2.7 Redirection, Piping and Command Substitution

As you study this section, answer the following questions:

- What are the three default file descriptors that Linux uses to classify information for a command?
- What is the difference between redirection and piping?
- When might you choose to redirect the input of a command?
- How can you overcome the 128 KB shell command size restriction?

In this section, you will learn to:

- Redirect the standard output from the screen to a file.
- Redirect and append new content to an existing file.
- Redirect a standard error from a command to a file.
- Redirect the standard input to a command.
- Pipe the output of a command to the input of another command.
- Use the **pipe** command to create a text stream.

Key terms for this section include the following:

Term	Definition
Standard stream	Preconnected input and output communication channels available to Linux shells and processes.
stdin	A standard stream that provides data that is typically streamed from the keyboard.
stdout	A standard stream that accepts normal output information to be streamed to the console screen or shell window.
stderr	A standard stream that accepts normal error information to be streamed to the console screen or shell window.
Redirection	The process of modifying a shell command to divert the standard input, output, and error streams to locations other than the default.
>, >>, &>, <	Command line operators used when implementing redirection.
Piping	The process of redirecting the output from one command to be the input of another command.
|	A command line operator that is used when implementing piping.
tee	A linux command that redirectsoutput to both stdout and to a file.
Here	

documents	A block of text that is redirected as input to a command.
<<	A command line operator that is used when implementing here documents.
/dev/tty	A device file that is associated with the computer's controlling terminal or the shell's window.
/dev/null	A device file that is associate with a null device that is commonly used for disposing unwanted output streams.
Command substitution	A feature of the bash shell that substitutes the output of one shell command as the arguments for another shell command.
$()	A command line operator that is used when implementing command substitution.
xargs	A shell command that can be used to split large text streams into 128 KB chunks and to execute shell commands using these chunks as arguments.

This section helps you prepare for the following certification exam objectives:

Exam	Objective

CompTIA Linux+	2.3 Given a scenario, create, modify, and redirect files.
	• Output redirection
	  ○ <
	  ○ >>
	  ○ |
	  ○ <<
	  ○ >>
	  ○ 2>
	  ○ &>
	  ○ stdin
	  ○ stdout
	  ○ stderr
	  ○ /dev/null
	  ○ /dev/tty
	  ○ xargs
	  ○ tee
	  ○ Here documents
	5.1 Given a scenario, deploy and execute basic BASH scripts.
	• Redirection and piping