Session: **490020 / 53ML**

Creating the System i5 Linux Desktop
A Native Linux Solution

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System i5 Access Development

i want stress-free IT.
i want control.
i want an i.

Agenda

- **System i5 Linux Desktop**

  - **System i5 Access for Web**
  - **iNavigator for Web**
  - **Toolbox for Java - JTOpen**
  - **System i5 Access for Linux**
  - **System i5 File and Print**
  - **OpenOffice**
  - **How to get started**

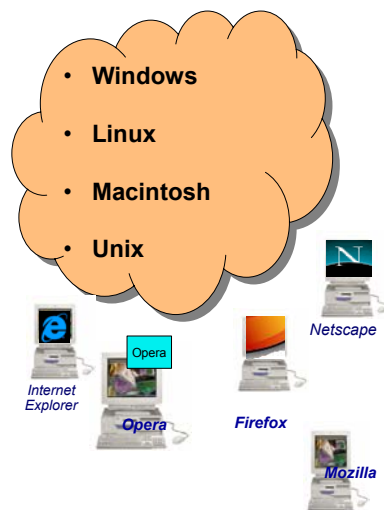*i want an i.*

System i5 Access for Web

- A customizable web solution

What is System i5 Access for Web?

End users can leverage business information, applications, and resources across an enterprise by extending the System i5 resources to the client desktop through a web browser

- **Provides access to System i5 through a browser**
  - **5250 access**
  - **Access to database, integrated file system, printers, output queues, jobs**
  - **Can run batch commands and send/receive messages**

- **It has the following advantages:**
  - **Is server based**
  - **Requires only a browser on the client, no configuration required at desktop, no applets installed on desktop**
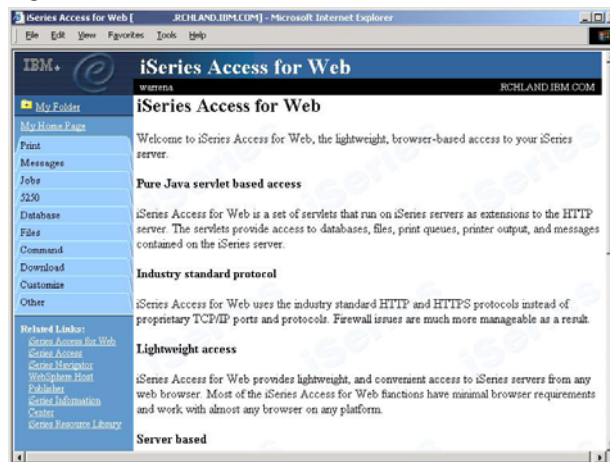 - **Uses industry standard protocols - HTTP, HTTPS and HTML**

- **Windows**
- **Linux**
- **Macintosh**
- **Unix**

Internet Explorer

Opera

Opera

Firefox

Netscape

Mozilla

System i5 Access for Web

- Home page

System i5 Access for Web

- Main page

Try out Access for Web for yourself!

Access the following web site through your browser:
– **http://System i5d.dfw.ibm.com/webaccess/iWAHome** (case sensitive)

Use the following User ID and password to sign into the EXPERIENCED USER page:

- **User ID of WUSER**
- **Password of DEMO2PWD**

This shows the basic look of Access for Web as we ship it. You can try various functions -- including working with printer output and the options we provide. You can click on the 5250 tab, sign onto the System i5, then start an RPG application called BOATS and run it.

Start up a different another browser session to same url address above, and use the following User ID and password to sign into the Access for Water INEXPERIENCED USER page:

- **User ID of BOATADMIN**
- **Password of DEMO2PWD**

This is an example of how you might design a web page for your company's use. You will see that an end user could start the same BOATS application by clicking on the 5250 session -- or they could have used WebFacing or HATS LE to run the application. Click on all 3 links and see the same application in different views. You will also see other links that would let a user work with spoolfile information, work with IFS, run database requests, etc..


System i5 Navigator Tasks from the Web

• Access core systems management tasks from your browser

System i5 Navigator Tasks from the Web

- Access core systems management tasks from your browser
  - Printer output
  - Jobs
  - Messages
  - Work Management
  - System Values
  - Database
- Access multiple systems through one System i5 from a web browser
- Uses a Java servlet application
- Runs same binaries as System i5 Navigator
- Different rendering technology applied
- System i5 Navigator web tasks can be embedded into other Web applications

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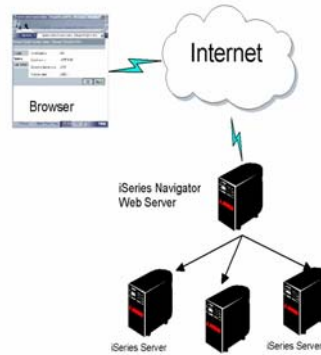
Tasks from the Web – Installation and Setup

- Zero installation! Everything you need is installed as part of i5/OS V5R3.
- Pre-deployed in the WebSphere System Instance
- Setup via HTTP Admin GUI
- Access via :2001 port
- Optional SSL configuration
- Access controlled through Application Administration in PC client version of System i5 Navigator
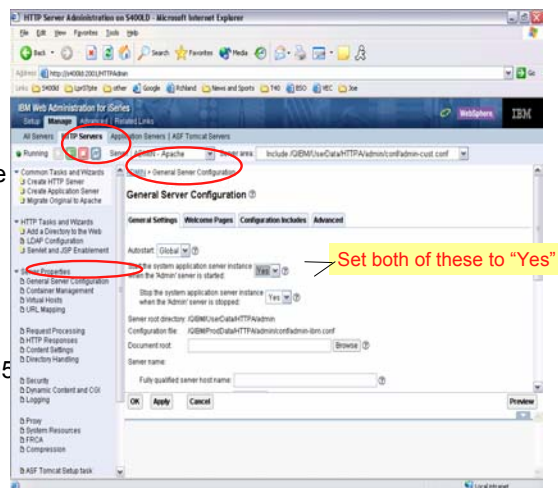
Available Tasks from the Web in V5R3

Basic Operations
- Send a message (sndmsg)
- System operator messages (sysoprmsg)
- Messages (msg)
- Printer Output (prtout)
- User Jobs (usrjob)

Work Management
- Output Queues (outq)
- Hold a job (hldjob)
- Release a job (rlsjob)
- Delete a job (dltjob)
- Display job properties (jobprop)
- Move a job (movjob)
- Display the job log for a job (joblog)
- Display the call stack for a job (callstack)
- Display the library list for a job (liblist)
- Display the locked objects for a job (lockobj)
- Display the open files for a job (openfiles)
- Display the threads for a job (threads)
- Display the performance statistics for a job (perfstats)
- Work with a job (wrkjob)
- Active Jobs (actjob)
- Server Jobs (svrjob)
- Active Subsystems (sbs)

Configuration and Service
- System Values (sysval)
- Time Management (timemgmt)

Database
- Create Alias (db.crtalias)
- Create Index (db.crtidx)
- Create Schema (db.crtschema)
- Create Sequence (db.crtseq)
- Create Table (db.crttbl)
- Create Distinct Type (db.crttyp)
- Select Schema (db.selschema)
- Aliases (db.alias)
- All Objects (db.allobj)
- Constraints (db.cst)
- Functions (db.func)
- Indexes (db.idx)
- Journals (db.jrn)
- Journal Receivers (db.jrnrcv)
- SQL Packages (db.pkg)
- SQL Procedures (db.proc)
- Sequences (db.seq)
- Tables (db.tbl)
- Triggers (db.trg)
- Distinct Types (db.typ)
- Views (db.view)

Available Tasks from the Web in V5R4

Basic Operations
- Query system message (qsysmsg)
- Display printer output (dspprtout)
- Reply printer output message (rpyprtout)
- Hold printer output (hldprtout)
- Release printer output (rlsprtout)
- Move printer output (movprtout)
- Delete printer output (dltprtout)
- Convert printer output to PDF (cnvprtout)
- Print output properties (prtoutprop)
- Printers (prt)
- Reply printer message (rpyprt)
- Hold printer (hldprt)
- Release printer (rlsprt)
- Start printer (startprt)
- Stop printer (stopprt)
- Restart printer (restartprt)
- Printer properties (prtprop)
- Make printer available (availprt)
- Make printer unavailable (unavailprt)
- Run command (runcmd)

Work Management
- Clear output queue (clroutq)
- Hold output queue (hldoutq)
- Release output queue (rlsoutq)
- All job queues (alljobq)
- Active job queues (actjobq)
- Hold job queue (hldjobq)
- Release job queue (rlsjobq)
- Clear job queue (clrjobq)
- Activate memory pools (actpool)
- Share memory pools (shrpool)
- System status (syssts)

Configuration and Service
- Disk status (dsksts)
- Display history log (dsplog)
- Change password (chgpwd)

Database
- Work with all partitions in a table (db.tblpart)
- Work with schemas in user list (db.schema)
- Work with a list of Databases (db.database)
- Work with all indexes for a table (db.tblidx)
- Work with performance monitors (db.perfmon)
- Create a new performance monitor (db.crtmon)
- Import data onto the system (db.import)
- Export data from the system (db.export)
- Work with a list of the objects that have an index advised (db.idxadv)

Toolbox for Java and JTOpen

• Java classes and utilities for accessing System i5 data and resources

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Toolbox for Java

• Server applications
  – Java application run on System i5
  – Java Virtual Machine (JVM) required
  – Performance benefits with direct local access to database
• Client applications
  – Java application run on Linux or any client with a JVM
  – Uses existing System i5 Access family servers
• Internet-based applications
  – Java applications run on System i5 web server
  – Access from any browser

Toolbox for Java and JTOpen

- Two versions available
  - Licensed program
    - Supported by IBM
    - Fixes via System i5 PTF's
  - Open source version
    - Supported by open source community and IBM service
    - Modify the source for your own use
    - Submit source fixes and improvements
    - New fixes and functions available here first!

Toolbox for Java

- Function examples
  - Database access via JDBC
  - Database access via record level I/O and DDS interface
  - Command Call
  - Program Call (Java and from XML)
  - Data Queues
  - User Spaces
  - Data Areas
  - Integrated File System access
  - Print objects
  - Data conversions
  - XML based GUI builder
  - Java Beans

System i5 Access for Linux

- Native Linux support for 5250 emulation and System i5 database access via ODBC
- 4 Linux architectures to choose from
  - 64-bit PowerPC or System i5 LPAR (New for V5R4)
  - 64-bit PC (AMD/EM64T) (New for V5R4)
  - 32-bit PowerPC or System i5 LPAR
  - 32-bit PC (i386)
- Toolkit headers included (New for V5R4)
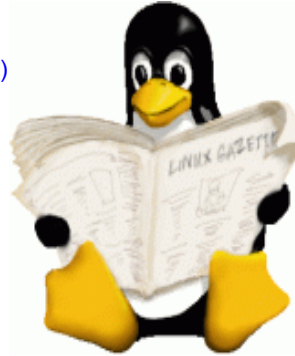
What is System i5 Access for Linux?

- **A full-function native Linux 5250 emulator**
  - Keyboard mapping
  - Macro support
  - Record/playback
  - Pop-up/pull-down keypads
  - Single Signon (SSO)/Kerberos
  - Workstation/device ID
  - 80 and 132 screen sizes
  - Screen print
  - and other capabilities

- **A full function ODBC Driver**
  - Enables your Linux applications (OpenOffice, Apache/PHP, Perl, C/C++, …) to access information in DB2 UDB on System i5

- **Many utilities included**
  - RmtCmd, CwbRunSQL, CwbPing, …

Designed to run natively on INTEL and POWERPC Linux operating systems

Linux 5250 Emulation
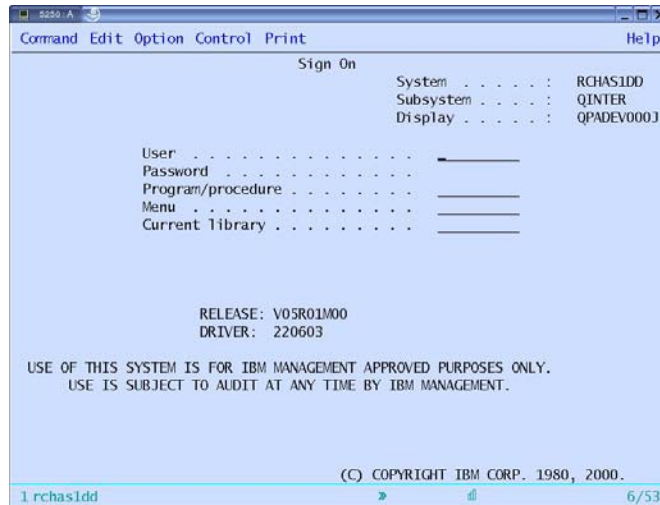
Full function, native 5250 emulator

- The 5250 emulator contains a variety of functions, such as:
  - Ability to provide a workstation/device ID
  - Both 80 and 132 screen sizes
  - Keyboard/Color mapping
  - Macro support
  - Record/playback
  - Pop-up/pull-down keypads
  - Screen print
  - and other capabilities

- It can also asynchronously display server messages
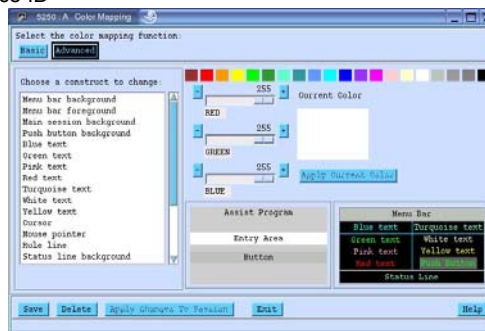
ODBC Applications

- **OpenOffice**
- **Apache/PHP for Web Serving**
- **unixODBC DataManager**
    - "Explorer" type of application to manage DSNs
    - Run and view results of SQL requests
    - DataManagerII simple insert/change/delete rows
- **cwbRunSQL**
    - Command line application for executing SQL scripts
- **unixODBC isql**
    - Command line application
    - Neat way to generate simple HTML page with data tables
- **Your own applications...C++, C, Perl, Python…**

OpenOffice.org

DB2. Information Management Software

+2.688
+5.000
+1.500
+1.125
+1.062

Linux Access to System i5 Files and Printers

- System i5 NetServer integration with Linux clients

System i5 NetServer: Supports Linux Clients

- File and Print serving for
  Common Internet File System (CIFS)
  – Linux and Windows clients
  – Windows Network Neighborhood
  – Compatible with SAMBA 3.0+
  – Part of the base i5/OS
    • This function was available as a V5R1 PTF in
      4Q01 and built into V5R2 and above

  Configured via iNavagator

- For additional information, see:
  – http://www.ibm.com/eserver/iseries/netserver

System i5
NetServer

This gives the System i5 administrator the ability to easily control what files or printers a Linux user can get access to.

Linux clients

OpenOffice

- The most **open** office productivity suite available…

OpenOffice.org
The Open Source Office Suite

OpenOffice

- **Full office suite**
  - Writer   - Word processor
  - Calc   - Spreadsheet
  - Impress   - Multimedia presentations
  - Draw   - Illustrations
  - Database   - Full database access
- **Grown up**
  - No License hassles
  - Many languages
  - Many platforms (Linux, Windows, Mac, …)
  - The first office suite to comply with the OASIS OpenDocument format
  - Full source, nothing to hide
- **Ease of use**
  - Look and feel is familiar and usable
- **Compatibility**
  - Handles all major competitors' files
- **Support**
  - Supported by a global community of friendly volunteers, only too happy to provide assistance to newcomers and advanced users alike

i want an i.

OpenOffice

i want an i.
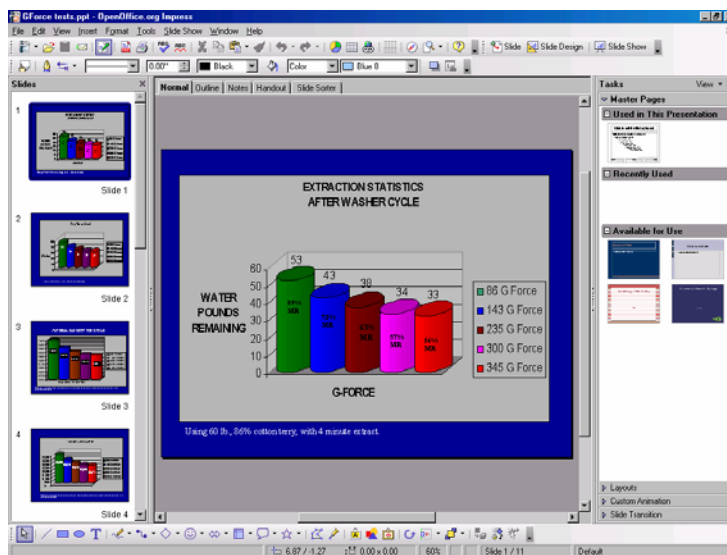
How to get started with Linux

- Live CD's/DVD's
  - Google "Live Linux" for sites
  - Recommendation
    - Knoppix, SLAX, SuSE, Red Hat …
- Virutal PC
  - VMWare Workstation
  - VMWare Player (free*)
  - Microsoft Virtual PC (free*)
  - Linux Xen (free*)
- Use old hardware
  - Install from DVD
- USB key
  - Puppy Linux

* Check license agreement

Summary

- Family of solutions for Linux
  - Web based
    - System i5 Access for Web
    - iNavigator Tasks from Web
    - Toolbox box for Java
  - Native Linux
    - System i5 Access Linux
    - File and Print support
    - OpenOffice

Web References

- Running Linux on the System i5
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- System i5 Access home page
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  - http://www.unixODBC.com/
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- OpenOffice
  - http://www.openoffice.org

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