

iSeries Client Access Express

*2001 Announcements
ITSO Technical Overview
May 2001*

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Agenda

- V5R1 Client Access Information & Enhancements
- Data Transfer
- Express Toolkit
- EZ-Setup wizard
- ODBC
- OLE DB
- Operations Navigator
- PC5250 Enhancements
- Security
- Service packs
- Host Changes
- Software License Keys
- NetServer Enhancements
- WebSphere Host Publisher



Client Access Express for Windows

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Client Access Express for Windows

- Product Number 5769-XE1

First Release

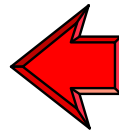
- May 1999
- Express VRM = V4R4M0

Last Release

- August 2000
- Express VRM = V4R5M0

Next Release

- V5R1
- Express VRM = V5R1M0



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Client Access is integral to AS/400

EZ Setup

- Use various Client Access functions to get your AS/400 out of the box to operational

Use Operations Navigator to work with each AS/400

- User administration, network configuration, database administration, security...
- Set up Domino users

Use Management Central to Manage AS/400's

- Software fixes, performance monitoring, remote operations, inventory....

e-business

All delivered with Client Access

- Java Toolbox
- LDAP
- Data Transfer
- ActiveX
- Other middleware (such as ODBC, OLE DB, etc)

Use Operations Console for remote AS/400 operations

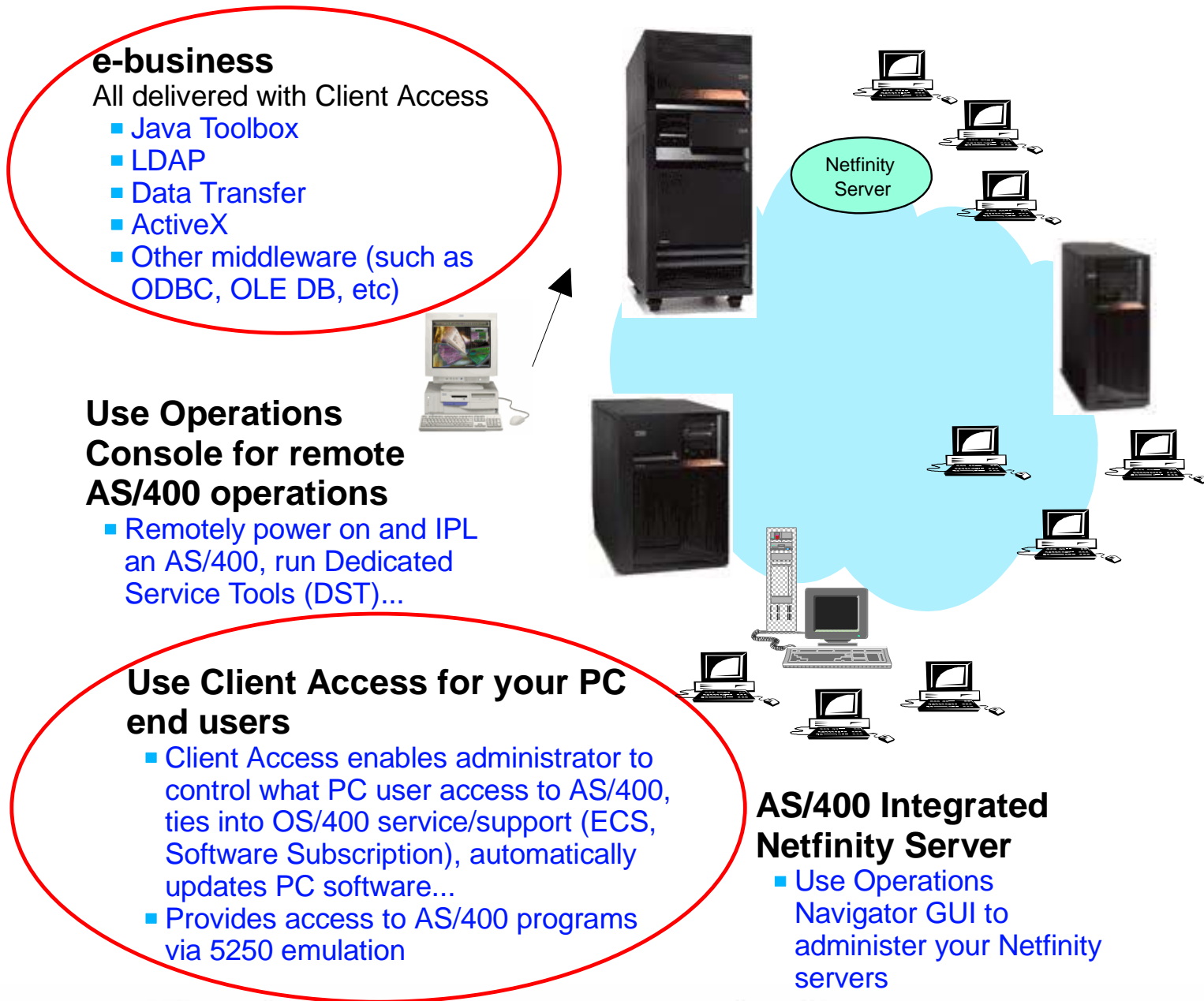
- Remotely power on and IPL an AS/400, run Dedicated Service Tools (DST)...

Use Client Access for your PC end users

- Client Access enables administrator to control what PC user access to AS/400, ties into OS/400 service/support (ECS, Software Subscription), automatically updates PC software...
- Provides access to AS/400 programs via 5250 emulation

AS/400 Integrated Netfinity Server

- Use Operations Navigator GUI to administer your Netfinity servers



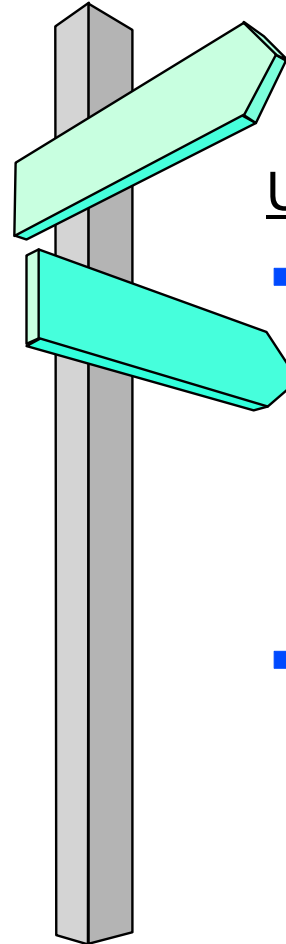
Client Access Family (57xx-XY1)

Withdrawn from marketing - 2/25/00

- Client Access for Windows 3.1 (XC1) - PC5250 & RUMBA emulators
- Client Access Optimized for OS/2 (XF1) - RUMBA & PC5250 emulators
- Client Access for OS/2 (XF1) - RUMBA & PC5250 emulators
- Client Access Extended for DOS (XB1) - RUMBA emulator
- Client Access for Base DOS (XL1) - WSF emulator

End of service - 5/31/00

- Some countries offer usage and defect rediscovery support (no development involvement) for 1 year after EOS.



Upgrade Paths

■ Client Access (XW1)

- Upgrade path exists from V3Rx to V4
- Upgrade path added on 10/20/99 from V4 XY1 to V4 XW1

■ Personal Communications or HOD

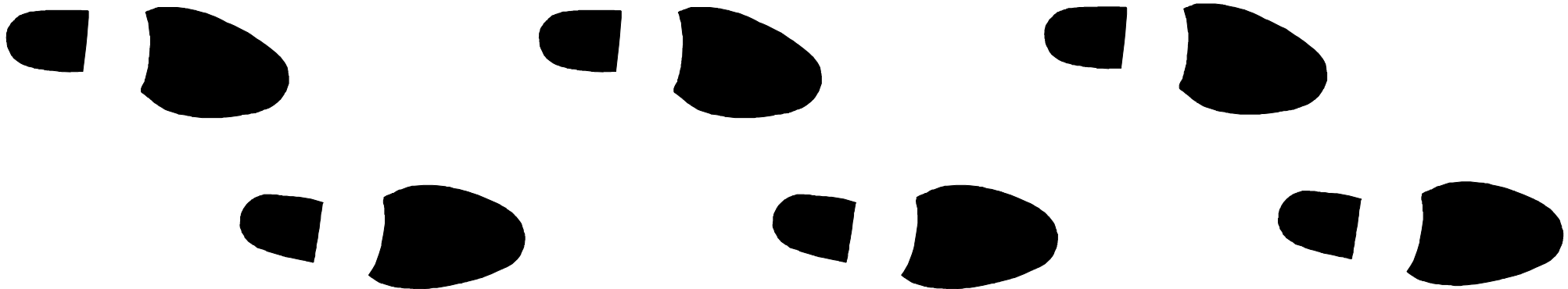
- Upgrades paths already exist

V4 - includes current clients

- Client Access Express for Windows (XE1)
- Client Access for Windows 95/NT (XD1)
- Client Access Enhanced for Windows 3.1 (XK1)

V5R1 - withdrawing 2 clients

- Withdrawing XD1 and XK1 clients from family offering
- End of support for these clients will be concurrent with EOS of OS/400 V4R5 (which is currently set at 7/31/2002)





- ~~Enhanced Windows 3.1~~
- ~~Windows 95/NT~~
- Express for Windows
- iSeries Access for Web

We're working on a new client

Visit our website to download the alpha

- www.as400.ibm.com/clientaccess

Packaging/Function Chart

Both clients part of Client Access Family (Product Number 5769-XW1 and 5722-XW1)

Capabilities	Client Access Express for Windows (5769-XE1, VxRxM0)	Web Access (5722-XH1, VxRxM0)
Last Enhanced Next Release Future Direction	Ongoing Each OS/400 release Strategic	Worldwide Internet alpha = 12/2000 GA= V5R1 (English) Meeting customer needs
Operating Systems Supported	Microsoft Windows 95, 98, Me, NT 4.0, 2000, TSE, IIS	Runs in a Netscape or Internet Explorer browsers. These browsers supported on Windows, Linux, OS/2...
Connectivity supported to OS/400 Releases at	OS/400 V4R3 or later	OS/400 V4R5 or later
Supports new AS/400 capability	via Operations Navigator and other functions	<ul style="list-style-type: none"> • Basic Operations Function provided: Printers, Printer Output, Messages • Will install OpNav for end user running Windows
Connectivities Supported	TCP/IP	TCP/IP
Network Security	Secure Sockets Layer (SSL)	Secure Sockets Layer (SSL)
Emulations Included	PC5250 display emulation PC5250 print emulation	<ul style="list-style-type: none"> • Web5250 (default) • Administrator can identify any other 5250 emulator • Printing to PC printer similar to Host Print Transform (HPT)
GUI Database Access	Data Transfer (upload and download) Add-in for Excel Batch Transfer	SQL Data Transfer download (initial) SQL Data Transfer upload (later)
AS/400 File Serving	Uses AS/400 NetServer	Uses IFS and may pick up AS/400 NetServer 'shared' view
AS/400 Print Serving	Uses AS/400 NetServer	Uses browser printing capabilities
Middleware	ODBC Data Queues Remote Commands OLE DB (inc.record level access) Visual Basic Wizards ActiveX Controls AS/400 Toolbox for Java	This product not designed for running applications in a browser. <ul style="list-style-type: none"> • Will install ODBC driver for end user running Windows Uses AS/400 Toolbox for Java but APIs not externalized to end user.

Client Access Family (5769-XW1, 5722-XW1)

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Capabilities	Client Access Express for Windows (5722-XE1)	iSeries Access for Web (5722-XH1)
Last Enhanced Next Release	V5R1 Each OS/400 released	Worldwide Internet Alpha = 12/2000
Operating Systems Supported	Microsoft Windows 95, 98, Me, NT 4.0, 2000, TSE, IIS	Runs in Netscape or Internet Explorer browsers. These browsers supported on Windows, Linux, OS/2...
OS/400 Releases Supported	OS/400 V4R4 or later	OS/400 V4R5 or later
Connectivities Supported	TCP/IP	TCP/IP
Other OS/400 requirements	<ul style="list-style-type: none"> • 5769-TC1 TCP/IP • 5769-JC1 AS/400 Toolbox for Java (for some Operations Navigator functions) 	<ul style="list-style-type: none"> • 5769-TC1 TCP/IP • 5769-JC1 AS/400 Toolbox for Java • 5769-JV1 AS/400 Developer Kit for Java • 5769-DG1 HTTP Server for AS/400 • IBM WebSphere Application Server for iSeries 400
Operations Navigator, Management Central, Operations Console, EZ Setup capabilities	Enhanced each release	Operation Navigator functions not provided. Capability does exist for users to work with their AS/400 printers & printer output, and send & receive messages
Network Security	Secure Sockets Layer (SSL) <ul style="list-style-type: none"> • Must install a Client Encryption product (5769-CEx) on PC 	Secure Sockets Layer (SSL) <ul style="list-style-type: none"> • Uses browser SSL interface
Firewall considerations	Multiple proprietary TCP/IP ports based on functions being used	Industry Standard HTTP and HTTPS ports
Emulations Included	High function, customizable 5250 emulation <ul style="list-style-type: none"> • PC5250 display emulation • PC5250 print emulation 	Base function 5250 emulation <ul style="list-style-type: none"> • 5250 display emulation via HTML • Printing to PC printer done through browser interface
GUI Database Access	Data Transfer - DB2/400 <ul style="list-style-type: none"> • Upload and download • Add-in for Excel • Batch Transfer 	SQL DB2/400 access <ul style="list-style-type: none"> • GUI available to create transfer requests • Can use transfer requests created by Express Data Transfer
AS/400 File Serving	Uses AS/400 NetServer	Uses IFS for file access <ul style="list-style-type: none"> • Will pick up AS/400 NetServer 'shared' views
AS/400 Print Serving	Uses AS/400 NetServer	
Middleware	<ul style="list-style-type: none"> • ODBC • Data Queues • Remote Commands • OLE DB (inc.record level access) • Visual Basic Wizards • ActiveX Controls • AS/400 Toolbox for Java 	Not designed for running applications in a browser.

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Data Transfer Enhancements

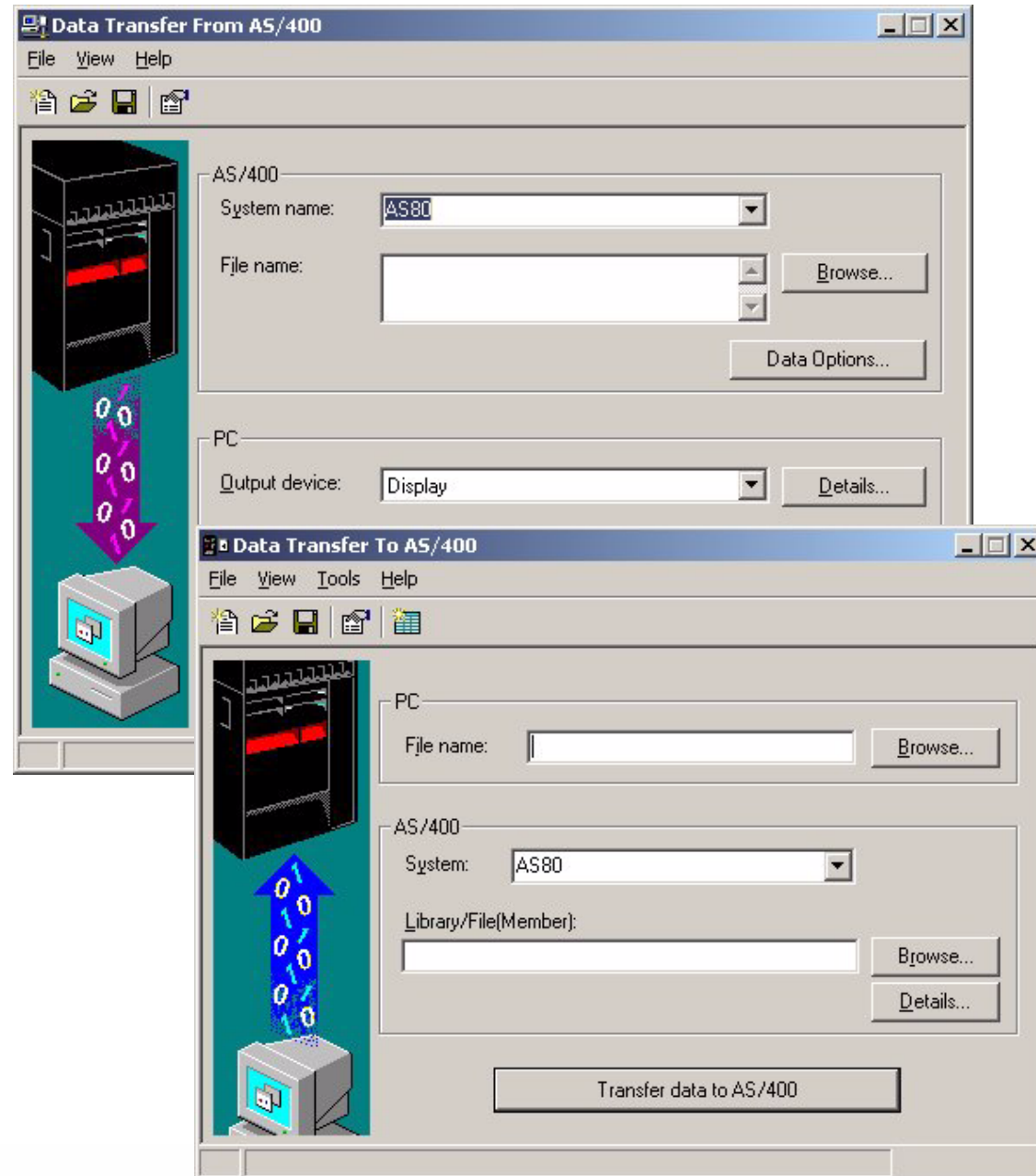
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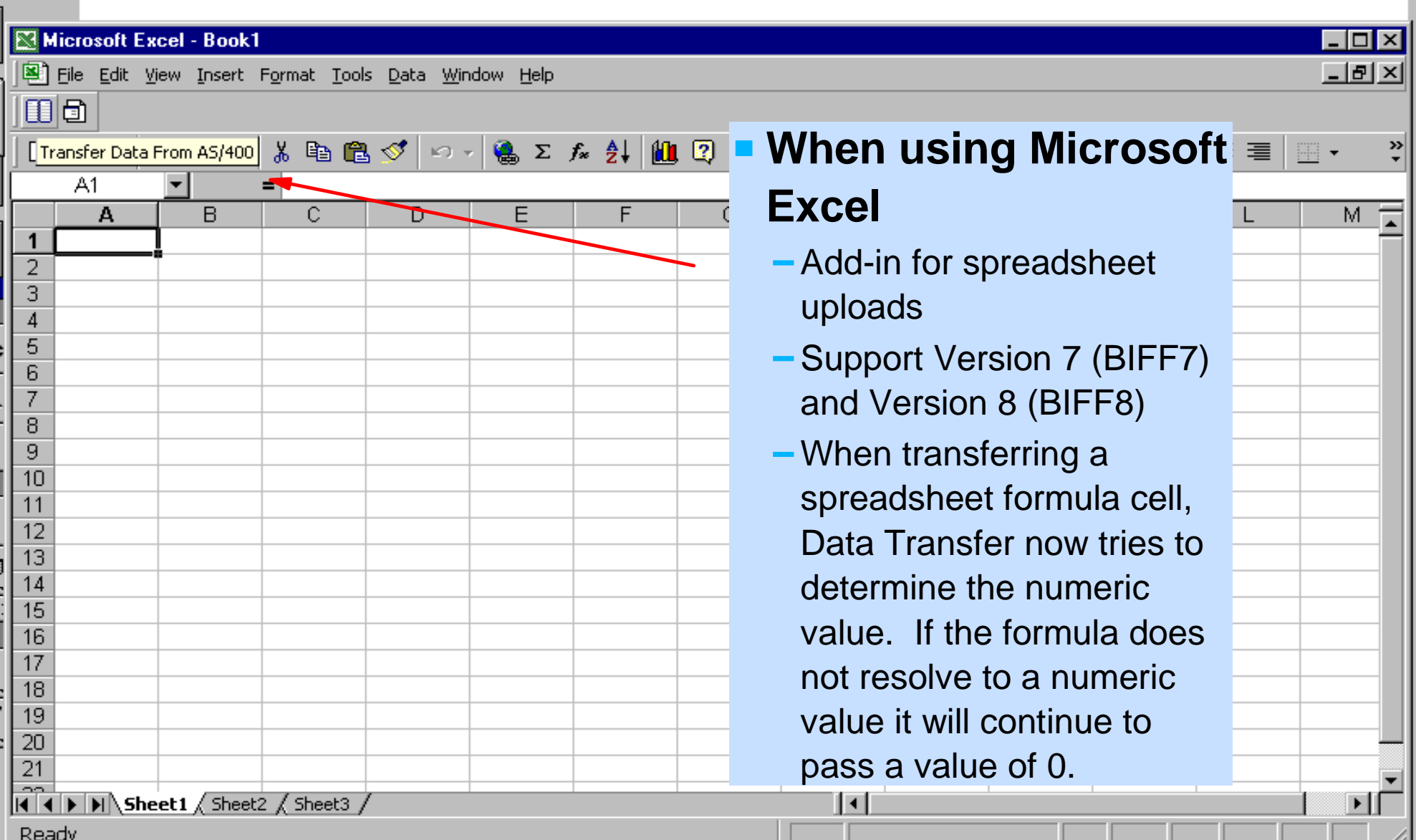
New Features of Data Transfer

- ActiveX Automation Object for Data Transfer
- The function to upload information from Microsoft Excel to the AS/400
- An option to configure which user ID to use when connecting to the AS/400
- Support for Lotus .123 file type
- Support for Microsoft Excel 8.0 file type
- Support of floating point and BIGINT data types
- UTF-8 Character support for download to HTML

Data Transfer Enhancements

- New Data Types (Float, Double, Bigint)
- New File Types (Excel 97, Excel 2000, Lotus 123)
- New Configurable Options
 - AS/400 Signon Information Configurable on a Per-Request Basis
 - Can retain spaces in tab-delimited files
 - Can pad ASCII numerics with zeros
 - Can choose not to display warnings
 - User-defined CCSIDs
- HTML
 - UTF-8 character support for HTML files
 - Configurable file size for auto-sizing option
- Proper Handling of Excel/Lotus Numeric Formula Cells





The screenshot shows the Microsoft Excel interface. The title bar reads "Microsoft Excel - Book1". The menu bar includes "File", "Edit", "View", "Insert", "Format", "Tools", "Data", "Window", and "Help". The toolbar contains various icons for file operations and calculations. The spreadsheet grid is visible, with cell A1 selected. A red arrow points to the equals sign (=) in the formula bar above cell A1. The status bar at the bottom indicates "Ready".

- **When using Microsoft Excel**
 - Add-in for spreadsheet uploads
 - Support Version 7 (BIFF7) and Version 8 (BIFF8)
 - When transferring a spreadsheet formula cell, Data Transfer now tries to determine the numeric value. If the formula does not resolve to a numeric value it will continue to pass a value of 0.

Microsoft Excel and Lotus 1-2-3 enhancements

- Lotus 123 .123 file support added, The .123 file type is the standard type used in 97 Edition of Lotus 123. Lotus .WK4 support was added in release V4R4. The current .WK4 selectively installed option is expanded to include .123 support since these file types use the same LMBCS character conversion routines. The .123 support includes UNICODE character set support and support for new .123 numeric storage types. These types are defined in the Lotus .123 file format specification. Like .WK4 file support, .123 file format support includes the capability to read and write records to multiple sheets within a single workbook. Support for these types is also now included in the 'Create AS/400 Database File' wizard.
- Upload from Excel Add-In. Today, Data Transfer provides the ability to download information into an Excel spreadsheet. This function is integrated into the Excel by providing (1) an Excel add-in module called cwbtfxla.xll, (2) a toolbar icon/button the user can select to invoke a Client Access data transfer GUI, and (3) a menu option from the Excel "Data" pull-down menu called "Transfer Data From AS/400..." Data Transfer now extends its integration with Excel by providing an option to upload information from Excel to the AS/400. This additional integration include (1) an additional icon/button on the Client Access toolbar, (2) an additional menu option on the Excel "Data" pull-down menu called "Transfer Data To AS/400...", (3) a new dialog similar to the current download dialog, which allows the user to specify what data to upload and where to upload it to. A new DLL to be shipped and installed to provide this new capability.
- Microsoft Excel BIFF7 and BIFF8 file support - support for the Microsoft Excel Versions 7 and 8 file formats. Version 7 support is simply an extension of the Version 5 file format which Data Transfer currently supports. The major change from Version 7 to Version 8 is that in Version 8 character data is stored as UNICODE. Like .WK4 file support, Excel Version 8 support includes the option to save to multiple sheets within a workbook. Support for these types also has been added to the Create AS/400 Database File wizard.
- Support numeric formula cells in Excel and Lotus sheets
- Previously Data Transfer "ignored" formula cells and passed the default value of the field type to the AS/400. For example, a numeric formula cell found in Excel today would cause Data Transfer to pass a value of 0 to the AS/400 database file. Data Transfer now determines if the formula is for a numeric value. If it is, Data Transfer pulls the result of the formula from the cell and passes it to the AS/400 database file. If the formula does not resolve to a numeric value, Data Transfer will continue to pass the default value for the cell type.

PC Files

- Option for retaining spaces in Tab delimited text files - Data Transfer previously removed trailing spaces from character data when writing to a tab delimited text file. If a field is all spaces, no data is written in the "cell". This can cause confusion on whether the field value was null, or simply all spaces. An option has been added for tab delimited text files to control this behavior. The default is to remove the trailing spaces.
- Option to have leading zeros on ASCII text fields instead of spaces - an option has been added to the ASCII text file details dialog to allow numeric fields to be padded with leading zeros instead of spaces. The default option will be to pad with spaces.

When using Lotus 123

- Support 97 Edition (123)
- When transferring a spreadsheet formula cell, Data Transfer now tries to determine the numeric value. If the formula does not resolve to a numeric value it will continue to pass a value of 0.

For PC Files

- Option added to retain trailing spaces from character data when writing to a Tab Delimited Text file. This reduces confusion caused by not knowing whether field value was null or simply all spaces.
- Option added to ASCII text file details to allow numeric field to be padded with leading zeros instead of spaces.

e-business (web serving)

- Default autosize for HTML downloads is 128KB, now users can change this value
- HTML details panel now includes support for writing to a UTF-8 file (used by Netscape Navigator and IE). This allows web pages to contain characters from different many character sets.

Usability improvements

- Use Windows logon, default mode, or specify a user id for a transfer request - an option was added to the Connection page on the Properties panel to allow users to configure which user ID to use to connect to the AS/400. This option is stored in the transfer request file and will be used whenever the request is opened or run.
- Setting for displaying/not displaying warnings which occur while transferring data to or from the AS/400. This option is available on the Display page under Properties. It can also be stored in the transfer request file and will be used when the request is opened or run.
- A status bar was added to the main Data Transfer application windows
- A 'lock' icon for SSL is on the status bar to indicate whether or not Data Transfer is connected over SSL.
- When cursor is positioned over menu items or the toolbar, a panel will display extended tool tip information.
- Lock icon for SSL on status bar. - a status bar was added to the main Data Transfer application windows and it contains an icon to indicate whether or not Data Transfer is connected over SSL. It will also contain a panel to display extended tool tip information when the cursor is positioned over menu items or the toolbar.

e-business (web serving) enhancements

- Configurable file size for auto sizing option in download to HTML - since OS/400 V4R2 the autosize option of HTML has used 128 Kb as the default size for HTML files. An edit field is now available so users can easily set this value to something other than 128 Kb. This value will then be stored in the transfer request file and will be used when the request is opened or run.
- UTF-8 character set support for HTML - currently, Data Transfer supports transferring ANSI and ASCII data into an HTML file. An option was added to the File page of the HTML Details panel to allow users to select writing to a UTF-8 file as well. This allows web pages to contain characters from many different character sets. Netscape Navigator and IE both support UTF-8.

AS/400 database

- Add support for 8-byte integers (BIGINT) - OS/400 V4R5
- Support transferring data to/from float and double fields in database files. Conversion routine are used when transferring these types to/from PC files.

Improve handling of CCSID data

- A 'Save Template' option added to UI to save a Data Transfer profile as the template for newly created transfer requests. This helps with items such as 65532 data conversions.
- An option added to the File Details panels to allow users to manually set the CCSID of their data.
- Option added to allow BIDI users to separately control Data Transfer conversions.

Usability improvements

- Option added to Data Transfer Properties, Connections page, to allow user to configure which User ID to use with that specific transfer request when it connects to an AS/400.
- Status Bar added to main Data Transfer windows
- SSL icon on Status Bar to indicate if Data Transfer is connected over SSL
- When cursor is positioned over menu items on Toolbar, extended tool tip information will be provided
- Properties setting to display/not display warnings occurring while transferring data

Provide APIs for Data Transfer

- Automation object support - customers continue to ask for a replacement for the "old" File Transfer API and also for better programmatic control over the current data transfer batch interfaces. Client Access Express has added ActiveX automation objects to meet these requests. Both high-level and low-level interfaces are provided. The high-level interface provides a fastpath approach for running database transfers. It requires minimal input and defaults many behaviors. The low-level interface provides programmatic access to most aspects of the Data Transfer GUI application, including the ability to create and save transfer requests.

AS/400 Database

- BIGINT (8 byte integer) support - OS/400 V4R5 (UDB) added support for 8 byte integers. Data Transfer now supports this new column type for both upload and download. For some files types (such as BIFF and WK4 where double is the largest numeric value supported), roundings may occur. Users will be warned when this happens.
- Support for transferring data to and from float and double database fields on the AS/400 - the database API currently supports float and double fields in AS/400 database files. Data Transfer conversion routines and file types now support transferring these types to and from PC files and the AS/400

Improve handling of CCSID

- Global request priming from set values - to help users set up default requests for such items as 65535 data conversion, an option to save a data transfer profile as the "template" for newly created data transfer requests has been added. To accomplish this, a 'Save Template' option is added to the user interfaces. This template information is stored in the registry.
- User-defined CCSID setting in GUI - an option was added to the File Details panel for both Data Transfer To AS/400 and Data Transfer From AS/400 to allow users to manually set the CCSID of their data. If a user defines their own CCSID, Data Transfer will convert data using that CCSID. This option will be stored in the transfer request file and be used when the request is opened or run. This option is also added to allow BIDI users to separately control Data Transfer conversions from the rest of the conversions performed in Client Access.

New ActiveX Automation support for all Data Transfer GUIs

- Client Access Express provides a set of ActiveX automation objects for transferring database data to and from the AS/400 system.
- These objects provide both a high-level and a low-level interface.
 - The high-level interface is the easiest to use and it defaults many behaviors.
 - The low-level interface provides programmatic control over most functions supported by the Data Transfer GUI application.
- These objects can be used from Visual Basic and other languages which support ActiveX automation.
 - For languages other than C/C++, this interface is often easier to use than the C API.
 - For complete documentation of these objects, including their properties and methods, see the Client Access Toolkit

Express Toolkit

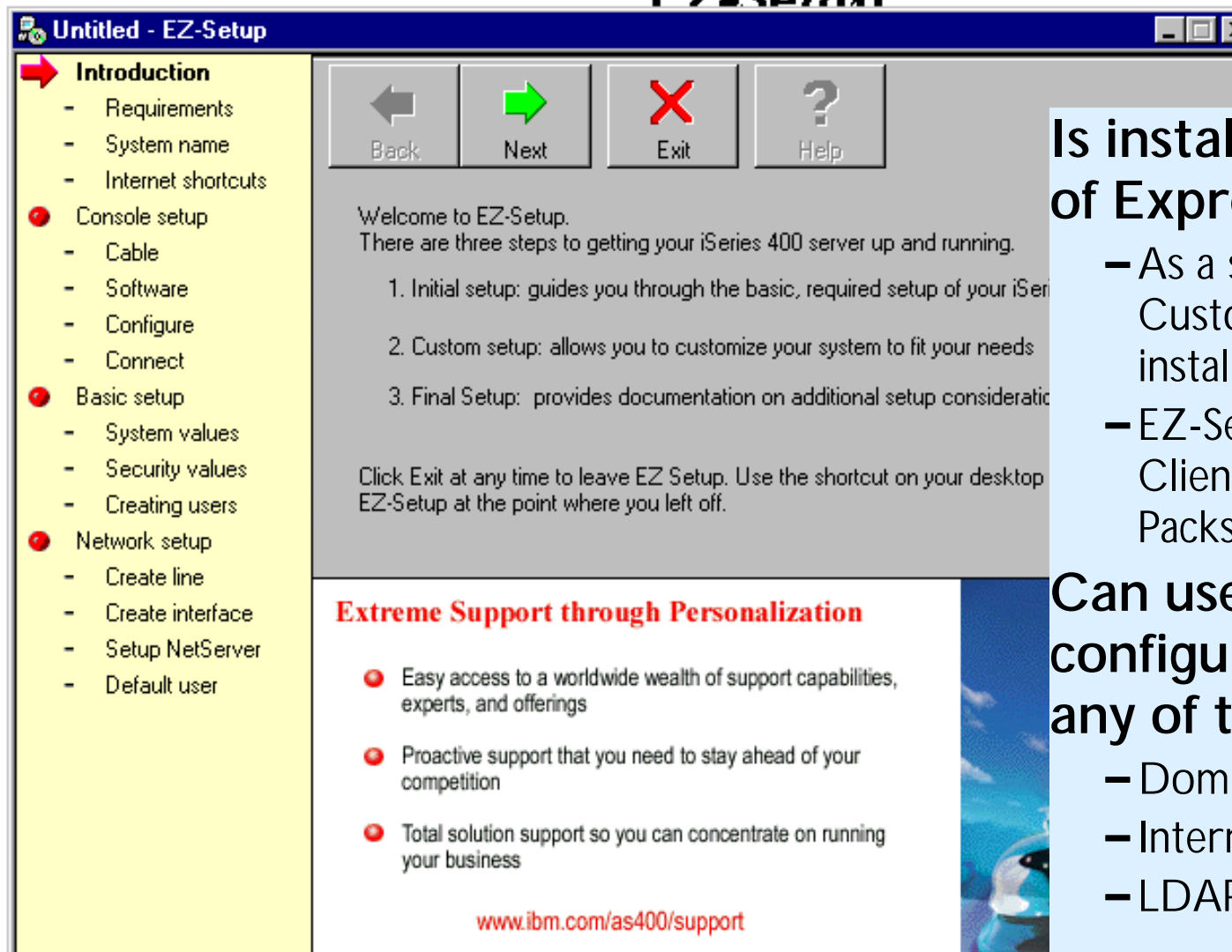
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- Data Transfer ActiveX Automation support
 - The database transfer automation objects provide a programming interface for the Data Transfer functionality.
 - Tools for Java
 - Two new Java tools, GUI Builder and Resource Script Converter, are included in Client Access Express.
 - ▶ The GUI Builder is a visual editor for creating Java dialogs, property sheets and wizards. The Resource
 - ▶ Script Converter converts Windows user interface elements into a form usable by Java programs. These tools are an optionally installable component of the Toolkit, and require the current JRE and Java Toolbox.
 - Visual Basic wizards
 - Data types (BigInt, Large Objects (LOBs))
 - Set cursor type and lock type properties
 - Generate recordset seek code for tables record level access
- **The Express Toolkit is an enhancement of what was previously called the Application Development Toolkit, and also includes what was formerly the SDK for ActiveX and OLE DB**
 - ▶ **It contains links to header files, sample programs, and documentation, providing a single interface to assist in your Client Access Express application development.**
 - ▶ **The Toolkit contains links to header files and Windows Help files installed on your PC.**
 - ▶ **It also contains internet links to sample programs, documentation, and other helpful information.**

EZ-Setup Enhancements

see EZ-Setup presentation - G01EZSetup.prz

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Is installed as a component of Express

- As a selectable component of Custom install, or can be installed via Selective Install
- EZ-Setup fixes is included in Client Access Express Service Packs.

Can use EZ-Setup to configure the iSeries to be any of the following:

- Domino Notes server
- Internet server
- LDAP server or user of LDAP

Will be installed as a component of Express

- As a selectable component of Custom install, or can be installed via Selective Install
- EZ-Setup fixes will be included in Client Access Express Service Packs.

Will additionally be able to use EZ-Setup to configure the AS/400 to be one or more of the following:

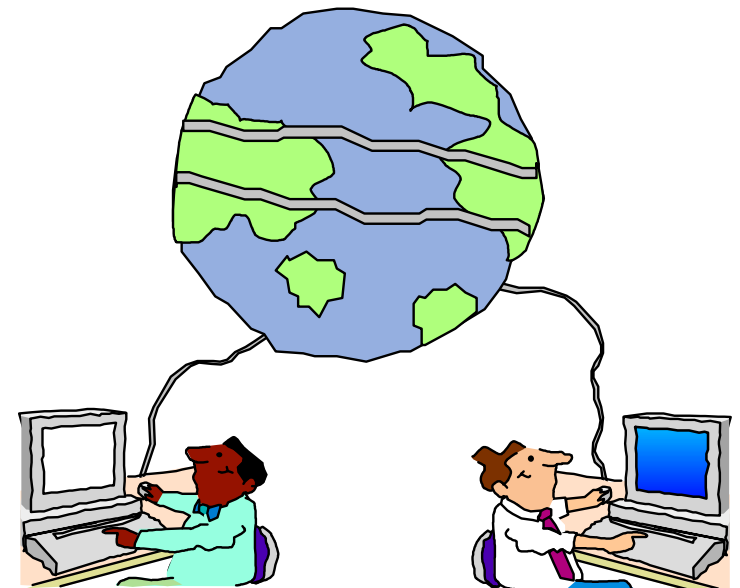
- Domino Notes server
- Internet server
- LDAP server or user of LDAP

ODBC Enhancements

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ODBC Enhancements

- Updated Client Access ODBC driver to support Microsoft ODBC Version 3 specification
 - Provides Version 3.5 ODBC driver
 - PC applications can now take advantage of new functions included in the 3.5 Specification
 - All of your current ODBC applications should continue to work as they do today
- UNICODE support
 - SQL statements may now be in UNICODE
 - CCSID handling between ODBC and host
- BIGINT support
- New Graphical User Interface on the setup
- New DSN options
 - Connection
 - Concurrency
 - Debug
- MTS support (2 phase commit)



- When connecting to an AS/400 system at OS/400 V4R4 or later, you will have these new capabilities:
 - Thread-safe ODBC driver
 - Direct conversion of data to the column CCSID for parameter markers in SQL statements
 - Support for the BIGINT data type
 - Enhanced diagnostic support
- When connecting to an AS/400 system at OS/400 V5R1 or later, you will have these new capabilities:
 - Support for Microsoft Transaction Server (MTS)
 - Support for Unicode SQL Statements
 - Support for Static Cursors
 - Support for data compression in datastreams to and from the AS/400

ODBC has a new driver which supports the ODBC 3.5 Specification. All of your current ODBC applications should continue to work as they do today. However, with V5R1 an ODBC 3.x application can take advantage of some of the new functionality included in the 3.5 Specification.

Some new features that exist when connecting to a V4R4 or later OS/400:

- Direct conversion of data to the column CCSID for parameter markers in SQL statements
- Thread-safe ODBC driver
- Enhanced diagnostic support
- Support for the BIGINT data type

Some new features that exist when connecting to a V5R1 OS/400:

- Support for Unicode SQL Statements
- Support for MTS. Microsoft® Transaction Server is a component-based transaction processing system for developing, deploying, and managing high-performing, scalable, and robust enterprise, Internet, and intranet server applications.

Application developers are looking for new ways to reduce development costs and extend the life of their existing applications. One way to achieve this goal is to build new applications out of components and to enhance existing applications by adding component interfaces to existing software. By providing Microsoft's Component Object Model (COM) on multiple platforms, developers can use a single object model to build cross-platform solutions out of components that run on heterogeneous systems.

- Support for Static Cursors
- Support for data compression in datastreams to and from the AS/400

The V5R1 Client Access Express ODBC driver is new and a complete rewrite, it is not built upon the older drivers. This new driver is based on the Toronto Lab's UDB (Universal Database) driver and is compliant with ODBC version 3.5. The previous drivers were version 2.5 compliant.

The new driver will handle code page conversion differently from the older drivers. The new driver supports sending the SQL statement in Unicode. Note that the GUI setup is not Unicode enabled because the host server doesn't support Unicode library names. In order to take advantage of this support, the PC application has to be compiled for Unicode (wide character) support. By default Unicode support is turned off (to avoid performance problems). It is controlled via the keyword UnicodeSQL, setting this to a value of 1 will enable Unicode support for the SQL statements. This can be specified in the connect string or in the DSN. To add it to a DSN, the user would have to manually added through a registry edit or file dsn edit (with a text editor). The GUI setup does not have an option to turn Unicode support on and off.

Support for 8 byte integers (BIGINT) has been added

ODBC has a new driver which supports the ODBC 3.5 Specification. All of your current ODBC applications should continue to work as they do today. However, with V5R1 an ODBC 3.x application can take advantage of some of the new functionality included in the 3.5 Specification.

Some new features that exist when connecting to a V4R4 or later OS/400:

- Direct conversion of data to the column CCSID for parameter markers in SQL statements
- Thread-safe ODBC driver
- Enhanced diagnostic support
- for the BIGINT data type

Some new features that exist when connecting to a V5R1 OS/400:

- Support for Unicode SQL Statements
- Support for MTS. Microsoft® Transaction Server is a component-based transaction processing system for developing, deploying, and managing high-performing, scalable, and robust enterprise, Internet, and intranet server applications.

Application developers are looking for new ways to reduce development costs and extend the life of their existing applications. One way to achieve this goal is to build new applications out of components and to enhance existing applications by adding component interfaces to existing software. By providing Microsoft's Component Object Model (COM) on multiple platforms, developers can use a single object model to build cross-platform solutions out of components that run on heterogeneous systems.

- Support for Static Cursors
- Support for data compression in datastreams to and from the AS/400

OLE DB Enhancements

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OLE DB Enhancements

This release features the following enhancements to OLE DB:

- Updated OLE DB Provider is enhanced to support the V2.5 definition of OLE DB
- Forward-only and static cursor types
- Optimistic lock type
- Recordset seek
- When connecting to AS/400 systems with OS/400 V4R5, OLE DB provider supports the following data types:
 - BigInt
 - Large Objects (LOBs)
- When connecting to AS/400 systems with OS/400 V5R1:
 - Static cursor types
 - Unicode
- Performance improvements
- OLE DB provider will work with new Windows products such as
 - ADO 2.1 - this ships with Microsoft IE 5.0 and Office/2000 products
 - ADO 2.5 - this ships with Microsoft Windows/2000
 - Visual Basic 6.0 OLE DB controls and wizards
 - An OLE DB interface to support ADO recordset seek
 - OLE DB provider has completed level 0 conformance tests and ADO minimal tests as defined by Microsoft
 - Optimistic Lock types
- Custom properties added which will translate CCSID 65535 data
 - Force Translate
 - Default Collection
 - Catalog Library List
 - Convert Date Time To Char

Turning error logging on causes the OLE DB Provider to write error information to the error logging file. By default, the error logging file will be in the Service\Trace Files subdirectory of your Client Access Express directory. The error log file by default is named IBMDA400.LOG. You can change the location and name of the error log file by using the -LF parameter when calling CWBZZTRC. You only need to specify the -LF parameter once, all future error logging will go to the location specified on the -LF parameter. Error logging does not reduce performance, and it is recommended that error logging always be on.

- The log file is limited to a maximum of 64K. If the file reaches this size, it will be reset to zero bytes and error logging will continue.

Turning tracing on causes the OLE DB Provider to write tracing information to the trace file. Generally, you will only use this function if you are having difficulty with the OLE DB Provider. The trace file by default is named IBMDA400.TRC. You can change the location and name of the trace file by using the -TF parameter when calling CWBZZTRC. You only need to specify the -TF parameter once, all future information will go to the location specified on the -TF parameter. Turning tracing on results in reduced performance. Tracing should only be used when needed.

- The trace file is cleared each time tracing is turned on.

Turning host record level access tracing on only affects Record Level Access usage on pre-V4R2 systems. Turning on host record level access tracing causes the OS/400 job handling the record level access for the PC to write out trace information to an AS/400 spool file. This tracing will slow down record level access, and will cause large spool files to be generated on the AS/400. It is recommended that this trace only be used when there are problems with record level access.

The Diagnostic Tools utility provides a unified interface for starting, stopping, displaying, and working with the properties of the History log, Detail trace, and Entry point trace. The Start Diagnostic Tools icon in the Client Access Express folder will launch an icon in the Windows system tray in the lower right corner of the screen.

- From the Diagnostic Tools system tray icon, you can:
 - Start/stop History log and traces
 - Display History log
 - Display trace output
 - Work with History log and trace properties

New CWBXXX Database APIs

New database APIs (CWBXXX) for use with C programs

- Support LOBs, BIGINT, working with server attributes, query time-out values, set data/time, data compression, get parameter name, determine if input/output, get size



New CWB... Database APIs to support new AS/400 database functions (ie, Large Object (LOB) data types)

- LOBS

- The AS/400 database server provides new extended data and parameter marker formats which have 4-byte record and field sizes and it introduced a new LOB locator data type. The server returns a LOB locator when the LOB field length is greater than the threshold, and the Client Access Database APIs mirror the server by returning a LOB handle when we get a lob locator from the server. Note: LOB locators are valid for single row (non blocked) fetch and inserts only. LOB locators are not valid for stream fetch. Client Access Express now provides the following new APIs which are most usually used when programming in C.

- CWBDB_SetLOBFieldThreshold

- CWBDB_RetrieveLOBData

- CWBDB_WriteLOBData

- CWBDB_PCBLOB

- CWBDB_PCCLOB

- CWBDB_PCDBCLOB

- CWB_PCBLOBLOCATOR

- CWBDB_PCCLOBLOCATOR

- CWBDB_PCDBCLOBLOCATOR

- Big Integer (long longs) - BIGINT

- Previously, integer data types could have a 2 byte or 4 byte length. A BIGINT is an 8-byte integer with a precision of 19 digits and a scale of zero. The range of big integers is 223372036854775808 to +9223372036854775807. Client Access now provides the following new APIs:

- A new local data type of CWBDB_PCBIGINT. The SQL data type CWBDB_SQLBigInt has a value of 492, and the SQL data type CWBDB_SQLBigIntNC has a value of 493.

New APIs provided for working with server attribute settings

- CWBDB_SetDefaultSQLLibraryName
- CWBDB_SetAmbiguousSelectOption
- CWBDB_SetAllowAddStatementToPackage.

New APIs to set the query time-out value, get the parameter name, or set client parameter to date/time.

- CWBDB_SetQueryTimeoutValue
- CWBDB_GetParameterName
- CWBDB_SetClientParameterToDateTime

New APIs to test if a parameter is input, output or input/output.

- CWBDB_IsParameterInput to determine if parameter is input
- CWBDB_IsParameterInputOutput) to determine if parameter is output
- CWBDB_GetParameterDirection to determine if parameter is input/output.

New API to get more specific size of parameters

- Currently there are two APIs to get the size of the parameters, (CWBDB_GetSizeOfInputParameters and CWBDB_GetSizeOfOutputParameters). Both these APIs report the total of both the input and output parameters which is further confused by the location parameter. The new API always reports the size of the parameters exchanged with the host:
 - CWBDB_GetSizeOfParameters
- This size may be different than the original parameter size reported by the host if one or more of the parameter data types have been changed with a call to one of the CWBDB_SetClientParameterToXxxx APIs.

New API to turn data compression on and off

- CWBDB_SetCompressionIndicator

Operations Navigator Enhancements

see Operations Navigator presentation - G01OpsNav.prz

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V5R1 - Operations Navigator Enhancements

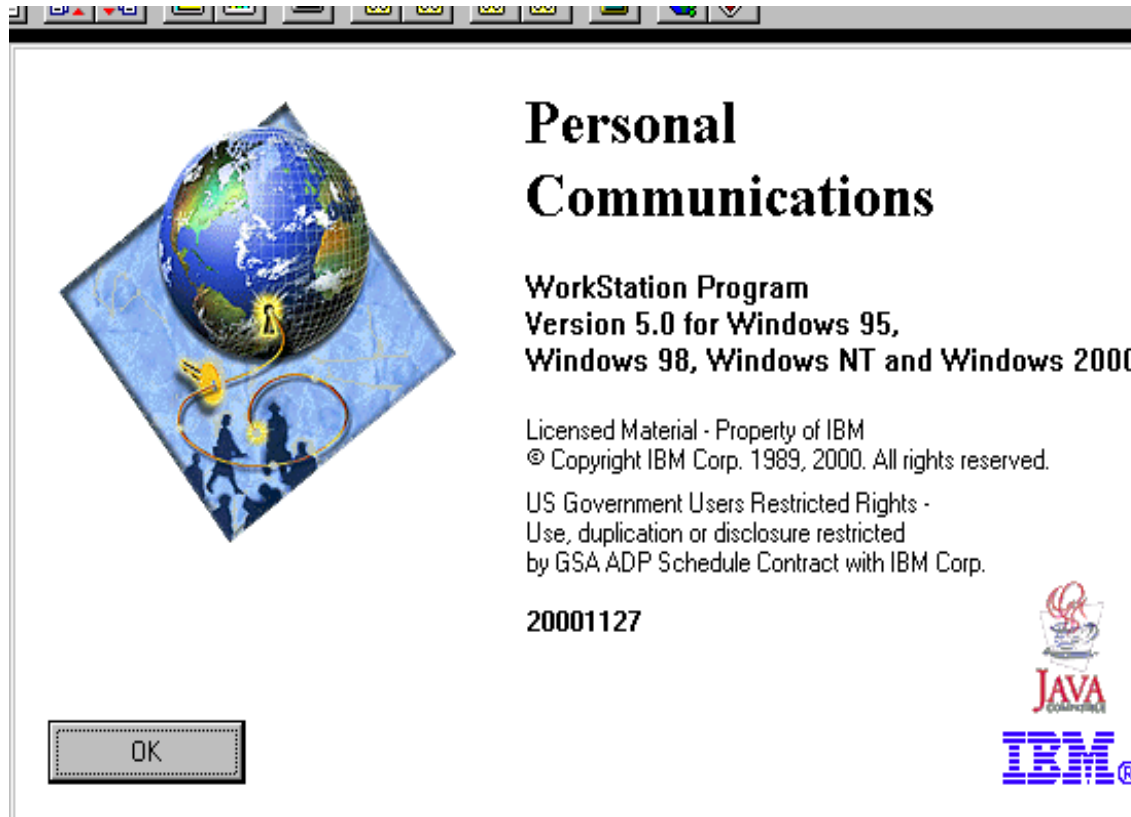
- Additional GUIs
 - Graphical Command Prompter, Retrieve NLS information from AS/400, For LPAR management, new V5R1 system values, Support for signed object system value, edit system value properties, Simplified 'Change Password' interface for OpNav, VPN, DHCP
- Additional functions enabled to run in Browser/JVM
- Management Central
 - Support for system values, Product and PTF packaging, Common dialogs to support MC applications, User administration, job monitors
- Integrated File System
 - New IFS attributes, mixed CCSID and Unicode support
- Database Administration
 - Database Navigator for visualization of database
- DASD Administration
 - 'Add Disk' and 'Replace Disk' wizards, simple cluster management
- Work Management
 - Subsystem support, Memory pools, Job queues, job lists
- Host Servers
 - Integrated Netfinity Server Disk Management, User enrollment
 - SLIC server toolbox
 - Netserver primary logon support

What's on the Drawing Board for AS/400 Operations Navigator?

- IBM is continuing to invest in Operations Navigator as its vehicle to provide a modern, easy to use, and productive user interface to the AS/400. Because we've been involving AS/400 customers in our user centered design activities, you may have heard about some of the things folks have been seeing here in the lab. While we can't talk about specific dates or release content, we think it's important for customers to know that its growth will continue tremendously over next couple of releases made possible because Operations Navigator development is being done by an expanding number of functional programming groups throughout the software lab. That growth will include more than the new OS/400 capabilities that are coming in the releases, but will also include large pieces of green screen function that have not yet been included in the GUI. You can expect to see major additions for backup and recovery, work management, system values, DASD management, and LPAR. We are even working on technology that would allow our GUI to do tasks that today can only be done through a green screen DST session. The Management Central component of Operations Navigator will expand the administrator's ability to do tasks against multiple systems simultaneously; expect more capability to do quick comparison and update of pieces of system configuration across systems. Also expect Management Central to add additional automatable system monitors; support for tasks like network-based user and group management, system value comparison and update, and licensed program creation and installation are also in the works.
- In addition to adding a large new set of function to the GUI, we're intensifying our work to provide an AS/400 UI with increased usability. Much of the function mentioned above will be supported by wizards which will guide users through sophisticated tasks. This usability focus will occur especially in the areas that are core pieces required for e-business: The HTTP server, TCP/IP security, etc. You can expect a new, task-oriented pane in the OpNav window that will make key pieces of function highly visible. And speaking of visibility, another trend you can expect is for us to provide enhanced usability through the use of highly graphical views of objects and the relationships between them. We're even working on a GUI prompter that will be available to help users enter command strings in those places in the GUI where they can enter commands to run (e.g., performance monitor triggers, Run Command).
- So there's a large amount of work going on under the Operations Navigator umbrella within our AS/400 development shop. But there's also an increasing number of plug-in applications created by other IBM organizations (including Lotus and Tivoli) and third parties (examples are listed at http://www.as400.ibm.com/oper_nav/BPpluginpage.htm). We're excited about Operations Navigator and what it can do for AS/400 customers today. But we're even more excited about what it and its plug-in extensions will do for customers in the future.

PC5250 Enhancements

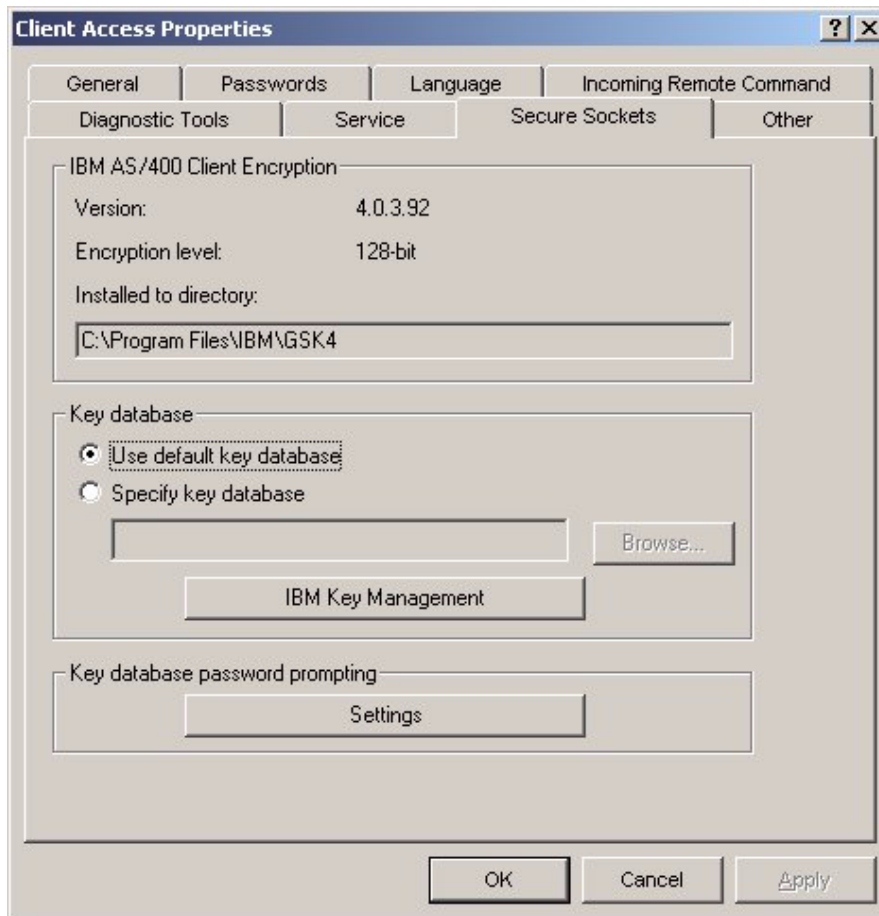
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Cannot use
PCOMM 4.3
with PC5250
V5.0

PC5250 - SSL Client Authentication

Set up Client Access properties on how often to provide client certificate to server for 'client authentication'



Client/Server Authentication

- There are two ways which Secure Sockets Layer (SSL) verifies identification: Client Authentication and Server Authentication. Server Authentication occurs when the client verifies the identity of the server application by the server certificate passed down to the client application. Client Authentication occurs when the server verifies the identity of the client by the client certificate passed up to the server application. If Client Authentication is performed, Server Authentication needs to be done first.

Client authentication

- In V5R1, the PC5250 Telnet client supports required SSL Client Authentication. You can also enable Client Authentication for the PC5250 Telnet client in V4R4 and V4R5 by issuing the following AS400 commands:
 - CALL PGM(QSYS/QTVSRV) PARM(*SSLCERT)
 - ENDTCP SVR SERVER(*TELNET)
 - STRTCPSVR SERVER(*TELNET)
 - To disable it, use the following commands:
 - CALL PGM(QSYS/QTVSRV) PARM(*NOSSLCERT)
 - ENDTCP SVR SERVER(*TELNET)
 - STRTCPSVR SERVER(*TELNET)
- For V5R1, use Digital Certificate Manager (DCM) to change the AS400 Telnet server SSL properties to require Client Authentication.
- If the AS400 is used to create client certificates, a browser capable of importing/exporting secure PKCS12 files is required. (currently IE 5.x and Netscape 4.x have this compatibility). After the client certificate is created, you need to export it from the browser and import it into the PC SSL key database using IBM Key Management. When exporting client certificates from the browser, always include the private key.
- The certificate authority that signed/created the client certificate needs to be imported into the PC SSL key database before the actual client certificate, or else the PC SSL key database will not be able to trust the client certificate and fail to import it. If more than one valid client certificate is in the PC SSL key database, you can either use IBM Key Management to change the default client certificate, or use the PC5250 configuration properties to allow selecting which one to use during a connection attempt.

The PC5250 Telnet client supports required SSL Client Authentication.

- Client Authentication occurs when the server verifies the identity of the client by the client certificate passed up to the server application.
- For required Client Authentication, the client certificate must be passed from the client, be valid, and trusted by the server.

PC5250 Configuration Enhancements

- GUI dialog now provided to configure workstation id
 - Computer Name
 - Windows User Name
 - Specify Workstation ID
- Check Boxes for
 - Add Prefix for Printer or Display
 - Avoid Duplicate Names on this Workstation (A-Z)
 - Avoid Duplicate Names with other Workstations (1-9)
- Truncate the workstation id (when over 10 characters)
 - from beginning
 - from end (default)

Configure PC5250

System name: RCHASBDS Properties

Workstation ID

Use Computer name Add prefix to indicate printer or display

Use Windows user name Avoid duplicate names on this workstation

Specify workstation ID Avoid duplicate names with other workstations

Truncate:

Beginning characters Ending characters

Type of emulation

Display Size: 24x80 Setup...

Printer

Bypass signon

Auto-reconnect

Host code-page: 037 United States

Port number: 23

OK Cancel Help

Printer emulation

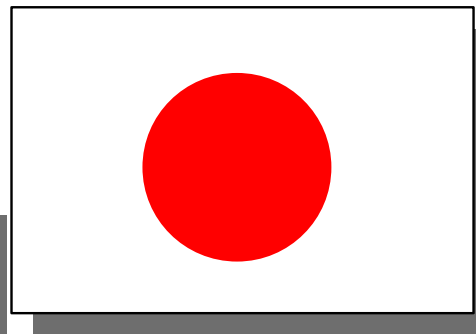
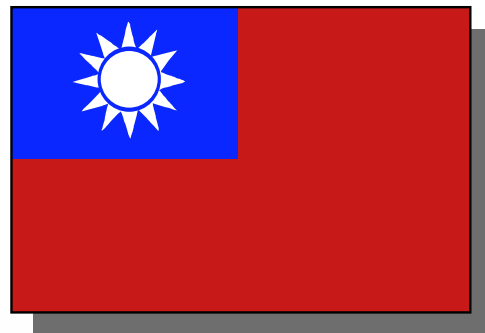
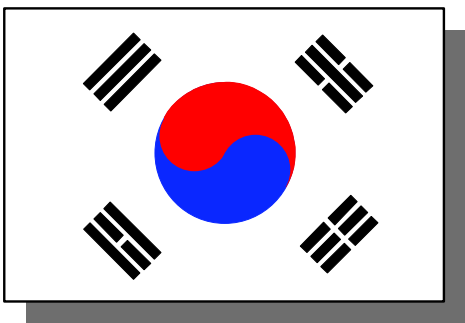
- DBCS printer sessions can now use Enhanced Computer Output Reduction (COR) to adjust the width and depth of print output to fit on a page

New code pages

- New DBCS Euro code pages for "1364 Korean", "1371 Taiwan", "1390 Japan Katakana Extended", and "1399 Japan Latin Extended"

Working with Multiple NLVs

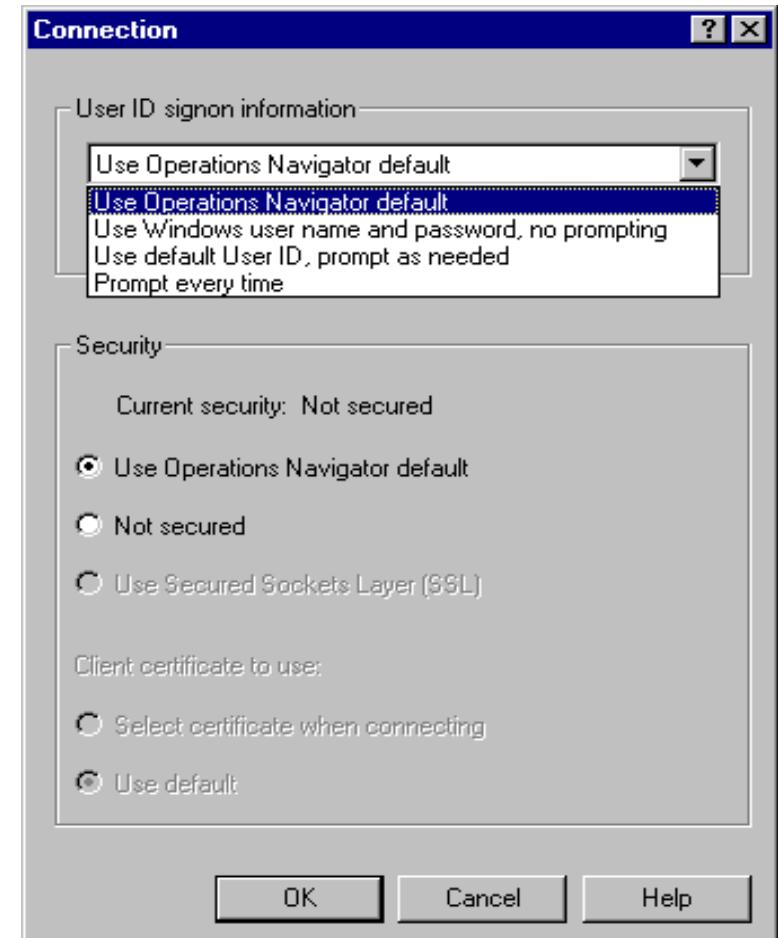
- PC5250 now supports multiple NLVs in much the same manner that Client Access Express core does



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Connection Properties

- User ID Signon Information
 - User can specify different default signon information than what is specified in Operations Navigator connection properties
- Choose from the following:
 - Use Operations Navigator Default
 - Use Windows user name and password, no prompting
 - Use default User ID, prompt as needed (may specify different User ID)
 - Prompt every time
- Security
 - If a SSL connection is being specified in Operations Navigator the emulation session can be "Not Secured"



PC5250 now has Policy Support

A new GUI interface to customize cut and paste functionality

Support for new DBCS Euro code pages

Color Remap Dialog easier

Policies enforced by CA/400 Express are

The prevention of configuration/modification of a display session

The prevention of configuration/modification of a printer session

The prevention of the usage of PC5250

A limit on the number of sessions that can be started.

Cut & Paste

Client Access did not previously correctly paste data from an Excel spreadsheets into an AS/400 emulation window. Columns were separated by a single space, rather than a field exit character. Our users calculate required journal entries in Excel, and then paste the journal entries into a journal entry program. Having the users re-key the data on the 400 was time-consuming, error prone and unacceptable. A new GUI interface allows a user to customize cut and paste functionality.

From the Menu bar choose Edit=>Preferences=>Edit

DBCS Euro pages

Additional Code Page Support: Support for new DBCS Euro code pages will added. This required a change to the PC5250 Configuration panel Host CodePage list. New strings "1364 Korean", "1371 Taiwan", "1390 Japan Katakana Extended", and "1399 Japan Latin Extended" will be added.

Color Remap Dialog Enhancement:

- The dialog will be rearranged to make the flow of selecting colors more obvious. Additionally, some controls will be hidden in the default view of the dialog, and exposed by pressing a new "Advanced" button.
- The functionality has not changed. The user can still click on areas of the emulator screen and select foreground and/or background colors as appropriate. Alternatively, colors may be dragged from the color bars and dropped on areas of the emulator screen.
- Advanced users who understand 3270/5250 screen attributes can select Category and Element values from the listboxes, and select colors to be applied to them.
- Also added are buttons to control the attributes that blink. The user can chose to have them blink in the color sent by the host (the default as is done today), choose to have them not blink but still in the color sent by the host, or not blink but with a user defined color (which is also done today).
- A new Undo function will be provided. Currently, when a user has made color changes he/she does not like, the available actions are to press the Cancel button, which results in ALL the changes the user just made being lost, or to pres the Default button which results in the color settings reverting to System Defaults.
- The Undo function will keep a list of all the changes the user has made in this invocation of the Color Remap dialog. Pressing the Undo button will result in the most recent change being undone. Pressing again will undo the next most recent change and so on until eventually the colors are back to their starting point.

General Usability

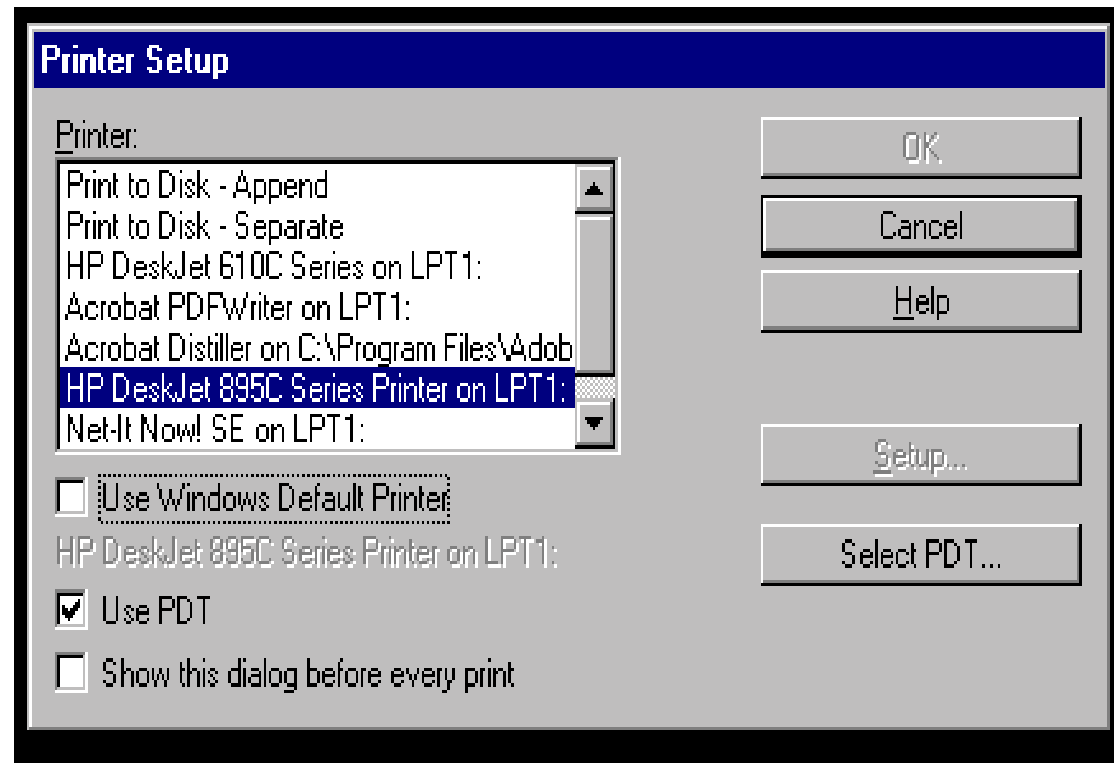
- 5250 Configure dialog provides GUI for Auto Device Name Generation.
- Option added to configuration to allow a prompt when exiting session so user can select to 'Save Changes'. Current configuration options allow "Always save" or "Never save" session changes on exit.
- The Connection dialog allows user to specify if a default user ID is to be used
- Messages: CWBEM0005 updated, CWBEM0007 new

Display emulation

- License authentication enhanced so when using Bypass Signon no additional prompting required.
- Color Remap enhancements
 - User can click on an area of the screen to change colors of a field type.
 - The Undo function will keep a list of all the changes a user is making in the Color Remap screen, and undo just the most recent change
- Buttons added to control the attributes that blink
- New radio-button on the "Edit => Preferences => Edit..." panel (more consistent with RUMBA)
- The Menu Bar terminology rearranged/renamed to be more consistent with Windows.
- Option to prevent recording/playback of hidden fields

Printer emulation

- Option added to .WS profile to allow use of multiple pcspd.dat files so user can have different files for special use with certain printer drivers. This option allows user to have a font mapping table (AS/400 to PC) on a per session basis
- DBCS printer sessions can now use Enhanced Computer Output Reduction (COR) to adjust the width and depth of print output to fit on a page



Administration

- 5250 policies so administrators can limit end user's ability to do any of the following:
 - Menu Configuration
 - Multiple Session Configuration
 - Toolbar Configuration
 - Keyboard Configuration
 - Mouse Configuration
 - Automatically add applications to the active menu
 - Execute Java Applet
 - Use Macro Play/Record
 - UseData Transfer

Application enablement

- Three new commands are added
 - PCOMSTRT - start a PCOMM session
 - PCOMSTOP - stop a PCOMM session
 - PCOMQRY - query a specified session or all sessions
- Upgrade VBScript to Version 5 to make it consistent with IE 5.

Additional National Language support

- New DBCS Euro code pages for "1364 Korean", "1371 Taiwan", "1390 Japan Katakana Extended", and "1399 Japan Latin Extended"
- PC5250 now supports multiple NLVs in much the same manner that CA/400 does

Client Access Express ships with PC5250 V5.0. Enhancements this release include:

- Administration enhancements
 - Will automatically generate a workstation name.
 - Ability to use multiple pcspd.dat files
 - Updates to the Exit Options dialog
 - Additional policy support

- National Language Enhancements
 - Support of DBCS Euro code pages

- Display emulation enhancements
 - Ability to type lowercase characters in a Shift-Caps lock state
 - Key repeating on function keys and Enter
 - Option to prevent recording/playback of hidden fields
 - Automatic font tuning
 - Color remap dialog enhancements
 - Menu bar rearranged/updated to more closely follow other Windows applications

- Printer emulation enhancements
 - Enhanced computer output reduction
 - Better default printer recognition

The PC5250 Telnet client supports required SSL Client Authentication. Client Authentication occurs when the server verifies the identity of the client by the client certificate passed up to the server application. For required Client Authentication, the client certificate must be passed from the client, be valid, and trusted by the server.

Note: V5R1 Client Access Express is compatible with Personal Communications 5.0, and also with IBM SecureWay Screen Customizer Version 2.0. If Personal Communications 4.3 is invoked from V5R1 Client Access Express, there may be coexistence problems.

Security Enhancements

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- The PC5250 Telnet client now supports required SSL Client Authentication. Client Authentication occurs when the server verifies the identity of the client by the client certificate passed up to the server application. For required Client Authentication, the client certificate must be passed from the client, be valid, and trusted by the server. The client certificate can be created from the AS400 certificate authority or a well-known internet certificate authority.
- Operations Navigator includes a new AS/400 certificate authority download option. When you use the AS/400 certificate authority to create system or client certificates, this option automates the process of downloading the AS400 certificate authority to the PC.
- Client Access Express also supports new password rules, including:
 - Allowing any typed character to be used in a password
 - Passwords can contain up to 128 characters

Service Packs

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Service Packs can be applied to the AS/400 Client Access Express install image. This means that you can install Client Access Express with the latest service packs in one step, without having to reboot between installs.

Host Changes

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- V5R1 Client Access Family for Windows, 5769XW1 will no longer include:
 - Client Access for Windows 95/NT 5763XD1
 - Client Access Enhanced for Windows 5763XK1
- Host Servers will now be a part of *BASE and library QSYS
- The default subsystem for database host server prestart jobs changed from QSERVER to QUSRWRK.
 - The database server job may now be run outside of the QSERVER subsystem.
- Sockets jobs default to QUSRWRK, SNA still in QSERVER.
- Daemon (QZDASRVSD) still runs in QSERVER.
- Daemon routes start server requests to subsystem based on index entries.
- Uses Batch Immediate jobs if prestart jobs aren't available or if the index is damaged.
- QZDA**** programs have been moved out of the QIWS library into QSYS library

- Client Access for Windows 95/NT 5763XD1 and Client Access Enhanced for Windows 5763XK1 will not be available on V5R1. No work has been done to explicitly not allow these clients to connect to V5R1 but there will be NO formal support for installing or connecting to OS/400 V5R1 and beyond. These clients will continue to be available on previous releases of OS/400 until each release is withdrawn from marketing.
- Host Servers were formerly optionally installed as Option 12 of 5769SS1, library QIWS
- The default subsystem for the database host server prestart jobs have been changed from QSERVER to QUSRWRK. This change removes the restriction that database host server prestart jobs can only be run in the QSERVER subsystem. This change will allow users to configure their own subsystems to better manage host server work.
- The QZDASOINIT job may now be moved to any other subsystem. This can be used to isolate the database server jobs to let them all run in one pool or to limit the number of database server jobs allowed on the system at one time. This is not presently feasible because the BCI jobs will start if you set the limit on the prestart job entry and netserver and file server jobs are affected if you limit the number of jobs in the QSERVER subsystem.
- QUSRWRK subsystem will be the default subsystem for the database server prestart jobs. QSERVER subsystem description will no longer have the prestart job entries for the QZDASOINIT and QZDASSINIT jobs. QZDAINIT (APPC connections) still run out of QSERVER.
- The socket daemon job still runs in the QSERVER subsystem and it can route the jobs to one or more subsystems, there is no need to move it to a different subsystem. The daemon job uses a user index (QUSRSYS/QYSMSVRE) to control the routing of the start server requests to the correct subsystem. If prestart jobs are not available in that subsystem, Batch Immediate jobs will be used.
- The server programs have been moved out of the QIWS library and into the QSYS library. This eliminates the library list hassles we've had in the past (user not authorized, QIWS was in the system library list, etc.)

Software License Keys

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5722-XW1 will now come with both a Base and option 1

- Software key is applied to option 1

Software License required for:

- PC 5250 display or printer emulation (no change)
- data transfer (no change)
- 70 days use allowed with no software license key (new)

Notes: Software License Keys

A software license key is required for V5R1 Client Access Family for Windows 5722-XW1, and 5722-XW1 is included in the V5R1 Keyed Stamped Media. You receive a license key if you order 5722-XW1.

As in prior releases, any/all components of Client Access Express can be installed on the PC, whether they require a license or not. Also, as in prior releases, it is at the point when the user tries to use a licensed function that the 5722-XW1 license will be checked. The functions of Client Access Express that will require a license in V5R1 will be the same functions as required a license in the past: 1) PC5250 display and printer emulation and 2) Data Transfer. The difference for V5R1 is that now users will be allowed the 70 days to try PC5250 and Data transfer without having the license key. After the 70 days, the key for 5722XW1 will be required on the AS/400 to use those functions.

Whoever installs the software and manages the software licenses at a customer site will need to know the following detail: 5722-XW1 will now come with both a Base and option 1, and the software key is applied to option 1. When 5722-XW1 is ordered, the customer automatically gets both the Base and option 1. And both are installed when XW1 is installed on the AS/400. Then the license key information is entered for 5722XW1 Option 1. (This was implemented this way so that we could still tie the usage limit to the 5722XW1 Base for compatibility).

Installation Information:

For upgrades from V4R4 and V4R5 to V5R1:

- If XW1 exists on the former system, both XW1 base and XW1 option 1 would automatically be installed on the V5R1 system.

For new installs:

Both the Base and Option 1 would automatically be installed in these scenarios:

- a) When XW1 is ordered and pre-loaded on the server.
- b) When a customer is installing a new system, such that they select e.g., "Installed products", "All products", or "New products", which is the use of GO LICPGM option 1.

Both Base and Option 1 need to be manually selected in these scenarios:

- 1) When a customer installs the 5722-XW1 LP individually with the RSTLICPGM (Restore Licensed Program) command.
- 2) When a customer selects one or more LPs to install from a list of all LPs that the Install component knows about, which is the use of GO LICPGM option 11.

NetServer Enhancements

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(psst, is NetServer part of CA? no, to be moved to OS?)

V5R1 NetServer Enhancements include:

- Logon Server support
- Master Browser services
- Configuration Wizard
- View disabled user profiles
- New and enhanced messages

Logon Server:

- Domain discovery
- Login Mailslot handler
- Enables roaming users
- Store, retrieve, and maintain Windows system policies
- Windows 95/98 require no additional software
- Windows NT/2000 require IBM NT Client for logon services

Master Browser Support

- additional SMB APIs
- Support/register additional NetBIOS name types
- Mailslot created to receive election request and browser list requests
- Forward requests to other domains
- Build and maintain browser lists

Operations Navigator

- Configuration Wizard
 - to configure NetServer based on customers environment
- View disabled profiles
 - Ability to display and re-enable disabled profiles (for Netserver)
- Administration for multiple sessions on same workstation

- New status messages
 - CPIB687 - Sent to QSYSOPR to alert of certain non-fatal errors or conflicts
 - CPIB688 - Sent to QSYSOPR when remote users log into NetServer requesting share point created for home directory
- Updates to configuration file for login server
 - QAZLSCFG
- New subdirectory (/NetLogon) for windows users login scripts
- Changes to APIs to accommodate enhancements
 - QZLSCHSI
 - QZLSENSS
 - QZLSLSTI

Cancel/Timeout mechanism for connections

- Improve communications traffic with Operations Navigator (compression)

AS/400 NetServer file and print serving enhancement

- Support AS/400 as Primary Logon Server through SMB

Install/Packaging enhancements

- For Windows 2000
- Install enhancements
- Integration of EZ Setup

PC Administration

- Add new policies to Express template
- Update documentation on communications policies
- Additional effort on policies for Windows 2000 environment

Communication

- Communications Compression - Operations Navigator use of RMTCMD needs this to improve performance
- SKIT changes - Need to integrate latest SKIT version, and move certificate download function to OpNav (migrate from tool)
- Time Out/Cancel Mechanism for connect, security (OpNav, Systems Management and OLE DB) requires this.
- New CWBPINT option(s) - add message and switch for default and OpNav configuration usage.
- Share CWBCO message files - consistent and useful messages needed by customers to resolve communication problems.
- Remove load-time linking of Client Access DLL's by Network Provider - need to reduce footprint when loaded and to allow temporary fixes to be applied easier.
- Support System Description - provide new APIs that allow get/set of system description.

Admin/Config

- Add new policies to Client Access Express.
- Document expected GUI behavior based upon Communications policy settings, i.e. which policies should disable which actions.
- Add new APIs and API functions for obtaining information on specific installable components.
- Improve logging/tracing in lower level ad/cf code.
- Unicode enable several SPIs for usage by other components.
- Observe and record behavior of policy downloading from Windows 2000 server, and also policy downloading from a "legacy" Windows NT server to Windows 2000 Professional. Fix up our policy templates to prevent the "Have the user policy override the machine policy" setting from showing up when displaying the template on a Windows 2000 machine using the Group Policy Editor.
- EZ-Setup needs an interface to turn back on some values that install turns off if EZ Setup is to be installed and run.

Appendix

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WebSphere Host Publisher

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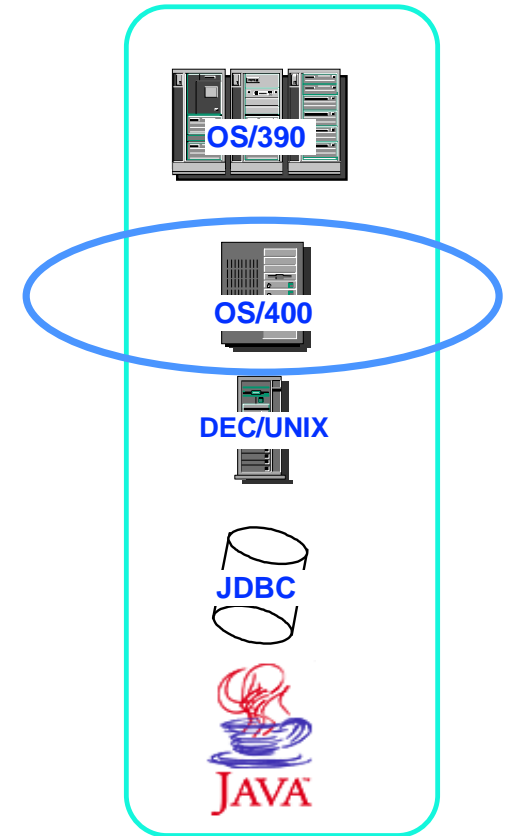
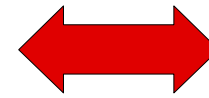
WebSphere Host Publisher

IBM  server iSeries

Included with Access for Web



HTML Web browser



- Extends host applications to web browser users and new e-business applications
 - ▶ Integrates *multiple back-end sources* into custom HTML web pages
 - ▶ Supports XML access to host applications
 - ▶ Protects and leverages existing I/T investments

iSeries Access for Web is for AS/400 (no testing or support if Host Publisher used with other platforms)



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- Java based web-to-host solution specifically designed to address the unique characteristics of the Internet
- Web browsers do not need to be Java-enabled
- Provides web integration with existing host applications without requiring any changes to the existing application itself
 - 3270
 - 5250
 - VT
 - JDBC
 - Java
- Can consolidate multiple existing applications into single composite application for presentation to the user
- Provides enterprise-class scalability, security, and availability
- Typical application includes:
 - External browser users
 - Extend existing applications to new e-business applications
 - Multiple applications involved
 - May require new business logic

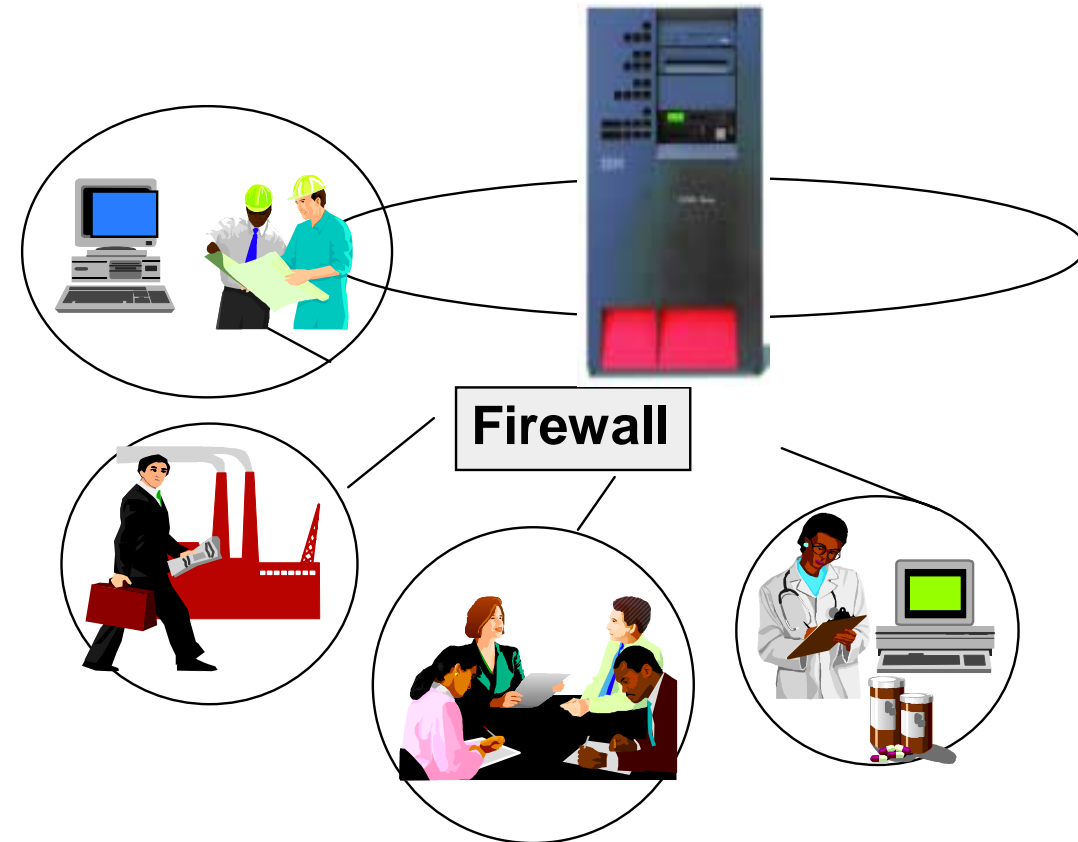
Who needs this new web client?

AS/400 customers looking for:

- A way to connect to their AS/400s through a browser interface
 - ▶ and want client to work via browser functions like cut and paste, print...
 - ▶ Want easy access to AS/400 via URL

A way to enable connection to their AS/400 without needing to:

- Provide or maintain special software on end user desktops



Good for users who:

- Are not in their main office but need to connect
- Occasionally need to connect
- Only need to connect for a short time

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Distinct Positioning in Client Access Family

IBM  server iSeries

What this product 'is'

- Complementary to Client Access Express for Windows
- For casual end users wanting simple to use browser access to server
 - including Linux, Network Station
- For remote Internet users wanting brief access to AS/400
- For 'loosely-connected' users who need casual access to an AS/400
 - ▶ Agents & brokers can check policies, claim status, and accounts receivable on the Internet
 - ▶ Dealers can order parts or check inventory online
 - ▶ Doctors & clinicians can enter lab orders and review test results anytime from anywhere
 - ▶ Can deploy parts orders & warranty filing system to distributors across an extranet


What this product 'is not'

- Replacement for Client Access Express for Windows
- For PC users running Windows applications against server
 - Excel, Access...
- For locally-attached users running day-to-day business applications
- For AS/400 administrators and operators trying to remotely run Operations Navigator functions

iSeries Access for Web



Client Access Express

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Let's Connect...

Welcome to AOL.COM - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Location: http://WidgetCorp/Inventory/Vendor

Shop Here at amazon.com. AOL 500 HOURS FREE! VERIO Everyone Has One! Get Your Website!

AOL.COM The All-New AIM 4 And Even Talk. It's

► AOL Mail ► My AOL.COM

AOL Anytime

Check Your AOL Mail

Enter AOL Mail

► Simplify Your Life My Calendar

► Personalize AOL.COM My AOL.COM

Quick Buddy Web Chat

Search [input] Search

Other Searches: [White Pages](#) | [Yellow Pages](#) | [Categories](#) | [Maps](#) | [E-mail Finder](#) | [Home Pages](#) | [Kids Only](#)

Shop

Username and Password Required

Enter username for rchast6d.rchland.ibm.com at smslnux3:

User Name:

Password:

OK Cancel

Essentials

► [Hot Chats](#)

► [Love@AOL](#)

► [Home Pages](#)

► [Free Greetings](#)

► [AOL 5.0 FREE](#)

STOCK QUOTE: [input] [Get Quote](#)

Your Career:

- [Poll: Happy At Work?](#)
- [Search Job Listings](#)
- [Get A Raise, Now!](#)

- Open browser
- Key in AS/400 URL
- Prompted for AS/400 user id and password

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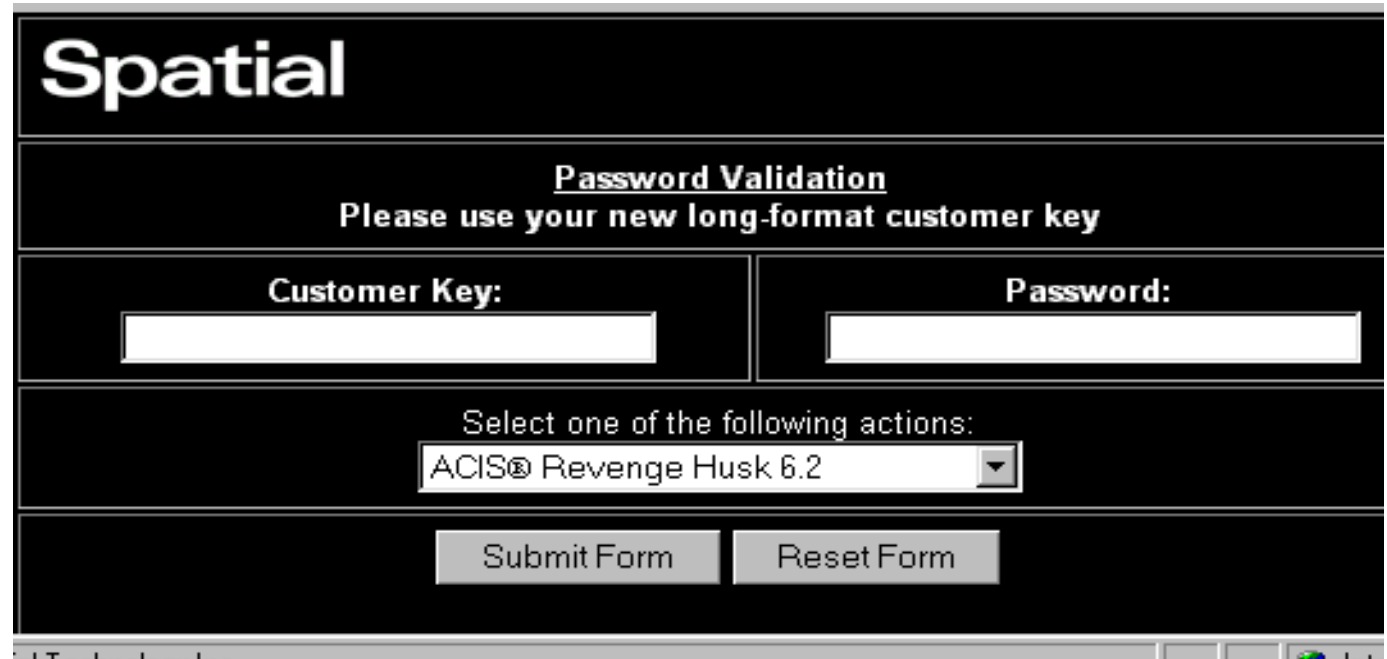
Validate Customer Key and Password

Customer key and password may not be equal to AS/400 user-id and password

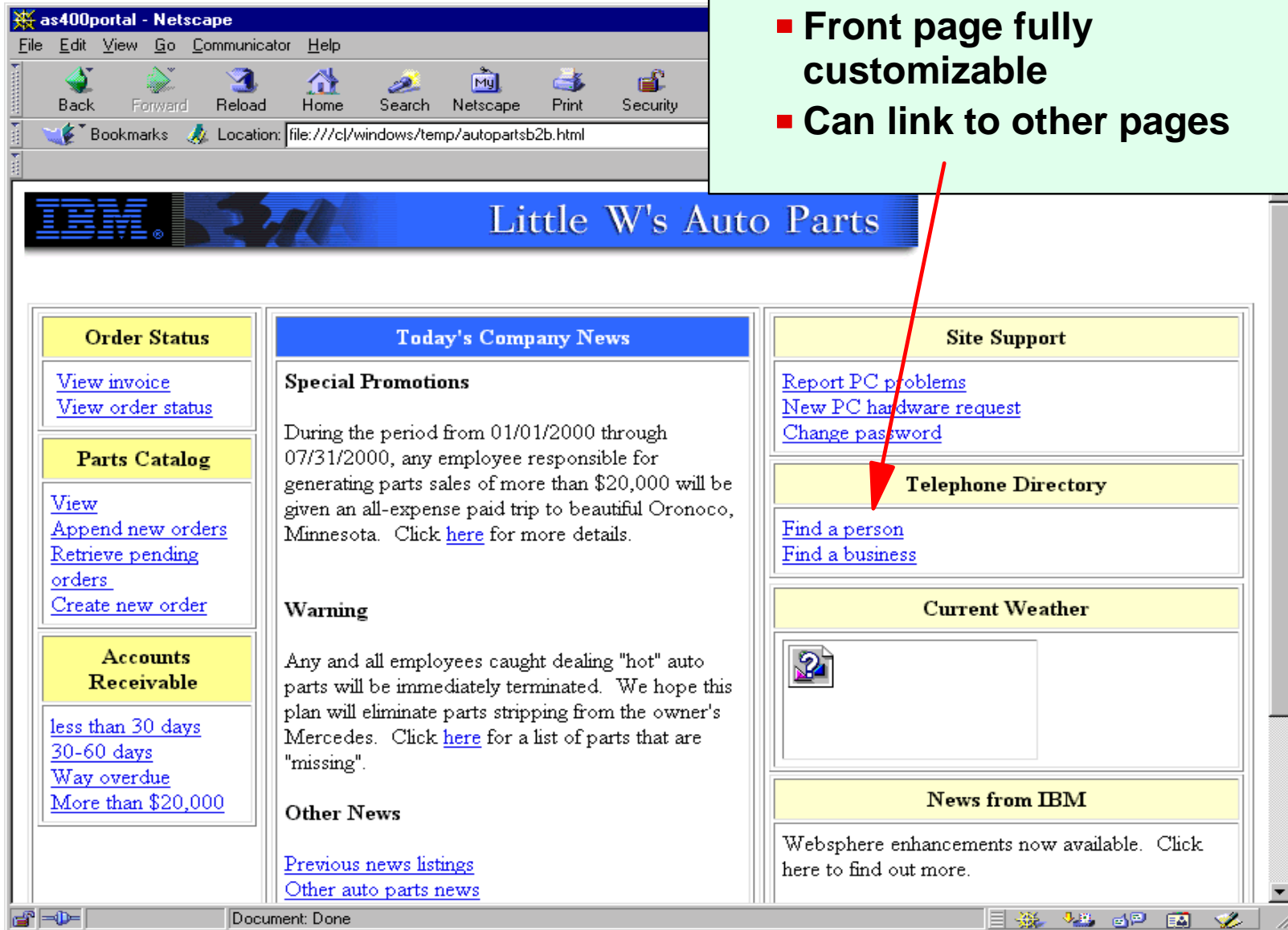
Validation List

- Only certain customers can access certain parts of the web site
- Compare their contractor number, account number, etc, to a validation list

Support Public, Group, User breakdowns



The screenshot shows a web browser window with a black background. At the top left, the word "Spatial" is written in white. Below it, the text "Password Validation" is centered, followed by "Please use your new long-format customer key". There are two input fields: "Customer Key:" on the left and "Password:" on the right. Below these is a dropdown menu with the text "Select one of the following actions:" and the selected option "ACIS® Revenge Husk 6.2". At the bottom, there are two buttons: "Submit Form" and "Reset Form".



as400portal - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security

Bookmarks Location: file:///cl/windows/temp/autopartsb2b.html

Little W's Auto Parts

Order Status

[View invoice](#)
[View order status](#)

Parts Catalog

[View](#)
[Append new orders](#)
[Retrieve pending orders](#)
[Create new order](#)

Accounts Receivable

[less than 30 days](#)
[30-60 days](#)
[Way overdue](#)
[More than \\$20,000](#)

Today's Company News

Special Promotions

During the period from 01/01/2000 through 07/31/2000, any employee responsible for generating parts sales of more than \$20,000 will be given an all-expense paid trip to beautiful Oronoco, Minnesota. Click [here](#) for more details.

Warning

Any and all employees caught dealing "hot" auto parts will be immediately terminated. We hope this plan will eliminate parts stripping from the owner's Mercedes. Click [here](#) for a list of parts that are "missing".

Other News

[Previous news listings](#)
[Other auto parts news](#)


Site Support

[Report PC problems](#)
[New PC hardware request](#)
[Change password](#)

Telephone Directory

[Find a person](#)
[Find a business](#)

Current Weather



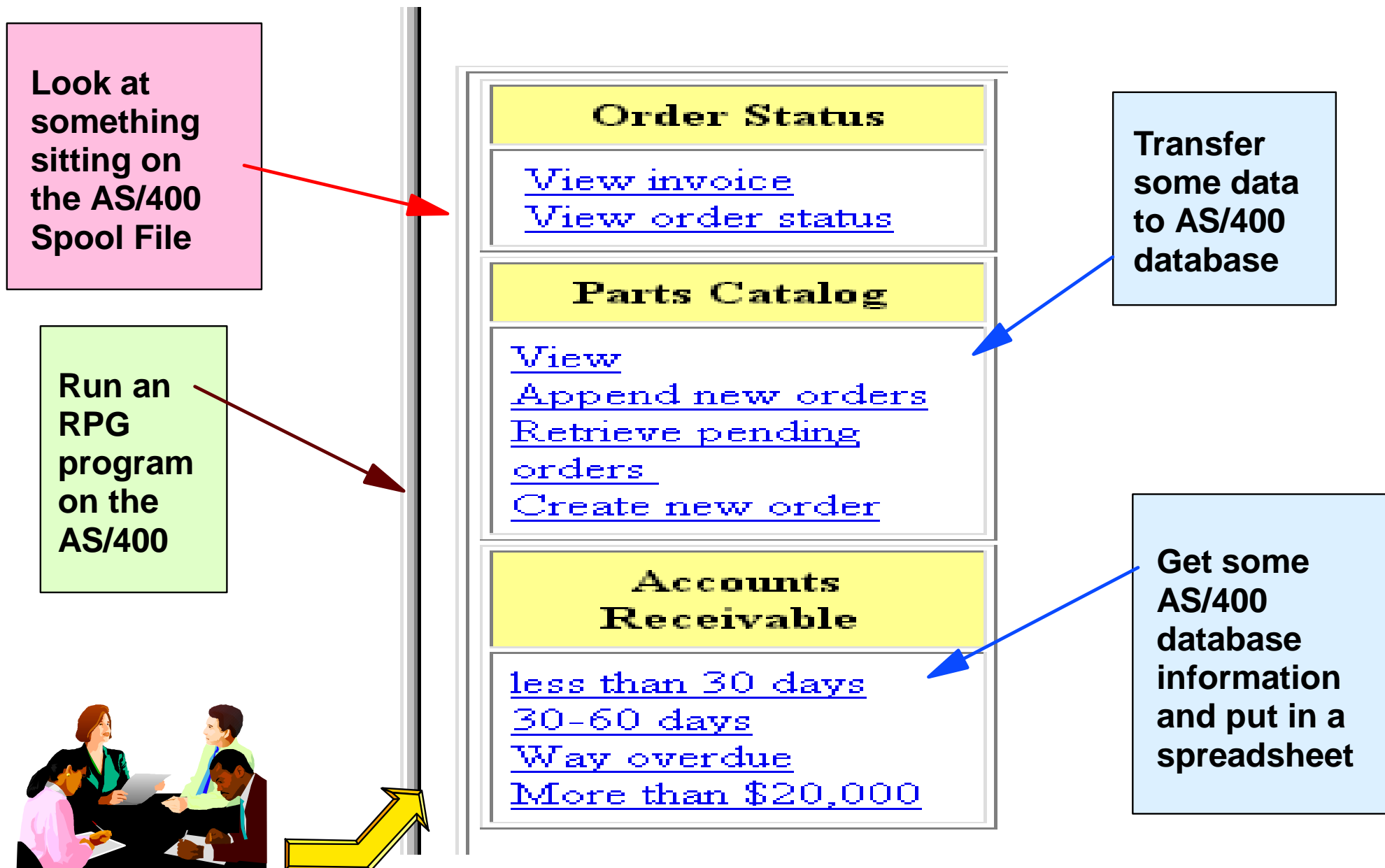
News from IBM

Websphere enhancements now available. Click [here](#) to find out more.

Document: Done

- Front page fully customizable
- Can link to other pages

Example of things an end user might do



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Using 5250 HTML Mapper from Host Publisher

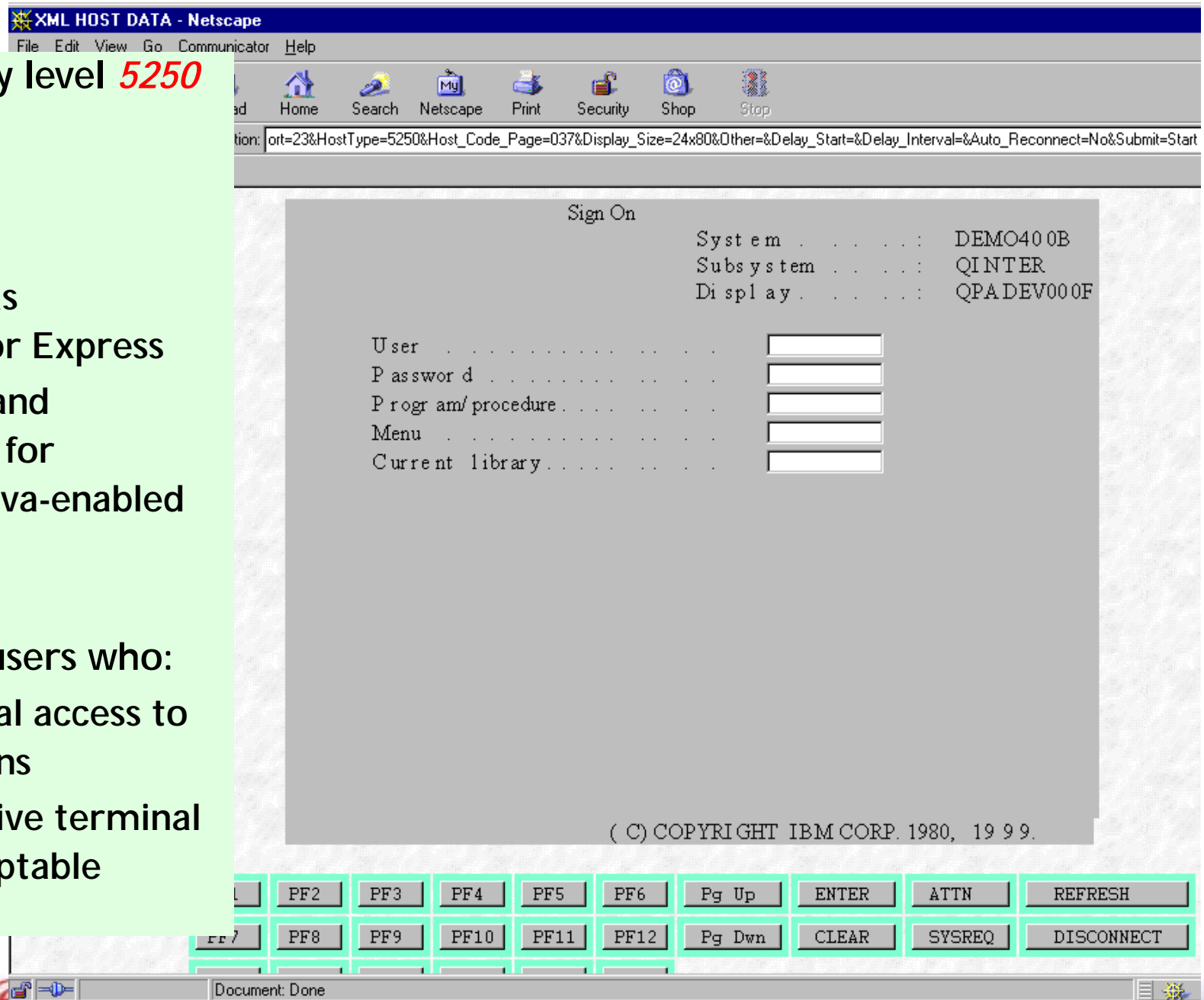
Load-and-go entry level **5250**
HTML emulator

Not full-function

- Not intended as replacement for Express
- Host On-Demand recommended for full-function, Java-enabled web emulation

Solution for end users who:

- Need occasional access to host applications
- Consider a native terminal screen an acceptable interface



Host Publisher - a B2B application connector

IBM  server iSeries

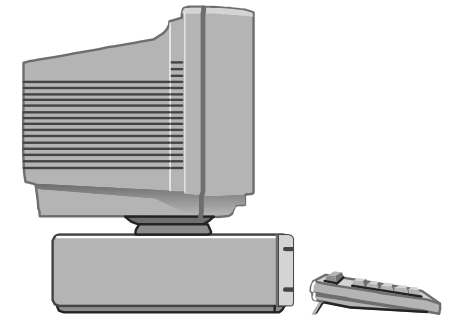
Host

Generates
Web
applications

Publisher

Host Publisher Studio

- Development environment on a PC
- Uses task oriented, graphical user interface
- Generates fully customizable Web pages using a leading edge HTML/JSP editor and business logic creation tools
- Creates reusable Host Integration Objects that encapsulate host interactions and data retrieval



Windows 95, 98,
NT, 2000



IBM
WebSphere
(Std Edition)

Host Publisher Server Runtime Environment

- Provides session management, license monitoring, run-time administration, load balancing and log and trace management
- Supports SSL encryption and DES encrypted passwords
- Supports integration with other IBM connectors

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Major components:

- HostPub Studio:
 - Graphical interface to customize HostPub. Specify applications to access, how to navigate the applications, which data and services to make available to end-users.
- WebSphere Std Edition a key component of the HostPub server runtime environment
- HostPub server:
 - Broad platform support. Leverage current hardware and skill set. Flexibility over time to change as needs may change.
- New with HostPub 2.2:
 - HostPub Studio support for Win2000.
- New with 2.2:
 - Addition of WebSphere Studio:
 - ✓ HTML/JSP editor to polish HostPub web pages, VisualAge for Java for adding new business logic to HostPub implementations.

Use of Host Publisher within the AS/400 B2B LP.

Our B2B architecture includes the concept of "connectors" which are used to access application and data resources in response to incoming B2B transactions (eg call a program to process a purchase order request). In our first release, we have program call, data queue/MQSeries and Java class connectors. In our 2nd release (mid/2001) we're currently planning to add database and 5250 connectors. It's for this later connector that I would like to leverage Host Publisher capabilities.

The basic task performed by a connector is to take the input data provided with a B2B transaction (eg product number of an item being ordered) and map to input parameters supported by the existing back-end business process (we also support mapping of output generated by a back-end application into the response message required by a given B2B protocol). In the 5250 case, we need to map fields/data values coming with the B2B transaction into fields on 5250 screens that require these items as input. We also need to extract data from 5250 screens to capture result data we need to package within the B2B response.

Host Publisher provides a good model for this approach through their Integration Object (IO) concept. With an IO, you basically have a series of 5250 screens encapsulated in a Java object with methods on the object provided to get/set values that are mapped to 5250 fields by the Host Publisher runtime. The model I would like to provide with our B2B LP would call for the customer to generate integration objects for the series of 5250 screen interactions they want to use when handling B2B requests and they "plugging" those integration objects into our B2B runtime framework. For this to work, we would need to ship or prereq both Host Publisher Studio and the Host Publisher runtime. Host Publisher Studio would be used at configuration time to create integration objects for a set of 5250 screens. The runtime would be used by our B2B runtime to "play back" a series of screen flows to get/set values into the 5250 screen flow.

Authentication/Login Services

- Create a *Validation List* to store user authentication information including passwords and digital certificates. Directories can be used to store more detailed user information as well as authentication information.
- In some circumstances OS/400 user-ids and passwords may be used for authentication

Application Connector

- There will be classes of application connectors for the various types of legacy application access requires (eg, 5250 application connectors)
- *Host Publisher* capabilities can be used to map the existing back-end business process to the fields/data values coming with the B2B transaction

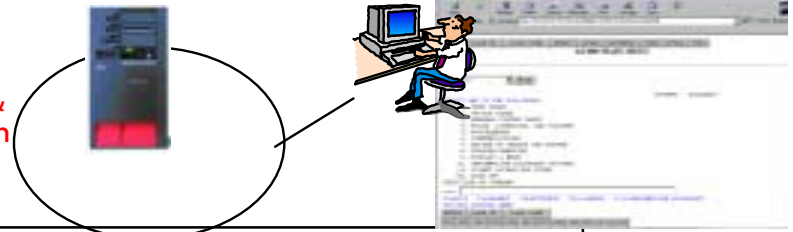
The 'Web Client' itself

- A simple framework that introduces customers to the use of *a front page for their web users*; which could then lead customers to expand into the B2B environment

Complement iSeries Market Strategy

Business-ready: Turn it on and run your business

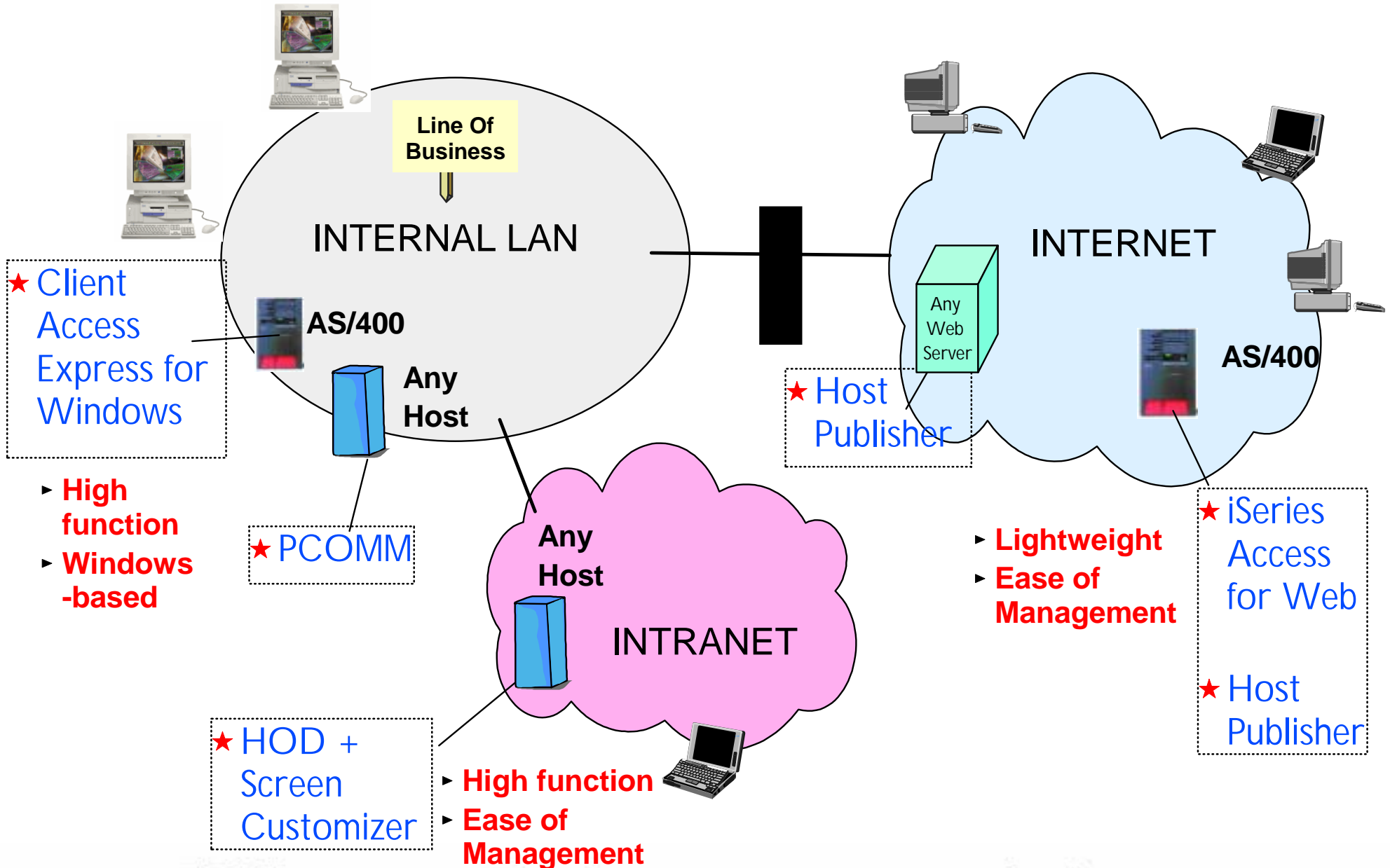
Small &
Medium
AS/400
market



AS/400 Strategy	What Web Access Can Do
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Sell AS/400 hardware <input checked="" type="checkbox"/> No software on desktops 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Deliver client that runs on OS/400 Requires more hardware to run more users <input checked="" type="checkbox"/> Maintain and run all software on host Download HTML pages as user needs them
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Generate new markets for iSeries systems B2B, ERP, ASP... Already strong in traditional market 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Deliver AS/400-specific e-business client --Designed for e-business --Provide unique AS/400 B2B front page
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Self-managed, 'it doesn't take an army to run the system' <input checked="" type="checkbox"/> Complete solutions for our target markets 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Deliver an integrated iSeries solution --Installs like all other AS/400 software --Fixes provided with AS/400 CUMTAPE --On same release schedule as iSeries --XW1 bundled with Model 250s --XW1 included in ValuPak offerings <input checked="" type="checkbox"/> Exploits OS/400 capabilities --Designed specifically to meet iSeries needs

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Target Markets



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PCSTSK

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PCS TSK Menu, Option 21 changed:

- previously when enrolling a CA user, the user profile was added to the system directory
- in V5R1, the default is not to add the user profile to the system directory

Notes: PCSTSK option 21

With the direction to move to Domino mail serving, the old menu GO PCSTSK OPT. 21, Enroll Client Access/400 users creates a system distribution directory entry that is only needed for PC users to access the QDLS (Folder) file system. The menu item makes no mention of what the enrollment does, but the SDD creates large problems when customers are implementing Domino and other mail frameworks as this entry causes duplicates and naming convention issues.

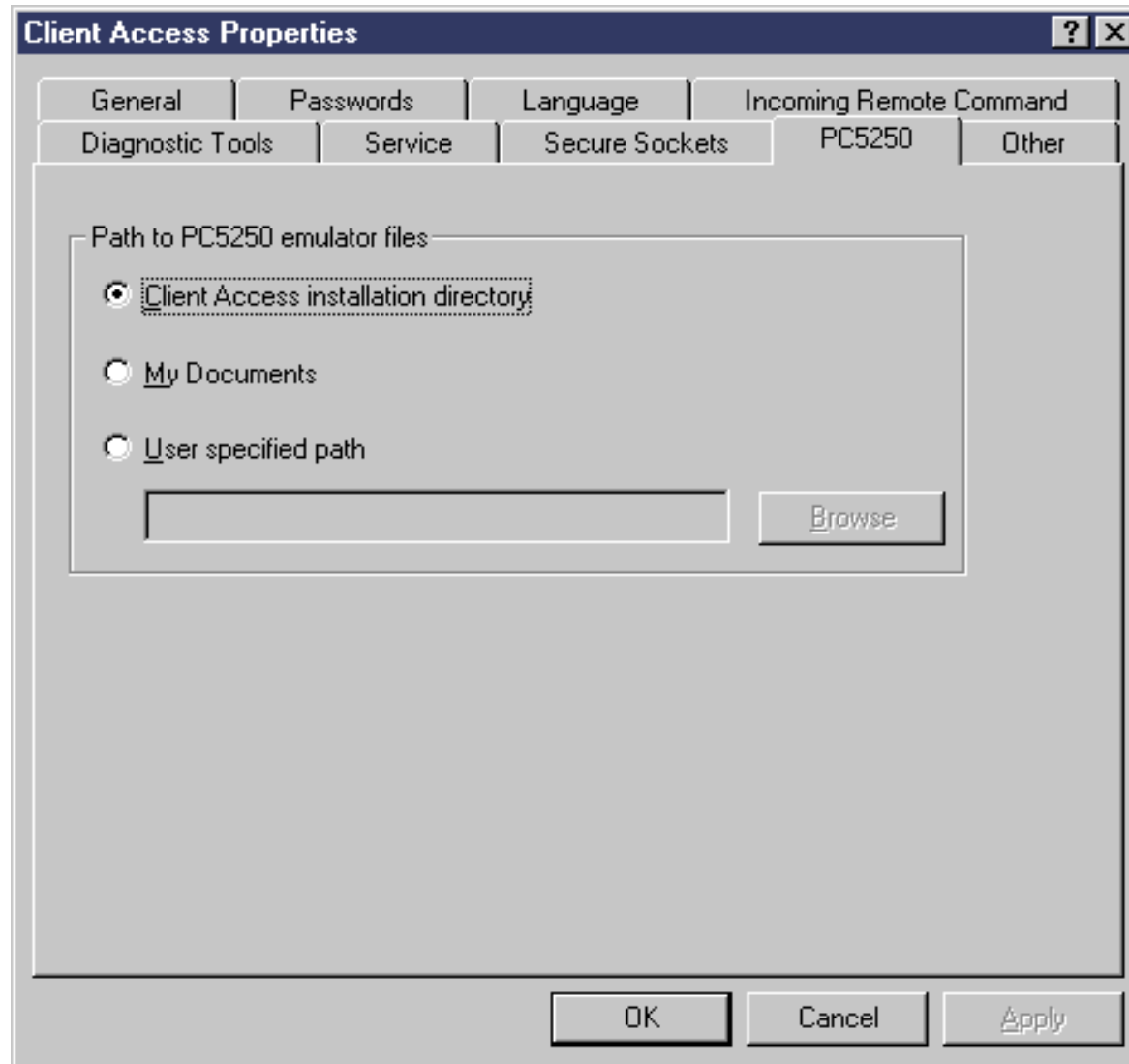
Because we are moving away from clients that support QDLS, adding a user to the system distribution directory should be treated as an option on GO PCSTSK OPT. 21, Enroll Client Access/ 400 users, with the default being *NO.

Handling Windows 2000 with NTFS

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Handling Windows 2000 with NTFS

New PC5250 page in Client Access Express Properties



- Previous to V5R1, Client Access has restrictions when being used by someone with "User" authority on an Windows 2000 PC configured for NTFS.
- Those restrictions are documented in Info APAR II12664. Restrictions are tied to the fact that "Users" cannot write to certain directories and registry locations.
- In V5R1, changes were made so that files that need to be written to are by default stored in user-writable locations (My documents). Examples are:
 - PC5250 .WS files
 - Traces, and other diagnostic info
 - Data Transfer saved requests
- A PC5250 page has been added to Client Access Properties to let users select where they want their emulator files to be located.
- If users are upgrading from V4xx Client Access Express to V5R1, existing files (like .WS files) will not be moved.

V5R1 - End User enhancements

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Cancel/Timeout mechanism for connections

- Improve communications traffic with Operations Navigator (compression)

AS/400 NetServer file and print serving enhancement

- Support AS/400 as Primary Logon Server through SMB

Install/Packaging enhancements

- For Windows 2000
- Install enhancements
- Integration of EZ Setup

PC Administration

- Add new policies to Express template
- Update documentation on communications policies
- Additional effort on policies for Windows 2000 environment

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