

Create and attach additional block storage disks to your Linux-based Lightsail instances

Last updated: November 14, 2017

You can create and attach additional block storage disks for your Lightsail instances. After you create additional disks, you need to connect to your Linux/Unix-based Lightsail instance and format and mount the disk.

This topic shows you how to create a new disk and attach it using Lightsail. It also describes how to connect to your Linux/Unix-based instance using SSH, so that you can format and mount your attached disk.

If you have a Windows Server-based instance, see the following topic instead: [Creating and attaching block storage disks to your Windows Server instance in Amazon Lightsail](#).

Step 1: Create a new disk and attach it to your instance

1. On the Lightsail home page, choose **Storage**.
2. Choose **Create disk**.
3. Choose the AWS Region and Availability Zone where your Lightsail instance is located.
4. Choose a size.
5. Enter a name for your disk.

Resource names:

- Must be unique within each AWS Region in your Lightsail account.
- Must contain 2 to 255 characters.
- Must start and end with an alphanumeric character or number.
- Can include alphanumeric characters, numbers, periods, dashes, and underscores.

6. Choose one of the following options to add tags to your disk:
 - **Add key-only tags** or **Edit key-only tags** (if tags have already been added). Enter your new tag into the tag key text box, and press **Enter**. Choose **Save** when you're done entering your tags to add them, or choose **Cancel** to not add them.



- **Create a key-value tag**, then enter a key into the **Key** text box, and a value into the **Value** text box. Choose **Save** when you're done entering your tags, or choose **Cancel** to not add them.

Key-value tags can only be added one at a time before saving. To add more than one key-value tag, repeat the previous steps.

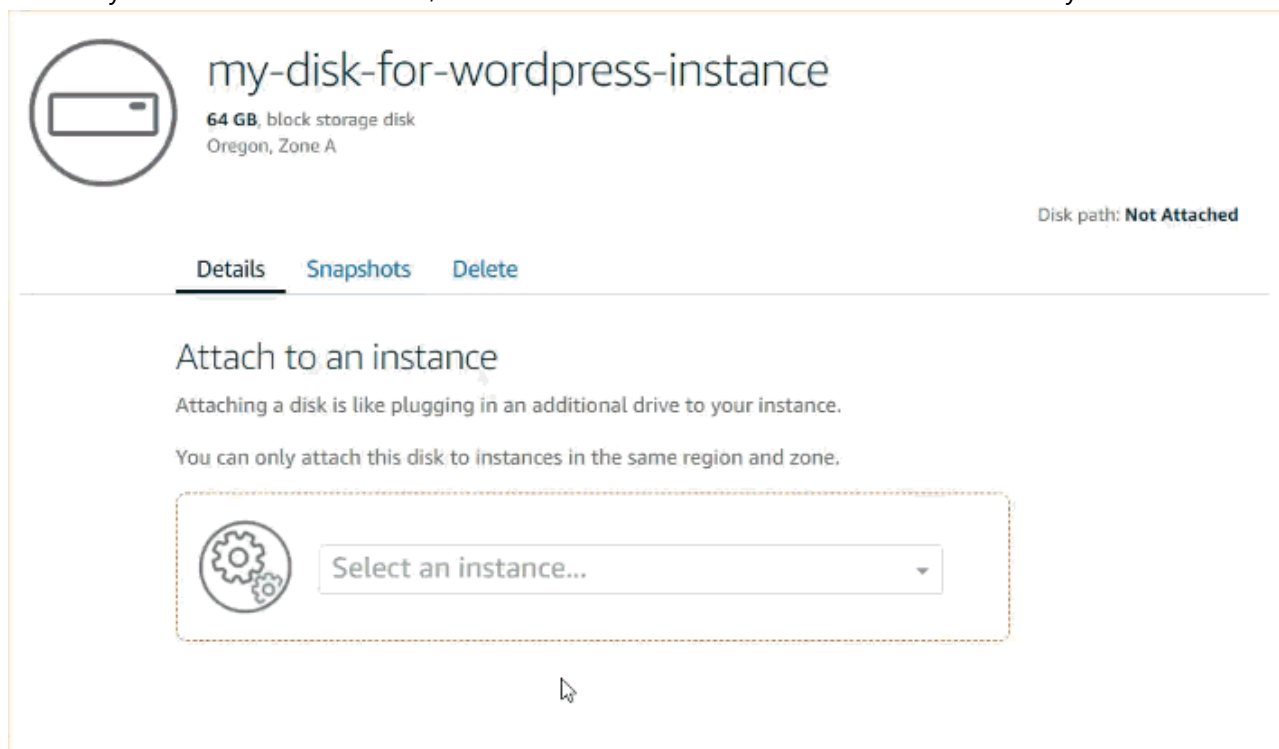
**Note**

For more information about key-only and key-value tags, see [Tags in Amazon Lightsail](#).

7. Choose **Create disk**.

After a few seconds, your disk is created and you're on the new disk management page.

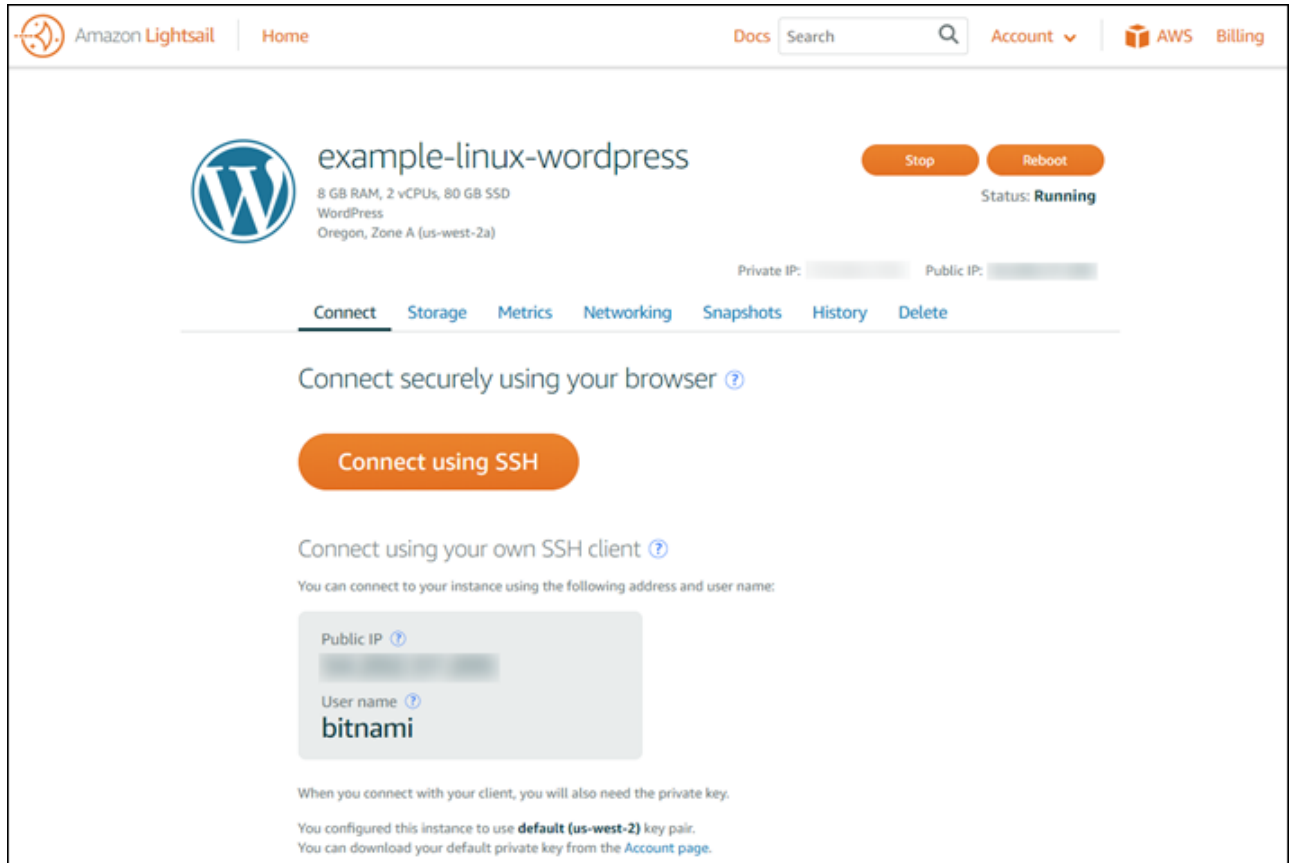
8. Choose your instance from the list, and then choose **Attach** to attach the new disk to your instance.



Step 2: Connect to your instance to format and mount the disk

1. After you create and attach your disk, go back to the instance management page in Lightsail.

The **Connect** tab is displayed by default.



2. Choose **Connect using SSH** to connect to your instance.

3. Type the following:

```
lsblk
```

You should see output like the following.

```
NAME      MAJ:MIN RM  SIZE RO  TYPE MOUNTPOINT
xvda      202:0    0   80G  0 disk
└─xvda1   202:1    0   80G  0 part /
xvdf      202:80   0   64G  0 disk
```

The output of `lsblk` removes the `/dev/` prefix from disk paths.

4. Determine whether to create a file system on the disk. New disks are raw block devices, and you must create a file system on them before you can mount and use them. Disks that have been restored from snapshots likely have a file system on them already. If you create a new file system on top of an existing file system, the operation overwrites your data. Use the following command to list special information, such as file system type.

```
sudo file -s /dev/xvdf
```

You should see the following output on a brand new disk.

```
/dev/xvdf: data
```

If you see output like the following, it means that your disk already has a file system.

```
/dev/xvda1: Linux rev 1.0 ext4 filesystem data, UUID=1701d228-e1bd-4094-a14c-12345EXAMPLE (needs journal recovery) (extents) (large files) (huge files)
```

5. Use the following command to create an ext4 file system on the disk. Substitute the device name (such as `/dev/xvdf`) for `device_name`. Depending on the requirements of your application or the limitations of your operating system, you can choose a different file system type, such as `ext3` or `XFS`. **Important** This step assumes that you're mounting an empty disk. If you're mounting a disk that already has data on it (for example, a disk that was restored from a snapshot), don't use `mkfs` before mounting the disk. Instead, skip to step 6 of this procedure and create a mount point. Otherwise, you'll format the disk and delete the existing data.

```
sudo mkfs -t ext4 device_name
```

You should see output like the following.

```
mke2fs 1.42.9 (4-Feb-2014)
Filesystem label=
OS type: Linux
Block size=4096 (log=2)
Fragment size=4096 (log=2)
Stride=0 blocks, Stripe width=0 blocks
4194304 inodes, 16777216 blocks
838860 blocks (5.00%) reserved for the super user
First data block=0
Maximum filesystem blocks=4294967296
512 block groups
32768 blocks per group, 32768 fragments per group
8192 inodes per group
Superblock backups stored on blocks:
32768, 98304, 163840, 229376, 294912, 819200, 884736, 1605632, 2654208,
4096000, 7962624, 11239424

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done
```

6. Use the following command to create a mount point directory for the disk. The mount point is where the disk is located in the file system tree and where you read files from and write files to after you mount the disk. Substitute a location for *mount_point*, such as */data*.

```
sudo mkdir mount_point
```

7. You can verify that the disk now has a file system on it by typing the following command.

```
sudo file -s /dev/xvdf
```

Instead of */dev/xvdf: data*, you'll see output similar to the following.

```
/dev/xvdf: Linux rev 1.0 ext4 filesystem data, UUID=0ee83fdf-e370-442e-ae38-12345EXAMPLE (extents) (large files) (huge files)
```

8. Finally, mount the disk by typing the following command.

```
sudo mount device_name mount_point
```

Review the file permissions of your new disk mount to ensure that your users and applications can write to the disk. For more information about file permissions, see [Making an Amazon EBS Volume Available for Use](#) in the *Amazon EC2 User Guide*.

Step 3: Mount the disk every time you reboot your instance

You probably want to mount this disk every time you reboot your Lightsail instance. If you don't, this step is optional for you.

1. To mount this disk on every system reboot, add an entry for the device to the */etc/fstab* file.

Create a backup of your */etc/fstab* file that you can use if you accidentally destroy or delete this file while you're editing it.

```
sudo cp /etc/fstab /etc/fstab.orig
```

2. Open the */etc/fstab* file using any text editor, such as vim.

You need to type *sudo* before opening the file so that you can save changes.

3. Add a new line to the end of the file for your disk using the following format.

```
device_name  mount_point  file_system_type  fs_mntops  fs_freq  fs_passno
```

For example, your new line might look something like this.

```
/dev/xvdf /data ext4 defaults, nofail 0 2
```

4. Save the file and exit your text editor.