2.6.3 Shell Configuration Facts

Shell configuration files are scripts that execute when a shell starts.

This lesson covers the following topics:

- Shell types
- Shell configuration files
- Login shell configuration script precedence

Shell Types

There are two shell types that determine which shell configuration files are executed.

- Login shells run after the user successfully logs in using a user ID and password. For example:
    - When the user logs in using the GUI.

        (i) A login shell runs in the background when a user first logs in using the GUI so the effects from any configuration file are not easily seen.

    - When the Linux system does not have a GUI and the user logs in using the text-based interface.
    - When the Linux system has a GUI, but a user logs into the text-based console using the Ctrl + Alt+ F2 key combination.
    - When a user runs the **su -l <user ID>** command and enters the correct password.
    - When a user runs the **sudo -i <user ID>** command and enters the correct password.
    - When a user logs in from a remote system using the SSH protocol.
- Non-login shells run when a user opens a shell after having first authenticating with a user ID and password. For example:
    - When a users opens a shell session (terminal application) from within the GUI.
    - When a user runs the **su <user ID>** command without the **-l** option.
    - When a user runs the **sudo <user ID>** command without the **-i** option.
    - When a user executes a script from within a shell.
    - When a user opens a new shell from a shell prompt.

    (i) One way to determine the shell type is to run the **echo $0** command. If this command returns a dash followed by the name of the shell (for example, **-bash**), then it is a login shell. If the command returns the name of the shell without the dash or returns the

name of the command that created the shell (example, **bash** or **su**), then it is a non-login shell.

Shell Configuration Files

Shell configuration files are scripts that are run during shell startup. The following are configuration files are run when a shell starts.

Configuration File	Run by	Shell Type
/etc/bashrc or **/etc/bash.bashrc**	All users	Non-login
~/.bashrc	The specified user only	Non-login ⓘ On most Linux distributions, this file is also called by login shell configuration files.
/etc/profile	All users	Login
*. sh files in the /etc/profile.d/ directory	All users	Login ⓘ On most Linux distributions, these file is also called by non-login shell configuration files.
~/.bash_profile	The specified user only	Login
~/.bash_login	The specified user only	Login
~/.profile	The specified user only	Login
~/.bash_logout	The specified user only	Login ⓘ This file is only run as the user logs out (runs the **exit** command).

Login Shell Configuration Script Precedence

Login shells execute the configuration scripts they use in the following order:

1. **/etc/profile**
2. **~/.bash_profile** (if this file is found, the shell does not look for additional configuration script files).
3. **~/.bash_login** (if this file is found, the shell does not look for additional configuration script files).
4. **~/.profile** (this file executes only in the absence of the two preceding configuration script files).