The procedure of provisioning serial SNR-VG

Содержание

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1. Authors and change log

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The main content	Version 1.0, 2014-9-25	porter

2. Introduction

This document is trying to introduce the provsioning feature of AOS 1.7 in SNR-VG series.

The provisioning can be used to:

1. Update firmware
2. Update configuration
3. Update license

The basic procedures of provision are:

1. Download the policy file from provisioning server
2. Parse the policy file
3. Execute the update procedure of firmware, configuration, license according to the policy file

Supported provisioning server:

1. http server
2. ftp server
3. tftp server

3. Prepare provisioning server

In this chapter, we will try to introduce how to prepare the provisioning server. Since VG supports http, ftp, tftp server, we will take ftp server as an example. The other server type may be added in the future.

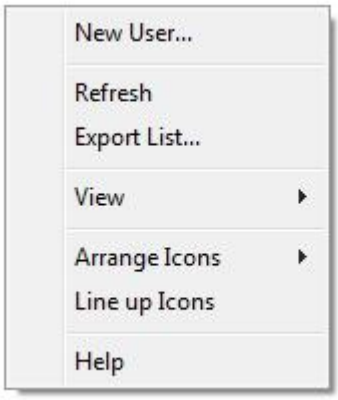
3.1 Install FTP server on Windows 7

3.1.1 Create a local user for FTP server

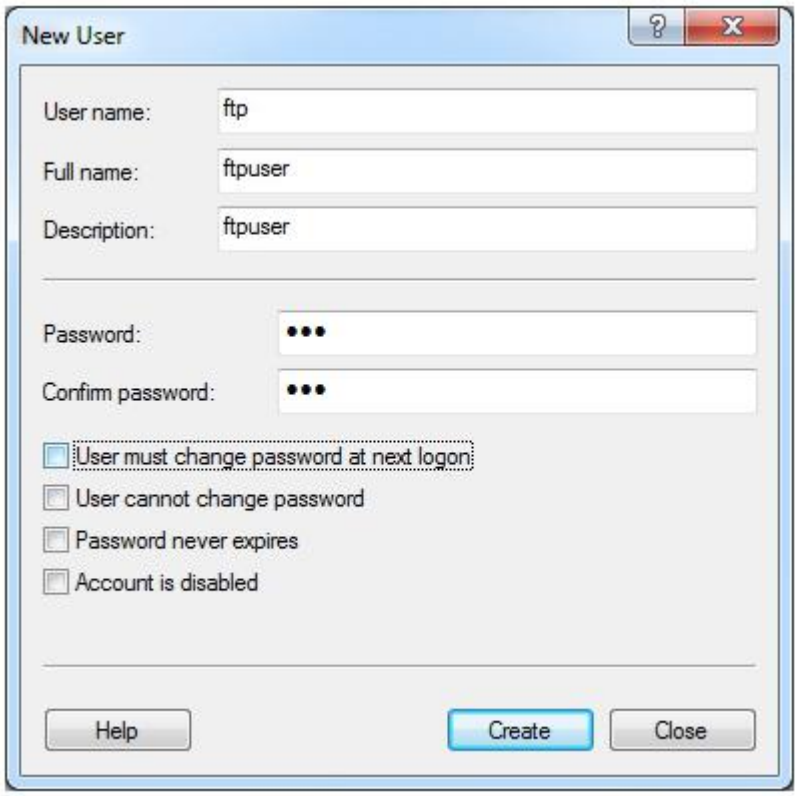
In this user is used to login the ftp server to download or upload file. And also you can add allow anonymous to login ftp server to download file. The username and password will be used to configure the VG gateway.

Step1. Right click "**Computer**", select "**Manage**" -> "**Local users and groups**" -> "User"

Step2. Right click in the blank location and select "New User"



Step3. Enter the User name, password, then disable "User must change password at next logon. Then click "**Create**". See bellow:

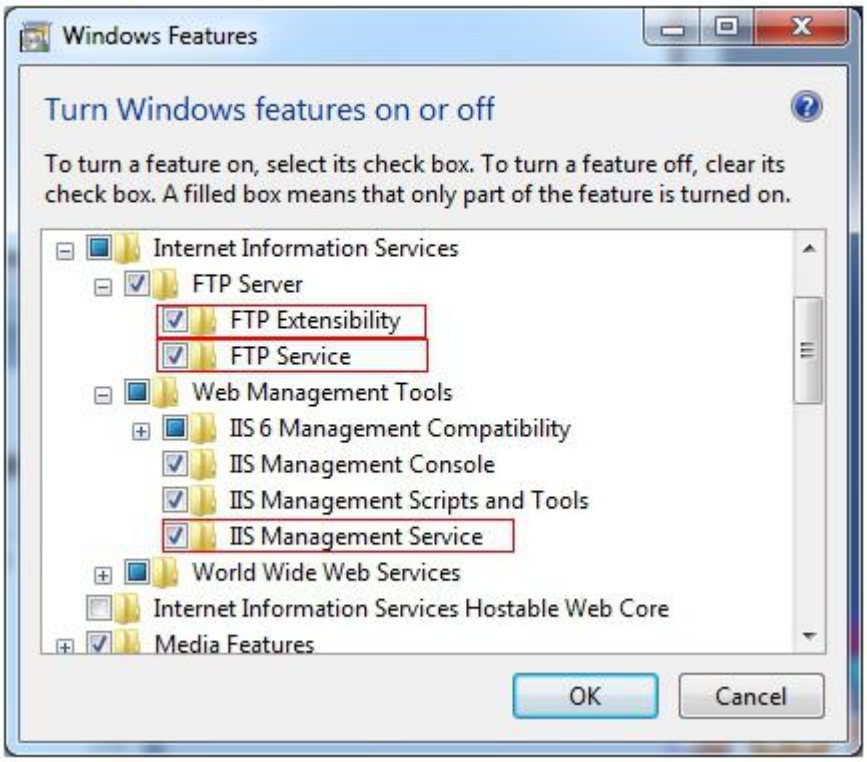


3.1.2 Create directory for FTP server

Step 1. Create a root directory for FTP server, here is **D:FTP**
Step 2. Create a directory name “18” under the root directory of FTP server, here is **D:FTP/18**. This directory will be used to save the policy file and configuration file, etc. It’s hard coded in VG software, so that directory “18” is required and can’t be changed.

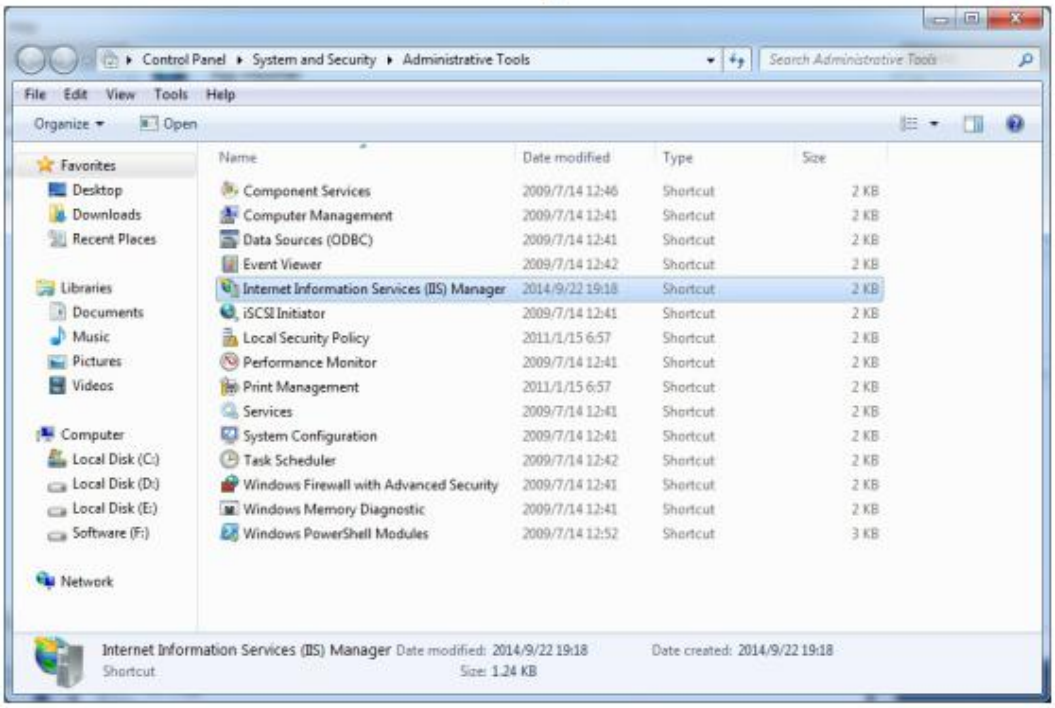
3.1.3 Install FTP server

Step 1. Click “**start**” -> “**Control Panel**” -> “**Turn windows feature on or off**”
Step 2. Select “**Internet Information Services**” -> FTP server: **“FTP extensibility”** and “**FTP service”**; then select “**Web Management Tools**” -> “**IIS Management Service**”. Then click OK. See bellow:

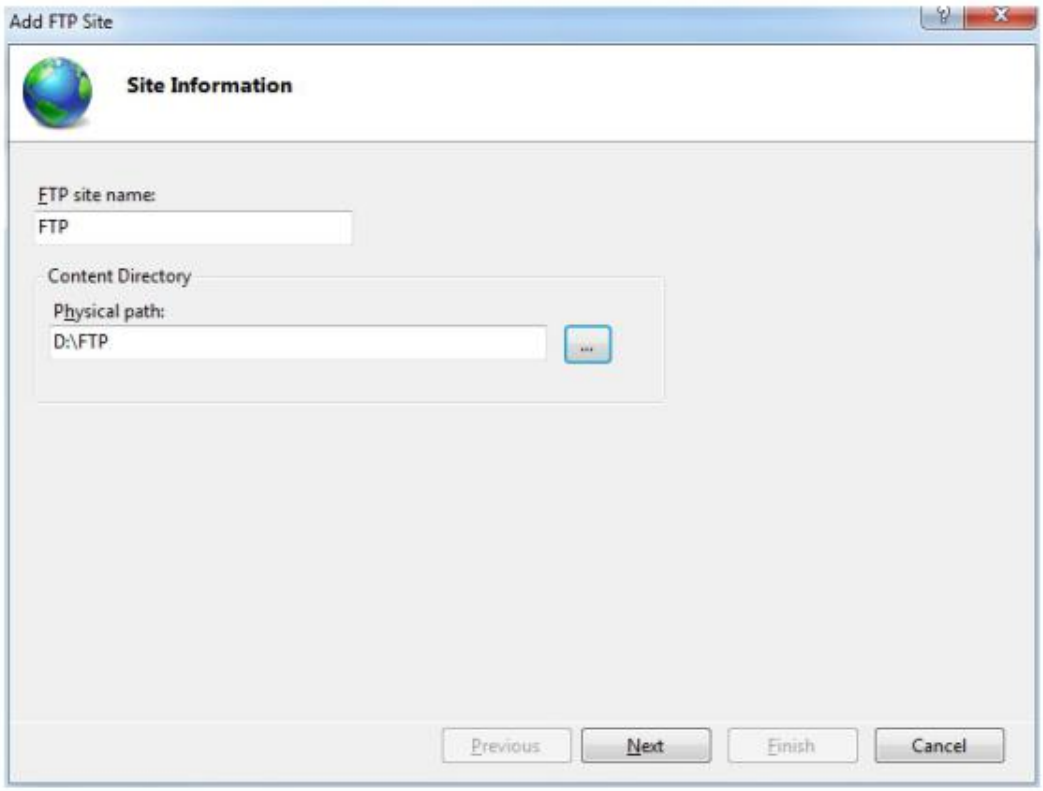


3.1.4 Configure FTP server

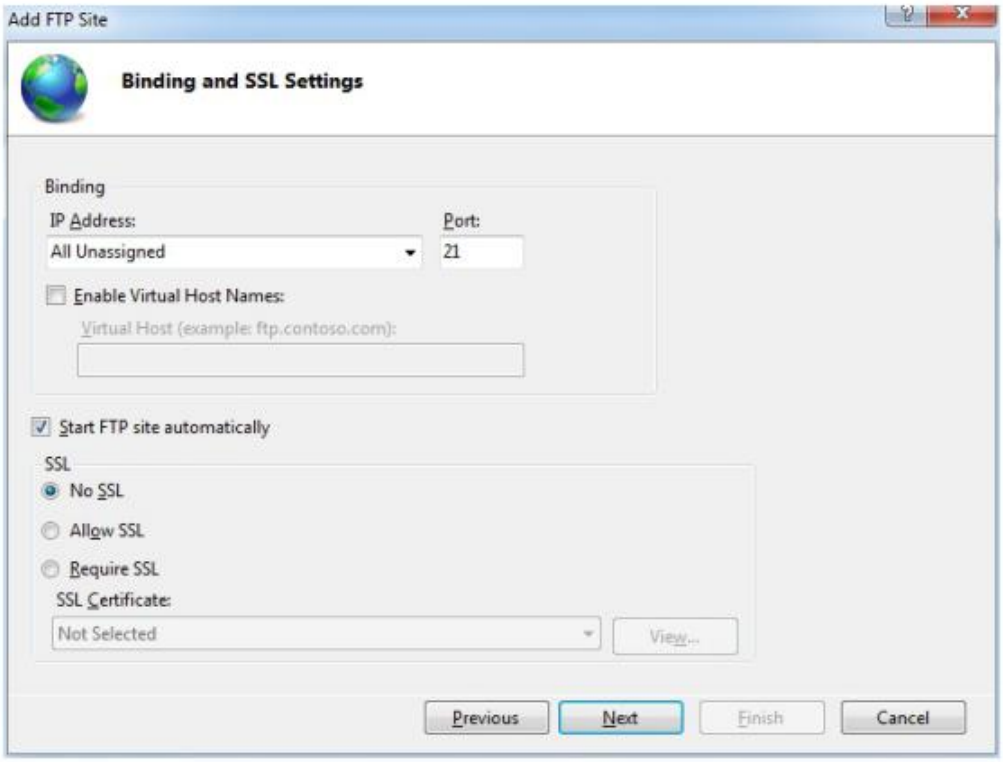
Step 1. Click "**Control panel**" -> "**System and Security**" -> "**Administrative Tools**" -> "**Internet Information Service Manger**"



Step 2. Right click “Sites” on the left tree under Connections, then select **“Add FTP site…**”, enter the name and select the path for root director of FTP server. Click “**Next**”, See bellow:

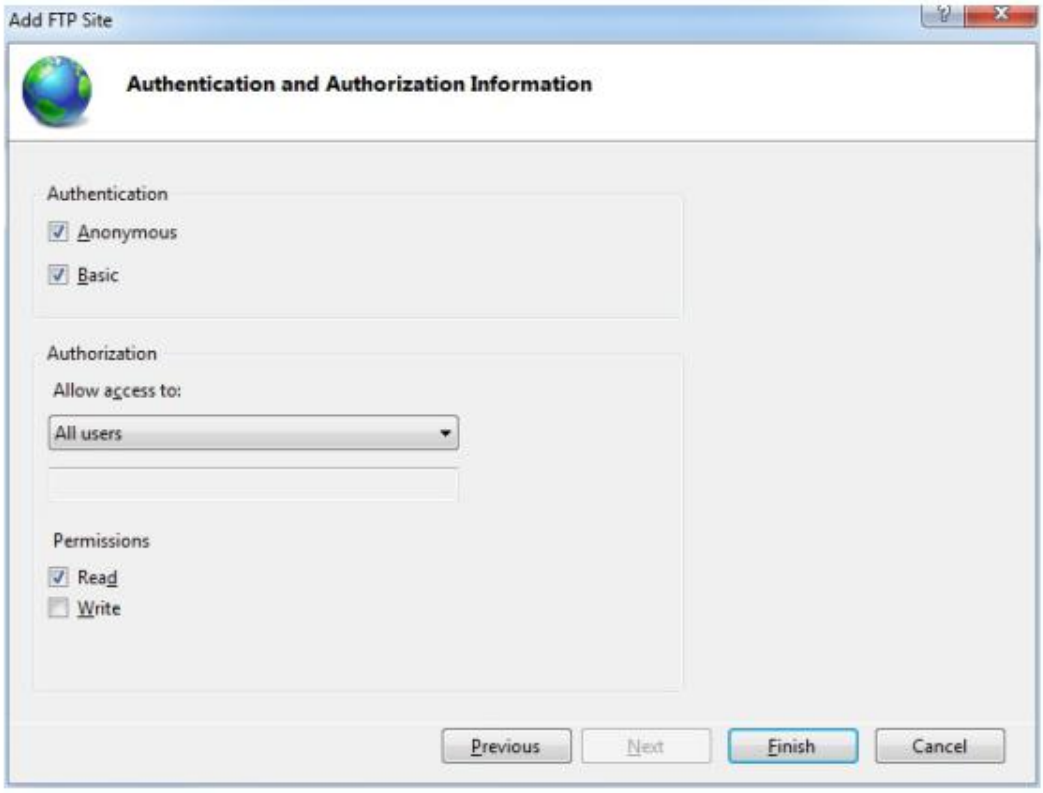


Step 3. Bind FTP server to all ethernet, and select “No SSL”, click “Next”. See bellow:



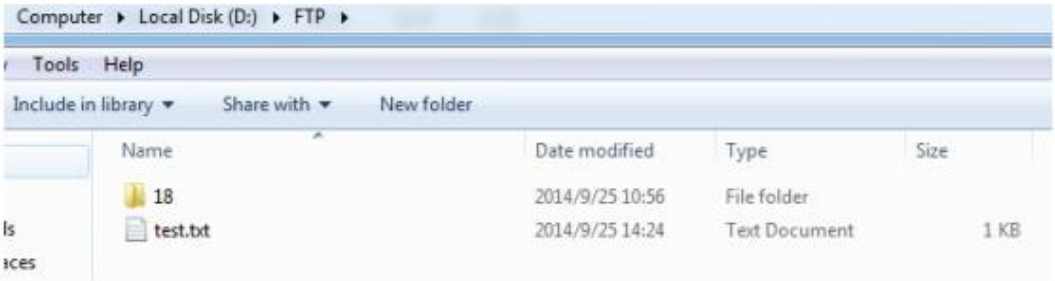
Step 4. Select “**Anonymous**” and “**Basic**”; Allow access to: **All users;** permissions:

Read; click “finish”. See bellow:

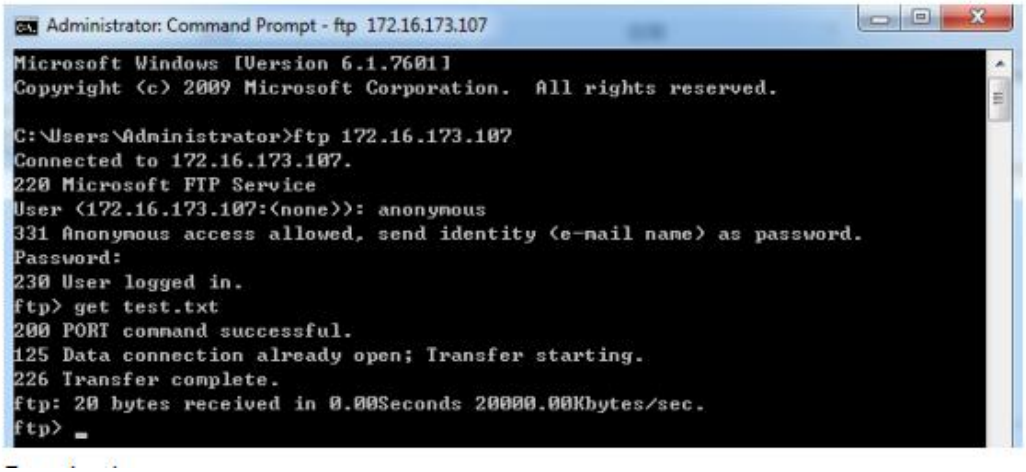


3.1.5 Test FTP server

Step 1. Create a file under root directory of FTP server (D:FTP).



Step 2. Use windows ftp command to download the test.txt file.



Download success.

3.2 Prepare the required file

3.2.1 Policy xml file

There are two types of policy file, one is named as $(SN).xml, another is named as default.xml. Once the VG gateway is configured with provision, gateway will try to download policy $(SN).xml file first, if failed, will try to download default policy file: default.xml.

You can check the $(SN) on the web of gateway:

Device ID	0172-0016-0053-0022		
MAC Address	F8-A0-3D-20-0E-22		
Network Mode	Bridge		
IP Address	172.16.53.22	255.255.0.0	Static
	172.16.1.8		
DNS Server	172.16.1.1		
Cloud Register Status	Not Registered		

Then we create a file 0172-0016-0053-0022.xml for this gateway.

The format of policy xml file will be introduce in chapter 4.

3.2.2 Firmware file

After the policy file download success, VG gateway will try to parse the policy xml file and then execute the firmware update procedure according to the policy configuration. So that we need to prepare the firmware files.

3.2.3 Configuration file

If configuration file is configured in policy file, configuration file is required for each VG gateway. The configuration file can be named as:

$(MAC).cfg 00:1F:D6:6A:EF:AC.cfg $(MA).cfg 001FD66AEFAC.cfg
$(SN).cfg 0172-0016-0053-0022.cfg

Note: 00:1F:D6:6A:EF:AC.txt file type can't be used in windows sytem. It is only apply for linux based system.

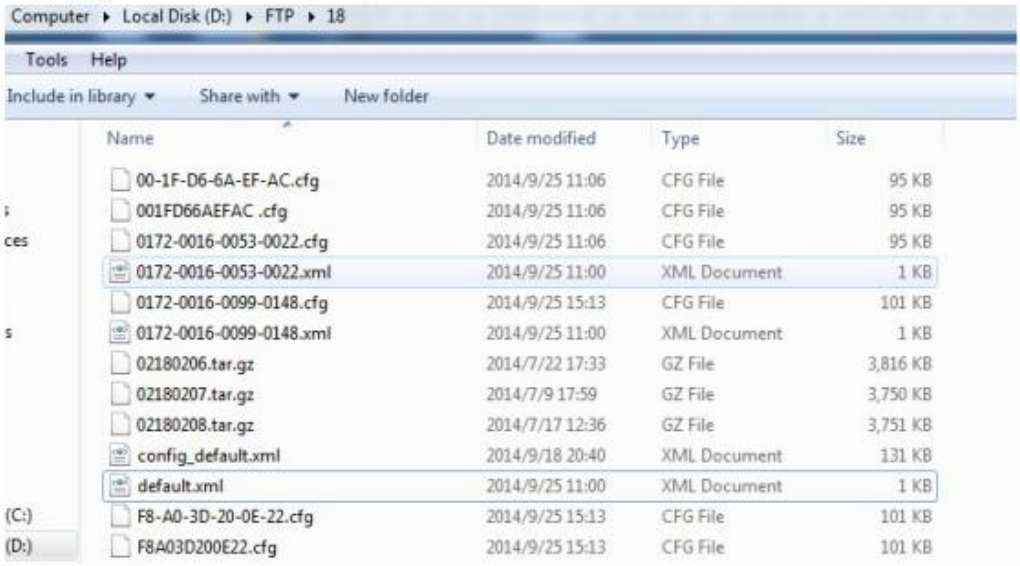
3.2.4 License file

Provision is also can be used to update license of gateway. The license file can be named as:

$(MAE).txt 00-1F-D6-6A-EF-AC.txt
$(MAC).txt 00:1F:D6:6A:EF:AC.txt
$(MA).txt 001FD66AEFAC.txt
$(SN).txt 0172-0016-0053-0022.txt

3.3 Copy the requried file to the right directory

No matter what types of your provisioning server, VG will try to download the file from root/18 directoty. Where root is the root directory of your provisioning server. In the document example, root directory is D:\FTP. So that we create a directory 18 and copy all files to this directory. See bellow:

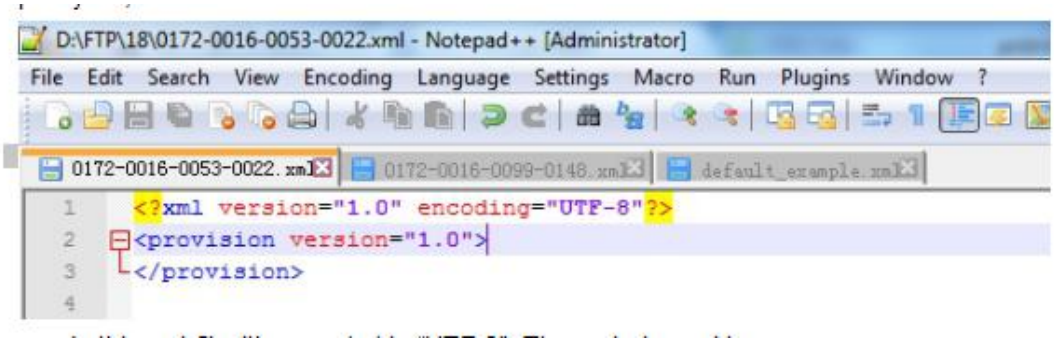

Computer ▸ Local Disk (D:) ▸ FTP ▸ 18
Tools Help
Include in library
Share with
New folder
Name
Date modified
Type
Size
00-1F-D6-6A-EF-AC.cfg 2014/9/25 11:06 CFG File 95 KB
001FD66AEFAC .cfg 2014/9/25 11:06 CFG File 95 KB
0172-0016-0053-0022.cfg 2014/9/25 11:06 CFG File 95 KB
0172-0016-0053-0022.xml 2014/9/25 11:00 XML Document 1 KB
0172-0016-0099-0148.cfg 2014/9/25 15:13 CFG File 101 KB
0172-0016-0099-0148.xml 2014/9/25 11:00 XML Document 1 KB
02180206.tar.gz 2014/7/22 17:33 GZ File 3,816 KB
02180207.tar.gz 2014/7/9 17:59 GZ File 3,750 KB
02180208.tar.gz 2014/7/17 12:36 GZ File 3,751 KB
config_default.xml 2014/9/18 20:40 XML Document 131 KB
default.xml 2014/9/25 11:00 XML Document 1 KB
F8-A0-3D-20-0E-22.cfg 2014/9/25 15:13 CFG File 101 KB
F8A03D200E22.cfg 2014/9/25 15:13 CFG File 101 KB
(C:)
(D:)

4. Introduce the policy xml file format

The policy is writed in xml format. XML stands for Extensible Markup Language, and was designed to describe data.

4.1 Root element

The first line is the XML declaration. It defines the XML version. Now we open the policy file



In this xml file, it's encoded in "UTF-8". The root element is: <provision version="1.0"> </provision>

And one atribute version is defined to stands for the version of provision. Now the value can be 1.0 and 2.0. attribute's value MUST be quoted.

Attribute	value	description
Version	1.0	Provision version 1
Version	2.0	Provision version 2

The provision version's feature and their difference will be added in the future.

4.2 Product element

All elements can have sub elements (child elements). And product element is the child element of root element, There can be more than one product elements under root elemet. Product element is used to define a class of product with its attributes. And product element supports the bellow attributes:

Attributes	Value	description
id	18	Stands for AOS1.7
url	Valid http,ftp,tftp url	Example: ftp://172.16.173.107/
force	True or false	Force to upgrade the firmware when firmware version is lower than current version
snfilter	Valid sn	Used to filter the device ID, only device ID match in this field will execute the procedure in this child element
macfilter	Valid MAC	Used to filter the MAC addr, only MAC addr match in this field will execute the procedure in this child element
model	Valid model name, example:4S|8S	This field describe the model of gateway
langauge	En or cn	Gateway's language
dmsno	DMS version no	Uboot_kernel_dsp_filesystem, Exmample:8_11_0_1.0.13
oemid	1 or 2	1 stands for normal version
lowver	Valid version	Lowest version
highv	Valid version	Highest version

The un-used attributes can be removed from the xml policy file. Bellow is an example of xml policy file of product element

<product id="18" snfilter="" url="ftp://172.16.173.107/" force="false"> </product>

4.3 Package element

Package element was designed to be a child element of product element. And it is used to describe the firmware upgrade data. Package element supports these attributes:

Attributes	Value	description
Ver	Valid firmware	Describe the firmware version

	version	
Rely	Valid firmware version	The dependency version
Name	File name	Package file name, this field is used to search in the url directory
Buildtime	Time format	The software build time
Type	Undefined	Undefined yet

Here is an example package element:
<package ver=”02180206” rely=”” buildtime=”” name=”02180206.tar.gz”/>

4.4 Config file element

Config file element was designed to be a child element of product element. And it is used to describe the config file update data. Config file element supports these attributes:

Attributes	Value	description
Ver	Valid firmware version	Describe the firmware version
Rely	Valid firmware version	The dependency version
Name	File name	Package file name, this field is used to search in the url directory
Buildtime	Time format	The software build time
Type	Undefined	Undefined yet

Here is an example config file element:
<ConfigFile name=” 00-1F-D6-6A-EF-AC.cfg”> </ConfigFile>

4.5 License file element

License file element was designed to be a child element of product element. And it is used to describe the config file update data. License file element supports these attributes:

Attributes	Value	description
Ver	Valid firmware version	Describe the firmware version
Rely	Valid firmware version	The dependency version
Name	File name	Package file name, this field is used to search in the url directory
Buildtime	Time format	The software build time
Type	Undefined	Undefined yet

Here is an example license file element:
<LicenseFile name=” 0172-0016-0053-0022.txt”>
<License>