Men & Mice Suite 6.1
Installation Guide
for Windows, Solaris, Linux, and Mac OS X

1   Introduction

Welcome to the Men & Mice Suite, a multi-user cross-platform DNS, DHCP, and IP address management system that allows you to manage servers on multiple platforms simultaneously.

The Men & Mice Suite consists of three types of components: Men & Mice Management Console and other user interfaces, Men & Mice Central, and the two server controllers, Men & Mice DNS Server Controller and Men & Mice DHCP Server Controller. An overview of the relationships between the components and the services being controlled is shown in Figure 1.
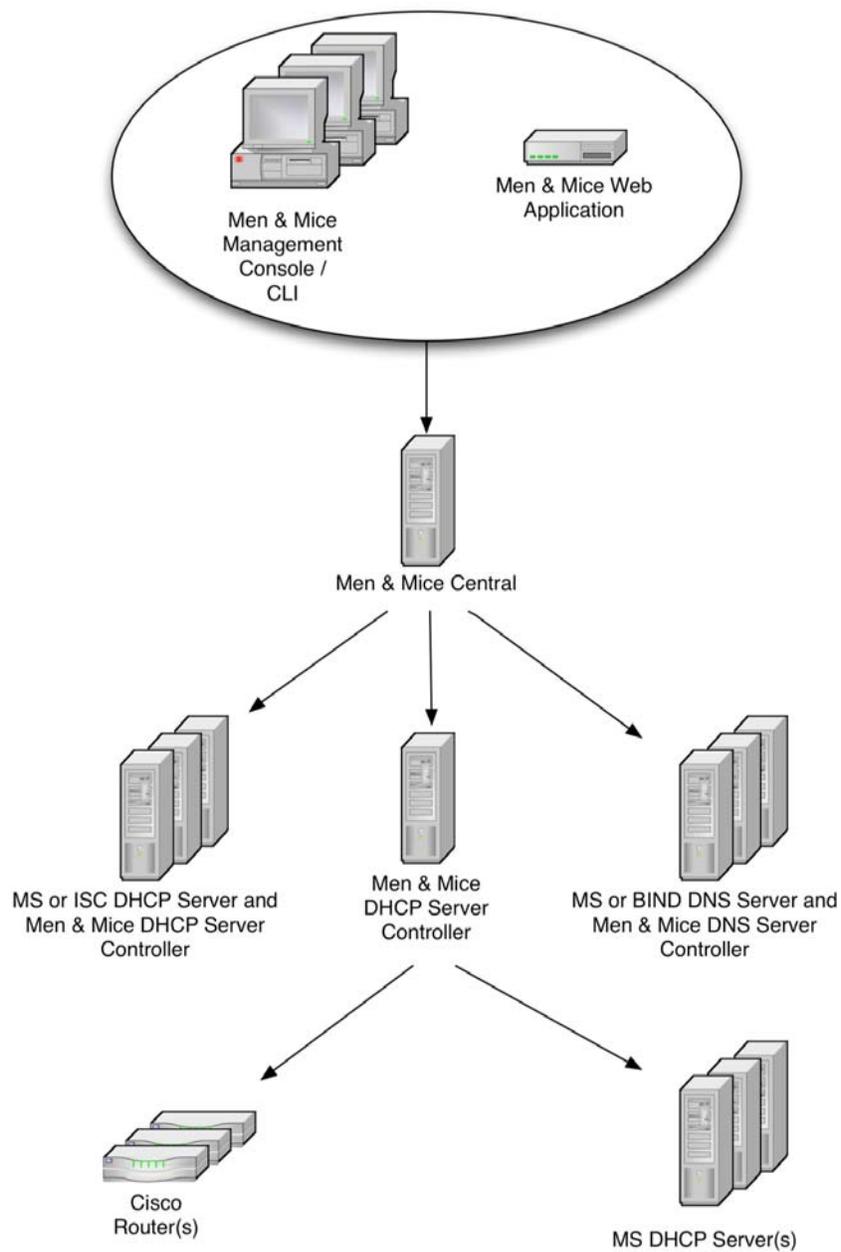

FIGURE 1

4

There are three main user interfaces for the Men & Mice Suite. Multiple copies of each may be installed, and multiple copies can be logged in at once to manage your servers. Each interface connects to Men & Mice Central on TCP port 1231.

- Men & Mice Management Console is the main user interface of Men & Mice Suite, and initial setup of the Suite (after software installation) must be performed with this application. The Management Console can be installed on any machine on your network that meets the minimum system requirements.

- Men & Mice Command Line Interface (CLI) has most of the editing features of the Management Console. It is ideal for scripting and batch jobs, as well as situations where a command line interface is required.

- Men & Mice Web Interface provides a basic editing interface for DNS and DHCP data. It is written in AJAX and runs primarily in the browser, so the resource requirements for the web server are relatively modest. It is available for Microsoft IIS and Apache 2. Other web servers may also be compatible.

- A few other user interfaces and API's are available.

Men & Mice Central provides central user authentication and data storage for Men & Mice Suite. It also acts as a gateway between the user interfaces and DNS and DHCP servers. Central can be installed on any available server on your network - it does not need to be installed on a DNS or DHCP server. Central connects to the DNS Server Controller on TCP port 1337, it connects to the DHCP Server Controller on TCP port 4151, and it listens for connections from user interfaces on TCP port 1231.

- Data Storage: Men & Mice Central stores its data in a database. Available data engines are SQLite (built in) and Oracle.

- Fault Tolerance: Only one copy of Men & Mice Central should be used at a time. However, extra copies can be set up as spares in case the primary instance fails.

Men & Mice DNS Server Controller is the agent software that manages a DNS server on your behalf. A copy should be installed on each DNS server machine. The DNS Server Controller listens for connections from Men & Mice Central on port 1337/TCP.

Men & Mice DHCP Server Controller is the agent software that manages one or more DHCP servers on your behalf. The DHCP Server Controller listens for connections from Men & Mice Central on port 4151/TCP.

- For ISC DHCP, a copy of Men & Mice DHCP Server Controller should be installed on each DHCP server machine. It will manage the ISC DHCP service on that machine, and can also manage Cisco IOS servers with DHCP support.

- For MS DHCP, a copy of Men & Mice DHCP Server Controller should be installed on a Windows Server near the DHCP servers to be managed. The options are:

  o On the same server as Men & Mice Central. This requires that Men & Mice Central run on a Windows Server. The system will use this copy by default when adding new MS DHCP servers. The service must be configured to run under a user account that is a member of the DHCP Admins group in Active Directory in order to control any DHCP server over the network.

  o On the DHCP server itself. The service can run as a local system service if it will not control any other MS DHCP servers. When adding a DHCP server to Men & Mice Suite using this copy of DHCP Server Controller, the DHCP Server Controller must be specified as a proxy.

- On any other available server. The service must run under a user account with the necessary privileges, as with the first option above. It must also be specified as a proxy when adding a DHCP server using this Controller, as with the second option above.
- For Cisco IOS with DHCP support, any installation of Men & Mice DHCP Server Controller can be used as a proxy.

This guide contains instructions to install each of these components. It is not necessary to read this entire document; however, it is recommended that you review the sections relevant to your chosen operating system for each component.

Once installation is complete, you should read the Men & Mice Suite User's Guide, which is installed in PDF format with the Management Console. The first time Men & Mice Management Console connects to Men & Mice Central, a setup wizard will take you through the steps of entering licenses and configuring connections to DNS and DHCP servers.

Note: The first connection to a new installation of Men & Mice Central must originate from Men & Mice Management Console. A connection from Men & Mice Web Interface or Men & Mice CLI will be refused until after the First Use Wizard has been completed using the Management Console.

2 Minimum System Requirements

2.1 Component/Operating System Matrix

	Windows	Solaris	Linux	Mac OS X
Men & Mice Management Console	+	-	-	-
Men & Mice Command Line Interface	+	+	+	+
Men & Mice Web Interface	+	+	+	+[1]
Men & Mice Central	+	+	+	+
Men & Mice DNS Server Controller	+	+	+	+
Men & Mice DHCP Server Controller	+	+	+	-

2.2 Supported Systems

Operating System	Windows 2000 or later [2]
	Solaris 9 or later for UltraSparc
	Solaris 10 or later for x86
	Red Hat Enterprise Linux 4 or later for x86
	Fedora 7 or later for x86
	SuSE Linux 10.0 or later for x86
	Ubuntu 6.06 or later for x86
	Mac OS X 10.4 or later [3]
DNS Server	Microsoft DNS
	BIND 8.3 or later [4]
	BIND 9.2 or later [4]
DHCP Server	Microsoft DHCP
	ISC DHCP 3.0.6 - 3.1.0 [4]
	Cisco IOS 12.3 - 12.4 with DHCP support
Men & Mice Web Interface	Microsoft IIS
	Apache 2 web server [4]

[1] Men & Mice Web Interface for Mac OS X requires Mac OS X 10.5.

[2] Men & Mice DNS and DHCP Server Controllers for Windows require a Server edition of Windows. Men & Mice Central runs better on Windows Server.

[3] On Mac OS X 10.4.x, the BSD Subsystem is required.

[4] The BIND name server and Apache web server are supported on all platforms except Windows. The ISC DHCP server is supported on all platforms except Windows and Mac OS X.

3 General Installation Overview

In general terms, the components can be installed in any order, and as far as communication between components goes, operating system type is unimportant.

A quick reprise of the components:

- Install one copy of Men & Mice Central on some server. If you want to have one or more backup copies, Men & Mice Professional Services can assist in setting up spares.
- Install Men & Mice DNS Server Controller on each DNS server.
- Install one copy of Men & Mice DHCP Server Controller for ISC DHCP on each ISC DHCP server and/or nearby to any Cisco IOS devices used as DHCP servers.
- Install Men & Mice DHCP Server Controller for MS DHCP either on each MS DHCP server, on the same server as Men & Mice Central, or on any other convenient Windows Server.
- The various user interfaces may be installed wherever convenient.

Component distribution archives can be downloaded from the Men & Mice website:
http://www.menandmice.com/solutions/vip_download

Nearly all components come with installers. Installers on Unix (except Mac OS X) are interactive and require knowledge of how each service is installed on that operating system, because of the wide variety of configurations in Unix systems.

Men & Mice CLI is an exception on some operating systems - it has no installer, and can be manually installed wherever convenient in the filesystem after it is extracted from its distribution archive.

For some supported operating systems, Men & Mice has created installation walkthroughs for each component. These can be found in the Men & Mice Knowledge Base:
http://kbase.menandmice.com/kb/doku.php?id=kb:mmsuite:6.o:walkthrough:start

Other more general installation notes can also be found in the Knowledge Base:
http://kbase.menandmice.com/kb/doku.php?id=kb:mmsuite:6.o:start

3.1 Upgrade Notes

Version 6.1 uses the same license keys as 6.0.

3.1.1 Back Up Beforehand

Although it is likely that any upgrade from a prior version will go smoothly, it is advisable to back up the Men & Mice Central database beforehand just in case. You can back up the database in one of two ways:

- stop the service and copy the data, or
- use the Men & Mice CLI to backup the database, using the `backup` command.

For version 5.5 and later, the database is a single file named `mmsuite.db`. For previous versions, the database is made up of a series of `.dbf`, `.cdx`, and `.fpt` files all in one directory (e.g. `/var/qdns/qdnscentral`).

3.1.2 Upgrading Components on Windows

When upgrading components on Microsoft Windows, other than the Men & Mice CLI, the older version of each component must be uninstalled first. Use the Add/Remove Programs item in the

Windows Control Panel. On other operating systems, a new version can be installed over an older version.

3.1.3 New Storage Format

If you are upgrading from version 5.1 or older you should be aware that Men & Mice Central 6.1 uses a new data storage format. When upgrading Men & Mice Central from version 5.1 or earlier, your data will be converted to the new format if the installer can find it. Otherwise, a new database will be created; your old data is still in its previous location, but it is not practical to merge the old data with new data.

3.1.4 DHCP Module

If your previous installation includes any Microsoft DHCP servers, then before uninstalling Men & Mice DHCP Server Controller (or Men & Mice Central in versions 5.5 and 5.6), take note of the user account used by this service in the Administrative Tools > Services window. You will need to know this later, when setting up Men & Mice DHCP Server Controller. You should install the new copy of Men & Mice DHCP Server Controller on the same server, and configure it to run as that user account. This will allow for a seamless upgrade.

3.2 Men & Mice Web Interface

The Men & Mice Web Interface is a web-based user interface for Men & Mice Suite. It is written in AJAX, which loads and runs in the browser, so there is very little load on the web server. However, the web server does need to be given the ability to pass communication between the Web Interface and Men & Mice Central.

Once installed, the Men & Mice Web Interface is accessible with most web browsers. Simply point your browser to the following URL, replacing your-server with the actual name or IP address of the web server where the Web Interface is installed.

```
http://your-server/MenAndMice
```

If you wish to use HTTPS to encrypt the traffic between web browser and the Men & Mice Web Interface, you can install an appropriate certificate in your web server, and then configure the web server to require its use to access the MenAndMice web application. Details are left as an exercise for the reader.

Please note that the Web Interface is not a complete replacement for Men & Mice Management Console. You will need to install the Management Console, especially for the initial setup of Men & Mice Suite.

4 Installation on Microsoft Windows

Each component for Microsoft Windows is downloadable separately, mostly in `.msi` format. For `.msi` files, double-clicking the file will launch the installer using the Windows installer engine. Note that it is also possible to install from the command line using the `msiexec` command.

4.1 Men & Mice Central

4.1.1 New Access Model

If upgrading from version 5.1 or earlier, and if the DHCP module was used in the older version, note that the new access model means that the data tables for DHCP access rights in the new version are not analogous to the access rights tables in the old version. After installing version 5.7 you should review and update the DHCP access rights.

4.1.2 New Method of Controlling MS DHCP Servers

In version 5.6.1 and earlier, Men & Mice Central used the Microsoft API for DHCP server management, controlling DHCP servers directly. This function has now been moved to Men & Mice DHCP Server Controller, and Men & Mice Central sends all requests through this new component. This means that it is no longer necessary to configure Central to run under a user account with DHCP management privileges. Instead, it is nearly always best to let Central run as a local system service.

The account previously used to run Central can now be used for the DHCP Server Controller if it will be used to control DHCP service on servers other than the server on which the DHCP Server Controller is installed. Note that the DHCP Server Controller can run as a local system service and still control a DHCP service running locally.

4.2 Men & Mice DNS Server Controller: Active Directory Integrated Zones and Other Dynamic Zones

In order to open a dynamic zone, Men & Mice Suite must read it from the DNS service rather than from a file. The way this is done is via zone transfer. On Windows Server 2003 and later, the zone transfer restriction setting in the zone's options window must be set to allow transfers to an explicit list of IP addresses that includes the server's own address. The default setting of allowing zone transfers to any server listed in the zone's NS records will not suffice. (None of this is a problem on Windows Server 2000.)

In some cases, Men & Mice DNS Server Controller will also need to be told specifically which interface to use when requesting zone transfers. If you have trouble opening a dynamic zone after setting the zone's transfer restrictions appropriately, check the Event Log / Application Log for messages from Men & Mice DNS Server Controller. If there is a message indicating that it was unable to get a zone transfer, note the address it tried to use; you can either add that IP address to the transfer restrictions list, or else edit a configuration file for Men & Mice DNS Server Controller.

To configure the DNS Server Controller to use a different address, edit the service's `preferences.cfg` file on the DNS server computer. The file is located in one of the following two locations, where `{Windows}` is probably `C:\Windows`:

```
{Windows}\System32\dns\mmsuite\preferences.cfg
C:\Documents and Settings\All Users\Application Data\Men and
Mice\DNS Server Controller\preferences.cfg
```

If the file does not exist, create it. The file is a text file in a simple XML-based format. Add the following element, replacing the dummy address here with the server's correct network address:

```
<DNSServerAddress value="192.0.2.1"/>
```

Save the file, and then restart Men & Mice DNS Server Controller using Administrative Tools > Services. Then also restart Men & Mice Central, so that it can cache the zone's contents.

Note that for Active Directory-integrated zones, other DC's running Microsoft DNS do not need to get zone transfers. This is because the zone data is replicated through LDAP, rather than through zone transfers. Thus, for an AD-integrated zone, the zone transfer restriction list might need only the server's own address.

4.3 Men & Mice DHCP Server Controller

4.3.1 Running Men & Mice DHCP Server Controller under a privileged user account

Normally, Men & Mice DHCP Server Controller is installed on one host in an Active Directory forest, or one copy per site. That installation can then manage all MS DHCP servers in the forest, or in the site, using Microsoft's own DHCP management API. In order for this to work, the service needs to run as a user that is a member of the Active Directory DHCP Admins group.

To configure Men & Mice DHCP Server Controller to access DHCP servers on remote computers, do the following:

- Start the Windows 'Services' program and open the properties dialog box for Men & Mice DHCP Server Controller.

- Click the **Log On** tab. The **Local System account** radio button is most likely selected.

- Click the **This account** radio button and enter the name and password of a Windows user that is a member of either the Administrators group or the DHCP Administrators group.

- Close the dialog box and restart the Men & Mice DHCP Server Controller service.

If Men & Mice DHCP Server Controller is run as a local system service (the default), then it will only be able to manage the MS DHCP service on the same host.

4.3.2 Where to install Men & Mice DHCP Server Controller

If Men & Mice Central is installed on a Windows host, then one option is to install Men & Mice DHCP Server Controller on the same host. If this is not done, then the system will need to be told where to find the DHCP Server Controller when adding a new DHCP server to the system. This will be presented as connecting via proxy.

However, there are other considerations when deciding where to install Men & Mice DHCP Server Controller.

- The Men & Mice communication protocol used to control a DHCP server is more efficient than the Microsoft protocol. This means that if a DHCP server is separated from Men & Mice Central by a slow network link, it is more efficient to install a copy of the Men & Mice DHCP Server Controller in the same local network (the same site, typically) as the DHCP server.

- Starting in Men & Mice Suite 6.0, Men & Mice DHCP Server Controller can be used to gather lease history data for a DHCP server. However, this requires that the Men & Mice DHCP Server Controller be installed on the DHCP server machine itself. If this is done for all DHCP servers, then there is never any need to run the DHCP Server Controller as a privileged user -

the DHCP Server Controller that is only used to control the DHCP service on the same machine as itself can run as a local system service.

4.3.3 Managing Cisco IOS with DHCP Support

Men & Mice DHCP Server Controller can also manage Cisco IOS servers with DHCP support. There is no need to install any software on the Cisco device, but it is necessary to create a user account on the device that has the ability to telnet or SSH in. You will be asked for the username and password when adding the server.

When adding a Cisco IOS server to Men & Mice Suite, the options are very similar to those shown when adding an MS DHCP server; by default, if possible, Men & Mice Central will look for a copy of the DHCP Server Controller on the same server as itself, but you can also specify a particular installation to use as a proxy. It is recommended to use a copy of the DHCP Server Controller that is on the same network segment as the Cisco IOS server.

4.4 Men & Mice Management Console

Men & Mice Management Console is the primary client application for Men & Mice Suite. It is necessary to initially configure the Suite through this interface; this initial configuration cannot be performed through the command line or web interfaces. Therefore, it is necessary to have this component installed somewhere.

4.5 Men & Mice CLI

The archive contains two versions of the documentation for Men & Mice CLI, in both PDF and TXT formats, as well as the program itself. Copy the file mmcmd.exe to somewhere convenient.

If upgrading from version 5.1 or older, note that the new version has a new filename. Update any scripts using the CLI to use the filename `mmcmd.exe` instead of the old `qdnscmd.exe`.

4.6 Men & Mice Web Interface

The Men & Mice Web Interface for Windows Server requires Microsoft's IIS web server software. No optional components of IIS are required.

The installer will install and configure a small web server module to communicate with Men & Mice Central, as well as the files needed by web browsers to run the Web Interface.

4.6.1 Single Sign-On and the Men & Mice Web Interface

If you wish to use single sign-on with the Men & Mice Web Interface, in addition to enabling the feature after installation using Men & Mice Management Console, you will also need to do the following:

- Using the IIS Administrator application, select an authentication method other than Anonymous and Basic for the MenandMice web folder.

- Edit the file Index.htm in the MenandMice web folder (probably C:\Program Files\Men & Mice\Web Interface\web), and change the redirection so SSO=1 argument is specified.

5   Installation on Unix (Solaris and Linux)

Men & Mice Central, Men & Mice DNS Server Controller, Men & Mice DNS Server Controller and Men & Mice CLI are distributed in one combined installer for each operating system. Men & Mice CLI is also distributed as a binary executable, with documentation. Men & Mice Web Interface is distributed in a separate installer.

To run an installer, first unpack it using a command like this:

Linux:

```
tar xzf archive-name.tgz
```

Solaris:

```
gzcat archive-name.tgz | tar xf -
```

Then change into the newly-created directory and run the installer:

```
cd archive-name
./install
```

The installer will ask a series of questions. Be prepared to answer them, as indicated below for each component.

5.1   Men & Mice Central

Before installing Men & Mice Central, decide the following:

- What user account will own the Men & Mice Central process?
- Will you use a chroot jail?
- Where do you want everything stored? There are defaults provided.

5.1.1   User Account

Men & Mice Central has the ability to discover devices in an IP range by sending ping packets (requires the IPAM module). However, in order to do so, it must run as root. If this is not a concern for you, you can run it as a less-privileged user; you should then create a dedicated user and group for the service.

On a Linux distribution with libcap2 installed and functioning properly, Men & Mice Central can be given the needed privilege without running as root. Execute the following:

```
setcap cap_net_raw=ep /path/to/mmcentrald
```

Note that many Linux distributions do not have libcap2 installed.

5.1.2   Locking the Service In a chroot Jail

Men & Mice Central runs just fine in a chroot jail. All it needs is a data directory inside that jail, plus some device nodes. The installer will create the data directory, but the jail must already exist. Creating a chroot jail is here left as an exercise for the reader; however, note that the installation walkthroughs in the Men & Mice Knowledge Base contain detailed instructions.

One important thing to note, however, is that if there is no log socket at /dev/log, relative to the chroot jail, Men & Mice Central will be unable to log messages to the syslog service. There is a command line switch to log messages to a file instead:

```
-lf /path/to/file
```

Add this option to the `mmcentral` init script `PARAMS` value, or to the init script settings file (currently only available on Ubuntu Linux).

5.1.3 Installer Questions

Here are the questions asked by the installer that pertain to Men & Mice Central:

- Do you want to install Men & Mice Central?
- Do you want to run Men & Mice Central within a chroot() environment?
- What is the chroot() directory?
- Where do you want Men & Mice Central to keep its configuration files?
- Enter the user and group names under which you want to run Men & Mice Central.
- Where do you want to install the Men & Mice Suite binaries?

5.2 Men & Mice DNS Server Controller

Before installing Men & Mice DNS Server Controller, examine your named data and operating environment, plus the init script and/or settings file used to start named. Be aware that the installer will rearrange named.conf and your named data directory. Know how to answer the following questions:

- Is there a starting configuration file, such as `/etc/named.conf`?
  - o If not, you will need to create one.
  - o If there is, is it valid? It must load without errors.
- Does named.conf contain the necessary statements? See the notes below.
- Does the named init script change the ownership of the named data directory? If so, this will cause problems and should be fixed. (This is aimed at users of some Red Hat Linux versions, and derivatives. Look for the ENABLE_ZONE_WRITE setting.)
- Does named run in a chroot environment? If so, look for the following problems, and fix or work around any encountered. (Check the installation walkthroughs in the knowledge base for solutions.)
  - o Does the named init script copy anything into the chroot jail when starting the service? (This is aimed at users of SUSE Linux.)
  - o When the installer rearranges the data directory listed in named.conf, will that cause problems? (This again is aimed at users of SUSE Linux.)
  - o Is there a log socket at `/dev/log` inside the chroot jail? If not, Men & Mice DNS Server Controller will be unable to send log messages to the syslog service. There is a command line switch to log messages to a file instead: `-lf /path/to/file`
- What user account owns the named process? Men & Mice DNS Server Controller must typically run as the same user. However, it is sometimes possible to use group membership instead.

5.2.1 Required named.conf Statements

Men & Mice DNS Server Controller requires that `named.conf` (including any files listed in `include` statements in `named.conf`) have certain settings. The following are required:

directory The `directory` substatement of the `options` statement must be present and must point to a directory that the installer can replace. Specifically, it may not refer to `/`, `/etc`, the root of a chroot jail, or any partition mount point. If you need to change or add the `directory` statement, you may then have to move files around or change the paths used elsewhere in your `named.conf` (or its included files).

key For BIND 9, there must be a key defined, so that Men & Mice DNS Server Controller can control named using rndc commands. It is common for there to be a key in a default file such as `rndc.key`, which is almost always found in the same location as `named.conf`; however, Men & Mice DNS Server Controller requires that this key be defined explicitly in `named.conf`. If there is a file named `rndc.key`, its contents can simply be copied directly into `named.conf`.

To generate a key, the following command usually works, though you may have to specify a path to the command:

```
rndc-confgen > /etc/rndc.conf
```

This creates the file `rndc.conf` in the default directory (usually `/etc` , which may or may not be where you want it). This file contains a complete rndc configuration for local use, as well as `key` and `controls` statements, in comments, that can be copied into `named.conf` (after removing the comment marks).

For BIND 8, a key is not required.

controls Men & Mice DNS Server Controller uses a `controls` statement for both BIND 8 and BIND 9. For BIND 9, there must be a `controls` statement with an `inet` substatement that references an explicitly defined key (see above); the `inet` statement must allow connections from the loopback address, 127.0.0.1. If there is no `controls` statement defined for a BIND 9 installation, the installer will remind you to create one manually.

For BIND 8, if there is no `controls` statement already present, the installer will create one; if one is present, the installer will alter it by adding an additional `unix` control socket for use by Men & Mice Suite.

5.2.2 SELinux

Some newer Linux distributions come with SELinux (Security Enhanced Linux) enabled by default. Due to the complexity of and variation between SELinux configuration files, we are unable to support SELinux configuration at this time. SELinux settings commonly interfere with the normal operation of named after its configuration has been rewritten by the installer for Men & Mice DNS Server Controller, so our recommendation is to disable SELinux. It is possible to make named, Men & Mice Suite, and SELinux all work together, but we cannot currently offer support for this.

5.2.3 The $INCLUDE and $GENERATE Directives

Please refer to the Men & Mice Knowledge Base for information about how these directives are handled in Men & Mice Suite.
http://kbase.menandmice.com/kb/doku.php?id=kb:mmsuite:6.0:start

5.2.4 Installation with Dynamic Zones

Men & Mice Suite expects dynamic zones to be made dynamic by allowing signed updates. Any dynamic zone must have an `allow-update` statement whose ACL contains a key. If you do not otherwise have a need for signed updates, add the rndc key (or any other key) to the list.

Furthermore, after installation, be sure that your server allows zone transfers of dynamic zones to the loopback address, 127.0.0.1, or users will be unable to open dynamic zones from this server. Zone transfer restrictions can be set or changed in the server's Options window and in each zone's Options window in Men & Mice Management Console.

5.2.5 Installer Questions

Here are the questions asked by the installer that pertain to Men & Mice DNS Server Controller:

- Do you want to install the Men & Mice DNS Server Controller?
- Are you using BIND version 8 or 9?
- Are you running named in a chroot() environment?
- What is the chroot() directory?
- Where is the BIND configuration file?
- The installer needs to rearrange the files in <directory> and restart the name server. A backup will be created. Is this OK?
- Enter the user and group names under which you want to run the Men & Mice DNS Server Controller. This must be the user which is running named.
- Where would you like to install the Men & Mice external static zone handling utilities?
- Where do you want to install the Men & Mice Suite binaries?
- BIND needs to be restarted. Would you like to restart it now?

5.3 Men & Mice DHCP Server Controller

Installing Men & Mice DHCP Server Controller is typically quite straightforward, with far fewer considerations than Men & Mice DNS Server Controller.

Here are the questions asked by the installer that pertain to Men & Mice DHCP Server Controller:

- Do you want to install the Men & Mice DHCP Server Controller?
- Where is the DHCP server configuration file?
- Where do you want the Men & Mice DHCP Server Controller to keep its configuration files?
- Enter the user and group names under which you want to run the Men & Mice DHCP Server Controller. This must be the user which is running dhcpd.
- Where do you want to install the Men & Mice Suite binaries?

5.3.1   Managing Cisco IOS with DHCP support

Men & Mice DHCP Server Controller can also manage Cisco IOS servers with DHCP support. There is no need to install any software on the Cisco device, but it is necessary to create a user account on the device that has the ability to telnet or SSH in. You will be asked for the username and password when adding the server.

When adding a Cisco IOS server to Men & Mice Suite, the options are very similar to those shown when adding an MS DHCP server; by default, if possible, Men & Mice Central will look for a copy of the DHCP Server Controller on the same server as itself, but you can also specify a particular installation to use as a proxy. It is recommended to use a copy of the DHCP Server Controller that is on the same network segment as the Cisco IOS server.

5.4   Men & Mice Management Console

Men & Mice Management Console is the primary client application for Men & Mice Suite. It is necessary to initially configure the Suite through this interface; this initial configuration cannot be performed through the command line or web interfaces. Therefore, it is necessary to have this component installed somewhere.

Men & Mice Management Console is only available as a Windows executable. However, if necessary, it can be run using the open-source Windows API replacement called Wine. Free packages for Wine are readily available for most Linux distributions, as well as for FredBSD and Solaris. For Mac OS X, although there is a free implementation available known as Darwine, in our experience, this solution is unsatisfactory. We recommend using Crossover Mac from Codeweavers instead; this is a commercial packaging of a somewhat polished-up implementation of Wine.

For more information regarding Wine and Crossover Mac, please see the following websites:
http://www.winehq.org/
http://www.codeweavers.com/

5.5   Men & Mice CLI

If you use the combination installer to install the CLI, it will be placed into the location specified in answer to this question:

- Where do you want to install the Men & Mice Command Line Interface?

If you download the separate distribution archive, unpack it as with the installer archives. This archive contains two versions of the documentation for Men & Mice CLI, in both PDF and TXT formats, as well as the program itself. Copy the file `mmcmd` to somewhere convenient, such as `/usr/bin`.

If upgrading from version 5.1 or earlier, note that the new version has a new filename. Update any scripts using the CLI to use the filename `mmcmd` instead of the old `qdnscmd`.

5.6   Men & Mice Web Interface

The Men & Mice Web Interface consists of several parts, which are installed in different locations:

- Men & Mice XML Interface, a service, plus an associated init script

- an Apache .conf file (to be included by httpd.conf)

- a collection of HTML and related files

The Men & Mice Web Interface installer, by default, will try to put all of these parts in standard locations, near other similar software. For example, it may suggest putting the HTML and related files

under your web server's docroot. However, there's no reason this has to be: The .conf file and the init script will be given the paths of everything else, regardless of where you choose to install the rest.

5.6.1 Installer Questions

The installer will first ask for the location of your `httpd.conf` (or equivalent) in order to try to guess the rest of the answers. It then presents these guesses as suggestions to the other questions. Here are those questions:

- Where is the Apache 2 server configuration file?
- Where would you like to install the configuration file for the Men & Mice Web Interface?
- Where would you like to install the Men & Mice Web Interface?
- Enter the user and group names that will be assigned ownership of any files that are a part of the Men & Mice Web Interface.
- Men & Mice Web Interface uses a daemon to communicate with Men & Mice Central. Where would you like to install the daemon binary?
- What port would you like the daemon to listen on?
- Would you like to run the daemon as some user other than "root:root"?
- Enter the user and group names under which you want to run the daemon.

6 Installation on Mac OS X

Installation of components on Mac OS X is quite straightforward. Installers are distributed on disk images, which must be mounted to access the installation packages.

Please check the software firewall in Mac OS X. The necessary ports are shown in the Introduction section of this document. Note that if all components are installed together on the same machine, it is possible that no ports will need to be opened except 1231/TCP, for Men & Mice Central to accept connections from Men & Mice Management Console.

Also note that Men & Mice Management Console is only available for Windows. The Web and Command Line Interfaces are not a replacement for the Management Console. If no Windows machines are available to run it, either physical or virtual, there is an article in the Men & Mice Knowledge Base relating to the use of Wine or Darwine to run the Management Console under either Linux or Mac OS X.
http://kbase.menandmice.com/kb/doku.php?id=kb:mmsuite:6.0:wine

6.1 Men & Mice Central

Men & Mice Central for Mac OS X has all of the same capabilities as Men & Mice Central for Linux or Solaris. If it is desired to run the service as a different user, with a different data path, and/or in a chroot jail, the system administrator can enable these features by editing the startup item script at the following path:

```
/Library/StartupItems/mmCentral/mmCentral
```

6.2 Men & Mice DNS Server Controller

6.2.1 Installation with Dynamic Zones

Men & Mice Suite expects dynamic zones to be made dynamic by allowing signed updates. Any dynamic zone must have an `allow-update` statement whose ACL contains a key. If you do not otherwise have a need for signed updates, add the rndc key (or any other key) to the list.

Furthermore, after installation, be sure that your server allows zone transfers of dynamic zones to the loopback address, 127.0.0.1, or users will be unable to open dynamic zones from this server. Zone transfer restrictions can be set or changed in the server's Options window and in each zone's Options window in Men & Mice Management Console.

6.2.2 Mac OS X Server and Server Admin

Men & Mice DNS Server Controller and Mac OS X Server's Server Admin utility use the same DNS service. Therefore, after installation, the DNS service will appear active in Server Admin. However, Server Admin does not understand the configuration file layout used by Men & Mice DNS Server Controller (and vice versa); therefore, depending on the version of Mac OS X Server, even clicking on DNS in Server Admin may corrupt your DNS server configuration. If this happens, restore /etc/named.conf to the version used by Men & Mice DNS Server Controller.

6.2.3 Customizing the Installation

Men & Mice DNS Server Controller for Mac OS X has all of the same capabilities as Men & Mice DNS Server Controller for Linux or Solaris. If it is desired to run the service as a different user, with a different path for named.conf, and/or in a chroot jail, the system administrator can enable these features by editing the startup item script at the following path:

```
/Library/StartupItems/mmServerControl/mmServerControl
```

6.3 Men & Mice DHCP Server Controller

Men & Mice DHCP Server Controller is not currently available for Mac OS X because Mac OS X does not include the ISC DHCP server. Apple maintains its own DHCP service source code. The necessary files can be made available for a manual installation to customers with a Bronze level or higher service contract, upon request.

6.4 Men & Mice CLI

If upgrading from version 5.1 or earlier, note that the new version has a new filename. Update any scripts using the CLI to use the filename `mmcmd` instead of the old `qdnscmd`.

6.5 Men & Mice Web Interface

Men & Mice Web Interface requires the Apache 2 web server, which is not included with Mac OS X 10.4.x and earlier. Therefore, the Men & Mice Web Interface installer requires Mac OS X 10.5 or later.

The Men & Mice Web Interface for Mac OS X uses the same web server as Personal Web Sharing on the non-Server edition of Mac OS X. On Mac OS X Server, it uses the same web server as is controlled by Server Admin. If the service was not active before installation, it will be active after installation.

6.5.1 Upgrading from a previous version

If a previous installation of the web interface is version 5.1.3 or earlier, it is recommended that the previous installation be removed or disabled prior to installation of the new version. To disable the old version, either remove the 'qdns' folder (and the 'qoi' folder, if present) from /Library/Tomcat/webapps, or disable Tomcat entirely.

If upgrading from version 5.6 or later, there is no need to remove the old installation of the web interface before installing the new version.

7 Unix Installation, More Information

This section contains some background information regarding what the Unix installers (Solaris and Linux) for the various Men & Mice service components do to the system, and how to remove the software and revert to your original configuration.

7.1 Men & Mice DNS Server Controller Installation

Installing Men & Mice DNS Server Controller rearranges your `named` configuration data, including rewriting `named.conf` and rearranging the data directory. The new configuration is functionally equivalent to the old, except the `logging` statement is either added or changed to add some new channels, and for BIND 8, a new `unix` control socket is defined.

7.1.1 Common Files

The file layout is a little different with or without BIND views. Here are the parts in common:

Description	File(s) or directory
Men & Mice DNS Server Controller daemon	mmremoted, usually in /usr/sbin or /usr/local/sbin
Men & Mice external static zone handling utilities	mmedit and mmlock, usually in /usr/bin or /usr/local/bin
Data directory for Men & Mice DNS Server Controller	Usually /var/named, /etc/namedb, /var/lib/named, or something within a chroot jail; the same location as before the DNS Server Controller was installed
Backup of original data directory	Same as above, with ".bak" appended to the path
New starting configuration file	Usually either /etc/named.conf or /etc/namedb/named.conf; possibly located within a chroot jail
Backup of original starting configuration file	Same as above, with ".bak" appended to the path
logging statement from named.conf	conf/logging, relative to the data directory
key and acl statements from named.conf	conf/user_before, relative to the data directory
options statement from named.conf	conf/options, relative to the data directory
controls, server, and trusted-keys statements from named.conf; also, if present and if not using views, the root hints zone statement	conf/user_after, relative to the data directory
Preferences file	mmsuite/preferences.cfg, located in the data directory
init script, the shell script that can be used to control the service; used by init during system startup	Solaris: /etc/init.d/mmremote
	Linux: /etc/init.d/mmremote
	Mac OS X: /Library/StartupItems/mmServerControl/mmServerControl
settings file used by the init script (Ubuntu Linux only)	/etc/default/mmremote

7.1.2 Without Views (including BIND 8)

If views are not defined, the following files are created inside the data directory:

Description	File(s) or directory
List of include statements, one for each zone statement file	conf/zones
Directory of zone statement files	conf/zoneopt
A sample zone statement file, for the zone "localhost."	conf/zoneopt/localhost.opt
Directory of primary master zone files	hosts/masters
Directory of slave zone files	hosts/slaves
A sample zone file, for the primary master zone "localhost."	hosts/masters/localhost-hosts

7.1.3 With Views (BIND 9 only)

If views are defined, the following files are created inside the data directory:

Description	File(s) or directory
View statements, not including zone statements within each view	conf/zones
List of include statements for a particular view, one for each zone statement file	conf/zones_viewname
Directory of zone statement files for a particular view	conf/zo_viewname
A sample zone statement file, for the zone "localhost." in the view "internal"	conf/zo_internal/localhost.opt
Directory of primary master zone files for a particular view	hosts/view_viewname/masters
Directory of slave zone files for a particular view	hosts/view_viewname/slaves
A sample zone file, for the primary master zone "localhost." in the view "internal"	hosts/view_internal/masters/localhost-hosts

7.1.4 Removing the DNS Server Controller and Reverting to Original Data

To remove the DNS Server Controller, first use the init script to stop the service (give it the "stop" argument). Then simply delete the daemon and the init script, and remove any references to the init script in the rest of the boot system if necessary. To revert to your original data, stop named with its init script. Then delete the initial configuration file and the data directory and rename the originals, removing the ".bak" from their names.

7.2 Men & Mice Central

Installing Men & Mice Central puts the following files on your system:

Description	File(s) or directory
Men & Mice Central daemon	mmcentrald, usually in /usr/sbin or /usr/local/sbin
Data directory for Men & Mice Central	Usually /var/mmsuite/mmcentral, possibly within a chroot

	jail
Preferences file	preferences.cfg, located in the data directory
init script, the shell script that can be used to control the service; used by init during system startup	Solaris: /etc/init.d/mmcentral
	Linux: /etc/init.d/mmcentral
	Mac OS X: /Library/StartupItems/mmCentral/mmCentral
settings file used by the init script (Ubuntu Linux only)	/etc/default/mmcentral

To remove Men & Mice Central, first use the init script to stop the service (give it the "stop" argument). Then simply delete the daemon and the init script, and remove any references to the init script in the rest of the boot system if necessary. Also delete the data directory if desired.

7.3   Men & Mice Web Interface

Installing Men & Mice Web Interface puts the following files on your system:

Description	File(s) or directory
Apache 2 configuration file	mmwebext.conf, usually in a directory of similar .conf files to be included by httpd.conf
directory of HTML, javascript, and other related files	usually named MenAndMice/, a directory that might be under the Apache document root
Men & Mice XML Interface daemon	mmxmlintd, usually in /usr/sbin or /usr/local/sbin
init script, the shell script that can be used to control the service; used by init during system startup	Solaris: /etc/init.d/mmxmlint
	Linux: /etc/init.d/mmxmlint
	Mac OS X: /Library/StartupItems/mmxmlint/mmxmlint
settings file used by the init script (Ubuntu Linux only)	/etc/default/mmxmlint

To remove Men & Mice Web Interface, first use the init script to stop the Men & Mice XML Interface daemon (give it the "stop" argument). Remove any symlinks pointing to the init script from the runlevel directories. Then simply delete all files referenced above, and remove any references to the init script in the rest of the boot system if necessary. If an include statement had to be created in httpd.conf expressly for Men & Mice Web Interface, remove it; check your Apache configuration with apachectl configtest to be sure it is valid after removing the Web Interface.