VNC® Upgrade Guide

Version 5.0

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Introduction

This Guide explains how to upgrade a computer running *VNC Enterprise Edition* 4.x or *VNC Personal Edition* 4.x to *VNC* 5.0.

Note: We recommend you do not upgrade a computer running *VNC Open* (formerly *VNC Free Edition*). For best results, remove it before installing *VNC* 5.0.

This Guide also explains how to upgrade a computer on which *VNC Viewer* 4.x is *installed* to *VNC Viewer* 5.0.

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What's new in this release

VNC consists of *VNC Server* and *VNC Viewer*, which are now separate installable packages.

VNC Server must be licensed. You can:

- Purchase *VNC Server (Enterprise)* to take advantage of all RealVNC remote control features. A thirty day trial is available.

- Purchase *VNC Server (Personal)* to take advantage of most RealVNC remote control features. A thirty day trial is available.

- Activate *VNC Server (Free)* to exercise basic remote control.

For more information on RealVNC remote control features, and other terms and conditions, visit www.realvnc.com/products/vnc/.

Note: *VNC Viewer* does not require a license key.

Many *VNC Server* and *VNC Viewer* names (components, services, and settings) have changed. If you script or integrate either product, examine this Guide for details.

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Upgrading VNC Server

This chapter explains how to upgrade *VNC Server* 4.x (installed as part of *VNC Enterprise Edition* or *VNC Personal Edition*) to *VNC Server* 5.0 (installed as part of *VNC*).

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Licensing VNC Server

VNC Server must be licensed in order that users may connect. Before upgrading, consider whether your existing license key will be effective:

- If your *VNC Enterprise Edition* or *VNC Personal Edition* support and upgrades contract is valid, you need take no action:
  - *VNC Enterprise Edition* automatically upgrades to *VNC Server (Enterprise)*.
  - *VNC Personal Edition* automatically upgrades to *VNC Server (Personal)*.

  To see whether you have a valid support and upgrades contract:
  - Under Windows or Mac OS X, just start the installer (if no warning appears, your support and upgrades contract is valid).
  - Under UNIX/Linux, run the command `vnclicense -list` from the directory in which VNC programs are installed. A support and upgrades contract is valid for one year from the date of issue of the license key, for example in the following case until 17th November 2012:

    ```
    1  10 desktops  2011/11/18  [full]
    ```

- If your *VNC Enterprise Edition* or *VNC Personal Edition* support and upgrades contract has expired, you can upgrade but *VNC Server* will only work for seven days. During this period, you must obtain a new license key; if you do not, connections will be prohibited. You can either:
  - Renew your support and upgrades contract in order to obtain a new license key. To apply it, follow the instructions in the **Licensing VNC Server** section of the appropriate installation instructions at www.realvnc.com/products/vnc/documentation/latest/installing-removing/.
  - Downgrade to *VNC Server (Free)*. Note if you do this you will lose RealVNC remote control features such as encryption, system authentication, file transfer, printing, and chat.

- If you are currently engaged in a trial of *VNC Enterprise Edition*, you can upgrade to *VNC Server (Enterprise)* for the outstanding remainder. At the end of the trial, you must either purchase *VNC Server (Enterprise)*, or downgrade to *VNC Server (Free)*. You have seven days in which to make this decision, after which connections will be prohibited.

- If you are currently engaged in a trial of *VNC Personal Edition*, you can upgrade to *VNC Server (Personal)* for the outstanding remainder. At the end of the trial, you must either purchase *VNC Server (Personal)*, upgrade to *VNC Server (Enterprise)*, or downgrade to *VNC Server (Free)*. You have seven days in which to make this decision, after which connections will be prohibited.

Installing VNC Server 5.0 for Windows

To install *VNC Server* on a supported Windows computer, follow the instructions at www.realvnc.com/products/vnc/documentation/latest/installing-removing/windows.

Note: If you script installation, the commands to do so may have changed. Consult the installation instructions above for more information.

When you install *VNC Server*:

• *VNC Server* is automatically started in Service Mode.

• If *VNC Server* 4.x is currently running in Service Mode, it is stopped. Any users are temporarily disconnected. Users can immediately reconnect to *VNC Server* 5.0 in Service Mode (or are automatically reconnected if using *VNC Viewer* 5.0).

• If *VNC Server* 4.x is currently running in User Mode, it is not stopped, and users are not disconnected. *VNC Server* 5.0 is not started in User Mode. Existing connections are maintained until explicitly stopped or the computer user logs out.

• If *VNC Enterprise Edition* or *VNC Personal Edition* is detected, all programs and the containing folder are deleted. An exception is if *VNC Server* 4.x is currently running in User Mode, in which case the appropriate executables are not deleted until the next time the computer is restarted.

When *VNC Server* is started for the first time (note this may happen automatically), registry settings, identity keys, and valid license keys are migrated. The originals are preserved.

Name changes

The default installation directory has changed:

Original location	New location
`C:\Program Files\RealVNC\VNC4`	`C:\Program Files\RealVNC\VNC Server`

The following names have changed:

VNC Server...	Original name	New name
Executable	`winvnc4.exe`	`vncserver.exe`
Service	`WinVNC4`	`vncserver`

The following registry settings have changed:

Registry location for...	Original name	New name
VNC Server in Service Mode	`HKEY_LOCAL_MACHINE/ Software/RealVNC/WinVNC4`	`HKEY_LOCAL_MACHINE/ Software/RealVNC/vncserver`
VNC Server in User Mode	`HKEY_CURRENT_USER/ Software/RealVNC/WinVNC4`	`HKEY_CURRENT_USER/ Software/RealVNC/vncserver`
Registry location for...	**Original name**	**New name**
License key	`WinVNC4_License`	`vncserver_license`

Stopping VNC Server in Service Mode

If *VNC Server* in Service Mode is explicitly stopped, and the computer then rebooted, *VNC Server* is no longer automatically restarted. *VNC Server* is now only automatically restarted if it was running when the computer powered down.

The *VNC Server* service no longer needs to be pre-registered. To start the service at the command line, run the command `vncserver.exe -start`. There is no longer a separate `-register` command.

Configuring VNC Server

VNC Server can be configured to customize almost any aspect of the remote control experience.

In *VNC Enterprise Edition*, a `vncconfig` utility provided a user interface for configuration operations. In addition, applying the `-license` command enabled you to apply a license key at the command line.

In *VNC Server* 5.0, this utility should no longer be invoked. The configuration user interface is automatically controlled by *VNC Server*. To apply a license key at the command line, use the `vnclicense` utility.

Installing VNC Server 5.0 for UNIX/Linux

To install *VNC Server* on a supported UNIX/Linux computer, follow the appropriate instructions for the platform at www.realvnc.com/products/vnc/documentation/latest/installing-removing/.

Note: *VNC Enterprise Edition* must first be removed under Solaris, HP-UX, and AIX. See the appropriate installation instructions above for more information.

When you install *VNC Server*:

• *VNC Server* is not automatically started in either User Mode or Virtual Mode. You must start *VNC Server* manually. (For information on Service Mode, see *Starting VNC Server in Service Mode* on page 11.)

• If *VNC Server* 4.x is currently running in User Mode, it is not stopped, and users are not disconnected. All connections are maintained until explicitly stopped or the computer user logs out.

• If *VNC Server* 4.x is currently running in Virtual Mode, it is not stopped, and users are not disconnected. All connections are maintained until explicitly stopped or the computer is restarted.

• If *VNC Enterprise Edition* is detected, it is deleted.

When you start *VNC Server* for the first time, configuration settings, identity keys, and valid license keys are migrated. The originals are preserved.

Note: If you perform other package management operations on RPM-based platforms at the same time, any changes made by these operations to the shared PAM configuration file `/etc/pam.conf` will be lost (this is likely to be used for single sign-on authentication by older systems only). To restore them, merge the backup file `/etc/pam.conf.vnc-E-upgrade` back in afterwards.

Name changes

The following names have changed:

VNC Server binary...	Original name	New name
User Mode	`x0vncserver`	`vncserver-x11`
Virtual Mode	`vncserver`	`vncserver-virtual`

Note: `vncserver` is now a symbolic link to `vncserver-virtual`.

The following registry settings have changed:

VNC Server package...	Original name	New name
Debian-compatible	`vnc-e`	`realvnc-vnc-server`
Red Hat-compatible	`vnc-E`	`realvnc-vnc-server`
Solaris	`vnc-E`	`RVNCsrv`
HP-UX	`vnc-E`	`realvnc-vnc-server`

Note: This may affect the command you use to uninstall *VNC Server*.

Starting VNC Server in Service Mode

VNC Server can be configured to run in Service Mode, which means that users can connect to the computer as soon as it boots, irrespective of whether or not a computer user is logged on.

In *VNC Enterprise Edition*, this was achieved by configuring the computer to run a `vnc.so` module. See www.realvnc.com/products/enterprise/4.6/x0.html for more information.

In *VNC Server* 5.0, this module is no longer provided. Instead, you can configure the computer to run a new daemon, `vncserver-x11-serviced`. See the `vncserver-x11-serviced` man page (available at www.realvnc.com/products/vnc/documentation/latest/misc/reference/vncserver-x11-serviced) for more information.

Starting VNC Server in Virtual Mode on demand

VNC Server can be configured so that users connect to a process that automatically creates a new instance of *VNC Server* in Virtual Mode on demand. Each instance is destroyed when its last user disconnects.

In *VNC Enterprise Edition*, this was achieved by creating an `inetd` service. See the `Xvnc` man page (available at www.realvnc.com/products/enterprise/4.6/man/Xvnc.html) for more information.

In *VNC Server* 5.0, an `inetd` service will not work. Instead, you can run a new daemon, `vncserver-virtuald`, which listens on port 5999 by default. See the `vncserver-virtuald` man page (available at www.realvnc.com/products/vnc/documentation/latest/misc/reference/vncserver-virtuald) for more information.

Generating identity keys

VNC Server automatically generates an RSA public/private key pair on start up. You can perform this operation manually if you want to generate identity keys in advance.

Note: If you need to regenerate missing or corrupt keys, you should first establish why the problem has occurred.

In *VNC Enterprise Edition*, this was achieved by running a `vnckeygen` utility. See the `vnckeygen` man page (available at www.realvnc.com/products/enterprise/4.6/man/vnckeygen.html) for more information.

In *VNC Server* 5.0, this utility is no longer provided. Run `vncserver-x11` or `Xvnc` with the `-generatekeys` command. For more information, run *<program>* `-help`.

Configuring VNC Server

VNC Server can be configured to customize almost any aspect of the remote control experience.

In *VNC Enterprise Edition*, a `vncconfig` utility provided, among other functionality, a user interface for configuration operations. By default, this utility was run system-wide by the `/etc/vnc/xstartup` script. For more information, see www.realvnc.com/products/enterprise/4.6/man/vncconfig.html.

In *VNC Server* 5.0, this utility is no longer provided. The configuration user interface is controlled by *VNC Server*. Features such as file transfer and copy and paste text no longer rely on a separately-launched process. Other commands (such as `-connect`) can be applied directly to `vncserver-x11` or `Xvnc`; run *<program>* `-help` for more information.

`/etc/vnc/xstartup` no longer invokes `vncconfig`. You should remove any similar invocations from custom configuration files.

Specifying a VNC password at the command line

VNC Server can be configured to use one or more passwords specific to VNC. These passwords can be generated at the command line.

In *VNC Enterprise Edition*, this was achieved by using the `vncpasswd` utility and referencing the resulting file using the `PasswordFile` VNC parameter (and `AdminPasswordFile` and `ViewOnlyPasswordFile` for extended 'admin' and 'view only' passwords respectively). For more information, see www.realvnc.com/products/enterprise/4.6/man/vncpasswd.html.

In *VNC Server* 5.0, these parameters no longer exist. Instead, use the `vncpasswd` utility to generate password(s) in *VNC Server* configuration file(s); run `vncpasswd -help` for more information.

Setting up single sign-on authentication

A computer running *VNC Server* can be added to a domain and, providing authorization services are set up correctly, connecting users can authenticate to *VNC Server* automatically using their own log on credentials.

In *VNC Enterprise Edition*, this was achieved by referencing a suitable GSSAPI-compatible library using the `SSOLib` VNC parameter, typically in the `/etc/vnc/config.d/common.custom` file.

In *VNC Server* 5.0, this parameter no longer exists. Instead, create a `/etc/vnc/ssolib` symbolic link to the GSSAPI-compatible library. Note this library must be owned by `root`.

Installing VNC Server 5.0 for Mac OS X

To install *VNC Server* on a supported Mac OS X computer, follow the instructions at www.realvnc.com/products/vnc/documentation/latest/installing-removing/macosx.

Note: If you script installation, the commands to do so may have changed. Consult the installation instructions above for more information.

When you install *VNC Server*:

• *VNC Server* is automatically started in Service Mode.

• If *VNC Server* 4.x is currently running in Service Mode, it is stopped. Any users are temporarily disconnected. Users can immediately reconnect to *VNC Server* 5.0 in Service Mode (or are automatically reconnected if using *VNC Viewer* 5.0).

• If *VNC Server* 4.x is currently running in User Mode, it is not stopped, and users are not disconnected. *VNC Server* 5.0 is not started in User Mode. Existing connections are maintained until explicitly stopped or the computer user logs out.

• If *VNC Enterprise Edition* is detected, it is deleted.

When *VNC Server* is started for the first time (note this may happen automatically), configuration settings, identity keys, and valid license keys are migrated. The originals are preserved.

Name changes

The following names have changed:

VNC Server...	Original name	New name
Binary	`macvnc`	`vncserver`
Helper	`macvnc-root`	`vncserver-root`
Uninstaller	`Uninstall VNC.app`	`Uninstall VNC Server.app`

Generating identity keys

VNC Server automatically generates an RSA public/private key pair on start up. You can perform this operation manually if you want to generate identity keys in advance.

Note: If you need to regenerate missing or corrupt keys, you should first establish why the problem has occurred.

In *VNC Enterprise Edition*, this was achieved by running a `vnckeygen` utility. See the `vnckeygen` man page (available from http://www.realvnc.com/products/enterprise/4.6/man/vnckeygen.html) for general information.

In *VNC Server* 5.0, this utility is no longer provided. Instead, to generate identity keys for *VNC Server* in User Mode, run `/Library/VNC/vncserver` with the `-generatekeys` command. For *VNC Server* in Service Mode, run the same command as a user with administrative privileges.

Specifying a VNC password at the command line

VNC Server can be configured to use one or more passwords specific to VNC. These passwords can be generated at the command line.

In *VNC Enterprise Edition*, this was achieved by using the `vncpasswd` utility and referencing the resulting file using the `PasswordFile` VNC parameter (and `AdminPasswordFile` and `ViewOnlyPasswordFile` for extended 'admin' and 'view only' passwords respectively). For general information, see www.realvnc.com/products/enterprise/4.6/man/vncpasswd.html.

In *VNC Server* 5.0, these parameters no longer exist. Instead, use the `vncpasswd` utility to generate password(s) in *VNC Server* configuration file(s); run `vncpasswd -help` for more information.

Setting up single sign-on authentication

A computer running *VNC Server* can be added to a domain and, providing authorization services are set up correctly, connecting users can authenticate to *VNC Server* automatically using their own log on credentials.

In *VNC Enterprise Edition*, this was achieved by referencing a suitable GSSAPI-compatible library using the `SSOLib` VNC parameter, typically in the `/etc/vnc/config.d/common.custom` file.

In *VNC Server* 5.0, this parameter no longer exists. Instead, create a `/etc/vnc/ssolib` symbolic link to the GSSAPI-compatible library. Note this library must be owned by `root`.

Note: Joining Mac OS X computers to Microsoft Active Directory Windows domains has only been tested using Powerbroker Identity Services Open Edition (formerly Likewise Open).

Upgrading VNC Viewer

This chapter explains how to upgrade *VNC Viewer* 4.x (installed as part of *VNC Enterprise Edition* or *VNC Personal Edition*) to *VNC Viewer* 5.0 (installed as part of *VNC*).

Note: *Standalone VNC Viewer* 4.x is not installable software and is therefore not upgraded. Version 5.0 of this product is freely available to download from www.realvnc.com/download/viewer/.

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Installing VNC Viewer 5.0

To install *VNC Viewer*, follow the platform-specific installation instructions for *VNC* at www.realvnc.com/products/vnc/documentation/latest/installing-removing/, and:

• Under Windows and Mac OS X, make sure the **VNC Viewer** component is selected on the appropriate installer page.

• Under UNIX/Linux, choose to install the separate *VNC Viewer* package.

When you install *VNC Viewer*:

• It is not automatically started. You must start *VNC Viewer* manually.

• If *VNC Viewer* 4.x is running, it is not stopped. Remote control sessions are maintained until explicitly stopped or the computer user logs out.

   Note: Under Mac OS X, to start *VNC Viewer* 5.0 while *VNC Viewer* 4.x is running, choose **New** from the **Window** menu.

• If *VNC Viewer* 4.x is detected, it is deleted under UNIX/Linux and Mac OS X. Under Windows, it is not deleted.

It is not necessary to apply a license key to *VNC Viewer*. To see how to establish a connection, start with www.realvnc.com/products/vnc/documentation/.

Name changes

The changes in this section only apply under Windows. There are no equivalent changes under UNIX/Linux or Mac OS X.

The default installation directory has changed:

Original location	New location
C:\Program Files\RealVNC\VNC4	C:\Program Files\RealVNC\VNC Viewer

The following registry settings have changed:

Registry location for...	Original name	New name
VNC Viewer	HKEY_CURRENT_USER/ Software/RealVNC/VNCViewer4	HKEY_CURRENT_USER/ Software/RealVNC/vncviewer

When you start *VNC Viewer* for the first time, registry settings and identity keys are migrated. The originals are preserved.