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# Table of Contents

Preliminary Information ...................................................................................................................................................... 5

Introduction ........................................................................................................................................................................ 5

System Requirements ....................................................................................................................................................... 5

Supported Devices ............................................................................................................................................................ 5

Prerequisites ....................................................................................................................................................................... 5

- APC .................................................................................................................................................................................. 5
- Automate™ ....................................................................................................................................................................... 5

Add the APC PowerNet MIB to Automate™ ....................................................................................................................... 6

UPS Devices Solution .......................................................................................................................................................... 6

Related Documents ............................................................................................................................................................ 7

- SNMP OID Reference Sheet ........................................................................................................................................... 8
- SNMP Trap Event Reference Sheet ................................................................................................................................... 9

Glossary ............................................................................................................................................................................... 10

- Alert Template .................................................................................................................................................................. 10
- Client .................................................................................................................................................................................. 10
- Computer ......................................................................................................................................................................... 10
- Control Center ............................................................................................................................................................... 10
- Detection Template .......................................................................................................................................................... 10
- Location ............................................................................................................................................................................. 10
- MIB .................................................................................................................................................................................. 10
- Network Probe ............................................................................................................................................................... 11
- OID .................................................................................................................................................................................. 11
- Report Categories ............................................................................................................................................................ 11
- Solution Center .............................................................................................................................................................. 11
- SNMP ............................................................................................................................................................................. 11
- SNMP Community String .................................................................................................................................................. 11
- SNMP Trap ....................................................................................................................................................................... 11
- SNMP Walk ..................................................................................................................................................................... 11

Detecting and Monitoring .................................................................................................................................................. 12

- Enable Automate™ Network Probe Scan .......................................................................................................................... 12
- Enable the Network Probe .................................................................................................................................................... 12
- Perform a Network Scan ..................................................................................................................................................... 12
- SNMP Configuration ......................................................................................................................................................... 12
- Automate™ Network Probe .............................................................................................................................................. 12
Preliminary Information

Introduction
The APC Managed Services Integration provides advanced SNMP monitoring of APC Smart-UPS® with Remote Monitoring and Management (RMM) solutions, using integrated SNMP Monitoring. This user guide details the process to configure SNMP detection, monitors and traps for APC Smart-UPS, using the ConnectWise® Automate™ Remote Monitoring and Management (RMM) solution. The SNMP Object Identifiers (OIDs) and traps detailed allow Managed Service Providers to monitor APC Smart-UPS with a Network Management Card (NMC) AP9630, AP9631 or AP9635 installed.

System Requirements
To configure Automate™ for SNMP Monitoring of APC Smart-UPS, the following configuration is required:

- Automate™ RMM server version 11 or higher.
  - See LabTech Installation Prerequisites available on the Automate™ Documentation Portal (docs.labtechsoftware.com) for specific server and workstation requirements.
  - For Automate™ technical support, visit the Automate™ Partner Portal (cp.labtechsoftware.com).
- Any APC Smart-UPS with an NMC 2 installed. See Supported Devices.
  - SNMPv1 is supported to communicate between the APC device and the Network Probe in Automate™. See Monitoring with the Automate™ Network Probe.
- If PSA integration with Automate™ is desired, the ConnectWise® PSA plugin can be acquired from the Automate™ Solution Center.
  - For further information on the Automate™ Plugins and the Solution Center, see the Automate™ Documentation Portal.

Supported Devices
Advanced SNMP monitoring of APC Smart-UPS with Automate™ RMM using an integrated SNMP monitoring is available for APC Smart-UPS with a Network Management Card 2 installed (AP9630, AP9631 and AP9635).

Prerequisites

**APC**
1) A Supported Device
2) Connected to an Internet Protocol (IP) network in which an Automate™ Computer is deployed and successfully checking into the Automate™ server.

**Automate™**
1) Automate™ 11 or higher (v110.286+)
2) User credentials with Super Admin user permissions
3) Ability to access the Solution Center (remote or local to server)
4) The UPS Devices Solution from the Automate™ Solution Center
Add the APC PowerNet MIB to Automate™

A MIB file helps identify what OIDs belong to what device and are valid to monitor.

1. Download the PowerNet MIB file
   a) Navigate to apc.com/tools/download
   b) On the Software/Firmware download page, click the drop down and select Firmware Upgrades – MIB
   c) Click Submit
   d) Find the latest version and click Download
      • Note: If the MIB file displays as text in a browser, right click on the page, click Save as... and if it saves it as a text file, change the file extension to .mib after saving it.

2. Load the MIB file
   a) Save/move the MIB file to C:\MIBS\RFC on the local machine where the Automate™ Control Center installed.
      • The file can go in the LTShare\MIBs\RFC directory on the server if the Automate™ server is on the same network as the Automate™ Control Center being used for this configuration and the L drive is mapped correctly.
   b) Close the Automate™ Control Center, and then relaunch it and log back in.
   c) Open the Probe Template Management screen.
      • Click Main > Probe Templates
   d) On the Probe Template Management screen, click Data > Reload MIB Files
      • Wait a few moments for the MIB to reload; The Status screen will display when the MIBs complete loading.
   e) Add the MIB to the Automate™ database
      • From the Probe Template Management screen click, Data > Store MIBs in LabTech

UPS Devices Solution

The UPS Devices Solution is obtained via the Automate™ Solution Center.

1. Login to the Automate™ Control Center with credentials that have Super Admin user permissions
2. Click Tools > Solution Center.
   • Note: The Solution Center may take a few moments to launch depending on how recently it has been accessed on the server and connection speed to it.
3. Add the UPS devices solution to the install queue
   a) Under the Solution Center navigation on the left click Network Devices.
   b) On the right-hand side find UPS Devices in the list of available solutions and click Queue.
      • Note: The status tag of UPS Devices solution may show as New or Out of Sync, either status is OK and will add or update the needed items in Automate™.
4. Click the 1 Solution in Queue button
5. Click the Install/Update button
   • Note: It is recommended to check the box Backup local database before update.
6. Click Yes to the Install/Update Notice
7. Click Finished
8. Close the Solution Center

Ensure that Automate Network Probe is enabled. If not, please refer to the Enable the Network Probe section in this document.

9. Refresh the Network Probe Configuration
   a) Open the Automate™ Network Probe
   b) Click Begin > Commands > Probe > Refresh Config
   c) Allow for the command to Complete. To check that the UPS Devices Solution has loaded successfully, view the Probe Commands tab.

Related Documents
The APC by Schneider Electric website, www.apc.com, includes the following UPS Network Management Card documentation:

- **Network Management Card 2 Installation Guide**, for AP9630, AP9631, and AP9635. See the NMC 2 Installation Guide for detailed instructions on the installation and configuration of the Network Management card for APC Smart-UPS.
## SNMP OID Reference Sheet

<table>
<thead>
<tr>
<th>OID Name</th>
<th>OID</th>
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<td><strong>SNMP About Information</strong></td>
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<td>upsAdvTestDiagnosticsResults</td>
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</table>

### SNMP Trap Event Reference Sheet

<table>
<thead>
<tr>
<th>Informational</th>
<th>Warning</th>
<th>Severe</th>
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<tr>
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<td>batteryOverTemperature</td>
<td>apcInternalCommunicationFault</td>
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<td>noBatteries</td>
<td>communicationLost</td>
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<tr>
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<td>hardwareFailureBypass</td>
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<td>noBatteriesCleared</td>
<td>upsOutletGroupCommand</td>
<td>lowBattery</td>
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<td>powerRestored</td>
<td>upsOutletGroupTurnedOff</td>
<td>upsBatteryNeedsReplacement</td>
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<tr>
<td>returnFromBypass</td>
<td>upsSleeping</td>
<td>upsCriticalCondition</td>
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<tr>
<td>returnFromLowBattery</td>
<td>upsTurnedOff</td>
<td>upsDiagnosticsFailed</td>
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<td>smartAvrReducingOff</td>
<td>upsWarningCondition</td>
<td>upsOnBattery</td>
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<td>upsWarningConditionCleared</td>
<td>upsOverload</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>upsOutletGroupTurnedOn</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Support for OIDs may vary between Smart-UPS models.
Glossary
Definitions of commonly used words and terms in this documentation that may be foreign or context-sensitive.

**Alert Template**
Alert actions, contact information, start and end times and success and fail messages are configured in the alert templates. One alert template can be created to control the actions of hundreds of monitors. These actions can be set for time of day and day of week and can have multiple rules. For example, daytime alerts can perform different actions than night-time and weekend alerts.

**Client**
An Automate™ Client is a node in Automate™ used as a container to organize Locations with contain Computers. Clients are most readily accessed via the Automate™ Navigation Tree.

**Computer**
An Automate™ Computer is a node in Automate™ used as a container to organize information pertaining an individual computer with the Automate™ agent installed on it. Computers are sub-containers to Locations and multiple Computers may reside within a Location. Computers are most readily accessed via the Automate™ Navigation Tree.

**Control Center**
The Automate™ Control Center is the Automate™ client used by MSP technicians and engineers to remotely administer their connected computers.

**Detection Template**
An Automate™ SNMP Detection Template is a set of OIDs that the Network Probe uses to help detect information such as device Type, Manufacturer, Model, etc. on SNMP enabled devices so they may be properly categorized in the Automate™ system. Detection templates get applied to devices by opening the Network Probe Computer then 1) Refreshing the Probe configuration by clicking Begin > Commands > Probe > Refresh Config and 2) under the Settings section click Redetect Devices. The device should then be listed in the Network Devices section on the Network Probe screen, click Refresh if it does not display immediately. To detect APC UPS Devices, use the unique identifier for APC devices in the detection template configuration. This identifier is always the first portion of the OID string, for APC it’s 1.3.6.1.4.1.318.

**Location**
An Automate™ Location is a node in Automate™ used as a container to organize Computers. Locations are sub-containers to Clients and multiple Locations may reside within one Client. Locations are most readily accessed via the Automate™ Navigation Tree.

**MIB**
A management information base (MIB) is a formal description of a set of network objects that can be managed using SNMP. The format of the MIB is defined by the vendor and uses OIDs. The MIB file maps the OID to a known Module to provide further information about that OID.
Network Probe

An Automate™ Network Probe is a service running on a designated Automate™ agent computer per location that will scan the network for other devices without the Automate™ agent installed on them. It can be accessed via the Automate™ Computer Management screen > Automation workspace > Network Probe tile.

OID

Object identifiers (OIDs) are strings of numbers. They are allocated in a hierarchical manner, so that, for instance, the authority for "1.2.3" is the only one that can say what "1.2.3.4" means. With SNMP, it acts as an address to a precise stream that provides information about the device sending SNMP the packet(s).

Report Categories

Report Categories tie various monitors together into common categories to allow reporting on. They also provide data for various status gauges in Automate™.

Solution Center

The Solution Center is used to download updates and any new items that are available for the Automate™ system.

SNMP

SNMP is a protocol used for network management. It is used for collecting information from, and configuring, network devices, such as servers, printers, UPSs, switches, and routers on an Internet Protocol (IP) network. SNMPv1 is the first version of SNMP and is the most widely version supported to date. It is the version that is supported in this integration document.

SNMP Community String

An SNMP Community String is like a password. It is sent along with each SNMP Get-Request and allows (or denies) access to device. Most network vendors ship their equipment with a default password of "public". (This is the so-called "default public community string".)

SNMP Trap

SNMP Traps enable an agent to notify the RMM application of significant events by way of an unsolicited SNMP message. The conditions to trigger a trap event from the UPS are defined in a Management Information Base (MIB) file loaded to the Automate™ server. After the condition has been met, the SNMP agent then generates an SNMP packet that is sent from the alerting device to the defined receiving SNMP Trap receiving device, the Automate™ Network Probe.

SNMP Walk

An SNMP Walk is an OID discovery run on a specific device to detect what SNMP OIDs respond and with what values in which Automate™ will then map the OID to the proper MIB module.
Detecting and Monitoring

Detecting and Monitoring APC Smart-UPS devices with the Automate™ Network Probe currently supports SNMPv1 only.

Enable Automate™ Network Probe Scan

The Automate™ Network Probe Scan finds all devices on the network and runs a detection process on all SNMP enabled devices. To perform a Network Probe Scan, follow these steps:

Enable the Network Probe

1. Follow the instructions available at docs.labtechsoftware.com/LabTech11/
   In the documentation, see Configuration > Network Probe > Enabling the Probe (Probe Wizard)
2. For SNMP detection and monitoring with APC UPSs, pay attention to steps 8 and 11.
   a) Step 8, the default Community Strings should be fine but be certain “public,private” are, at minimum, included.
   b) Step 11, be certain the box is checked to enable (default) “Collect Network Device Data for this Location”

Perform a Network Scan

1. From the Clients node, navigate to the [Computer] you wish to use as the probe and then double-click to open the Computer Management screen.
   • Note: The selected computer should be on the same LAN, VLAN and/or Subnet as the supported APC network device.
2. Select the Automation workspace and then click the Network Probe tile.
3. Click Rescan Network
   • Note: This will trigger a scan of the network which takes on average about 5 to 15 minutes which allows for the time needed to perform further configuration steps.

SNMP Configuration

In order to receive SNMP data to monitor in Automate™, the Network Probe must be configured to receive SNMP Traps and the APC Network Management Cards must be configured to send SNMP Trap alerts to the Automate™ Network Probe Agent in the same Automate™ Location and on the same network.

Automate™ Network Probe

Detect the device and create an SNMP Trap Receiver.

Detect Devices

Detect and identify the device you want to monitor.

1. Open the Automate™ Network Probe
2. Under the Settings section click Redetect Devices
   a) Wait for the command to finish
3. Click Network Devices and find the desired UPS
   a) Click Refresh if the UPS does not immediately appear.
b) If the UPS continues to not show in the Network Device list, try and Perform a Network Scan again, wait 15 to 30 minutes and try to Redetect Devices again.

Create SNMP Trap Receiver(s)
Once the desired UPS is identified, the SNMP Trap can be configured with the IP address.

1. Click SNMP Traps > SNMP Trap Receivers
2. Click the + icon to add a new SNMP Trap Receiver
3. Enter the desired Name for the trap you want to create.
   - **Note:** The IP Address, OID Value, Generic Type Rule and Specific Code Rule can all be used in conjunction with each other or individually. For the purpose of this integration we will just use the IP Address field.
4. An individual IP, comma separated list of IPs, a range of IPs or an entire subnet can be added. Below are some examples:
   a) A range of IP addresses between 10.45.6.70 and 10.45.6.90, inclusive. Enter in the following format, 10.45.6.[70-90].
   b) Every IP on a /24 subnet. Enter in the following format, 10.45.6.*
   c) Comma separated list. Enter the following format, 10.30.56.90, 10.30.56,95, 10.30.56.122
   d) Alternative way to entering a comma separated list (10.30.56.90, 10.30.56,95 and 10.30.56.122) is to enter the list in the following format, 10.30.56.[90, 95, 122].
5. The default Evaluation Order of 10 should be fine unless the Network Probe has been specifically configured to use other Evaluation Orders.
6. Click Save

APC Network Management Card
1. For each Network Management Card on the network, open the NMC Web interface in a web browser.
2. To confirm that SNMPv1 is enabled, go to Configuration > Network > SNMPv1 > Access and check that the Enable checkbox is selected.
   SNMPv1 is enabled by default.
3. Go to Configuration > Notification > SNMP Traps > Trap Receivers and click Add Trap Receiver.
4. Enter the Trap Receiver details for the Automate™ Network Probe Agent.
   - **Trap Generation:** Enable
   - **NMS IP / Host Name:** Enter the IP Address of the Automate™ Network Probe Agent.
   - **Language:** Select desired language of SNMP Traps. English is the default.
   - **SNMPv1 Community Name:** Enter the Community String used during Enable the Network Probe. The default string is public.
   - **Authenticate traps:** Enable.
5. Click Apply to save the Trap Receiver settings.
6. To test the Trap Receiver settings, go to Configuration > Notification > SNMP Traps > Test. Select the Probe Agent Trap Receiver from the dropdown list and click Apply.
7. To verify that the Trap has been received, open the Automate™ Network Probe interface and go to SNMP Traps > SNMP Traps Received.

- If you don’t see the test trap immediately, click Refresh and/or try searching the list for the expected UPS IP.

Creating Monitors

Now that the device(s) can now be detected and identified, adding monitors is the next step. There are a couple of ways to add monitors, 1) using pre-defined monitors or 2) creating from an SNMP Walk.

Pre-defined Monitors

Pre-defined monitors allow a quick way to add a monitor to an individual device or a group of devices.

Individual Device

A monitor on an individual device will monitor that device only.

1. Open the Automate™ Network Probe
2. Click Network Devices
3. Find the APC UPS device to create the monitor(s) on and double click it
4. Click the Monitors tab
5. Right click anywhere in the data grid and click Add New Monitor
6. On the Location tab
   a) Define a name for the monitor and use the remaining default settings.
   - Note: It’s good to have a naming convention that is universally identifies the alert and UPS related to this monitor. Example: UPS - apcF2508D - Battery Status which translates as MonitorType – UPSName – CheckType
7. On the Alerting tab
   a) Assign the desired Alert Template
   - Note: For the purpose of this integration document use the Default – Create Ticket Alert Template
8. On the Configuration tab
   a) Set the Monitor Type to SNMP OID Check
   b) Under Preloaded SNMP Checks choose:
      - Group: UPS
      - Manufacturer: APC
      - Model: SmartUPS
      - Check: Choose whichever item you would like to alert on from the dropdown list.
   c) The defaults for Condition and Result are fine but can be changed, if desired.
9. On the Trending tab
   a) All defaults are fine, unless otherwise desired by an administrator.
Network Device Group
A monitor applied to a network device group will automatically apply to all the devices joined to that group. This helps prevent from having to create repetitious monitors per individual device.

1. Login to the Automate™ Control Center
2. Via the Navigation Tree, navigate to the Group Network Devices > UPS Devices > APC UPS > Smart-UPS and double click on it to edit it.
3. Click on the Network Devices tab
   a) The UPS(s) should be listed in the data grid on the Members List tab
4. Click the Monitors sub-tab
5. Click the Add button
   a) On the Create Network Device Monitor wizard select:
      • SNMP – Simple Network Management Protocol and click Next
   b) Under Known SNMP Checks select:
      • Group: UPS
      • Manufacturer: APC
      • Model: SmartUPS
      • Check: Choose whichever item you would like to alert on from the dropdown list.
      • Click Next
   c) Monitor Interval
      • This should remain at a reason interval between 2-5 minutes to allow for accuracy but to also help avoid using too many resources on the Network Probe computer.
   d) Result Evaluation
      • The group Create Network Device Monitor wizard does not pull in the default values for the results, please see the OID Reference Sheet in this document to apply the proper Check and Result values.
   e) Configure Alerting
      • When to Alert: Every Time
      • Alert Template: Default – Create Ticket
      • Ticket Category: <Not Specified>. If advanced ticketing and/or PSA integration is desired, a custom ticket category can be assigned. For example: UPS
      • Report Category: <Not Specified>. Optionally, something like SNMP Checks can be selected for instance and it will then be accounted for as an SNMP Check on certain built-in reports or any custom report pointing to that data. Also, custom Report Categories can be created and used, if desired.
From an SNMP Walk

An SNMP Walk offers the widest select of OIDs to choose from. When the monitor is created, it applies to the individual device.

1. Open the APC UPS Network Device from the Network Probe or the Network Navigation Tree
2. Click the **SNMP Explorer** tab
3. Click **Walk**
   - Use the Default values (empty and greyed out) to walk the device against all known OIDs. **Note:** This may take a longer amount of time to finish, click **Send Command**.
   - To walk the device for only APC products, check the **Starting OID** box and enter the OID 1.3.6.1.4.1.318 in the text box and click **Send Command**.
4. When the walk completes, it will display a list of all known OIDs
   - **Tip:** To help with ease of navigating the OIDs follow these steps.
     i. Set the **Display Options** View As: to **Tree**
     ii. Click the Minus icon in the upper right corner next to **Result Count**
     iii. This will shrink all the results and allow expansion one level at a time.
5. Navigate to a desired OID to monitor
6. Right click on the OID and click **Create Monitor**
7. On the Monitor creation screen
   - Click the **Location** tab and verify the **Monitor Name** is as desired
   - Click the **Alerting** tab
     i. **Alert Template:** Default – Create Ticket
     ii. **Alert Style:** Once
     iii. **Alert Message:** Default is fine, advance options are fine too.
     iv. **Ticket Category:** <Not Specified>. If advanced ticketing and/or PSA integration is desired a custom ticket category can be assigned. For example: **UPS**
     v. **Report Category:** <Not Specified>. Optionally, something like **SNMP Checks** can be selected for instance and it will then be accounted for as an SNMP Check on certain built-in reports or any custom report pointing to that data. Also, custom Report Categories can be created and used, if desired.
   - Click the **Configuration** tab
     i. Use the defaults. **Condition** and **Result** as they may be adjusted as desired.
   - Click **Save**
   - The monitor will now be applied to the device it was created on and can be access via the **Monitors** tab on the Network Device.
Customer support for this or any other APC by Schneider Electric product is available at no charge in any of the following ways:

- Visit the APC by Schneider Electric web site, www.apc.com to access documents in the APC Knowledge Base and to submit customer support requests.
  - www.apc.com (Corporate Headquarters)
    Connect to localized APC by Schneider Electric web site for specific countries, each of which provides customer support information.
  - www.apc.com/support/
    Global support searching APC Knowledge Base and using e-support.

- Contact the APC by Schneider Electric Customer Support Center by telephone or e-mail.
  - Local, country specific centers: go to www.apc.com/support/contact for contact information.
  - For information on how to obtain local customer support, contact the APC by Schneider Electric representative or other distributor from whom you purchased your APC by Schneider Electric product.