



## **GDMA v2.1 INSTALLATION AND CONFIGURATION**

(GroundWork Distributed Monitoring Agents V2.1)

**February 23, 2010**

Version 1.2

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# GDMA v2.1 Installation and Configuration

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## ***Document Summary***

This document describes the steps necessary to configure an existing GroundWork Monitor Enterprise server to support GDMA agents, and the Windows Child server. This document describes a basic, first time installation, and upgrades to simple existing installations. Customized versions of GDMA are not discussed in detail. The information in this document is intended to give the GroundWork Monitor Enterprise administrator enough familiarity with the GDMA software to allow them to install and configure the agent on Linux and Windows hosts. Solaris installations are similar, but are documented elsewhere. For information on advanced configurations, contact GroundWork Support.

## ***Document Organization***

This document contains the following major sections:

- Target GroundWork Monitor Server setup
  - New Install
  - Upgrade install
- Windows GDMA
  - New Install
  - Upgrade Install
- Linux GDMA
  - New Install
  - Upgrade Install
- Windows Child Server Installation and Upgrade.

In general, the administrator should begin by configuring the Target GroundWork Monitor Server for the common requirements, then move on to configure it one of the agent types, either Windows GDMA, Windows Child, or Linux GDMA. Once one agent type is configured and working, it will be relatively easy to add a second agent type.

## ***Background***

The GDMA (GroundWork Distributed Monitoring Agent) was developed primarily as a scaling method for GroundWork Monitor installations. In simple terms, it is an agent that runs independently of the Nagios scheduler in GroundWork, and forwards the state of the monitored services on individual nodes to the GroundWork Monitor Enterprise server using the NSCA protocol. The Nagios instance in GroundWork Monitor processes these results as passive checks.

The configuration information for which services to run on which hosts, the monitoring thresholds, frequency, etc., are hosted on the GroundWork server with http or https, and are retrieved by the GDMA agents.

GDMA agents can send results to multiple GroundWork Monitor Enterprise servers, but can pull configuration data from only one source.

---

## TARGET GROUNDWORK MONITOR SERVER: NEW INSTALLATION

This section describes the steps necessary to configure a GroundWork Monitor Enterprise server to be a Target server for GDMA results, and a source for GDMA configuration data. This section describes setting up for a new installation of GDMA. If upgrading, see the next section.

### ***Prerequisites***

The following prerequisites exist for configuration of a GDMA Target Server

- GroundWork Monitor Enterprise 6.1 or higher correctly installed.
- Communication allowed from GDMA targets on ports 80 (HTTP) or 443(HTTPS)
- Communication allowed from GDMA targets on port 5667 (NSCA)
- Target Server and GDMA monitored hosts clock synchronization<sup>1</sup>
- Administrative access and familiarity with GroundWork and Linux
- Taking a backup of the monarch database is highly recommended before beginning this operation See Bookshelf →System Maintenance→Backup and Restore for details.

### ***NSCA Communication Setup***

GroundWork Monitor Enterprise 6.0 and above 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 with correct timestamps. To support these timestamps, the Bronx configuration file, `/usr/local/groundwork/config/bronx.cfg`, `listener_max_packet_age` parameter needs to be updated. Set this value to 900 seconds to allow for 15 minutes of GDMA spooling. Longer durations are possible, but may result in transient overload conditions on the GroundWork server while large data volumes are processed.

Similarly, packets will be dropped by Bronx if they contain a future timestamp. This can be an issue in environments where perfect time synchronization is not possible. Setting the `listener_max_packet_imminence` parameter will compensate for a small amount of “future” time variance between the monitored node and the Target server. We suggest leaving the default of 1 second unless this is determined to be a problem in the environment.

Finally, the `use_client_timestamp` parameter should be left at the default of 1, to allow the timestamp from the monitored node to be used. This is useful in collecting the performance data and graphing it in time series graphs in the interface. If this parameter is set to 0, the server timestamp will be used, and graphing may not be accurate.

The following settings are from the Bronx configuration file:

---

<sup>1</sup> GDMA operation requires a unified time base for Target servers and the monitored systems. This is normally accomplished using an external clock source such as NTP (Network Time Protocol) for all systems. Messages from systems with out of sync clocks may be dropped silently by the Bronx event broker.

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/usr/local/groundwork/config/Bronx.cfg

```
# LISTENER MAX PACKET AGE
# The max allowed age, in seconds, of the passive check result received.
# Any older results are dropped to the floor.
# The maximum allowed value is "900" seconds.
# Set the value to "0" to accept passive checks with older timestamps.
# If not specified, the value will be "30" seconds.
listener_max_packet_age=900

# LISTENER MAX PACKET IMMINENCE
# The max allowed "future age", in seconds, of the passive check result received.
# Any newer results are dropped to the floor.
# The maximum allowed value is "900" seconds.
# Set the value to "0" to disallow passive checks with newer timestamps.
# If not specified, the value will be "1" second, which should be just
# enough to allow for possible slight discrepancies which can arise even
# between time-synchronized client and server machines. In general, we
# highly recommend that the site use NTP or similar time-synchronization
# software to tie together the software clocks on disparate machines to
# high accuracy, to prevent misunderstandings about when events actually
# occur. Note that time synchronization for a VM guest machine can be
# problematic; see your vendor's documentation on this topic.
#listener_max_packet_imminence=1

# USE CLIENT TIMESTAMP
# This parameter, if set to a positive value, configures the listener thread
# to use the timestamp in the passive check result received for processing,
# rather than the time on the server when the check result is processed.
# To prevent confusion in handling data from clients which are not
# time-synchronized to the server, such a check result timestamp will be
# automatically overridden and replaced with the server timestamp if the
# passive check result timestamp is found by the server to be in the future.
# If not specified, the value will be "1".
#use_client_timestamp=0
```

If any changes to the Bronx.cfg file are needed, Nagios must be restarted to put them into effect:

```
/etc/init.d/groundwork restart nagios
```

## Create GDMA Build Directory

This is the location that will be used for building and distribution of GDMA host configurations.

As user root create the directory and change ownership to user Nagios.

```
#mkdir /usr/local/groundwork/apache2/htdocs/gdma
#chown nagios.nagios /usr/local/groundwork/apache2/htdocs/gdma
```

## Enable Externals

In Configuration→Control→Setup

Check enable externals

Select Save



The system is now configured for general GDMA operation. To configure the monitored nodes, see the relevant section (Windows GDMA Setup, Linux GDMA Setup). It is likely that you will wish to take advantage of the Auto-configuration functions as well, so be sure to review the section on Auto-configuration Setup.

---

## TARGET SERVER UPGRADE

This section describes the steps necessary to upgrade an existing a GroundWork Monitor Enterprise server with a previous version of GDMA configured to be a Target server for GDMA 2.1 agents.

### Prerequisites

- An existing GroundWork Monitor Enterprise server version 6.0.1 or higher, configured and running with GDMA 1.x or 2.0.



# GDMA v2.1 Installation and Configuration

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- Familiarity with GroundWork and Linux System Administration

## ***Communications setup***

Verify all the parameters in `/usr/local/groundwork/config/bronx.cfg` are correct as per the previous section. Restart Nagios if changes are necessary.

## ***Create GDMA Build Directory***

This is the location that will be used for building and distribution of GDMA host configurations.

As user root create the directory and change ownership to user Nagios.

```
#mkdir /usr/local/groundwork/apache2/htdocs/gdma
#chown nagios.nagios /usr/local/groundwork/apache2/htdocs/gdma
```

All other steps are contained in the relevant upgrade sections. Please proceed to Windows GDMA Upgrade or Linux GDMA Upgrade.

You may wish to take advantage of the Auto-Configuration features of GDMA 2.1. If so, complete the following section before proceeding.

---

## **AUTO-CONFIGURATION SETUP**

### ***Background***

The auto configuration feature of GDMA 2.1 enables GDMA agents to be deployed to target systems without needing to provide a host specific configuration at installation time. When GDMA is first installed and started without a configuration it will operate in Auto Configuration mode. While in Auto Configuration mode the agent will periodically perform a basic discovery of the monitored host system and transmit the discovery information to a pre-defined Parent system. The pre-defined host name must be added to DNS, so that the monitored hosts will resolve it as the GroundWork Target server. This information can then be used by the Groundwork administrator to configure a host-specific configuration for the new monitored host. When the host-specific configuration is available, it will be retrieved by the agent and the agent will self-configure and switch to normal operation.

### ***Auto Configuration Operation***

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The following is a description of the sequence of operations that occur when a new GDMA is deployed in Auto Configuration mode. It is useful to understand this process, so that the messages received and displayed on the GroundWork Monitor Enterprise user interface can be understood.

When the agent is first started both the poller and spooler engines are started.

### Basic Poller Operation in Auto Configuration mode<sup>2</sup>

1. Poller reads `gdma_auto.cfg`
2. Poller checks for the presence of a local host configuration file.
3. Poller attempts to retrieve a host configuration file from the location defined by `gdma_auto.cfg`.
4. If it fails to download a host configuration file it sleeps until `Poller_Proc_Interval` has expired and starts at step 1

### Basic Spooler Operation in Auto Configuration mode<sup>3</sup>

1. Spooler reads `gdma_auto.cfg`
2. Spooler checks for the presence of a local host configuration file.
3. If the host configuration file is not present the spooler transmits an auto configuration message.

The message is sent via NSCA as a service check result.

The message is sent to the Target server as coming from the host defined by the `GDMA_Auto_Host` parameter (default is `gdma-autohost`) and the service defined by `GDMA_Auto_Service` (default is `gdma_auto`).

The message payload contains the hostname, ip address and operating system information.

Example:

Received By GW	Message Count	Device	Status	Message	Application Type	Severity	Last Detected	First Detected
02/25/2010 12:33:41 PM	15	gdma-autohost	UNKNOWN	No configuration file: wgdma2 [172.28.112.239] running MSWin32 5.00	NAGIOS	UNKNOWN	02/25/2010 12:33:41 PM	02/25/2010 12:25:45 PM
02/25/2010 12:32:41	1	localhost	WARNING	WARNING - load average: 3.50	NAGIOS	WARNING	02/25/2010 12:32:40	02/25/2010 12:32:40

4. Spooler sleeps until `Spooler_Proc_Interval` has expired and restarts starts at step 1

### **Create DNS entry for `gdma-autohost` the points to the GroundWork Monitor Enterprise server**

The GDMA agent relies on DNS to resolve the pre-configured hostname "`gdma-autohost`" to the Target server where it will submit its check results, and attempt to pick up its configuration file. Using whatever DNS system is available on your network, ensure that the system to be monitored with GDMA can resolve the name "`gdma-autohost`" to the GroundWork Monitor Enterprise server.

<sup>2</sup> See Fig 1, Poller Operation for details

<sup>3</sup> See Fig 2, Spooler Operation for details

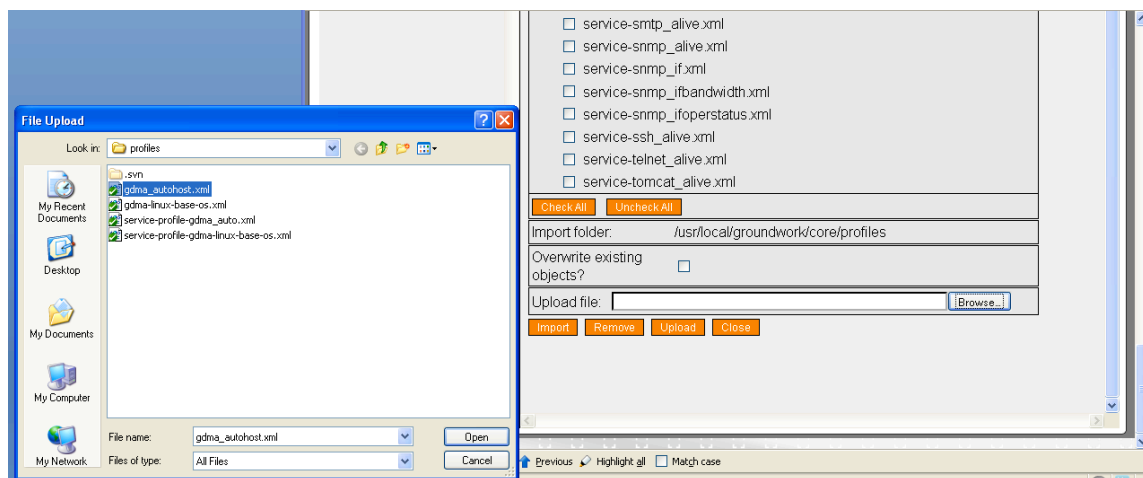
# GDMA v2.1 Installation and Configuration

## Upload and Import GDMA Auto-configuration Profile

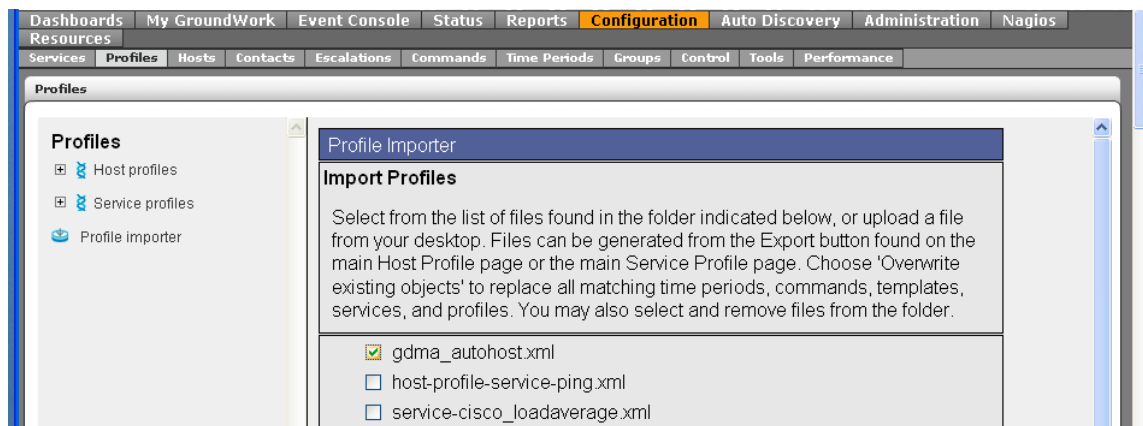
The GDMA Auto-configuration profile provides a template for the auto-configuration virtual host. In order to properly process the messages from GDMA hosts in Auto Configuration mode, this profile must be loaded, using the following procedure.

### In Configuration→Profiles

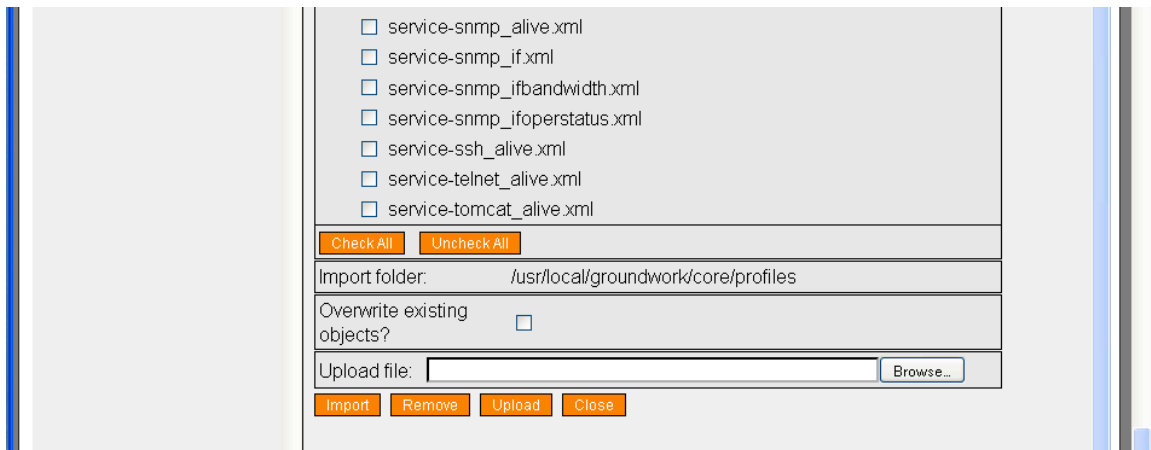
1. Select Profile importer
2. Scroll to bottom of screen
3. Select Browse and enter location of "gdma\_autohost.xml"
4. Select upload
5. Select Browse and enter location of "service-profile-gdma\_auto.xml"
6. Select upload



### 7. Toggle Checkbox for gdma\_autohost.xml



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A screenshot of the GDMA v2.1 Profile Importer dialog box. It features a list of service XML files with checkboxes, 'Check All' and 'Uncheck All' buttons, an 'Import folder' text field, an 'Overwrite existing objects?' checkbox, an 'Upload file' text field with a 'Browse...' button, and 'Import', 'Remove', 'Upload', and 'Close' buttons at the bottom.

☐ service-snmp\_alive.xml  
☐ service-snmp\_if.xml  
☐ service-snmp\_ifbandwidth.xml  
☐ service-snmp\_ifoperstatus.xml  
☐ service-ssh\_alive.xml  
☐ service-telnet\_alive.xml  
☐ service-tomcat\_alive.xml

**Check All** **Uncheck All**

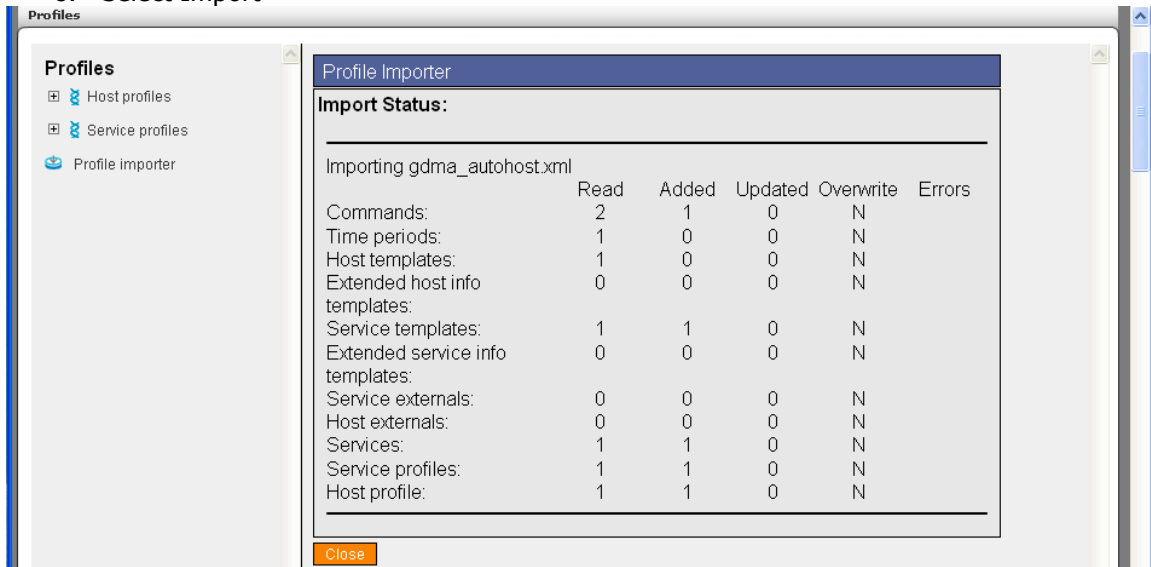
Import folder: /usr/local/groundwork/core/profiles

Overwrite existing objects? ☐

Upload file:  **Browse...**

**Import** **Remove** **Upload** **Close**

### 8. Select Import



A screenshot of the GDMA v2.1 Profile Importer window. The left sidebar shows 'Profiles' with 'Host profiles', 'Service profiles', and 'Profile importer'. The main area is titled 'Profile Importer' and shows 'Import Status: Importing gdma\_autohost.xml'. A table displays the import results for various components.

	Read	Added	Updated	Overwrite	Errors
Commands:	2	1	0	N	
Time periods:	1	0	0	N	
Host templates:	1	0	0	N	
Extended host info templates:	0	0	0	N	
Service templates:	1	1	0	N	
Extended service info templates:	0	0	0	N	
Service externals:	0	0	0	N	
Host externals:	0	0	0	N	
Services:	1	1	0	N	
Service profiles:	1	1	0	N	
Host profile:	1	1	0	N	

**Close**

### **Create GDMA Auto-configuration Virtual Host**

This virtual host serves as a collection point for notifications and alerts from un-configured GDMA agents.

#### In Configuration→Hosts

1. Select Host Wizard
2. Fill in Host Name "gdma-autohost"<sup>4</sup>
3. Fill in alias "gdma-autohost"
4. Fill in address "127.0.0.2"<sup>5</sup>
5. Select gdma-autohost Host profile



The screenshot shows the GroundWork Configuration web interface. The top navigation bar includes links for Dashboards, My GroundWork, Event Console, Status, Reports, Configuration (highlighted), Auto Discovery, Administration, and Nagios. Below this is a sub-navigation bar with Services, Profiles, Hosts (selected), Contacts, Escalations, Commands, Time Periods, Groups, Control, Tools, and Performance. The main content area is titled 'Hosts' and contains a 'New Host Wizard' form. The form has a 'Host Vitals' section with the following fields: Host name (gdma\_autohost), Alias (gdma\_autohost), Address (127.0.0.2), and Host profile (gdma\_autohost). At the bottom of the form are 'Next >>' and 'Cancel' buttons.

6. Select Next,Next,Next,Next,Continue<sup>6</sup>. Note: if you are using clone host or another method for creating this host, please ensure it has no externals associated, or you may see an error when running externals related to the distribution directory. The gdma-autohost and its services should have no externals.
7. Commit Changes to activate

The system is now configured to receive auto configuration messages from GDMA targets.

---

<sup>4</sup> This name is controlled by the GDMA\_Auto\_Host Configuration parameter. Do not modify this path without also modifying all the requisite GDMA agent configurations.

<sup>5</sup> Nagios and Groundwork require that all IP addresses for configured hosts be unique. Ensure that the address used here is unique in the configuration.

<sup>6</sup> You may optionally place the gdma-autohost in a hostgroup and configure notification options.

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## ***Install GDMA Auto-configuration scripts and cron entry***

The GDMA Target Server can be configured to automatically add un-configured hosts to Monarch and generate the External configuration files. This feature is currently only supported when the GDMA Target Server is running GroundWork Monitor 6.1 Enterprise or above.

Setup is done by installing two scripts on the GroundWork Monitor Enterprise server and then enabling a cron job to regularly look for and add the new hosts.

As user root, transfer the GDMA 2.1 auto registration files into a temporary directory on the GroundWork Monitor Enterprise server designated as the Target server, and copy the two Perl scripts to the required location. Then change ownership to user nagios, and flag them executable.

```
#cp *.pl /usr/local/groundwork/core/monarch/automation/scripts
#chown nagios.nagios /usr/local/groundwork/core/monarch/automation/scripts/gdma_auto.pl
#chown nagios.nagios /usr/local/groundwork/core/monarch/automation/scripts/auto_add_gdma.pl
#chmod +x /usr/local/groundwork/core/monarch/automation/scripts/gdma_auto.pl
#chmod +x /usr/local/groundwork/core/monarch/automation/scripts/auto_add_gdma.pl
```

Create the cron job by entering the crontab editor and then typing in the single line (in bold, below) to run the above scripts.

```
#crontab -e -u nagios
SHELL=/bin/bash
PATH=/usr/local/groundwork/common/bin:/usr/local/groundwork/common/sbin

50 23 * * * /usr/local/groundwork/core/reports/utils/dashboard_data_load.pl >
/usr/local/groundwork/core/reports/utils/log/dashboard_data_load.log 2>&1
0 1 * * * /usr/local/groundwork/core/reports/utils/dashboard_avail_load.pl >
/usr/local/groundwork/core/reports/utils/log/dashboard_avail_load.log 2>&1
0 0 * * * /usr/local/groundwork/common/bin/find /tmp/ -maxdepth 0 -name 'sess_*' -cmin +480 -
exec rm \{\} \;
0 0 * * * /usr/local/groundwork/common/bin/find /usr/local/groundwork/php/tmp/ -maxdepth 0 -
name 'sess_*' -cmin +480 -exec rm \{\} \;
0 0 * * * /usr/local/groundwork/common/bin/find /usr/local/groundwork/nagios/var/archives/ -
follow -name 'nagios-*' -mtime +60 -exec rm \{\} \;
* /5 * * * (cd /usr/local/groundwork/core/monarch/automation/scripts ;
./gdma_auto.pl ; ./auto_add_gdma.pl -f
/usr/local/groundwork/core/monarch/automation/data/gdma_auto.txt) > /dev/null
2>&1
```

Your choice of host profile and configuration group in later steps may be matched to operating system in the gdma\_auto.pl script. The mapping is controlled by the following structure:

```
"linux;gdma-21-linux-host;unix-gdma-2.1",
"MSWin32;gdma-21-windows-host;windows-gdma-2.1",
"linux 2.6.9-42.0.3.el5mp;gdma-21-linux-host;unix-gdma-2.1",
"MSWin32 5.00;gdma-21-windows-host;windows-gdma-2.1"
```

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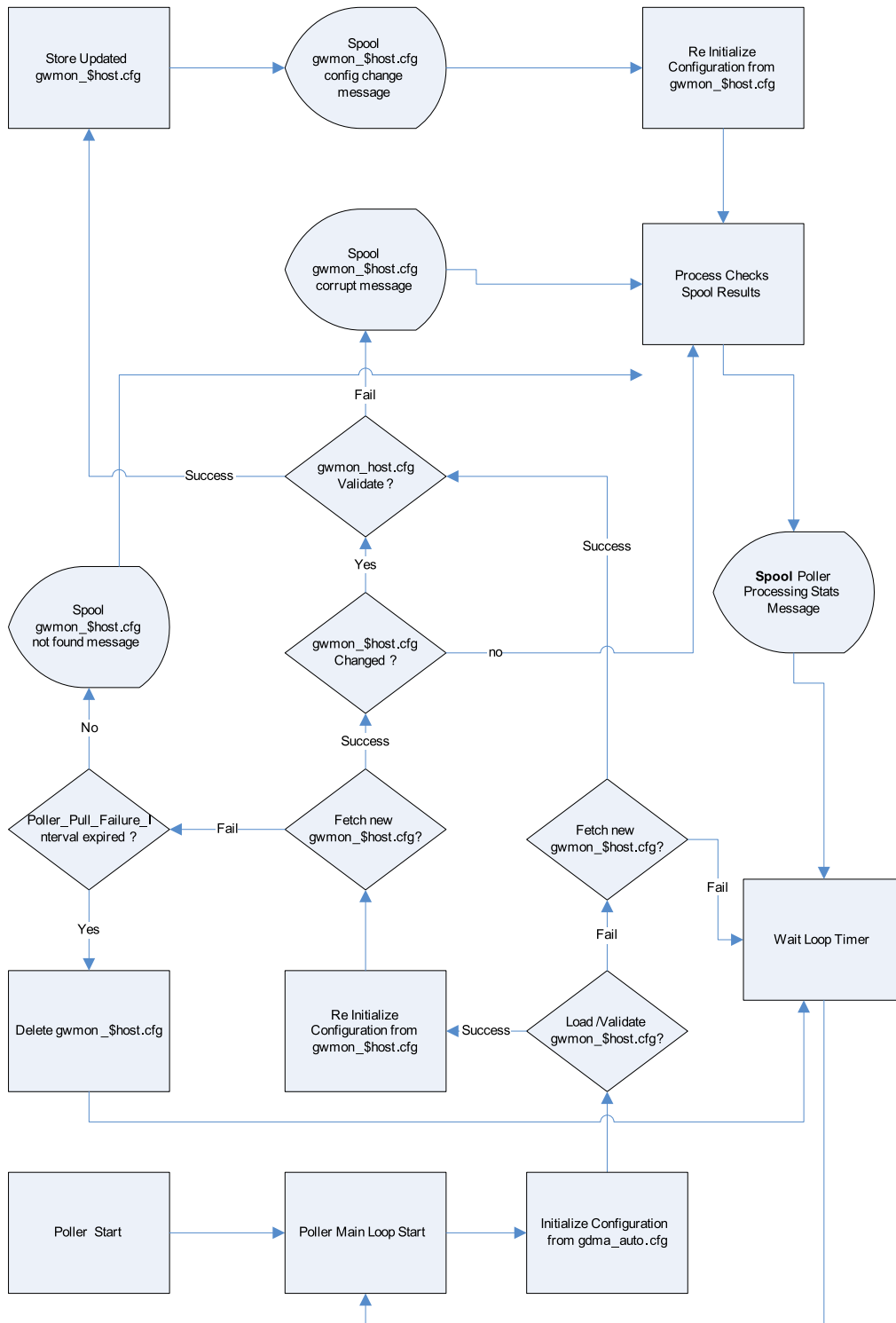
You may change these defaults, or add matches to the list, as long as you maintain the quoted, comma-delimited string of:

```
os string;host_profile;monarch_group
```

Note that the last encountered match is what will be used, so you should place general matches first, more specific matches later in the list.

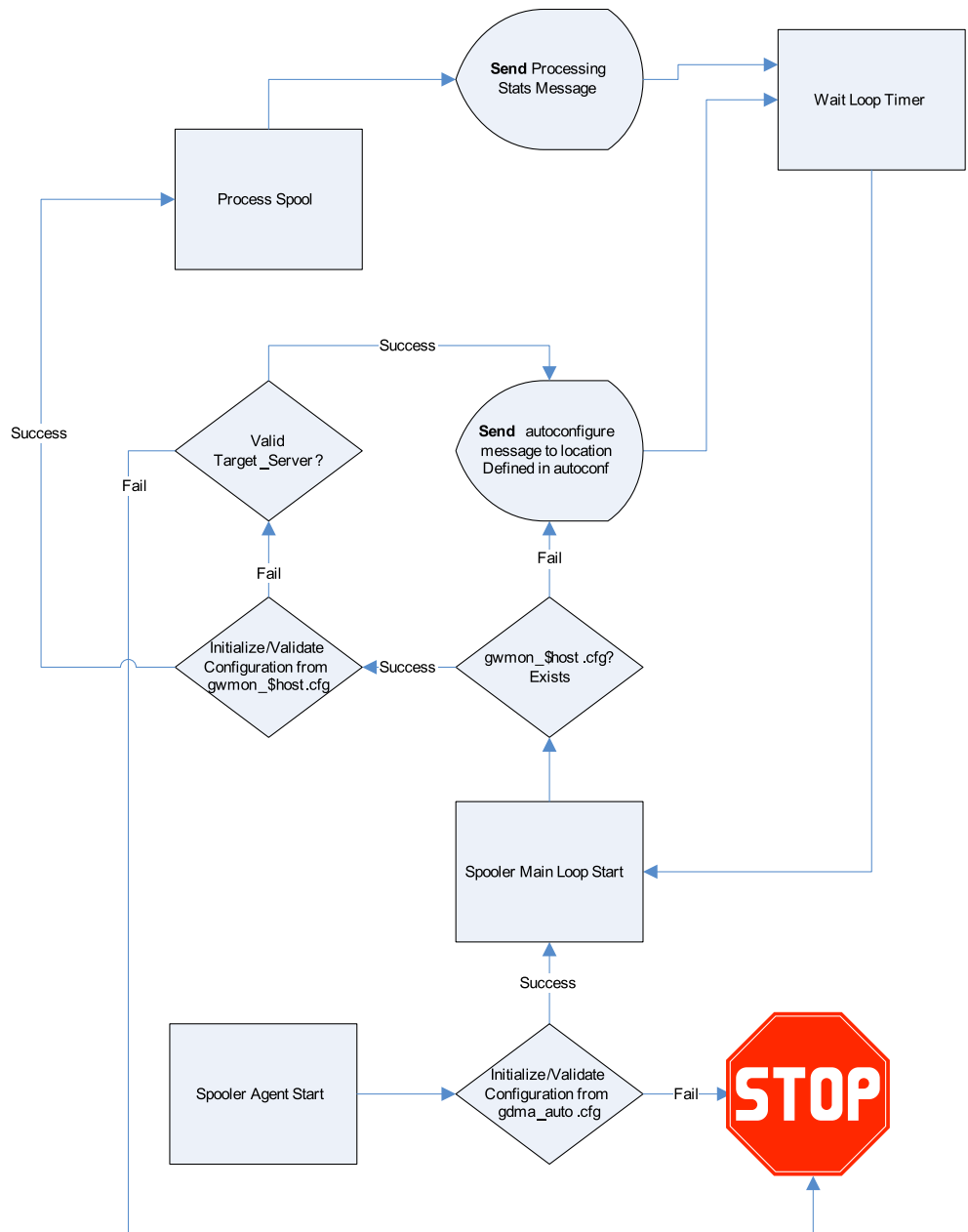
GDMA Target Server configuration for auto-configuration is now complete. You should periodically check your configuration for new hosts as you deploy the GDMA in your organization. These hosts should be placed in hostgroups and the configuration committed.

**FIGURE 1 POLLER OPERATION**





**FIGURE 2 SPOOLER OPERATION**



## **WINDOWS GDMA SETUP: NEW INSTALLATIONS**

### ***Background***

The Windows GDMA installation requires several new profiles to be present on the Target GroundWork Monitor Enterprise server. These profiles must be loaded on the system and applied to the GDMA monitored node hosts. Windows GDMA hosts must be additionally organized into Configuration Groups. Configuration groups (aka Monarch Groups) are used to control creation of external<sup>7</sup> definitions used by GDMA agents.

This section covers setting up these parameters in a new installation of GDMA.

### ***Prerequisites***

The following prerequisites exist for configuring Windows GDMA Agents:

- GroundWork Monitor Enterprise 6.1 correctly installed.
- GroundWork Monitor GDMA Target Server Configuration complete.
- Administrative access to Groundwork and monitored systems and familiarity with the administration of Linux, GroundWork Monitor, and Windows systems
- Taking a backup of the monarch database is highly recommended before beginning this operation See Bookshelf →System Maintenance→Backup and Restore for details

### ***GroundWork Monitor Target Server Setup***

The following steps need to be performed on the GroundWork Monitor Enterprise server designated as the Target Server for the Windows GDMA monitored hosts.

### ***Create Configuration Group for Windows GDMA hosts***

In Configuration→Groups→

1. Select New
2. Fill in Group Name field E.G. "windows-gdma-2.1"
3. Select Add to create the monarch group.

---

<sup>7</sup> See Bookshelf Using Applications→Configuration→Configuration Scenarios→Configuring Externals

# GDMA v2.1 Installation and Configuration

Manage Group	
Detail	Hosts Sub Groups Macros
Monarch group name: windows-gdma-2.1	
Description: Windows GDMA	
<b>Contact groups</b> Selecting a contact group here will provide the default contact group for hosts and services where no contact group has been defined, and it WILL OVERRIDE the contact groups defined on host templates and service templates. Contact groups assigned to sub groups will in turn override these contact groups.	
	<div><div></div><div>nagiosadmin</div><div>Remove &gt;&gt;</div><div>&lt;&lt; Add</div></div>
<b>Group Status</b> Setting the group inactive will remove the member hosts and their services from the Status Viewer (GroundWork Monitor) and the Nagios GUIs while preserving their configurations. Hosts can be reinstated by simply removing them from the inactive group or removing the inactive setting for the group.	
Set group inactive: <input type="checkbox"/>	
<b>Build Instance Properties</b> These properties are required only if you wish to use this group as part of a distributed Nagios environment. It is not necessary to set these values to perform a pre-flight check for this group.	
Build folder:	<input type="text" value="/usr/local/groundwork/apache2/htdocs/gdma"/>
Nagios etc folder:	<input type="text"/>
Force hosts:	<input type="checkbox"/>

### **Configure Group for Windows GDMA hosts**

In Configuration→Groups→

1. Select detail page of windows-gdma-2.1
2. Fill in Description[Optional]  
"Group for configuration of gdma targets"
3. Fill in Build directory  
"/usr/local/groundwork/apache2/htdocs/gdma"<sup>8</sup>
4. Leave all other fields blank
5. Select Save

### **Upload and Import GDMA Windows Base OS Host and Service Profile**

The Windows Base OS profile provides configuration parameters for the creation of Windows monitored nodes.

In Configuration→Profiles

1. Select Profile importer
2. Scroll to bottom of screen
3. Select Browse and enter location of "gdma-21-windows-host.xml"
4. Select upload
5. Select Browse and enter location of "service-profile-gdma-21-windows.xml"
6. Select upload
7. Select Browse and enter location of "perfconfig-gdma-21-windows.xml"
8. Select upload

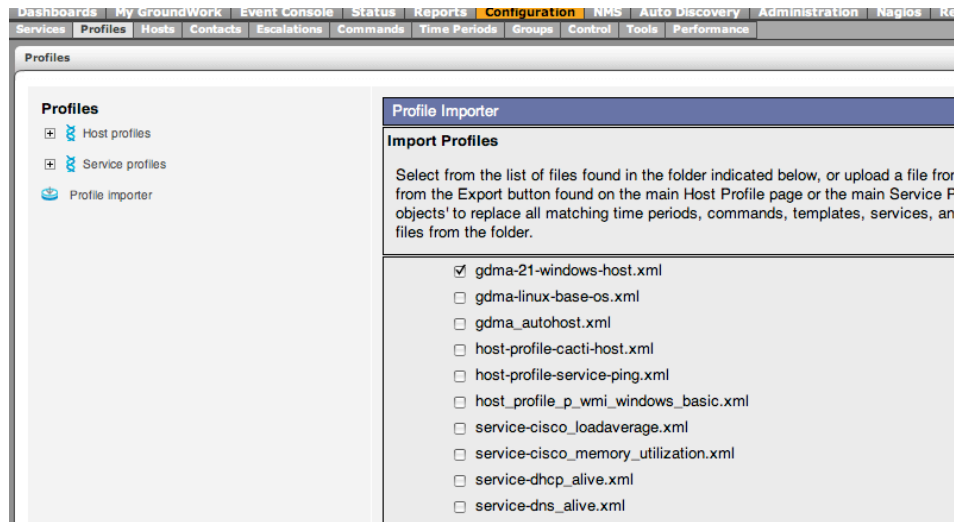
The screenshot shows a web-based configuration interface. At the top, there is a list of service profiles, each with an unchecked checkbox:   
- service-snmp\_ifoperstatus.xml  
- service-ssh\_alive.xml  
- service-telnet\_alive.xml  
- service-tomcat\_alive.xml  
- service\_profile\_cacti.xml  
- service\_profile\_check-cacti.xml  
Below the list are two buttons: "Check All" and "Uncheck All".  
The "Import folder:" field is set to "/usr/local/groundwork/core/profiles".  
The "Overwrite existing objects?" checkbox is unchecked.  
The "Upload file:" field has a "Choose File" button and a text input containing "gdma-21-wi...s-host.xml".  
At the bottom, there are four buttons: "Import", "Remove", "Upload", and "Close".

9. Toggle Checkbox for gdma-21-windows-host.xml

---

<sup>8</sup> This directory is controlled by the GDMAConfigDir Configuration parameter. Do not modify this path without also changing the relevant GDMA agent parameters.

# GDMA v2.1 Installation and Configuration



10. Select Import.

## ***Review and Modify gdma-21-windows host externals properties***

In Configuration→Hosts→Host Externals

1. Select Modify
2. Select gdma-21-windows

## ***Modify Target\_Server parameter***

This parameter controls where GDMA agents will download their configurations from and where they will send check results. The parameter must be in the form of a URL. This parameter is normally set to the hostname or IP address of the Master system. For details on this and other configuration parameters see Appendix A: GDMA Agent Configuration Reference. If you are using Auto-configuration, you may set this to `http://gdma-autohost`.

## GDMA v2.1 Installation and Configuration

Host External	
Host external name:	gdma-21-windows
Type:	host
Detail:	<pre>### Start "gdma-21-windows" host externals ###  # Target_Server is the host (or hosts) to receive GDMA results # This is also the location where configurations are pulled from # Multiple entries may be used separated by commas  Target_Server = http://gdma_autohost  # URL timeout in seconds when trying to get the cfigs via https # ConfigPull_Timeout = "10"  # the NSCA port # Spooler_NSCA_Port = "5667"  # Time in seconds for polling interval # Look at service gdma_poller run times if this is set to less than the time it takes to run all checks for the host # then checks will be killed by GDMA # Poller_Proc_Interval = "600"  # How often to try and pull the cfigs # ConfigFile_Pull_Cycle = "1"  # Enable target logging # Leave this off except when debugging Enable_Local_Logging = "off"</pre>
<div>Save Delete Rename Copy Cancel</div>	

3. Select Save.

## ***Configure A GDMA Windows Host***

If you are using auto-configuration, you may skip this step.

In Configuration→Hosts

8. Select Host Wizard
9. Fill in Host Name E.G "2000pro"
10. Fill in alias E.G."2000pro"
11. Fill in address E.G."196.168.11.72"
12. Select gdma-21-windows-host Host profile
13. Select Next,Next,Next,Next,Continue<sup>9</sup>

---

<sup>9</sup> You may optionally place the host in a hostgroup and configure additional host, service and notification options.

# GDMA v2.1 Installation and Configuration

## Add new host to Group

If you are using auto-configuration, you may skip this step.

In Configuration→Groups

1. Expand Groups
2. Expand windows-gdma-21
3. Select Detail
4. Select Hosts Tab
5. Toggle Checkbox for host E.G. 2000pro
6. Select Add Hosts

Manage Group			
Detail	Hosts	Sub Groups	Macros
Monarch group name: windows-gdma-2.1			
<b>Host Assignment</b>			
Assign hosts individually or by host group. The preferred method is to assign host groups as new hosts will be included here when th assigned to the host group.			
<input type="checkbox"/>	wgdma2	host	wgdma2
<div>Remove</div> <div>Check All</div> <div>Uncheck All</div>			
<input type="checkbox"/>	172.28.111.219	172.28.111.219	172.2
<input type="checkbox"/>	172.28.112.157	172.28.112.157	172.2
<input type="checkbox"/>	172.28.112.45	172.28.112.45	172.2
<input type="checkbox"/>	172.28.112.56	172.28.112.56	172.2
<input type="checkbox"/>	172.28.112.76	172.28.112.76	172.2
<input type="checkbox"/>	172.28.112.81	172.28.112.81	172.2

Host will appear in the upper field as an assigned host.



# GDMA v2.1 Installation and Configuration

---

## ***Commit changes and Build Externals***

To commit changes to groundwork and create gdma configuration file

In Configuration→Control

1. Select Commit, Backup, Commit
2. Select Run externals

The configuration file will be created in "/usr/local/groundwork/apache2/htdocs/gdma" as defined in the windows-gdma monarch group. The filename will be gwmon\_\${hostname}.cfg in this example gwmon\_2000pro.cfg

```
#ls -al /usr/local/groundwork/apache2/htdocs/gdma/gwmon_2000pro.cfg
-rw-r--r-- 1 nagios nagios /usr/local/groundwork/apache2/htdocs/gdma/gwmon_2000pro.cfg
#
```

---

## WINDOWS GDMA UPGRADE

### ***Background***

Upgrading Windows GDMA systems will likely be a phased project. This document describes the extra steps needed when upgrading a system with existing GDMA agents.

### ***Prerequisites***

The following prerequisites exist for upgrading Windows GDMA Agents:

- GroundWork Monitor Enterprise 6.0.1 or above correctly installed.
- GroundWork Monitor GDMA Target Server Configuration complete.
- Administrative access to Groundwork and monitored systems and familiarity with the administration of Linux, GroundWork Monitor, and Windows systems
- Taking a backup of the monarch database is highly recommended before beginning this operation See Bookshelf →System Maintenance→Backup and Restore for details
- (Optional) If auto-configuration features of GDMA 2.1 are desired, the auto-configuration setup should be completed prior to starting this process.

### ***GroundWork Monitor Target Server Setup***

The following steps need to be performed on the GroundWork Monitor Enterprise server designated as the Target Server for the Windows GDMA monitored hosts.

### ***Create a New Configuration Group for Windows GDMA 2.1 hosts***

In Configuration→Groups→

4. Select New
5. Fill in Group Name field E.G. "windows-gdma-2.1"
6. Select Add to create the monarch group.

### ***Configure Group for Windows GDMA 2.1 hosts***

In Configuration→Groups→

1. Expand Groups
2. Select group windows-gdma-2.1
3. Select detail page of windows-gdma-2.1
4. Fill in Description [Optional]  
"Group for configuration of gdma targets"
5. Fill in Build directory

## GDMA v2.1 Installation and Configuration

---

- "/usr/local/groundwork/apache2/htdocs/gdma"<sup>10</sup>
6. Leave all other fields blank
  7. Select Save

### ***Perform the Profile Upload and Import Steps as for a New installation***

Do the following steps as you would for a new installation:

- Upload and Import GDMA Windows Host and Service Profile
- Review and Modify gdma-21-windows host externals properties

### ***Select Windows Hosts for Client Side upgrade***

At this point, you must upgrade the Windows Client software by uninstalling the old GDMA and installing the new package.

You can pause at this point and perform this task on a set of existing Windows GDMA hosts, or you can continue with this process up to the point where you are about to build externals and/or commit the changes. Either way, it would be advisable to schedule downtime on the set of hosts to be upgraded in this phase.

### ***Assign Upgraded GDMA Windows Hosts to the gdma-21-windows-host Profile***

In Configuration→Profiles

1. Select Host Profiles, expand Modify
2. Select gdma-21-windows-host
3. Select the Assign Hosts tab
4. Assign the hosts to be upgraded
5. Click Save
6. Select the Apply tab
7. Choose Apply to Hosts
8. Choose either Merge with existing services or Replace existing services. Note: if you merge, you must manually remove the services from the legacy GDMA. The services associated with the new GDMA version are named differently, so they will not interfere with existing services. If you wish to rename them to the old names, you may do so once you are finished migrating. Replacing existing services is recommended unless you have custom services added that you wish to keep.
9. Click Apply

---

<sup>10</sup> This directory is controlled by the GDMAConfigDir Configuration parameter. Do not modify this path without also changing the relevant GDMA agent parameters.

Hostgroups action: <input type="checkbox"/> Apply to hostgroups.	
Hosts action: <input checked="" type="checkbox"/> Apply to hosts.	
Host properties action(s):	<input type="checkbox"/> Apply parents to hosts. <input type="checkbox"/> Apply hostgroups to hosts. <input type="checkbox"/> Apply escalations to hosts. <input type="checkbox"/> Apply contact groups to hosts. <input type="checkbox"/> Apply detail to hosts.
Services action: <input checked="" type="radio"/> Replace existing services. <input type="radio"/> Merge with existing services.	
<b>Caution</b> <i>Applying a host profile at this point will modify the current service configuration across probably multiple hosts. Before taking this action, be sure to double-check:</i> <ul style="list-style-type: none"><li>• <i>your host profile changes</i></li><li>• <i>your chosen set of target hosts that reference this host profile</i></li><li>• <i>which host properties you wish to apply from the profile to the hosts</i></li><li>• <i>how you want to modify the existing services</i></li></ul>	
<input type="button" value="Apply"/>	

# GDMA v2.1 Installation and Configuration

## Add Upgraded Windows hosts to New Group

In Configuration→Groups

7. Expand Groups
8. Expand windows-gdma-2.1
9. Select Detail
10. Select Hosts Tab
11. Toggle Checkbox for upgraded hosts
12. Select Add Hosts

Manage Group

Detail

Hosts

Sub Groups

Macros

Monarch group name: windows-gdma-2.1

Host Assignment

Assign hosts individually or by host group. The preferred method is to assign host groups as new hosts will be included here when th assigned to the host group.

☐ wgdma2

host

wgdma2

Remove

Check All

Uncheck All

<input type="checkbox"/> 172.28.111.219	172.28.111.219	172.2
<input type="checkbox"/> 172.28.112.157	172.28.112.157	172.2
<input type="checkbox"/> 172.28.112.45	172.28.112.45	172.2
<input type="checkbox"/> 172.28.112.56	172.28.112.56	172.2
<input type="checkbox"/> 172.28.112.76	172.28.112.76	172.2
<input type="checkbox"/> 172.28.112.81	172.28.112.81	172.2

Host will appear in the upper field as an assigned host.

### ***Commit changes and Build Externals***

To commit changes to groundwork and create GDMA configuration file. Note: do this when you have completed the GDMA installations on the client systems.

In Configuration→Control

3. Select Commit, Backup, Commit
4. Select Run externals

The configuration file will be created in "/usr/local/groundwork/apache2/htdocs/gdma" as defined in the windows-gdma-2.1 monarch group. The filename will be gwmon\_\$(hostname).cfg in this example gwmon\_2000pro.cfg

```
#ls -al /usr/local/groundwork/apache2/htdocs/gdma/gwmon_2000pro.cfg
-rw-r--r-- 1 nagios nagios /usr/local/groundwork/apache2/htdocs/gdma/gwmon_2000pro.cfg
#
```

### ***Client Install/Upgrade for Windows GDMA***

Use this procedure to install the Windows GDMA on a Windows hosts. If upgrading, you must first uninstall the legacy GDMA client.

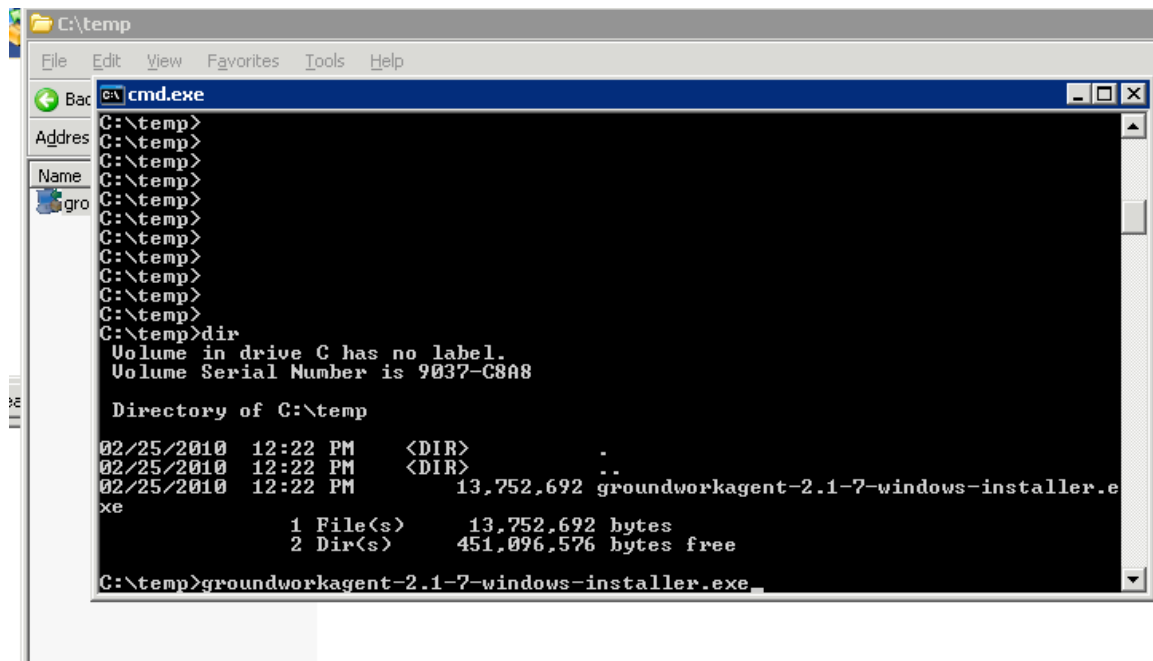
#### **To uninstall a legacy client:**

1. Access the Windows client user interface.
2. Start a command window
3. Stop the GDMA service with the command:
4. net stop gdma
5. Remove the gdma service with the command:
6. sc delete gdma
7. Backup any custom plugins you may have added to the GDMA in the c:\groundwork directory structure. You will need to move these to the new location.
8. (Optional) Delete the directory c:\groundwork and all subdirectories.

#### **To install a Windows GDMA 2.1 client:**

1. Access the Windows client user interface
2. Transfer the binary installer file to a temporary location on the local disk
3. Start a command window
4. Change to the temporary directory
5. Type the name of the binary installer

## GDMA v2.1 Installation and Configuration



```
C:\temp>cmd.exe
C:\temp>
C:\temp>
C:\temp>
C:\temp>
C:\temp>
C:\temp>
C:\temp>
C:\temp>
C:\temp>
C:\temp>
C:\temp>
C:\temp>
C:\temp>dir
Volume in drive C has no label.
Volume Serial Number is 9037-C8A8

Directory of C:\temp

02/25/2010  12:22 PM    <DIR>          .
02/25/2010  12:22 PM    <DIR>          ..
02/25/2010  12:22 PM               13,752,692  groundworkagent-2.1-7-windows-installer.e
xe
               1 File(s)              13,752,692 bytes
               2 Dir(s)              451,096,576 bytes free

C:\temp>groundworkagent-2.1-7-windows-installer.exe_
```

Follow the prompts on the screen. If you are using the auto-configuration feature, you should leave the target server as `gdma-autohost`. If not, you should fill in the Target server hostname or IP address.

If you wish to install the GDMA via a scripted method, such as a software distribution package or a batch script, you may wish to take advantage of the unattended mode option. Type the name of the binary installer followed by `--help` for a list of available options.

## LINUX GDMA SETUP FOR NEW INSTALLATIONS

### Prerequisites

The following prerequisites exist for configuring Linux GDMA Agents:

- GroundWork Monitor Enterprise 6.0.1 or above correctly installed.
- GroundWork Monitor GDMA Target Server Configuration complete.
- Administrative access to Groundwork and Target systems and familiarity with Groundwork, Nagios and Monarch
- Taking a backup of the monarch database is highly recommended before beginning this operation See Bookshelf →System Maintenance→Backup and Restore for details

### GroundWork Monitor Setup

#### Create Configuration Group for Linux/Unix GDMA 2.1 targets

In Configuration→Groups→

7. Select New
8. Fill in Group Name feild E.G. "unix-gdma-2.1"
9. Select Add to create the monarch group.

The screenshot shows the GroundWork Monitor web interface. At the top is a navigation bar with tabs: Services, Profiles, Hosts, Contacts, Escalations, Commands, Time Periods, Groups (selected), Control, Tools, and Performance. Below the navigation bar is a 'Groups' section. On the left, there is a sidebar with icons and labels: 'New', 'Groups' (with a plus icon), 'Macros', and 'Build instances'. The main area displays a 'New Monarch Group' dialog box. This dialog has a title bar 'New Monarch Group' and a text input field labeled 'Monarch group name:' containing the text 'unix-gdma-2.1'. At the bottom of the dialog are two buttons: 'Add' and 'Cancel'.



### ***Configure Group for Linux/Unix GDMA hosts***

Configuration groups are used to control creation of external<sup>11</sup> definitions used by GDMA agents.

In Configuration→Groups→

1. Expand Groups
2. Select group unix-gdma-2.1
3. Select detail page of unix-gdma-2.1
4. Fill in Description[Optional]  
"Group for configuration of Linux gdma systems"
5. Fill in Build directory  
"/usr/local/groundwork/apache2/htdocs/gdma"<sup>12</sup>
6. Leave all other fields blank
7. Select Save

---

<sup>11</sup> See Bookshelf Using Applications→Configuration→Configuration Scenarios→Configuring Externals

<sup>12</sup> This directory is controlled by the GDMAConfigDir Configuration parameter. Do not modify this path without changing appropriate GDMA agent parameters to match.

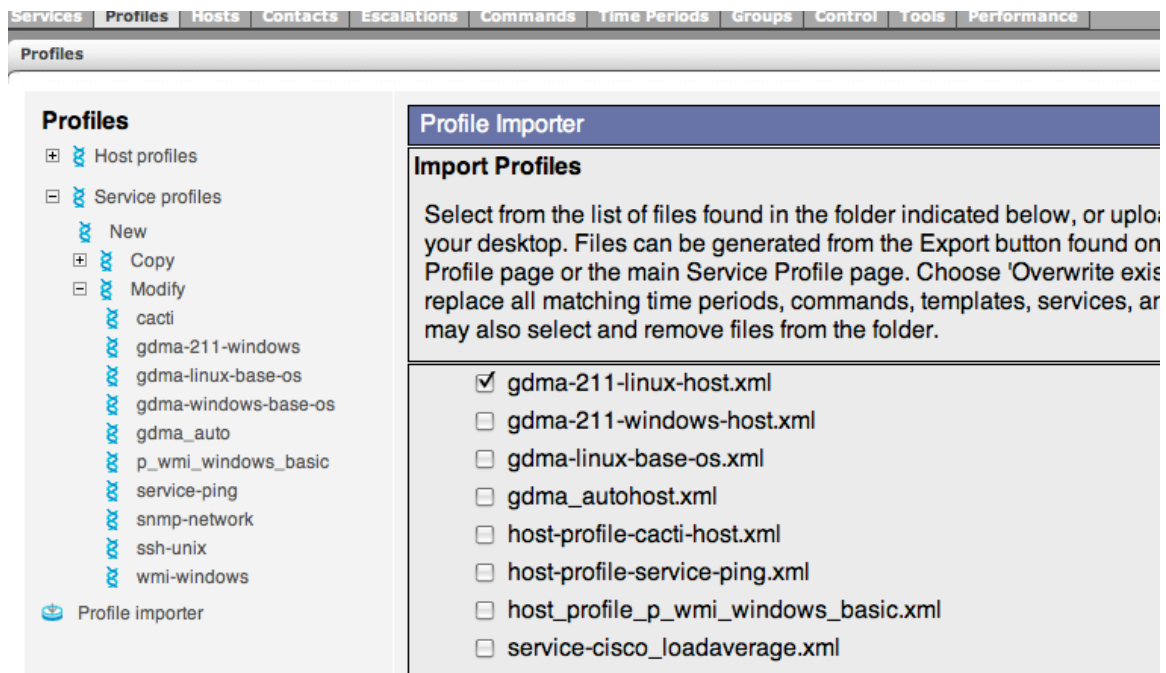
# GDMA v2.1 Installation and Configuration

## ***Upload and Import GDMA Linux Base OS Host and Service Profile***

The Linux Base OS profile provides configuration parameters for the creation of Linux targets.

In Configuration→Profiles

1. Select Profile importer
2. Scroll to bottom of screen
3. Select Browse and enter location of "gdma-21-linux-host.xml"
4. Select upload
5. Select Browse and enter location of "service-profile-gdma-21-linux.xml"
6. Select upload
7. Select Browse and enter location of "perfconfig-gdma-21-linux.xml"
8. Select upload
9. Toggle Checkbox for gdma-21-linux-host.xml



10. Select Import

# GDMA v2.1 Installation and Configuration

Profiles

Host profiles

Service profiles

New

Copy

Modify

gdma-211-windows

gdma-linux-base-os

gdma-windows-base-os

gdma\_auto

p\_wmi\_windows\_basic

service-ping

snmp-network

ssh-unix

wmi-windows

Profile importer

Profile Importer

Import Status:

Importing gdma-211-linux-host.xml

	Read	Added	Updated	Overwrite	Errors
Commands:	2	0	0	N	
Time periods:	1	0	0	N	
Host templates:	1	0	0	N	
Extended host info	0	0	0	N	
templates:					
Service templates:	1	0	0	N	
Extended service info	3	0	0	N	
templates:					
Service externals:	6	0	0	N	
Host externals:	1	0	0	N	
Services:	8	0	0	N	
Service profile "gdma-211-linux" already exists.					
Service profiles:	1	0	0	N	
Host profile:	1	1	0	N	

Close

# GDMA v2.1 Installation and Configuration

## ***Review and Modify gdma-21-linux host externals properties***

In Configuration→Hosts→Host Externals

1. Select Modify
2. Select gdma-21-linux

Modify Target\_Server parameter

This parameter controls where GDMA agents will download their configurations from and where they will send check results. The parameter must be in the form of a url. This parameter is normally set to the hostname or ip address of the Master system. For details on this and other configuration parameters see appendix A: GDMA Agent Configuration Reference.

Host External	
Host external name:	gdma-211-linux
Type:	host
Detail:	<pre>### Start "gdma-211-linux" host externals ###  # Target_Server is the host (or hosts) to receive GDMA results # This is also the location where configurations are pulled from # Multiple entries may be used separated by commas  Target_Server = http://gdma_autohost  # URL timeout in seconds when trying to get the cfigs via https # ConfigPull_Timeout = "10"  # the NSCA port # Spooler_NSCA_Port = "5667"  # Time in seconds for polling interval # Look at service gdma_211_poller run times if this is set to less than the time it takes to run all checks for the host # then checks will be killed by GDMA # Poller_Proc_Interval = "600"  # How often to try and pull the cfigs # ConfigFile_Pull_Cycle = "1"  # Enable target logging # Leave this off except when debugging Enable_Local_Logging = "off"</pre>
<div>Save Delete Rename Copy Cancel</div>	

## **Configure A GDMA Linux Host**

In Configuration→Hosts

1. Select Host Wizard
2. Fill in Host Name E.G "linux\_gdma"
3. Fill in alias E.G."gdma\_test"
4. Fill in address E.G."196.168.11.220"
5. Select gdma-21-linux-host Host profile

**New Host Wizard**

**Host Vitals**

Host name:

Alias:

Address:

Host profile:

**Next >>** **Cancel**

6. Select Next,Next,Next,Next,Continue<sup>13</sup>

---

<sup>13</sup> You may optionally place the host in a hostgroup and configure additional host, service and notification options.

## Add new host to Configuration Group

In Configuration→Groups

1. Expand Groups
2. Expand unix-gdma-2.1
3. Select Detail
4. Select Hosts Tab
5. Toggle Checkbox for host E.G. gdma\_test
6. Select Add Hosts

The screenshot shows the GroundWork configuration interface. On the left is a sidebar with a 'Groups' section containing a tree view of configuration groups. The 'unix-gdma-2.1' group is expanded, showing sub-items like 'Detail', 'Nagios cgi', 'Nagios cfg', 'Resource cfg', 'Pre flight test', 'Build instance', 'Export', 'windows-child', 'windows-gdma', and 'windows-gdma-2.1'. The main panel is titled 'Manage Group' and has three tabs: 'Detail', 'Hosts', and 'Sub Groups'. The 'Hosts' tab is active, displaying a table of hosts assigned to the group. The table has two columns: the host name and a description. The 'linux-gdma' host is selected with a checked checkbox. Below the table are buttons for 'Remove', 'Check All', and 'Uncheck All'.

Remove	Check All	Uncheck All
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
kaio.groundwork.groundworkopensource.com	kaio.groundwork.groundw	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
leda.groundwork.groundworkopensource.com	leda.groundwork.groundw	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
linux-gdma	GDMA test	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
linuxchild530	linuxchild530	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
linuxchild530.groundwork.groundworkopensource.com	linuxchild530.groundwork.	

Host will appear in the upper field as an assigned host.

# GDMA v2.1 Installation and Configuration

---

## ***Commit changes and Build Externals***

To commit changes to groundwork and create gdma configuration file

In Configuration→Control

5. Select Commit, Commit
6. Select Run externals

The configuration file will be created in "/usr/local/groundwork/apache2/htdocs/gdma" as defined in the unix-gdma-2.1 monarch group. The filename will be gwmon\_\$(hostname).cfg in this example gwmon\_linux-gdma.cfg

```
#ls -al /usr/local/groundwork/apache2/htdocs/gdma/gwmon_linux-gdma.cfg
-rw-r--r-- 1 nagios nagios /usr/local/groundwork/apache2/htdocs/gdma/gwmon_linux-gdma.cfg
#
```

---

## **LINUX GDMA UPGRADES**

### Background

Upgrading Linux GDMA systems will likely be a phased project. This document describes the extra steps needed when upgrading a system with existing GDMA agents.

### ***Prerequisites***

The following prerequisites exist for upgrading Linux GDMA Agents:

- GroundWork Monitor Enterprise 6.1 correctly installed.
- Working Linux GDMA hosts being monitored, with all associated profiles, groups and directories created.
- GroundWork Monitor GDMA Target Server Configuration complete.
- Administrative access to Groundwork and monitored systems and familiarity with the administration of Linux and GroundWork Monitor systems
- Taking a backup of the monarch database is highly recommended before beginning this operation See Bookshelf →System Maintenance→Backup and Restore for details
- (Optional) If auto-configuration features of GDMA 2.1 are desired, the auto-configuration setup should be completed prior to starting this process.

### ***GroundWork Monitor Target Server Setup***

The following steps need to be performed on the GroundWork Monitor Enterprise server designated as the Target Server for the Linux GDMA monitored hosts.

# GDMA v2.1 Installation and Configuration

---

## **Create a New Configuration Group for Linux GDMA 2.1 hosts**

In Configuration→Groups→

10. Select New
11. Fill in Group Name field E.G. "unix-gdma-2.1"
12. Select Add to create the monarch group.

## **Configure Group for Linux GDMA 2.1 hosts**

In Configuration→Groups→

8. Expand Groups
9. Select group unix-gdma-2.1
10. Select detail page of unix-gdma-2.1
11. Fill in Description [Optional]  
"Group for configuration of gdma on Linux"
12. Fill in Build directory  
"/usr/local/groundwork/apache2/htdocs/gdma"<sup>14</sup>
13. Leave all other fields blank
14. Select Save

## **Perform the Profile Upload and Import Steps as for a New installation**

Do the following steps as you would for a new installation:

- Upload and Import GDMA Linux Host and Service Profile
- Review and Modify gdma-21-linux host externals properties

## **Select Hosts for Client Side upgrade**

At this point, you must upgrade the Linux GDMA Client software by uninstalling the old GDMA and installing the new package.

You can pause at this point and perform this task on a set of existing Linux GDMA hosts, or you can continue with this process up to the point where you build externals and/or commit the changes. Either way, it would be advisable to schedule downtime on the set of hosts to be upgraded in this phase.

## **Assign Upgraded GDMA Windows Hosts to the gdma-21-linux-host Profile**

In Configuration→Profiles

---

<sup>14</sup> This directory is controlled by the GDMAConfigDir Configuration parameter. Do not modify this path without also changing the relevant GDMA agent parameters.



## GDMA v2.1 Installation and Configuration

10. Select Host Profiles, expand Modify
11. Select gdma-21-linux-host
12. Select the Assign Hosts tab
13. Assign the hosts to be upgraded
14. Click Save
15. Select the Apply tab
16. Choose Apply to Hosts
17. Choose either Merge with existing services or Replace existing services. Note: if you merge, you must manually remove the services from the legacy GDMA.
18. Click Apply

Hostgroups action: ☐ Apply to hostgroups.  
Hosts action: ☒ Apply to hosts.

Host properties action(s): ☐ Apply parents to hosts.  
☐ Apply hostgroups to hosts.  
☐ Apply escalations to hosts.  
☐ Apply contact groups to hosts.  
☐ Apply detail to hosts.

Services action: ☒ Replace existing services.  
☐ Merge with existing services.

**Caution**

***Applying a host profile at this point will modify the current service configuration across probably multiple hosts. Before taking this action, be sure to double-check:***

- ***your host profile changes***
- ***your chosen set of target hosts that reference this host profile***
- ***which host properties you wish to apply from the profile to the hosts***
- ***how you want to modify the existing services***

**Apply**

### ***Add Upgraded hosts to New Group***

In Configuration→Groups

13. Expand Groups
14. Expand unix-gdma-2.1
15. Select Detail
16. Select Hosts Tab
17. Toggle Checkbox for upgraded hosts
18. Select Add Hosts

Host will appear in the upper field as an assigned host.

# GDMA v2.1 Installation and Configuration

---

## ***Commit changes and Build Externals***

To commit changes to groundwork and create gdma configuration file.

In Configuration→Control

7. Select Commit, Backup, Commit
8. Select Run externals

The configuration file will be created in "/usr/local/groundwork/apache2/htdocs/gdma" as defined in the windows-gdma monarch group. The filename will be gwmon\_\$(hostname).cfg in this example gwmon\_linux1.cfg

```
#ls -al /usr/local/groundwork/apache2/htdocs/gdma/gwmon_linux1.cfg
-rw-r--r-- 1 nagios nagios /usr/local/groundwork/apache2/htdocs/gdma/gwmon_linux1.cfg
#
```

## ***Client Install/Upgrade for Linux GDMA***

Use this procedure to install the Linux GDMA on Linux hosts. If upgrading, you must first uninstall the legacy GDMA client.

### **To uninstall a legacy client:**

1. Access the client command line interface.
2. Backup any custom plugins you may have added to the GDMA in the /usr/local/groundwork directory structure. You will need to move these to the new location.
3. Delete the directory /usr/local/groundwork and all subdirectories.
4. Type chkconfig gdma off
5. Type /etc/init.d/gdma stop
6. Remove the file /etc/init.d/gdma file:  
rm /etc/init.d/gdma
7. Remove the entire /usr/local/groundwork directory  
rm -Rf /usr/local/groundwork

Note: Linux GDMA 2.1 can be uninstalled with the script:  
/usr/local/groundwork/uninstall

### **To install a Linux GDMA 2.1 client:**

1. Access the client command line interface
2. Transfer the binary installer file to a temporary location on the local disk
3. Change to the temporary directory
4. Type:  
chmod +x groundworkagent-2.1-14-linux-32-installer.bin  
to make the installer executable. Substitute the name of your installer: note: Linux GDMA has a 32 and a 64 bit version. Please select the correct one for your architecture.

## GDMA v2.1 Installation and Configuration

---

5. Type the name of the binary installer to launch it, e.g:  
`./groundworkagent-2.1-14-linux-32-installer.bin`

Follow the prompts on the screen. If you are using the auto-configuration feature, you should leave the target server as `gdma-autohost`. If not, you should fill in the Target server hostname or IP address.

If you wish to install the GDMA via a scripted method, such as a software distribution package or a batch script, you may wish to take advantage of the unattended mode option. Type the name of the binary installer followed by `--help` for a list of available options.

---

## WINDOWS CHILD SERVER SETUP

This document describes the steps necessary to configure an existing GroundWork Monitor Enterprise server to support a Windows Child Server. This document describes a basic installation. For information on advanced configurations contact GroundWork Support.

---

## PREREQUISITES

The following prerequisites exist for configuration of a Windows Child Target Server

- GroundWork Monitor Enterprise 6.0.1 correctly installed.
- Communication allowed from Windows Child to Master on port 80 (HTTP) or 443(HTTPS)
- Communication allowed from Windows Child to Master on port 5667 (NSCA)
- Target Server and Windows Child clock synchronization<sup>15</sup>
- Administrative access and familiarity with GroundWork, Nagios and Monarch.
- Taking a backup of the monarch database is highly recommended before beginning this operation See Bookshelf →System Maintenance→Backup and Restore for details.

---

## GROUNDWORK MONITOR SETUP

### *NSCA Communication Setup*

GroundWork Monitor Enterprise 6.0.1 uses a Nagios Event Broker (NEB) to process passive check results. The NEB is called Bronx. Windows Child supports a feature called *spooling* which will handle network interruptions between the Windows Child host 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`, `listener_max_packet_age` parameter needs to be updated. Set this value to 900 seconds to allow for GDMA spooling.

```
# LISTENER MAX PACKET AGE
# The max allowed age, in seconds, of the passive check result received.
# Any older results are dropped to the floor.
```

---

<sup>15</sup> Windows Child operation requires a unified time base for master system and the windows child. This is normally accomplished using an external clock source such as NTP (Network Time Protocol) for all systems.

## GDMA v2.1 Installation and Configuration

---

```
# The maximum allowed value is "900" seconds.  
# Set the value to "0" to accept passive checks with older timestamps.  
# If not specified, the value will be "30" seconds.  
listener_max_packet_age=900
```

## Create Windows Child Build Directory

This is the location that will be used for building and distribution of monitored Windows host configurations.

As user root create the directory and change ownership to user Nagios.

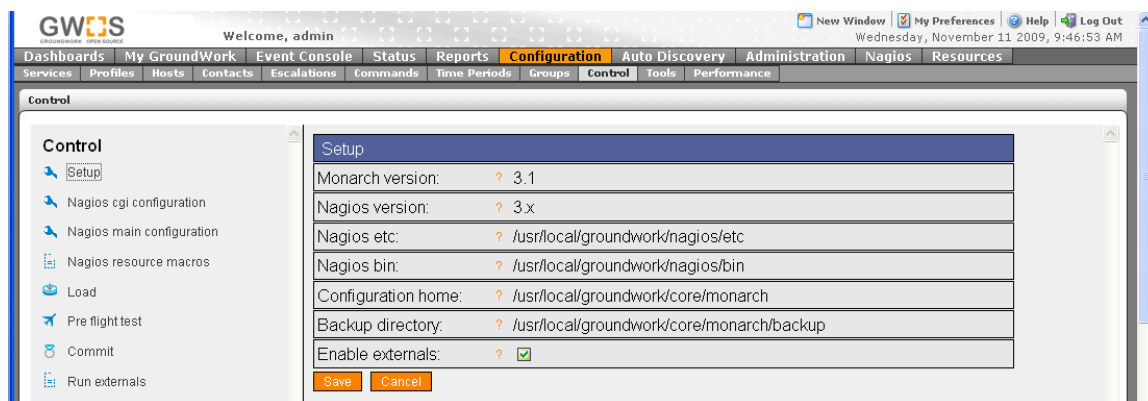
```
#mkdir /usr/local/groundwork/apache2/htdocs/wchild1
#chown nagios.nagios /usr/local/groundwork/apache2/htdocs/wchild1

# ls -al /usr/local/groundwork/apache2/htdocs/
total 44
drwxr-xr-x  4 nagios nagios 4096 Nov 11 09:54 .
drwxr-xr-x 15 nagios nagios 4096 Nov 11 08:29 ..
-rw-r--r--  1 nagios nagios 2205 Dec 14 2005 apache_pb22_ani.gif
-rw-r--r--  1 nagios nagios 2410 Dec 14 2005 apache_pb22.gif
-rw-r--r--  1 nagios nagios 1502 Dec 14 2005 apache_pb22.png
-rw-r--r--  1 nagios nagios 2326 Nov 20 2004 apache_pb.gif
-rw-r--r--  1 nagios nagios 1385 Nov 20 2004 apache_pb.png
-rw-r--r--  1 nagios nagios 1150 Jan 22 2009 favicon.ico
drwxr-xr-x  2 nagios nagios 4096 Nov 11 09:54 wchild1
-rwxr-xr-x  1 nagios nagios  993 Nov  9 06:46 index.html
drwxr-xr-x  2 nagios nagios 4096 Nov 11 08:30 rrd
```

## Enable Monarch Externals

In Configuration→Control→Setup

1. Check enable externals
2. Select Save



## GDMA v2.1 Installation and Configuration

### **Configure Monarch Group for Windows Child targets**

Monarch groups are used to control creation of monarch external<sup>16</sup> definitions used by GDMA agents.

In Configuration→Groups→

1. Expand Groups
2. Select group windows-gdma
3. Select detail page of windows-gdma
4. Fill in Description[Optional]
  - a. "Monarch group for configuration of gdma targets"
5. Fill in Build directory
  - a. "/usr/local/groundwork/apache2/htdocs/wchild1"<sup>17</sup>
6. Leave all other fields blank
7. Select Save

The screenshot shows the Nagios GUI 'Manage Group' page for the group 'windows-child1'. The left sidebar shows a tree view with 'Groups' expanded, and 'windows-child1' selected. The main panel has tabs for 'Detail', 'Hosts', 'Sub Groups', and 'Macros'. The 'Detail' tab is active, showing the following fields:

- Monarch group name:** windows-child1
- Description:** Monarch group for configuration of windows child targets
- Contact groups:** A list box containing 'nagiosadmin'. Below the list box are 'Remove >>' and '<< Add' buttons.
- Group Status:** A section with a checkbox for 'Set group inactive:' which is currently unchecked.
- Build Instance Properties:** A section with the following fields:
  - Build folder:** /usr/local/groundwork/apache2/htdocs/wchild1
  - Nagios etc folder:** (empty)
  - Force hosts:** (checkbox unchecked)
  - Force checks:** (checkbox unchecked)
  - ☐ Passive checks enabled
  - ☐ Active checks enabled

At the bottom of the page are buttons for 'Save', 'Delete', 'Rename', and 'Close'.

<sup>16</sup> See Bookshelf Using Applications→Configuration→Configuration Scenarios→Configuring Externals

<sup>17</sup> This directory is controlled by the GDMAConfigDir Configuration parameter. Do not modify this path without consulting GDMA agent documentation.



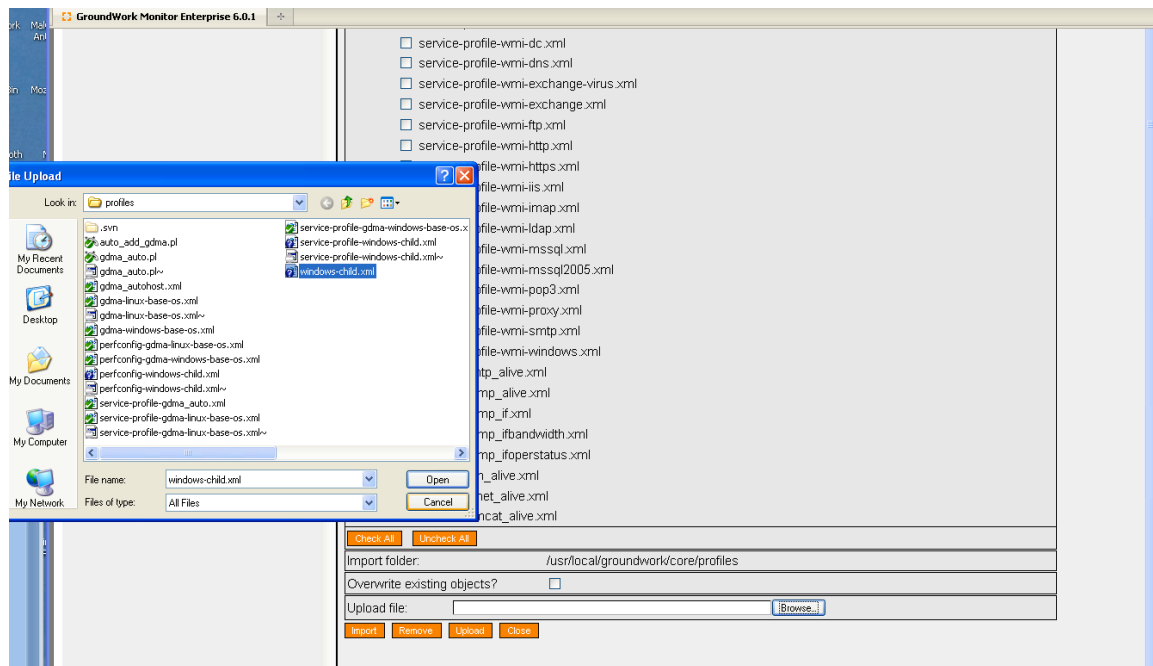
# GDMA v2.1 Installation and Configuration

## Upload and Import Windows Child Profiles

The Windows Child profile provides a template for the Windows Child host.

In Configuration→Profiles

1. Select Profile importer
2. Scroll to bottom of screen
3. Select Browse and enter location of "windows\_child.xml"
4. Select upload
5. Select Browse and enter location of "service-profile-windows\_child.xml"
6. Select upload
7. Select Browse and enter location of "perfconfig-windows-child.xml"
8. Select upload



9. Toggle Checkbox for windows\_child.xml

10. Select Import

# GDMA v2.1 Installation and Configuration

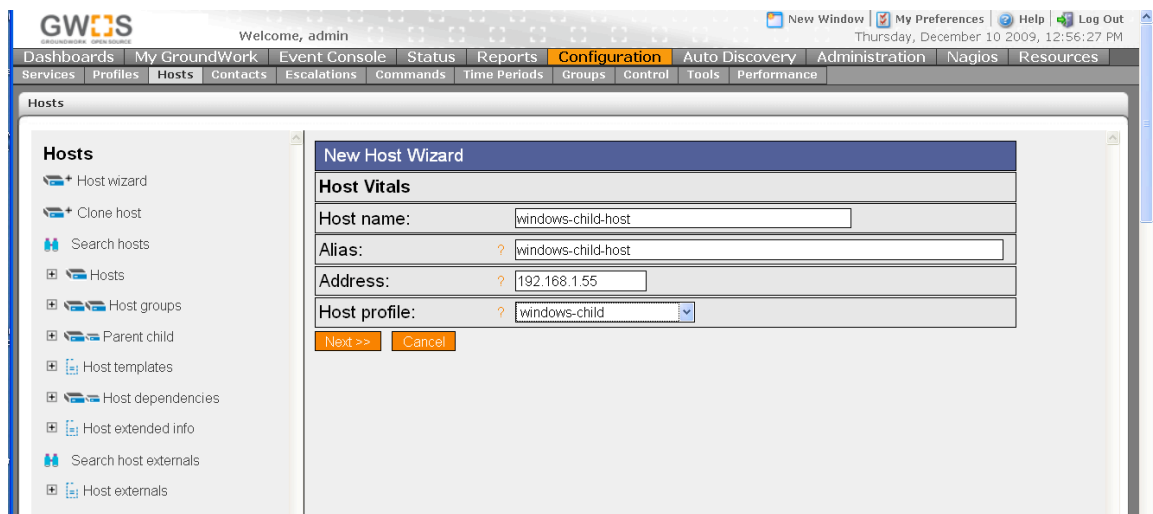
---

## Create Windows Child Host

This host serves as a collection point for notifications and alerts from the windows child system.

In Configuration→Hosts

1. Select Host Wizard
2. Fill in Host Name "child-hostname"
3. Fill in alias "windows child server"
4. Fill in address "xx.xx.xx.xx"
5. Select windows\_child Host profile



6. Select Next,Next,Next,Next,Continue
7. Commit Changes to activate

## Review and Modify windows-child host externals properties

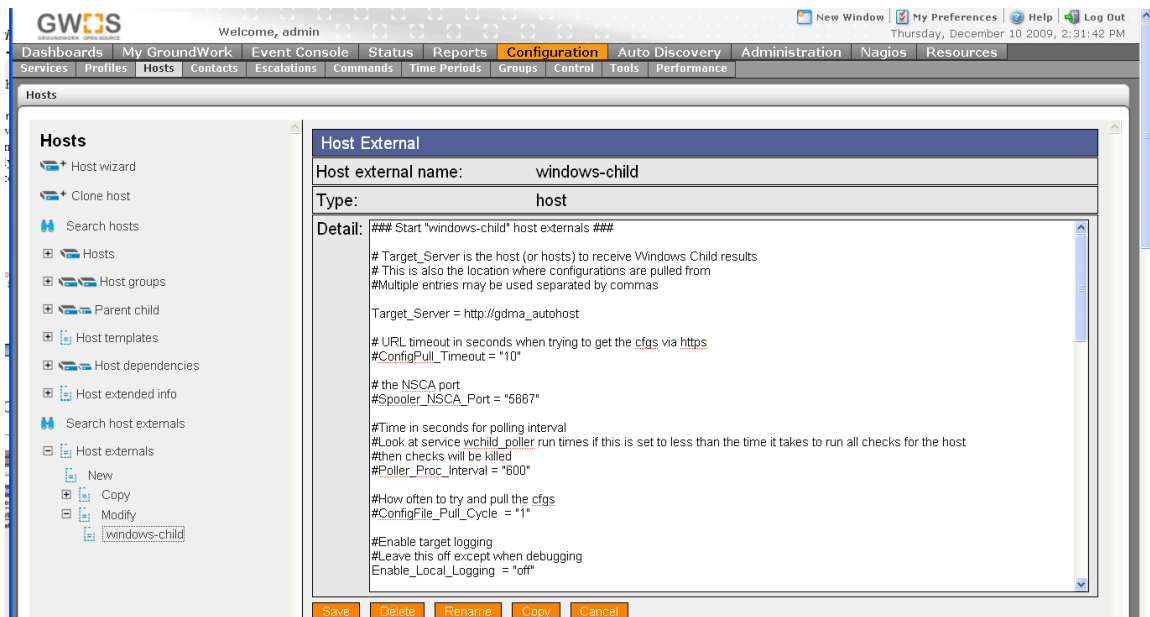
In Configuration→Hosts→Host Externals

1. Select Modify
2. Select windows-child

### Modify Target\_Server parameter

This parameter controls where the windows child will download its host configurations from and where it will send check results. The parameter must be in the form of a URL. This parameter is normally set to the hostname or IP address of the Master system. For details on this and other configuration parameters see GDMA Agent Configuration Reference.

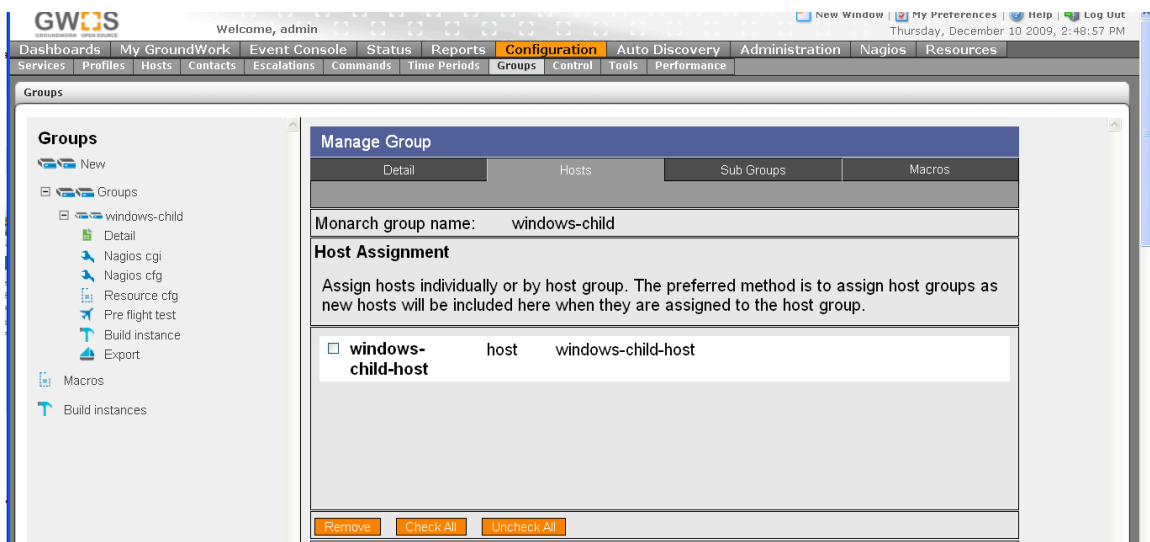
# GDMA v2.1 Installation and Configuration



## Add windows child host to Monarch Group

In Configuration→Groups

1. Expand Groups
2. Expand windows-child
3. Select Detail
4. Select Hosts Tab
5. Toggle Checkbox for host E.G. windows-child-host
6. Select Add Hosts



# GDMA v2.1 Installation and Configuration

## ***Commit changes and Build Externals***

To commit changes to GroundWork and create Windows Child configuration files

In Configuration→Control

9. Select Commit, Commit
10. Select Run externals

The configuration file will be created in "/usr/local/groundwork/apache2/htdocs/wchild1" as defined in the windows-gdma monarch group. The filename will be gwmon\_\$(hostname).cfg in this example gwmon\_windows-child-host.cfg

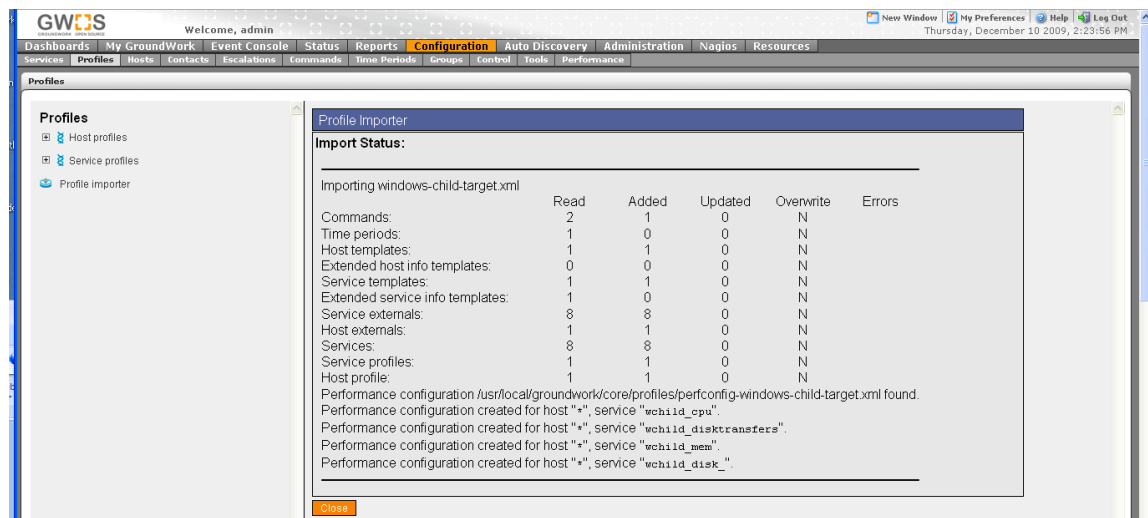
```
#ls -al /usr/local/groundwork/apache2/htdocs/wchild1/gwmon_windows-child-host.cfg
-rw-r--r-- 1 nagios nagios /usr/local/groundwork/apache2/htdocs/wchild1/windows-child-host.cfg
```

## ***Upload and Import Windows Child Target Profiles***

The Windows Child Target profile provides configuration parameters for the creation of Windows targets.

In Configuration→Profiles

1. Select Profile importer
2. Scroll to bottom of screen
3. Select Browse and enter location of "windows-child-target.xml"
4. Select upload
5. Select Browse and enter location of "service-profile-windows-child-target.xml"
6. Select upload
7. Select Browse and enter location of "perfconfig-windows-child-target.xml"
8. Select upload
9. Toggle Checkbox for gdma-windows-base-os.xml
10. Select Import



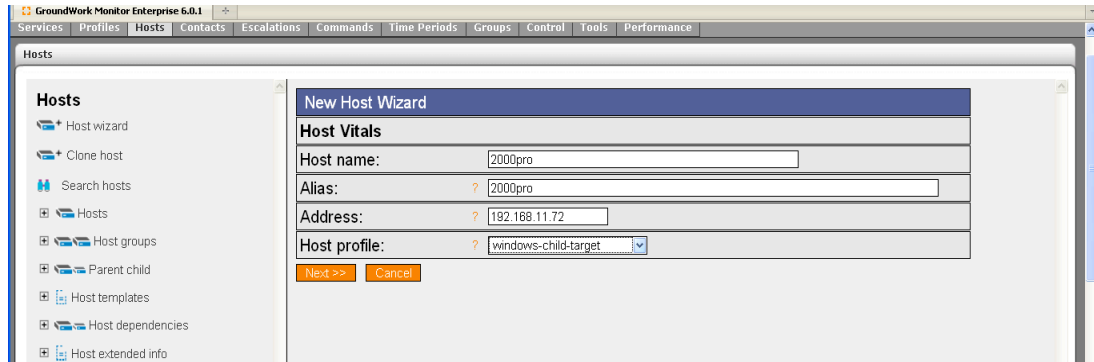
# GDMA v2.1 Installation and Configuration

---

## **Create/Configure Windows Target**

In Configuration→Hosts

1. Select Host Wizard
2. Fill in Host Name E.G "2000pro"
3. Fill in alias E.G."2000pro"
4. Fill in address E.G."196.168.11.72"
5. Select windows-child-target Host profile



6. Select Next,Next,Next,Next,Continue<sup>18</sup>

## **Add new host to Monarch Group**

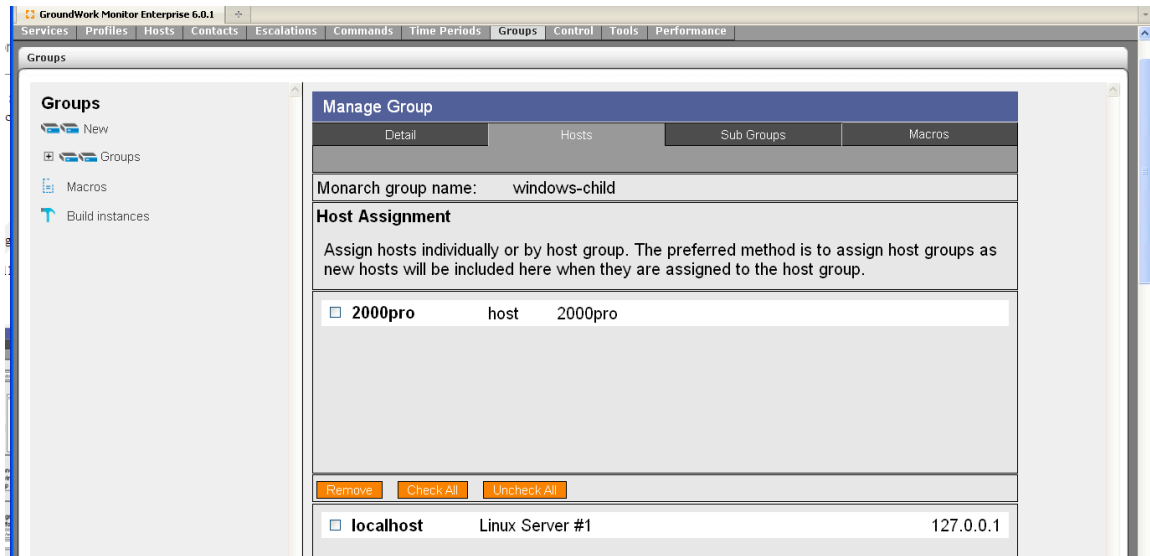
In Configuration→Groups

1. Expand Groups
2. Expand windows-child
3. Select Detail
4. Select Hosts Tab
5. Toggle Checkbox for host E.G. 2000pro
6. Select Add Hosts

---

<sup>18</sup> You may optionally place the host in a hostgroup and configure additional host, service and notification options.

# GDMA v2.1 Installation and Configuration



Host will appear in the upper field as an assigned host.

## ***Commit changes and Build Externals***

To commit changes to groundwork and create windows child configuration files

In Configuration→Control

11. Select Commit, Commit
12. Select Run externals

The configuration file will be created in "/usr/local/groundwork/apache2/htdocs/wchild1" as defined in the windows-gdma monarch group. The filename will be gwmon\_\$(hostname).cfg in this example gwmon\_2000pro.cfg

```
#ls -al /usr/local/groundwork/apache2/htdocs/wchild1/gwmon_2000pro.cfg
-rw-r--r-- 1 nagios nagios /usr/local/groundwork/apache2/htdocs/wchild1/gwmon_2000pro.cfg
#
```

## **Install Windows Child Software**

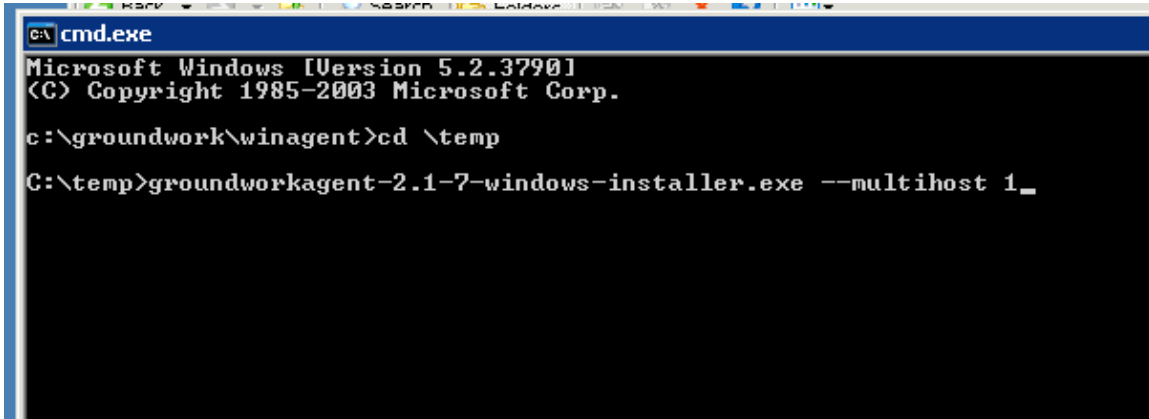
Use this procedure to install the Windows Child package on a Windows host. Upgrading is not supported. It is suggested that you convert any existing legacy Windows child hosts by adding one new Windows child, and then migrating all the monitored hosts from existing Windows child servers to the new one in a phased migration.

## GDMA v2.1 Installation and Configuration

---

### To install a Windows Child:

1. Access the Windows client user interface
2. Transfer the binary installer file to a temporary location on the local disk
3. Start a command window
4. Change to the temporary directory
5. Type the name of the binary installer, appending "-- multihost 1" to the command



```
cmd.exe
Microsoft Windows [Version 5.2.3790]
Copyright 1985-2003 Microsoft Corp.

c:\groundwork\winagent>cd \temp
C:\temp>groundworkagent-2.1-7-windows-installer.exe --multihost 1_
```

Follow the prompts on the screen.

If you wish to install the Windows Child via a scripted method, such as a software distribution package or a batch script, you may wish to take advantage of the unattended mode option. Type the name of the binary installer followed by "--help" for a list of available options.

### Appendix A: GDMA Agent Configuration Reference

This document describes the configuration details and installation methods for GDMA 2.1.

---

#### CONFIGURATION

In normal operation a GDMA host configuration is generated via the configuration tool Monarch using the “externals” capability. Global configuration parameters are set via a “host external” property and per service parameters are set via a “service external” property. See “Configuring Externals” in the bookshelf for details.

GDMA uses two configuration files to control its operation. These files share the same structure and command parameters.

##### Autoconfiguration Config

`$basedir/config/gdma_auto.cfg` is a component of the installation image and governs the behavior of the newly installed agent in an unconfigured state. The purpose of this file is to enable the agent to contact the Target Server and obtain a host configuration file without operator intervention. In general this file should not be modified unless special circumstances require non default auto configuration behavior. This file is also used to enable the agent to revert to autoconfiguration in the event that the host configuration file becomes corrupted or if the Target Server becomes unavailable.

##### Host Config

`$basedir/config/gwmon_$host.cfg` is normal mode configuration for the agent. This file overrides all parameters from the autoconfiguration file when it exists. This file will contain the global configuration and per service configuration details for the agent and the services to be monitored.

#### *Global Configuration Parameters*

##### Target\_Server

Default Value = `http://gdma-autohost`



## GDMA v2.1 Installation and Configuration

---

Valid Values = a valid http or https url

Used by Spooler: Yes

Used by Poller: Yes

Description: Defines system where agent will attempt to pull gwmon\_\$host.cfg file from. This may be in the form of a comma separated list to send results to multiple targets.

### Target\_Server\_Secondary

Default Value =

Valid Values = a valid http or https url

Used by Spooler: Yes

Used by Poller: No

Description: Defines system where agent will attempt send check results when the [Target\\_Server](#) is unavailable.

### GDMAConfigDir

Default Value = gdma

Valid Values = valid path string

Used by Spooler: No

Used by Poller: Yes

Description: Defines path where agent will attempt to pull gwmon\_\$host.cfg file from. This value is concatenated with [Target\\_Server](#) and the hostname of the target system to identify the configuration file to pull.

Example:

gdma\_auto.cfg: [Target\\_Server](#)= "http://gdma-autohost"

gdma\_auto.cfg: [GDMAConfigDir](#)="gdma"

Target hostname=gdma\_test

Would result in the agent pulling its configuration file from  
http://gdma-autohost/gdma/gwmon\_gdma\_test.cfg

### Enable\_Auto

Default Value = on

Valid Values = on:off

Used by Spooler: Yes

Used by Poller: Yes

Description: Enables and disables auto configuration mode. This should normally be toggled **on** in gdma\_auto.cfg and **off** in gwmon\_\$host.cfg

### GDMA\_Auto\_Host

## GDMA v2.1 Installation and Configuration

---

Default Value = gdma-autohost

Valid Values = string conforming to Groundwork/Nagios host object rules

Used by Spooler: Yes

Used by Poller: No

Description: Groundwork Host under which GDMA will submit auto configuration messages.

### **GDMA\_Auto\_Service**

Default Value = gdma\_auto

Valid Values = string conforming to Groundwork/Nagios service object rules

Used by Spooler: Yes

Used by Poller: No

Description: Groundwork Service under which GDMA will submit auto configuration messages.

### **Poller\_Service**

Default Value = gdma\_poller

Valid Values = string conforming to Groundwork/Nagios service object rules

Used by Spooler: No

Used by Poller: Yes

Description: Groundwork Service under which GDMA will submit poller messages.

### **Spooler\_Service**

Default Value = gdma\_spooler

Valid Values = string conforming to Groundwork/Nagios service object rules

Used by Spooler: Yes

Used by Poller: No

Description: Groundwork Service under which GDMA will submit spooler messages.

### **ConfigFile\_Pull\_Cycle**

Default Value = 1

Acceptable Values = 1-10

Used by Spooler: No

Used by Poller: Yes

Description: Controls how often new configuration information should be pulled from the Target Server, The value is a multiple of [Poller\\_Proc\\_Interval](#).

### **ConfigPull\_Timeout**

Default Value = 10

## GDMA v2.1 Installation and Configuration

---

Acceptable Values = 1-100

Used by Spooler: No

Used by Poller: Yes

Description: Controls how long in seconds to wait before timing out a  
configuration file pull attempt.

## GDMA v2.1 Installation and Configuration

---

### Enable\_Local\_Logging

Default Value = off

Acceptable Values = on:off

Used by Spooler: Yes

Used by Poller: Yes

Description: Enables local logging of events and errors. Default is off. If this is enabled some provision to clear or rotate logs should be employed.

### Logdir

Default Value = /usr/local/groundwork/gdma/log/ or, for Windows GDMA: c:\program files\groundwork\gdma\log

Acceptable Values = absolute directory path

Used by Spooler: Yes

Used by Poller: Yes

Description: Path to write local log files. Must be valid absolute path and writable by agent user.

### Poller\_Proc\_Interval

Default Value = 600

Acceptable Values = 60-900 seconds

Used by Spooler: No

Used by Poller: Yes

Description: Controls how often poller engine will run. Also used as a multiple by [ConfigFile\\_Pull\\_Cycle](#) and [\\$SERVICE\\_Check\\_Interval](#). Modifying this value is not recommended without understanding the full impact on performance data collection and target system overhead for the environment.

### Poller\_Pull\_Failure\_Interval

Default Value = 86400 ( 1 Day)

Acceptable Values = 0- 2592000 seconds (0-30Days)

Used by Spooler: No

Used by Poller: Yes

Description: Controls how long poller will continue to operate in normal mode with the current host configuration after it can no longer pull a configuration file from the Target Server. When this timer expires the poller engine will remove the current host configuration file and revert to auto configuration mode. Setting this value to 0 disables this feature and the agent will continue to operate in normal mode with the stale configuration file indefinitely.

## GDMA v2.1 Installation and Configuration

---

### **Poller\_Plugin\_Timeout**

Default Value = 5

Acceptable Values = 0- 900 seconds

Used by Spooler: No

Used by Poller: Yes

Description: Controls how long poller will wait for a plugin to execute.

### **Poller\_Plugin\_Directory**

Default Value = /usr/local/groundwork/gdma/libexec/ or, for Windows GDMA, c:\program files\groundwork\gdma\libexec

Acceptable Values = absolute directory path

Used by Spooler: No

Used by Poller: Yes

Description: Path to local plugins

### **Spooler\_Batch\_Size**

Default Value = 20

Acceptable Values = integer > 5

Used by Spooler: Yes

Used by Poller: No

Description: Defines max NSCA batch size to use when transmitting results to Target Server.

### **Spooler\_Max\_Reties**

Default Value = 10

Acceptable Values = integer > 1 and <100

Used by Spooler: Yes

Used by Poller: No

Description: Attempt transmission of results this many times before purging. Multiple of [Spooler\\_Proc\\_Interval](#) time.

### **Spooler\_Retention\_Time**

Default Value = 900

Acceptable Values = positive integer and <900

Used by Spooler: Yes

Used by Poller: No

Description: Unsent spooled results older than this number of seconds will be purged.

### **Spooler\_NSCA\_Port**

Default Value = 5667

Acceptable Values = valid tcp port number

Used by Spooler: Yes

Used by Poller: No

Description: Port to use when transmitting spooled results.

### **Spooler\_NSCA\_Timeout**

Default Value = 5

Acceptable Values = 1-30 seconds

Used by Spooler: Yes

Used by Poller: No

Description: NSCA send timeout

### **Spooler\_Proc\_Interval**

Default Value = 180

Acceptable Values = 60-900 seconds

Used by Spooler: Yes

Used by Poller: No

Description: Controls how often spooler engine will run. Also used as a multiple by [Spooler\\_Max\\_Reties](#).

### **Spooler\_NSCA\_Program**

Default Value = /usr/local/groundwork/gdma/bin/send\_nsca.pl

or

c:\program files\groundwork\gdma\bin\send\_nsca.pl

Acceptable Values = absolute path to send nsca program

Used by Spooler: Yes

Used by Poller: No

Description: Location of send nsca program

### **GDMA\_Multihost**

Default Value = off

Acceptable Values = on:off

Used by Spooler: No

Used by Poller: Yes

Description: Enable Multihost (windows child) behavior See Windows GDMA Setup section for details

### ***Per Service Configuration Parameters***

#### **check\_(service)\_Enable**

Default Value = on

Acceptable Values = on:off

Used by Spooler: No

Used by Poller: Yes

Description: Enable or disable service check

#### **check\_(service)\_Service**

Default Value = n/a

Acceptable Values = string conforming to GroundWork/Nagios service object rules

Used by Spooler: No

Used by Poller: Yes

Description: Groundwork/Nagios service name

#### **check\_(service)\_Command**

Default Value = n/a

Acceptable Values = command definition to be executed by poller

Used by Spooler: No

Used by Poller: Yes

Description: Command definition

#### **check\_(service)\_Timeout**

Default Value = 5

Acceptable Values = 0- 900 seconds

Used by Spooler: No

Used by Poller: Yes

Description: Controls how long poller will wait for a plugin to execute.

### ERROR AND STATUS MESSAGING

Unless configured with **Enable\_Local\_Logging = on** GDMA will not produce any log output on the target system. Normal messaging is returned to the master system via the standard spooling and NSCA transmission methods.

Service	Type of Message	Description	Example
gdma_auto	missing configuration	Indicates unconfigured GDMA host or corrupt configuration file	"gdma-autohost;gdma_auto;3;No configuration file: my_host [192.168.5.13] running MSWin32 5.00"
gdma_spooler	startup message	Indicates normal startup	"my_host;gdma_spooler;0;Spool processor 1.0 started at Wednesday January 6 16:55:27 2010"
	status message	Indicates normal operation	"my_host;gdma_spooler;0;Spooler transmitted 11 results in 0 secs"
	transmission failure	Indicates that spooler failed in transmitting results	"my_host;gdma_spooler;2;Failed to transmit 1 results to 192.168.5.74"
	purge message	Indicates that results are being expired from the spool	"my_host;gdma_spooler;1;Retention timer 900 reached for 38 messages, messages purged"

gdma_poller	status message	Indicates normal operation	"my_host;gdma_poller;0;OK Poller processed 9 checks in 8.547 secs Using 1.42% of 600 sec Polling Interval"
-------------	----------------	----------------------------	--



## GDMA v2.1 Installation and Configuration

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	<b>startup message</b>	Indicates normal startup	"my_host;gdma_poller;0;Poller 1.0 started at Wednesday January 6 17:01:08 2010"
	<b>config change</b>	message Indicates that a configuration change has been detected.	"my_host;gdma_poller;1;Configuration change detected :C:\groundwork\gdma\config\gwmon_my_host.cfg at Wednesday January 6 16:13:06 2010"

# GDMA v2.1 Installation and Configuration

---

## GDMA SWITCHES

gdma\_poll and gdma\_spool\_processor provide the following switches for troubleshooting. These should not be used in normal operation.

### Poller Switches

```
#!/usr/local/groundwork/perl/bin/perl gdma_poll.pl -h
```

GDMA poller agent for version 1.0 monitors system statistics on this server. Dumps the results to spool file.

#### Options:

-c <CONFIG FILE>	Config file containing monitoring parameters.
-a <AUTOCONF FILE>	File with default settings. Must contain a target server address.
-l <LOG DIR>	Full path for log directory for this script
-d <1,2>	Debug mode. Will log additional messages to the log file, 1 less 2 most.
-h	Displays help message.
-x	Run once. If this option not selected, run continually with sleep.
-i	Run interactively - shows output to the cli (non service mode) as well as to log
-v	Show version.

### Spooler Switches

```
/usr/local/groundwork/perl/bin/perl gdma_spool_processor.pl -h
```

GDMA Spool Processor version 1.0 monitors system statistics on this server. Results are sent back to the GroundWork server(s) using NSCA.

#### Options:

-c <CONFIG FILE>	Config file containing monitoring parameters.
-a <AUTOCONF FILE>	File with default settings. Must contain a target server address.
-l <LOG DIR>	Log directory for this script, relative to GDMA HOME.
-d <1,2>	Debug mode. Will log additional messages to the log file, 1 less 2 most.
-h	Displays help message.
-x	Run once. If this option not selected, run continually with sleep.

## GDMA v2.1 Installation and Configuration

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-i                                Run interactively - shows output to the cli  
(non service mode) as well as to log  
-v                                Show version.