



# RAN Backhaul Provisioning

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RAN Backhaul APIs in Cisco Prime Provisioning includes provisioning support for creating TDM Circuit Emulation (TDM-CEM) and ATM Pseudowire services. These can be added on top of an existing Prime Provisioning EVC infrastructure.

The TDM-CEM feature supports provisioning of SAToP PW3 and CESoPSN PWE3 services whereas the ATM feature supports provisioning of ATM IMA VCC PWE3 and ATM IMA PVP PWE3 services.

This chapter describes TDM-CEM and ATM Pseudowire service concepts and the steps required to provision services using Prime Provisioning APIs. A provisioning example includes all steps from creating the inventory to auditing the service deployment.

For a detailed description of supported TDM-CEM and ATM Pseudowire features, policy attribute definitions, GUI implementation, and other information, see the [Cisco Prime Provisioning 7.0 User Guide](#).

This chapter contains the following sections:

- [Policy Types, page 11-1](#)
- [TDM-CEM Service Definitions, page 11-3](#)
- [TDM-CEM Service Requests, page 11-8](#)
- [TDM-CEM End-to-End Provisioning Process, page 11-27](#)
- [ATM Pseudowire Service Definitions, page 11-34](#)
- [ATM Pseudowire Service Requests, page 11-37](#)
- [ATM Pseudowire End-to-End Provisioning Process, page 11-54](#)

## Policy Types

The following policy types are supported for RAN Backhaul in Prime Provisioning:

- **Circuit-Emulation-TDM** – Circuit Emulation (TDM) services for RAN backhaul can be defined using this policy type.
- **ATM** – ATM services for RAN backhaul can be defined using this policy type.

For the list of RAN Backhaul Provisioning Attributes, refer to [Table 11-1](#):

**Table 11-1 RAN Backhaul Attributes**

Attributes	Description
RanServiceType	Specifies RAN backhaul service type.
ContainerType	Specifies container type.
UseCemClass	Set as True to use CEMClass.
CemClassName	Specifies CEM class name.
Terminal	Specifies pseudowire end points.
CemGroupId	CEM Group Id under the controller creates a CEM interface that has the same slot/subslot/port information as the controller. The number it can take depends on E1 or T1 line.
TimeSlot	Specifies the time slot value/range for configuring a RAN service. Range is 1-24 for T1 controllers and 1-31 for E1 Controllers.
ClockSourceType	Specifies the type of clock source. May be INTERNAL or LINE.
AugMappingType	A true value configures the administrative unit group mapping when SDH framing is used.
ChannelModeType	Specifies the channel mode type for a RAN service. If the framing type is SDH and Aug Mapping is Au-3, use c-11 as the ChannelModeType, if the framing type is SDH and Aug Mapping is Au-4, use c-12 as the ChannelModeType, and if the framing type is SONET, use sts-1 as ChannelModeType.
Tug2Number	Specifies the tug-2 number. A value from 1 to 3.
Tug3Number	Specifies the tug-3 number. A value from 1 to 7.
E1Number	Specifies the T1 Line Number. A value from 1 to 3.
MCPTTimer1	First MCPT timer value in microseconds. A number between 500 and 10000.
MCPTTimer2	Second MCPT timer value in microseconds. A number between 1000 and 10000.
MCPTTimer3	Third MCPT timer value in microseconds. A number between 1500 and 10000.
MCPTTimerToUse	Indicates which MCPT timer to use for ATM services.
AutoPickElineName	Specifies the auto-pick capability for the Eline name within the service. If the value for this attribute is set to true, then Prime Provisioning automatically created the Eline name, and if this attribute is set to false, the Eline name needs to be specified manually in the service. This is applicable only for IOS XR devices.
L2VpnGrpName	Specifies the L2VPN Group Name. Note that this would be set for IOS XR devices only.
Width	Configures the number of AU streams. This is applicable only for IOS XR devices.

# TDM-CEM Service Definitions

A TDM-CEM service definition specifies the core type, policy subtype, and the attributes common to all EVC attachment circuits. This section lists the supported service definitions, service orders, and policies and includes corresponding examples.

## CEM Class Inventory Operations

Prime Provisioning supports the creation of following CEM Class features:

- Creating
- Modifying
- Deleting
- Viewing

XML file in [Cisco Prime Provisioning API 6.8 Programmer Reference: CreateCEMClass.xml](#)

```
<?xml version="1.0" encoding="utf-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ns0="http://www.cisco.com/cim-cx/2.0" xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <ns0:message id="87855" timestamp="2002-12-13T14:55:38.885Z"
sessiontoken="p36bttjwyl" />
  </soapenv:Header>
  <soapenv:Body>
    <ns1:createInstance>
      <objectPath xsi:type="ns1:CIMObjectPath">
        <className xsi:type="xsd:string">CemClass</className>
        <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Name</name>
            <value xsi:type="xsd:string">sampleNbi_cemclass</value>
          </item>
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Description</name>
            <value xsi:type="xsd:string">Sampledescription</value>
          </item>
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">DejitterBuffer</name>
            <value xsi:type="xsd:string">250</value>
          </item>
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">PayloadSize</name>
            <value xsi:type="xsd:string">400</value>
          </item>
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">IdlePattern</name>
            <value xsi:type="xsd:string">10</value>
          </item>
        </properties>
      </objectPath>
    </ns1:createInstance>
  </soapenv:Body>
</soapenv:Envelope>
```

## Supported Service Definitions and Service Orders

Prime Provisioning supports the following TDM-CEM features:

- Creating:
  - TDM-CEM Service Definition/Policy
  - TDM-CEM Service Order/Request
- Modifying:
  - TDM-CEM Service Definition/Policy
  - TDM-CEM Service Order/Request
- Deleting:
  - TDM-CEM Service Definition/Policy
  - TDM-CEM Service Order/Request
- Viewing:
  - TDM-CEM Service Definition/Policy
  - TDM-CEM Service Order/Request

## Policy Examples

The following constitute XML policy examples for TDM-CEM:

- [Creating a TDM-CEM \(CESoPN\) Policy, page 11-4](#)
- [Creating a TDM-CEM \(SAToP\) Policy, page 11-6](#)
- [Creating RAN Backhaul TDM-CEM Policy with IOS XR Support, page 11-8](#)

### Creating a TDM-CEM (CESoPN) Policy

In this example, a TDM-CEM (CESoPN) policy is created.

XML file in [Cisco Prime Provisioning API 6.8 Programmer Reference](#):

CreateTDM\_CEM\_CESoPN\_Policy.xml

The relevant attributes that need to be set for this policy are highlighted in bold in the example. They are **RanServiceType**, which in the example is set to **CESoPN\_TIMESLOT**, **ContainerType**, which in the example is set to **E1**, and **UseCemClass**, which in the example is set to **true**.

```
<?xml version="1.0" encoding="UTF-8" ?>
<soapenv:Envelope
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:ns0="http://www.cisco.com/cim-cx/2.0"
  xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <ns0:message id="87855" timestamp="2002-12-13T14:55:38.885Z"
```

```

        sessiontoken="p36bttjwy1"/>
    </soapenv:Header>
    <soapenv:Body>
        <ns1:createInstance>
            <objectPath xsi:type="ns1:CIMObjectPath">
                <className xsi:type="xsd:string">ServiceDefinition</className>
                <properties xsi:type="ns1:CIMPropertyList"
                    soapenc:arrayType="ns1:CIMProperty[]">
                    <item xsi:type="ns1:CIMProperty">
                        <name xsi:type="xsd:string">Name</name>
                        <value xsi:type="xsd:string">TDM_CES</value>
                    </item>
                    <item xsi:type="ns1:CIMProperty">
                        <name xsi:type="xsd:string">Type</name>
                        <value xsi:type="xsd:string">EvcIpran</value>
                    </item>
                </properties>
            <objectPath xsi:type="ns1:CIMObjectPath">
                <className xsi:type="xsd:string">ServiceDefinitionDetails</className>
                <properties xsi:type="ns1:CIMPropertyList"
                    soapenc:arrayType="ns1:CIMProperty[]">
                    <item xsi:type="ns1:CIMProperty">
                        <name xsi:type="xsd:string">SubType</name>
                        <value xsi:type="xsd:string">Evc</value>
                    </item>
                    <item xsi:type="ns1:CIMProperty">
                        <name xsi:type="xsd:string">AccessType</name>
                        <value xsi:type="xsd:string">TDM_CEM</value>
                    </item>
                    <item xsi:type="ns1:CIMProperty">
                        <name xsi:type="xsd:string">RanServiceType</name>
                        <value xsi:type="xsd:string">CESoPN_TIMESLOT</value>
                    </item>
                    <item xsi:type="ns1:CIMProperty">
                        <name xsi:type="xsd:string">AutopickVCID</name>
                        <value xsi:type="xsd:string">>true</value>
                        <qualifier xsi:type="ns1:CIMQualifier">
                            <name xsi:type="xsd:string">editable</name>
                            <value xsi:type="xsd:string">>true</value>
                        </qualifier>
                    </item>
                    <item xsi:type="ns1:CIMProperty">
                        <name xsi:type="xsd:string">EnablePWRedundancy</name>
                        <value xsi:type="xsd:string">>false</value>
                        <qualifier xsi:type="ns1:CIMQualifier">
                            <name xsi:type="xsd:string">editable</name>
                            <value xsi:type="xsd:string">>true</value>
                        </qualifier>
                    </item>
                    <item xsi:type="ns1:CIMProperty">
                        <name xsi:type="xsd:string">TransportType</name>
                        <value xsi:type="xsd:string">PSEUDOWIRE</value>
                    </item>
                    <item xsi:type="ns1:CIMProperty">
                        <name xsi:type="xsd:string">ContainerType</name>
                        <value xsi:type="xsd:string">E1</value>
                        <qualifier xsi:type="ns1:CIMQualifier">
                            <name xsi:type="xsd:string">editable</name>
                            <value xsi:type="xsd:string">>true</value>
                        </qualifier>
                    </item>
                    <item xsi:type="ns1:CIMProperty">
                        <name xsi:type="xsd:string">UseCemClass</name>
                        <value xsi:type="xsd:string">>true</value>
                    </item>
                </properties>
            </objectPath>
        </ns1:createInstance>
    </soapenv:Body>
</soapenv:Envelope>

```

```

        <qualifier xsi:type="ns1:CIMQualifier">
          <name xsi:type="xsd:string">editable</name>
          <value xsi:type="xsd:string">>true</value>
        </qualifier>
      </item>
    </properties>
  </objectPath>
</objectPath>
</ns1:createInstance>
</soapenv:Body>
</soapenv:Envelope>

```

## Creating a TDM-CEM (SAToP) Policy

In this example, a TDM-CEM (SAToP) policy is created.

XML file in [Cisco Prime Provisioning API 6.8 Programmer Reference](#):

CreateTDM\_CEM\_SAToP\_Policy.xml

The relevant attributes that need to be set for this policy are highlighted in bold in the example. They are **RanServiceType**, which in the example is set to **SAToP\_UNFRAMED**, **ContainerType**, which in the example is set to **E1**, and **UseCemClass**, which in the example is set to **true**.

```

<?xml version="1.0" encoding="UTF-8" ?>
<soapenv:Envelope
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:ns0="http://www.cisco.com/cim-cx/2.0"
  xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <ns0:message id="87855" timestamp="2002-12-13T14:55:38.885Z"
      sessiontoken="p36bttjwy1" />
  </soapenv:Header>
  <soapenv:Body>
    <ns1:createInstance>
      <objectPath xsi:type="ns1:CIMObjectPath">
        <className xsi:type="xsd:string">ServiceDefinition</className>
        <properties xsi:type="ns1:CIMPropertyList"
          soapenc:arrayType="ns1:CIMProperty[]">
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Name</name>
            <value xsi:type="xsd:string">ipran_nbi</value>
          </item>
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Type</name>
            <value xsi:type="xsd:string">EvcIpran</value>
          </item>
        </properties>
      <objectPath xsi:type="ns1:CIMObjectPath">
        <className xsi:type="xsd:string">ServiceDefinitionDetails</className>
        <properties xsi:type="ns1:CIMPropertyList"
          soapenc:arrayType="ns1:CIMProperty[]">
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">SubType</name>
            <value xsi:type="xsd:string">Evc</value>
          </item>
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">AccessType</name>

```

```

        <value xsi:type="xsd:string">TDM_CEM</value>
    </item>

    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">RanServiceType</name>
        <value xsi:type="xsd:string">SAToP_UNFRAMED</value>
    </item >

    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">AutopickVCId</name>
        <value xsi:type="xsd:string">>true</value>
        <qualifier xsi:type="ns1:CIMQualifier">
            <name xsi:type="xsd:string">editable</name>
            <value xsi:type="xsd:string">>true</value>
        </qualifier>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">EnablePWRedundancy</name>
        <value xsi:type="xsd:string">>true</value>
        <qualifier xsi:type="ns1:CIMQualifier">
            <name xsi:type="xsd:string">editable</name>
            <value xsi:type="xsd:string">>true</value>
        </qualifier>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">TransportType</name>
        <value xsi:type="xsd:string">PSEUDOWIRE</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">ContainerType</name>
        <value xsi:type="xsd:string">E1</value>
        <qualifier xsi:type="ns1:CIMQualifier">
            <name xsi:type="xsd:string">editable</name>
            <value xsi:type="xsd:string">>true</value>
        </qualifier>
    </item>

        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">UseCemClass</name>
            <value xsi:type="xsd:string">>true</value>
            <qualifier xsi:type="ns1:CIMQualifier">
                <name xsi:type="xsd:string">editable</name>
                <value xsi:type="xsd:string">>true</value>
            </qualifier>
        </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">CemClassId</name>
        <value xsi:type="xsd:string">6</value>
        <qualifier xsi:type="ns1:CIMQualifier">
            <name xsi:type="xsd:string">editable</name>
            <value xsi:type="xsd:string">>true</value>
        </qualifier>
    </item>
</properties>
</objectPath>
</objectPath>
</ns1:createInstance>
</soapenv:Body>
</soapenv:Envelope>

```

## Creating RAN Backhaul TDM-CEM Policy with IOS XR Support

The following example shows a partial list of properties that can be specified to enable TDM-CEM support for IOS XR devices. These attributes should be added under **ServiceDefinitionDetails**. These attributes could be used for both the SAToP and the CESoPN type.

If you want to set the **AutoPickElineName** attribute to false in the request XML, add the following item manually in the service request (instead of the **AutoPickElineName** tag):

```
<item xsi:type="ns1:CIMProperty">
<name xsi:type="xsd:string">ElineName</name>
<value xsi:type="xsd:string">LocalSRTest1</value>
</item>
```

Example: Create\_IPRAN\_TDM\_Policy\_IOS\_XR.xml (excerpt)

```
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">ServiceDefinitionDetails</className>
  <properties xsi:type="ns1:CIMPropertyList"
    soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">L2VpnGrpName</name>
      <value xsi:type="xsd:string">ISC</value>
    </item>

    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AutoPickElineName</name>
      <value xsi:type="xsd:string">true</value>
      <qualifier xsi:type="ns1:CIMQualifier">
        <name xsi:type="xsd:string">editable</name>
        <value xsi:type="xsd:string">true</value>
      </qualifier>
    </item>
  </properties>
</objectPath>
```

### Related APIs

- ModifyTDM\_CEM\_CESoPN\_Policy.xml
- DeleteTDM\_CEM\_Policy.xml

## TDM-CEM Service Requests

Before creating a service request, a service policy has to be defined. For information on TDM-CEM policies, see [EVC Service Definitions, page 9-1](#).

A TDM-CEM service request defines the service definition along with the the respective attributes for a EVC-TDM link.

See the [Cisco Prime Provisioning 7.0 User Guide](#) for the illustration of RAN Backhaul Services.



## Service Request Examples

The following XML examples illustrate how you work with service requests for TDM-CEM APIs. They also demonstrate the kinds of properties (attributes) that need to be specified for each request.

This section includes the following examples:

- [Creating a TDM-CEM \(CESoPN\) Service Request Without Pseudowire Redundancy, page 11-9](#)
- [Creating a TDM-CEM \(CESoPN\) Service Request With Pseudowire Redundancy, page 11-12](#)
- [Creating a RAN Backhaul CEM Class, page 11-17](#)
- [Creating a RAN Backhaul TDM Service Request, page 11-18](#)
- [Creating a TDM-CEM Service Request for IOS XR, page 11-19](#)
- [Creating a TDM-CEM Service Request with E1-E1 Service, page 11-20](#)
- [Creating a TDM-CEM Service Request with T1-T1 Service, page 11-24](#)

### Creating a TDM-CEM (CESoPN) Service Request Without Pseudowire Redundancy

In this example, a TDM-CEM (CESoPN) service request is created without Pseudowire redundancy.

XML file in [Cisco Prime Provisioning API 6.8 Programmer Reference](#):

CreateTDM\_CEM\_CESoPN\_SR\_PW.xml

The relevant attributes that need to be set for this policy are highlighted in bold in the example. They are **CemClassName**, which in the example is set to **CEM\_1**, **ContainerType**, which in the example is set to **E1**, **UseCemClass**, which in the example is set to **true**, **Terminal**, which in the example is set to **A**, **CemGroupId**, which in the example is set to **12**, **TimeSlot**, which in the example is set to **15**, **ClockSourceType**, which in the example is set to **INTERNAL**, **TimeSlot**, which in the example is set to **12-16**, **ClockSourceType**, which in the example is set to **INTERNAL**, **AugMappingType**, which in the example is set to **au-4**, **Tug3Number**, which in the example is set to **1**, **ChannelModeType**, which in the example is set to **c-12**, **Tug2Number**, which in the example is set to **2**, and **E1Number**, which in the example is set to **1**.

```
<?xml version="1.0" encoding="utf-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ns0="http://www.cisco.com/cim-cx/2.0" xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <!-- WaitTimeout has a default set in system properties.-->
    <ns0:message id="87855" timestamp="2011-11-13T14:55:38.885Z"
Wait="true" WaitTimeout="90" sessiontoken="p36bttjwy1" />
  </soapenv:Header>
  <soapenv:Body>
    <ns1:performBatchOperation>
      <actions xsi:type="ns1:CIMActionList"
soapenc:arrayType="ns1:CIMAction[]">
        <action>
          <actionName xsi:type="xsd:string">createInstance</actionName>
          <objectPath xsi:type="ns1:CIMObjectPath">
            <className xsi:type="xsd:string">ServiceOrder</className>
            <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">ServiceName</name>
                <value xsi:type="xsd:string">ServiceOrder257</value>
```

```

</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">CarrierId</name>
  <value xsi:type="xsd:string">322</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">DesiredDueDate</name>
  <value xsi:type="xsd:dateTime">2008-12-13T14:55:38.885Z</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">NumberOfRequests</name>
  <value xsi:type="xsd:string">1</value>
</item>
</properties>
</objectPath>
</action>
<action>
  <actionName xsi:type="xsd:string">createInstance</actionName>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">ServiceRequest</className>
    <properties xsi:type="ns1:CIMPropertyList"
      soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">RequestName</name>
        <value xsi:type="xsd:string">Ipran</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Type</name>
        <value xsi:type="xsd:string">EvcIpran</value>
      </item>
    </properties>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">ServiceRequestDetails</className>
    <properties xsi:type="ns1:CIMPropertyList"
      soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">ServiceDefinition</name>
        <value xsi:type="xsd:string">TDM_CES</value>
        <qualifier xsi:type="xsd:string">
          <name xsi:type="xsd:string">ServiceDefinitionType</name>
          <value xsi:type="xsd:string">EvcIpran</value>
        </qualifier>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">AutopickVCID</name>
        <value xsi:type="xsd:string">true</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">ContainerType</name>
        <value xsi:type="xsd:string">E1</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">UseCemClass</name>
        <value xsi:type="xsd:string">true</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">CemClassName</name>
        <value xsi:type="xsd:string">CEM_1</value>
      </item>
    </properties>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">EvcLink</className>
    <properties xsi:type="ns1:CIMPropertyList"
      soapenc:arrayType="ns1:CIMProperty[]">

```

```

<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">Npe</name>
  <value xsi:type="xsd:string">ems2941q</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">UniInftId</name>
  <value xsi:type="xsd:string">CONTROLLER E10/3</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">Terminal</name>
  <value xsi:type="xsd:string">A</value>
</item>
</properties>
</objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcTDMLinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">CemGroupId</name>
      <value xsi:type="xsd:string">12</value>
    </item>
    <!-- use Time slot for CESoPN -->
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">TimeSlot</name>
      <value xsi:type="xsd:string">15</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">ClockSourceType</name>
      <value xsi:type="xsd:string">INTERNAL</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UsePwClass</name>
      <value xsi:type="xsd:string">>true</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PwClassName</name>
      <value xsi:type="xsd:string">PW_1</value>
    </item>
  </properties>
</objectPath>
</objectPath>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcLink</className>
  <properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">ems7606c</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">CONTROLLER SONET3/2/0</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Terminal</name>
      <value xsi:type="xsd:string">Z</value>
    </item>
  </properties>
</objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcTDMLinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">CemGroupId</name>

```

```

        <value xsi:type="xsd:string">10</value>
      </item>
      <!-- use Time slot for CESoPN -->
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Timeslot</name>
        <value xsi:type="xsd:string">12-16</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">ClockSourceType</name>
        <value xsi:type="xsd:string">INTERNAL</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">AugMappingType</name>
        <value xsi:type="xsd:string">au-4</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Tug3Number</name>
        <value xsi:type="xsd:string">1</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">ChannelModeType</name>
        <value xsi:type="xsd:string">c-12</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Tug2Number</name>
        <value xsi:type="xsd:string">2</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">E1Number</name>
        <value xsi:type="xsd:string">1</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">UsePwClass</name>
        <value xsi:type="xsd:string">>true</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">PwClassName</name>
        <value xsi:type="xsd:string">PW_3</value>
      </item>
    </properties>
  </objectPath>
</objectPath>
</objectPath>
</action>
</actions>
</ns1:performBatchOperation>
</soapenv:Body>
</soapenv:Envelope>

```

## Creating a TDM-CEM (CESoPN) Service Request With Pseudowire Redundancy

In this example, a TDM-CEM (CESoPN) service request is created with Pseudowire redundancy. To enable Pseudowire redundancy, set **UseBackPwClass** and **BackPwClassName** while creating the service request.

**UseBackPwClass** and **BackPwClassName** are highlighted with bold in this below example.

XML file in [Cisco Prime Provisioning API 6.8 Programmer Reference](#):  
CreateTDM\_CEM\_CESoPN\_SR\_PWRRedundancy.xml

The relevant attributes that need to be set for this policy are highlighted in bold in the example. They are **Terminal**, which in the example is set to **A**, **UseBackPwClass**, which in the example is set to **true**, **BackPwClassName**, which in the example is set to **PW\_2**.

```
<?xml version="1.0" encoding="utf-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ns0="http://www.cisco.com/cim-cx/2.0" xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <!-- WaitTimeout has a default set in system properties.-->
    <ns0:message id="87855" timestamp="2011-11-13T14:55:38.885Z"
Wait="true" WaitTimeout="90" sessiontoken="p36bttjwyl" />
  </soapenv:Header>
  <soapenv:Body>
    <ns1:performBatchOperation>
      <actions xsi:type="ns1:CIMActionList"
soapenc:arrayType="ns1:CIMAction[]">
        <action>
          <actionName xsi:type="xsd:string">createInstance</actionName>
          <objectPath xsi:type="ns1:CIMObjectPath">
            <className xsi:type="xsd:string">ServiceOrder</className>
            <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">ServiceName</name>
                <value xsi:type="xsd:string">ServiceOrder257</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">CarrierId</name>
                <value xsi:type="xsd:string">322</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">DesiredDueDate</name>
                <value xsi:type="xsd:dateTime">2008-12-13T14:55:38.885Z</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">NumberOfRequests</name>
                <value xsi:type="xsd:string">1</value>
              </item>
            </properties>
          </objectPath>
        </action>
        <action>
          <actionName xsi:type="xsd:string">createInstance</actionName>
          <objectPath xsi:type="ns1:CIMObjectPath">
            <className xsi:type="xsd:string">ServiceRequest</className>
            <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">RequestName</name>
                <value xsi:type="xsd:string">Ipran</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">Type</name>
                <value xsi:type="xsd:string">EvcIpran</value>
              </item>
            </properties>
          <objectPath xsi:type="ns1:CIMObjectPath">
            <className xsi:type="xsd:string">ServiceRequestDetails</className>
            <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
```

```

<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">ServiceDefinition</name>
  <value xsi:type="xsd:string">TDM_CES</value>
  <qualifier xsi:type="xsd:string">
    <name xsi:type="xsd:string">ServiceDefinitionType</name>
    <value xsi:type="xsd:string">EvcIpran</value>
  </qualifier>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">AutopickVCID</name>
  <value xsi:type="xsd:string">>true</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">UseBackupVCID</name>
  <value xsi:type="xsd:string">>true</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">ContainerType</name>
  <value xsi:type="xsd:string">E1</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">UseCemClass</name>
  <value xsi:type="xsd:string">>true</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">CemClassName</name>
  <value xsi:type="xsd:string">CEM_1</value>
</item>
</properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcLink</className>
  <properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">ems2941q</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">CONTROLLER E10/2</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Terminal</name>
      <value xsi:type="xsd:string">A</value>
    </item>
  </properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcTDMLinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">CemGroupId</name>
      <value xsi:type="xsd:string">4</value>
    </item>
    <!-- use Time slot for CESoPN -->
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">TimeSlot</name>
      <value xsi:type="xsd:string">6</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">ClockSourceType</name>
      <value xsi:type="xsd:string">INTERNAL</value>
    </item>
    <item xsi:type="ns1:CIMProperty">

```

```

        <name xsi:type="xsd:string">UsePwClass</name>
        <value xsi:type="xsd:string">>true</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">PwClassName</name>
        <value xsi:type="xsd:string">PW_1</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">UseBackPwClass</name>
        <value xsi:type="xsd:string">>true</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">BackPwClassName</name>
        <value xsi:type="xsd:string">PW_2</value>
    </item>
</properties>
</objectPath>
</objectPath>
</objectPath>
<objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">EvcLink</className>
    <properties xsi:type="ns1:CIMPropertyList"
    soapenc:arrayType="ns1:CIMProperty[]">
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Npe</name>
            <value xsi:type="xsd:string">ems7609f</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">UniInftId</name>
            <value xsi:type="xsd:string">CONTROLLER SONET1/2/0</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Terminal</name>
            <value xsi:type="xsd:string">Z</value>
        </item>
    </properties>
</objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">EvcTDMLinkAttrs</className>
    <properties xsi:type="ns1:CIMPropertyList"
    soapenc:arrayType="ns1:CIMProperty[]">
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">CemGroupId</name>
            <value xsi:type="xsd:string">10</value>
        </item>
        <!-- use Time slot for CESoPN -->
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">TimeSlot</name>
            <value xsi:type="xsd:string">25</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">ClockSourceType</name>
            <value xsi:type="xsd:string">INTERNAL</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">AugMappingType</name>
            <value xsi:type="xsd:string">au-4</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Tug3Number</name>
            <value xsi:type="xsd:string">2</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">ChannelModeType</name>
            <value xsi:type="xsd:string">c-12</value>
        </item>
    </properties>
</objectPath>

```

```

    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Tug2Number</name>
      <value xsi:type="xsd:string">2</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">E1Number</name>
      <value xsi:type="xsd:string">1</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UsePwClass</name>
      <value xsi:type="xsd:string">>true</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PwClassName</name>
      <value xsi:type="xsd:string">PW_5</value>
    </item>
  </properties>
</objectPath>
</objectPath>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcLink</className>
  <properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">ems7606c</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">CONTROLLER SONET3/2/0</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Terminal</name>
      <value xsi:type="xsd:string">Z-BackUp</value>
    </item>
  </properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcTDMLinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">CemGroupId</name>
      <value xsi:type="xsd:string">9</value>
    </item>
    <!-- use Time slot for CESoPN -->
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">TimeSlot</name>
      <value xsi:type="xsd:string">13</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">ClockSourceType</name>
      <value xsi:type="xsd:string">INTERNAL</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AugMappingType</name>
      <value xsi:type="xsd:string">au-4</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Tug3Number</name>
      <value xsi:type="xsd:string">2</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">ChannelModeType</name>
      <value xsi:type="xsd:string">c-12</value>

```



```

</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">Tug2Number</name>
  <value xsi:type="xsd:string">2</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">ElNumber</name>
  <value xsi:type="xsd:string">1</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">UsePwClass</name>
  <value xsi:type="xsd:string">true</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">PwClassName</name>
  <value xsi:type="xsd:string">PW_6</value>
</item>
</properties>
</objectPath>
</objectPath>
</objectPath>
</objectPath>
</action>
</actions>
</ns1:performBatchOperation>
</soapenv:Body>
</soapenv:Envelope>

```

## Creating a RAN Backhaul CEM Class

The following example shows a partial list of properties that can be specified to enable support for IOS XR devices. These attributes should be added under **CemClass**.

Provide a **DummyMode** attribute as either **USER DEFINED** or **LAST FRAME** as a value. If **DummyMode** is set as **UserDefined**, then a hexadecimal value has to be provided by the user for the **DummyPattern** attribute. Attributes are highlighted in bold below.



### Note

When the **DummyMode** attribute is set as **LAST FRAME**, then there is no need to set the **DummyPattern**.

```

<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">CemClass</className>
  <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">DummyMode</name>
      <value xsi:type="xsd:string">USER DEFINED</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">DummyPattern</name>
      <value xsi:type="xsd:string">15</value>
    </item>
  </properties>
</objectPath>

```

## Creating a RAN Backhaul TDM Service Request

The following XML example shows a partial list of the properties that can be specified for the attachment circuit **Evclink**.

Below highlighted attributes are added to support IOS XR platform and all other attributes would be similar to what is supported for IOS.

```
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">Evclink</className>
  <properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">isc-tl-dev-asr9006-1</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">CONTROLLER SONET 0/2/0/0</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Terminal</name>
      <value xsi:type="xsd:string">Z</value>
    </item>
  </properties>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">EvclinkAttrs</className>
    <properties xsi:type="ns1:CIMPropertyList"
    soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">CemGroupId</name>
        <value xsi:type="xsd:string">12</value>
      </item>
      <!-- use Time slot for CESoPN -->
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">TimeSlot</name>
        <value xsi:type="xsd:string">17</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">AugMappingType</name>
        <value xsi:type="xsd:string">au-4</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Width</name>
        <value xsi:type="xsd:string">3</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Tug3Number</name>
        <value xsi:type="xsd:string">1</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">ChannelModeType</name>
        <value xsi:type="xsd:string">c12-e1</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Tug2Number</name>
        <value xsi:type="xsd:string">2</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">E1Number</name>
        <value xsi:type="xsd:string">1</value>
      </item>
    </properties>
  </objectPath>
</objectPath>
```

```

<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">L2VpnGrpName</name>
  <value xsi:type="xsd:string">ISC</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">AutoPickElineName</name>
  <value xsi:type="xsd:string">>true</value>
</item>
</properties>
</objectPath>
</objectPath>

```

## Creating a TDM-CEM Service Request for IOS XR

The following XML example shows a partial list of the properties that can be specified for the attachment circuit **Evclink**.

The attributes highlighted below are added to support the IOS XR platform. All other attributes are similar to what is supported for IOS.

The relationships between the attributes **AugMappingType** and **ChannelModeType** for both IOS and IOS XR device platforms is shown in [Table 11-2](#).

**Table 11-2** TDM-CEM Attribute Relationships

Device Platform Type	AugMappingType	ChannelModeType
IOS	au-4	c12
IOS	au-3	c11
IOS XR	au-4	c12-e1
IOS XR	au-3	c11-t1

Example: CreateIPRAN\_TDM\_SR\_IOS\_XR.xml

```

<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">Evclink</className>
  <properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">isc-t1-dev-asr9006-1</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">CONTROLLER SONET 0/2/0/0</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Terminal</name>
      <value xsi:type="xsd:string">Z</value>
    </item>
  </properties>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">EvclinkAttrs</className>
    <properties xsi:type="ns1:CIMPropertyList"
    soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">CemGroupId</name>

```

```

        <value xsi:type="xsd:string">12</value>
    </item>
    <!-- use Time slot for CESoPN -->
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">TimeSlot</name>
        <value xsi:type="xsd:string">17</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">AugMappingType</name>
        <value xsi:type="xsd:string">au-4</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Width</name>
        <value xsi:type="xsd:string">3</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Tug3Number</name>
        <value xsi:type="xsd:string">1</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">ChannelModeType</name>
        <value xsi:type="xsd:string">c12-e1</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Tug2Number</name>
        <value xsi:type="xsd:string">2</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">E1Number</name>
        <value xsi:type="xsd:string">1</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">L2VpnGrpName</name>
        <value xsi:type="xsd:string">ISC</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">AutoPickE1LineName</name>
        <value xsi:type="xsd:string">true</value>
    </item>
</properties>
</objectPath>
</objectPath>

```

## Creating a TDM-CEM Service Request with E1-E1 Service

The following example sets up an E1-E1 service. To do so, set the attributes of the **EvcLink** and **EvcTDMLinkAttrs** classes highlighted below.

Example: Create\_TDM\_CES\_E1-E1\_SR.xml

```

<?xml version="1.0" encoding="UTF-8"?>

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ns0="http://www.cisco.com/cim-cx/2.0" xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <!-- WaitTimeout has a default set in system properties.-->
    <ns0:message id="87855" timestamp="2011-11-13T14:55:38.885Z" Wait="true"
WaitTimeout="90" sessiontoken="p36bttjwy1"/>

```

```

</soapenv:Header>
<soapenv:Body>
  <ns1:performBatchOperation>
    <actions xsi:type="ns1:CIMActionList" soapenc:arrayType="ns1:CIMAction[]">
      <action>
        <actionName xsi:type="xsd:string">createInstance</actionName>
        <objectPath xsi:type="ns1:CIMObjectPath">
          <className xsi:type="xsd:string">ServiceOrder</className>
          <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">ServiceName</name>
              <value xsi:type="xsd:string">ServiceOrder257</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">CarrierId</name>
              <value xsi:type="xsd:string">322</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">DesiredDueDate</name>
              <value
xsi:type="xsd:dateTime">2008-12-13T14:55:38.885Z</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">NumberOfRequests</name>
              <value xsi:type="xsd:string">1</value>
            </item>
          </properties>
        </objectPath>
      </action>
      <action>
        <actionName xsi:type="xsd:string">createInstance</actionName>
        <objectPath xsi:type="ns1:CIMObjectPath">
          <className xsi:type="xsd:string">ServiceRequest</className>
          <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">RequestName</name>
              <value xsi:type="xsd:string">Ipran</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">Type</name>
              <value xsi:type="xsd:string">EvcIpran</value>
            </item>
          </properties>
        <objectPath xsi:type="ns1:CIMObjectPath">
          <className
xsi:type="xsd:string">ServiceRequestDetails</className>
          <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">ServiceDefinition</name>
              <value xsi:type="xsd:string">TDM_CES</value>
              <qualifier xsi:type="xsd:string">
                <name
xsi:type="xsd:string">ServiceDefinitionType</name>
                <value xsi:type="xsd:string">EvcIpran</value>
              </qualifier>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">AutopickVCID</name>
              <value xsi:type="xsd:string">true</value>
            </item>
            <item xsi:type="ns1:CIMProperty">

```

```

<name xsi:type="xsd:string">VCID</name>
<value xsi:type="xsd:string">101</value>
</item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">ContainerType</name>
    <value xsi:type="xsd:string">E1</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">UseCemClass</name>
    <value xsi:type="xsd:string">>true</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">CemClassName</name>
    <value xsi:type="xsd:string">cem_e1</value>
  </item>
</properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcLink</className>
  <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">Npe</name>
    <value xsi:type="xsd:string">ems7609f</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">UniInftId</name>
    <value xsi:type="xsd:string">CONTROLLER E1
1/0/3</value>
  </item>

  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">Terminal</name>
    <value xsi:type="xsd:string">A</value>
  </item>
</properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className
xsi:type="xsd:string">EvcTDMLinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">CemGroupId</name>
    <value xsi:type="xsd:string">12</value>
  </item>
  <!-- use Time slot for CESoPN -->
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">TimeSlot</name>
    <value xsi:type="xsd:string">15</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name
xsi:type="xsd:string">ClockSourceType</name>
    <value xsi:type="xsd:string">INTERNAL</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">UsePwClass</name>
    <value xsi:type="xsd:string">>true</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">PwClassName</name>
    <value
xsi:type="xsd:string">PW_Tango_40_1</value>
  </item>
</properties>

```

```

        </objectPath>
    </objectPath>
    <objectPath xsi:type="ns1:CIMObjectPath">
        <className xsi:type="xsd:string">EvcLink</className>
        <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
            <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">Npe</name>
                <value xsi:type="xsd:string">ems2941q</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">UniInftId</name>
                <value xsi:type="xsd:string">CONTROLLER E1
0/3</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">Terminal</name>
                <value xsi:type="xsd:string">Z</value>
            </item>
        </properties>
        <objectPath xsi:type="ns1:CIMObjectPath">
            <className
xsi:type="xsd:string">EvcTDMLinkAttrs</className>
            <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
                <item xsi:type="ns1:CIMProperty">
                    <name xsi:type="xsd:string">CemGroupId</name>
                    <value xsi:type="xsd:string">4</value>
                </item>
                <!-- use Time slot for CESoPN -->
                <item xsi:type="ns1:CIMProperty">
                    <name xsi:type="xsd:string">TimeSlot</name>
                    <value xsi:type="xsd:string">12-16</value>
                </item>
                <item xsi:type="ns1:CIMProperty">
                    <name
xsi:type="xsd:string">ClockSourceType</name>
                    <value xsi:type="xsd:string">INTERNAL</value>
                </item>
                <item xsi:type="ns1:CIMProperty">
                    <name xsi:type="xsd:string">UsePwClass</name>
                    <value xsi:type="xsd:string">>true</value>
                </item>
                <item xsi:type="ns1:CIMProperty">
                    <name xsi:type="xsd:string">PwClassName</name>
                    <value
xsi:type="xsd:string">PW_Tango_40_1</value>
                </item>
            </properties>
        </objectPath>
    </objectPath>

    </objectPath>
</objectPath>
</action>
</actions>
</ns1:performBatchOperation>
</soapenv:Body>
</soapenv:Envelope>

```

## Creating a TDM-CEM Service Request with T1-T1 Service

The following example sets up a T1-T1 service. To do so, set the attributes of the **Evclink** and **Evctdmlinkattrs** classes highlighted below.

Example: Create\_TDM\_SAT\_T1-T1\_SR.xml

```
<?xml version="1.0" encoding="UTF-8"?>

<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ns0="http://www.cisco.com/cim-cx/2.0" xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <!-- WaitTimeout has a default set in system properties.-->
    <ns0:message id="87855" timestamp="2011-11-13T14:55:38.885Z" Wait="true"
WaitTimeout="90" sessiontoken="p36bttjwy1"/>
  </soapenv:Header>
  <soapenv:Body>
    <ns1:performBatchOperation>
      <actions xsi:type="ns1:CIMActionList" soapenc:arrayType="ns1:CIMAction[]">
        <action>
          <actionName xsi:type="xsd:string">createInstance</actionName>
          <objectPath xsi:type="ns1:CIMObjectPath">
            <className xsi:type="xsd:string">ServiceOrder</className>
            <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">ServiceName</name>
                <value xsi:type="xsd:string">ServiceOrder257</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">CarrierId</name>
                <value xsi:type="xsd:string">322</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">DesiredDueDate</name>
                <value
xsi:type="xsd:dateTime">2008-12-13T14:55:38.885Z</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">NumberOfRequests</name>
                <value xsi:type="xsd:string">1</value>
              </item>
            </properties>
          </objectPath>
        </action>
        <action>
          <actionName xsi:type="xsd:string">createInstance</actionName>
          <objectPath xsi:type="ns1:CIMObjectPath">
            <className xsi:type="xsd:string">ServiceRequest</className>
            <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">RequestName</name>
                <value xsi:type="xsd:string">Ipran</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">Type</name>
                <value xsi:type="xsd:string">EvclIpran</value>
              </item>
            </properties>
          </objectPath>
        </action>
      </actions>
    </ns1:performBatchOperation>
  </soapenv:Body>
</soapenv:Envelope>
```



```

        <objectPath xsi:type="ns1:CIMObjectPath">
          <className
xsi:type="xsd:string">ServiceRequestDetails</className>
          <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]" ">
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">ServiceDefinition</name>
              <value xsi:type="xsd:string">TDM_SAT</value>
              <qualifier xsi:type="xsd:string">
                <name
xsi:type="xsd:string">ServiceDefinitionType</name>
                <value xsi:type="xsd:string">EvcIpran</value>
              </qualifier>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">AutopickVCID</name>
              <value xsi:type="xsd:string">>true</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">VCID</name>
              <value xsi:type="xsd:string">101</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">ContainerType</name>
              <value xsi:type="xsd:string">T1</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">UseCemClass</name>
              <value xsi:type="xsd:string">>true</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">CemClassName</name>
              <value xsi:type="xsd:string">CEM_Tango_40_1</value>
            </item>
          </properties>
        <objectPath xsi:type="ns1:CIMObjectPath">
          <className xsi:type="xsd:string">EvcLink</className>
          <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]" ">
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">Npe</name>
              <value xsi:type="xsd:string">ems7606c</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">UniInftId</name>
              <value xsi:type="xsd:string">CONTROLLER T1
3/0/4</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">Terminal</name>
              <value xsi:type="xsd:string">A</value>
            </item>
          </properties>
        <objectPath xsi:type="ns1:CIMObjectPath">
          <className
xsi:type="xsd:string">EvcTDMLinkAttrs</className>
          <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]" ">
            <item xsi:type="ns1:CIMProperty">
              <name xsi:type="xsd:string">CemGroupId</name>
              <value xsi:type="xsd:string">12</value>
            </item>
            <item xsi:type="ns1:CIMProperty">

```

```

        <name
xsi:type="xsd:string">ClockSourceType</name>
        <value xsi:type="xsd:string">LINE</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">UsePwClass</name>
        <value xsi:type="xsd:string">>true</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">PwClassName</name>
        <value
xsi:type="xsd:string">PW_Tango_40_1</value>
    </item>
</properties>
</objectPath>
</objectPath>
<objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">EvcLink</className>
    <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Npe</name>
            <value xsi:type="xsd:string">ems2941g</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">UniInftId</name>
            <value xsi:type="xsd:string">CONTROLLER T1
0/7</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Terminal</name>
            <value xsi:type="xsd:string">Z</value>
        </item>
    </properties>
    <objectPath xsi:type="ns1:CIMObjectPath">
        <className
xsi:type="xsd:string">EvcTDMLinkAttrs</className>
        <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
            <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">CemGroupId</name>
                <value xsi:type="xsd:string">9</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
                <name
xsi:type="xsd:string">ClockSourceType</name>
                <value xsi:type="xsd:string">INTERNAL</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">UsePwClass</name>
                <value xsi:type="xsd:string">>true</value>
            </item>
            <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">PwClassName</name>
                <value
xsi:type="xsd:string">PW_Tango_40_1</value>
            </item>
        </properties>
    </objectPath>
</objectPath>
</objectPath>
</objectPath>
</action>
</actions>

```

```

        </ns1:performBatchOperation>
    </soapenv:Body>
</soapenv:Envelope>

```

## TDM-CEM End-to-End Provisioning Process

This section describes the process for using the API to provision TDM-CEM and includes the required operation, object definition (className), and parameter definitions.

### Process Summary

This TDM-CEM provisioning example uses the following processes:

1. Create device groups (optional).
2. Create devices.
3. Collect device configurations.
4. Create provider.
5. Create regions.
6. Declare devices as PEs.
7. Create customer.
8. Create VC ID pool.
9. Create TDM-CEM service definition (policy).
10. Create TDM-CEM service request.

### Detailed Process

This section describes the process for provisioning TDM-CEM using XML examples.

The complete list of XML examples for ATM Pseudowire is available here:

[Cisco Prime Provisioning API 6.8 Programmer Reference](#)



#### Note

For clarity, this provisioning process shows each step as a separate XML request. Many of these steps can be combined using **performBatchOperations**.

**Step 1** Create device groups (optional).

**Table 11-3** Create Device Group

Operation	className	Required Parameters
createInstance	DeviceGroup	Name

#### XML Examples:

- CreateDeviceGroup.xml

**Tip**

If you plan to create device groups, create the empty device groups before you create the devices. As you create each device, add the associated device group name as a key property in the create device XML request.

In the following example, the device group (CustDev) is added as a key property when creating the device **CiscoRouter**:

```
<ns1:createInstance>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">CiscoRouter</className>
    <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">DeviceGroup</name>
        <value xsi:type="xsd:string">CustDev</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">CfgUpDnldMech</name>
        <value xsi:type="xsd:string">DEFAULT</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">TransportMechanism</name>
        <value xsi:type="xsd:string">DEFAULT</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Password</name>
        <value xsi:type="xsd:string">vpnsc</value>
      </item>
    </properties>
  </objectPath>
</ns1:createInstance>
```

**Step 2** Create devices.

Every network element that Prime Provisioning manages must be defined as a device in the system. An element is any device from which Prime Provisioning can collect configuration information.

**Table 11-4** Create Devices

Operation	className	Required Parameters
createInstance	<ul style="list-style-type: none"> <li>CiscoRouter</li> <li>CatOS</li> </ul>	One or more of the following: <ul style="list-style-type: none"> <li>ManagementIPAddress</li> <li>HostName</li> <li>DomainName</li> </ul>

**XML Examples:**

- CreateCiscoRouter.xml
- CreateCat.xml

**Step 3** Collect device configurations.

A device configuration collection is a task. This task uploads the current configuration from the device to the Prime Provisioning database. The collection task is executed through a service request, and the service request is scheduled through a service order.

**Note**

The service request name must be unique for each NBI API.

**Table 11-5** *Collect Device Configurations*

Operation	className	Required Parameters
createInstance	ServiceOrder	<ul style="list-style-type: none"> <li>• ServiceName</li> <li>• NumberofRequests</li> <li>• ServiceRequest</li> </ul>
	ServiceRequest	<ul style="list-style-type: none"> <li>• RequestName</li> <li>• Type=Task</li> <li>• ServiceRequestDetails</li> </ul>
	ServiceRequestDetails	<ul style="list-style-type: none"> <li>• SubType=COLLECTION</li> <li>• Device (or DeviceGroup)</li> </ul> <p><b>Note</b> You must select at least one device or device group.</p> <ul style="list-style-type: none"> <li>• RetrieveVersion=true</li> <li>• RetrieveDeviceInterfaces=true</li> </ul>

**XML Examples:**

- CreateTaskServiceOrderCollection.xml

**Step 4** Create a provider.

The provider is the administrative domain of an ISP, with one BGP autonomous system (AS) number. The network owned by the provider is called the backbone network. If an ISP has two AS numbers, you must define it as two provider administrative domains.

**Table 11-6** *Create a Provider*

Operation	className	Required Parameters
createInstance	Provider	<ul style="list-style-type: none"> <li>• Name</li> <li>• AsNumber</li> </ul>

**XML Examples:**

CreateProvider.xml

**Step 5** Create regions.

Each provider can contain multiple regions.

**Table 11-7** *Create Regions*

Operation	className	Required Parameters
createInstance	Region	<ul style="list-style-type: none"> <li>• Name</li> <li>• Provider</li> </ul>

**XML Examples:**

CreateRegion.xml

**Step 6** Declare devices as PEs.

The XML request that assigns a PE role to a device is also used to:

- Assign PE devices to Regions/Provider
- Specify interface information

**Table 11-8** Create PE Devices

Operation	className	Required Parameters
createInstance	PE	<ul style="list-style-type: none"> <li>• Provider</li> <li>• Region</li> <li>• Role= <ul style="list-style-type: none"> <li>– N-PE</li> </ul> </li> <li>• Device</li> <li>• Interface</li> </ul>

**XML Examples:**

CreatePE.xml

**Step 7** Create a customer.

A customer is a requestor of VPN services. Each customer can contain multiple customer sites. Each site belongs to only one customer and can contain multiple CPEs.

**Table 11-9** Create Organization

Operation	className	Required Parameters
createInstance	Organization	<ul style="list-style-type: none"> <li>• Name</li> </ul>

**XML Examples:**

- CreateOrganization.xml

**Step 8** Create VC ID pool.

For a VPLS VPN, all PE-POP routers use the same VC ID to establish the virtual circuit (VC) across the provider core. The VC ID is also the VPN ID and is assigned from the VC ID pool. Prime Provisioning ensures that VC IDs are unique among VPLS VPNs.

**Note**

A VC ID pool is global (not associated with a provider or organization).

**Table 11-10** Create VC ID Pool

Operation	className	Required Parameters
createInstance	VcIdPool	<ul style="list-style-type: none"> <li>• Start</li> <li>• Size</li> </ul>

**XML Examples:**

- CreateVcIdPool.xml

**Step 9** Create TDM-CEM service definition (policy).

A TDM-CEM service definition specifies the service subtype, device properties, and the attributes common to all attachment circuits.

**Table 11-11** Create a TDM-CEM Service Definition

Operation	className	Required Parameters
createInstance	ServiceDefinition	<ul style="list-style-type: none"> <li>• Name</li> <li>• Type=EvcIpran</li> <li>• Provider or Organization</li> </ul> <p><b>Note</b> If you do not specify a <b>Provider</b> or <b>Organization</b>, the service policy is global</p> <ul style="list-style-type: none"> <li>• ServiceDefinitionDetails</li> </ul>
	ServiceDefinitionDetails	<ul style="list-style-type: none"> <li>• SubType=Evc</li> <li>• Parameters: <ul style="list-style-type: none"> <li>– AccessType = TDM_CEM</li> <li>– RanServiceType = SAToP_UNFRAMED / CESoPN_TIMESLOT (depends on the policy requirement)</li> <li>– AutopickVCId</li> <li>– EnablePWRedundancy</li> <li>– TransportType = PSEUDOWIRE</li> <li>– ContainerType = E1 / T1 (depends on the requirement)</li> <li>– UseCemClass</li> </ul> </li> </ul>

**XML Examples:**

- CreateTDM\_CEM\_SAToP\_Policy.xml
- CreateTDM\_CEM\_CESoPN\_Policy.xml

**Step 10** Create TDM-CEM service request.

A TDM-CEM service request defines the service definition and assigns interfaces and attributes.

**Table 11-12** Create a TDM-CEM Service Request

Operation	className	Required Parameters
createInstance	ServiceOrder	<ul style="list-style-type: none"> <li>• ServiceName</li> <li>• NumberOfRequests</li> <li>• Provider or Organization</li> </ul> <p><b>Note</b> If you do not specify a <b>Provider</b> or <b>Organization</b>, the service policy is global.</p> <ul style="list-style-type: none"> <li>• ServiceRequest</li> </ul>



Table 11-12 Create a TDM-CEM Service Request (continued)

Operation	className	Required Parameters
	ServiceRequest	<ul style="list-style-type: none"> <li>• RequestName</li> <li>• Type=EvcIpran</li> <li>• ServiceRequestDetails</li> </ul>
	ServiceRequestDetails	<ul style="list-style-type: none"> <li>• ServiceDefinition <ul style="list-style-type: none"> <li>– ServiceDefinitionType=EvcIpran</li> </ul> </li> <li>• VCID</li> <li>• BackupVCID</li> <li>• UseCemClass</li> <li>• SonetFrameType - SDH/SONET</li> <li>• CemClassName</li> <li>• Npe</li> <li>• UniInftId</li> <li>• Terminal</li> <li>• CemGroupId</li> <li>• ClockSourceType</li> <li>• UsePwClass</li> <li>• PwClassName</li> <li>• For Z and Z-backup terminals: Following are extra parameters apart from mentioned above: <ul style="list-style-type: none"> <li>– AugMappingType</li> <li>– Tug3Number</li> <li>– ChannelModeType</li> <li>– Tug2Number</li> <li>– E1Number</li> <li>– UseBackPwClass (If PW Redundancy is selected)</li> <li>– BackPwClassName (If PW Redundancy is selected)</li> </ul> </li> </ul>

**Tip**

Record the **LocatorId** value from the XML response for the service request. The Locator ID is required for subsequent service request tasks.

**XML Example:**

- CreateTDM\_CEM\_CESoPN\_SR\_PW.xml
  - CreateTDM\_CEM\_CESoPN\_SR\_PWRedundancy.xml (use this example if there is PW Redundancy to be created)
  - CreateTDM\_CEM\_SAToP\_SR\_PW.xml
  - CreateTDM\_CEM\_SAToP\_SR\_PWRedundancy.xml (use this example if there is PW Redundancy to be created)
  - CreateIPRAN\_TDM\_SR\_IOS\_XR.xml
- 

## Auditing Service Requests

A configuration audit occurs automatically each time you deploy a service request. During this configuration audit, Prime Provisioning verifies that all Cisco IOS commands are present and that they have the correct syntax. An audit also verifies that there were no errors during deployment by examining the commands configured by the service request on the target devices. If the device configuration does not match what is defined in the service request, the audit flags a warning and sets the service request to a *Failed Audit* or *Lost* state.

If you do not want the configuration audit to occur, change the value for the **Audit** parameter. The **Audit** parameter supports these values:

- **Audit**—This is the default. A successfully deployed service request is automatically audited unless this flag is changed.
- **NoAudit**—Do not perform a configuration audit when the service request is deployed.
- **ForceAudit**—Perform a configuration audit even if the service request deployment is not successful.

You can use the Audit parameter with a **Create**, **Modify**, or **Decommission** service request or a **Deployment** task. See the “[Service Decommission](#)” section on page 3-11 for more information. To perform a configuration audit as a separate task, see the “[Configuration Audit](#)” section on page 3-11.

## ATM Pseudowire Service Definitions

An ATM Pseudowire service definition specifies the core type, policy subtype, and the attributes common to all EVC attachment circuits. This section lists the supported service definitions, service orders, and policies and includes corresponding examples.

## Supported Service Definitions and Service Orders

Prime Provisioning supports the following ATM Pseudowire features:

- Creating:
  - ATM Service Definition/Policy
  - ATM Service Order/Request
- Modifying:

- ATM Service Definition/Policy
- ATM Service Order/Request
- Deleting:
  - ATM Service Definition/Policy
  - ATM Service Order/Request
- Viewing:
  - ATM Service Definition/Policy
  - ATM Service Order/Request

## Policy Examples

The following constitute XML policy examples for ATM Pseudowire:

- [Create ATM Pseudowire Policy, page 11-35](#)
- [Creating RAN Backhaul ATM Policy with IOS XR Support, page 11-36](#)

XML file in *Cisco Prime Provisioning API 6.8 Programmer Reference*: CreateATM\_IMA\_Policy.xml

## Create ATM Pseudowire Policy

In this example, an ATM Pseudowire policy is created.

```
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:ns0="http://www.cisco.com/cim-cx/2.0"
  xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <ns0:message id="87855" timestamp="2002-12-13T14:55:38.885Z"
      sessiontoken="p36bttjwyl"/>
  </soapenv:Header>
  <soapenv:Body>
    <ns1:createInstance>
      <objectPath xsi:type="ns1:CIMObjectPath">
        <className xsi:type="xsd:string">ServiceDefinition</className>
        <properties xsi:type="ns1:CIMPropertyList"
          soapenc:arrayType="ns1:CIMProperty[]">
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Name</name>
            <value xsi:type="xsd:string">ATM_VP</value>
          </item>
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Type</name>
            <value xsi:type="xsd:string">EvcIpran</value>
          </item>
        </properties>
      <objectPath xsi:type="ns1:CIMObjectPath">
        <className xsi:type="xsd:string">ServiceDefinitionDetails</className>
        <properties xsi:type="ns1:CIMPropertyList"
          soapenc:arrayType="ns1:CIMProperty[]">
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">SubType</name>
```

```

        <value xsi:type="xsd:string">Evc</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">AccessType</name>
        <value xsi:type="xsd:string">ATM</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">TransportType</name>
        <value xsi:type="xsd:string">PSEUDOWIRE</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">AtmTransportMode</name>
        <value xsi:type="xsd:string">VP</value>
        <qualifier xsi:type="ns1:CIMQualifier">
            <name xsi:type="xsd:string">editable</name>
            <value xsi:type="xsd:string">true</value>
        </qualifier>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">AutopickVCId</name>
        <value xsi:type="xsd:string">true</value>
        <qualifier xsi:type="ns1:CIMQualifier">
            <name xsi:type="xsd:string">editable</name>
            <value xsi:type="xsd:string">true</value>
        </qualifier>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">EnablePWRedundancy</name>
        <value xsi:type="xsd:string">false</value>
        <qualifier xsi:type="ns1:CIMQualifier">
            <name xsi:type="xsd:string">editable</name>
            <value xsi:type="xsd:string">true</value>
        </qualifier>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">UsePwClass</name>
        <value xsi:type="xsd:string">false</value>
        <qualifier xsi:type="ns1:CIMQualifier">
            <name xsi:type="xsd:string">editable</name>
            <value xsi:type="xsd:string">true</value>
        </qualifier>
    </item>
</properties>
</objectPath>
</objectPath>
</ns1:createInstance>
</soapenv:Body>
</soapenv:Envelope>

```

## Creating RAN Backhaul ATM Policy with IOS XR Support

The following example shows a partial list of properties that can be specified to enable ATM support for IOS XR devices. These attributes should be added under **ServiceDefinitionDetails**.

```

<objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">ServiceDefinitionDetails</className>
    <properties xsi:type="ns1:CIMPropertyList"
        soapenc:arrayType="ns1:CIMProperty[]">
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">L2VpnGrpName</name>

```

```

    <value xsi:type="xsd:string">ISC</value>
  </item>

  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">AutoPickELineName</name>
    <value xsi:type="xsd:string">true</value>
    <qualifier xsi:type="ns1:CIMQualifier">
      <name xsi:type="xsd:string">editable</name>
      <value xsi:type="xsd:string">true</value>
    </qualifier>
  </item>
</properties>
</objectPath>

```

#### Related APIs

- [ModifyATM\\_IMA\\_Policy.xml](#)
- [DeleteATM\\_IMA\\_Policy.xml](#)

## ATM Pseudowire Service Requests

Before creating a service request, a service policy has to be defined. For information on ATM Pseudowire policies, see [EVC Service Definitions, page 9-1](#).

An ATM Pseudowire service request defines the service definition along with the the respective attributes for a EVC-TDM link.

See the [Cisco Prime Provisioning 7.0 User Guide](#) for the illustration of RAN Backhaul Services.

## Service Request Examples

The following XML examples illustrate how you work with service requests for ATM Pseudowire APIs. They also demonstrate the kinds of properties (attributes) that need to be specified for each request.

This section includes the following examples:

- [Create ATM \(VCC\) Service Request Without Pseudowire Redundancy, page 11-37](#)
- [Create ATM \(VCC\) Service Request With Pseudowire Redundancy, page 11-41](#)
- [Create ATM \(PVP\) Service Request Without enabling Pseudowire Redundancy:, page 11-46](#)
- [Create ATM \(PVP\) Service Request with Pseudowire Redundancy enabled:, page 11-49](#)
- [Create RAN Backhaul ATM Service Request With IOS XR, page 11-53](#)

### Create ATM (VCC) Service Request Without Pseudowire Redundancy

In this example, a ATM Pseudowire (VCC) service request is created without Pseudowire redundancy.

XML file in [Cisco Prime Provisioning API 6.8 Programmer Reference](#):

CreateATM\_IMA\_VCC\_SR\_PW.xml

The relevant attributes that need to be set for this policy are highlighted in bold in the example. They are **MCPTTimer1**, which in the example is set to **1652**, **MCPTTimer2**, which in the example is set to **6245**, **MCPTTimer3**, which in the example is set to **8246**, **Terminal**, which in the example is set to **A**, **MCPTTimerToUse**, which in the example is set to **2**, and **Terminal**, which in the example is set to **Z**.

```
<?xml version="1.0" encoding="utf-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ns0="http://www.cisco.com/cim-cx/2.0" xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <!-- WaitTimeout has a default set in system properties.-->
    <ns0:message id="87855" timestamp="2002-12-13T14:55:38.885Z"
      Wait="true" WaitTimeout="90" sessiontoken="p36bttjwy1" />
  </soapenv:Header>
  <soapenv:Body>
    <ns1:performBatchOperation>
      <actions xsi:type="ns1:CIMActionList"
        soapenc:arrayType="ns1:CIMAction[]">
        <action>
          <actionName xsi:type="xsd:string">createInstance</actionName>
          <objectPath xsi:type="ns1:CIMObjectPath">
            <className xsi:type="xsd:string">ServiceOrder</className>
            <properties xsi:type="ns1:CIMPropertyList"
              soapenc:arrayType="ns1:CIMProperty[]">
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">ServiceName</name>
                <value xsi:type="xsd:string">ATM_VC</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">CarrierId</name>
                <value xsi:type="xsd:string">322</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">DesiredDueDate</name>
                <value xsi:type="xsd:dateTime">2008-12-13T14:55:38.885Z</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">NumberOfRequests</name>
                <value xsi:type="xsd:string">1</value>
              </item>
            </properties>
          </objectPath>
        </action>
        <action>
          <actionName xsi:type="xsd:string">createInstance</actionName>
          <objectPath xsi:type="ns1:CIMObjectPath">
            <className xsi:type="xsd:string">ServiceRequest</className>
            <properties xsi:type="ns1:CIMPropertyList"
              soapenc:arrayType="ns1:CIMProperty[]">
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">RequestName</name>
                <value xsi:type="xsd:string">ATM_VC</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">Type</name>
                <value xsi:type="xsd:string">EvcIpran</value>
              </item>
            </properties>
          <objectPath xsi:type="ns1:CIMObjectPath">
            <className xsi:type="xsd:string">ServiceRequestDetails</className>
          </objectPath>
        </action>
      </actions>
    </ns1:performBatchOperation>
  </soapenv:Body>
</soapenv:Envelope>
```

```

<properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">ServiceDefinition</name>
    <value xsi:type="xsd:string">ATM_VC</value>
    <qualifier xsi:type="xsd:string">
      <name xsi:type="xsd:string">ServiceDefinitionType</name>
      <value xsi:type="xsd:string">EvcIpran</value>
    </qualifier>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">AutopickVCID</name>
    <value xsi:type="xsd:string">>true</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">Description</name>
    <value xsi:type="xsd:string">ATM VC SR</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">MCPTTimer1</name>
    <value xsi:type="xsd:string">1652</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">MCPTTimer2</name>
    <value xsi:type="xsd:string">6245</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">MCPTTimer3</name>
    <value xsi:type="xsd:string">8246</value>
  </item>
</properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcLink</className>
  <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">ems2941q</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">ATM0/IMA5</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Terminal</name>
      <value xsi:type="xsd:string">A</value>
    </item>
  </properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcATMIMALinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmInterfaceEncapType</name>
      <value xsi:type="xsd:string">AAL0</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmTransportMode</name>
      <value xsi:type="xsd:string">VC</value>
    </item>
    <!-- VC Attribute-->
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmSubInterfaceNumber</name>
      <value xsi:type="xsd:string">465724</value>
    </item>
  </properties>
</objectPath>

```

```

</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">PVPVPINumber</name>
  <value xsi:type="xsd:string">161</value>
</item>
<!-- VC Attribute-->
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">PVPVCINumber</name>
  <value xsi:type="xsd:string">46556</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">MaxCells</name>
  <value xsi:type="xsd:string">5</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">MCPTTimerToUse</name>
  <value xsi:type="xsd:string">2</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">UsePwClass</name>
  <value xsi:type="xsd:string">>true</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">PwClassName</name>
  <value xsi:type="xsd:string">PW_1</value>
</item>
</properties>
</objectPath>
</objectPath>
<!-- L2Access Links -->
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcLink</className>
  <properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">ems7606c</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">ATM3/0/11</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Terminal</name>
      <value xsi:type="xsd:string">Z</value>
    </item>
  </properties>
</objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcATMIMALinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmInterfaceEncapType</name>
      <value xsi:type="xsd:string">AAL0</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmTransportMode</name>
      <value xsi:type="xsd:string">VC</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmSubInterfaceNumber</name>
      <value xsi:type="xsd:string">25650</value>
    </item>
    <item xsi:type="ns1:CIMProperty">

```



```

        <name xsi:type="xsd:string">PVPVPINumber</name>
        <value xsi:type="xsd:string">255</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">PVPVCINumber</name>
        <value xsi:type="xsd:string">18465</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">MaxCells</name>
        <value xsi:type="xsd:string">20</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">MCPTTimerToUse</name>
        <value xsi:type="xsd:string">2</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">UsePwClass</name>
        <value xsi:type="xsd:string">true</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">PwClassName</name>
        <value xsi:type="xsd:string">PW_2</value>
    </item>
    </properties>
</objectPath>
</objectPath>
</objectPath>
</objectPath>
</action>
</actions>
</ns1:performBatchOperation>
</soapenv:Body>
</soapenv:Envelope>

```

## Create ATM (VCC) Service Request With Pseudowire Redundancy

In this example, a ATM Pseudowire (VCC) service request is created with Pseudowire redundancy. To enable Pseudowire redundancy, set **UseBackPwClass** and **BackPwClassName** while creating the service request.

**UseBackPwClass** and **BackPwClassName** are highlighted with bold in this below example.

XML file in [Cisco Prime Provisioning API 6.8 Programmer Reference](#):  
CreateATM\_IMA\_VCC\_SR\_PWRedundancy.xml

```

<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:ns0="http://www.cisco.com/cim-cx/2.0"
  xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <!-- WaitTimeout has a default set in system properties.-->
    <ns0:message id="87855" timestamp="2002-12-13T14:55:38.885Z"
      Wait="true" WaitTimeout="90" sessiontoken="p36bttjwy1"/>
  </soapenv:Header>
  <soapenv:Body>
    <ns1:performBatchOperation>
      <actions xsi:type="ns1:CIMActionList"

```

```

        soapenc:arrayType="ns1:CIMAction[]">
<action>
  <actionName xsi:type="xsd:string">createInstance</actionName>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">ServiceOrder</className>
    <properties xsi:type="ns1:CIMPropertyList"
      soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">ServiceName</name>
        <value xsi:type="xsd:string">ATM_VC</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">CarrierId</name>
        <value xsi:type="xsd:string">322</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">DesiredDueDate</name>
        <value xsi:type="xsd:dateTime">2008-12-13T14:55:38.885Z</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">NumberOfRequests</name>
        <value xsi:type="xsd:string">1</value>
      </item>
    </properties>
  </objectPath>
</action>
<action>
  <actionName xsi:type="xsd:string">createInstance</actionName>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">ServiceRequest</className>
    <properties xsi:type="ns1:CIMPropertyList"
      soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">RequestName</name>
        <value xsi:type="xsd:string">ATM_VC</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Type</name>
        <value xsi:type="xsd:string">EvcIpran</value>
      </item>
    </properties>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">ServiceRequestDetails</className>
    <properties xsi:type="ns1:CIMPropertyList"
      soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">ServiceDefinition</name>
        <value xsi:type="xsd:string">ATM_VC</value>
        <qualifier xsi:type="xsd:string">
          <name xsi:type="xsd:string">ServiceDefinitionType</name>
          <value xsi:type="xsd:string">EvcIpran</value>
        </qualifier>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">AutopickVCID</name>
        <value xsi:type="xsd:string">>true</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">UseBackupVCID</name>
        <value xsi:type="xsd:string">>true</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Description</name>
        <value xsi:type="xsd:string">ATM VC SR</value>
      </item>
    </properties>
  </objectPath>
</action>

```

```

</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">MCPTTimer1</name>
  <value xsi:type="xsd:string">1652</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">MCPTTimer2</name>
  <value xsi:type="xsd:string">6245</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">MCPTTimer3</name>
  <value xsi:type="xsd:string">8246</value>
</item>
</properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcLink</className>
  <properties xsi:type="ns1:CIMPropertyList"
    soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">ems2941g</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">ATM0/IMA6</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Terminal</name>
      <value xsi:type="xsd:string">A</value>
    </item>
  </properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcATMIMALinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
    soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmInterfaceEncapType</name>
      <value xsi:type="xsd:string">AAL0</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmTransportMode</name>
      <value xsi:type="xsd:string">VC</value>
    </item>
    <!-- VC Attribute-->
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmSubInterfaceNumber</name>
      <value xsi:type="xsd:string">465724</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PVPVPINumber</name>
      <value xsi:type="xsd:string">161</value>
    </item>
    <!-- VC Attribute-->
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PVPVCINumber</name>
      <value xsi:type="xsd:string">46556</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">MaxCells</name>
      <value xsi:type="xsd:string">5</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">MCPTTimerToUse</name>
      <value xsi:type="xsd:string">2</value>
  </properties>

```

```

    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UsePwClass</name>
      <value xsi:type="xsd:string">>true</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PwClassName</name>
      <value xsi:type="xsd:string">PW3</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UseBackPwClass</name>
      <value xsi:type="xsd:string">>true</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">BackPwClassName</name>
      <value xsi:type="xsd:string">PW_2</value>
    </item>
  </properties>
</objectPath>
</objectPath>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcLink</className>
  <properties xsi:type="ns1:CIMPropertyList"
    soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">ems7606c</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">ATM3/0/11</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Terminal</name>
      <value xsi:type="xsd:string">Z</value>
    </item>
  </properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcATMIMALinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
    soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmInterfaceEncapType</name>
      <value xsi:type="xsd:string">AAL0</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmTransportMode</name>
      <value xsi:type="xsd:string">VC</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmSubInterfaceNumber</name>
      <value xsi:type="xsd:string">25650</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PVPVPINumber</name>
      <value xsi:type="xsd:string">255</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PVPVCINumber</name>
      <value xsi:type="xsd:string">18465</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">MaxCells</name>
      <value xsi:type="xsd:string">20</value>
    </item>
  </properties>
</objectPath>

```

```

</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">MCPTTimerToUse</name>
  <value xsi:type="xsd:string">2</value>
</item>
</properties>
</objectPath>
</objectPath>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcLink</className>
  <properties xsi:type="ns1:CIMPropertyList">
    soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">ems7609f</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">ATM3/1/2</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Terminal</name>
      <value xsi:type="xsd:string">Z-BackUp</value>
    </item>
  </properties>
</objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcATMIMALinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList">
    soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmInterfaceEncapType</name>
      <value xsi:type="xsd:string">AAL0</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmTransportMode</name>
      <value xsi:type="xsd:string">VC</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmSubInterfaceNumber</name>
      <value xsi:type="xsd:string">25650</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PVPVPINumber</name>
      <value xsi:type="xsd:string">255</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PVPVCINumber</name>
      <value xsi:type="xsd:string">18465</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">MaxCells</name>
      <value xsi:type="xsd:string">20</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">MCPTTimerToUse</name>
      <value xsi:type="xsd:string">2</value>
    </item>
  </properties>
</objectPath>

```

```

        </item>
        <item xsi:type="ns1:CIMProperty">
          <name xsi:type="xsd:string">UsePwClass</name>
          <value xsi:type="xsd:string">>true</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
          <name xsi:type="xsd:string">PwClassName</name>
          <value xsi:type="xsd:string">PW2</value>
        </item>
      </properties>
    </objectPath>
  </objectPath>
</objectPath>
</objectPath>
</action>
</actions>
</ns1:performBatchOperation>
</soapenv:Body>
</soapenv:Envelope>

```

## Create ATM (PVP) Service Request Without enabling Pseudowire Redundancy:

In this example, a ATM Pseudowire (PVP) service request is created without Pseudowire redundancy.

XML file in [Cisco Prime Provisioning API 6.8 Programmer Reference](#):

CreateATM\_IMA\_PVP\_SR\_PW.xml

The relevant attributes that need to be set for this policy are highlighted in bold in the example. They are **MCPTTimer1**, which in the example is set to **1505**, **MCPTTimer2**, which in the example is set to **3205**, **MCPTTimer3**, which in the example is set to **5505**, Terminal, which in the example is set to **A**, **MCPTTimerToUse**, which in the example is set to **3**, and Terminal, which in the example is set to **Z**.

```

<?xml version="1.0" encoding="utf-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ns0="http://www.cisco.com/cim-cx/2.0" xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <!-- WaitTimeout has a default set in system properties.-->
    <ns0:message id="87855" timestamp="2002-12-13T14:55:38.885Z"
      Wait="true" WaitTimeout="90" sessiontoken="p36bttjwy1" />
  </soapenv:Header>
  <soapenv:Body>
    <ns1:performBatchOperation>
      <actions xsi:type="ns1:CIMActionList"
        soapenc:arrayType="ns1:CIMAction[]">
        <action>
          <actionName xsi:type="xsd:string">createInstance</actionName>
          <objectPath xsi:type="ns1:CIMObjectPath">
            <className xsi:type="xsd:string">ServiceOrder</className>
            <properties xsi:type="ns1:CIMPropertyList"
              soapenc:arrayType="ns1:CIMProperty[]">
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">ServiceName</name>
                <value xsi:type="xsd:string">ATM_VP</value>
              </item>
              <item xsi:type="ns1:CIMProperty">
                <name xsi:type="xsd:string">CarrierId</name>
                <value xsi:type="xsd:string">322</value>

```

```

</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">DesiredDueDate</name>
  <value xsi:type="xsd:dateTime">2008-12-13T14:55:38.885Z</value>
</item>
</properties>
</objectPath>
</action>
<action>
  <actionName xsi:type="xsd:string">createInstance</actionName>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">ServiceRequest</className>
    <properties xsi:type="ns1:CIMPropertyList"
      soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">RequestName</name>
        <value xsi:type="xsd:string">ATM_VP</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Type</name>
        <value xsi:type="xsd:string">EvcIpran</value>
      </item>
    </properties>
    <objectPath xsi:type="ns1:CIMObjectPath">
      <className xsi:type="xsd:string">ServiceRequestDetails</className>
      <properties xsi:type="ns1:CIMPropertyList"
        soapenc:arrayType="ns1:CIMProperty[]">
        <item xsi:type="ns1:CIMProperty">
          <name xsi:type="xsd:string">ServiceDefinition</name>
          <value xsi:type="xsd:string">ATM_VP</value>
          <qualifier xsi:type="xsd:string">
            <name xsi:type="xsd:string">ServiceDefinitionType</name>
            <value xsi:type="xsd:string">EvcIpran</value>
          </qualifier>
        </item>
        <item xsi:type="ns1:CIMProperty">
          <name xsi:type="xsd:string">AutopickVCID</name>
          <value xsi:type="xsd:string">true</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
          <name xsi:type="xsd:string">MCPTTimer1</name>
          <value xsi:type="xsd:string">1505</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
          <name xsi:type="xsd:string">MCPTTimer2</name>
          <value xsi:type="xsd:string">3205</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
          <name xsi:type="xsd:string">MCPTTimer3</name>
          <value xsi:type="xsd:string">5505</value>
        </item>
      </properties>
      <objectPath xsi:type="ns1:CIMObjectPath">
        <className xsi:type="xsd:string">EvcLink</className>
        <properties xsi:type="ns1:CIMPropertyList"
          soapenc:arrayType="ns1:CIMProperty[]">
          <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Npe</name>
            <value xsi:type="xsd:string">ems2941q</value>
          </item>
        </objectPath>
      </properties>
    </objectPath>
  </action>
</action>

```

```

<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">UniInftId</name>
  <value xsi:type="xsd:string">ATM0/IMA14</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">Terminal</name>
  <value xsi:type="xsd:string">A</value>
</item>
</properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcATMIMALinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmTransportMode</name>
      <value xsi:type="xsd:string">VP</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PVPVPINumber</name>
      <value xsi:type="xsd:string">12</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">MaxCells</name>
      <value xsi:type="xsd:string">6</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">MCPTimerToUse</name>
      <value xsi:type="xsd:string">3</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UsePwClass</name>
      <value xsi:type="xsd:string">>true</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PwClassName</name>
      <value xsi:type="xsd:string">PW_1</value>
    </item>
  </properties>
</objectPath>
</objectPath>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcLink</className>
  <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">ems7606c</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">ATM6/0/0</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Terminal</name>
      <value xsi:type="xsd:string">Z</value>
    </item>
  </properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcATMIMALinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmTransportMode</name>
      <value xsi:type="xsd:string">VP</value>

```



```

</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">PVPVPINumber</name>
  <value xsi:type="xsd:string">111</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">MaxCells</name>
  <value xsi:type="xsd:string">5</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">MCPTTimerToUse</name>
  <value xsi:type="xsd:string">3</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">UsePwClass</name>
  <value xsi:type="xsd:string">true</value>
</item>
<item xsi:type="ns1:CIMProperty">
  <name xsi:type="xsd:string">PwClassName</name>
  <value xsi:type="xsd:string">PW_2</value>
</item>
</properties>
</objectPath>
</objectPath>
</objectPath>
</objectPath>
</action>
</actions>
</ns1:performBatchOperation>
</soapenv:Body>
</soapenv:Envelope>

```

## Create ATM (PVP) Service Request with Pseudowire Redundancy enabled:

In this example, a ATM Pseudowire (PVP) service request is created with Pseudowire redundancy. To enable Pseudowire redundancy, set **UseBackPwClass** and **BackPwClassName** while creating the service request.

**UseBackPwClass** and **BackPwClassName** are highlighted with bold in this below example.

XML file in [Cisco Prime Provisioning API 6.8 Programmer Reference](#):

CreateATM\_IMA\_PVP\_SR\_PWRedundancy.xml

```

<?xml version="1.0" encoding="utf-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:ns0="http://www.cisco.com/cim-cx/2.0" xmlns:ns1="urn:CIM">
  <soapenv:Header>
    <!-- WaitTimeout has a default set in system properties.-->
    <ns0:message id="87855" timestamp="2002-12-13T14:55:38.885Z"
      Wait="true" WaitTimeout="90" sessiontoken="p36bttjwy1" />
  </soapenv:Header>
  <soapenv:Body>
    <ns1:performBatchOperation>
      <actions xsi:type="ns1:CIMActionList"
        soapenc:arrayType="ns1:CIMAction[]">
        <action>
          <actionName xsi:type="xsd:string">createInstance</actionName>

```

```

<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">ServiceOrder</className>
  <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">ServiceName</name>
      <value xsi:type="xsd:string">ATM_VP</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">CarrierId</name>
      <value xsi:type="xsd:string">322</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">DesiredDueDate</name>
      <value xsi:type="xsd:dateTime">2008-12-13T14:55:38.885Z</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">NumberOfRequests</name>
      <value xsi:type="xsd:string">1</value>
    </item>
  </properties>
</objectPath>
</action>
<action>
  <actionName xsi:type="xsd:string">createInstance</actionName>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">ServiceRequest</className>
    <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">RequestName</name>
        <value xsi:type="xsd:string">ATM_VP</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Type</name>
        <value xsi:type="xsd:string">EvcIpran</value>
      </item>
    </properties>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">ServiceRequestDetails</className>
    <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">ServiceDefinition</name>
        <value xsi:type="xsd:string">ATM_VP</value>
        <qualifier xsi:type="xsd:string">
          <name xsi:type="xsd:string">ServiceDefinitionType</name>
          <value xsi:type="xsd:string">EvcIpran</value>
        </qualifier>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">AutopickVCID</name>
        <value xsi:type="xsd:string">true</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">UseBackupVCID</name>
        <value xsi:type="xsd:string">true</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">MCPTTimer1</name>
        <value xsi:type="xsd:string">505</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">MCPTTimer2</name>

```

```

        <value xsi:type="xsd:string">1005</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">MCPTTimer3</name>
        <value xsi:type="xsd:string">1505</value>
    </item>
</properties>
<objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">EvcLink</className>
    <properties xsi:type="ns1:CIMPropertyList"
    soapenc:arrayType="ns1:CIMProperty[]">
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Npe</name>
            <value xsi:type="xsd:string">ems2941g</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">UniInftId</name>
            <value xsi:type="xsd:string">ATM0/IMA16</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">Terminal</name>
            <value xsi:type="xsd:string">A</value>
        </item>
    </properties>
<objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">EvcATMIMALinkAttrs</className>
    <properties xsi:type="ns1:CIMPropertyList"
    soapenc:arrayType="ns1:CIMProperty[]">
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">AtmTransportMode</name>
            <value xsi:type="xsd:string">VP</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">PVPVPINumber</name>
            <value xsi:type="xsd:string">12</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">MaxCells</name>
            <value xsi:type="xsd:string">6</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">MCPTTimerToUse</name>
            <value xsi:type="xsd:string">2</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">UsePwClass</name>
            <value xsi:type="xsd:string">true</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">PwClassName</name>
            <value xsi:type="xsd:string">PW_1</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">UseBackPwClass</name>
            <value xsi:type="xsd:string">true</value>
        </item>
        <item xsi:type="ns1:CIMProperty">
            <name xsi:type="xsd:string">BackPwClassName</name>
            <value xsi:type="xsd:string">PW_2</value>
        </item>
    </properties>
</objectPath>
</objectPath>
<objectPath xsi:type="ns1:CIMObjectPath">

```

```

<className xsi:type="xsd:string">EvcLink</className>
<properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">Npe</name>
    <value xsi:type="xsd:string">ems7609f</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">UniInftId</name>
    <value xsi:type="xsd:string">ATM3/1/1</value>
  </item>
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">Terminal</name>
    <value xsi:type="xsd:string">Z</value>
  </item>
</properties>
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcATMIMALinkAttrs</className>
  <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmInterfaceEncapType</name>
      <value xsi:type="xsd:string">AAL5</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">AtmTransportMode</name>
      <value xsi:type="xsd:string">VP</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PVPVPINumber</name>
      <value xsi:type="xsd:string">111</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">MaxCells</name>
      <value xsi:type="xsd:string">5</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">MCPTTimerToUse</name>
      <value xsi:type="xsd:string">2</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UsePwClass</name>
      <value xsi:type="xsd:string">true</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">PwClassName</name>
      <value xsi:type="xsd:string">PW_5</value>
    </item>
  </properties>
</objectPath>
</objectPath>
<!-- Third Link for Pseudowire Redundancy -->
<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string">EvcLink</className>
  <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">Npe</name>
      <value xsi:type="xsd:string">ems7606c</value>
    </item>
    <item xsi:type="ns1:CIMProperty">
      <name xsi:type="xsd:string">UniInftId</name>
      <value xsi:type="xsd:string">ATM6/0/0</value>
    </item>
  </properties>
</objectPath>

```

```

        <item xsi:type="ns1:CIMProperty">
          <name xsi:type="xsd:string">Terminal</name>
          <value xsi:type="xsd:string">Z-BackUp</value>
        </item>
      </properties>
    </objectPath>
  </objectPath>
</objectPath>
</action>
</actions>
</ns1:performBatchOperation>
</soapenv:Body>
</soapenv:Envelope>

```

## Create RAN Backhaul ATM Service Request With IOS XR

The following example shows a partial list of properties that needs to be specified to enable support for IOS XR devices. These attributes should be added under EvcLink (**L2VpnGrpName** and **AutoPickElineName**).

```

<objectPath xsi:type="ns1:CIMObjectPath">
  <className xsi:type="xsd:string"> EvcLink</className>

```

```

<properties xsi:type="ns1:CIMPropertyList"
  soapenc:arrayType="ns1:CIMProperty[]">
  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">L2VpnGrpName</name>
    <value xsi:type="xsd:string">ISC</value>
  </item>

  <item xsi:type="ns1:CIMProperty">
    <name xsi:type="xsd:string">AutoPickElineName</name>
    <value xsi:type="xsd:string">>true</value>
    <qualifier xsi:type="ns1:CIMQualifier">
      <name xsi:type="xsd:string">editable</name>
      <value xsi:type="xsd:string">>true</value>
    </qualifier>
  </item>
</properties>
</objectPath>

```

## ATM Pseudowire End-to-End Provisioning Process

This section describes the process for using the API to provision ATM Pseudowire and includes the required operation, object definition (className), and parameter definitions.

### Process Summary

This ATM Pseudowire provisioning example uses the following processes:

1. Create device groups (optional).
2. Create devices.
3. Collect device configurations.
4. Create provider.
5. Create regions.
6. Declare devices as PEs.
7. Create customer.
8. Create VC ID pool.
9. Create ATM Pseudowire service definition (policy).
10. Create ATM Pseudowire service request.

### Detailed Process

This section describes the process for provisioning ATM Pseudowire using XML examples.

The complete list of XML examples for ATM Pseudowire is available here:

[Cisco Prime Provisioning API 6.8 Programmer Reference](#)



#### Note

For clarity, this provisioning process shows each step as a separate XML request. Many of these steps can be combined using **performBatchOperations**.

**Step 1** Create device groups (optional).

**Table 11-13 Create Device Group**

Operation	className	Required Parameters
createInstance	DeviceGroup	Name

**XML Examples:**

- CreateDeviceGroup.xml



**Tip**

If you plan to create device groups, create the empty device groups before you create the devices. As you create each device, add the associated device group name as a key property in the create device XML request.

In the following example, the device group (CustDev) is added as a key property when creating the device **CiscoRouter**:

```
<ns1:createInstance>
  <objectPath xsi:type="ns1:CIMObjectPath">
    <className xsi:type="xsd:string">CiscoRouter</className>
    <properties xsi:type="ns1:CIMPropertyList"
soapenc:arrayType="ns1:CIMProperty[]">
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">DeviceGroup</name>
        <value xsi:type="xsd:string">CustDev</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">CfgUpDnldMech</name>
        <value xsi:type="xsd:string">DEFAULT</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">TransportMechanism</name>
        <value xsi:type="xsd:string">DEFAULT</value>
      </item>
      <item xsi:type="ns1:CIMProperty">
        <name xsi:type="xsd:string">Password</name>
        <value xsi:type="xsd:string">vpnsc</value>
      </item>
    </properties>
  </objectPath>
</ns1:createInstance>
```

**Step 2** Create devices.

Every network element that Prime Provisioning manages must be defined as a device in the system. An element is any device from which Prime Provisioning can collect configuration information.

**Table 11-14 Create Devices**

Operation	className	Required Parameters
createInstance	<ul style="list-style-type: none"> <li>• CiscoRouter</li> <li>• CatOS</li> </ul>	One or more of the following: <ul style="list-style-type: none"> <li>• ManagementIPAddress</li> <li>• HostName</li> <li>• DomainName</li> </ul>

**XML Examples:**

- CreateCiscoRouter.xml
- CreateCat.xml

**Step 3** Collect device configurations.

A device configuration collection is a task. This task uploads the current configuration from the device to the Prime Provisioning database. The collection task is executed through a service request, and the service request is scheduled through a service order.

**Note**

The service request name must be unique for each NBI API.

**Table 11-15** Collect Device Configurations

Operation	className	Required Parameters
createInstance	ServiceOrder	<ul style="list-style-type: none"> <li>• ServiceName</li> <li>• NumberofRequests</li> <li>• ServiceRequest</li> </ul>
	ServiceRequest	<ul style="list-style-type: none"> <li>• RequestName</li> <li>• Type=Task</li> <li>• ServiceRequestDetails</li> </ul>
	ServiceRequestDetails	<ul style="list-style-type: none"> <li>• SubType=COLLECTION</li> <li>• Device (or DeviceGroup)</li> </ul> <p><b>Note</b> You must select at least one device or device group.</p> <ul style="list-style-type: none"> <li>• RetrieveVersion=true</li> <li>• RetrieveDeviceInterfaces=true</li> </ul>

**XML Examples:**

- CreateTaskServiceOrderCollection.xml

**Step 4** Create a provider.

The provider is the administrative domain of an ISP, with one BGP autonomous system (AS) number. The network owned by the provider is called the backbone network. If an ISP has two AS numbers, you must define it as two provider administrative domains.

**Table 11-16** Create a Provider

Operation	className	Required Parameters
createInstance	Provider	<ul style="list-style-type: none"> <li>• Name</li> <li>• AsNumber</li> </ul>

**XML Examples:**

CreateProvider.xml

**Step 5** Create regions.



Each provider can contain multiple regions.

**Table 11-17 Create Regions**

Operation	className	Required Parameters
createInstance	Region	<ul style="list-style-type: none"> <li>Name</li> <li>Provider</li> </ul>

**XML Examples:**

CreateRegion.xml

**Step 6** Declare devices as PEs.

The XML request that assigns a PE role to a device is also used to:

- Assign PE devices to Regions/Provider
- Specify interface information

**Table 11-18 Create PE Devices**

Operation	className	Required Parameters
createInstance	PE	<ul style="list-style-type: none"> <li>Provider</li> <li>Region</li> <li>Role= <ul style="list-style-type: none"> <li>N-PE</li> </ul> </li> <li>Device</li> <li>Interface</li> </ul>

**XML Examples:**

CreatePE.xml

**Step 7** Create a customer.

A customer is a requestor of VPN services. Each customer can contain multiple customer sites. Each site belongs to only one customer and can contain multiple CPEs.

**Table 11-19 Create Organization**

Operation	className	Required Parameters
createInstance	Organization	<ul style="list-style-type: none"> <li>Name</li> </ul>

**XML Examples:**

- CreateOrganization.xml

**Step 8** Create VC ID pool.

For a VPLS VPN, all PE-POP routers use the same VC ID to establish the virtual circuit (VC) across the provider core. The VC ID is also the VPN ID and is assigned from the VC ID pool. Prime Provisioning ensures that VC IDs are unique among VPLS VPNs.

**Note**

A VC ID pool is global (not associated with a provider or organization).

**Table 11-20 Create VC ID Pool**

Operation	className	Required Parameters
createInstance	VcIdPool	<ul style="list-style-type: none"> <li>Start</li> <li>Size</li> </ul>

**XML Examples:**

- CreateVcIdPool.xml

**Step 9** Create ATM Pseudowire service definition (policy).

A ATM Pseudowire service definition specifies the service subtype, device properties, and the attributes common to all attachment circuits.

**Table 11-21 Create a ATM Pseudowire Service Definition**

Operation	className	Required Parameters
createInstance	ServiceDefinition	<ul style="list-style-type: none"> <li>Name</li> <li>Type=EvciPran</li> <li>Provider or Organization</li> </ul> <p><b>Note</b> If you do not specify a <b>Provider</b> or <b>Organization</b>, the service policy is global</p> <ul style="list-style-type: none"> <li>ServiceDefinitionDetails</li> </ul>
	ServiceDefinitionDetails	<ul style="list-style-type: none"> <li>SubType=Evci</li> <li>Parameters <ul style="list-style-type: none"> <li>AccessType = ATM</li> <li>TransportType = PSEUDOWIRE</li> <li>AtmTransportMode</li> <li>AutopickVCId</li> <li>EnablePWRedundancy</li> <li>UsePwClass</li> </ul> </li> </ul>

**XML Examples:**

- CreateATM\_IMA\_Policy.xml

**Step 10** Create ATM Pseudowire service request.

A ATM Pseudowire service request defines the service definition and assigns interfaces and attributes.

Table 11-22 Create a ATM Pseudowire Service Request

Operation	className	Required Parameters
createInstance	ServiceOrder	<ul style="list-style-type: none"> <li>ServiceName</li> <li>NumberOfRequests</li> <li>Provider or Organization</li> </ul> <p><b>Note</b> If you do not specify a <b>Provider</b> or <b>Organization</b>, the service policy is global.</p> <ul style="list-style-type: none"> <li>ServiceRequest</li> </ul>
	ServiceRequest	<ul style="list-style-type: none"> <li>RequestName</li> <li>Type=EvcIpran</li> <li>ServiceRequestDetails</li> </ul>
	ServiceRequestDetails	<ul style="list-style-type: none"> <li>ServiceDefinition <ul style="list-style-type: none"> <li>ServiceDefinitionType=EvcIpran</li> </ul> </li> <li>VCID</li> <li>BackupVCID</li> <li>MCPTTimer1</li> <li>MCPTTimer2</li> <li>MCPTTimer3</li> <li>Npe</li> <li>UniInftId</li> <li>Terminal</li> <li>AtmInterfaceEncapType</li> <li>AtmTransportMode</li> <li>AtmSubInterfaceNumber</li> <li>PVPVPINumber</li> <li>PVPVCINumber</li> <li>MaxCells</li> <li>MCPTTimerToUse</li> <li>UsePwClass</li> <li>PwClassName</li> <li>UseBackPwClass - Only if PW Redundancy needs to be created</li> <li>BackPwClassName - Only if PW Redundancy needs to be created</li> </ul>

**Tip**

Record the **LocatorId** value from the XML response for the service request. The Locator ID is required for subsequent service request tasks.

**XML Examples:**

- CreateATM\_IMA\_PVP\_SR\_PW.xml
- CreateATM\_IMA\_PVP\_SR\_PWRedundancy.xml (only if PW redundancy needs to be created for ATM IMA PVP Service)
- CreateATM\_IMA\_VCC\_SR\_PW.xml
- CreateATM\_IMA\_VCC\_SR\_PWRedundancy.xml (only if PW redundancy needs to be created for ATM IMA VCC Service)
- CreateIPRAN\_ATM\_SR\_IOS\_XR.xml

## Auditing Service Requests

A configuration audit occurs automatically each time you deploy a service request. During this configuration audit, Prime Provisioning verifies that all Cisco IOS commands are present and that they have the correct syntax. An audit also verifies that there were no errors during deployment by examining the commands configured by the service request on the target devices. If the device configuration does not match what is defined in the service request, the audit flags a warning and sets the service request to a *Failed Audit* or *Lost* state.

If you do not want the configuration audit to occur, change the value for the **Audit** parameter. The **Audit** parameter supports these values:

- **Audit**—This is the default. A successfully deployed service request is automatically audited unless this flag is changed.
- **NoAudit**—Do not perform a configuration audit when the service request is deployed.
- **ForceAudit**—Perform a configuration audit even if the service request deployment is not successful.

You can use the Audit parameter with a **Create**, **Modify**, or **Decommission** service request or a **Deployment** task. See the “[Service Decommission](#)” section on page 3-11 for more information. To perform a configuration audit as a separate task, see the “[Configuration Audit](#)” section on page 3-11.