

# Service Level Template Management

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## WSA Service Management

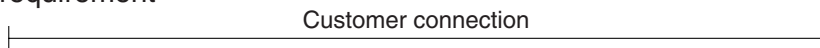
Under normal usage, when creating connections in a single network, WSA allows the user to simply choose a service that implies a template. A template is a predefined group of parameters used to configure the connection.

The relationship between connection Service Levels (refer to Service Levels on page 2-65) and Templates are most significant in multi-network or multi-vendor environments.

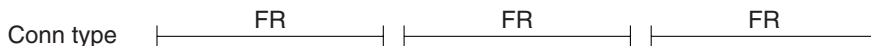
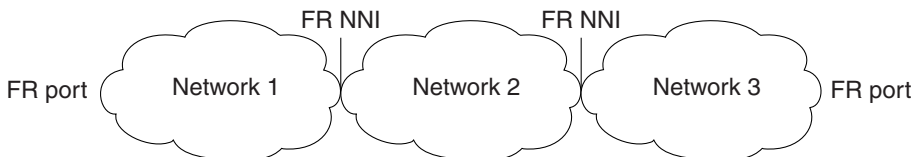
WSA defines a service as a group of one or more templates defined for each possible connection type required to support the service over the assigned network infrastructure.

By defining the appropriate Service Levels with a group of templates defined for each possible connection type and subtype to support the service over each individual network, WSA is able to infer the proper connection type, subtype, and QOS parameters for each assigned network infrastructure.

Customer requirement



Frame Relay end to end



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## Services Levels Overview

A service is defined by the WSA system administrator and is assigned a unique ASCII character name.

A service includes a definition of the default connection subtypes used to support the service over different network connection types. This is required because WSA cannot infer or calculate this information. WSA can infer that ATM - FR or ATM might be required, but needs to know the default connection subtype.

For each connection type, connection subtype pair, create the template with suitable traffic parameters. Then assign the template to a specific Service Level that has a connection type and connection subtype that determine the calculation rules for WSA.

When WSA creates a connection between multiple networks, it performs a test to identify the customer port type at each end of the connection and the NNI port type at each end of the NNI link. Then the connection type is determined. WSA then looks at the corresponding Service Level inherited by the Template chosen to determine the default connection subtype.

Table 3-1, “Example of Service Connection Subtype”, shows the calculated results determined by the default connection subtype defined in the Service Level. Note that the QOS traffic parameters are defined in the Service Template within a group of templates designed for that specific Service Level.

**Table 3-1 Example of Service Connection Subtype**

<b>A-End Port Type</b>	<b>B-End Port Type</b>	<b>Via NNI-1 Port</b>	<b>Via NNI-2 Port</b>	<b>Connection Type</b>	<b>Service Connection Subtype (example)</b>
FR	FR	FR	FR	Network 1 = FR	Network 1 = FR - FS
				Network 2 = FR	Network 2 = FR - FS
				Network 3 = FR	Network 3 = FR - FS
FR	FR	ATM	ATM	Network 1 = ATMF	Network 1 = ABR - FS
				Network 2 = ATM	Network 2 = ABR
				Network 3 = ATMF	Network 3 = ABR - FS

## Templates Overview

To create a template, take a copy of an existing template and edit the parameter values as required, refer to the section Template Creation on page 3-11.

Templates are specific to connection types and connection subtypes (for example, ABR, VBR, and CBR). The default WSA build is supplied with default system templates and all available configured parameters for each connection and connection-subtype.

Table 3-2, “QOS Parameters Supported by WSA”, lists all available QOS parameters supported by WSA for each connection type and connection subtype.

**Table 3-2 QOS Parameters Supported by WSA**

<b>svConnType</b>	<b>svConnSubtype</b>	<b>Description</b>	<b>Traffic Parameter (Default)</b>
fr-fr (1)	fr (7)	Frame Relay connection, ForeSight is disabled.	frEndPointCIR frEndPointBc frEndPointBe frEndPointVcQSize frEndPointEcnQSize frEndPointPercUtil frEndPointInitialBurstSize frEndPointDeTagging frEndPointIngressDeThreshold frEndPointEgressQDepth frEndPointEgressDeThreshold frEndPointEgressEcnThreshold frEndPointEgressQSelect frEndPointchanType frEndPointchanFECNconfig frEndPointchanDEtoCLPmap frEndPointchanCLPtoDEmap

**Table 3-2 QOS Parameters Supported by WSA**

<b>svConnType</b>	<b>svConnSubtype</b>	<b>Description</b>	<b>Traffic Parameter (Default)</b>
<b>fr-fr (1)</b>	fr-fs (6)	Frame Relay connection, ForeSight is enabled	frEndPointMIR frEndPointCIR frEndPointBc frEndPointBe frEndPointVcQSize frEndPointPIR frEndPointEcnQSize frEndPointQIR frEndPointPercUtil frEndPointInitialBurstSize frEndPointDeTagging frEndPointIngressDeThreshold frEndPointEgressQDepth frEndPointEgressDeThreshold frEndPointEgressEcnThreshold frEndPointEgressQSelect frEndPointchanType frEndPointchanFECNconfig frEndPointchanDEtoCLPmap frEndPointchanCLPtoDEmap
<b>atm-atm (2)</b>	cbr-1 (1)	ATM CBF connection, CLP is not applicable.	atmEndPointPCRZeroPlus1 atmEndPointCDVTZeroPlus1 atmEndPointPercUtil

**Table 3-2 QOS Parameters Supported by WSA**

<b>svConnType</b>	<b>svConnSubtype</b>	<b>Description</b>	<b>Traffic Parameter (Default)</b>
<b>atm-atm (2)</b>	vbr-1 (2)	ATM VBR connection, CLP is not applicable.	atmEndPointPCRZeroPlus1 atmEndPointSCRZeroPlus1 atmEndPointCDVTZeroPlus1 atmEndPointPercUtil atmEndPointMBS atmEndPointFGCRA
<b>atm-atm (2)</b>	vbr-2 (3)	ATM VBR connection, CLP is applicable.	atmEndPointPCRZeroPlus1 atmEndPointSCRZeroPlus1 atmEndPointCDVTZeroPlus1 atmEndPointPercUtil atmEndPointMBS atmEndPointFGCRA
<b>atm-atm (2)</b>	vbr-3 (4)	ATM VBR connection, CLP is applicable.	atmEndPointPCRZeroPlus1 atmEndPointSCRZeroPlus1 atmEndPointCDVTZeroPlus1 atmEndPointPercUtil atmEndPointMBS atmEndPointFGCRA

**Table 3-2 QOS Parameters Supported by WSA**

<b>svConnType</b>	<b>svConnSubtype</b>	<b>Description</b>	<b>Traffic Parameter (Default)</b>
<b>atm-atm (2)</b>	abr-fs (5)	ATM ABR connection, ForeSight is enabled, CLP is applicable.	atmEndPointPCRZeroPlus1 atmEndPointCDVTZeroPlus1 atmEndPointMCR atmEndPointPercUtil atmEndPointSCRZeroPlus1 atmEndPointMBS atmEndPointFGCRA atmEndPointBCM atmEndPointICR atmEndPointRateUp atmEndPointRateDown atmEndPoint1CRTO atmEndPointMinAdjustPeriod
<b>atm-atm (2)</b>	ubr-1 (8)	ATM UBR connection, CLP is applicable.	atmEndPointPCRZeroPlus1 atmEndPointCDVTZeroPlus1 atmEndPointPercUtil atmEndPointFGCRA
<b>atm-atm (2)</b>	ubr-2 (9)	ATM UBR connection, CLP is applicable	atmEndPointPCRZeroPlus1 atmEndPointCDVTZeroPlus1 atmEndPointPercUtil atmEndPointFGCRA

**Table 3-2 QOS Parameters Supported by WSA**

<b>svConnType</b>	<b>svConnSubtype</b>	<b>Description</b>	<b>Traffic Parameter (Default)</b>
atm-atm (2)	abr-1 (10)	ATM ABR connection, Foresight is disabled, CLP is applicable.	atmEndPointPCRZeroPlus1 atmEndPointCDVTZeroPlus1 atmEndPointSCRZeroPlus1 atmEndPointMBS atmEndPointFGCRA atmEndPointBCM atmEndPointPercUtil atmEndPointICR atmEndPointMinAdjustPeriod atmEndPointRateUp atmEndPointRateDown atmEndPointNRM atmEndPointTBE atmEndPointFRIT atmEndPointVSVD atmEndPointPolicing



**Table 3-2 QOS Parameters Supported by WSA**

<b>svConnType</b>	<b>svConnSubtype</b>	<b>Description</b>	<b>Traffic Parameter (Default)</b>
<b>atm-fr (3) either from ATM to FR or from RF to ATM</b>	abr-fs (5)	ATM ABR connection, ForeSight is enabled, CLP is applicable. atmEndPoint Traffic parameters for FR are the same as fr-fs (6)	atmEndPointPCRZeroPlus1
			atmEndPointCDVTZeroPlus1
			atmEndPointMCR
			atmEndPointPercUtil
			atmEndPointSCRZeroPlus1
			atmEndPointMBS
			atmEndPointFGCRA
			atmEndPointBCM
			atmEndPointICR
			atmEndPointRateUp
			atmEndPointRateDown
			atmEndPointICRTO
			atmEndPointMinAdjustPeriod
<b>atm-fr (3) either from ATM to FR or from RF to ATM</b>	vbr-3 (4)	ATM VBR connection, CLP is applicable.  Traffic parameters for FR are the same as fr (7)	atmEndPointPCRZeroPlus1
			atmEndPointSCRZeroPlus1
			atmEndPointCDVTZeroPlus1
			atmEndPointPercUtil
			atmEndPointMBS
			atmEndPointFGCRA

**Table 3-2 QOS Parameters Supported by WSA**

<b>svConnType</b>	<b>svConnSubtype</b>	<b>Description</b>	<b>Traffic Parameter (Default)</b>
<b>ce-ce (4)</b>	cbr-1 (1)	ATM CBR connection.  CLP is not applicable.	svCeEndPointBufMaxSize svCeEndPointCDVRxt svCeEndPointCellLossPeriod svCeEndPointCBFClockMode svCeEndPointPartialFill svCeEndPointIdleDet svCeEndPointIdleSupp svCeEndPointOnhookCode svCeEndPointCAS

When a template is created, it is assigned to a service level from the list of already defined services.

## Multi-network Services

WSA infers the connection types required from the port types on the customer ports and NNI ports. The Service Level definition is used to allow WSA to identify the connection subtype required.

Using the definition of each network segment, the required template is chosen that matches the following:

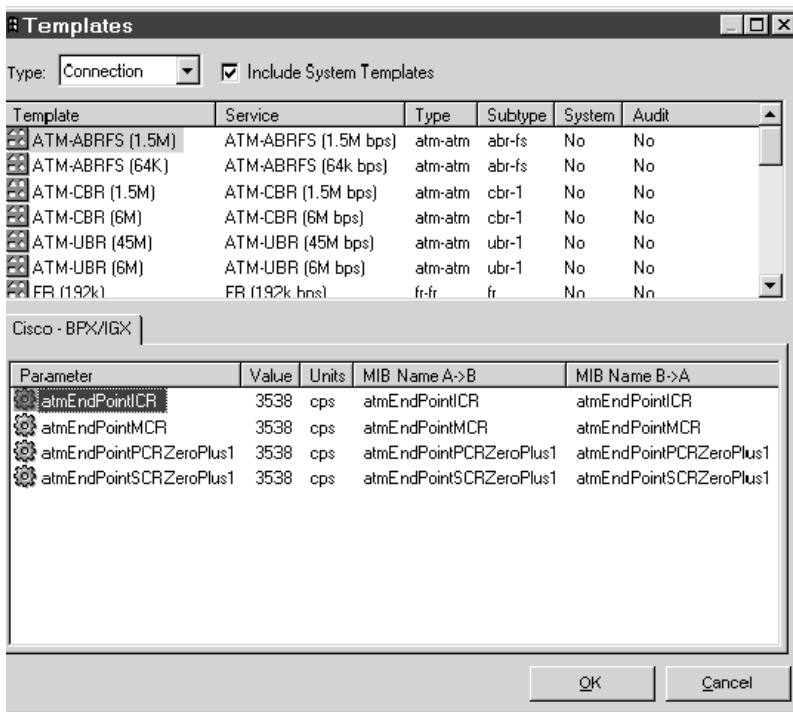
- 1** Connection type that customer requested
- 2** Connection subtype that customer requested
- 3** Service Level that defines the default connection subtype for each PVC segment

# Template Creation

The parameters in a given template and the values for these parameters are shown in a window such as Figure 3-1, “Template Parameters”. Select the template editor under **Tools** on the menu bar to bring up the **Templates** window.

The same parameter can exist in many templates, but may have different values.

**Figure 3-1**      **Template Parameters**

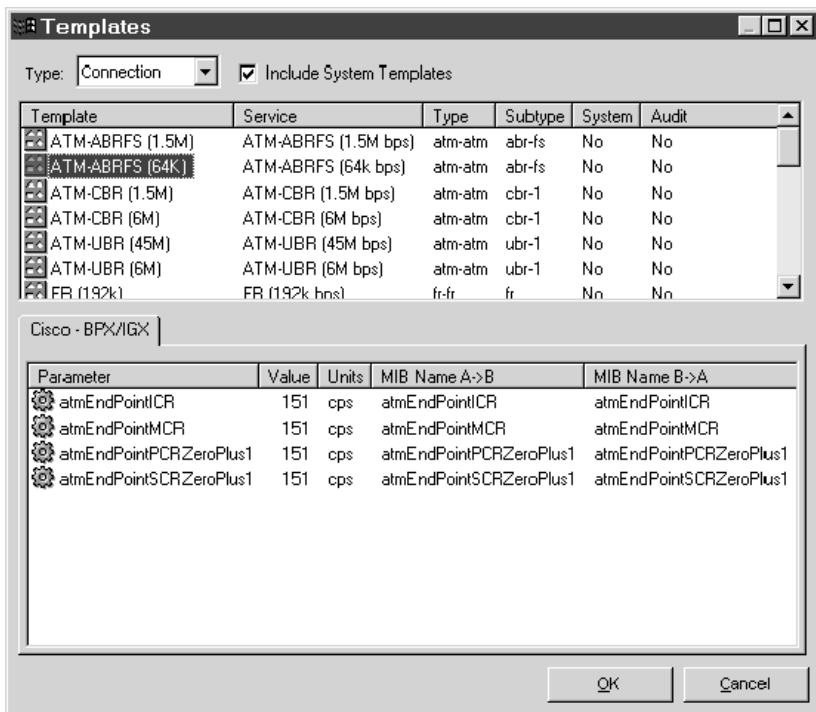


**Step 1**      Select an object using the scroll bar labeled **Type**. The choices of **Type** of object are: Card, Connection, Netlink, Node, or Port.

## Template Creation

- Step 2** A list of all parameters associated with Cisco—BPX/IGX are listed. To create a new template, as shown in Figure 3-2, “Creating a Template”, follow these steps:
- Step 1** Click the right mouse button and select the **New** command. A **New Template** window appears.
- Step 2** In the **Tools** menu, select **Copy Service level** to copy existing service parameters to a new service name.

**Figure 3-2** Creating a Template



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## Editing a Template

Select the template to edit

Click the right mouse button and adjust the **Properties** according to network protocols

A window like Figure 3-3, “Template Properties”, appears.

**Figure 3-3** Template Properties

The screenshot shows a dialog box titled "Template Properties" with a close button (X) in the top right corner. The dialog is split into two main sections: "Details" on the left and "Object" on the right. In the "Details" section, there are several input fields: "Name" (text box with "System ATM ABR-FS"), "Service" (dropdown menu with "System" selected), "Revenue" (text box with "0"), "Cost Multiplier" (text box with "0.00"), "Speed" (text box with "0"), "Utilization" (text box with "0"), "Max. Port Speed" (text box with "0"), and "Min. Port Speed" (text box with "0"). The "Object" section contains three dropdown menus: "SAM Object" (with "Connection" selected), "Type" (with "atm-atm" selected), and "Subtype" (with "abr-fs" selected). Below these are two checkboxes: "Audit Template" (unchecked) and "System Template" (checked). At the bottom of the "Object" section, there are two text fields: "Inserted by: engineering" and "On: 1998-01-01". At the very bottom of the dialog are three buttons: "OK", "Apply", and "Cancel". A vertical text "18790" is visible on the right edge of the dialog box.

## Adding Parameters to a Template

To add a new parameter to the vendor template, as shown in, Figure 3-4, “Adding Parameters to Template”, follow these steps:

- Step 1** Click the right mouse button away from any parameter and select **New**.
- Step 2** Select the name of the new parameter.
- Step 3** Add a logical value and click **Add** to commit the new parameter.

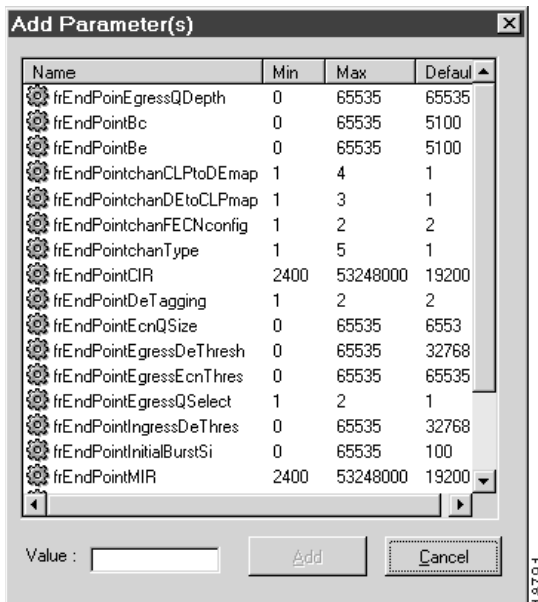
## Adding Parameters to a Template

Notice that setting logical values for parameters within a Service Template requires the ATM/FR traffic QOS expertise. For example, to modify the **frEndPointQIR** parameters value, the customer must adjust the **frEndPointMIR** and **frEndPointPIR** accordingly, based on the rule that **frEndPointMIR** must be less than or equal to **frEndPointQIR**, which must be less than or equal to **frEndPointPIR**. The attributes for **MIR**, **CIR**, **PIR**, and **QIR** can only be set to values evenly divisible by 100... and so on.

Also note that the same template parameters might not apply to the same connection type with the same connection subtype but might be built on different type of nodes.

For example, a FR (64k) template might contain a traffic parameter **frEndPointCIR** with value 64000 bps and this template would suffice to provision an FR end point at AXIS node but not to provision on an IGX node. Therefore, pay attention when designing the proper templates for each network infrastructure with different connection types and connection subtype pairs for each Service Level.

**Figure 3-4 Adding Parameters to Template**



If no value is given, then the system will use a default. Figure 3-5, “Fully Populated Template”, shows a fully populated template.

Figure 3-5 Fully Populated Template

