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1 PURPOSE

Important Note: The distributed Readme document should be reviewed prior to the installation or upgrade of GroundWork Monitor Open Source 5.0.

The purpose of the “Build Instructions” document is to describe the steps to build the GroundWork Monitor Open Source 5.0 product from source. Additionally, the documents “Installation”, “Readme”, and “Release Notes” include bug fixes and known issues; new features in this release; and an outline of system hardware requirements, pre-installation planning, and installation instructions, respectively. All documents are distributed in .txt and .pdf formats.

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2 BUILD ENVIRONMENT

Building GroundWork Monitor Open Source 5.0 from source requires preparing build environment, installing prerequisite software components, and executing the build script. Instructions are listed below and are also in the open source repository at this URL: http://archive.groundworkopensource.com/groundwork-opensource/trunk/build/. Building GroundWork Monitor Open Source 5.0 from source requires preparing the build environment, installing prerequisite software components, and executing the build script. **Note**: Feedback is invited! Please post corrections and/or improvements to this document to the GroundWork Community Support Forums: http://www.groundworkopensource.com/community/forums/.

These steps describe how to set up the build environment. Currently, these instructions have been used to perform successful builds on the platforms listed below. Specialized instructions for a specific platform are denoted with the appropriate heading (e.g. CentOS4).

- Red Hat Enterprise Linux 4 (RHEL4)
- CentOS 4.3 (CENTOS4) 32 bit

1. The following packages must be installed before attempting a build of GroundWork Monitor Open Source:
    - gcc (3.4.3-9 or later) http://gcc.gnu.org/
    - gcc-c++ (3.4.3-9 or later) http://gcc.gnu.org/
    - glibc (3.4.3-9 or later) http://ftp.gnu.org/gnu/glibc/
    - Java Development Toolkit (JDK) (1.5.0_05 or later) http://java.sun.com/
    - MySQL Database server (5.0.18 or later) http://dev.mysql.com/downloads/
    - Subversion (version 1.3 or later) http://subversion.tigris.org/project_packages.html
    - ant (1.6.5 - get it from GroundWork - see below)
    - maven (1.0.2 - get it from GroundWork - see below)

    To check the existing versions of these packages use the command **rpm -qa | grep packagename**. For example, to verify that these packages are installed and are of the correct version:

- Execute this command to check gcc and gcc-c++

  % rpm -qa |grep gcc

  Expect this output:

  gcc-3.4.3-9.EL4
  libgcc-3.4.3-9.EL4
  gcc-c++-3.4.3-9.EL4

- Execute the following command to check **glibc**

  % rpm -qa |grep glibc

  Expect this output:

  glibc-2.3.4-2
  glibc-devel-2.3.4-2
  glibc-headers-2.3.4-2

2. Make sure that **rpm-devel** package is not installed as it conflicts with the **libbeecrypt** compilation. To verify that this package is not installed:

   - Execute this command to check **rpm-devel**:

     % rpm -qa | grep rpm-devel

     If you see this output:

     rpm-devel-4.3.3-13_nonptl
     (or any version of **rpm-devel**) you need to uninstall **rpm-devel**.

   - Execute this command to uninstall **rpm-devel**:

     % rpm -e rpm-devel-4.3.3
     (specify the version according to what you have installed)

3. Install Java 5

   - Download and install **JDK 1.5** from http://java.sun.com/. Install by following Sun's instructions for your platform.
   - Change the link in **/etc/alternatives/java** to point to the Java5 install **/usr/java/jdk1.5.0_05/bin/java**.

4. Install MySQL 5.0

   RHEL4

   - Red Hat installs some MySQL4 packages. You can identify the versions of the packages with the command **rpm -qa | grep -i mysql**.
   - To uninstall run this command, replacing xx with the version identified above:

     rpm -e mysql-client-xx cyrus-sasl-sql-2.1.19-5.EL4.i386
   - Download the MySQL rpm files from the MySQL web site, http://dev.mysql.com/downloads/. The packages are:

     MySQL-server-standard

     MySQL-client-standard

     MySQL-shared-standard

     MySQL-devel-standard

     If you put all the files into the same temporary directory, rpm can install them all, in the right order, with a single command:

     cd /tmp/mysql

rpm -Uvh MySQL-*

CENTOS4

- Download the CentOS-specific MySQL 5 packages available at http://mirror.centos.org/centos/4/centosplus/i386/RPMS/.
- You need the following files, installed in this order:

  mysqlclient14-4.1.14-4.2.c4.1.i386.rpm

  mysql-5.0.22-1.centos.1.i386.rpm (you may need the CentOS Install Disk 1 in the CD drive)

  mysql-server-5.0.22-1.centos.1.i386.rpm
- Check for the proper installation of these files using **rpm -qa**, for example:

  rpm -qa | grep -i mysql

  expect this output:

  mysql-server-5.0.22-1.centos.1

  mysqlclient14-4.1.14-4.2.c4.1

  mysql-5.0.22-1.centos.1

  perl-DBD-MySQL-2.9004-3.1

5. Modify /**etc**/**hosts**
   - Make sure that **localhost** entry in /**etc**/**hosts** is valid:

     127.0.0.1 localhost localhost.localdomain

     Note that the "**localhost**" is *before* the "**localhost.localdomain**".
6. Install Apache Runtime Utilities (apr) Subversion
   - Use the RPM install:

     apr-util-0.9.4-17.i386.rpm &

     subversion-1.3.2-1.rhel4.i386.rpm
7. Configure **ldconfig**
   - Note that the build has to be run as root. This is because some of the components execute the ldconfig command.
   - Edit /**etc**/**ld.so.conf** and add /**usr**/**local**/**groundwork**/**lib** as the first line. Run **ldconfig**.
8. Install **ant** and **maven**
   - GroundWork uses the 1.0.2 version of maven. You can get the right versions of these tools from our repository:

   wget -c ftp://archive.groundworkopensource.com/pub/groundwork-core/build/*
   - untar files into an appropriate location, such as:

   /usr/local/ant

   /usr/local/maven
9. Update the .bash_profile
   - Note that the build has to be run as root. This is because some of the components execute the ldconfig command.
   - These environment variables must be set for the user running the build, in the **.bash_profile**, for example:

     export GW_HOME=/usr/local/groundwork

     export JAVA_HOME=/usr/java/jdk1.5.0_05

     export ANT_HOME=/home/nagios/apache/apache-ant-1.6.5

     export MAVEN_HOME=/home/nagios/apache/maven-1.0.2

     export LDFLAGS=-L$GW_HOME/lib

export LD_RUN_PATH=$GW_HOME/lib:$LD_RUN_PATH

export LD_LIBRARY_PATH=$GW_HOME/lib:$LD_LIBRARY_PATH

export CPPFLAGS=-I$GW_HOME/include

export PATH=$GW_HOME/bin:$PATH:$MAVEN_HOME/bin:$ANT_HOME/bin:$JAVA_HOME/bin

- Confirm all paths and versions are correct: the build does do a pre-flight check and will abort early if it can't find a necessary build component.

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3. EXECUTE THE BUILD

1. Invoke the **master_build.sh** script:
2. Make sure you are root. Then execute these commands:

   # mkdir /home/nagios

   # cd /home/nagios

   **# svn co http://archive.groundworkopensource.com/groundwork-opensource/trunk **

   groundwork-monitor

   # cd groundwork-monitor/build

   # nohup ./master-build.sh &

3. It can take a couple of hours to build. You can keep an eye on things by tailing the output:

   # tail -f nohup.out

4. The **master_build.sh** script will build all of the components, deploy them **into /usr/local/groundwork**, and will build an RPM for Red Hat.
5. Find the RPM in (e.g. **/usr/src/redhat/RPMS/i386/groundwork-monitor-os-5.0-xx.rhel4.i386.rpm**).
6. See the section 7 INSTALLATION INSTRUCTIONS below for information about how to install the RPM.

   Note: The RPM should not be installed in the same environment where it was built. This is because the installation procedure will clobber some of the components of the build.

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4 SUPPORT/FEEDBACK/PROBLEM REPORTS/DISCUSSION

GroundWork Monitor Open Source Support

GroundWork Monitor Open Source 5.0 software is user supported. If you have problems, please review the GroundWork Support Forum at http://www.groundworkopensource.com/community/forums/. If you cannot find the answer, please inquire on the GroundWork Support Forum. Issues, such as bug reports, should also be reported using the GroundWork Support Forum at http://www.groundworkopensource.com/community/forums/. The forums are monitored by the GroundWork team.