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WebSphere & Express V5 Technical Update

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Agenda¹

- **Introduction**
 - ▶ **Development, deployment, & integration**

- **Technologies**
 - ▶ **Definitions and examples**

- **WebSphere Application Server V5.0**
 - ▶ **Network Deployment (follow-on to 4.0 AE)**
 - ▶ **Base (follow-on to 4.0 AEs)**
 - ▶ **Express (logical follow-on to 3.5 SE)**

- **iSeries Implementations**
 - ▶ **Express Installation**
 - ▶ **IBM Telephone Directory for iSeries**

- **Development & Deployment Tools**

- **Additional Resources**

¹This presentation does not intend to cover information on terms and conditions, such as licensing and pricing



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Introduction

Key Messages to Your Customers regarding WebSphere

- **Development (Build) vs. Deployment (Run) Platforms**
 - ▶ Use open standards, e.g., Java, XML, etc.
 - ▶ Development platform criteria
 - Programmer productivity - GUI, popular tools
 - ▶ Deployment platform criteria
 - Secure, reliable, scalable iSeries

- **Integration Options With Core Applications & Data**
 - ▶ WebSphere - easy to access back-end (Wizards in tools)
 - ▶ Re-use existing logic rather than re-writing to Java
 - ▶ Develop new functions in Java

- **GUI Development & Administration**
 - ▶ iSeries allows old apps to use new technologies
 - 5250 can give "old system" image (but higher throughput)
 - ▶ Faster end-user training
 - ▶ Browser allows wider access

e-Infrastructure - Simplified

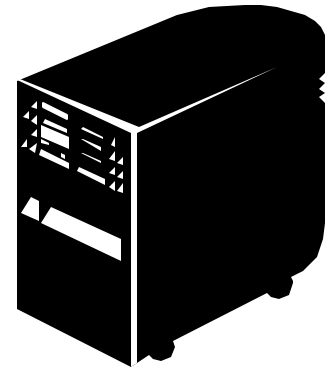


"Show me X"

"Here's X"

HTTP Server
a.k.a.
Web Server

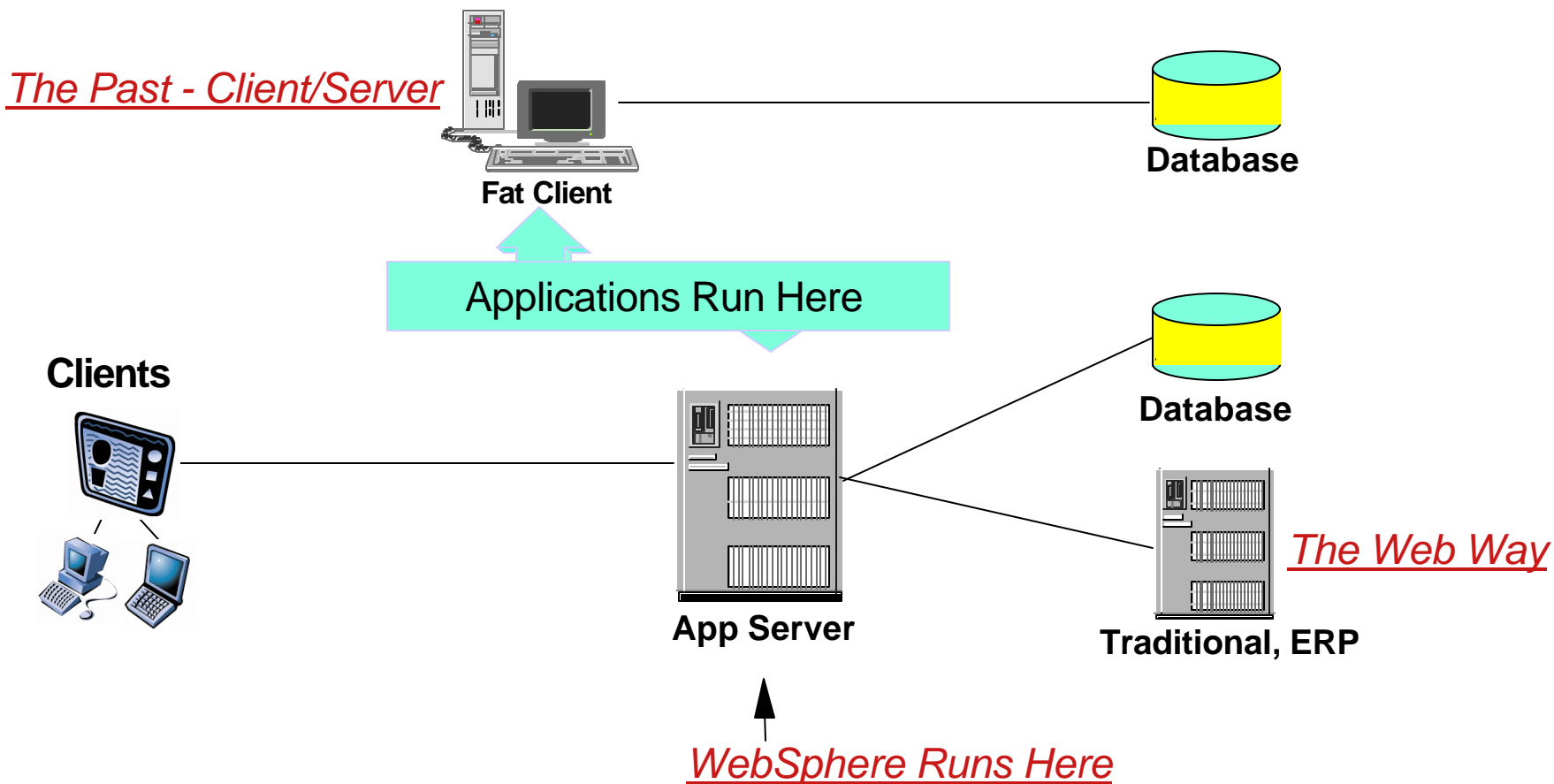
Business
Processes /
Transactions



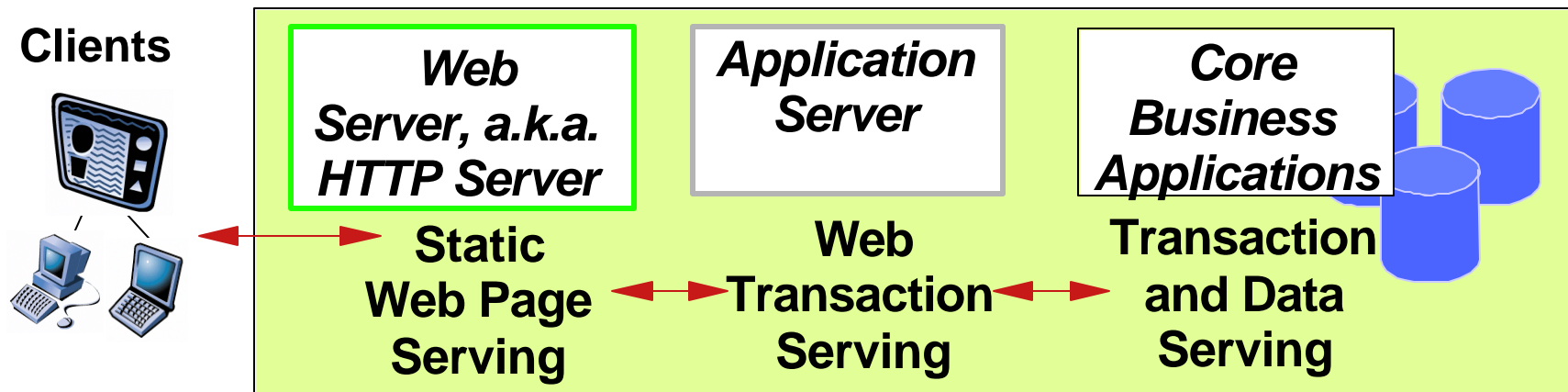
Other clients

DB2 UDB
for
iSeries

What is an Application Server?



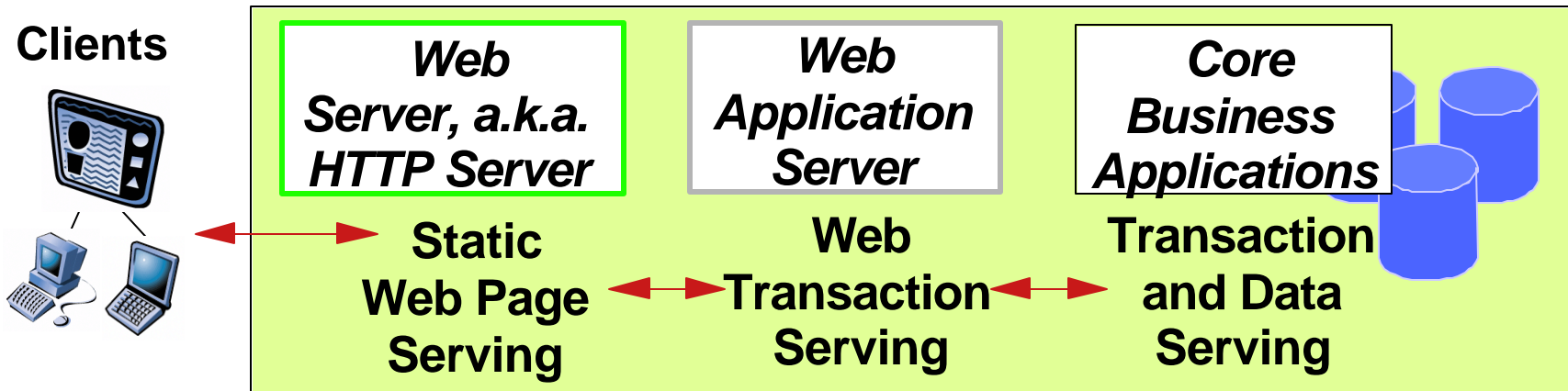
What is an Application Server...



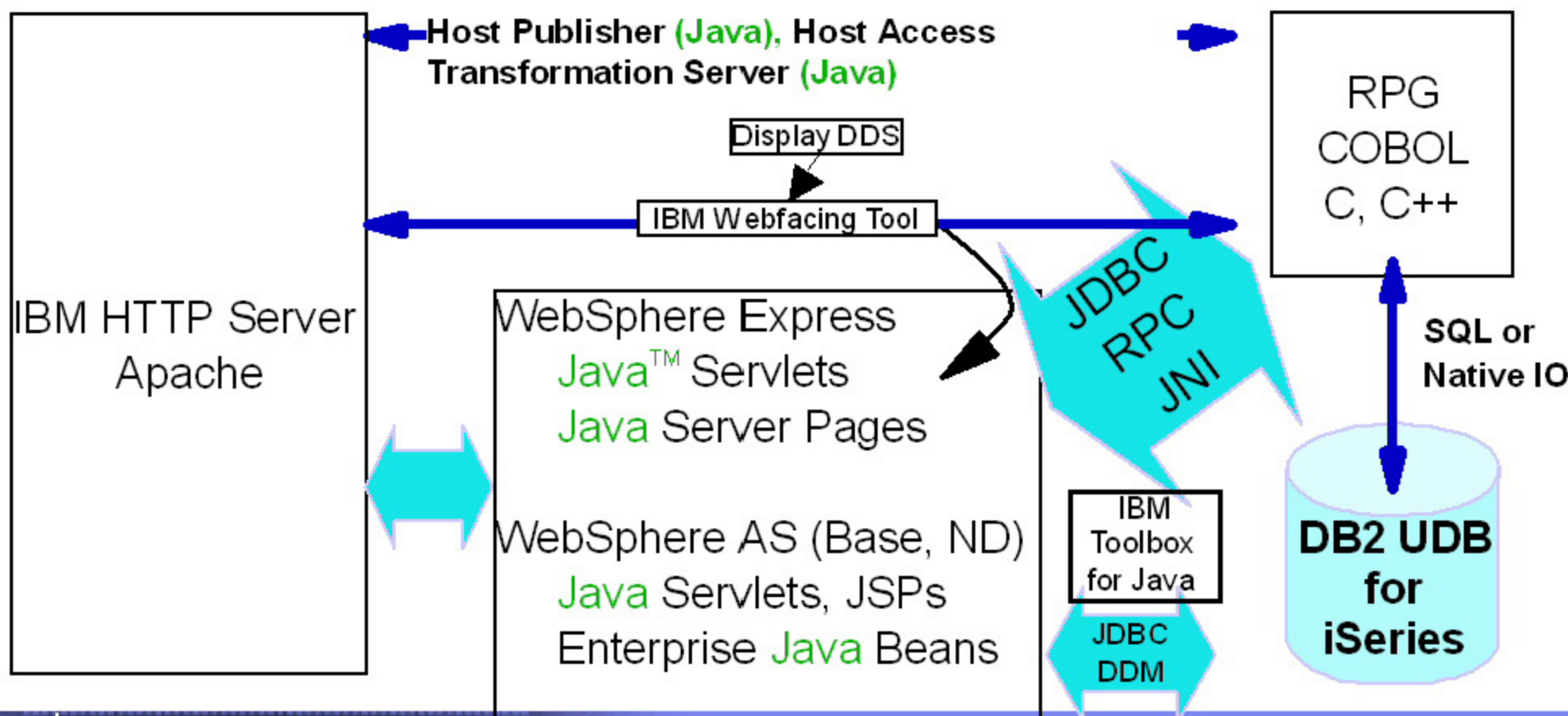
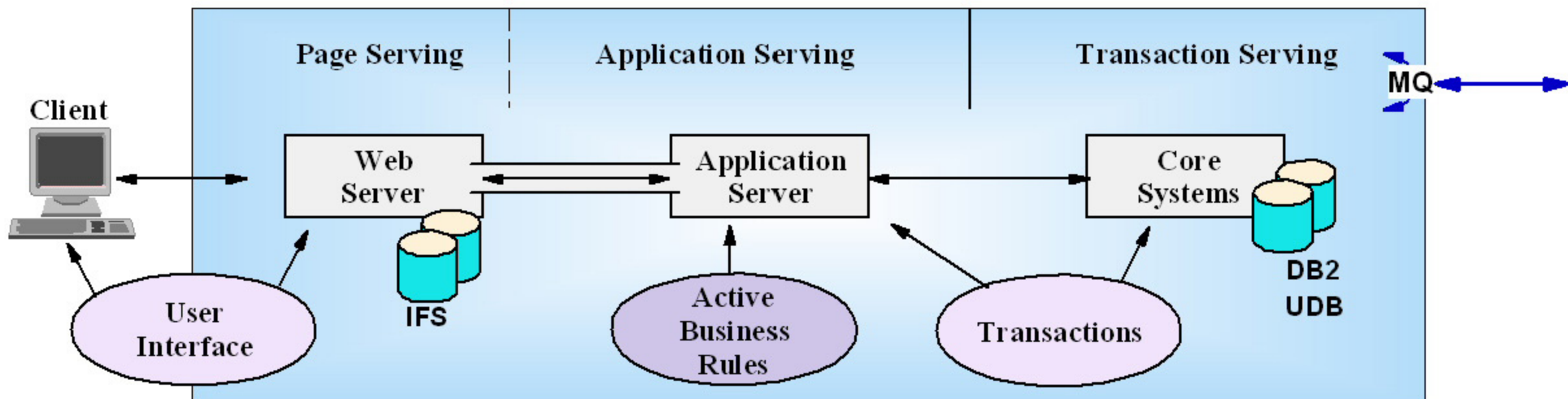
- **Web/HTTP server**
 - ▶ Provides pages (UI) to the browser
- **Application server**
 - ▶ Mediates between Web and business applications
 - ▶ Runs new business logic (filters, rules, etc.) in Java™
 - ▶ Handles some transaction processing
- **Back-end**
 - ▶ Handles most transactions, running the state of the business

What Does an Application Server Do?

- J2EE™ support
- Transaction Management
- Data Sources
- DB connection pooling
- Clustering & Load balancing
- Session/State management
- Failover support
- Persistence Service
- Security server
- Java Message Service (JMS)
- Name Service (JNDI)
- ...



Common Options - Application Server & Integration



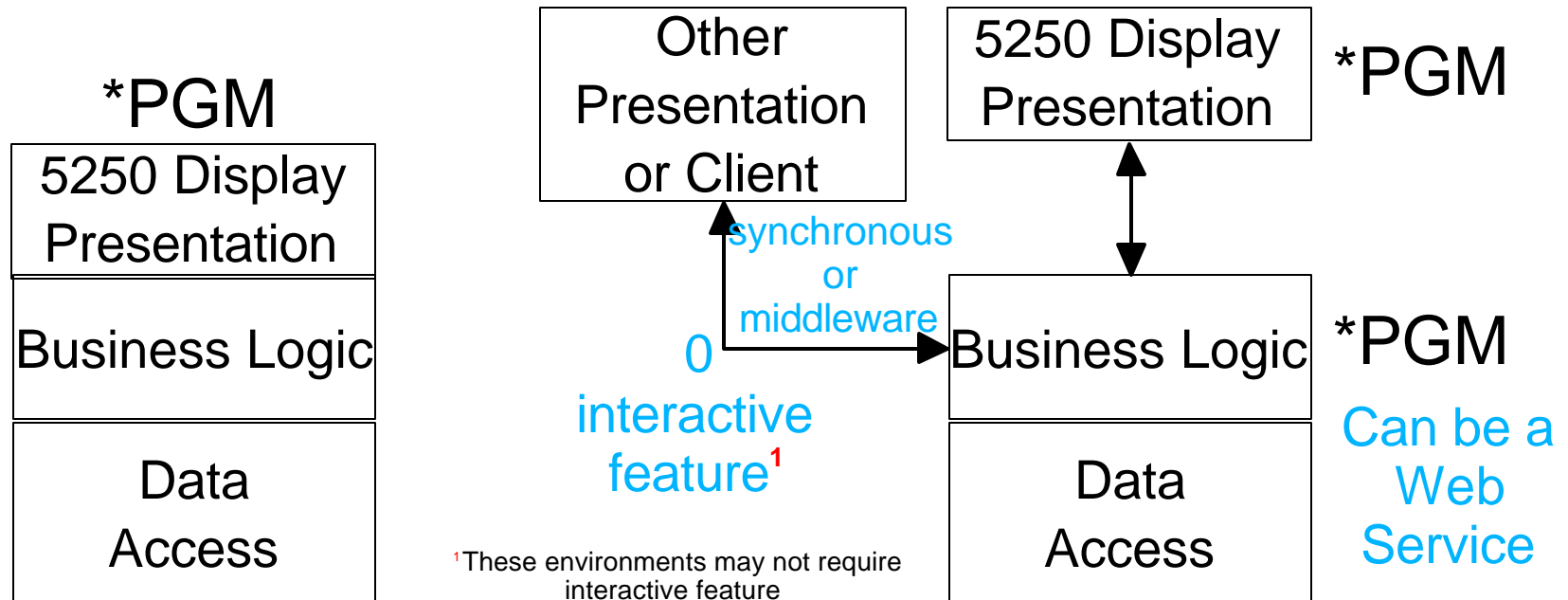
Integration - How Embedded is Presentation Layer?

Monolithic Program Design, 5250 cannot be EASILY bypassed

Modular Program Design, can either use or bypass 5250

- Host Access SW, e.g.,
 - IBM WebFacing¹
 - IBM Host Publisher
 - IBM Host Access Transformation Server (HATS)
 - IBM and other 3rd Party SW

- Host Access SW
 - IBM WebFacing, IBM Host Publisher, HATS, etc.
 - CGI or Net.Data (non-Java)
 - New Java logic can call existing business programs
 - e.g., Web Interaction Wizard



¹These environments may not require interactive feature



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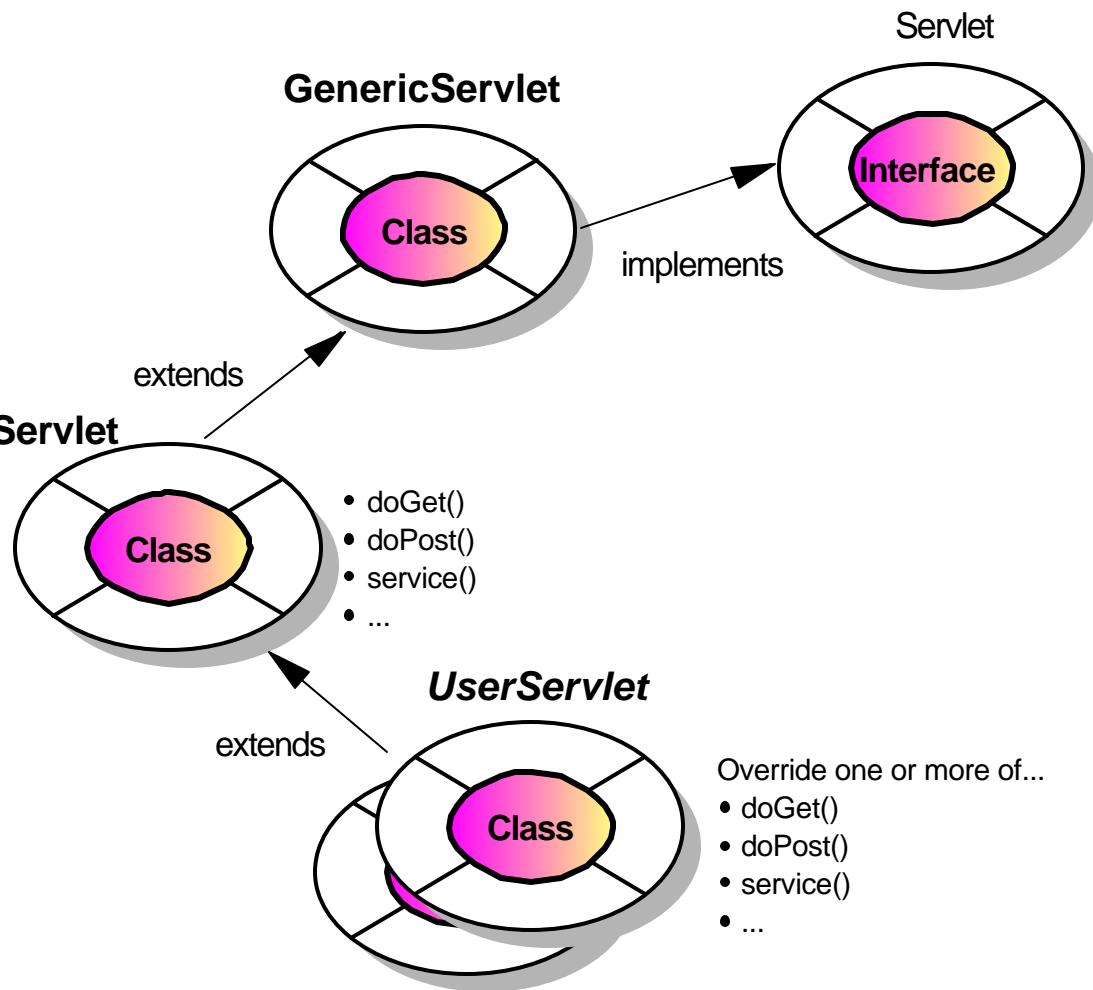
Technologies

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Servlets

- WAS 5.0 supports Servlet 2.3 spec.
- Servlets are to the server what applets are to the browser
 - ▶ Servlets extend the given environment with a powerful, portable, OO language.
 - ▶ Servlets are a way to write business logic using Java, and deploy this business logic via thin clients.
- The Java servlet architecture provides an excellent framework for server-side processing.
- Servlets can take advantage of Java's memory management and rich set of APIs.
- Servlets can run on numerous platforms and HTTP servers without change.
- Servlets can do anything; they're just Java called by the HTTP server



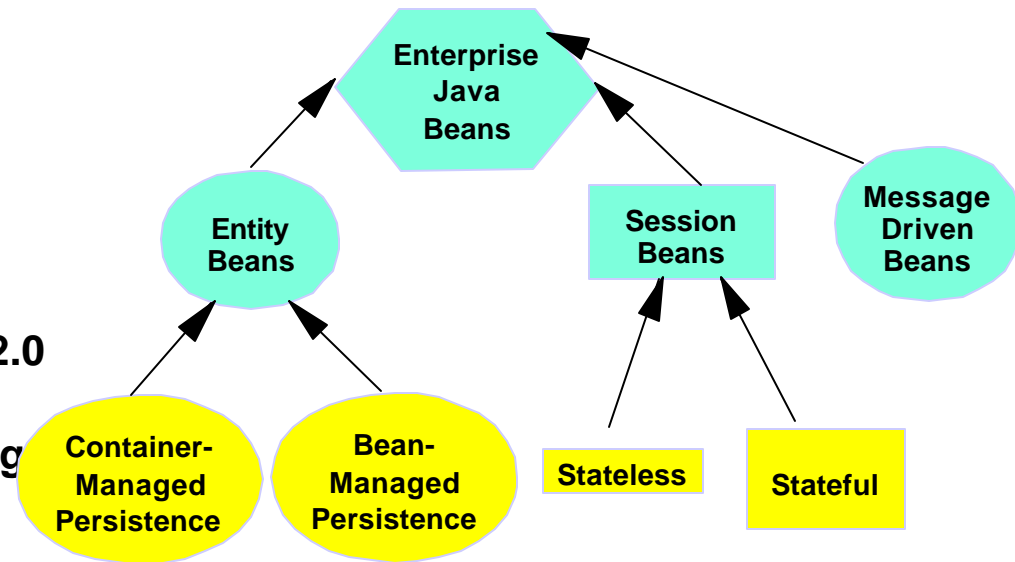
Java Server Page (JSP)

- JSPs are an extension to the Java Servlet API
- JSPs make it possible to imbed Java right into web pages
 - ▶ Makes it easier to separate code (Java) from presentation (HTML)
- Based on specification from Sun Microsystems™
 - ▶ WebSphere 3.5 implements the 0.91, 1.0 and 1.1 specification
 - ▶ WebSphere 4.0 implements the 1.1 specification only
 - ▶ WebSphere 5.0 & Express implement 1.2
- Contains a combination of:
 - ▶ HTML/XML
 - ▶ Java
 - ▶ <SERVLET> tags
 - ▶ JSP-specific tags
- Use file extension .jsp
- Support the use of JavaBeans

```
<html>
<body>
Hello,
<%out.println(" World!");%>
</body>
</html>
```

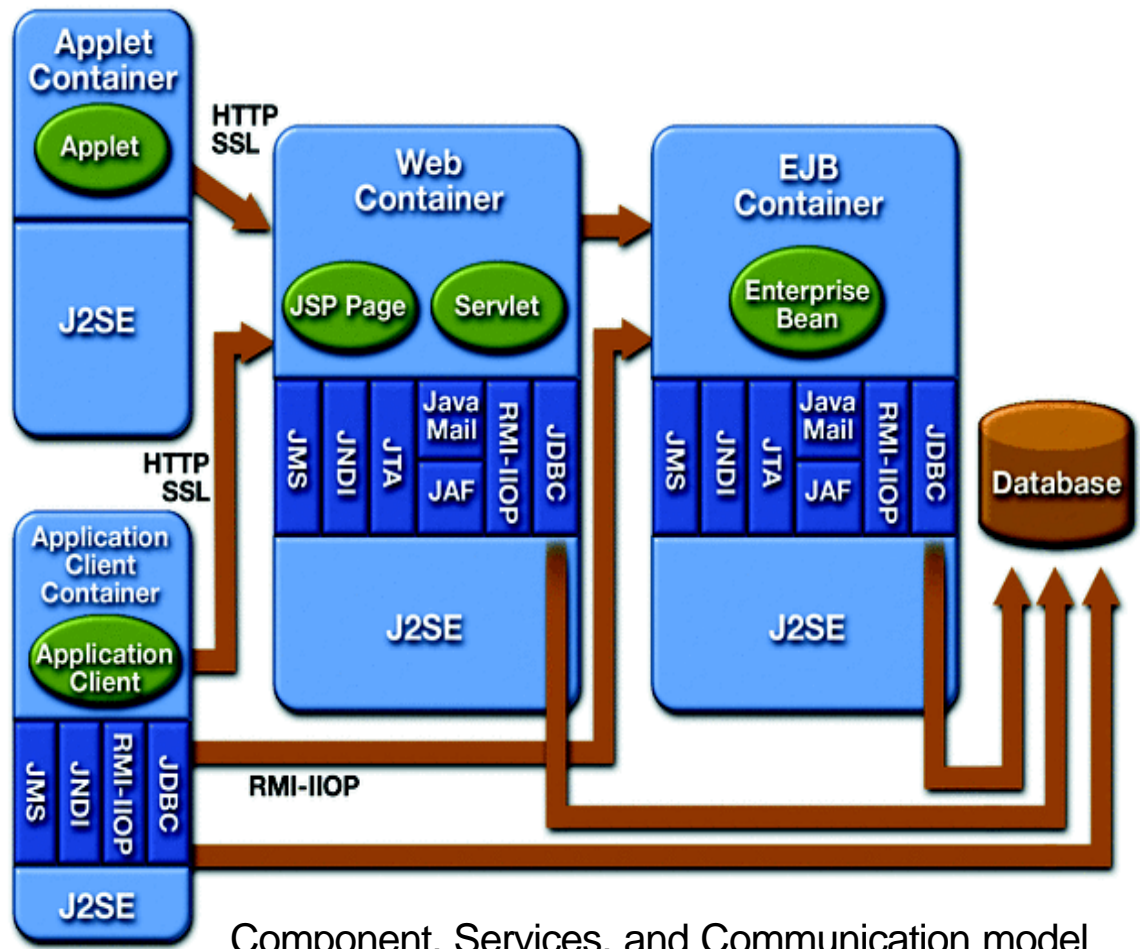
Enterprise Java Bean (EJB)

- Java components that can be combined with other resources to create J2EE applications
 - ▶ Entity Bean - permanent data
 - Container managed
 - Bean managed
 - ▶ Session Bean - ephemeral data
 - stateful
 - stateless
 - ▶ Message-driven Bean (new in EJB 2.0 spec, J2EE 1.3, WAS 5.0)
 - Asynchronous message handling
 - ▶ Specifications
 - EJB 2.0 for WAS 5
 - EJB 1.1 for WAS 4.0
 - EJB 1.0 for WAS 3.5
- No support for EJBs in WebSphere Express



J2EE™

- **Java 2 Platform, Enterprise Edition**
 - ▶ Is a Sun brand
 - ▶ Parts are in fact "accepted" standards for enterprise application development
 - ▶ Currently evolving
- **The standard includes**
 - ▶ Application Programming Model
 - ▶ Platform Specification
 - ▶ Compatibility Test Suite
 - ▶ Reference Implementation
 - ▶ ECPeef™ benchmark
 - ▶ EJB security interoperability, security auditing, transaction interoperability, i18n, workflows



Component, Services, and Communication model

IBM Contributed 80% of J2EE Specification

- JSR 1 - Real-time Extension; Lead
 JSR 3 - Java Management Extension; Participant
 JSR 4 - ECPerf Benchmark; Participant
 JSR 5 - XML Extensions; Participant
 JSR 6 - Unified Print API; Participant
JSR 10 - Preferences API; Lead
 JSR 11 - JAIN; Participant
 JSR 12 - Java Data Objects; Participant
JSR 13 - Big Decimal Arithmetic; Lead
 JSR 14 - Generic Types; Participant
JSR 16 - J2EE Connectors; Participant, Submitter
JSR 19 - EJBs; Participant, Submitter
 JSR 20 - Orthogonal Persistence; Participant
 JSR 21 - JAIN JCC/JCAT; Participant
 JSR 22 - JAIN SCE/SLEE; Participant
 JSR 26 - UML/EJB Mapping; Participant
 JSR 28 - Java/SASL; Participant
 JSR 31 - XML Data Binding; Participant
 JSR 38 - Application Installation API; Participant
 JSR 40 - Metadata API; Participant
 JSR 43 - JTA API; Participant
 JSR 44 - Braille API; Participant
 JSR 45 - Debugging Support for other Languages; Participant
JSR 47 - Java Logging API; Co-lead, Submitter
 JSR 14 - Generic Types; Participant
JSR 16 - J2EE Connectors; Participant, Submitter
JSR 19 - EJBs; Participant, Submitter
 JSR 20 - Orthogonal Persistence; Participant
 JSR 21 - JAIN JCC/JCAT; Participant
 JSR 22 - JAIN SCE/SLEE; Participant
 JSR 48 - WBEM Services; Participant
 JSR 50 - Distributed Realtime; Participant
- JSR 51 - I/O APIs; Participant
 JSR 52 - Standard Tag-lib for JSPs; Participant
 JSR 53 - Servlet 2.3 and JSP 1.2; Participant
 JSR 54 - JDBC 3.0; Participant
 JSR 55 - Certification Path API; Participant
 JSR 57 - Long-term Persistence for JavaBeans; Participant
 JSR 58 - J2EE 1.3 Specification; Participant
 JSR 59 - J2SE Merlin Specification; Participant
 JSR 63 - Java API for XML Processing; Participant
 JSR 67 - Java API for XML Messaging; Participant
 JSR 68 - J2ME Specification; Participant
 JSR 69 - Java OLAP Interface; Participant
 JSR 72 - Generic Security Services; Participant
 JSR 73 - Data Mining API; Participant
JSR 74 - Public Key Crypto; Lead
 JSR 75 - PDA Profile for JME; Participant
 JSR 76 - RMI Security; Participant
 JSR 77 - J2EE Management; Participant
 JSR 78 - Custom Remote References; Participant
JSR 80 - Universal Serial Bus; Lead
 JSR 82 - Java APIs for Bluetooth; Participant
JSR 83 - Java Multi-array Package; Lead
JSR 84 - Floating Point Extensions; Lead
JSR 86 - Enterprise Media Beans; Lead
 JSR 87 - Java Agent Services; Participant
 JSR 88 - J2EE Application Deployment; Participant
JSR 92 - Localizable Text; Lead, Submitter
 JSR 93 - Java API for XML Registry; Participant
 JSR 94 - Java Rule Engine; Participant
JSR 95 - J2EE Activity Service for Extended Transactions; Lead, Submitter
 JSR 96 - Java Daemons; Participant
 JSR 100 - JAIN Service Creation Environment; Participant
- JSR 101 - Java APIs for XML-based RPC; Participant
 JSR 102 - JDOM; Participant
JSR 104 - XML Trust Services API; Lead
JSR 105 - XML Digital Signatures API; Co-lead
JSR 106 - XML Digital Encryption API; Lead
 JSR 107 - JCACHE; Participant
JSR 109 - Implementing Enterprise Web Services; Lead
JSR 110 - Java APIs for WSDL; Lead
 JSR 111 - Java Services Framework; Participant
JSR 112 - J2EE Connector Architecture 2.0; Participant, Submitter
 JSR 114 - JDBC Rowset Implementations; Participant
 JSR 115 - Java Authorization Service; Participant
 JSR 117 - J2EE APIs for Continuous Availability; Participant
 JSR 121 - Application Isolation APIs; Participant
JSR 126 - Distributed Page Assembly; Lead
 JSR 127 - GUI Component Architecture; Participant
 JSR 131 - ECPerf 1.1; Participant
 JSR 133 - Java Memory Model; Participant
 JSR 138 - Performance Metrics; Participant
JSR 149 - WorkAreas; Lead, Submitter
JSR 150 - I18N Context; Lead, Submitter
 JSR 151 - J2EE 1.4; Participant
 JSR 152 - JSP 1.3; Participant
 JSR 153 - EJB 2.1; Participant
 JSR 153 - Servlet 2.4; Participant
JSR 168 - Portlet API, Lead, Submitter

XML == eXtensible Markup Language

Heritage

- a subset of SGML (Standard Generalized Markup Language)
 - based on GML (Generalized Markup Language)
 - intended for document processing and publishing
- a sibling to HTML (HyperText Markup Language)
 - used to format information for the Web

XML describes and delivers data

- goes beyond the limits of HTML
- developer can define own markup language
- separates the content from the presentation (formatting)
- allows precise declaration of content
- allows a standardized strategy to define content of documents & databases

XML Example: Compared with HTML

```
<?xml version="1.0"?>
<catalog>
  <product category="equipment">
    <number>SE1357908</number>
    <name>Tennis Racket R13</name>
    <description>Tennis Racket Pro R13
      </description>
    <price currency="USD">148.00</price>
    <brand>Wilson</brand>
    <color>granite</color>
    <weight unit="pounds">1.25</weight>
    <availableQuantity>14</availableQuantity>
  </product>
  <product category="clothing">
    <number>SW5782098</number>
    <name>Running Shorts</name>
    <description>Running Shorts - Nylon
      </description>
    <price currency="USD">37.00</price>
    <brand>Nike</brand>
    <color>midnight blue</color>
    <size>small</size>
    <availableQuantity>34</availableQuantity>
  </product>
</catalog>
```

```
<html>
<table>
  <tr>
    <td>SE1357908</td>
    <td>Tennis Racket R13</td>
    <td>Tennis Racket Pro R13</td>
    <td>148.00</td>
    <td>Wilson</td>
    <td>granite</td>
    <td>1.25</td>
    <td>14</td>
  </tr>
  <tr>
    <td>SW5782098</td>
    <td>Running Shorts</td>
    <td>Running Shorts - Nylon</td>
    <td>37.00</td>
    <td>Nike</td>
    <td>midnight blue</td>
    <td>small</td>
    <td>34</td>
  </tr>
</table>
</html>
```

Web Services

"The Web Services Architecture defines the basic principles and functions required for such dynamic business interactions, including the ability to **publish** to a server, **find** a particular service and **bind** to it programmatically through the use of standards"

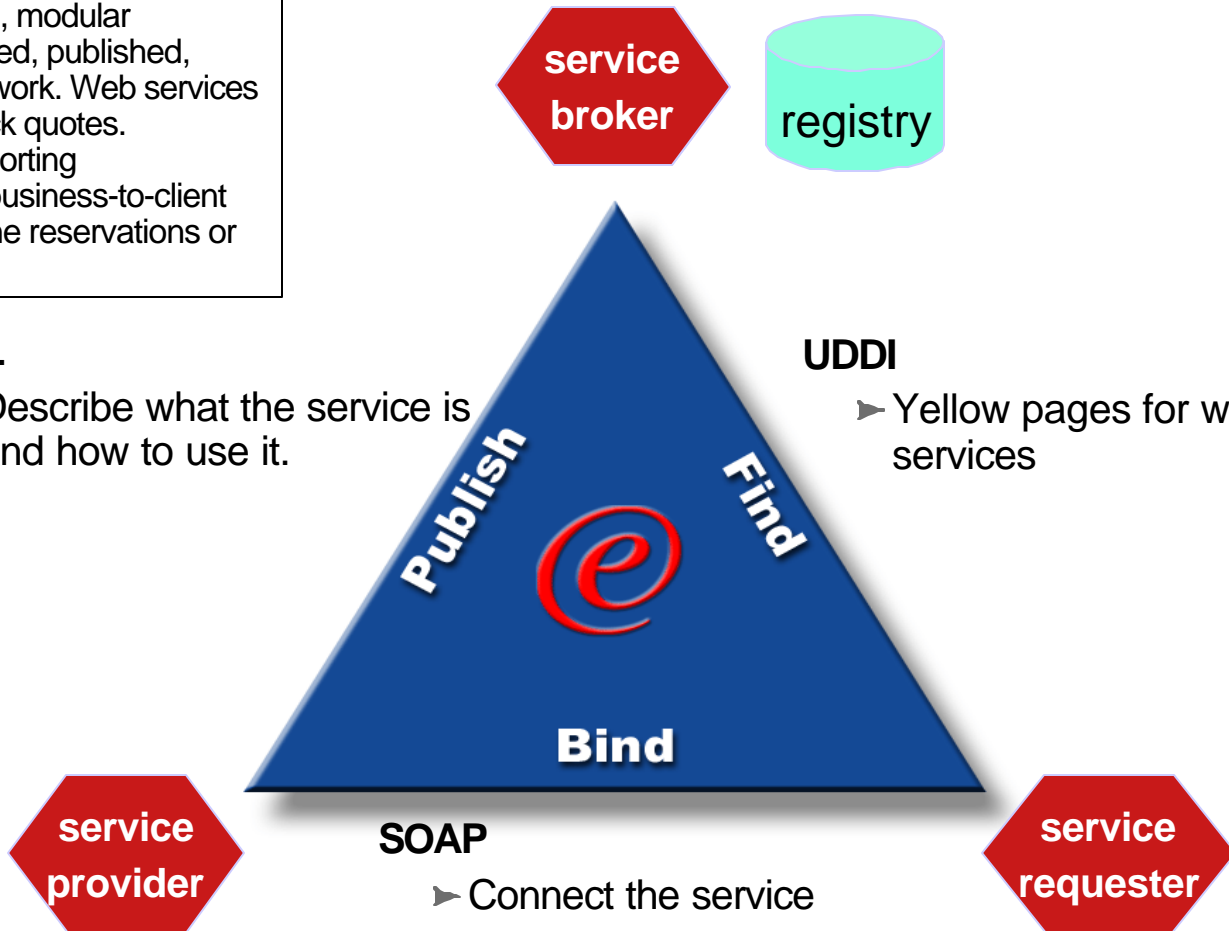
Web services are self-contained, modular applications that can be described, published, located, and invoked over a network. Web services could be weather reports or stock quotes. Transaction Web services, supporting business-to-business (B2B) or business-to-client (B2C) operations, could be airline reservations or purchase orders.

WSDL

- ▶ Describe what the service is and how to use it.

UDDI

- ▶ Yellow pages for web services



iSeries RPG, COBOL, C, C++, CL programs can provide web services
iSeries WAS Express also includes DB2 Web Services sample application

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Apache Software Foundation Tomcat on iSeries

- ASF Tomcat 3.2.4
 - Servlet container with a JSP environment
 - A servlet container is a runtime shell that manages and invokes servlets on behalf of users.
 - Basic servlet/JSP engine
 - ▶ Java Server Pages (JSP) 1.1
 - ▶ Servlet 2.2 specification
 - ▶ JDK 1.2 and 1.3
 - Lower CPW requirements for startup (similar steady-state requirements as Express)
 - Possibly supported through 2004
- NO:
 - ▶ Support of WebSphere Branded Products:
 - IBM Webfacing, WebSphere Portal Server, WebSphere Commerce Suite, WebSphere Payment Manager, WebSphere Host Publisher, WebSphere Transcoding Publisher, etc.
 - ▶ Transaction management
 - ▶ J2EE Compliance
 - ▶ Enterprise JavaBeans
 - ▶ JMS (Java Messaging Service)
 - ▶ Domino Integration
 - including Single Signon
 - ▶ Multi-node Administration
 - ▶ Distributed Security
 - ▶ Workload management
 - ▶ Clustering/cloning
 - ▶ Directory Services
 - ▶ J2EE client application support
 - ▶ Javamail



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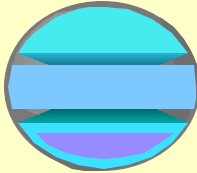

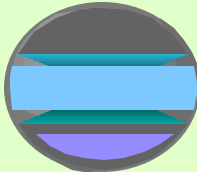
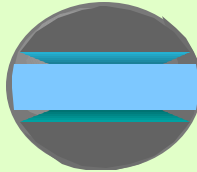
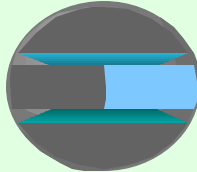

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WebSphere Application Server V5.0

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WebSphere Application Server V5

Name	Contents	Logical follow-on to:
WAS Enterprise	 	4.0 EE
WAS Network Deployment		4.0 AE
WAS (a.k.a. base)		4.0 AEs
WAS - Express	 	3.5 SE

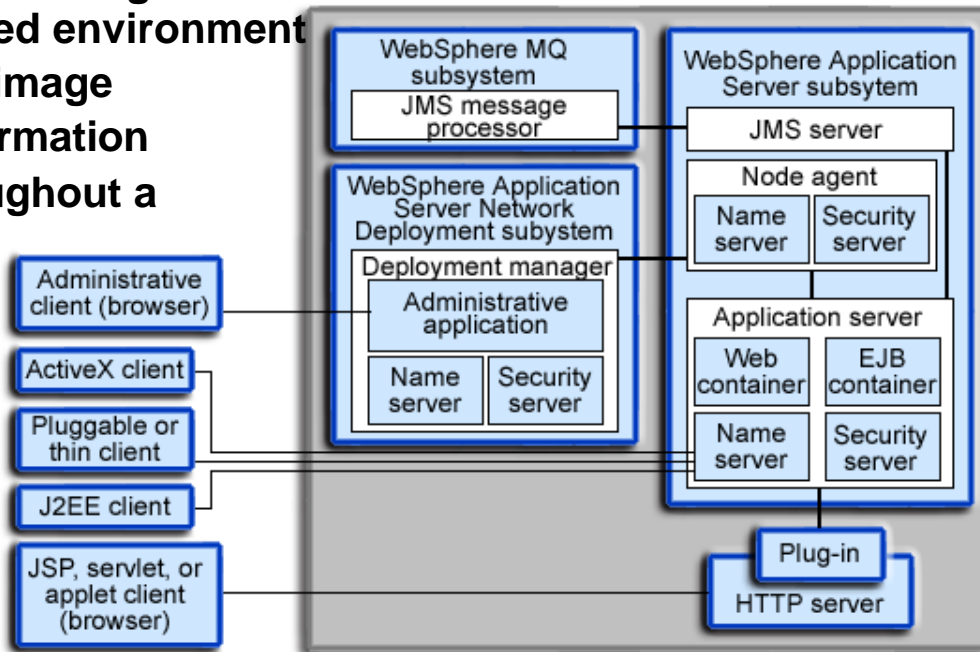
iSeries

iSeries

iSeries includes WDSsc

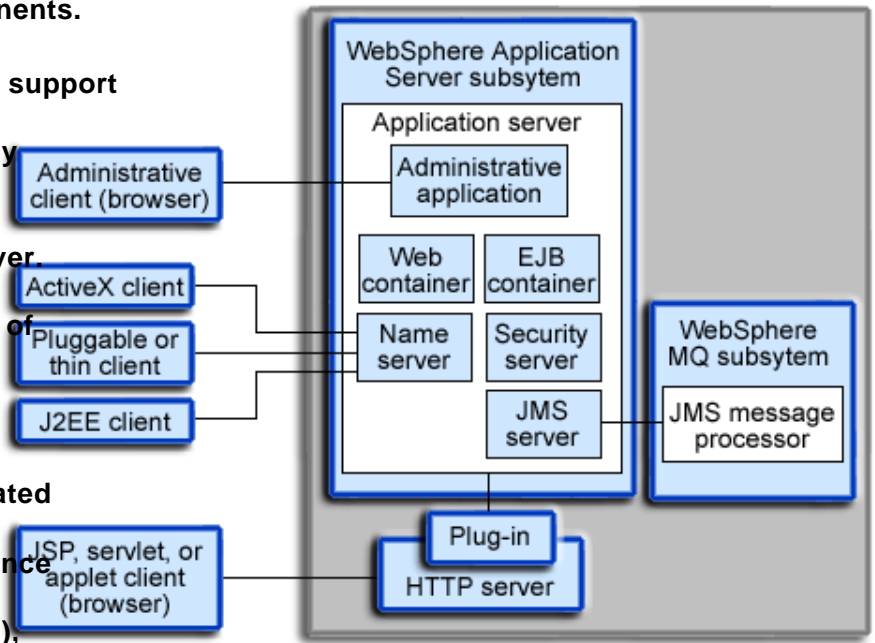
WAS Network Deployment, Version 5.0

- WebSphere Application Server *Network Deployment (ND)* expands on the functionality of the *base* product.
- WebSphere Application Server *Network Deployment* adds:
 - ▶ **Distributed systems administration**
 - single administrative interface to manage multiple app servers in a clustered environment
 - Presentation of a single-system image
 - Distribution of configuration information
 - Distribution of applications throughout a Network Deployment cell
 - Monitoring distributed systems
 - ▶ **Clustering and workload management**
 - Workload management
 - Failover
 - Distributed security
 - Distributed naming
 - ▶ **Advanced Web services**
 - private Universal Description, Discovery, and Integration (UDDI) registry
 - IBM Web Services Gateway (WSGW) support



WAS, Version 5.0 (a.k.a. Base)

- The *base* WebSphere Application Server product, is fully J2EE-compliant and supports single machine environments. Some features:
 - ▶ Browser-based administrative console.
 - ▶ All configuration data is stored in XML files.
 - ▶ Integrated Java Message Service (JMS) server.
 - JMS is part of the J2EE 1.3 specification, and enables asynchronous messaging between application components.
 - ▶ Dynamic network caching.
 - ▶ Java Management Extensions (JMX) systems management support (technology preview)
 - ▶ An ANT-based administrative tool called ws_ant (technology preview)
 - ▶ HTTP session state failover support.
 - ▶ A session manager is integrated into each application server.
 - ▶ Web services support, including Web Services Invocation Framework (WSIF), WS-Security, and a technology preview of JSR109.
 - ▶ New security features, including support for JAAS, CSIv2 interoperability, Java 2 security, and third-party security providers.
 - ▶ The Performance Monitoring Infrastructure (PMI) is integrated with JMX.
 - ▶ Resource Analyzer has been rebranded as Tivoli Performance Viewer and includes extended functionality.
 - ▶ Troubleshooting includes First Failure Data Capture (FFDC), which allows you to collect data based on the first failure in the system.
 - ▶ The collector script gathers system information and packages it in a JAR file that you can send to IBM Service for analysis.



WebSphere Express vs. WAS V5 Capabilities

	WAS - Express, V5	WAS, V5
Full J2EE 1.3 support to maximize J2EE functionality, including EJBs		X
Full XML support	X	X
Full Web services support to host and consume Web services	X	X
JDBC and Connection Management for access to DB2, SQL Server™ 2000 and Oracle™ 9i	X ¹	X ¹
Sample applications	X	X
Simplified administration using WebSphere Studio Site Developer	X, iSeries WDS ³	X
WebSphere Studio Site Developer included	iSeries only. WDS ³	
Embedded HTTP Server	X	X
Basic authentication and authorization to secure access to Web resources	X	X
Web services client for access to back-end Web services	X	X
Basic platform support for rapid implementation on Windows, Windows NT, Windows 2000, Linux and OS/400	X	X
Extended platform support for IBM AIX, IBM OS/400, Sun Solaris operating environment, HP/UX		X
Microsoft component object model architecture to EJB support for integration with ActiveX client and server resources		X
Enhanced features for performance such as dynamic caching, Tivoli® Performance Viewer, integration with third-party tools		X
Advanced authentication and authorization such as JAAS and JCE for enhanced security		X
Support for some J2EE 1.4 features		X
Extended JDBC support for access to Informix™ and Sybase™		X ²
Extended HTTP Server included for configuration flexibility and added security	iSeries only	X
Browser-based administration for remote administration across firewalls	iSeries only	X
Full Java Message Service (JMS) support message-driven beans, including embedded JMS transport		X
Migration tools and assistance	iSeries only	X

¹iSeries installed JDBC drivers do not support SQL Server and Oracle 9i

²WAS for multi-platforms, not iSeries

³iSeries WebSphere Development Studio client (WDS) is a significant superset of WebSphere Studio Site Developer

WebSphere Application Server - Express Runtime Specs

Included:

- Web container
- JSP processor
- Server-side JavaScript (Bean Scripting Framework)
- WebSphere Common Control Model libraries
- XML parser
- XSL processor
- Web Services - SOAP client API only
- Security runtime (Simple WebSphere Authentication, local OS authorization -- no LDAP or custom registry support, **except iSeries which includes these**)
- RAS subsystem
- HTTP session support -- in-memory session support
- J2EE API libraries
- Internal web server
- JVM 1.3.1
- Simplified default server config
- Connection Manager
- JDBC providers
- Debug libraries
- Installs as Windows™ service (Windows platforms only, **iSeries uses QASE5 subsystem & jobs**)
- HTTP web admin console extensions (**iSeries platform only**)

Excluded:

(From base WebSphere Application Server V5)

- EJB container
- Java messaging support / JMS providers
- J2EE transaction support
- J2C resource adapters
- J2EE Application Client
- ACE support
- Work Load Management (WLM)
- Performance monitoring infrastructure (PMI)
- Localizable text
- Dynacache
- Data Replication Service (DRS)
- XML grammar library
- Client Container Resource Config Tool (CCRCT)
- Mail providers
- URL providers
- Resource Environment provider
- Application Assembly Tool (function provided by WSSD)
 - ▶ **iSeries provides superset WDS**
- Deploy Tool (provided by WSSD)
 - ▶ **iSeries provides superset WDS**
- WAS runtime samples (alternate samples provided)
- IBM HTTP Server (external)
 - ▶ **iSeries packages & supports this, including remote HTTP servers**
- Web server plug-ins (IBM HTTP Server, IIS, Apache, iPlanet™)
 - ▶ **iSeries includes IBM HTTP Server (Apache)**

WebSphere Application Server - Express Administrative Capabilities

Included:

- Create server instance
- Create server configuration
- Start server
- Stop server
- Start server in debug mode
- Publish to server
- Restart application
- Set classpath entries for server
- Pass arguments and system properties when starting server
- Configure mime types
- Enable/disable session manager, URL rewrite, cookies
- Configure data sources
- Configure ports
- SSL configuration
- Configure the deployment descriptor for an application:
 - ▶ Servlet configuration
 - ▶ Security roles
 - ▶ Environment variables
 - ▶ Specify start page
 - ▶ Specify error page
 - ▶ Set context parameters
 - ▶ Set mime types

Excluded:

(From base WebSphere Application Server V5)

- Browser-based admin interface
 - ▶ **Included in iSeries (adminconsole)**
- Trace level configuration
- Trace analysis
- Analysis logger support (Site Analyzer components)
- Resource Analyzer
- Tivoli Performance Manager
- Performance monitoring

- Tool-based application management and deployment

- Near-zero based administration

- Full support for migration to a higher functionality application server

- Operating System Support: Windows (NT, 2000)™, Linux (2.4 kernel), iSeries (OS/400)



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iSeries Implementations of WAS V5.0

WebSphere Application Server on iSeries

- **Shared code base with multi-platforms**
 - ▶ port, package (install procs) & test on iSeries
- **Applications retain function**
- **Develop & influence in parallel**
 - ▶ iSeries team influences design, e.g., large multi-user environments
 - ▶ Drive code changes back to base code
- **File system starts with root**
 - ▶ '/' as directory separators, same as Unix & Linux, not '\'
 - ▶ Classpath separators are ':' same as Unix & Linux, not ';'
 - ▶ multiple file systems on iSeries

WebSphere Application Server on iSeries

- **Co-existence of multiple versions**
 - ▶ **WAS V5.0 can coexist with other versions**
 - ▶ **uses some of the same pre-defined port numbers, need to resolve. "Installation and Initial Configuration" documentation**
- **Same client graphical consoles (browser-based)**
- **Startup procedure varies: Start Subsystem (STRSBS)**
 - ▶ **QASE5 for WebSphere Express**
 - ▶ **QEJBAS5 for WAS 5**
 - ▶ **QEJBASND5 for WAS 5 Network Deployment**
- **Multi-platform fixpacks repackaged to iSeries PTFs**
- **Separate, easy-to-use publications**

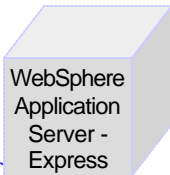
WebSphere Application Server on iSeries

- **Flexible Topology - documented and fully supported**
 - ▶ **Multiple administrative cells on single system image (LPAR or system footprint)**
 - ▶ **separate environments, e.g., dev., test, etc.**
 - ▶ **multiple application server instances within each administrative cells**
 - ▶ **Multi-tiered or single tier with DB, HTTP, etc.**
- **Multiple language environments**
- **Multiple HTTP server instances**
- **Multiple administrative agents**

WAS Express - Windows vs. iSeries Comparisons

Unique to Windows / Linux:

- One offering containing both:
 - application server (embedded WAS runtime)
 - tools (WSSD)
- Single Integrated Install of Development tools and entry AppServer
- Supports DB2, Oracle and SQL Server databases
- "Built-in" Cloudscape DB (dev only)



Common for: Windows / Linux / iSeries

- Based on WAS runtime
- J2EE programming model minus EJBs
- Web services (no UDDI iserver)
- Value-add documentation, integration, and pre-canned apps
- Easy to install and run including simple electronic download
- Programming model: Javascript/HTML/XML apps w/JSPs, JDBC and Servlets
- Application migration from Tomcat
- IPD deliverables (Accessibility, globalization, etc)
- Inclusion of Jakarta taglibs
- Custom tag library
- NT/LT Template Wizard
- NT/LT Template Builder (tech preview)
- JavaScript debug support for both client and server side
- OS and LDAP registries



Unique to iSeries:

- Two offerings:
 - application server (embedded WAS runtime)
 - new iSeries product well integrated with HTTP serving
 - included with new hardware in 2003
 - included with many new models
 - tools (WDS with embedded WSSD)
- Consoles:
 - iSeries integrated HTTP and application server web admin console (usability)
 - WAS 5.0 web admin console subset (advanced users only)
- Migration tools for existing Tomcat and WAS 3.5 SE
- Web server plug-ins (Apache and Domino HTTP servers for iSeries)
- DB2 for iSeries
- LTPA (SSO for Domino)





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Installing WebSphere Express

Install WAS Express - HW Recommendations

- **Minimums**
 - ▶ CPW **recommended minimum** of 300
 - ▶ L2 Cache **at least** 2 MB
 - ▶ WebSphere™ main storage pool **recommended minimum** of 512 MB
- **Sizing**
 - ▶ IBM Americas Technical Sales Support
 - 1. <http://w3-1.ibm.com/support/americas/index.html>
 - 2. "Request Technical Sales Resources"
 - 3. Techline
 - ▶ Workload Estimator <http://as400service.ibm.com/estimator>
- **Load / Stress testing**
 - ▶ iSeries Benchmark Center
<http://www-919.ibm.com/developer/cbc/>

Install WAS Express - SW Requirements

■ Related Licensed Program Products

▶ OS/400 V5R2 *

- Library QGPL & Library QUSRSYS
- Option 1 (OS/400 - Extended Base Support)
- Option 3 (OS/400 - Extended Base Directory Support)
- Option 30 (QShell Interpreter)

▶ 5722-DG1 (IBM HTTP Server for iSeries) + Option 1 (Triggered Cache Manager)

▶ 5722-JV1 (Developer Kit For Java) + Option 5 (Java Developer Kit 1.3)

▶ 5722-JC1 (Toolbox for Java)

▶ 5722-TC1 (TCP/IP Connectivity Utilities for AS/400)

■ 5722-IWE (WebSphere Application Server Express) +

▶ Option 2 - WebSphere Application Server Express V5

▶ Option 3 - IBM Telephone Directory

■ Latest PTFs - INSPTF (Install PTF)

▶ Cumulative

▶ DB group

▶ Java group

▶ Toolbox for Java

▶ WebSphere group

*ALLOBJ &
*IOSYSCFG
authorities required
for *USRPRF for
installation &
configuration

* Later availability for V5R1

Install WAS Express - Post installation

- **Start the HTTP administration server**
 - ▶ **STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN)**
 - ▶ **Or use iSeries Navigator**

- **Start the WebSphere subsystem**
 - ▶ **STRSBS SBSD(QASE5/QASE5)**

Install WAS Express - Active Jobs

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Work with Active Jobs ASJ4L1
12/16/02 13:05:55
CPU %: 2.9 Elapsed time: 00:00:00 Active jobs: 293
Type options, press Enter.
 2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message
 8=Work with spooled files 13=Disconnect ...

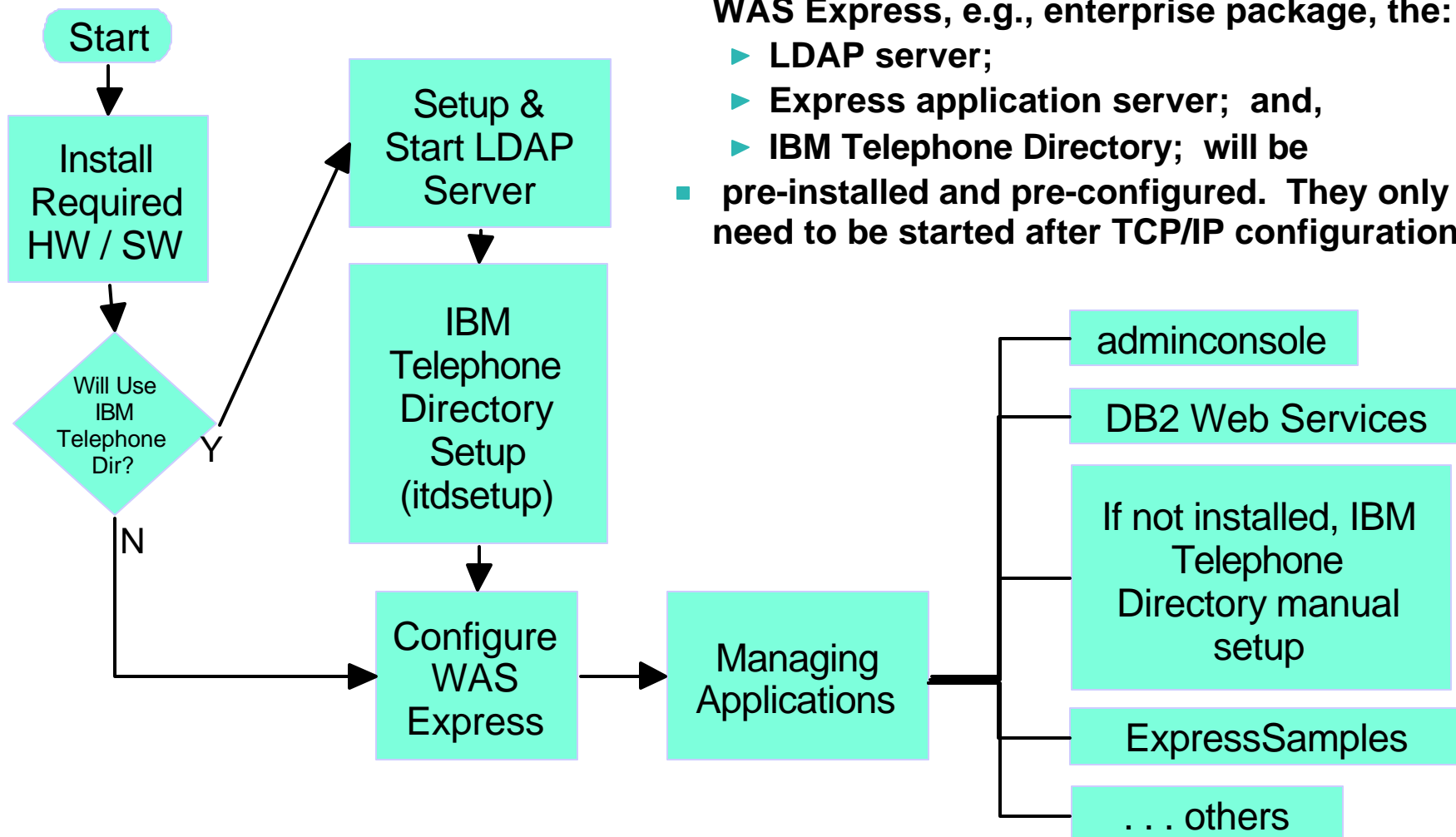
Opt Subsystem/Job User Type CPU % Function Status
--
 1 QASE5 QSYS SBS .0 DEQW
 2 QBATCH QSYS SBS .0 DEQW
 3 QCMN QSYS SBS .0 DEQW
 4 QCTL QSYS SBS .0 DEQW
 5 QSYSSCD QPGMR BCH .0 PGM-QEZSCNEP EVTW
 6 QHTTPSVR QSYS SBS .0 DEQW
 7 ADMIN QTMHHTTP BCH .0 PGM-QZHBHTTP SIGW
 8 ADMIN QTMHHTTP BCI .0 PGM-QZSRLOG SIGW
 9 ADMIN QTMHHTTP BCI .0 PGM-QZSRHTTP SIGW
More...

Parameters or command
===>
F3=Exit F5=Refresh F7=Find F10=Restart statistics
F11=Display elapsed data F12=Cancel F23=More options F24=More keys

Má a MW 10/002
Connected to remote server/host asj4l1 using port 23
    
```



Basic Installation & Configuration Flow



- For new V5R2 hardware orders that include WAS Express, e.g., enterprise package, the:
 - ▶ LDAP server;
 - ▶ Express application server; and,
 - ▶ IBM Telephone Directory; will be
- pre-installed and pre-configured. They only need to be started after TCP/IP configuration



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**Setup LDAP Server - Required for
IBM Telephone Directory**

Setting Up LDAP Server

- **Lightweight Directory Access Protocol (LDAP) - a communications protocol**
 - ▶ **Defines the transport and format of messages used by a client to access data in an X.500-like directory.**
- **Directory**
 - ▶ **listing of information about objects arranged in some order that gives details about each object.**
 - ▶ **allow users or applications to find resources that have the characteristics needed for a particular task.**
- **For IBM Telephone Directory application,**
 - ▶ **If LDAP server not configured, configure LDAP server**
 - ▶ **If already configured,**
 - **verify properties**
 - **change password if unknown, possibly because LDAP was autoconfigured. *ALLOBJ and *IOSYSCFG authority needed.**
 - **start Directory server**
 - ▶ **can use local (same system image) or remote LDAP server**

iSeries Navigator - LDAP Configuration

The screenshot shows the iSeries Navigator interface. On the left, a tree view shows the navigation path: My Connections > Asj41 > Network > TCP/IP > Directory. The main pane displays a table of servers with the 'Directory' server selected. A context menu is open over the 'Directory' server, with the 'Properties' option highlighted. A red arrow points to this 'Properties' option.

Server Name	Status	Description
WebFacing	Stopped	WebFacing server
System Debug	Stopped	Graphical system debug se
Management Central	Started	Management Central
DLFM	Stopped	Datalinks File Server
ASFTomcat	Stopped	ASFTomcat server
Triggered Cache Manager	Stopped	Triggered cache manager
FTP	Started	FTP
LPD	Started	LPD
POP	Stopped	POP
Remote Execution	Stopped	Remote execution
SMTP	Started	SMTP
TELNET	Started	TELNET
HTTP Administration	Stopped	HTTP administration
Directory	Not configured	Directory

Context menu options for 'Directory':

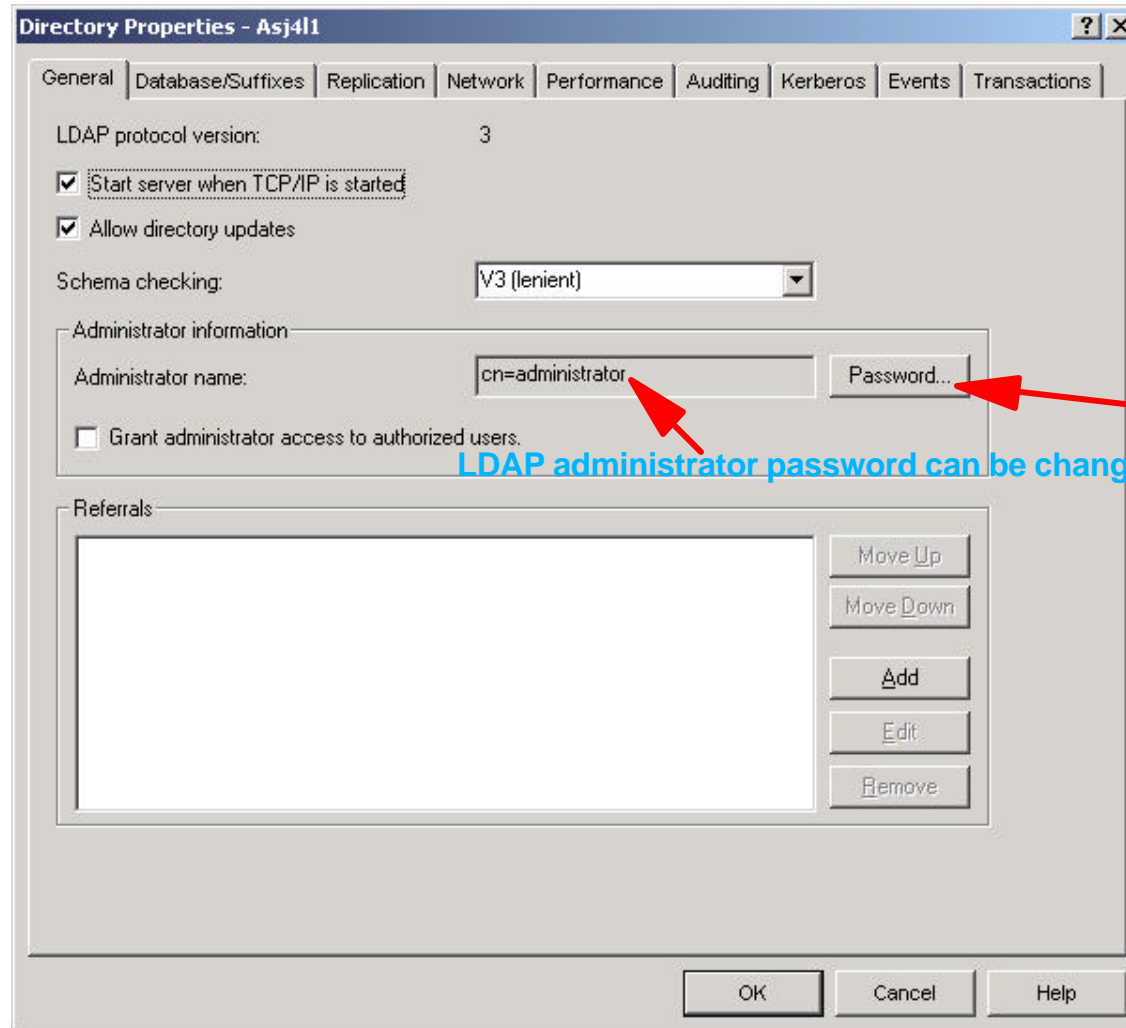
- Configure
- Properties**

Server Configuration tasks:

- Configure subsystems for server jobs
- Create a new DNS Name Server
- Configure system as DHCP server
- Configure system as Directory server
- Help for related tasks

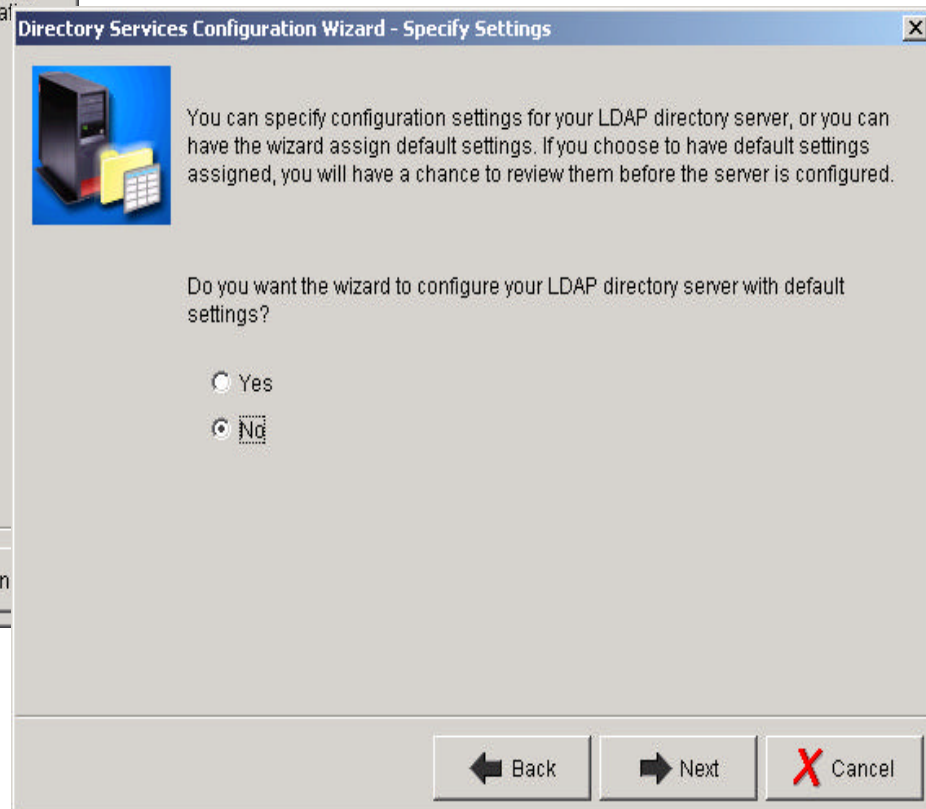
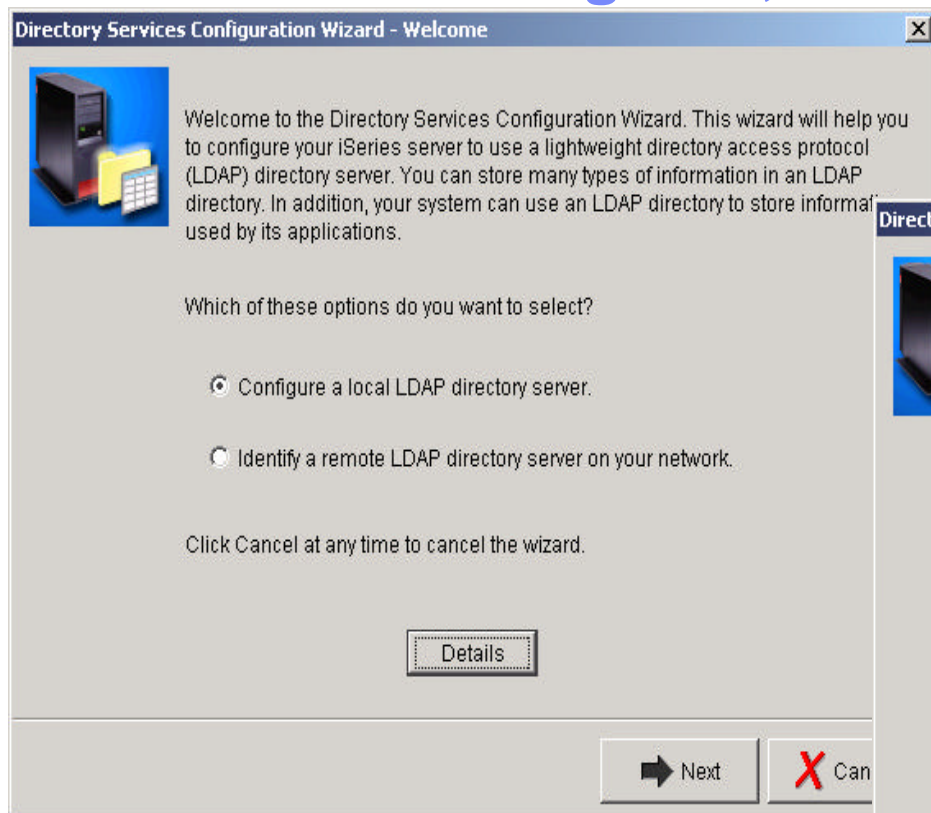
If LDAP has already been configured, verify the information by clicking on "Properties"

If LDAP Server Already Configured, Verify Properties



LDAP administrator password can be changed through this button.

If LDAP Not Configured, Setup Server with Wizard



Setup the LDAP Server

Directory Services Configuration Wizard - Specify Administrator DN

The directory server administrator has unrestricted access to all directory entries on the server.

What do you want the distinguished name (DN) and password to be for the administrator of this directory?

Administrator Distinguished Name

System-generated

Select this option when you do not need to know the Administrator DN or password because only the system will use the directory.

Administrator DN:

Password:

Confirm password:

Back Next Cancel

Directory Server Configuration Wizard - Specify Suffixes

Directory suffixes determine which objects can be stored in the directory. Objects that have one of these suffixes at the end of their distinguished names (DNs) can be stored in the directory. To get more information about suffixes, click Details.

What suffixes do you want on this server?

Suffix:

Back Next Cancel

- This userid is only used inside the directory server and is not related to an OS/400 user profile.
- Note that you can change the administrator DN and password at a later time by opening the Directory Services properties

Setup the LDAP Server

Directory Services Configuration Wizard - Select IP Addresses

Your system has multiple IP addresses. If you want to have another LDAP directory server on this system, you can use this panel to assign specific IP addresses to this server, leaving the other addresses available for other servers.

Do you want the Directory Services server to use all IP addresses?

Yes, use all IP addresses

No, use only the following IP addresses:

- 9.10.113.235
- 9.10.113.238
- 10.10.0.1
- 127.0.0.1
- 192.168.3.1

Select all

Deselect all

← Back → Next X Cancel

Directory Services Configuration Wizard - Specify TCP/IP Preference

Do you want the directory server to start each time TCP/IP is started?


Yes

No

← Back → Next X Cancel

Setup the LDAP Server

Directory Services Configuration Wizard - Specify Information to Publish




The system can publish certain types of information to the LDAP directory server. Users can then use LDAP clients to access the information.

Which types of information do you want the system to publish to the directory server?

- Users
- System

← Back → Next X Cancel

Directory Services Configuration Wizard - Summary



You have completed all the steps necessary to configure the LDAP directory server.

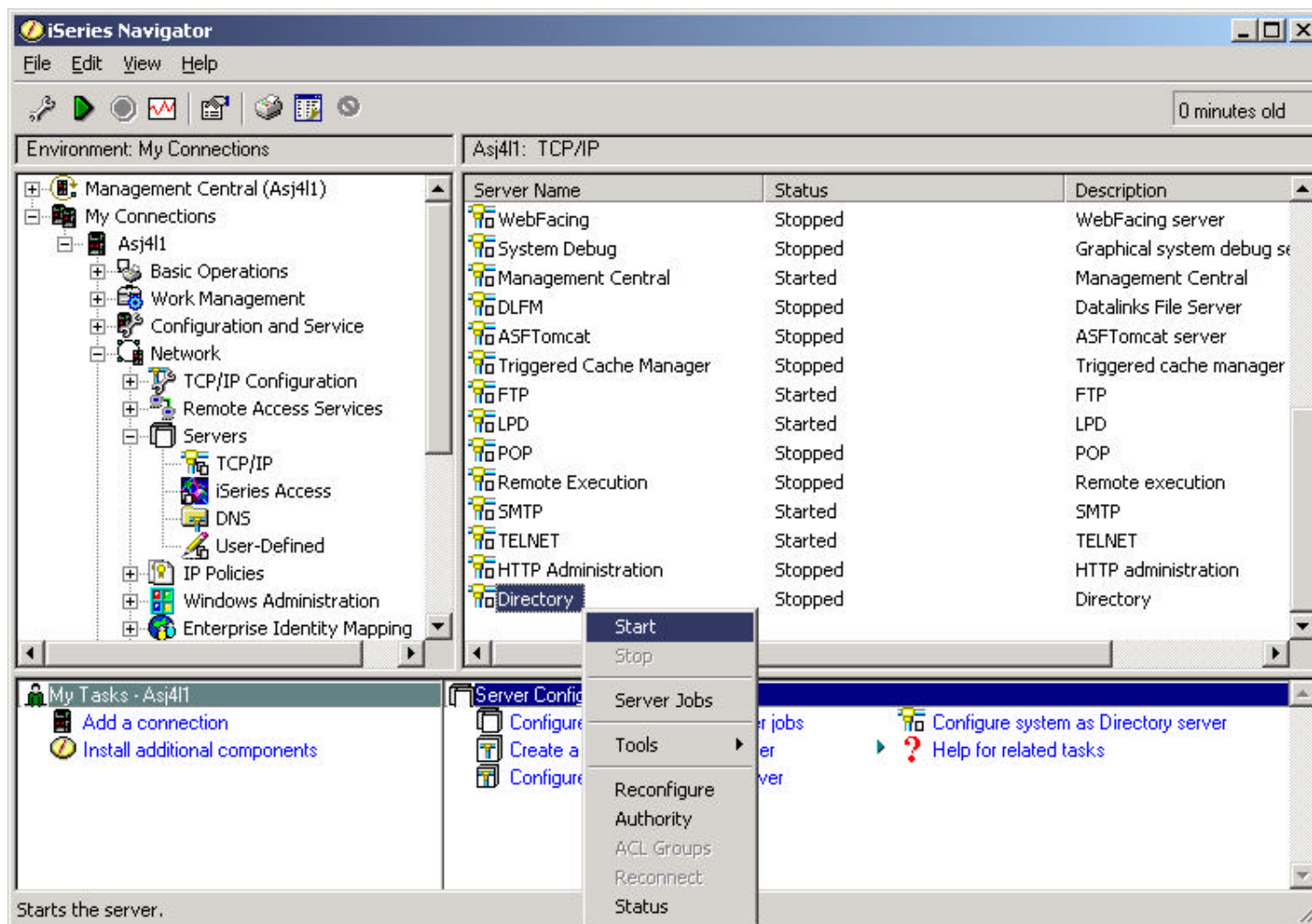
If you want to change any settings, click Back. To save the directory configuration, click Finish. For more information on the directory settings, click Details.

Setting	Value
Database library:	/QSYS.LIB/QUSRDIRDB.LIB
Administrator DN:	cn=administrator
Directory Suffixes:	dc=ASJ4L1,dc=RCHLAND,dc=IBM,dc=...
IP addresses to use:	Use all IP addresses
Start server when TCP/IP is started:	Yes
Information to publish:	Users

Details

← Back ✓ Finish X Cancel

Start the LDAP Server



The screenshot shows the iSeries Navigator interface. On the left, a tree view shows the hierarchy: Management Central (Asj41) > My Connections > Asj41 > Network > TCP/IP Configuration > Servers > Directory. The main pane displays a table of server configurations for 'Asj41: TCP/IP'. The 'Directory' server is highlighted, and a context menu is open over it with 'Start' selected.

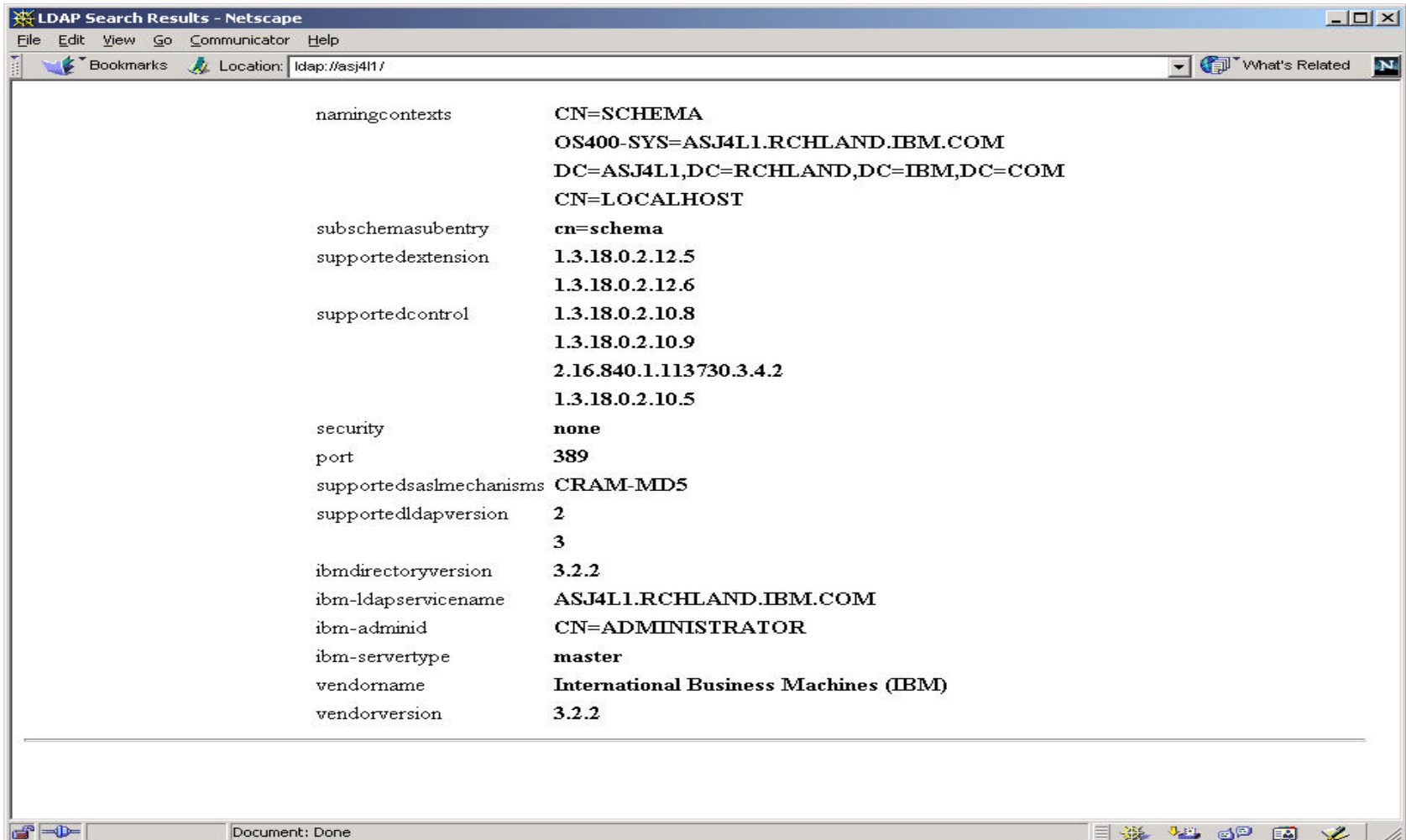
Server Name	Status	Description
WebFacing	Stopped	WebFacing server
System Debug	Stopped	Graphical system debug server
Management Central	Started	Management Central
DLFM	Stopped	Datalinks File Server
ASFTomcat	Stopped	ASFTomcat server
Triggered Cache Manager	Stopped	Triggered cache manager
FTP	Started	FTP
LPD	Started	LPD
POP	Stopped	POP
Remote Execution	Stopped	Remote execution
SMTP	Started	SMTP
TELNET	Started	TELNET
HTTP Administration	Stopped	HTTP administration
Directory	Stopped	Directory

The context menu for the Directory server includes the following options:

- Start
- Stop
- Server Jobs
- Tools
- Reconfigure
- Authority
- ACL Groups
- Reconnect
- Status

At the bottom of the window, a status bar reads: "Starts the server."

Test the LDAP Server - ldap://servername/ in Netscape™



The screenshot shows a Netscape browser window titled "LDAP Search Results - Netscape". The address bar contains "ldap://asj411/". The main content area displays a list of LDAP search results in a key-value format. The results are as follows:

namingcontexts	CN=SCHEMA OS400-SYS=ASJ4L1.RCHLAND.IBM.COM DC=ASJ4L1,DC=RCHLAND,DC=IBM,DC=COM CN=LOCALHOST
subschemasubentry	cn=schema
supportedextension	1.3.18.0.2.12.5 1.3.18.0.2.12.6
supportedcontrol	1.3.18.0.2.10.8 1.3.18.0.2.10.9 2.16.840.1.113730.3.4.2 1.3.18.0.2.10.5
security	none
port	389
supportedsaslmmechanisms	CRAM-MD5
supportedldapversion	2 3
ibm-directoryversion	3.2.2
ibm-ldap-service-name	ASJ4L1.RCHLAND.IBM.COM
ibm-adminid	CN=ADMINISTRATOR
ibm-server-type	master
vendor-name	International Business Machines (IBM)
vendor-version	3.2.2



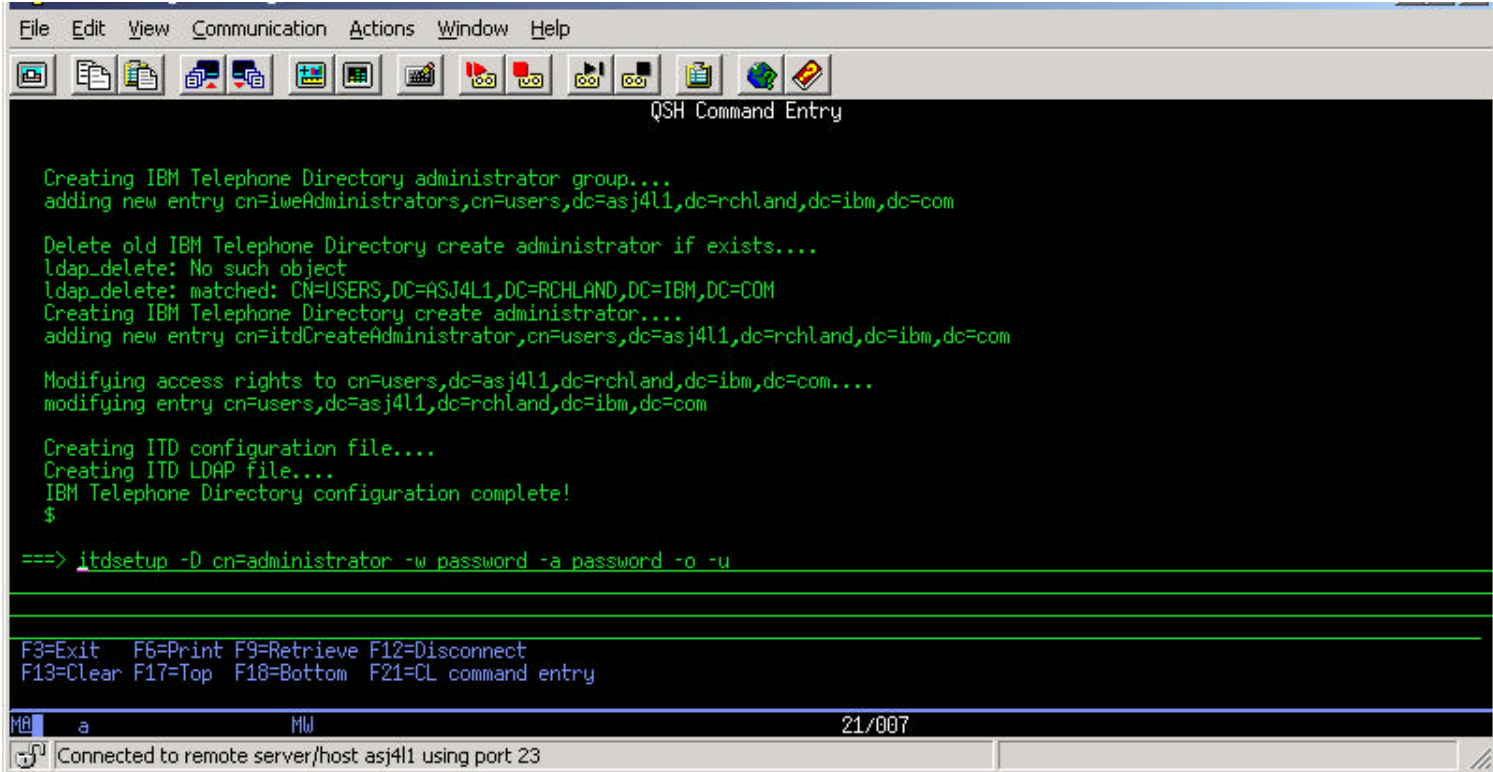
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itdsetup = IBM Telephone Directory Setup

In Qshell, IBM Telephone Directory Setup

- From OS/400 command line, type QSH or STRQSH
- In QSH, entering itdsetup alone will display & describe parameters
- See example below but do not use the same passwords
 - ▶ Authentication information for LDAP administrator
 - ▶ Authentication information for ITD's iweAdministrator



```
File Edit View Communication Actions Window Help
QSH Command Entry

Creating IBM Telephone Directory administrator group...
adding new entry cn=iweAdministrators,cn=users,dc=asj4l1,dc=rchland,dc=ibm,dc=com

Delete old IBM Telephone Directory create administrator if exists...
ldap_delete: No such object
ldap_delete: matched: CN=USERS,DC=ASJ4L1,DC=RCHLAND,DC=IBM,DC=COM
Creating IBM Telephone Directory create administrator...
adding new entry cn=itdCreateAdministrator,cn=users,dc=asj4l1,dc=rchland,dc=ibm,dc=com

Modifying access rights to cn=users,dc=asj4l1,dc=rchland,dc=ibm,dc=com...
modifying entry cn=users,dc=asj4l1,dc=rchland,dc=ibm,dc=com

Creating ITD configuration file...
Creating ITD LDAP file...
IBM Telephone Directory configuration complete!
$

==> itdsetup -D cn=adminiatorator -w password -a password -o -u

F3=Exit F6=Print F9=Retrieve F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry

Mw a Mw 21/007
Connected to remote server/host asj4l1 using port 23
```



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Configuring WAS Express

Configure WAS Express - Access Admin. Server



iSeries Tasks
ASJ4L1.RCHLAND.IBM.COM

-  **[IBM HTTP Server for iSeries](#)**
Configure the iSeries HTTP Server and SSL
-  **[Digital Certificate Manager](#)**
Create, distribute, and manage Digital Certificates
-  **[IBM IPP Server for iSeries](#)**
Configure the IBM IPP Server
-  **[4758 Cryptographic Coprocessor](#)**
Configure the 4758 coprocessor

[Related task information](#)

 **[Help](#)**
(Requires JavaScript)

Configure WAS Express - HTTP Server

HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://asj4l1:2001/HTTPAdmin

HTTP Server with WebSphere Application Server - Express for iSeries

Welcome Setup Manage TCM Related Links

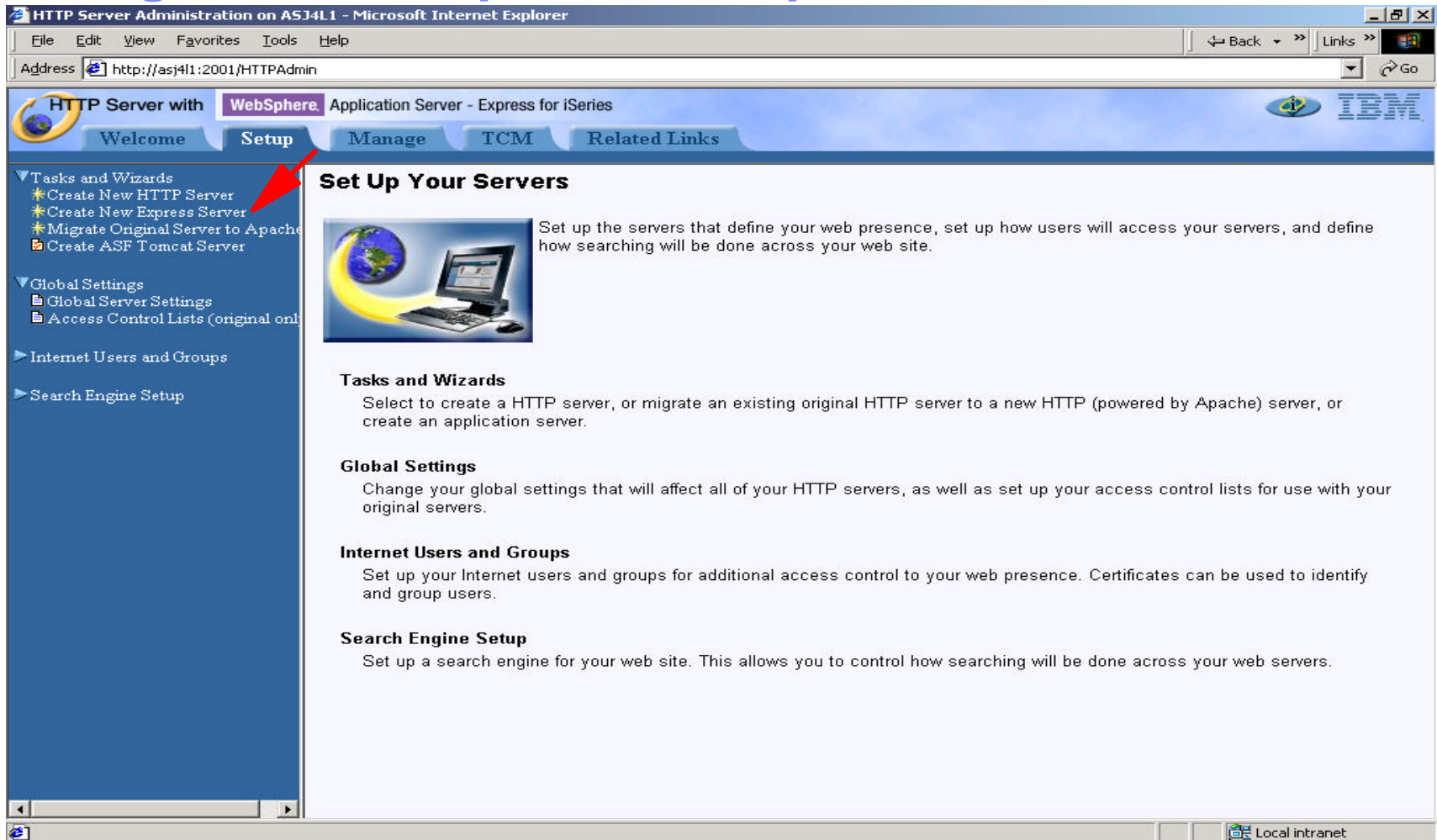
Welcome to IBM HTTP Server with WebSphere Application Server - Express for iSeries

IBM HTTP Server for iSeries

- Getting Started with HTTP Server**
 How do I get started? What do I need to get my web site up and running? Let "Getting Started with HTTP Server" show you how.
- What's New with HTTP Server**
 Find out what's new in the latest release of IBM HTTP Server for iSeries.
- Fundamental Apache Concepts**
 Understanding some fundamental concepts will make managing your HTTP server (powered by Apache) much easier to do.
- Beyond the Basics**
 Dig into more advanced HTTP server topics such as virtual hosting, ASF Tomcat, highly available HTTP servers and search engines.
- Overview of WebSphere Application Server - Express**
 Why should you use Application Server - Express? How is Application Server - Express different from Apache HTTP Server? How are virtual hosts and aliases different in the two servers? How do you get your e-business applications up and running? If you're new to application serving, start here. You'll learn about fundamental application server concepts and the product's architecture.
- WebSphere Application Server - Express Configuration and Management**
 Now that you're ready to use WebSphere Application Server - Express, you'll need to administer resources and applications. Learn how to use the HTTP Server GUI to manage the application server, install applications, and manage resources. Here you'll also find information on using the Web-based administrative console to secure applications and monitor performance.
- Application Development for WebSphere Application Server - Express**
 Are you new to developing e-business applications? Or do you just need some programming tips? Here you'll find information about developing servlets and JavaServer Pages (JSP) files for WebSphere Application Server - Express.

Local intranet

Configure WAS Express - Setup the servers



HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://asj4l1:2001/HTTPAdmin>


HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome **Setup** Manage TCM Related Links

- Tasks and Wizards
 - Create New HTTP Server
 - Create New Express Server
 - Migrate Original Server to Apache
 - Create ASF Tomcat Server
- Global Settings
 - Global Server Settings
 - Access Control Lists (original only)
- Internet Users and Groups
- Search Engine Setup

Set Up Your Servers

Set up the servers that define your web presence, set up how users will access your servers, and define how searching will be done across your web site.



Tasks and Wizards
Select to create a HTTP server, or migrate an existing original HTTP server to a new HTTP (powered by Apache) server, or create an application server.

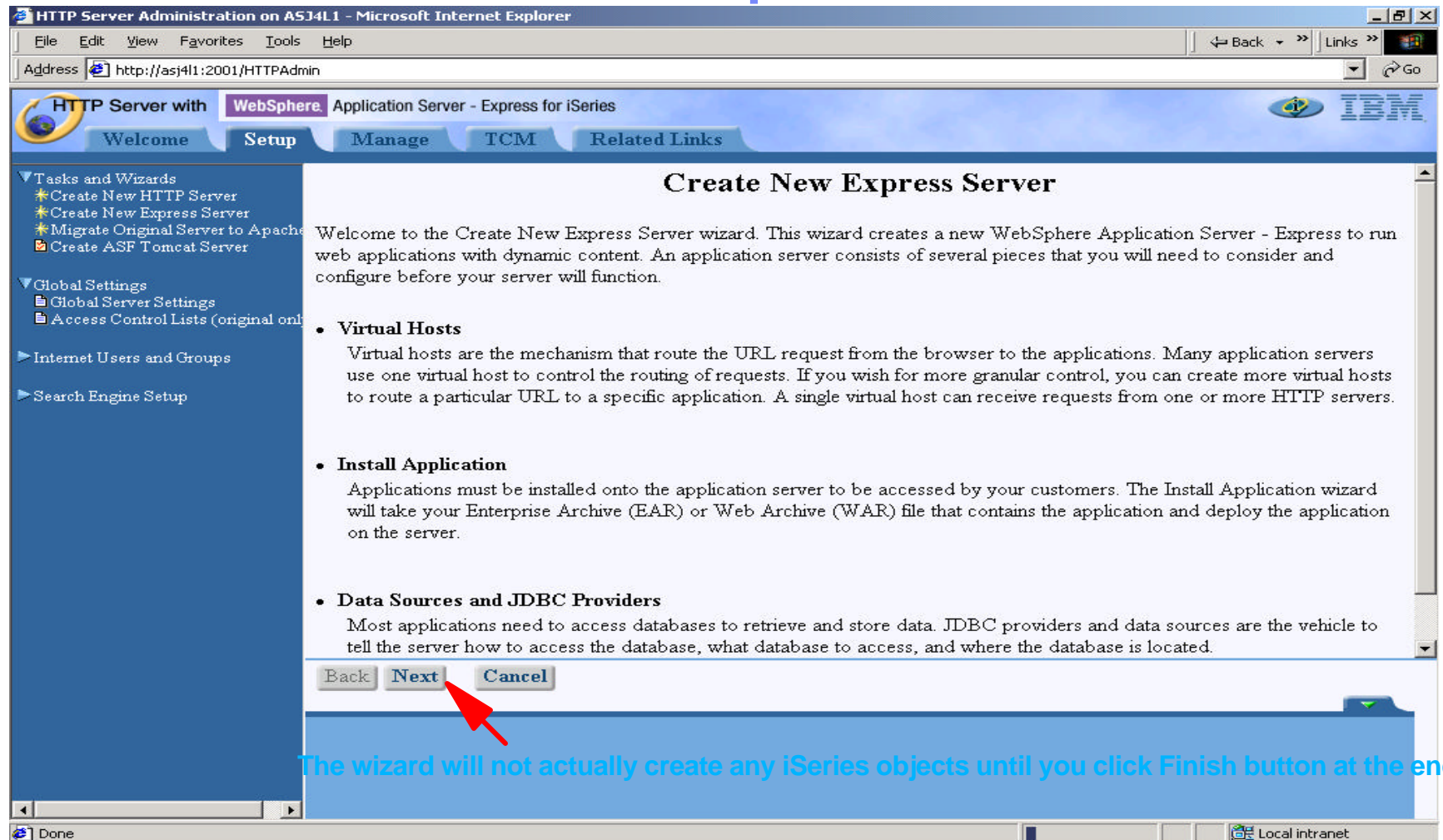
Global Settings
Change your global settings that will affect all of your HTTP servers, as well as set up your access control lists for use with your original servers.

Internet Users and Groups
Set up your Internet users and groups for additional access control to your web presence. Certificates can be used to identify and group users.

Search Engine Setup
Set up a search engine for your web site. This allows you to control how searching will be done across your web servers.

Local intranet

Wizard - Create New WAS Express Server



HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://asj4l1:2001/HTTPAdmin

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup Manage TCM Related Links

Create New Express Server

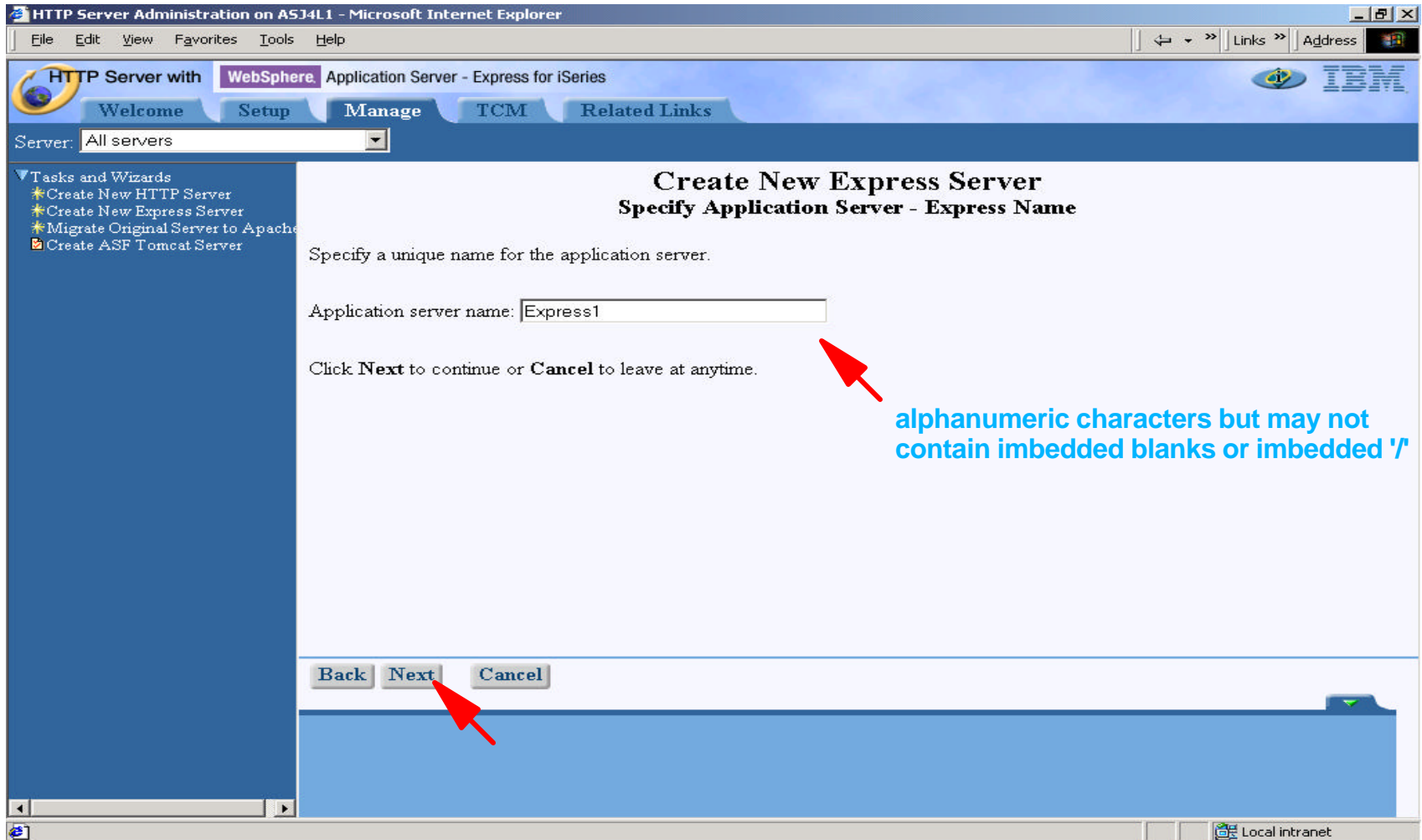
Welcome to the Create New Express Server wizard. This wizard creates a new WebSphere Application Server - Express to run web applications with dynamic content. An application server consists of several pieces that you will need to consider and configure before your server will function.

- Virtual Hosts**
 Virtual hosts are the mechanism that route the URL request from the browser to the applications. Many application servers use one virtual host to control the routing of requests. If you wish for more granular control, you can create more virtual hosts to route a particular URL to a specific application. A single virtual host can receive requests from one or more HTTP servers.
- Install Application**
 Applications must be installed onto the application server to be accessed by your customers. The Install Application wizard will take your Enterprise Archive (EAR) or Web Archive (WAR) file that contains the application and deploy the application on the server.
- Data Sources and JDBC Providers**
 Most applications need to access databases to retrieve and store data. JDBC providers and data sources are the vehicle to tell the server how to access the database, what database to access, and where the database is located.

Back **Next** Cancel

The wizard will not actually create any iSeries objects until you click Finish button at the end

Wizard - Specify Application Server



HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: All servers

Tasks and Wizards

- Create New HTTP Server
- Create New Express Server
- Migrate Original Server to Apache
- Create ASF Tomcat Server

Create New Express Server

Specify Application Server - Express Name

Specify a unique name for the application server.

Application server name:

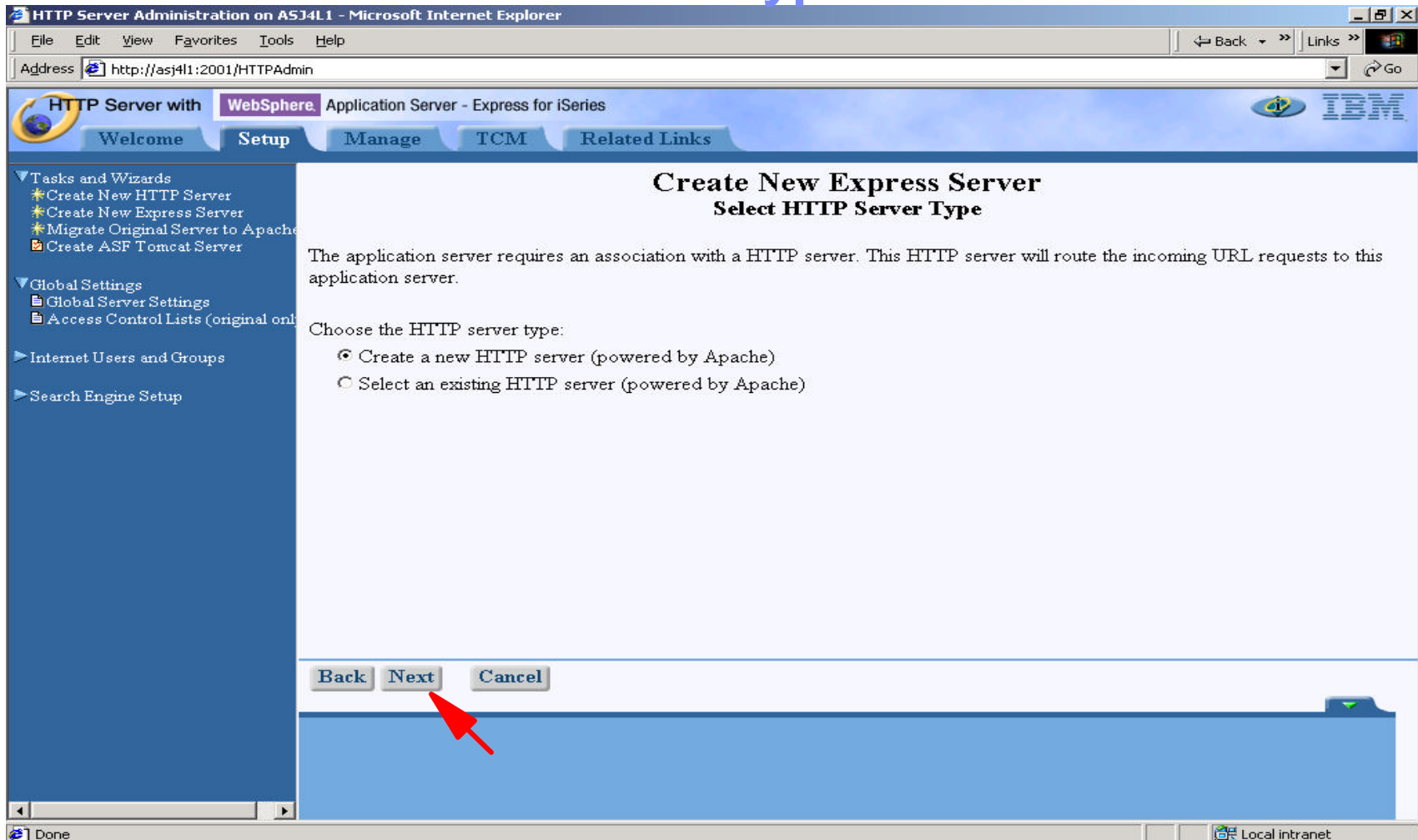
Click **Next** to continue or **Cancel** to leave at anytime.

Back Next Cancel

Local intranet

alphanumeric characters but may not contain imbedded blanks or imbedded '/'

Wizard - Select HTTP Server Type



HTTP Server Administration on AS34L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://as34l1:2001/HTTPAdmin

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Tasks and Wizards

- Create New HTTP Server
- Create New Express Server
- Migrate Original Server to Apache
- Create ASF Tomcat Server

Global Settings

- Global Server Settings
- Access Control Lists (original only)

Internet Users and Groups

Search Engine Setup

Create New Express Server

Select HTTP Server Type

The application server requires an association with a HTTP server. This HTTP server will route the incoming URL requests to this application server.

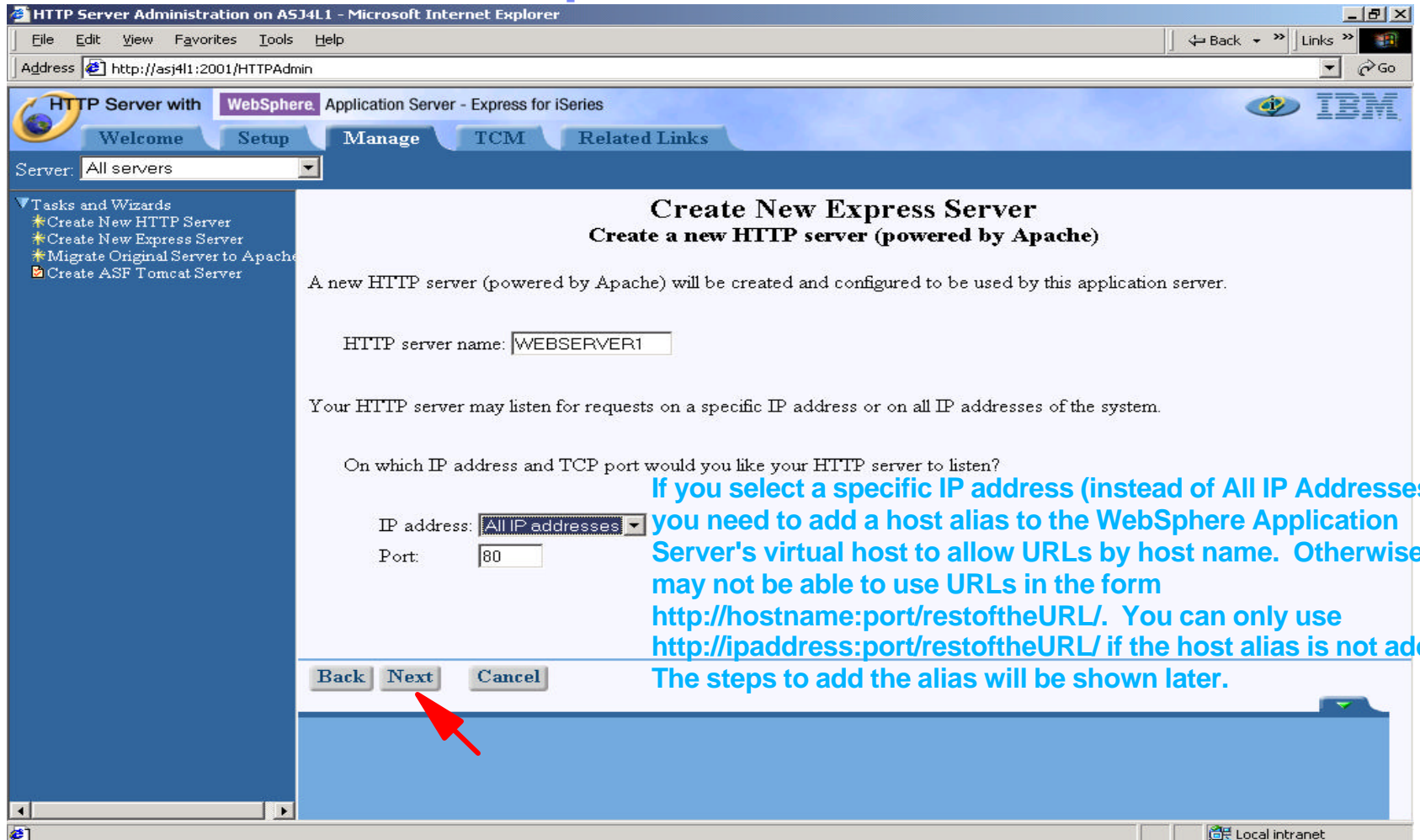
Choose the HTTP server type:

- Create a new HTTP server (powered by Apache)
- Select an existing HTTP server (powered by Apache)

Back Next Cancel

Done Local intranet

Wizard - Create New Apache HTTP Server



HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

Address: http://asj4l1:2001/HTTPAdmin

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: All servers

Tasks and Wizards

- Create New HTTP Server
- Create New Express Server
- Migrate Original Server to Apache
- Create ASF Tomcat Server

Create New Express Server

Create a new HTTP server (powered by Apache)

A new HTTP server (powered by Apache) will be created and configured to be used by this application server.

HTTP server name:

Your HTTP server may listen for requests on a specific IP address or on all IP addresses of the system.

On which IP address and TCP port would you like your HTTP server to listen?

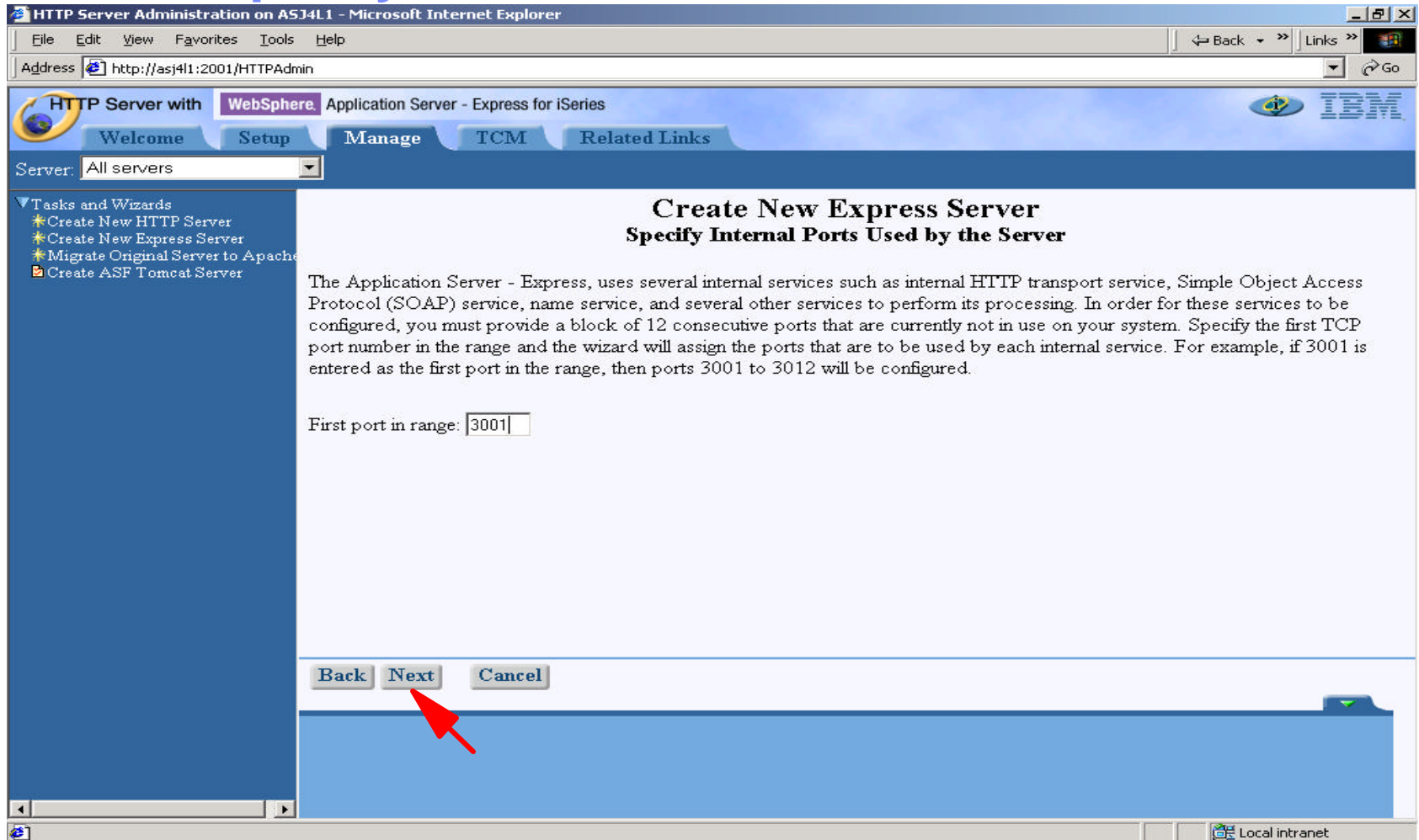
IP address:

Port:

Back Next Cancel

If you select a specific IP address (instead of All IP Addresses), you need to add a host alias to the WebSphere Application Server's virtual host to allow URLs by host name. Otherwise, you may not be able to use URLs in the form `http://hostname:port/restoftheURL/`. You can only use `http://ipaddress:port/restoftheURL/` if the host alias is not added. The steps to add the alias will be shown later.

Wizard - Specify Internal Port Numbers



The screenshot shows a web browser window titled "HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer". The address bar shows "http://asj4l1:2001/HTTPAdmin". The page content includes a navigation menu with "Welcome", "Setup", "Manage", "TCM", and "Related Links". A "Server:" dropdown menu is set to "All servers".

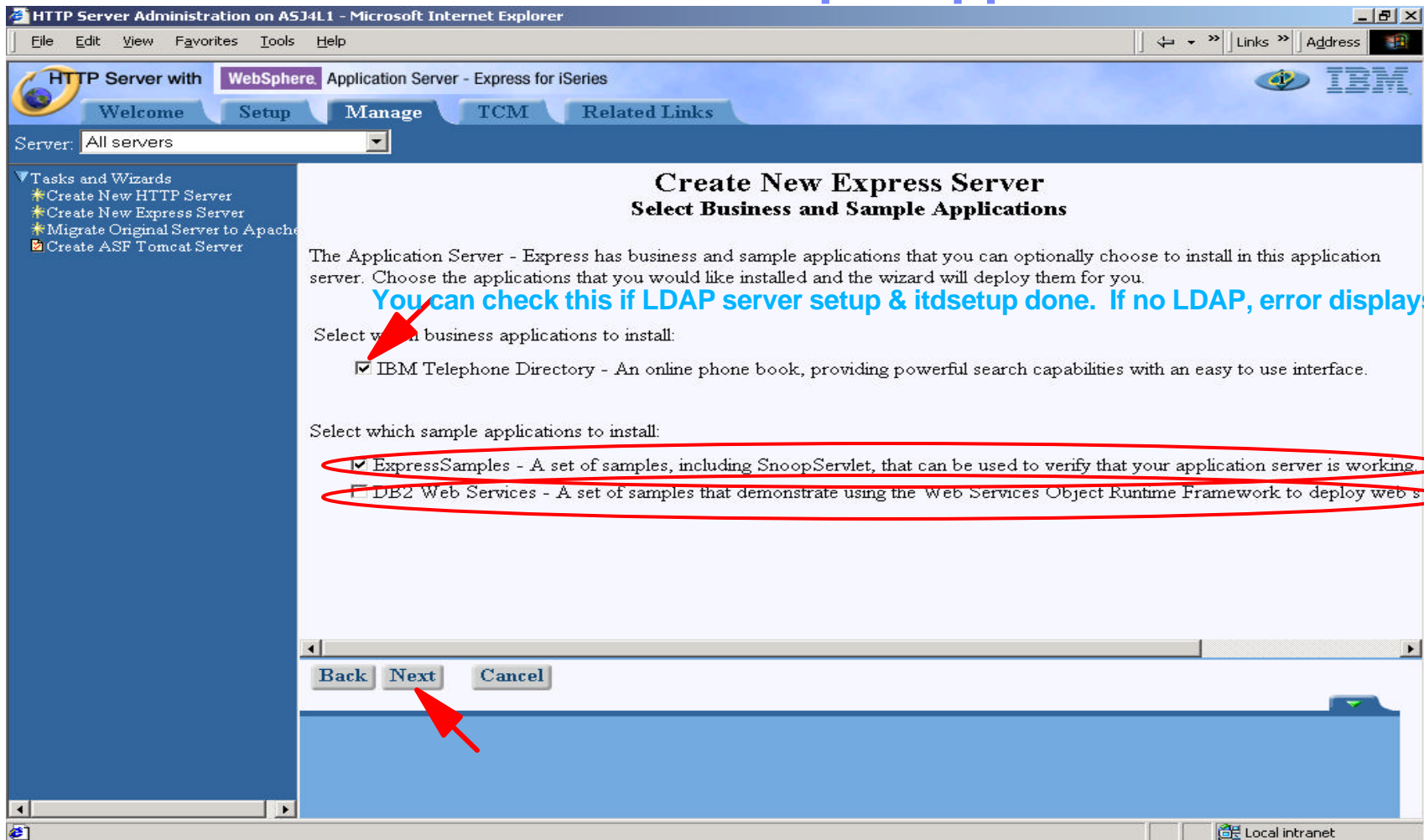
Create New Express Server
Specify Internal Ports Used by the Server

The Application Server - Express, uses several internal services such as internal HTTP transport service, Simple Object Access Protocol (SOAP) service, name service, and several other services to perform its processing. In order for these services to be configured, you must provide a block of 12 consecutive ports that are currently not in use on your system. Specify the first TCP port number in the range and the wizard will assign the ports that are to be used by each internal service. For example, if 3001 is entered as the first port in the range, then ports 3001 to 3012 will be configured.

First port in range:

At the bottom of the page, there are three buttons: "Back", "Next", and "Cancel". A red arrow points to the "Next" button.

Wizard - Select Business & Sample Applications



HTTP Server Administration on AS34L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: All servers

Tasks and Wizards

- Create New HTTP Server
- Create New Express Server
- Migrate Original Server to Apache
- Create ASF Tomcat Server

Create New Express Server

Select Business and Sample Applications

The Application Server - Express has business and sample applications that you can optionally choose to install in this application server. Choose the applications that you would like installed and the wizard will deploy them for you.

You can check this if LDAP server setup & itdsetup done. If no LDAP, error displays.

Select which business applications to install:

- IBM Telephone Directory - An online phone book, providing powerful search capabilities with an easy to use interface.

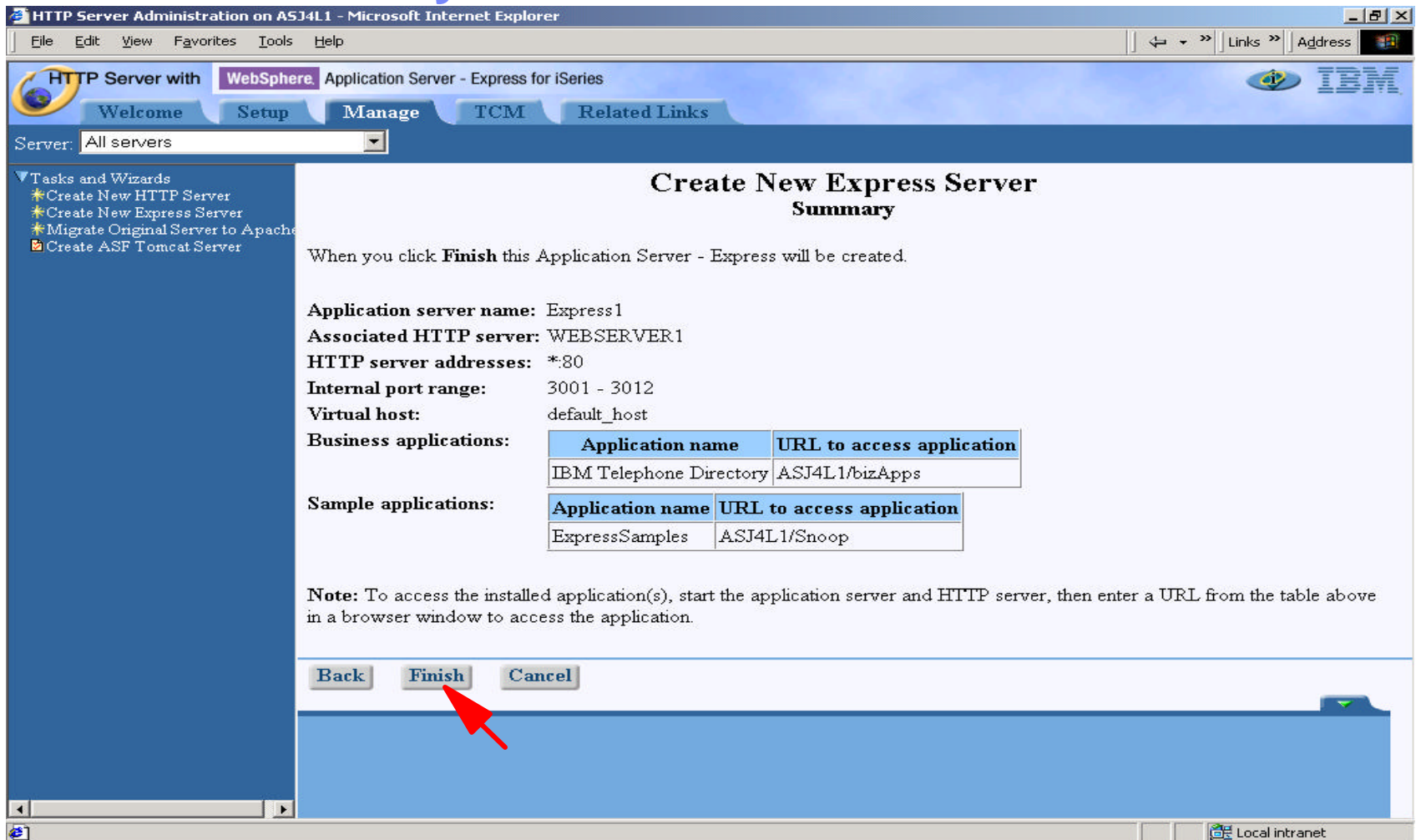
Select which sample applications to install:

- ExpressSamples - A set of samples, including SnoopServlet, that can be used to verify that your application server is working.
- DB2 Web Services - A set of samples that demonstrate using the Web Services Object Runtime Framework to deploy web s...

Back Next Cancel

Local intranet

Wizard - Summary



HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: All servers

Tasks and Wizards

- Create New HTTP Server
- Create New Express Server
- Migrate Original Server to Apache
- Create ASF Tomcat Server

Create New Express Server Summary

When you click **Finish** this Application Server - Express will be created.

Application server name: Express1
Associated HTTP server: WEBSERVER1
HTTP server addresses: *.80
Internal port range: 3001 - 3012
Virtual host: default_host

Business applications:

Application name	URL to access application
IBM Telephone Directory	ASJ4L1/bizApps

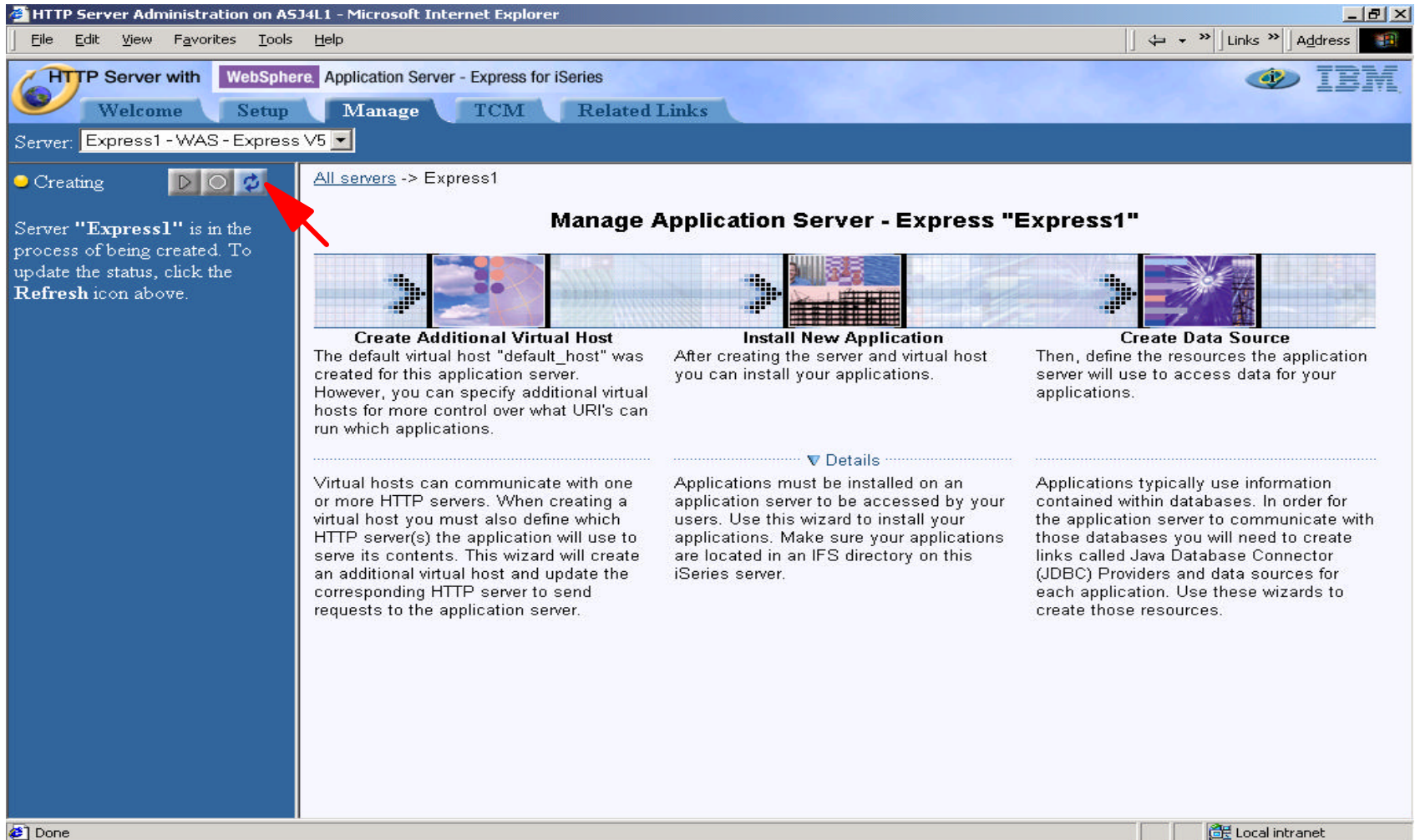
Sample applications:

Application name	URL to access application
ExpressSamples	ASJ4L1/Snoop

Note: To access the installed application(s), start the application server and HTTP server, then enter a URL from the table above in a browser window to access the application.

Back **Finish** Cancel

Wizard - Creation




HTTP Server Administration on AS411 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

HTTP Server with **WebSphere** Application Server - Express for iSeries

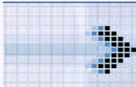
Welcome Setup **Manage** TCM Related Links

Server: Express1 - WAS - Express V5

● Creating  [All servers -> Express1](#)

Server "Express1" is in the process of being created. To update the status, click the **Refresh** icon above.

Manage Application Server - Express "Express1"




Create Additional Virtual Host

The default virtual host "default_host" was created for this application server. However, you can specify additional virtual hosts for more control over what URI's can run which applications.

[▼ Details](#)

Virtual hosts can communicate with one or more HTTP servers. When creating a virtual host you must also define which HTTP server(s) the application will use to serve its contents. This wizard will create an additional virtual host and update the corresponding HTTP server to send requests to the application server.

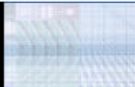


Install New Application

After creating the server and virtual host you can install your applications.

[▼ Details](#)

Applications must be installed on an application server to be accessed by your users. Use this wizard to install your applications. Make sure your applications are located in an IFS directory on this iSeries server.



Create Data Source

Then, define the resources the application server will use to access data for your applications.

[▼ Details](#)

Applications typically use information contained within databases. In order for the application server to communicate with those databases you will need to create links called Java Database Connector (JDBC) Providers and data sources for each application. Use these wizards to create those resources.

Done Local intranet

What's Happening in the Background?

```

File Edit View Communication Actions Window Help
[Icons]
Work with Active Jobs
AS
12/17/02 17
CPU %: 62.1 Elapsed time: 00:00:26 Active jobs: 194

Type options, press Enter.
2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message
8=Work with spooled files 13=Disconnect ...

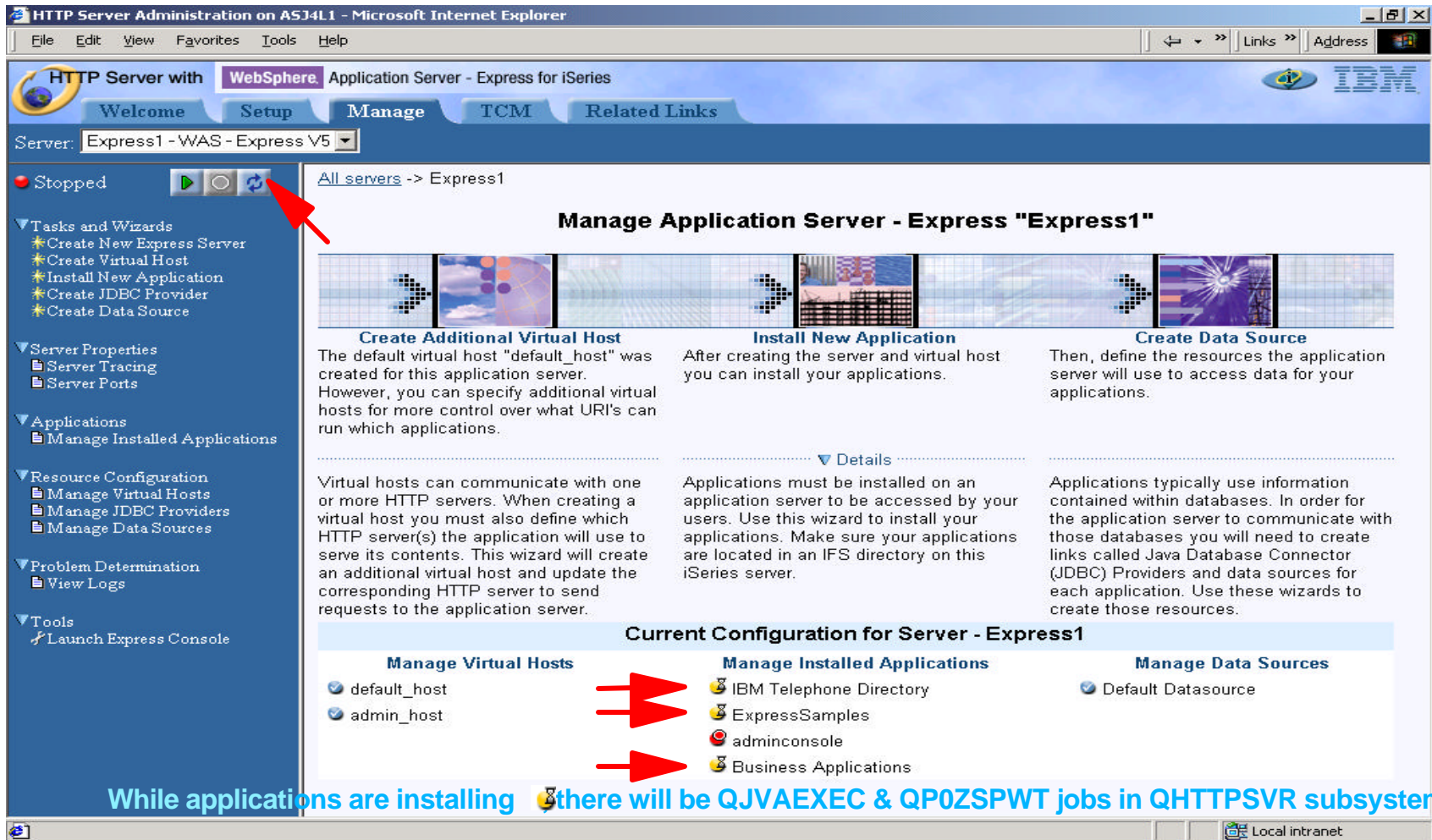
Opt Subsystem/Job User Type CPU % Function Status
---
QASE5 QSYS SBS .0 DEQW
QHTTSPVR QSYS SBS .0 DEQW
ADMIN QTMHHTTP BCH .0 PGM-QZHBHTTP SIGW
ADMIN QTMHHTTP BCI .0 PGM-QZSRLOG SIGW
ADMIN QTMHHTTP BCI .0 PGM-QZSRHTTP SIGW
ADMIN QTMHHTTP BCI .0 PGM-QZSRCGI TIMW
ADMIN QTMHHTTP BCI .0 PGM-QZSRCGI TIMW
QJVAEXEC QTMHHTTP BCI .0 PGM-QZSHSH EVTW
QPOZSPWP QTMHHTTP BCI 30.1 PGM-CRTWASINST RUN

Parameters or command
===>
F3=Exit F5=Refresh F7=Find F10=Restart statistics
F11=Display elapsed data F12=Cancel F23=More options F24=More keys

MA a MW
Connected to remote server/host asj411 using port 23
    
```



Still Installing Applications



HTTP Server Administration on AS/400 - Microsoft Internet Explorer

HTTP Server with **WebSphere** Application Server - Express for iSeries

Server: Express1 - WAS - Express V5





Manage Application Server - Express "Express1"

Create Additional Virtual Host
The default virtual host "default_host" was created for this application server. However, you can specify additional virtual hosts for more control over what URI's can run which applications.

Install New Application
After creating the server and virtual host you can install your applications.

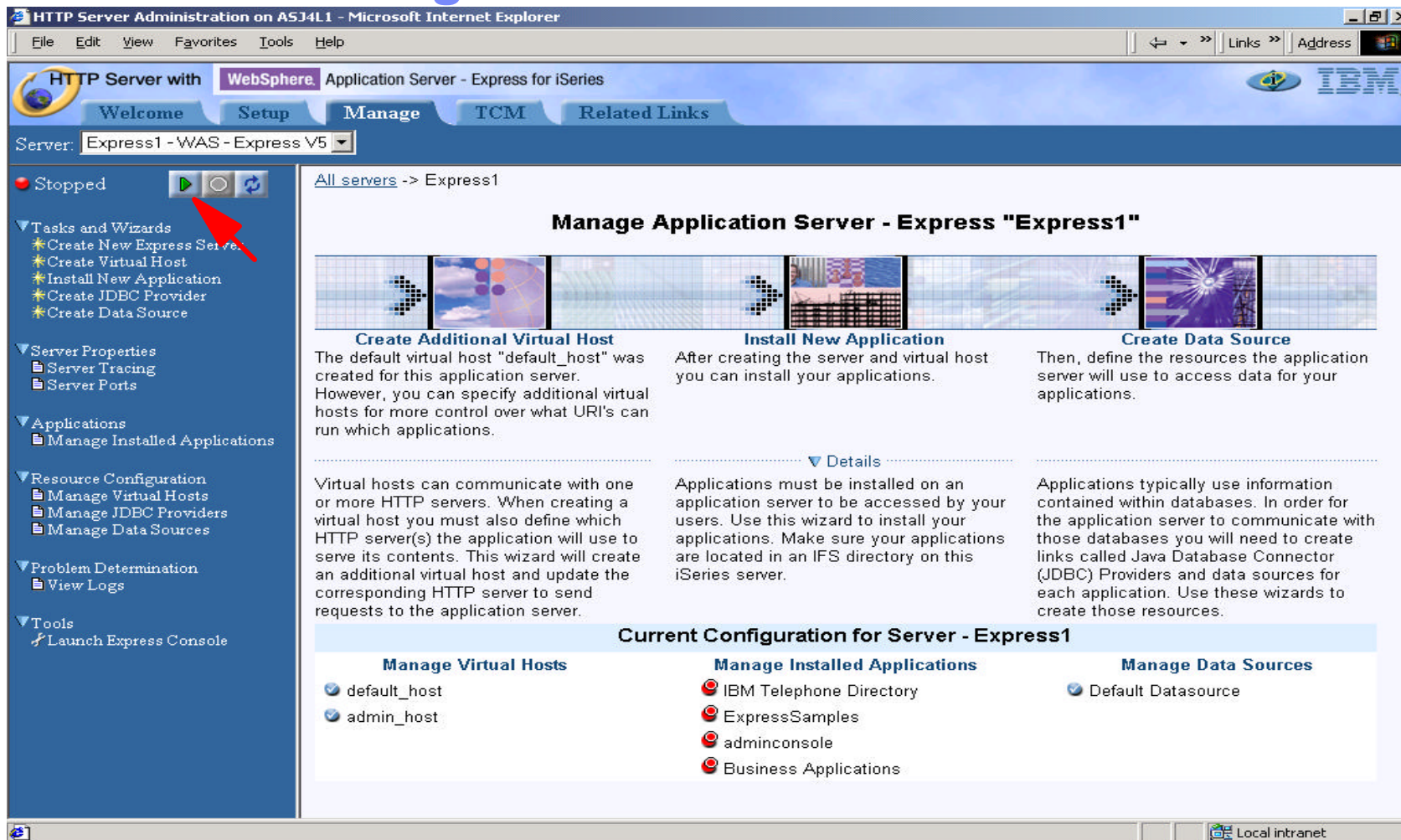
Create Data Source
Then, define the resources the application server will use to access data for your applications.

Current Configuration for Server - Express1

Manage Virtual Hosts	Manage Installed Applications	Manage Data Sources
<input checked="" type="checkbox"/> default_host	 IBM Telephone Directory	<input checked="" type="checkbox"/> Default Datasource
<input checked="" type="checkbox"/> admin_host	 ExpressSamples	
	 adminconsole	
	 Business Applications	

While applications are installing there will be QJVAEXEC & QP0ZSPWT jobs in QHTTSPVR subsystem

Finished Installing! Start the WAS Server






HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: Express1 - WAS - Express V5

Stopped   

Tasks and Wizards

- * Create New Express Server
- * Create Virtual Host
- * Install New Application
- * Create JDBC Provider
- * Create Data Source

Server Properties

- Server Tracing
- Server Ports

Applications

- Manage Installed Applications

Resource Configuration

- Manage Virtual Hosts
- Manage JDBC Providers
- Manage Data Sources

Problem Determination

- View Logs

Tools

- Launch Express Console

All servers -> Express1

Manage Application Server - Express "Express1"

Create Additional Virtual Host

The default virtual host "default_host" was created for this application server. However, you can specify additional virtual hosts for more control over what URI's can run which applications.

Virtual hosts can communicate with one or more HTTP servers. When creating a virtual host you must also define which HTTP server(s) the application will use to serve its contents. This wizard will create an additional virtual host and update the corresponding HTTP server to send requests to the application server.

Install New Application

After creating the server and virtual host you can install your applications.

Applications must be installed on an application server to be accessed by your users. Use this wizard to install your applications. Make sure your applications are located in an IFS directory on this iSeries server.

Create Data Source

Then, define the resources the application server will use to access data for your applications.

Applications typically use information contained within databases. In order for the application server to communicate with those databases you will need to create links called Java Database Connector (JDBC) Providers and data sources for each application. Use these wizards to create those resources.

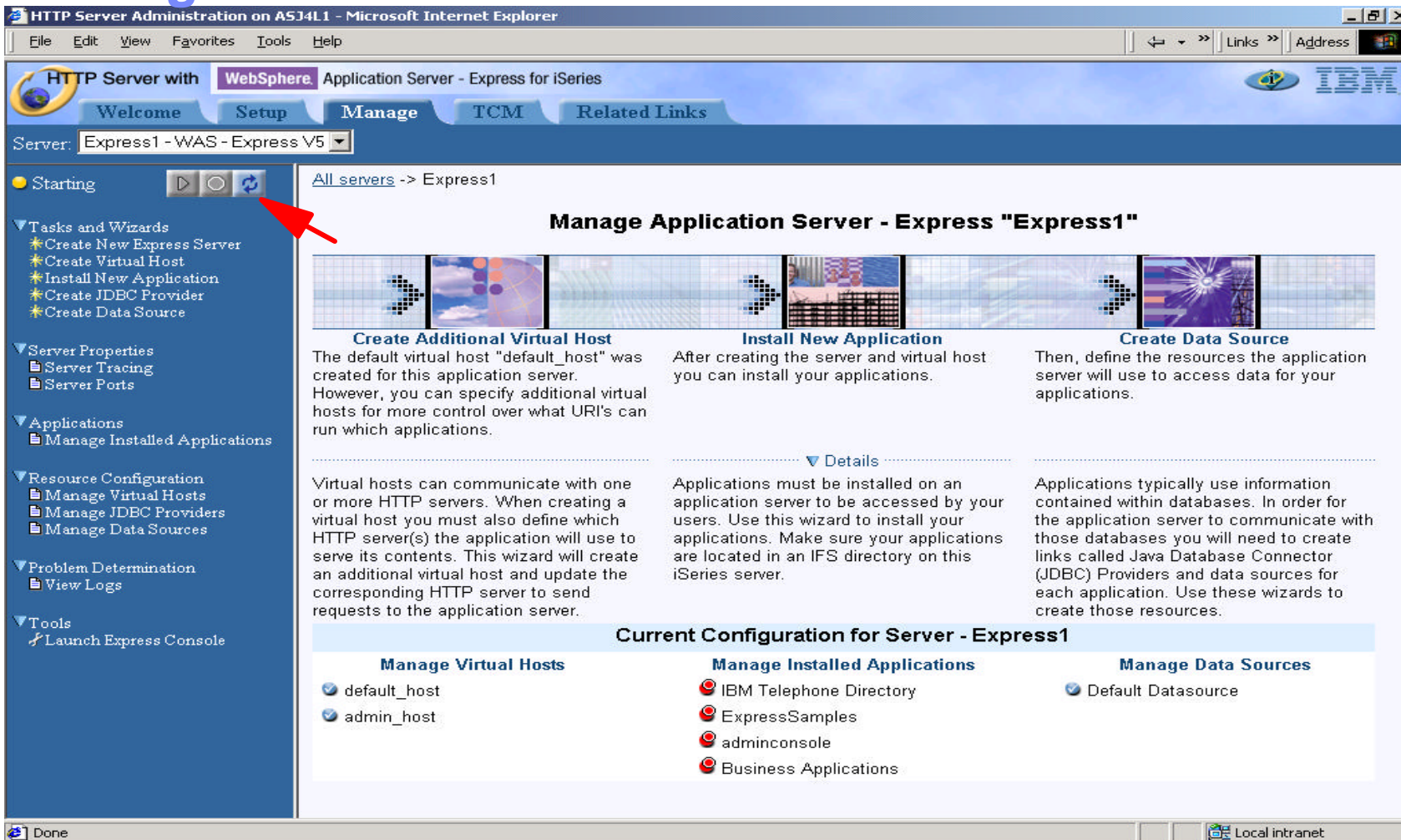
▼ Details

Current Configuration for Server - Express1

Manage Virtual Hosts	Manage Installed Applications	Manage Data Sources
<input checked="" type="checkbox"/> default_host	<input checked="" type="checkbox"/> IBM Telephone Directory	<input checked="" type="checkbox"/> Default Datasource
<input checked="" type="checkbox"/> admin_host	<input checked="" type="checkbox"/> ExpressSamples	
	<input checked="" type="checkbox"/> adminconsole	
	<input checked="" type="checkbox"/> Business Applications	

Local intranet

Starting






HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: Express1 - WAS - Express V5

Starting   

All servers -> Express1

Manage Application Server - Express "Express1"

Create Additional Virtual Host

The default virtual host "default_host" was created for this application server. However, you can specify additional virtual hosts for more control over what URI's can run which applications.

Virtual hosts can communicate with one or more HTTP servers. When creating a virtual host you must also define which HTTP server(s) the application will use to serve its contents. This wizard will create an additional virtual host and update the corresponding HTTP server to send requests to the application server.

Install New Application

After creating the server and virtual host you can install your applications.

Applications must be installed on an application server to be accessed by your users. Use this wizard to install your applications. Make sure your applications are located in an IFS directory on this iSeries server.

Create Data Source

Then, define the resources the application server will use to access data for your applications.

Applications typically use information contained within databases. In order for the application server to communicate with those databases you will need to create links called Java Database Connector (JDBC) Providers and data sources for each application. Use these wizards to create those resources.

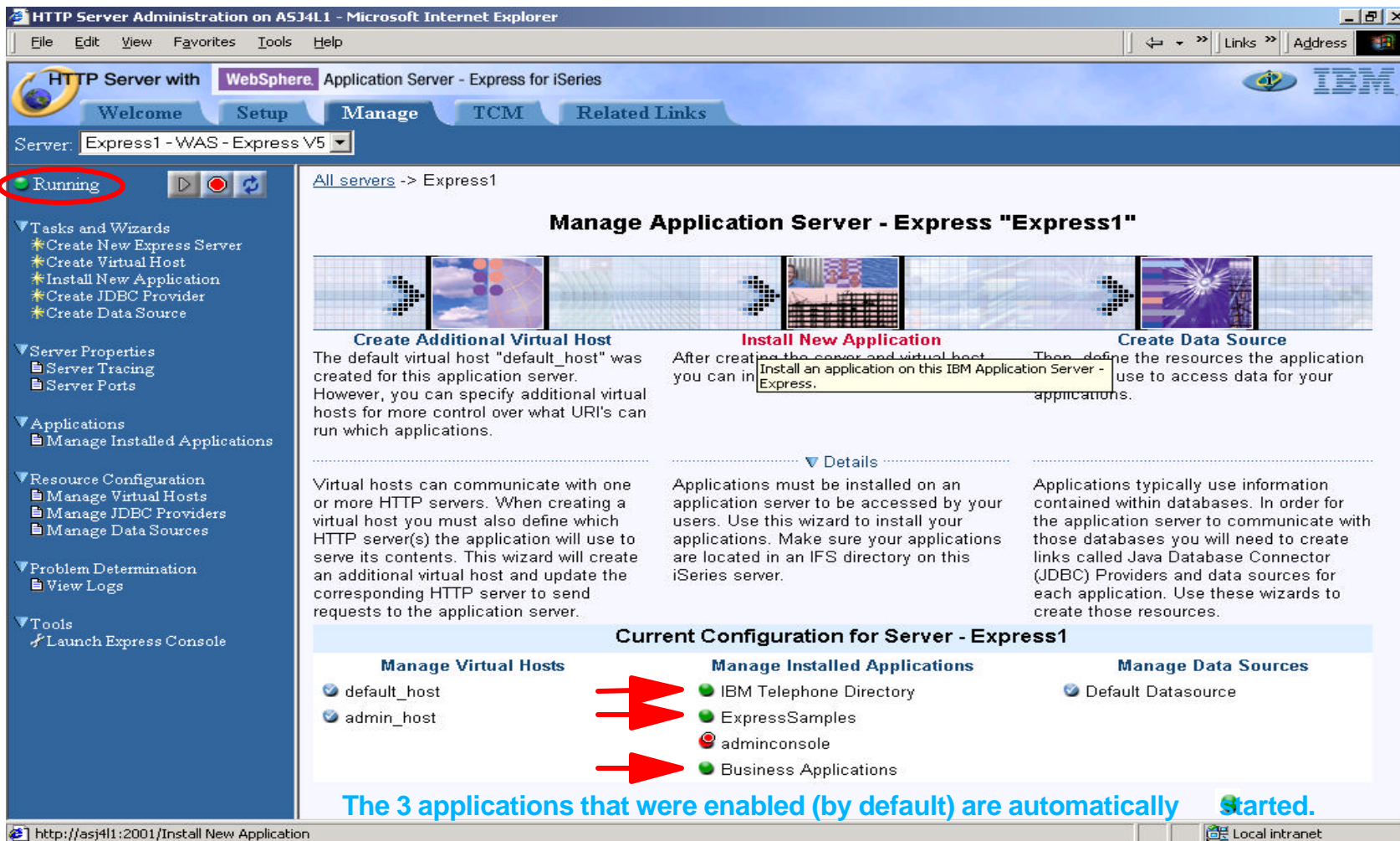
▼ Details

Current Configuration for Server - Express1

Manage Virtual Hosts	Manage Installed Applications	Manage Data Sources
<input checked="" type="checkbox"/> default_host <input checked="" type="checkbox"/> admin_host	<input checked="" type="checkbox"/> IBM Telephone Directory <input checked="" type="checkbox"/> ExpressSamples <input checked="" type="checkbox"/> adminconsole <input checked="" type="checkbox"/> Business Applications	<input checked="" type="checkbox"/> Default Datasource

Done Local intranet

Successful Start!



HTTP Server Administration on AS/411 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: Express1 - WAS - Express V5

Running

All servers -> Express1

Manage Application Server - Express "Express1"

Create Additional Virtual Host

The default virtual host "default_host" was created for this application server. However, you can specify additional virtual hosts for more control over what URI's can run which applications.

Virtual hosts can communicate with one or more HTTP servers. When creating a virtual host you must also define which HTTP server(s) the application will use to serve its contents. This wizard will create an additional virtual host and update the corresponding HTTP server to send requests to the application server.

Install New Application

After creating the server and virtual host, you can install an application on this IBM Application Server - Express.

Applications must be installed on an application server to be accessed by your users. Use this wizard to install your applications. Make sure your applications are located in an IFS directory on this iSeries server.

Create Data Source

Then define the resources the application use to access data for your applications.

Applications typically use information contained within databases. In order for the application server to communicate with those databases you will need to create links called Java Database Connector (JDBC) Providers and data sources for each application. Use these wizards to create those resources.

▼ Details

Current Configuration for Server - Express1		
Manage Virtual Hosts	Manage Installed Applications	Manage Data Sources
<input checked="" type="checkbox"/> default_host	<input checked="" type="checkbox"/> IBM Telephone Directory	<input checked="" type="checkbox"/> Default Datasource
<input checked="" type="checkbox"/> admin_host	<input checked="" type="checkbox"/> ExpressSamples	
	<input checked="" type="checkbox"/> adminconsole	
	<input checked="" type="checkbox"/> Business Applications	

The 3 applications that were enabled (by default) are automatically Started.

http://asj411:2001/Install New Application

Local intranet

See the WAS Express Server Job

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
[Icons]
Work with Active Jobs ASJ4L1
12/20/02 18:24:17
CPU %: 10.8 Elapsed time: 00:11:35 Active jobs: 208
Type options, press Enter.
2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message
8=Work with spooled files 13=Disconnect ...

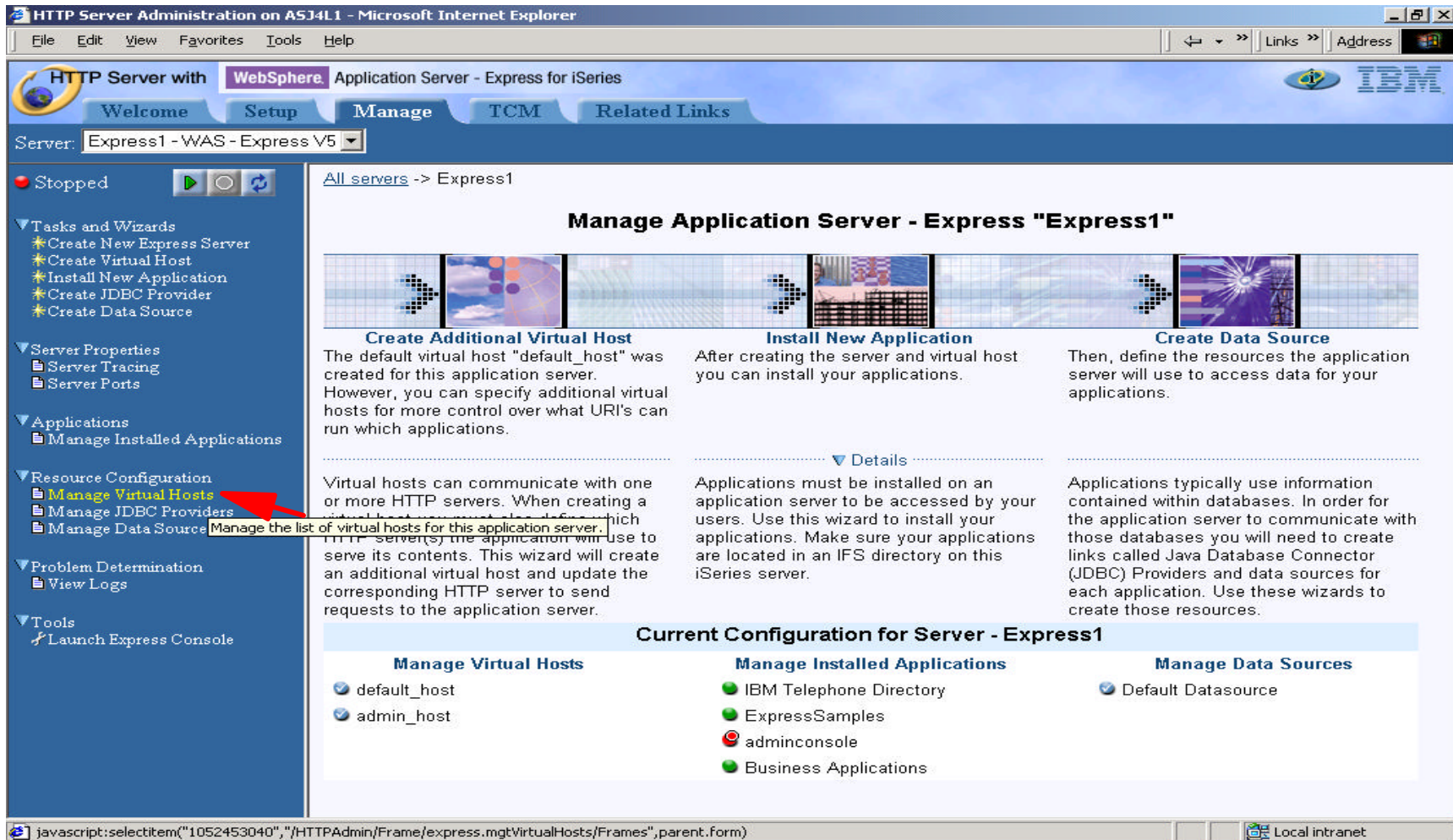
Opt Subsystem/Job User Type CPU % Function Status
---
_ QASE5 QSYS SBS .0 DEQW
_ EXPRESS1 QEJBSVR BCH 1.7 PGM-QASESTRSVR JVAW
_ QHTTTPSVR QSYS SBS .0 DEQW
_ ADMIN QTMHHTTP BCH .0 PGM-QZHBHTTP SIGW
_ ADMIN QTMHHTTP BCI .0 PGM-QZSRLOG SIGW
_ ADMIN QTMHHTTP BCI .4 PGM-QZSRHTTP SIGW
_ ADMIN QTMHHTTP BCI .0 PGM-QYUNLANG TIMW
_ ADMIN QTMHHTTP BCI .0 PGM-QYUNLANG TIMW
_ ADMIN QTMHHTTP BCI .0 PGM-QYUNLANG TIMW
More...

Parameters or command
===>
F3=Exit F5=Refresh F7=Find F10=Restart statistics
F11=Display elapsed data F12=Cancel F23=More options F24=More keys

MA a MW 10/002
Connected to remote server/host.asj4l1 using port 23
    
```



Check Host Aliases






HTTP Server Administration on AS/411 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: Express1 - WAS - Express V5

Stopped   

All servers -> Express1

Manage Application Server - Express "Express1"

Create Additional Virtual Host

The default virtual host "default_host" was created for this application server. However, you can specify additional virtual hosts for more control over what URI's can run which applications.

Virtual hosts can communicate with one or more HTTP servers. When creating a virtual host, you must specify the application which will serve its contents. This wizard will create an additional virtual host and update the corresponding HTTP server to send requests to the application server.

Install New Application

After creating the server and virtual host you can install your applications.

Applications must be installed on an application server to be accessed by your users. Use this wizard to install your applications. Make sure your applications are located in an IFS directory on this iSeries server.

Create Data Source

Then, define the resources the application server will use to access data for your applications.

Applications typically use information contained within databases. In order for the application server to communicate with those databases you will need to create links called Java Database Connector (JDBC) Providers and data sources for each application. Use these wizards to create those resources.

▼ Details

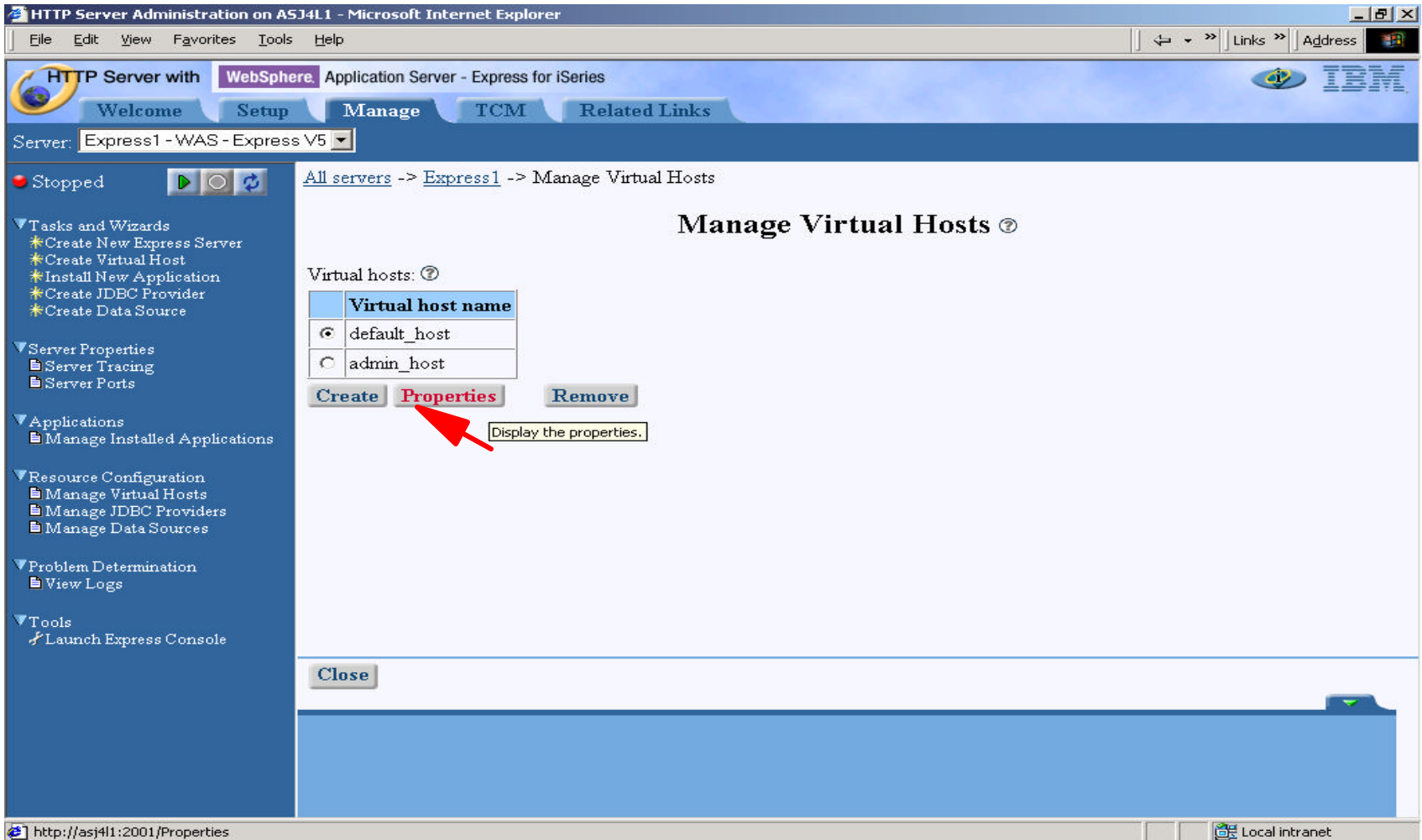
Current Configuration for Server - Express1

Manage Virtual Hosts	Manage Installed Applications	Manage Data Sources
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> default_host <input checked="" type="checkbox"/> admin_host 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> IBM Telephone Directory <input checked="" type="checkbox"/> ExpressSamples <input checked="" type="checkbox"/> adminconsole <input checked="" type="checkbox"/> Business Applications 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Default Datasource

javascript:selectitem("1052453040","/HTTPAdmin/Frame/express.mgtVirtualHosts/Frames",parent.form)

Local intranet

Check Host Aliases

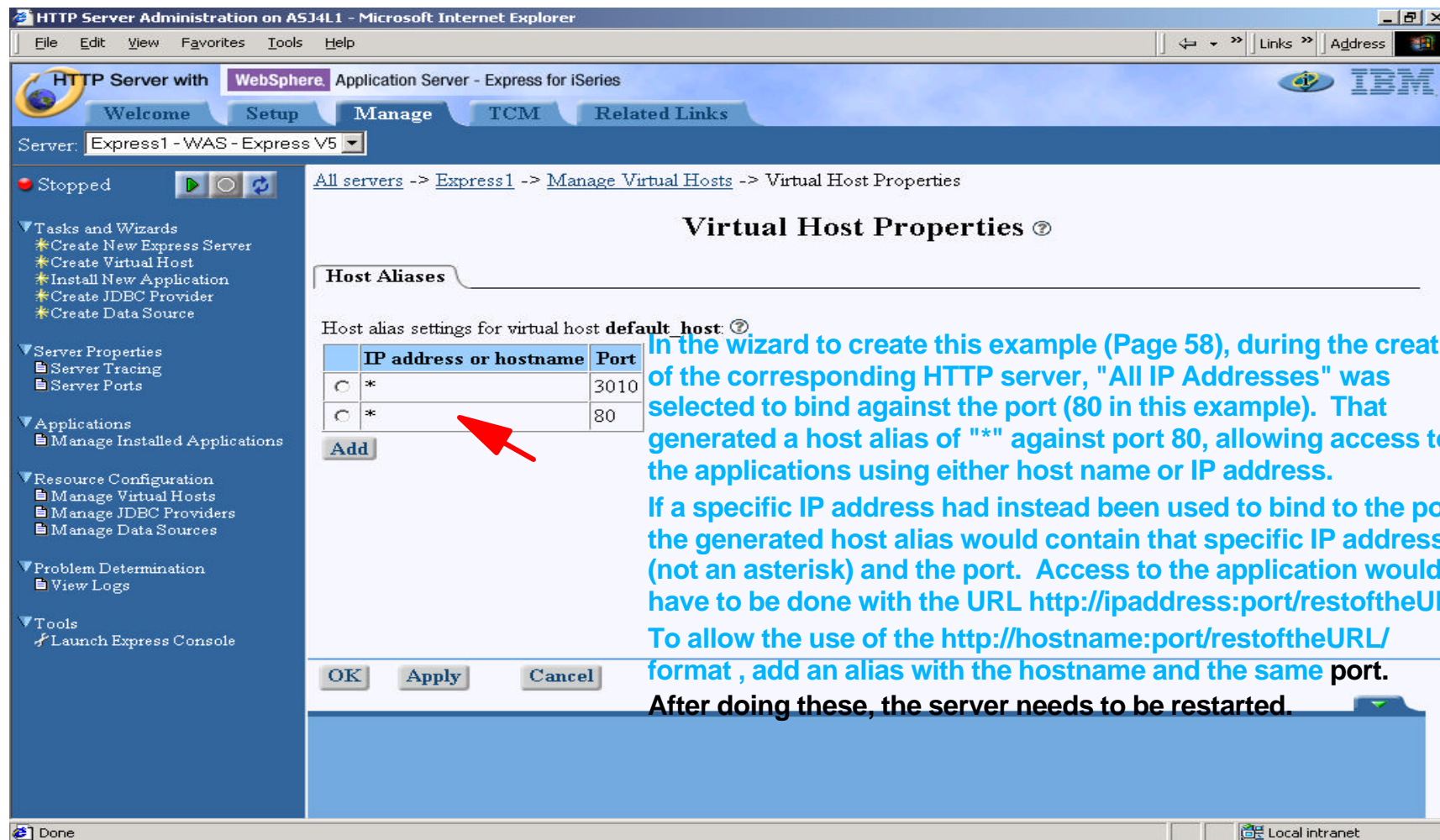


The screenshot shows the 'HTTP Server Administration on ASJ4L1' interface in Microsoft Internet Explorer. The main content area is titled 'Manage Virtual Hosts' and displays a table of virtual hosts:

Virtual host name
<input checked="" type="radio"/> default_host
<input type="radio"/> admin_host

Below the table are buttons for 'Create', 'Properties', and 'Remove'. A red arrow points to the 'Properties' button, with a tooltip that says 'Display the properties.'. The left sidebar contains a navigation tree with categories like 'Tasks and Wizards', 'Server Properties', 'Applications', 'Resource Configuration', 'Problem Determination', and 'Tools'. The status bar at the bottom shows the URL 'http://asj4l1:2001/Properties' and 'Local intranet'.

Check Host Aliases



The screenshot shows the 'Virtual Host Properties' dialog box in the IBM HTTP Server Administration console. The 'Host Aliases' tab is active, displaying a table of host alias settings for the virtual host 'default_host'. A red arrow points to the first row of the table, which has an asterisk (*) in the 'IP address or hostname' column and '3010' in the 'Port' column. The second row has an asterisk (*) in the 'IP address or hostname' column and '80' in the 'Port' column. The 'Add' button is visible below the table.

	IP address or hostname	Port
<input type="radio"/>	*	3010
<input type="radio"/>	*	80

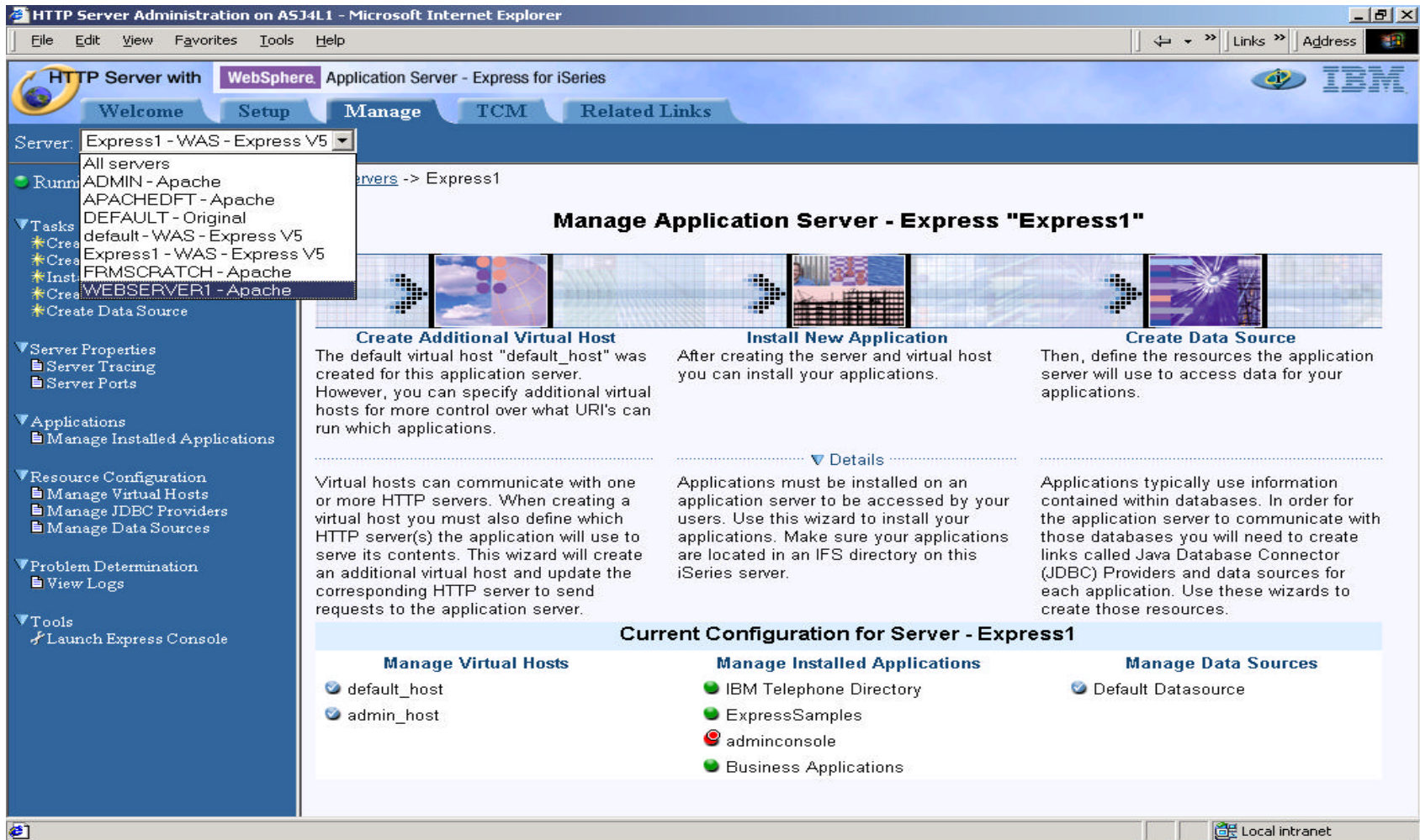
In the wizard to create this example (Page 58), during the creation of the corresponding HTTP server, "All IP Addresses" was selected to bind against the port (80 in this example). That generated a host alias of "*" against port 80, allowing access to the applications using either host name or IP address.

If a specific IP address had instead been used to bind to the port, the generated host alias would contain that specific IP address (not an asterisk) and the port. Access to the application would have to be done with the URL `http://ipaddress:port/restoftheURL/`.

To allow the use of the `http://hostname:port/restoftheURL/` format, add an alias with the hostname and the same port.

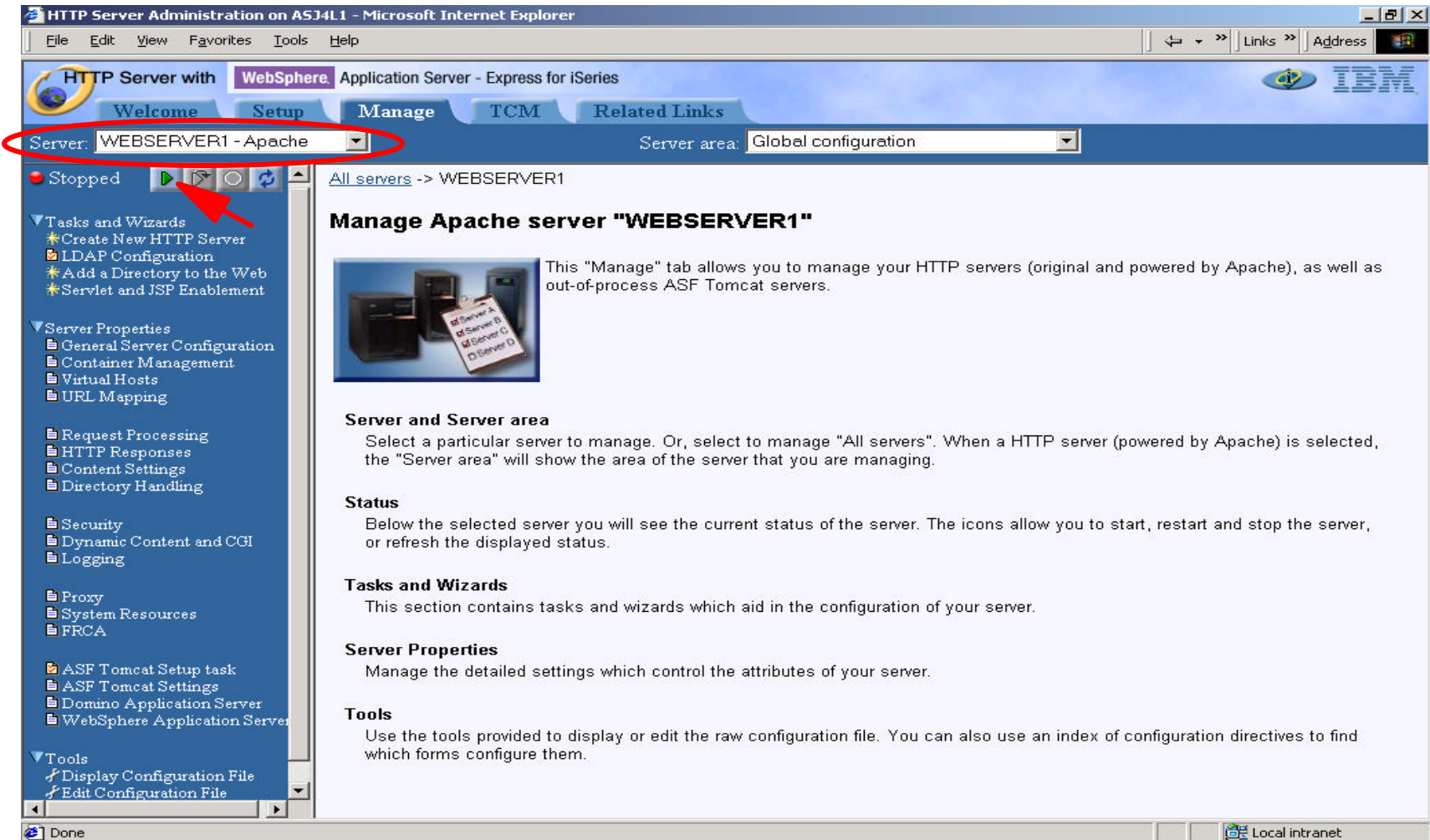
After doing these, the server needs to be restarted.

Select the Corresponding HTTP Server from Drop-down



The screenshot shows the 'HTTP Server Administration on AS/400' interface. The 'Server' dropdown menu is open, showing a list of servers including 'Express1 - WAS - Express V5'. The main content area displays the 'Manage Application Server - Express "Express1"' wizard, which includes sections for 'Create Additional Virtual Host', 'Install New Application', and 'Create Data Source'. At the bottom, there is a 'Current Configuration for Server - Express1' section with three columns: 'Manage Virtual Hosts', 'Manage Installed Applications', and 'Manage Data Sources'.

Start the HTTP Server







HTTP Server Administration on AS/400 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: **WEBSERVER1 - Apache** Server area: Global configuration

Stopped    

Tasks and Wizards

- Create New HTTP Server
- LDAP Configuration
- Add a Directory to the Web
- Servlet and JSP Enablement

Server Properties


- General Server Configuration
- Container Management
- Virtual Hosts
- URL Mapping
- Request Processing
- HTTP Responses
- Content Settings
- Directory Handling
- Security
- Dynamic Content and CGI
- Logging
- Proxy
- System Resources
- FRCA
- ASF Tomcat Setup task
- ASF Tomcat Settings
- Domino Application Server
- WebSphere Application Server

Tools

- Display Configuration File
- Edit Configuration File

All servers -> WEBSERVER1

Manage Apache server "WEBSERVER1"



This "Manage" tab allows you to manage your HTTP servers (original and powered by Apache), as well as out-of-process ASF Tomcat servers.

Server and Server area

Select a particular server to manage. Or, select to manage "All servers". When a HTTP server (powered by Apache) is selected, the "Server area" will show the area of the server that you are managing.

Status

Below the selected server you will see the current status of the server. The icons allow you to start, restart and stop the server, or refresh the displayed status.

Tasks and Wizards

This section contains tasks and wizards which aid in the configuration of your server.

Server Properties

Manage the detailed settings which control the attributes of your server.

Tools

Use the tools provided to display or edit the raw configuration file. You can also use an index of configuration directives to find which forms configure them.

Done Local intranet

Test a Sample - Success if Snoop shows!

- `http://<server name>/Snoop`

Snoop Servlet - Request/Client Information

Requested URL:

http://asj411/Snoop

Servlet Name:

Snoop Servlet

Request Information:

Request method	GET
Request URI	/Snoop
Request protocol	HTTP/1.0
Servlet path	/Snoop
Path info	<none>
Path translated	<none>
Character encoding	<none>
Query string	<none>
Content length	<none>



IBM server™ iSeries™

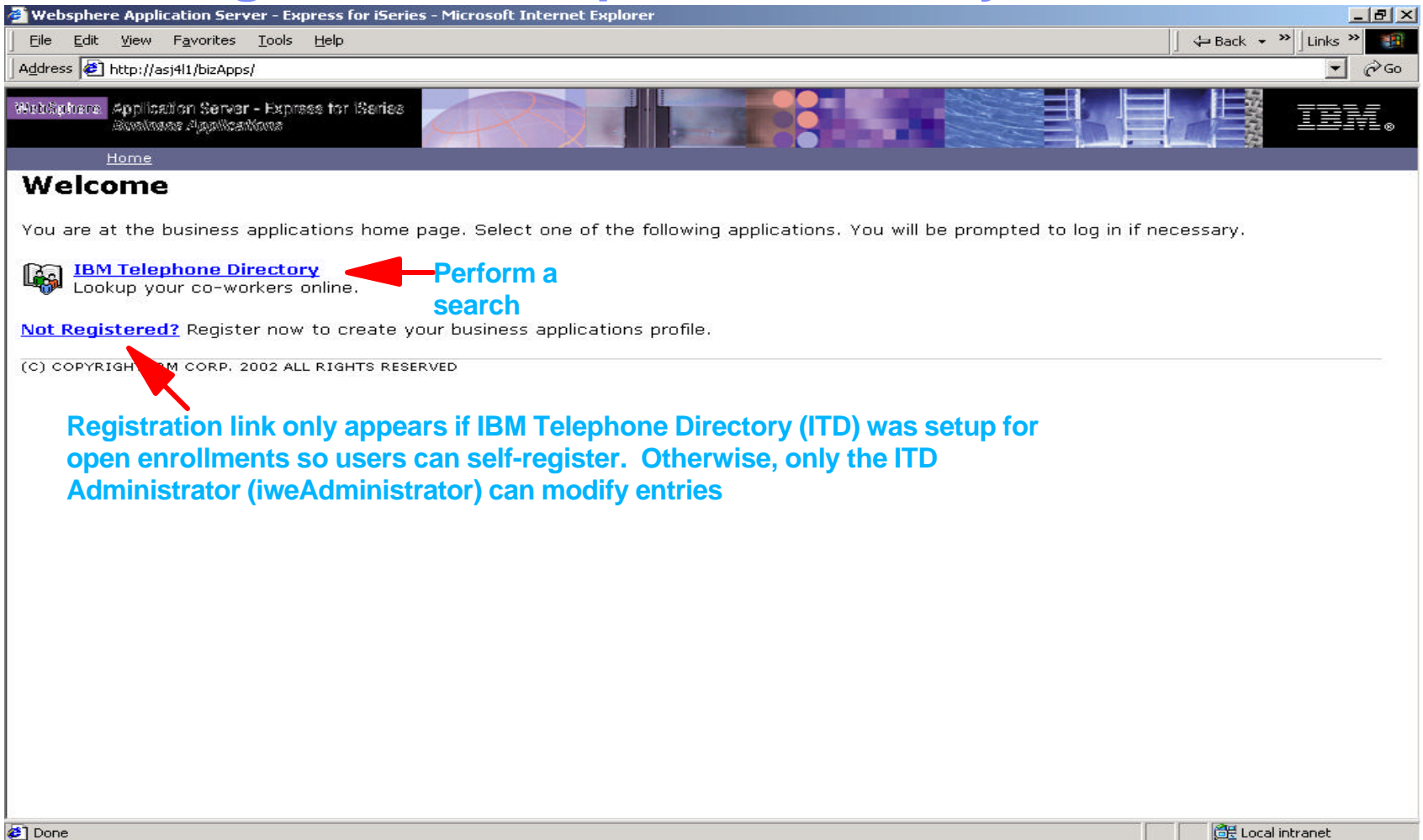
IBM server™ & TotalStorage™
UNIVERSITY 2003

Testing the IBM Telephone Directory

IBM & IBM Business Partner Use Only Until Announced

© 2003 IBM Corporation

Accessing the IBM Telephone Directory <http://<server>:<port>/bizApps>



WebSphere Application Server - Express for iSeries - Microsoft Internet Explorer



File Edit View Favorites Tools Help

Address <http://asj41/bizApps/>

Home

Welcome

You are at the business applications home page. Select one of the following applications. You will be prompted to log in if necessary.

 [IBM Telephone Directory](#)  **Perform a search**
 Lookup your co-workers online.

[Not Registered?](#) Register now to create your business applications profile.

(C) COPYRIGHT IBM CORP. 2002 ALL RIGHTS RESERVED

Registration link only appears if IBM Telephone Directory (ITD) was setup for open enrollments so users can self-register. Otherwise, only the ITD Administrator (iweAdministrator) can modify entries

Done Local intranet

Search

WebSphere Application Server - Express for iSeries - Microsoft Internet Explorer

File Edit View Favorites Tools Help

← Back → Links >> Address

WebSphere Application Server - Express for iSeries Business Applications

Home

[Search](#)
[Advanced Search](#)
[Help](#)
[Register](#)

Search

Search for an employee using the fields below.

Search On: [Advanced Search](#)

Search For:

Have Same Manager Report-to-Chain


[Update Profile](#) [Change Password](#) [Delete Profile](#)

Llames, Leonardo

Preferred First Name: **Leonardo**

Manager: **No**

User ID: **Leonardo Llames**



Local intranet

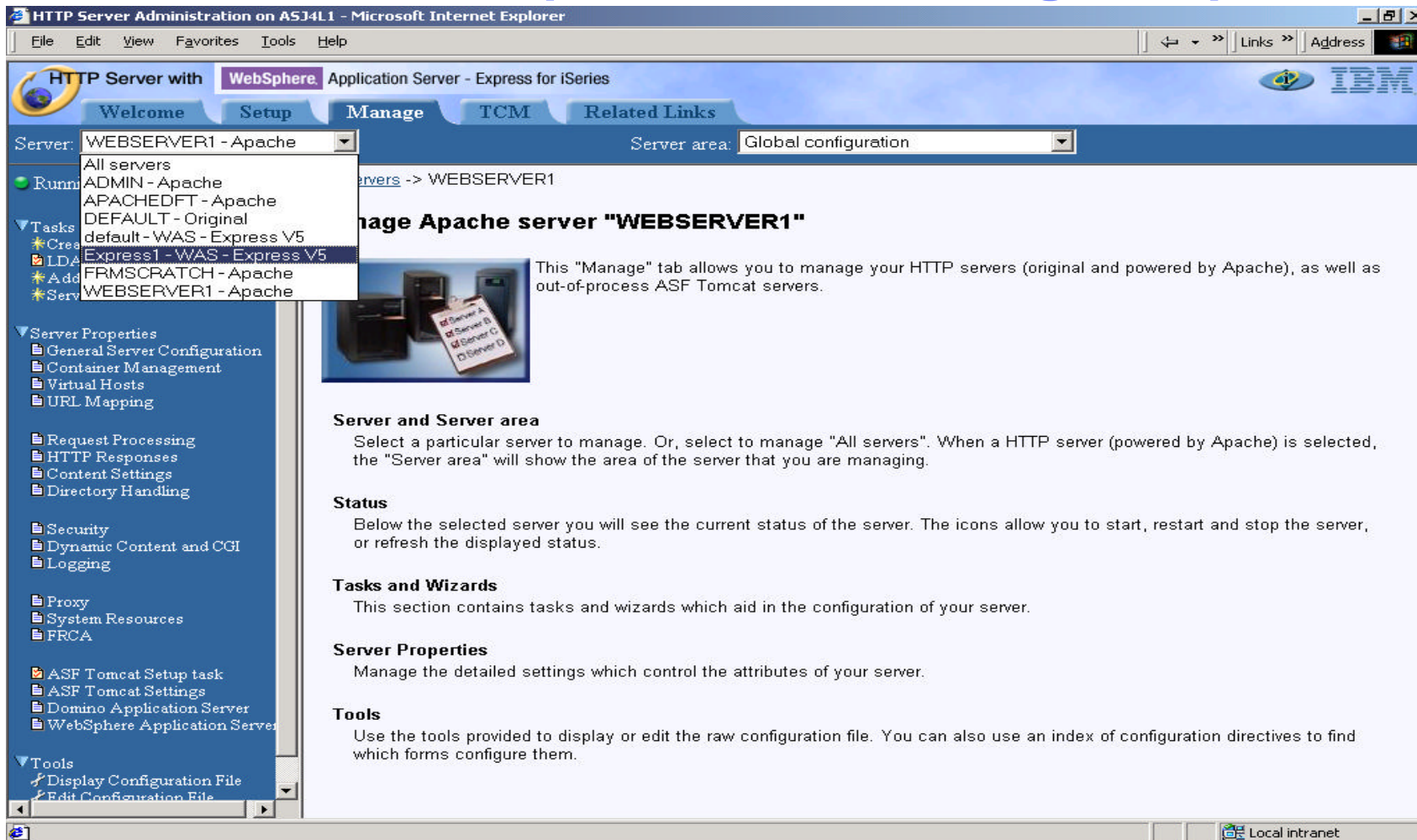


IBM server™ iSeries™

IBM server™ & TotalStorage™
UNIVERSITY 2003

**Managing the Express Server -
adminconsole**

Access Your WAS Express Server Through Drop-down



Server: WEBSEVER1 - Apache

Server area: Global configuration

Manage Apache server "WEBSEVER1"

This "Manage" tab allows you to manage your HTTP servers (original and powered by Apache), as well as out-of-process ASF Tomcat servers.

Server and Server area
 Select a particular server to manage. Or, select to manage "All servers". When a HTTP server (powered by Apache) is selected, the "Server area" will show the area of the server that you are managing.

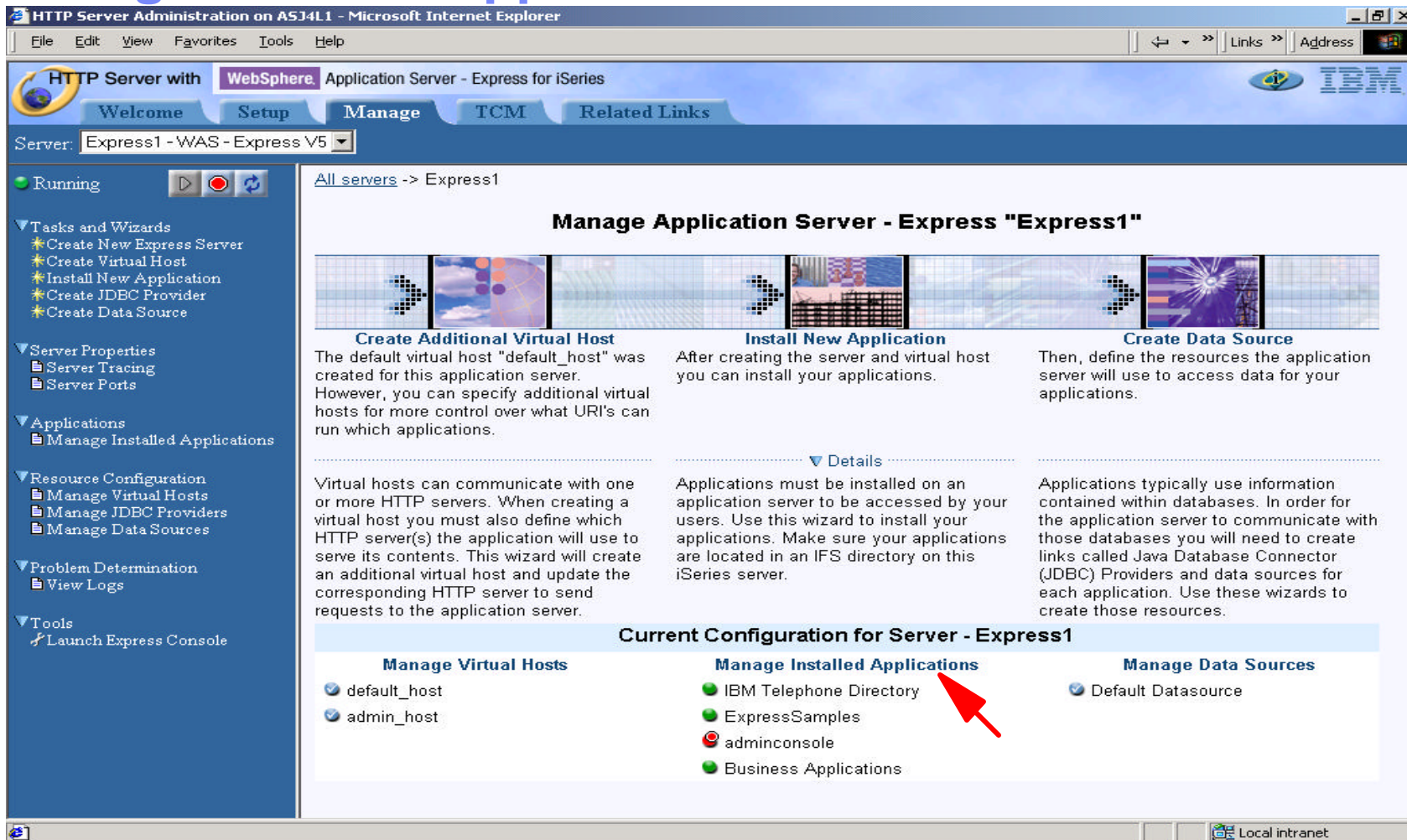
Status
 Below the selected server you will see the current status of the server. The icons allow you to start, restart and stop the server, or refresh the displayed status.


Tasks and Wizards
 This section contains tasks and wizards which aid in the configuration of your server.

Server Properties
 Manage the detailed settings which control the attributes of your server.

Tools
 Use the tools provided to display or edit the raw configuration file. You can also use an index of configuration directives to find which forms configure them.

Manage Installed Applications



Running 

Tasks and Wizards

- Create New Express Server
- Create Virtual Host
- Install New Application
- Create JDBC Provider
- Create Data Source

Server Properties

- Server Tracing
- Server Ports

Applications

- Manage Installed Applications

Resource Configuration

- Manage Virtual Hosts
- Manage JDBC Providers
- Manage Data Sources

Problem Determination

- View Logs

Tools

- Launch Express Console

All servers -> Express1

Manage Application Server - Express "Express1"

Create Additional Virtual Host

The default virtual host "default_host" was created for this application server. However, you can specify additional virtual hosts for more control over what URI's can run which applications.

Virtual hosts can communicate with one or more HTTP servers. When creating a virtual host you must also define which HTTP server(s) the application will use to serve its contents. This wizard will create an additional virtual host and update the corresponding HTTP server to send requests to the application server.

Install New Application

After creating the server and virtual host you can install your applications.

Applications must be installed on an application server to be accessed by your users. Use this wizard to install your applications. Make sure your applications are located in an IFS directory on this iSeries server.

Create Data Source

Then, define the resources the application server will use to access data for your applications.

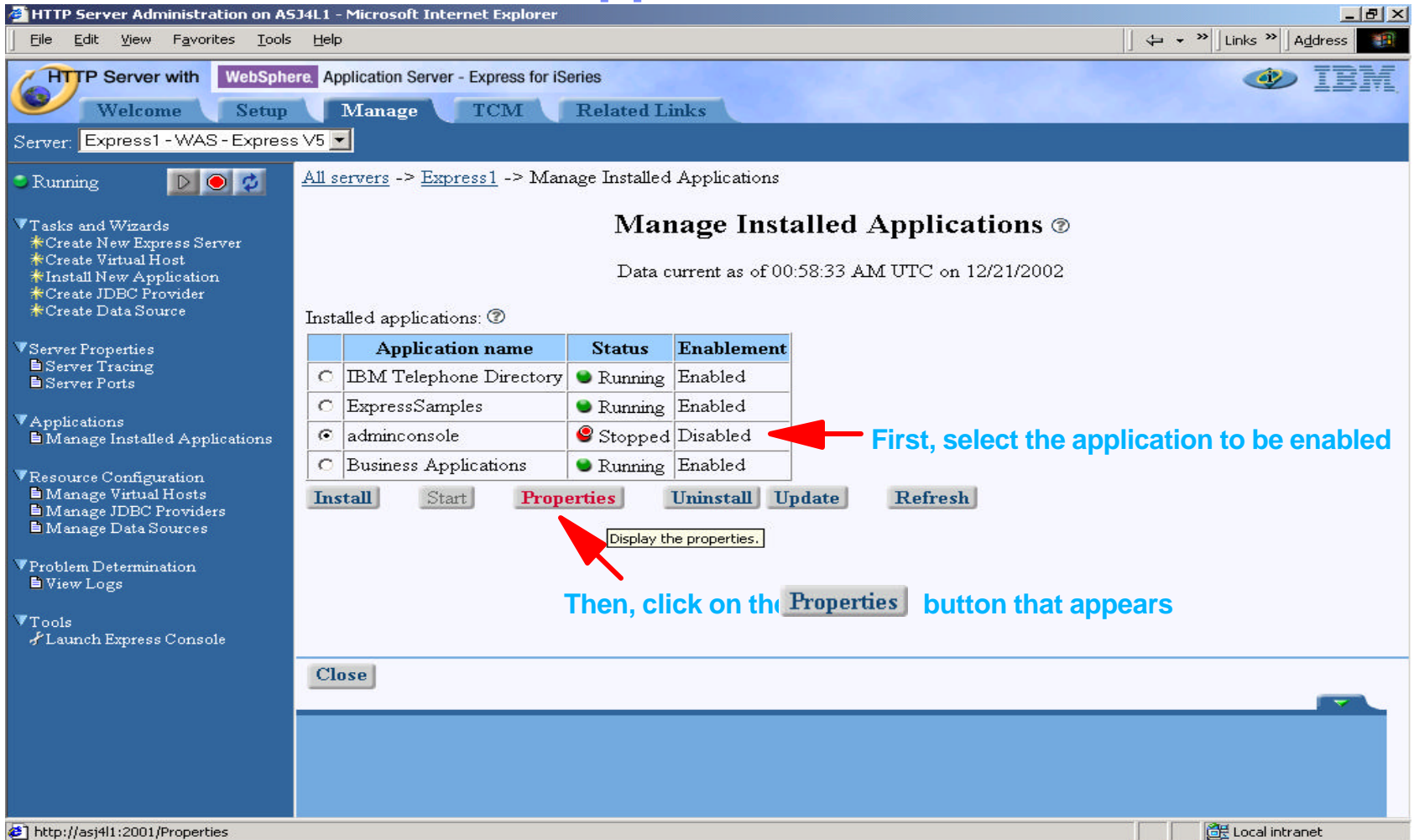
Applications typically use information contained within databases. In order for the application server to communicate with those databases you will need to create links called Java Database Connector (JDBC) Providers and data sources for each application. Use these wizards to create those resources.

▼ Details

Current Configuration for Server - Express1		
Manage Virtual Hosts	Manage Installed Applications	Manage Data Sources
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> default_host <input checked="" type="checkbox"/> admin_host 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> IBM Telephone Directory <input checked="" type="checkbox"/> ExpressSamples <input checked="" type="checkbox"/> adminconsole <input checked="" type="checkbox"/> Business Applications 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Default Datasource

Local intranet

Enable adminconsole Application



HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

HTTP Server with **WebSphere** Application Server - Express for iSeries

Server: Express1 - WAS - Express V5

All servers -> Express1 -> Manage Installed Applications

Manage Installed Applications ©

Data current as of 00:58:33 AM UTC on 12/21/2002

Installed applications: ©

	Application name	Status	Enablement
<input type="radio"/>	IBM Telephone Directory	● Running	Enabled
<input type="radio"/>	ExpressSamples	● Running	Enabled
<input checked="" type="radio"/>	adminconsole	● Stopped	Disabled
<input type="radio"/>	Business Applications	● Running	Enabled

Buttons: **Install** Start **Properties** Uninstall Update Refresh

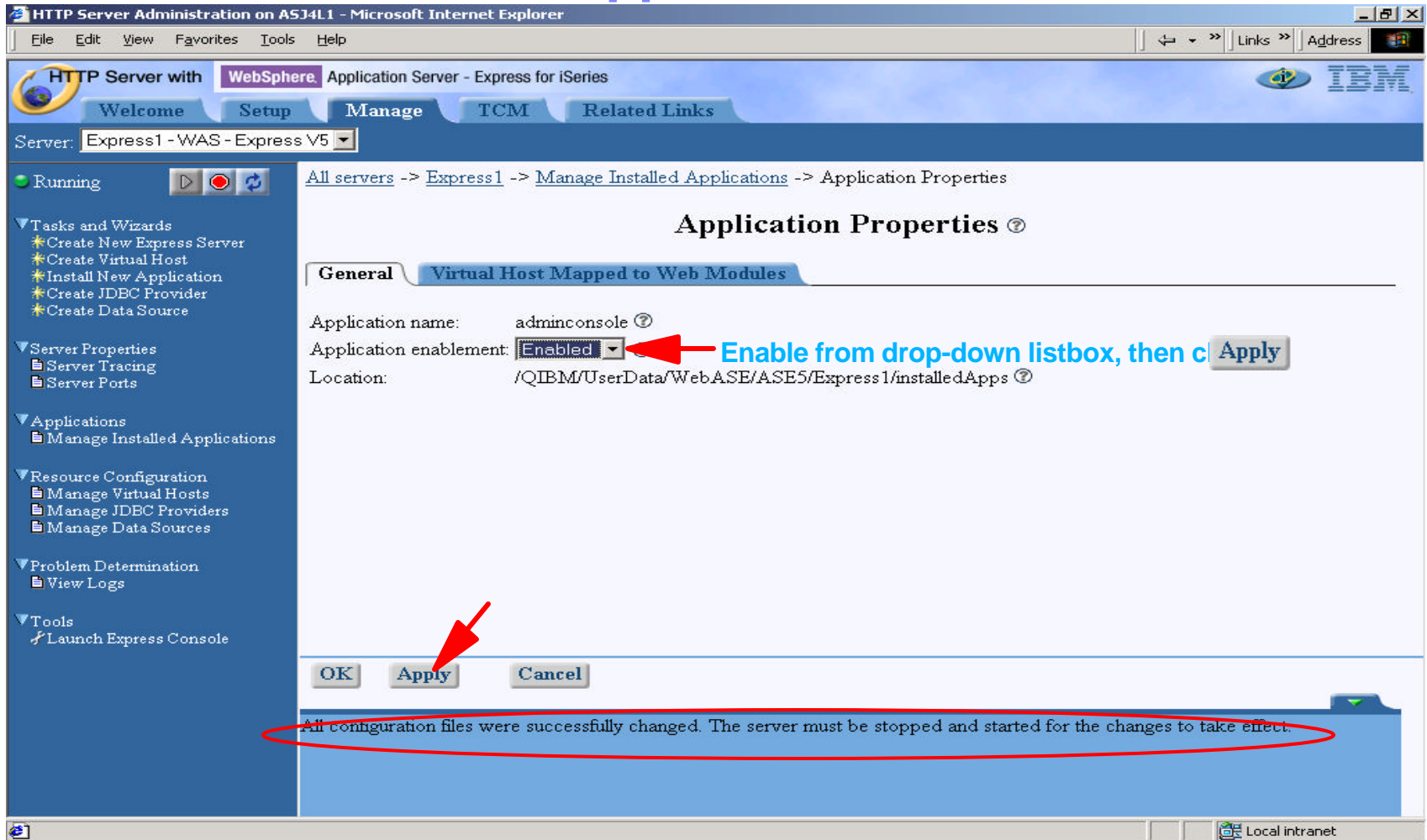
Close

http://asj4l1:2001/Properties

First, select the application to be enabled

Then, click on the **Properties** button that appears

Enable adminconsole Application




HTTP Server Administration on AS34L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links


Server: Express1 - WAS - Express V5


Running 


All servers -> Express1 -> Manage Installed Applications -> Application Properties


Application Properties

General Virtual Host Mapped to Web Modules

Application name: adminconsole 

Application enablement: **Enabled**  **Enable from drop-down listbox, then click Apply**

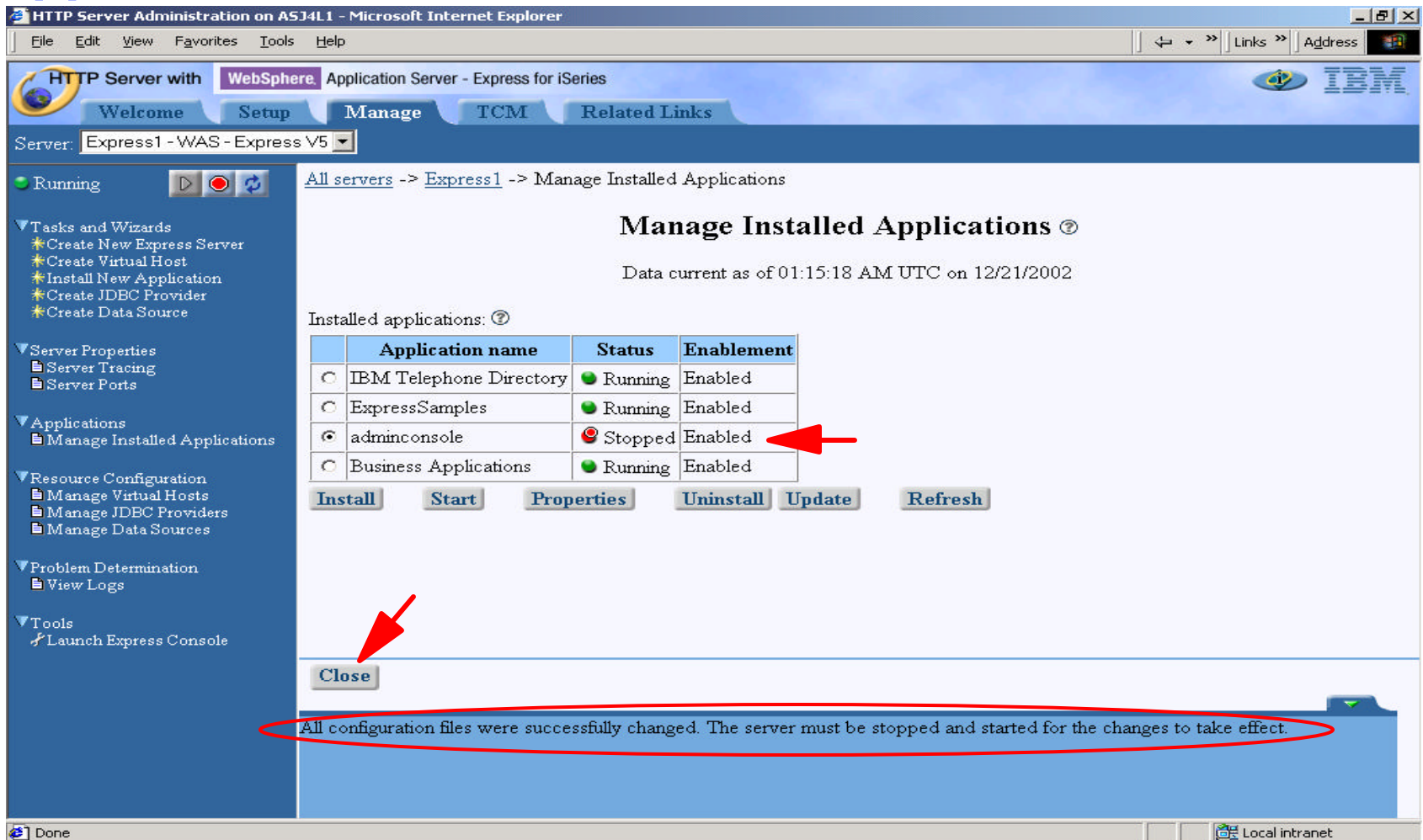
Location: /QIBM/UserData/Web.ASE/ASE5/Express1/installedApps 

OK **Apply**  Cancel

All configuration files were successfully changed. The server must be stopped and started for the changes to take effect.

Local intranet

Application now enabled



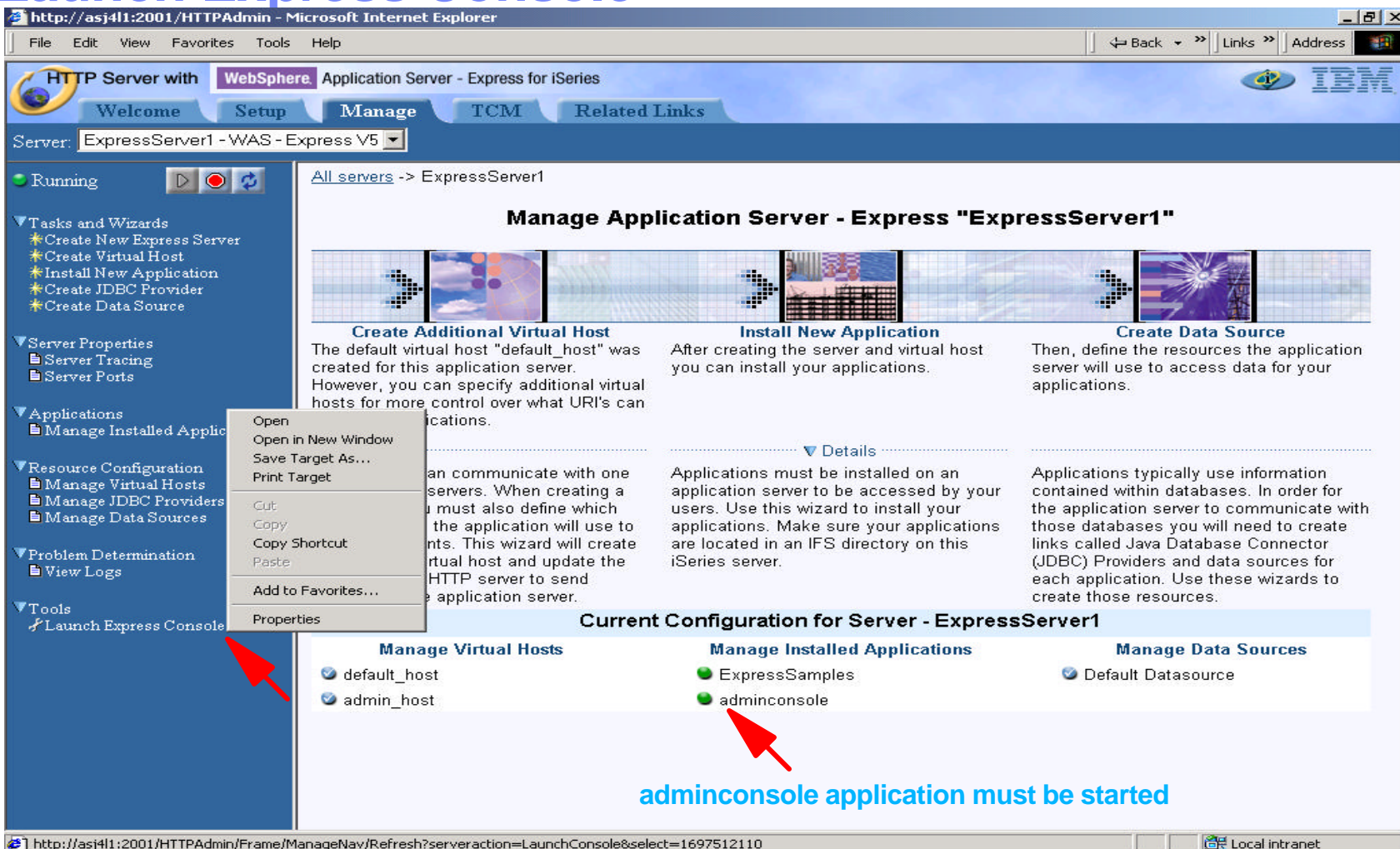
The screenshot shows the 'Manage Installed Applications' page in a Microsoft Internet Explorer browser. The page title is 'Manage Installed Applications ©' and the data is current as of 01:15:18 AM UTC on 12/21/2002. The server is 'Express1 - WAS - Express V5'. The 'adminconsole' application is listed with a status of 'Stopped' and 'Enabled' for enablement. A red arrow points to the 'adminconsole' row. Below the table are buttons for 'Install', 'Start', 'Properties', 'Uninstall', 'Update', and 'Refresh'. A 'Close' button is also visible, with a red arrow pointing to it. A red oval highlights a message at the bottom: 'All configuration files were successfully changed. The server must be stopped and started for the changes to take effect.'

	Application name	Status	Enablement
<input type="radio"/>	IBM Telephone Directory	● Running	Enabled
<input type="radio"/>	ExpressSamples	● Running	Enabled
<input checked="" type="radio"/>	adminconsole	● Stopped	Enabled
<input type="radio"/>	Business Applications	● Running	Enabled

Buttons: **Install** **Start** **Properties** **Uninstall** **Update** **Refresh**

Message: All configuration files were successfully changed. The server must be stopped and started for the changes to take effect.

Launch Express Console



http://asj411:2001/HTTPAdmin - Microsoft Internet Explorer




File Edit View Favorites Tools Help

Back Links Address

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: ExpressServer1 - WAS - Express V5

Running   

Tasks and Wizards

- Create New Express Server
- Create Virtual Host
- Install New Application
- Create JDBC Provider
- Create Data Source

Server Properties

- Server Tracing
- Server Ports

Applications

- Manage Installed Applications

Resource Configuration

- Manage Virtual Hosts
- Manage JDBC Providers
- Manage Data Sources

Problem Determination

- View Logs

Tools

- Launch Express Console

All servers -> ExpressServer1

Manage Application Server - Express "ExpressServer1"

Create Additional Virtual Host

The default virtual host "default_host" was created for this application server. However, you can specify additional virtual hosts for more control over what URI's can be accessed.

Applications must be installed on an application server to be accessed by your users. Use this wizard to install your applications. Make sure your applications are located in an IFS directory on this iSeries server.

Install New Application

After creating the server and virtual host you can install your applications.

Applications must be installed on an application server to be accessed by your users. Use this wizard to install your applications. Make sure your applications are located in an IFS directory on this iSeries server.

Create Data Source

Then, define the resources the application server will use to access data for your applications.

Applications typically use information contained within databases. In order for the application server to communicate with those databases you will need to create links called Java Database Connector (JDBC) Providers and data sources for each application. Use these wizards to create those resources.

▼ Details

Current Configuration for Server - ExpressServer1

Manage Virtual Hosts

- default_host
- admin_host

Manage Installed Applications

- ExpressSamples
- adminconsole

Manage Data Sources

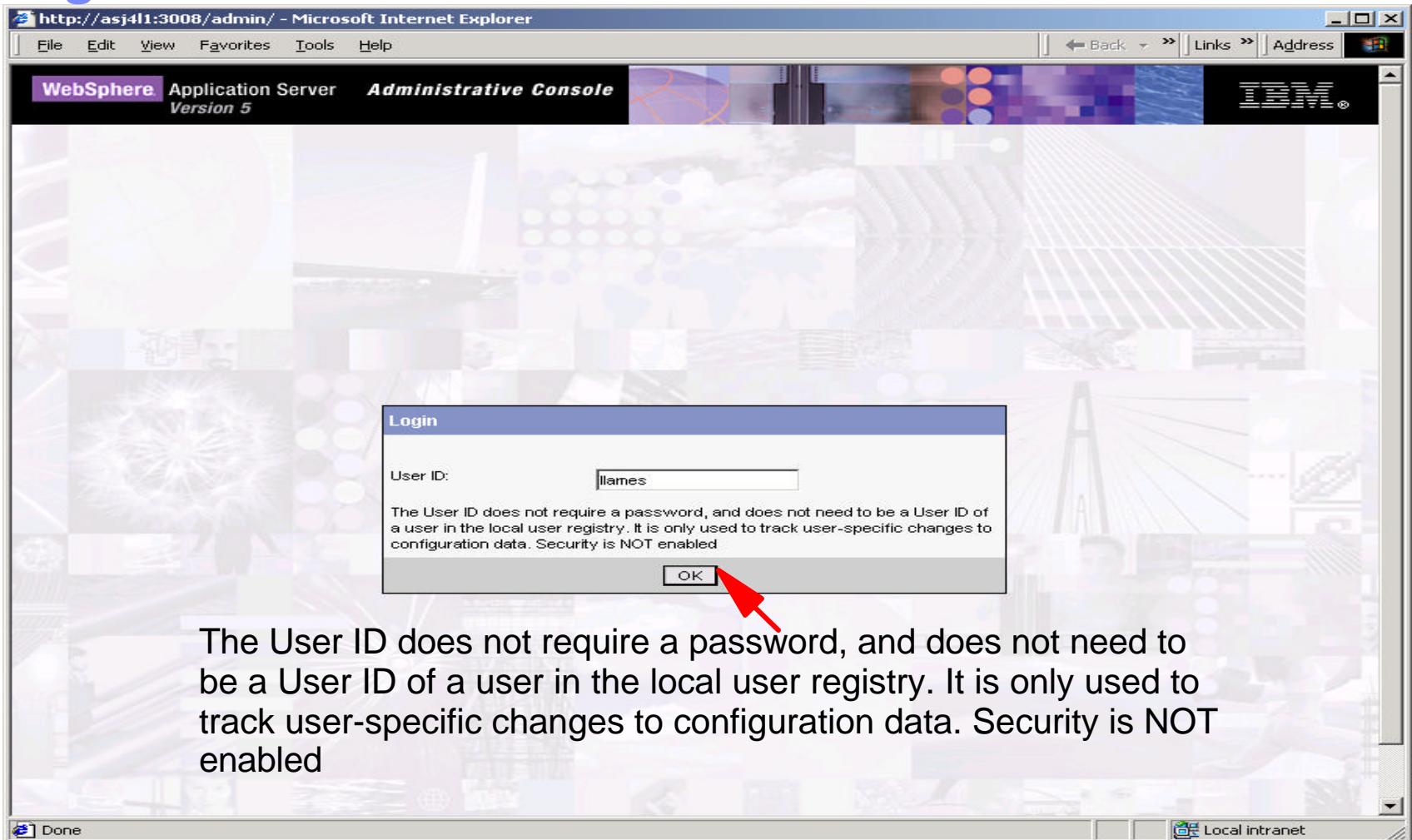
- Default Datasource

adminconsole application must be started

http://asj411:2001/HTTPAdmin/Frame/ManageNav/Refresh?serveraction=LaunchConsole&select=1697512110

Local intranet

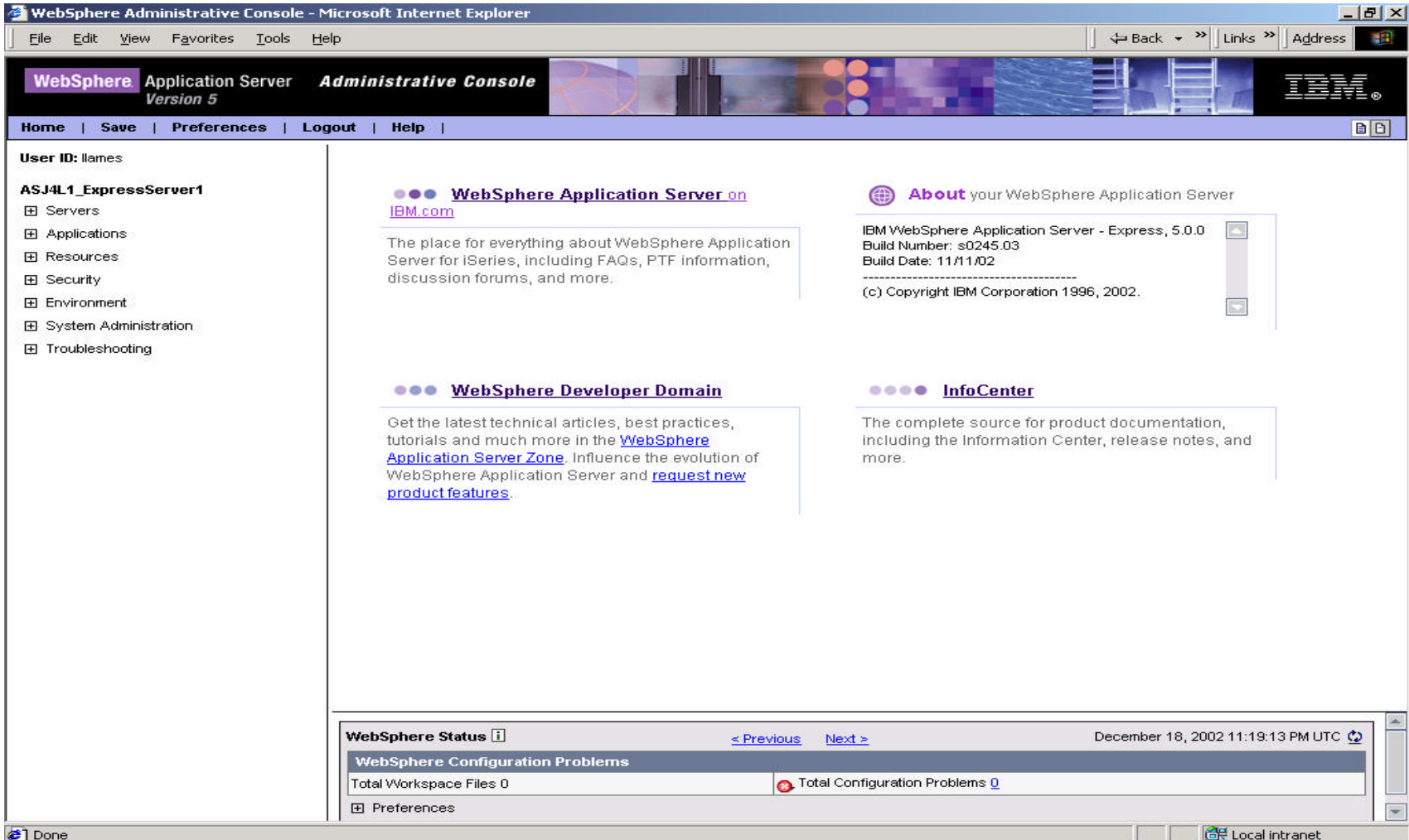
Login



The screenshot shows a Microsoft Internet Explorer browser window displaying the WebSphere Administrative Console. A 'Login' dialog box is open in the center of the screen. The dialog box has a title bar that says 'Login'. Inside, there is a 'User ID:' label followed by a text input field containing the text 'llames'. Below the input field, there is a paragraph of text: 'The User ID does not require a password, and does not need to be a User ID of a user in the local user registry. It is only used to track user-specific changes to configuration data. Security is NOT enabled'. At the bottom of the dialog box, there is an 'OK' button. A red arrow points to the 'OK' button.

The User ID does not require a password, and does not need to be a User ID of a user in the local user registry. It is only used to track user-specific changes to configuration data. Security is NOT enabled

Administrative Console!



WebSphere Application Server Administrative Console
Version 5

Home | Save | Preferences | Logout | Help

User ID: llames

ASJ4L1_ExpressServer1

- [-] Servers
- [-] Applications
- [-] Resources
- [-] Security
- [-] Environment
- [-] System Administration
- [-] Troubleshooting

WebSphere Application Server on IBM.com

The place for everything about WebSphere Application Server for iSeries, including FAQs, PTF information, discussion forums, and more.

About your WebSphere Application Server

IBM WebSphere Application Server - Express, 5.0.0
Build Number: s0245.03
Build Date: 11/11/02

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WebSphere Developer Domain

Get the latest technical articles, best practices, tutorials and much more in the [WebSphere Application Server Zone](#). Influence the evolution of WebSphere Application Server and [request new product features](#).

InfoCenter

The complete source for product documentation, including the Information Center, release notes, and more.

WebSphere Status | < Previous | Next > | December 18, 2002 11:19:13 PM UTC

WebSphere Configuration Problems

Total Workspace Files 0 | Total Configuration Problems 0

[-] Preferences | Local intranet



IBM server™ iSeries™

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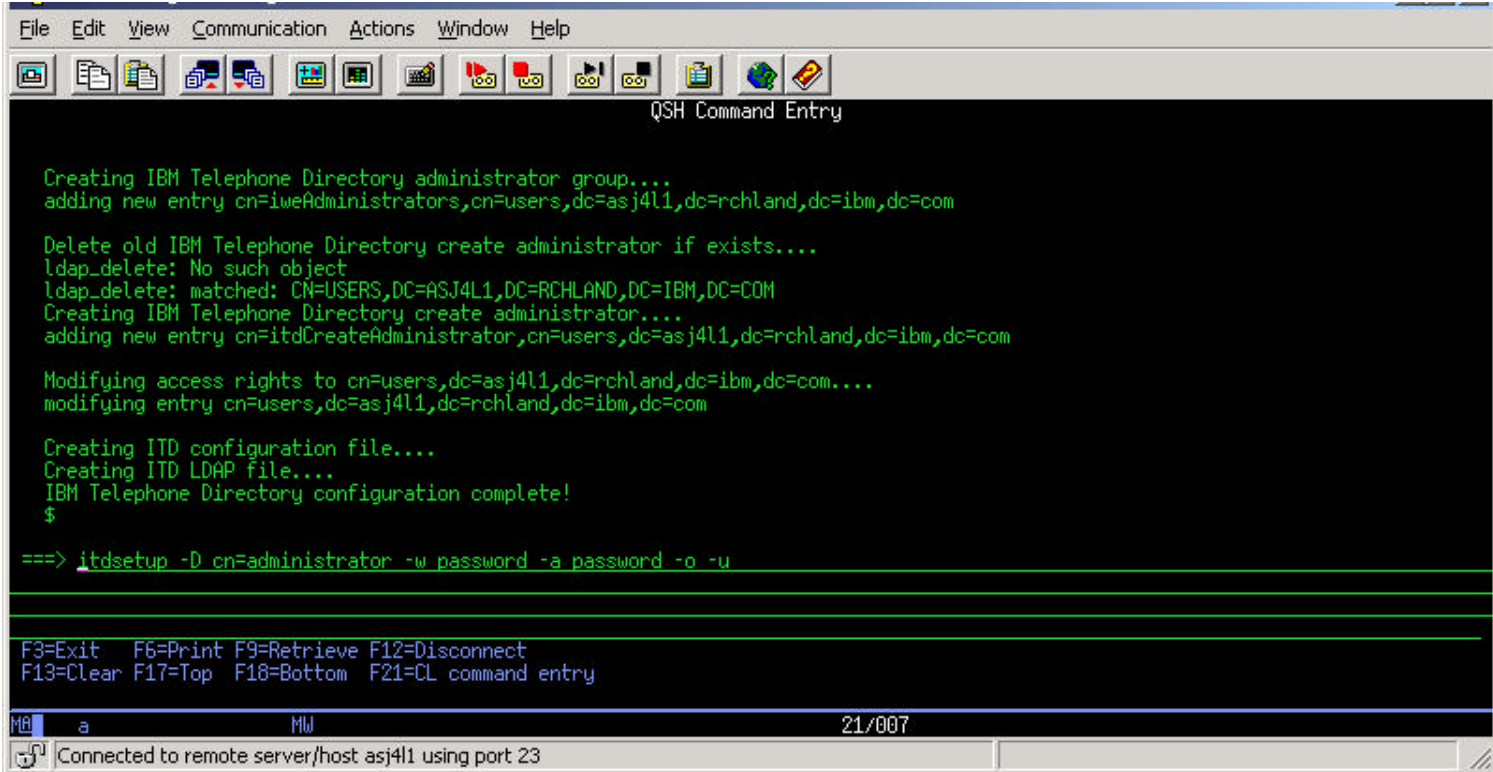
**Manual Configuration, IBM Telephone
Directory - 5722-IWE Option 3**

Manual Configuration - ITD

- Preferred way of configuring ITD is:
 - ▶ 1. Pre-configured
 - ▶ 2. WAS Express wizard
- "Basic Installation and Configuration" flowchart had the following:
 - ▶ Setup and Start LDAP
 - ▶ Run the itdsetup script
 - ▶ These are shown in other sections
- This section describes ITD Configuration outside WAS Express wizard
 - ▶ labor-intensive
 - ▶ error-prone
- If you used the WAS Express wizard for ITD, you do not need this section

In Qshell, IBM Telephone Directory Setup

- From OS/400 command line, type QSH or STRQSH
- In QSH, entering `itdsetup` alone will display & describe parameters
- See example below but do not use the same passwords
- Need the LDAP Administrator password to run `itdsetup`
 - ▶ if unknown, change password, described in LDAP section



```
File Edit View Communication Actions Window Help
Creating IBM Telephone Directory administrator group...
adding new entry cn=iweAdministrators,cn=users,dc=asj4l1,dc=rchland,dc=ibm,dc=com

Delete old IBM Telephone Directory create administrator if exists...
ldap_delete: No such object
ldap_delete: matched: CN=USERS,DC=ASJ4L1,DC=RCHLAND,DC=IBM,DC=COM
Creating IBM Telephone Directory create administrator...
adding new entry cn=itdCreateAdministrator,cn=users,dc=asj4l1,dc=rchland,dc=ibm,dc=com

Modifying access rights to cn=users,dc=asj4l1,dc=rchland,dc=ibm,dc=com...
modifying entry cn=users,dc=asj4l1,dc=rchland,dc=ibm,dc=com

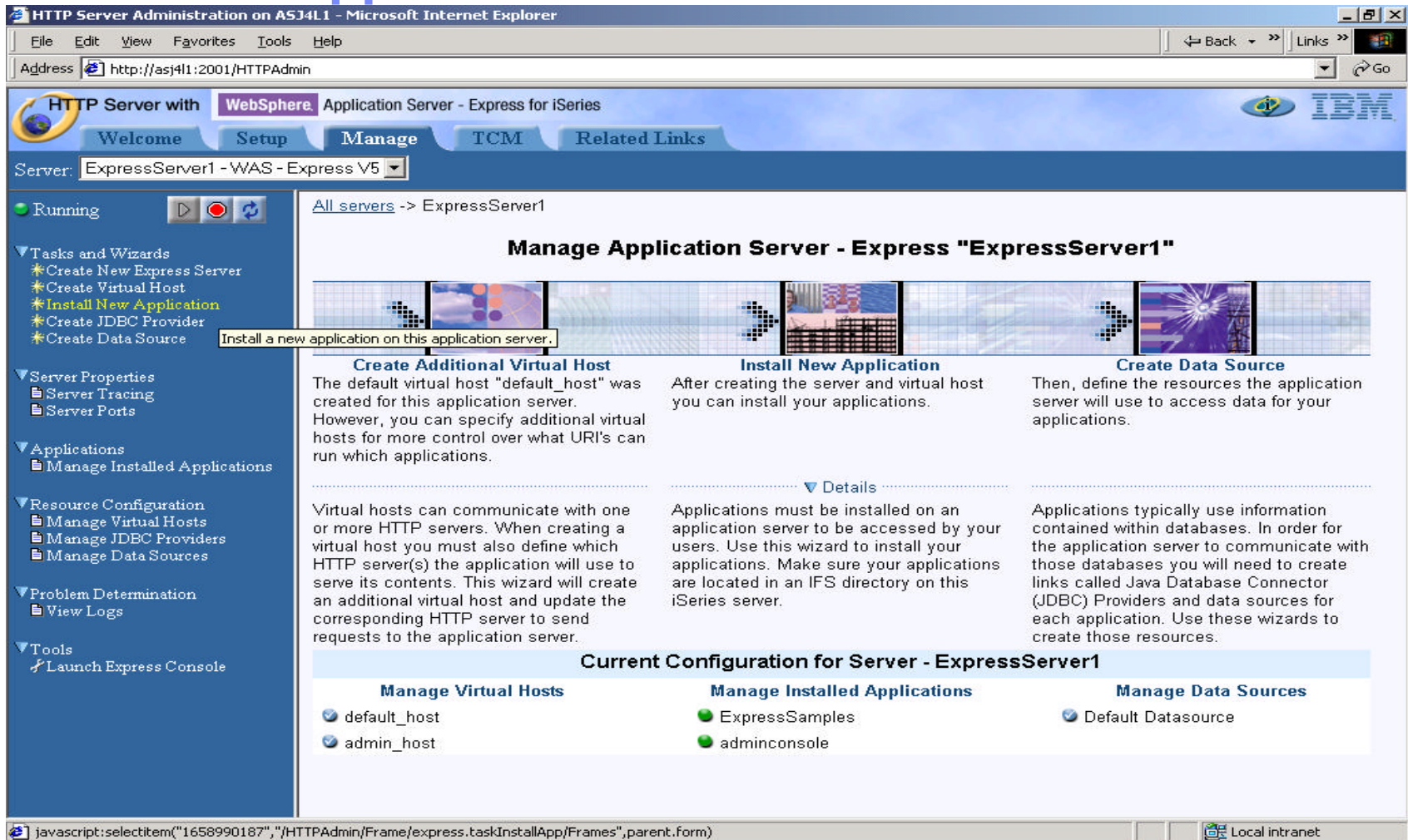
Creating ITD configuration file...
Creating ITD LDAP file...
IBM Telephone Directory configuration complete!
$

==> itdsetup -D cn=administrator -w password -a password -o -u

F3=Exit F6=Print F9=Retrieve F12=Disconnect
F13=Clear F17=Top F18=Bottom F21=CL command entry

a MW 21/007
Connected to remote server/host asj4l1 using port 23
```

Install New Application



The screenshot shows the 'HTTP Server Administration on AS/411 - Microsoft Internet Explorer' window. The browser address bar shows 'http://asj411:2001/HTTPAdmin'. The page title is 'HTTP Server with WebSphere Application Server - Express for iSeries'. The server selected is 'ExpressServer1 - WAS - Express V5'. The main content area is titled 'Manage Application Server - Express "ExpressServer1"'. It features a navigation pane on the left with categories like 'Tasks and Wizards', 'Server Properties', 'Applications', 'Resource Configuration', 'Problem Determination', and 'Tools'. The 'Install New Application' wizard is displayed with three steps: 'Create Additional Virtual Host', 'Install New Application', and 'Create Data Source'. Below the wizard steps is a 'Current Configuration for Server - ExpressServer1' section with three columns: 'Manage Virtual Hosts', 'Manage Installed Applications', and 'Manage Data Sources'.

Manage Application Server - Express "ExpressServer1"

Install a new application on this application server.

Create Additional Virtual Host
The default virtual host "default_host" was created for this application server. However, you can specify additional virtual hosts for more control over what URI's can run which applications.

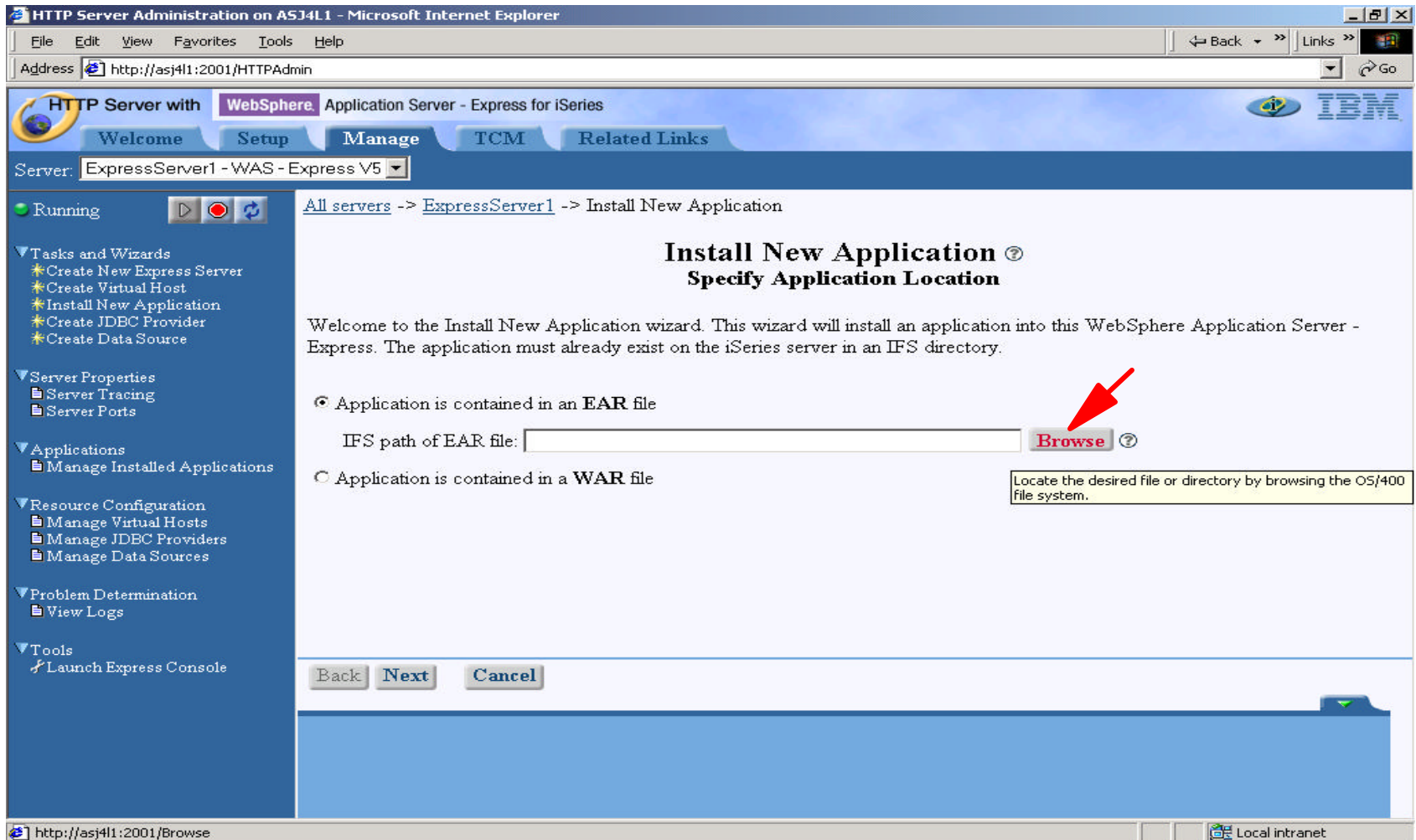
Install New Application
After creating the server and virtual host you can install your applications.

Create Data Source
Then, define the resources the application server will use to access data for your applications.

Current Configuration for Server - ExpressServer1

Manage Virtual Hosts	Manage Installed Applications	Manage Data Sources
<ul style="list-style-type: none"> <input checked="" type="checkbox"/> default_host <input checked="" type="checkbox"/> admin_host 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> ExpressSamples <input checked="" type="checkbox"/> adminconsole 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Default Datasource

Browse for the .EAR file



HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

Address: http://asj4l1:2001/HTTPAdmin

HTTP Server with **WebSphere** Application Server - Express for iSeries

Server: ExpressServer1 - WAS - Express V5

Running

- Tasks and Wizards
 - Create New Express Server
 - Create Virtual Host
 - Install New Application**
 - Create JDBC Provider
 - Create Data Source
- Server Properties
 - Server Tracing
 - Server Ports
- Applications
 - Manage Installed Applications
- Resource Configuration
 - Manage Virtual Hosts
 - Manage JDBC Providers
 - Manage Data Sources
- Problem Determination
 - View Logs
- Tools
 - Launch Express Console

All servers -> ExpressServer1 -> Install New Application

Install New Application [?]

Specify Application Location

Welcome to the Install New Application wizard. This wizard will install an application into this WebSphere Application Server - Express. The application must already exist on the iSeries server in an IFS directory.

Application is contained in an **EAR** file

IFS path of EAR file: **Browse** [?]

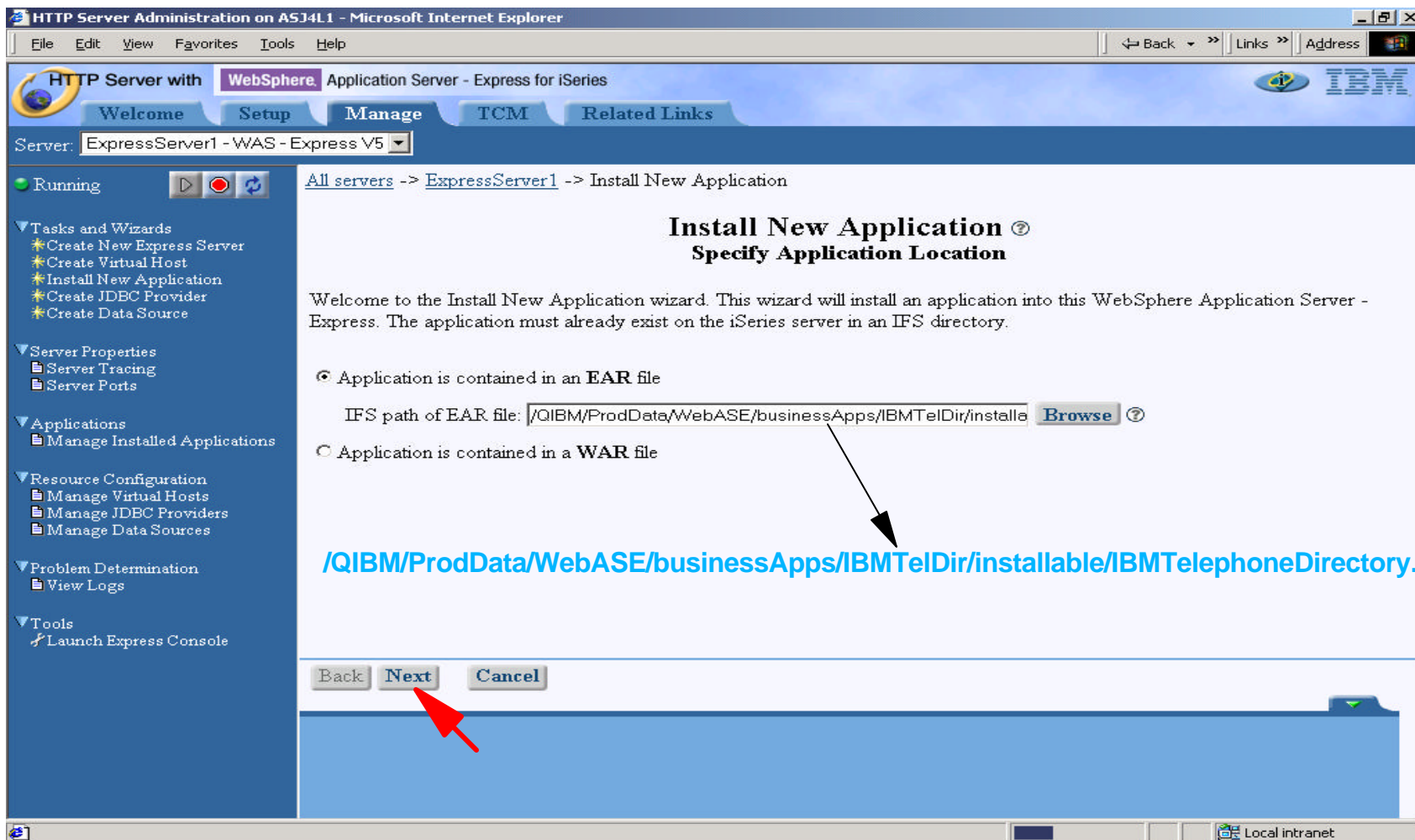
Application is contained in a **WAR** file

Locate the desired file or directory by browsing the OS/400 file system.

Back Next Cancel

http://asj4l1:2001/Browse Local intranet

.EAR File Selected



HTTP Server Administration on AS/400 - Microsoft Internet Explorer


File Edit View Favorites Tools Help

← Back → Links → Address

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: ExpressServer1 - WAS - Express V5

Running 

Tasks and Wizards

- Create New Express Server
- Create Virtual Host
- Install New Application
- Create JDBC Provider
- Create Data Source

Server Properties

- Server Tracing
- Server Ports

Applications

- Manage Installed Applications

Resource Configuration

- Manage Virtual Hosts
- Manage JDBC Providers
- Manage Data Sources

Problem Determination

- View Logs

Tools

- Launch Express Console


All servers -> ExpressServer1 -> Install New Application

Install New Application

Specify Application Location

Welcome to the Install New Application wizard. This wizard will install an application into this WebSphere Application Server - Express. The application must already exist on the iSeries server in an IFS directory.

Application is contained in an **EAR** file

IFS path of EAR file: /QIBM/ProdData/WebASE/businessApps/IBMTelDir/installable **Browse** 

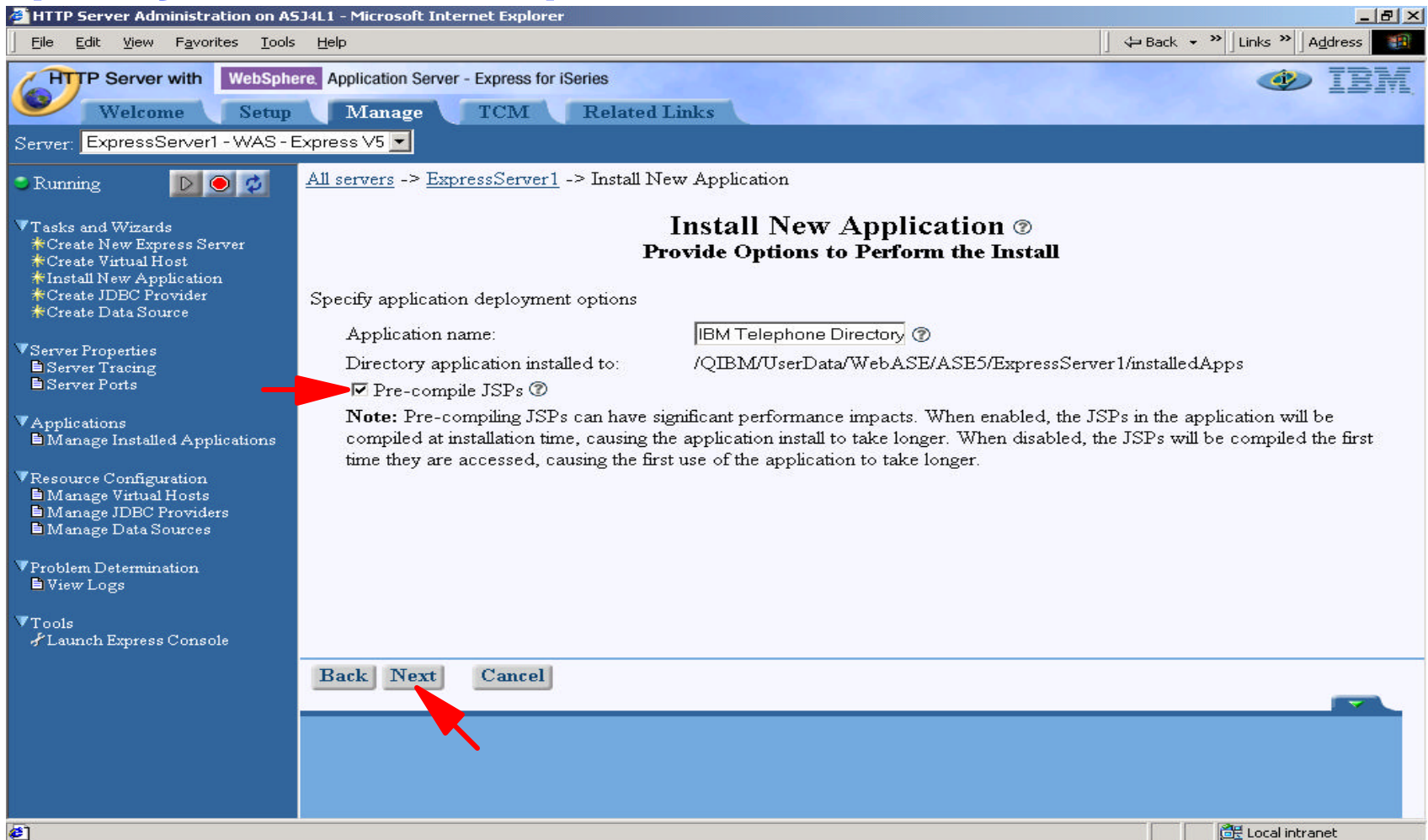
Application is contained in a **WAR** file

/QIBM/ProdData/WebASE/businessApps/IBMTelDir/installable/IBMTTelephoneDirectory.ear

Back **Next** Cancel

Local intranet

Specify Installation Options




HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: ExpressServer1 - WAS - Express V5


Running 

All servers -> ExpressServer1 -> Install New Application


Install New Application

Provide Options to Perform the Install

Specify application deployment options

Application name: IBM Telephone Directory 

Directory application installed to: /QIBM/UserData/WebASE/ASE5/ExpressServer1/installedApps

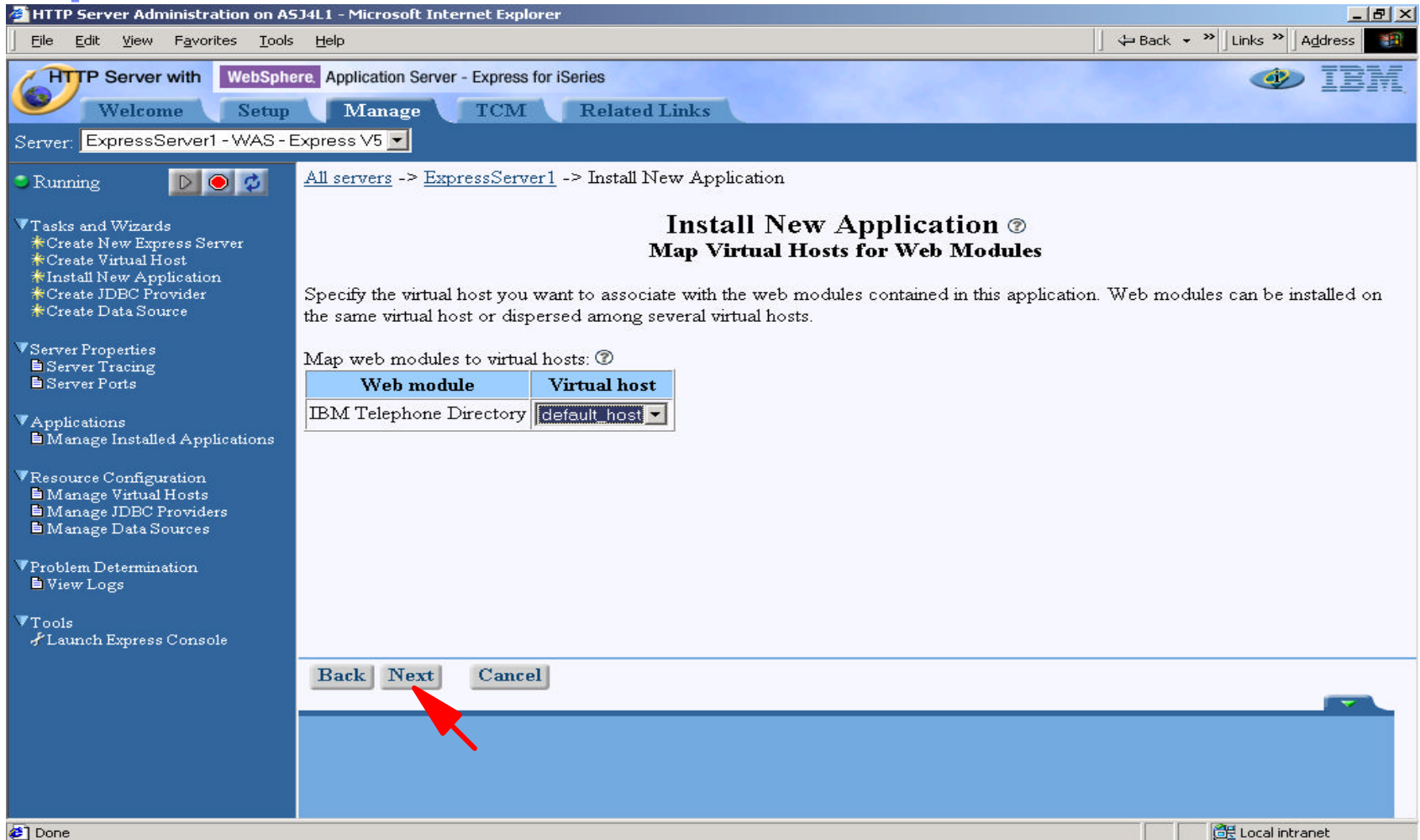
Pre-compile JSPs 

Note: Pre-compiling JSPs can have significant performance impacts. When enabled, the JSPs in the application will be compiled at installation time, causing the application install to take longer. When disabled, the JSPs will be compiled the first time they are accessed, causing the first use of the application to take longer.

Back Next Cancel

Local intranet

Map Virtual Host



HTTP Server Administration on AS34L1 - Microsoft Internet Explorer


File Edit View Favorites Tools Help

← Back >> Links >> Address

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: ExpressServer1 - WAS - Express V5


Running 

All servers -> ExpressServer1 -> Install New Application

Install New Application

Map Virtual Hosts for Web Modules

Specify the virtual host you want to associate with the web modules contained in this application. Web modules can be installed on the same virtual host or dispersed among several virtual hosts.

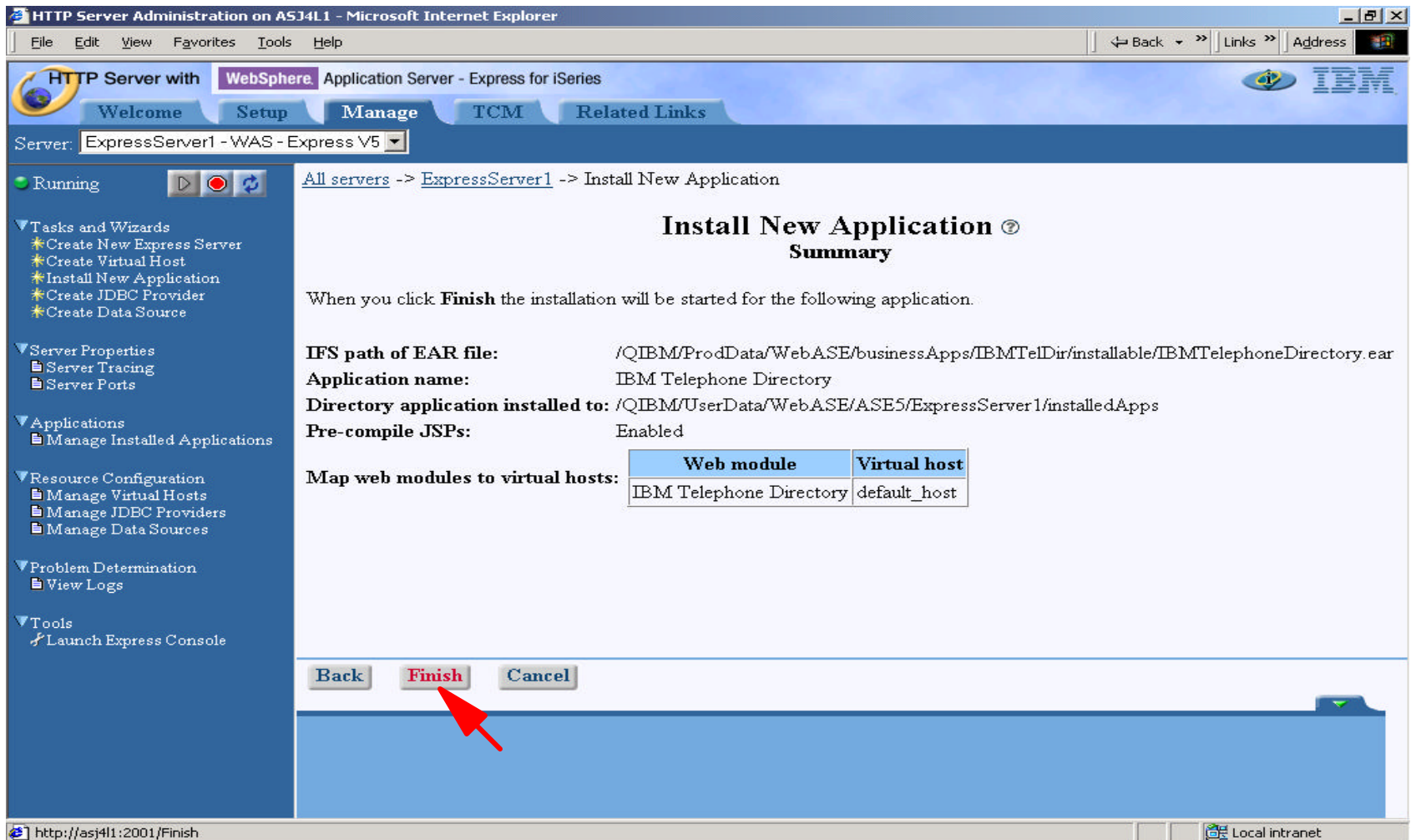
Map web modules to virtual hosts: 

Web module	Virtual host
IBM Telephone Directory	default_host

Back Next Cancel

Done Local intranet

Finish!



HTTP Server Administration on AS/400 - Microsoft Internet Explorer


File Edit View Favorites Tools Help

← Back >> Links >> Address

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: ExpressServer1 - WAS - Express V5

Running 

All servers -> ExpressServer1 -> Install New Application

Install New Application

Summary

When you click **Finish** the installation will be started for the following application.

IFS path of EAR file: /QIBM/ProdData/WebASE/businessApps/IBMTelDir/installable/IBMTTelephoneDirectory.ear

Application name: IBM Telephone Directory

Directory application installed to: /QIBM/UserData/WebASE/ASE5/ExpressServer1/installedApps

Pre-compile JSPs: Enabled

Map web modules to virtual hosts:

Web module	Virtual host
IBM Telephone Directory	default_host

Back **Finish** Cancel

http://asj411:2001/Finish

Local intranet

What's Happening in the Background?

```

Session A - [24 x 80]
File Edit View Communication Actions Window Help
Work with Active Jobs
ASJ4L1
12/19/02 17:58:27
CPU %: 29.4 Elapsed time: 00:00:02 Active jobs: 192
Type options, press Enter.
 2=Change 3=Hold 4=End 5=Work with 6=Release 7=Display message
 8=Work with spooled files 13=Disconnect ...

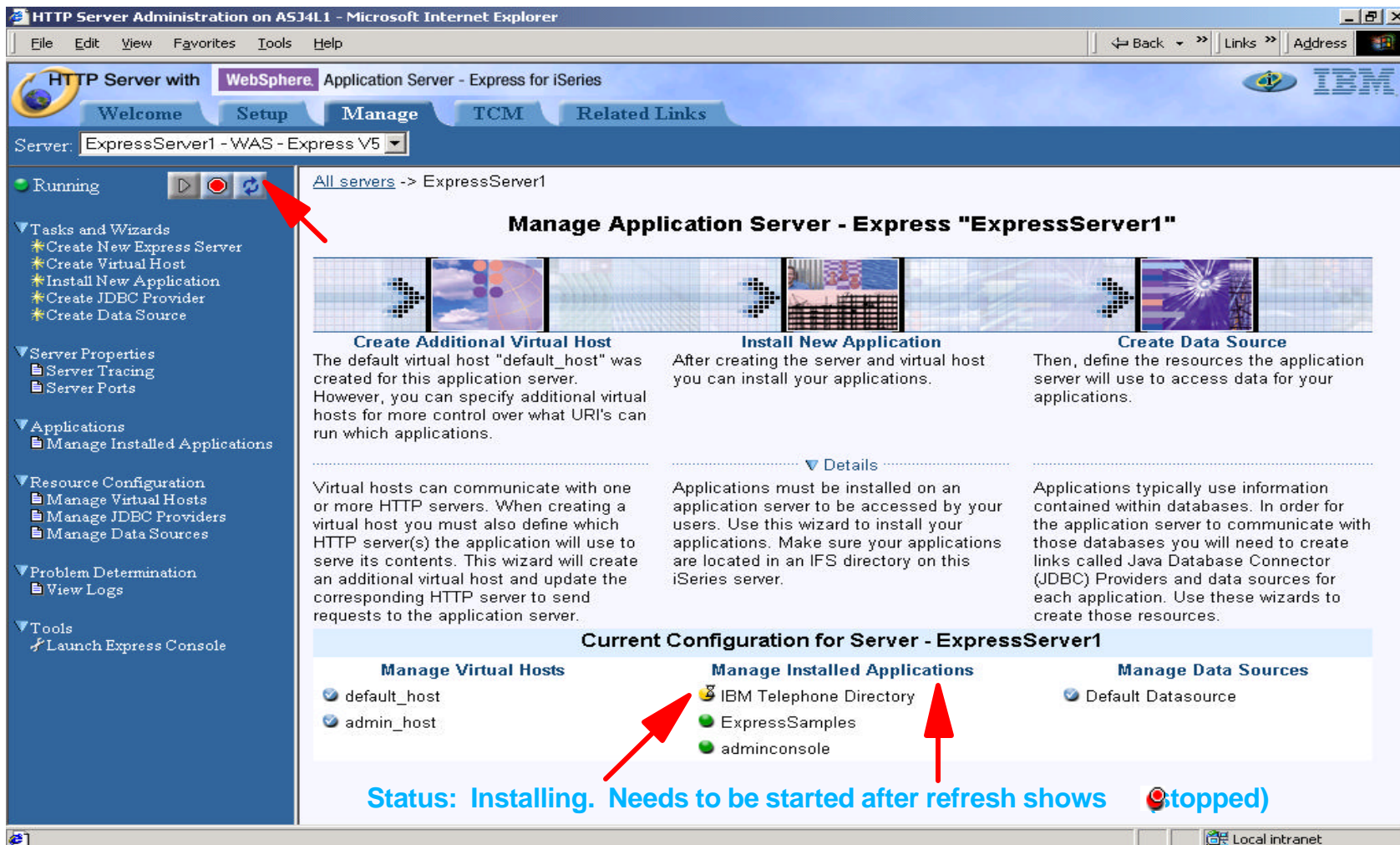
Opt Subsystem/Job User Type CPU % Function Status
---
  QASE5 QSYS SBS .0 DEQW
  EXPRESSSER QEJBSVR BCH .0 PGM-QAESTRSVR JVAW
  QHTTSPVR QSYS SBS .0 DEQW
  ADMIN QTMHHTTP BCH .0 PGM-QZHBHTTP SIGW
  ADMIN QTMHHTTP BCI .0 PGM-QZSRLOG SIGW
  ADMIN QTMHHTTP BCI .0 PGM-QZSRHTTP SIGW
  ADMIN QTMHHTTP BCI .0 PGM-QYUNLANG TIMW
  QJVAEXEC QTMHHTTP BCI .0 PGM-QZSHSH EVTW
  QPOZSPWT QTMHHTTP BCI 13.4 PGM-QJVATJAVA RUN
  More...

Parameters or command
==>
F3=Exit F5=Refresh F7=Find F10=Restart statistics
F11=Display elapsed data F12=Cancel F23=More options F24=More keys

Mâ a MW 10/002
Connected to remote server/host asj4l1 using port 23
    
```

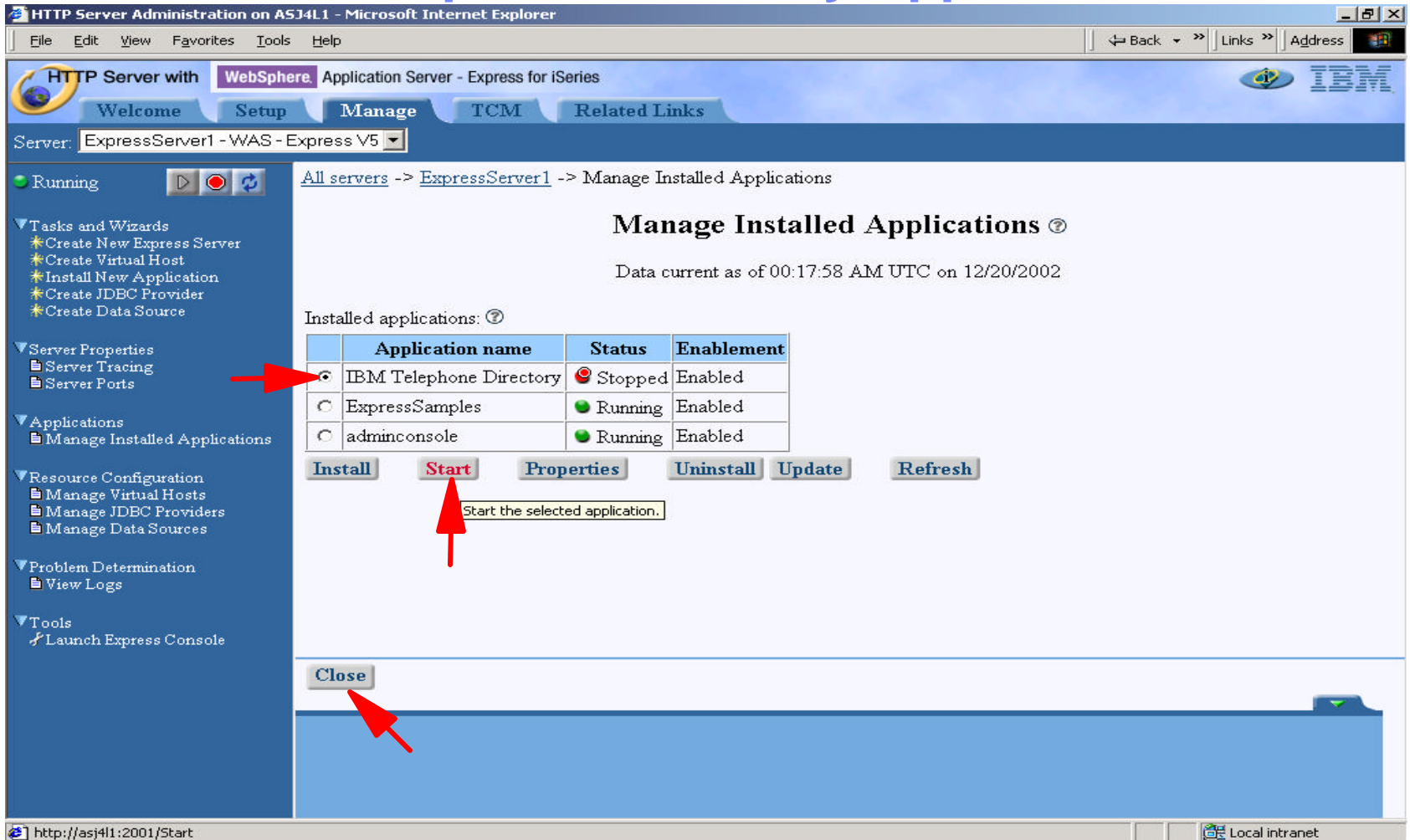


Refresh Console



The screenshot shows the 'HTTP Server Administration on AS/400 - Microsoft Internet Explorer' window. The main content area is titled 'Manage Application Server - Express "ExpressServer1"'. A red arrow points to the 'Refresh' button (a circular arrow icon) in the top left toolbar. Below the main title, there are three wizard sections: 'Create Additional Virtual Host', 'Install New Application', and 'Create Data Source'. At the bottom, the 'Current Configuration for Server - ExpressServer1' section is visible, with a red arrow pointing to the 'Manage Installed Applications' sub-section. This sub-section lists 'IBM Telephone Directory', 'ExpressSamples', and 'adminconsole'. A status bar at the bottom indicates 'Status: Installing. Needs to be started after refresh shows (stopped)'. The left sidebar contains navigation options like 'Tasks and Wizards', 'Server Properties', and 'Applications'.

Start the IBM Telephone Directory Application



HTTP Server Administration on ASJ4L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

← Back → Links → Address

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: ExpressServer1 - WAS - Express V5

Running

Tasks and Wizards

- Create New Express Server
- Create Virtual Host
- Install New Application
- Create JDBC Provider
- Create Data Source

Server Properties

- Server Tracing
- Server Ports

Applications

- Manage Installed Applications

Resource Configuration

- Manage Virtual Hosts
- Manage JDBC Providers
- Manage Data Sources

Problem Determination

- View Logs

Tools

- Launch Express Console

All servers -> ExpressServer1 -> Manage Installed Applications

Manage Installed Applications

Data current as of 00:17:58 AM UTC on 12/20/2002

Installed applications:

	Application name	Status	Enablement
<input checked="" type="radio"/>	IBM Telephone Directory	Stopped	Enabled
<input type="radio"/>	ExpressSamples	Running	Enabled
<input type="radio"/>	adminconsole	Running	Enabled

Install Start Properties Uninstall Update Refresh

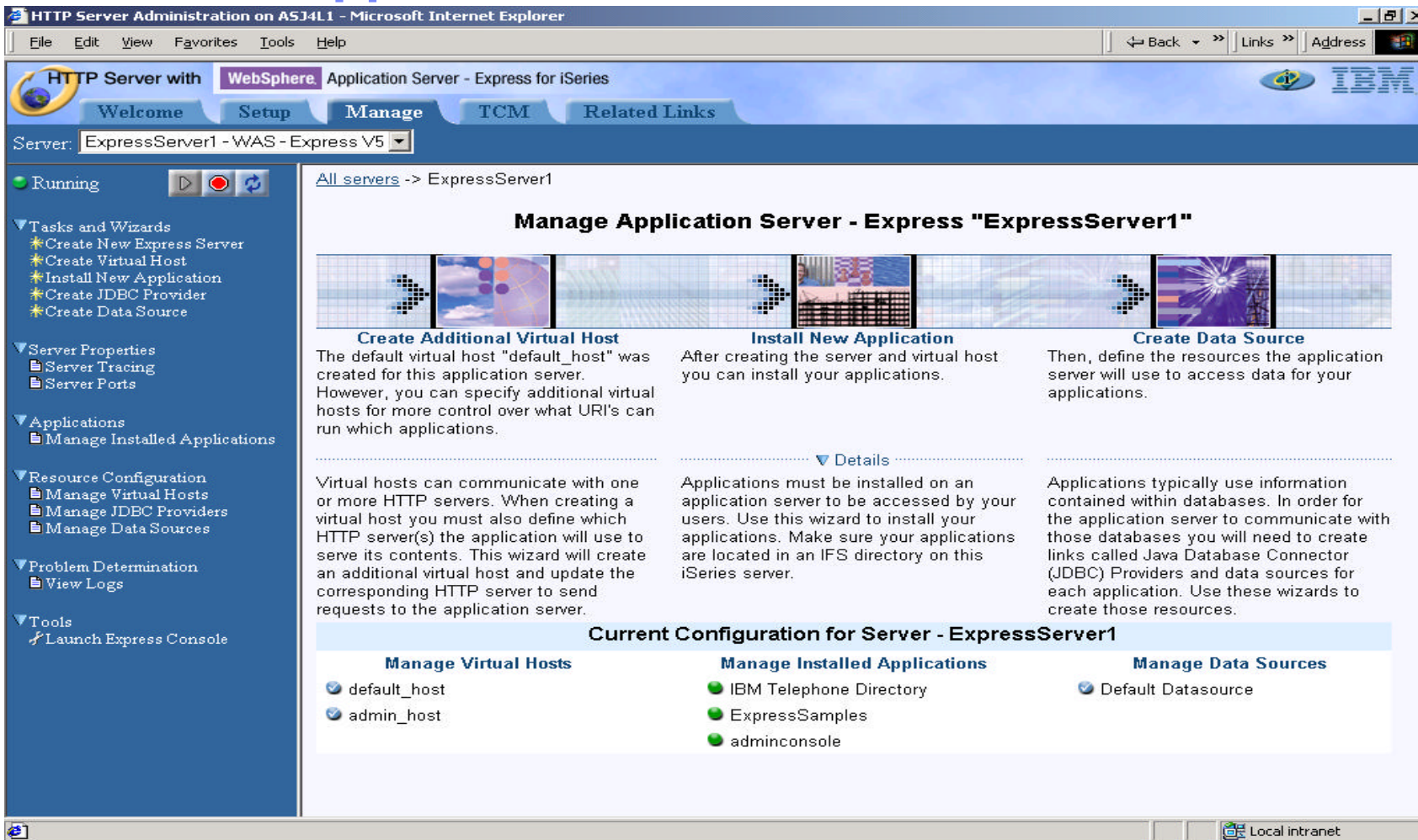
Start the selected application.

Close

http://asj4l1:2001/Start

Local intranet

Restart the Application Server



HTTP Server Administration on AS/411 - Microsoft Internet Explorer


File Edit View Favorites Tools Help

Back Links Address

HTTP Server with **WebSphere** Application Server - Express for iSeries

Welcome Setup **Manage** TCM Related Links

Server: ExpressServer1 - WAS - Express V5

Running 

All servers -> ExpressServer1

Manage Application Server - Express "ExpressServer1"

Create Additional Virtual Host

The default virtual host "default_host" was created for this application server. However, you can specify additional virtual hosts for more control over what URI's can run which applications.

Virtual hosts can communicate with one or more HTTP servers. When creating a virtual host you must also define which HTTP server(s) the application will use to serve its contents. This wizard will create an additional virtual host and update the corresponding HTTP server to send requests to the application server.

Install New Application

After creating the server and virtual host you can install your applications.

Applications must be installed on an application server to be accessed by your users. Use this wizard to install your applications. Make sure your applications are located in an IFS directory on this iSeries server.

Create Data Source

Then, define the resources the application server will use to access data for your applications.

Applications typically use information contained within databases. In order for the application server to communicate with those databases you will need to create links called Java Database Connector (JDBC) Providers and data sources for each application. Use these wizards to create those resources.

▼ Details

Current Configuration for Server - ExpressServer1

Manage Virtual Hosts	Manage Installed Applications	Manage Data Sources
<input checked="" type="checkbox"/> default_host <input checked="" type="checkbox"/> admin_host	<input checked="" type="checkbox"/> IBM Telephone Directory <input checked="" type="checkbox"/> ExpressSamples <input checked="" type="checkbox"/> adminconsole	<input checked="" type="checkbox"/> Default Datasource

Local intranet

Manually Configure HTTP Server

HTTP Server Administration on AS34L1 - Microsoft Internet Explorer

File Edit View Favorites Tools Help

← Back → Links → Address

HTTP Server with **WebSphere** Application Server - Express for iSeries


Welcome Setup **Manage** TCM Related Links

Server: WEBSERVER1 - Apache Server area: Global configuration

Stopped

All servers -> WEBSERVER1

Manage Apache server "WEBSERVER1"



This "Manage" tab allows you to manage your HTTP servers (original and powered by Apache), as well as out-of-process ASF Tomcat servers.

Server and Server area

Select a particular server to manage. Or, select to manage "All servers". When a HTTP server (powered by Apache) is selected, the "Server area" will show the area of the server that you are managing.

Status

Below the selected server you will see the current status of the server. The icons allow you to start, restart and stop the server, or refresh the displayed status.

Tasks and Wizards

This section contains tasks and wizards which aid in the configuration of your server.

Server Properties

Manage the detailed settings which control the attributes of your server.

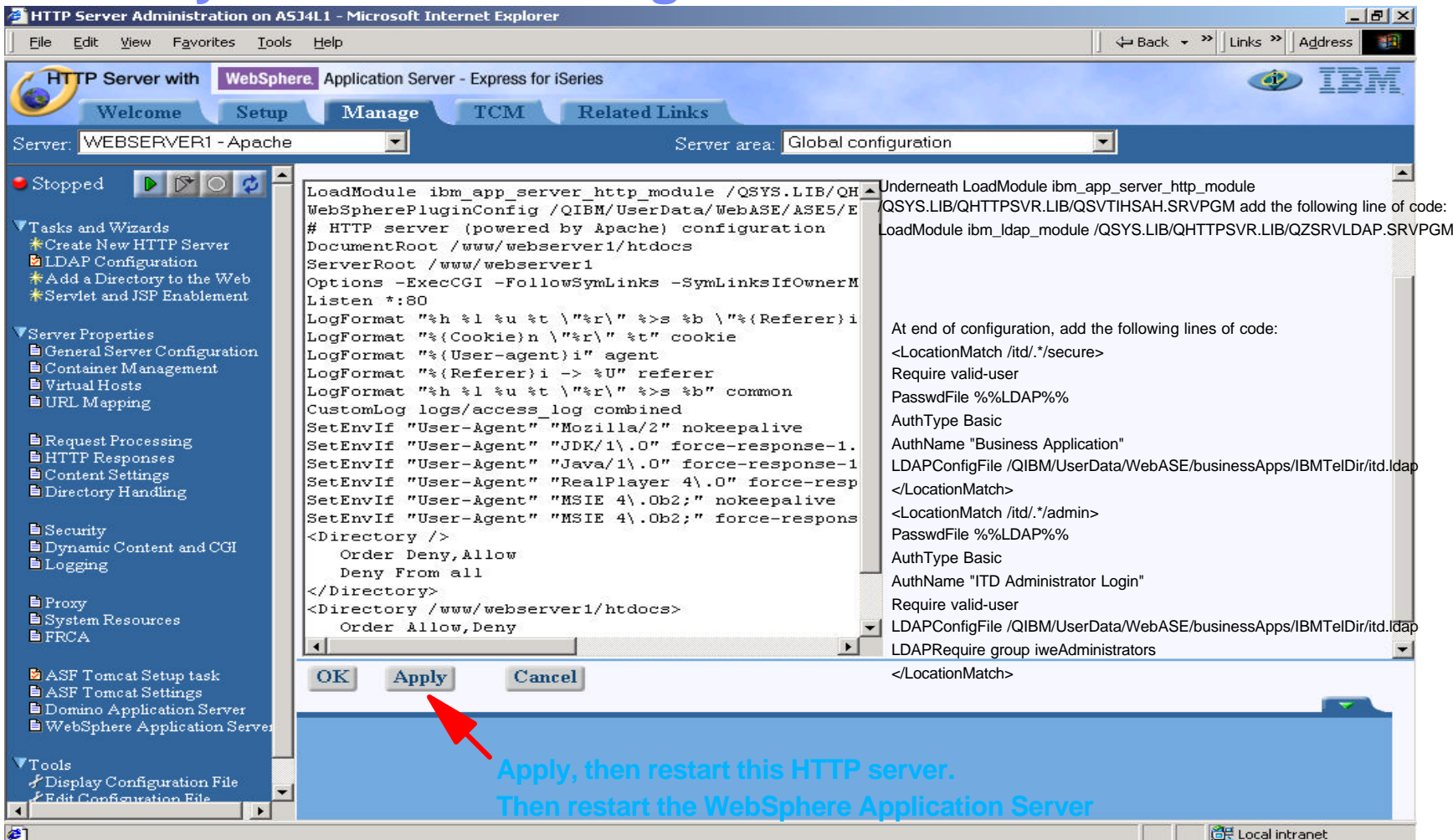
Tools

Use the tools provided to display or edit the raw configuration file. You can also use an index of configuration directives to find which forms configure them.

javascrip:selectitem("189>Edit the raw configuration file for this HTTP server.arent.form)

Local intranet

Manually Edit HTTP Configuration for ITD



The screenshot shows the 'HTTP Server Administration' interface in Microsoft Internet Explorer. The server is 'WEBSEVER1 - Apache' and the area is 'Global configuration'. The configuration file is being edited, showing the following content:

```

LoadModule ibm_app_server_http_module /QSYS.LIB/QH
WebSpherePluginConfig /QIBM/UserData/WebASE/ASE5/E
# HTTP server (powered by Apache) configuration
DocumentRoot /www/webserver1/htdocs
ServerRoot /www/webserver1
Options -ExecCGI -FollowSymLinks -SymLinksIfOwnerM
Listen *:80
LogFormat "%h %l %u %t \"%r\" %>s %b \"%{Referer}i
LogFormat "%{(Cookie)n \"%r\" %t" cookie
LogFormat "%{User-agent}i" agent
LogFormat "%{Referer}i -> %U" referer
LogFormat "%h %l %u %t \"%r\" %>s %b" common
CustomLog logs/access_log combined
SetEnvIf "User-Agent" "Mozilla/2" nokeepalive
SetEnvIf "User-Agent" "JDK/1\>.0" force-response-1.
SetEnvIf "User-Agent" "Java/1\>.0" force-response-1
SetEnvIf "User-Agent" "RealPlayer 4\>.0" force-resp
SetEnvIf "User-Agent" "MSIE 4\>.0b2;" nokeepalive
SetEnvIf "User-Agent" "MSIE 4\>.0b2;" force-respons
<Directory />
    Order Deny,Allow
    Deny From all
</Directory>
<Directory /www/webserver1/htdocs>
    Order Allow,Deny
    
```

On the right side, there are instructions and additional configuration lines:

Underneath LoadModule ibm_app_server_http_module /QSYS.LIB/QHTTSPVR.LIB/QSVTIHSAH.SRVPGM add the following line of code:
 LoadModule ibm_ldap_module /QSYS.LIB/QHTTSPVR.LIB/QZSRVLDAP.SRVPGM

At end of configuration, add the following lines of code:

```

<LocationMatch /itd/.*secure>
Require valid-user
PasswdFile %LDAP%%
AuthType Basic
AuthName "Business Application"
LDAPConfigFile /QIBM/UserData/WebASE/businessApps/IBMTelDir/itd.Idap
</LocationMatch>
<LocationMatch /itd/.*admin>
PasswdFile %LDAP%%
AuthType Basic
AuthName "ITD Administrator Login"
Require valid-user
LDAPConfigFile /QIBM/UserData/WebASE/businessApps/IBMTelDir/itd.Idap
LDAPRequire group iweAdministrators
</LocationMatch>
    
```

At the bottom of the configuration editor, there are 'OK', 'Apply', and 'Cancel' buttons. A red arrow points to the 'Apply' button.

**Apply, then restart this HTTP server.
 Then restart the WebSphere Application Server**



IBM server™ iSeries™

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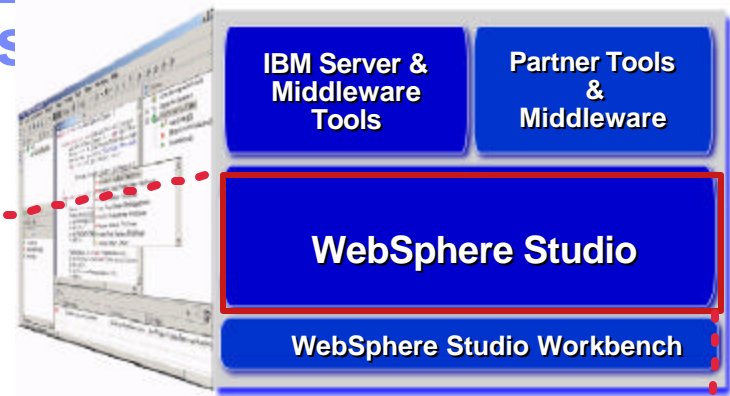
Development & Deployment Tools

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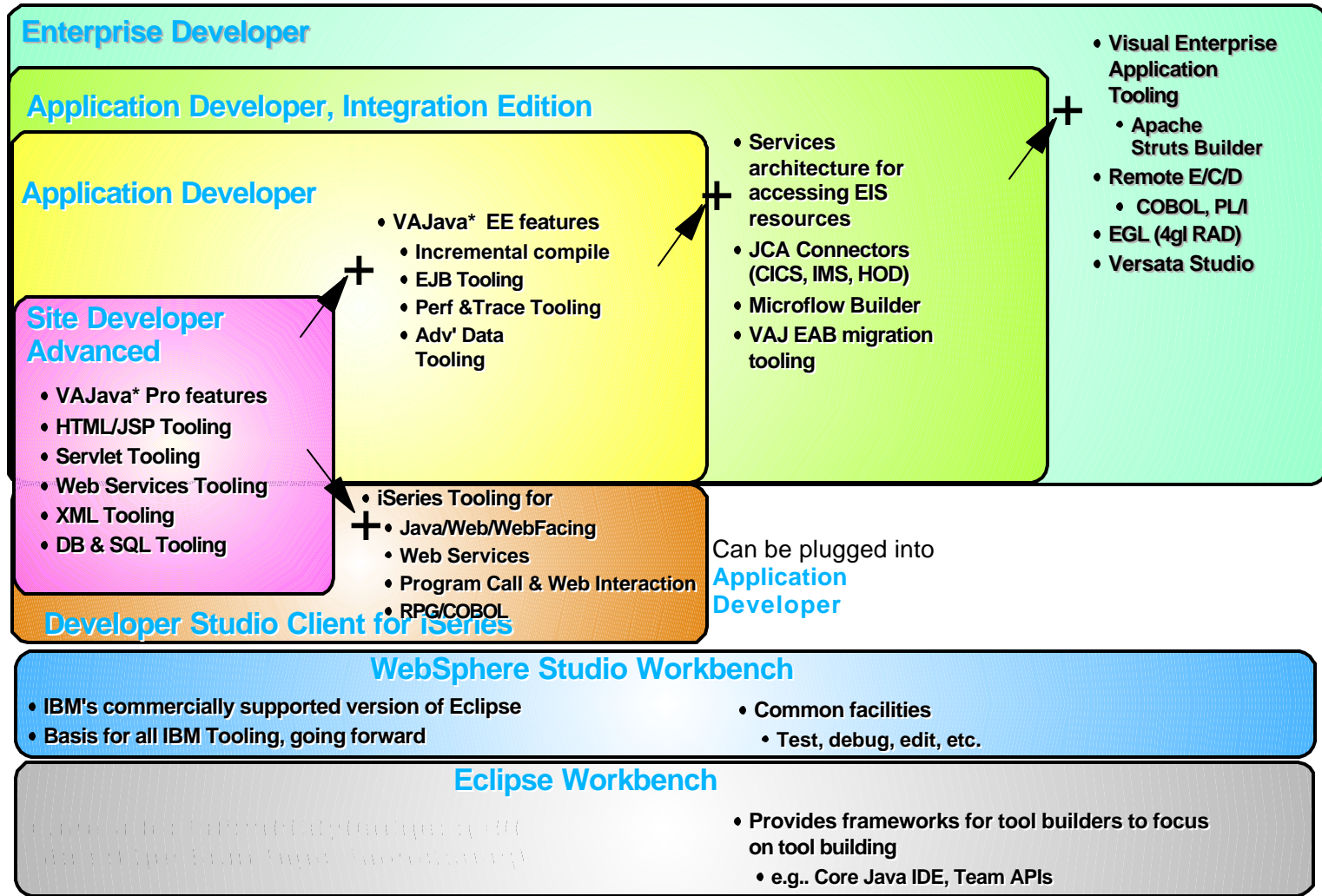
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WebSphere Studio Configurations

One IDE with multiple configurations that add functions and "perspectives" for specific developer roles



WebSphere Studio Configurations

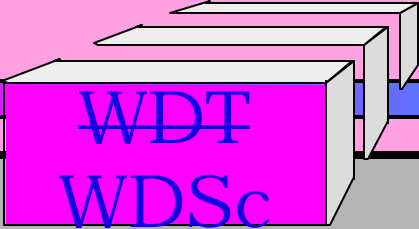
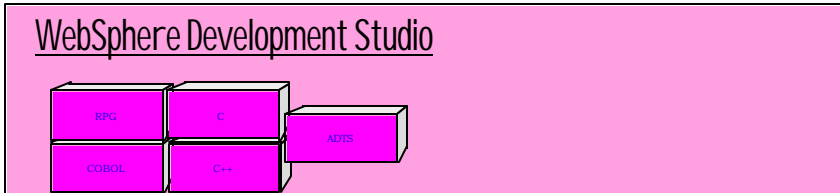


* VisualAge for Java V4 is the final version of the product.

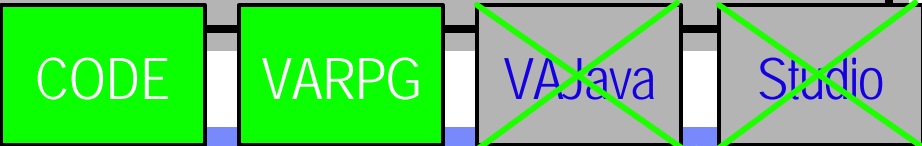
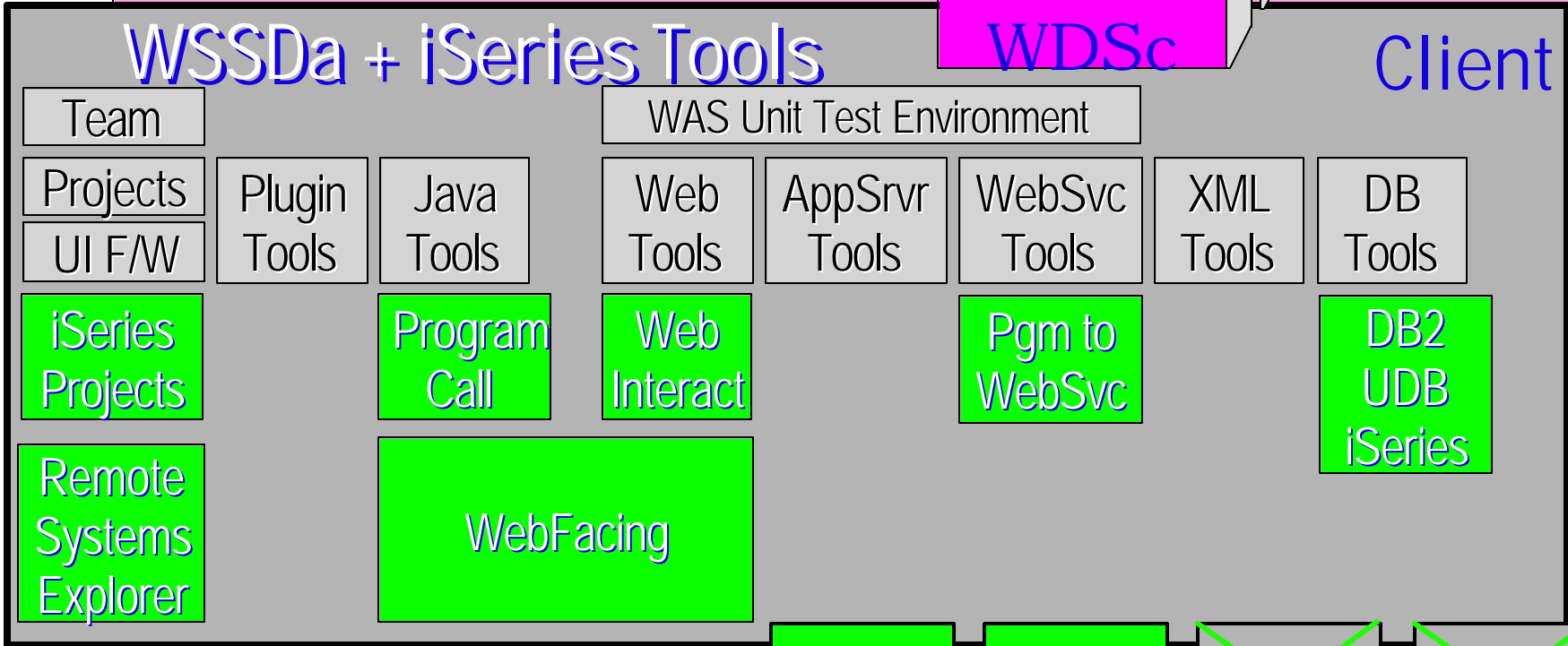
WebSphere Development Studio Client (WDSc) 4.0 *

Free upgrade
from WDT!

5722-WDS
Refresh code 2655



Host



* Version 5 development tools 1Q 2003

WebSphere Studio Site Developer

- **Rapid Web design and authoring tooling, including HTML, JSP and JavaScript**
- **Visual Page Designer to create Web user interfaces**
- **Wizards to create Web interfaces to databases**
- **GIF editing and animation tools**
- **Web services creation and consumption (supports WSDL, SOAP and UDDI)**
- **JSP Debugging**
- **XML & XSL Support**
- **Interface to version control systems**
- **Simple deployment of applications to the application server**
- **Operating System Support: Windows™ NT, 2000, XP**
- **Additional Specifications**
 - ▶ **Programming Model: HTML, Tag Libraries, JavaScript, JSPs, Servlets**
 - ▶ **Database Support: IBM DB2, MS SQL Server™ 2000, Oracle™ 9i, JDBC**

Industry Standards Supported by the Tools

- ✓ By WSSDa, WSAD and WDS*c* 4.0
 - ▶ EJB 1.1
 - ▶ Servlet 2.2
 - ▶ JSP 1.1
 - ▶ JRE 1.3
 - ▶ Web Services Definition Language (WSDL) 1.1
 - ▶ Apache SOAP 2.1
 - ▶ XML DTD 1.0 10/2000 Revision
 - ▶ XML Namespaces 1/99 Version
 - ▶ XML Schema 5/2001 Version
 - ▶ HTML 4.01 (other levels should work)
 - ▶ CSS2 (PageDesigner displays a subset)



IBM server™ iSeries™

IBM server™ & TotalStorage™ UNIVERSITY 2003

Additional Resources

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WebSphere First Install Customer Assistance

First Install Customer Assistance for WebSphere Application Server Standard or Advanced Edition for iSeries or AS/400.

- **We would like to welcome new customers to the WebSphere arena and provide them with assistance that may be needed to install and configure WebSphere Application Server, either Standard or Advanced Edition. By starting with a working instance of WebSphere Application Server and reviewing the sample programs provided, your time spent with WebSphere Application Server will be more productive and enjoyable. Through your application and acceptance into this program, the Rochester Support Center will provide you with 8:00 AM - 5:00 PM Central Standard Time phone support assistance in setting up a WebSphere Application Server test environment.**

This assistance includes:

1. **Documentation clarification**
2. **Verify you have all Prerequisites available: Software, Hardware, PTF's, and Communication configurations**
3. **Creation of a default WebSphere instance**
4. **Configuration and enablement of WebSphere for an HTTP server**
5. **Installation and use of WebSphere Client based Admin Console (excluded Firewall configuration)**
6. **Validate the above by running of a sample servlet.**

<http://www.iseries.ibm.com/developer/websphere/assistance.html>

Important URL's For WebSphere & iSeries Partners

iSeries WebSphere

- <http://www-1.ibm.com/servers/eserver/series/software/websphere/wsappserver/>

WebSphere Roadshows & Early Enablement Programs

- <http://cgse3.cgselearning.com/websphere/roadshows/>

On-line Training For Developers

- <http://cgse2.cgselearning.com/>

WebSphere Innovation Connection On-Line

- http://www-3.ibm.com/software/info1/websphere/partners/index.jsp?S_TACT=102BBW01&S_CMP=campaign

PartnerWorld for Developers

- <http://www.developer.ibm.com/>
- iSeries - <http://www-919.ibm.com/developer/>

Education, reference material, & demos

Education:

- **IBM WebSphere Host Publisher Application for iSeries Development**
 - Course Code: S6232
 - See iSeries Technology Center website at: <http://www-3.ibm.com/services/learning/>
- **IBM WebSphere Host Publisher Application Development Workshop**
 - Course Code: SW910
 - See IBM Learning Services website at <http://www.ibm.com/services/learning/us/>
- **Web Enablement Workshop for iSeries**
 - Course Code: ITC08
 - See iSeries Technology Center website at: <http://www-3.ibm.com/services/learning/spotlight/iseries/>
- **iSeries WebFacing Tools**
 - CourseCode: AS043
 - <http://www-3.ibm.com/services/learning>
- **WebSphere Studio for iSeries plus WebFacing Tool**
 - CourseCode: S6185
 - <http://www-3.ibm.com/services/learning>
- **Web Strategy and Design Workshop**
 - Course Code: ITC12
 - hands on workshop intended to introduce a set of application development tools to customers that are creating Java-based applications for iSeries.
 - WebFacing, Host Publisher, Visual Age for RPG

On-line Education - (<http://www-3.ibm.com/services/learning>)

- **Introduction to WebSphere on iSeries (1.5 hrs)**
 - Course Code: IK087
- **Implementing WebSphere Application Server on iSeries (1.5 hrs)**
 - Course Code: IK088
- **WebFacing Your iSeries Applications (1.0 hrs)**
 - Course Code: IK089

Reference Material:

- **Building Integration Objects With IBM SecureWay Host Publisher Version 2.1, SG24-5385-00**
- **iSeries Access for Web InstallationGuide (SC41-5518)**
- **WebSphere Development Tools for iSeries Generating Web Front Ends to Existing Applications, REDP0516**
- **IBM WebSphere Development Tools for AS/400: An Introduction, REDP0503**
- **Web Enabling AS/400 Applications with IBM WebSphere Studio, SG24-5634-00**
- **Linux on the IBM eServer iSeries Server: An Implementation Guide, SG24-6232-00**
- **Building iSeries Applications for WebSphere Advanced Edition 3.5, SG24-5691-00**
- **Building A Java Adapter Over a 5250 Application to enable B-B transactions' article**
 - An example of taking an interactive 5250 order entry application running on an iSeries machine, and making it accessible via a web browser
 - <http://www.iseries.ibm.com/developer/java/topics/hostpubadapter.html>



Demo iSeries Access for Web and WebSphere Host Publisher:

<http://iseriesd.dfw.ibm.com/webaccess/iWAHome> (case sensitive)

Use the following User ID and password to sign in:

User ID of **WUSER**

Password of **GUEST1**

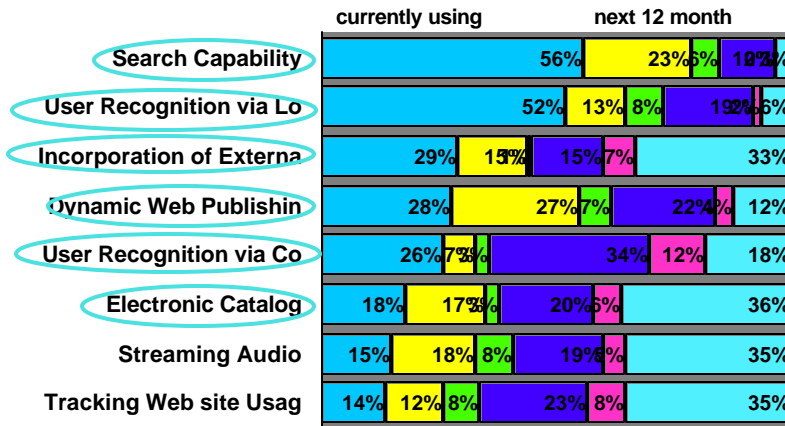
Beaver Creek Web Solutions Demo site...

<http://www.piner.com/>

WebSphere Application Server - Express Samples

WebSphere Application Server - Express samples provide the building blocks for the dynamic Web site functions requested by mid-market customers across industries.

IBM is working with ISV partners to provide industry specific and targeted sample solutions.



Samples Included:

- Electronic catalog
- Document distribution
- Survey
- Customer self-service
- Dynamic Web page

- Web page containing downloadable mini-applications from IBM Business Partners for use with WebSphere Application Server - Express will augment samples included in the package
- Mini-applications may include information on or the ability to easily upgrade to the Business Partner's full application . May also provide a link to the Business Partner's web site for those customers who want to learn more about or purchase the full application
- Participation in Express Solutions will be open to all business partners but Early Release Program participants will receive priority exposure.
- Modeled after highly successful IBM WebSphere Portlet program

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Stylized	HTTP Server for AS/400	Net.Commerce	WebSphere Development Tools for AS/400	
AIX	IBM	Net.Data	WebSphere Standard Edition	
DB2 UDB for AS/400	IBM Logo	PowerPC		
Application Development	e-business logo	PowerPC AS		
APPN	Payment Manager	VisualAge for RPG		
AS/400	Integrated Language Environment	xSeries		
AS/400e	e(logo) Server	Operating System/400		
DB2 Universal	Screen Publisher	OS/400		
VisualAge for Java	iSeries			

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