



Play with MAAS CLI

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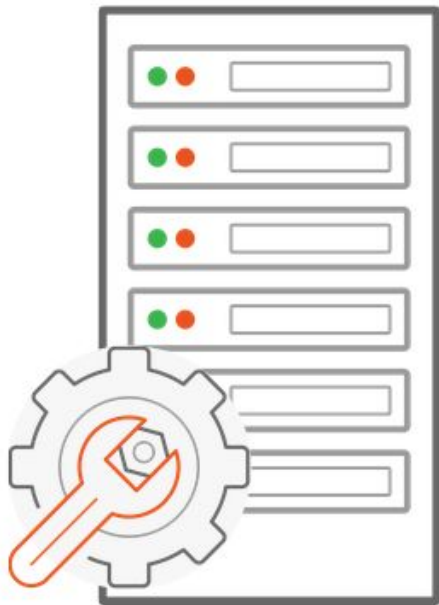


About Me

- Saputro Aryulianto (Ary)
- VP of Tech Talent Delivery @btechpt
- Cloud Tech Wizard @intekid
- OpenStack & OpenInfra Indonesia User Group Organizers
- Know Ubuntu since High school (2010), through Shiplt Ubuntu programme
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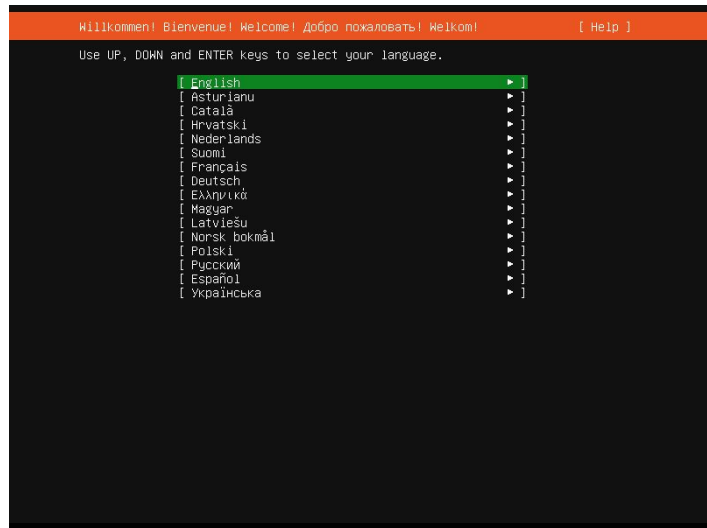
What is MAAS?



MAAS



The Manual/Slow Way



<https://ubuntu.com/server/docs/install/step-by-step>



MAAS (Metal as a Service)

- MAAS is an open-source tool that lets you create a data centre from bare-metal servers with Web UI, no need to manage servers individually.
- MAAS turns bare metal into an elastic cloud-like resource, that treats physical servers like virtual machines (instances) in the cloud.
- Enlist and deploy standard or custom operating systems to hardware and virtual machines – remotely.
- Monitor, manage, and secure your metal infrastructure easily and efficiently.

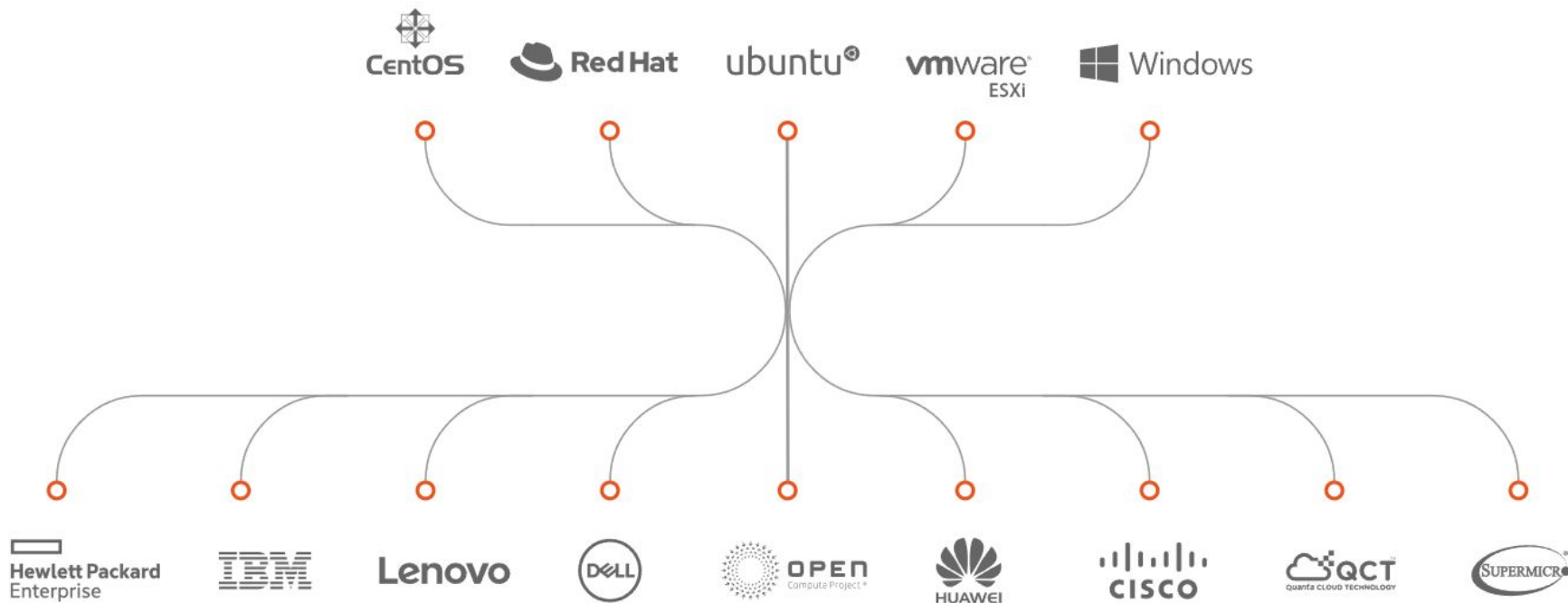


What MAAS offers

- ✓ Bare metal cloud with on-demand servers
- ✓ Remote edge cluster operations
- ✓ Infrastructure monitoring and discovery
- ✓ Ansible, Chef, Puppet, SALT, Juju integration
- ✓ Super fast install from scratch
- ✓ VMWare ESXi, Windows, CentOS, RHEL, Ubuntu
- ✓ Custom images with pre-installed apps
- ✓ Disk and network configuration
- ✓ API-driven DHCP, DNS, PXE, IPAM
- ✓ REST API for provisioning
- ✓ LDAP user authentication
- ✓ Role-based access control (RBAC)
- ✓ Hardware testing and commissioning



Deploy any OS Image on any Hardware





How to install MAAS

To install MAAS 3.2 from a snap, simply enter the following:

```
sudo snap install --channel=3.2 maas
```

```
sudo snap install maas-test-db
```

```
sudo maas createadmin
```

MAAS URL default = `http://<your-IP>:5240/MAAS`



MAAS (Metal as a Service)

Canonical MAAS

Machines

Devices

Controllers

KVM

Images

DNS

AZs

Subnets

Settings

admin

Log out

Machines 2 machines available

Add hardware

Take action

2 Machines1 Resource pool2 Tags

Filters

Search

Group by status

<div><div></div><div>FQDN MAC IP</div></div>	POWER	STATUS	OWNER TAGS	POOL NOTE	ZONE SPACES	FABRIC VLAN	CORES ARCH	RAM	DISKS	STORAGE
<div><div></div><div>Commissioning 2 machines</div></div>										—
<div><div></div><div>ary-pod-node02.maas</div></div>	<div><div></div><div>On</div><div>Virsh</div></div>	<div><div></div><div>Commissioning</div><div>Performing PXE boot</div></div>	<div><div></div><div>admin</div><div>-</div></div>	<div><div></div><div>default</div></div>	<div><div></div><div>default</div></div>	<div><div></div><div>fabric-1</div><div>Default VL...</div></div>	<div><div></div><div>0</div><div>amd64</div></div>	<div><div></div><div>0 GiB</div></div>	<div><div></div><div>0</div></div>	<div><div></div><div>0 B</div></div>
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Local documentation

Legal information

Give feedback

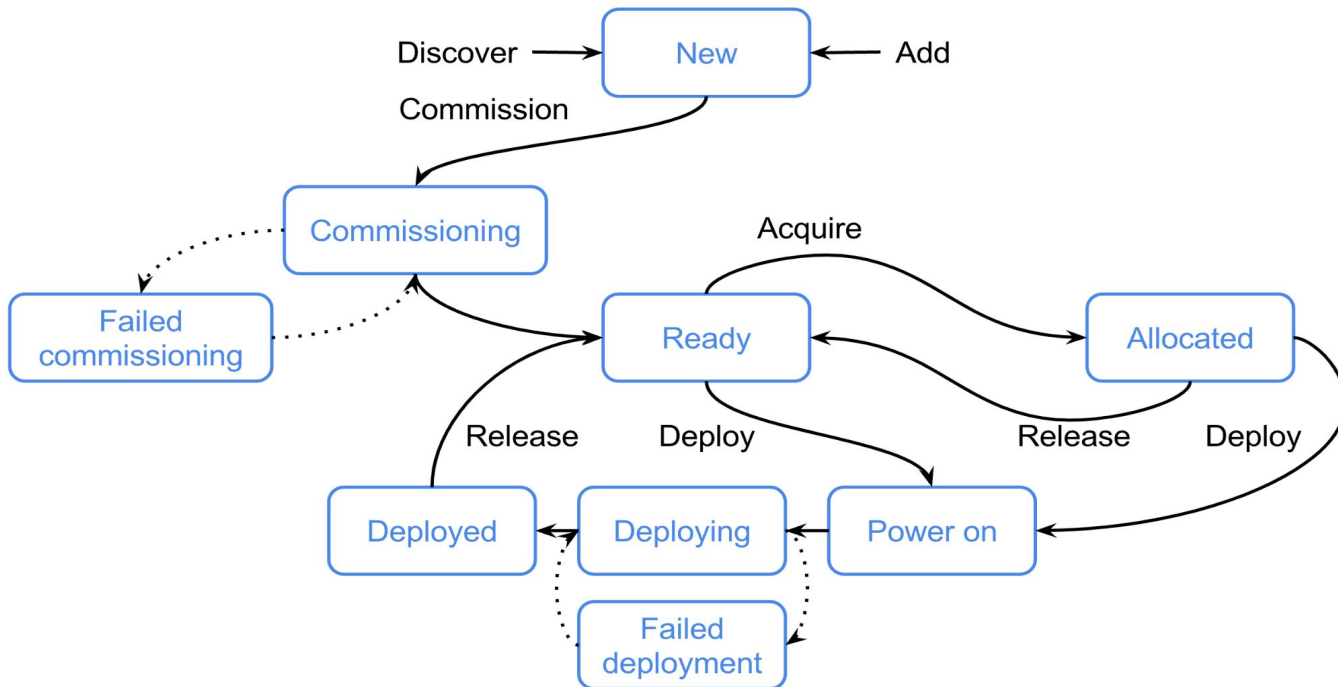
CANONICAL

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maas-ubucon22 MAAS: 3.2.6



Basic Statuses and Actions



<https://linchpiner.github.io/maas-statuses-and-actions.html>



Add Machines

← → ↻ 10.2.2.10:5240/MAAS/r/machines ☆ 🛡️ ☰

Canonical MAAS Machines Devices Controllers KVM Images DNS AZs Subnets Settings admin Log out

Add machine

Machine name <input type="text" value="Machine name (optional)"/>	* Power type <input type="text" value="IPMI"/>
* Domain <input type="text" value="maas"/>	* Power driver <input type="text" value="LAN_2_0 [IPMI 2.0]"/>
* Architecture <input type="text" value="amd64/generic"/>	Power boot type <input type="text" value="Automatic"/>
Minimum kernel <input type="text" value="No minimum kernel"/>	* IP address <input type="text"/>
* Zone <input type="text" value="default"/>	Power user <input type="text"/>
* Resource pool <input type="text" value="default"/>	Power password <input type="text"/>
MAC address <input type="text"/>	K_g BMC key <input type="text"/>

maas-ucc22 MAAS: 3.2.6



Configure Disk

← → ↻ 10.2.2.10:5240/MAAS/r/machine/bkt447/storage ☆ 🛡️ ☰

Available disks and partitions

<input checked="" type="checkbox"/>	NAME SERIAL	MODEL FIRMWARE	BOOT	SIZE	TYPE NUMA NODE	HEALTH TAGS	ACTIONS
<input checked="" type="checkbox"/>	vdb		×	53.68 GB Free: 53.68 GB	Physical 0	✓ OK 1rpm, rotary	⌵
<input checked="" type="checkbox"/>	vdc		×	53.68 GB Free: 53.68 GB	Physical 0	✓ OK 1rpm, rotary	⌵

* Name

RAID level

Size

Tags

Filesystem

Mount point

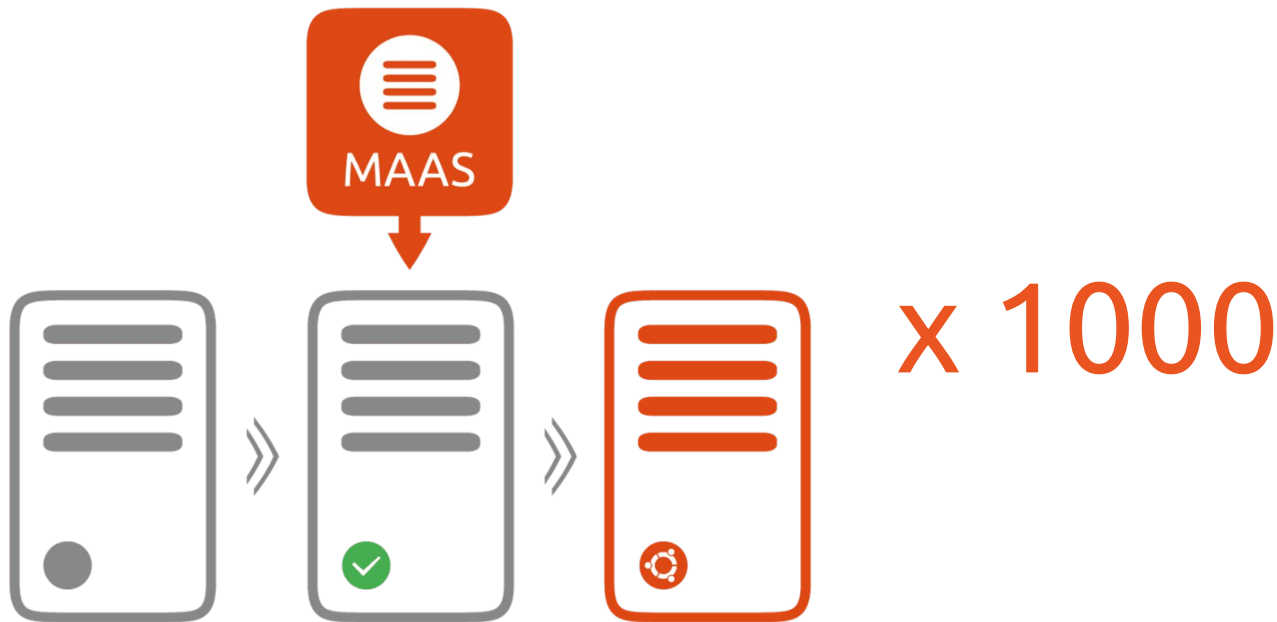
Mount options

NAME	SIZE	TYPE
vdb	53.68 GB	Physical
vdc	53.68 GB	Physical

maas-uca22 MAAS: 3.2.6 ary-node02.maas Last commissioned: 2 days ago



MAAS at Scale with Web UI is an Challenging job





How to do it quickly at Scale?

Don't Repeat Yourself
use
MAAS CLI



The Solutions

MAAS CLI + jq + Bash Script 🧐



Log into MAAS

- `maas apikey --username=admin > api-key-file`
- `maas login admin http://10.2.2.10:5240/MAAS/api/2.0/ $(head -1 api-key-file)`

```
You are now logged in to the MAAS server at  
http://10.2.2.10:5240/MAAS/api/2.0/ with the profile name 'admin'.
```

```
For help with the available commands, try:
```

```
maas admin --help
```

```
student@ary-pod-node01:~$
```




Using jq with the MAAS CLI

- The JSON output from the MAAS CLI can be very lengthy for even one machine. You can imagine how large a listing 10 or 12 or 1k machines might present.
- Traditional JSON output is both consistent and comprehensive, but it's sometimes hard for humans to process.



What can we do with MAAS CLI?

..		
📁 00-register-nodes	Archive mgmt workdir	1 year ago
📄 01-network.sh	Archive mgmt workdir	1 year ago
📄 01-network10g.sh	Archive mgmt workdir	1 year ago
📄 01-network1g.sh	Archive mgmt workdir	1 year ago
📄 01-networkvid30.sh	Archive mgmt workdir	1 year ago
📄 02-raid.sh	Archive mgmt workdir	1 year ago
📄 03-tagmachine.sh	Archive mgmt workdir	1 year ago
📄 04-relabelhdd.sh	Archive mgmt workdir	1 year ago
📄 05-relabelnvme.sh	Archive mgmt workdir	1 year ago
📄 06-dns.sh	Archive mgmt workdir	1 year ago
📄 07-zone.sh	Archive mgmt workdir	1 year ago
📄 99-liststorage.sh	Archive mgmt workdir	1 year ago
📄 99-mtu-change.sh	Archive mgmt workdir	1 year ago
📄 99-netplan-br-ex.sh	Archive mgmt workdir	1 year ago



Demo



Next?

- MAAS Ansible
- MAAS Juju Integration
- ...



Reference

- <https://maas.io/>
- <https://maas.io/docs/how-to-install-maas>
- <https://maas.io/docs/using-jq-with-the-maas-cli>
- <https://maas.io/docs/how-to-use-the-maas-cli>



Thank you!

