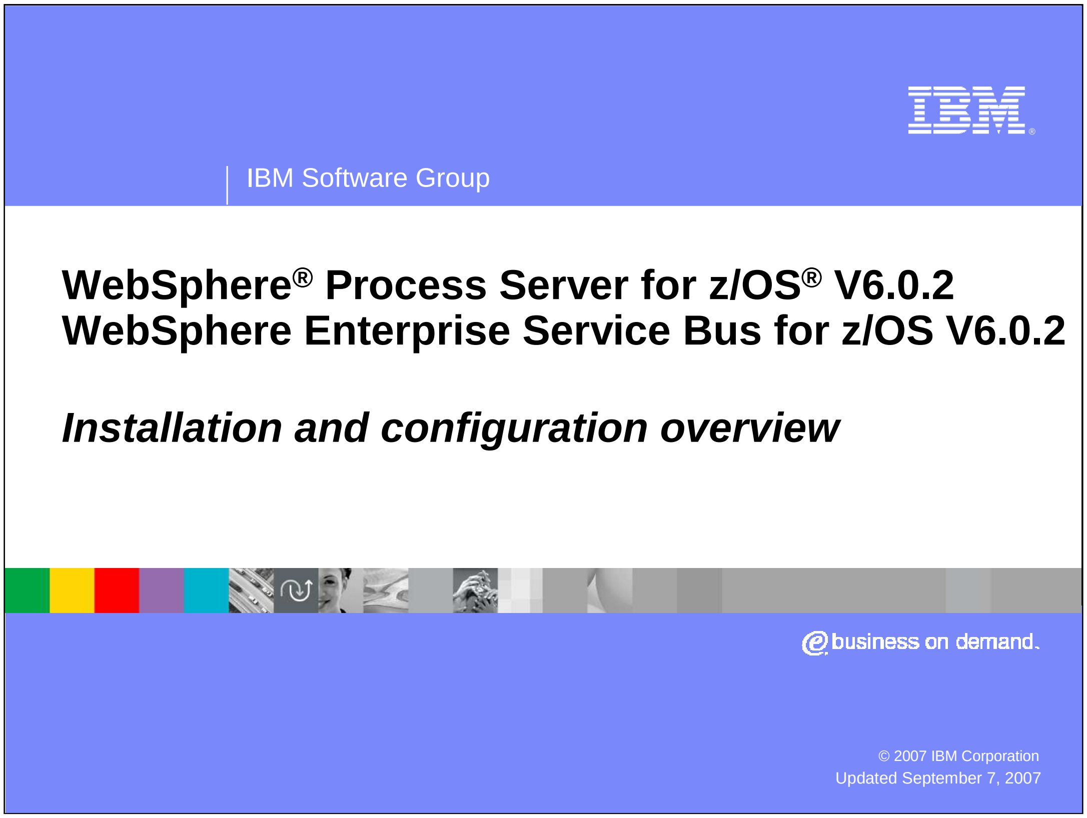

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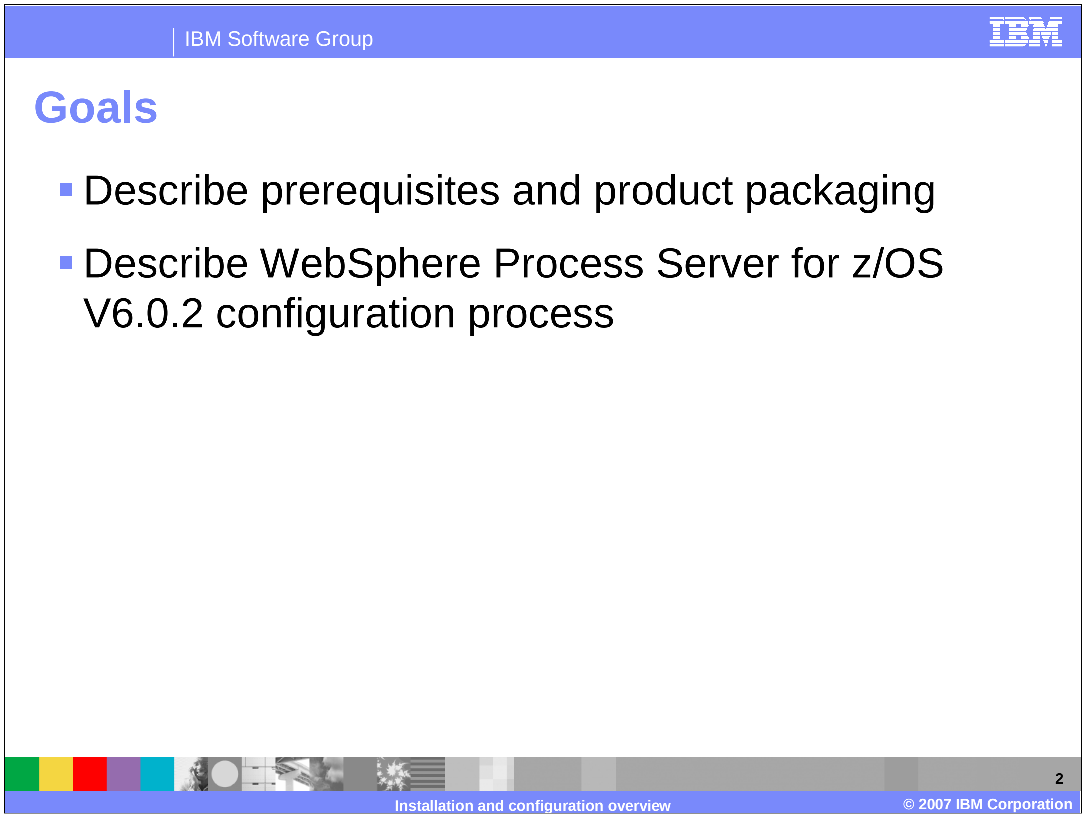
WebSphere® Process Server for z/OS® V6.0.2 WebSphere Enterprise Service Bus for z/OS V6.0.2

Installation and configuration overview

business on demand.

Updated September 7, 2007

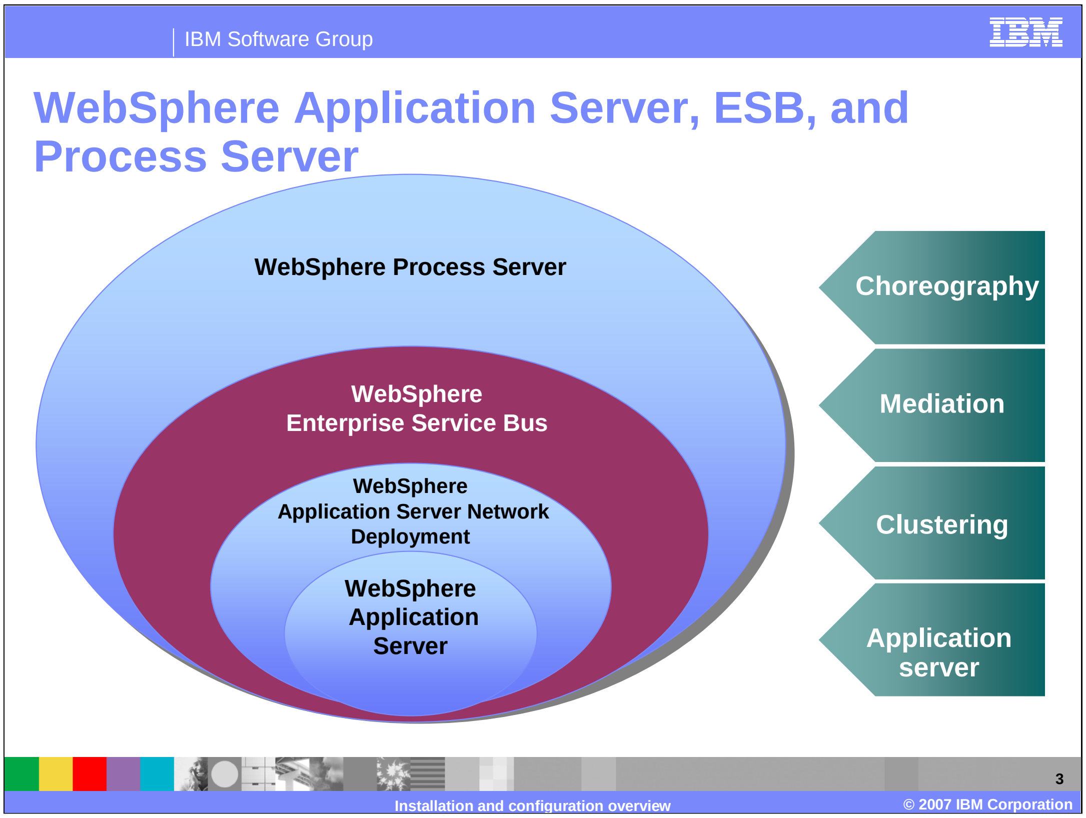
This presentation will cover installation of WebSphere Process Server for z/OS V6.0.2 and WebSphere Enterprise Service Bus for z/OS V6.0.2.



Goals

- Describe prerequisites and product packaging
- Describe WebSphere Process Server for z/OS V6.0.2 configuration process

The goal is to look at the pre-requisites and packaging of the products and then look at the installation of the products at a high level.



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WebSphere Application Server, ESB, and Process Server

WebSphere Process Server

WebSphere Enterprise Service Bus

WebSphere Application Server Network Deployment

WebSphere Application Server

Choreography

Mediation

Clustering

Application server

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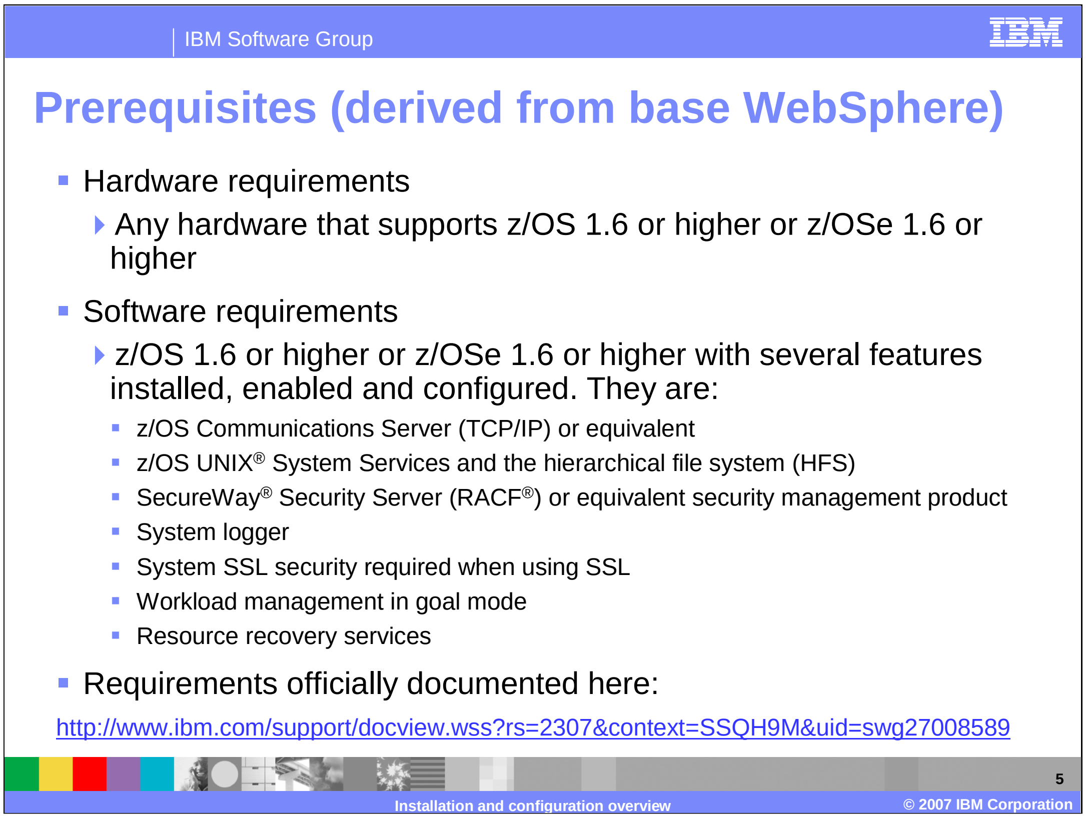
Installation and configuration overview

This slide is meant to show where the WebSphere Process Server and the WebSphere Enterprise Service Bus fit in the product stack. Notice that the WebSphere Enterprise Service Bus is built on top of the WebSphere Application Server which provides the Java™ 2 Enterprise Edition framework for the stack products. The WebSphere Enterprise Service Bus adds mediation capabilities to the picture, allowing mediation of message flows between service requestors and providers. WebSphere Process Server is built on top of that, which means that the WebSphere Process Server includes the mediation functions found in the WebSphere Enterprise Service Bus. The WebSphere Process Server also adds choreography capabilities for business process management applications.

Section

Prerequisites and product packaging

This next section will look briefly at the prerequisites for the products and how the products are packaged.

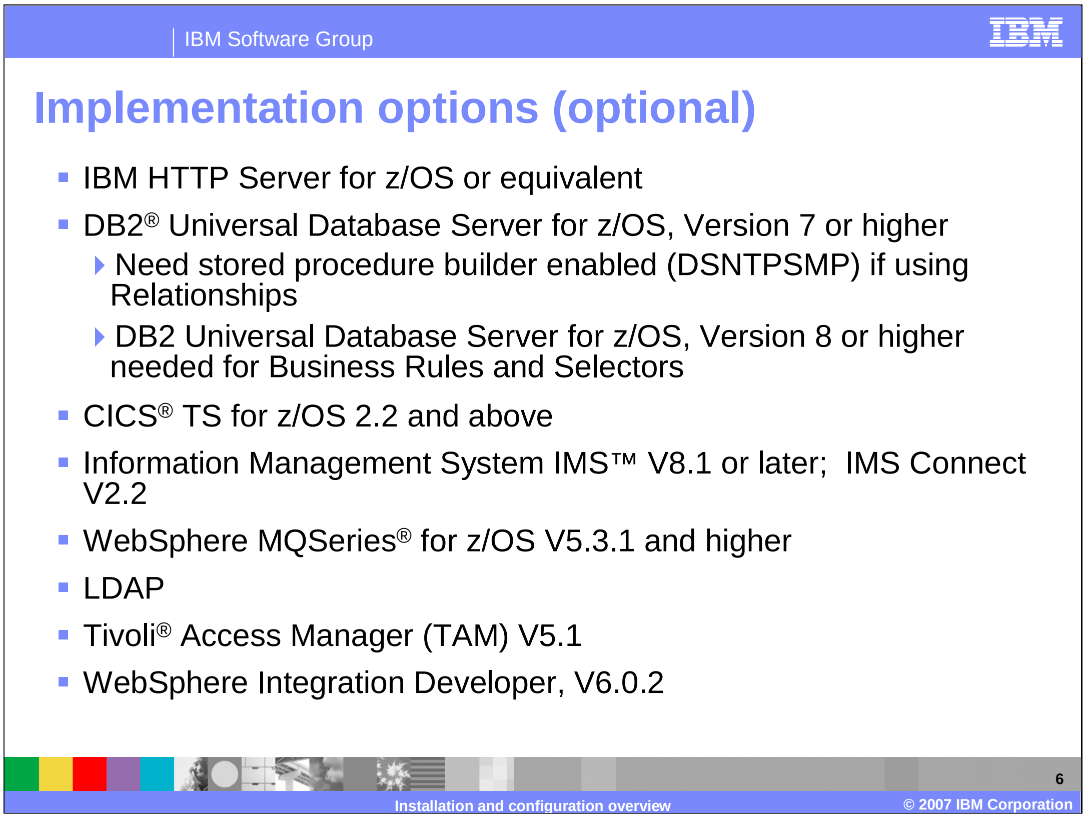


Prerequisites (derived from base WebSphere)

- Hardware requirements
  - Any hardware that supports z/OS 1.6 or higher or z/OSe 1.6 or higher
- Software requirements
  - z/OS 1.6 or higher or z/OSe 1.6 or higher with several features installed, enabled and configured. They are:
    - z/OS Communications Server (TCP/IP) or equivalent
    - z/OS UNIX® System Services and the hierarchical file system (HFS)
    - SecureWay® Security Server (RACF®) or equivalent security management product
    - System logger
    - System SSL security required when using SSL
    - Workload management in goal mode
    - Resource recovery services
- Requirements officially documented here:

http://www.ibm.com/support/docview.wss?rs=2307&context=SSQH9M&uid=swg27008589

The requirements for WebSphere Process Server for z/OS V6.02 and WebSphere Enterprise Service Bus for z/OS V6.0.2 come from the Base WebSphere that the Process Server or the Enterprise Service Bus will be installed on top of. Notice that z/OS 1.6 is the minimum z/OS level with V6.0.2 since z/OS V1.4 went out of service. If you plan to exploit any zAAPs in your configuration, you will need an IBM eServer zSeries 990 or zSeries 890. The features listed are needed for the base application server configuration. For an official list of requirements, you can refer to the Web site shown on the slide.



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Implementation options (optional)

- IBM HTTP Server for z/OS or equivalent
- DB2® Universal Database Server for z/OS, Version 7 or higher
  - Need stored procedure builder enabled (DSNTPSMP) if using Relationships
  - DB2 Universal Database Server for z/OS, Version 8 or higher needed for Business Rules and Selectors
- CICS® TS for z/OS 2.2 and above
- Information Management System IMS™ V8.1 or later; IMS Connect V2.2
- WebSphere MQSeries® for z/OS V5.3.1 and higher
- LDAP
- Tivoli® Access Manager (TAM) V5.1
- WebSphere Integration Developer, V6.0.2

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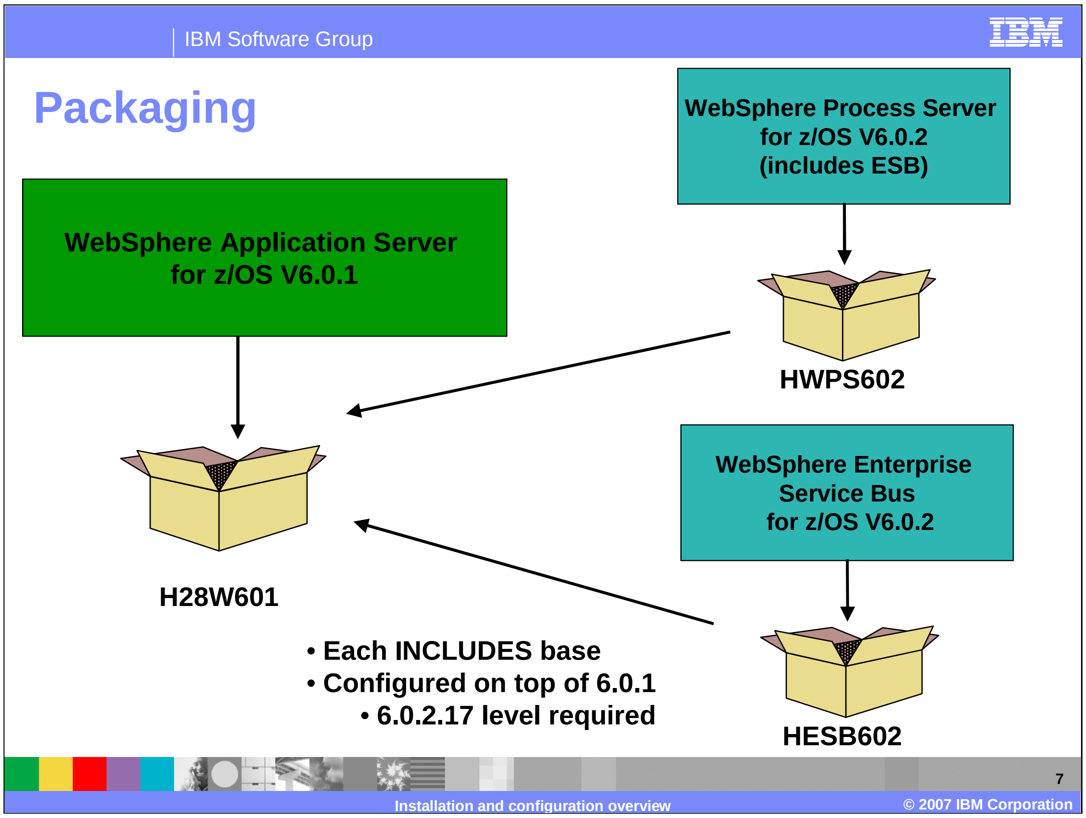
Installation and configuration overview

Many of the implementation options shown here, such as CICS and IMS, are determined by the applications that are run on the server. In the case of DB2, if you plan to implement a Network Deployment solution with WebSphere Process Server or WebSphere Enterprise Service Bus, DB2 becomes a requirement. WebSphere Process Server and WebSphere Enterprise Service Bus require many databases which will be shown on a later slide. DB2 V7 is sufficient for the Process Choreographer function in WebSphere Process Server but may pose limitations for Common Event Infrastructure, Business Rules and Selector functions. DB2 V8 is recommended.   The Stored Procedure Builder (DSNTPSMP) in DB2 also needs to be enabled if using Relationships.

The tools to build the applications to be run in a WebSphere Process Server environment are provided by the WebSphere Integration Developer.



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Packaging

- Each INCLUDES base
- Configured on top of 6.0.1
  - 6.0.2.17 level required

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Installation and configuration overview

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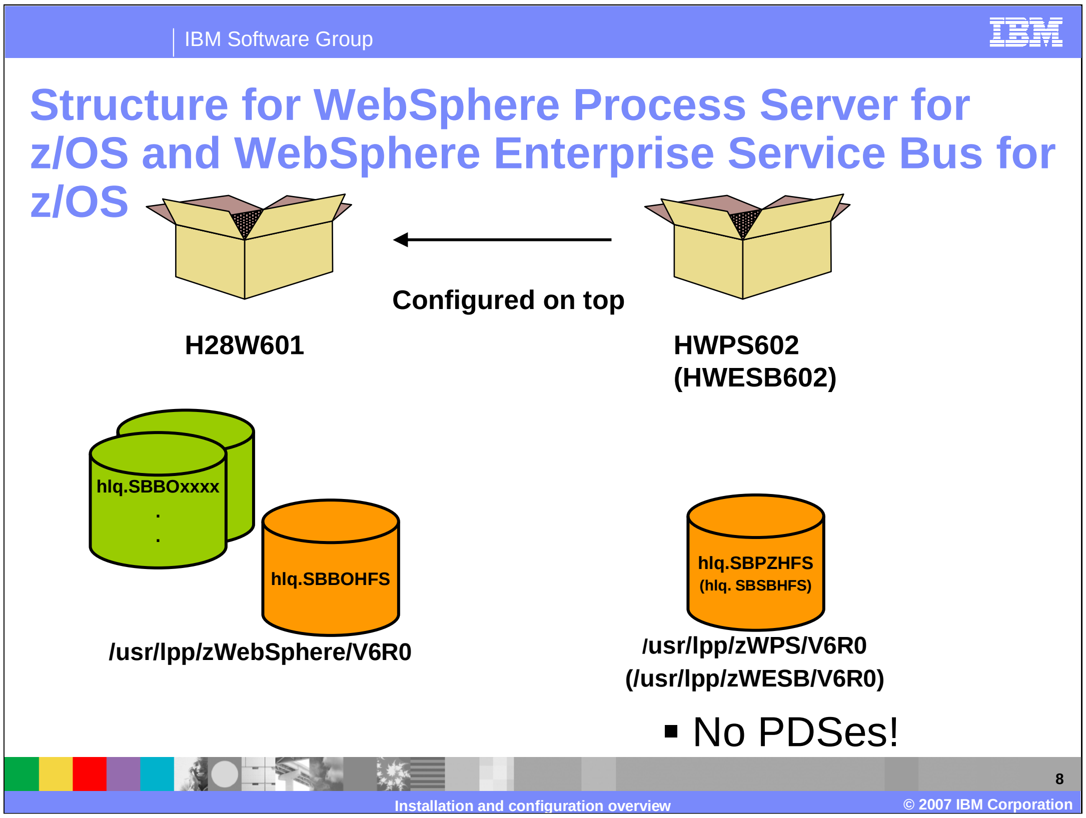
This slide shows the packaging of the products. WebSphere Process Server for z/OS V6.0.2 and WebSphere Enterprise Service Bus for z/OS V6.0.2 are built on top of WebSphere Application Server for z/OS V6.01. When you order either product, you will receive a copy of the base WebSphere Application Server for z/OS at the latest PTF level. You should note that V6.0.2.17 is the minimum required PTF level. There are two new FMIDs for the products, HWPS602 and HESB602 as shown on the slide.   You should also note that the WebSphere Process Server product INCLUDES the WebSphere Enterprise Service Bus product so the WebSphere Enterprise Service Bus product is really a subset of the WebSphere Process Server product.



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Structure for WebSphere Process Server for z/OS and WebSphere Enterprise Service Bus for z/OS

Configured on top

H28W601

HWPS602
(HWESB602)

hlq.SBBOxxxx
.
.

hlq.SBBOHFS

/usr/lpp/zWebSphere/V6R0

hlq.SBPZHFS
(hlq. SBSBHFS)

/usr/lpp/zWPS/V6R0
(/usr/lpp/zWESB/V6R0)

- No PDSes!

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Installation and configuration overview

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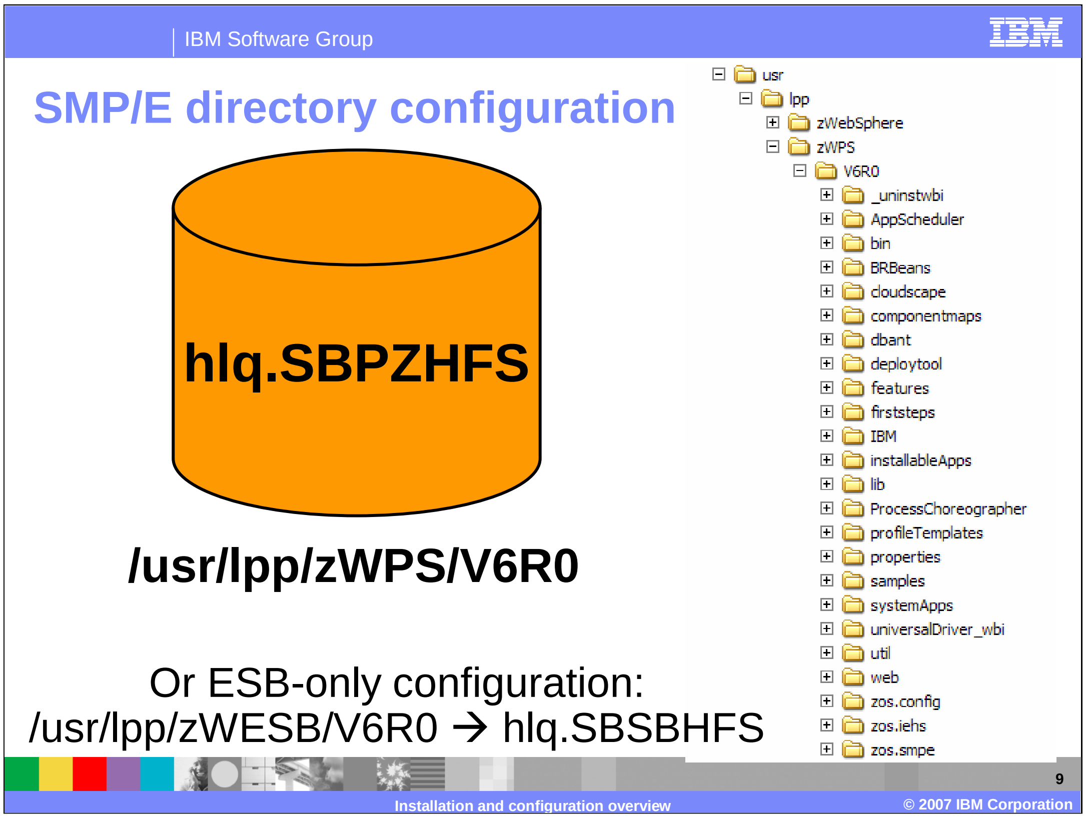
WebSphere Process Server for z/OS and WebSphere Enterprise Service Bus for z/OS are pure Java implementations so there is no need for PDSes in the products. The code is fully contained in the HFSes shown. Unlike the WebSphere Business Integration Server Foundation product, there is no need for the high-level qualifier (HLQ) for the stack products to be the same as the high-level qualifier used for the WebSphere base product.



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SMP/E directory configuration

hlq.SBPZHFS

/usr/lpp/zWPS/V6R0

Or ESB-only configuration:
/usr/lpp/zWESB/V6R0 → hlq.SBSBHFS

```
⊟ usr
  ⊟ lpp
    ⊞ zWebSphere
    ⊟ zWPS
      ⊟ V6R0
        ⊞ _uninstwbi
        ⊞ AppScheduler
        ⊞ bin
        ⊞ BRBeans
        ⊞ cloudscape
        ⊞ componentmaps
        ⊞ dbant
        ⊞ deploytool
        ⊞ features
        ⊞ firststeps
        ⊞ IBM
        ⊞ installableApps
        ⊞ lib
        ⊞ ProcessChoreographer
        ⊞ profileTemplates
        ⊞ properties
        ⊞ samples
        ⊞ systemApps
        ⊞ universalDriver_wbi
        ⊞ util
        ⊞ web
        ⊞ zos.config
        ⊞ zos.iehs
        ⊞ zos.smpe
```

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Installation and configuration overview

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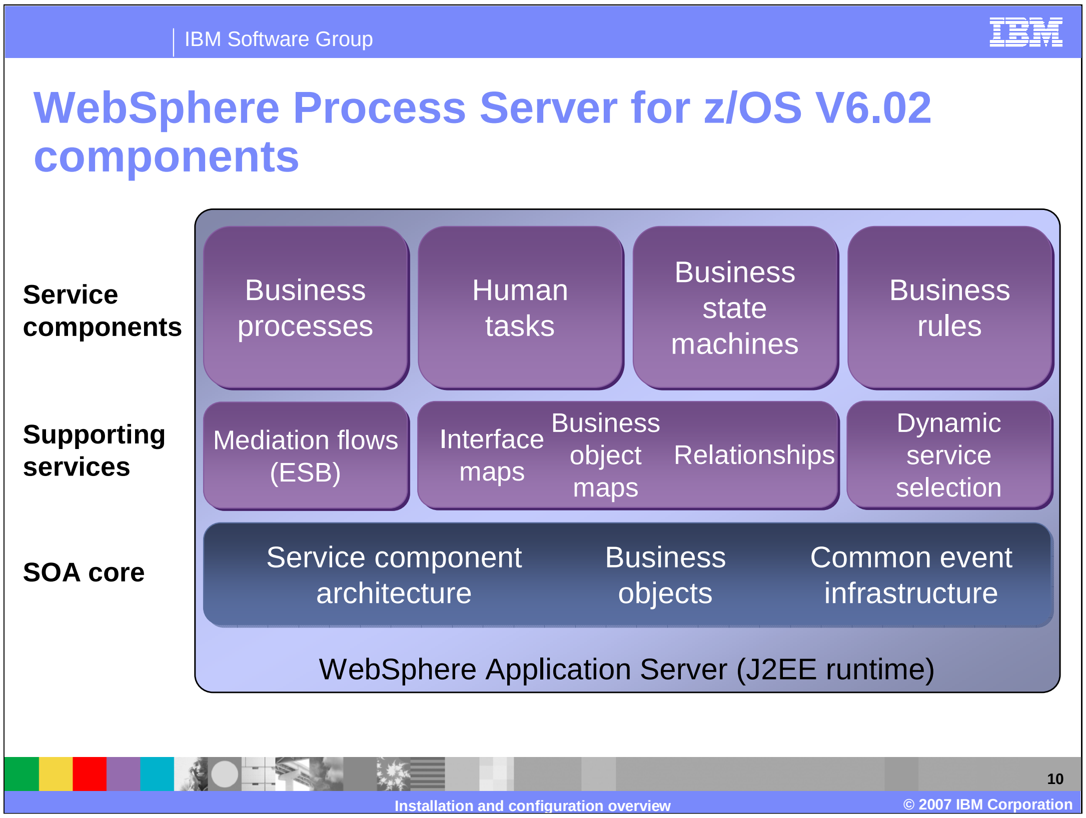
This slide shows the HFS for the WebSphere Process Server as installed by SMP/E. The WebSphere Enterprise Service Bus HFS would be similar. The default paths are shown along with the naming for the HFS file that will contain the product code.

WebSphere Process Server for z/OS V6.02 components



This slide provides an overview of the components that make up the WebSphere Process Server and are enabled by the WebSphere Integration Developer.

The WebSphere Process Server is built on WebSphere Application Server Version 6, providing a robust J2EE application server runtime with capabilities that the process server implementation can exploit, such as JMS messaging and enterprise beans. It can also make use of the application server qualities of service, such as transactions, security and clustering. Overall, this provides a well proven runtime environment for WebSphere Process Server.

The Service Oriented Architecture (SOA) Core is the foundation in WebSphere Process Server. The main components of the SOA Core are the Service Component Architecture (SCA), Business Objects (BOs) and the Common Event Infrastructure (CEI).

SCA is the uniform programming and invocation model for business services that publish or operate on business data.

Business Objects (BOs) represent the data that is passed within that framework. Business objects are extensions to Service Data Objects (SDOs), which carry additional information needed for some integration scenarios.

The Common Event Infrastructure (CEI) provides the foundation architecture for the management and handling of events produced by business processes. This is essential for enabling the monitoring of business processes with products such as the WebSphere Business Monitor.

On top of the SOA Core are a set of Supporting Services, which provide the transformation primitives required by integration scenarios built using Service Component Architecture and Business Objects.   WebSphere Enterprise Service Bus is found in this layer and provides Mediation capabilities for the WebSphere Process Server. As noted, WebSphere Enterprise Service Bus is also a separate product.

Interface maps are used to enable components making use of a particular interface to make calls to a component that provides a semantically similar but syntactically different interface.

Business object maps enable the transformation of business data between fields of Business Objects representing the same business entity but of differing types.

Relationships enable the correlation and synchronization of data representing the same business entity stored in multiple back end systems.

Selectors provide for a dynamic invocation of a target component based on a date and time criteria.

Business Processes are a fundamental part of the programming model, providing the composition aspect of the programming model. In WebSphere Process Server, the business processes are defined using BPEL.   Business processes provide an implementation of a process model that describes the logical order in which the different activities of the process are being run, making calls out to the individual SCA services that implement the specific activities. As a result, a business process is the set of business-related activities, rules and conditions that are invoked in a defined sequence to achieve a business goal.

Human Tasks are enabled by the Human Task Manager and provide the human task capabilities for WebSphere Process Server.

Human Tasks allow people to participate in a business process in a machine-to-human scenario, a human-to-machine scenario and in a human-to-human scenario.

In the machine-to-human scenario an automated process creates tasks for people who participate in the business process, whereas the human-to-machine scenario allows a person to create a task that is run by an automated service. The human-to-human scenario allows a task to be created by a person for another person.

Human tasks can be integrated directly into the BPEL for a business process or can be packaged as an SCA component for use by any client that can invoke an SCA component.

Business State Machines are another way of modeling a business process. There are some processes that are highly event driven and are well suited to being thought of in terms of a state transition diagram. For example, a business process for order processing has to deal with the fact that an order can be canceled at any time during the order process up until the order is actually shipped. It can be difficult to model these kinds of processes in a business process. The Business State Machine component allows you to model the business process using similar constructs as UML 2.0 state machine support, and then generates BPEL for the implementation.

Business rules are a means of implementing and enforcing business policy through externalization of business function. Externalization enables the business rules to be managed independently from other aspects of an application. This independence allows for dynamic updating capabilities of the business rules to provide for a more agile business. There are two styles of business rules, if then rulesets and decision tables.

A Web client is provided where the parameters of business rules can be changed by a business user using a natural language specification of these rules rather than requiring an application developer or integration developer to change the application.

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Section

Installation and configuration overview

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Installation and configuration overview

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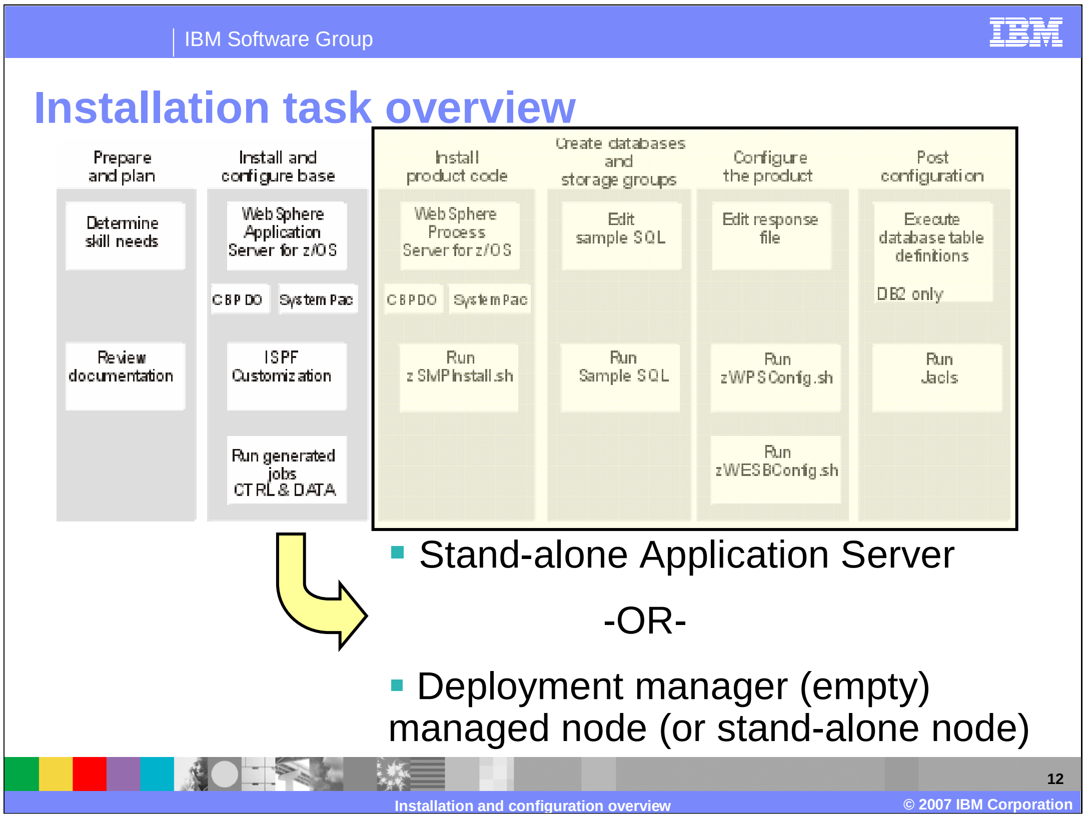
The next section will look at an overview of the installation and configuration of the WebSphere Process Server for z/OS V6.0.2 and the WebSphere Enterprise Service Bus for z/OS V6.0.2.



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Installation task overview

Prepare and plan

Determine skill needs

Review documentation

Install and configure base

WebSphere Application Server for z/OS

CBPDO

SystemPac

ISPF Customization

Run generated jobs CTRL & DATA

Install product code

WebSphere Process Server for z/OS

CBPDO

SystemPac

Run zSMPInstall.sh

Create databases and storage groups

Edit sample SQL

Run Sample SQL

Configure the product

Edit response file

Run zWPSConfig.sh

Run zWESBConfig.sh

Post configuration

Execute database table definitions

DB2 only

Run Jacls

- Stand-alone Application Server

-OR-

- Deployment manager (empty) managed node (or stand-alone node)

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Installation and configuration overview

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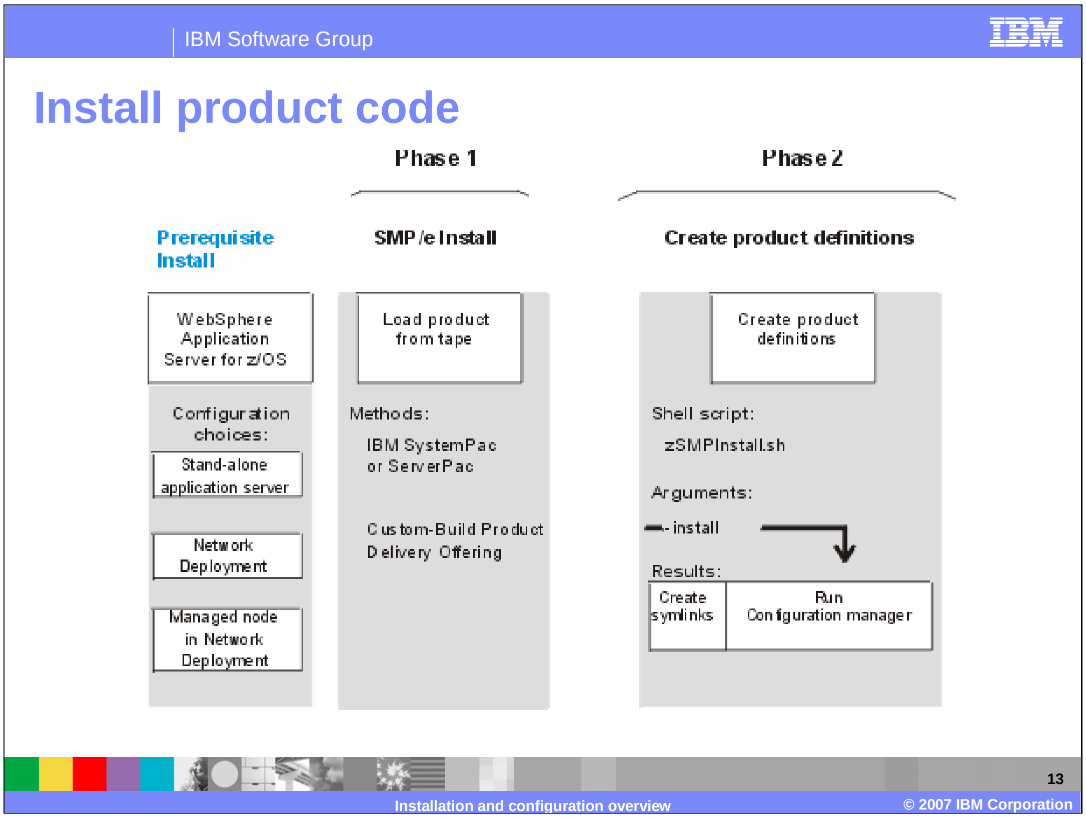
Shown here is the installation task overview. The WebSphere Process Server and WebSphere Enterprise Service Bus configuration is highlighted. Note that you are installing on top of a base WebSphere Application Server Configuration. This can be either a stand-alone Application Server or a deployment manager/empty managed node combination. Starting with V6.0.2, you can also federate a stand-alone Application Server into a deployment manager cell. Highlighted functions will be the topic of this education. This education assumes you have already installed and configured a base application server.



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Install product code

Phase 1

Phase 2

Prerequisite Install

SMP/e Install

Create product definitions

WebSphere Application Server for z/OS

Configuration choices:

Stand-alone application server

Network Deployment

Managed node in Network Deployment

Load product from tape

Methods:

IBM SystemPac or ServerPac

Custom-Build Product Delivery Offering

Create product definitions

Shell script:

zSMPInstall.sh

Arguments:

- install

Results:

Create symlinks

Run Configuration manager

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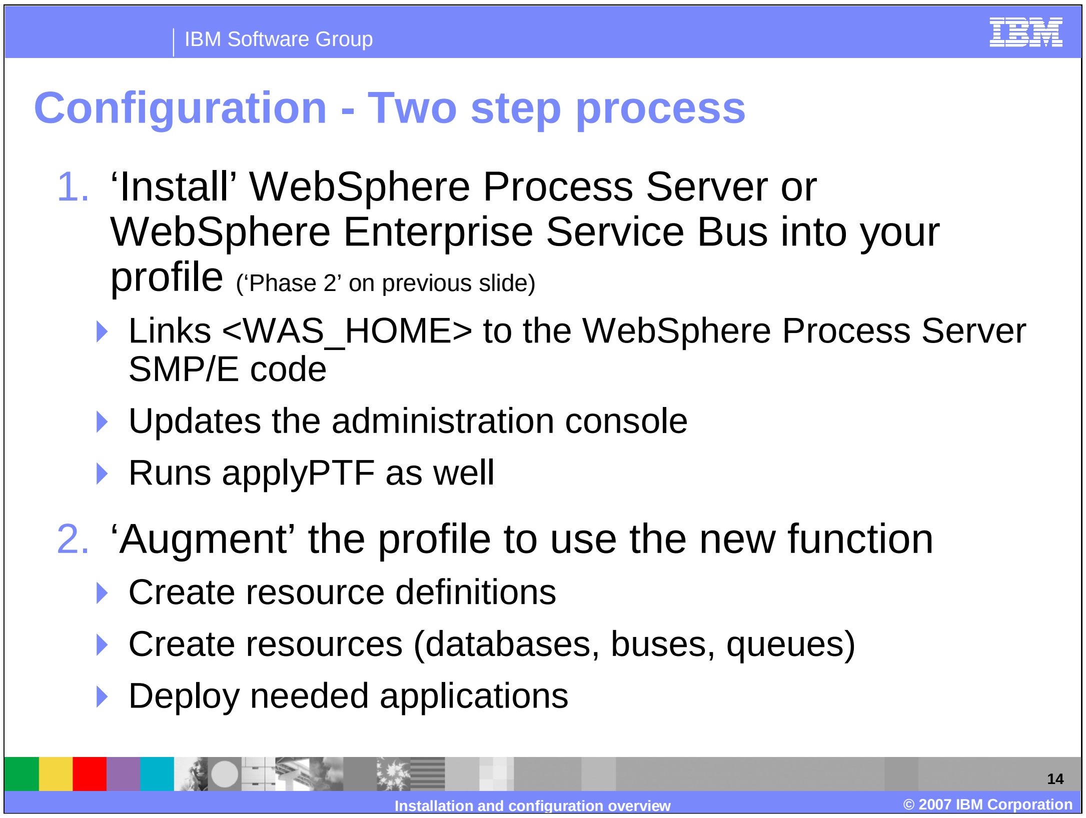
Installation and configuration overview

As with the base WebSphere Application Server installation, the WebSphere Process Server and WebSphere Enterprise Service Bus installation is really a two-phase operation. The first thing that needs to be done is the SMP/E **installation** of the product code. Once that is done, you need to **configure** a WebSphere Application Server environment to be able to run WebSphere Process Server or WebSphere Enterprise Service Bus-enabled applications. After you have a base WebSphere Application Server defined, and the WebSphere Process Server or WebSphere Enterprise Service Bus product SMP/E-installed, you are ready to create product definitions for the WebSphere Process Server or WebSphere Enterprise Service Bus. To do this, you will run the zSMPInstall.sh script which will create symlinks back to the WebSphere Process Server or WebSphere Enterprise Service Bus product code in your base WebSphere Application Server configuration. The zSMPInstall.sh script will also run the Configuration Manager which runs many Ant scripts, resulting in the administrative console being updated with WebSphere Process Server or WebSphere Enterprise Service Bus definitions.



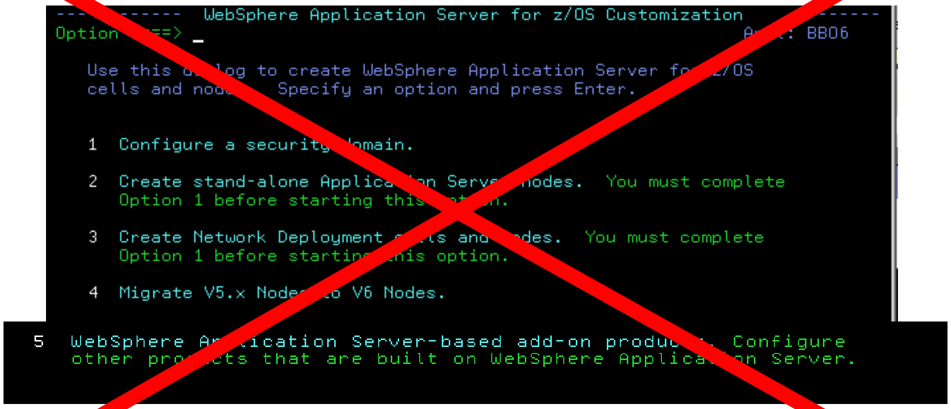
Configuration - Two step process

1. ‘Install’ WebSphere Process Server or WebSphere Enterprise Service Bus into your profile (‘Phase 2’ on previous slide)
   - Links <WAS_HOME> to the WebSphere Process Server SMP/E code
   - Updates the administration console
   - Runs applyPTF as well
2. ‘Augment’ the profile to use the new function
   - Create resource definitions
   - Create resources (databases, buses, queues)
   - Deploy needed applications

Configuring a server to include WebSphere Process Server for z/OS or WebSphere Enterprise Service Bus for z/OS is a two-step process. Keep in mind that you are updating an existing WebSphere Application Server Profile to have WebSphere Process Server or WebSphere Enterprise Service Bus function. In the first step (which is really ‘Phase 2’ on the previous slide where you ran the zSMPInstall.sh command), you will establish links to the WebSphere Process Server or WebSphere Enterprise Service Bus product code. During this phase, you will also update the administrative console to include new functions available with the products and run the applyPTF shell script. This first step is really geared towards the systems programmer. There are two pieces of information that are needed to complete this step. The first needed piece of information is the <WAS_HOME> directory whose profile you are updating. The second needed piece of information is the directory where the WebSphere Process Server or WebSphere Enterprise Service Bus products are SMP/E installed.

The second step is geared towards the WebSphere Administrator and is called ‘augmentation’. In this step, you will create the resource definitions and create the resources needed to use the WebSphere Process Server or WebSphere Enterprise Service Bus. This includes such things as databases, service integration buses and message queues. Applications are also installed into the server during this phase.

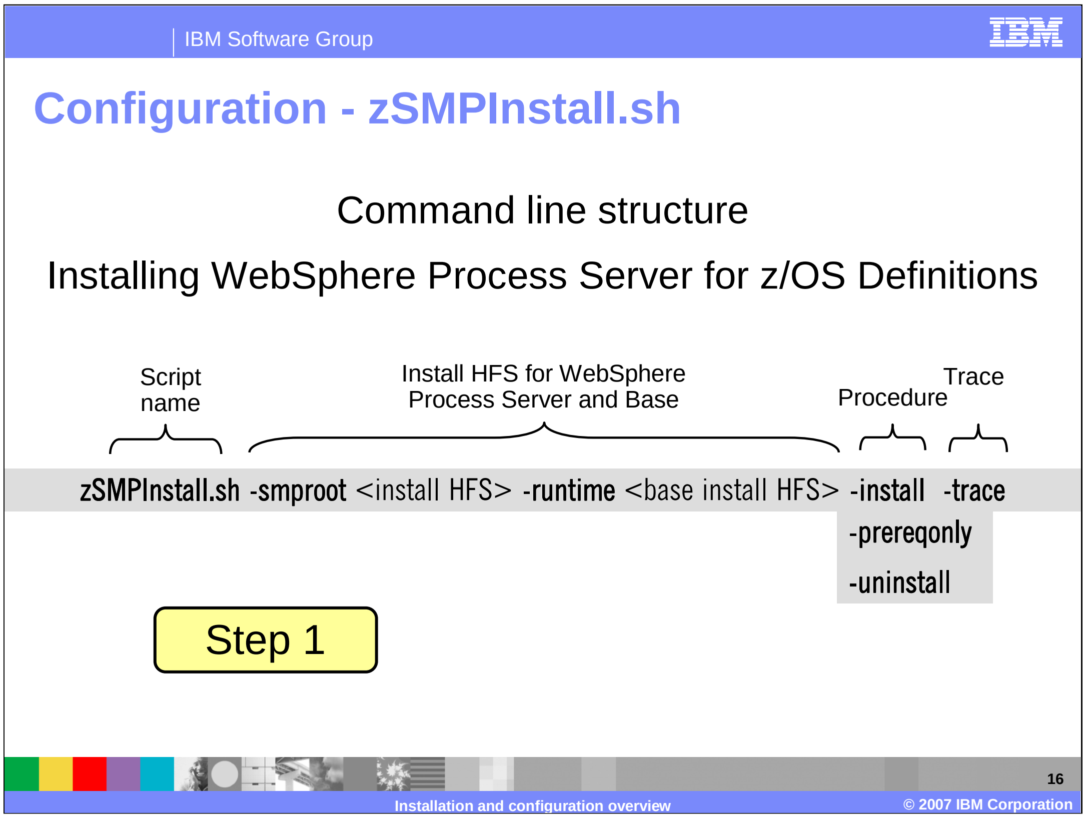
Configuration (continued)



```
-----------  WebSphere Application Server for z/OS Customization  -------
Option ===> _                                                  Area: BBO6

   Use this dialog to create WebSphere Application Server for z/OS
   cells and nodes.  Specify an option and press Enter.


   1  Configure a security domain.

   2  Create stand-alone Application Server nodes.  You must complete
      Option 1 before starting this option.

   3  Create Network Deployment cells and nodes.  You must complete
      Option 1 before starting this option.

   4  Migrate V5.x Nodes to V6 Nodes.

 5  WebSphere Application Server-based add-on products. Configure
    other products that are built on WebSphere Application Server.
```

No ISPF dialog configuration!!

As you learned on a previous slide, the WebSphere Process Server for z/OS and WebSphere Enterprise Service Bus for z/OS products are fully contained in an HFS. You will notice that ISPF Dialogs are NOT used for configuration of the products which would require PDSes. By using only shell scripts for configuration, the installation among the various platforms is more consistent and takes advantage of common code.



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Configuration - zSMPInstall.sh

Command line structure

Installing WebSphere Process Server for z/OS Definitions

Script name
Install HFS for WebSphere Process Server and Base
Procedure
Trace

```
zSMPInstall.sh -smproot <install HFS> -runtime <base install HFS> -install  -trace
                                                                  -prereqonly
                                                                  -uninstall
```

Step 1

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Installation and configuration overview

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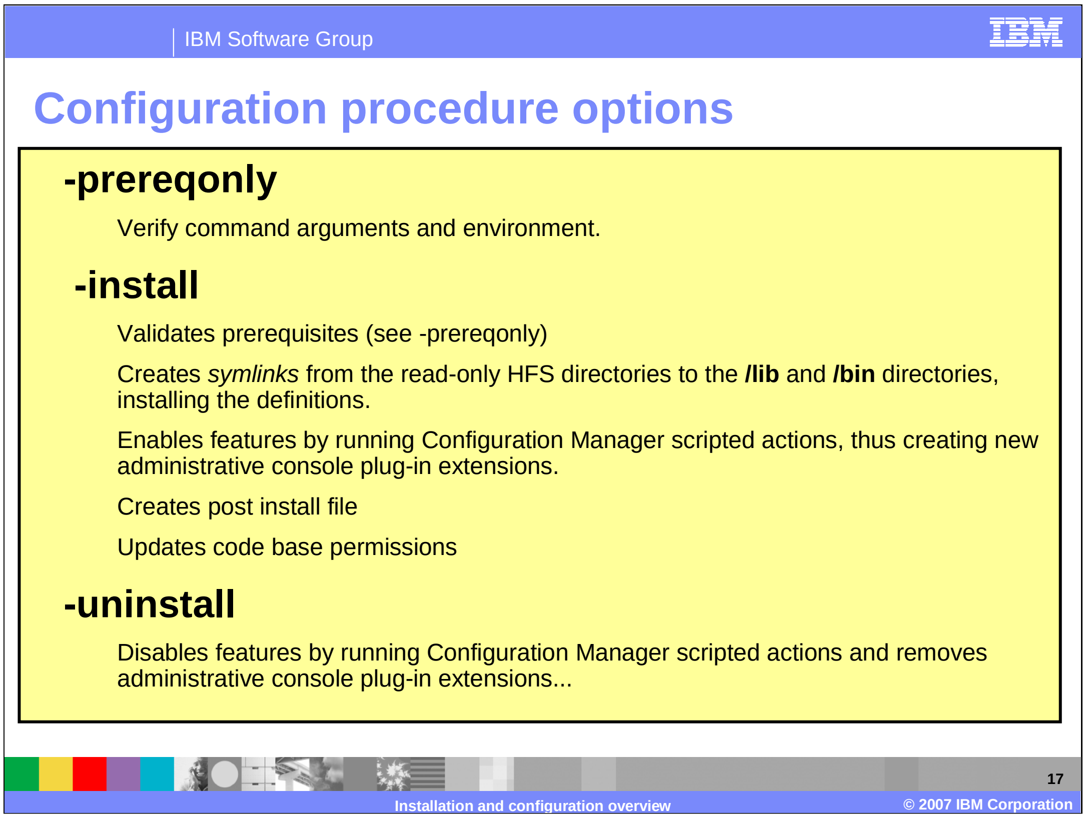
The first step in the configuration process uses the zSMPInstall.sh script that was shown briefly on a previous slide. This slide shows the syntax for the command. You need to only supply values for the smproot parameter and the runtime parameter. The smproot parameter tells the script where the WebSphere Process Server or WebSphere Enterprise Service Bus product code was SMP/E installed. The runtime parameter tells the script what profile you plan to add WebSphere Process Server or WebSphere Enterprise Service Bus functionality to. The ‘procedure’ parameter will normally be **install**. The prereqonly parameter verifies arguments and the environment. When specifying install, the code will automatically validate the arguments and environment, or in other words, perform the function of the prereqonly parameter anyway. The install parameter will create *symbolic links* from the WebSphere Process Server or WebSphere Enterprise Service Bus read-only HFS directories to the WebSphere Application Server for z/OS /lib and /bin directories, installing the WebSphere Process Server or WebSphere Enterprise Service Bus definitions. It will also enable WebSphere Process Server or WebSphere Enterprise Service Bus features by running Configuration Manager scripted actions. This will create any new administrative console plug-in extensions needed.



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Configuration procedure options

-prereqonly

Verify command arguments and environment.

-install

Validates prerequisites (see -prereqonly)

Creates *symlinks* from the read-only HFS directories to the **/lib** and **/bin** directories, installing the definitions.

Enables features by running Configuration Manager scripted actions, thus creating new administrative console plug-in extensions.

Creates post install file

Updates code base permissions

-uninstall

Disables features by running Configuration Manager scripted actions and removes administrative console plug-in extensions...

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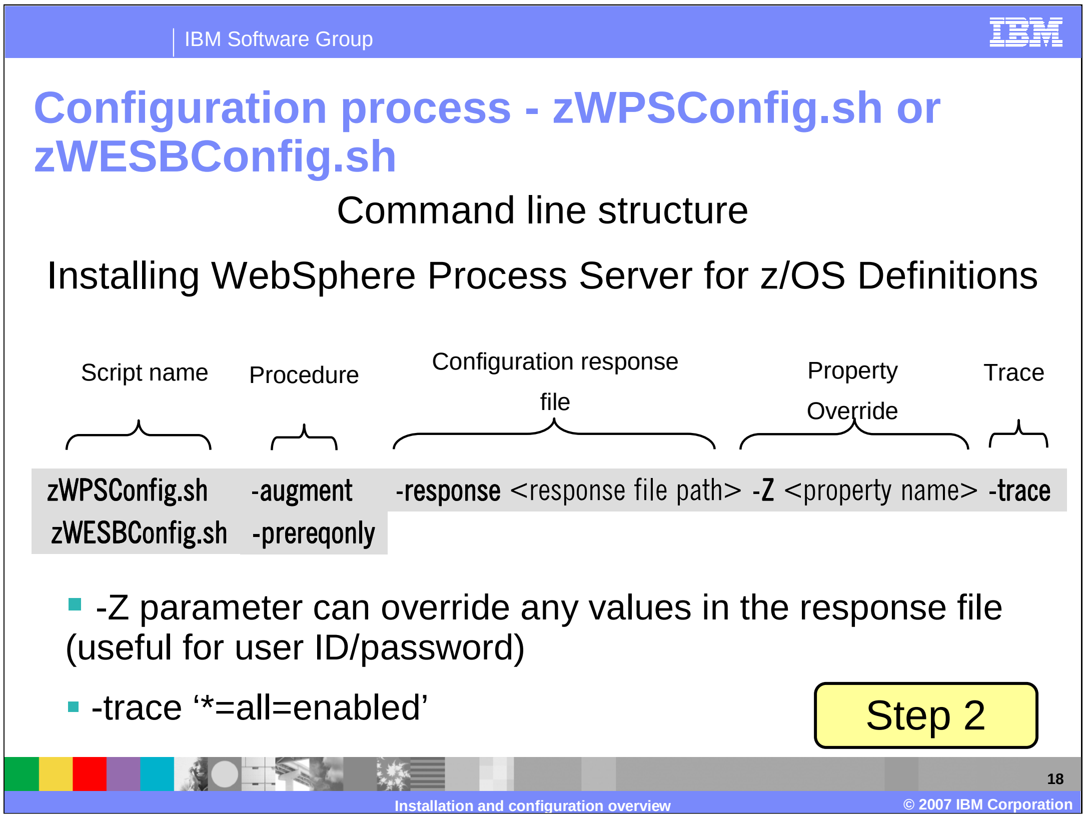
Installation and configuration overview

This slide spells out the various procedure options and talks in more detail about what each of them does when specified. You should note that the **uninstall** option will NOT completely remove the WebSphere Process Server or WebSphere Enterprise Service Bus function. Save or backup the WebSphere Application Server configuration root before configuring WebSphere Process Server or WebSphere Enterprise Service Bus in a WebSphere Application Server environment.



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Configuration process - zWPSConfig.sh or zWESBConfig.sh

Command line structure

Installing WebSphere Process Server for z/OS Definitions

Script name	Procedure	Configuration response file	Property Override	Trace
zWPSConfig.sh zWESBConfig.sh	-augment -prereqonly	**-response** <response file path>	**-Z** <property name>	**-trace**

- -Z parameter can override any values in the response file (useful for user ID/password)
- -trace '*=all=enabled'

Step 2

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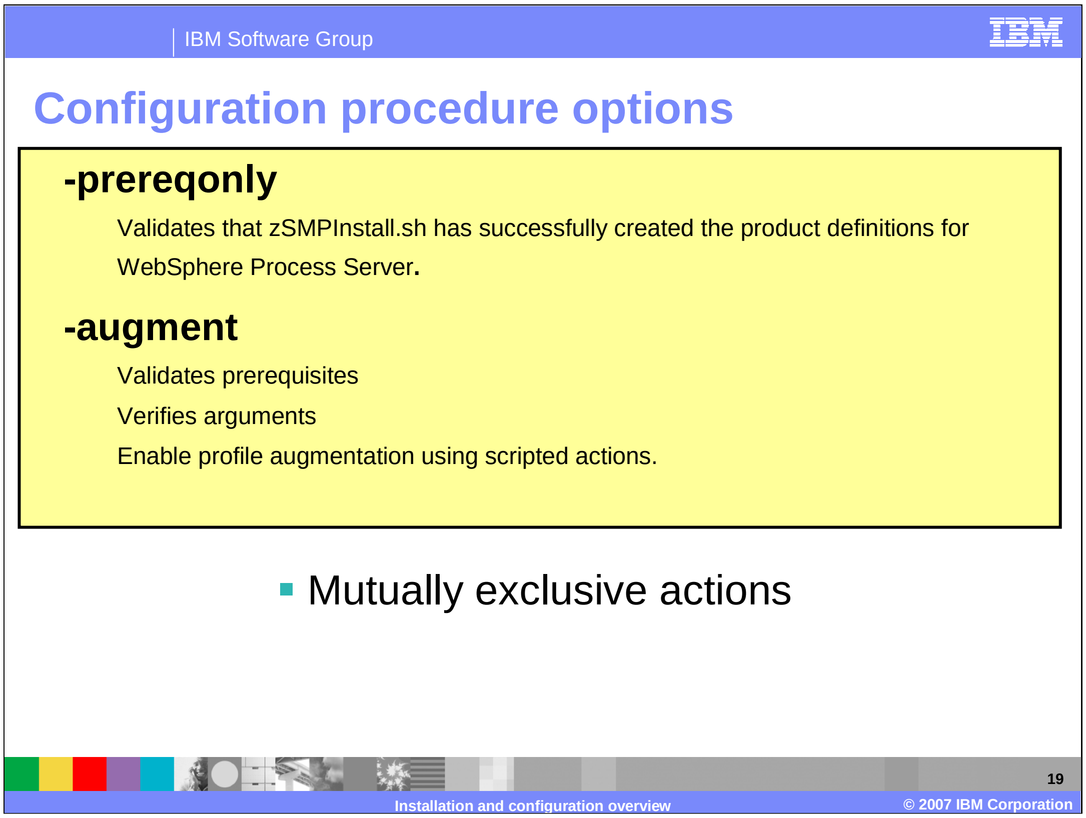
Installation and configuration overview

In the second step of the configuration process, you will use the zWPSConfig.sh or the zWESBConfig.sh script to augment the WebSphere Application Server environment with WebSphere Process Server or WebSphere Enterprise Service Bus functionality. This step requires that you provide a response file to provide information to the configuration process. Sample response files are found in the product HFS; those will be shown on a later slide. The **Z**-parameter is used to override any of the properties specified in the response file. An example usage of this parameter is to specify user IDs and passwords on the command line so that they are not specified in clear text in the response file. You can also specify a trace string with the **trace** parameter if needed. You would put the trace string in single quotes as shown on the slide.

Both scripts are available with the WebSphere Process Server for z/OS product. When dealing with the WebSphere Process Server for z/OS product, it is possible to configure an Application Server with the WebSphere Process Server function OR the WebSphere Enterprise Service Bus function only. Remember that WebSphere Process Server INCLUDES the WebSphere Enterprise Service Bus function. If you have the WebSphere Enterprise Service Bus for z/OS product, only the zWESBConfig.sh script is available.



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Configuration procedure options

-prereqonly

Validates that zSMPInstall.sh has successfully created the product definitions for WebSphere Process Server**.**

-augment

Validates prerequisites

Verifies arguments

Enable profile augmentation using scripted actions.

- Mutually exclusive actions

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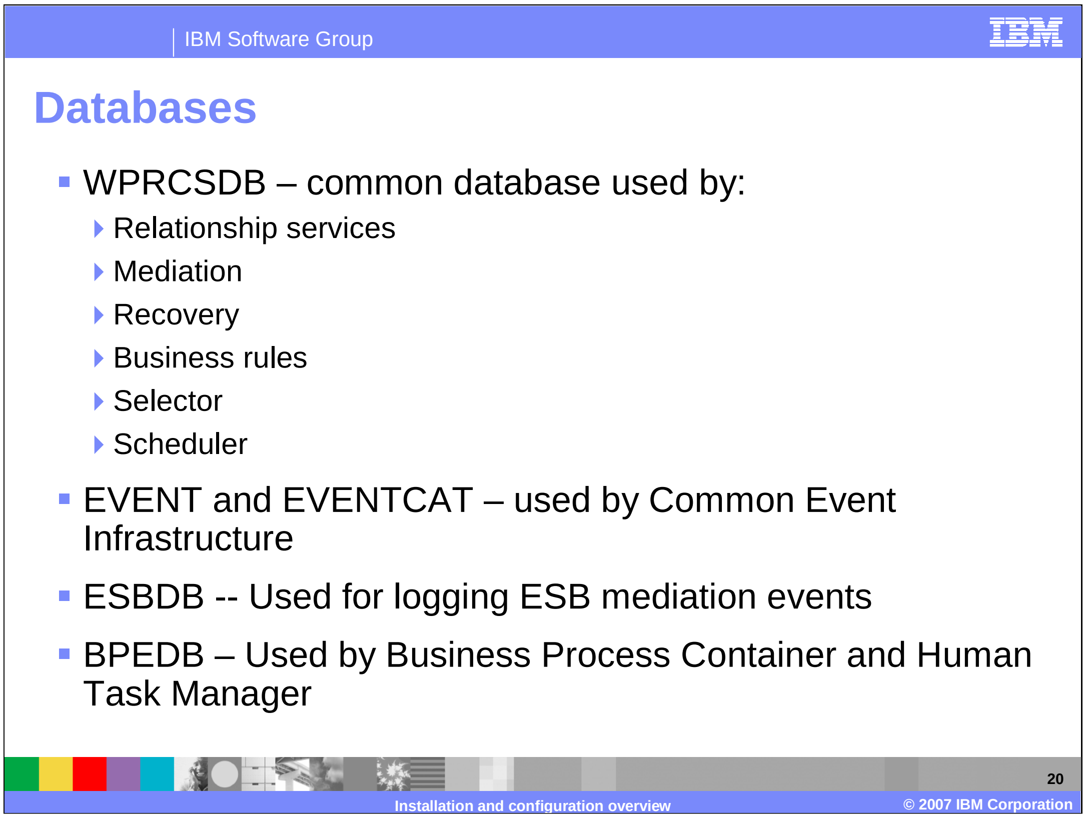
Installation and configuration overview

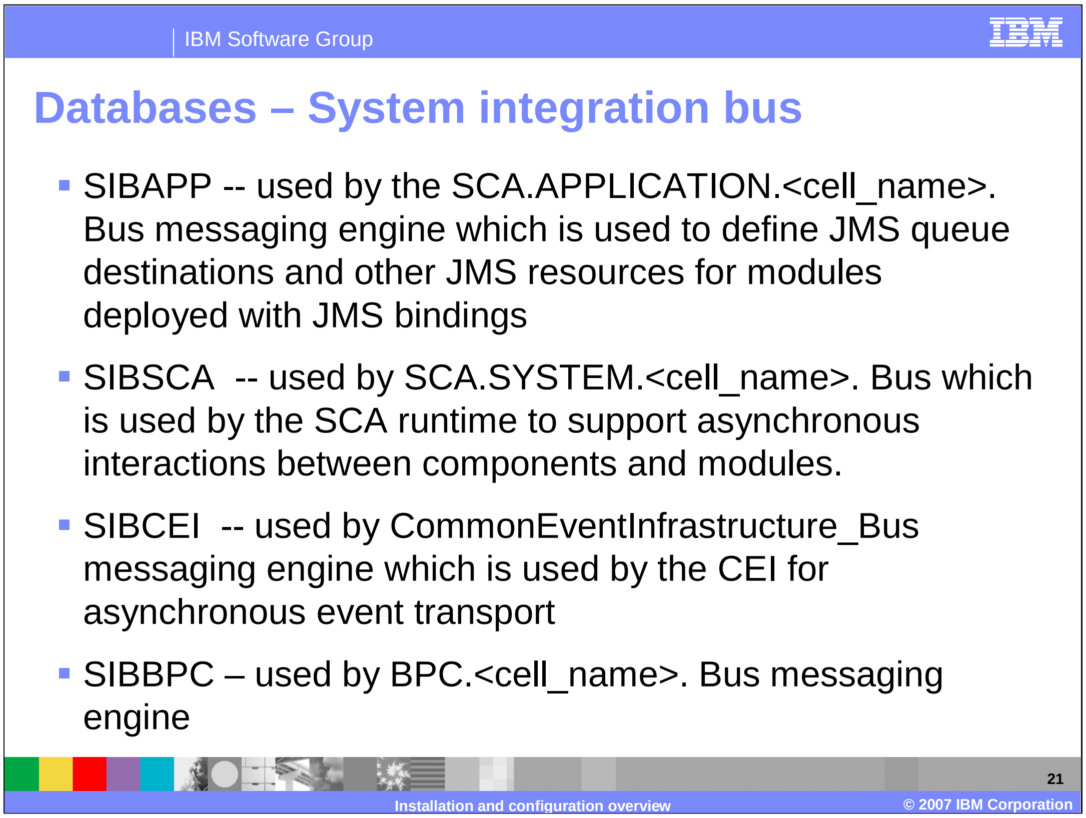
This slide again shows the various procedure options and talks in more detail about what each of them does when specified. They are mutually exclusive and you can only specify one.



Databases

- WPRCSDB – common database used by:
  - Relationship services
  - Mediation
  - Recovery
  - Business rules
  - Selector
  - Scheduler
- EVENT and EVENTCAT – used by Common Event Infrastructure
- ESBDB -- Used for logging ESB mediation events
- BPEDB – Used by Business Process Container and Human Task Manager

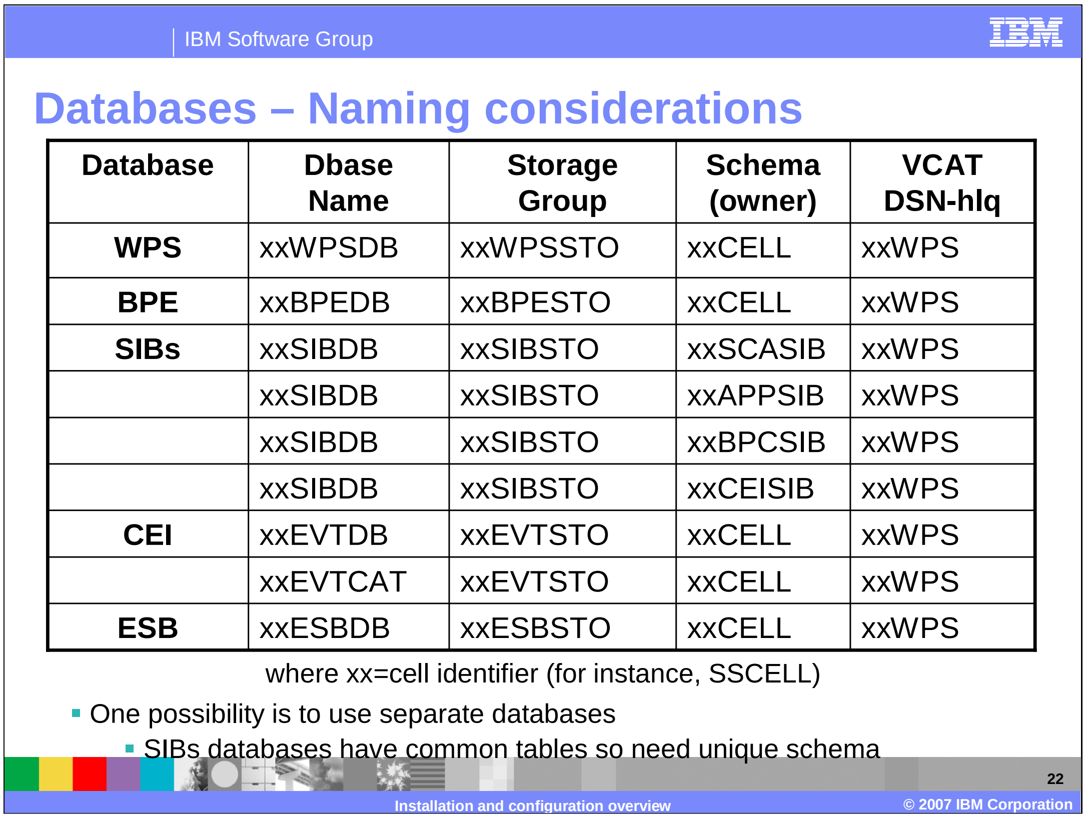
The next few slides describe the databases needed by the WebSphere Process Server and WebSphere Enterprise Service Bus. This slide shows the main databases needed with the default names used. While there are five databases shown here, it is important to note that you really only need to configure the databases for the functions you plan to use. The WebSphere Process Server database, or WPRCSDB, is the common database that is the only ‘required’ database. It is used by many of the functions introduced with the WebSphere Process Server and the WebSphere Enterprise Service Bus products such as Mediation, Relationship services and Business Rules. The Common Event Infrastructure, or CEI, requires two databases, EVENT and EVENTCAT, but if you do not plan on using CEI, it is not necessary to configure them. The ESBDB is needed only if you plan to log ESB mediation events. The BPEDB is one used by the Business Process Container and the Human Task Manager, so again, it is only needed if you plan to configure those components and use them in the server. Note that WebSphere Enterprise Service Bus would only use the WPRCSDB, EVENT and ESBDB databases.



Databases – System integration bus

- SIBAPP -- used by the SCA.APPLICATION.<cell_name>. Bus messaging engine which is used to define JMS queue destinations and other JMS resources for modules deployed with JMS bindings
- SIBSCA -- used by SCA.SYSTEM.<cell_name>. Bus which is used by the SCA runtime to support asynchronous interactions between components and modules.
- SIBCEI -- used by CommonEventInfrastructure_Bus messaging engine which is used by the CEI for asynchronous event transport
- SIBBPC – used by BPC.<cell_name>. Bus messaging engine

There are also four service integration bus databases that might be used by the WebSphere Process Server or the WebSphere Enterprise Service Bus. Service integration buses support the deployment of service applications and mediation modules in the WebSphere Process Server and WebSphere Enterprise Service Bus environments. The first two databases shown on the slide here, SIBAPP and SIBSCA, are used by the Service Component architecture so they are required in both environments. The other two databases shown, SIBCEI and SIBBPC, are needed only if you plan to configure CEI and Business Process Choreographer functions.



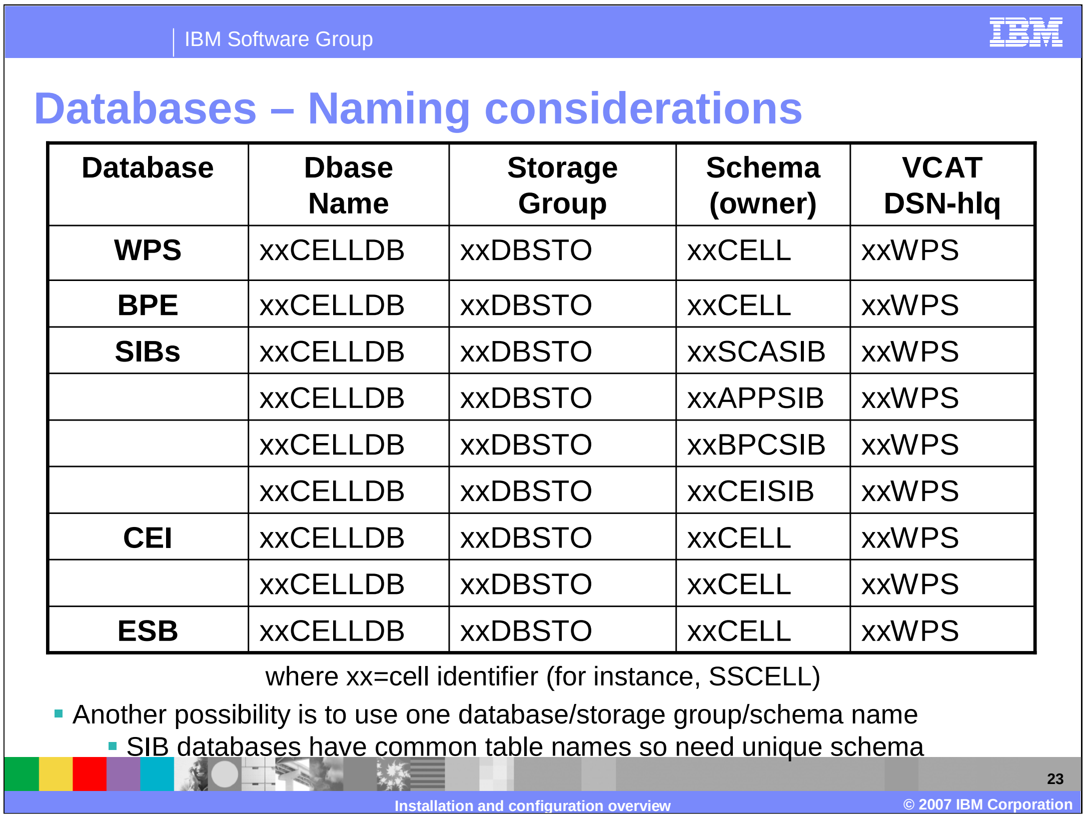
Databases – Naming considerations

Database	Dbase Name	Storage Group	Schema (owner)	VCAT DSN-hlq
WPS	xxWPSDB	xxWPSSTO	xxCELL	xxWPS
BPE	xxBPEDB	xxBPESTO	xxCELL	xxWPS
SIBs	xxSIBDB	xxSIBSTO	xxSCASIB	xxWPS
	xxSIBDB	xxSIBSTO	xxAPPSIB	xxWPS
	xxSIBDB	xxSIBSTO	xxBPCSIB	xxWPS
	xxSIBDB	xxSIBSTO	xxCEISIB	xxWPS
CEI	xxEVTDB	xxEVTSTO	xxCELL	xxWPS
	xxEVTCAT	xxEVTSTO	xxCELL	xxWPS
ESB	xxESBDB	xxESBSTO	xxCELL	xxWPS

where xx=cell identifier (for instance, SSCELL)

- One possibility is to use separate databases
  - SIBs databases have common tables so need unique schema

One of the first things you need to do when configuring the WebSphere Process Server or WebSphere Enterprise Service Bus is to figure out a naming convention for the many databases needed. This slide shows one option where unique databases are used for each of the various components. One exception is the database used by the four possible Service Integration Buses. Since the Service Integration Bus databases use common table names, it is advised to use one database name for all of the Service Integration Buses with a unique schema name for each specific bus to distinguish the tables. The convention shown here assumes a 2-letter cell identifier has been used for the WebSphere Application Server cell and that is pre-pended to each of the database component names.



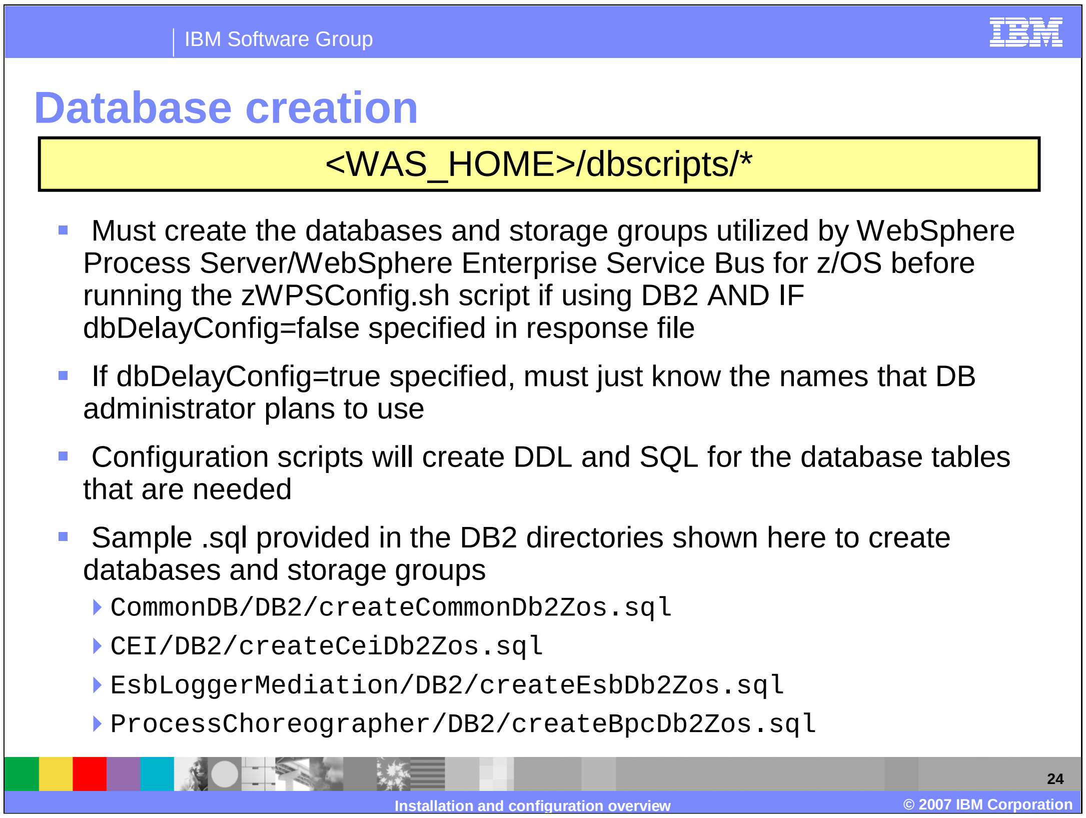
Databases – Naming considerations

Database	Dbase Name	Storage Group	Schema (owner)	VCAT DSN-hlq
WPS	xxCELLDB	xxDBSTO	xxCELL	xxWPS
BPE	xxCELLDB	xxDBSTO	xxCELL	xxWPS
SIBs	xxCELLDB	xxDBSTO	xxSCASIB	xxWPS
	xxCELLDB	xxDBSTO	xxAPPSIB	xxWPS
	xxCELLDB	xxDBSTO	xxBPCSIB	xxWPS
	xxCELLDB	xxDBSTO	xxCEISIB	xxWPS
CEI	xxCELLDB	xxDBSTO	xxCELL	xxWPS
	xxCELLDB	xxDBSTO	xxCELL	xxWPS
ESB	xxCELLDB	xxDBSTO	xxCELL	xxWPS

where xx=cell identifier (for instance, SSCELL)

- Another possibility is to use one database/storage group/schema name
  - SIB databases have common table names so need unique schema

Another option is to use a single database for all the components with a common storage group and schema name. Again, since the Service Integration Buses use common table names, they need to be distinguished with unique schema names. You can find sample SQL and DDL in techdoc PRS2520 that follows this pattern. The techdoc will be referenced on a later slide. Keep in mind that the naming possibilities are endless and you will need to take your installation's conventions into account. These are just shown as two possibilities.



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Database creation

<WAS_HOME>/dbscripts/*

- Must create the databases and storage groups utilized by WebSphere Process Server/WebSphere Enterprise Service Bus for z/OS before running the zWPSConfig.sh script if using DB2 AND IF dbDelayConfig=false specified in response file
- If dbDelayConfig=true specified, must just know the names that DB administrator plans to use
- Configuration scripts will create DDL and SQL for the database tables that are needed
- Sample .sql provided in the DB2 directories shown here to create databases and storage groups
  - `CommonDB/DB2/createCommonDb2Zos.sql`
  - `CEI/DB2/createCeiDb2Zos.sql`
  - `EsbLoggerMediation/DB2/createEsbDb2Zos.sql`
  - `ProcessChoreographer/DB2/createBpcDb2Zos.sql`

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Installation and configuration overview

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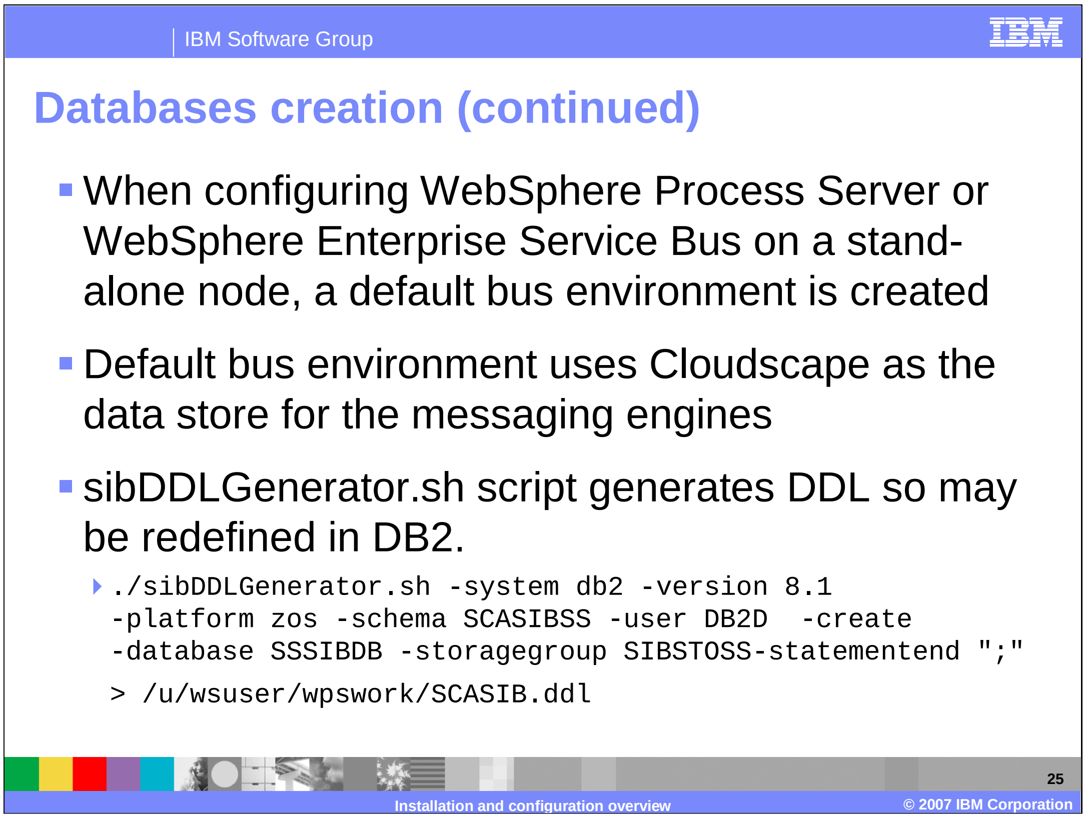
One of the parameters specified in the response file provided on the zWPSConfig.sh or zWESBConfig.sh script invocation is the dbDelayConfig parameter. The configuration scripts will create DDL and SQL for the database tables that are needed by the various components and this parameter determines whether the DDL or SQL is run during configuration. If you are using DB2, the dbDelayConfig parameter should be set to 'true' since the DB2 administrator will most likely be the one responsible for actually running the DDL or SQL. If setting up a simple configuration with Cloudscape™, the dbDelayConfig parameter should be set to 'false' so that the Cloudscape databases are automatically created during configuration. If using DB2 and if the dbDelayConfig parameter is set to 'false' in the response file, you must create the databases and storage groups utilized by WebSphere Process Server or WebSphere Enterprise Service Bus before running the zWPSConfig.sh or zWESBConfig.sh script. This allows the configuration scripts to run the SQL or DDL they create. Otherwise, if the dbDelayConfig parameter is set to 'true', you just need to know the names that the DB2 administrator plans to use so that you can successfully create a response file to match.

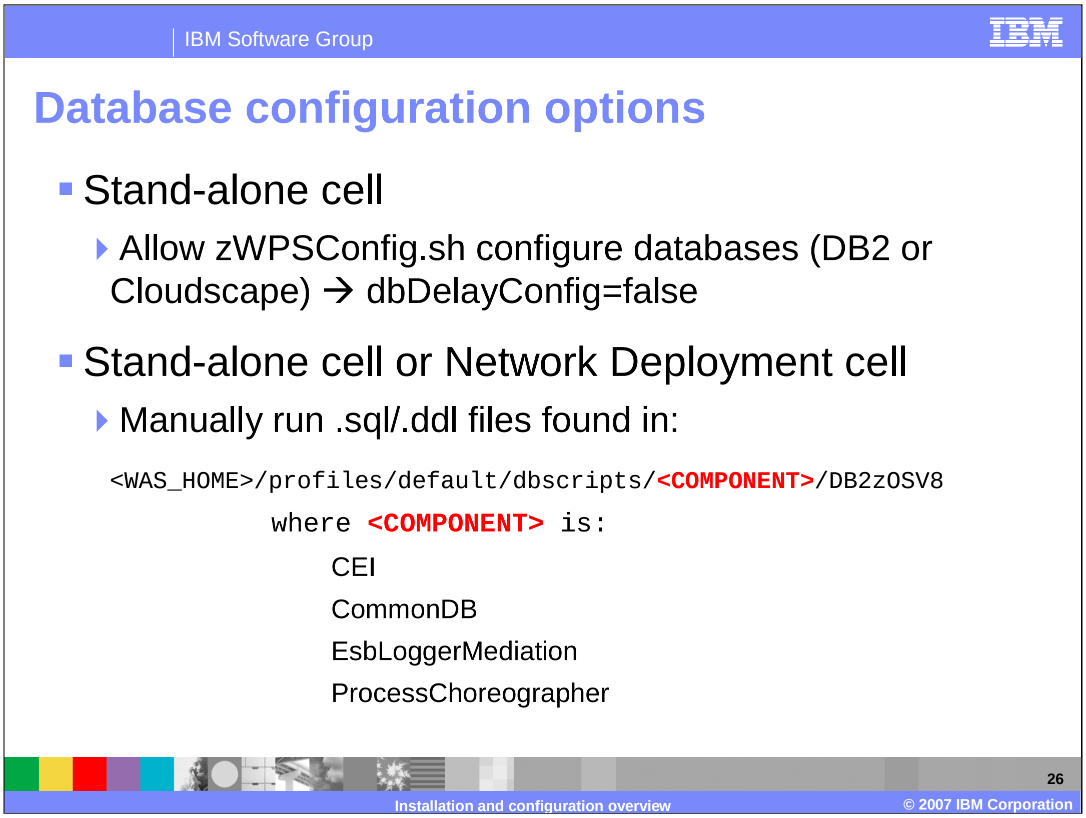


Databases creation (continued)

- When configuring WebSphere Process Server or WebSphere Enterprise Service Bus on a stand-alone node, a default bus environment is created
- Default bus environment uses Cloudscape as the data store for the messaging engines
- sibDDLGenerator.sh script generates DDL so may be redefined in DB2.

```
./sibDDLGenerator.sh -system db2 -version 8.1
-platform zos -schema SCASIBSS -user DB2D  -create
-database SSSIBDB -storagegroup SIBSTOSS-statementend ";"
> /u/wsuser/wpswork/SCASIB.ddl
```

During the augmentation phase of the WebSphere Process Server or WebSphere Enterprise Service Bus configuration, a default service integration bus environment is created for you. This default bus environment utilizes Cloudscape as the data store for the messaging engines. You can use the sibDDLGenerator.sh script to generate .ddl so that the databases can be redefined in DB2. Note that each of the System Integration Bus databases require different SCHEMA qualifiers since they share table names. Again, you can you use a single database for all of the Service Integration Buses. A sample sibDDLGenerator.sh script invocation is shown.



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Database configuration options

- Stand-alone cell
  - Allow zWPSConfig.sh configure databases (DB2 or Cloudscape) → dbDelayConfig=false
- Stand-alone cell or Network Deployment cell
  - Manually run .sql/.ddl files found in:

```
<WAS_HOME>/profiles/default/dbscripts/<COMPONENT>/DB2zOSV8
           where <COMPONENT> is:
```

CEI

CommonDB

EsbLoggerMediation

ProcessChoreographer

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Installation and configuration overview

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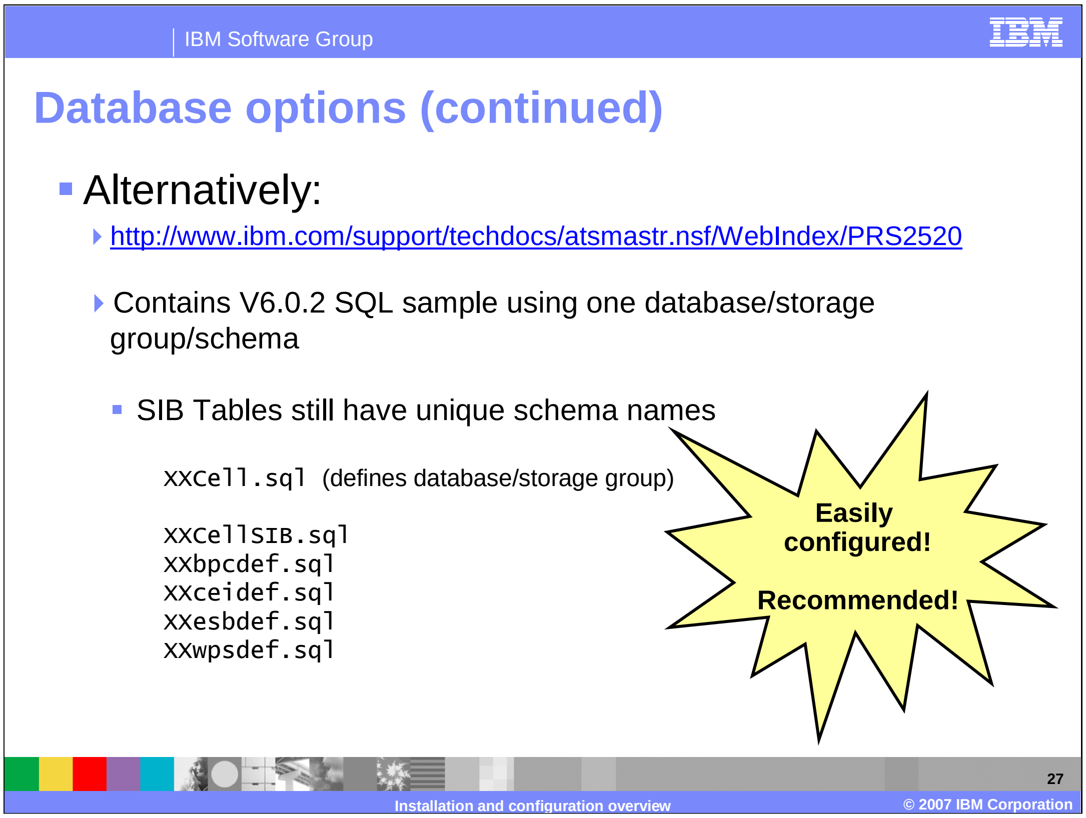
You have a couple of options for the database configuration. If you are configuring a stand-alone cell, you can allow the zWPSConfig.sh or zWESBConfig.sh script to configure the databases for you by specifying dbDelayConfig=false. If dbDelayConfig=true is specified instead and you are configuring in either the stand-alone or network deployment environment, you can manually run the SQL or DDL created for you which can be found in the dbscripts directory shown on the slide. There are approximately 12 SQL/DDL files that need to be run manually.



Database options (continued)

- Alternatively:
  - http://www.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/PRS2520
  - Contains V6.0.2 SQL sample using one database/storage group/schema
    - SIB Tables still have unique schema names

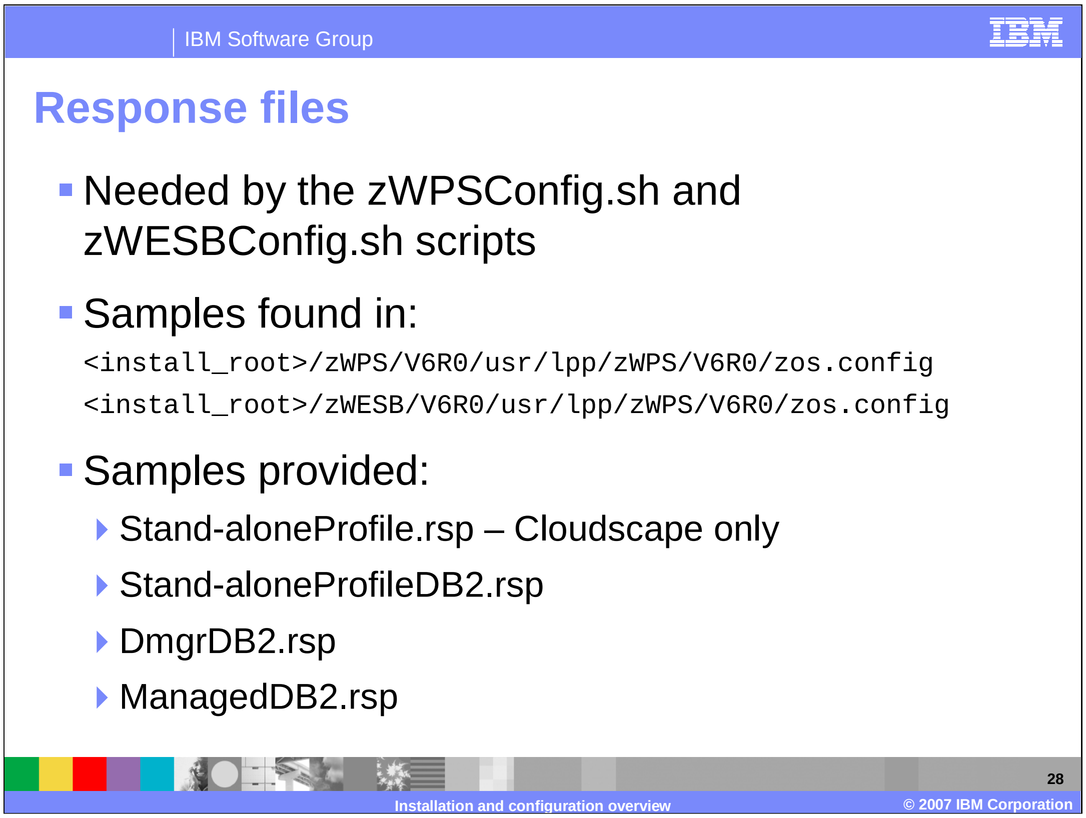
```
XXCell.sql  (defines database/storage group)

XXCellSIB.sql
XXbpcdef.sql
XXceidef.sql
XXesbdef.sql
XXwpsdef.sql
```

Easily configured!

Recommended!

Alternatively, the techdoc mentioned earlier, PRS2520, found at the URL shown on the slide, contains sample SQL or DDL that can be used instead. The SQL/DDL found in the techdoc follows the one database/storage group/schema name shown earlier, with the service integration bus databases being the only exception with unique schema names for each one. The naming is easily customizable to your cell naming conventions and it is highly recommended as the way to go.



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Response files

- Needed by the zWPSConfig.sh and zWESBConfig.sh scripts
- Samples found in:

```
<install_root>/zWPS/V6R0/usr/lpp/zWPS/V6R0/zos.config
<install_root>/zWESB/V6R0/usr/lpp/zWPS/V6R0/zos.config
```

- Samples provided:
  - Stand-aloneProfile.rsp – Cloudscape only
  - Stand-aloneProfileDB2.rsp
  - DmgrDB2.rsp
  - ManagedDB2.rsp

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Installation and configuration overview

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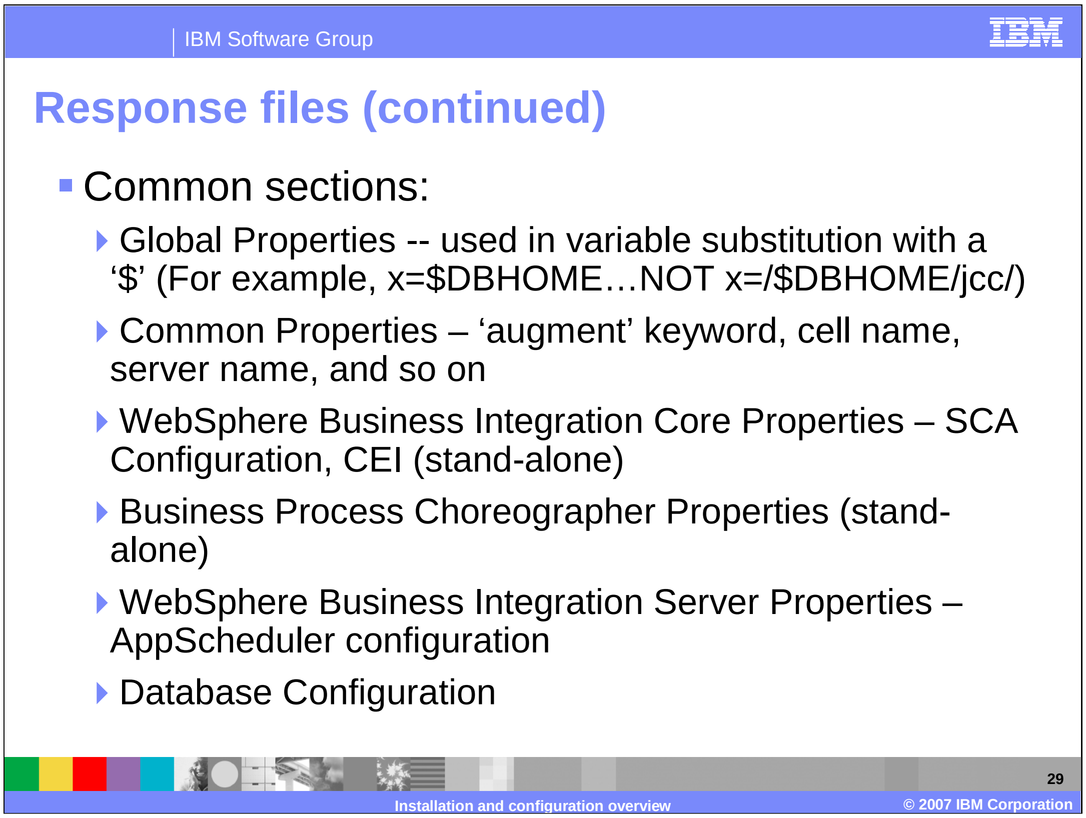
Now, let’s look at the response files needed by the configuration scripts. Again, the response files supply values needed for the configuration. Sample response files are found in the zos.config directory in the SMP/E install root. Four sample response files are provided. “stand-aloneProfile.rsp” is the response file used for the simplest configuration and uses Cloudscape databases. It allows for an automated configuration of a stand-alone application server. To configure a stand-alone application server with WebSphere Process Server or WebSphere Enterprise Service Bus function using DB2, you would start with the stand-aloneProfileDB2.rsp file. That configuration can also be highly automated if you are able to configure the databases during augmentation. Starting with V6.0.2, you can now federate a stand-alone application server that has been augmented with WebSphere Process Server or WebSphere Enterprise Service Bus function into a network deployment cell. Starting with an empty-managed node is still recommended, as explained in the Network Deployment Configuration topic.

When you move to the network deployment configuration, DB2 is the only option for the databases and there are two response files for that configuration: DmgrDB2.rsp and ManagedDB2.rsp. You will first use the DmgrDB2.rsp file to augment the Deployment Manager with WebSphere Process Server or WebSphere Enterprise Service Bus function. You would then augment an empty-managed node using the ManagedDB2.rsp file before federating it into the Network Deployment Cell.

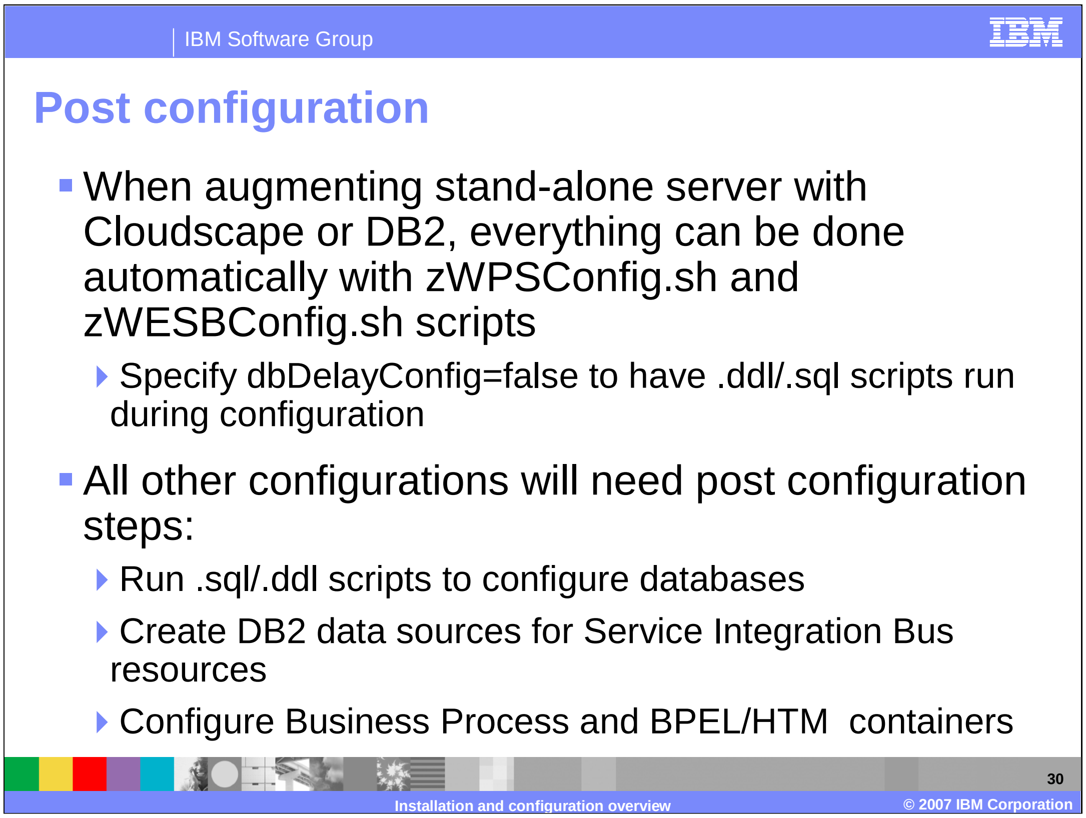
Two other presentations are available that talk about the ‘simple configuration’ and the ‘network deployment configuration’ in more detail.



Response files (continued)

- Common sections:
  - Global Properties -- used in variable substitution with a '$' (For example, x=$DBHOME…NOT x=/$DBHOME/jcc/)
  - Common Properties – 'augment' keyword, cell name, server name, and so on
  - WebSphere Business Integration Core Properties – SCA Configuration, CEI (stand-alone)
  - Business Process Choreographer Properties (stand-alone)
  - WebSphere Business Integration Server Properties – AppScheduler configuration
  - Database Configuration

Each of the sample response files have many of the same common sections shown on this slide. Each starts with 'Global Properties' definitions which are used in variable substitutions throughout the rest of the response file. Using the dollar sign with these global properties, you can specify your value once and use variable substitution for the parameters in the following sections. Common properties include parameters that provide information such as cell name, server name and profile name. WebSphere Business Integration Core Properties and Business Process Choreographer properties sections are found only in the stand-alone response files since these are manual post-configuration steps in the Network Deployment Configuration. WebSphere Business Integration Server Properties provides parameters for the AppScheduler configuration if needed and finally, some database parameters are needed such as the dbDelayConfig parameter to determine if the databases will be configured during augmentation. There is documentation in each one of the response files to describe the parameters being asked for.



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Post configuration

- When augmenting stand-alone server with Cloudscape or DB2, everything can be done automatically with zWPSConfig.sh and zWESBConfig.sh scripts
  - Specify dbDelayConfig=false to have .ddl/.sql scripts run during configuration
- All other configurations will need post configuration steps:
  - Run .sql/.ddl scripts to configure databases
  - Create DB2 data sources for Service Integration Bus resources
  - Configure Business Process and BPEL/HTM containers

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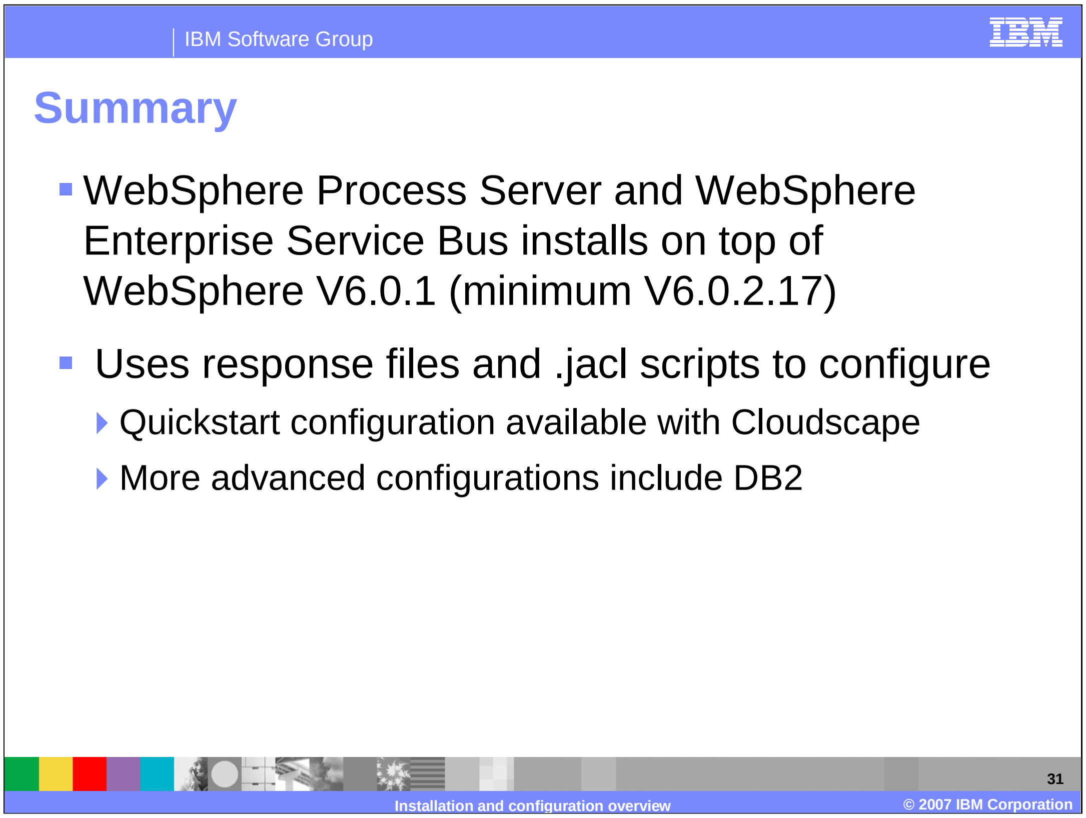
Installation and configuration overview

Once you have run the zWPSConfig or the zWESBConfig shell scripts, you may still need to do some manual configuration. As mentioned earlier, the stand-alone configurations are highly automated. However, in the DB2 case, you will most likely need to have the databases configured after augmentation since that will normally be handled by a DB2 administrator. In the case of the Network Deployment configuration, you will need to actually create a WebSphere Process Server or WebSphere Enterprise Service Bus-capable server once the managed node has been federated. Depending on the functions you plan to exploit, you may also need to configure CEI, the Business Process Container and Human Task Manager after augmentation, and configure the DB2 databases. The Network Deployment Configuration presentation goes into more detail on these manual post-configuration steps.



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Summary

- WebSphere Process Server and WebSphere Enterprise Service Bus installs on top of WebSphere V6.0.1 (minimum V6.0.2.17)
- Uses response files and .jacl scripts to configure
  - Quickstart configuration available with Cloudscape
  - More advanced configurations include DB2

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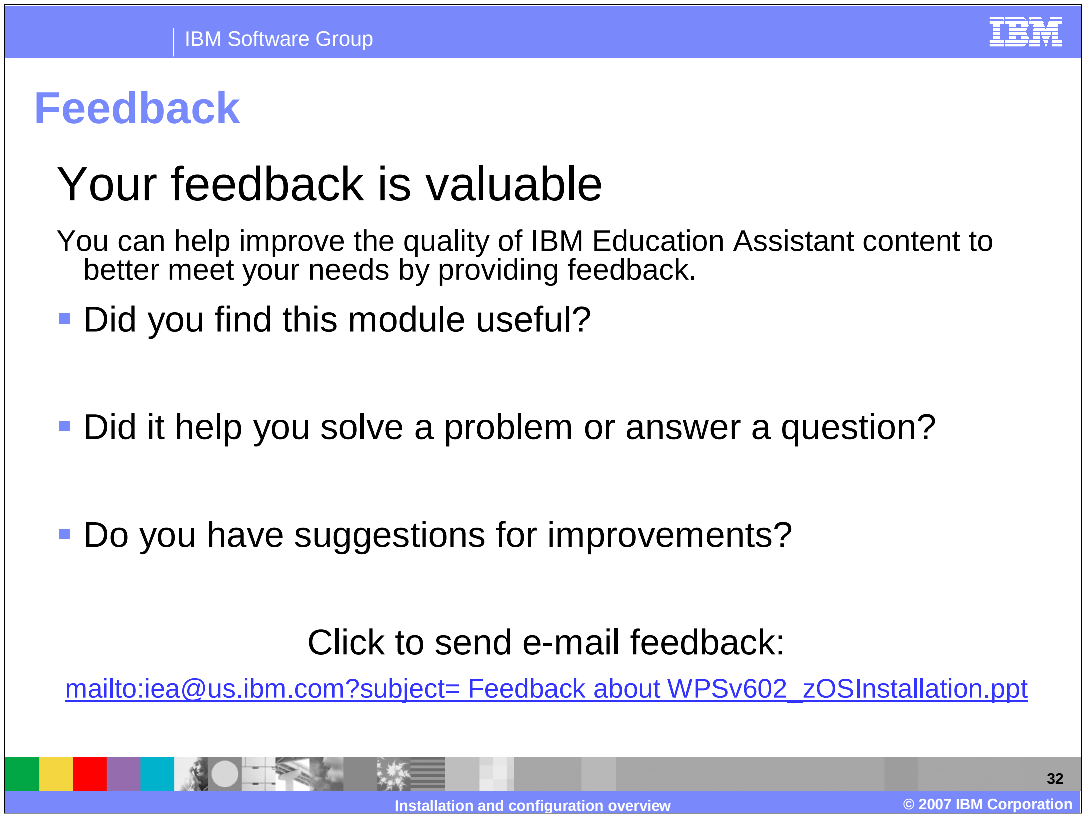
Installation and configuration overview

In summary, this presentation has given an overview of the steps needed in order to configure an application server with WebSphere Process Server or WebSphere Enterprise Service Bus function. For more detailed information, see the Stand-alone and Network Deployment configuration presentations.



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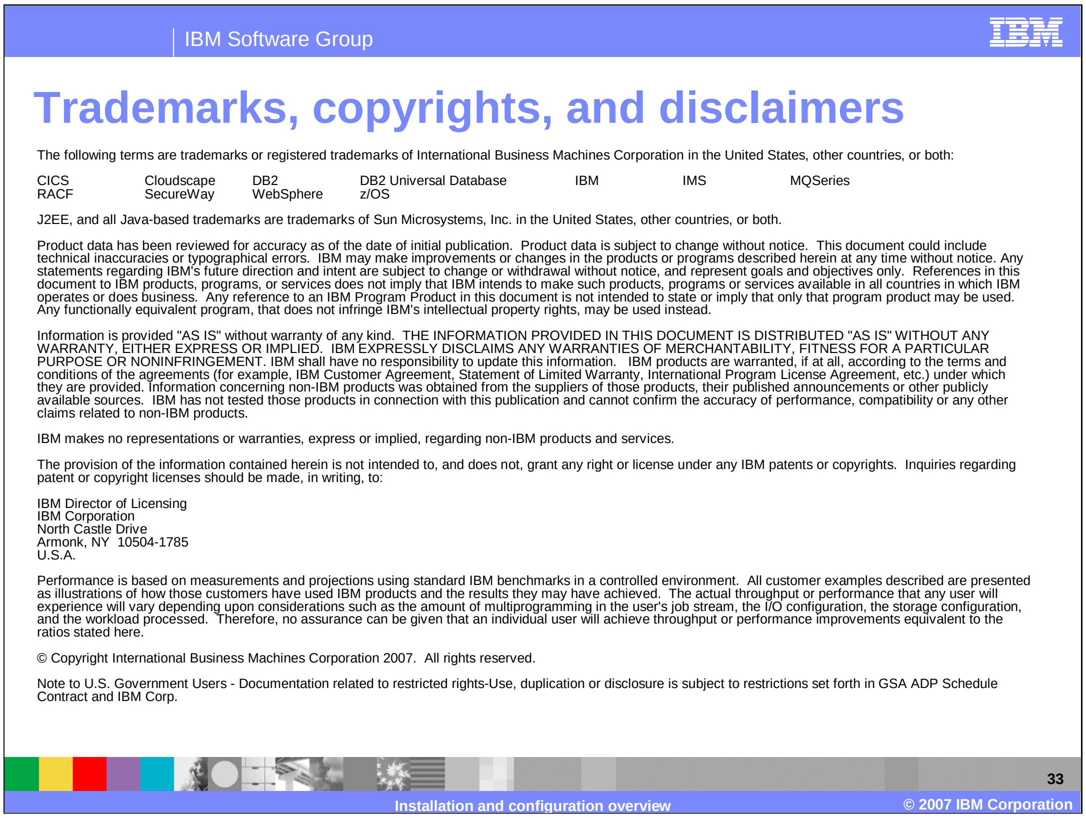

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