

Chapter 2



Installation and Upgrade Guide

2.1 Supported Platforms

Helix is currently supported on the following platforms:

- RedHat Linux 8 and other Linux distributions with equivalent kernel level (2.4.18) on Intel x86 platforms. Due to changes in the binary architecture on RedHat Linux 9, RedHat Enterprise 3 or other distributions using linux kernel level 2.4.20 or above may generate errors and is currently not supported by Fidelia.
- Windows 2000 (Professional and Server) and XP (Professional Only)
- Solaris 2.6 and above on UltraSparc platforms.

You can use `uname -s -r` to determine the kernel version.

2.2 Recommended Hardware

For moderate sized networks, Helix can be installed on either of:

Pentium 3 (800 Mhz), 512M memory, 9G disk

OR

Sun UltraSparc II, 512M memory, 9G disk

The system should have at least 3G of free disk space in one partition.

For better performance, adding memory is the most critical factor. SCSI drives are strongly recommended in large environments.

NOTE *Some desktop class processors like the Celeron or SPARC-IIe, which have minimal onboard cache, are not suitable for a Helix installation.*

Disk Space Requirements

The software installation (all platforms) requires 500M of disk space.

Additional Software Requirements

The following packages must be installed for proper operation of Helix:

- Perl version 5.005 and above programming language/interpreter (available from www.perl.com) should be installed on Linux/Solaris platforms. A Perl interpreter is bundled with the Windows version and need not be pre-installed.

2.3 System Performance Tuning

1. You can increase performance by running a caching nameserver on the servers that run the DGE component.
2. On Linux systems, the file descriptors should be increased to 8192 by editing the following files:
 - a) Edit `/etc/security/limits.conf`, and add the lines:

```
*          soft    nofile   8192
*          hard    nofile   8192
```
 - b) Edit `/etc/pam.d/login`, and add:

```
session required /lib/security/pam_limits.so
```
3. Increase the system-wide file descriptor limit by adding the following three lines to the `/etc/rc.d/rc.local` startup script:

```
# Increase system-wide file descriptor limit.
echo 4096 > /proc/sys/fs/file-max
echo 16384 > /proc/sys/fs/inode-max
```

4. On Linux systems, if you are using IDE drives, you can increase I/O performance by turning on 32bit io, direct memory access and multi block reads using:

```
hdparm -c1 -d1 -m16 /dev/hda
```

Make sure to replace `/dev/hda` with the proper device name appropriate for your system. This command should be added to `/etc/rc.local`.

5. On Solaris systems, the following patch should be installed:

Table 2.1 Solaris patches for Helix installation

Solaris Version	Patch Id	Note	Description
Solaris 7 (5.7)	106327-06	required	Shared library patch for C++
Solaris 2.6 (5.6)	105591-07	required	Shared library patch for C++

In addition, make sure the patches appropriate for your Solaris version listed at <http://java.sun.com/j2se/1.3/install-solaris-patches.html> have been installed.

2.3.1 Increasing Java Memory (JVM) Size

If you add additional physical memory on your DGE or other servers, you should increase the memory size of the Java Virtual Memory used by Helix. The DGE, BVE ObjectStore and the WebApp all run as separate processes and have their own JVM size setting. In most situations, you will probably increase the DGE and the WebApp memory sizes. The following steps are for increasing the JVM size for the DGE- the steps for the web application are similar.

1. Shut down the DGE (or web application) using the Control Panel on Windows or using the corresponding init script on Unix.

Start > Control Panel > Admin Tools > Services

\$HELIX_HOME/etc/monitor.init stop # on Unix

2. On Windows, edit the following file using Notepad (turn off the word wrap feature)

\Program Files\Fidelia Helix\bin\monitor.lax

and add the following line at the end of the file to add an additional 512M of memory to the DGE process:

```
lax.nl.java.option.additional=-Xmx512
```

Save the file.

3. On Unix, edit \$HELIX_HOME/etc/monitor.init and search for xmx256. Replace this with xmx768 to add an additional 512M of JVM.

Remember that you should always dedicate physical memory to the java process, not swap. i.e. if you have 2GB of swap space, but only 512M of physical memory, you should set the JVM size to less than 512M and NOT 2GB.

2.3.2 System Security Issues

It is strongly recommended that all daemons or server processes not required on the servers running Helix be shutdown and disabled on startup (this includes telnet, ftp, etc.). All logins and file transfers should be done using 'ssh' or 'scp' into your servers. For advanced firewall rules, please see Section 3.11, "Operating Helix Behind Firewalls" on page 46.

2.4 First-time Installation

For instructions on upgrading an existing installation, see Section 2.5, "Upgrading From Previous Versions" on page 13.

NOTE Make sure that there is no web server or database running on the Helix Server. If there is, you will get a port conflict and Helix will not start.

The Helix distribution for Linux/Solaris consists of two compressed archives (tar.gz) provided either on a CDROM or downloadable via HTTP/FTP:

- helix-base-OS.tar.gz
- helix-x.y.z-OS.tar.gz

Where x represents major, y is the minor version of the software, z is the maintenance release number and OS is the operating system. Example, helix-3.6.1-linux.tar.gz.

For Windows platforms, Helix is distributed as a single executable file.

In addition to the installation files, you need a license key. This can be either a limited-time trial key, or a permanent key based on the terms of your purchase.

2.4.1 Planning Checklist

Prior to your install, you should ensure that you have complete information about your IT environment where Helix is being installed.

Table 2.2 Helix Installation Checklist

Item	Notes
Any large switches, routers or servers in each location?	A large switch with 500 ports will have close to 3000 tests (6 tests per port) which is the same as the number of tests on 100 devices.
Any existing custom monitors that need to be migrated to Helix?	Use the plug-in API to interface any custom monitoring scripts to Helix (see Advanced Development Guide).
List of subnets & SNMP passwords used on your network	During device discovery, Helix uses these to automatically find devices and tests and add them to the system.

2.4.2 Linux & Solaris Installations

The table that follows lists the tasks that you must perform in order to install Helix on a Unix system, and the shell command corresponding to each task.

Table 2.3 Helix Unix Installation Tasks

Installation Task	Shell Command
Change to a temporary location with at least 100 MB disk space	<code>cd /var/tmp</code>
Copy the downloaded archives to the temporary directory	<code>cp /download/dir/helix-x.y.z-OS.tar.gz .</code> <code>cp /download/dir/helix-base-OS.tar.gz .</code>
Extract the OS software package. Do not uncompress/extract the files within the base package <code>helix-base-OS.tar.gz</code>	<code>gunzip -c helix-x.y.z-OS.tar.gz tar xvf -</code>
Change into the directory with newly extracted files. The package will be extracted into a directory named <code>helix-x.y.z</code>	<code>cd helix-x.y.z</code>

If you need to make any changes to the software license key, you should make them before running the installation script. If the terms of your license have changed (e.g. change in expiration date, number of devices, etc.), a new license file would be provided to you by Fidelia customer support. The new key should be saved into `helix-x.y.z/etc/licenseKey.xml` file, replacing any existing file.

Table 2.3 Helix Unix Installation Tasks

Installation Task	Shell Command
Run the installation script (as root)	<pre>su root sh ./install.sh</pre>

The installation script will ask a series of questions to determine your requirements. When asked for the location of the base package, specify `/var/tmp/helix-base.tar.gz`. Once all necessary information has been collected, the software package will be installed under the specified directory and you are ready to start using Helix. This directory will have the following general layout:

2.4.3 Windows Installation

The Windows distribution consists of a single self-extracting archive:

- `helix-x.y.z-windows.exe`

□ To begin installation:

1. Double-click on `helix-x.y.z-windows.exe`.
2. Provide answers to the requested information.
3. After the files have been copied and the installer has quit, reboot the machine (Start | Shutdown | Reboot).

NOTE You *MUST* reboot the machine before starting Helix.

2.5 Upgrading From Previous Versions

Before beginning the upgrade process from a previous version of Helix, you must ensure that you have a current and verified backup of your existing Helix installation available, so that you can recover from a failed upgrade. To accomplish this, you can simply make a copy of the

```
<helix_directory>/database &
<helix_directory>/mysql/data
```

directories to a safe location. Once it has been verified that a backup exists, follow the method outlined in Section 2.4, “First-time Installation” on page 10 to install the new package. Make sure to specify the same locations as your existing Helix installation as the destination path, and answer y (or yes) when asked if you wish to preserve the existing database.

2.6 Quick Start

The following quick start steps will enable you to start using the Helix system immediately after installation:

1. Make sure that your Helix license key is not expired (`HELIX_HOME/etc/licensekey.xml`), and you are not running any other web server on the Helix host which might prevent Helix's web service from starting up (on TCP port 80).
2. Start Helix components. On Linux/Solaris platform execute the commands

```
cd HELIX_HOME;  
etc/helix.init start
```

On Windows platforms select
 Start | Programs | Fidelia Helix | Start Fidelia Helix

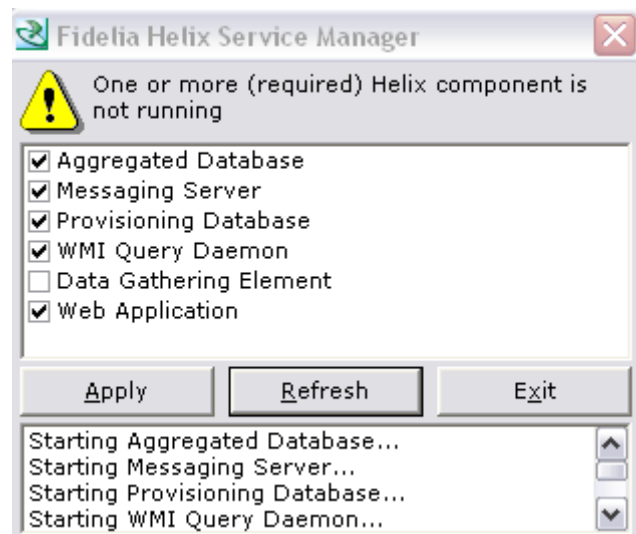


Figure 2.1 *Starting Helix on Windows*

3. Check for proper operation of different components using the `helix.init` status command on Unix or looking at the output of `net start | more` on Windows platforms. (For additional information, see Section 3.3.3, “Verifying proper operation” on page 21.) The most common reasons for not starting up are:
 - a) either the license is expired (you can get new evaluation license by sending email to support@fidelia.com)
 - b) or some other web server is running and using the httpd port.
 - c) or you did not reboot your machine after installation on Windows platforms
4. If the components did not start, you will have to fix the cause and then restart Helix using `helix.init restart` on Unix and using the Service Manager on Windows. Look in the `logs/` directory for the cause of the error and also in Appendix B, “Troubleshooting” on page 143 of this manual.

5. Use your web browser to connect to `http://your_host/` where `your_host` is the fully qualified name or ip address of the server that the Helix web application component is running on.
6. Log into the website using end-user name `helix` and the password `helix`
7. Add a few sample devices to verify that the system is functioning properly. Go to `Manage > Devices > Create New` and try adding 'localhost' or any other test device.
8. Log out, and log back in as `admin` with password `helix`. If you want to create additional departments and admin-groups, you should do so now as described in Chapter 4, "Managing Users"
9. Populate the system with devices- go to `SuperUser -> Discover` and run a new discovery on your network. For more information, see Section 3.5, "Network Device Discovery" on page 26.

2.7 What Next

You need to make configuration changes described in Chapter 3, "Configuration and Operations" .) such as for paging, email notifications, etc.

You must edit the following configuration parameters for your site:

- DGE controller password (see Section 3.4.4, "DGE controller port/password" on page 25)
- Mail Server (see Section 3.4.5, "E-mail servers" on page 25)
- To use a DGE to send alphanumeric pages, add modem and 'paging central' configurations to the DGE as described in Section 3.8, "Alphanumeric Paging" on page 38.

Scheduled tasks (cron jobs)

NOTE: *This section is applicable to Linux and Solaris platforms only*

There is a sample crontab file `HELIX_HOME/etc/crontab.helix` that should be installed for the superuser ("root") on Linux or Unix installations. The file contains periodic maintenance tasks and ensure a smooth and trouble free operation of the Helix system.

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