GROUNDWORK
OPEN SOURCE

HOW TO – UNIX GDMA

(GroundWork Distributed Monitoring Agents)

April 9, 2009

Version 2.2

Table of Contents

SUMMARY

This document describes the steps necessary to monitor a UNIX host using GroundWork UNIX GDMA software and integrate it with an installed GroundWork Monitor server.

Briefly, the GroundWork Monitor server is configured with all host and service definitions. These definitions are extended with Monarch Externals entries. The UNIX GDMA host is configured to communicate with the GroundWork Monitor server to pull these Externals entries and use them as the basis for monitoring. Results of monitoring are then sent to the GroundWork Monitor server (or servers) using NSCA messages.

PREREQUISITES

The following prerequisites exist for use of GDMA:

- GroundWork Monitor Enterprise 5.3.0 correctly installed.
- Server configured with all GDMA hosts to be monitored.
- Communication from the UNIX GDMA host to the GroundWork Monitor server on TCP port 443 (for HTTPS) or port 80 (for HTTP) or port 443 (for SSL) is allowed.
- Communication from the UNIX GDMA host to the GroundWork Monitor server on TCP port 5667 (for NSCA) is allowed.
- Updated Monarch modules to support Monarch Externals workflow improvements for GDMA deployments obtained from GroundWork Support staff.[1]

[1] `/usr/local/groundwork/core/monarch/lib/MonarchExternals.pm` and `/usr/local/groundwork/core/monarch/lib/MonarchCallOut.pm`.

GROUNDWORK MONITOR SETUP

NSCA Communication Setup

GroundWork Monitor Enterprise 5.3.0 uses a Nagios Event Broker (NEB) to process passive check results. The NEB is called Bronx. GDMA supports a feature called *spooling* which will handle network interruptions between GDMA hosts and the GroundWork Monitor server. When that interruption ceases, results are sent back with correct timestamps. To support these timestamps, the Bronx configuration file, `/usr/local/groundwork/config/bronx.cfg`, needs to be updated to include the following lines:

```
listener=on
listener_port=5667
listener_max_packet_age=0
listener_allowed_hosts=192.168.*
```

The `listener_allow_hosts` setting here is just an example, but in any case should include the address of the UNIX GDMA host. If you wish to have Bronx accept NSCA messages from any source, simply omit the line from the configuration file. If you make changes to this Bronx configuration file, restart the nagios daemon by executing `/etc/init.d/groundwork restart nagios` as user `root`.

Monarch Group Configuration

Monarch Groups are used for configuring and building Monarch External entries which are in turn used for creating the GDMA service definitions. Create a new Monarch group and assign UNIX GDMA hosts to it as follows:

1. Log in to the GroundWork web interface (`http://<gwserver>/monitor/index.php` as a user capable of accessing the *Configuration* application. The usual user for this purpose is *admin*.)
2. Navigate to the *Configuration* application and then to the *Groups* tab.
3. Click the *New* link and in the *Name* field type `unix-gdma` for example.
4. In the new screen that appears, enter some description into the *Description* field, such as `Group of UNIX hosts to be monitored using GDMA`
5. In the *Build folder* field, type in `/usr/local/groundwork/apache2/htdocs/gdma.`
6. Leave all other fields blank.
7. Click *Save.*
8. Click on the *Macros* link and in the *New Macro* section type in the following values:
    a. Name: `Plugin_Directory`
    b. Description: `GDMA Plugin Directory`
10. Leave the Value field blank and click the *Add New Macro* button.
11. Now navigate to the `unix-gdma` *Detail* section and click on the *Macros* tab that appears at the far right of the screen.

12. Check the box to the left of the `Plugin_Directory` macro and then click the *Add Macro(s)* button.
13. After doing that you will see that the `Plugin_Directory` macro is assigned to the `unix-gdma` Monarch Group. Now type in the following value into the *Value:* text box immediately below the macro name and description:
    a. `/usr/local/groundwork/gdma/libexec`
14. Click the *Save* button.
15. Select the *Hosts* tab for this new Group and assign all UNIX hosts that you wish to have monitored using GDMA.
16. From a `nagios` shell on the GroundWork Monitor server create the directory defined in step 5 and change permissions with a `/bin/chmod 755 /usr/local/groundwork/apache2/htdocs/gdma`.

Configuring HTTPS access

This version of UNIX GDMA supports pulling of configuration files from the GroundWork Monitor server using HTTPS. It also supports the older method of SCP but the instructions here are limited to the set up of HTTPS access.

On the GroundWork Monitor server as user `nagios` perform the following steps:

1. Modify `/usr/local/groundwork/apache2/conf/httpd.conf` and make sure the following line is in place at the end of the file:
   a. `Include conf/extra/httpd-gdma.conf`
2. Copy the `extra/httpd-gdma.conf` file from the UNIX GMDA package file to the `/usr/local/groundwork/apache2/conf/extra` directory.
3. Generate SSL certificates as follows:
   a. `cd /usr/local/groundwork/apache2/conf`
   b. `openssl genrsa –out gdma.key 2048`
   c. `openssl req –new –x509 –key gdma.key –out gdma.crt –days 1095`

In step 3c above answer the prompts as you see fit.

On the GroundWork Monitor server as user `root` perform the following step:

1. Restart Apache with `/etc/init.d/groundwork restart apache`.

You can test out the HTTPS access method by placing a test file under `/usr/local/groundwork/apache2/htdocs/gdma` with plain text in it, and then accessing it in a browser by going to `https://<your server name>/<test file name>`. You will be prompted to view and accept the certificate before you get the file. Note that you can also use HTTP if required.

Create Externals Definitions

Monarch is used to define the GDMA monitored hosts, and to define the configuration files used by the UNIX GDMA hosts. In order to ease the process of defining UNIX GDMA configuration files, a Monarch host profile for hosts monitored by the UNIX GDMA host is provided in the software package. Its name is gdma-linux-base-os.xml. The host profile includes:

- Nagios host definitions.
- Nagios service definitions for the passive services.
- External definitions matching the passive services.

At this time we have not included performance configuration definitions. These will be provided shortly.

To use the provided host profile, use the following procedure:

1. In a user `nagios` shell, backup the following files under `/usr/local/groundwork/core/monarch/lib`:
   `MonarchExternals.pm`
   `MonarchCallOut.pm`
   Replace the originals with files from GroundWork Support. Make sure to run the UNIX tool `dos2unix` against each of these files to ensure no extra carriage returns are left in those files.
2. Enable externals in Monarch via the Configuration->Control->Setup option.
3. Copy the file `gdma-linux-base-os.xml` from the zip file to `/usr/local/groundwork/core/profiles` and set permissions to 440. Import this host profile using the Configuration->Profiles->Profile Importer. You may use the upload feature of the profile importer if you have the profile available locally.
4. Add the target monitored hosts using standard Monarch facilities. If necessary, assign the `gdma-linux-base-os` host and service profiles to these hosts. This will create the passive services for these hosts and ensure both host and service externals are applied to them. To avoid warnings during the Commit process you will need to assign a default contact group to each host since this default is not assigned to the host template.
5. Go to Configuration -> Hosts -> Host externals -> Modify and update the default host external with the correct IP address(es) for the GroundWork Monitor server, and the optional Standby server, if used. If you don't use a Standby server place a '#' comment symbol at the beginning of the line that says `Monitor_Server[2]="localhost"`.
6. The updated `MonarchCallOut.pm` file results in external configuration files being generated automatically when a Monarch Commit operation is performed. This saves the extra step of going to Configuration->Control->Run Externals. The Commit will generate a configuration file in the directory specified in the Monarch Group build directory for each UNIX GDMA host that has been assigned the `gdma-linux-base-os` UNIX GDMA profile. This step has to be performed whenever an update to host or service definitions for UNIX GDMA hosts is required. Note that all modifications to parameters of the services executed on UNIX GDMA hosts must be made to the service externals. No changes to the service parameters will be reflected in the externals.

UNIX GDMA HOST SETUP

Software Installation

The UNIX GDMA software has been packaged up as a `.tar.gz` file. The name of the file reflects the operating system and architecture of the GDMA host, e.g. the file is `gdma_rh432.tar.gz` for a RedHat 4 32-bit operating system.

As user `root` on the target system perform the following steps:

1. Copy the archive to the `/root` directory.
2. Copy the install script `gdma_install.sh` to the `/root` directory.
3. Execute the install script.

Once the install script has completed, there will be a GDMA installation under `/usr/local/groundwork/gdma` and the GDMA will be running. You will need to edit the file `/usr/local/groundwork/gdma/config/gdma_server.conf` and set the URL to match the URL of your GroundWork Monitor server. If you are deploying GDMA to a lot of hosts it may be more efficient for you to extract the archive, update the file, and recreate the archive.

TESTING THE INSTALLATION

Testing Externals Files Creation

1. While still logged in to the GroundWork Monitor web interface, navigate to the Configuration->Control menu and click `Run externals`.
2. Log in to a `nagios` shell on the GroundWork Monitor server.
3. Change directory to `<build folder>` and look at its contents. There should be one configuration file per host.

Testing Monitoring on the UNIX GDMA Host

1. Log in to the UNIX GDMA host as `root`.
2. Check the `/usr/local/groundwork/gdma/log` directory. If the GDMA is successfully able to pull a configuration file for the UNIX GMDA host then there will be a log file named `gwmon_<hostname>.log`.
3. Check the log file for evidence of monitoring and evidence of a send string and successful transmission of a data packet to the Parent server.