

Hi Jayakumar.K.:

Thanks for your reply.

I knew Provisioning is template-driven and it reduces the development effort. But I need to know how to use it, I found there is a directory: provisioningtemplates under Adventnet/WebNMS, picking up a template document like snmpnode\_template.xml, could you please tell me which client (a JSP or a Java GUI application) will generate interactive form for user's input with the configuration defined in this document and which API (ProvisioningAPI?) will drive & analyse this document. So, we can also define more template documents for proprietary cases.

Hope to get your detail and timely reply. Thanks!

Regards, Lin Youyong

Dear Lin Youyong,

Let me explain the concepts of Configuration Management and Provisioning involved in the AdventNet Web NMS in detail.

Configuration Management deals with the area of configuring devices in the network to achieve defined functionality. AdventNet Web NMS provides you a customizable framework with rich set of APIs, which will be used to develop user applications that can maintain network configuration changes.

Configuration Management provides Task based configuration. Task is an entity that contains configuration attributes along with its data that are used to configure devices in the network.. Attributes, on the other hand comprises of the command to be executed and the set of values that are required to execute the command. For example, in case of SNMP, the attribute consists of OID and corresponding value to be set to that particular OID and in case of Telnet, it is the command that has to be executed in a device, etc.

Features in Configuration Management:

1. Stand alone Configuration Management  
Configuration Management can be run as a stand alone process.
2. Multi-protocol configuration.  
Configuration Management provides the facility of plugging proprietary protocols with the AdventNet Web NMS.
3. Auditing Functionality  
Auditing helps the administrators to know about the tasks that has been configured, the devices over which the configuration applied, the attributes changed during the configuration, and the time at which the configuration was made, etc.
4. Rollback Functionality:  
Rollback is a way of restoring the older configuration of devices if any attribute configuration fails.

## 5. Configuration Upload/Download

Configuration Upload is a process in which the configuration data are got from the network device. Similarly, Configuration Download is

a process in which the device is configured with the set of parameters supplied.

## 6. Synchronizing Topology Database

Once configuration succeeds, updates the topology database to the new configuration details.

## 7. Customizing Authentication

In order to provide the facility of authenticating the user who is configuring the system, AdventNet Web NMS provides an interface named

AuthenticationModel. By implementing this interface and using the methods, you can design your own Authentication model

8. AdventNet Web NMS provides a wizard like approach for creating, modifying and executing the task in the Configuration -- BatchConfiguration tree node of the Java Client.

The enhanced details of the above features are available on the DeveloperGuide in the <Web NMS Home/help/index.html.

Thus Configuration Management is the base framework that configures devices in the network.

Let us consider Service Management Provisioning(Please see <Web NMS Home/tutorials/provisioning\_tutorial/Service\_Management tutorial for more detail.).

It includes configuring devices and applying rules and creation/updation of topology database. It needs a work flow. Provisioning provides such a framework.

It internally uses Configuration Management for configuring devices in the network.

Provisioning System of AdventNet Web NMS is designed to meet the needs of OEMs to develop full fledged service provider OSS solution with multi-vendor, multi-protocol, multi-device provisioning capabilities. It enables you to wrap the provisioning functions and MO behaviour in a common set of objects, exposed via extension APIs.

The most important components of provisioning framework includes

1. APIs for building applications and interacting with the module.
2. Templates, business rules and policies for customizing and extending the provisioning capabilities.
3. Customer management information and order processing information.
4. Service management for modelling and managing services offered

to  
customers.

5. Network inventory.

6. OSS interfaces to allow service activation and work flow automation, etc.

As Task is for Configuration Management, Template is for Provisioning.

The focus of the provisioning module is to simplify service provisioning and enable rapid development of service provisioning applications. Flexible template driven approach minimizes development for specific applications and allows easy customization of provisioning functions after deployment. This will allow end customer administrators to configure templates to suit their specific service, network and data needs.

The provisioning templates are XML documents that have parameterized provisioning profiles for configuring multiple devices in the network (Please refer to the <Web NMS Home/provisioningtemplates/Template.dtd for more details).

Features in Provisioning Management:

Provisioning Management reuses all the features provided by the Configuration Management and has its own ones.

1. Flexible XML template driven approach minimizes development for specific applications and allows easy customization of provisioning functions after deployment.

2. Gathers data from inventory input (any database) and network element.

3. Dynamic rendering of forms ie., UI is dynamically created from the template XML at run time.

4. Flexible updation of database, irrespective of the result, as specified in the template.

5. Business rules and filters that can be applied at various stages of the provisioning operation.

6. Domain and Vendor specific Extensions

The ability to implement domain and vendor-specific extensions is an important feature of Provisioning Management. This allows OEMs to develop API extensions that leverage the provisioning APIs, the configuration management APIs, and the topology module APIs.

Extensions work with templates and extend the template processing capabilities in three ways.

1. Extensions can support special processing of template data as part of every client interaction, i.e., initializing and sending

template  
to client, initiating the  
provisioning activities after user input and sending the results back  
to the client. This includes bypassing some or all of the template  
based  
provisioning functions on  
the server.

2. Extensions can implement special parameters in the  
template,  
which will be processed by the application extensions.

3. Extensions can implement special configuration or other  
tags, so that these tags are processed by the application extensions  
at any of  
the stages of  
processing. For example, all network configuration can be done in  
the  
application extension, by bypassing the regular configuration and  
processing the new tags  
defined for this purpose in the XML templates.

#### 7. Scheduling functionality:

Provisioning Management provides the capability of  
scheduling  
the provisioning operation.

Please refer DeveloperGuide in the <Web NMS Home/help/index.html  
for  
more enhanced details.

Application scopes:

Multiple provisioning applications can be built using the  
Provisioning Management Framework, and can co-exist within the framework.  
The kinds of  
applications that  
can be provided are

1. Domain specific provisioning. e.g., Optical Provisioning.
2. Service Management
3. Special purpose, application specific, Northbound interfaces.

AdventNet Web NMS provides dynamically generated provisioning UI  
(invoked by the menu item Provision) in the Java Client. The  
templates  
used for it are  
simple ones to explain the basic functionality of Provisioning. Real  
time examples like DHCP Configuration and Service Management are available  
in  
the Tutorial  
under <Web NMS Home/tutorials/provisioning\_tutorial directory.  
These  
tutorials will elaborate the functionality of Provisioning.

Hope that the above explanation will help you.

Please get back to us if you have any queries.

Regards and Thanks,  
Jayakumar.K.

Hi Nms Support:

I wonder the two concepts involved in your webnms:

- Provision

- Configuration

Could you tell me the difference and detail about their application

scopes and purposes?

Thanks!

Best Regards, Lin Youyong