

- 1 In Ubuntu, you install packages with an Advanced Packing Tool (APT). This is a super-powerful package-management tool that automatically installs any additional packages it needs. All you need to do is say “install a web server,” and APT installs all the required components.

For this example, install the LAMP web stack. This is probably the most common set of web components: Linux, Apache (a web server), MySQL (a database server), and PHP (a web programming language):

```
sudo apt-get update && sudo apt install -y lamp-server^
```

The first command updates the available packages, which is good practice to make sure you can install the latest and greatest packages. Once that finishes, you run the next command with `&&`. Why not just start a new line for the next command? The `&&` runs the next command only if the preceding command was successful. For example, if there was no network connectivity for `apt` to get the latest packages (humor me, I know you must have network connectivity to connect in the first place!), then there’s no point in running the `install` command.

If the `update` command is successful, `apt` then determines what additional packages it needs and begins to install `lamp-server`. Why the caret symbol at the end (^)? That tells `apt` to install the entire set of packages that make up the LAMP server, not just a single package named `lamp-server`.

- 2 The installer may prompt you for a password, or default to using an empty MySQL password. That’s not very secure, and for real production use, you need to specify a strong password. In chapter 15, we get really cool and store a strong, secure password in Azure Key Vault that’s automatically injected into this MySQL install wizard.
- 3 It takes a minute or so to install all the packages for your LAMP web stack, and then you’re finished. Type `exit` to log out of your VM and return to the Cloud Shell prompt.

That’s it! Your web server is up and running, but you won’t be able to access it in a web browser just yet. To do that, you need to allow web traffic to reach the VM.

### 2.3 *Allowing web traffic to reach the VM*

Your web server is up and running, but if you enter the public IP address of your VM in a web browser, the web page doesn’t load. Why? Remember the network security groups we briefly talked about earlier? When you created the VM, a network security group was created for you. A rule was added that allows remote management: in this case, that was SSH. If you create a Windows VM, a rule is added that allows RDP. But that’s it. The rest of the VM is locked down. To allow visitors to access your web server over the internet, you need to create a rule in the network security group that allows web traffic. Otherwise, no one can order pizzas!

Some testing text but we should extract from the image.

This is some testing text.