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**WebSphere® Enterprise Service Bus for z/OS® V6.1  
WebSphere Process Server for z/OS V6.1**

***z/OS Network Deployment configuration - Part 2  
Post-configuration tasks***



@business on demand.

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This presentation covers the post-configuration steps for setting up a Network Deployment cell to enable WebSphere Process Server for z/OS V6.1 or WebSphere Enterprise Service Bus for z/OS V6.1 function in its servers or clusters.

## Goals

- Describe WebSphere Process Server for z/OS V6.1 and WebSphere Enterprise Service Bus for z/OS V6.1 configuration process using a Network Deployment configuration scenario

The goal of this presentation is to show you how to complete the configuration of WebSphere Process Server for z/OS V6.1 and WebSphere Enterprise Service Bus for z/OS V6.1 in a Network Deployment environment.

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## Define servers to run workloads

Steps to configure the **empty node**

1. Create application server (or cluster) in the now-federated empty node
  - ▶ Application Servers->**New**
  - ▶ Clusters->**New**

WebSphere Process Server and WebSphere Enterprise Service Bus templates

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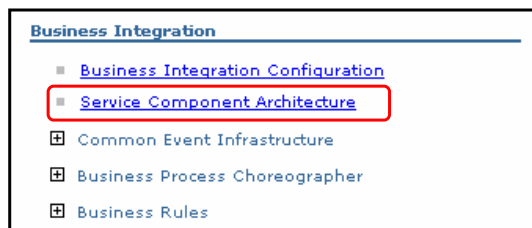
Part one of this topic suggests that you should configure an empty node rather than the stand-alone node in the network deployment scenario. This presentation covers what is needed for that scenario. The first thing needed is a server or cluster to run a WebSphere Process Server or WebSphere Enterprise Service Bus workload. You will notice new server templates are available for the WebSphere Process Server and the WebSphere Enterprise Service Bus functions as shown here, creating a new cluster.

## Configure service component architecture

### 2. Add support for service component architecture components

```
Application servers > <serverName> >  
  Service Component Architecture  
Clusters > <clusterName> >  
  Service Component Architecture
```

Found  
under  
Business  
Integration



WebSphere Process Server applications or WebSphere Enterprise Service Bus applications need the service component architecture customized. You can configure it in the administrative console as shown. You need to fill in some information about the database you plan to use for the data stores that the messaging engines need. The messaging engines are created for you.

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## Configure service component architecture...

**Server clusters > sds01 > Service Component Architecture**

The Service Component Architecture enables this deployment target for Service Oriented Architecture applications. To configure asynchronous communication with service components and Integration Adapters, identify a bus member to host the destinations for asynchronous communication.

Configuration

**General Properties**

Support the Service Component Architecture components **Select!**

**Bus Member Location**

Local **Configures service integration buses and messaging engines**

Remote

**System Bus Member**

System bus destinations support the asynchronous communication of Service Oriented Architecture applications and their Service Component Architecture components with each other.

Database Instance	Schema	Create Tables	User name	Password	Server	Provider
MVS21201	SDS1S	<input type="checkbox"/>	DB2D	*****	localhost	DB2 for z/OS v8 and v9

**Application Bus Member**

Application bus destinations support asynchronous communication between Integration Adapters and other System Component Architecture components.

Enable the WebSphere Business Integration Adapter components

Database Instance	Schema	Create Tables	User name	Password	Server	Provider
MVS21201	SDS1A	<input type="checkbox"/>	DB2D	*****	localhost	DB2 for z/OS v8 and v9

**DB location** (points to Local radio)

**Different schema names** (points to SDS1S and SDS1A)

**Clear!** (points to Create Tables checkbox in Application Bus Member)

5

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Two possible service integration buses are configured for you. These are the SCA system bus and the SCA application bus. The SCA system bus supports the asynchronous communication between service oriented architecture components and is required. The SCA application bus is optional and is used for asynchronous communication between WebSphere Business Integration adapter components and service oriented architecture applications. Each bus will have a messaging engine created for it. In order to configure the service component architecture, the first thing you need to do is select the check box near the top of the screen, indicating that you want SCA supported. You then need to fill in some information about the database that you plan to use for the messaging engines that are created for you. Keep in mind that the schema names must be different since the data stores DB have common table names for each of the buses.

## Section

# ***Configure business process and human task containers***

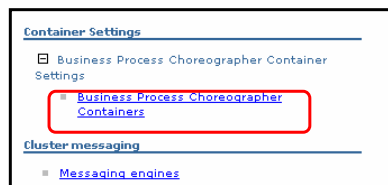
The next several slides deal with configuring the business process and human task containers

## Configure containers

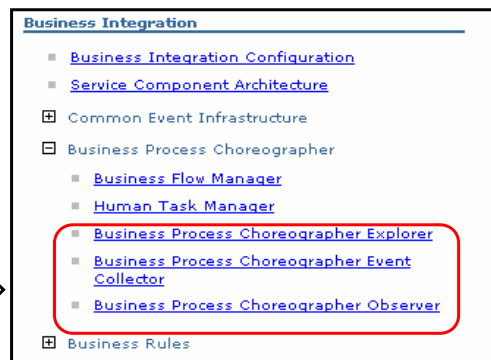
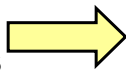
### 3. Add support for business processes and human tasks

Application servers > <serverName> > Business Process  
Choreographer Containers

Clusters > <clusterName> > Business Process Choreographer  
Containers



Additional business process applications



7

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If you will be hosting applications that contain business processes or human tasks, you need to configure the business process choreographer containers. This is only available with the WebSphere Process Server product and is not available with the WebSphere Enterprise Service Bus product. This slide shows where to find the installation wizard from the administrative console under the server or cluster that you configured. A later slide looks at the configuration using the `bpeconfig.jacl` script, which gives you more options. Also shown on the slide, under the Business Integration heading in the administrative console are some applications that you might want to install in order to administer or monitor your applications that contain business processes. These include the Business Process Choreographer Explorer, Event Collector and Observer.

The Business Process Choreographer Explorer is a Web application that implements a generic Web user interface for interacting with business processes and human tasks. There is information in the information center on customizing this to suit your needs.

The Business Process Choreographer Event Collector and Business Process Choreographer Observer are used together to monitor business processes. The event collector application reads event information from the common event infrastructure bus and stores it in the Business Process Choreographer Observer database, which must be configured. The observer application then uses this event data to produce reports on the business processes and human tasks.

## Configure containers...

[Server clusters](#) > [sdr01](#) > **Business Process Choreographer Containers**

The Business Process Choreographer provides support for business-process applications. Business processes can be automatic, recoverable processes, or processes. With the Business Process Choreography, you can combine business process technology with any other service offered by products supporting the open J2EE architecture.

To use the Business Process Choreographer functionality, configure it with this page. The business flow and the human task containers will be installed and basic configuration performed. Use the links under "Related Items" for additional configuration.

Configuration

Same look as SCA configuration

**Data Source**

Database Instance	Schema Name	Create Tables	User Name	Password	Server	Provider
MVS212D1	SDCELL	<input type="checkbox"/>	DB2D	*****	localhost	DB2 for z/OS v8 and v9

**Human Task Manager Mail Session**

Enable e-mail service

Mail transport host

Mail transport user

Mail transport password

Confirm mail transport password

Business Process Choreographer Explorer URL

Configure mail

When you configure the Business Process Choreographer container in the administrative console, you are asked for information for the data source that holds the tables needed. The format is identical to the data source configuration for the SCA configuration. You also have the opportunity to configure the e-mail service for human tasks. This can be configured later as well so you can leave the defaults here if you choose.



## Configure containers...

Role	User	Group	Description
Administrator	sdadmin	SDCFG	User name(s) and/or group name(s) for the business process administrator role. Users assigned to this role have full access to the system.
Monitor	sdadmin	SDCFG	User name(s) and/or group name(s) for the business flow and human task monitor role. Users assigned to this role can view the properties of all of the business process and task objects.

Authentication	User	Password	Confirm Password	Description
JMS Authentication	sdadmin	*****	*****	Authentication used to authorize communication between messaging engines on the system integration bus
JMS API Authentication	sdadmin	*****	*****	Authentication for business flow manager message-driven bean to process asynchronous API calls
Escalation User Authentication	sdadmin	*****	*****	Authentication for human task manager message-driven bean to process asynchronous API calls

Logging	Business Flow Manager	Human Task Manager
Audit Logging	<input type="checkbox"/>	<input type="checkbox"/>
Common Event Infrastructure Logging	<input type="checkbox"/>	<input type="checkbox"/>

Need EJBROLE profiles if using SAF

Next you are asked for some security information relating to the business process container. The user ID and groups that you specify need to be given access to the appropriate EJBROLE profiles if you are using SAF. See the **z/OS installation and configuration overview** presentation for more information on creating the EJBROLE profiles. You should give the user ID and group specified for the Administrator role access to the BPESystemAdministrator and TaskSystemAdministrator EJBROLE profiles. The user ID and group specified for the monitor role should be given access to the BPESystemMonitor and TaskSystemMonitor EJBROLE profiles. The JMS Authentication user ID specified is the user that is used to secure the BPC bus and also has the BPC\_Auth\_Alias, which is used to protect various other resources such as connection factories, created for it. The user ID specified for the JMS API Authentication becomes the user that should be specified for the RunAs role for the JMSAPIUser EJBROLE profile. Finally, the user ID specified for the Escalation User Authentication is the user that should be specified for the RunAs role for the EscalationUser EJBROLE profile.

You can turn on logging for the state observer from here but that should wait until it is used.

## Configure containers...

▼ SCA Bindings

Host	Context Root	Relative Path	Description
http://host:port	/BFMIF_sd	/sca/com/ibm/bpe/spi/sca/BFMWS	Business Flow Manager Web Service Endpoint
http://host:port	/HTMIF_sd	/sca/com/ibm/bpe/spi/sca/HTMWS	Human Task Manager Web Service Endpoint

▼ Bus

Use the default configuration

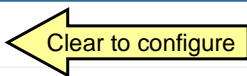
**Bus Member Location**

Local

Remote

WebSphere:node=sdnode1,server=sdserver011 New...

Database Instance	Schema Name	Create Tables	User Name	Password	Server	Provider
MVS212D1	SDS1B	<input type="checkbox"/>	DB2D	*****	localhost	DB2 for z/OS v8 and v9



Finally, you are asked for some information about the SCA bindings and the bus that is created for the business process choreographer container. You have the opportunity to specify a different context root for the SCA binding but the default will work fine. In order to configure the bus for the business process choreographer container, you need to first clear the box to indicate to you do NOT want to use the default configuration. You then need to specify the schema name that is used on the tables for the data store on the messaging engine that is created for you. The other fields should be correct.

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## Configure containers...

**Server clusters > sdsr01 > Business Process Choreographer Event Collector**  
 The Business Process Choreographer Event Collector is an application for information gathering and monitoring of process instances in a Business Process Choreographer container. The Business Process Choreographer Event Collector is a front end web application to the Business Process Choreographer Event Collector. The observer allows the user to visualize the monitoring data gathered by the Business Process Choreographer Event Collector.

**Server clusters > sdsr01 > Business Process Choreographer Observer**  
 The Business Process Choreographer Observer is a front end web application to the Business Process Choreographer Event Collector. The observer allows the user to visualize the monitoring data gathered by the Business Process Choreographer Event Collector.

**Server clusters > sdsr01 > Business Process Choreographer Explorer**  
 The Business Process Choreographer Explorer is a web application for managing and administering process instances and task instances for a given business process choreographer container. Use this configuration panel to set up the explorer for a target business process choreographer container.

Configuration

General Properties

Data Source

Database Instance

Observation Target

CEI required first!

Need DB2 tables configured for event collector application

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If you are planning to use the Business Process Choreographer Explorer or Collector and Observer, you need to configure those applications as well. Only the Collector has any real information needed where it needs to know about the database that is being used and the observation target. The other two applications have a simple 'add' box to indicate that you want the application deployed to the server or cluster. You are prompted for parameters such as the context root, but you can take the defaults. You must configure CEI before configuring the event collector and observer.

## Configure containers using bpeconfig.jacl

```
<WAS_HOME>/ProcessChoreographer/config/bpeconfig.jacl
```

- `../../bin/wsadmin.sh -f bpeconfig.jacl parameters`
  - ▶ Can be run non-interactively if all needed parameters are specified on the command line
  - ▶ See 'Using the bpeconfig.jacl script file to configure Business Process Choreographer' article in the Information Center for more detail

While the installation wizard in the administrative console gives you a nice sample BPC configuration, there is also a jacl script available to configure the business process and human task containers. It can be run interactively where you are prompted for all the values it needs or you can specify all values on the command line. To see all the possible parameters and for more information on running it, see the article in the information center.

## Configure common event infrastructure

### 4. Add support for CEI

Application servers > <serverName> > Common Event Infrastructure Server  
 Clusters > <clusterName> > Common Event Infrastructure Server

**Server clusters > sdr01 > Common Event Infrastructure Server**

The Common Event Infrastructure is an implementation of a consistent, unified set of APIs and infrastructure for the creation, transmission, persistence and distribution of a wide network Common Base Event formatted events. The Common Event Infrastructure is based upon the Common Base Event specification, which defines a standard format for event software uses to keep track of transactions and other activity.

Configure at least one Common Event Infrastructure server on a deployment target to enable the service.

You can use this panel to configure the data source properties for the event database and messaging database. You can decide to configure the SIBus messaging engine for the locally or to use a remote destination location.

Configuration

**General Properties**

Enable the event infrastructure server

**Common Event Infrastructure Event Database**

The Common Event Infrastructure event database stores Common Base Events for historic data processing.

Database Instance	Schema	Create Tables	User name	Password	Server	Provider
MVS212D1	SDCELL	<input type="checkbox"/>	DB2D	*****	localhost:446	DB2 for z/OS v8 and v9

**Common Event Infrastructure Bus Member Location**

Local  
 Remote

**Common Event Infrastructure Bus Member**

Common Event Infrastructure bus destination support the asynchronous transmission and distribution of Common Base Events.

Database Instance	Schema	Create Tables	User name	Password	Server	Provider
MVS212D1	SDS1C	<input type="checkbox"/>	DB2D	*****	localhost:446	DB2 for z/OS v8 and v9

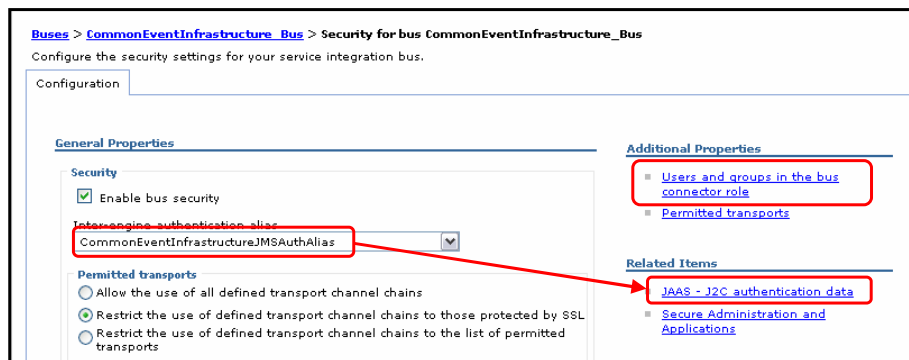
13

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The last bit of function that you might want to add to the WebSphere Process Server or WebSphere Enterprise Service Bus cluster or server is support for the common event infrastructure. This is optional but can also be configured with an installation wizard. In order to configure the common event infrastructure function, you must select the check box indicating you want to enable it on the server. You will then be asked for the same data base information that you have seen before. The first box pertains to the EVENT database that is needed while the second one pertains to the data store that is to be used by the messaging engine that is created for the CEI bus.

## Configure common event infrastructure... security

- Security is automatically enabled on the bus that is created
- A valid user or group needs to be added to the bus connector role and to the authentication alias



Security is automatically enabled on the bus that is created for the common event infrastructure. Therefore, in order to successfully use the common event infrastructure, you need to add a valid user to the bus connector role and for the specified authentication alias as shown on the slide.

## Configure common event infrastructure... security

**Buses > CommonEventInfrastructure\_Bus > Security for bus CommonEventInfrastructure\_Bus > Users and groups in the bus connector role**

Users in the bus connector role are able to connect to the bus to perform messaging operations. Users can have this role either by specifically having that role, or because they are in a group with that role.

Preferences

New Delete

Select	Name	Type
<input type="checkbox"/>	CEI	User
<input type="checkbox"/>	Serv	

Total 2

**Buses > CommonEventInfrastructure\_Bus > Security for bus CommonEventInfrastructure\_Bus > Users and groups in the bus connector role > New**

Create a user or group in the bus connector role.

Configuration

**General Properties**

**Bus Connector Role**

Group name

User name SDADMIN

Server - Allow servers to connect to the bus

All Authenticated - Allow all authenticated users to connect to the bus

Everyone - Allow unauthenticated users to connect to the bus

First, you should add a user or group to the bus connector role. This slide shows the addition of a user name. You can also add a group name or even allow everyone to connect to the bus.

## Configure common event infrastructure... security

Buses > CommonEventInfrastructure Bus > Security for bus CommonEventInfrastructure Bus > JAAS - J2C authentication data

Specifies a list of user identities and passwords for Java(TM) 2 connector security to use.

Preferences

New Delete

Select	Alias	User ID
<input type="checkbox"/>	BPCDB_sdnodet1.sdsr011 Auth Alias	DB2D
<input type="checkbox"/>	BPCME_00 Auth Alias	DB2D
<input type="checkbox"/>	BPC Auth Alias	sdadmin
<input type="checkbox"/>	CEIME_sdsr04 Auth Alias	DB2D
<input type="checkbox"/>	CommonEventInfrastructureJMSAuthAlias	CEI
<input type="checkbox"/>	SCAAPPME00 Auth Alias	DB2D

Configuration

Buses > CommonEventInfrastructure Bus > Security for bus CommonEventInfrastructure Bus > JAAS - J2C authentication data > CommonEventInfrastructureJMSAuthAlias

Specifies a list of user identities and passwords for Java(TM) 2 connector security to use.

General Properties

\* Alias  
CommonEventInfrastructureJMSAuthAlias

\* User ID  
SDADMIN

\* Password  
\*\*\*\*\*

Description  
Authentication alias for the C

Apply OK Reset Cancel

Set to a valid user ID and password!

Next, you should update the authentication alias that was created for you to contain a valid user ID. This example sets it to the administrator's user ID.



## Configure DB2 databases

### 5. Run SQL and DDL scripts created by configuration

- ▶ Need to run the tailored SQL that was created if dbDelayConfig='true' was specified
  - Only the common database is tailored or configured during augmentation!

```
<profile_path>/dbscripts/*
```

```
CommonDB
```

- ▶ Need to configure Process Choreographer and Common Event Infrastructure tables
- ▶ Need to create and run DDL for the service integration bus message stores that were created

createdB sample script alternative:


```
<profile_path>/dbscripts/CommonDB/DB2zOSV8/xxCELL
```

Now that the server or cluster is configured with all the functions you want, you need to configure the databases that the functions will use. Unlike the stand-alone case, only the common database is tailored or configured during augmentation. Partially tailored SQL is created during the business process choreographer configuration using the installation wizard. Fully tailored SQL is created during business process choreographer configuration using the bpeconfig.jacl script. For the common event infrastructure, you need to run a script in order to create the DDL necessary for that function. You also need to create and run the DDL for the service integration bus message stores that were created for you. A very nice alternative to all this is the createdB sample script that is discussed in the [z/OS DB2 configuration](#) presentation. If you decide not to use the createdB script, the next few slides will show you where to find the DDL or SQL that you need to run to complete the configuration.

## Configure DB2 databases...

- CommonDB (WPRCSDB)

```
cat cr* >COMMON.sql
cat ins* >>COMMON.sql
```



Order is important

- ProcessChoreographer (BPEDB)

```
<profile_path>/dbscripts/ProcessChoreographer/
  DB2zOSV7/<DB2_locName>/<schemaName>/
  DB2zOSV8/<DB2_locName>/<schemaName>/
```

```
createSchema.ddl
createSchema.sql
```

Configured from administrative console

As seen in the z/OS DB2 configuration presentation, each component creates a directory under the dbscripts directory where you will find the SQL or DDL if it exists. It has been tailored (or partially tailored in this case) to your installation but consists of multiple files under each directory. You can combine the CommonDB files into one file, but an alternative is to use the createDB sample script as mentioned on the previous slide. To see the files created for the CommonDB component, see the z/OS DB2 configuration presentation.

When you use the administrative console to configure the business process choreographer containers, not all information to tailor the DDL or SQL is available. Therefore, both DB2 V7 and DB2 V8 SQL and DDL files are created and placed in the directories shown on this slide. The files need some additional tailoring such as substituting the storage group and the database name to match your naming conventions. Keep in mind that all files ending in SQL are encoded in ASCII and all files ending in DDL are encoded in EBCDIC.

## Configure DB2 databases...

- ProcessChoreographer (BPEDB)

```
<profile_path>/dbscripts/ProcessChoreographer/  
    <DB2_version>/<dbName>/<schemaName>/  
For example, DB2zOSV8/xxCELL/xxCELL
```

Configured with  
bpeconfig.jacl

```
createSchema.ddl  
createSchema.sql
```

- CEI (EVENT and EVENTCAT)

```
<profile_path>/databases/event/<scopeName>/dbscripts/db2zos/ddl  
where scopeName = serverName or clusterName
```

```
cat cr* >CEI.ddl  
cat cat* >>CEI.ddl  
cat ins* >>CEI.ddl
```

EBCDIC

When you use the bpeconfig.jacl to configure the business process choreographer, more information is available so the SQL and DDL created are complete. These are found under the directory shown on the slide and one of the files must be run to configure the database. CEI is the last component that needs database configuration. Tailored DDL is found under the databases/event directory as shown on the slide. Again you can see here how you can combine the files into one. Be sure to examine the output, since there are some things that will need to be changed such as the database name and the storage group name.

## Configure DB2 databases...

- Need to create DDL for the messaging engine data stores

```
./sibDDLGenerator.sh -system db2 -version 8.1  
-platform zos -schema xxyyS -user DB2D -create  
-database xxCELL -storagegroup xxDBSTO -statementend  
";" > /u/wsuser/wpswork/SIBSCA.ddl
```

- The schema name used here must match the administrative console!

createDB sample script alternative:

```
<profile_path>/dbscripts/CommonDB/DB2zOSV8/xxCELL
```

Regardless of the schema names you decide to use, you need to somehow create the DDL that can be used to configure the DB2 database. Shown here is the sibDDLGenerator command which is one way to generate the DDL for the service integration bus' message stores. One of the parameters specified on the command is 'schema' so you can customize it here to match your conventions. If you chose to use the createDB sample script instead, the SQL is found in the directory shown. The schema names in that case are shown in the [z/OS DB2 configuration](#) presentation.

## Server initialization

### 6. Start the server!!

- ▶ Check for SQL errors
- ▶ Check that the messaging engines start
- ▶ Verify configuration with IVP found here:

<http://www.ibm.com/support/docview.wss?uid=tss1wp100830>

### 7. You are done!

With that, you should have a fully configured WebSphere Process Server or WebSphere Enterprise Service Bus server and you can start it up. Check for any severe errors on startup and check that the messaging engines start. Errors are often seen with the database configuration so check for any SQL errors as well. SQL errors are very common. Once everything looks good, verify the configuration with the white paper found at the Web address shown on the slide. The white paper has you verify each of the various components in a very informative, methodical manner.

## Summary

- WebSphere Process Server and WebSphere enterprise service bus configured in a Network Deployment environment has more post-configuration steps
  - ▶ Uses DB2 only

In summary, the configuration of a Network Deployment environment with WebSphere Process Server for z/OS or WebSphere Enterprise Service Bus for z/OS has some manual steps. The two parts of this presentation have looked at the steps involved to configure a fully-functional WebSphere Process Server or WebSphere Enterprise Service Bus server or cluster in a Network Deployment environment.

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