



Advanced Package Tool

Initializing the Distro

Following installation of a Linux distro in WSL, it is recommended that you update the distro.

The Linux operating system consists of separate “packages” that are indexed in a catalog, which can be updated by the system’s package manager. In the Ubuntu distro the package manager is the **A**dvanced **P**ackage **T**ool (**apt**). This package manager can update the package catalog with the command **apt update** and can upgrade the packages with the command **apt upgrade**.

Changes to the system require administrator privileges so each of these commands must therefore be preceded by a **sudo** command:

- 1 Click Start, **Ubuntu** to open a Terminal window
- 2 At the prompt, type this command, then hit **Return**
sudo apt update
- 3 Now, enter the password you chose for your Linux account, then hit **Return** to update the catalog

```
mike@win-pc: ~
mike@win-pc:~$ sudo apt update
[sudo] password for mike:
Hit:1 http://archive.ubuntu.com/ubuntu bionic InRelease
Hit:2 http://archive.ubuntu.com/ubuntu bionic-updates InRelease
Hit:3 http://archive.ubuntu.com/ubuntu bionic-backports InRelease
Get:4 http://security.ubuntu.com/ubuntu bionic-security InRelease [83.2 kB]
Fetched 83.2 kB in 7s (12.3 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
17 packages can be upgraded. Run 'apt list --upgradable' to see them.
mike@win-pc:~$
```

- 4 Type a **clear** command and hit **Return** (or press **Ctrl + L** keys) to clear the Terminal window to a prompt
- 5 At the prompt, type this command, then hit **Return**
sudo apt upgrade
- 6 Read the summary of available upgrades, then type **Y** and hit **Return** to continue

...cont'd

```
mike@win-pc: ~
mike@win-pc:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages will be upgraded:
  apt apt-utils base-files cloud-init console-setup console-setup-linux
  keyboard-configuration libapt-inst2.0 libapt-pkg5.0 liblxc-common liblxc1
  libmspack0 libxml2 lshw open-iscsi python3-distupgrader
  ubuntu-release-upgrader-core
17 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
Need to get 6200 kB of archives.
After this operation, 38.9 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y_
```

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See the available replacement packages now get downloaded and unpacked to upgrade your system

```
mike@win-pc: ~
Preparing to unpack .../04-open-iscsi_2.0.874-5ubuntu2.1_amd64.deb ...
Unpacking open-iscsi (2.0.874-5ubuntu2.1) over (2.0.874-5ubuntu2) ...
Preparing to unpack .../05-libxml2_2.9.4+dfsg1-6.1ubuntu1.2_amd64.deb ...
Unpacking libxml2:amd64 (2.9.4+dfsg1-6.1ubuntu1.2) over (2.9.4+dfsg1-6.1ubuntu1) ...
Preparing to unpack .../06-lshw_02.18-0.1ubuntu6.18.04.1_amd64.deb ...
Unpacking lshw (02.18-0.1ubuntu6.18.04.1) over (02.18-0.1ubuntu6) ...
Preparing to unpack .../07-ubuntu-release-upgrader-core_1%3a18.04.24_all.deb ...
Unpacking ubuntu-release-upgrader-core (1:18.04.24) over (1:18.04.21) ...
Preparing to unpack .../08-python3-distupgrader_1%3a18.04.24_all.deb ...
Unpacking python3-distupgrader (1:18.04.24) over (1:18.04.21) ...
Preparing to unpack .../09-liblxc-common_3.0.1-0ubuntu1~18.04.2_amd64.deb ...
Unpacking liblxc-common (3.0.1-0ubuntu1~18.04.2) over (3.0.1-0ubuntu1~18.04.1) ...
Preparing to unpack .../10-liblxc1_3.0.1-0ubuntu1~18.04.2_amd64.deb ...
Unpacking liblxc1 (3.0.1-0ubuntu1~18.04.2) over (3.0.1-0ubuntu1~18.04.1) ...
Preparing to unpack .../11-libmspack0_0.6-3ubuntu0.1_amd64.deb ...
Unpacking libmspack0:amd64 (0.6-3ubuntu0.1) over (0.6-3) ...
Preparing to unpack .../12-cloud-init_18.3-9-g2e62cb8a-0ubuntu1~18.04.2_all.deb ...
Progress: [ 64%] [#####]
```

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Type a **clear** command and hit **Return** (or press **Ctrl + L** keys) to clear the Terminal window to a prompt

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Now, exactly type **bash --version** then hit **Return** to discover the current Bash version – identical to that on the Linux system illustrated on page 9

```
mike@win-pc: ~
mike@win-pc:~$ bash --version
GNU bash, version 4.4.19(1)-release (x86_64-pc-linux-gnu)
Copyright (C) 2016 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>

This is free software; you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.
mike@win-pc:~$
```



For further help with installation of Linux in the WSL you should refer to the Troubleshooting page online at docs.microsoft.com/en-us/windows/wsl/troubleshooting



The Bash versions are identical on this Windows 10 PC and the Linux PC, so the vast majority of examples in this book can run on either PC. Most screenshots illustrate Bash in WSL on Windows but would appear identical in a Linux Terminal. There are, however, a few examples that are illustrated in a Linux Terminal as these require a graphical Linux interface or a multi-user Linux environment.