

Data Collection with SPM's Custom Device Templates Feature – Part Number SPM-CDT

Purpose

This technical note documents SPM's Custom Device Templates, the key-activated feature for data collection that allows communication, tracking, and reporting for any SNMP-enabled device you create to export data from within SPM.

Overview

The Custom Device Templates feature tracks a subset of the operational values for devices that are not otherwise in communication with SPM; for example, an unsupported PDU, UPS, or printer.

You create a new custom template, configure the template values for specific device attributes, and then associate the template (by its name) to the custom device when you add the device to SPM.

Once the template is associated with the custom device, values can be monitored in several places in the SPM interface.

The Custom Device Templates feature has the capability of tracking data center power from within SPM using a single value in an unsupported device (like a UPS).

In addition, the feature offers the convenience of letting you add individual infeeds and outlets directly to SPM one at a time as needed.

Before You Begin

To use the Custom Device Templates feature, you will need the following:

- Sentry Power Manager (SPM), version 5.3 or greater.
- A software license key for the Custom Device Templates feature, purchased separately from Server Technology.
- One or more non-PDU, SNMP-enabled devices that you want to track.

Requesting the SPM License Key

Obtain the Custom Device Templates license key by contacting Server Technology at:

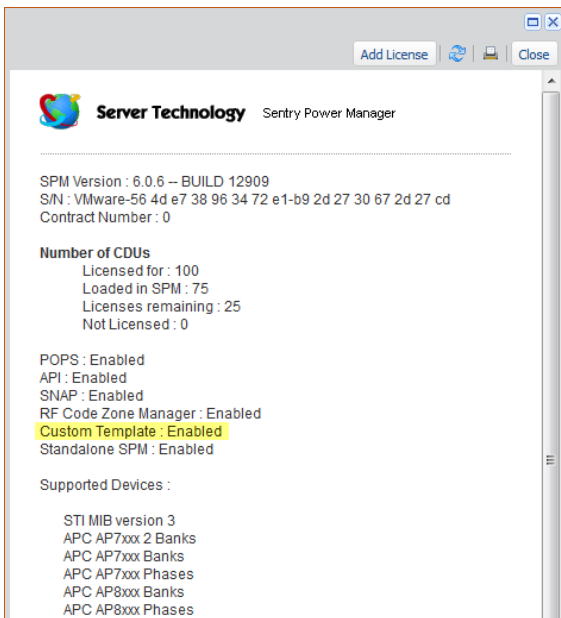
1-800-835-1515 (domestic),

++0 (1) 775-284-2000 (international),

or email: sales@servertech.com

When you obtain the license key, enter it in SPM at the **Admin Setup > Add License** window. The Custom Device Templates feature will then be operational with an auto-enabled status.


To verify the enabled status, go to the **Application Help > Product License** window. Look for “Custom Template: Enabled”, as highlighted in this example:

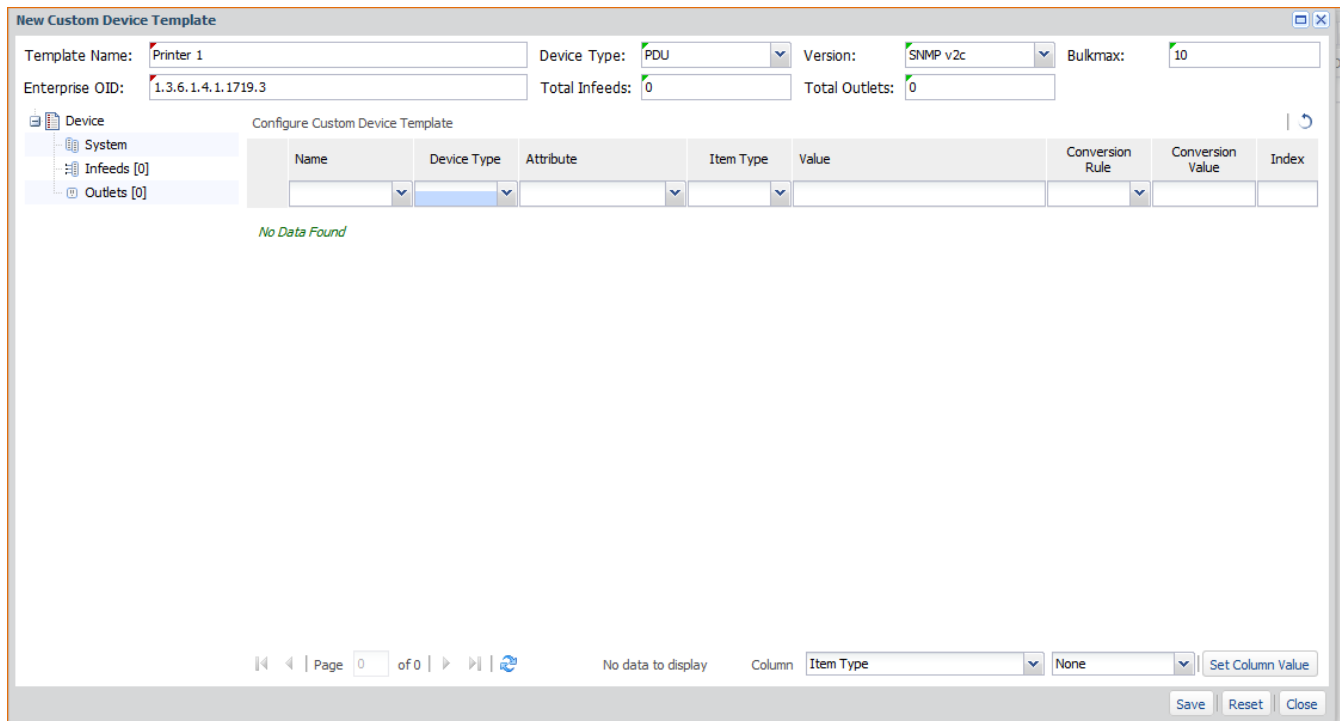


Creating a New Custom Device Template

Once the Custom Device Templates feature is enabled in SPM, you can set up your own templates.

To create a new template:

1. Start SPM and go to **SPM Setup > Custom Device Templates**. The list displays any previously created templates.
2. Click the New Custom Device Template  icon in the toolbar (or right-click the template and from the drop-down menu, select the New Custom Device Template option). The New Custom Device Template window displays:




3. (Required) Type a new template name.
4. In the Enterprise OID field, provide the full Object Identifier (OID) required for SNMP. This value is the returned OID from the MIB SysObjectID, and the value you enter must be numeric.
5. From the drop down list, select PDU.
6. From the Version drop-down menu, select the version of SNMP (v1, v2c, v3).
7. Type the (maximum) Bulkmax quantity for data retrieval (for SNMP). Bulkmax is the maximum number of OIDs from the device in one request. The value varies by device, and for most devices, it is not recommended to go beyond 40.
8. If you are creating the template for a conventional Power Distribution Unit (PDU), type the number of Total Infeeds and Total Outlets. If you are creating the template for a custom, non-PDU device (for example, a printer or a UPS), then type 0 (zero) for the Total Infeeds and Total Outlets.
9. Click **Save**. The new template is shown in the Custom Device Templates list, and the Configure Custom Device Templates window then displays so you can then set the attributes of your new template.

Configuring a Custom Device Template

When you configure a custom device template, you are editing the settings that include text definitions for certain parameters, conversion rules, and conversion values that apply to a specific device attribute.

To configure device attributes in a custom device template:

1. Start SPM and go to **SPM Setup > Custom Device Templates**. (Note that the list displays any previously created custom device templates.)
2. Select the template in the list you want to configure, and click the Configure Custom Device Template  icon in the toolbar (or right-click the template in the list, and from the drop-down menu, select the Configure Custom Device Template option).
3. The Configure Custom Device Template window displays:

Notes:

- You will be configuring values (in the Value field of this window) for the attributes of the custom device as displayed in the Attributes column.
- A green corner in the field indicates that the field can be edited by clicking into the field and typing a new value. A red corner in the field indicates that your changed valued will be saved when you click the **Save** button.

4. To configure an attribute, from the Item Type drop-down menu, select the None, Constant, or OID option:
 - **None:** (Default) Leaves the device attribute blank and disables the Value, Conversion Rule, and Conversion Value fields. Conversion is not performed with this option.
 - **Constant:** If the attribute is numeric, SPM uses the text string you type in the Value field and enables the Conversion Rule and Conversion Value fields.
 - **OID:** If the attribute is numeric, SPM uses the numeric OID string you type in the Value field to collect the attribute value and enables the Conversion Rule and Conversion Value fields.

For the Constant or OID options only:

5. Click in the Value field to type a text string.
6. Select a rule from Conversion Rule drop-down list.
7. Click in the Conversion Value field and type a value.
8. Click **Save**.

IMPORTANT: If the template is edited after devices have been associated with the template (the association is made as you add the device to SPM and apply the template to the device by name), for your template edits to take effect, the devices may need to be deleted and re-added.

Supported Custom Device Values

SPM supports three groups of values so you can apply a value that is unique to the custom device:

- **Whole Device Level:** Device model, version, serial number, power type, total power (watts), manufacturer, up to three custom text fields (any string value you want to track), and up to five custom numeric fields (any numeric value you want to track).
- **Infeed:** Index, name, current(amps), power(watts), voltage(volts), apparent power(volt-amps), and power factor(%).
- **Outlet:** Index, name, current(amps), power(watts), voltage(volts), apparent power(volt-amps), and power factor(%).


Note: Thresholds can be a custom number but the threshold value will not be used to determine device alarms.

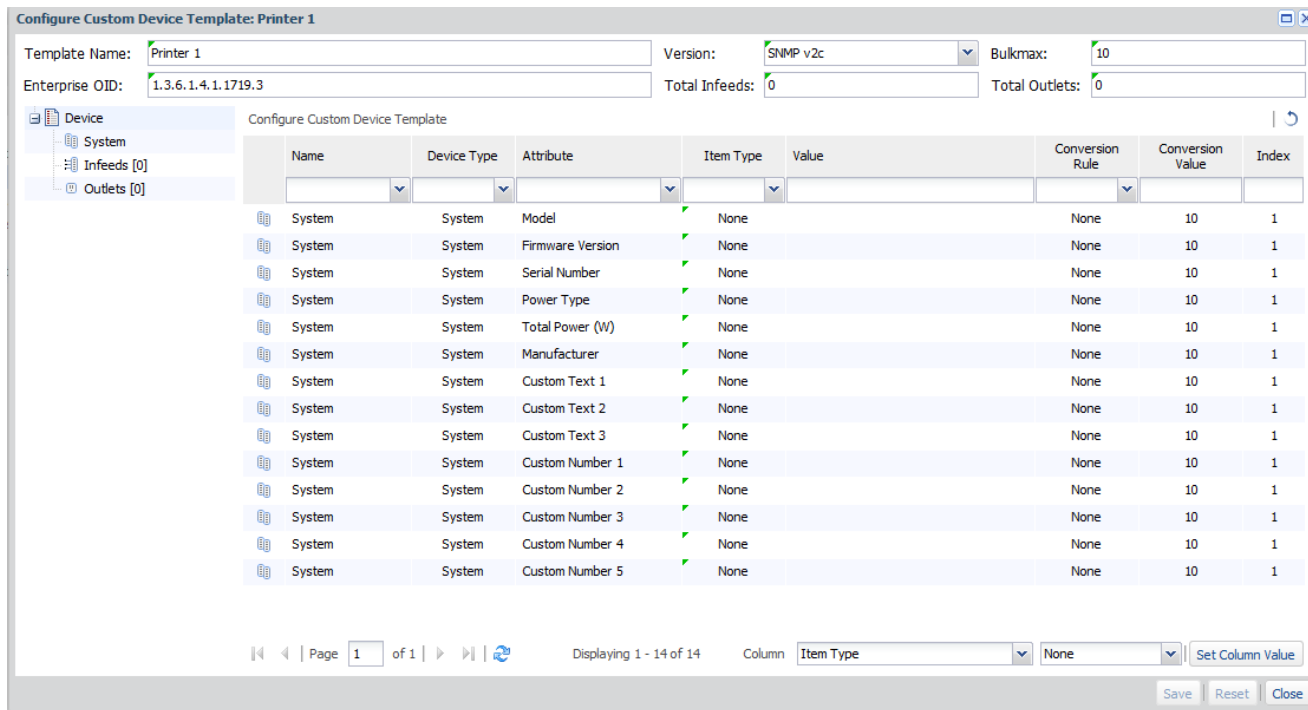
Converting Values

There are no fixed rules for conversion of values. The operational values of a custom device will vary by product and manufacturer, and each device will have its own values and meaning.

Therefore, some values in a custom device may need to be converted to be correctly displayed in SPM, while other values in that same device may not need conversion. OID values are more likely to be converted than Constant values.

To convert values:

1. Go to **SPM Setup > Custom Device Templates**, select a template in the list, and then click the Configure Custom Device Template  icon in the toolbar (or right-click the template and select the Configure option). The Configure Custom Device Template window displays as shown:



2. From the Item Type drop-down menu, select the Constant or OID option for a numeric attribute. The default is None.
3. Click in the Value field and type the numeric value or OID sequence number that will be converted.
4. From Conversion Rule drop-down list, select the conversion operand: * , /, -, or +.
5. Click in Conversion Value field and type the numeric factor for conversion, such as: 10, 20, 30, etc.
6. Click **Save**.

If the Item Type is “Constant”

When you select Item Type “Constant”, enter a numeric value in the Value field (for example, 1275.5). Generally, conversion of constants is unnecessary. You may be converting OID values more often than Constant values.

If the Item Type is “OID”

When you select Item Type = OID, enter an OID Value (for example, 1.3.6.1.4.1.1719.3.1.4.5.1 or a similar OID sequence). The OID will obtain the device value through SNMP.

Note that if an OID needs to be converted using division, the extra data will be truncated. For example, if the device’s power is 32.9 W, the value might report as 329 in SNMP, as there are no decimal places in SNMP. The reporting value depends on the device and its MIB, and, as in this example, the device might report 3290, 32, 33, or even another value.

To correctly represent the device’s power in SPM, the value must be converted back to 32.9. This means you will need to divide the OID by 10 (using the Conversion Rule field and the Conversion Value field as described in the previous screen example).

The value displayed in SPM will then show as 32. Notice the “.9” was truncated and no rounding was performed. Keep in mind that this example is correct for power, but other fields may support decimal places. For example, voltage can have one decimal place and current can have two decimal places. Any additional decimal places will be truncated.

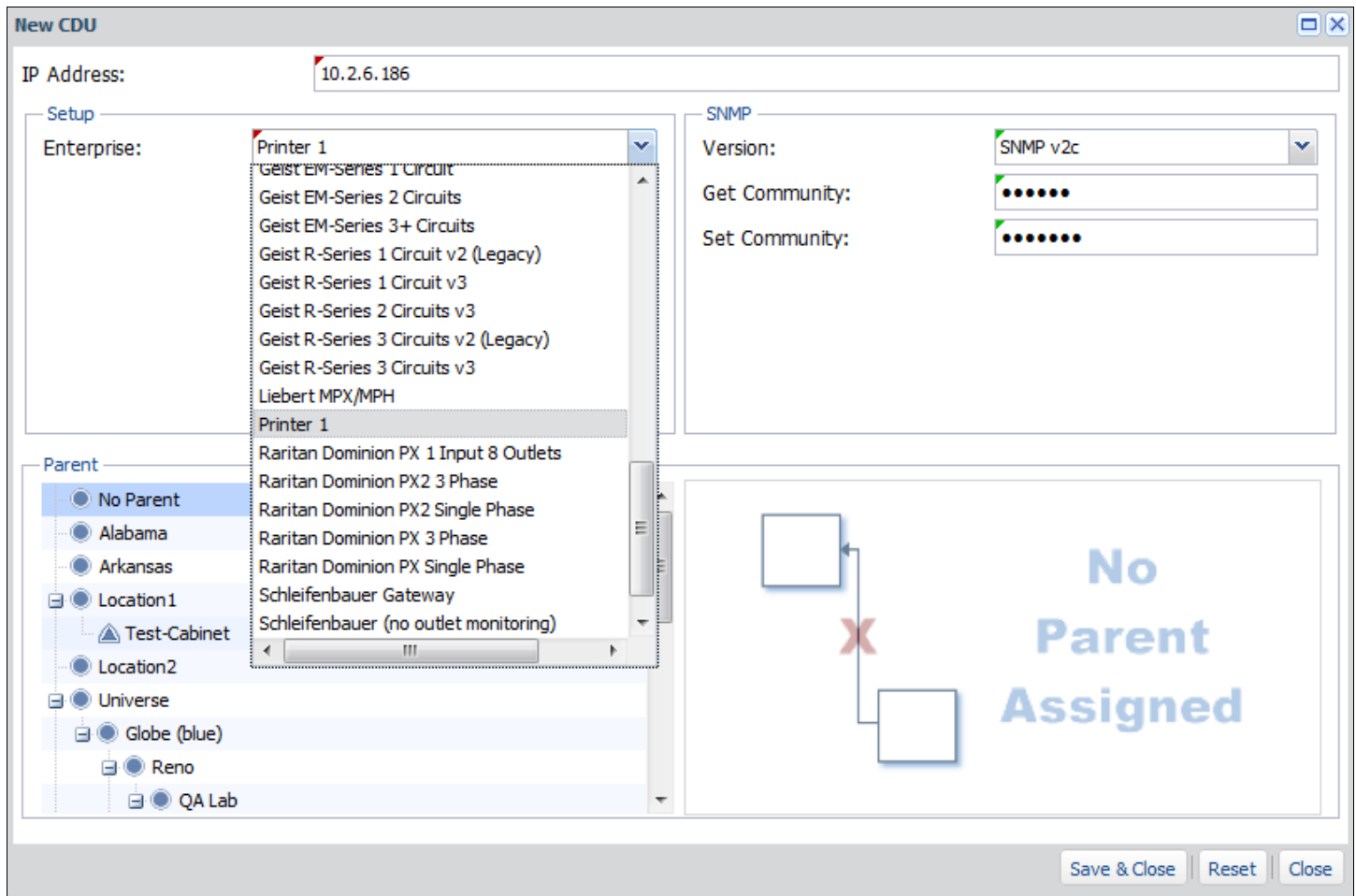
Associating the Template with a New Custom Device

The values from a custom device template are associated with a new device when the device is added to SPM.

To apply a template to a custom device:

1. From the CDUs list, open the New CDU window.

Note: Only the New CDU window can be used to associate a custom device template with a new custom device. The Device Discovery window cannot be used for a custom device template association.

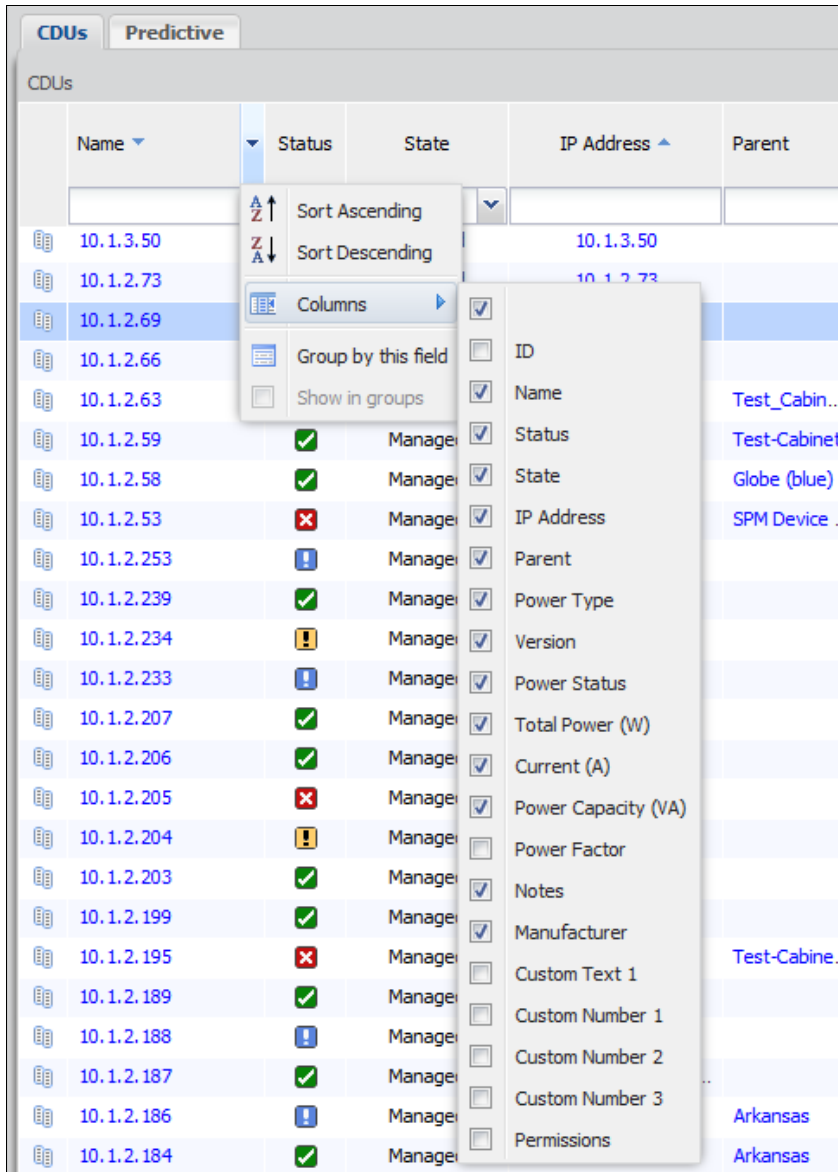


2. (Required) In the IP Address field, name the new custom device.
3. Provide SNMP and other parameters, as necessary.
4. From the Enterprise drop-down menu, select the custom device template (by name) that you created at **SPM Setup > Custom Device Templates**.
5. Click **Save & Close**.

Viewing Device Values

You can view the custom text or numeric values from a custom device template that you applied to a new device.

1. To view the values, from the CDUs list, enable the reporting fields by clicking the drop-down arrow and selecting the Columns option, as shown below:



2. At the bottom of the options panel, check one or more checkboxes for Manufacturer, Custom Text 1, and Customer Number(s).
3. If checked, information from these options will display as columns in the CDUs list and in the CDU Device Summary panel, showing the reported values for the attributes of your custom device.

Contact Technical Support



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Server Technology, Inc.

1040 Sandhill Drive

Tel: 775.284.2000

Web: www.servertech.com

Reno, Nevada 89521 USA

Fax: 775.284.2065

Email: support@servertech.com



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