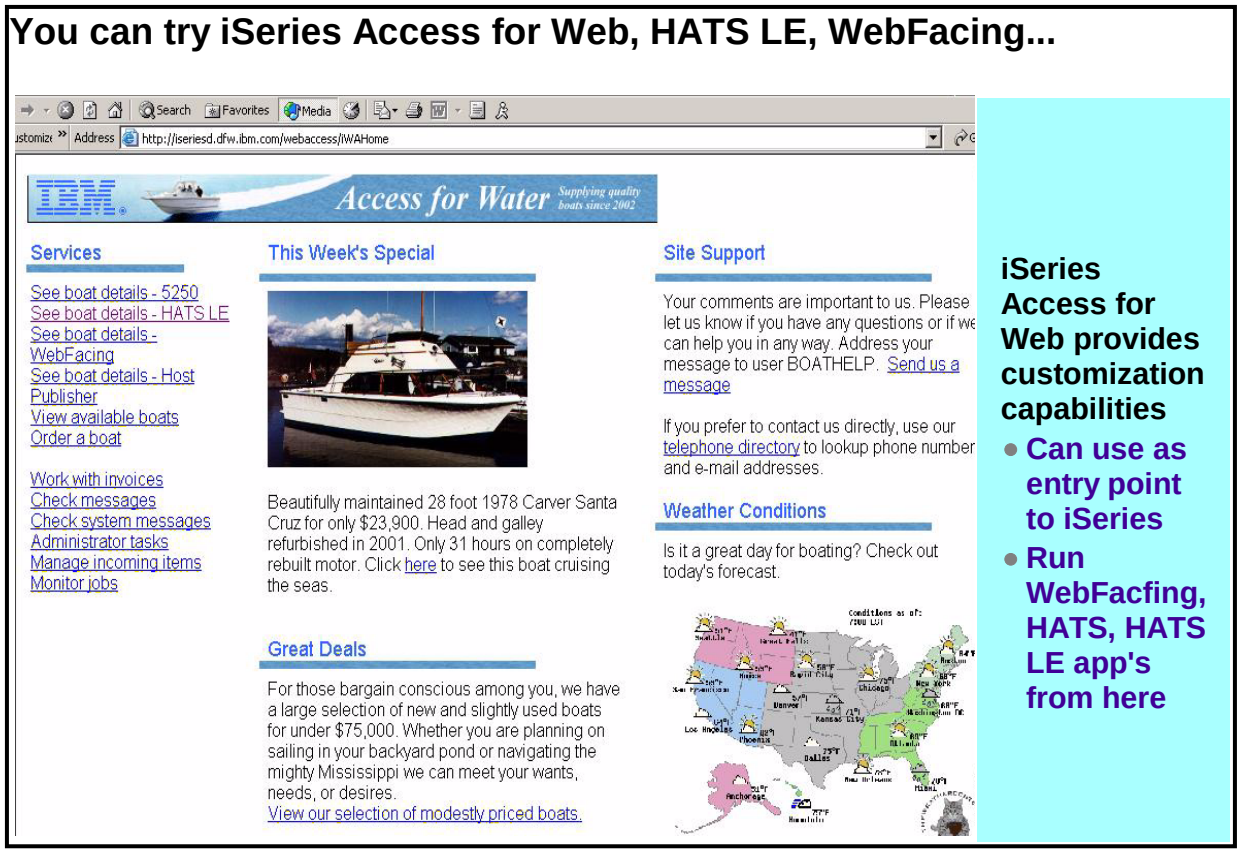
5250 enhancements (continued)

- **Support for precise cursor positioning**
- **Support for WebSphere Portal for iSeries**
  - **Run a 5250 session as a portlet**
  - **Use the CFGACCWEB2 CL command to deploy**
- **Integration with Sametime**
  - **E-mail support**
  - **Pop-up support**

5250 Enhancements (continued)

The cursor can now be precisely positioned within a field. This is useful when an application requires the cursor to be at an exact location within a field for context-sensitive operations. This setting takes effect only if the ‘Enable Cursor Positioning’ setting is enabled.

As already mentioned, 5250 emulation is now possible via a portlet window when using WebSphere Portal for an iSeries product. The ‘Configure iSeries Access for Web’ (CFGACCWEB2) CL command can be used to deploy portlets, including a 5250 session portlet, to WebSphere Portal for iSeries.



You can try iSeries Access for Web, HATS LE, WebFacing…

The best way to understand the benefits of iSeries Access for Web is to see it! Go to the Web site shown on this chart (and provided in the "Links" section of this course) and use the User ID (WACUST) and password (Guest1) to sign into the EXPERIENCED USER page. This demo (which runs on an iSeries server in Dallas, Texas) shows the basic look of iSeries Access for Web as IBM ships it. You can try various functions, including working with printer output and other options. You can click on the 5250 tab, sign onto the iSeries server, then start an RPG application called BOATS and run it.

You can start up another browser session to the same URL—using a second user ID (BOATADMIN) and password (ADMIN1BOAT)—to sign into the Access for Water INEXPERIENCED USER page.

This is an example of how a business might design a Web page for its use. You will see that an end user could start the same BOATS application by clicking on the 5250 session—or if they had used IBM WebFacing Tool for iSeries or WebSphere Host Publisher, they could run the application with those interfaces. You can click on all three links and see the same application in different views. You will also see other links that let a user work with spool file information, work with IFS, run database requests, etc.

[NOTE: Obviously, this Web site is also a great place just to learn about the functionality of this offering for yourself… enjoy! And, good luck!]

HATS Limited Edition

Part of iSeries Access Family - 5722-XW1

- Automatically ships with new orders for 5722-XW1
- iSeries Access Family users (at V5R2) can order no-charge Feature Number 2646 of 5722-XW1 to receive HATS LE

Runs in a browser

- Delivers HTML to the desktop
- Only software needed on the client is a Web browser
- Uses browser SSL features

A quick and easy way to put iSeries applications on the Web

Works on all 5250 screens

- Stock templates included to quickly personalize Web pages to your company look & feel

Screens are converted on the fly, in real time

- Convert selection lists to hot links, buttons, drop-down menus, or option lists (radio buttons)
- Convert PF keys to buttons or hotlinks

No programming necessary

- Does not break if changes are made to 5250 application
- No need to access source code

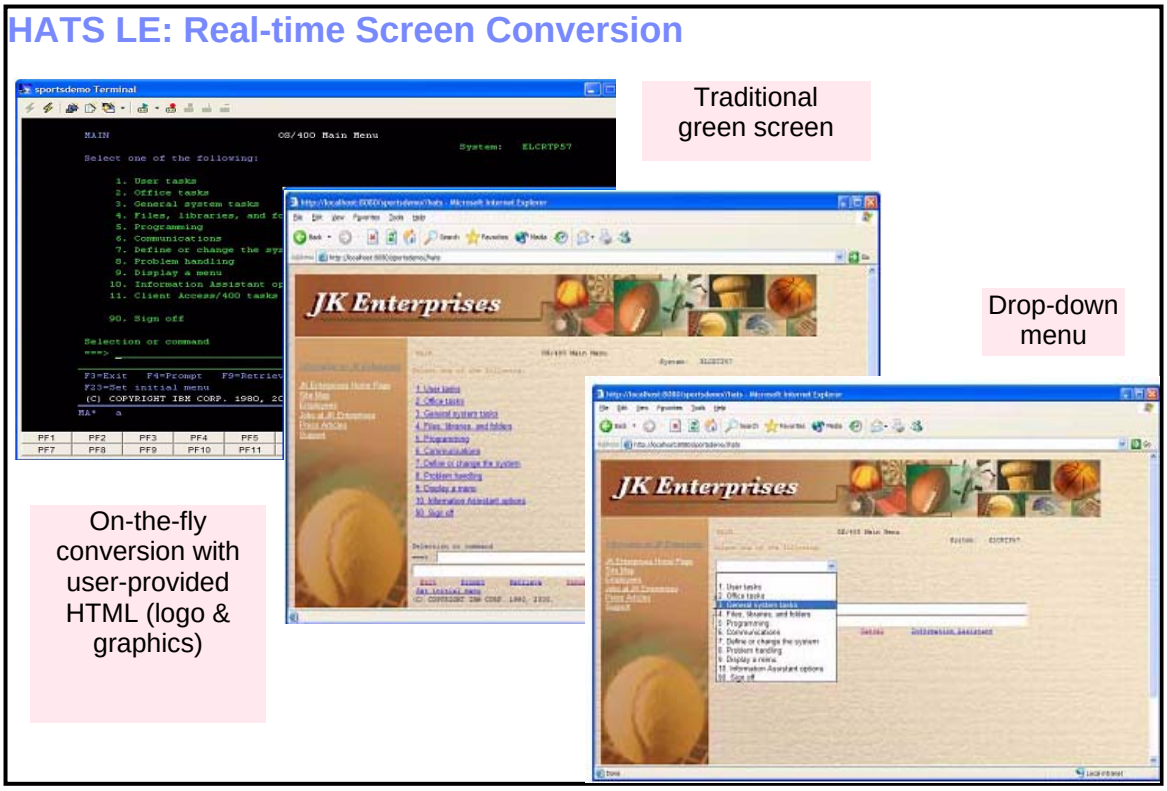
Host Access Transformation Services Limited Edition (HATS LE)

HATS Limited Edition is similar to Host Access Transformation Services (HATS) in that both products provide a highly visual GUI for users who work with iSeries applications via a browser interface. The two differ in terms of implementation and functionality. HATS LE lets you modernize your iSeries host environment, while HATS enables you to additionally modernize a specific application.

HATS LE is exclusively available with the iSeries Access Family (ships automatically with 5722-XW1), while the HATS runtime is purchased separately. An iSeries administrator only needs to provide information on three simple configuration screens to get HATS LE up and running. The HATS studio runs on the WebSphere Development Studio Client, its tools must be used to perform configuration and other functions to make the host applications more visually appealing.

Like iSeries Access for Web, HATS LE requires only a browser on the client in order to deliver HTML to the desktop—all else is server-based. It supports SSL and works on all 5250 screens. Stock templates allow you to quickly personalize the resulting HTML to meet your organization's "look and feel" standards. The 5250 screens are converted in real time. Selection lists can be transformed into hotlinks, buttons, drop-down menus, or option lists that appear as radio buttons. PF keys become buttons or hotlinks. Conversions happen automatically, requiring no programming skills or source code. The

resulting HTML needs no changes when 5250 applications are changed. All this makes HATS LE an out-of-the-box tool that can be used extensively.



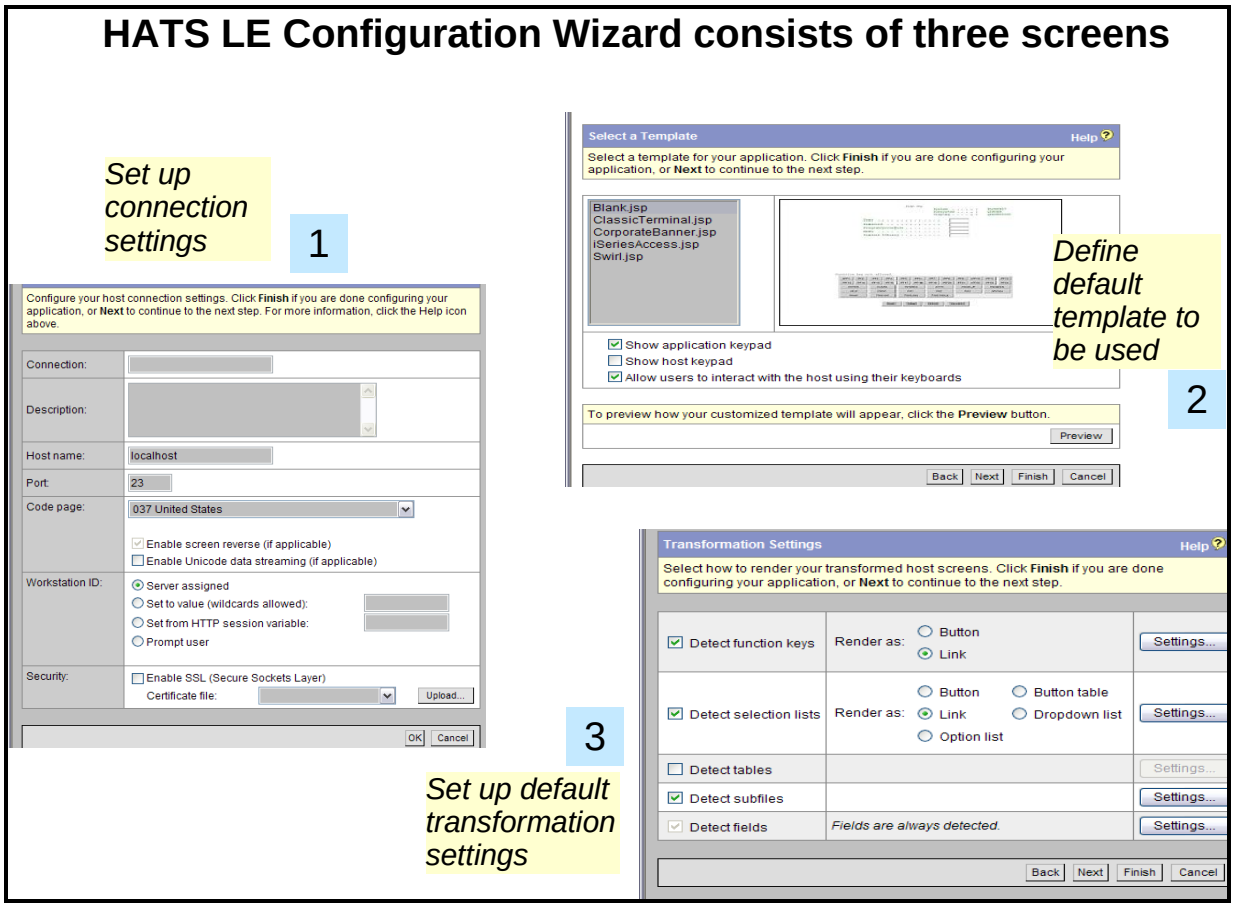
HATS LE: Real-time Screen Conversion

HATS LE has three configuration screens, as shown here:

- The traditional green screen
- The ‘on-the-fly’ conversion that results from the use of the stock templates and includes the company’s logo and related graphics, and
- The dressed-up version where option lists are converted to drop-down menus and other GUI tricks today’s users like so much.

You must install a WebSphere Application Server to run applications with HATS LE as it is not supported with the AFS Tomcat web application server.

HATS LE also supports all the “Tier 1” languages, including those using double-byte characters.



HATS LE Configuration Wizard Consists of Three Screens

The HATS LE configuration wizard contains three screens, as shown here.

The first screen is used to configure the connection settings. You will enter the connection, its description, the local host name, the port, the code page, the workstation ID, and security details. For example, will this connection use Secure Sockets Layer (SSL), etc.

The second screen will define the default template that is to be used for the graphical interface from this connection. You will select from a set of templates shown on the left side of this screen.

The purpose of the third screen is to allow you to set up default transformation settings. For instance: Will function keys be rendered as a button or a link? Will selection lists be rendered as a button, a link, an option list, or a dropdown list?

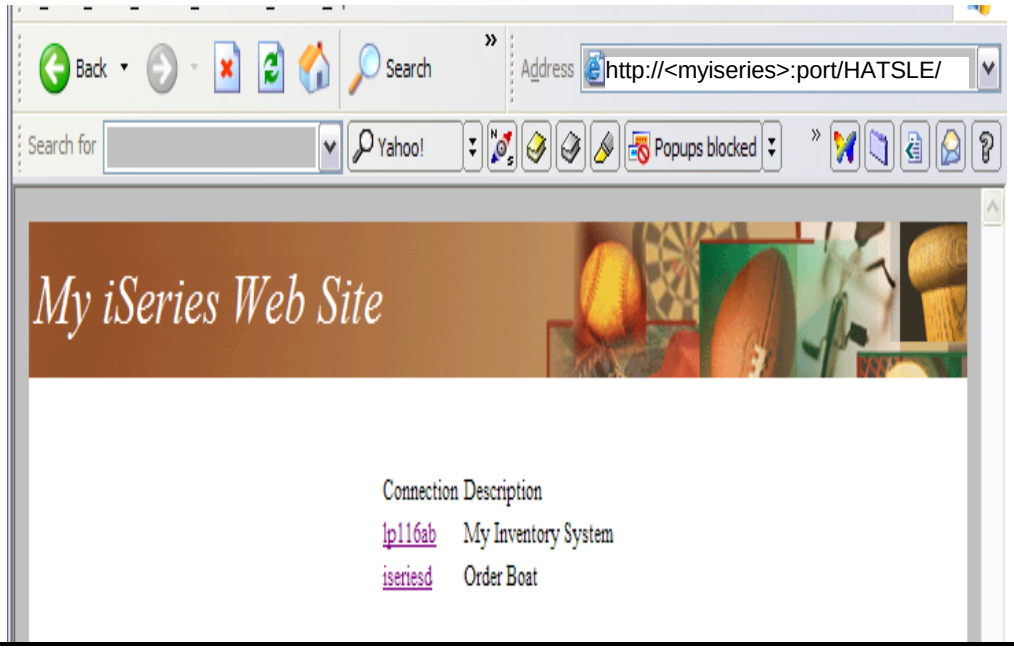
Users Can Connect to Multiple Servers

http://<myiseries>:<port>/hatsle

Administrator can configure HATS LE so users can connect to multiple servers

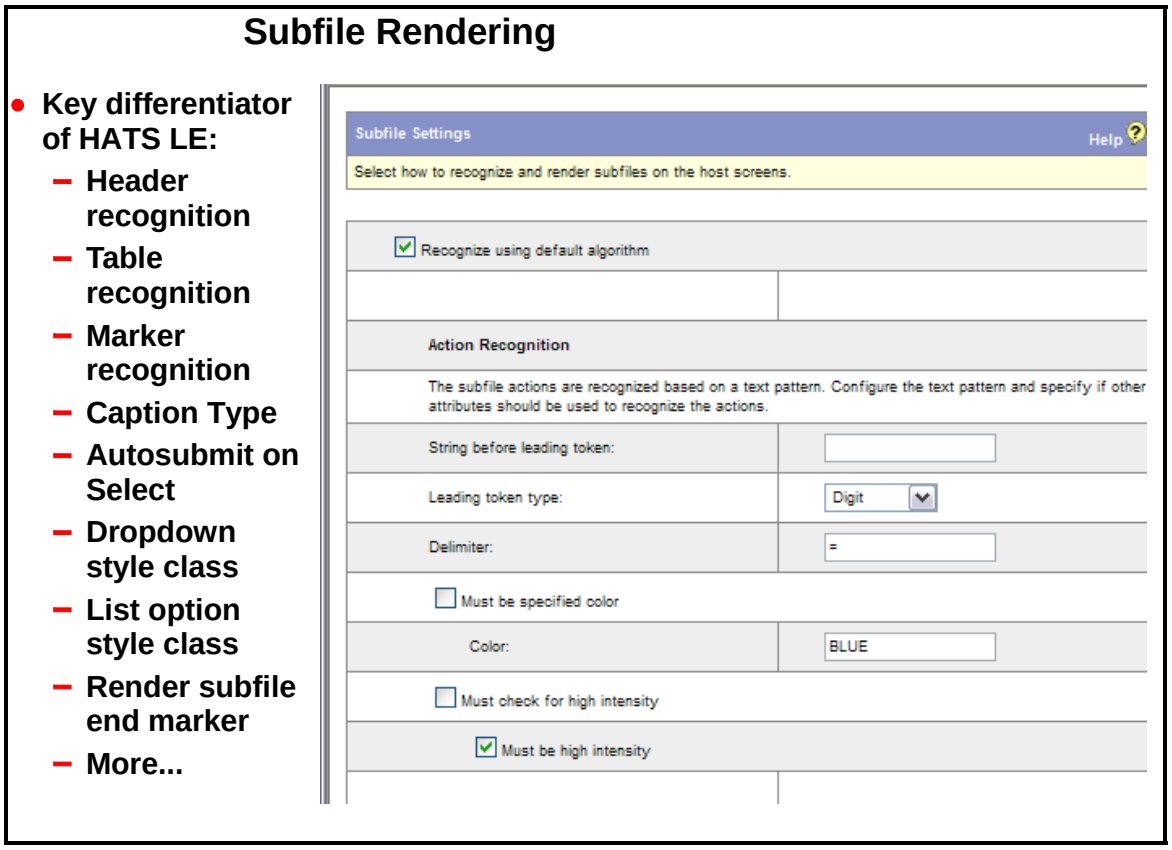
New in HATS LE V5

- **Only give one URL to end users**
- **Choice of server to connect to**



Users Can Connect to Multiple Servers

Users have the flexibility to connect to multiple iSeries or eServer i5 servers. This multi-connectivity is configured by the iSeries administrator. The end user only needs to be given one URL address, and yet they will have the choice of which server to connect.

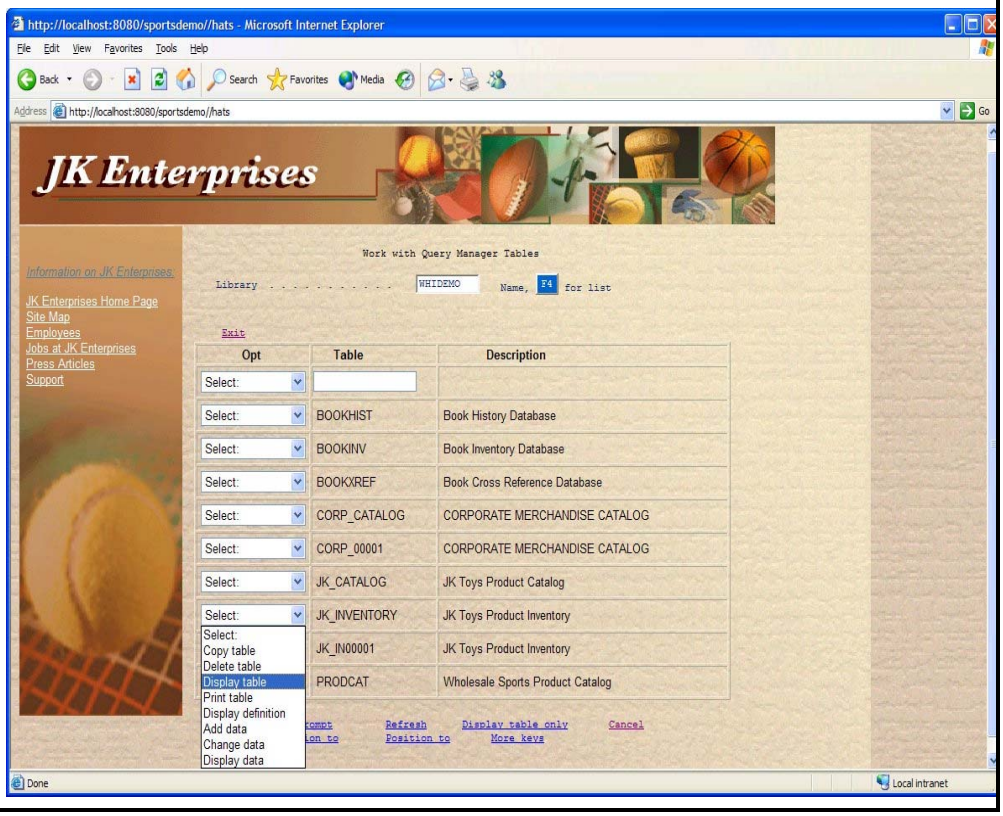


Subfile Rendering

A feature that distinguishes HATS LE from iSeries Access for Web is its handling of subfiles. You have the flexibility to recognize headers, tables, and markers. You can also specify marker type and “autosubmit” on a Select. You determine the dropdown and list option style class. Other subfile processing is also available for your needs.

Subfile Handling by HATS LE...

- **HATS LE has special default code to handle 'subfiles.'**
  - **Ran command 'STRQM'**
  - **Selected 'Work with Query Manager Tables'**



Subfile Handling by HATS LE…

You can determine how your HATS LE application will transform components of the host screen into widgets on a Web page. For example, you can specify that selection lists should be transformed into drop-down lists, lists of links, or buttons, you can specify how to recognize PF keys on your host screen, and you can say whether text copied from the host screen should stay the same color or have its color determined by the style sheet. But one of the special features of HATS LE is the flexibility it provides for enabling you to set how subfiles should be treated. As part of the HATS LE configuration, you have many options for how subfiles will be recognized and rendered. HATS LE includes many panels of options for recognizing the beginning and end of a subfile Here are some of the options:

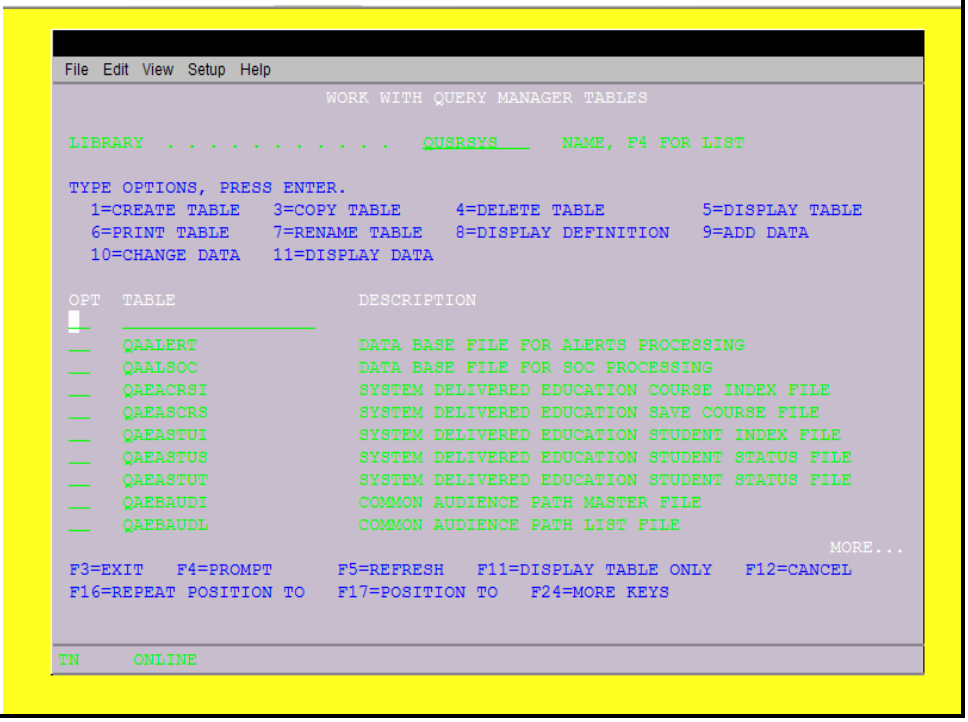
- String before the leading token
- Leading token
- End delimiter
- Minimum required options
- Selection target – Row, Column
- Action key
- Sort list options - Sort by, Sort order
- Convert action number

- Caption type
- Layout
- Number of columns per row
- Separator
- Link style class
- Style

The example on this slide is of an OS/400 screen that uses subfiles. I ran the command STRQM (start query manager), and then selected ‘Work with Query Manager Tables’. By simply using the defaults shipped with HATS LE, this screen very nicely handles the look of these subfiles.

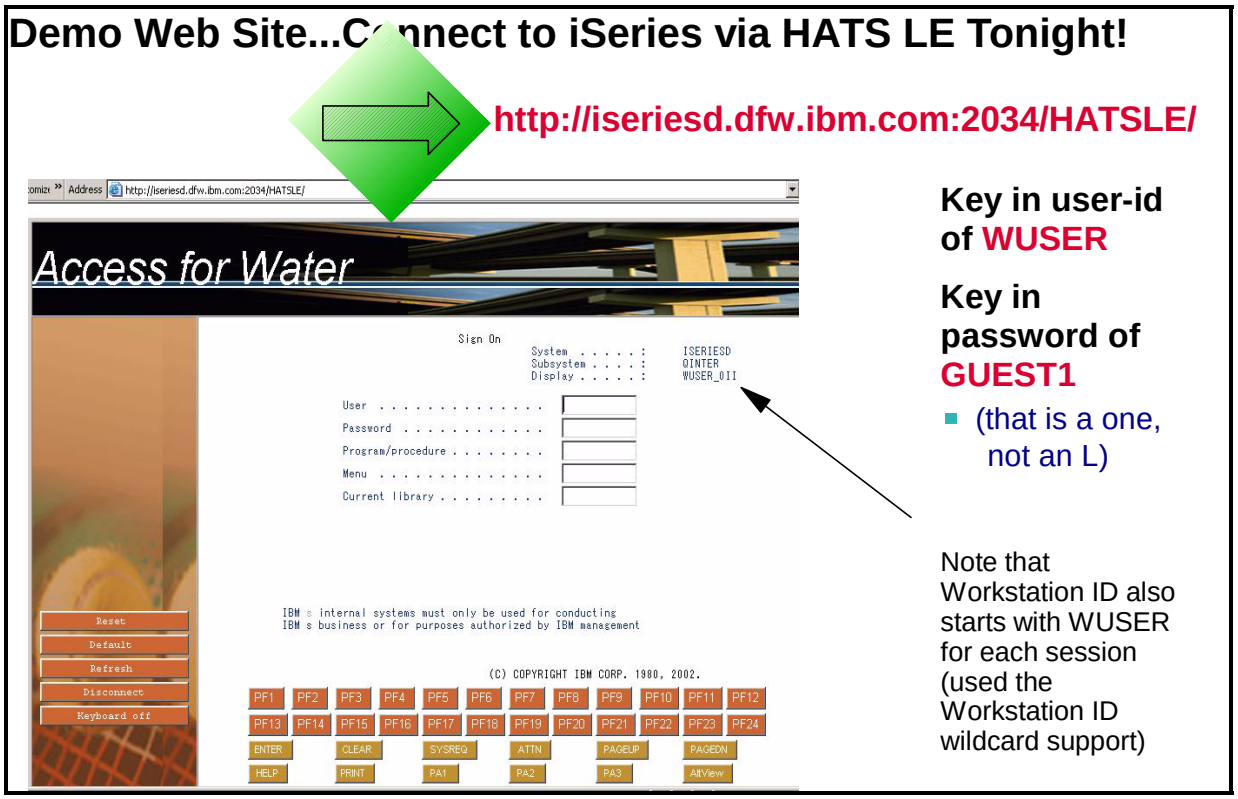
Another TN5250 Browser-based Emulator

- **Same screens using another TN5250 browser-based emulator**
  - **Ran command 'STRQM'**
  - **Selected 'Work with Query Manager Tables'**



Another TN5250 Browser-based Emulator

Here is an example of using another 5250 browser-based emulator to work with the same OS/400 screens and running the same command. You can quickly see compare these two views and realize that HATS LE gives your iSeries environment a much more GUI-look with no effort on your part – other than installing and configuring the product.



Demo Web Site… Connect to iSeries via HATS LE Tonight!

Here is a screen capture from another convenient and very useful demo—for HATS LE. You can access this demo 24 hours a day by going to the Web site shown here. (This site is also listed in the “Links” section of this course.)

The user ID is “WUSER” and the password is “GUEST1”.

iSeries Access for Wireless 5722-XP1

Application Flexibility, Innovative Technology

Integrated package of wireless functions and middleware

- **Management Central-Pervasive**
  - Enhancements for V5R2 include worldwide enablement
- **IBM Toolbox for Java Micro Edition provides…**
  - iSeries access via Java classes running on devices
  - Ability to write IBM Toolbox for Java applications with customized look for the devices
- **JDBC Micro Edition**
  - Access DB2 UDB for iSeries from Java that runs on wireless devices
  - Write full-featured JDBC applications
    - Transactions, stored procedures, DB triggers, etc.
- For more information, go to iSeries Access Family Web page:
  - **ibm.com**/eserver/iseries/access
  - Follow links to 'iSeries Access for Wireless'

iSeries Access for Wireless is a member of the iSeries Access Family

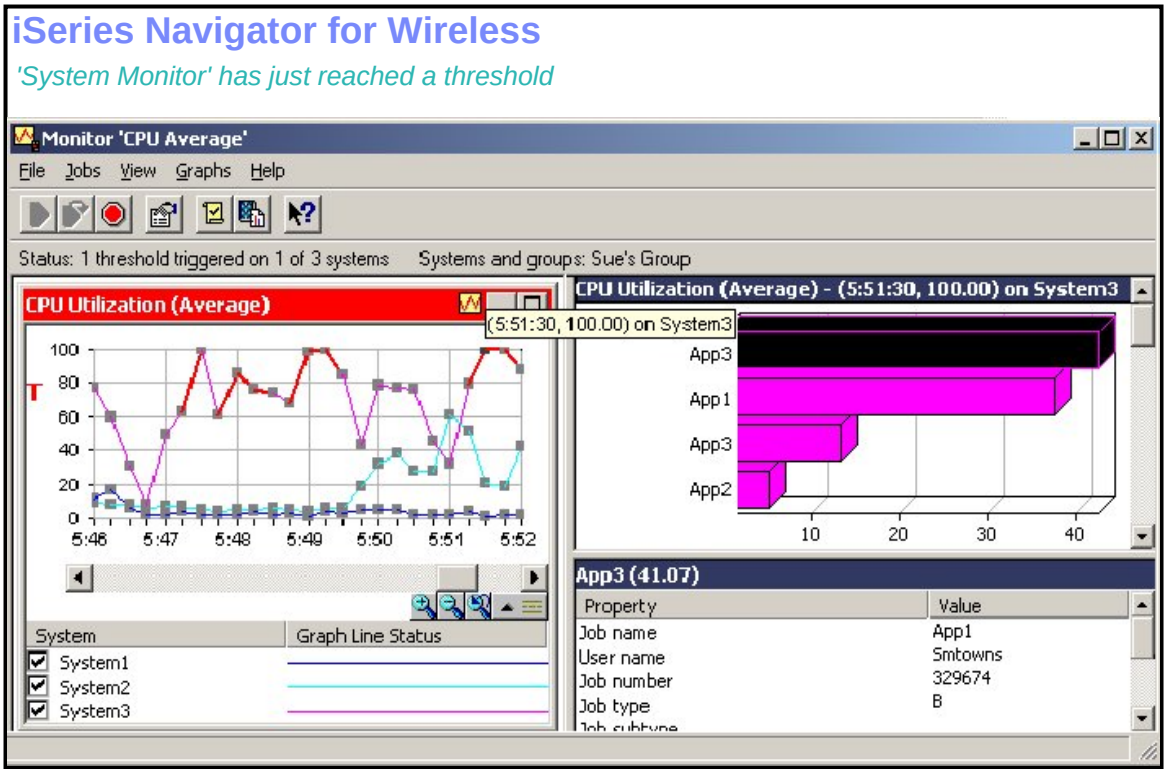
Delivered with OS/400 at no additional cost

iSeries Access for Wireless (5722-XP1)

Users can improve business productivity without spending more time in the office or at the desk through wireless access to administration functions and business solutions. iSeries Access for Wireless supports administration of OS/400 and application development; targeting wireless devices, such as personal digital assistants (PDAs) and Internet-enabled phones. This offering provides consistent branding and consolidation of development tools for creating wireless solutions.

The OS/400 administrator interface, previously called MC-Pervasive, is enhanced and repackaged as iSeries Navigator.

The IBM Toolbox for Java, used by developers to rapidly create Java applications to access iSeries data and resources, also has a micro edition to extend its capabilities to wireless devices. The IBM Toolbox for Java 2 Micro Edition code runs directly on any wireless device (such as a mobile phone or a PDA) so users do not need to use a browser. The toolbox contains a Java Database Connection (JDBC) driver to access DB2 UDB for iSeries that can provide feature-rich and secure database transactions from a mobile device. IBM has a demo of the IBM Toolbox for Java running on a PDA that you will certainly want to explore.

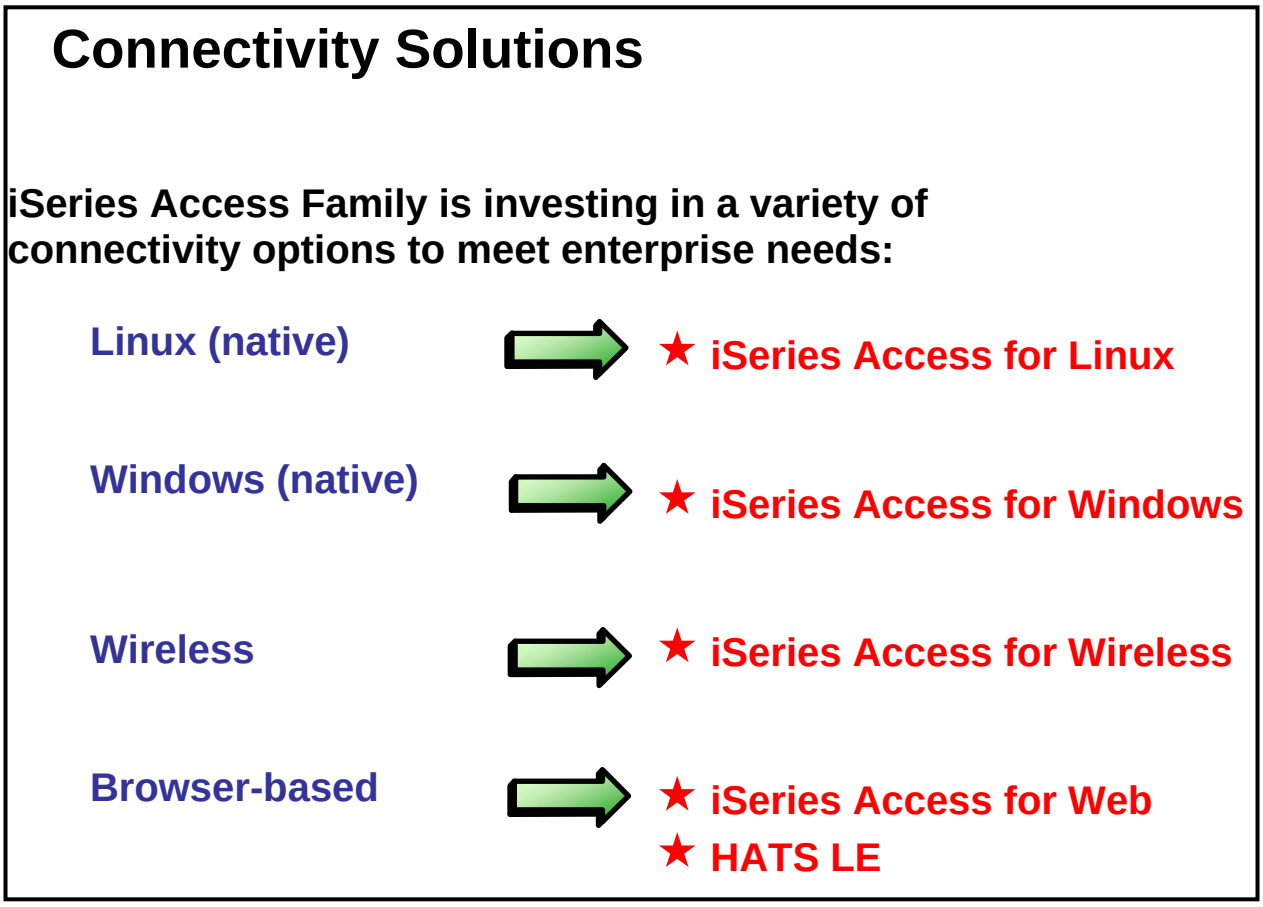


iSeries Navigator for Wireless

With iSeries Navigator for Wireless, which runs as a servlet on your iSeries Web server, you simply enter the URL into your Internet phone, PDA, or Web browser to check the availability of your servers and any active iSeries Navigator monitors. For example, you can determine if one of your servers finished restarting, or you can check an active monitor to see if any thresholds for CPU were exceeded. If you then find a job that is taking up too much CPU, you can hold or end it. With the V5R2 version, you can:

- Run commands across multiple servers
- Start and view system, job, and message monitors
- Work with jobs and messages from the monitors (hold, release, end, reply, get details, ...)
- Manage Integrated xSeries™ Servers
- Start and view File and B2B Activity monitors
- Work with all iSeries Navigator tasks (not just command tasks)
- View a summary report off-line
- Control access to functions via Application Administration
- Use Setup scripts to configure Web application servers!

To get more information, go to the iSeries Access Family Web page shown on this chart and included in the “Links” section of this course. Just follow the links to “iSeries Access for Wireless.”



Connectivity Solutions

As we have mentioned in this course, there are four iSeries Access products to support your connectivity needs. Each iSeries Access product provides a common look-and-feel which your users will appreciate. iSeries Access for Linux supports native Linux users with a graphical interface. iSeries Access for Windows supports native Windows users. iSeries Access for Wireless supports wireless clients. And, iSeries Access for Web supports users who will be using a browser to gain access to the iSeries or eServer i5 server. In addition, browser-based users can also utilize HATS LE for the same purpose.

Summary

- **Work with your eServer i5 server via an easy-to-use and powerful GUI.**
  - **Desktop solutions will look great.**
  - **Finger-tip access to leading technology will bring exceptional productivity benefits.**
  - **You can easily expand your business to the Web.**
- **As one business user so aptly said:**
  - **"A definite 'got to have' product for any serious iSeries shop."**

Browsers
(Internet Explorer, Netscape, Mozilla...)

iSeries Access Family

Summary

iSeries Access Family provides solutions for Linux, Windows, Wireless, and browsers. You must be aware of all the functions that iSeries and eServer i5 servers offer to cater to the needs of enterprises which require specific functions. You can learn more through the demos that have been mentioned in this course and by visiting the additional Web sites listed in the “Links” section of this course.

The way to sell iSeries servers is through the delivery of GUI-based applications because these desktop solutions have profound visual appeal. They offer leading technology and exceptional productivity benefits. And, they offer your customers an easy way to expand their businesses to the Web.

Links

Here are some links you can refer to for more information on the topic:

- iSeries Access for Linux
  ibm.com/eserver/iseries/access/linux
- iSeries NetServer
  ibm.com/eserver/iseries/netserver
- Samba Web site
  www.samba.org
- Running Linux on iSeries
  ibm.com/servers/eserver/iseries/linux/
- iSeries ODBC driver for Linux home page
  ibm.com/servers/eserver/iseries/linux/odbc/
- unixODBC home page
  www.unixODBC.org/
- Microsoft ODBC
  http://msdn.microsoft.com/library/default.asp?url=/library/en-us/odbc/htm/dasdkodbcoverview.asp
  or… www.microsoft.com/data
- iSeries Access Information Center
  http://publib.boulder.ibm.com/iseries/v5r2/ic2924/index.htm
- iSeries Access articles
  ibm.com/servers/eserver/iseries/access/web/articles.html
- DB2 SQL Reference
  http://publib.boulder.ibm.com/iseries/v5r2/ic2924/index.htm?info/db2/rbafzmst02.htm
- IBM Redbooks
  ibm.com/redbooks
- IBM iSeries Support
  ibm.com/servers/eserver/iseries/support
- iSeries Access for Windows 5722-XE1
  ibm.com/eserver/iseries/access
- IBM eServer Workload Estimator
  http://www-912.ibm.com/wle/EstimatorServlet
- Fine-tuning your Web application server
  ibm.com/servers/eserver/iseries/software/Websphere/index2.html
- iSeries Access for Web 5722-XH2
  www.iseries.com/Webaccess/iWAHome
- Download V5R3 version of iSeries Access for Web
  ibm.com/servers/eserver/iseries/access/web/v5r3.html
- Infoprint Server for iSeries - 5722-IP1
  www.printers.ibm.com/internet/wwsites.nsf/vwWebpublished/ipserverhome_i_ww
- 5250 enhancement
  ibm.com/servers/eserver/iseries/access/Web/betafeedback.html
- New Redbook (SG24-7005-00) for iSeries Access for Web and HATS LE
  ibm.com/eserver/iseries/access

- iSeries Access For Wireless
  ibm.com/eserver/iseries/access
- Demo site for iSeries Access for Web, HATS LE, and IBM WebFacing for iSeries (case sensitive)
  http://iseriesd.dfw.ibm.com/webaccess/iWAHome
- Demo site for HATS LE
  http://iseriesd.dfw.ibm.com:2034/HATSLE/

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