Introduction Of

WebAccess/NMS

ICG AE
John Huang
Agenda

■ Introduction for WebAccess/NMS

■ System Architecture

■ WebAccess/NMS Key Features
  – V1.2.4 new functions

■ Installation & Configuration

■ FAQ

PS: If you have any question about WebAccess/NMS, please send the mail to the ICG support team with below email address:

ICG.support@advantech.com.tw
Introduction of WebAccess/NMS
About the network management …

- We know the network is getting more complex and larger.
- How do we get all the status of network, especially when the event occurs?

Diagram:
- GPRS
- Wi-Fi AP
- Device Server
- Managed switch
- ProVew switch
- WebAccess/NMS

Enabling an Intelligent Planet
So, why we need the WebAccess/NMS?

- Strong network management:
  - Support to Ethernet, WLAN, Cellular integration network topology
  - Remote scheduled for updating configuration, monitoring, and FW upgrading
  - Support the Advantech Ethernet based devices

- Powerful compatibility with the populous application:
  - Easy device locating with Google map support
  - 100% browser-based software system
  - Support a variety of mobile device and browsers (Suitable for IE, Google Chrome, Firefox, etc.)
What is WebAccess/NMS?

- **Industrial Network Management System**
  - All Advantech Ethernet-based Products

- **Visual Management**
  - Topology, Ring, Event, Device Status, Performance Monitoring

- **Auto Topology**
  - Ring, WLAN, Cellular, Trunk, PoE Connection Status
System Requirements:

- **NMS Server**

<table>
<thead>
<tr>
<th></th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>2 GHz or faster dual core CPU (ex: intel i3 CPU or better)</td>
</tr>
<tr>
<td>RAM</td>
<td>8 GB minimum, more recommend</td>
</tr>
<tr>
<td>HD Spaces</td>
<td>30 GB or more</td>
</tr>
<tr>
<td>OS</td>
<td>Windows 7 (32/64-bit) SP1, Windows 8 (32/64-bit), Windows Server 2008 (32/64-bit) R2, Windows Server 2012 (32/64-bit)</td>
</tr>
<tr>
<td>Software</td>
<td>.Net Framework 4.5 or later version</td>
</tr>
</tbody>
</table>

- **Client Side Browser**

<table>
<thead>
<tr>
<th>Browser</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chrome</td>
<td>Version 37 or later version</td>
</tr>
<tr>
<td>Firefox</td>
<td>Version 31 or later version</td>
</tr>
<tr>
<td>Internet Explorer</td>
<td>IE11 or later version</td>
</tr>
<tr>
<td>Safari</td>
<td>Version 7 or later version</td>
</tr>
</tbody>
</table>

- **Display Resolution**: 1024 x 768 or higher (recommend)
Visual Management

WebAccess/NMS

Performance

Topology

Ring

Status

Event

Enabling an Intelligent Planet
# Supported Device List

- For Advantech product total 23 model + ProView series switch:

<table>
<thead>
<tr>
<th>Device Type</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managed Switch</td>
<td>EKI-2748CI/FI, EKI-6558TI, EKI-6559TMI, EKI-7554, EKI-7556MI, EKI-7559, EKI-7654C, EKI-7656C/CI, EKI-7657C, EKI-7659C/CI, EKI-7659CPI, EKI-7758F, EKI-9316</td>
</tr>
<tr>
<td>Serial Device Server</td>
<td>EKI-1321/1322 (GPRS), EKI-1361/1362</td>
</tr>
<tr>
<td>Wireless</td>
<td>EKI-6311GN/6331AN (AP)</td>
</tr>
<tr>
<td>ProView Switch</td>
<td>ProView series switch (ex : EKI-5000 series)</td>
</tr>
<tr>
<td>Platform</td>
<td>UNO-2174G</td>
</tr>
</tbody>
</table>
System Architecture
Network Management Architecture

- The following are two common network management architecture
  - Centralized Architecture
  - Hierarchical Architecture

- The considerations of the Network management architecture
  - Network size
  - Network architecture
  - The department organization
  - The geographical distribution
Centralized Architecture (1/2)

Managed Agent

Managed Agent

Managed Agent

Managed Agent

Data Base

Local Queries
(Ex: SNMP Query)

NMS
(Network Management system)
Centralized Architecture (2/2)

- All the network management is focused on the single one network management system that is responsible for the below work:
  - All network alarm and event reporting
  - All network information gathering
  - Access and operate all of the network management applications

- Disadvantages:
  - Can not divide the management
  - Low efficiency, and the expansion for infrastructure network is not easy.
Hierarchical Architecture (1/2)

Global Query
(EX: Use Http by XML type for Web-based management)

Browser-based manager
HTTP
CGI
Application
SNMP
NMS (client)
SNMP
Managed Agent

Local Queries
(Ex: SNMP Query)

NMS (server)
HTTP
CGI
Application
SNMP
NMS (client)
SNMP
Managed Agent

Enabling an Intelligent Planet
Hierarchical Architecture (2/2)

- Use the multiple network management systems, one is for the network management server (Server), the rest is the front network management (Client)
  - Works not only rely on a single network management system
  - The network management and monitoring will spread out in each management system.
  - The centralized information storage.

- Advantages:
  - Decentralized network management control.
  - High efficiency and high resource utilization.
  - Improve the network expansion and flexibility.
CMS & EMS Agent

- CMS = Centralized Management System
- EMS = Equipment Management System

Global Query (Http XML)

Local Queries (SNMP Query)
WebAccess/NMS Architecture (2/2)

- CMS & multi-EMS Agent

Local Queries (SNMP Query) → Global Query (Http XML) → central control room

GPRS → Local Field Site

WiFi

Enabling an Intelligent Planet
WebAccess/NMS Key Features
Features

- Automatic generated topology
- PoE, ring, wireless, cellular connection indication
- Support all Advantech Ethernet-based product
- FW and configuration maintenance
- 2 layer server design support scaling up to 4000 nodes
- 100% HTML5 web based design
- Online Google map and offline OpenStreetMap support
100% HTML5 web based design

Install Once, Access everywhere

Enabling an Intelligent Planet
Online Google map and offline OpenStreetMap support
Automatic generated topology

Manual Topology Toolbar

Ring

PoE

WLAN

Trunk
Performance Monitoring

- We can view the performance of Advantech device

Traffic input & output
DB Mgmt – Backup and Restore

- We can Backup and restore the NMS database file
Message – SMS/E-mail/Trap

- WebAccess/NMS support SMS (short message service), SMTP (email) and trap to send the alarm message.
Event Log

- When the network events happen (ex: polling fail, port link up/link down...etc), these information will record on the event log table.
WebAccess/NMS

(v1.2.4)

New Features
New features on v1.2.4 of WebAccess

- WebAccess/NMS increased following features on v1.2.4 release:
  1) **Support famous third-party products**, ex: MOXA, D-Link ...etc
  2) **Support monitor the traffic flow of each link**, and send mail to alarm user when traffic is over threshold then import all data as CSV file or Graphic
  3) **No need to enable LLDP to draw topology** due to new algorithms using “MAC table + ARP table”
  4) **Able to detect no SNMP (but Ping-able) device**
New feature 1-
Support famous third-party products

- WebAccess/NMS currently could support other branding network device by importing 3rd party profile like D-link, MOXA ...etc

Now WebAccess/NMS could support other branding device by adding the profile of those model!
New feature 2 - Support monitor the traffic flow of each link

- If the traffic of link is over the threshold value, NMS could send alarm to specified mail address.
New feature 3-
No need to enable LLDP to draw topology

Due to NMS development team has designed new algorithms which is using “MAC table + ARP table” on WebAccess/NMS, now even the monitored device doesn’t enable LLDP, WebAccess/NMS also could draw all the topology
New feature 4 - Detect no SNMP but Ping-able device

- From many cases, we do know there still lots of devices which doesn’t support SNMP but could be Ping, WebAccess/NMS still could detect those devices and shows topology by Ping every 5 minutes.

WebAccess/NMS could detect the other devices even it is no SNMP but only Ping-able.
Installation & Configuration
Download Link Information

- You can get the trial version (Max. 200 device management and one year availability period) from the following link to download WebAccess/NMS v1.2
  - [https://goo.gl/Pvsz6B](https://goo.gl/Pvsz6B) → For global user (Google cloud service)
  - [http://pan.baidu.com/s/1kUbvokJ](http://pan.baidu.com/s/1kUbvokJ) → For China user (Baidu cloud service)

- If the https port 443 has been used by other application, NMS will change the port number to 10297.
  - After installation, you can login the WebAccess/NMS by opening web browser and input the URL ([https://127.0.0.1/SCMS/web/index.jsp](https://127.0.0.1/SCMS/web/index.jsp))
  - Default username/password: admin/admin.

- The first time you start up our NMS...
  - You will get a serial number, please email this serial number and your contact information to [NMS.WebAccess@advantech.com](mailto:NMS.WebAccess@advantech.com), and you can receive the license key to use WebAccess/NMS.
The step to Install WebAccess/NMS (1/3)

1. Execute the WebAccess installation file.exe

2. Then the installing process start going.
3. Configure the startup type of the Apache Tomcat (Web Server) as Automatic mode.
The step to Install WebAccess/NMS (3/3)

4. Then we can complete the installation process.
The step to start up NMS (1/8)

- Access the URL to browser the WebAccess/NMS
  - Https://127.0.0.1/SCMS/web/index.jsp (Access by localhost)
  - Https://x.x.x.x/SCMS/web/index.jsp (Access by Client, x.x.x.x = NMS server IP address).

- Or use the shortcut of WebAccess/NMS on the desktop:
The step to start up NMS (2/8)

- After input the URL, please select the item to access the WebAccess/NMS continuously:

**For Firefox:**

**For IE:**
The step to start up NMS (3/8)

- Authentication (default)
  - User name: admin
  - Password: admin

- We can also use the shortcut of Apache Tomcat (the Web server of WebAccess/NMS) to confirm if it is start up
The step to start up NMS (4/8)

- Apache Tomcat and MySQL package will be installed:
  - MySQL Installer - Community
  - MySQL Server 5.6
Please notice the first time you start up v1.2 WebAccess/NMS, you can’t use it, you will get a serial number generated from NMS:

![License Error]

You will get a serial number generated from NMS, then please send this serial number to NMS.WebAccess@advantech.com, our NMS developed team would receive your mail, and feedback the license key to you, please input this unique license key to NMS, and then you can start to use WebAccess/NMS.
The step to start up NMS (6/8)

- Then please e-mail this **serial number** and **your contact information** to **NMS.WebAccess@advantech.com**

- Ex:

```plaintext
Dear NMS support team,

My Serial Number is 1201816193.

Please provide the license keys to me,

And there are my contact details:

Name: John

Company: Advantech

Phone: 0982-255-233

Sincerely thanks!
```

Enabling an Intelligent Planet
The step to start up NMS (7/8)

- Our NMS developed team could receive your mail, and feedback the *license key file* to you

- Then *import* this unique license key file to NMS, and you can begin to use WebAccess/NMS

PS: Please note to replace the file name as “*nms.Key*”
The step to start up NMS (8/8)

- Access into the main window:
  - Device List
  - Topology View
  - Device Properties
  - The system mode
  - Event Log
In order to discovery the network device, we have to get the below information:

1. The IP address of the network device.
2. The SNMP read and write community string.

Example:

SNMP Community:
- Agent Mode: SNMP v1/v2c only
- Community String:
  - RO Community: public
  - RW Community: private

Switch IP Address:
- Address ip: 192.168.1.1
- Address subnet: 255.255.255.0
- Address gateway: 192.168.1.254
- Address FirstDNS: 0.0.0.0
- Address SecondDNS: 0.0.0.0
NMS Basic configuration (2/4)

- Use the Device Discovery feature on tool bar.

  ![Device Discovery feature]

- Input the search IP range and SNMP community string.

  ![Device Discovery configuration panel]
NMS Basic configuration (3/4)

- Get the device information and icon in topology view:

![Device information and icon in topology view](image)
Main Window – Device List

- Root Map -> Google Map
- Hierarchy structure
  - Group, device, SSID
- Group wireless device with same SSID
- Show device number in group
- Selected device can be also selected in topology view

Access to Google Map
Hierarchy structure
FAQ
Q1(1/2):

- How to analysis if there is any application will conflict with the installation of WebAccess/NMS?

- Ans: We can follow the steps to get the log:
  
  ① Start up the windows CMD by administrator
  
  ② Input the “netstat -abn > port_log .txt”
Q1(2/2):

③ Then we can trace the txt file to know which application may conflict with NMS.

Start up the Windows commend, and input "netstat -abn > port_log.txt", to save the log file to analyze it.
Q2:

- What information should we check before using the WebAccess/NMS to discovery network device?

- Ans: We should check the below information:
  
  ① IP Address
  
  ② Read & write SNMP community of the network device
  
  ③ Enable LLDP on network device
Q3:

- Is there any ready sample to demo the SMS (Short Message Service) on WebAccess/NMS?

- Ans: Our development team already register the account on the “Clickatell” website to provide the service of SMS for internal test: https://www.clickatell.com/

  So, if other team members want to test or demo this function, they could apply a new account or ask us about this account.
Q4:

- Many people ask that do WebAccess/NMS support Proview series switch in the future?

- Ans: Yes, *the new version of WebAccess/NMS will support Proview switch*, NMS can discover and monitor the network information from the site of Proview switch through the RFC-1213 MIB, ifMIB, and Advantech private MIB.
Thanks for your attention!
Please send your question as below:
ICG.support@advantech.com.tw