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**Advantech eAutomation Group**

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**Advantech**  
**SNMP Subagent**  
**User Guide**  
**For Windows**

**Version <0.91>**

Advantech SNMP Subagent	Version: <0.91>
User Guide	Date: <12/12/2014>

## Revision History

Date	Version	Description	Author
2014/12/12	0.91	Add Advantech SNMP Subagent Functions	Zhirong.Hsu
2014/10/23	0.90	Initial draft	Zhirong.Hsu

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# User Guide

## 1. Introduction

### 1.1 Advantech SNMP Subagent

The Advantech SNMP Subagent allows you to communicate Simple Network Management Protocol (SNMP) with the common or platform Subagent on the managed system. With the Advantech SNMP Subagent, you can use SNMP SETs, GETs, and TRAPs to manage supported platforms.

### 1.2 Supported Advantech Platforms

The current version of Advantech SNMP Subagent supports the Advantech IAG x86 hardware platform products. Please see the release notes to check the support list before using it.

### 1.3 Supported Operating Systems

The Advantech SNMP Subagent supports the following operating systems:

- Windows Embedded Standard 2009
- Windows Embedded Standard 7
- Windows 7 SP1
- Windows 8
- Windows 8.1

### 1.4 System Requirements

#### 1.4.1 SNMP Master Agent

The Advantech SNMP Subagent is based on the Windows SNMP service. You must install the Windows SNMP service on the supported operating systems. You can check the service snap-in. Please refer to Figure 1-1 (found under Administrative Tools in Windows Control Panel).

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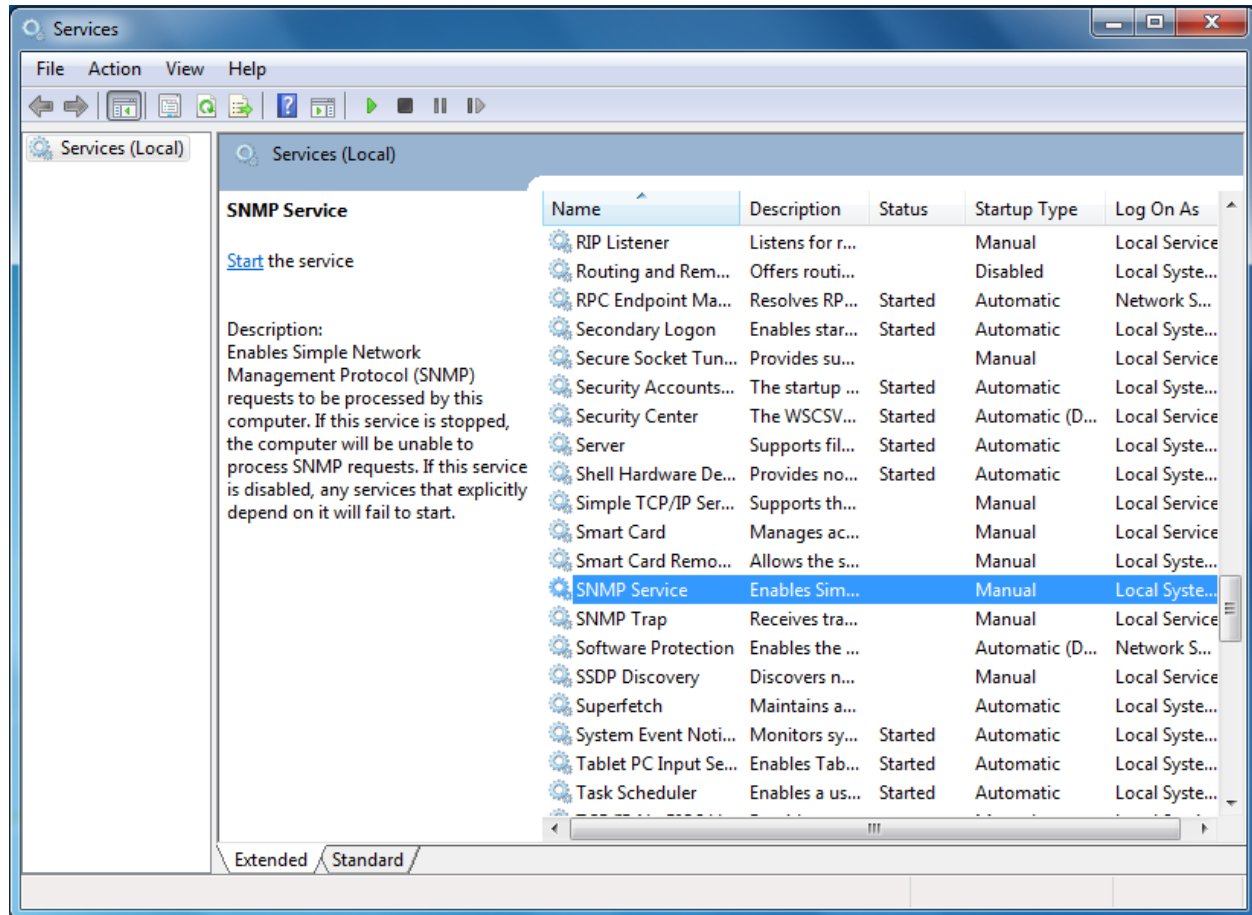


Figure 1-1 Windows Services

If the SNMP service does not exist, you can turn on the *Simple Network Management Protocol* by the following steps. Here is a Windows 7 example.

1. Go to **Control panel > Programs and Features**. (Figure 1-2)
2. Click **Turn Windows features on or off** on the left panel.
3. In **Windows Features** window, check the checkbox **Simple Network Management Protocol**. (Figure 1-3)
4. Click **OK**.

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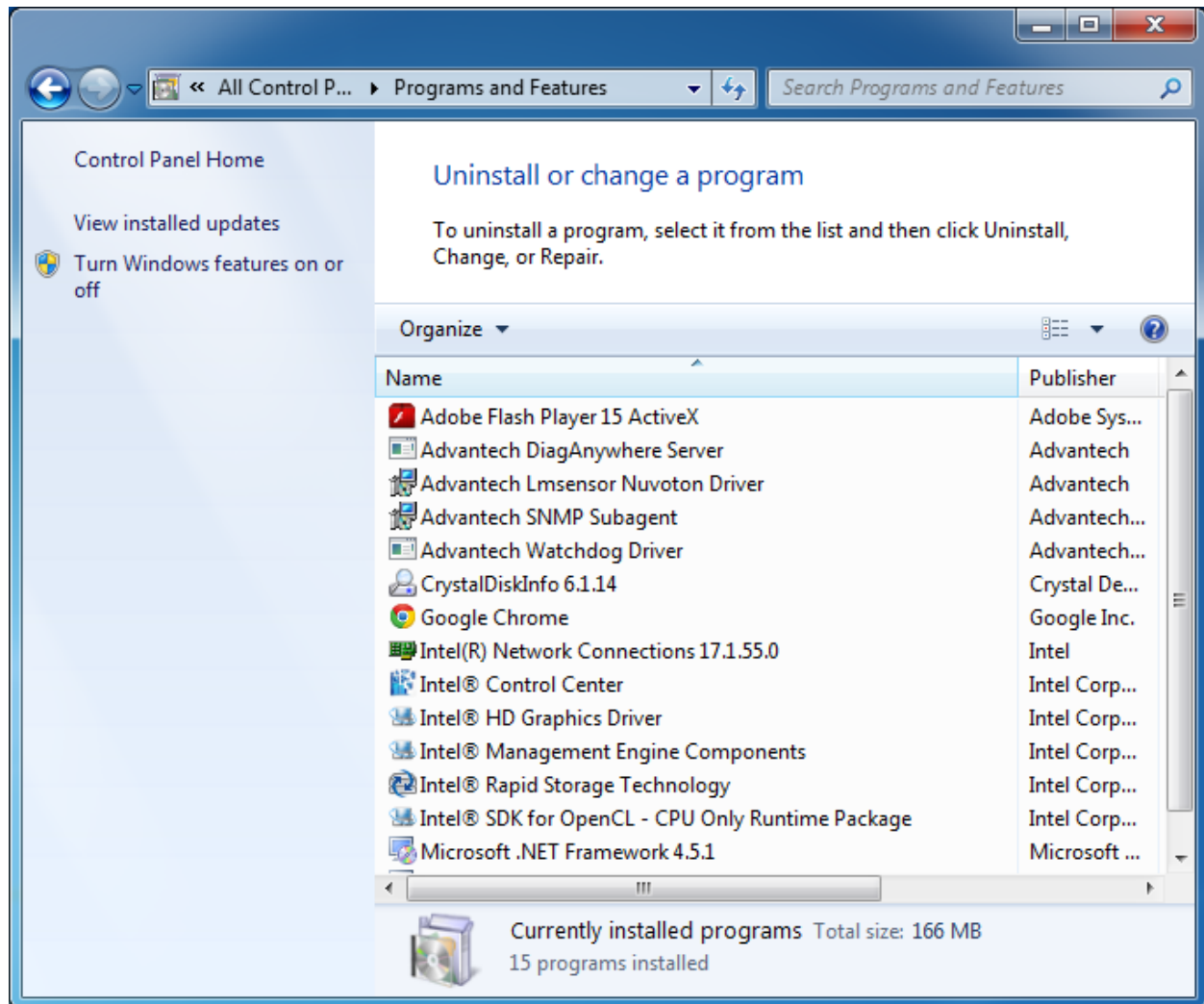


Figure 1-2 Programs and Features

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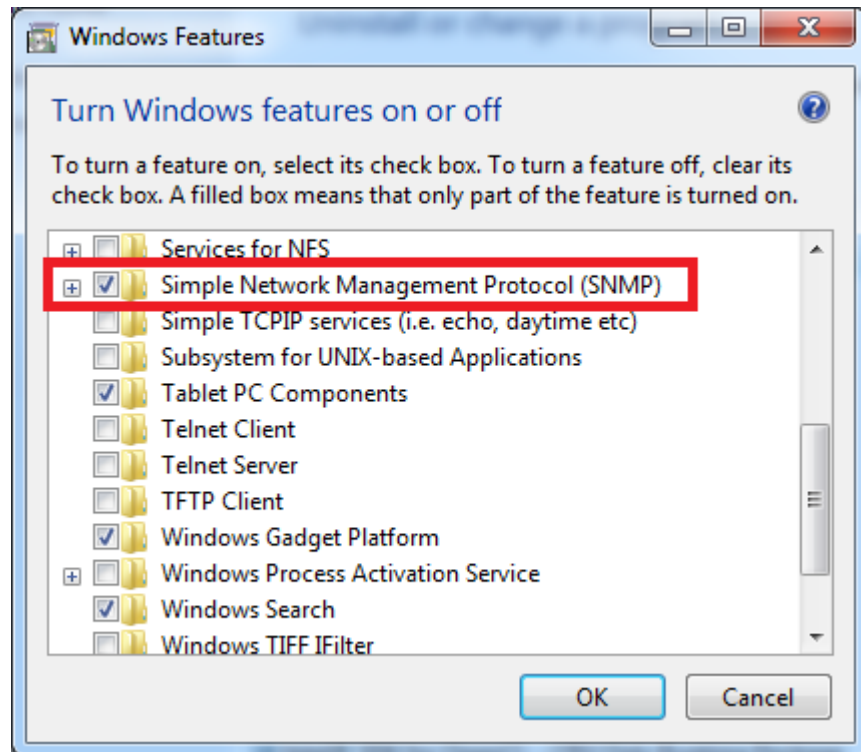


Figure 1-3 Windows Features

#### 1.4.2 Latest Drivers

The Advantech SNMP Subagent requires the latest Advantech drivers including the following.

- Advantech Lmsensor Drivers
- Advantech Watchdog Drivers
- Advantech Multi-level Watchdog Drivers (If applicable)
- Advantech Brightness Drivers (If applicable)
- Advantech UNODIO Drivers for embedded IO (If applicable)

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## 2. Advantech SNMP Subagents Overview

Advantech SNMP Subagents are SNMP extension agents that provide interfaces for retrieving Advantech x86 hardware and software information and monitoring the health status on the network using the SNMP protocol.

Table 2-1 is the basic information of Advantech SNMP Subagents.

Table 2-1 Advantech SNMP Subagents

Name	MIB file	Supported Region
Advantech Common Agent	advantech-common-mib.mib	iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).advantech(10297).advantechCommonMIB(100)
IAG Platform Agent	IAG-PLATFORMS-MIB.mib	iso(1).org(3).dod(6).internet(1).private(4).enterprises(1).advantech(10297).iagPlatformsMIB(200)

### 2.1 MIB and OID

SNMP works with basic components OIDs (Object Identifier) and MIBs (Management Information Base). User gets information by querying “Objects”. A MIB (Management Information Base) is a database including many objects and it is as a tree structure shown as Figure 2-1; each node is addressed through an object identifier (OID) and it maps to an entity in a communications network. OIDs are always written in a numerical form instead of a text one. Therefore, the top three object levels are written as “1.3.1” rather than “iso\org\dod” and the OIDs of Advantech is 1.3.6.1.4.1.10297



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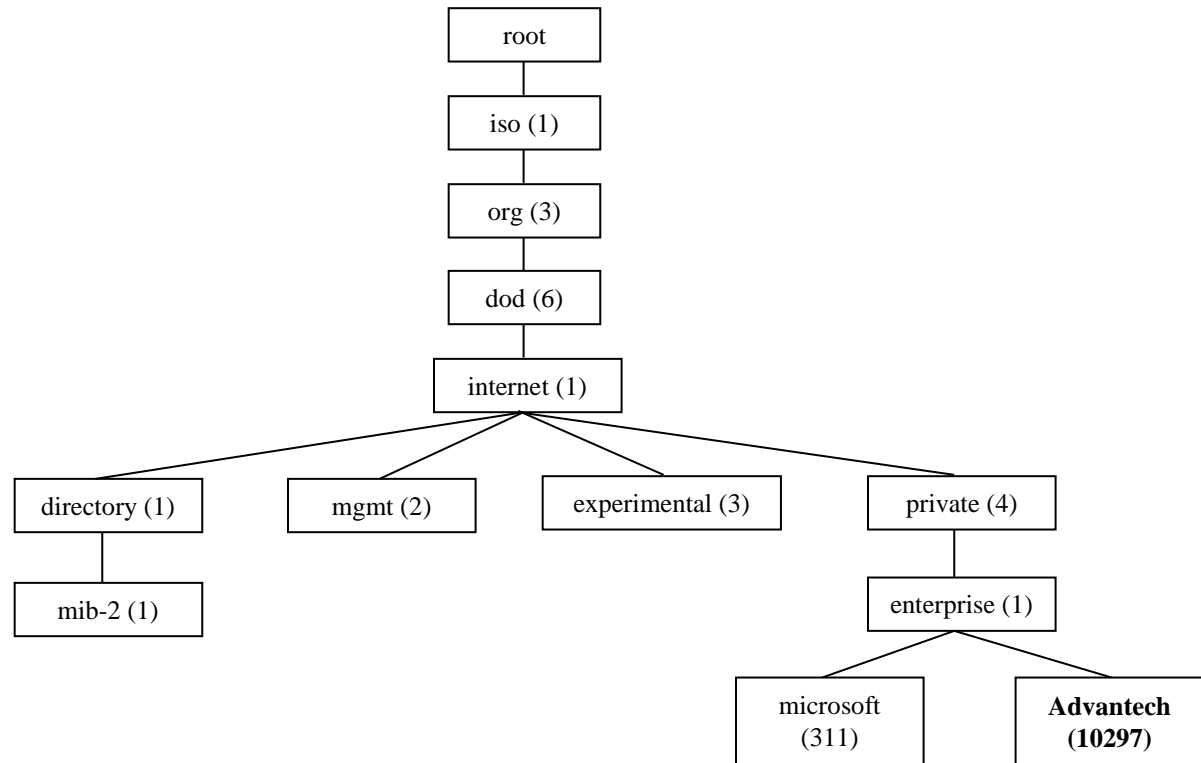


Figure 2-1 OIDs tree

## 2.2 Community Strings

Community Strings are similar to passwords. They are used to allow authorized users to access the SNMP agent on a device.

Community Strings can be configured as read-only (RO) or read-write (RW). As the name implies, read-only strings only allow information to be pulled from the agent. However, read-write strings are much more powerful and can allow re-configuration of many device properties. In general, the default community strings are set to be “public” for read-only (RO), and “private” for read-write (RW).

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## 2.3 Architecture

Network Management Station (NMS) can communicate with subagents by the OIDs defined in the MIB files.

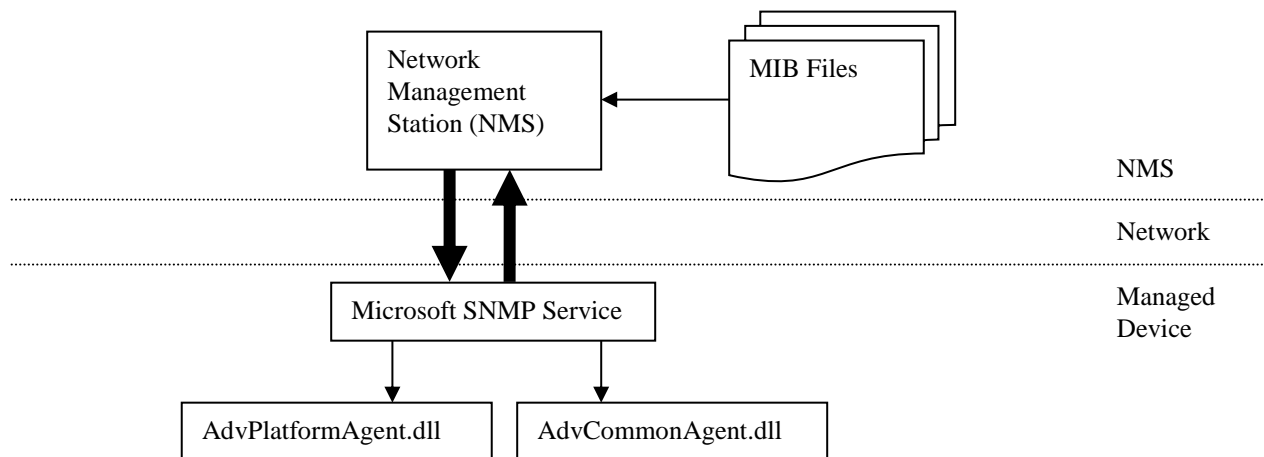


Figure 2-2 Architecture

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## 2.4 Advantech SNMP Subagents

The Advantech SNMP Subagents provides the functions as shown in Figure 2-3.

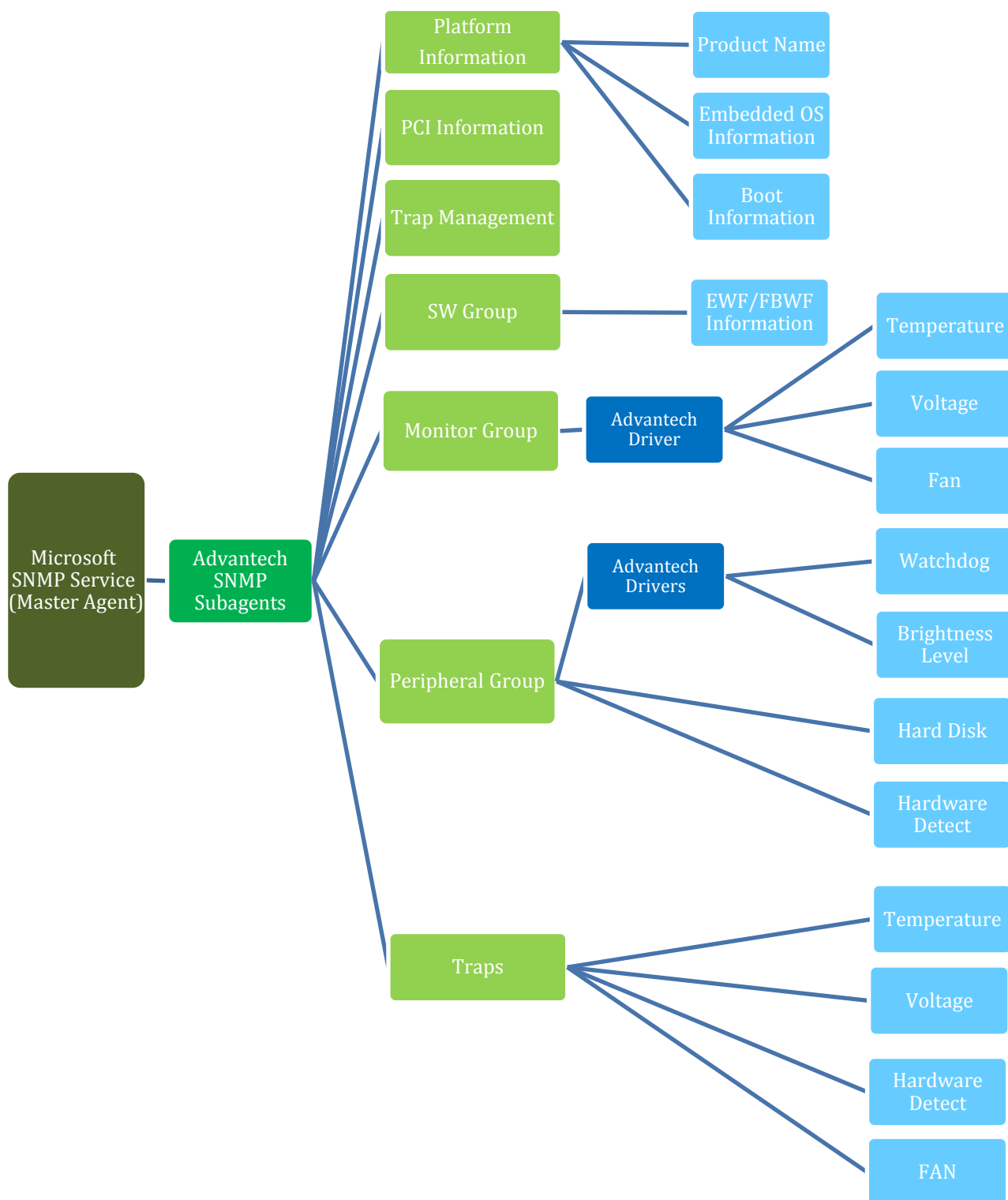


Figure 2-3 Advantech SNMP Subagent Functions

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### 2.4.1 Platform Information

User can **get** the system information of the managed device, such as *model name*, *image version*, *image release date*, *system first boot time*, *system boot time*, and *boot count*.

If there are many identical devices, user can **set** an *alias name* or a *description* of each device.

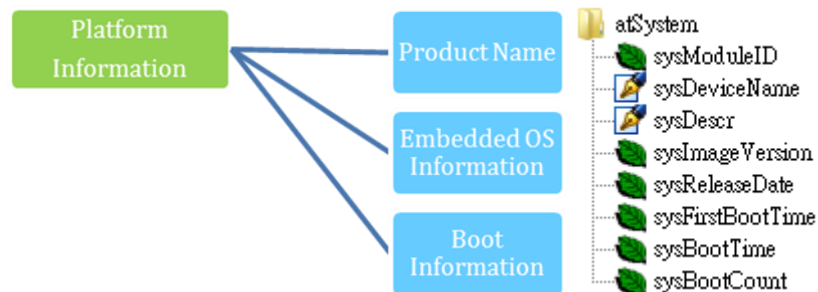


Figure 2-4 Platform Information

### 2.4.2 PCI Information

User **can** get the PCI information (table) of the managed device, such as *Vendor ID*, *Device ID*, *IRQ*, *Description*, *Base Address* ... etc.

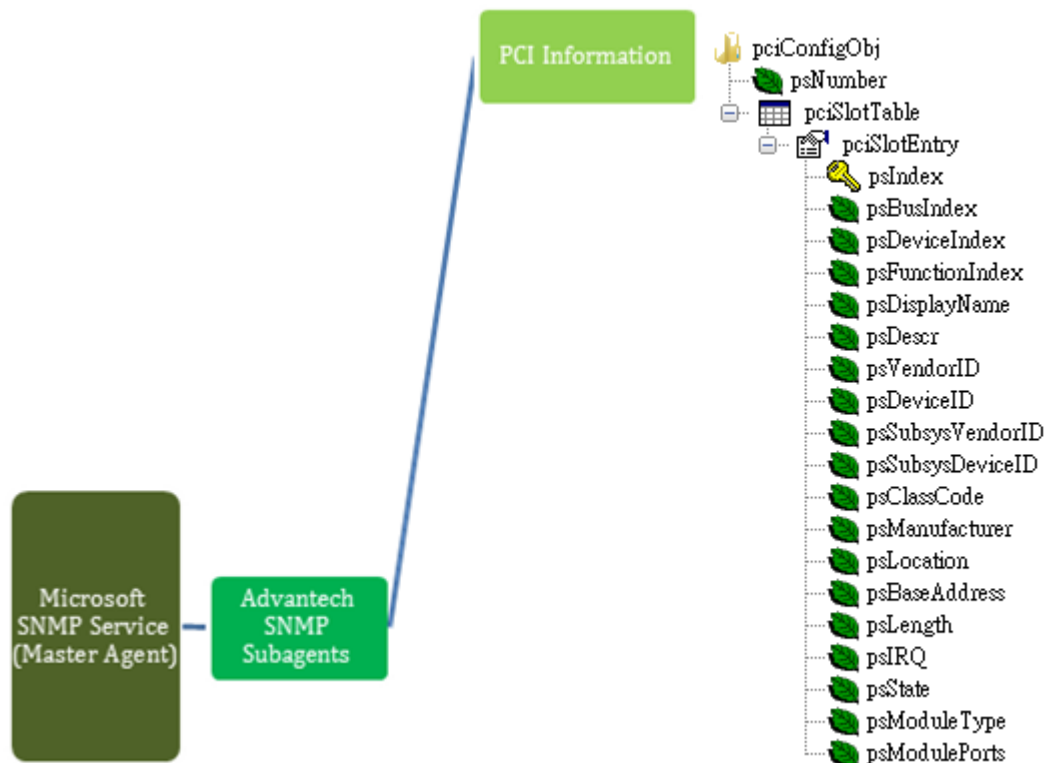


Figure 2-5 PCI Information

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### 2.4.3 Trap Management

User can **set** the *destination IP* of NMS or trap management tool.



Figure 2-6 Trap Management

### 2.4.4 Software Group

User can **get** the EWF (Enhanced Write Filter) and FBWF (File Based Write Filter) current settings.

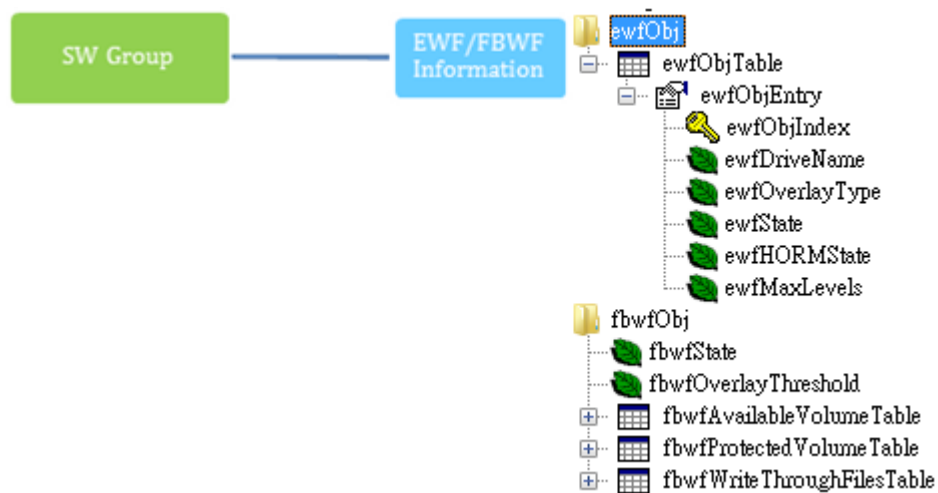


Figure 2-7 SW Group

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### 2.4.5 Monitor Group

- User can **get** the *Temperature, Voltage and Fan* information which is handled by *Advantech Lmsensor Driver*.
- User can **set** *maximum, minimum* value of each Temperature, Voltage, and Fan.
- User can also enable monitoring state when the value is out of bound, it will send a trap to NMS.
- User can **get** the current *CPU Loading, current CPU Speed, CPU Maximum Speed* and the *memory size* of the managed device.

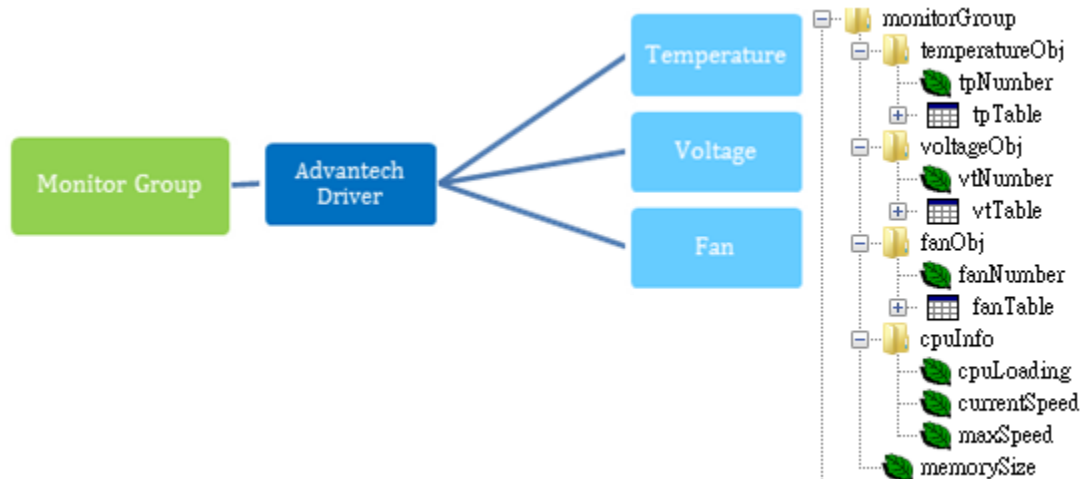


Figure 2-8 Monitor Group

### 2.4.6 Peripheral Group

- User can **get** the current Watchdog/Multilevel Watchdog *configuration* and the current *state*.
- User can **get** the current *brightness level* of the HMI device. (if applicable)

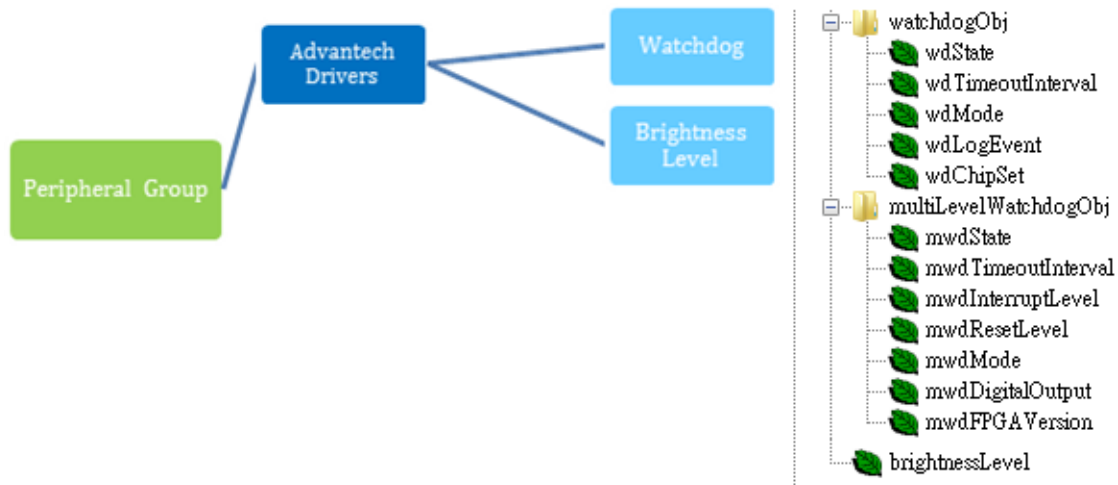


Figure 2-9 Peripheral Group

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### 2.4.7 Peripheral Group – Hard Disk

- User can **get** the *hard disk information* and the *S.M.A.R.T.* (Self-Monitoring, Analysis and Reporting Technology) information of it.

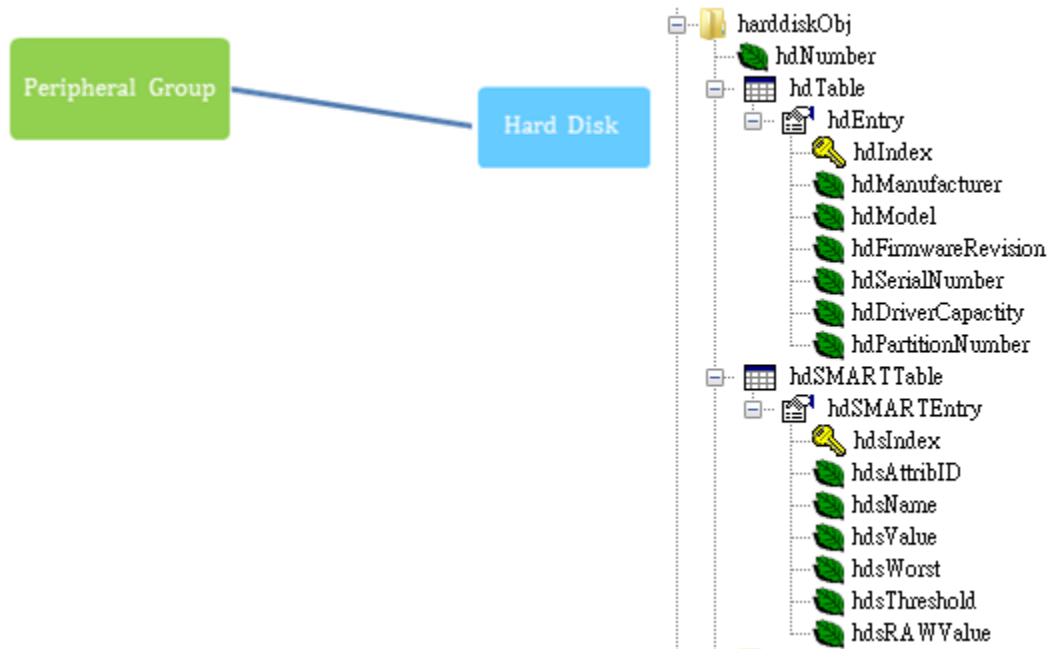


Figure 2-10 Peripheral Group – Hard Disk

### 2.4.8 Peripheral Group – Hardware Detection

- If there is a hardware *insertion* or *removal actions*, the SNMP subagent will record the information. If the “hardware detect trap” is **enabled**, the SNMP subagent will also send a trap (alarm) to the NMS.

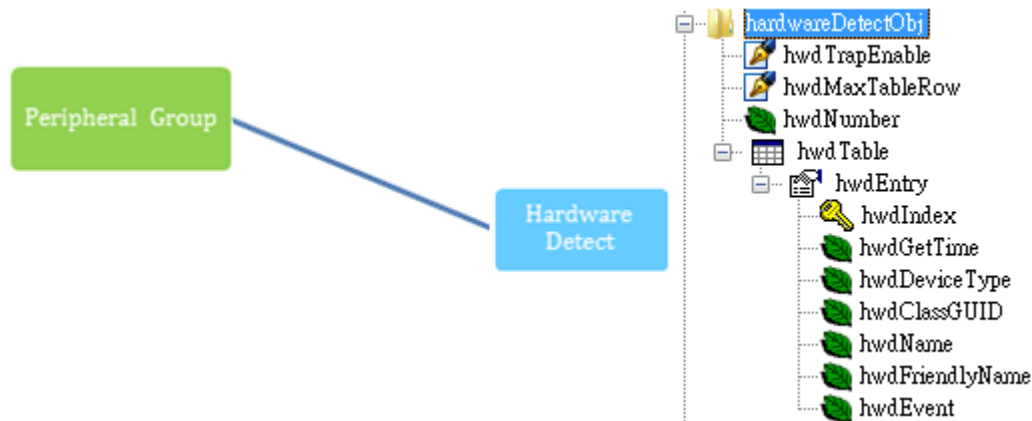


Figure 2-11 Peripheral Group – Hardware Detection

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### 2.4.9 Trap

- The *Advantech SNMP Subagents* currently support 7 types of Traps.
  - Temperature is out of range
  - Temperature becomes normal
  - Voltage is out of range
  - Voltage becomes normal
  - Hardware insertion and removal
  - Fan Speed is out of range
  - Fan Speed becomes normal

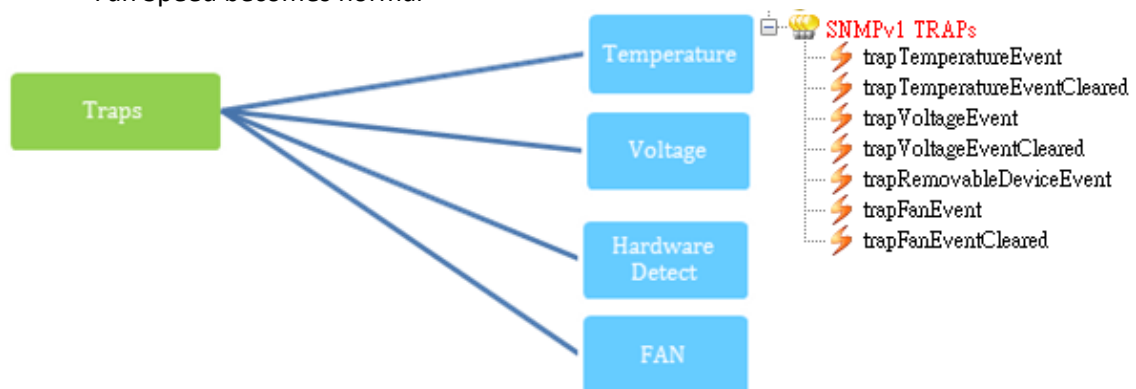


Figure 2-12 Traps



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## 3. Installation and Uninstallation

### 3.1 Installation

#### Step 1: Launch installation package.

Please launch the *Advantech SNMP Subagent Installation Package* and you can see the following wizard. Click *Next* button to start the installation.

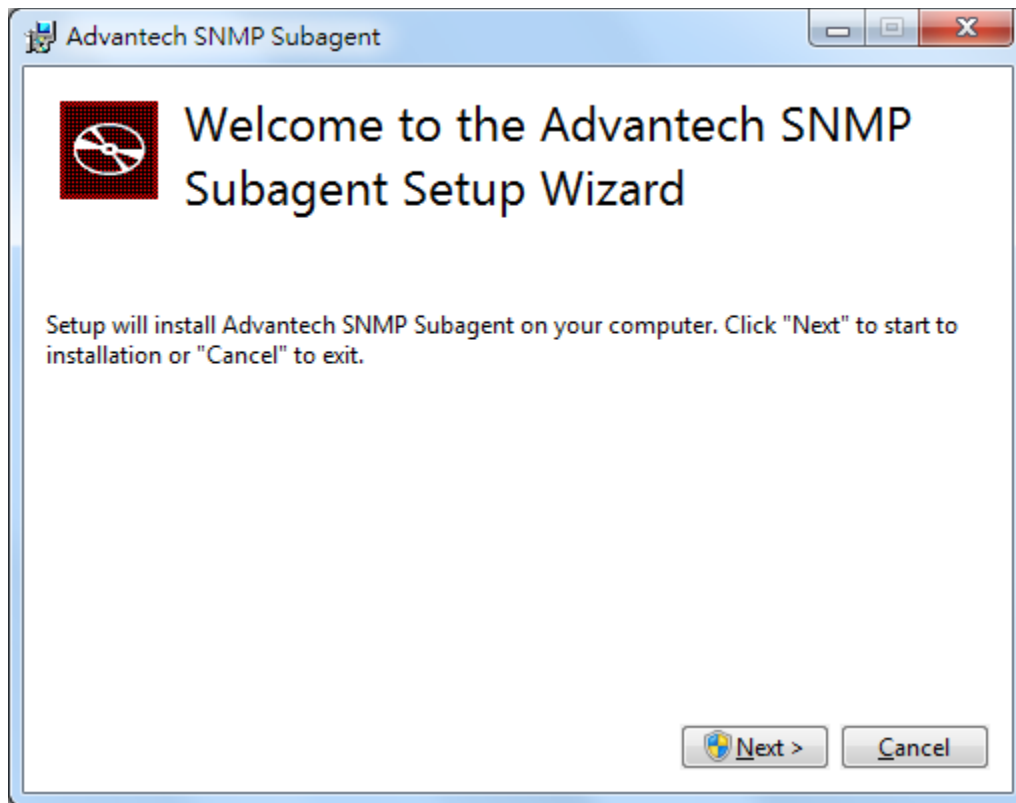


Figure 3-1 Advantech SNMP Subagent Installation Package

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You may see an error message as below if the target device has not installed *SNMP service before*.

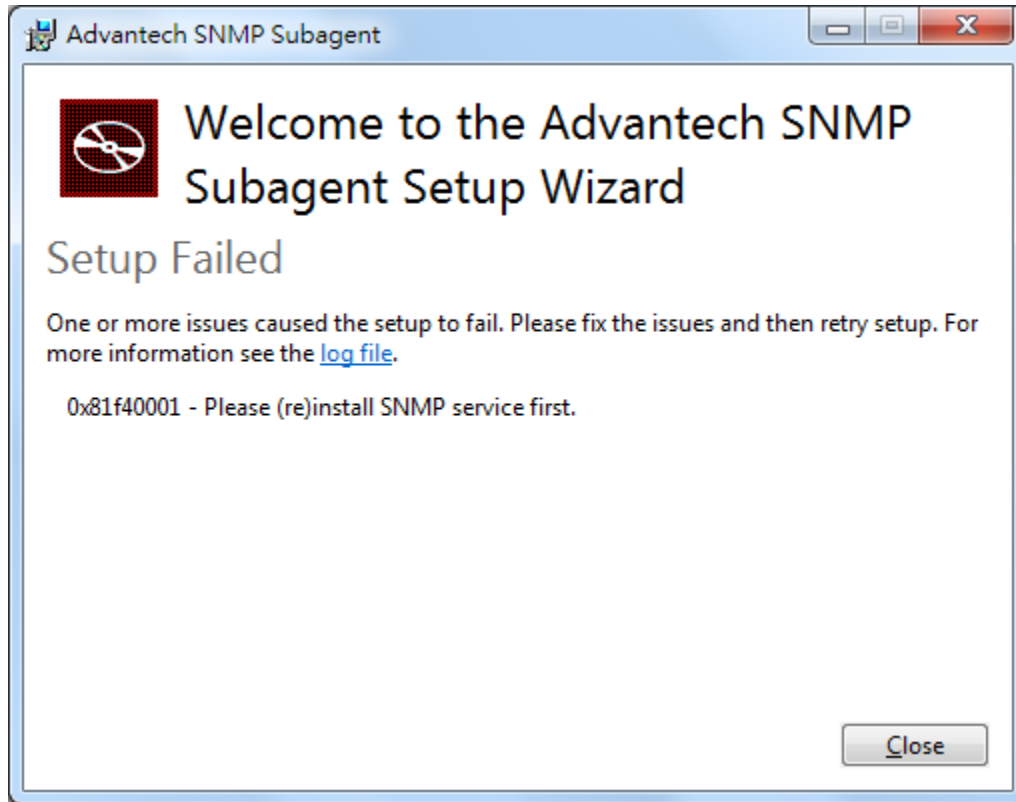


Figure 3-2 Please install SNMP service

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## Step 2: Install Advantech Kernel Driver.

The installation package will install the *Advantech Kernel Driver* which is needed by *Advantech SNMP Subagent*.

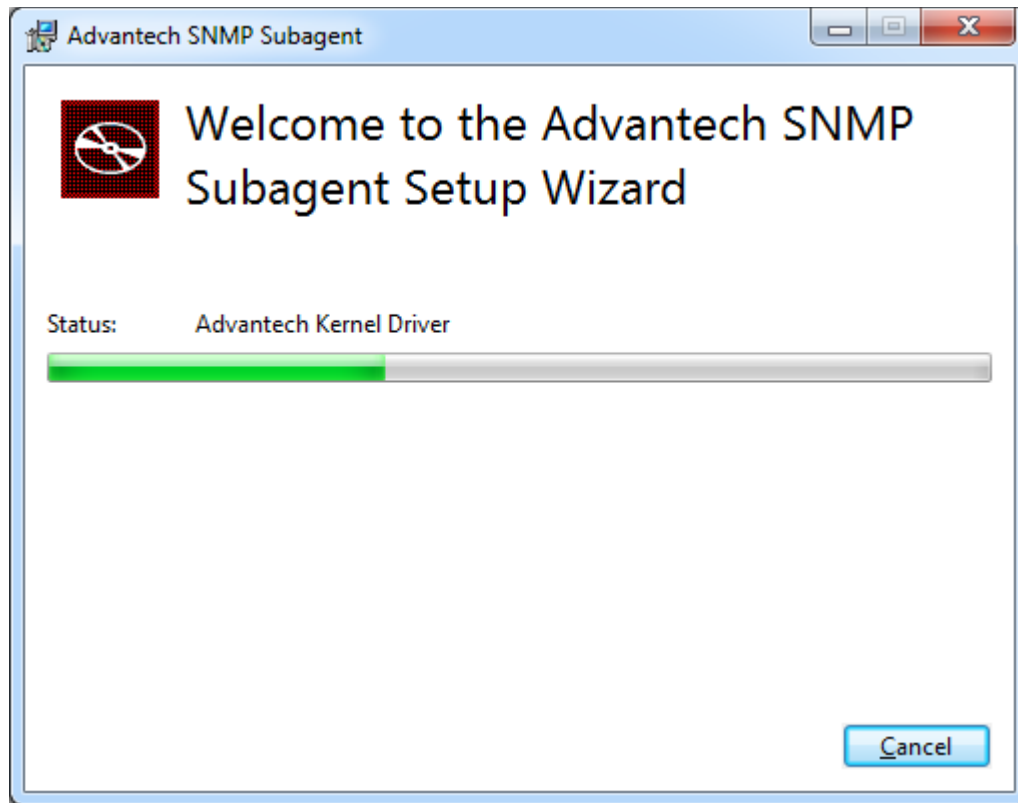


Figure 3-3 Advantech Kernel Driver

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The Installation may pop up the following message, click *Install* to continue.

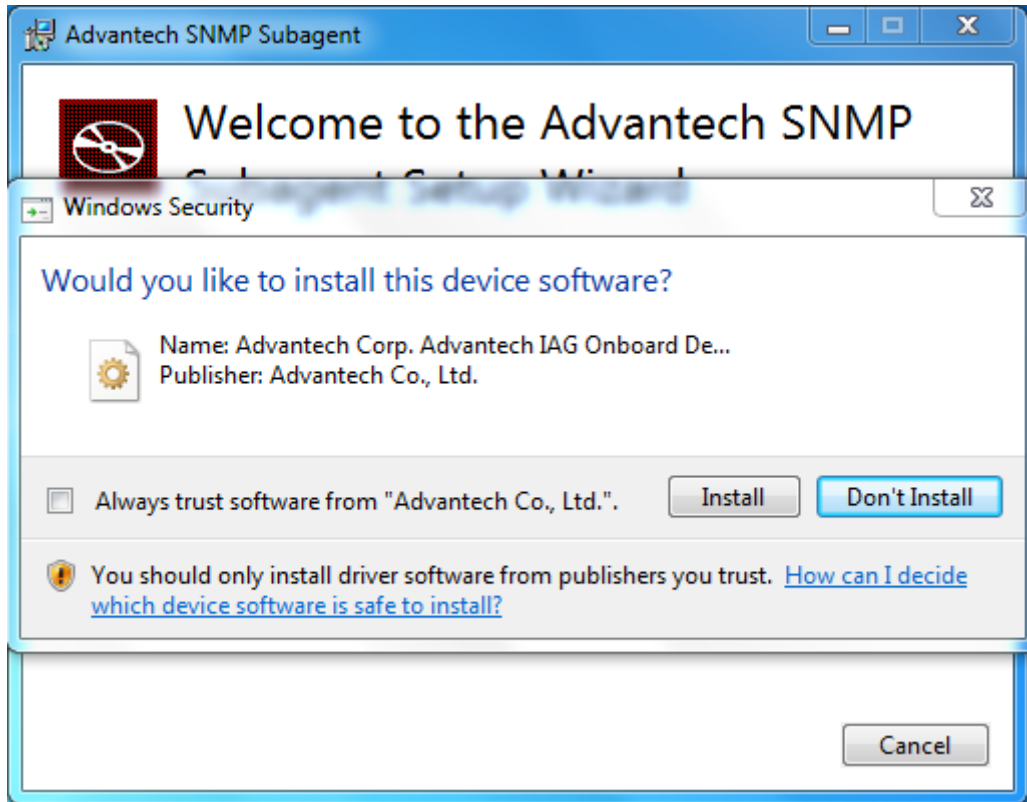


Figure 3-4 Windows Security of Driver

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### Step 3: Install Advantech SNMP Subagent.

To install the *Advantech SNMP Subagent*, the installation Wizard will pop up another installation wizard as shown in Figure 3-6.

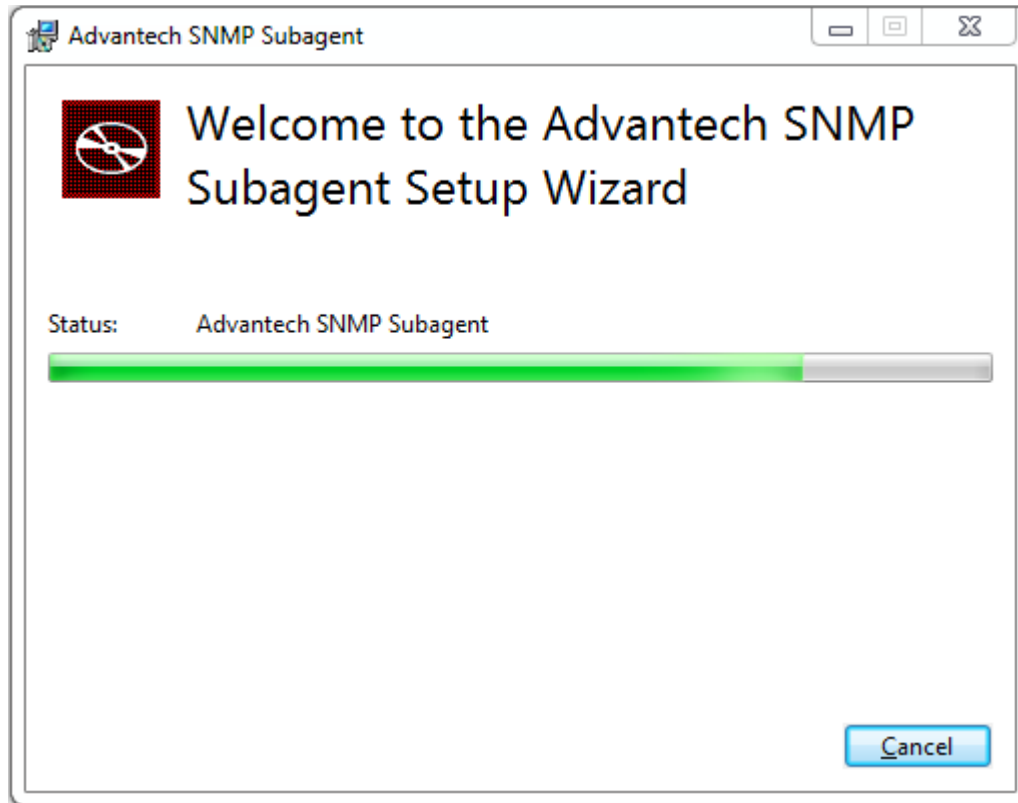


Figure 3-5 Advantech SNMP Subagent

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Click *Next* button to start the installation and you will see a *SNMP configuration* page as shown in Figure 3-7.

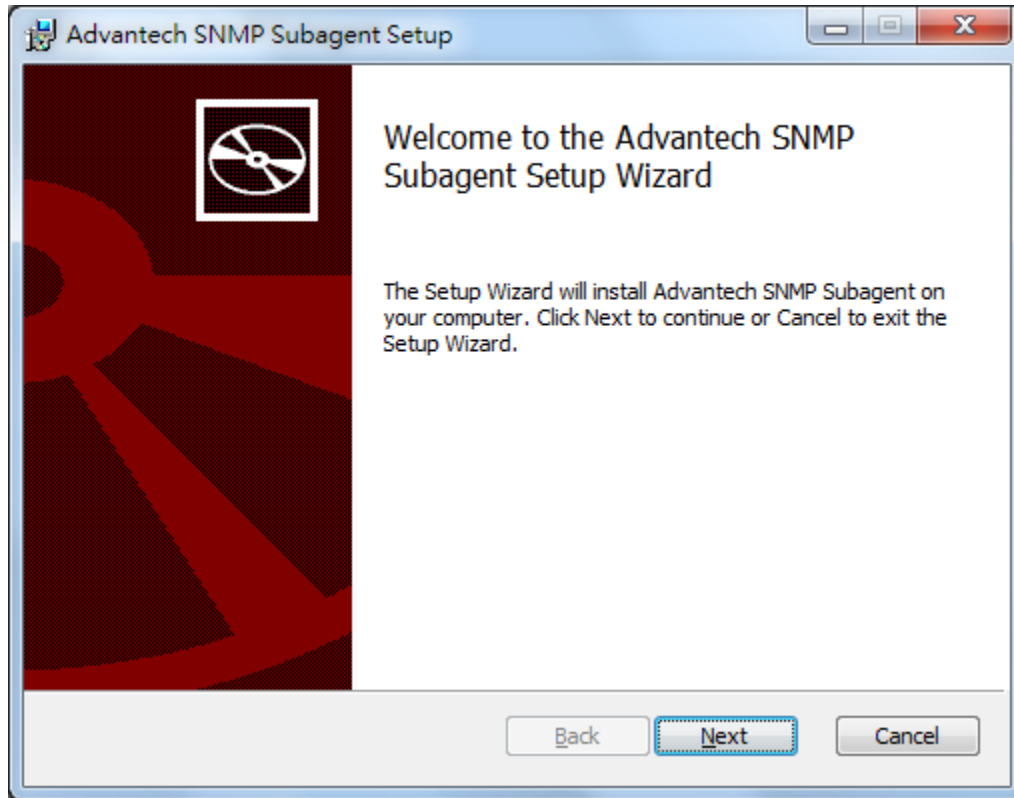
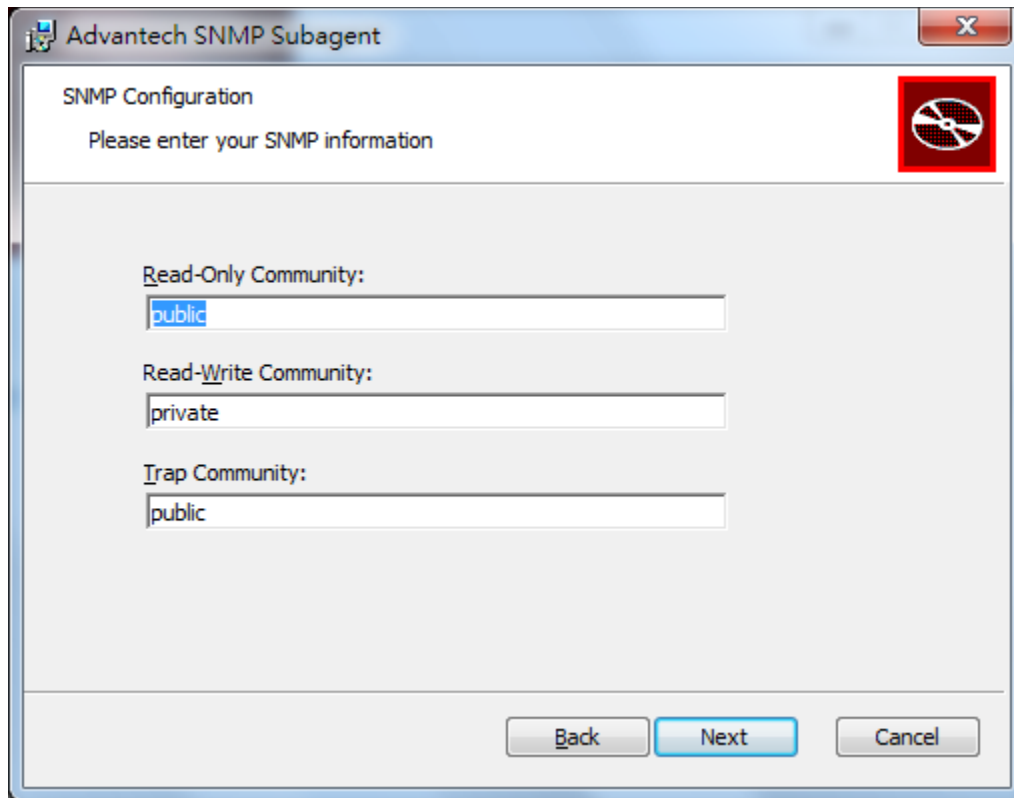


Figure 3-6 Advantech SNMP Subagent Setup Wizard

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#### Step 4: SNMP Configuration

You can enter the *Read-Only*, *Read-Write*, and *Trap Community* which will be applied to the SNMP service. If you input an incorrect Community String, the installation wizard will show an error message as shown in Figure 3-8.



The image shows a Windows-style dialog box titled "Advantech SNMP Subagent". Inside the dialog, the title "SNMP Configuration" is displayed above the instruction "Please enter your SNMP information". There is a red square icon with a white circle and a diagonal line through it in the top right corner. Below the instruction, there are three text input fields. The first is labeled "Read-Only Community:" and contains the text "public". The second is labeled "Read-Write Community:" and contains the text "private". The third is labeled "Trap Community:" and contains the text "public". At the bottom of the dialog, there are three buttons: "Back", "Next", and "Cancel". The "Next" button is highlighted in blue.

Figure 3-7 SNMP Configuration

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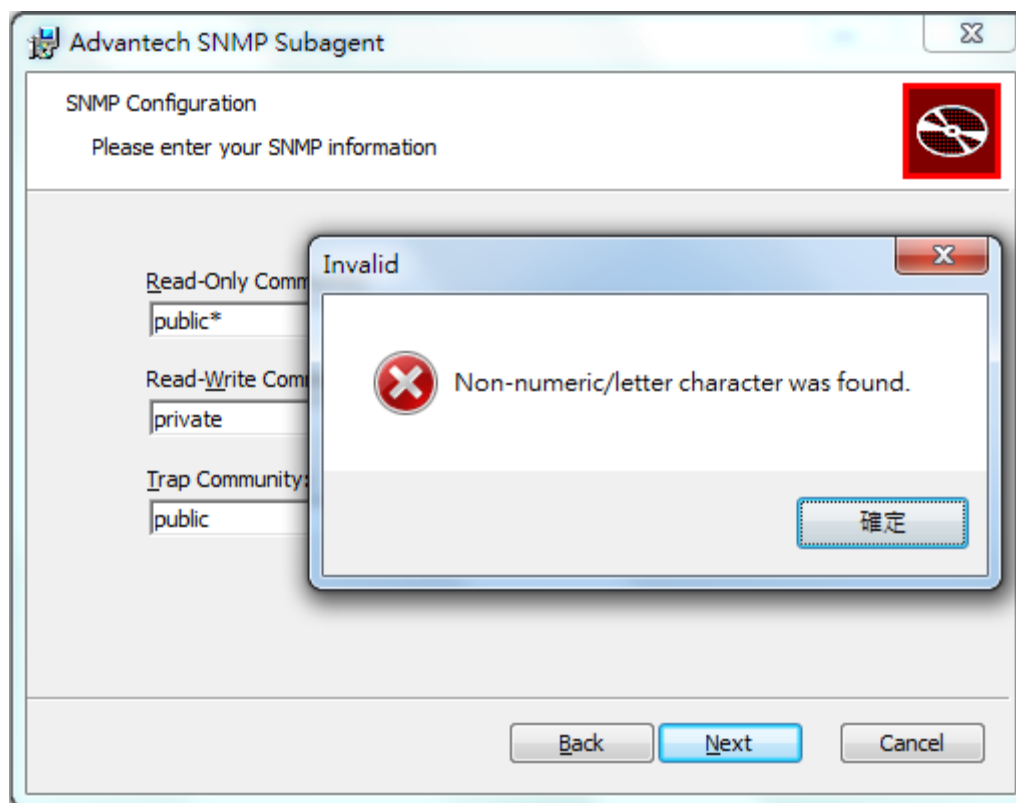


Figure 3-8 Incorrect Community String

After the installation, the Read-Only and Read-Write community will be applied to the *Security tab* of SNMP Service Properties as shown in Figure 3-9.

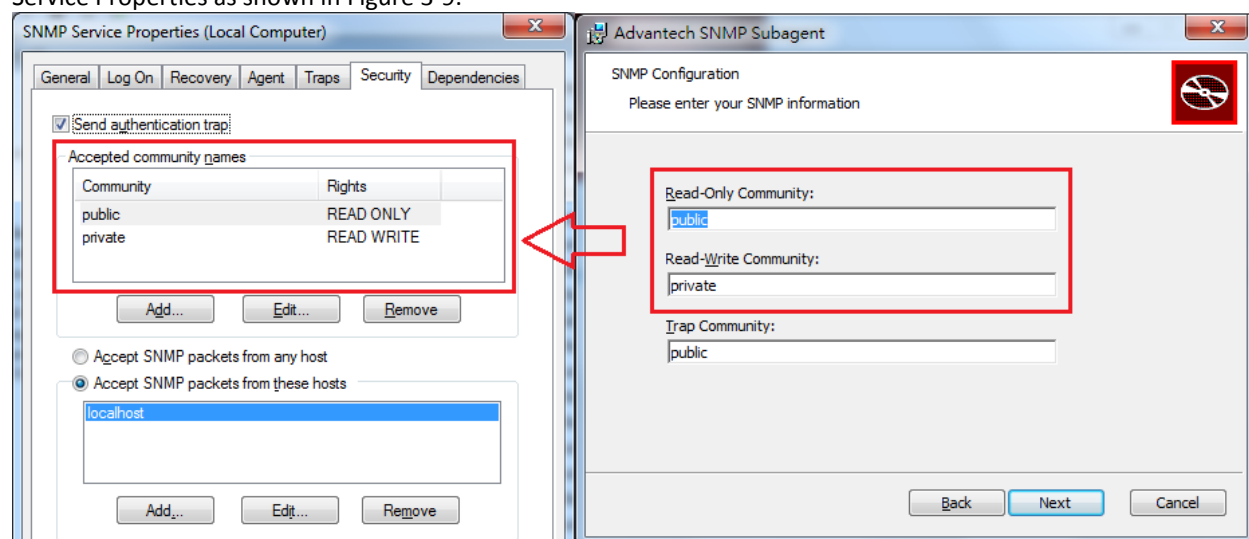


Figure 3-9 Community for Security of SNMP service



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The *Trap Community* will be applied to the *Traps* tab of *SNMP Service Properties* as shown in Figure 3-10.

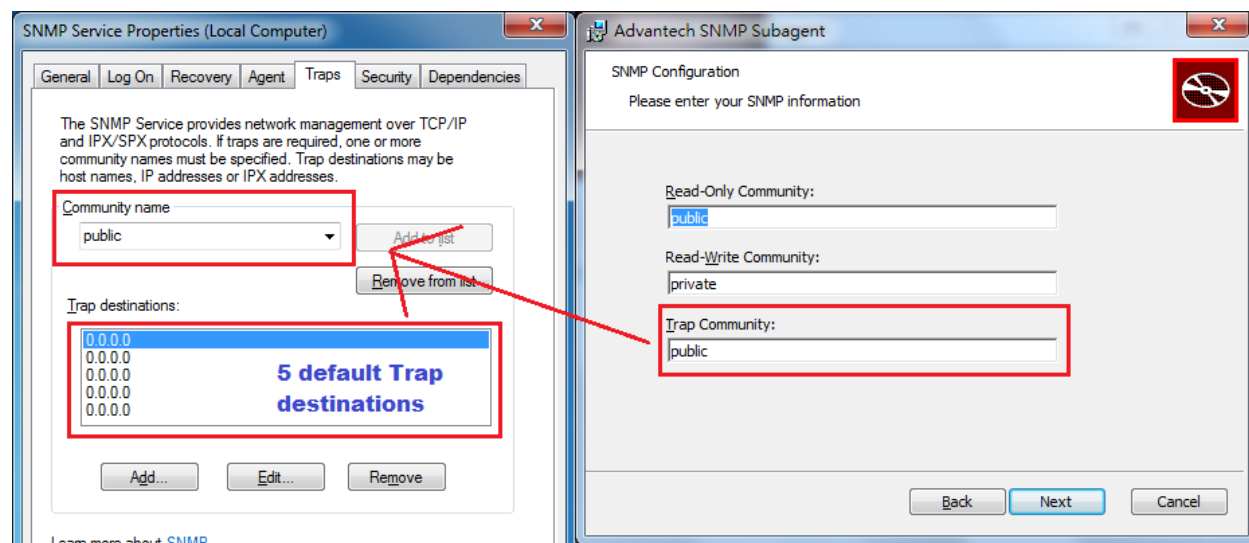


Figure 3-10 Community for Traps of SNMP service

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## Step 5: Install the SNMP Subagent

After finishing SNMP configuration, you can continue to install SNMP subagent. During the installation, it will install subagents to the system and restart the SNMP service as shown in Figure 3-12.

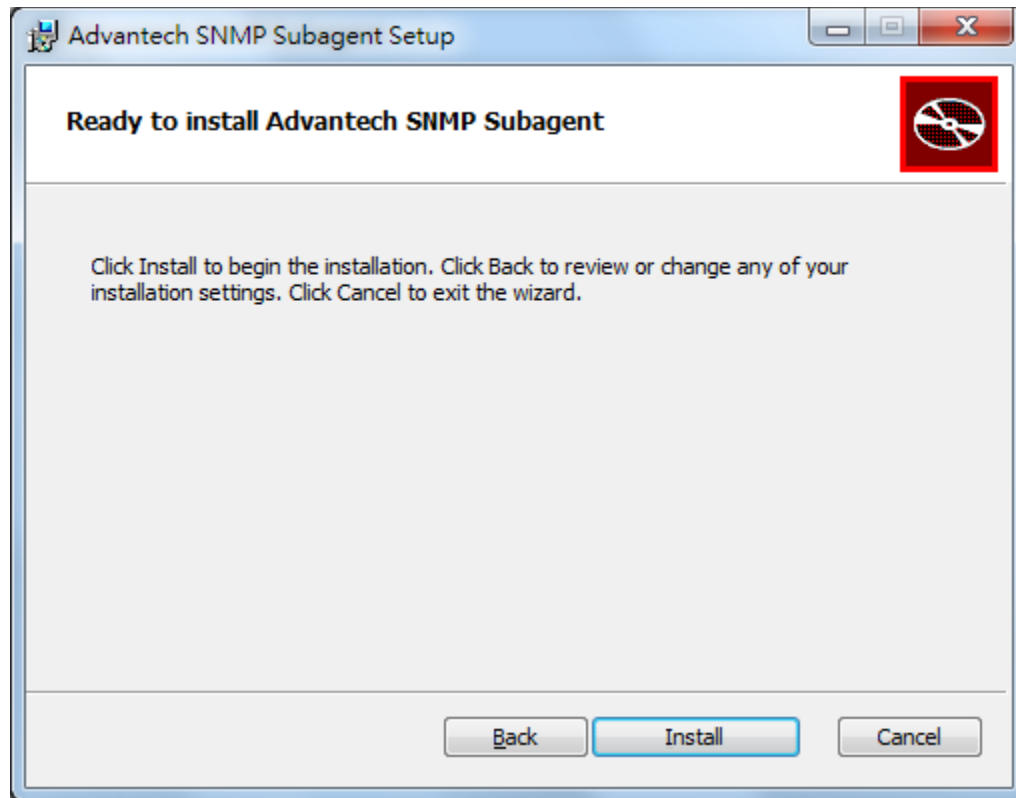


Figure 3-11 Ready to Install SNMP Subagent

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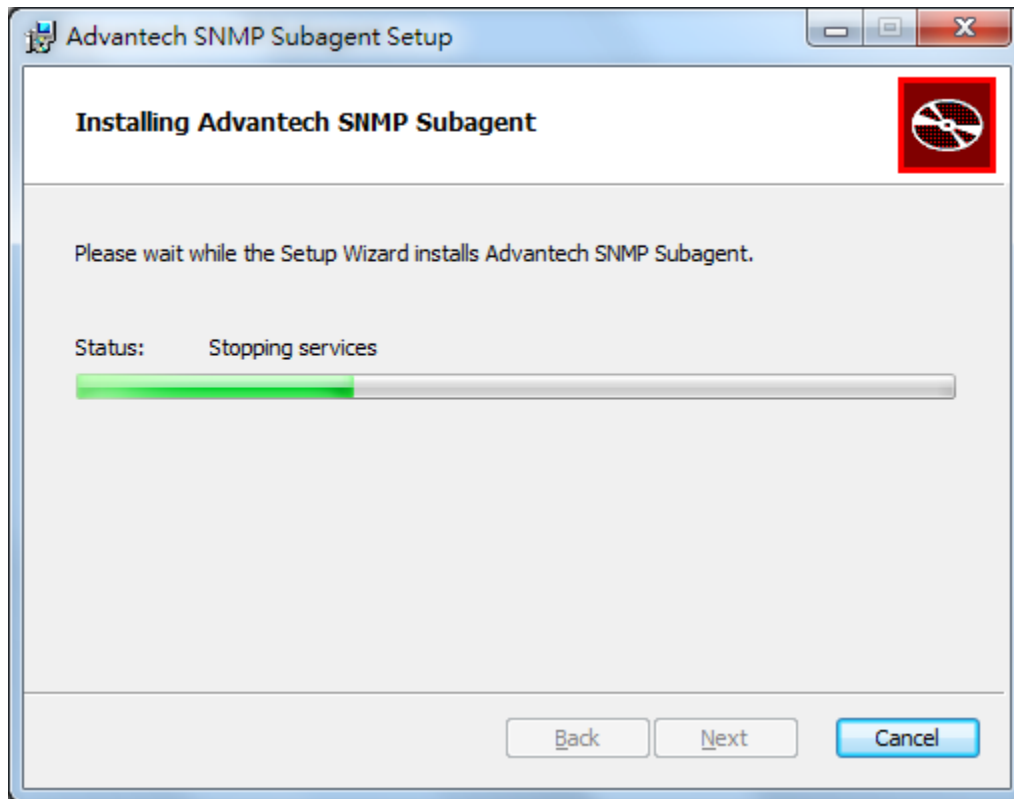


Figure 3-12 Stop/Start Service

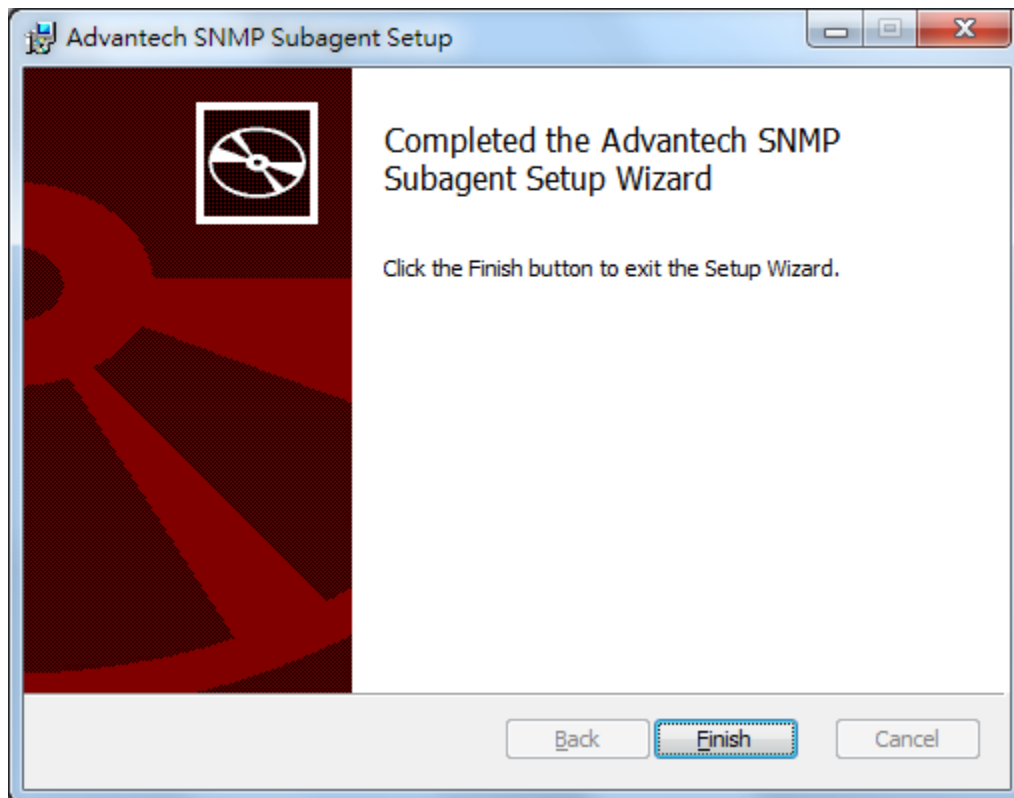


Figure 3-13 Installation Completed

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### Step 6: Restart Computer

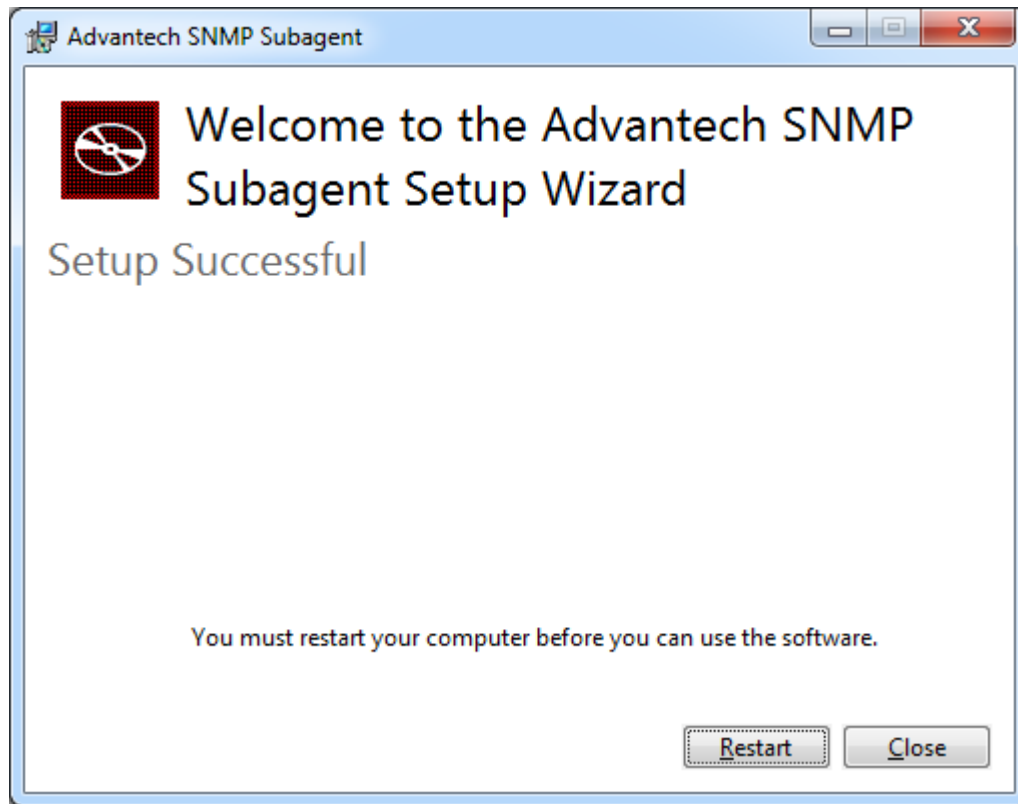


Figure 3-14 Restart Required

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## Step 7: Security Settings

In order to communicate with Network Management Station (NMS), you need to add the NMS IP address to the Security tab of SNMP service properties as shown in Figure 3-15

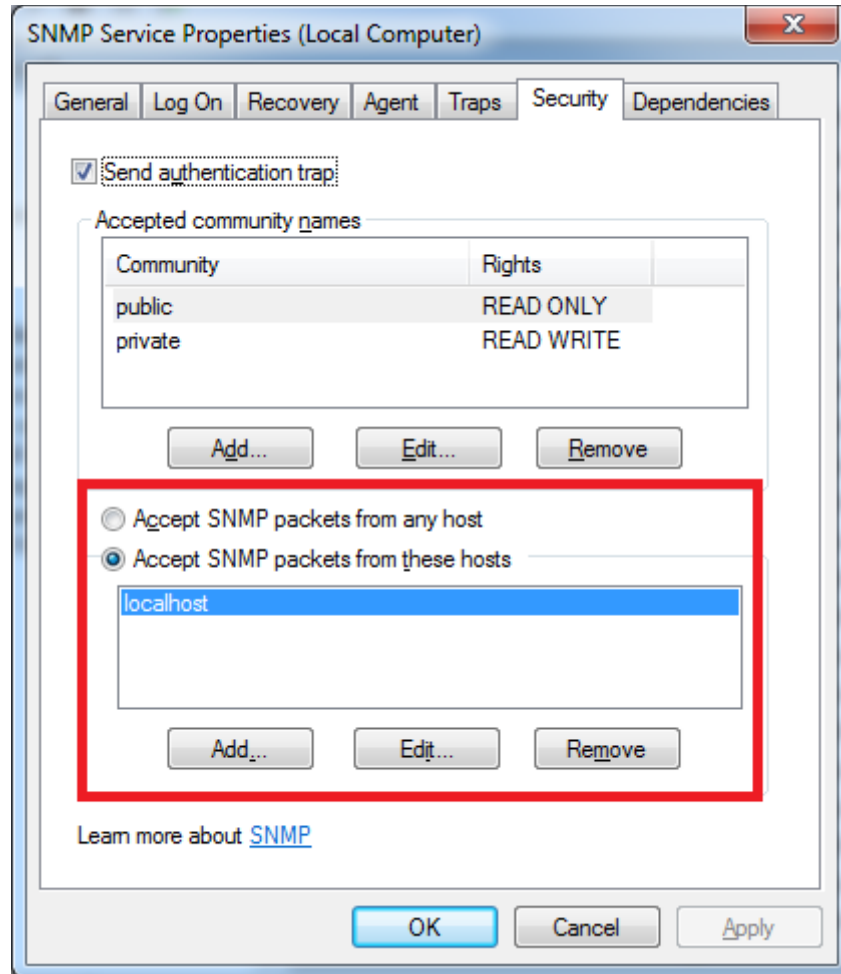


Figure 3-15 Add NMS IP address

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## Step 8: Get MIB files

After the installation finished, you can find the MIB Files from **Start menu > All Programs > Advantech > SNMP Subagent > MIB Files** as shown in Figure 3-16 or from the installation folder of *Advantech SNMP Subagent* as shown in Figure 3-17.

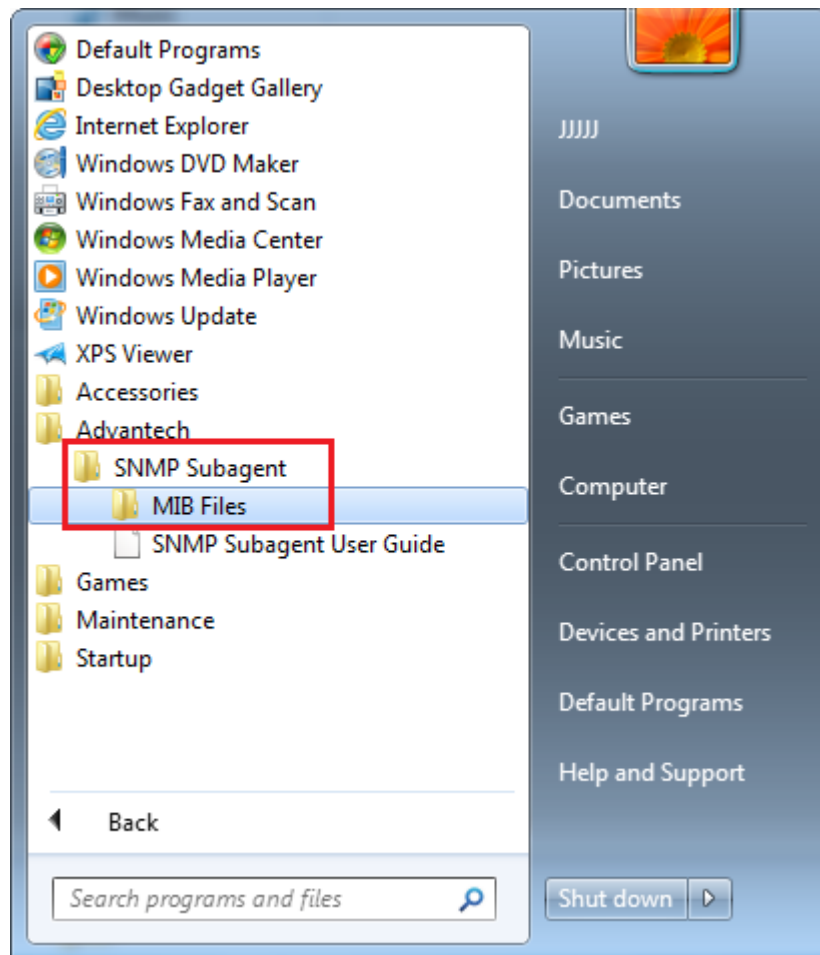


Figure 3-16 MIB Files

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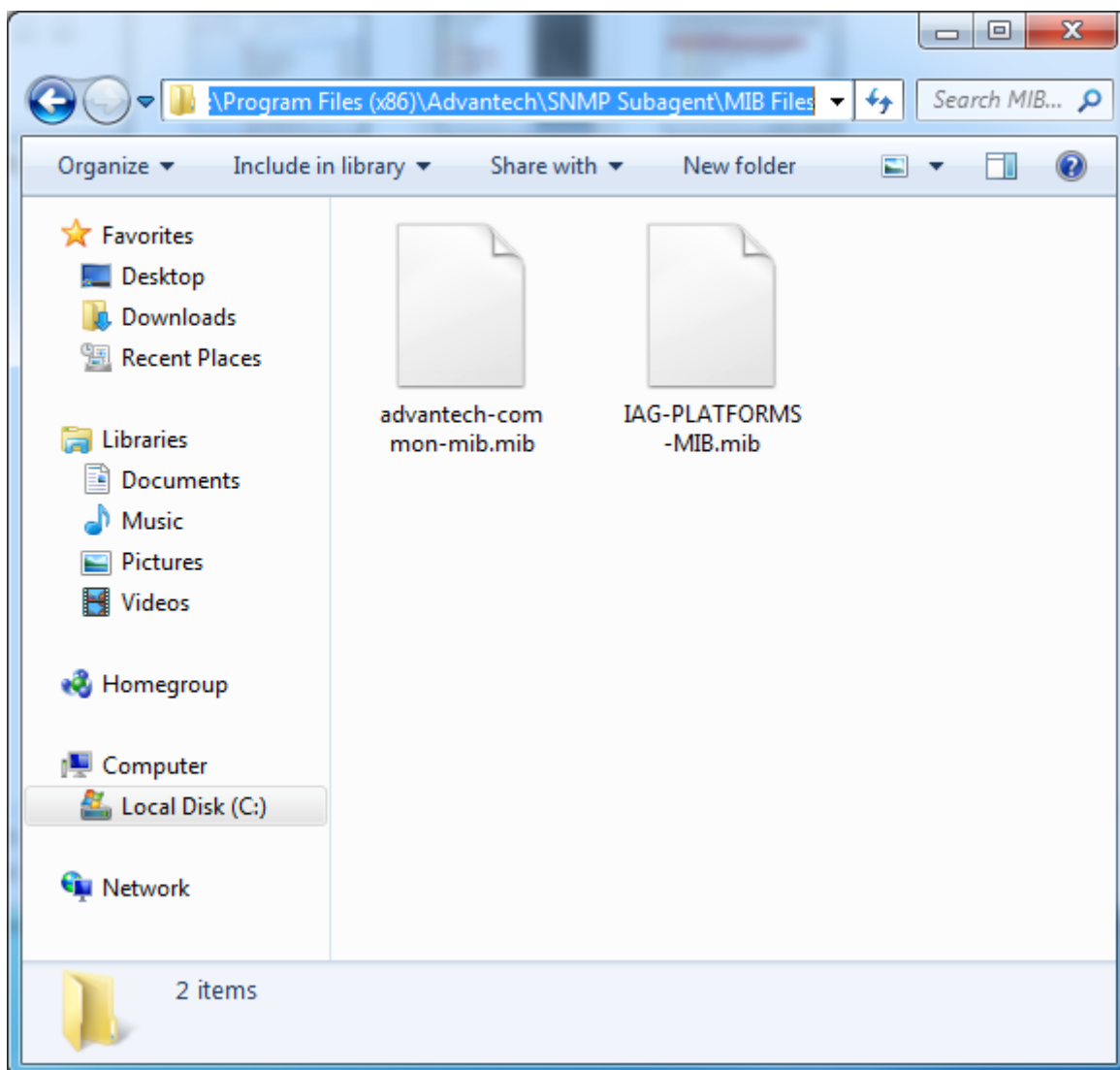


Figure 3-17 MIB Files Location

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## 3.2 Uninstallation

To uninstall the Advantech SNMP Subagent, you can follow the following steps.

### Step 1: Launch uninstallation wizard

Go to **Control panel > Programs and Features** and select the *Advantech SNMP Subagent*. Click *Uninstall* to launch uninstallation wizard as shown in Figure 3-19.

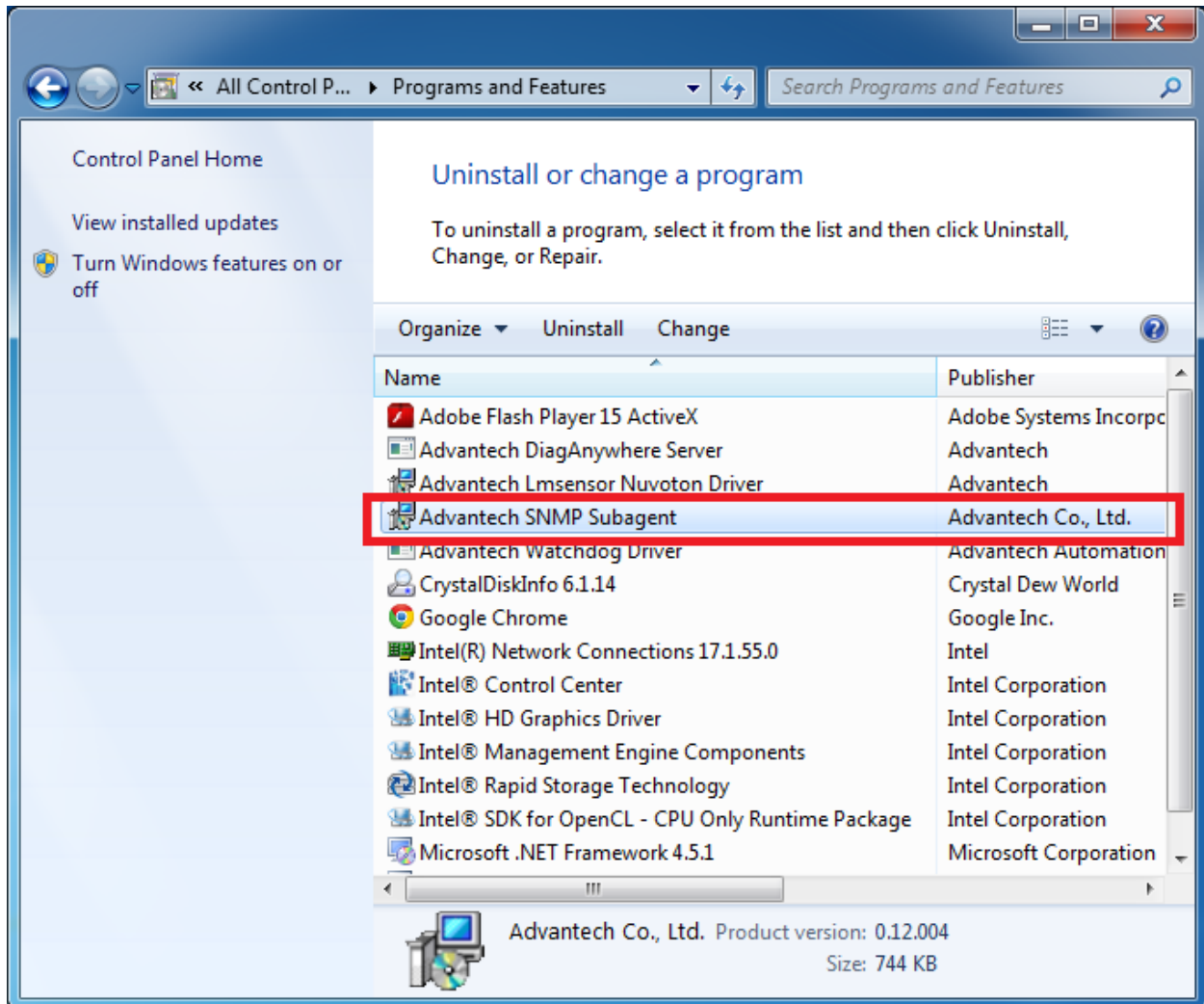


Figure 3-18 Uninstall or change a program



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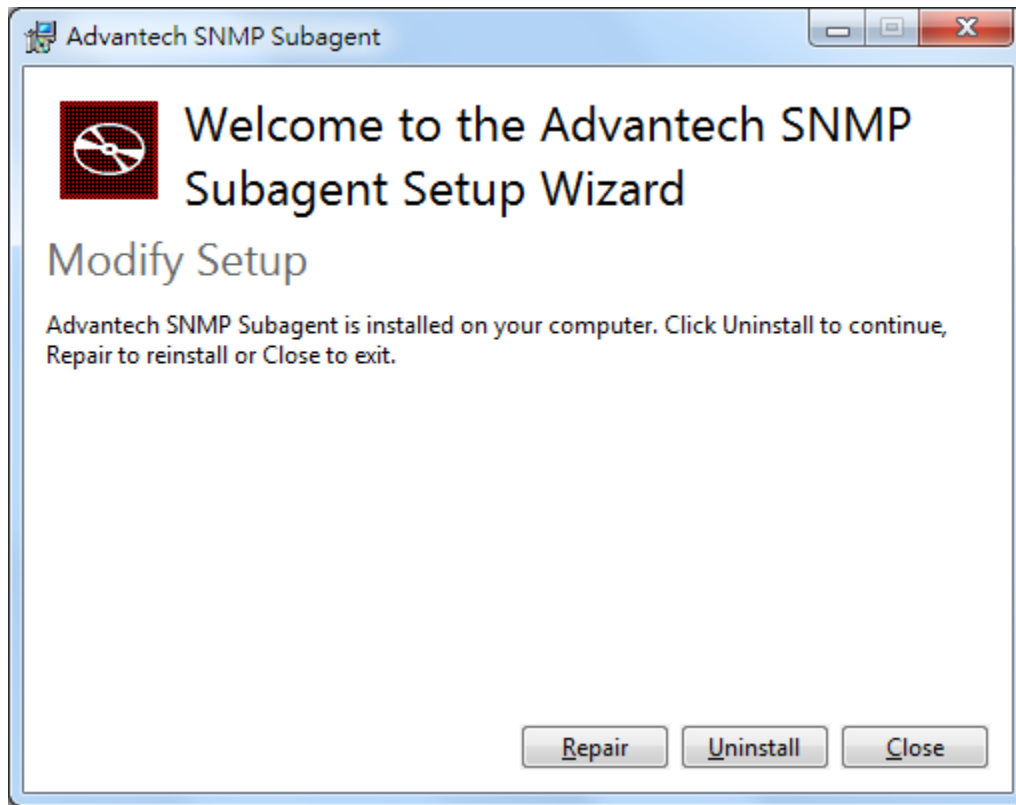


Figure 3-19 Uninstallation Wizard

## Step 2: Uninstall the Advantech SNMP Subagent

Click *Uninstall* button to continue the uninstallation process and wait the uninstallation completed as shown in Figure 3-21.

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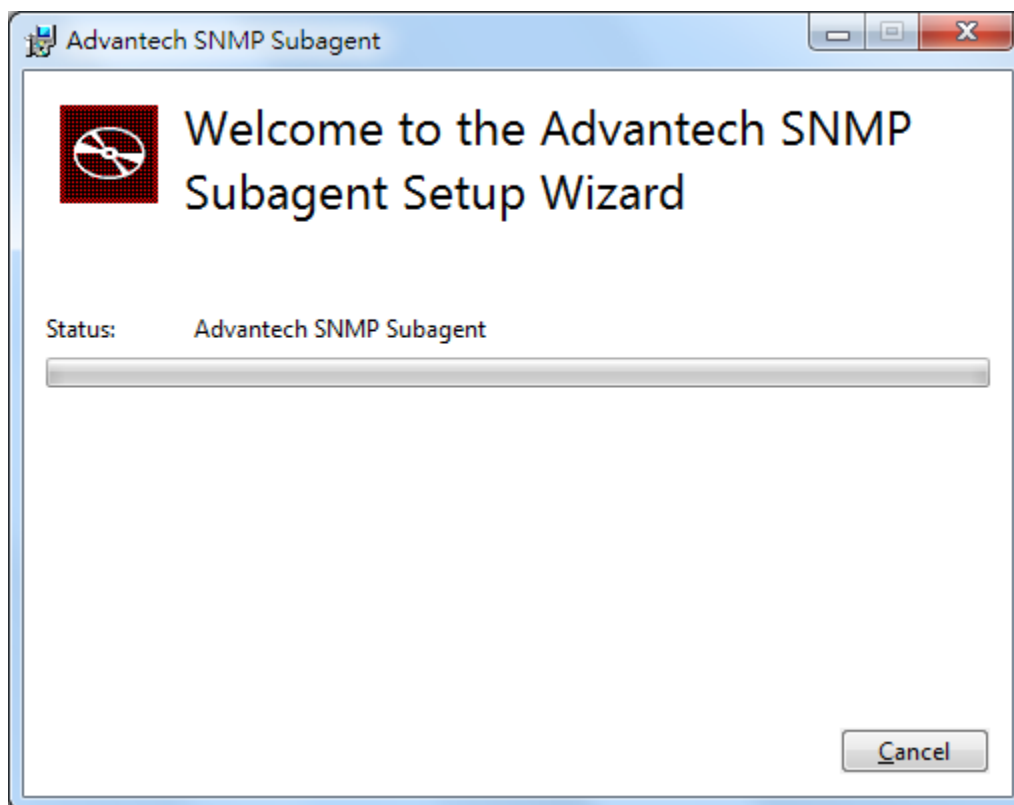


Figure 3-20 Uninstall Advantech SNMP Subagent

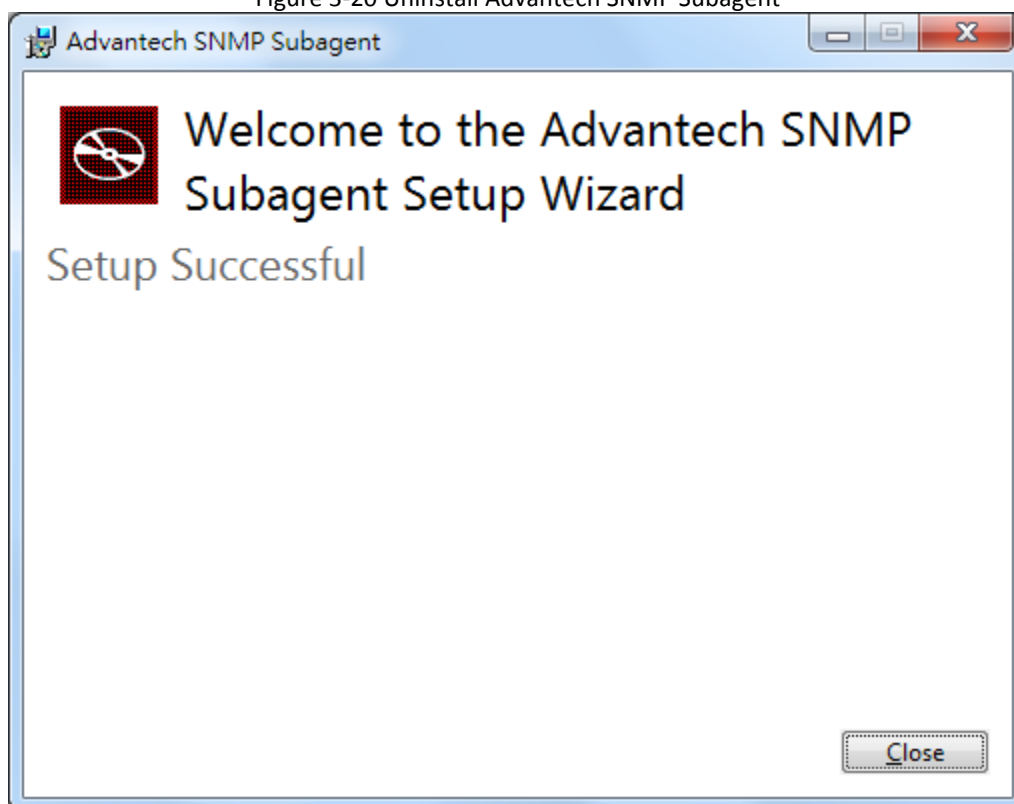


Figure 3-21 Uninstall Successful