Monitoring disk stats with Cacti

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Contents

1 Disk space utilisation

Cacti comes preinstalled with an SNMP data query to fetch and graph the disk space used in each of the filesystems on a Linux server running snmpd.

1.1 Add or update the device

- From the left panel select "Devices"
- If you're creating a new device, use template "ucd/net SNMP host". If you do this, you will automatically get two associated data queries: interface stats and monitored partitions.
- Otherwise, select an existing device. Under "Associated Data Queries" next to "Add Data Query" select "ucd/net - Get Monitored Partitions", and click Add.

- Click on "verbose query" next to the to see the execution of the SNMP query.

You will probably see "Success [0 Items, 0 Rows]", and the debug output will show that there is no data underneath the OID queried. This is because snmpd needs to be configured with which partitions to monitor.

1.2 Update snmpd configuration

On the host being monitored, edit `/etc/snmp/snmpd.conf` and add a line at the end for each partition you want to monitor. In a simple system it will have only one partition, the root, so all you need to add is:

```
disk /
```

Then restart snmpd:

```
service snmpd restart
```

(See `man snmpd.conf` for full details)

1.3 Return to Cacti

Now click on the "verbose query" link again, and check that you have some data: it should say "Success [3 Items, 1 Row]"

Now go to "Create Graphs for this Host". Under "Data Query - Get Monitored Partitions", check the box to select it, and Create. Then add the graph into a graph tree as normal.

2 Monitoring disk I/O operations

You can use Cacti to monitor disk I/O (that is, read/write transactions per second and bytes per second). This MIB is available in recent versions of snmpd.

However, out-of-the-box Cacti does not have the data query for this, so you need to install a new data query and graph templates. This can be done on a standard Cacti installation - it does *not* require the Cacti Plugin Architecture.

2.1 Download the configuration

Firstly, go to http://docs.cacti.net/usertemplate:data:host_mib:diskio and download the file with a name like 'diskio087d.tar.gz', and extract the two XML files it contains. You could do this under Linux like this:

```
$ wget http://docs.cacti.net/_media/usertemplate:data:host_mib:diskio087d.tar.gz
$ gzip -dc usertemplate:data:host_mib:diskio087d.tar.gz | tar -xvf -
```

This should give you two files:

- disk_io.xml
- cacti087d_data_query_snmp-get_disk_io.xml

2.2 Install the configuration files

`disk_io.xml` needs to be installed in the Linux box in the correct directory:

```
# cp disk_io.xml /usr/share/cacti/resource/snmp_queries/disk_io.xml
```

The other file needs to be installed via the web interface. Login to Cacti via the web browser, click "Import Templates". Next to "Import Template from Local File" click "Choose"; select the file; then click "Save"

Note: this means that you'll have to have the file `cacti087d_data_query_snmp_-_get_disk_io.xml` on your laptop. You can copy it to your laptop using something like Putty PSFTP (or another Windows scp or sftp client). Alternatively, just download the original .tar.gz file to your laptop and unpack it there.

You should see "Cacti has imported the following items..."

2.3 Start monitoring

- From the left pane select "Devices", then from the main screen click on a device
- Under "Associated Data Queries", next to `Add Data Query` select "SNMP - Get Disk IO" and click "Add"
- Go to "Create Graphs for this host"
- Enable the checkbox next to the disk and/or partitions you want to monitor, and select one of the graph types from the dropdown below:
  - Host MIB - Disk IO - Bytes per second

  - Host MIB - Disk IO - Transactions

- Then click 'Next>>' and create the graph.

If you want to monitor both Bytes per second and Transactions per second, then repeat the process to create graphs of the other type.