Connecting CSM to Nagios
Version 1.0
(December 13, 2006)

Overview

CSM provides a very power and flexible monitoring capability. However, there's no CSM monitoring GUI for System x, and the GUI that is available for System p (a Web-based System Manager plug-in) may or may not meet your needs.

Nagios (http://www.nagios.org) is an open source monitoring tool. It has a web browser-based monitoring GUI which you can use to keep an eye on the health of a set of systems.

This paper describes how CSM monitoring can be hooked-in under Nagios using the **csm2nagios** command from the xCSM package available at:
   http://www14.software.ibm.com/webapp/set2/sas/f/csm/utilities/xCSMfixhome.html

Prereqs

The order in which you do these is unimportant.
*   Set up a CSM cluster to the point of having an operational management server and managed nodes. Optionally, you can start CSM monitoring on anything you want.
*   Install, configure, and start Nagios on the system that is or will become your CSM management server. (If it's still available, the following article is very helpful if you're using SLES: http://www.novell.com/coolsolutions/feature/16723.html)

    Note: Though not required at this point, you can define some or all your CSM nodes as Nagios hosts in your Nagios configuration files. However, if you do, the support described in this paper requires that you define them in a **/usr/local/nagios/etc/csm/hosts.cfg** file which your top-level **/usr/local/nagios/etc/nagios.cfg** file must include using: **cfg_dir=/usr/local/nagios/etc/csm**

Installation of csm2nagios

Install the xCSM package on your CSM management server.

Once installed, the files of interest are:
*   **/opt/xcsm/nagios/bin/csm2nagios -** A user script.

- **/opt/xcsm/nagios/resources/IBM.EventResponse/ForwardToNagios.pm -** An internally used response definition.
- **/opt/xcsm/nagios/bin/forwardtonagios** - An internally used script.

Using csm2nagios

After installing the xCSM package on your management server, you can connect CSM to Nagios simply by running this command:

csm2nagios --connect

When this command completes, all of your CSM nodes will show up as hosts in the Nagios web GUI, and all monitored conditions will show up as services.

What exactly does **csm2nagios --connect** do? It does the following:
- It creates **/usr/local/nagios/etc/csm/hosts.cfg** (if it doesn't exist yet), and ensures that this file has a host definition for each of your CSM nodes.
- It creates **/usr/local/nagios/etc/csm/services.cfg**, and ensures that this file has service definitions for all <u>monitored</u> CSM conditions. (Monitored CSM conditions with 'local' scope will show up as services for the localhost, which is the management server; those with 'management domain' scope will show up as services for each and every node.)
- It edits **/usr/local/nagios/etc/nagios.cfg** to ensure that it has these lines:
  `check_external_commands=1`
  and
  `cfg_dir=/usr/local/nagios/etc/csm`
- It runs **mkresources** to define the IBM.EventResponse **ForwardToNagios** if doesn't exist yet.
- It runs **startcondresp** *condition* **ForwardToNagios** for each <u>monitored</u> CSM condition so that CSM events and rearm events get forwarded to Nagios when they occur.
- It runs **/etc/init.d/nagios restart** to get the Nagios daemon to read the new and edited Nagios **.cfg** files while restarting itself.

csm2nagios has other capabilities too. Here's the full usage:

csm2nagios [-h]

> **--connect**
> > **[--mkhosts {ALL** | *node***[,…]** | **NONE }]**
> > **[--mkservices {ALL[,***condition***[,…]]** | *condition***[,…]** | **NONE}]**
> > **[--rmservices {ALL** | **OBSOLETE[,***condition***[,…]]}]**

--disconnect

--undo

NOTES:
- *Specifying no flags is the same as specifying **-h**.*
- *-h, **--connect**, **--disconnect**, and **--undo** are mutually exclusive options.*
- ***csm2nagios** never removes host definitions (because it can't tell if it had added such host definitions or if you had). So if you really want to remove one or more host definitions that correspond to CSM nodes, manually delete them from your **/usr/local/nagios/etc/csm/hosts.cfg** file, then manually delete all service definitions in **/usr/local/nagios/etc/csm/services.cfg** (and possibly elsewhere) pertaining to the hosts you've removed, and then restart Nagios.*
- *The **/usr/local/nagios/etc/csm/services.cfg** is generated anew each time you run **csm2nagios --connect**. So avoid editing this file on your own.*
- *--undo will undo the work of the previous run of **csm2nagios --connect**.*

--mkhosts   specifies the CSM nodes for which there should be Nagios host definitions.
  ALL   requests host definitions for all CSM nodes. This is the default.
  *node***[,…]**   requests host definitions for one or more specific CSM nodes.
  NONE   requests that no new host definitions be created.

--mkservices   specifies the CSM conditions which should be monitored, and for which there should be Nagios service definitions.
  ALL   requests service definitions for all CSM conditions currently monitored. This is the default.
  NONE   requests that no new service definitions be created.
  *condition***[,…]**   requests service definitions for one or more specific CSM conditions, even if it means starting monitoring on conditions not currently monitored.

--rmservices   specifies the CSM conditions for which there should be no Nagios service definitions. This specification is handled <u>after</u> **--mkservices**.
  ALL   requests that there be no service definitions for CSM conditions, removing existing service definitions if necessary.
  OBSOLETE requests that all host services for which CSM conditions no longer exist be removed. This is the default.
  condition **[,…]**   requests that there be no service definitions for one or more specific CSM conditions, even if it means removing existing service definitions as appropriate.

Examples:

1. To connect CSM to Nagios for the first time and have all CSM nodes appear as hosts, and all monitored CSM conditions appear as services:
   csm2nagios --connect
   Which is equivalent to:
   csm2nagios --connect --mkhosts ALL --mkservices ALL --rmservices OBSOLETE
   This can also be used to update the CSM to Nagios connection, adding hosts and services as necessary so that all current CSM nodes appear as hosts, and all monitored CSM conditions appear as services. Notice that no hosts are dropped, even if the corresponding CSM nodes no longer exist. On the other hand, obsolete services (i.e. services whose corresponding conditions no longer exist) are removed.

2. To update the CSM to Nagios connection, adding hosts as necessary so that all current CSM nodes appear as hosts, and adding and/or removing services so that all monitored CSM conditions appear as services and non-existent CSM conditions do not:
   csm2nagios --connect
   Which is equivalent to:
   csm2nagios --connect --mkhosts ALL mkservices ALL --rmservices OBSOLETE

3. To accomplish the same thing as #1 plus start monitoring a few CSM conditions that are not yet monitored, and have them appear as Nagios services too:
   csm2nagios --connect --mkservices ALL,condA,condZ

4. To accomplish the same thing as #1 but for just a select few CSM nodes:
   csm2nagios --connect --mkhosts node5,node6,node7

5. To accomplish the same thing as #1 but for just a select few monitored CSM conditions:
   csm2nagios --connect --mkservices condB,condY

6. To accomplish the same thing as #1 for most, but not all your monitored CSM conditions:
   csm2nagios --connect --rmservices condC,condX

7. To disconnect CSM and Nagios, reactivating the configuration files that had existed prior to the first run of **csm2nagios --connect:**
   csm2nagios --disconnect

8. To undo your last invocation of **csm2nagios --connect:**
   csm2nagios --undo