



# IBM IMS SOAP Gateway Version 9.1 Beta



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## Chapter 1. IMS SOAP Gateway

IBM® IMS™ SOAP Gateway is a Web services solution that enables IMS applications to inter-operate outside of the IMS environment through Simple Object Gateway Protocol (SOAP) to provide and request services independently of platform, environment, application language, or programming model.

The IMS SOAP Gateway can assist an organization in the following areas:

- Enterprise modernization
- Application development
- Business-to-Business (B2B) integration
- Service-oriented architecture (SOA) implementation

IMS SOAP Gateway allows you to enable your IMS application to become a Web Service. Different types of client applications, such as Microsoft® .NET, Java™, and third-party applications, can submit SOAP requests into IMS to drive the business logic of the COBOL applications.

IMS SOAP Gateway is compliant with the industry standards for Web Services, including SOAP/HTTP 1.1 and WSDL 1.1. This allows your IMS assets to inter-operate openly with various types of applications.

IMS SOAP Gateway consists of the following components:

### Related reference

“System requirements for IMS SOAP Gateway” on page 5

IMS SOAP Gateway Version 9.1 runs on Microsoft Windows® XP and 2000. IMS SOAP Gateway requires IMS Version 9 with integrated IMS Connect.

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## IMS SOAP Gateway Deployment Utility

The IMS SOAP Gateway Deployment Utility allows you to set up properties and create runtime code that IMS SOAP Gateway uses to enable IMS applications as Web services.

With the IMS SOAP Gateway Deployment Utility, you can:

- Deploy and enable your IMS application to be accessible as Web Services
- Start and stop IMS SOAP Gateway
- Set up the connection and correlation properties for a Web Service
- Generate Java client code to access a Web Service
- Configure properties for the IMS SOAP Gateway server
- Undeploy Web Services

You can use the IMS SOAP Gateway Deployment Utility in two ways:

- **Interactive mode:** Utilize the IMS SOAP Gateway Deployment Utility commands with an interactive user interface which walks you through each command needed to complete a selected task. Interactive mode steps you through tasks by prompting you for input.
- **Expert mode:** Utilize the IMS SOAP Gateway Deployment Utility commands on the Windows command line. The deployment utility allows you to perform tasks in one step by entering commands on the Windows command line with parameters.

### Related reference

“Deployment Utility Expert Mode” on page 55

The IMS SOAP Gateway Deployment Utility in Expert Mode includes commands that allow you to specify all the input values to perform tasks for IMS SOAP Gateway in one instruction.

“Deployment Utility in Interactive Mode” on page 49

IMS SOAP Gateway Deployment Utility Interactive Mode provides an interactive user interface which walks you through each command needed to complete a selected task. Interactive mode steps you through tasks by prompting you for input.

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## IMS SOAP Gateway Administrative Console

The IMS SOAP Gateway Administrative Console lists the deployed Web services when the server is started. Each item in the list is a link to the Web service’s WSDL (Web service description language) file.

### Related tasks

“Deploying the WSDL file” on page 24

Deploying the WSDL is the last step for deploying a Web service to IMS SOAP Gateway.

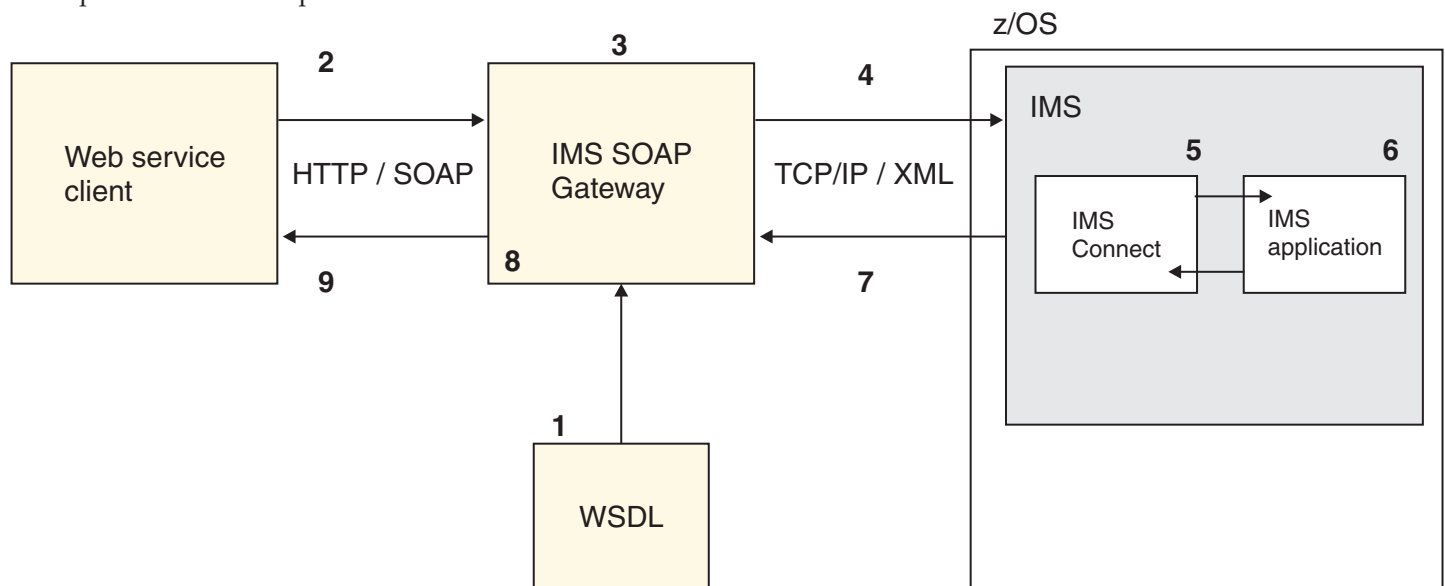
“Starting the IMS SOAP Gateway Administrative Console” on page 28

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## IMS SOAP Gateway server

The IMS SOAP Gateway server processes SOAP messages. It receives the SOAP message from the client application, converts it to an IMS input message, and sends it to IMS. It then receives the output message from IMS and converts it to a SOAP message to send back to the client.

The following figure shows the IMS SOAP Gateway runtime environment. The numbers in the figure correspond to the description that follows.



1. A Web Service interface for the IMS application is created and deployed to IMS SOAP Gateway. IMS SOAP Gateway provides a URL address for this IMS application such that it can be Gatewayable as a Web Service using HTTP communication.
2. The client application sends a SOAP message to IMS SOAP Gateway. The SOAP message contains the input data for the IMS message wrapped in XML. The client application uses the URL that is specified in the WSDL file.
3. IMS SOAP Gateway receives the SOAP message from the client. It processes the header information of the SOAP message and retrieves the appropriate correlation and connection information for this input request. It then optionally adds the LLZZ and transaction code information to the XML-formatted input message data.
4. IMS SOAP Gateway sends the input message to IMS Connect by using TCP/IP.
5. IMS Connect then sends the transaction request to IMS.

6. IMS runs the transaction. IMS application retrieves the input message data, which is in XML format. It processes the input XML data and then builds the transaction output data in XML format as well.
7. IMS adds the LLZZ prefix to the output message and sends it through IMS Connect back to IMS SOAP Gateway.
8. IMS SOAP Gateway gets the transaction output and optionally removes the LLZZ value from the message. It then builds a SOAP message with the transaction output.
9. IMS SOAP Gateway sends the SOAP response message, which contains the output message, back to the client application.

**Related tasks**

*“Starting the IMS SOAP Gateway server” on page 27*

There are three ways to start the IMS SOAP Gateway server: from the Windows start menu, with the deployment utility Interactive mode, or with the deployment utility in Expert mode.





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## Chapter 2. Installing

This section provides the following installation information:

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### System requirements for IMS SOAP Gateway

IMS SOAP Gateway Version 9.1 runs on Microsoft Windows XP and 2000. IMS SOAP Gateway requires IMS Version 9 with integrated IMS Connect.

#### Operating system requirements

IMS SOAP Gateway runs on Microsoft Windows XP and 2000.

#### IMS requirements

IMS SOAP Gateway requires IMS Version 9 with integrated IMS Connect.

##### Related tasks

“Installing the IMS SOAP Gateway”

##### Related information

Chapter 1, “IMS SOAP Gateway,” on page 1

IBM IMS SOAP Gateway is a Web services solution that enables IMS applications to inter-operate outside of the IMS environment through Simple Object Gateway Protocol (SOAP) to provide and request services independently of platform, environment, application language, or programming model.

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### Installing the IMS SOAP Gateway

To install IMS SOAP Gateway:

1. Download `imssoap910.exe` into a temporary directory.
2. Run the file `imssoap910.exe`. The InstallShield Wizards opens and guides you through a series of installation steps.
3. Follow the instructions in the InstallShield Wizard to complete the installation. To access IMS SOAP Gateway from the Windows **Start** menu, navigate to **Start->All Programs->IBM IMS SOAP Gateway**.

##### Related reference

“System requirements for IMS SOAP Gateway”

IMS SOAP Gateway Version 9.1 runs on Microsoft Windows XP and 2000. IMS SOAP Gateway requires IMS Version 9 with integrated IMS Connect.

---

### Verifying the configuration of IMS OTMA and IMS Connect

IMS SOAP Gateway uses IMS Connect and IMS OTMA to invoke IMS transaction as Web Services.

**Prerequisite:** IMS SOAP Gateway *cannot* access IMS transactions unless IMS Connect and IMS OTMA are properly configured.

To verify the configuration of OTMA and IMS Connect, ensure that the following have been performed:

1. User Exit Routine `HWSSOAP1` and the sample `JCL` are downloaded from the IMS SOAP Gateway Web site.
2. IMS Connect and IMS OTMA are installed, configured, enabled and running properly.

3. IMS Connect and OTMA is setup with the desired level of security. For example, if you have security enabled for your IMS Connect and IMS OTMA, make sure you have provide the valid security properties (like user ID and password) to IMS SOAP Gateway.
4. IMS transaction and the program associated with the IMS transaction has been started and are running properly.

#### Related tasks

“Verifying installation of IMS SOAP Gateway” on page 7

To verify the installation of IMS SOAP Gateway, use the IMS SOAP Gateway Installation Verification Program (IVP).

## Setting up the user exit routines for IMS Connect

#### Prerequisite:

- You must have IMS Connect installed and configured on your system. IMS Connect is include with IMS™ Version 9.
- Download the User Exit Routine HWSSOAP1 and the sample JCL from the IMS SOAP Gateway Web site.

For more information on user exit routines and configuring IMS Connect, see the *IMS Version 9: IMS Connect Guide and Reference* .

To configure IMS Connect with User Exit Routine HWSSOAP1:

1. Compile and bind (link-edit) the User Exit Routine HWSSOAP1 to the IMS Connect resource library (SDFSRESL). The following sample JCL can assist you with the step:

```
//HWSSOAP JOB (ACTINF01),'PGMRNAME',
//          CLASS=A,MSGCLASS=Z,MSGLEVEL=(1,1),REGION=4M
//SOAP01 EXEC PGM=ASMA90,REGION=32M,
//          PARM='DECK,NOOBJECT,SIZE(MAX,ABOVE) '
//SYSLIB DD DSN=SYS1.SDFSRESL,DISP=SHR
//          DD DSN=SYS1.MODGEN,DISP=SHR
//SYSPUNCH DD UNIT=SYSVIO,DISP=(,PASS),SPACE=(TRK,(1,1,1)),
//          DSN=&&TEXT(HWSSOAP1)
//SYSPRINT DD SYSOUT=*,
//          DCB=(BLKSIZE=605),
//          SPACE=(605,(100,50),RLSE,,ROUND)
//SYSUT1 DD UNIT=SYSDA,DISP=(,DELETE),
//          DCB=BLKSIZE=13024,
//          SPACE=(CYL,(16,15))
//SYSIN DD DSN=IMSBLD.IMSCON91.APAR.MAINT.SHWSSRC(HWSSOAP1),DISP=SHR
//SOAP02 EXEC PGM=IEWL,
//          PARM='SIZE=(180K,28K),RENT,REFR,NCAL,LET,XREF,LIST,TEST '
//SYSPRINT DD SYSOUT=A
//SYSLMOD DD DSN=IMSBLD.USERTEMP.HWSRESL,DISP=SHR
//SYSUT1 DD UNIT=SYSVIO,DISP=(,DELETE),SPACE=(CYL,(10,1),RLSE)
//TEXT DD UNIT=SYSVIO,DISP=(OLD,DELETE),DSN=&&TEXT
//SYSLIN DD *
//          INCLUDE TEXT(HWSSOAP1)
//          ENTRY HWSSOAP1
//          MODE RMODE(24),AMODE(31)
//          NAME HWSSOAP1(R)
//
```

2. Add the User Exit Routine HWSSOAP1 to the IMS Connect configuration file for the TCPIP statement at EXIT= :  
TCPIP=(HOSTNAME=...,EXIT=(HWSSMPL0,HWSSMPL1,HWSSOAP1),...)
3. Restart IMS Connect to complete the configuration.

---

## Verifying installation of IMS SOAP Gateway

To verify the installation of IMS SOAP Gateway, use the IMS SOAP Gateway Installation Verification Program (IVP).

**Prerequisite:** You must have IMS Connect installed and configured on your system. IMS Connect is include with IMS Version 9. For more information configuring IMS Connect, see the *IMS Version 9: IMS Connect Guide and Reference* .

The IMS SOAP Gateway Installation Verification Program (IVP) is a Web Service that is installed with IMS SOAP Gateway. The IVP verifies the installation when you successfully access the target IMS environment.

**Note:** The IVP does not require a host IMS application.

To verify the installation:

1. Configure the connection bundle properties for use by the IVP to connect to your target IMS:
  - a. Start the IMS SOAP Gateway Deployment Utility in Interaction mode by navigating to **Start -> Programs -> IBM IMS SOAP Gateway -> Deployment Utility**. The deployment utility command line interface opens.
  - b. Select the **Set Connection Properties Task** by entering the corresponding number on the command line.
  - c. Enter **c** to create a new connection bundle.
  - d. Enter the following values for each property of the connection bundle:
    - Bundle name: **imsssoapivp**
    - IMS Connect host name or IP Address: Specify the IP address or host name of the machine running the target IMS Connect
    - IMS Connect port number: Specify the number of a port used by the target IMS Connect.
    - IMS datastore name: Specify the name of the target IMS datastore. It must match the ID parameter of the Datastore statement that is specified in the IMS Connect configuration member when IMS Connect is installed. It also serves as the XCF member name for IMS during internal XCF communications between IMS Connect and OTMA.
    - RACF userid: If you have security enabled on your IMS environment, specify the user name that will be used for security checking.
    - RACF password: If you have security enabled on your IMS environment, specify the password that will be used for security checking.
    - RACF group name: Specify the IMS group name that will be used for security authorization is applicable.
2. Run the IVP
  - a. From any web browser, type the following to invoke the IMS SOAP Gateway IVP Web client, `http://hostname:port/imssoap/IMSSOAPIVP` where *hostname:port* is the hostname and *port* is the port number where IMS SOAP Gateway is running.

**Tip:** If you invoke the IVP from the same work station where IMS SOAP Gateway is installed, then you can use the default port number and the URL is:`http://localhost:8080/imssoap/IMSSOAPIVP`.
  - b. Click **Submit**. The IVP is run successfully if you see one of the following messages:
    - DFS058I hh:mm:ss START COMMAND COMPLETED
    - DFS1292E SECURITY VIOLATION

The objective of the IVP is to receive a message from IMS in reply to the `/STA OTMA` command. One of these messages is returned, depending on the level of security checking in place for your

installation and whether or not the UserName/Password/GroupName is permitted to issue the /STA command. Either message indicates successful execution of the IVP, since it is IMS that issues the "DFS" message. The IVP does not run an IMS application program, therefore it does not verify that IMS transactions can run successfully. It only verifies that the path to IMS is available.

#### **Related tasks**

"Tips for diagnosing Installation Verification Program errors" on page 33

Running the IVP for IMS SOAP Gateway is usually trouble free. However, if you do experience an error this topic lists the possible errors and recommended solutions for these problems.

"Verifying the configuration of IMS OTMA and IMS Connect" on page 5

IMS SOAP Gateway uses IMS Connect and IMS OTMA to invoke IMS transaction as Web Services.

---

## **Removing IMS SOAP Gateway**

You can uninstall IMS SOAP Gateway in either of the following:

- Run the uninstaller.exe file located in <installation directory>\\_uninst.
- Use the Windows Add/Remove Programs control panel.

---

## Chapter 3. Enabling an IMS application as a Web Service

This topic gives an overview of the tasks required enable an IMS application as a Web Service using IMS SOAP Gateway. After you deploy the WSDL file, the IMS application is available as a Web service and the client application can send it SOAP messages.

Perform the following tasks to make an IMS application accessible to a Web service. Once these task are complete, the next step is creating your client applications.

### Related tasks

Chapter 4, “Writing the client application,” on page 25

Write a client application which sends a SOAP message to invoke the IMS application as a Web service through IMS SOAP Gateway.

---

## Creating the WSDL file

To deploy an IMS application as a Web service, you need to create a WSDL (Web service description language) file.

A WSDL file is an XML document that describes a Web service. WSDL files are used by others (for example, the client that invokes the service) to discover the service and to understand how to invoke the service. It specifies the location of the service and the operations that the service exposes.

To make your IMS application accessible as a Web Service, you need to describe the functions provided by the IMS application and how the input and output message looks like for invoking the function in a WSDL file. The WSDL file serves as the Web service interface for the IMS application.

There are three ways to create the WSDL file: generating the file by using IBM WebSphere Developer for zSeries, manually creating the file, or modifying an existing WSDL file that is generated by IBM WebSphere® Application Developer Integration Edition V5.1.1. To prepare the WSDL file, you need a COBOL copybook that describes the input and output messages for the IMS application.

### Related tasks

“Deploying a Web service with IMS SOAP Gateway” on page 21

Use the deployment utility to deploy an application as a Web service and to perform associated tasks.

Use the deployment utility in either Interactive or Expert mode.

## Generating a WDSL file by using WebSphere Developer for zSeries

With WebSphere Developer for zSeries, you can generate a WDSL file that you can use without modification for IMS SOAP Gateway.

To generate a WSDL file, you must have a COBOL copybook that describes the format of the input and output messages for the application.

To generate a WSDL file:

1. In WebSphere Developer for zSeries, create a project.
2. Import the COBOL copybook that describes the format of the input and output messages.
3. Start the Enable Web Service wizard:
  - a. Right-click on the COBOL copybook file.
  - b. Select **Enable Web Services** → **Generate enablement code**.
4. Select the data structures for the inbound and outbound converters:

- a. Click **Change COBOL Options**. The COBOL Import Properties panel displays.
  - b. In the **Platform** field, select z/OS.
  - c. Click **Finish**. The Data structures panel displays.
  - d. For the inbound data structure, select the COBOL data structure that corresponds to the input message of the IMS application.
  - e. Select the Outbound data structure tab.
  - f. Select the COBOL data structure that corresponds to the output message of the IMS application.
  - g. Click **Next** to continue.
5. Specify generation options:
- a. In the **Converter type** field, select IMS SOAP Gateway.
  - b. In the **Host code page** field, select the code page that the host uses. IMS SOAP Gateway supports only UTF-8 encoding for the inbound and outbound code pages. Therefore, you cannot change these settings.
  - c. Specify any additional properties.
  - d. Select the WSDL and XSD Options tab.
  - e. In the **Endpoint URI** field, change the host and port name to the location of IMS SOAP Gateway. This URI specifies the address of the Web service.
  - f. Specify any additional properties.
  - g. Click **Next** to continue.
6. Specify the IMS SOAP Gateway correlator properties and click **Next**.
7. Specify location and name of the WSDL file.
- a. Select the WSDL and XSD tab.
  - b. If necessary, change the default location and names of the WSDL file.
  - c. Ensure that **WSDL file name** is selected.
  - d. Optionally, select the inbound and outbound XSD files to be generated. These files are not required by IMS SOAP Gateway.
  - e. Click **Finish**.

WebSphere Developer for zSeries generates the following files, but you need only the WSDL file. The other files are not required for IMS SOAP Gateway Version 9.1.

- WSDL file
- COBOL converters and driver file
- Correlator file
- Inbound and outbound XSD files (optional)

8. Store the WSDL file in the IMS SOAP Gateway WSDL directory: *installation\_directory*\server\webapps\imsssoap\wsdl. For example: c:\Program Files\IBM\IMS SOAP Gateway\server\webapps\imsssoap\wsdl. You can store the WSDL anywhere, but you must then specify the entire path when you are deploying the Web service.

## Manually creating the WSDL file

To enable an application as a Web service, you must first create the Web service interface.

To create the Web service interface:

1. Create an XML schema that maps the COBOL copybook data structures for the input message and output message of the application. Do not include the LLZZ prefix and transaction code in the schema. If you have a COBOL copybook, you can use it to help you create the schema.
2. Create a Document/Literal style WSDL file that defines a Web service operation that uses the input and output messages that are defined in the XML schema. Put the schema that you created in step 1 in the <wsdl:types> element.

3. Create the rest of WSDL file with the following rules:
  - The soap:operation soapAction attribute value must match the correlator file name.
  - The soap:operation style attribute value must be "document".
  - The SOAP address must be `http://hostname:8080/imssoap/services/WebServicePortname` where *hostname* is the location of IMS SOAP Gateway and *WebServicePortname* matches the name attribute value of the port element.
4. Store the WSDL file in the IMS SOAP Gateway WSDL directory: `installation_directory\server\webapps\imssoap\wsdl`. For example: `c:\Program Files\IBM\IMS SOAP Gateway\server\webapps\imssoap\wsdl\SOAPService.wsdl`. You can store the WSDL anywhere, but you must then specify the entire path when you are deploying the Web service.

#### Related information

"WSDL file example" on page 13

The example WSDL file is for the IMS phonebook sample application.

## Modifying WSDL files that are generated by WebSphere Studio Application Developer

If you have WSDL files generated by using WebSphere Studio Application Developer Integration Edition V5.1.x, you can modify them to use it with IMS SOAP Gateway.

WebSphere Studio Application Developer Integration Edition allows you to create an Enterprise Service application from the COBOL copybook for use with IMS Connector for Java. The following WSDL files are generated when the Enterprise Service application is created for the IMS environment: *prefixService.wsdl*, *prefixSOAPService.wsdl*, and *prefixSOAPServiceBinding.wsdl*. These files can be modified to use with IMS SOAP Gateway. *prefixIMSService.wsdl* and *prefixIMSBinding.wsdl* files are generated as well, but they are not required by IMS SOAP Gateway.

To use a generated WSDL file for IMS SOAP Gateway, make the following changes to the WSDL files:

1. Modify the XML schema part of the *prefixService.wsdl* file:
  - a. Optional: Remove the LL, ZZ, and trancode elements of the input message. LLZZ and the trancode are added by IMS SOAP Gateway when it sends the message to IMS, and so these elements are ignored by IMS SOAP Gateway. For example, remove the following elements:

```

<element name="in_ll">
  <simpleType>
    <restriction base="short">
      <minInclusive value="-999"/>
      <maxInclusive value="999"/>
    </restriction>
  </simpleType>
</element>
<element name="in_zz">
  <simpleType>
    <restriction base="short">
      <minInclusive value="-999"/>
      <maxInclusive value="999"/>
    </restriction>
  </simpleType>
</element>
<element name="in_trcd">
  <annotation>
    <appinfo source="http://www.wsadie.com/appinfo">
      <initialValue kind="SPACE"/>
    </appinfo>
  </annotation>
  <simpleType>
    <restriction base="string">

```

```

        <maxLength value="10"/>
      </restriction>
    </simpleType>
  </element>

```

- b. Optional: Remove the LL and ZZ elements of the output message. For example, remove the following elements:

```

<element name="out_ll">
  <annotation>
    <appinfo source="http://www.wsadie.com/appinfo">
      <initialValue kind="string_value" value="+0"/>
    </appinfo>
  </annotation>
  <simpleType>
    <restriction base="short">
      <minInclusive value="-999"/>
      <maxInclusive value="999"/>
    </restriction>
  </simpleType>
</element>
<element name="out_zz">
  <annotation>
    <appinfo source="http://www.wsadie.com/appinfo">
      <initialValue kind="string_value" value="+0"/>
    </appinfo>
  </annotation>
  <simpleType>
    <restriction base="short">
      <minInclusive value="-999"/>
      <maxInclusive value="999"/>
    </restriction>
  </simpleType>
</element>

```

- c. After the definitions of the complex types and before the end of the schema, add elements that reference the input and output complex type elements. The name attribute value must match the name attribute value of the complexType elements, and the type attribute value must match the type attribute value of the part element. For example, add the following elements:

```

....
</complexType>
<element name="INPUTMSG" type="tns:INPUTMSG"/>
<element name="OUTPUTMSG" type="tns:OUTPUTMSG"/>
</schema>
....

```

- d. In the part elements, change the type attribute name to “element” to reference the input and output message. For example, modify the following:

```

...
</types>
<message name="runPhoneBookRequest">
  <part name="iINPUTMSG" element="tns:INPUTMSG"/>
</message>
<message name="runPhoneBookResponse">
  <part name="oOUTPUTMSGPart" element="tns:OUTPUTMSG"/>
</message>

```

## 2. Modify the *prefix*SOAPBinding.wsdl file:

- a. Change the style attribute value of the soap:binding element and of the soap:operation element from “rpc” to “document” For example:

```

<binding name="PhoneBookSOAPBinding" type="interface1:PhoneBook">
  <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
  <operation name="runPhoneBook">
    <soap:operation soapAction="urn:PhoneBook" style="document"/>
  </operation>
</binding>

```

- b. In the two soap:body elements, which are nested inside the input and output elements, change the use attribute values from “encoded” to “literal.” For example:



```

<input name="runPhoneBookRequest">
  <soap:body
    encodingStyle=http://schemas.xmlsoap.org/soap/encoding/
    namespace="urn:PhoneBook" parts="INPUTMSG" use="literal"/>
</input>
<output name="runPhoneBookResponse">
  <soap:body
    encodingStyle=http://schemas.xmlsoap.org/soap/encoding/
    namespace="urn:PhoneBook" parts="OUTPUTMSGPart"
    use="literal"/>
</output>

```

3. Modify the *prefixSOAPService.wsdl* file by changing location attribute value of the soap:address element to match the location of the IMS SOAP Gateway server and the port name of the Web Service that is being installed. The SOAP address must be `http://hostname:8080/imssoap/services/WebServicePortname`, where *WebServicePortname* matches the name attribute value of the port element and *hostname* is the location of IMS SOAP Gateway. For example:

```

<service name="PhoneBookService">
  <port binding="binding1:PhoneBookSOAPBinding"
    name="PhoneBookSOAPPort">
    <soap:address
      location="http://localhost:8080/imssoap/services/PhoneBookSOAPPort"/>
    </port>
  </service>

```

4. Store the three WSDL files in the IMS SOAP Gateway. WSDL directory: `installation_directory\server\webapps\imssoap\wsdl`. For example: `c:\Program Files\IBM\IMS SOAP Gateway\server\webapps\imssoap\wsdl`. When you are required to specify a WSDL file to the IMS SOAP Gateway deployment utility, specify the *prefixSOAPService.wsdl* file.

#### Related information

“WSDL file example”

The example WSDL file is for the IMS phonebook sample application.

## WSDL file example

The example WSDL file is for the IMS phonebook sample application.

```

<?xml version="1.0" encoding="UTF-8"?>
<wsdl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/" xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  <wsdl:types>
    <schema xmlns="http://www.w3.org/2001/XMLSchema" xmlns:cb1="http://www.IMSPHBKI.com/schemas/IMSPHBKIInterface" attribute="cb1:cb1">
      <complexType name="INPUTMSG">
        <sequence>
          <element name="in_ll">
            <simpleType>
              <restriction base="short">
                <minInclusive value="-999"/>
                <maxInclusive value="999"/>
              </restriction>
            </simpleType>
          </element>
          <element name="in_zz">
            <simpleType>
              <restriction base="short">
                <minInclusive value="-999"/>
                <maxInclusive value="999"/>
              </restriction>
            </simpleType>
          </element>
          <element name="in_trcd">
            <annotation>
              <appinfo source="http://www.wsadie.com/appinfo">
                <initialValue kind="SPACE"/>
              </appinfo>
            </annotation>
          </element>
        </sequence>
      </complexType>
    </schema>
  </wsdl:types>

```

```

</annotation>
<simpleType>
  <restriction base="string">
    <maxLength value="10"/>
  </restriction>
</simpleType>
</element>
<element name="in_cmd">
  <annotation>
    <appinfo source="http://www.wsadie.com/appinfo">
      <initialValue kind="SPACE"/>
    </appinfo>
  </annotation>
  <simpleType>
    <restriction base="string">
      <maxLength value="8"/>
    </restriction>
  </simpleType>
</element>
<element name="in_name1">
  <annotation>
    <appinfo source="http://www.wsadie.com/appinfo">
      <initialValue kind="SPACE"/>
    </appinfo>
  </annotation>
  <simpleType>
    <restriction base="string">
      <maxLength value="10"/>
    </restriction>
  </simpleType>
</element>
<element name="in_name2">
  <annotation>
    <appinfo source="http://www.wsadie.com/appinfo">
      <initialValue kind="SPACE"/>
    </appinfo>
  </annotation>
  <simpleType>
    <restriction base="string">
      <maxLength value="10"/>
    </restriction>
  </simpleType>
</element>
<element name="in_extn">
  <annotation>
    <appinfo source="http://www.wsadie.com/appinfo">
      <initialValue kind="SPACE"/>
    </appinfo>
  </annotation>
  <simpleType>
    <restriction base="string">
      <maxLength value="10"/>
    </restriction>
  </simpleType>
</element>
<element name="in_zip">
  <annotation>
    <appinfo source="http://www.wsadie.com/appinfo">
      <initialValue kind="SPACE"/>
    </appinfo>
  </annotation>
  <simpleType>
    <restriction base="string">
      <maxLength value="7"/>
    </restriction>
  </simpleType>
</element>

```

```

    </sequence>
  </complexType>
  <element name="INPUTMSG" type="cb1:INPUTMSG"/>
</schema>
<schema xmlns="http://www.w3.org/2001/XMLSchema" xmlns:cb1="http://www.IMSPHBK0.com/schemas/IMSPHBK0Interface" attri
  <complexType name="OUTPUTMSG">
    <sequence>
      <element name="out_ll">
        <simpleType>
          <restriction base="short">
            <minInclusive value="-999"/>
            <maxInclusive value="999"/>
          </restriction>
        </simpleType>
      </element>
      <element name="out_zz">
        <simpleType>
          <restriction base="short">
            <minInclusive value="-999"/>
            <maxInclusive value="999"/>
          </restriction>
        </simpleType>
      </element>
      <element name="out_msg">
        <annotation>
          <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
          </appinfo>
        </annotation>
        <simpleType>
          <restriction base="string">
            <maxLength value="40"/>
          </restriction>
        </simpleType>
      </element>
      <element name="out_cmd">
        <annotation>
          <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
          </appinfo>
        </annotation>
        <simpleType>
          <restriction base="string">
            <maxLength value="8"/>
          </restriction>
        </simpleType>
      </element>
      <element name="out_name1">
        <annotation>
          <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
          </appinfo>
        </annotation>
        <simpleType>
          <restriction base="string">
            <maxLength value="10"/>
          </restriction>
        </simpleType>
      </element>
      <element name="out_name2">
        <annotation>
          <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
          </appinfo>
        </annotation>
        <simpleType>
          <restriction base="string">

```

```

        <maxLength value="10"/>
    </restriction>
</simpleType>
</element>
<element name="out_extn">
    <annotation>
        <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
        </appinfo>
    </annotation>
    <simpleType>
        <restriction base="string">
            <maxLength value="10"/>
        </restriction>
    </simpleType>
</element>
<element name="out_zip">
    <annotation>
        <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
        </appinfo>
    </annotation>
    <simpleType>
        <restriction base="string">
            <maxLength value="7"/>
        </restriction>
    </simpleType>
</element>
<element name="out_segno">
    <annotation>
        <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
        </appinfo>
    </annotation>
    <simpleType>
        <restriction base="string">
            <maxLength value="4"/>
        </restriction>
    </simpleType>
</element>
</sequence>
</complexType>
<element name="OUTPUTMSG" type="cbl:OUTPUTMSG"/>
</schema>
</wsdl:types>
<wsdl:message name="IMSPHBKOperationRequest">
    <wsdl:part element="xsd1:INPUTMSG" name="INPUT-MSGPart"/>
</wsdl:message>
<wsdl:message name="IMSPHBKOperationResponse">
    <wsdl:part element="xsd2:OUTPUTMSG" name="OUTPUT-MSGPart"/>
</wsdl:message>
<wsdl:portType name="IMSPHBKPortType">
    <wsdl:operation name="IMSPHBKOperation">
        <wsdl:input message="tns:IMSPHBKOperationRequest" name="IMSPHBKOperationRequest"/>
        <wsdl:output message="tns:IMSPHBKOperationResponse" name="IMSPHBKOperationResponse"/>
    </wsdl:operation>
</wsdl:portType>
<wsdl:binding name="IMSPHBKBinding" type="tns:IMSPHBKPortType">
    <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
    <wsdl:operation name="IMSPHBKOperation">
        <soap:operation soapAction="urn:IMSPHBK" style="document"/>
        <wsdl:input name="IMSPHBKOperationRequest">
            <soap:body encodingStyle="literal" use="literal"/>
        </wsdl:input>
        <wsdl:output name="IMSPHBKOperationResponse">
            <soap:body encodingStyle="literal" use="literal"/>
        </wsdl:output>
    </wsdl:operation>
</wsdl:binding>

```

```

    </wsdl:operation>
</wsdl:binding>
<wsdl:service name="IMSPHBKService">
  <wsdl:port binding="tns:IMSPHBKBinding" name="IMSPHBKPort">
    <soap:address location="http://localhost:8080/imssoap/services/IMSPHBKPort"/>
  </wsdl:port>
</wsdl:service>
</wsdl:definitions>

```

### Related tasks

“Manually creating the WSDL file” on page 10

To enable an application as a Web service, you must first create the Web service interface.

“Modifying WSDL files that are generated by WebSphere Studio Application Developer” on page 11

If you have WSDL files generated by using WebSphere Studio Application Developer Integration Edition V5.1.x, you can modify them to use it with IMS SOAP Gateway.

---

## Modifying the IMS application

You must modify the IMS application to accept the XML input message and to return an XML output message.

### Data format of messages

The client and IMS application must send and receive messages in XML that matches the XML schema in the WSDL file. The message data does not need to include LL, ZZ, or trancode information.

### Message prefix

IMS requires all transaction message to be prefixed by a two-byte LL field and a two-byte ZZ field. In addition, IMS requires a transaction code field up to eight bytes long for the first input message of the IMS application. These fields cannot wrapped in XML tags. To allow your XML-formated IMS message data to reach your IMS application, IMS SOAP Gateway allows you to specify the transaction code value by specifying a correlator property. At runtime, IMS SOAP Gateway adds the simple EBCDIC byte values of the transaction code and LL and ZZ fields to XML-formatted IMS data input message.

**Note:** The XML schema can contains the LL, ZZ, and trancode definitions, but the values will not be used by IMS if you specify the transaction code value by using the IMS SOAP Gateway correlator property.

### Sample

The IMS application has the following COBOL copybook:

```

01 INPUT-MSG.
   02 IN-LL          PICTURE S9(3) COMP.
   02 IN-ZZ          PICTURE S9(3) COMP.
   02 IN-TRCD        PICTURE X(10).
   02 IN-CMD         PICTURE X(8).
   02 IN-NAME1       PICTURE X(10).
   02 IN-NAME2       PICTURE X(10).
   02 IN-EXTN        PICTURE X(10).
   02 IN-ZIP         PICTURE X(7).

01 OUTPUT-MSG.
   02 OUT-LL         PICTURE S9(3) COMP VALUE +0.
   02 OUT-ZZ         PICTURE S9(3) COMP VALUE +0.
   02 OUT-MSG        PICTURE X(40) VALUE SPACES.
   02 OUT-CMD        PICTURE X(8) VALUE SPACES.
   02 OUT-NAME1      PICTURE X(10) VALUE SPACES.
   02 OUT-NAME2      PICTURE X(10) VALUE SPACES.

```

```

02 OUT-EXTN    PICTURE X(10) VALUE SPACES.
02 OUT-ZIP     PICTURE X(7) VALUE SPACES.
02 OUT-SEGNO   PICTURE X(4) VALUE SPACES.

```

The following schema, which maps to the COBOL copybook, is in the WSDL file:

```

<schema attributeFormDefault="qualified"
  elementFormDefault="unqualified"
  targetNamespace="http://ims.sample/"
  xmlns="http://www.w3.org/2001/XMLSchema" xmlns:xsd1="http://ims.sample/">
  <complexType name="INPUTMSG">
    <sequence>
      <element name="in__ll">
        <simpleType>
          <restriction base="short">
            <minInclusive value="-999"/>
            <maxInclusive value="999"/>
          </restriction>
        </simpleType>
      </element>
      <element name="in__zz">
        <simpleType>
          <restriction base="short">
            <minInclusive value="-999"/>
            <maxInclusive value="999"/>
          </restriction>
        </simpleType>
      </element>
      <element name="in__trcd">
        <annotation>
          <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
          </appinfo>
        </annotation>
        <simpleType>
          <restriction base="string">
            <maxLength value="10"/>
          </restriction>
        </simpleType>
      </element>
      <element name="in__cmd">
        <annotation>
          <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
          </appinfo>
        </annotation>
        <simpleType>
          <restriction base="string">
            <maxLength value="8"/>
          </restriction>
        </simpleType>
      </element>
      <element name="in__name1">
        <annotation>
          <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
          </appinfo>
        </annotation>
        <simpleType>
          <restriction base="string">
            <maxLength value="10"/>
          </restriction>
        </simpleType>
      </element>
      <element name="in__name2">
        <annotation>
          <appinfo source="http://www.wsadie.com/appinfo">

```

```

        <initialValue kind="SPACE"/>
    </appinfo>
</annotation>
<simpleType>
    <restriction base="string">
        <maxLength value="10"/>
    </restriction>
</simpleType>
</element>
<element name="in_extn">
    <annotation>
        <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
        </appinfo>
    </annotation>
    <simpleType>
        <restriction base="string">
            <maxLength value="10"/>
        </restriction>
    </simpleType>
</element>
<element name="in_zip">
    <annotation>
        <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
        </appinfo>
    </annotation>
    <simpleType>
        <restriction base="string">
            <maxLength value="7"/>
        </restriction>
    </simpleType>
</element>
</sequence>
</complexType>
<complexType name="OUTPUTMSG">
    <sequence>
        <element name="out_ll">
            <annotation>
                <appinfo source="http://www.wsadie.com/appinfo">
                    <initialValue kind="string_value" value="+0"/>
                </appinfo>
            </annotation>
            <simpleType>
                <restriction base="short">
                    <minInclusive value="-999"/>
                    <maxInclusive value="999"/>
                </restriction>
            </simpleType>
        </element>
        <element name="out_zz">
            <annotation>
                <appinfo source="http://www.wsadie.com/appinfo">
                    <initialValue kind="string_value" value="+0"/>
                </appinfo>
            </annotation>
            <simpleType>
                <restriction base="short">
                    <minInclusive value="-999"/>
                    <maxInclusive value="999"/>
                </restriction>
            </simpleType>
        </element>
        <element name="out_msg">
            <annotation>
                <appinfo source="http://www.wsadie.com/appinfo">
                    <initialValue kind="SPACE"/>
                </appinfo>
            </annotation>

```

```

        </appinfo>
    </annotation>
    <simpleType>
        <restriction base="string">
            <maxLength value="40"/>
        </restriction>
    </simpleType>
</element>
<element name="out__cmd">
    <annotation>
        <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
        </appinfo>
    </annotation>
    <simpleType>
        <restriction base="string">
            <maxLength value="8"/>
        </restriction>
    </simpleType>
</element>
<element name="out__name1">
    <annotation>
        <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
        </appinfo>
    </annotation>
    <simpleType>
        <restriction base="string">
            <maxLength value="10"/>
        </restriction>
    </simpleType>
</element>
<element name="out__name2">
    <annotation>
        <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
        </appinfo>
    </annotation>
    <simpleType>
        <restriction base="string">
            <maxLength value="10"/>
        </restriction>
    </simpleType>
</element>
<element name="out__extn">
    <annotation>
        <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
        </appinfo>
    </annotation>
    <simpleType>
        <restriction base="string">
            <maxLength value="10"/>
        </restriction>
    </simpleType>
</element>
<element name="out__zip">
    <annotation>
        <appinfo source="http://www.wsadie.com/appinfo">
            <initialValue kind="SPACE"/>
        </appinfo>
    </annotation>
    <simpleType>
        <restriction base="string">
            <maxLength value="7"/>
        </restriction>
    </simpleType>

```



```

        </element>
        <element name="out__segno">
            <annotation>
                <appinfo source="http://www.wsadie.com/appinfo">
                    <initialValue kind="SPACE"/>
                </appinfo>
            </annotation>
            <simpleType>
                <restriction base="string">
                    <maxLength value="4"/>
                </restriction>
            </simpleType>
        </element>
    </sequence>
</complexType>
<element name="INPUTMSG" type="tns:INPUTMSG"/>
<element name="OUTPUTMSG" type="tns:OUTPUTMSG"/>
</schema>

```

The message to the IMS application then has the following format based on this schema:

```

<INPUTMSG xmlns="">
  <in__cmd>DISPLAY</in__cmd>
  <in__name1>LAST1</in__name1>
  <in__name2></in__name2>
  <in__extn></in__extn>
  <in__zip></in__zip>
</INPUTMSG>

```

The message that the IMS application sends back to the client as the following format based on this schema:

```

<OUTPUTMSG xmlns="">
  <out__msg>ENTRY WAS DISPLAYED</out__msg>
  <out__cmd>DISPLAY</out__cmd>
  <out__name1>LAST1</out__name1>
  <out__name2></out__name2>
  <out__extn></out__extn>
  <out__zip></out__zip>
  <out__segno>0001</out__segno>
</OUTPUTMSG>

```

### Related tasks

Chapter 4, "Writing the client application," on page 25

Write a client application which sends a SOAP message to invoke the IMS application as a Web service through IMS SOAP Gateway.

---

## Deploying a Web service with IMS SOAP Gateway

Use the deployment utility to deploy an application as a Web service and to perform associated tasks. Use the deployment utility in either Interactive or Expert mode.

### Prerequisite:

- You must have a Web service interface, which is in one or possibly more WSDL (Web service description language) files.
- Start IMS SOAP Gateway before deploying the Web service.

The deployment process consists of the following steps:

After you deploy the Web service, you must restart IMS SOAP Gateway to complete the process. Look at the IMS SOAP Gateway Administrative Console to see the deployed Web services.

### Related tasks

“Creating the WSDL file” on page 9

To deploy an IMS application as a Web service, you need to create a WSDL (Web service description language) file.

“Starting the IMS SOAP Gateway server” on page 27

There are three ways to start the IMS SOAP Gateway server: from the Windows start menu, with the deployment utility Interactive mode, or with the deployment utility in Expert mode.

#### Related reference

“Task 1: Enable your IMS application as Web Service from start to finish” on page 49

Task 1 of the deployment utility allows you to deploy and set up properties to make your IMS application accessible as a Web Service.

## Specifying the correlator properties for a Web service

Correlator properties specify how to interact with the IMS application for the Web Service. Each deployed application or Web service must have a correlation file associated with it.

You can create the correlator properties for a new Web Service or update correlator properties for a deployed Web Service using the Set Correlator properties for Web Service task in several ways. Use the IMS SOAP Gateway Deployment Utility in Interactive or Expert mode:

- In Interactive mode use **Task 5: Set IMS correlator properties**.
- In Expert mode use the **-setprop** command.

#### Related reference

“Task 5: Create, Update or View correlator properties for a Web Service” on page 52

This task creates or updates the correlator file by specifying the transaction and runtime correlator properties.

“-corr :Create or update the correlator file” on page 58

The **-corr** command creates or updates the correlator file by specifying transaction and runtime properties.

“Task 6: Create, Update, Delete or View the connection bundle for a Web Service” on page 53

This task creates, update, or delete a connection bundle which contains the connection properties.

“-conn :Create, update, or delete a connection bundle” on page 60

Use the **-conn** command to create, update, or delete a connection bundle.

“Deployment Utility Expert Mode” on page 55

The IMS SOAP Gateway Deployment Utility in Expert Mode includes commands that allow you to specify all the input values to perform tasks for IMS SOAP Gateway in one instruction.

“Deployment Utility in Interactive Mode” on page 49

IMS SOAP Gateway Deployment Utility Interactive Mode provides an interactive user interface which walks you through each command needed to complete a selected task. Interactive mode steps you through tasks by prompting you for input.

## Correlator file

The correlator file specifies transaction, and runtime properties and the information that the IMS SOAP Gateway needs to match incoming requests to the appropriate IMS application in the back-end.

These properties are stored in an XML file whose name must be the same as the SOAP Action URN of the web service. The IMS SOAP Gateway Deployment Utility will obtain this information from the WSDL file for the web service and follow this convention while creating this file. This file is also created by the WebSphere Developer for Z series(WDz) tool. The correlator properties are as follows.

The correlation properties include:

- **Connection bundle name:** The name of the connection bundle that contains the connection and security properties which will be used to connect with the IMS.
- **Socket Timeout:** The timeout value for IMS SOAP Gateway to receive a response from IMS Connect.

- **Execution Timeout:** The timeout value for IMS Connect to send a message to IMS and receive the response.
- **Lterm name:** The name of the logical terminal.
- **IMS transaction code:** IMS transaction code of the IMS application that is invoked by the Web service.

## Specifying the connection properties of the connection bundle

Creating a connection bundle consists of specifying the connection properties between IMS SOAP Gateway, IMS Connect, and IMS.

Create, update and delete a connection bundle with the deployment utility:

- For Interactive mode select **Task 6: Set connection properties**
- For Expert mode use the **-setprop** command

After you create a connection bundle:

- Specify the name of the connection bundle in the correlator properties for the Web Service. You must specify the connection bundle name to allow IMS SOAP Gateway to identify which set of connection properties should be used for its associated Web service
- Restart the IMS SOAP Gateway after you change the connection properties

### Related reference

“Task 5: Create, Update or View correlator properties for a Web Service” on page 52

This task creates or updates the correlator file by specifying the transaction and runtime correlator properties.

“-corr :Create or update the correlator file” on page 58

The **-corr** command creates or updates the correlator file by specifying transaction and runtime properties.

“Task 6: Create, Update, Delete or View the connection bundle for a Web Service” on page 53

This task creates, update, or delete a connection bundle which contains the connection properties.

“-conn :Create, update, or delete a connection bundle” on page 60

Use the **-conn** command to create, update, or delete a connection bundle.

“Deployment Utility Expert Mode” on page 55

The IMS SOAP Gateway Deployment Utility in Expert Mode includes commands that allow you to specify all the input values to perform tasks for IMS SOAP Gateway in one instruction.

“Deployment Utility in Interactive Mode” on page 49

IMS SOAP Gateway Deployment Utility Interactive Mode provides an interactive user interface which walks you through each command needed to complete a selected task. Interactive mode steps you through tasks by prompting you for input.

## Connection bundle

The connection bundle specifies the connection and security properties between IMS SOAP Gateway, IMS Connect, and IMS.

The properties refer to the location and other parameters required for creating a TCP/IP socket connection to IMS. properties are in a connection bundle XML file. You can have as many connection bundles as you want. However, each Web service can be associated with only one connection bundle at a time and this has to be specified in the Correlator file for that Web service.

Each connection bundle consists of the following connection and security properties:

- **Connection bundle name:** A name to identify this set of connection properties.
- **IMS Connect hostname:** Specifies the name or IP address of the host system where IMS Connect is running.
- **IMS Connect port number:** The port number of IMS Connect.

- **IMS Datastore ID:** The name of the target IMS datastore. It must match the ID parameter of the Datastore statement that is specified in the IMS Connect configuration member. It also serves as the XCF member name for IMS during internal XCF communications between IMS Connect and IMS OTMA.
- **User ID:** The security authorization facility (SAF) user name that will be used for the connection to IMS.
- **Password:** The security authorization facility (SAF) password that will be used for the connection to IMS.
- **Groupname:** The security authorization facility (SAF) group name that will be used for the connection to IMS.

## Deploying the WSDL file

Deploying the WSDL is the last step for deploying a Web service to IMS SOAP Gateway.

Before you deploy the WSDL file, you must have a connection bundle and a correlator file.

To deploy the WSDL file:

Start the IMS SOAP Gateway Deployment Utility either in Interactive or Expert mode.

- In Interactive mode, select task 7.
- For Expert Mode, use the **-deploy** command.

After you deploy the WSDL file, you must restart the IMS SOAP Gateway server before the client application can Gateway the IMS application as a Web service. Look at the IMS SOAP Gateway Administrative Console to see the Web services that are deployed.

### Related concepts

“IMS SOAP Gateway Administrative Console” on page 2

The IMS SOAP Gateway Administrative Console lists the deployed Web services when the server is started. Each item in the list is a link to the Web service’s WSDL (Web service description language file) file.

### Related tasks

“Accessing the WSDL file of a deployed Web Services” on page 29

You can access the WSDL file for a web service after it has been deployed to IMS SOAP Gateway. For example, you may want to retrieve the WSDL file to create a client application to access the Web Service. There are three ways to access the WSDL file: from the file system, from the web, and with the SOAP Gateway Administrative Console.

### Related reference

“-deploy :Deploy an application as a Web service” on page 62

The **-deploy** command deploys the WSDL file to IMS SOAP Gateway, which allows an IMS application to be enabled as a Web service.

---

## Chapter 4. Writing the client application

Write a client application which sends a SOAP message to invoke the IMS application as a Web service through IMS SOAP Gateway.

The way in which you write the client application depends on whether you use client proxy code. If you do not have proxy code, the client application itself is responsible for these tasks. The client proxy code is usually generated by a tool or utility and does the following:

- Creates a connection to send and receive SOAP messages
- Wraps the transaction data in a SOAP message

When building the client application, ensure that the transaction data inside the SOAP message is in an XML format that is understood by the IMS application. The client and the IMS application must adhere to the format of the input and output message as described in the schema definition of the WSDL file.

### Related tasks

Chapter 3, “Enabling an IMS application as a Web Service,” on page 9

This topic gives an overview of the tasks required enable an IMS application as a Web Service using IMS SOAP Gateway. After you deploy the WSDL file, the IMS application is available as a Web service and the client application can send it SOAP messages.

“Generating the Java proxy code”

You can generate client proxy code in Java by using the IMS SOAP Gateway Deployment Utility

### Related reference

“Data format of messages” on page 17

The client and IMS application must send and receive messages in XML that matches the XML schema in the WSDL file. The message data does not need to include LL, ZZ, or tranocode information.

---

## Generating the Java proxy code

You can generate client proxy code in Java by using the IMS SOAP Gateway Deployment Utility

Generating proxy code requires a WSDL file.

To generate the client proxy code:

1. Start the deployment utility.
2. At the prompt, enter: 8
3. Enter the location of the WSDL file and the path to where you want the generated code to be placed.

Use the proxy code in your client application.

### Related tasks

Chapter 4, “Writing the client application”

Write a client application which sends a SOAP message to invoke the IMS application as a Web service through IMS SOAP Gateway.



---

## Chapter 5. Administrating IMS SOAP Gateway

The administration of IMS SOAP Gateway is primarily performed through the IMS SOAP Gateway Deployment Utility which allows you to set up properties and create runtime code that IMS SOAP Gateway uses to enable IMS applications as Web services.

Use the IMS SOAP Gateway Deployment Utility in either Interactive or Expert mode to perform the following administrative tasks:

---

### Starting the IMS SOAP Gateway server

There are three ways to start the IMS SOAP Gateway server: from the Windows start menu, with the deployment utility Interactive mode, or with the deployment utility in Expert mode.

To start the IMS SOAP Gateway server:

- From the Windows start menu, select: **Start** → **All Programs** → **IBM IMS SOAP Gateway Version 9.1** → **Start Server**
- From the deployment utility in Interactive mode, select **Task 2: Start IMS SOAP Gateway**
- From the deployment utility in Expert mode, use the **-start** command.

The IMS SOAP Gateway server starts. A window opens named IMS SOAP Gateway that displays output messages from the server.

#### Related concepts

“IMS SOAP Gateway server” on page 2

The IMS SOAP Gateway server processes SOAP messages. It receives the SOAP message from the client application, converts it to an IMS input message, and sends it to IMS. It then receives the output message from IMS and converts it to a SOAP message to send back to the client.

#### Related tasks

“Deploying a Web service with IMS SOAP Gateway” on page 21

Use the deployment utility to deploy an application as a Web service and to perform associated tasks. Use the deployment utility in either Interactive or Expert mode.

#### Related reference

“Task 2: Start IMS SOAP Gateway” on page 50

This task starts the IMS SOAP Gateway server.

“-start :Start an IMS SOAP Gateway server” on page 55

The **-start** command starts an IMS SOAP Gateway server.

---

### Stopping the IMS SOAP Gateway server

There are three ways to stop the IMS SOAP Gateway server: from the Windows start menu, with the deployment utility in either interactive or Expert mode.

To stop the IMS SOAP Gateway server:

- From the Windows start menu, select: **Start** → **All Programs** → **IBM IMS SOAP Gateway Version 9.1** → **Stop Server**
- For Interactive mode, select **Task 3: Stop the IMS SOAP Gateway**.
- For Expert mode, use the **-stop** command.

The IMS SOAP Gateway server window closes and IMS SOAP Gateway stops.

#### Related reference

“Task 3: Stop IMS SOAP Gateway” on page 50

This task stops the IMS SOAP Gateway server .

“-stop :Stop an IMS SOAP Gateway server” on page 56

The **-stop** command stops the IMS SOAP Gateway server.

---

## Starting the IMS SOAP Gateway Administrative Console

**Prerequisite:** The IMS SOAP Gateway server must be started.

To start the IMS SOAP Gateway Administrative Console:

1. From the Windows Start menu, navigate to **Start > All Programs > IBM IMS SOAP Gateway Version 9.1 > Administrative Console**. The console opens in a Web browsers.
2. Click **View Deployed Web Services**. The list of the currently deployed Web services are displayed. Each item in the list is a link to the Web service’s WSDL file.

### Related concepts

“IMS SOAP Gateway Administrative Console” on page 2

The IMS SOAP Gateway Administrative Console lists the deployed Web services when the server is started. Each item in the list is a link to the Web service’s WSDL (Web service description language file) file.

### Related reference

“Task 4: Update IMS SOAP Gateway properties” on page 50

This task allows you to set or view IMS SOAP Gateway properties.

“-prop :Set IMS SOAP Gateway properties” on page 56

Use the **-prop** command to modify the IMS SOAP Gateway server properties.

---

## Setting up the connections and correlator file properties for SOAP Gateway

You must set up the connection bundle and correlation file properties before IMS SOAP Gateway can communicate with the Web services or deployed IMS applications. To set up these properties, use the IMS SOAP Gateway Deployment Utility in either Expert or interactive mode.

The deployment utility lets you specify the connection and security properties between IMS SOAP Gateway, IMS Connect, and IMS. You only need one connection bundle for your deployed IMS applications (Web services) but each web service must have a correlator file. IMS SOAP Gateway Web Services can share the same connection bundle as long as they belong to the same IMS instance and in most cases, all your IMS application are located in the same IMS instance. The connection bundle for each Web Service is defined in the correlator file.

### Related reference

“Task 5: Create, Update or View correlator properties for a Web Service” on page 52

This task creates or updates the correlator file by specifying the transaction and runtime correlator properties.

“-corr :Create or update the correlator file” on page 58

The **-corr** command creates or updates the correlator file by specifying transaction and runtime properties.

“Task 6: Create, Update, Delete or View the connection bundle for a Web Service” on page 53

This task creates, update, or delete a connection bundle which contains the connection properties.

“-conn :Create, update, or delete a connection bundle” on page 60

Use the **-conn** commad to create, update, or delete a connection bundle.



“Deployment Utility Expert Mode” on page 55

The IMS SOAP Gateway Deployment Utility in Expert Mode includes commands that allow you to specify all the input values to perform tasks for IMS SOAP Gateway in one instruction.

“Deployment Utility in Interactive Mode” on page 49

IMS SOAP Gateway Deployment Utility Interactive Mode provides an interactive user interface which walks you through each command needed to complete a selected task. Interactive mode steps you through tasks by prompting you for input.

---

## Viewing Deployed Web services

You can view the list of Web services being deployed by IMS SOAP Gateway. The IMS SOAP Gateway Administrative Console lists the deployed Web services when the server is started.

**Prerequisite:** The IMS SOAP Gateway server must be started.

To view the list of deployed Web Services:

1. Select **Start > All Programs > IBM IMS SOAP Gateway Version 9.1 > Administrative Console**. The console opens in a Web browser.
2. Click **View Deployed Web Services**. A list of Web services that are currently deployed is listed. Each item in the list is a link to the Web service’s WSDL file.

---

## Accessing the WSDL file of a deployed Web Services

You can access the WSDL file for a web service after it has been deployed to IMS SOAP Gateway. For example, you may want to retrieve the WSDL file to create a client application to access the Web Service. There are three ways to access the WSDL file: from the file system, from the web, and with the SOAP Gateway Administrative Console.

To retrieve the WSDL file for a deployed Web Service:

- From the file system, locate the WSDL file for the deployed Web services in the directory `<installation_directory>\server\webapps\imssoap\wsdl`.
- From the Web, locate the WSDL file for the deployed Web services `@http://<hostname:port>/imssoap/services/<service_name>?WSDL` where `<hostname>` is IMS SOAP Gateway hostname, `<port>` is IMS SOAP Gateway port number and `<service_name>` is the service name of the web service being deployed to IMS SOAP Gateway.
- From the Administrative Console, view the WSDL file of the deployed web services using the Service Console by clicking the service name of the deployed service in the View Deployed Services page.

### Related tasks

“Deploying the WSDL file” on page 24

Deploying the WSDL is the last step for deploying a Web service to IMS SOAP Gateway.

---

## Changing deployed Web services

After you deploy a Web service, you can change interaction and connection properties by using the IMS SOAP Gateway Deployment Utility.

Use either the Interactive or Expert mode of the deployment utility.

To change the interaction properties, which are in the correlator file:

- For Interactive Mode, start the deployment utility and select option 5.
- For Expert Mode, use the **-corr** command.

To change the connection properties, which are in the connection bundle:

- For Interactive Mode, start the deployment utility and select option 6.
- For Expert Mode, use the **-conn** command.

Restart IMS SOAP Gateway after you change the connection properties.

**Related reference**

“Task 5: Create, Update or View correlator properties for a Web Service” on page 52

This task creates or updates the correlator file by specifying the transaction and runtime correlator properties.

“-corr :Create or update the correlator file” on page 58

The **-corr** command creates or updates the correlator file by specifying transaction and runtime properties.

“Task 6: Create, Update, Delete or View the connection bundle for a Web Service” on page 53

This task creates, update, or delete a connection bundle which contains the connection properties.

“-conn :Create, update, or delete a connection bundle” on page 60

Use the **-conn** command to create, update, or delete a connection bundle.

## Undeploying a Web service

Undeploying a Web service removes the WSDL file from IMS SOAP Gateway and therefore makes the IMS application unavailable as a Web service.

To undeploy a Web service:

Start the deployment utility either in Interactive or Expert mode.

- For Interactive Mode, select **Task 9: Undeploy an application as a Web Service**
- For Expert Mode, use the **-undeploy** command.

**Related reference**

“Task 9: Undeploy a Web Service” on page 54

This task undeploys an application as a Web Service. In addition, this task generates client proxy code for a Java client application.

“-undeploy :Undeploy an application as a Web service” on page 63

Use the **-undeploy** command to undeploy an application.

## Changing port number for IMS SOAP Gateway server

The default port number for IMS SOAP Gateway is configured to run on port 8080 and to listen to SOAP request over the HTTP communication protocol.

To change the default port number:

- From the deployment utility in Interactive mode, select **Task 4: Update IMS SOAP Gateway properties**
- From the deployment utility in Expert mode, use the **-prop** command.

After the port number changes, the URL to access the Web Services running on the IMS SOAP Gateway will change as well. You must change the clients accessing the Web Services accordingly in your client applications.

After the port number is changed, restart IMS SOAP Gateway server.

**Related reference**

“Task 4: Update IMS SOAP Gateway properties” on page 50

This task allows you to set or view IMS SOAP Gateway properties.

“-prop :Set IMS SOAP Gateway properties” on page 56  
Use the **-prop** command to modify the IMS SOAP Gateway server properties.



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## Chapter 6. Troubleshooting

This section provides the following troubleshooting information:

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### Tips for diagnosing Installation Verification Program errors

Running the IVP for IMS SOAP Gateway is usually trouble free. However, if you do experience an error this topic lists the possible errors and recommended solutions for these problems.

If the IVP does not complete successfully, it may be due to one of the following errors:

- A page not found error when accessing the IMS SOAP Gateway IVP Web client from the Web browser. Possible causes for this error are:
  - The IMS SOAP Gateway server may not be started.
  - The host name and port number you specified in the URL of the IVP Web client for IMS SOAP Gateway is not correct.
- An error message returned when you invoke the IMS SOAP Gateway IVP Web client. Possible causes for this error are:
  - Invalid data was specified when configuring the connection bundle properties for the host IMS environment. For example:
    - The IMS host name is misspelled and is not sufficiently qualified (for TCP/IP communication).  
**Attention:** In some environments the IP address may be required.
    - An incorrect IMS Port Number was specified for the target IMS Connect (for TCP/IP communication).
    - IMS Datastore name is invalid for the target IMS or is misspelled. Datastore name must be in uppercase characters.
  - IMS is not running.
  - IMS Connect is not running. For more information IMS Connect, see the *IMS Version 9: IMS Connect Guide and Reference* .
  - The IMS Connect port is not active. Use the IMS Connect command **VIEWHWS** to determine if the port is active. Use the IMS Connect command **OPENPORT** to activate an IMS Connect port.
  - The target IMS datastore is not active. Use the IMS Connect command **VIEWHWS** to determine if the datastore is active. Use the IMS Connect command **OPENDS** to activate a IMS datastore.
  - TCP/IP failure. Always ensure a successful ping to your IMS environment prior to running the IVP.

#### Related tasks

“Verifying installation of IMS SOAP Gateway” on page 7

To verify the installation of IMS SOAP Gateway, use the IMS SOAP Gateway Installation Verification Program (IVP).

---

### Diagnosing runtime errors

The topics in this section provide information on how to log and trace information to diagnose problems, as well as listing the error messages for IMS SOAP Gateway.

IMS SOAP Gateway logs the error messages in the following two places:

- IMS SOAP Gateway Server Window
- IMS SOAP Gateway log file

## Tracing

You can turn on internal tracing for IMS SOAP Gateway to help diagnosis problems. The trace level can be changed to control the amount of logging and tracing.

To set the trace levels for IMS SOAP Gateway:

1. Start IMS SOAP Gateway Deployment Utility.
  - For Interactive mode, select **Task 4: Update IMS SOAP Gateway properties**.
  - For Expert mode, Use the **-prop** command.
2. Change to the desired trace level using the following values:

Table 1. Trace level values and description

Trace level value	Trace level	Description
1	Fatal	Only errors and exceptions are logged. This is the default level.
2	Error	If the value is not divisible by 10, it is converted to the next greater increment of 10.
3	Warn	Errors and exceptions plus warning messages are logged.
4	Information	Errors and exceptions, information of important events are logged.
5	Debug	Errors and exceptions, the entry and exit of important events and functions, and the contents of buffers sent to and received from IMS Connect and IMS SOAP Gateway are logged.

3. Restart IMS SOAP Gateway after the trace level is changed.

### Related reference

“Task 4: Update IMS SOAP Gateway properties” on page 50

This task allows you to set or view IMS SOAP Gateway properties.

“-prop :Set IMS SOAP Gateway properties” on page 56

Use the **-prop** command to modify the IMS SOAP Gateway server properties.

## Changing log file

IMS SOAP Gateway logs all informational and error messages. By default the log file is located in `install_directory\server\logs\imssoap.log`. You can change the log file by changing the log filename and location using the IMS SOAP Gateway deployment utility.

To change the log file for IMS SOAP Gateway:

Start IMS SOAP Gateway Deployment Utility.

- For Interactive mode, select **Task 4: Update IMS SOAP Gateway properties**.
- For Expert mode, use the **-prop** command.

### Related reference

“Task 4: Update IMS SOAP Gateway properties” on page 50

This task allows you to set or view IMS SOAP Gateway properties.

“-prop :Set IMS SOAP Gateway properties” on page 56

Use the **-prop** command to modify the IMS SOAP Gateway server properties.

## Messages for IMS SOAP Gateway

IMS SOAP Gateway returns messages with the prefixes IOGC, IOGS, and IOGX.

### IOGC messages

IOGC messages are messages that result from errors from IMS or IMS Connect.

#### IOGC001E:

```
Failed to connect to IMS Connect. Hostname[hostname], port [portnumber]. [error_message].
```

### Explanation

IMS SOAP Gateway was unable to connect to the host and port combination. The *error\_message* indicates the reason for the failure to connect.

### User action

Examine the error message to determine the reason for the failure to connect to the host. Possible errors:

#### UnknownHostException: *hostname*

The hostname that you specified in the connection bundle is invalid. You might have to use the fully qualified path for host name or the IP address.

#### ConnectException: Connection refused

Possible reasons:

- The port number is invalid. Ensure that you are using a valid port number for the IMS Connect indicated by hostname.
- The specified port is stopped. You can determine whether the port is stopped by using the IMS Connect command VIEWHWS. If the port is stopped, its status is NOT ACTIVE. Use the IMS Connect command OPENPORT *portnumber* to start the port.
- IMS Connect on the specified host is not running. Start IMS Connect on the host system.
- TCP/IP was restarted without canceling and restarting IMS Connect or issuing the command STOPPORT followed by OPENPORT on the host.

#### SocketException: Network is unreachable: connect

Possible reasons:

- The system with the specified host name is unreachable on the TCP/IP network. Ensure that the host system is accessible from the TCP/IP network by issuing the ping command to the specified host system from the system on which IMS SOAP Gateway is running. Start TCP/IP on the host if it is not started.
- TCP/IP was restarted, but the status of the port that is used by the application was NOT ACTIVE. To fix the problem, you can do one of the following:
  - Use the IMS Connect command OPENPORT *portnumber* to start the port.
  - Restart IMS Connect.

#### IOGC002E:

Socket timeout value [*socket\_timeout*] is invalid. [*error\_message*].

#### Explanation

The value *socket\_timeout* that was specified for the socket timeout property in the correlator file is not valid. *error\_message* denotes the reason for the failure.

#### User action

One of possible errors is `IllegalArgumentException: timeout can't be negative`, which indicates that a negative value has been provide for the socket timeout value. Ensure a positive numerical value was given for the socket timeout in the correlator file.

#### IOGC003E:

Failed to send and receive messages from IMS Connect. Hostname [*hostname*], port [*portnumber*]. [*error\_message*].

#### Explanation

IMS SOAP Gateway was unable to successfully complete a send and receive interaction with the target IMS Connect. *error\_message* indicates the reason for the failure to complete the interaction.

#### User action

Possible values for *error\_message* and their associated user actions:

##### EOFException

A possible reason for this exception is that IMS Connect has closed the connection because of an error occurred. See the z/OS® console for associated IMS Connect error messages. IMS Connect error messages begin with the characters " HWS." For more diagnostic information on the other return code and reason code values, and IMS Connect error messages, see the *IMS Version 9: IMS Connect Guide and Reference*.

##### SocketException: Connection reset by peer: socket write error

Possible reasons for the exception are:

- The underlying socket connection that is used for the interaction is no longer connected to IMS Connect. This can happen if IMS Connect is restarted during the interaction.
- TCP/IP on the host is shutting down.

##### SocketException: Connection reset

A possible reason for this exception is that IMS Connect has closed the connection because of an error occurred. See the z/OS® console for associated IMS Connect error messages. IMS Connect



error messages begin with the characters " HWS." For more diagnostic information on the other return code and reason code values, and IMS Connect error messages, see the *IMS Version 9: IMS Connect Guide and Reference*.

Another possible reason is that the User Message Exit HWSSOAP1 has not been properly installed with IMS Connect to handle the input message from IMS SOAP Gateway. See the following message on the z/OS® console for associated IMS Connect:

```
HWSP1445E UNKNOWN EXIT NAME SPECIFIED IN MESSAGE PREFIX; MSGID=*HWSOA1*/ HWSSOA1 , M=SDRC
```

Ensure that you follow the instructions in XXX to have your User Message Exit HWSSOAP1 installed properly to resolve the problem.

#### **IOGC005E:**

IMS SOAP Gateway internal error. [*error\_message*]

#### **Explanation**

An internal error has occurred in IMS SOAP Gateway.

#### **User action**

Contact IBM Software Support. Specify the error message when reporting the problem.

#### **IOGC006E:**

IMS SOAP Gateway internal error. [*error\_message*]

#### **Explanation**

An internal error has occurred in IMS SOAP Gateway.

#### **User action**

Contact IBM Software Support. Specify the Java exception when reporting the problem.

#### **IOGC007E:**

IMS Connect had an internal error. Return code: [*returncode*], Reason code: [*reasoncode*].

#### **Explanation**

An internal error has occurred in IMS Connect.

#### **User action**

Contact IBM Software Support. Specify the return code and reason code when reporting the problem.

#### **IOGC008E:**

IMS returned an error: [*DFS\_message*]

#### **Explanation**

IMS returned the IMS message *DFS\_message* instead of the transaction output message.

## User action

See the message explanation in *IMS Version 9: Messages and Codes Volume 2*. Some of the possible messages are:

- DFS065 hh:mm:ss TRAN/LTERM STOPPED

The IMS transaction that the client wants to invoke is stopped. The transaction might have been stopped by the

- DFS1292E SECURITY VIOLATION

IMS OTMA has rejected the IMS transaction request because it failed the security check. Ensure that the user ID

- DFS064 hh:mm:ss DESTINATION CAN NOT BE FOUND OR CREATED

The transaction code value in the input request could not be recognized as a valid IMS transaction. Ensure that correlator properties is valid.

### IOGC009E:

The value [*lterm*] for the LTERM property in the correlator file exceeds the maximum allowable length of [*length*].

## Explanation

The value of the LTERM property exceeds eight characters.

## User action

Correct the length of the LTERM property value in the correlator file for the Web service to be less than or equal to eight characters.

### IOGC010E:

The value [*password*] of the Password property exceeds the maximum allowable length of [*length*].

## Explanation

The value of the password property exceeds eight characters.

## User action

Correct the length of the password property value in the correlator file for the Web service to be less than or equals to eight.

### IOGC011E:

The value [*username*] of the User name property exceeds the maximum allowable length of [*length*].

## Explanation

The value of the user name property exceeds the maximum allowable length of eight characters.

## User action

Correct the length of the user name property value in the correlator file for the Web service to be less than or equal to eight characters.

### IOGC012E:

The value [*groupname*] of the Group name property exceeds the maximum allowable length of [*length*].

### **Explanation**

The value of the group name property exceeds eight characters.

### **User action**

Correct the length of the group name property value in the correlator file of the Web service to be less than or equal to eight characters.

### **IOGC013E:**

The value [*datastore*] of the Datastore name property exceeds the maximum allowable length of [*length*].

### **Explanation**

The value of the datastore name property exceeds eight characters.

### **User action**

Correct the length of the datastore name property value in the correlator file of the Web service to be less than or equal to eight characters.

### **IOGC017E:**

The Adapter type property value [*adaptertype*] is invalid.

### **Explanation**

IMS SOAP Gateway only supports the IBM XML COBOL adapter.

### **User action**

Change the adapter property to "IBM XML COBOL Adapter"

### **IOGC020E:**

The Execution timeout property value [*executiontimeout*] is invalid. The execution timeout value must either be -1 or in the range from 0 to 3 600 000 milliseconds.

### **Explanation**

The execution timeout property value [*executiontimeout*] is invalid.

### **User action**

Change the execution timeout property to between -1 to 3 600 000 in the correlator file.

### **IOGC025E:**

Error processing output message. Outbound codepage is not supported. [*error\_message*]

**Explanation**

haley researching

**User action**

IOGC026E:

IMS Connect Adapter error message is formatted incorrectly. Unable to retrieve the content.

**Explanation****User action**

IOGC027E:

IMS has returned an error, IMS SOAP Gateway cannot display it.

**Explanation**

The COBOL converter in IMS Connect does not have the right codepage.

**User action**

regenerate the converters with the correct codepage. if that doesn't work, call service.

IOGC028E:

The IMS Connect RSM message is formatted incorrectly. Unable to retrieve the content.

**Explanation**

An internal error has occurred in IMS Connect.

**User action**

Contact IBM Software Support.

IOGC029E:

The IMS Connect message is not formatted correctly.

**Explanation**

An internal error has occurred in IMS Connect.

**User action**

Contact IBM Software Support.

IOGC031E:

XML COBOL Converter reports an error. [error\_message]

**Explanation**

## User action

Look in websphere doc but give examples. but soap might catch some of them. WD4z

### IOGC032E:

The Inbound codepage property value [codepage] is invalid. haley checking to see if we need

## Explanation

### User action

Look in websphere doc but give examples. but soap might catch some of them. WD4z

### IOGC034E:

Socket Timeout has occurred for this interaction. The Socket Timeout value specified was [sockettimeout] milliseconds. [error\_message]

## Explanation

The time for IMS SOAP Gateway to receive a response from IMS Connect is greater than the time specified for the socket timeout.

The *error\_message* explains the reason for the error. A common error is [java.net.SocketTimeoutException: Read timed out], which indicates that a timeout occurred when IMS SOAP Gateway was trying to read a message from IMS Connect from the TCP/IP socket.

### User action

Review the error message. Ensure that the value of the socket timeout is sufficient for IMS SOAP Gateway to receive a response from IMS Connect. If it is not, increase the socket timeout value in the correlator file. If the value of the socket timeout given is sufficient, it is possible that network problems are causing delays. Contact your network administrator.

### IOGC035E:

IMS Connect default timeout has occurred for this interaction.

## Explanation

The IMS Connect timeout value that is specified in the IMS Connect configuration member has been expired. The IMS Connect timeout value has been used because the execution timeout property for this interaction was not specified in the correlator file or has been set to zero.

### User action

If the IMS Connect TIMEOUT value is not what you expected, modify the timeout value in the IMS Connect configuration member. For more information about changing the timeout value for IMS Connect, see *IMS Version 9 IMS Connect Guide and Reference* .

If you expect to use an execution timeout value instead of the IMS Connect timeout value, ensure that have a valid execution timeout specified in the correlator file.

### IOGC036E:

Execution timeout has occurred for this interaction. The timeout value used was [executiontimeout] milliseconds.

## Explanation

The time it took for IMS Connect to send a message to IMS and receive the response was greater than the execution timeout value that was rounded to an appropriate execution timeout interval. IMS SOAP Gateway converts the value of the execution timeout property in the correlator file to a value that IMS Connect can use.

## User action

If the rounded execution timeout value is not what you expected, see the following table of conversion rules and change the execution timeout value in the correlator file as appropriate.

Table 2. Execution timeout value conversion rules

Range of execution timeout values in the correlator file	Conversion rule
1 – 250	If the value is not divisible by 10, it is converted to the next greater increment of 10.
251 – 1 000	If the value is not divisible by 50, it is converted to the next greater increment of 50.
1 001 – 60 000	If the value is not divisible by 1 000, it is converted to the next greater increment of 1 000. Values that are exactly between increments of 1 000 are converted to the next greater increment of 1 000.
60 001 – 3 600 000	The value is converted to the nearest increment of 60 000. Values that are exactly between increments of 60 000 are converted to the next greater increment of 60 000.

### IOGC037E:

The XML Converter driver name property is empty or all blanks.

## Explanation

## User action

### IOGC040E:

Cannot read the message from IMS Connect. Haley looking into it.

## Explanation

## User response

Call IBM Software support.

### IOGC041E:

IMS Connect returns an error. Return code: [returncode]. Reason code: [reasoncode]. [error\_message]

## Explanation

IMS Connect returned an error. *error\_message* provides a brief description of the *reasoncode*.

## User response

Look at the error message to determine the reason for the failure. Possible errors are:

- Return code: [8]. Reason code:[40]. [Security violation. User ID [*userid*], Group ID[*groupid*]]

IMS Connect rejected the IMS transaction request because it failed the security check.

- Return code: [4]. Reason code:[72]. [IMS Datastore [*datastore*] not found]

The specified IMS datastore name cannot be found. Look at the IMS Connect configuration file and ensure that

- Return code: [4]. Reason code:[74]. IMS Datastore [*datastore*] in stop or close process
- The IMS with the datastore name *datastore* is in stop and shutdown process. Invoke the IMS transaction request again after IMS has been restarted.

In addition, see the z/OS® console for associated IMS Connect error messages. IMS Connect error messages begin with the characters " HWS." For more diagnostic information on the other return code and reason code values, and IMS Connect error messages, see the *IMS Version 9: IMS Connect Guide and Reference*.

### IOGC042E:

The value [*trancode*] of the IMS Transaction code property exceeds the maximum allowable length of [*length*]

## Explanation

The value of the transaction code property exceeds eight characters.

## User action

Correct the length of the transaction code property value in the correlator file of the Web service to be less than or equals to eight characters.

## IOGS messages

IOGS messages are returned from the SOAP server.

### IOGS001E:

Invalid SOAP URN [*urnname*] in SOAP message.

## Explanation

The SOAP action URN in the client request does not match the SOAP action URNs of any of the deployed Web services. This could happen because the Web service has not been successfully deployed to the IMS SOAP Gateway. This could also happen if the correct WSDL file is not used for proxy code generation.

## User action

The following actions can be taken to address the problem:

1. Ensure that the Web Service has been successfully deployed to the IMS SOAP Gateway.
2. Ensure that the correct WSDL file is used for proxy code generation. The SOAPAction element in the WSDL file must match the URN in the client request message and the name of the correlator file for the Web service.

### IOGS023E:

The Port Number property value [*value*] is invalid.

### **Explanation**

The value of the port number property is not an integer.

### **User response**

Examine the port number property value in the connection bundle of the Web service and ensure that it is a valid integer value.

#### **IOGS024E:**

The Socket Timeout property value [*value*] is invalid.

### **Explanation**

The value of the Socket Timeout parameter is not an integer.

### **User response**

Examine the Socket Timeout property value in the correlator file of the Web service and ensure that it is a valid integer value.

#### **IOGS025E:**

Error processing the output message from IMS. A null value was returned.

### **Explanation**

IMS SOAP Gateway received an empty message from IMS.

### **User response**

Look at the IMS SOAP Gateway and IMS traces to determine the problem.

#### **IOGS026E:**

The Execution Timeout property value [*value*] is invalid.

### **Explanation**

The value of the Execution Timeout property is not an integer.

### **User response**

Examine the Execution Timeout property value in the correlator file of the Web service and ensure that it is a valid integer value.

#### **IOGS027E:**

Error processing output message. [*error\_message*].



## Explanation

An error occurred when processing the IMS output message. *error\_message* indicates the reason for the failure. Possible reasons are as follows:

- The output message that was returned from the IMS application is not a valid XML document.
- The XML document that was returned from the IMS application does not match the schema definition of the output message that is defined in the WSDL document of the Web service.

## User action

Examine the output message from the IMS application. Ensure that it is an XML document and matches the schema definition of the output message in the WSDL file. If the output message is an XML document but it does not match the schema definition of the output message in the WSDL file, you can either correct the IMS application or correct the WSDL file. If you need to correct the WSDL file, deploy the corrected WSDL file again to IMS SOAP Gateway. You do not need to undeploy the WSDL file before deploying it again.

### IOGS029E:

Connection bundle [*connbundle*] not found in connbundle file.

## Explanation

The value of the Connection Bundle name property that is specified in the correlator file of the Web service is not found.

## User response

Correct the Connection Bundle name property in the correlator file of the Web service to specify a connection bundle name that exists. Or, create a new connection bundle that has a name that is specified in the correlator file of the Web service.

### IOGS030E:

Correlator file for SOAP URN [*urn*] cannot be found. [*error\_message*]

## Explanation

The correlator file for the SOAP request is not found.

## User response

Examine the URN value of the SOAP request. The correlator file of the SOAP request must have the file name of *name.xml* if the URN value of the SOAP request is *urn:name*. All of the correlator files are in *installation\_directory\server\webapps\imssoap\wsdl*.

### IOGS501E:

IMS SOAP Gateway could not find the Web Service to invoke. Target Web service is [*service\_name*].

## Explanation

IMS SOAP Gateway could not find the Web service to invoke. The Web Service *service\_name* is not deployed to IMS SOAP Gateway.

## User response

Ensure the Web service *service\_name* is deployed to IMS SOAP Gateway. Check the IMS SOAP Gateway server console to make sure that the Web service is deployed. If the WSDL file for the Web service is listed, the Web service is deployed. If the WSDL is not listed, the Web service is not deployed and you must deploy the WSDL file to IMS SOAP Gateway.

Also, verify that the client is sending the correct name of the Web service. The Web service name is the name attribute value of the port element in the WSDL file.

### IOGS502E:

IMS SOAP Gateway cannot find the operation [*operation\_name*].

## Explanation

IMS SOAP Gateway could not find the operation *operation\_name* for the Web service.

## User response

Ensure the operation is defined to Web service in the WSDL file. Verify the client is sending the correct operation name.

### IOGS503E:

The envelope namespace of the SOAP message is bad: [*namespace\_name*]

## Explanation

The envelope namespace *namespace\_name* of the SOAP message is not valid.

## User response

Ensure that the client is sending a valid SOAP message to IMS SOAP Gateway.

### IOGS504E:

The envelope tag of the SOAP message is bad: [*tag\_name*]

## Explanation

The envelope tag name of the SOAP message is not valid.

## User response

Ensure that the client is sending a valid SOAP message to IMS SOAP Gateway.

### IOGS505E:

The body part is not found in the SOAP message.

## Explanation

The body part is not found in the SOAP message.

## User response

Ensure that the client is sending a valid SOAP message that contains the body element with the input data to IMS SOAP Gateway.

## IOGX messages

IOGX messages are returned from the XML parser.

### IOGX002E:

Error encountered in Connection Specification XML file: [*error\_message*]

## Explanation

The connection bundle file does not conform to its schema definition.

## User action

Modify the connection bundle file to be compliant with the schema *installation\_directoryserver\webapps\imssoap\xml\connbundle.xsd*.

### IOGX003E:

Error encountered in Correlator XML file: [*error message*]

## Explanation

The correlator file does not conform to its schema definition.

## User action

Modify the correlator file to be compliant with the file *installation\_directoryserver\webapps\imssoap\xml\correlator.xsd*.



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## Chapter 7. Reference for the deployment utility

This section provides the following reference information:

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### Deployment Utility in Interactive Mode

IMS SOAP Gateway Deployment Utility Interactive Mode provides an interactive user interface which walks you through each command needed to complete a selected task. Interactive mode steps you through tasks by prompting you for input.

To invoke a task in interactive mode:

1. Select **Start** → **All Programs** → **IBM IMS SOAP Gateway Version 9.1** → **Deployment Utility**. The IMS SOAP Gateway Deployment Utility menu is displayed.
2. From the IMS SOAP Gateway Deployment Utility menu, choose the desired task and press Enter. For example, task 1:
3. Follow the instructions on each step to complete the task. Type cancel on the command line at any time during a task and return to the IMS SOAP Gateway Deployment Utility menu.

The deployment utility has options to perform different tasks.

#### Related concepts

“IMS SOAP Gateway Deployment Utility” on page 1

The IMS SOAP Gateway Deployment Utility allows you to set up properties and create runtime code that IMS SOAP Gateway uses to enable IMS applications as Web services.

#### Related tasks

“Specifying the correlator properties for a Web service” on page 22

Correlator properties specify how to interact with the IMS application for the Web Service. Each deployed application or Web service must have a correlation file associated with it.

“Specifying the correlator properties for a Web service” on page 22

Creating a connection bundle consists of specifying the connection properties between IMS SOAP Gateway, IMS Connect, and IMS.

“Specifying the correlator properties for a Web service” on page 22

You must set up the connection bundle and correlation file properties before IMS SOAP Gateway can communicate with the Web services or deployed IMS applications. To set up these properties, use the IMS SOAP Gateway Deployment Utility in either Expert or interactive mode.

### Task 1: Enable your IMS application as Web Service from start to finish

Task 1 of the deployment utility allows you to deploy and set up properties to make your IMS application accessible as a Web Service.

#### Tasks 1 overview

1. From the IMS SOAP Gateway Deployment Utility menu, type **1** and press Enter.
2. The deployment utility prompts you through the following tasks:
  - a. Specifying which WSDL file to use for the deployment.
  - b. Specifying the connection and security information for the Web service to create a connection bundle.
  - c. Specifying the interaction properties of the Web service to create a correlator file.
  - d. Deploying the Web service to IMS SOAP Gateway.

After you deploy the Web service, open the IMS SOAP Gateway Server Console to verify that the Web service is successfully deployed.

#### **Related tasks**

“Deploying a Web service with IMS SOAP Gateway” on page 21

Use the deployment utility to deploy an application as a Web service and to perform associated tasks.

Use the deployment utility in either Interactive or Expert mode.

## **Task 2: Start IMS SOAP Gateway**

This task starts the IMS SOAP Gateway server.

### **Tasks 2 overview**

1. From the IMS SOAP Gateway Deployment Utility menu, type **2** and press Enter.
2. IMS SOAP Gateway server starts. An additional window opens titled IMS SOAP Gateway. This window has information about the startup of the server. If the server started successfully, the following informational message is displayed at the end of the output:

INFO : IMS SOAP Gateway server is now up and running.

#### **Related tasks**

“Starting the IMS SOAP Gateway server” on page 27

There are three ways to start the IMS SOAP Gateway server: from the Windows start menu, with the deployment utility Interactive mode, or with the deployment utility in Expert mode.

## **Task 3: Stop IMS SOAP Gateway**

This task stops the IMS SOAP Gateway server .

### **Tasks 3 overview**

1. From the IMS SOAP Gateway Deployment Utility menu, type **3** and press Enter.
2. The IMS SOAP Gateway server stops. In addition, the informational window titled IMS SOAP Gateway which opened when the IMS SOAP Gateway server was started, is closed

#### **Related tasks**

“Stopping the IMS SOAP Gateway server” on page 27

There are three ways to stop the IMS SOAP Gateway server: from the Windows start menu, with the deployment utility in either interactive or Expert mode.

## **Task 4: Update IMS SOAP Gateway properties**

This task allows you to set or view IMS SOAP Gateway properties.

### **Task 4 overview**

1. From the IMS SOAP Gateway Deployment Utility menu, type **4** and press Enter.
2. You can modify and view the IMS SOAP Gateway properties:
3. The IMS SOAP Gateway needs to be restarted after changing the properties for them to take effect.

## **Properties**

Use the following parameters to modify the IMS SOAP Gateway properties.

### **IMS SOAP Gateway port number**

Specify the port number for the IMS SOAP Gateway server. IMS SOAP Gateway is configured to run and listen on SOAP request over the HTTP communication protocol using port 8080 by default. The port number must be a non-negative number.

## Trace level

Specify the trace level. The trace level controls the amount of logging and tracing with IMS SOAP Gateway. The trace level can be one of the following values:

Table 3. Trace level values

Trace level value	Trace level	Description
1	Fatal	Only errors and exceptions are logged. This is the default level.
2	Error	If the value is not divisible by 10, it is converted to the next greater increment of 10.
3	Warn	Errors and exceptions plus warning messages are logged.
4	Information	Errors and exceptions, information of important events are logged.
5	Debug	Errors and exceptions, the entry and exit of important events and functions, and the contents of buffers sent to and received from IMS Connect and IMS SOAP Gateway are logged.

## Log file

Specify the location and the filename for the log file. The log file name of the file which contains the logging and tracing messages.

### Related tasks

“Tracing” on page 34

You can turn on internal tracing for IMS SOAP Gateway to help diagnosis problems. The trace level can be changed to control the amount of logging and tracing.

“Changing log file” on page 35

IMS SOAP Gateway logs all informational and error messages. By default the log file is located in `install_directory\server\logs\imssoap.log`. You can change the log file by changing the log filename and location using the IMS SOAP Gateway deployment utility.

“Changing port number for IMS SOAP Gateway server” on page 30

The default port number for IMS SOAP Gateway is configured to run on port 8080 and to listen to SOAP request over the HTTP communication protocol.

“Starting the IMS SOAP Gateway Administrative Console” on page 28

## Task 5: Create, Update or View correlator properties for a Web Service

This task creates or updates the correlator file by specifying the transaction and runtime correlator properties.

### Task 5 overview

1. From the IMS SOAP Gateway Deployment Utility menu, type **5** and press Enter.
2. Enter **c** to create a new correlator file or **u** to update existing file.  
If you create a new correlator file, you need provide the WSDL filename of the Web Service in which you create the correlator file. If you update an existing correlator file, you need to provide the existing the correlator filename of the web service.
3. Create or update the correlator properties.

### Properties

#### Connection bundle name

Specifies a connection bundle name. The name must be less than or equal to twenty characters. Required.

#### Socket timeout

Specifies the socket timeout in milliseconds. The timeout value for IMS SOAP Gateway to receive a response from IMS Connect before disconnecting the socket and returning an error. The value must be greater than or equal to zero. Optional.

#### Execution timeout

Specifies the execution timeout in milliseconds. The timeout value for IMS Connect to send a message to IMS and receive the response. The value must be between -1 and 3 600 000, inclusively. That is, the execution Timeout value must be greater than zero and less than or equal to one hour. The execution timeout value can also be -1 if you want an interaction to run without a time limit. The execution timeout value cannot contain non-numeric characters.

If you do not specify an execution timeout value or if the value that you specify is invalid, the timeout value in the IMS Connect configuration member is used and the interaction continues to run. If a valid execution timeout value is set, this value is converted into a value that IMS Connect can use. The following table describes how the values you specify are converted to the values that IMS Connect uses:

Table 4. Execution timeout value conversion rules

Range of execution timeout values in the correlator file	Conversion rule
1 – 250	If the value is not divisible by 10, it is converted to the next greater increment of 10.
251 – 1 000	If the value is not divisible by 50, it is converted to the next greater increment of 50.
1 001 – 60 000	If the value is not divisible by 1 000, it is converted to the next greater increment of 1 000. Values that are exactly between increments of 1 000 are converted to the next greater increment of 1 000.
60 001 – 3 600 000	The value is converted to the nearest increment of 60 000. Values that are exactly between increments of 60 000 are converted to the next greater increment of 60 000.

The default is zero. Optional.

#### Lterm name

Specifies the name used to override the value in the LTERM field of the IMS application program's I/O PCB. The name must be eight characters or less. Optional.



## trancode

Specifies the IMS transaction code of the IMS application that is invoked by the Web service. The transaction code value must be eight characters or less. If the transaction code is less than eight characters, IMS SOAP Gateway adds blanks to the end of the transaction code value. If you want to add trailing spaces to the transaction code value, enclosed the value with double quotes (for example, "MYTRCD "). IMS SOAP Gateway removes the quotes at runtime. If you do not specify a transaction code, no transaction code will be added by IMS SOAP Gateway to the input message before it sends the message to IMS.

### Related tasks

"Specifying the correlator properties for a Web service" on page 22

You must set up the connection bundle and correlation file properties before IMS SOAP Gateway can communicate with the Web services or deployed IMS applications. To set up these properties, use the IMS SOAP Gateway Deployment Utility in either Expert or interactive mode.

"Specifying the correlator properties for a Web service" on page 22

Creating a connection bundle consists of specifying the connection properties between IMS SOAP Gateway, IMS Connect, and IMS.

"Specifying the correlator properties for a Web service" on page 22

Correlator properties specify how to interact with the IMS application for the Web Service. Each deployed application or Web service must have a correlation file associated with it.

"Changing deployed Web services" on page 29

After you deploy a Web service, you can change interaction and connection properties by using the IMS SOAP Gateway Deployment Utility.

## Task 6: Create, Update, Delete or View the connection bundle for a Web Service

This task creates, update, or delete a connection bundle which contains the connection properties.

### Task 6 overview

1. From the IMS SOAP Gateway Deployment Utility menu, type **6** and press Enter.
2. You will be prompted and asked to view the existing connection bundle, enter **y** to view, enter **n** to skip.
3. Enter **c** to create a new connection bundle, **u** to update an existing one or **d** to delete an existing one.
4. Enter the name of the connection bundle to be created, updated or deleted. If you create a new connection bundle file, this name must be twenty characters or less and contain no spaces.
5. You can specify or update the connection properties.

### Properties

#### Host name

Specifies the name or IP address of the host system where IMS Connect is running.

#### Port number

Specifies the port number of the host system where IMS™ Connect is running. The port number must be a non-negative number. Default is 9999.

#### Datastore

Specifies the name of the target IMS datastore. The name must match the ID parameter of the Datastore statement that is specified in the IMS Connect configuration member. This name also serves as the XCF member name for IMS during internal XCF communications between IMS Connect and IMS OTMA. The name must be eight characters or less.

#### Username

The default security authorization facility (SAF) user name that will be used for connections with IMS. The user ID must be eight characters or less.

**Password**

Specifies the password that will be used for connections with IMS. The password must be eight characters or less.

**Groupname**

Specifies the name of the group that will be used for connections with IMS. The name must be eight characters or less.

**Related tasks**

“Specifying the correlator properties for a Web service” on page 22

You must set up the connection bundle and correlation file properties before IMS SOAP Gateway can communicate with the Web services or deployed IMS applications. To set up these properties, use the IMS SOAP Gateway Deployment Utility in either Expert or interactive mode.

“Specifying the correlator properties for a Web service” on page 22

Creating a connection bundle consists of specifying the connection properties between IMS SOAP Gateway, IMS Connect, and IMS.

“Specifying the correlator properties for a Web service” on page 22

Correlator properties specify how to interact with the IMS application for the Web Service. Each deployed application or Web service must have a correlation file associated with it.

“Changing deployed Web services” on page 29

After you deploy a Web service, you can change interaction and connection properties by using the IMS SOAP Gateway Deployment Utility.

**Task 7: Deploy the WSDL file**

This task deploys the WSDL file to IMS SOAP Gateway, which allows an IMS application to be accessible as a Web service.

**Task 7 overview**

1. From the IMS SOAP Gateway Deployment Utility menu, type **7** and press Enter.
2. Specify which WSDL file to use. If the WSDL file is in the IMS SOAP Gateway WSDL directory (installation\_directory\server\webapps\imssoap\wsdl), you only need to specify the file name. If the WSDL is located anywhere else, you must specify the full path to the file as well.
3. Specify the correlator file to use. If the Correlator file is in the IMS SOAP Gateway XML directory (installation\_directory\server\webapps\imssoap\xml), you only need to specify the file name. If the correlator file is anywhere else, you must specify the full path to the file as well.

**Task 8: Generate Java client code**

This task generates client proxy code for a Java client application.

**Task 8 overview**

1. From the IMS SOAP Gateway Deployment Utility menu, type **8** and press Enter.
2. Specify which WSDL file to use. If the WSDL file is in the IMS SOAP Gateway WSDL directory (installation\_directory\server\webapps\imssoap\wsdl), you only need to specify the file name. If the WSDL is located anywhere else, you must specify the full path to the file as well.
3. Specifies the directory for the generated proxy code.

**Task 9: Undeploy a Web Service**

This task undeploys an application as a Web Service. In addition, this task generates client proxy code for a Java client application.

**Task 9 overview**

1. From the IMS SOAP Gateway Deployment Utility menu, type **9** and press Enter.

2. Specifies which WSDL file to use. If the WSDL file is in the IMS SOAP Gateway WSDL directory (installation\_directory\server\webapps\imsssoap\wsdl), you only need to specify the file name. If the WSDL is anywhere else, you must specify the full path to the file as well.
3. The Web Service is be undeployed from IMS SOAP Gateway.

#### Related tasks

“Undeploying a Web service” on page 30

Undeploying a Web service removes the WSDL file from IMS SOAP Gateway and therefore makes the IMS application unavailable as a Web service.

## Task 10: Exit the deployment utility

This task exits the deployment utility.

### Task 10 overview

From the IMS SOAP Gateway Deployment Utility menu, type **10** and press Enter. The IMS SOAP Gateway Deployment Utility exits

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## Deployment Utility Expert Mode

The IMS SOAP Gateway Deployment Utility in Expert Mode includes commands that allow you to specify all the input values to perform tasks for IMS SOAP Gateway in one instruction.

### iogdeploy command

To use the deployment utility in Expert mode, enter the command `iogdeploy` from the installation directory where the IMS SOAP Gateway is installed. After you type the command, you can enter options depending on the task that you want to perform.

### Example

```
c:\Program Files\IBM\IMS SOAP Gateway\deploytool>iogdeploy -start
```

#### Related concepts

“IMS SOAP Gateway Deployment Utility” on page 1

The IMS SOAP Gateway Deployment Utility allows you to set up properties and create runtime code that IMS SOAP Gateway uses to enable IMS applications as Web services.

#### Related tasks

“Specifying the correlator properties for a Web service” on page 22

Correlator properties specify how to interact with the IMS application for the Web Service. Each deployed application or Web service must have a correlation file associated with it.

“Specifying the correlator properties for a Web service” on page 22

Creating a connection bundle consists of specifying the connection properties between IMS SOAP Gateway, IMS Connect, and IMS.

“Specifying the correlator properties for a Web service” on page 22

You must set up the connection bundle and correlation file properties before IMS SOAP Gateway can communicate with the Web services or deployed IMS applications. To set up these properties, use the IMS SOAP Gateway Deployment Utility in either Expert or interactive mode.

### **-start :Start an IMS SOAP Gateway server**

The **-start** command starts an IMS SOAP Gateway server.

### Syntax

▶▶ iogdeploy --start ◀◀

## Parameters

### -start

Specify the task to start the server

## Example

```
iogdeploy -start
```

### Related tasks

“Starting the IMS SOAP Gateway server” on page 27

There are three ways to start the IMS SOAP Gateway server: from the Windows start menu, with the deployment utility Interactive mode, or with the deployment utility in Expert mode.

## -stop :Stop an IMS SOAP Gateway server

The **-stop** command stops the IMS SOAP Gateway server.

## Syntax

▶▶ iogdeploy --stop ◀◀

## Parameters

### -stop

Specify the task to stop the server

## Example

```
iogdeploy -stop
```

### Related tasks

“Stopping the IMS SOAP Gateway server” on page 27

There are three ways to stop the IMS SOAP Gateway server: from the Windows start menu, with the deployment utility in either interactive or Expert mode.

## -prop :Set IMS SOAP Gateway properties

Use the **-prop** command to modify the IMS SOAP Gateway server properties.

## Syntax

▶▶ iogtool --prop --p *port\_number* --l *trace\_level* --f *log\_file* ◀◀

## Parameters

Use the following parameters to modify the IMS SOAP Gateway properties.

### -prop

Specify the task to change IMS SOAP Gateway server properties

- p Specify the port number for the IMS SOAP Gateway server. IMS SOAP Gateway is configured to run and listen on SOAP request over the HTTP communication protocol using port 8080 by default. The port number must be a non-negative number.
- l Specify the trace level. The trace level controls the amount of logging and tracing with IMS SOAP Gateway. The trace level can be one of the following values:

Table 5. Trace level values

Trace level value	Trace level	Description
1	Fatal	Only errors and exceptions are logged. This is the default level.
2	Error	If the value is not divisible by 10, it is converted to the next greater increment of 10.
3	Warn	Errors and exceptions plus warning messages are logged.
4	Information	Errors and exceptions, information of important events are logged.
5	Debug	Errors and exceptions, the entry and exit of important events and functions, and the contents of buffers sent to and received from IMS Connect and IMS SOAP Gateway are logged.

**-f** Specify the location and the filename for the log file. The log file name of the file which contains the logging and tracing messages.

### Example

```
iogdeploy -prop -p 8081 -l 4 -f c:\log.txt
```

#### Related tasks

“Tracing” on page 34

You can turn on internal tracing for IMS SOAP Gateway to help diagnosis problems. The trace level can be changed to control the amount of logging and tracing.

“Changing log file” on page 35

IMS SOAP Gateway logs all informational and error messages. By default the log file is located in `install_directory\server\logs\imssoap.log`. You can change the log file by changing the log filename and location using the IMS SOAP Gateway deployment utility.

“Changing port number for IMS SOAP Gateway server” on page 30

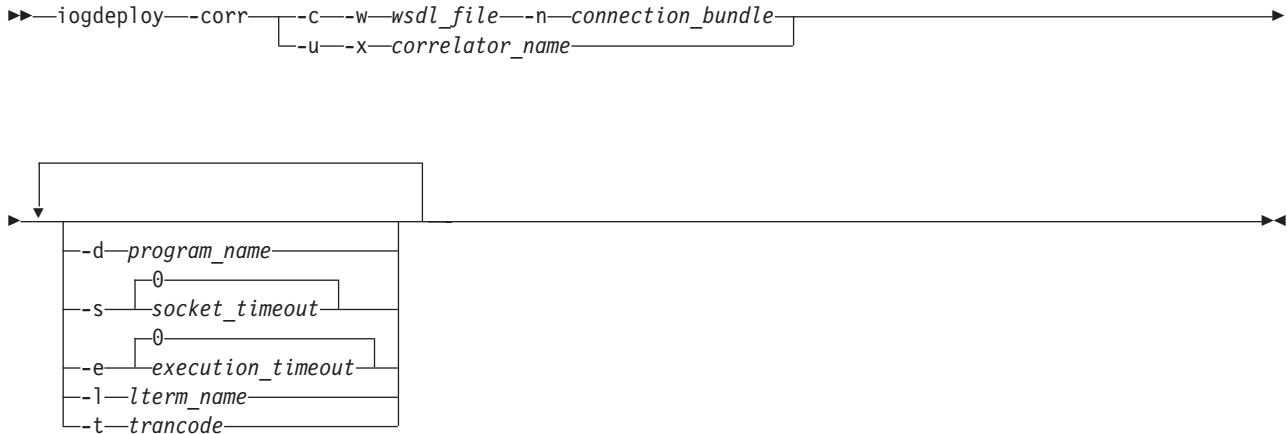
The default port number for IMS SOAP Gateway is configured to run on port 8080 and to listen to SOAP request over the HTTP communication protocol.

“Starting the IMS SOAP Gateway Administrative Console” on page 28

## -corr :Create or update the correlator file

The **-corr** command creates or updates the correlator file by specifying transaction and runtime properties.

### Syntax



### Parameters

Use the following parameters to create an IMS correlator file which contains the correlation properties. When creating a correlator file, options **-corr**, **-c**, **-w**, and **-n** are required. When updating a correlator file, options **-corr**, **-u**, and **-x** are required. All other parameters are optional and can be listed in any order.

#### **-corr**

Specifies the correlator task

**-5** Specifies the correlator option.

**-c** Specifies that a correlator file is to be created. The correlator file name is the URN of the Web service. The URN is specified by the soapAction attribute of the soap:operation element in the WSDL file.

#### **-w** *wsdl\_file*

Specifies which WSDL file to use. If the WSDL file is in the IMS SOAP Gateway WSDL directory (*installation\_directory*\server\webapps\imssoap\wsdl), you only need to specify the file name. If the WSDL is anywhere else, you must specify the full path to the file as well.

#### **-n** *connection\_bundle*

Specifies a connection bundle name. The name must be less than or equal to twenty characters. Required.

**-u** Specified that a correlator file is to be updated.

#### **-x** *correlator\_name*

Specifies the correlator name to be updated. The correlator name is the URN of the Web service. The URN is specified by the soapAction attribute of the soap:operation element in the WSDL file. If the correlator file is in the IMS SOAP Gateway XML directory (*installation\_directory*\server\webapps\imssoap\xml), you only need to specify the file name. If the correlator file is anywhere else, you must specify the full path to the file as well.

#### **-s** *socket\_timeout*

Specifies the socket timeout in milliseconds. The timeout value for IMS SOAP Gateway to receive a response from IMS Connect before disconnecting the socket and returning an error. The value must be greater than or equal to zero. Optional.

#### **-e** *execution\_timeout*

Specifies the execution timeout in milliseconds. The timeout value for IMS Connect to send a message to IMS and receive the response. The value must be between -1 and 3 600 000, inclusively. That is, the executionTimeout value must be greater than zero and less than or equal to one hour. The execution timeout value can also be -1 if you want an interaction to run without a time limit. The execution timeout value cannot contain non-numeric characters.

If you do not specify an execution timeout value or if the value that you specify is invalid, the timeout value in the IMS Connect configuration member is used and the interaction continues to run. If a valid execution timeout value is set, this value is converted into a value that IMS Connect can use. The following table describes how the values you specify are converted to the values that IMS Connect uses:

Table 6. Execution timeout value conversion rules

Range of execution timeout values in the correlator file	Conversion rule
1 – 250	If the value is not divisible by 10, it is converted to the next greater increment of 10.
251 – 1 000	If the value is not divisible by 50, it is converted to the next greater increment of 50.
1 001 – 60 000	If the value is not divisible by 1 000, it is converted to the next greater increment of 1 000. Values that are exactly between increments of 1 000 are converted to the next greater increment of 1 000.
60 001 – 3 600 000	The value is converted to the nearest increment of 60 000. Values that are exactly between increments of 60 000 are converted to the next greater increment of 60 000.

The default is zero. Optional.

**-l lterm\_name**

Specifies the name used to override the value in the LTERM field of the IMS application program's I/O PCB. The name must be eight characters or less. Optional.

**-t trancode**

Specifies the IMS transaction code of the IMS application that is invoked by the Web service. The transaction code value must be eight characters or less. If the transaction code is less than eight characters, IMS SOAP Gateway adds blanks to the end of the transaction code value. If you want to add trailing spaces to the transaction code value, enclosed the value with double quotes (for example, "MYTRCD "). IMS SOAP Gateway removes the quotes at runtime. If you do not specify a transaction code, no transaction code will be added by IMS SOAP Gateway to the input message before it sends the message to IMS.

## Create example

This example creates a correlator file for MyWSDL.wsdl. This example specifies that the Web service is to use the connection bundle named bundle1, that the IMS transaction code is tran1, and that

```
iogdeploy -corr -c -w MyWSDL.wsdl -n bundle1 -t tran1 -d program1
```

## Update example

```
iogdeploy -corr -u -x MyCorrelator.xml -s 1000 -d program2
```

### Related tasks

“Specifying the correlator properties for a Web service” on page 22

You must set up the connection bundle and correlation file properties before IMS SOAP Gateway can communicate with the Web services or deployed IMS applications. To set up these properties, use the IMS SOAP Gateway Deployment Utility in either Expert or interactive mode.

“Specifying the correlator properties for a Web service” on page 22

Creating a connection bundle consists of specifying the connection properties between IMS SOAP Gateway, IMS Connect, and IMS.

“Specifying the correlator properties for a Web service” on page 22

Correlator properties specify how to interact with the IMS application for the Web Service. Each deployed application or Web service must have a correlation file associated with it.

Creating a correlator file

Before you can deploy a Web service to IMS SOAP Gateway, you must first create a correlator by using the deployment utility. You do not need to edit the file directly. The utility creates and updates the file. The correlator specifies connection, transaction, and runtime properties.

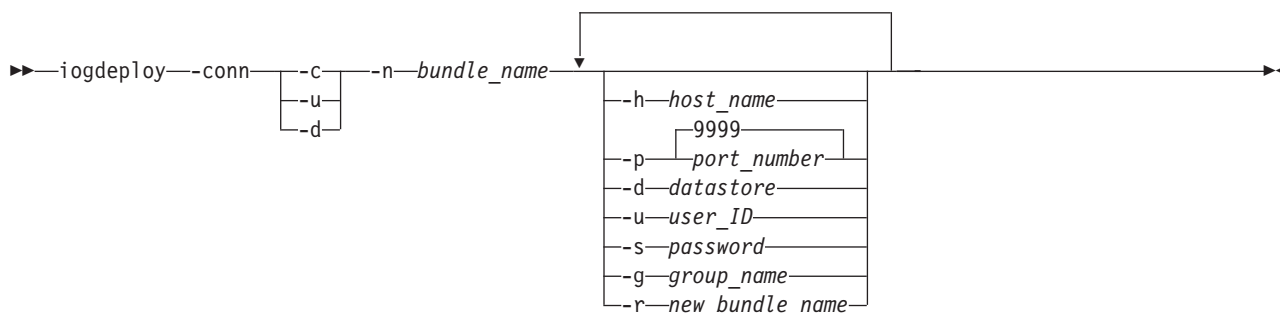
“Changing deployed Web services” on page 29

After you deploy a Web service, you can change interaction and connection properties by using the IMS SOAP Gateway Deployment Utility.

## **-conn :Create, update, or delete a connection bundle**

Use the **-conn** command to create, update, or delete a connection bundle.

### **Syntax**



### **Parameters**

Use the following parameters to create or update a connection bundle. When creating a connection bundle, **-conn**, **-c**, and **-n** are required. When updating a connection bundle, **-conn**, **-u**, and **-n** are required. All other parameters are optional and can be listed in any order. When you are deleting a connection bundle, **-conn**, **-d**, and **-n** are required and no other parameters are valid.

#### **-conn**

Specifies the connection bundle option task.

**-c** Specifies that you want to create a new connection bundle.

**-u** Specifies that you want to update an existing connection bundle.

**-d** Specifies that you want to delete an existing connection bundle.

#### **-n bundle\_name**

Specifies the name of the connection bundle to create or update. The correlator file uses this name to specify which connection properties to use for its associated Web service. The name must be twenty characters or less and contain no spaces.

#### **-h host\_name**

Specifies the name or IP address of the host system where IMS Connect is running.

#### **-p port\_number**

Specifies the port number of the host system where IMS™ Connect is running. The port number must be a non-negative number. Default is 9999.



- d** *datastore*  
Specifies the name of the target IMS datastore. The name must match the ID parameter of the Datastore statement that is specified in the IMS Connect configuration member. This name also serves as the XCF member name for IMS during internal XCF communications between IMS Connect and IMS OTMA. The name must be eight characters or less.
- u** *user\_ID*  
The default security authorization facility (SAF) user name that will be used for connections with IMS. The user ID must be eight characters or less.
- s** *password*  
Specifies the password that will be used for connections with IMS. The password must be eight characters or less.
- g** *group\_name*  
Specifies the name of the group that will be used for connections with IMS. The name must be eight characters or less.
- r** *new\_bundle\_name*  
Specifies a new name for the connection bundle. The name must be twenty characters or less and contain no spaces.

## Create example

This example creates a new connection bundle that is named MyBundle. It does not specify any properties.

```
iogdeploy -conn -c -n MyBundle
```

## Update example

This example changes the name of the connection bundle from MyBundle to YourBundle. It also specifies a default SAF user name of USER1.

```
iogdeploy -conn -u -n MyBundle -s USER1 -r YourBundle
```

## Delete example

This example deletes the connection bundle that is named YourBundle.

```
iogdeploy -conn -d -n YourBundle
```

### Related tasks

“Specifying the correlator properties for a Web service” on page 22

You must set up the connection bundle and correlation file properties before IMS SOAP Gateway can communicate with the Web services or deployed IMS applications. To set up these properties, use the IMS SOAP Gateway Deployment Utility in either Expert or interactive mode.

“Specifying the correlator properties for a Web service” on page 22

Creating a connection bundle consists of specifying the connection properties between IMS SOAP Gateway, IMS Connect, and IMS.

“Specifying the correlator properties for a Web service” on page 22

Correlator properties specify how to interact with the IMS application for the Web Service. Each deployed application or Web service must have a correlation file associated with it.

Creating a connection bundle

You must create a connection bundle by using the IMS SOAP Gateway Deployment Utility to specify the connection and security properties between IMS SOAP Gateway, IMS Connect, and IMS. You can create multiple connection bundles, but you can only use one connection bundle for each Web service.

“Changing deployed Web services” on page 29

After you deploy a Web service, you can change interaction and connection properties by using the IMS SOAP Gateway Deployment Utility.

## **-deploy :Deploy an application as a Web service**

The **-deploy** command deploys the WSDL file to IMS SOAP Gateway, which allows an IMS application to be enabled as a Web service.

### **Syntax**

```
▶▶—iogdeploy—-deploy—-w—wsdl_file—-c—correlator_file—▶▶
```

### **Parameters**

Use the following parameters to deploy an application as a Web service. The **-deploy** command, **-w**, and **-c** are required.

#### **-deploy**

Specifies the deployment task option. Required.

#### **-w wsdl\_file**

Specifies which WSDL file to use. If the WSDL file is in the IMS SOAP Gateway WSDL directory (*installation\_directory\server\webapps\imssoap\wsdl.*), you only need to specify the file name. If the WSDL is anywhere else, you must specify the full path to the file as well.

#### **-x correlator\_file**

Specifies the correlator file to use. If the Correlator file is in the IMS SOAP Gateway XML directory (*installation\_directory\server\webapps\imssoap\xml*), you only need to specify the file name. If the correlator file is anywhere else, you must specify the full path to the file as well.

### **Example**

This example deploys the file *MyWSDL.wsdl*, which is in *installation\_directory\server\webapps\imssoap\wsdl.*, and uses the correlator file *MyCorrelator.xml*.

```
iogdeploy -deploy -w MyWSDL.wsdl -c MyCorrelator.xml
```

#### **Related tasks**

“Deploying the WSDL file” on page 24

Deploying the WSDL is the last step for deploying a Web service to IMS SOAP Gateway.

## **-genclient :Generate client proxy code**

Use the **-genclient** command to generate client proxy code for a client application.

### **Syntax**

```
▶▶—iogdeploy—-genclient—-w—wsdl_file—-d—proxy_destination—▶▶
```

### **Parameters**

Use the following parameters to generate client proxy code for a client application. The **-genclient** command, **-w**, and **-d** are required.

#### **-genclient**

Specifies the proxy code task option.

#### **-w wsdl\_file**

Specifies which WSDL file to use. If the WSDL file is in the IMS SOAP Gateway WSDL directory (*installation\_directory\server\webapps\imssoap\wsdl.*), you only need to specify the file name. If the WSDL is anywhere else, you must specify the full path to the file as well.

**-x proxy\_destination**

Specifies the directory for the generated proxy code.

## Example

This example creates proxy code that is based on MyWSDL.wsdl, which is in *installation\_directory*\server\webapps\imssoap\wsdl.. The generated code is stored in the directory c:\SOAP\proxy\_code.

```
iogdeploy -genclient -w MyWSDL.wsdl -d c:\SOAP\proxy_code
```

## -undeploy :Undeploy an application as a Web service

Use the **-undeploy** command to undeploy an application.

## Syntax

```
▶▶ iogdeploy --undeploy --w wsdl_file ◀◀
```

## Parameters

Use the following parameters to undeploy an application as a Web service. The **-undeploy** command and **-w** are required.

### **-undeploy**

Specifies the undeployment task option.

### **-w wsdl\_file**

Specifies which Web service to undeploy. If the corresponding WSDL file is in the IMS SOAP Gateway WSDL directory (*installation\_directory*\server\webapps\imssoap\wsdl.), you only need to specify the file name. If the WSDL is anywhere else, you must specify the full path to the file as well.

## Example

This example undeploys the MyWSDL.wsdl file from IMS SOAP Gateway.

```
iogdeploy -undeploy -w MyWSDL.wsdl
```

### Related tasks

“Undeploying a Web service” on page 30

Undeploying a Web service removes the WSDL file from IMS SOAP Gateway and therefore makes the IMS application unavailable as a Web service.



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