# Creating Thinly Provisioned Volumes

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# Overview

Thin-provisioning

Deploy thin-provisioned volumes

# People Always Want More

If a user asks for 200GB of data for their project, they probably only need 100GB. Why upset them by giving them less. Using thinly-provisioned volumes you can appear to give them more than they actually get.

```
$ sudo apt install thin-provisioning-tools
```

# Install Tools

**You may have to install an additional package to support thin provisioning if it is not already installed.**

```
$ sudo lvcreate -L 1g --thinpool tpool vg1
```

# Create the Thin-pool

**The thin-pool is a special volume used as a storage pool to supply thin-volumes.**

```
$ sudo lvcreate -V 2g --thin -n thin_lv vg1/tpool
```

# Create a Thin-volume

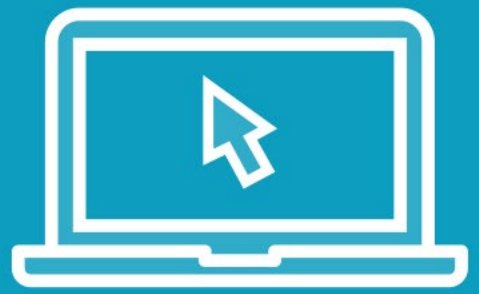
**Thin-volumes are created in the thin-pool, rather than the volume group directly. They can be allocated more space than exists, this is over provisioning. The size of the thin-volume can increase to the size allocated but it does not have to be available at creation.**

# Auto-grow Pool

/etc/lvm/lvm.conf

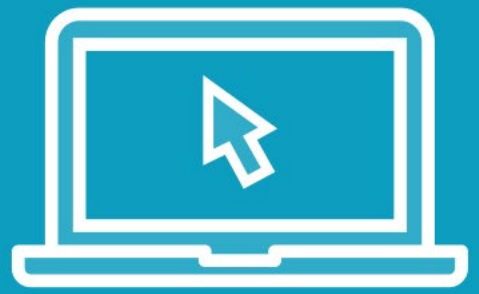
```
thin_pool_autoextend_threshold = 100

thin_pool_autoextend_percent = 20
```

# Demo



In this first demonstration we will create the thin pool on the controller

# Demo



Now we will deploy the thin-pool and volume to the managed nodes

# Overview

Thin provisioning LVM volumes makes more efficient use of actual disk space

Create the thin-pool in the volume group first

Then create thin-volume specifying a virtual size with -V

Monitor the volume group to add space add required

The thin-pool can be set to auto-grow if there is space in the volume group

# Adding Thin Provisoning

site.yml

```yaml
- name: Install tools
  apt:
        name: thin-provisioning-tools
        state: latest

- name: Create pool
  lvol:
        vg: vg1
        thinpool: tpool
        size: 1g

- name: Create Thin LV
  lvol:
        vg: vg1
        lv: thin-lv
        thinpool: tpool
        size: 2g
```

# Using LVM Snapshots