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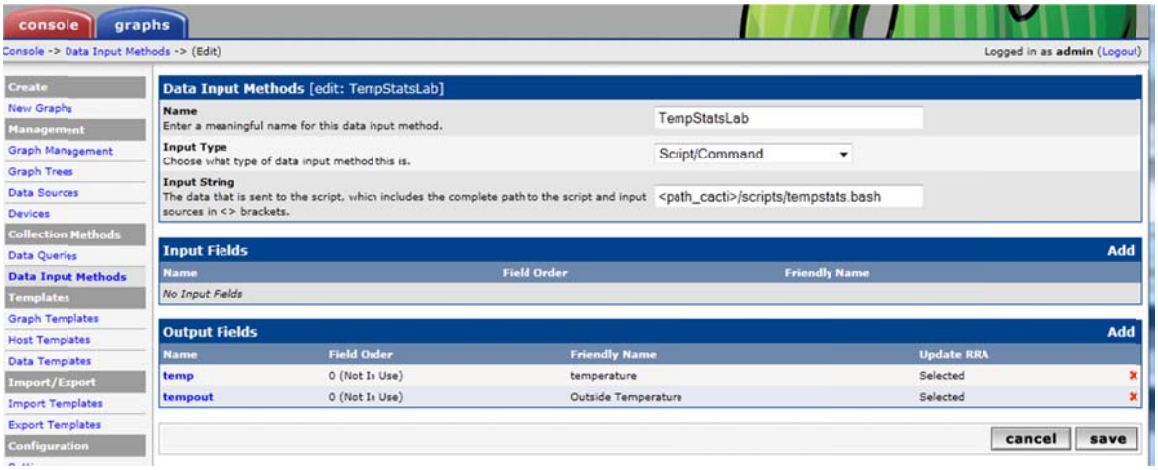
Network Monitoring with Cacti

This article will describe the steps necessary to create custom data sources for graphing within Cacti. This particular example will take 2 readings, one from a temperature sensor inside a data center, and another reading from weather.com for the outside temperature.

Cacti Configuration

With Cacti installed, create a new Data Input Method:



As you can see, this is where we specify our custom script. In this case, tempstats.bash is a simple wrapper script that will call 2 commands—one for each of our data sources. The wrapper script will output raw data in the form “temp:value tempout:value”. To be able to parse this, Cacti needs to know which fields to pick up. So we create tw new Output Fields accordingly.

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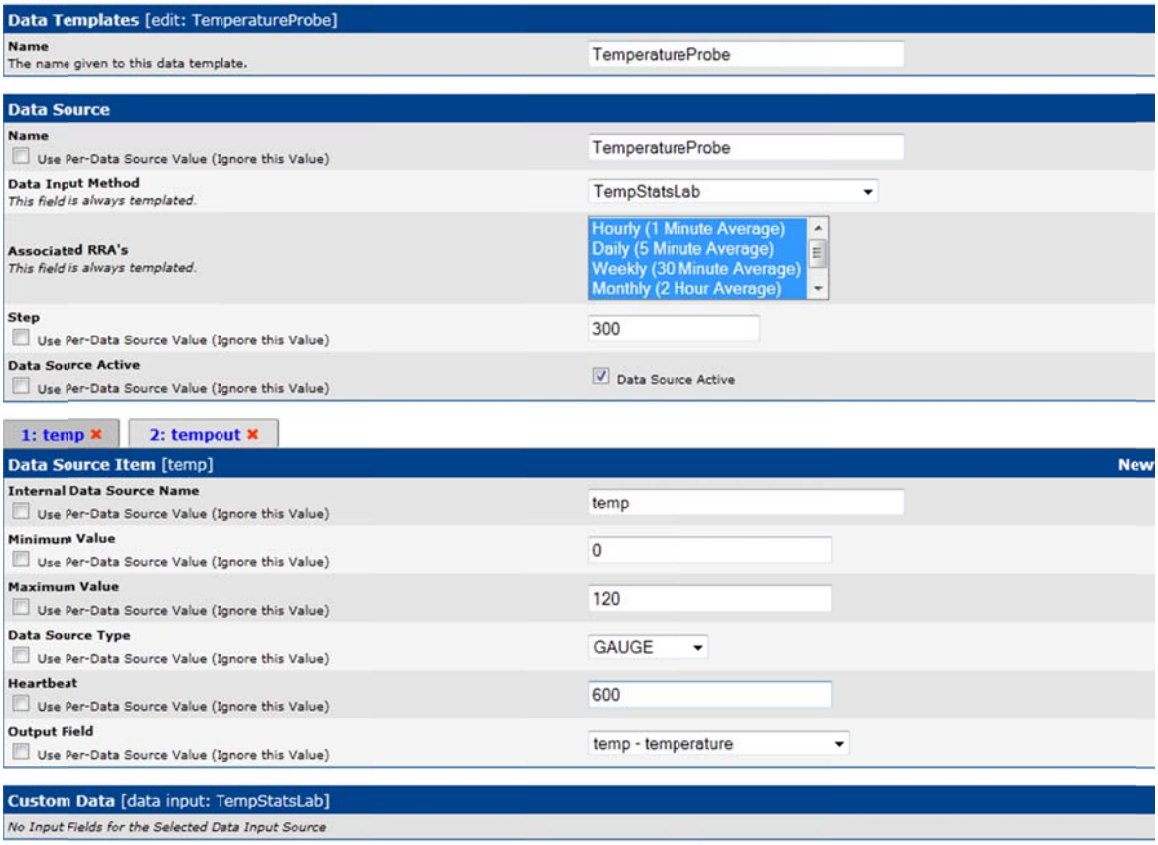
Next, we create a Data Template. This will provide some basic parameters for our data source:



Here we define which round-robin databases we want. We also take the two previously defined output fields, and we create a new Data Source Item for each. The Data Source Items will define additional parameters for the data source, such as the temperature range.

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Next, we create a Graph Template Item:

Graph Template Items [edit: LabTemperature] — Add

Graph Item	Data Source	Graph Item Type	CF Type	Item Color
Item # 1	**(temp): Inside Deg F**	**LINE3**	**AVERAGE**	**DA4725**
Item # 2	(temp): Max:	GPRINT	MAX	
Item # 3	(temp): Min:	GPRINT	MIN	
Item # 4	(temp): Current:	GPRINT	LAST	
Item # 5	**(tempout): Outside Deg F**	**LINE3**	**AVERAGE**	**4444FF**
Item # 6	(tempout): Max:	GPRINT	MAX	
Item # 7	(tempout): Min:	GPRINT	MIN	
Item # 8	(tempout): Current:	GPRINT	LAST	

Graph Item Inputs — Add

Name
Data Source [tempout]
Data Source [temp]

Template [edit: LabTemperature]

Name The name given to this graph template.	LabTemperature

Graph Template

Title (--title) ☐ Use Per-Graph Value (Ignore this Value)	LabTemperature
Image Format (--imgformat) ☐ Use Per-Graph Value (Ignore this Value)	PNG
Height (--height) ☐ Use Per-Graph Value (Ignore this Value)	120
Width (--width) ☐ Use Per-Graph Value (Ignore this Value)	500
Slope Mode (--slope-mode) ☐ Use Per-Graph Value (Ignore this Value)	☑ Slope Mode (--slope-mode)
Auto Scale ☐ Use Per-Graph Value (Ignore this Value)	☑ Auto Scale
Auto Scale Options ☐ Use Per-Graph Value (Ignore this Value)	○ Use --alt-autoscale (ignoring given limits) ◉ Use --alt-autoscale-max (accepting a lower limit) ○ Use --alt-autoscale-min (accepting an upper limit, requires rrdtool 1.2.x) ○ Use --alt-autoscale (accepting both limits, rrdtool default)
Logarithmic Scaling (--logarithmic) ☐ Use Per-Graph Value (Ignore this Value)	☐ Logarithmic Scaling (--logarithmic)
SI Units for Logarithmic Scaling (--units=si) ☐ Use Per-Graph Value (Ignore this Value)	☐ SI Units for Logarithmic Scaling (--units=si)
Rigid Boundaries Mode (--rigid) ☐ Use Per-Graph Value (Ignore this Value)	☐ Rigid Boundaries Mode (--rigid)
Auto Padding ☐ Use Per-Graph Value (Ignore this Value)	☑ Auto Padding
Allow Graph Export ☐ Use Per-Graph Value (Ignore this Value)	☑ Allow Graph Export
Upper Limit (--upper-limit) ☐ Use Per-Graph Value (Ignore this Value)	120
Lower Limit (--lower-limit) ☐ Use Per-Graph Value (Ignore this Value)	20
Base Value (--base) ☐ Use Per-Graph Value (Ignore this Value)	1000
Unit Grid Value (--unit/--y-grid) ☐ Use Per-Graph Value (Ignore this Value)	
Unit Exponent Value (--units-exponent) ☐ Use Per-Graph Value (Ignore this Value)	
Vertical Label (--vertical-label) ☐ Use Per-Graph Value (Ignore this Value)	

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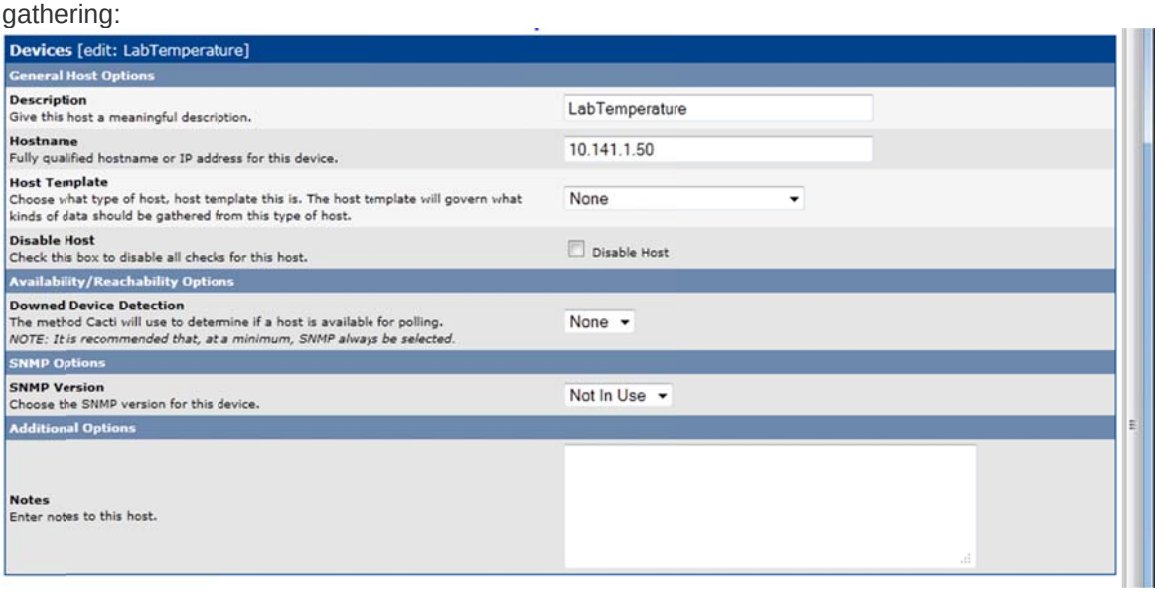
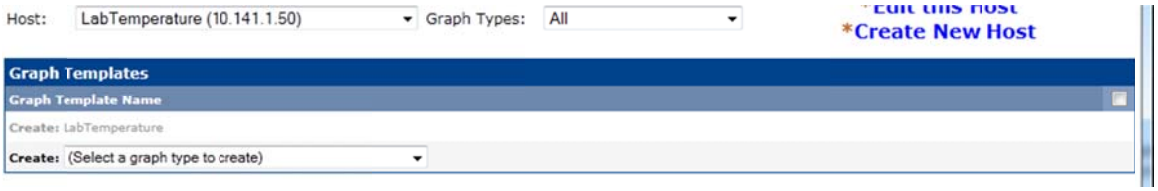
This provides further detail for the graphs. In particular, we specify that we want to display Average, Min, Max, and Last values. We also define line colors for each of our data sources.

Next, we'll want to create a Device. In this example, I create a device for the temperature probe. Optionally, we can tell Cacti to periodically ping this device to see if it is available for data gathering:



Finally, create the new graph. Click on "New Graphs" under "Create":



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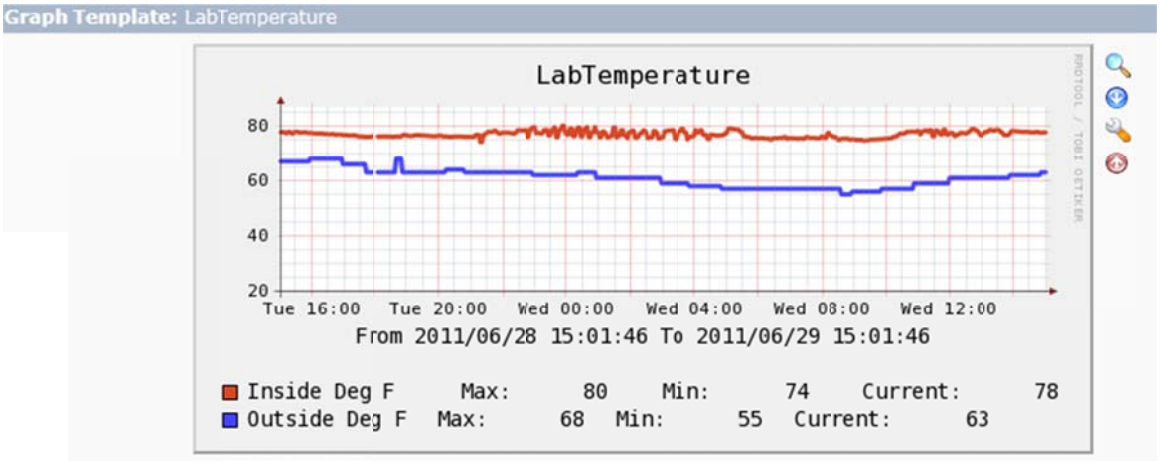
Here is our end result:



Supporting Scripts

tempstats.bash:

```
#!/bin/bash

INSIDE=`curl -s http://tempsensor/index.html?em | grep TF: | awk -F:\
{'print $2'} | awk -FHU {'print $1'}`
OUTSIDE=`/var/www/cacti/scripts/weather.bash`

echo temp:$INSIDE tempout:$OUTSIDE
```

weather.bash:

#!/bin/bash

```
php -q -d error_reporting=0 /var/www/cacti/scripts/weather.php | grep
^Temp | sed 's/Temp:\ \([0-9][0-9]\)F.*/\1/'
```

weather.php:

Credit goes to the following author of weather.php:
// WEATHER.COM XML PARSER
// Version 1.4
// Copyright 2005 Nick Schaffner
// http://53x11.com