**This article describes how to prepare a Linux system for installing WebSphere® Application Server.**

**Before you begin**

The installation uses Installation Manager. You can use the graphical interface, the command line, or a response file.

On the SUSE Linux Enterprise Server Version 10 operating system, the xorg-x11-libs package exists by default. This package contains the following libraries, which are required to properly operate WebSphere Application Server:

* libXp
* libXmu
* libXtst

For more information on this package, see the Novell website.

If you want to install 32-bit WebSphere Application Server on a 64-bit operating system, you must install the appropriate 32-bit libraries on your system.

**Avoid trouble Avoid trouble:** Ensure that the default shell for your Linux operating system is /bin/bash. Use the following command to ensure that your default shell is *bash* and not *dash*:

$ readlink /bin/sh

If the result of the command is *dash*, consult your operating system documentation for the steps to properly switch to *bash* as the default shell. Failure to use the *bash* shell can result in errors and hang situations during the profile creation process.

**Tip:** Installation Manager is based on the Eclipse Rich Client Platform architecture. This architecture requires specific graphical libraries and versions to work properly. Read [Installation Manager graphical environment issues on Solaris, Linux, AIX](http://www.ibm.com/support/docview.wss?uid=swg21330190) for information about specific system requirements.

**About this task**

Preparing the operating system involves such changes as allocating disk space and installing patches to the operating system. IBM® tests WebSphere Application Server products on each operating system platform. Such tests verify whether an operating system change is required for WebSphere Application Server products to run correctly. Without the required changes, WebSphere Application Server products do not run correctly.

While this article lists many steps that are common to all Linux distributions, specific Linux distributions might require additional steps. Complete all common steps, as well as any additional steps that are required for your distribution. If your distribution is not listed in this article, but is supported by WebSphere Application Server, check for any post-release technical notes that are available for your operating system at the product support site at <http://www.ibm.com/software/webservers/appserv/was/support/>. If a technical note is not available for your distribution, additional steps might not be required.

When additional steps are required, it is typically because a default installation of the distribution does not provide required libraries or operating system features. If you install WebSphere Application Server on a customized Linux installation that has installed packages that differ significantly from the packages provided by a default installation of the distribution, ensure that your customized installation has the packages required for WebSphere Application Server to run. WebSphere Application Server does not maintain lists of the packages required for each Linux distribution or for updates to each distribution.

For WebSphere Application Server to run adequately, your Linux installation must have the following items:

* Kernel and C runtime library
* Current® and all compatibility versions of the C++ runtime library
* X Windows libraries and runtime
* GTK runtime libraries

**Procedure**

1. Log on to the operating system.

You can log on as root or as a nonroot installer.

Select a umask that allows the owner to read/write to the files, and allows others to access them according to the prevailing system policy. For root, a umask of 022 is recommended. For nonroot users a umask of 002 or 022 can be used, depending on whether the users share the group. To verify the umask setting, issue the following command:

umask

To set the umask setting to 022, issue the following command:

umask 022

1. Download and install the Mozilla Firefox web browser.

**Note:** It might be necessary to run >firefox &url from directories other than the one where Firefox is installed, so ensure that Firefox is in the path. You can add a symbolic link to the Firefox directory by entering:

>ln -s /locationToFirefox/firefox firefox

1. Optional: Export the location of the supported browser.

Export the location of the supported browser using a command that identifies the actual location of the browser.

If the Mozilla Firefox package is in the /opt/bin/firefox directory, for example, use the following command:

export BROWSER=/opt/bin/firefox

1. Stop all Java processes related to WebSphere Application Server on the machine where you are installing the product.
2. Stop any web server process such as the IBM HTTP Server.
3. Provide adequate disk space.

The amount of disk space required varies with the number of features or products installed. If you are installing the product using Installation Manager, the installation summary panel indicates the approximate amount of disk space required based on the features and products that you have selected.

Installing all features and products requires approximately 2 GB of disk space. This estimate includes the following products, components, and features:

* + Main application server product installation
  + Profiles
  + Sample applications
  + IBM HTTP Server
  + Web Server Plug-ins
  + Application Client for WebSphere Application Server

If you plan to migrate applications and the configuration from a previous version, verify that the application objects have enough disk space. As a rough guideline, plan for space equal to 110 percent of the size of the applications.

1. Verify that prerequisites and corequisites are at the required release levels.

Although Installation Manager checks for prerequisite operating system patches, review the prerequisites on the [Supported hardware and software website](http://www.ibm.com/support/docview.wss?rs=&uid=swg27006921) if you have not done so already.

Refer to the documentation for non-IBM prerequisite and corequisite products to learn how to migrate to their supported versions.

1. Increase the ulimit setting in the bash command shell profile to prevent addNode and importWasprofile problems.

The **addNode** command script can fail when adding a node, or the **importWasprofile** command can fail when importing a configuration archive.

Set a higher ulimit setting for the kernel in the bash shell profile script, which is loaded at login time for the session.

Set the ulimit on your Linux command shells by adding the command to your shell profile script. The shell profile script is usually found under your home directory:

* + cd ~
  + vi .bashrc
  + ulimit -n 8192

**Best practice Best practice:** Set ulimit -c as unlimited to ensure that the core file is not truncated if a failure occurs.

1. Restore the original copy of the /etc/issue file if the file is modified.

Installation Manager uses the file to verify the version of the operating system. If you cannot restore the original version, ignore the Operating System Level Check message about the operating system being unsupported. The installation can continue successfully despite the warning.

1. Verify the system **cp** command when using emacs or other freeware.

If you have emacs or other freeware installed on your operating system, verify that the system **cp** command is used.

* + Type the following command prompt before running the installation program for the WebSphere Application Server product.

which cp

* + Remove the freeware directory from your PATH if the resulting directory output includes freeware. For example, assume that the output is similar to the following message: .../freeware/bin/cp. If so, remove the directory from the PATH.
  + Install the WebSphere Application Server product.
  + Add the freeware directory back to the PATH.

If you install with a **cp** command that is part of a freeware package, the installation might appear to complete successfully, but the Java 2 SDK that the product installs might have missing files in the *app\_server\_root*/java directory.

Missing files can destroy required symbolic links. If you remove the freeware **cp** command from the PATH, you can install the application server product successfully.

1. Complete any distribution-specific set up.

Complete the steps for your distribution:

* + [Preparing Asianux Server 3 for installation](http://www.ibm.com/support/knowledgecenter/en/SS7K4U_8.5.5/com.ibm.websphere.installation.nd.doc/ae/tins_linuxsetup_asianux.html?view=kc)
  + [Preparing Red Hat Enterprise Linux 5 for installation](http://www.ibm.com/support/knowledgecenter/en/SS7K4U_8.5.5/com.ibm.websphere.installation.nd.doc/ae/tins_linuxsetup_rhel5.html?view=kc)
  + [Preparing Red Hat Enterprise Linux 6 for installation](http://www.ibm.com/support/knowledgecenter/en/SS7K4U_8.5.5/com.ibm.websphere.installation.nd.doc/ae/tins_linuxsetup_rhel6.html?view=kc)
  + [Preparing Red Hat Enterprise Linux 7 for installation](http://www.ibm.com/support/knowledgecenter/en/SS7K4U_8.5.5/com.ibm.websphere.installation.nd.doc/ae/tins_linuxsetup_rhel7.html?view=kc)
  + [Preparing SUSE Linux Enterprise Server 10 for installation](http://www.ibm.com/support/knowledgecenter/en/SS7K4U_8.5.5/com.ibm.websphere.installation.nd.doc/ae/tins_linuxsetup_sles10.html?view=kc)
  + [Preparing SUSE Linux Enterprise Server 11 for installation](http://www.ibm.com/support/knowledgecenter/en/SS7K4U_8.5.5/com.ibm.websphere.installation.nd.doc/ae/tins_linuxsetup_sles11.html?view=kc)

If you are using a supported distribution other than those listed, examine the WebSphere Application Server support site for any technical notes that are published for your distribution. If technical notes have been published, apply the fixes.

1. Grant a non-root installer ID the correct file permissions to create menu entries in Gnome and KDE.

Before the installation, the root user can grant write permission to the non-root installer for the /etc/xdg/menus/applications-merged directory. Then, Installation Manager creates the menu entries during the non-root installation.

Otherwise, you must run scripts to create and remove the menu entries while WebSphere Application Server Network Deployment is installed.

**Results**

This procedure results in preparing the operating system for installing the product.