

Service/Subscriber Provisioning Windows: Detailed Description

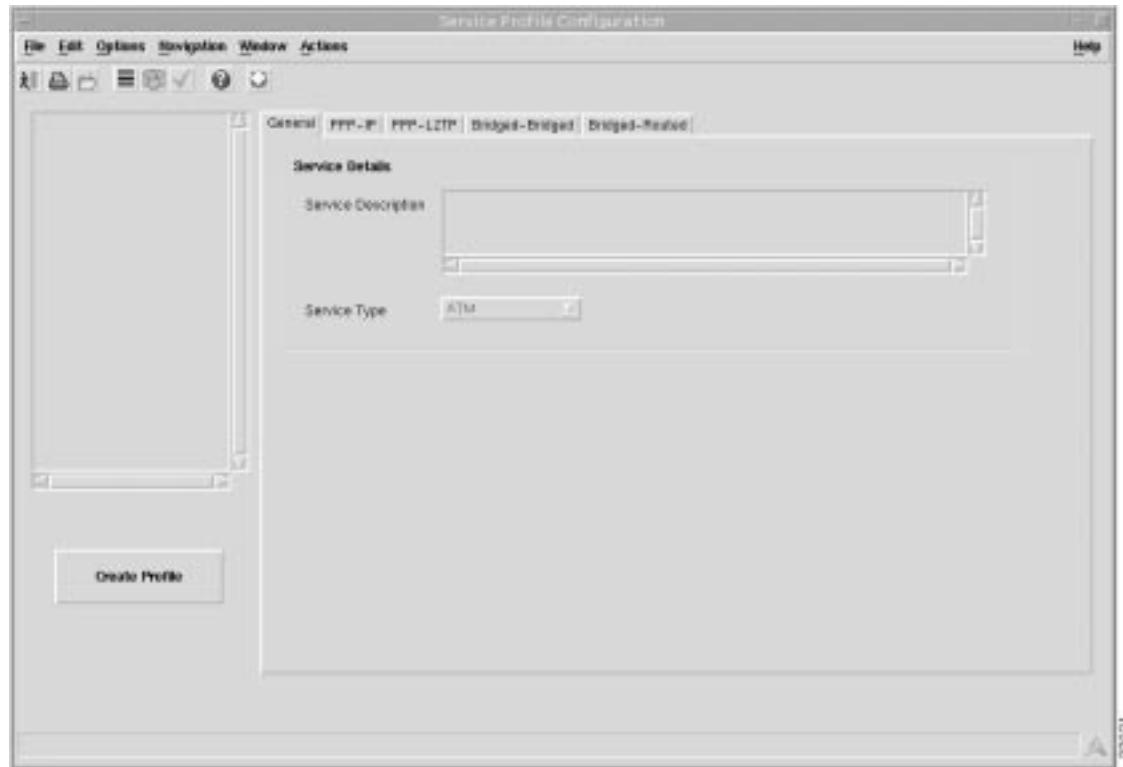
Service Profile Configuration Window

The Service Profile Configuration window has five tabbed sections: **General**, **PPP-IP**, **PPP-L2TP**, **Bridged-Bridged**, and **Bridged-Routed**.

General Tab

The **General** tab (shown in Figure 7-1) appears by default and has a single frame.

Figure 7-1 Service Profile Configuration Window (General Tab)



Service Profile Configuration Window

Service Details

Service Description — allows you to enter a description for the service.

Service Type — allows you to select a service type from the available services. When a **Service Type** is selected the service tabs that do not relate to this service are greyed out and cannot be selected. For example, when the **PPP-IP** service is selected the **PPP-IP** tab can be selected and the **PPP-L2TP**, **Bridged-Bridged** and **Bridged-Routed** tabs are greyed out and cannot be selected.

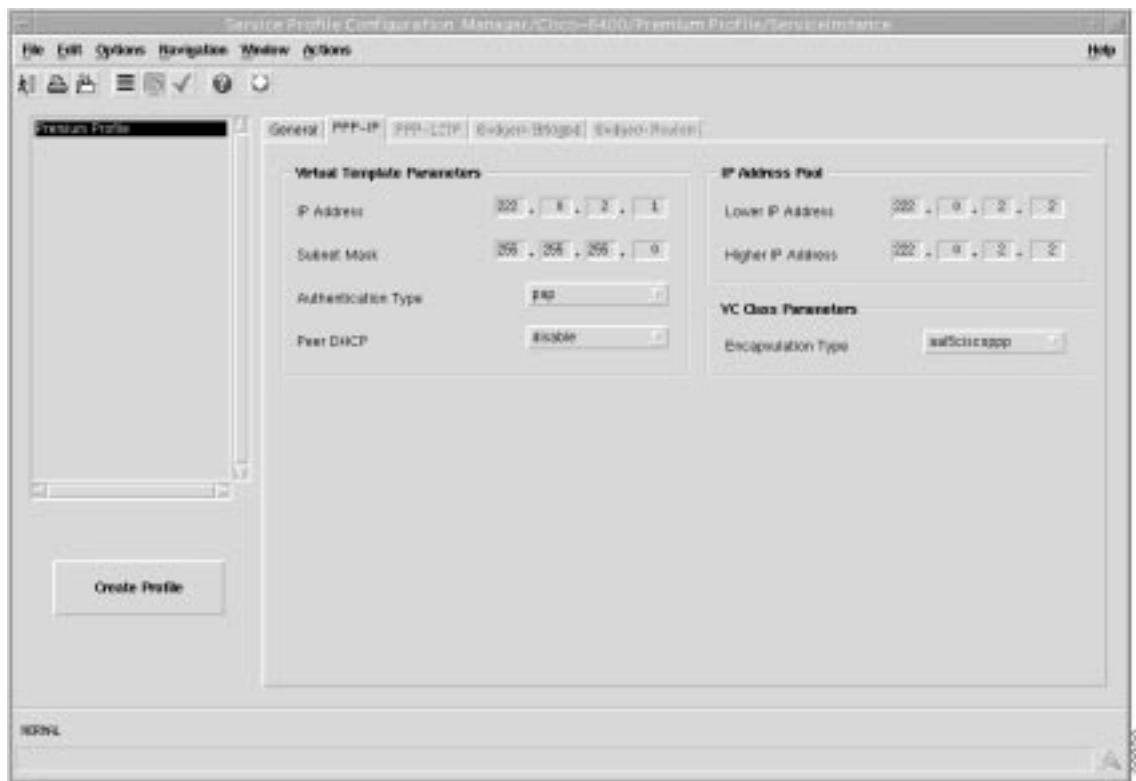
Create Profile

Select **Create Profile** to create a new service profile with the parameters set in the service profile configuration tabs.

PPP-IP Tab

The **PPP-IP** tab (shown in Figure 7-2) has three frames.

Figure 7-2 Service Profile Configuration Window (PPP-IP Tab)



Virtual Template Parameters

A virtual template is a mechanism used by the 6400 UAC to establish or terminate subscriber PPP sessions.

The Virtual Template Parameters establish incoming subscriber PPP traffic information.

IP Address — IP address of the virtual template.

Subnet Mask — a 32 bit number used to separate the network and host sections of an IP address.

Authentication Type — PPP authentication type for any subscribers wishing to connect to this service.

Peer DHCP — when the Peer Dynamic Host Configuration Protocol (DHCP) option is enabled the Cisco 6400 UAC uses DHCP in place of IP pools.

IP Address Pool

Lower IP Address — the lower limit on the IP address pool.

Higher IP Address — the upper limit on the IP address pool.

No IP address pool is configured when the **Higher IP Address** and **Lower IP Address** parameter are left blank.

VC Class Parameters

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

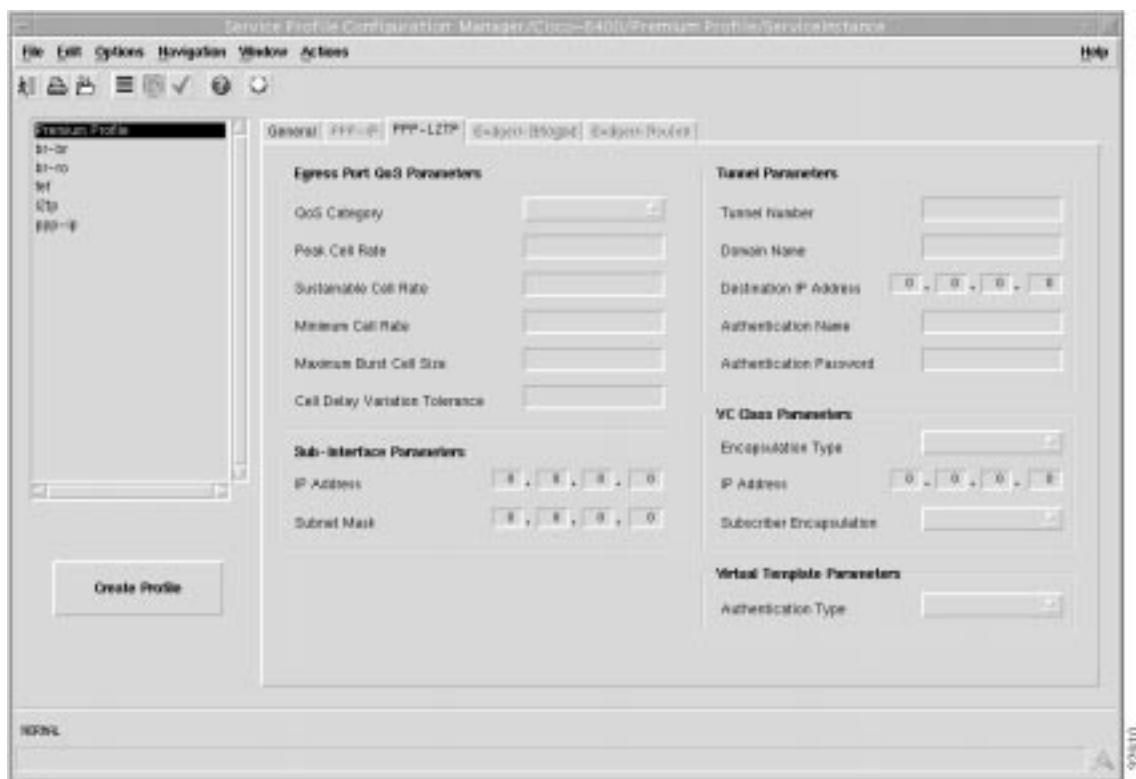
Create Profile

Select **Create Profile** to create a new service profile with the parameters set in the service profile configuration tabs.

PPP-L2TP Tab

The **PPP-L2TP** tab (shown in Figure 7-3) has 5 frames.

Figure 7-3 Service Profile Configuration Window (PPP-L2TP Tab)



Egress Port QoS Parameters

The ATM QoS parameters for the egress port are set according to the marketing offering of the carrier (wholesaler) to the upstream service provider.

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Minimum Cell Rate — the lowest value of the cell rate.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Sub-Interface Parameters

The **Sub-Interface Parameters** define a local interface created (on the NRP) to communicate with the service network.

IP Address — a local IP address that is used while communicating with the service.

Subnet Mask — a 32 bit number used to separate the network and host sections of an IP address.

Tunnel Parameters

The **Tunnel Parameters** define the configuration of the tunnel that is created between the sub-interface and the tunnel destination (service).

Tunnel Number — a unique identifier for the tunnel in the range 1 to 3000.

Domain Name — the domain name to which the tunnel is mapped.

Destination IP Address — the destination IP address of the tunnel.

Authentication Name — the authentication name for the tunnel.

Authentication Password — the authentication password for the tunnel.

VC Class Parameters

The **VC Class Parameters** define the details of the next logical hop in the route to the service network.

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

IP Address — The IP address of the next hop. There should be a router at this address. This point may also be the tunnel termination point.

Subscriber Encapsulation — The method of PPP over ATM encapsulation for any subscribers wishing to connect to this service.

Virtual Template Parameters

The Virtual Template Parameters establish incoming subscriber PPP traffic information.

Authentication Type — PPP authentication type for any subscribers wishing to connect to this service.

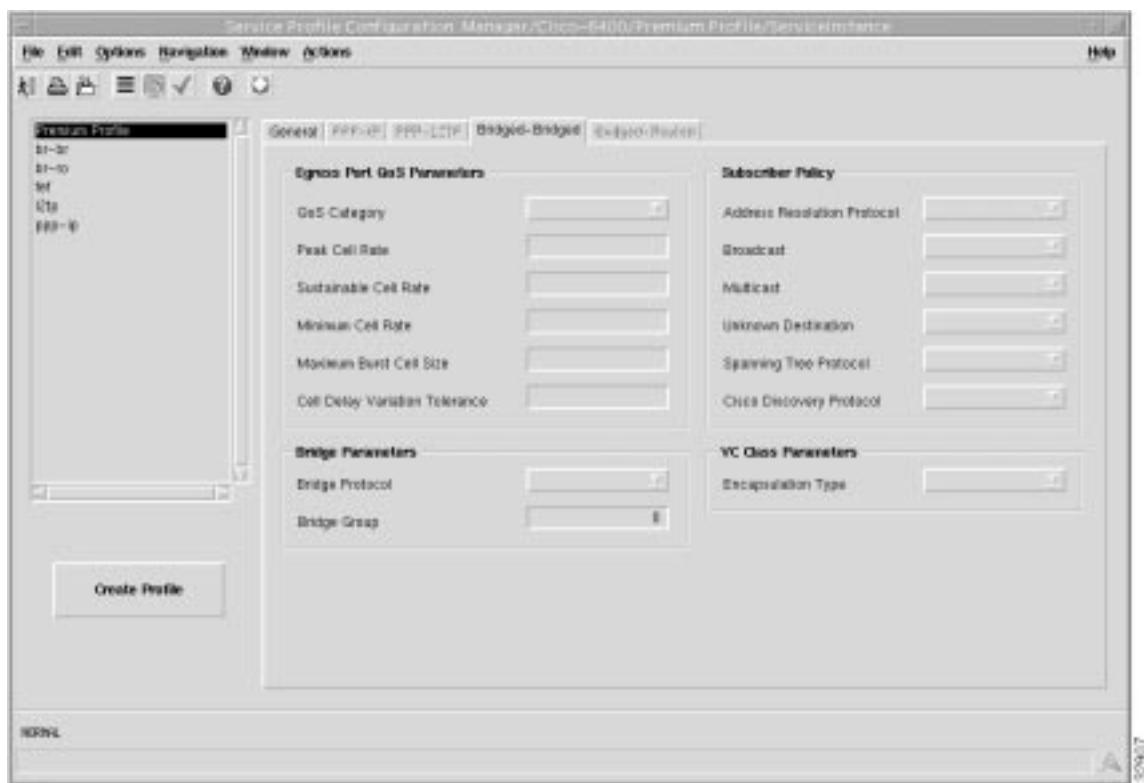
Create Profile

Select **Create Profile** to create a new service profile with the parameters set in the service profile configuration tabs.

Bridged-Bridged Tab

The **Bridged-Bridged** tab (shown in Figure 7-3) appears by default and has four frames.

Figure 7-4 Service Profile Configuration Window (Bridged-Bridged Tab)



Egress Port QoS Parameters

The ATM QoS parameters for the egress port are set according to the marketing offering for the carrier (wholesaler) to the upstream service provider.

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Minimum Cell Rate — the lowest value of the cell rate.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Bridge Parameters

The **Bridge Parameters** define the details of the bridge group to be created, including the bridge virtual interface.

Bridge Protocol — Defines the bridge spanning tree protocol.

Bridge Group — unique identifier for the bridge group to be created in the range 1 to 255.

Subscriber Policy

The **Subscriber Policy** defines the types of traffic allowed within the bridge group. Traffic types available are, **Address Resolution Protocol**, **Broadcast**, **Multicast**, **Unknown Destination**, **Spanning Tree Protocol**, and **Cisco Discovery Protocol**. Select **Permit** to allow the traffic type or **Deny** to disallow the traffic type.

VC Class Parameters

The **VC Class Parameters** define the details of the next logical hop in the route to the service network.

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

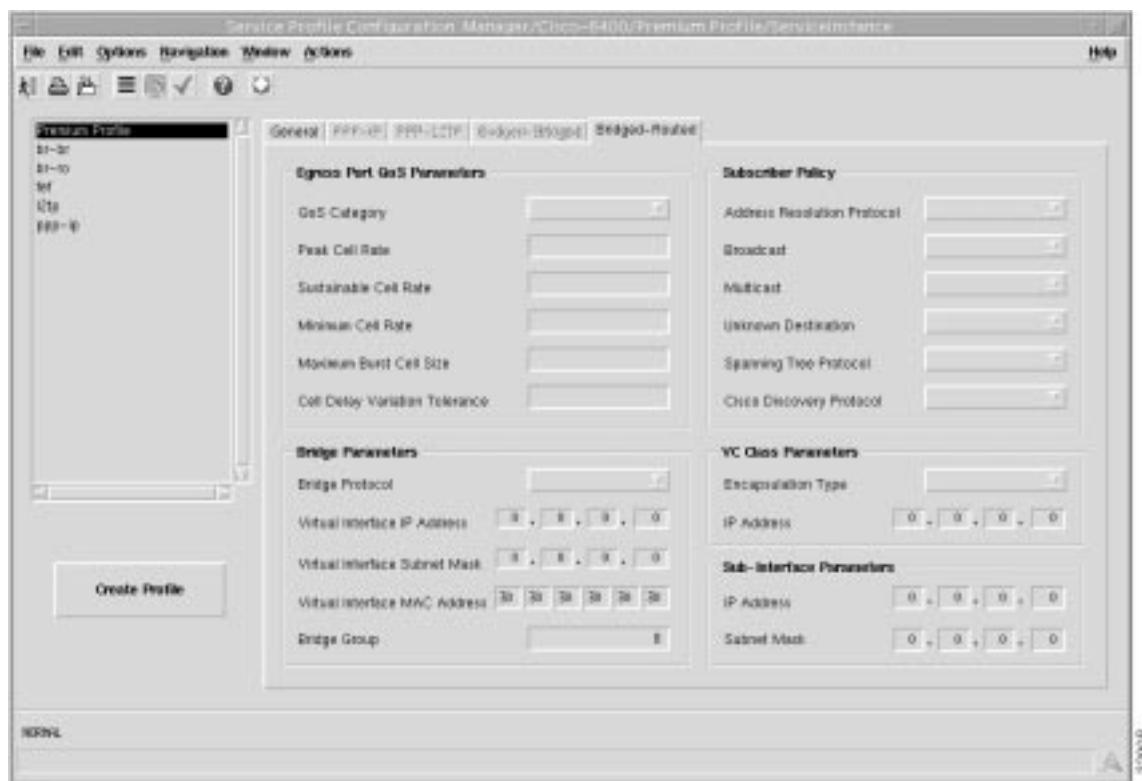
Create Profile

Select **Create Profile** to create a new service profile with the parameters set in the service profile configuration tabs.

Bridged-Routed Tab

The **Bridged-Routed** tab (shown in Figure 7-5) has 5 frames.

Figure 7-5 Service Profile Configuration Window (Bridged-Routed Tab)



Egress Port QoS Parameters

The ATM QoS parameters for the egress port are set according to the marketing offering for the carrier (wholesaler) to the upstream service provider.

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Minimum Cell Rate — the lowest value of the cell rate.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Bridge Parameters

The **Bridge Parameters** define the details of the bridge group to be created, including the bridge virtual interface.

Bridge Protocol — Defines the bridge spanning tree protocol.

Virtual Interface IP Address — the IP address of the virtual interface.

Virtual Interface Subnet Mask — the subnet mask of the virtual interface. A subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Virtual Interface MAC Address — The virtual interface Media Access Control (MAC) address.

Bridge Group — unique identifier for the bridge group to be created in the range 1 to 255.

Subscriber Policy

The **Subscriber Policy** defines the types of traffic allowed within the bridge group. Traffic types available are, **Address Resolution Protocol**, **Broadcast**, **Multicast**, **Unknown Destination**, **Spanning Tree Protocol**, and **Cisco Discovery Protocol**. Select **Permit** to allow the traffic type or **Deny** to disallow the traffic type.

VC Class Parameters

The **VC Class Parameters** define the details of the next logical hop in the route to the service network.

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

IP Address — The IP address of the next hop. There should be a router at this address. This point may also be the tunnel termination point.

Sub-Interface Parameters

The **Sub-Interface Parameters** define a local interface created (on the NRP) to communicate with the service network.

IP Address — a local IP address that is used while communicating with the service.

Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Create Profile

Select **Create Profile** to create a new service profile with the parameters set in the service profile configuration tabs.

PTA-MD Service Profile Window

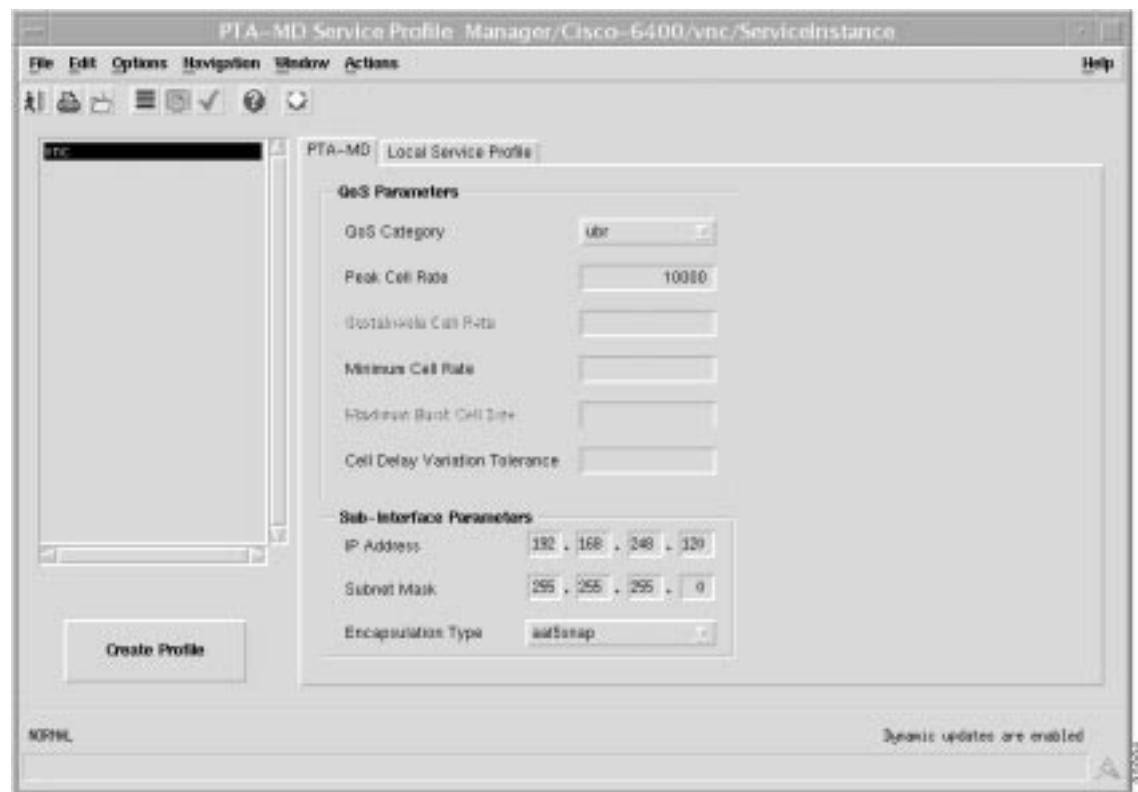
Select the **Cisco 6400 UAC, Profiles, Configure PTA-MD Profiles** option from any card type (that is NSP, NRP or Line Card). to view the PTA-MD Service Profile Window (PTA-MD Tab).

The PTA-MD Service Profile window has two tabbed sections: **PTA-MD** and **Local Service Profiles**.

PTA-MD Tab

The **PTA-MD** tab (shown in Figure 7-6) appears by default and has two frames.

Figure 7-6 PTA-MD Service Profile Window (PTA-MD Tab)



QoS Parameters

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Minimum Cell Rate — the lowest value of the cell rate.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Sub-Interface Parameters

The **Sub-Interface Parameters** define a local interface created (on the NRP) to communicate with the service network.

IP Address — a local IP address that is used while communicating with the service.

Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

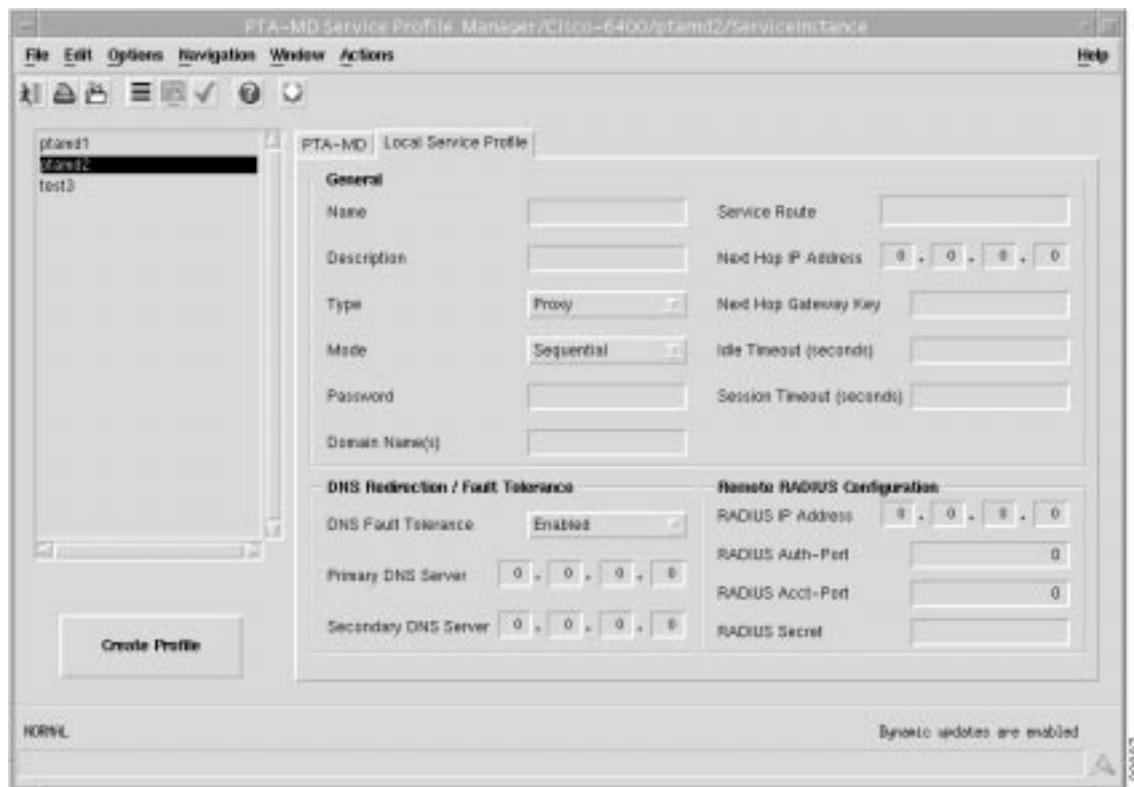
Create Profile

Select **Create Profile** to create a new service profile with the parameters set in the service profile configuration tabs.

Local Service Profile Tab

The **Local Service Profile** tab (shown in Figure 7-7) is divided into three frames.

Figure 7-7 PTA-MD Service Profile Window (Local Service Profile Tab)



General

Name — local service profile name.

Description — allows you to enter a description to help identify the local service profile. The **Description** is optional.

Type — allows you to select **Passthrough** or **Proxy** as the service **Type**. When **Passthrough** is selected, the NRP SSGs local RADIUS server will authenticate subscribers attempting to access the service. The **IP Address** of the local RADIUS server is configured in the Cisco 6400 NRP Management window (**SSG Configuration** tab). Refer to the “Cisco 6400 NRP Management Window” section on page 5-15 for further details. When **Proxy** is selected the remote RADIUS server authenticates the user for access to the service (this is the RADIUS server at the service destination). The **IP Address** of the remote RADIUS server is configured in the **Remote RADIUS Configuration** frame (see the “Remote RADIUS Configuration” section on page 7-35 for further details).

Mode — allows you to select the service **Mode** parameter (**Sequential** or **Concurrent**).

The subscriber is prevented from simultaneously logging on to any other service when the **Sequential** option is selected. The subscriber can simultaneously log on to any other **Concurrent** service when the **Concurrent** option is selected.

Password — required to access this service. The Password should be the same as the service password on Figure 5-16.

Domain Name(s) — multiple Domain Names can be entered. each name must be separated by a semi-colon.

Service Route — this defines the destination network(s). You should enter the IP addresses and subnet mask(s) that make up the destination network(s) separated by a semi-colon.

Next Hop IP Address — the **IP Address** of the next hop in the network.

Next Hop Gateway Key — KEY string to bind next hop IP address to. When the **Next Hop Gateway Key** is not entered the 6400 SCM binds the next hop IP address to the service profile name.

Idle Timeout (seconds) — allows you to set a timeout (in seconds) for the SSG connection object within the local Service profile that a connection object can remain idle. The **Idle Timeout** parameter is optional.

Session Timeout (seconds) — allows you to set a session timeout (in seconds) for the SSG connection object within the local Service profile. The **Session Timeout** parameter is optional.

DNS Redirection/Fault Tolerance

The **DNS Redirection/Fault Tolerance** parameters define the DNS configuration.

DNS Fault Tolerance — can be set to **Enabled** or **Disabled**. When **Enabled**, both the **Primary** and **Secondary DNS Server** IP addresses are available. When **Disabled** only the **Primary DNS Server** IP address is available.

Primary DNS Server — the IP address of the **Primary DNS Server**. No DNS commands are set onto the NRP when the **Primary DNS Server IP Address** is set to **0.0.0.0**.

Secondary DNS Server (for failover) — the IP Address of the failover DNS Server. Available only when the **DNS Failover** parameter is **Enabled**. When the **DNS Failover** parameter is **Enabled** the DNS Server at this IP Address is used when the **Primary DNS Server** fails.

Remote RADIUS Configuration

The **Remote RADIUS Configuration** parameters are only valid for the **Proxy** service type.

RADIUS IP Address — IP Address of the remote RADIUS Server.

RADIUS Auth-Port — defines the port to be used for authentication. Defaults to 1645.

RADIUS Acct-Port — defines the port to be used for accountancy. Defaults to 1646.

RADIUS Secret — unique secret key for the RADIUS Server.

Create Profile

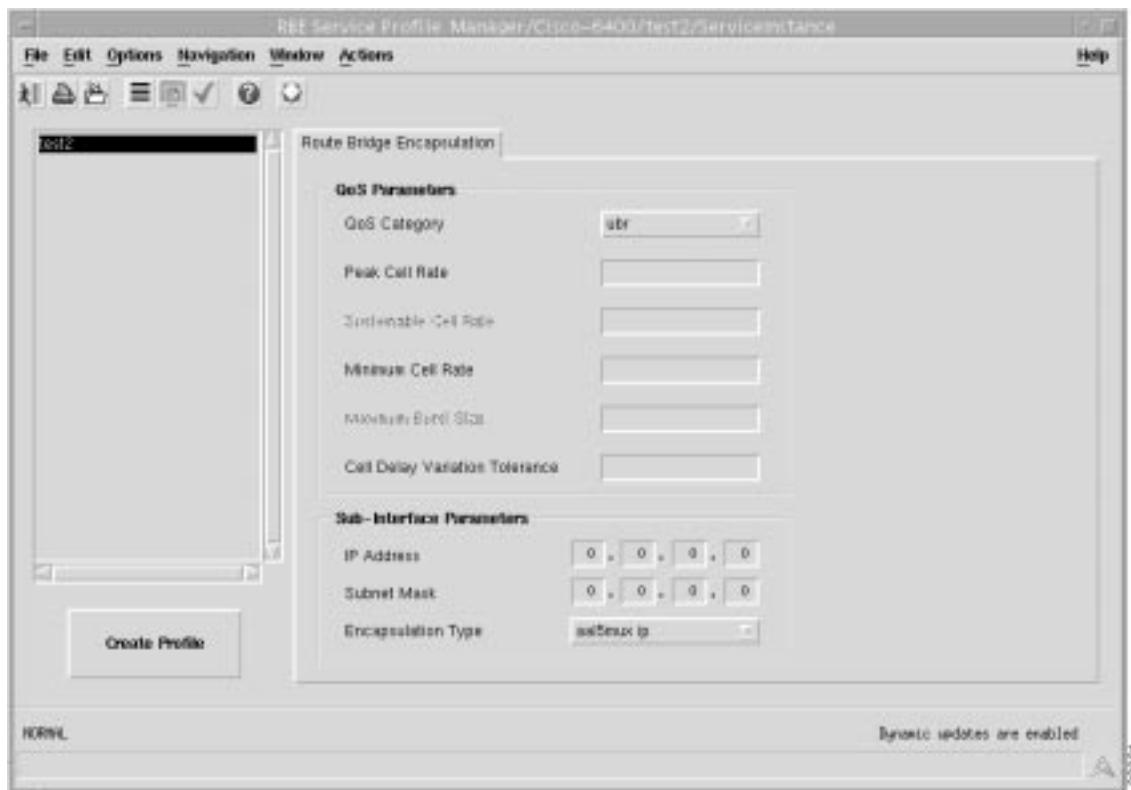
Select **Create Profile** to create a new service profile with the parameters set in the service profile configuration tabs.

RBE Service Profile Window

Select the **Cisco 6400 UAC, Profiles, Configure RBE Profiles** option from any card type (that is NSP, NRP or Line Card). to view the RBE Service Profile Window (Route Bridge Encapsulation Tab).

The **Route Bridge Encapsulation** tab (shown in Figure 7-8) appears by default and has two frames: **QoS Parameters** and **Sub-Interface Parameters**.

Figure 7-8 RBE Service Profile Window (Route Bridge Encapsulation Tab)



QoS Parameters

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Minimum Cell Rate — the lowest value of the cell rate.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Sub-Interface Parameters

The **Sub-Interface Parameters** define a local interface created (on the NRP) to communicate with the service network.

IP Address — a local IP address that is used while communicating with the service.

Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

Create Profile

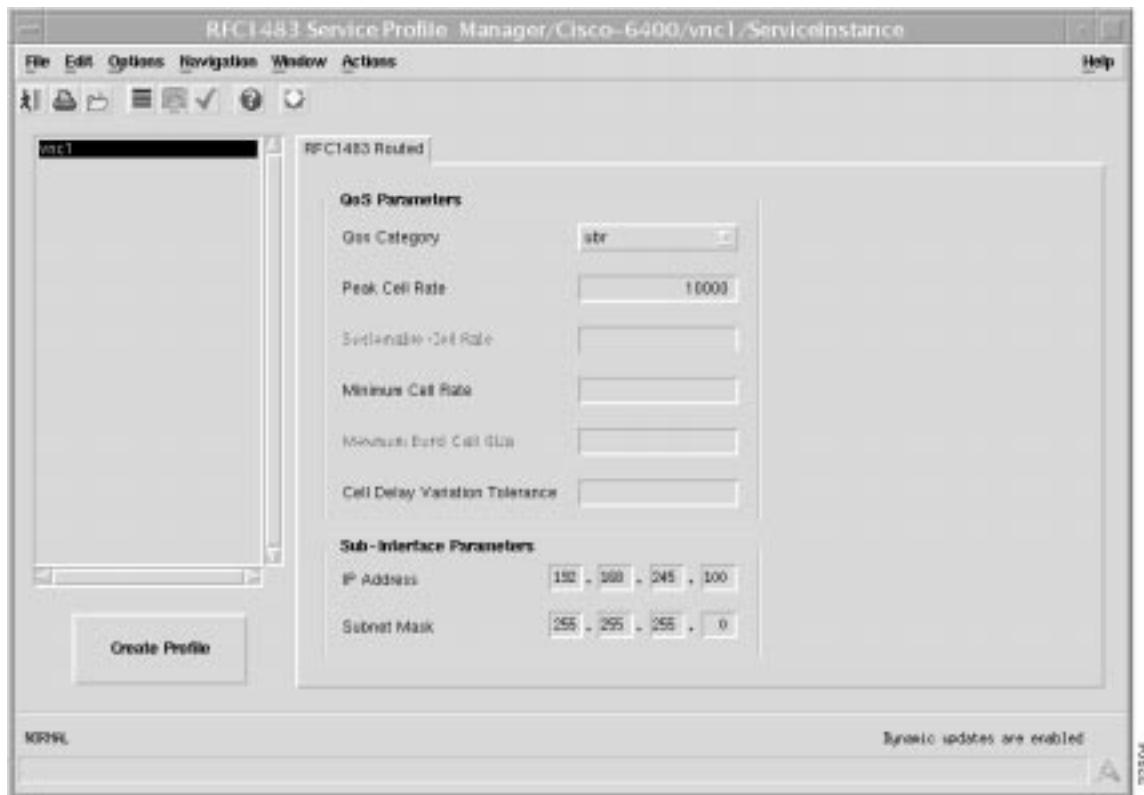
Select **Create Profile** to create a new service profile with the parameters set in the service profile configuration tabs.

RFC1483 Service Profile Window

Select the **Cisco 6400 UAC, Profiles, Configure RFC1483 Routed Profiles** option from any card type (that is NSP, NRP or Line Card) to view the PTA-MD Service Profile Window (RFC1483 Routed Tab).

The RFC1483 Service Profile Window has a single tabbed section: **RFC1483 Routed**. The **RFC1483 Routed** tab (shown in Figure 7-9) appears by default and has two frames: **QoS Parameters** and **Sub-Interface Parameters**.

Figure 7-9 RFC1483 Service Profile Window (RFC1483 Tab)



QoS Parameters

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Minimum Cell Rate — the lowest value of the cell rate.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Sub-Interface Parameters

The **Sub-Interface Parameters** define a local interface created (on the NRP) to communicate with the service network.

IP Address — a local IP address that is used while communicating with the service.

Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Create Profile

Select **Create Profile** to create a new service profile with the parameters set.

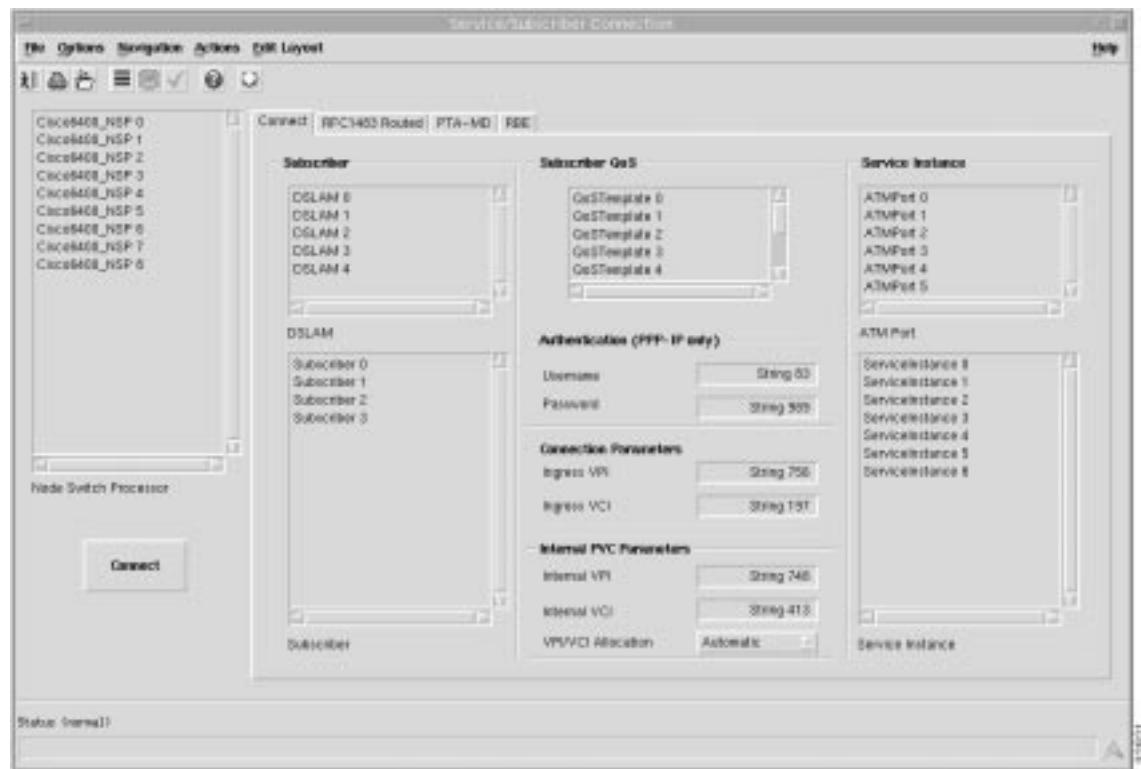
Service/Subscriber Connection Window

The Service/Subscriber Connection window has four tabbed sections: **Connect**, **RFC 1483 Routed**, **PTA-MD**, and **RBE**.

Connect Tab

The **Connect** tab (shown in Figure 7-1) appears by default and has a six frames.

Figure 7-10 Service/Subscriber Connection Window (Connect Tab)



Subscriber

DSLAM

Lists the available DSLAM objects.

Subscriber

Lists the available subscribers.

Subscriber QoS

Lists the available subscriber QoS.

Connect

Select **Connect** to connect the selected subscriber.

RFC1483 Routed Tab

The **RFC1483 Routed** tab (shown in Figure 7-11) appears by default and has a single frame.

Figure 7-11 Service/Subscriber Connection Window (RFC1483 Routed Tab)



Subscriber Parameters

Sub-Interface Parameters

IP Address — a local IP address that is used while communicating with the service.

Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

VC Class Parameters

IP Address — a local IP address that is used while communicating with the service.

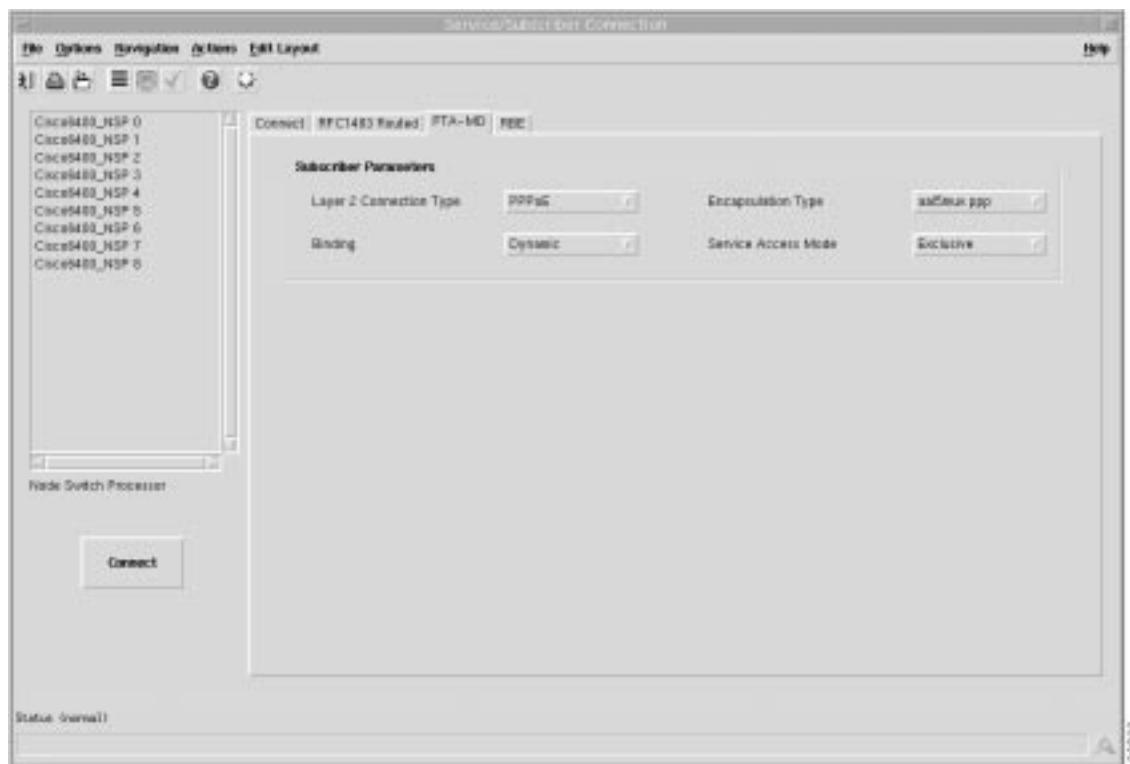
CPE supports ARP

Allows you the ability to switch on the address resolution protocol if the Customer Premises Equipment (CPE) supports ARP. When the CPE does not support ARP then the IP Address with the class parameters are assigned to the subscribers PVC residing within the sub-interface.

PTA-MD Tab

The **PTA-MD** tab (shown in Figure 7-12) appears by default and has a single frame.

Figure 7-12 Service/Subscriber Connection Window (PTA-MD Tab)



Subscriber Parameters

Layer 2 Connection Type — allows you to select the subscriber connection type (**PPPoE** or **PPPoA**).

Binding — allows you to select the binding type (**Static** or **Dynamic**). **Static** binding is only valid when the subscriber connection type is **PPPoA**.

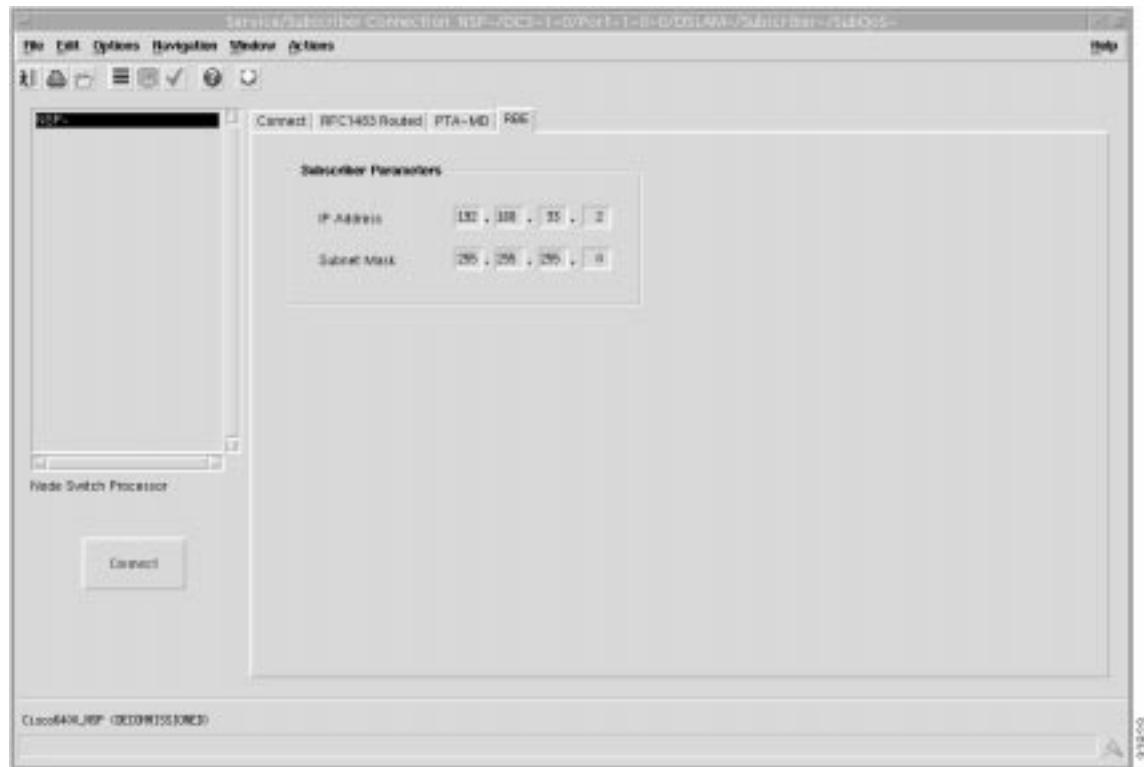
Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop. The following subscriber **Encapsulation Types** are available: **aal5mux ppp** (for PPPoE connection type), and **aaal5mux ppp** or **aal5 ciscopp** for a PPPoA connection type.

Service Access Mode — allows you to set the subscribers exclusivity to **Non-Exclusive** or **Exclusive**. Exclusivity is only a valid option when the subscriber connection type is **PPPoA** and the subscriber binding is **Static**.

RBE Tab

The **RBE** tab (shown in Figure 7-13) appears by default and has a single frames.

Figure 7-13 Service/Subscriber Connection Window (RBE Tab)



Subscriber Parameters

IP Address — a local IP address that is used while communicating with the service.

Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Service Configuration Windows

The Cisco 6400 SCM has four Service Configuration windows: Service Instance Configuration window (for configuring ATM, PPP-IP, PPP-L2TP, Bridged-Bridged, and Bridged-Routed services), RFC1483 Routed Service Configuration window, PTA-MD Service Configuration window, and RBE Service Configuration window.

Note Refer to the tooltips supplied with the SCM software for further descriptions on each of the windows and tabs described. Move the mouse pointer over the appropriate category and the tooltip description appears.

Service Instance Configuration Window

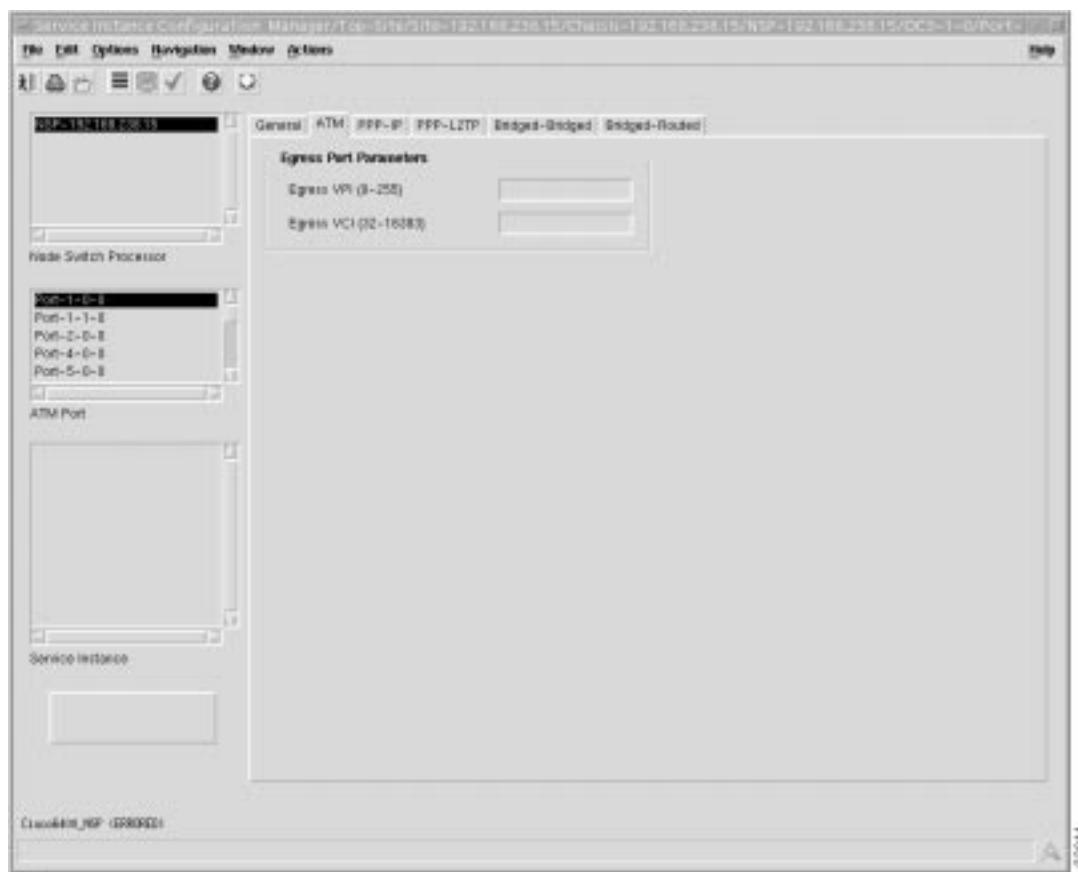
The Service Instance Configuration window (Figure 7-14) is divided into six tabbed sections: **General**, **ATM**, **PPP-IP**, **PPP-L2TP**, **Bridged-Bridged**, and **Bridged-Routed**.

Note Refer to the tooltips supplied with the application software for further descriptions on each of the categories that follow. Move the mouse pointer over the appropriate category and the tooltip description appears.

ATM Tab

The **ATM** tab displays a single **Egress Port Parameters** frame.

Figure 7-14 Service Instance Configuration Window (ATM Tab)



Egress Port Parameters

The physical line card and port details through which the service is accessed.

Egress VPI (0 - 255) — outgoing port VPI value.

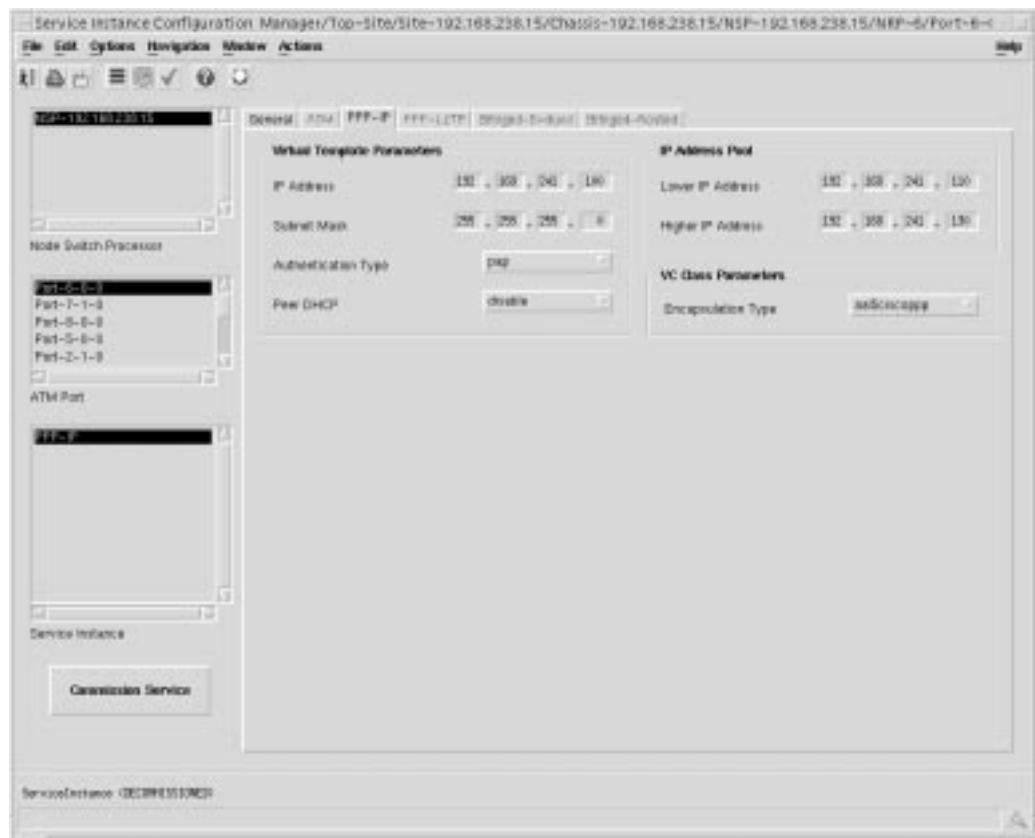
Egress VCI (32 - 16383) — outgoing port VCI value.

Egress Port — The location of the outgoing line card port. For example, **2/1/0**, represents port **0** on the line card in subslot **1** contained in slot **2**.

PPP-IP Tab

The **PPP-IP** tab displays three frames: **Virtual Template Parameters**, **IP Address Pool**, and **VC Class Parameters**.

Figure 7-15 Service Instance Configuration Window (PPP-IP Tab)



Virtual Template Parameters

The Virtual Template Parameters establish incoming subscriber PPP traffic information.

IP Address — the virtual template IP address.

Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Authentication Type — PPP authentication type for any subscribers wishing to connect to this service.

Peer DHCP — when the Peer Dynamic Host Configuration Protocol (DHCP) option is enabled the Cisco 6400 UAC uses DHCP in place of IP pools.

IP Address Pool

Lower IP Address — the lower limit on the IP address pool.

Higher IP Address — the upper limit on the IP address pool.

No IP address pool is configured when the **Higher IP Address** and **Lower IP Address** parameter are left blank.

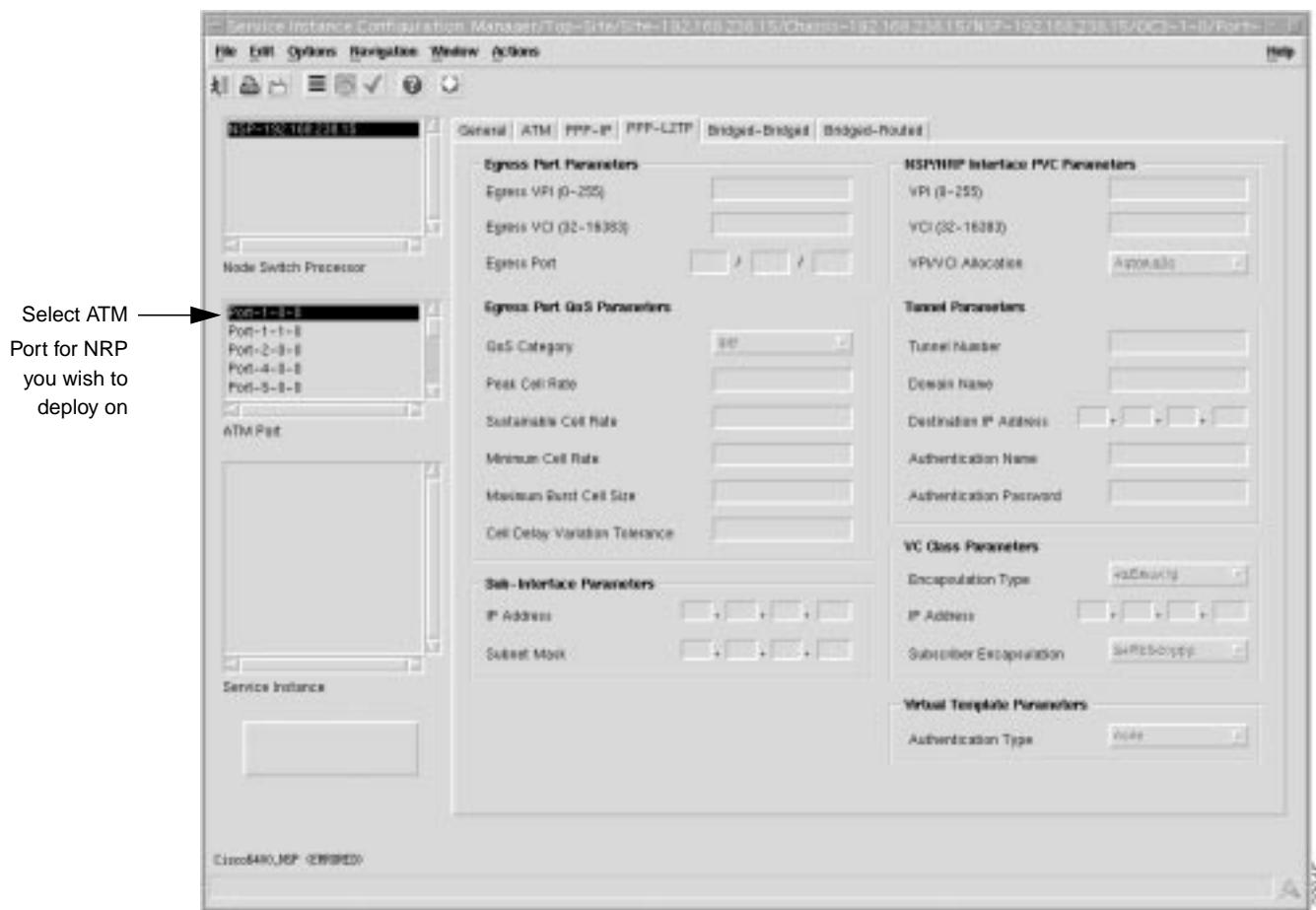
VC Class Parameters

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

PPP-L2TP Tab

The PPP-L2TP tab displays seven frames: **Egress Port Parameters**, **Egress Port QoS Parameters**, **Sub-Interface Parameters**, **NSP/NRP Interface PVC Parameters**, **Tunnel Parameters**, **VC Class Parameters**, and **Virtual Template Parameters**.

Figure 7-16 Service Instance Configuration Window (PPP-L2TP Tab)



Egress Port Parameters

The physical line card and port details through which the service is accessed.

Egress VPI (0 - 255) — outgoing port VPI value.

Egress VCI (32 - 16383) — outgoing port VCI value.

Egress Port — The location of the outgoing line card port. For example, **2/1/0**, represents port **0** on the line card in subslot **1** contained in slot **2**.

Egress Port QoS Parameters

The ATM QoS parameters for the egress port are set according to the marketing offering of the carrier (wholesaler) to the upstream service provider.

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Minimum Cell Rate — the lowest value of the cell rate.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Sub-Interface Parameters

The **Sub-Interface Parameters** define a local interface created (on the NRP) to communicate with the service network.

IP Address — a local IP address that is used while communicating with the service.

Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

NSP/NRP Interface PVC Parameters

The **NSP/NRP Interface PVC Parameters** define the internal PVCs between the NSP and NRP.

VPI (0-255) — internal VPI value.

VCI (32-16383) — internal VCI value.

VPI/VCI Allocation — the **NSP/NRP Interface PVC Parameters (VPI and VCI)** can be completed either manually or automatically by selecting the appropriate option from the **VPI/VCI Allocation** list. When the **Manual** option is selected the **VPI** and **VCI** boxes must be completed by the operator. When the **Automatic** option is selected the values are selected automatically by the 6400 SCM and (the **VPI** and **VCI** boxes are greyed out). We recommend that you keep the **Automatic** option selected.

Tunnel Parameters

The **Tunnel Parameters** define the configuration of the tunnel that is created between the sub-interface and the tunnel destination (service).

Tunnel Number — a unique identifier for the tunnel in the range 1 to 3000.

Domain Name — the domain name to which the tunnel is mapped.

Destination IP Address — the destination IP address of the tunnel.

Authentication Name — the authentication name for the tunnel.

Authentication Password — the authentication password for the tunnel.

VC Class Parameters

The **VC Class Parameters** define the details of the next logical hop in the route to the service network.

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

IP Address — The IP address of the next hop. There should be a router at this address. This point may also be the tunnel termination point.

Subscriber Encapsulation — The method of PPP over ATM encapsulation for any subscribers wishing to connect to this service.

Virtual Template Parameters

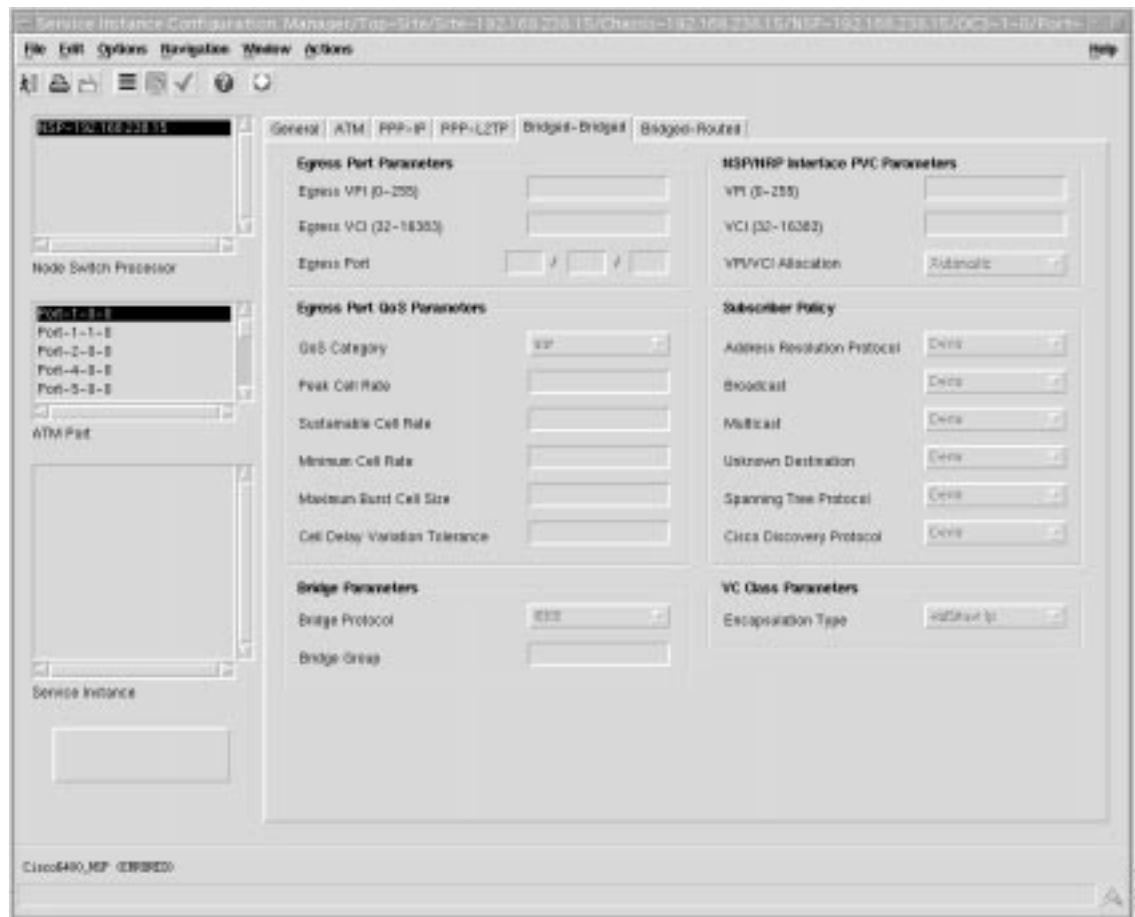
The Virtual Template Parameters establish incoming subscriber PPP traffic information.

Authentication Type — PPP authentication type for any subscribers wishing to connect to this service.

Bridged-Bridged Tab

The **Bridged-Bridged** tab displays six frames: **Egress Port Parameters**, **Egress Port QoS Parameters**, **Bridge Parameters**, **NSP/NRP Interface PVC Parameters**, **Subscriber Policy**, and **VC Class Parameters**.

Figure 7-17 Service Instance Configuration Window (Bridged-Bridged Tab)



Egress Port Parameters

The physical line card and port details through which the service is accessed.

Egress VPI (0 - 255) — outgoing port VPI value.

Egress VCI (32 - 16383) — outgoing port VCI value.

Egress Port — The location of the outgoing line card port. For example, **2/1/0**, represents port **0** on the line card in subslot **1** contained in slot **2**.

Egress Port QoS Parameters

The ATM QoS parameters for the egress port are set according to the marketing offering from the carrier (wholesaler) to the upstream service provider.

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Minimum Cell Rate — the lowest value of the cell rate.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Bridge Parameters

The **Bridge Parameters** define the details of the bridge group to be created, including the bridge virtual interface.

Bridge Protocol — Defines the bridge spanning tree protocol.

Bridge Group — unique identifier for the bridge group to be created in the range 1 to 255.

NSP/NRP Interface PVC Parameters

VPI (0-255) — internal VPI value.

VCI (32-16383) — internal VCI value.

VPI/VCI Allocation — the **NSP/NRP Interface PVC Parameters (VPI and VCI)** can be completed either manually or automatically by selecting the appropriate option from the **VPI/VCI Allocation** list. When the **Manual** option is selected the **VPI** and **VCI** boxes must be completed by the operator. When the **Automatic** option is selected the values are selected automatically by the 6400 SCM and (the **VPI** and **VCI** boxes are greyed out). We recommend that you keep the **Automatic** option selected.

Subscriber Policy

The **Subscriber Policy** defines the types of traffic allowed within the bridge group. Traffic types available are, **Address Resolution Protocol**, **Broadcast**, **Multicast**, **Unknown Destination**, **Spanning Tree Protocol**, and **Cisco Discovery Protocol**. Select **Permit** to allow the traffic type or **Deny** to disallow the traffic type.

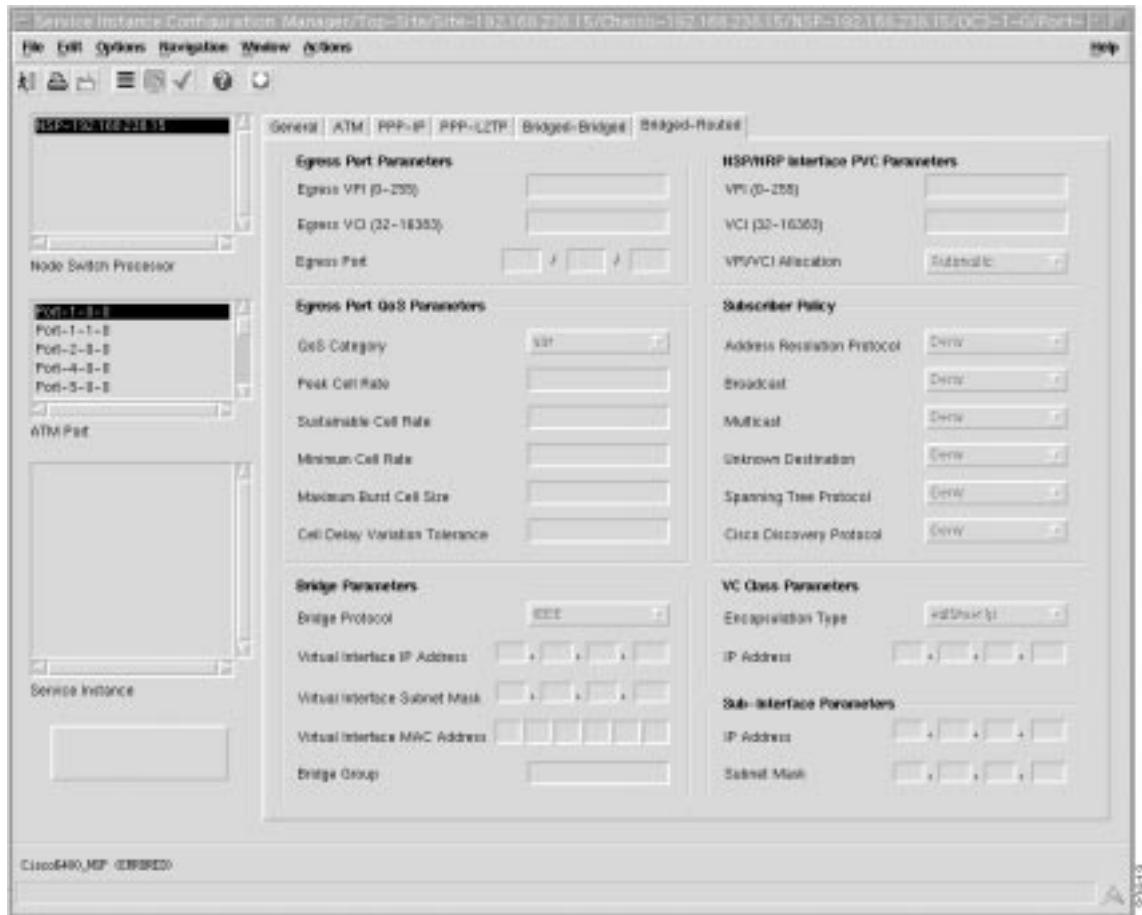
VC Class Parameters

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

Bridged-Routed Tab

The **Bridged-Routed** tab displays seven frames: **Egress Port Parameters**, **Egress Port QoS Parameters**, **Bridge Parameters**, **NSP/NRP Interface PVC Parameters**, **Subscriber Policy**, **VC Class Parameters**, and **Sub-Interface Parameters**.

Figure 7-18 Service Instance Configuration Window (Bridged-Routed Tab)



Egress Port Parameters

The physical line card and port details through which the service is accessed.

Egress VPI (0 - 255) — outgoing port Virtual Path Identifier (VPI) value.

Egress VCI (32 - 16383) — outgoing port Virtual Circuit Identifier (VCI) value.

Egress Port — The location of the outgoing line card port. For example, **2/1/0**, where **2** represents the slot number in the 6400 chassis where the line card is located, **1** is the subslot (lower row) and **0** is the port number.

Egress Port QoS Parameters

The ATM QoS parameters for the egress port are set according to the marketing offering of the carrier (wholesaler) to the upstream service provider.

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Minimum Cell Rate — the lowest value of the cell rate.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Bridge Parameters

The **Bridge Parameters** define the details of the bridge group to be created, including the bridge virtual interface.

Bridge Protocol — Defines the bridge spanning tree protocol.

Virtual Interface IP Address — the IP address of the virtual interface.

Virtual Interface Subnet Mask — the subnet mask of the virtual interface. A subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Virtual Interface MAC Address — The virtual interface Media Access Control (MAC) address.

Bridge Group — unique identifier for the bridge group to be created in the range 1 to 255.

NSP/NRP Interface PVC Parameters

The **NSP/NRP Interface PVC Parameters** define the

VPI (0-255) — internal VPI value.

VCI (32-16383) — internal VCI value.

VPI/VCI Allocation — the **NSP/NRP Interface PVC Parameters (VPI and VCI)** can be completed either manually or automatically by selecting the appropriate option from the **VPI/VCI Allocation** list. When the **Manual** option is selected the **VPI** and **VCI** boxes must be completed by the operator. When the **Automatic** option is selected the values are selected automatically by the 6400 SCM and (the **VPI** and **VCI** boxes are greyed out). We recommend that you keep the **Automatic** option selected.

Subscriber Policy

The **Subscriber Policy** defines the types of traffic allowed within the bridge group. Traffic types available are, **Address Resolution Protocol**, **Broadcast**, **Multicast**, **Unknown Destination**, **Spanning Tree Protocol**, and **Cisco Discovery Protocol**. Select **Permit** to allow the traffic type or **Deny** to disallow the traffic type.

VC Class Parameters

The **VC Class Parameters** define the details of the next logical hop in the route to the service network.

Encapsulation Type — the IP over ATM encapsulation type to be used when forwarding traffic to the next hop.

IP Address — The IP address of the next hop.

Sub-Interface Parameters

The **Sub-Interface Parameters** define a local interface created (on the NRP) to communicate with the service network.

IP Address — a local IP address that is used while communicating with the service.

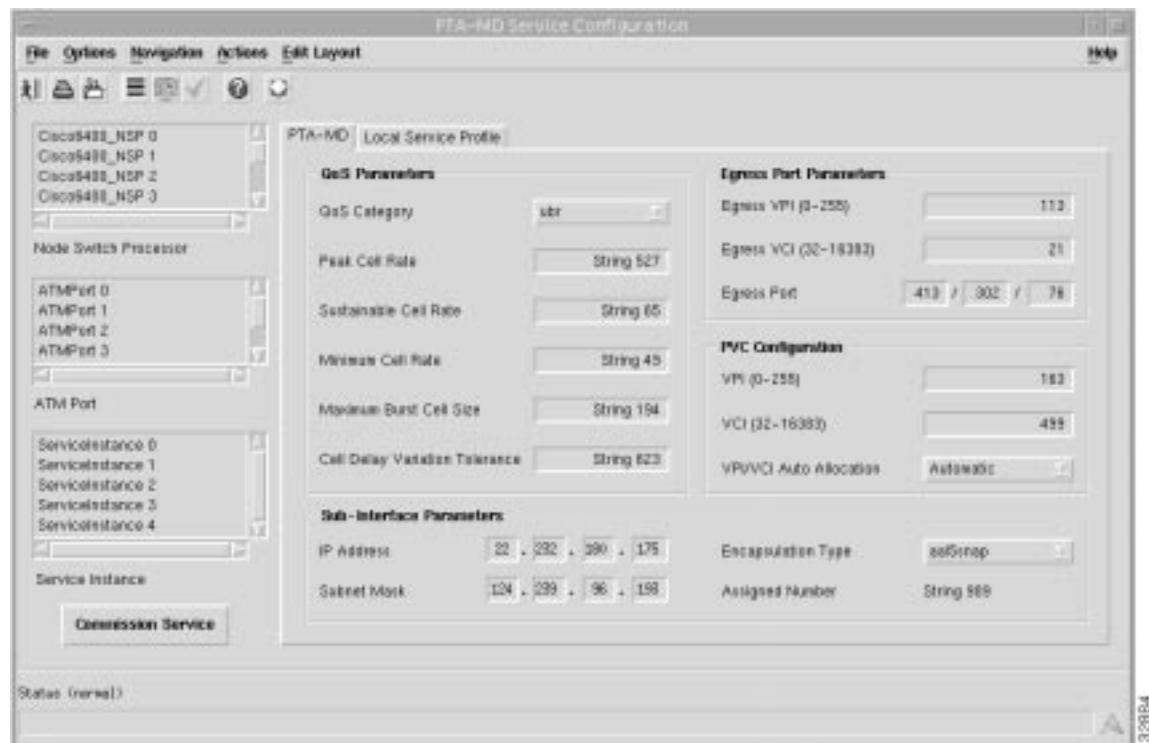
Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

PTA-MD Service Configuration Window

PTA-MD Tab

The **PTA-MD** tab (Figure 7-19) displays four frames: **QoS Parameters**, **Sub-Interface Parameters**, **Egress Port Parameters**, and **PVC Configuration**.

Figure 7-19 PTA-MD Service Configuration Window (PTA-MD Tab)



QoS Parameters

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Minimum Cell Rate — the lowest value of the cell rate.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Sub-Interface Parameters

The **Sub-Interface Parameters** define a local interface created (on the NRP) to communicate with the service network.

IP Address — a local IP address that is used while communicating with the service.

Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

Assigned Number — uniquely identifies the sub-interface for the service uplink.

Egress Port Parameters

The physical line card and port details through which the service is accessed.

Egress VPI (0 - 255) — outgoing port VPI value.

Egress VCI (32 - 16383) — outgoing port VCI value.

Egress Port — The location of the outgoing line card port. For example, **2/1/0**, where **2** represents the slot number in the 6400 chassis where the line card is located, **1** is the subslot (lower row) and **0** is the port number.

PVC Configuration

VPI (0 - 255) — internal VPI value.

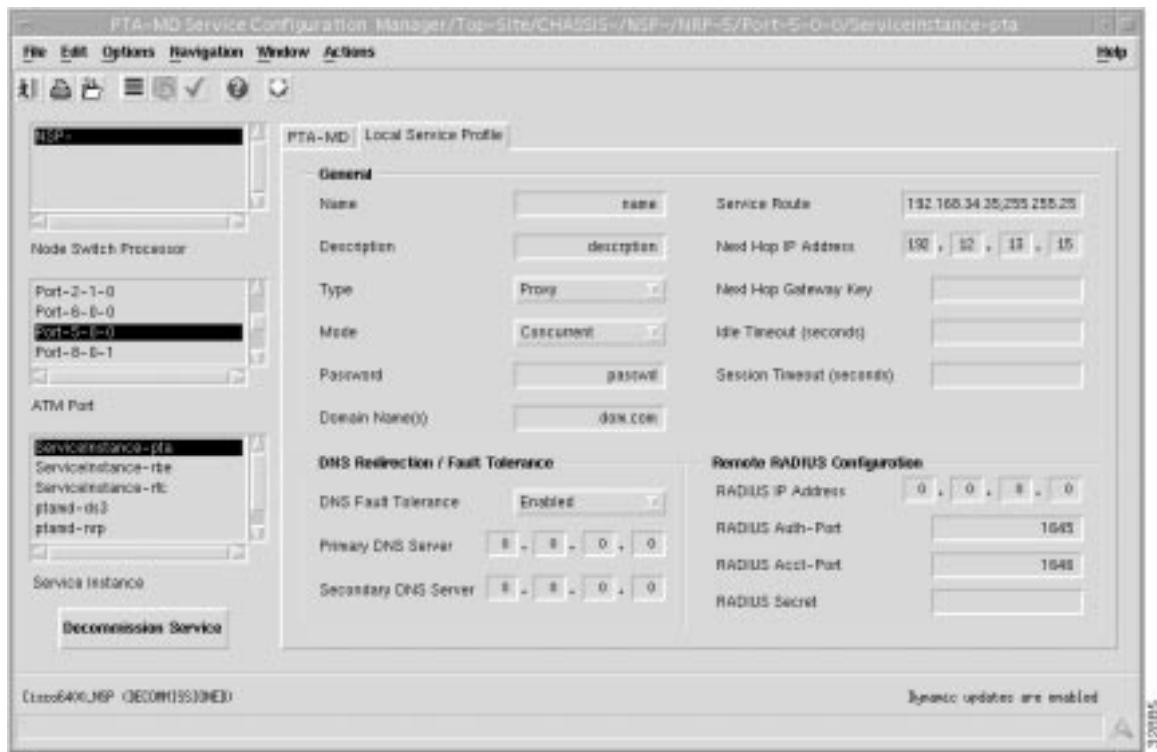
VCI (32 - 16383) — internal VCI value.

VPI/VCI Auto Allocation — the **NSP/NRP Interface PVC Parameters (VPI and VCI)** can be completed either manually or automatically by selecting the appropriate option from the **VPI/VCI Allocation** list. When the **Manual** option is selected the **VPI** and **VCI** boxes must be completed by the operator. When the **Automatic** option is selected the values are selected automatically by the 6400 SCM and (the **VPI** and **VCI** boxes are greyed out). We recommend that you keep the **Automatic** option selected.

Local Service Profile Tab

The **Local Service Profile** tab (shown in Figure 7-20) displays the attributes that need to be configured to set up the PTA-MD local service profile on the NRP-Service Selection Gateway (SSG).

Figure 7-20 PTA-MD Service Configuration Window (Local Service Profile Tab)



The **Local Service Profile** tab displays three frames: **General**, **DNS Configuration**, and **Remote RADIUS Configuration**.

General

Name — local service profile name.

Description — allows you to enter a description to help identify the local service profile. The **Description** is optional.

Type — allows you to select **Passthrough** or **Proxy** as the service **Type**. When **Passthrough** is selected, the NRP SSGs local RADIUS server authenticates the service. The **IP Address** of the local RADIUS server is configured in the Cisco 6400 NRP Management window (**SSG Configuration** tab). Refer to the “Cisco 6400 NRP Management Window” section on page 5-15 for further details. When **Proxy** is selected the remote RADIUS server authenticates the user for access to the service (this is the RADIUS server at the service destination). The **IP Address** of the remote RADIUS server is configured in the **Remote RADIUS Configuration** frame (see the “Remote RADIUS Configuration” section on page 7-35 for further details).

Mode — allows you to select the service **Mode** parameter. The service **Mode** is configurable within the local service profile for security reasons (that is, from the service provider’s point of view if a subscriber is logged on to this service).

The SCM allows the ability to specify whether the service can be accessed concurrently with other services or not by configuring a Service Profile's Service Mode as **Sequential** or **Concurrent**. The subscriber is prevented from simultaneously logging on to any other service when the **Sequential** option is selected. The subscriber can simultaneously log on to any other **Concurrent** service when the **Concurrent** option is selected.

The SCM allows the ability to specify whether the service can be accessed concurrently with other services or not by configuring a Service Profile's Service Mode as **Sequential** or **Concurrent**. The subscriber is prevented from simultaneously logging on to any other service when the **Sequential** option is selected. The subscriber can simultaneously log on to any other **Concurrent** service when the **Concurrent** option is selected.

Password — required to access this service. The **Password** should be the same as the service password on Figure 5-16.

Domain Name(s) — multiple Domain Names can be entered. each name must be separated by a semi-colon.

Service Route — The SCM provides the ability to configure the networks that make up the service by defining Service Routes. The SCM allows multiple service routes to be specified.

Next Hop IP Address — the **IP Address** of the next hop in the network. The SCM allows you to configure the next hop gateway IP address for the service. The SCM binds the local service profile to the next hop gateway IP address or will bind the NHG key to the next hop gateway IP address depending upon the selection made.

Next Hop Gateway Key — KEY string to bind next hop IP address to. When the **Next Hop Gateway Key** is not entered the 6400 SCM binds the next hop IP address to the service profile name.

Idle Timeout (seconds) — allows you to set a timeout (in seconds) for the SSG connection object within the local Service profile that a connection object can remain idle. The **Idle Timeout** parameter is optional.

Session Timeout (seconds) — allows you to set a session timeout (in seconds) for the SSG connection object within the local Service profile. The **Session Timeout** parameter is optional.

DNS Redirection/Fault Tolerance

The **DNS Redirection/Fault Tolerance** parameters define the DNS configuration.

DNS Fault Tolerance — can be set to **Enabled** or **Disabled**. When **Enabled**, both the **Primary** and **Secondary DNS Server** IP addresses are available. When **Disabled** only the **Primary DNS Server** IP address is available.

Primary DNS Server — the IP address of the **Primary DNS Server**. No DNS commands are set onto the NRP when the **Primary DNS Server IP Address** is set to **0.0.0.0**.

Secondary DNS Server (for failover) — the IP Address of the failover DNS Server. Available only when the **DNS Failover** parameter is **Enabled**. When the **DNS Failover** parameter is **Enabled** the DNS Server at this IP Address is used when the **Primary DNS Server** fails.

Remote RADIUS Configuration

The **Remote RADIUS Configuration** parameters are only valid for the **Proxy** service type.

RADIUS IP Address — IP Address of the remote RADIUS Server.

RADIUS Auth-Port — defines the port to be used for authentication. Defaults to 1645.

RADIUS Acct-Port — defines the port to be used for accountancy. Defaults to 1646.

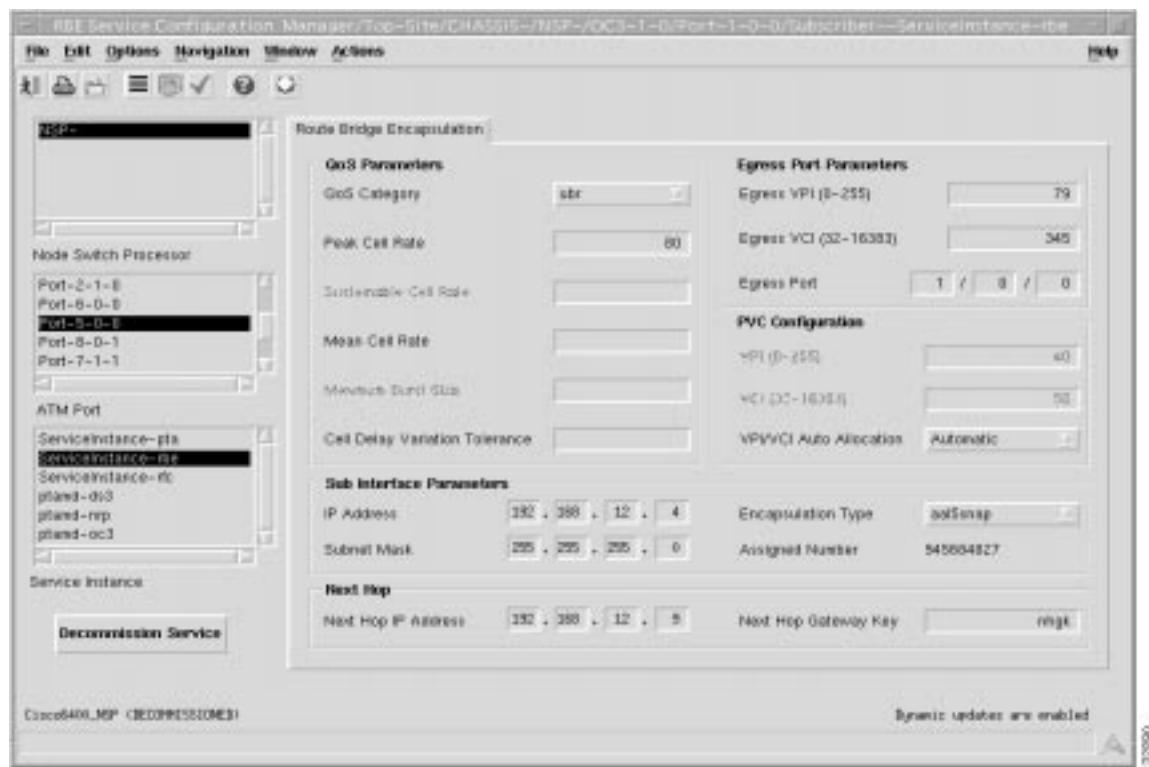
RADIUS Secret — unique secret key for the RADIUS Server.

Route Bridge Encapsulation (RBE) Service Configuration Window

Route Bridge Encapsulation Tab

The **Route Bridge Encapsulation** tab (Figure 7-21) displays four frames: **QoS Parameters**, **Sub Interface Parameters**, **Egress Port Parameters**, and **PVC Configuration**.

Figure 7-21 RBE Service Configuration Window (Route Bridge Encapsulation Tab)



QoS Parameters

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Mean Cell Rate — the mean cell rate value.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Sub-Interface Parameters

The **Sub-Interface Parameters** define a local interface created (on the NRP) to communicate with the service network.

IP Address — a local IP address that is used while communicating with the service.

Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

Assigned Number — uniquely identifies the sub-interface for the service uplink.

Egress Port Parameters

The physical line card and port details through which the service is accessed.

Egress VPI (0 - 255) — outgoing port Virtual Path Identifier (VPI) value.

Egress VCI (32 - 16383) — outgoing port Virtual Circuit Identifier (VCI) value.

Egress Port — The location of the outgoing line card port. For example, **2/1/0**, where **2** represents the slot number in the 6400 chassis where the line card is located, **1** is the subslot (lower row) and **0** is the port number.

PVC Configuration

VPI (0 - 255) — internal VPI value.

VCI (32 - 16383) — internal VCI value.

VPI/VCI Auto Allocation — the **NSP/NRP Interface PVC Parameters (VPI and VCI)** can be completed either manually or automatically by selecting the appropriate option from the **VPI/VCI Allocation** list. When the **Manual** option is selected the **VPI** and **VCI** boxes must be completed by the operator. When the **Automatic** option is selected the values are selected automatically by the 6400 SCM and (the **VPI** and **VCI** boxes are greyed out). We recommend that you keep the **Automatic** option selected.

Next Hop

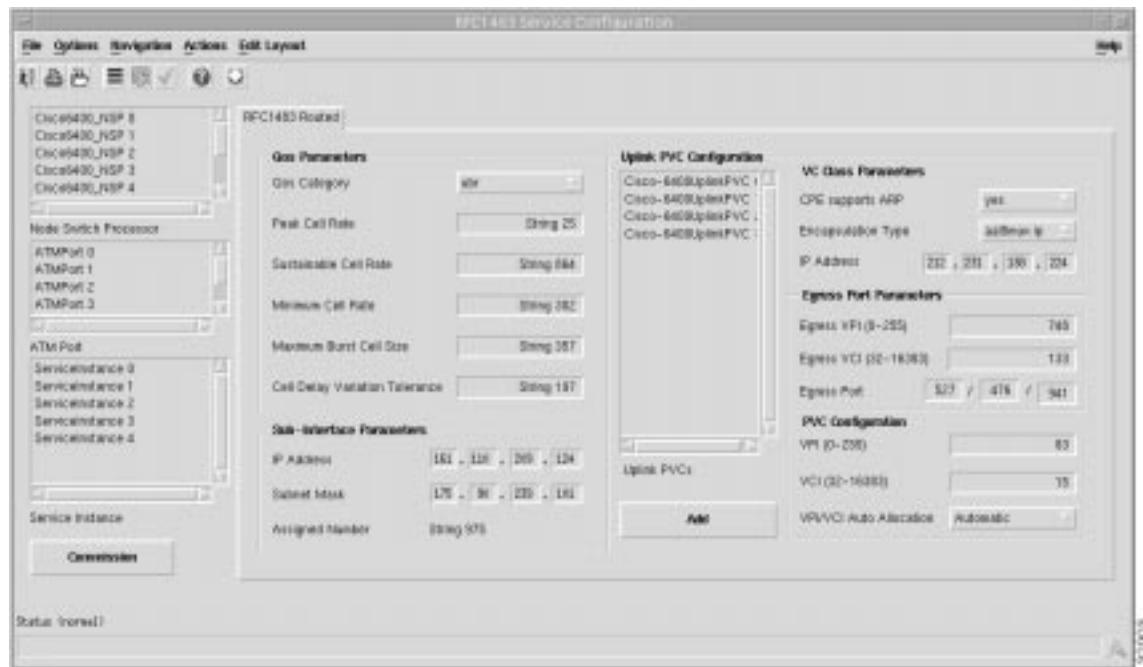
Next Hop IP Address — the **IP Address** of the next hop in the network. The SCM allows you to configure the next hop gateway IP address for the service. The SCM binds the local service profile to the next hop gateway IP address or will bind the NHG key to the next hop gateway IP address depending upon the selection made.

Next Hop Gateway Key — KEY string to bind next hop IP address to. When the **Next Hop Gateway Key** is not entered the 6400 SCM binds the next hop IP address to the service profile name.

RFC1483 Service Configuration Window

The **RFC1483** tab (Figure 7-22) displays three frames: **QoS Parameters**, **Sub Interface Parameters**, and **Uplink PVC Configuration**.

Figure 7-22 RFC1483 Service Configuration Window (RFC1483 Routed Tab)



RFC1483 Routed Tab

QoS Parameters

QoS Category — ATM Quality of Service.

Note Inapplicable parameters are greyed out when a **QoS Category** is selected. Values are not required for all applicable parameters. For example, values can be entered for the **Peak Cell Rate**, **Minimum Cell Rate**, and **Cell Delay Variation Tolerance** parameters when **ubr** is the selected **QoS Category** (but values may not be required for all three parameters).

Choose values appropriate to your selected QoS category for the following options:

Peak Cell Rate — the maximum value that the cell rate will reach.

Sustainable Cell Rate — the cell rate that the network must sustain.

Minimum Cell Rate — the lowest value of the cell rate.

Maximum Burst Cell Size — the maximum number of cells per burst.

Cell Delay Variation Tolerance — the delay variation that the data can withstand without degradation.

Sub-Interface Parameters

The **Sub-Interface Parameters** define a local interface created (on the NRP) to communicate with the service network.

IP Address — a local IP address that is used while communicating with the service.

Subnet Mask — a subnet mask is a 32 bit number used to separate the network and host sections of an IP address.

Assigned Number — uniquely identifies the sub-interface for the service uplink.

Uplink PVC Configuration Frame

Uplink PVCs — the **Uplink PVCs** configuration frame allows you to view all PVCs that reside within the uplink sub-interface.

VC Class Parameters

The **VC Class Parameters** define the details of the next logical hop in the route to the service network.

CPE Supports ARP — select **Yes** to disable the **IP Address** (in the **VC Class Parameters** frame) or select **No** to enable the **IP Address** (in the **VC Class Parameters** frame).

Encapsulation Type — the IP over ATM encapsulation type used when forwarding traffic to the next hop.

IP Address — The IP address of the PVC.

Egress Port Parameters

The physical line card and port details through which the service is accessed.

Egress VPI (0 - 255) — outgoing port VPI value.

Egress VCI (32 - 16383) — outgoing port VCI value.

Egress Port — The location of the outgoing line card port. For example, **2/1/0**, represents port **0** on the line card in subslot **1** contained in slot **2**.

PVC Configuration

VPI (0 - 255) — internal VPI value.

VCI (32 - 16383) — internal VCI value.

VPI/VCI Auto Allocation — the **NSP/NRP Interface PVC Parameters** (**VPI** and **VCI**) can be completed manually or automatically by selecting the appropriate option from the **VPI/VCI Allocation** list. When the **Manual** option is selected the **VPI** and **VCI** boxes must be completed by the operator. When the **Automatic** option is selected the values are selected automatically by the 6400 SCM and (the **VPI** and **VCI** boxes are greyed out). We recommend that you keep the **Automatic** option selected.

Add

Select the **Add** button to add the **Uplink PVC Configuration** parameters to the **Uplink PVCs** list. Enter an **UPLink PVC Object** name in the pop-up window the appears. Select the **OK** button. The new **UPLink PVC Object** appears in the **Uplink PVCs** list.

Commission

Select **Commission** to commission the service.