



XML and DTD

Introduction

This chapter describes the encoding scheme supported through Java API.

XML DTD

Data exchanged between the client application and the Java API are encoded as an XML string. This includes:

- Object identification—includes class and object name; defined as **ObjId** in an XML DTD
- Object definition—includes ObjId and attribute list; defined as **ObjDef** in an XML DTD
- Inventory query result—defined as **InventoryQueryResult** in an XML DTD.

XML Document Type Definitions

ObjDef

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

<!ELEMENT ObjDef (ObjId, attribute*)>
<!ATTLIST ObjDef name ID #REQUIRED

<!ELEMENT ObjId (#PCDATA)>
<!ATTLIST ObjId class CDATA #REQUIRED>
<!ATTLIST ObjId name CDATA #REQUIRED>

<!ELEMENT attribute (int|float|string|enum|strenum|bitmap|seq|seqOf)>
<!ATTLIST attribute name CDATA #REQUIRED>

<!ELEMENT int (#PCDATA)>
<!ATTLIST int value CDATA #REQUIRED>

<!ELEMENT float (#PCDATA)>
<!ATTLIST float value CDATA #REQUIRED>

<!ELEMENT string (#PCDATA)>
<!ATTLIST string value CDATA #REQUIRED>
```

```

<!ELEMENT enum (#PCDATA)>
<!ATTLIST enum name CDATA #IMPLIED
              value CDATA #IMPLIED>

<!ELEMENT strenum (#PCDATA)>
<!ATTLIST strenum name CDATA #IMPLIED
              value CDATA #IMPLIED>

<!ELEMENT bitmap (#PCDATA)>
<!ATTLIST bitmap name CDATA #IMPLIED
              value CDATA #REQUIRED>

<!ELEMENT seq (seqItem)+>
<!ATTLIST seq name CDATA #IMPLIED>

<!ELEMENT seqItem (int|float|string|enum|strenum|bitmap|seq|seqOf)>
<!ATTLIST seqItem name CDATA #REQUIRED>

<!ELEMENT seqOf (int+|float+|string+|enum+|strenum+|bitmap+|seq+|seqOf+)>

```

InventoryQueryResult

```

<!ELEMENT InventoryQueryResult (ObjDef)*>

```

XML Sample Code

Input XML Sample Code

```

<ObjId class = "Region" name = "/NetworkId=1/RegionId=SanJose">
</ObjId>

```

Output XML Sample Code

```

<InventoryQueryResult>
<ObjDef>
<ObjId class = "Interface" name =
"/NetworkId=1/GatekeeperId=tv-7200-2_172.29.129.131/InterfaceId=Ethernet1_1">
<attribute name="_CmTypeVersionInfo"
>
</attribute>
<attribute name="_mgFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=tv-7200-2_172.29.129.131"
/>
</attribute>
<attribute name="_vgFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/virtualGWId=tv-7200-2_172.29.129.131"
/>
</attribute>
<attribute name="_scope"
>
</attribute>
<attribute name="_vnmInterfaceFdn"
>

```

```
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=tv-7200-2_172.29.129.131/Inter
faceId=Ethernet1_1"
/>
</attribute>
<attribute name="_interfaceType"
>
<string value="Ethernet"
/>
</attribute>
<attribute name="interfaceId"
>
<string value="Ethernet1/1"
/>
</attribute>
<attribute name="inHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="outHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="bandwidth"
>
<int value="10000"
/>
</attribute>
<attribute name="delay"
>
<int value="8"
/>
</attribute>
<attribute name="keepAliveTimer"
>
<int value="0"
/>
</attribute>
<attribute name="ipAddress"
>
<string value=""
/>
</attribute>
<attribute name="subnetMask"
>
<string value=""
/>
</attribute>
<attribute name="mediaType"
>
<strenum name=""
value=""
>
</strenum>
</attribute>
<attribute name="squelch"
>
<strenum name=""
value=""
>
</strenum>
</attribute>
```

```

<attribute name="extraCommands"
>
</attribute>

</ObjId>
<ObjId class = "Interface" name =
"/NetworkId=1/GatekeeperId=tv-7200-2_172.29.129.131/InterfaceId=Ethernet1_0">
<attribute name="_CmTypeVersionInfo"
>
</attribute>
<attribute name="_mgFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=tv-7200-2_172.29.129.131"
/>
</attribute>
<attribute name="_vgFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/virtualGWId=tv-7200-2_172.29.129.131"
/>
</attribute>
<attribute name="_scope"
>
</attribute>
<attribute name="_vnmInterfaceFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=tv-7200-2_172.29.129.131/Inter
faceId=Ethernet1_0"
/>
</attribute>
<attribute name="_interfaceType"
>
<string value="Ethernet"
/>
</attribute>
<attribute name="interfaceId"
>
<string value="Ethernet1/0"
/>
</attribute>
<attribute name="inHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="outHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="bandwidth"
>
<int value="10000"
/>
</attribute>
<attribute name="delay"
>
<int value="8"
/>
</attribute>
<attribute name="keepAliveTimer"
>

```

```

<int value="0"
/>
</attribute>
<attribute name="ipAddress"
>
<string value="172.29.129.131"
/>
</attribute>
<attribute name="subnetMask"
>
<string value="255.255.255.0"
/>
</attribute>
<attribute name="mediaType"
>
<strenum name=" "
value=" "
>
</strenum>
</attribute>
<attribute name="sqelch"
>
<strenum name=" "
value=" "
>
</strenum>
</attribute>
<attribute name="extraCommands"
>
</attribute>

</ObjId>
<ObjId class = "Interface" name =
"/NetworkId=1/GatekeeperId=tv-7200-2_172.29.129.131/InterfaceId=Loopback2">
<attribute name="_CmTypeVersionInfo"
>
</attribute>
<attribute name="_mgFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=tv-7200-2_172.29.129.131"
/>
</attribute>
<attribute name="_vgFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/virtualGWId=tv-7200-2_172.29.129.131"
/>
</attribute>
<attribute name="_scope"
>
</attribute>
<attribute name="_vnmInterfaceFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=tv-7200-2_172.29.129.131/Inter
faceId=Loopback2"
/>
</attribute>
<attribute name="_interfaceType"
>
<string value="Loopback"
/>
</attribute>

```

```

<attribute name="loopbackInterfaceId"
>
<int value="2"
/>
</attribute>
<attribute name="inHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="outHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="bandwidth"
>
<int value="8000000"
/>
</attribute>
<attribute name="delay"
>
<int value="8"
/>
</attribute>
<attribute name="keepAliveTimer"
>
<int value="0"
/>
</attribute>
<attribute name="ipAddress"
>
<string value="12.10.19.18"
/>
</attribute>
<attribute name="subnetMask"
>
<string value="255.0.0.0"
/>
</attribute>
<attribute name="extraCommands"
>
</attribute>

</ObjId>
<ObjId class = "Interface" name =
"/NetworkId=1/GatekeeperId=tv-7200-2_172.29.129.131/InterfaceId=Loopback1">
<attribute name="_CmTypeVersionInfo"
>
</attribute>
<attribute name="_mgFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=tv-7200-2_172.29.129.131"
/>
</attribute>
<attribute name="_vgFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/virtualGWId=tv-7200-2_172.29.129.131"
/>
</attribute>
<attribute name="_scope"
>

```

```

</attribute>
<attribute name="_vnmInterfaceFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=tv-7200-2_172.29.129.131/Inter
faceId=Loopback1"
/>
</attribute>
<attribute name="_interfaceType"
>
<string value="Loopback"
/>
</attribute>
<attribute name="loopbackInterfaceId"
>
<int value="1"
/>
</attribute>
<attribute name="inHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="outHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="bandwidth"
>
<int value="8000000"
/>
</attribute>
<attribute name="delay"
>
<int value="8"
/>
</attribute>
<attribute name="keepAliveTimer"
>
<int value="0"
/>
</attribute>
<attribute name="ipAddress"
>
<string value="123.109.11.10"
/>
</attribute>
<attribute name="subnetMask"
>
<string value="255.0.0.0"
/>
</attribute>
<attribute name="extraCommands"
>
</attribute>

</ObjId>
<ObjId class = "Interface" name =
"/NetworkId=1/GatekeeperId=tv-7200-2_172.29.129.131/InterfaceId=Ethernet1_2">
<attribute name="_CmTypeVersionInfo"
>
</attribute>
<attribute name="_mgFdn"

```

```

>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=tv-7200-2_172.29.129.131"
/>
</attribute>
<attribute name="_vgFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/virtualGWId=tv-7200-2_172.29.129.131"
/>
</attribute>
<attribute name="_scope"
>
</attribute>
<attribute name="_vnmInterfaceFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=tv-7200-2_172.29.129.131/Inter
faceId=Ethernet1_2"
/>
</attribute>
<attribute name="_interfaceType"
>
<string value="Ethernet"
/>
</attribute>
<attribute name="interfaceId"
>
<string value="Ethernet1/2"
/>
</attribute>
<attribute name="inHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="outHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="bandwidth"
>
<int value="10000"
/>
</attribute>
<attribute name="delay"
>
<int value="8"
/>
</attribute>
<attribute name="keepAliveTimer"
>
<int value="0"
/>
</attribute>
<attribute name="ipAddress"
>
<string value=""
/>
</attribute>
<attribute name="subnetMask"
>
<string value=""

```



```

/>
</attribute>
<attribute name="mediaType"
>
<strenum name=" "
  value=" "
>
</strenum>
</attribute>
<attribute name="squelch"
>
<strenum name=" "
  value=" "
>
</strenum>
</attribute>
<attribute name="extraCommands"
>
</attribute>

</ObjId>
<ObjId class = "Interface" name =
"/NetworkId=1/GatekeeperId=dgk1_172.29.129.147/InterfaceId=FastEthernet1_0">
<attribute name="_CmTypeVersionInfo"
>
</attribute>
<attribute name="_mgFdn"
>
<string value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=dgk1_172.29.129.147"
/>
</attribute>
<attribute name="_vgFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/virtualGWId=dgk1_172.29.129.147"
/>
</attribute>
<attribute name="_scope"
>
</attribute>
<attribute name="_vnmInterfaceFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=dgk1_172.29.129.147/InterfaceI
d=FastEthernet1_0"
/>
</attribute>
<attribute name="_interfaceType"
>
<string value="FastEthernet"
/>
</attribute>
<attribute name="interfaceId"
>
<string value="FastEthernet1/0"
/>
</attribute>
<attribute name="inHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="outHoldQueueLength"
>

```

```

<int value="0"
/>
</attribute>
<attribute name="bandwidth"
>
<int value="100000"
/>
</attribute>
<attribute name="delay"
>
<int value="18"
/>
</attribute>
<attribute name="keepAliveTimer"
>
<int value="0"
/>
</attribute>
<attribute name="mtuSize"
>
<int value="1500"
/>
</attribute>
<attribute name="ipAddress"
>
<string value=""
/>
</attribute>
<attribute name="subnetMask"
>
<string value=""
/>
</attribute>
<attribute name="mediaType"
>
<strenum name=""
value=""
>
</strenum>
</attribute>
<attribute name="duplex"
>
</attribute>
<attribute name="speed"
>
<strenum name=""
value=""
>
</strenum>
</attribute>
<attribute name="extraCommands"
>
</attribute>

</ObjId>
<ObjId class = "Interface" name =
"/NetworkId=1/GatekeeperId=dgk1_172.29.129.147/InterfaceId=FastEthernet0_0">
<attribute name="_CmTypeVersionInfo"
>
</attribute>
<attribute name="_mgFdn"
>
<string value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=dgk1_172.29.129.147"
/>

```

```
</attribute>
<attribute name="_vgFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/virtualGWId=dgk1_172.29.129.147"
/>
</attribute>
<attribute name="_scope"
>
</attribute>
<attribute name="_vnmInterfaceFdn"
>
<string
value="/systemTitle=ACT/networkId=1/subnetworkId=0/routerId=dgk1_172.29.129.147/InterfaceI
d=FastEthernet0_0"
/>
</attribute>
<attribute name="_interfaceType"
>
<string value="FastEthernet"
/>
</attribute>
<attribute name="interfaceId"
>
<string value="FastEthernet0/0"
/>
</attribute>
<attribute name="inHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="outHoldQueueLength"
>
<int value="0"
/>
</attribute>
<attribute name="bandwidth"
>
<int value="100000"
/>
</attribute>
<attribute name="delay"
>
<int value="18"
/>
</attribute>
<attribute name="keepAliveTimer"
>
<int value="0"
/>
</attribute>
<attribute name="mtuSize"
>
<int value="1500"
/>
</attribute>
<attribute name="ipAddress"
>
<string value="172.29.129.147"
/>
</attribute>
<attribute name="subnetMask"
>
```

```
<string value="255.255.255.0"
/>
</attribute>
<attribute name="mediaType"
>
<strenum name=""
value=""
>
</strenum>
</attribute>
<attribute name="duplex"
>
</attribute>
<attribute name="speed"
>
<strenum name=""
value=""
>
</strenum>
</attribute>
<attribute name="extraCommands"
>
</attribute>

</ObjId>
</ObjDef>
</InventoryQueryResult>
```