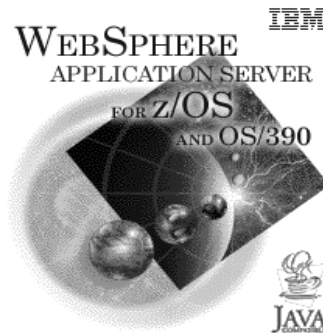


WebSphere Enablement

Systems Management End User Interface

Installing an Application



End User Interface

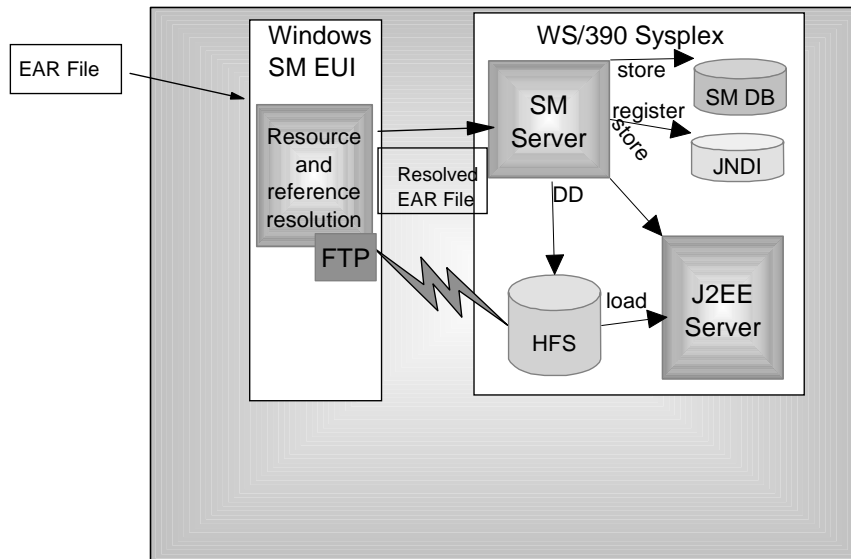


- Workstation tool
- Administration Application
 - ▶ Used to display and modify the WAS configuration
 - ▶ Requires CBADMIN authority
- Operation Application
 - ▶ Start and stop servers
 - ▶ Display the status of servers

J2EE Application Deployment



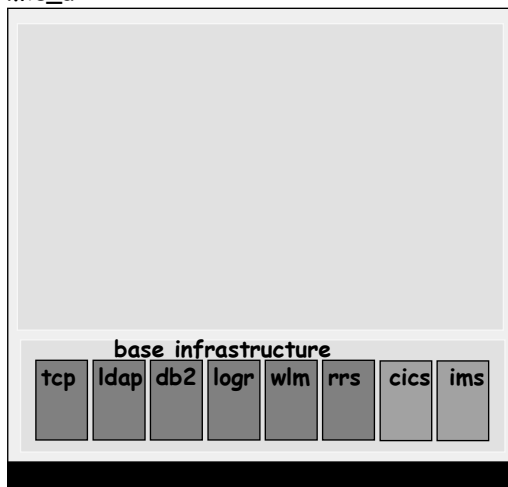
Deployment on WAS/390 4.01



Starting the Environment



mvs_a



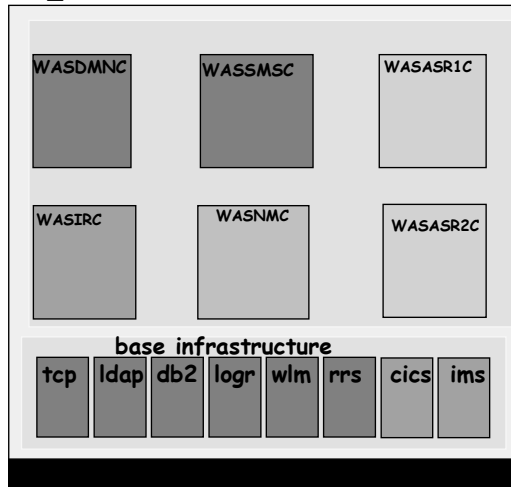
All underlying servers and services must be active prior to starting WAS/390 servers

RRS
DB2
LDAP

Starting the Environment



mvs_a



■ MVS operator issues S WASDMNC

► WASDMNC internally issues:

- S WASNMC
- S WASSMSC
- S WASIRC

► Wait until the main CB servers are 'ready'

- BBOU0016I - Daemon

- BBOU0020I - All the rest

■ Operator starts the 'servers' by starting the control region.

► MVS oper: 'S WASASR2C'

► Server regions started by WLM as needed.

► Application environments must be enabled for WLM to start server regions.

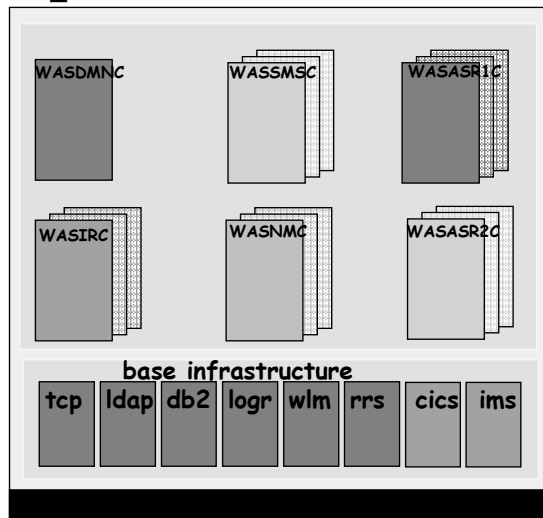
■ Operator repeats process for each system in the WAS/390 node.



Stopping the Environment



mvs_a



■ MVS operator stops the application control regions:

► P WASASR1C

► WLM will take down the server regions

■ MVS operator stops the daemon:

► P WASDMNC

► BBODMN internally issues:

- P WASNMC
- P WASSMSC
- P WASIRC

► WLM takes down the server regions

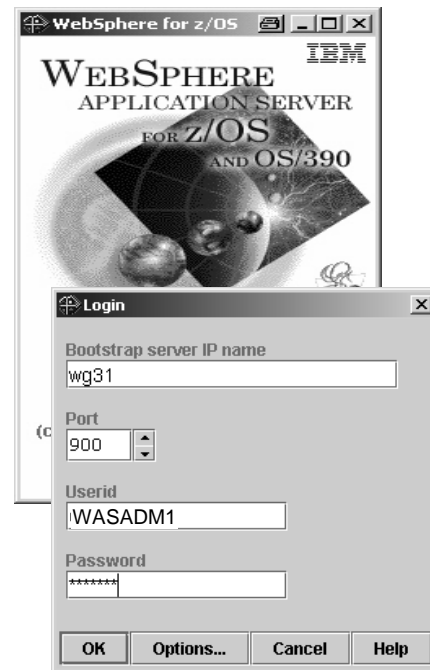
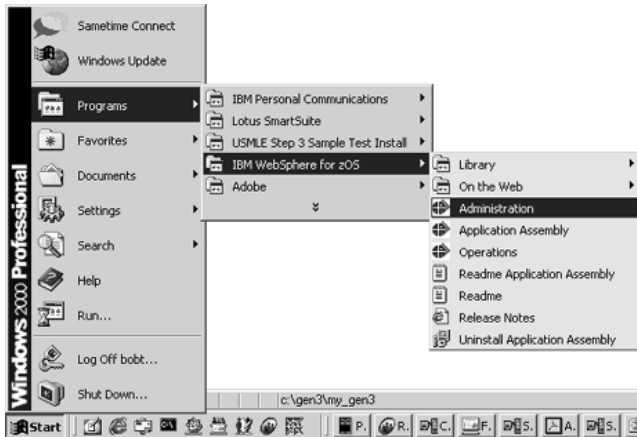
■ Occasionally, Control or Server regions must be cancelled. *

■ Repeat for each system in the sysplex.

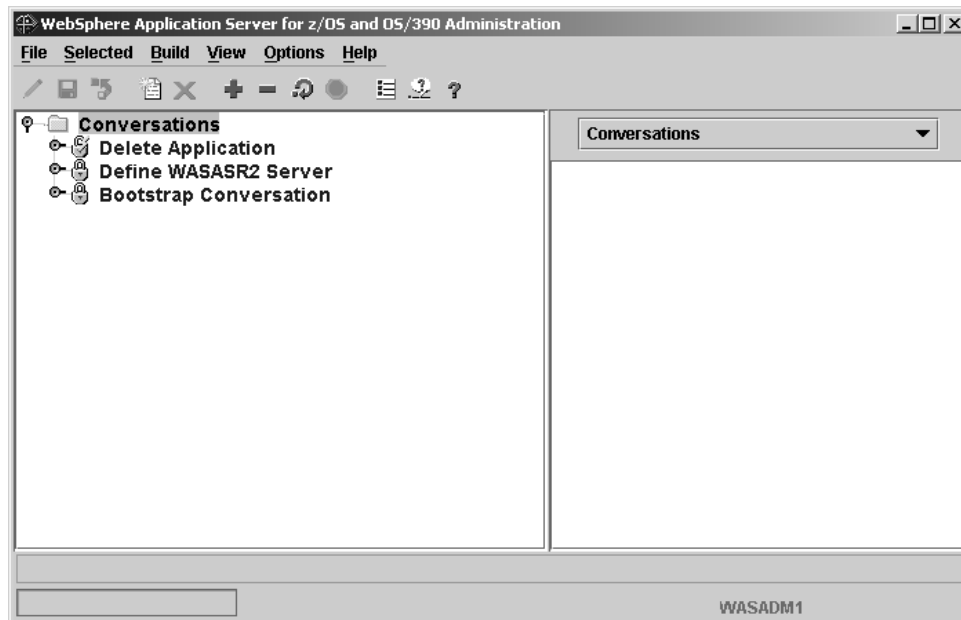


If the application region is started by SMS, it issues:
S WASASR2C.WASASR2A
PROCname.INSTANCEname

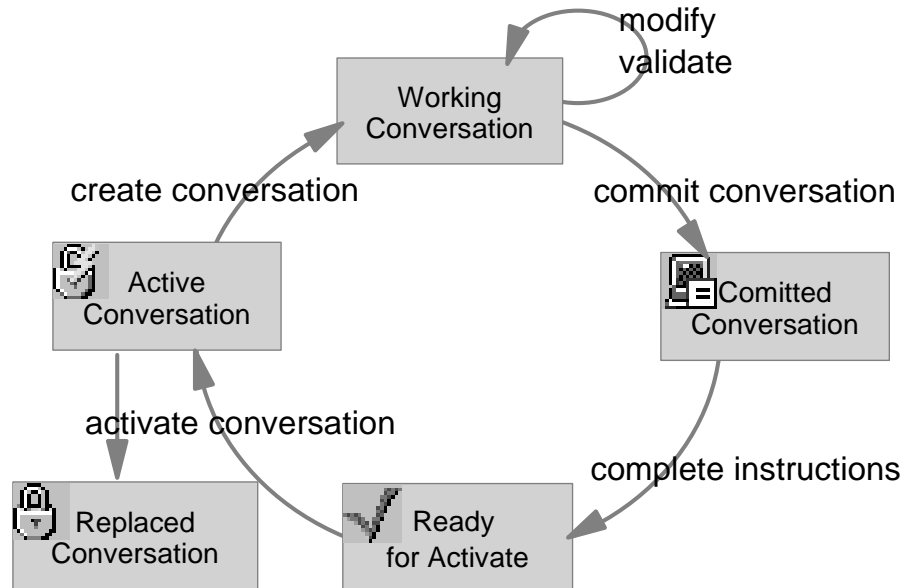
Administration



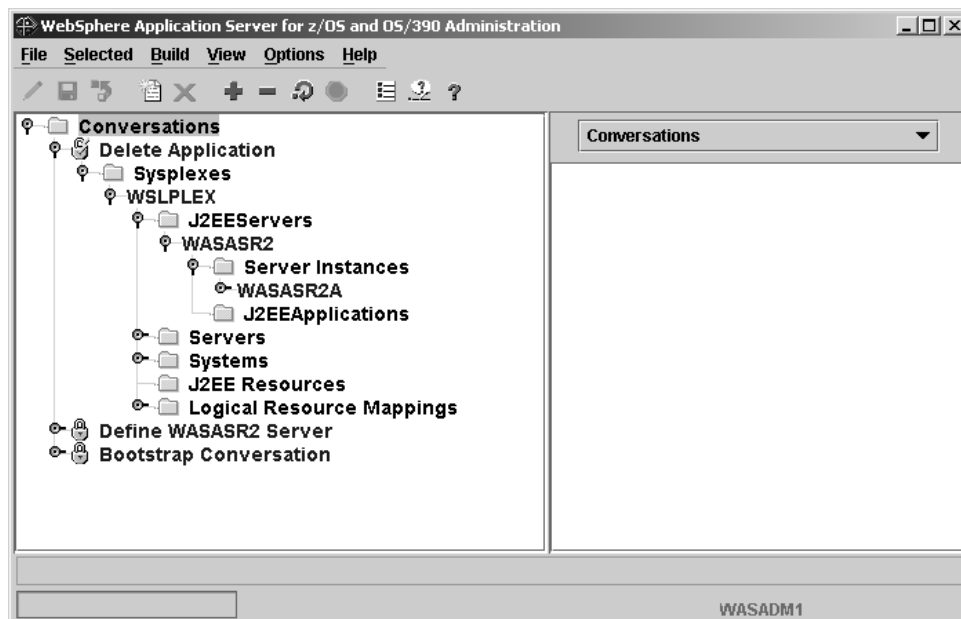
Conversations



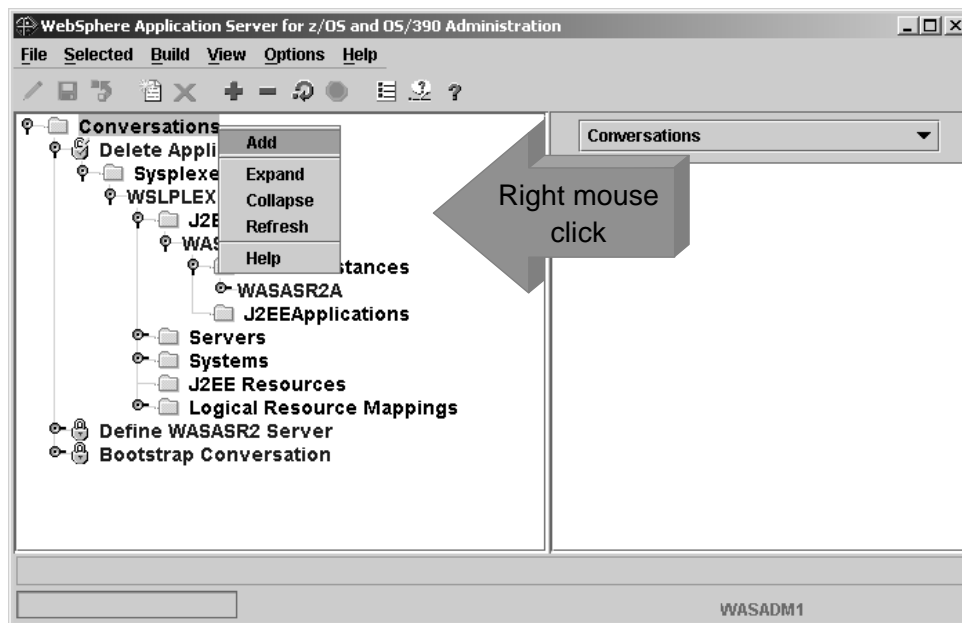
Lifecycle of a Conversation



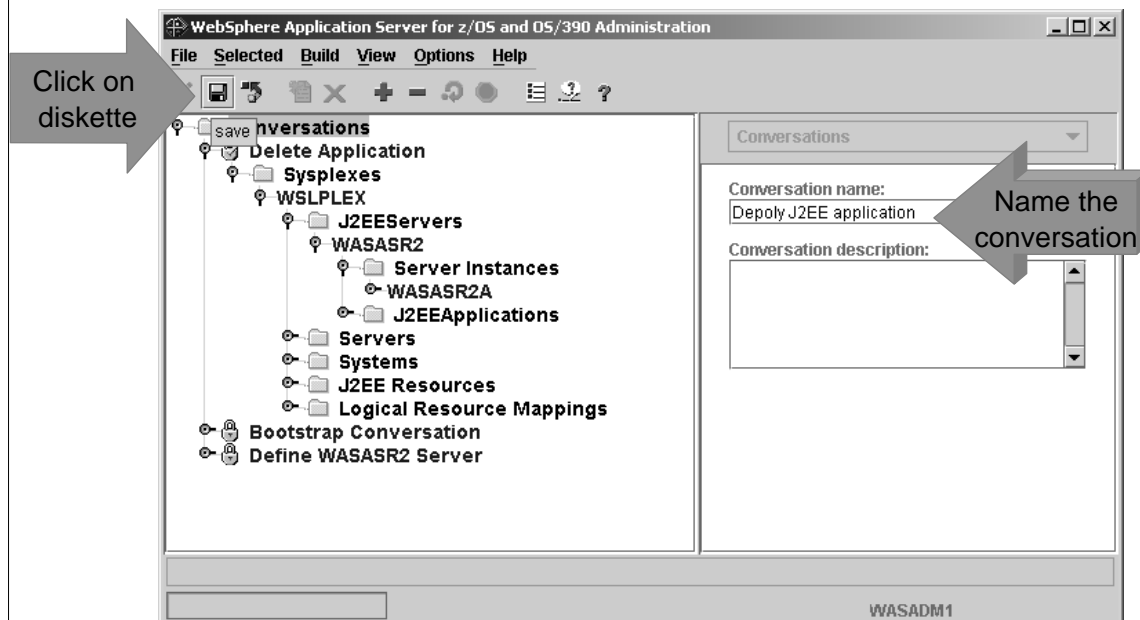
Servers



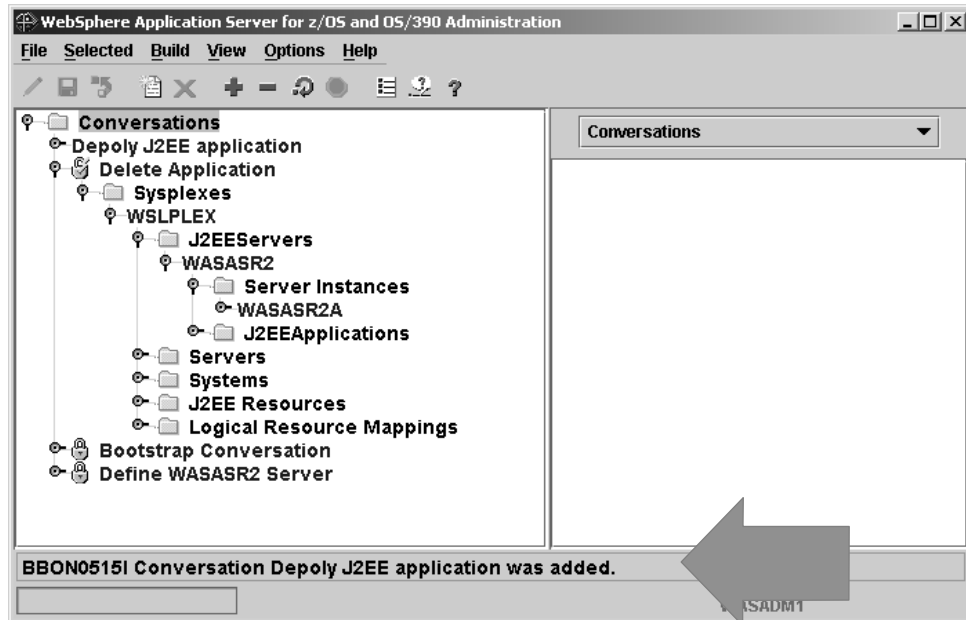
Creating a Conversation



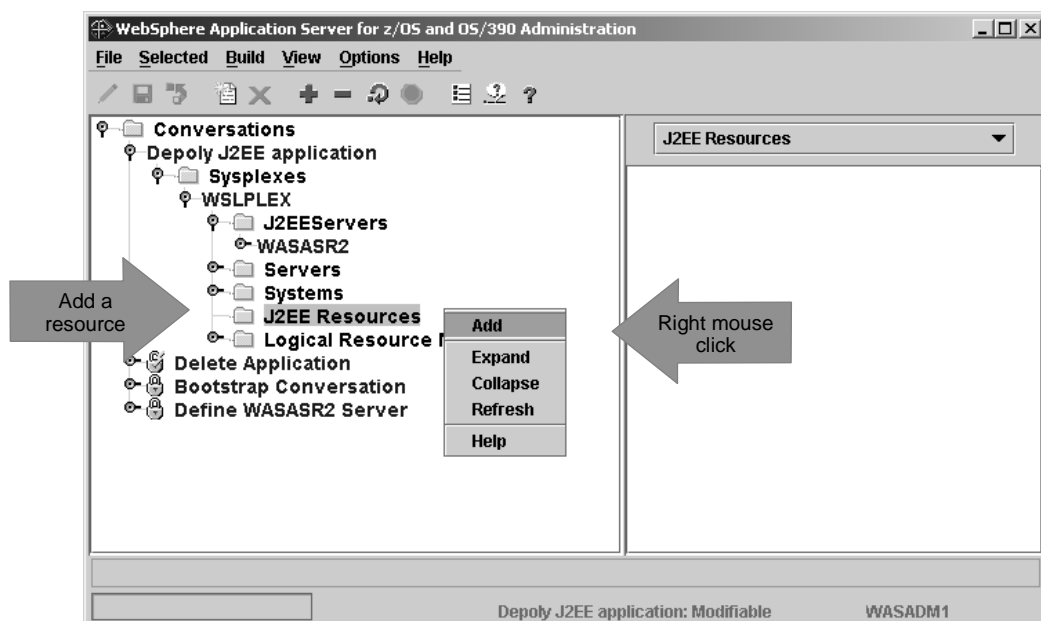
Saving the Conversation



New Modifiable Configuration



J2EE Resource



Add J2EE Resource



Click on diskette

WebSphere Application Server for z/OS and OS/390 Administration

File Selected Build View Options Help

Conversations

- Depoly J2EE application
 - Sysplexes
 - WSLPLEX
 - J2EEServers
 - WASASR2
 - Servers
 - Systems
 - J2EE Resources**
 - Logical Resource Mappings
 - Delete Application
 - Bootstrap Conversation
 - Define WASASR2 Server

Name the resource

J2EE Resources

J2EE Resource name:
WASASR2_DB2_Resource

J2EE Resource description:
Database resource to be used in PolicyVP application.

Factory class name preview:
com.ibm.ws390.container.resref.DB2JDBCRe

Connector class name preview:
com.ibm.db2.jcc.DB2DataSource

Connector interface class name preview:
javax.sql.DataSource

J2EE Resource type:
DB2datasource

DB2datasource
JavaMailSession
JavaNetURLResource
MQQueue
MQQueueConnectionFactory
MQRRSQueueConnectionFactory
MQRRSTopicConnectionFactory

Depoly J2EE applica

Add J2EE Resource



WebSphere Application Server for z/OS and OS/390 Administration

File Selected Build View Options Help

Conversations

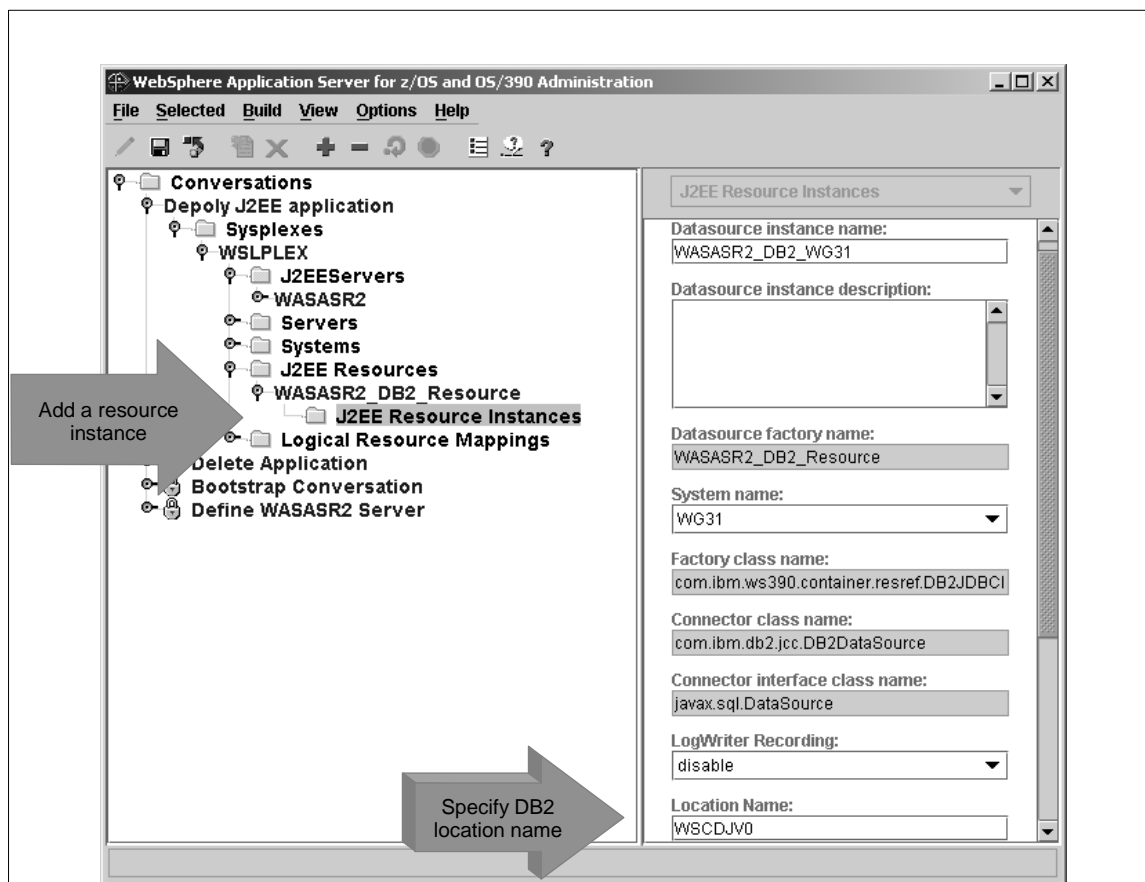
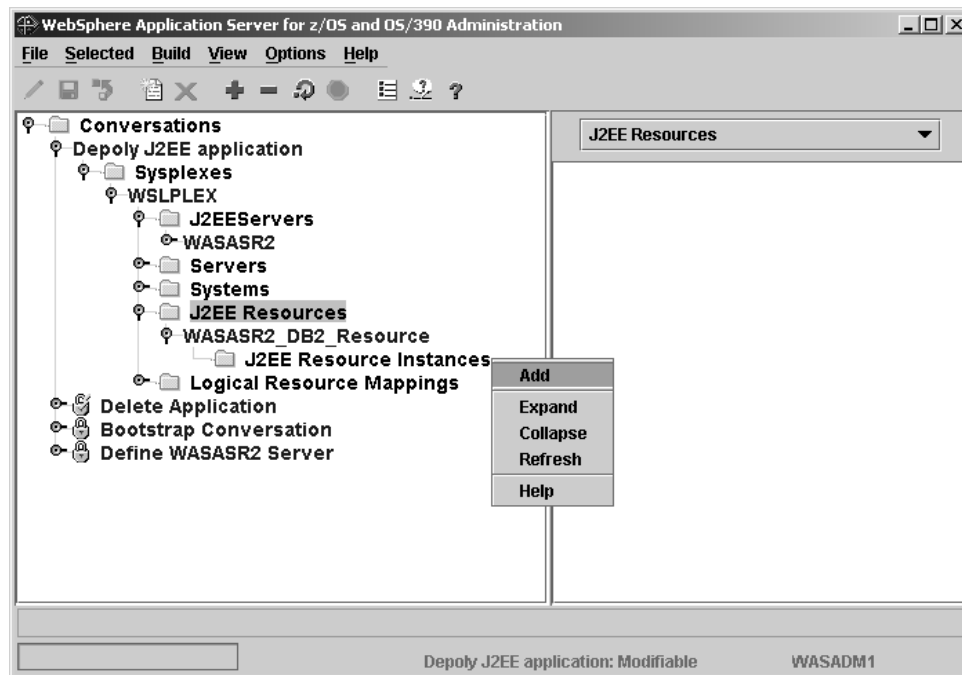
- Depoly J2EE application
 - Sysplexes
 - WSLPLEX
 - J2EEServers
 - WASASR2
 - Servers
 - Systems
 - J2EE Resources**
 - WASASR2_DB2_Resource
 - Logical Resource Mappings
 - Delete Application
 - Bootstrap Conversation
 - Define WASASR2 Server

BBON0515I J2EE Resources WASASR2_DB2_Resource was added.

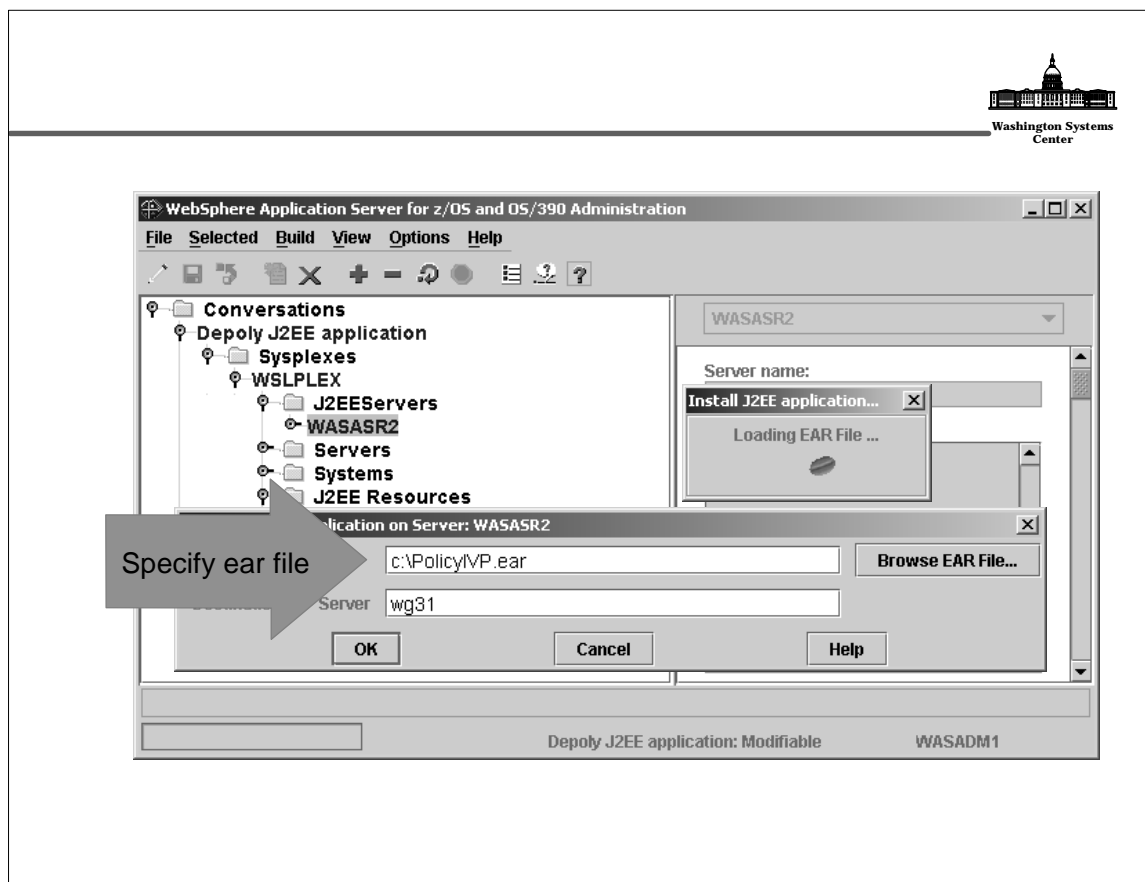
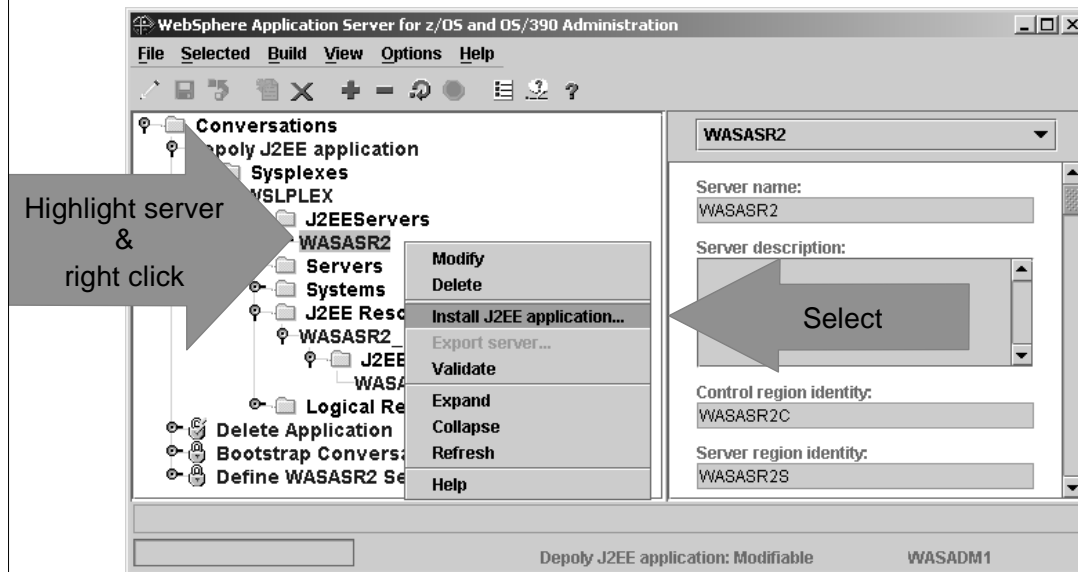
Depoly J2EE application: Modifiable

WASADM1

Add Resource Instance



Install Application



JNDI Name



Reference and Resource Resolution

com.ibm.ws390.samples.ivp.ejb.PolicyBMPBean

☒ EJB ☒ **Reference** ☐ J2EE Resource

Home Interface Name:
com.ibm.ws390.samples.ivp.ejb.PolicyBMPHome

Remote Interface Name:
com.ibm.ws390.samples.ivp.ejb.PolicyBMP

Type:
Entity

JNDI Path:
/WSLPLEX/WASASR2/PolicyVP/Policy/PolicyBMP/

JNDI Name:

Set Default JNDI Path & Name

Help OK Save Cancel



Reference and Resource Resolution

com.ibm.ws390.samples.ivp.ejb.PolicyBMPBean

☒ EJB ☒ **Reference** ☐ J2EE Resource

Home Interface Name:
com.ibm.ws390.samples.ivp.ejb.PolicyBMPHome

Remote Interface Name:
com.ibm.ws390.samples.ivp.ejb.PolicyBMP

Type:
Entity

JNDI Path:
/WSLPLEX/WASASR2/PolicyVP/Policy/PolicyBMP/

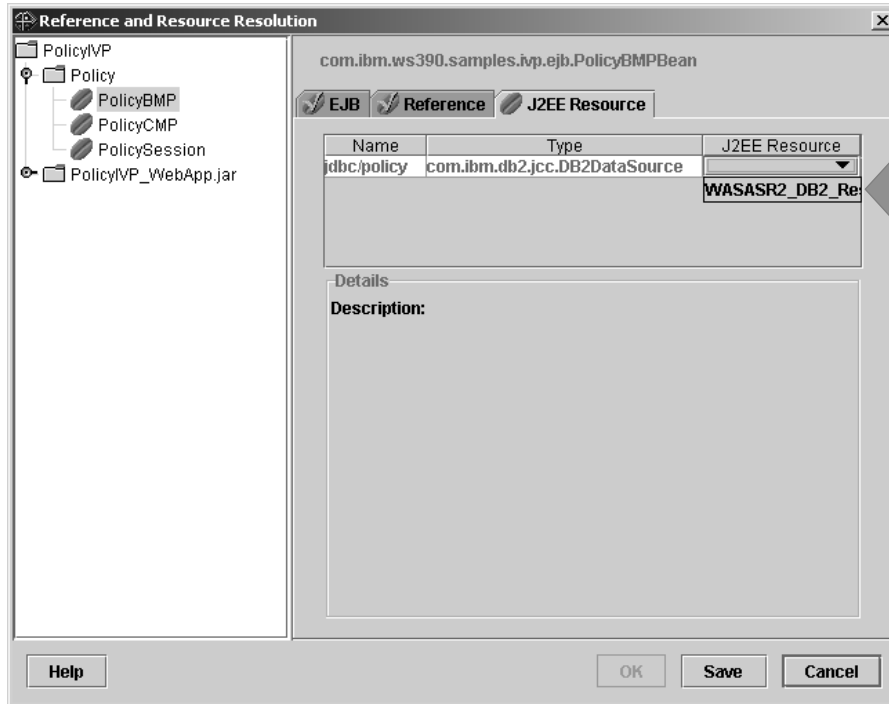
JNDI Name:
com.ibm.ws390.samples.ivp.ejb.PolicyBMPHome

Set Default JNDI Path & Name

Help OK Save Cancel

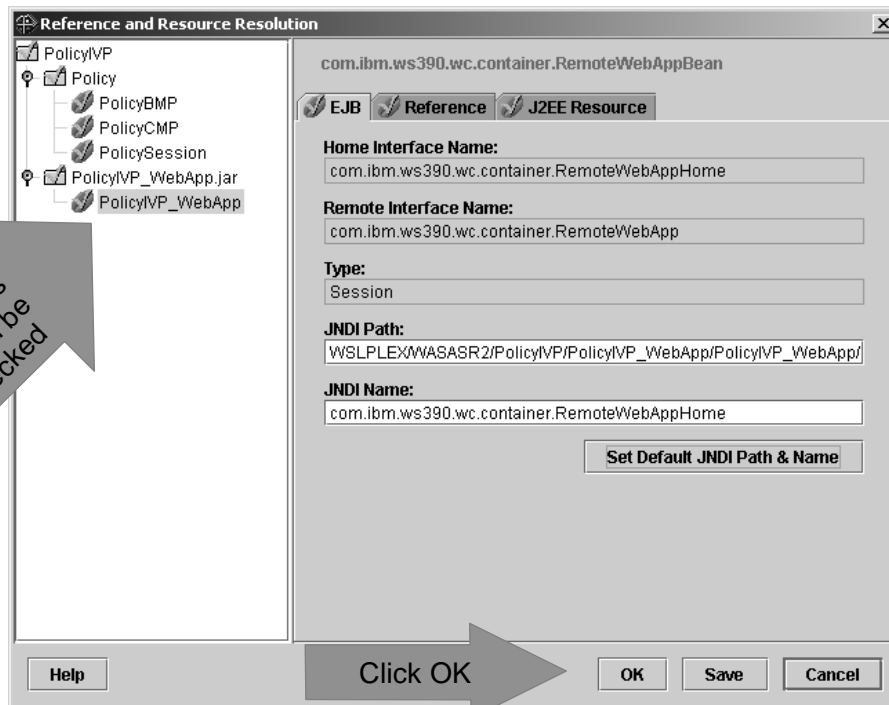
Set JNDI name

J2EE Resource Association



Associate with the appropriate resource

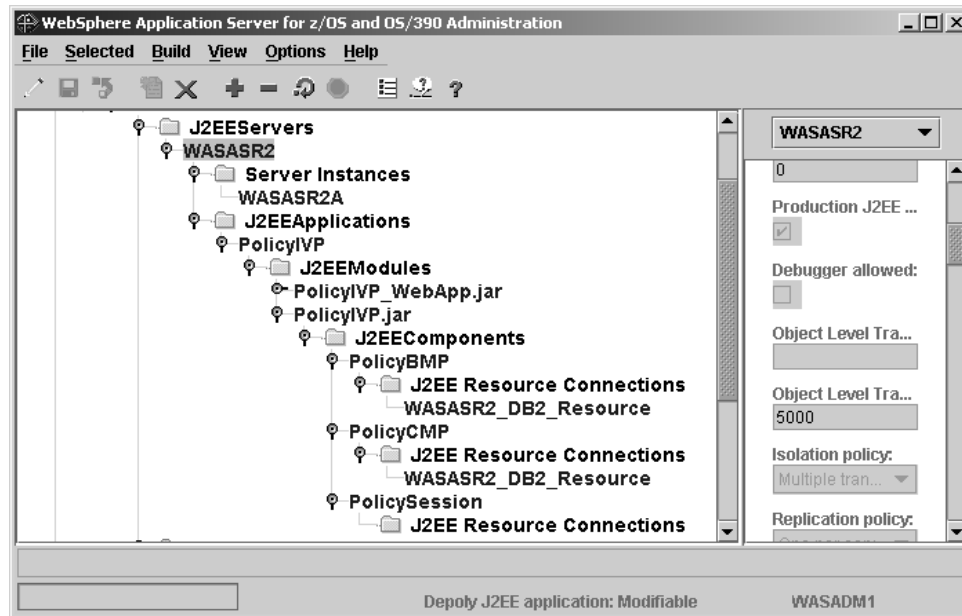
References Completed



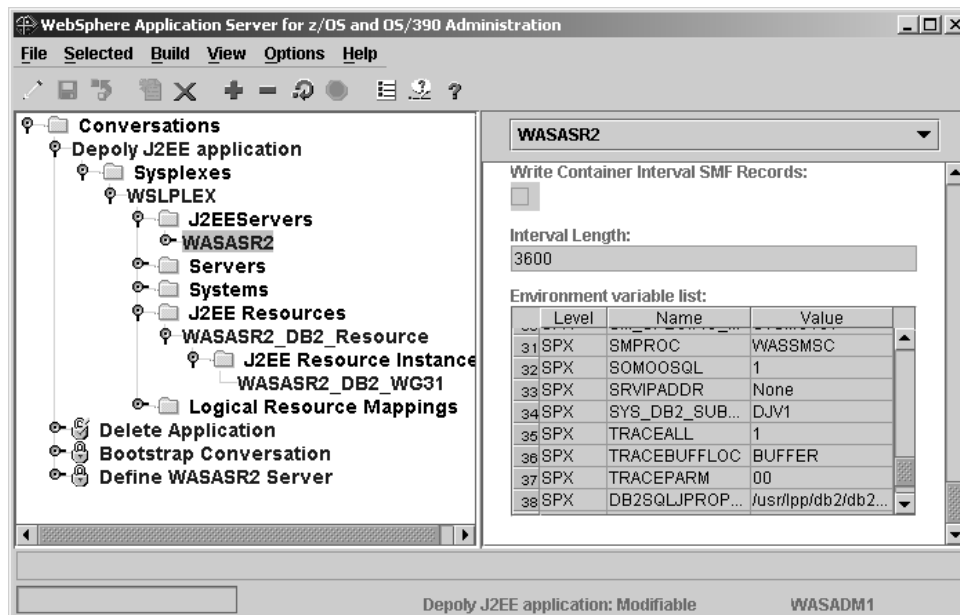
All beans should be checked

Click OK

Installed Application

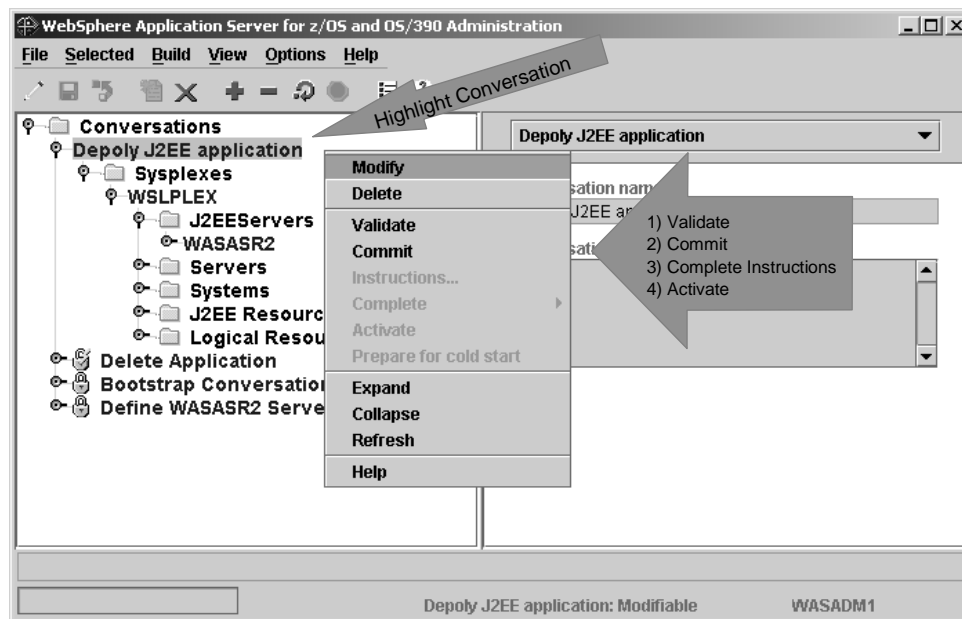


Environment Variables



The Level field tells you at which level this variable is defined: SY (Sysplex), SV (Server), or SI (Server instance)

Validate Conversation



Commit a Conversation



- During the commit process, the SM database is locked
 - ▶ the active configuration is not disrupted for CTL regions that are up and running, **but...**
 - ▶ CTL regions that start up during commit processing need to wait until commit processing completes.
- After commit, the conversation cannot be modified any more via the SM EUI

Complete Instructions



- Things that need to be done outside WAS for server instances to run
- Security tasks
 - ▶ add servers to started task table, update security profiles
- WLM tasks
 - ▶ define application environments for new servers
- ARM tasks
 - ▶ define server instances to restart in place in ARM
- Automation tasks
 - ▶ define server instances to automation product so that they start up automatically
- Resource manager tasks
 - ▶ e.g., bind DBRMs into package/plan, grant access on tables, etc.
- Log stream tasks
 - ▶ set up logstreams for sysplex, server and server instance

Completed Instructions



For this Lab

- Setup work has been done for you
 - ▶ Security definitions for the server and client
 - ▶ WLM definitions for server
 - ▶ Data Base has been loaded
 - ▶ Permissions granted

Activate a Conversation



■ Three steps:

1. preparation: set new conversation as active conversation, re-write all environment files
 - For each server instance, write environment file to
 <CBCONFIG>/envfile/<SysplexName>/<ServerInstanceName>/current.env
 - Copy old environment file to
 <CBCONFIG>/envfile/<SysplexName>/<ServerInstanceName>/backup/current.Date.Time.env
 - New environment file contains environment settings merged from sysplex, server and server instance, where the most specific takes precedence
2. recycle active servers that are affected by changes
3. register homes in naming and lifecycle as part of the server start up
 - Caveat: after activate, new application servers will start up successfully, but won't be fully operational until naming/lifecycle registration is done.

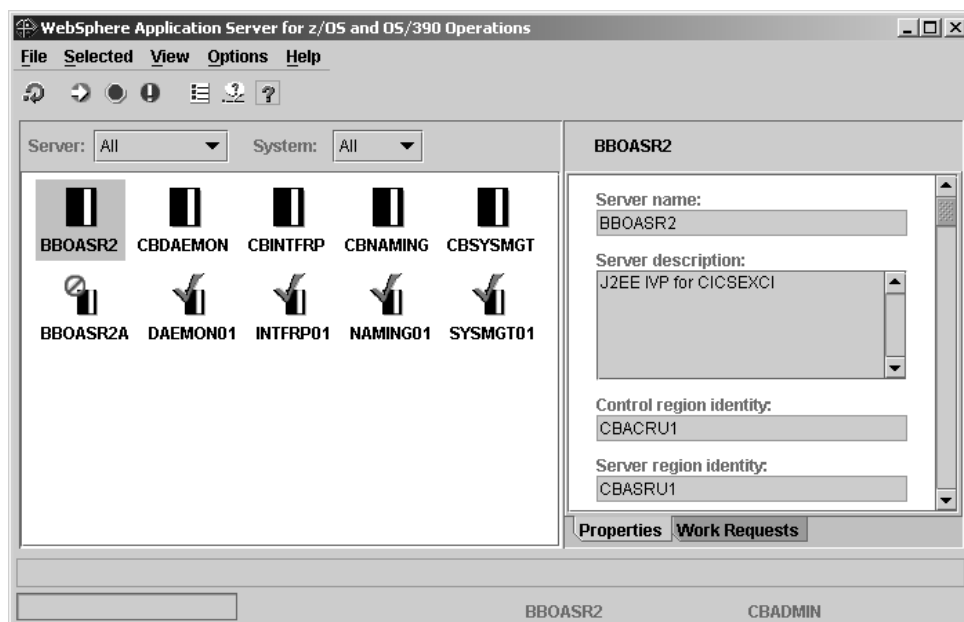
Operations

Operating WAS/390

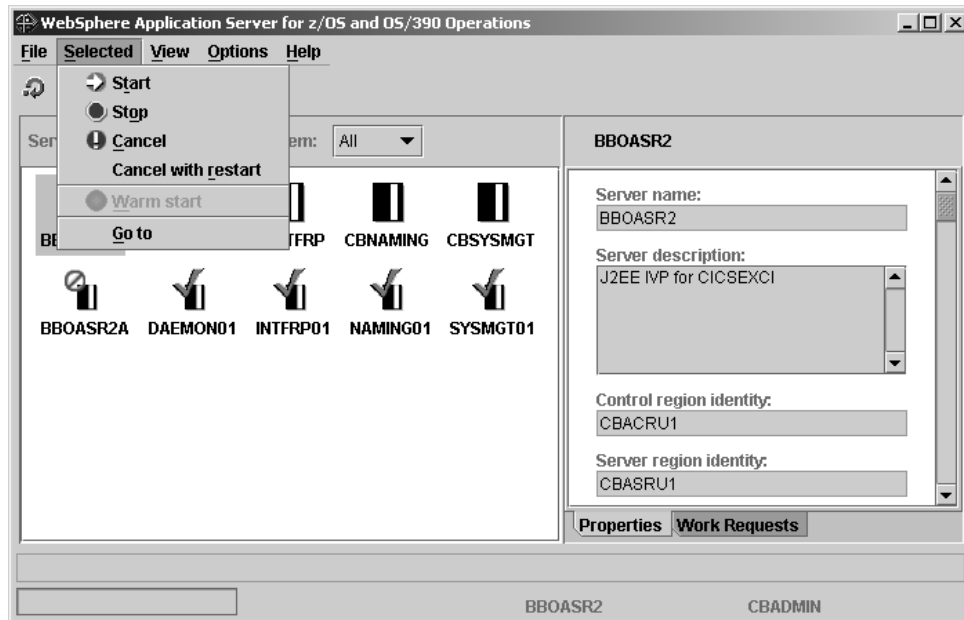


- Operation of WAS servers and server instances via the SM operations EUI or the SM scripting interface
- Displays status and properties of servers and server instances in the currently active conversation
- Operations for servers and server instances
 - ▶ start
 - ▶ stop
 - ▶ cancel with restart
 - ▶ cancel
 - ▶ warm start (not yet applicable)
- Not yet supported:
 - ▶ display work requests for servers and server instances

Operating WAS/390








Operating WAS/390



States of Servers and Server Instances

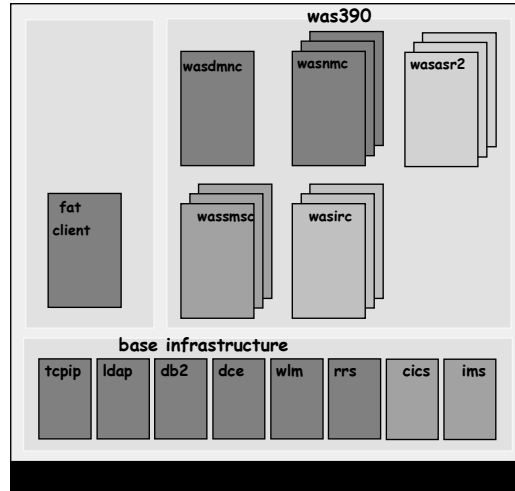


-  Server
-  Active server instance
-  Inactive server instance
-  Server instance with unknown state
-  Server instance in transition
 - EUI refreshs are driven only by the client
 - To view the latest changes of server instance states, refresh the EUI

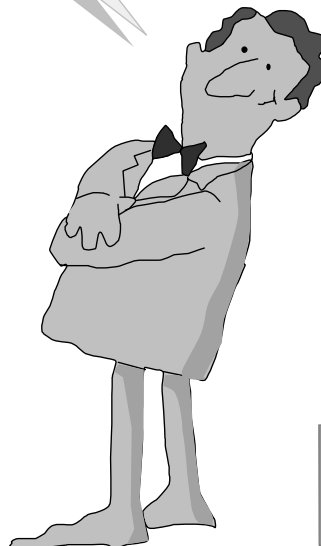
In the end...



WSL1



Now let's see
if this thing
really works?

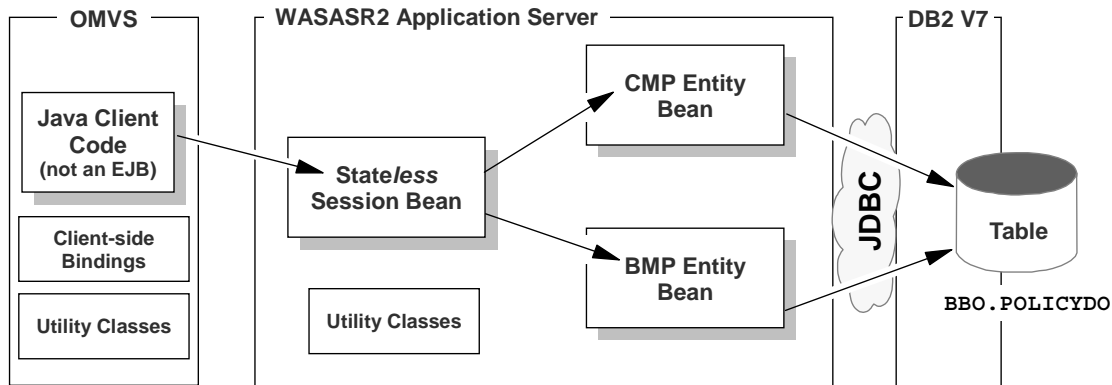


Lab

Lab



In the lab you are going to use a java client running in the OMVS shell to invoke the session bean in the PolicyIVP application.



Client Shell Script



```
export LIBPATH=/usr/lpp/WebSphere/lib:$LIBPATH
```

```
CLASSPATH=$CLASSPATH:/usr/lpp/WebSphere/lib/ws390crt.jar
```

```
CLASSPATH=$CLASSPATH:/usr/lpp/WebSphere/samples/PolicyIVP/ejb/PolicyClient.jar
```

```
CLASSPATH=$CLASSPATH:/usr/lpp/WebSphere/samples/PolicyIVP/ejb/PolicySessionClientBindings.jar
```

```
export CLASSPATH=$CLASSPATH:/usr/lpp/WebSphere/samples/PolicyIVP/ejb/PolicyUtil.jar
```

```
# Run the testcase for 'bmp'
```

```
java -DSESSION_NAME=<install path>/PolicyIVP/policysession_deploy/ivp.policysession/com.ibm.ws390.samples.ivp.ejb.PolicySessionHome com.ibm.ws390.samples.ivp.client.TestClient bmp
```

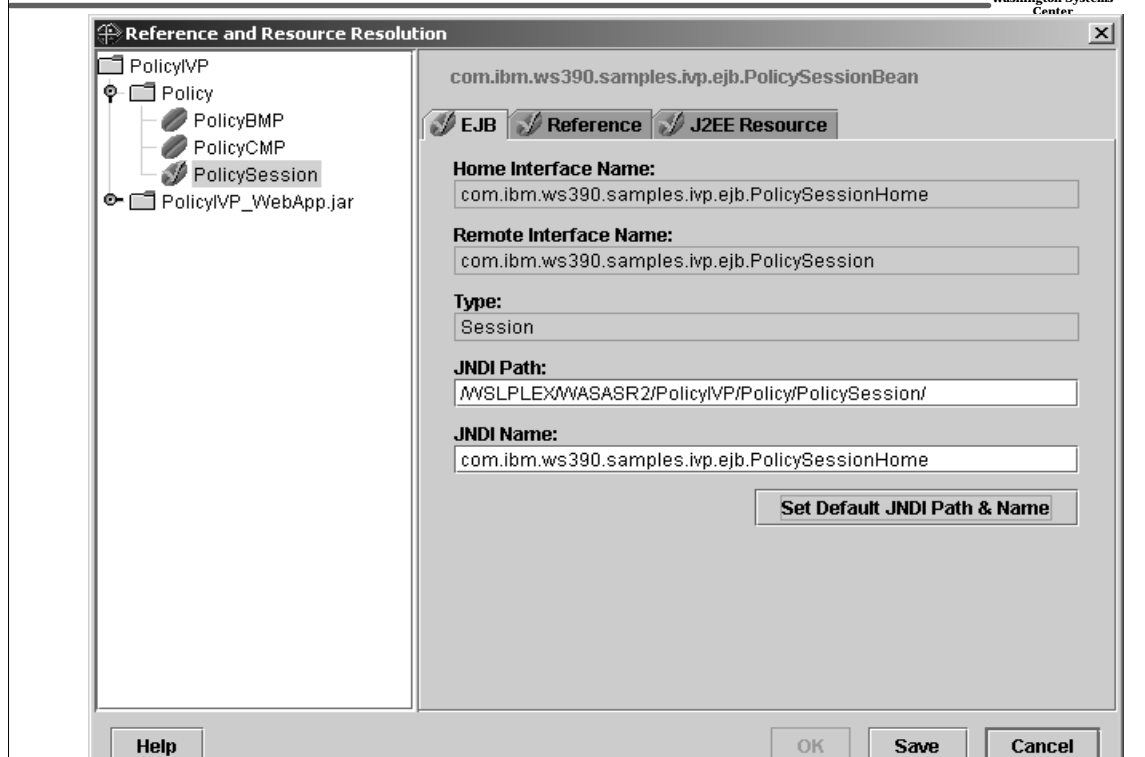
java -DSESSION_NAME=

invoke a java program and pass in a variable

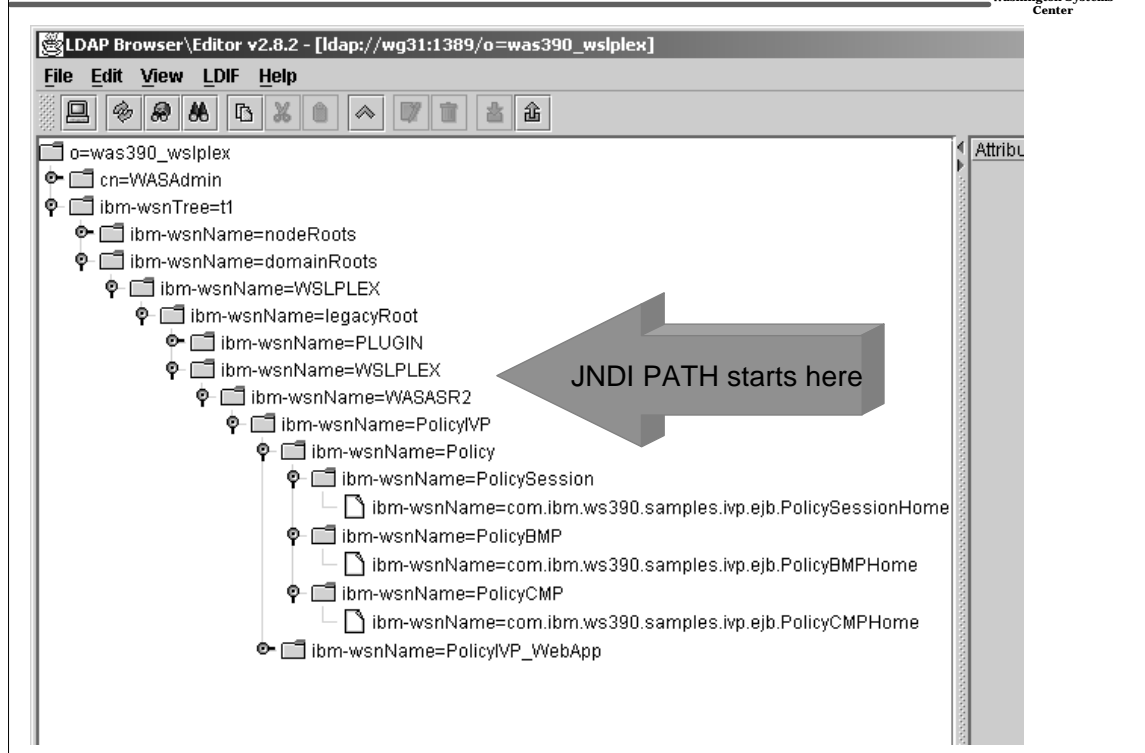
/<install path> /PolicyIVP/policysession_deploy/ivp.policysession/

jndi path name

Resolved JNDI Name



LDAP Browser View



Client Shell Script



```
export LIBPATH=/usr/lpp/WebSphere/lib:$LIBPATH
```

```
CLASSPATH=$CLASSPATH:/usr/lpp/WebSphere/lib/ws390crt.jar
```

```
CLASSPATH=$CLASSPATH:/usr/lpp/WebSphere/samples/PolicyIVP/ejb/PolicyClient.jar
```

```
CLASSPATH=$CLASSPATH:/usr/lpp/WebSphere/samples/PolicyIVP/ejb/PolicySessionClientBindings.jar
```

```
export CLASSPATH=$CLASSPATH:/usr/lpp/WebSphere/samples/PolicyIVP/ejb/PolicyUtil.jar
```

```
# Run the testcase for 'bmp'
```

```
java -DSESSION_NAME=<install path>/PolicyIVP/policysession_deploy/ivp.policysession/com.ibm.ws390.samples.ivp.ejb.PolicySessionHome com.ibm.ws390.samples.ivp.client.TestClient bmp
```

com.ibm.ws390.samples.ivp.ejb.PolicySessionHome

indi name

bmp

type of bean to invoke

com.ibm.ws390.samples.ivp.client.TestClient

name of java client program

Questions?

