GroundWork Monitor Open Source 5.1.3 Installation Guide

PURPOSE

The purpose of this guide is to provide installation and upgrade instructions for GroundWork Monitor Open Source 5.1.x.

DISTRIBUTION NOTES

In addition to this Installation guide, please read the Readme and Release Notes which accompany this release. These documents contain important information regarding bug fixes, known issues, and new features.

CONTENTS

SECTION 1 – SYSTEM REQUIREMENTS

This section outlines the system requirements for GroundWork Monitor Open Source 5.1.x. Section 2 will cover the actual installation of the software requirements.

HARDWARE RECOMENDATIONS

The recommended hardware configuration for a single Groundwork Monitor server is listed below. This configuration can support up to 500 active Service checks per minute using standard GroundWork Service Profiles.

- 2 CPU, 3 GHz Pentium 4 or better
- 4 GB RAM
- 160 GB Disk

SUPPORTED OPERATING SYSTEMS

GroundWork Monitor Open Source runs on Linux and supports the following listed Operating Systems. We strongly recommend placing GroundWork Monitor Open Source on a dedicated server to ensure adequate performance, especially if there are a large number of devices to monitor via polling.

- Red Hat Linux Enterprise WS 4.0 32-bit
- Red Hat Linux Enterprise ES 4.0 32-bit
- Red Hat Linux Enterprise ES 5.0 32-bit
- SuSE Linux Enterprise Server 9 32-bit
- SuSE Linux Enterprise Server 10 32-bit
- CentOS 4.4 32-bit
- Red Hat Enterprise Linux WS 4.0 64-bit
- Red Hat Linux Enterprise ES 4.0 64-bit
- Red Hat Linux Enterprise ES 5.0 64-bit
- SuSE Linux Enterprise Server 10 64-bit

SUPPORTED BROWSERS

Firefox

- Firefox version 2.x
- Firefox version 1.5 (see the separate Configuration document for this version)

Internet Explorer

- Internet Explorer version 6.x
- Internet Explorer version 7.x

SOFTWARE PREREQUISITES

- MySQL Open Source version 5.0.18 – 5.0.26
- Java SDK version 1.5 Update 6

SECTION 2 – NEW INSTALLATION OF GROUNDWORK MONITOR OPEN SOURCE

This section outlines the installation steps for GroundWork Monitor Open Source 5.1.x. You should log in as user root to run all steps in this section.

INSTALLING AND CONFIGURING PREREQUISITES

Step 1 - Operating System Installation

Red Hat

Red Hat's Security Enhanced Linux (SELinux) is known to cause certain failures with GroundWork Monitor and must be disabled. During the installation of Red Hat, you will be prompted for Firewall and SELinux setting. Make sure the Firewall Configuration is set to No Firewall and set SELinux to Disable. Additionally, when you arrive at the Package Installation Defaults screen, select the option Customized software packages to be installed. And, in the section Package Group Selection, scroll down to the location marked Miscellaneous and select Minimal.

SuSE

During the installation of SuSE make sure when you arrive at the Installation Settings screen to select Change, Software, Minimum graphical system (without KDE). Also, after the installation of the OS is complete you will need to disable the Firewall using YaST.

Note: Re-configuring your firewall and re-enabling SELinux is covered later In Section 4 – Verifying and Completing Installation.

Configuring your Firewall

Upon successful installation and verification of GroundWork Monitor Open Source at this point you can choose to configure your Firewall.

Configuring SELinux (Red Hat)

Upon successful installation and verification of GroundWork Monitor Open Source at this point you can choose to enable SELinux option.

Changes to Syslog Configuration

As part of the installation process, the operating system's **syslogd** process has been disabled, and it is replaced with a GroundWork installation of **syslog-ng**.

Any customizations to **/etc/syslog.conf** must be moved to **/usr/local/groundwork/etc/syslog-ng/syslog-ng.conf** and any future modifications to **/etc/syslog.conf** will not have any effect.

Step 2 - Java Installation

GroundWork Monitor specifically requires Sun Microsystems' Java SDK version 1.5 Update 6. A version of GNU's Java can affect performance or impact the garbage collection of the recommended JVM instance. The steps below will take you through removing any non Sun Microsystems Java versions, and downloading and installing the required version.

Remove any non SUN Microsystems Java versions

1. Query for existing Java packages:
   rpm -qa | grep -i java
2. Remove the RPMs: rpm –e
   Example Java packages:
   java-1.4.2-gcj-compat-1.4.2.0-27jpp
   gcc-java-3.4.6-3
3. Reboot the machine (to make sure the cache is cleared).

Downloading Sun Java SDK 1.5.0-06 i586 for Linux

You can download Sun JAVA SDK 1.5.0-06 i586 for Linux from Sun Microsystem download page (http://java.sun.com/javase/downloads/index_jdk5.jsp)

Installing SUN Microsystems Java

During installation of Java, careful attention must be paid to the steps needed to properly configure the environment, specifically the **JAVA_HOME** and **PATH** environment variables.

1. Copy the file into a temporary folder on your hard disk. Change directory to that folder.
2. Make the file executable with the command: **chmod +x jdk-1_5_0_06-linux-i586-rpm.bin**
3. Login as **root** if you are not already.
4. Execute the binary file which will extract and install the RPM file by running the following command:
   ./jdk-1_5_0_06-linux-i586-rpm.bin
5. You will be prompted to accept the license.
6. The installer puts all files into: **/usr/java**
7. Set the environment variable **JAVA_HOME**. You will need to add the following two environment variables to **/etc/profile**:
   export JAVA_HOME=/usr/java/jdk1.5.0_06
   export PATH=$PATH:$JAVA_HOME/bin
8. Update the current session environment variables by running the following command: **source /etc/profile**
9. In most Linux systems /usr/bin/java is a link to **/etc/alternatives/java** which is another link to the java executable. If this is the case you will need to update **/etc/alternatives/java** so that it points to your installation of the Java SDK command. Execute the following commands:
   ln -sf $JAVA_HOME/bin/java /etc/alternatives/java
   ln -sf /etc/alternatives/java /usr/bin/java

Step 3 - SELinux Configuration

The SELinux package interferes with MySQL installation and must be disabled. It can be re-enabled after installing MySQL. **Note**: If you followed the Red Hat installation in Step 1 above this step can be skipped. Make sure that you have disabled the Firewall.

Disabling SELinux

1. Edit the **/etc/selinux/config** file so that it looks like:
   # This file controls the state of SELinux on the system.
   # SELINUX= can take one of these three values:
   # enforcing - SELinux security policy is enforced.
   # permissive - SELinux prints warnings instead of enforcing.
   # disabled - SELinux is fully disabled.
   SELINUX=disabled
   # SELINUXTYPE= type of policy in use. Possible values are:
   # targeted - Only targeted network daemons are protected.
   # strict - Full SELinux protection.
   # SELINUXTYPE=targeted
2. If you change these settings you may need to reboot your system before installing MySQL.

Step 4 - Perl-DBI Installation

GroundWork Monitor Open Source requires Perl-DBI-1.40-5.i386.rpm to be installed on Red Hat and CentOS servers prior to MySQL. To download Perl DBI 1.40-5 i386 for Linux select this link http://rpmfind.net/linux/RPM/fedora/3/i386/perl-DBI-1.40-5.i386.html.

Installing DBI

1. To install Perl-DBI enter the command:
   rpm –Uvh perl-DBI-1.40-5.i386.rpm

Step 5 – MySQL Configuration

Note: Even if you have already installed MySQL, please review the material in this section for important configuration information.

GroundWork Monitor Open Source requires the following packages (version 5.0.18 or higher) to be installed on the system. If you are not sure if the correct version of the packages is installed, query the RPM database for each package using **rpm -qa |grep MySQL**.

Note: Upgrading an existing MySQL 4.x installation can cause the MySQL engine start to fail. Configuration settings for MySQL 4.x might be incompatible with MySQL 5.0. If MySQL doesn't start (server error), check if an old **my.cnf** file exists in the **/etc** directory. Simply remove or rename the file and MySQL will start **(/etc/init.d/mysql restart**).

Downloading MySQL (version 5.0.18 or higher)

You can download MySQL 5.0.18-0 at http://dev.mysql.com/downloads/.

- MySQL-server
- MySQL-client
- MySQL-shared-compat
- MySQL-shared

Installing MySQL

1. Copy the appropriate MySQL rpm files for your operating system and issuing the command **rpm -Uvh MySQL***. This will install the MySQL packages in the correct order.

Database Access

The installer needs root access for creating new databases and setting the permissions. If your root password for MySQL is empty (not recommended, but the default after installing MySQL) no further MySQL configuration is needed and you can proceed with the installation step. If a root password has been specified you can pass it to the installer by setting an environment variable. **Note**: If you use a root password for MySQL it needs to be provided to the RPMs that perform the installation. Prior to launching any rpm commands you need to set the value of the MySQL root password as follows:

1. Create an environment variable **MYSQL_ROOT** (all UPPERCASE) with the password value. For example:
   export MYSQL_ROOT=password

Step 6 - Network Configuration

1. MySQL uses the localhost entry in **/etc/hosts**. Make sure that the **localhost** entry looks like the example below. Also, make sure that localhost is first after the IP address followed by **localhost.localdomain**. Replace **192.168.2.100** with the IP address of the system, and **groundworkserver** with the real Host name. Example: **groundworkserver.mycompany.com** is the fully qualified domain name where the GroundWork Monitor server is installed. Also, make sure TCP port 3306 is not blocked by your firewall rules. This port is for communication to the MySQL server.

   127.0.0.1 localhost localhost.localdomain
   192.168.2.100 groundworkserver groundworkserver.mycompany.com

DOWNLOADING AND INSTALLING THE GROUNDWORK MONITOR RPMS

File Name Structure

Throughout the installation instructions the actual filename structure may vary depending on the particular product edition, version, build, and platform as described here in our example files and structure:

Example files

1. Foundation RPM:
   groundwork-foundation-pro-1.6.1-63.noarch.rpm
2. Core RPM:
   groundwork-monitor-core-5.1.3-4.rhel5.i386.rpm

Structure

g r o u n d w o r k – r p m – x . x . y – y . z
groundwork is the common prefix
rpm is the RPM type; foundation-pro (Foundation), monitor-core (Core), monitor-pro (PRO)
x.x is the version number; foundation-pro-1.6, monitor-core-5.1
y-y represents the build number; Foundation RPM (1-63), Core RPM (3-4), PRO RPM (3-21)
z is the platform; Red Hat rhel4.i386 or SuSE sles10

Downloading the GroundWork Monitor RPMs

New Installation of GroundWork Monitor Open Source means installing the software in a new, clean environment where there isn't any pre-existing GroundWork Monitor data. This install package implements all GroundWork Monitor Open Source components in 2 RPM files:

Foundation RPM:
groundwork-foundation-pro-1.6.y-y.noarch.rpm
Core RPM:
groundwork-monitor-core-5.1.y-y.z.rpm

You can download GroundWork Monitor Open Source 5.1.x at http://www.groundworkopensource.com/downloads. After the download, untar using the command which extracts the RPM: **tar -xzvf GroundWorkMonitorOS_5.1.x.tar**

Installing the GroundWork Monitor RPMs

To perform the installation you need to be root on the system. The installation places all files in the directory **/usr/local/groundwork**. **Note**: A GroundWork supplied version of Apache is installed with this package. If you are running Apache on your system, it will be stopped during the installation process, but not removed. Any content served will be served by the GroundWork version of Apache, but you should be aware that patches applied using the usual patch distribution systems will not be applied to the GroundWork provided or existing version of Apache. The GroundWork Monitor Open Source package should be installed on a standalone system to avoid this scenario. Install the RPMs using the following steps in sequence and verifying that there are no errors after each one is complete.

Note: To install the product successfully, the following 2 RPM commands must be performed separately, do not combine.

1. Foundation RPM. This will install the GroundWork Foundation components:
   rpm -Uvh groundwork-foundation-pro-1.6.y-y.noarch.rpm
2. Core RPM. This will install GroundWork Monitor components:
   rpm -Uvh groundwork-monitor-core-5.1.y-y.z.rpm

Verifying and Completing Installation

After installation, go to Section 4 Verifying and Completing Installation.

SECTION 3 – UPGRADING TO GROUNDWORK MONITOR OPEN SOURCE 5.1.3

This section covers the upgrade steps for the following product versions. If you are upgrading from other GroundWork Monitor products please contact support. **Note**: It is important to back up any additional monitoring packages or extensions you may have installed before upgrading GroundWork Monitor Open Source.

Upgrade from GroundWork Monitor Open Source 5.1.x

- GroundWork Monitor Open Source 5.1.x to GroundWork Monitor Open Source 5.1.x (follow all steps)

Upgrade from a Nagios Installation

UPGRADE FROM A PREVIOUS VERSION OF GROUNDWORK MONITOR OPEN SOURCE

Step 1 – Remove any non SUN Microsystems Java versions

GroundWork Monitor specifically requires Sun Microsystems' Java SDK version 1.5 Update 6. A version of GNU's Java can affect performance or impact the garbage collection of the recommended JVM instance. The steps below will take you through removing any non Sun Microsystems Java versions, and downloading and installing the required version.

Remove any non SUN Microsystems Java versions

1. Query for existing Java packages:
   rpm -qa | grep -i java
2. Remove the RPMs: rpm –e
   Example Java packages:
   java-1.4.2-gcj-compat-1.4.2.0-27jpp
   gcc-java-3.4.6-3
3. Reboot the machine (to make sure the cache is cleared).

Step 2 - Root Password

If you use a root password for MySQL it needs to be provided to the RPMs that perform the installation. Prior to launching any RPM commands you need to set the value of the MySQL root password as follows:

- Create an environment variable **MYSQL_ROOT** (all UPPERCASE) with the password value:
  Example: **export MYSQL_ROOT=password**

Step 3 - Downloading the RPMs

Download the GroundWork Monitor Open Source 5.1.x RPMs to a local folder on the machine where you have a previous version of GroundWork Monitor installed. The packages are:

- Foundation RPM:
  groundwork-foundation-pro-1.6.y-y.noarch.rpm
- Core RPM:
  groundwork-monitor-core-5.1.y-y.z.rpm

You can download GroundWork Monitor Open Source 5.1.x at http://www.groundworkopensource.com/downloads. After the download, untar using the following command which extracts the RPM:

tar -xzvf GroundWorkMonitorOS_5.1.x.tar

Step 4 - Backing Up

1. Back up custom changes you may have made to your GroundWork Monitor system:
   - Plugins:
     /usr/local/groundwork/nagios/libexec

- CGI Graphs:
  /usr/local/groundwork/apache2/cgi-bin/graphs
- Eventhandlers:
  /usr/local/groundwork/nagios/eventhandlers

2. Back up existing RRD files and your current Nagios configuration. This will create three TAR files in the current directory.
   - **tar cfz GWMON-xxx-rrd.tar.gz /usr/local/groundwork/rrd**
   - **tar cfz GWMON-xxx-nagios.tar.gz /usr/local/groundwork/nagios/etc**
   - **tar cfz GWMON-xxx-users.tar.gz /usr/local/groundwork/users**
3. Database Back Up
   GroundWork recommends that all MySQL databases be backed up before upgrading. The upgrade procedure will migrate the databases to the latest version of GroundWork Monitor. Create a back up directory (e.g. **/usr/local/backup-gwmon/**) and enter the following commands to create the back ups:
   - Monarch (Configuration):
     mysqldump -uroot monarch > /usr/local/backup-gwmon/monarch.sql
   - Guava (Framework):
     mysqldump -uroot guava > /usr/local/backup-gwmon/guava.sql
   - Foundation (Monitor Data):
     mysqldump -uroot GWCollageDB > /usr/local/backup-gwmon/GWCollageDB.sql
4. GroundWork Configuration Files Back Up
   - Monarch Back Up
     Back up the following files and folders before removing GroundWork Monitor and restore after the 5.1.x installation.
     tar cfz GWMON-xxx-monarchbackup.tar.gz
     /usr/local/groundwork/monarch/backup
     tar cfz GWMON-xxx-performance_views.tar.gz
     /usr/local/groundwork/performance/performance_views
   - If you have done custom work to these files back up the following: Note: This does not apply to GWMON 4.0 to GWMON-PRO 5.1.x upgrade.
     tar cfz GWMON-xxx-monarchcallout.tar.gz /usr/local/groundwork/monarch/lib/MonarchCallOut.pm
     tar cfz GWMON-xxx-monarchexternals.tar.gz
     /usr/local/groundwork/monarch/lib/MonarchExternals.pm
   - If you have configured Apache for secure SSL authentication any HTTPS certificates need to be preserved (the directory of the HTTPS certificates may differ from the example below):
     tar cfz ssl-keys.tar.gz /usr/local/groundwork/apache2/conf/ssl.key
   - Backup data collected by syslog-ng
     tar cfz GWMON-xxx-syslog-ng-data.tar.gz /usr/local/groundwork/var/log/syslog-ng

Step 5 - Upgrade to GroundWork Monitor Open Source 5.1.x

1. The directory containing all the performance data files can be large (500MB or larger) and this will affect the installation time. We recommend that the directory containing the RRD files be moved to a temporary directory before the RPMs are installed and then moved back to their original directory. To move the RRD directory to temporary location use the command: **mv /usr/local/groundwork/rrd /usr/local/rrd-save**
2. Install the RPMs by following these steps in sequence and verifying that there are no errors after each one is complete. **Note**: To install the product successfully, the following 2 RPM commands must be performed separately, do not combine.
   - Foundation RPM. This will install the GroundWork Foundation components:
     rpm -Uvh groundwork-foundation-pro-1.6.y-y.noarch.rpm
   - Core RPM. This will install GroundWork Monitor components:
     rpm -Uvh groundwork-monitor-core-5.1.y-y.z.rpm
3. To move the back up of RRD files back to their original directory use the following commands:

rm -rf /usr/local/groundwork/rrd
mv /usr/local/rrd-save /usr/local/groundwork/rrd

Step 6 – Restore your custom files

1. Copy your custom plugins and eventhandlers to the new system's directory:
   Plugins:
   /usr/local/groundwork/nagios/libexec
   Eventhandlers:
   /usr/local/groundwork/nagios/eventhandlers
2. Copy your custom CGI files to the new system's directory:
   /usr/local/groundwork/apache2/cgi-bin/graphs/
3. Use the Configuration tool in GroundWork Monitor Open Source to change the references in the Host and Service extended info to URL: **/usr/local/groundwork/apache2/cgi-bin/graphs/**

Step 7 - Restore the back ups created by the previous version of GroundWork Monitor

tar xfz GWMON-xxx-rrd.tar.gz -C/

Change the ownership for the rrd files:

chown -R nagios.nagios /usr/local/groundwork/rrd
tar xfz GWMON-xxx-monarchbackup.tar.gz -C/
tar xfz GWMON-xxx-performance_views.tar.gz -C/
tar xfz GWMON-xxx-monarchcallout.tar.gz -C/
tar xfz GWMON-xxx-monarchexternals.tar.gz -C/
tar xfz GWMON-xxx-nagios.tar.gz -C/
tar xfz GWMON-xxx-users.tar.gz -C/
tar xfz GWMON-xxx-syslog-ng-data.tar.gz -C/

If you have backed up HTTPS certificates, in Step 3 Backing Up above, restore them using the following command:

tar xfz ssl-keys.tar.gz –C/

Adjust the permissions for the restored files:

chown nobody.nagios /usr/local/groundwork/performance/performance_views
chown nobody.nobody /usr/local/groundwork/performance/performance_views

Verifying and Completing Upgrade

After upgrading, go to Section 4 Verifying and Completing Installation.

UPGRADING FROM A NAGIOS INSTALLATION

The steps below will show you how to set up a GroundWork Server and import an existing Nagios configuration. **Note**: You will first need to follow the steps in Section 2 New Installation to install GroundWork Monitor Open Source as a clean install. Then import your existing Nagios configuration into the GWMON-OS installation. GroundWork supports configuration setups imported from nagios versions 1.2 to 2.5.

1. Copy the existing Nagios configuration files to **/usr/local/groundwork/nagios/etc**.
2. Adjust the paths in **nagios.cfg** and **nagios.cgi** **to** **/usr/local/groundwork/nagios/etc**.
3. For example, if your Nagios cfgs files are in **/usr/local/nagios/etc**, you just need the files referenced in your **nagios.cfg** and the **cgi.cfg**. Put them in **/usr/local/groundwork/nagios/etc**. Adjust the path in the **nagios.cfg** and the **cgi.cfg**. Be sure they are owned by Nagios (**chown nagios.nagios *.cfg**) so that the loader can read them.
4. Log into GroundWork Monitor Open Source as an Administrator (admin/admin).
5. Click the Application Launcher and select the Configuration option.
6. Confirm your configuration by loading the Nagios configuration, select Control>Load.
7. Next, select Pre Flight Test, and then Commit.
8. After upgrading, go to Section 4 Verifying and Completing Installation.

SECTION 4 – VERIFYING AND COMPLETING INSTALLATION

Note: Refer to the separate Configuration document for any special install steps that might apply to your site.

VERIFYING INSTALLATION

Step 1 - Checking the User Interface as an Administrator

An Administrator can define Users, Groups, Roles, and Packages. The Administrator role also provides access to the Configuration option, which allows you to configure the Nagios monitoring system.

1. Go to the URL **http://<hostaddress>/.**
2. Login as an Administrator with the User ID admin and Password admin.
3. Reference the Bookshelf within GroundWork Monitor Open Source for additional advice and instructions.
4. When finished exploring Admin options, continue with Step 2 below.

Step 2 - Checking the User Interface as an Operator

An Operator role is pre-defined for you. The Operator role provides access to GroundWork Monitor Open Source applications such as Status, Reports, and Bookshelf.

1. Log out as an Administrator.
2. Log into GroundWork Monitor Open Source as an Operator with the User ID joe and Password joe.
3. Click the Application Launcher and select the Status option.
4. Review the Overview status page.
5. Expand the tree (left Panel) and Navigate to Hosts and Services.
6. Select Host and Service information. Check that the status information is correct.

Step 3 - Checking the connection between Nagios and GroundWork Foundation

1. From a command shell (open as root), if the Status Viewer status and Nagios Service detail do not match, check the following:
   - Check to see if the nagios2collage_status.pl is executing with the following command:
     ps -ef | grep nagios2collage
   - If this process is not running, restart **gwservices** with the following command:
     /etc/init.d/gwservices restart
2. If the Console events do not appear, check the following:
   - Check to see if the nagios2collage_event.pl is executing with the following command:
     ps -ef | grep nagios2collage
   - If this process is not running, restart gwservices with the following command:
     /etc/init.d/gwservices restart

COMPLETING INSTALLATION

Configuring your Firewall

Upon successful installation and verification of GroundWork Monitor Open Source at this point you can choose to configure your Firewall.

Configuring SELinux (Red Hat)

Upon successful installation and verification of GroundWork Monitor Open Source at this point you can choose to enable SELinux option.

SECTION 5 – UNINSTALLING THE PRODUCT

This section takes you through the steps to uninstall GroundWork Monitor Open Source.

NOTES ON UNINSTALLING GROUNDWORK MONITOR OPEN SOURCE

- If you would like to preserve any of your GroundWork files you can refer to Section 3 Step 3 Backing Up.
- rpm -e removes all traces of GroundWork Monitor, including any config files. You should back up all the RRDs, config files, and log files at a minimum if you want to keep these around. It is good practice to do this whenever performing a software install.
- The rpm uninstall doesn't remove any files created at run time (log files, rrd's, and temp files) and will not drop any GroundWork databases.

UNINSTALLING GROUNDWORK MONITOR OPEN SOURCE

1. To check which version you have installed, enter the command:

   rpm -qa | grep groundwork
2. Once you know your current installed version, enter the following command for the appropriate package. Note: The order of uninstalling needs to be first Core, and then Foundation.

   rpm -e groundwork-monitor-core-x.x.y-y
   rpm -e groundwork-foundation-pro-x.x.y-y