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Yaim Based Installation of Nagios & NCG

NCG Overview

An overview of NCG is provided at [GridMonitoringNcgOverview](#). This document describes an automated installation based on YAIM and yum.

Tutorial

- In September 2008 a tutorial was given on this process at the EGEE'08 conference : [GridMonitoringNcgYaimTutorial2008](#).
- In September 2009 a tutorial was given on this process at the EGEE'09 conference : [GridMonitoringNcgYaimTutorial2009](#).

Configuring the repositories

In order to install via Yaim, you need to add some yum repositories. **SL5 is now only maintained version**
These are:

- SL5
 - ◆ [lcg-CA](#)
 - ◆ [glite-BDII.repo](#)
 - ◆ [rpmforge](#) dag himself now recommends rpmforge.
 - ◆ [glite-UI 3.2](#) - this is to get the base yaim packages and glite-version only_
 - ◆ [sa1-release](#) - contains SL5 x86_64 yum config for SA1

Requirements

You need

- a `host certificate` in order to secure the Nagios web portal.

Installing packages

Once this is done, you can install by doing `yum install httpd && yum install egee-NAGIOS lcg-CA`. The explicit `httpd` is needed since it must be installed before the nagios RPM. The nagios RPM as supplied by DAG has a missing RPM PreRequisite.

All On One Box

- `yum install httpd`
- `yum install glite-UI` OR `yum groupinstall 'glite-UI (production - x86_64)'`
- `yum install lcg-CA egee-NAGIOS`
- `vi site-info.def` # Configure with below parameters.
- `/opt/glite/yaim/bin/yaim -s /root/site-info.def -c -n glite-UI -n glite-NAGIOS`

On Two Boxes

- Box 1 , NAGIOS Host.
 - ◆ `yum install httpd`
 - ◆ `yum install egee-NAGIOS lcg-CA`
 - ◆ `/opt/glite/yaim/bin/yaim -s /root/site-info.def -c -n glite-NAGIOS`

- Box 2, UI and NRPE Node.
 - ◆ SL4 `yum install lcg-CA glite-UI egee-NRPE`
 - ◆ SL5 `yum install lcg-CA egee-NRPE && yum groupinstall 'glite-UI (production - x86_64)'`
 - ◆ `/opt/glite/yaim/bin/yaim -s /root/site-info.def -c -n glite-NRPE -n glite-UI`

If you plan to have an NRPE node running the local tests on an existing UI then install that with `yum install egee-NRPE`.

YAIM's site-info.def File

The configuration requires you to set the following variables in the YAIM *site-info.def* file:

Variable	Description	Example
INSTALL_ROOT	Location of grid middleware.	/opt
SITE_NAME	the site you wish to monitor	MY-SITE
NAGIOS_HOST	Nagios Hostname	nagios.example.org
NCG_NRPE_UI	UI hostname for running NRPE. This should only be set if using a remote UI. If the UI is on the local box don't set it.	ui.example.org
PX_HOST	MyProxy Server to retrieve a certificate to run local tests under	myproxy.example.org
SITE_BDII_HOST	The site BDII for the monitored site, <code>SITE_NAME</code>	site-bdii.example.org
BDII_HOST	A top level BDII that you can use.	e.g lcg-bdii.cern.ch
VOS	A list of VOs who can view the nagios information.	"ops dteam alice"
VO_<VONAME>_VOMS_SERVERS	URI for the VOMS service.	vomss://voms.cern.ch:8443/voms/ops?/ops
NAGIOS_ADMIN_DNS	comma separated list of local admin DNs that can perform actions via the nagios web interface	"/DC=ch/OU=Users/CN=Dr Kildare,/DC=ch/OU=User/CN=Dr Who"
MYSQL_ADMIN	Root password of MySQL	Unset by default if this is set then MySQL will be configured on the localhost to support NDOUtils. When not set then MySQL and the NDOUtils schema must be loaded by hand outside of YAIM. The easiest option is to set this to a string of your choice.
NAGIOS_NSCA_PASS	The shared secret used by NSCA for sending results back to the nagios server via NSCA	tomato
ATP_DB_PASS	The mysql password for the ATP database	lemon
ATP_DB_NAME	The database name for the ATP database	atp
MS_DB_PASS	The mysql password for the metricstore database	lemon
MS_DB_NAME	The database name for the Metric Store database	metricstore

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MDDB_DB_PASS	The mysql password for the MDDB database	lemon
MDDB_DB_NAME	The database name for the MDDB database	mddb
MYEGEE_DB_TYPE	Type of the DB (Pdo_Mysql/Oracle)	Pdo_Mysql
MYEGEE_DB_USER	The database username for the MyEGEE portal	lemon
MYEGEE_DB_PASS	The database password for the MyEGEE portal	lemon
MYEGEE_DB_SCHEMA	The database schema of the MyEGEE portal	atp
MYEGEE_DB_ATP	The ATP database name of the MyEGEE portal	atp
MYEGEE_DB_MS	The Metric Store database name of the MyEGEE portal	metricstore
MYEGEE_DB_MDDB	The Metric Description database name of the MyEGEE portal	mddb
MYEGEE_DB_HOST	The MySQL hostname of the MyEGEE portal. It is only needed when used with MySQL.	localhost
MYEGI_ADMIN_NAME	System administrator name (optional)	David Horat
MYEGI_ADMIN_EMAIL	System administrator email (optional)	example@exampleNOSPAMPLEASE.com
MYEGI_DEFAULT_PROFILE	Default nagios profile (Default value: ROC_CRITICAL)	ROC_CRITICAL
MYEGI_DATABASE_ENGINE	Type of DB (values: mysql/oracle) (default: mysql)	mysql
MYEGI_DATABASE_USER	The database username for the MyEGI portal (default: myegi)	myegi
MYEGI_DATABASE_NAME	The database name to use by the MyEGI portal (default: mrs)	mrs
MYEGI_DATABASE_PASSWORD	The database password for the MyEGI portal (mandatory)	lemon
MYEGI_DATABASE_HOST	The database hostname (default: localhost)	localhost
MYEGI_DATABASE_PORT	The database port (optional)	3306
MYEGI_DEBUG	Turn on/off debug mode for MyEGI (values: True/False) (default value: False)	False
ROC_NAME	Your ROC name, use GOCDB names. In fact only compulsory if you are a ROC. Cannot contain multiple values. In case of multiple ROCs remove ROC_NAME and use NCG_GOCDB_ROC_NAME.	no default
ATP_WEB_SECRET_KEY	some secret key string based on uuid for ATP web front-end	no default

NCG_MDDDB_SUPPORTED_PROFILES	List of supported profiles - is needed by MRS to know profiles for status recalculations.	ROC,ROC_CRITICAL,ROC_OPERATORS
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The following variables have defaults but you may well want to change them.

Variable	Default	Description
NCG_INCLUDE_EMPTY_HOSTS	1	Show hosts without services associated
NCG_ENABLE_NOTIFICATIONS (TODO)	0	If set to true nagios will be configured to send notifications
NCG_NAGIOS_ADMIN (TODO)	root@localhost	Email address which will receive notifications for Nagios internal checks (e.g. GridProxy-Get, GridProxy-Valid, MyProxy-ProxyLifetime, org.egee.SendToMsg, etc)
NAGIOS_MYPROXY_USER	nagios	Change the myproxy username, i.e the -l option to myproxy-init, myproxy-login
MSG_BROKER_CACHE_NETWORK	PROD	Set the Broker service to look for in the information system
MSG_BROKER_CACHE_HOST	null	The hostname of broker to hard code to , setting this will disable the variable MSG_BROKER_CACHE_NETWORK and auto discovery of broker
NAGIOS_HTTPD_ENABLE_CONFIG	false	Set true to update apache configuration for X509 auth. Will overwrite /etc/httpd/conf.d/nagios.conf and ssl.conf. If you don't do this you will have to configure apache by hand for X509 certificate authentication
NAGIOS_NCG_ENABLE_CRON (TODO)	false	Set true for YAIM to enable ncg cronjob for rerunning of ncg.pl every 3 hours.
NAGIOS_NCG_ENABLE_CONFIG	false	Set true for YAIM to write /etc/ncg/ncg.conf and execute ncg.pl for you.
NAGIOS_SUDO_ENABLE_CONFIG	false	Set true for YAIM to append to /etc/sudoers to allow nagios to call certain probes as root
NAGIOS_NAGIOS_ENABLE_CONFIG	false	Set true for YAIM to write /etc/nagios/nagios.cfg for you and reload NAGIOS.
NAGIOS_CGI_ENABLE_CONFIG	false	Set true for YAIM to write /etc/nagios/cgi.cfg for you.
NCG_LDAP_FILTER	""	If set your NAGIOS will not monitor the SITE_NAME specified above but will instead query the top bdi for GlueSite objects that match this. e.g To monitor all sites maintained under the Italian ROC set this value to GlueSiteOtherInfo=EGEE_ROC=ITALY
NCG_GOCDB_ROC_NAME	""	Set this to a GOCDB ROC name to collect a list of sites from GOCDB within a ROC. e.g CERN. In case of multiple ROCs set space separated list.
NCG_GOCDB_COUNTRY_NAME	""	Set this to a GOCDB Country name to collect a list of sites from the GOCDB with a country.
NCG_TOPOLOGY_USE_SAM	false	If true, uses SAM for getting services
NCG_TOPOLOGY_USE_GOCDB	true	If true, uses SAM for getting services
NCG_TOPOLOGY_USE_ENOC	true	If true, uses SAM for getting services

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NCG_TOPOLOGY_USE_LDAP	true	If true, uses SAM for getting sitenames
NCG_REMOTE_USE_SAM	true	If true, show SAM remote results in Nagios
NCG_REMOTE_USE_NAGIOS	false	If true, show project or ROC remote results in Nagios
NCG_REMOTE_USE_ENOC	true	If true, show ENOC (DownCollector) remote results in Nagios
NAGIOS_ROLE	site	This can be one of <code>Site</code> , <code>ROC</code> , <code>Project</code> , <code>VO</code> and denotes if the nagios is acting in a site, roc or project level monitoring role.
NCG_PROBES_TYPE	remote,local,all	Defines which type of probes should be configured. Local probes are probes executed by the Nagios. Remote probes are probes imported from external systems (e.g. SAM, remote Nagios, ENOC Downcollector). Default is all.
NCG_VO	dteam	List of VOs the tests should run as. A space seperated list e.g "dteam cms lhcb". You must have a member of each VO willing to store a proxy for your retrieval.
GGUS_SERVER_FQDN	null	The hostname of GGUS endpoint, setting this also open GGUS tickets for service notifications
ATP_WEB_DB_USER	user name for ATP database.	no default
ATP_WEB_DB_PASS	password for ATP database.	lemon
ATP_WEB_DB_NAME	name for ATP database.	no default
ATP_WEB_DB_ENGINE	database engine for ATP database.	oracle
ATP_WEB_DEBUG	debug flag for ATP web front-end.	false
ATP_WEB_TEMPLATE_DEBUG	template debug flag for ATP web front-end.	false
ATP_WEB_VIEW_TEST	functional-test flag for ATP web front-end.	false
ATP_WEB_INTERNAL_IPS	internal IP setting for ATP web front-end.	127.0.0.1
ATP_WEB_SERVER_EMAIL	server email-id for ATP web.	root@localhost
ATP_WEB_EMAIL_HOST	email host for ATP web front-end.	localhost
ATP_WEB_PREFIX	server prefix for ATP web front-end.	localhost

The following variables are optional and have no default.

Variable	Default	Description
VO_<VONAME>_NCG_VO_FQAN		

no default A comma separated list of VOMS FQANs to run metrics as for a given VO. You must have a member of each VO with the appropriate FQAN willing to store a proxy for your retrieval.

Defining a Set of Sites

Note setting more than one of `NCG_LDAP_FILTER`, `NCG_GOCDB_ROC_NAME` or `NCG_GOCDB_COUNTRY_NAME` will give the union of the sites.

Co-Existing with Existing Nagios and/or Apache

The 4 variables `NAGIOS_*_ENABLE_CONFIG` above are *false* by default but can be set to *true* resulting in more configuration being done for you. Setting all to true is the easiest but may clobber any existing work. When merging in with an existing configuration of NAGIOS or Apache you may wish to leave some or all of them as false.

Variable	Files that will be Edited or Replaced by YAIM	Actions
<code>NAGIOS_HTTPD_ENABLE_CONFIG</code>	<code>/etc/httpd/conf.d/nagios.conf</code> & <code>ssl.conf</code>	apache will be reloaded
<code>NAGIOS_NCG_ENABLE_CONFIG</code>	<code>/etc/ncg/ncg.conf</code>	<code>ncg.pl</code> will be executed creating <code>/etc/nagios/wlcfg.d/*</code> and <code>/etc/nagios/nrpe/*</code> .
<code>NAGIOS_NAGIOS_ENABLE_CONFIG</code>	<code>/etc/nagios/nagios.cfg</code>	nagios will be reloaded
<code>NAGIOS_CGI_ENABLE_CONFIG</code>	<code>/etc/nagios/cgi.cfg</code>	No actions

The following configuration files are edited by YAIM even if all the above are set to false. If this is a problem for your existing installations advise us.

Will be altered with every run of YAIM
<code>/etc/nagios/ndo2db.cfg</code>
<code>/etc/voms2htpasswd.conf</code>
<code>/etc/nagios-proxy-refresh.conf</code>
<code>/etc/httpd/conf.d/nrpe.conf</code>
<code>/etc/broker-cache-file.conf</code>
<code>/etc/sysconfig/msg-to-queue</code>
<code>/etc/nagios/nsca.cfg</code>
<code>/etc/nagios/send_nsca.cfg</code>
<code>/etc/ncg/ncg-localdb.d/yaim-nagios-to-msg-queue.conf</code>

The following variables have defaults, and can be changed if you have a non-standard installation of nagios or httpd.

Variable	Default	Description
<code>NCG_MAIN_DB_FILE</code>	<code>/etc/ncg/ncg.localdb</code>	location of your local configurations for NCG
<code>NCG_TEMPLATES_DIR</code>	<code>/usr/share/grid-monitoring/config-gen/nagios</code>	the location of NCG configuration templates
<code>NCG_OUTPUT_DIR</code>	<code>/etc/nagios/wlcfg.d</code>	Where the nagios configuration files for the server will be generated
<code>NCG_NRPE_OUTPUT_DIR</code>	<code>/etc/nagios/nrpe/</code>	Where NRPE configuration files will be generated

NAGIOS_HTPASSWD_FILE	/etc/nagios/htpasswd.users	Location of allowed users for nagios web portal
NAGIOS_DB_HOST (removed)	localhost	Hostname of MySQL for NDOUtils, localhost makes everything very easy
NAGIOS_DB_USER (removed)	ndouser	MySQL user name for NDOUtils.
NAGIOS_DB_PASS (removed)	ndopassword	Especially if MySQL is on localhost then can be left alone. You may wish to change though.

Configuration

To configure, you just need to run yaim. There are really two deployment options to consider:

Once this is completed successfully, you should be able to browser the Nagios web portal at `https://SERVER_NAME/nagios/`.

You may find that your web server hangs connections because of [BUG:48458](#). If this is the case installing the *dummy-ca-certs* package and restarting apache should hopefully resolve this.

Security

If using *local* probes then these require a valid proxy certificate. This is obtained from a MyProxy service. Allow the host running the local probes, the NRPE node, to retrieve a valid proxy. i.e MyProxy should have a YAIM configuration of at least.

```
PX_HOST=myproxy.example.ch
GRID_TRUSTED_RETRIEVERS="'/DC=ch/DC=cern/OU=computers/CN=nrpe-ui.example.ch'"
GRID_AUTHORIZED_RETRIEVERS="'/DC=ch/DC=cern/OU=computers/CN=nrpe-ui.example.ch'"
SITE_EMAIL="mybigsite@example.ch"
```

Finally from a UI interface somewhere you must upload a proxy to MyProxy that can be retrieved by the NRPE node.

```
$ myproxy-init -c 336 -k NagiosRetrieve-nrpe-ui.example.ch-dteam -s myproxy.example.org \
-l nagios -x -Z "/DC=ch/OU=computers/CN=nrpe-ui.example.ch"
```

Information System

Nagios now publishes important information about itself into the information system. Please add the GRIS running on the Nagios node into your site BDII.

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