



CHINA
OpenStack Days

Topic: Introducing Mogan

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Title: OpenStack Upstream Developer



Outline

- **Why Mogan?**
- What is Mogan?
- Mogan Architecture

Bare Metal As A Service



NOVA

an OpenStack Community Project

Compute Service



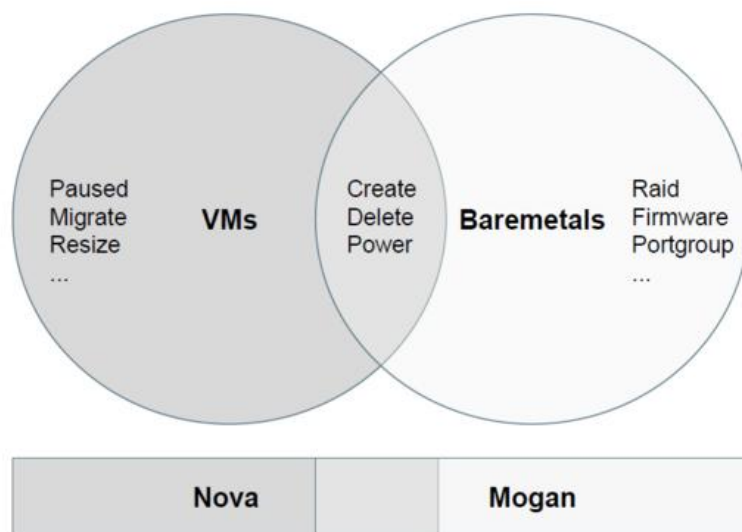
IRONIC

an OpenStack Community Project

Bare Metal Provision Tool

Pretended Virtual Machine

Nova from the get-go was focused only on virtual machines

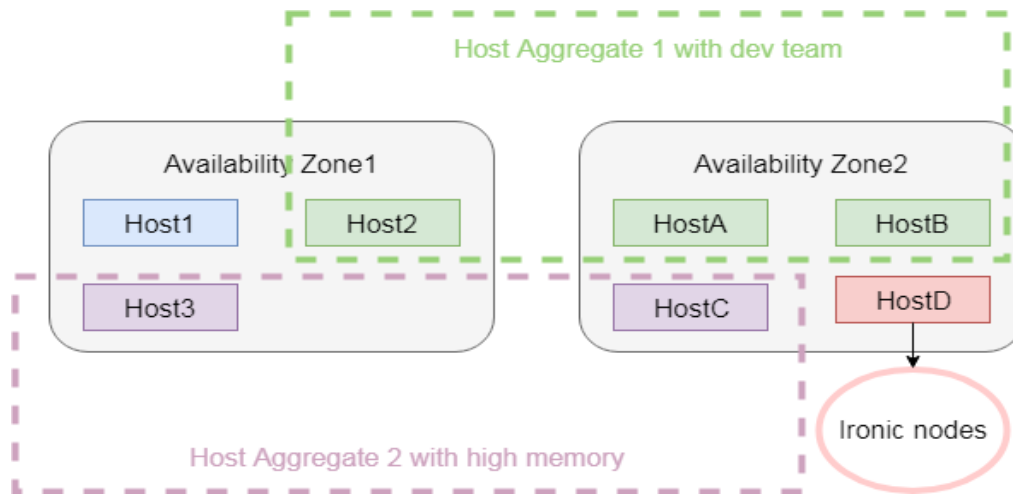


Instance
+ vcpus
+ vm_mode
+ vm_state
+ vcpu_model

Resource Management

VM: one nova-compute-service associates with *one* compute-node

BM: one nova-compute-service associates with *all* compute-node

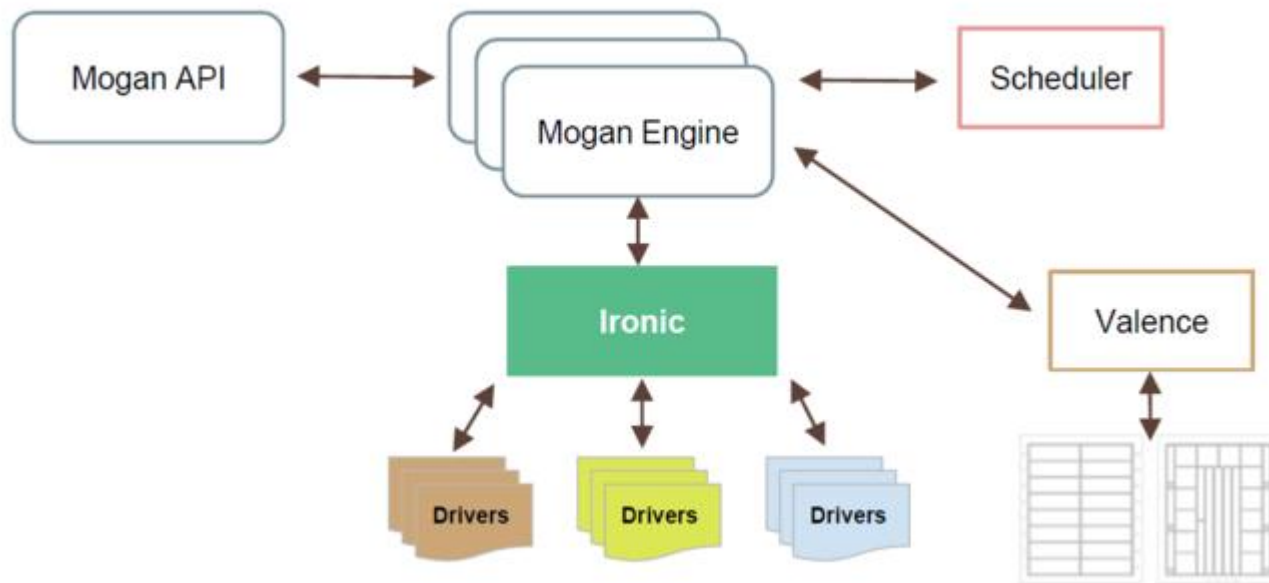


Outline

- Why Mogan?
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Bare Metal Compute As A Service

Mogan, from the get go is all about Bare Metal provisioning in all its richness, no twists and turns



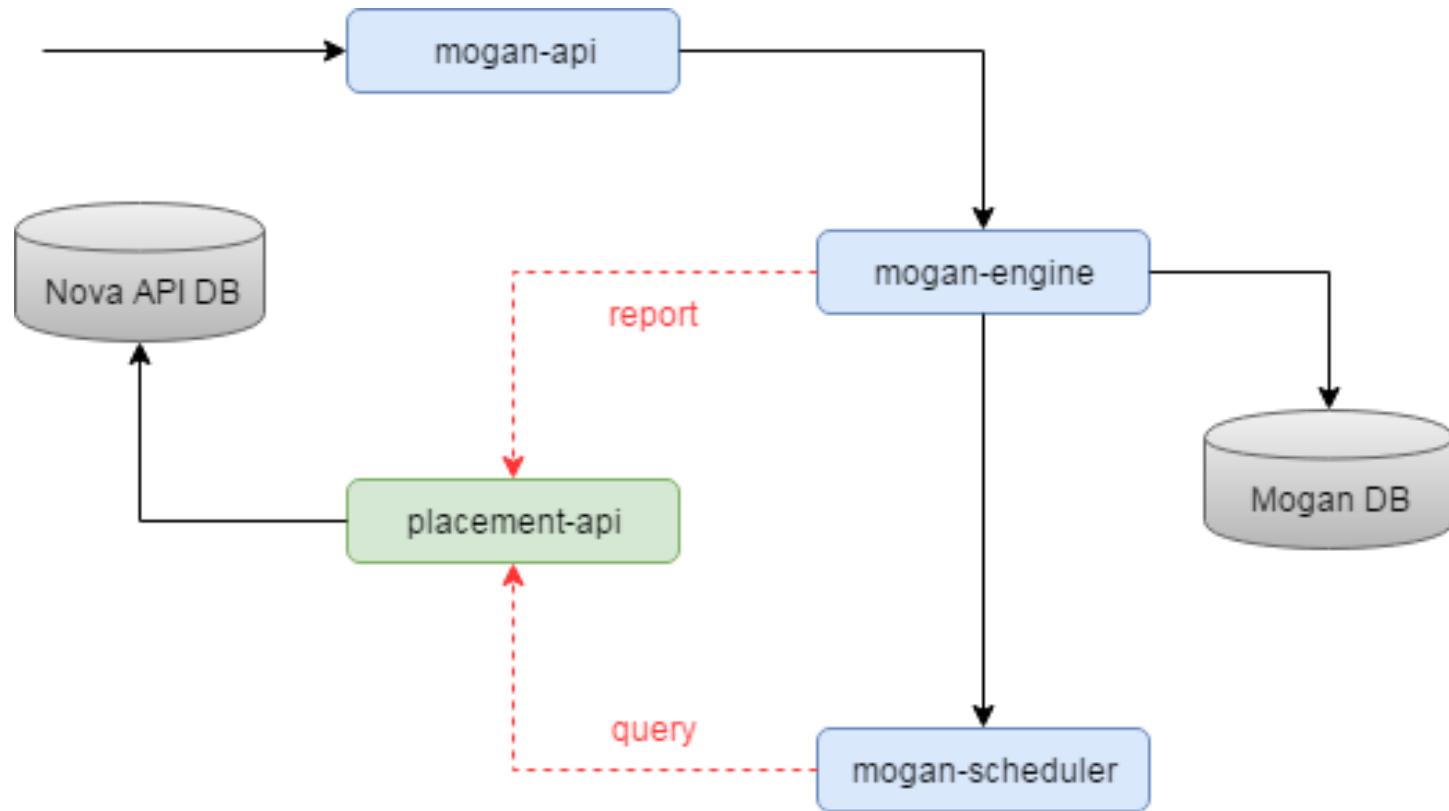
Mogan Mission Statement

1. To implement services which focus on the management of bare metal computing resources.
2. To make bare metal support in OpenStack a first class citizen.

Outline

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- What is Mogan?
- Mogan Architecture

Placement



Resources Tracking

```
mysql> select * from resource_classes;
+-----+-----+-----+-----+
| id | name | created_at | updated_at |
+-----+-----+-----+-----+
| 10000 | CUSTOM_BAREMETAL_1CPU_1280MBRAM_10GBDISK | 2017-07-19 03:42:41 | NULL |
+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> select * from resource_providers;
+-----+-----+-----+-----+-----+-----+-----+
| created_at | updated_at | id | uuid | name | generation | can_host |
+-----+-----+-----+-----+-----+-----+-----+
| 2017-07-19 03:43:02 | 2017-07-19 08:37:39 | 4 | fca094bd-af25-4573-ab3f-c971ae842418 | node-0 | 2 | NULL |
| 2017-07-19 03:43:02 | 2017-07-19 03:43:02 | 5 | cecb0740-737b-47e6-a5f8-cc3adfc4d938 | node-1 | 1 | NULL |
| 2017-07-19 03:43:02 | 2017-07-19 03:43:02 | 6 | 03632701-5b52-43ea-b1cc-6359b8a1e275 | node-2 | 1 | NULL |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from inventories;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| created_at | updated_at | id | resource_provider_id | resource_class_id | total | reserved | min_unit | max_unit | step_size | allocation_ratio |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 2017-07-19 03:43:02 | NULL | 13 | 4 | 10000 | 1 | 0 | 1 | 1 | 1 | 1 |
| 2017-07-19 03:43:02 | NULL | 14 | 5 | 10000 | 1 | 0 | 1 | 1 | 1 | 1 |
| 2017-07-19 03:43:02 | NULL | 15 | 6 | 10000 | 1 | 0 | 1 | 1 | 1 | 1 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from allocations;
+-----+-----+-----+-----+-----+-----+-----+
| created_at | updated_at | id | resource_provider_id | consumer_id | resource_class_id | used |
+-----+-----+-----+-----+-----+-----+-----+
| 2017-07-19 08:37:39 | NULL | 1 | 4 | c2aa2bc7-613a-44af-9dee-a36c75d248a1 | 10000 | 1 |
+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

Flavor

Operators may define flavors like this:

- baremetal-gold

 - resources:

 - baremeal_gold: 1

 - resource_traits:

 - baremetal_gold: row1rack6

 - description:

 - Intel(R) Xeon(R) E5620 2.40GHz 16 cores, 8GB RAM, 4*TB SSD, 4*10Gbps Ethernet

- baremetal-RSD-gold

 - resources:

 - valence-gold-flavor: 1

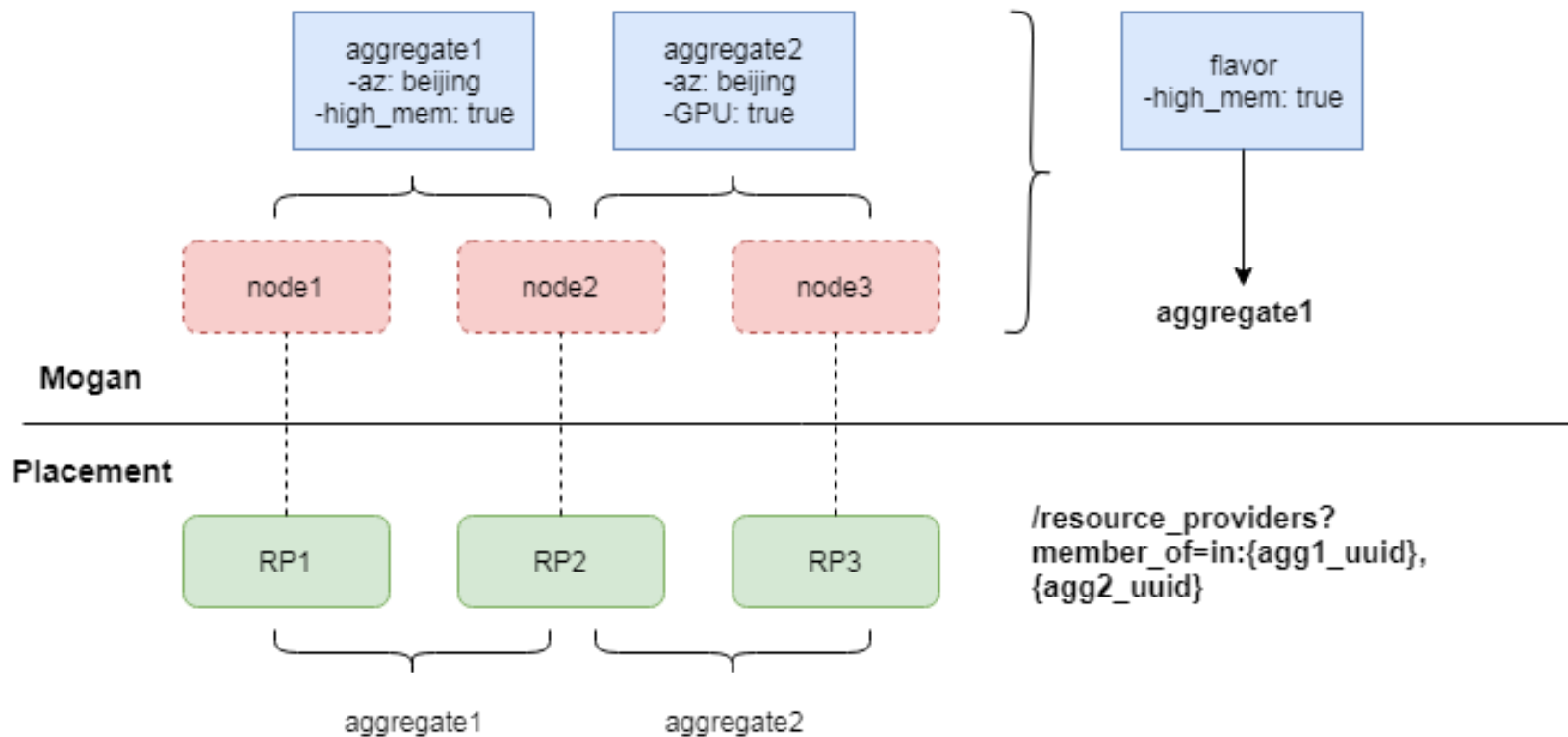
 - resource_traits:

 - valence-gold-flavor: PodM1

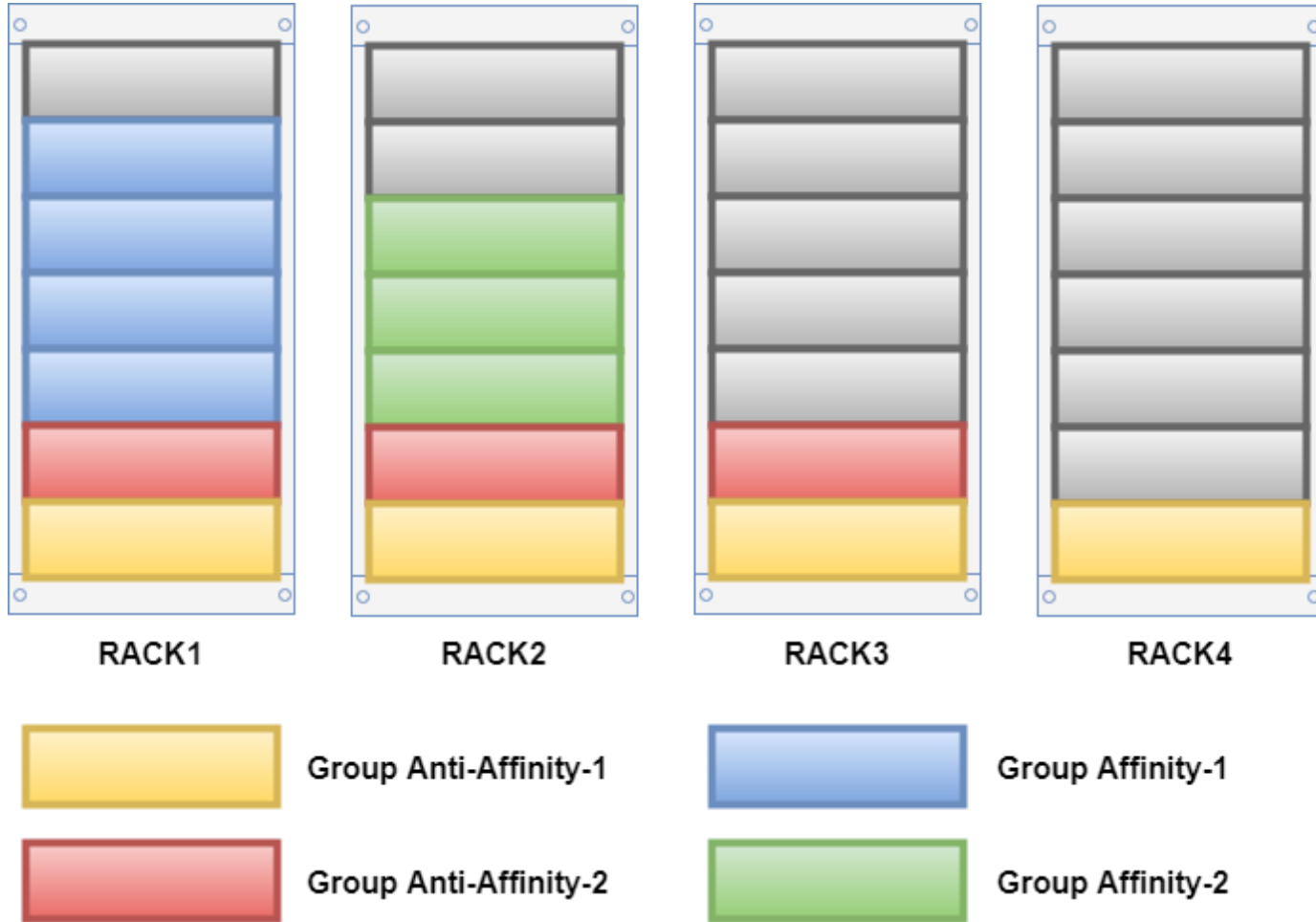
 - description:

 - Intel(R) Xeon(R) E5620 2.40GHz 16 cores, 8GB RAM 4*TB SSD, 4*10Gbps Ethernet

Node Aggregates



Server Groups

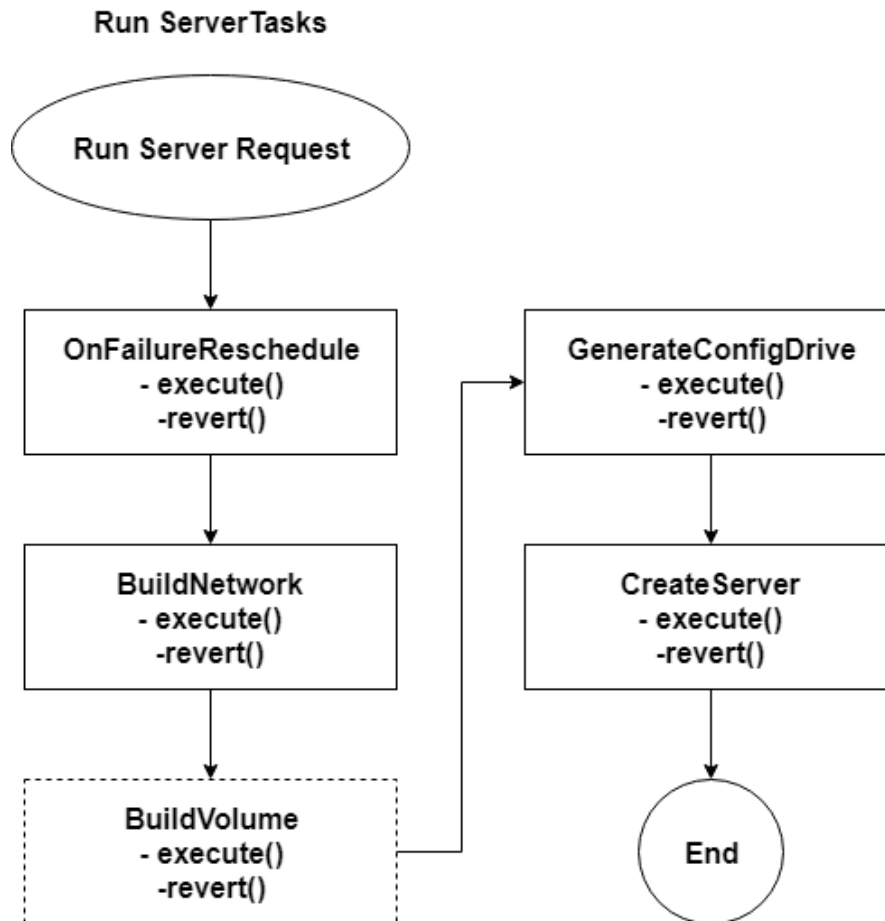


Bare Metal Provisioning Drivers

Mogan has an abstraction layer for bare metal provisioning drivers. This is what allows you to choose which hypervisor to use for your Mogan deployment.

- Ironic
- CloudBoot (HFBank)
- ...

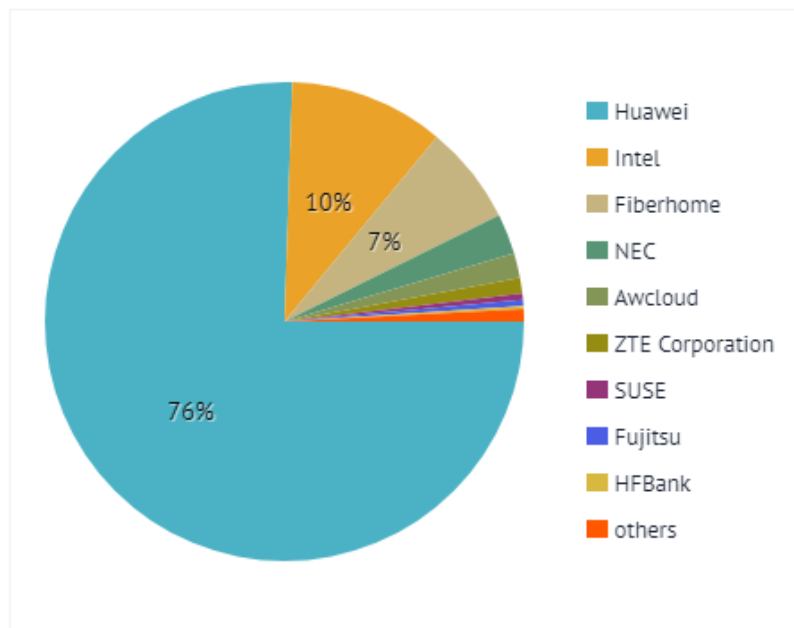
TaskFlow



1. Build networks for the server
2. Build volumes for the server
3. Generate configdrive for the server
4. Provision server
5. Reschedule on failure

Acknowledgement

Contribution by companies



#	Company	Commits
1	Huawei	361
2	Intel	50
3	Fiberhome	32
4	NEC	13
5	Awcloud	8
6	ZTE Corporation	5
7	SUSE	2
8	Fujitsu	2
9	HFBank	1
10	Red Hat	1

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Join us!

Come and join us in making bare metal support in OpenStack a first class citizen.

- Documentation: <http://111.20.68.219:7950/docs/>
- Source: <https://git.openstack.org/cgit/openstack/mogan>
- Bugs: <https://bugs.launchpad.net/mogan>
- Wiki: <https://wiki.openstack.org/wiki/Mogan>
- APIs: <http://111.20.68.219:7950/v1/>

THANK YOU