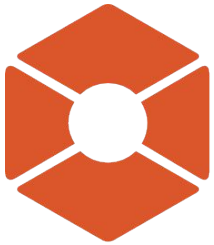
Workshop Prep / Requirements

- Grab a USB key!
- A computer with:
  - 3+GB RAM
  - VirtualBox and Vagrant - Both included on USB drive
  - Windows users need ssh client (putty, cygwin)
- Copy “DesignateWorkshop” from USB drive
- `cd DesignateWorkshop && vagrant up && vagrant ssh`
- VM also @ http://bit.ly/1SyJRuf
- Vagrantfile @ http://bit.ly/1pCUzrn

DESIGNATE
DNS FOR OPENSTACK



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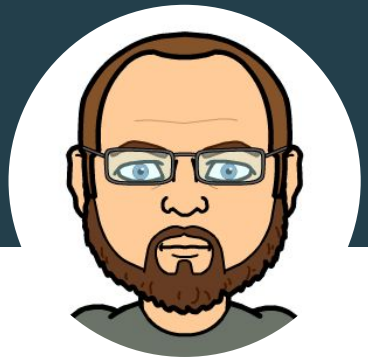
How do I install this thing?



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Are you ready?

- Grab a USB key!
- A computer with:
  - 3+GB RAM
  - VirtualBox and Vagrant - Both included on USB drive
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Install Designate

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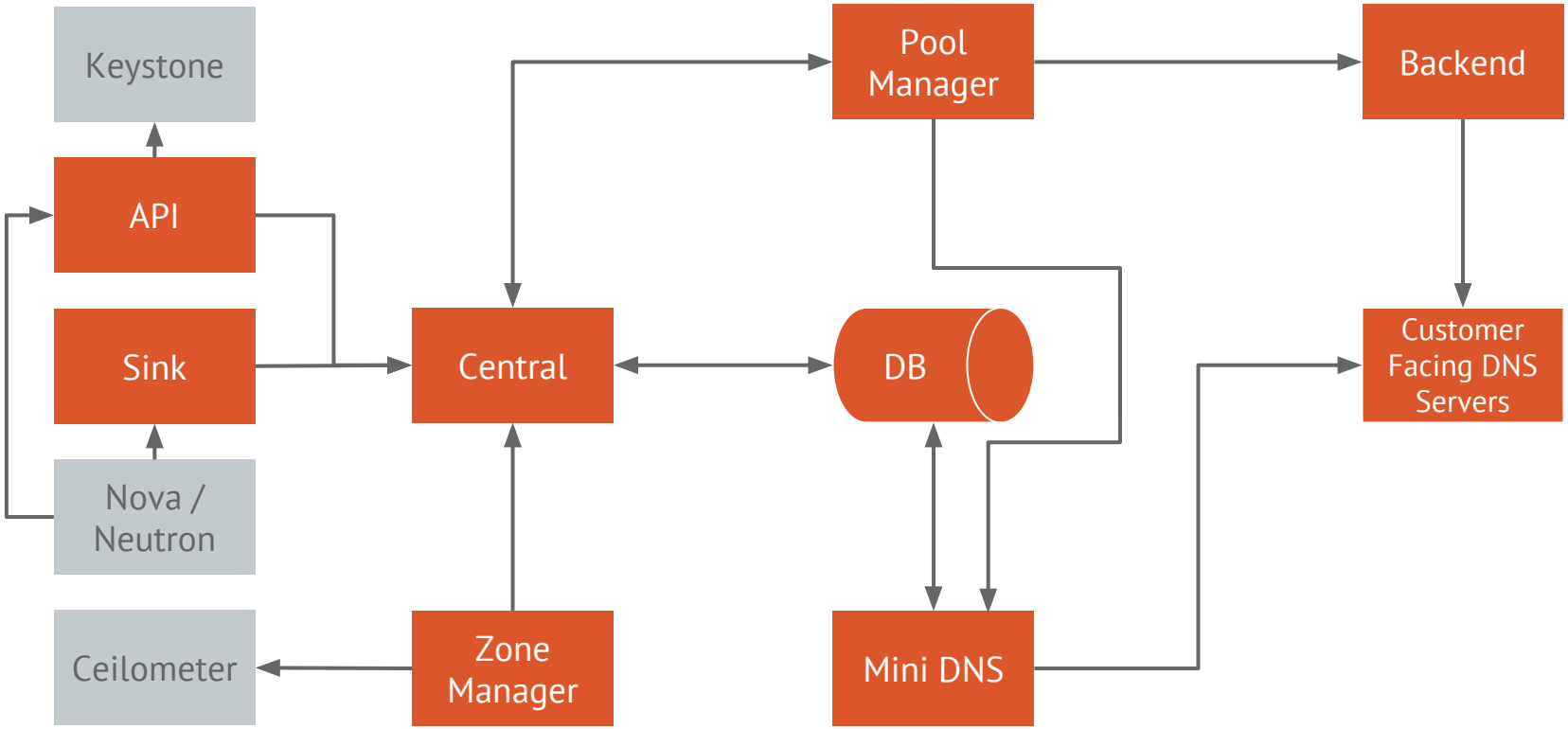

What we are installing

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Time to Follow along

Make sure your Vagrant VM is up, and you can SSH into it!

https://github.com/designate-dns/designate-workshop-packer/tree/austin

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Installing All the Things!

```
$ vagrant ssh

$ ./install-designate.sh
```

Designate Configuration

```
$ less designate.conf
```

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Pools Configuration

```
$ less pools.yml
```

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Questions?

Next up, we'll cover how to use the service!

Designate Operations

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OpenStack CLI

```
$ ./client.sh
```

Python Bindings

```
$ python example.py
$ python short_url.py ...
```

Designate Nova and Neutron

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Let’s create an instance

```
$ source openrc.user1
$ neutron net-list
$ nova flavor-list
$ nova image-list
$ nova boot my_vm --image <image-uuid>
  --flavor <flavor-id> --nic net-id=<net-uuid>
```

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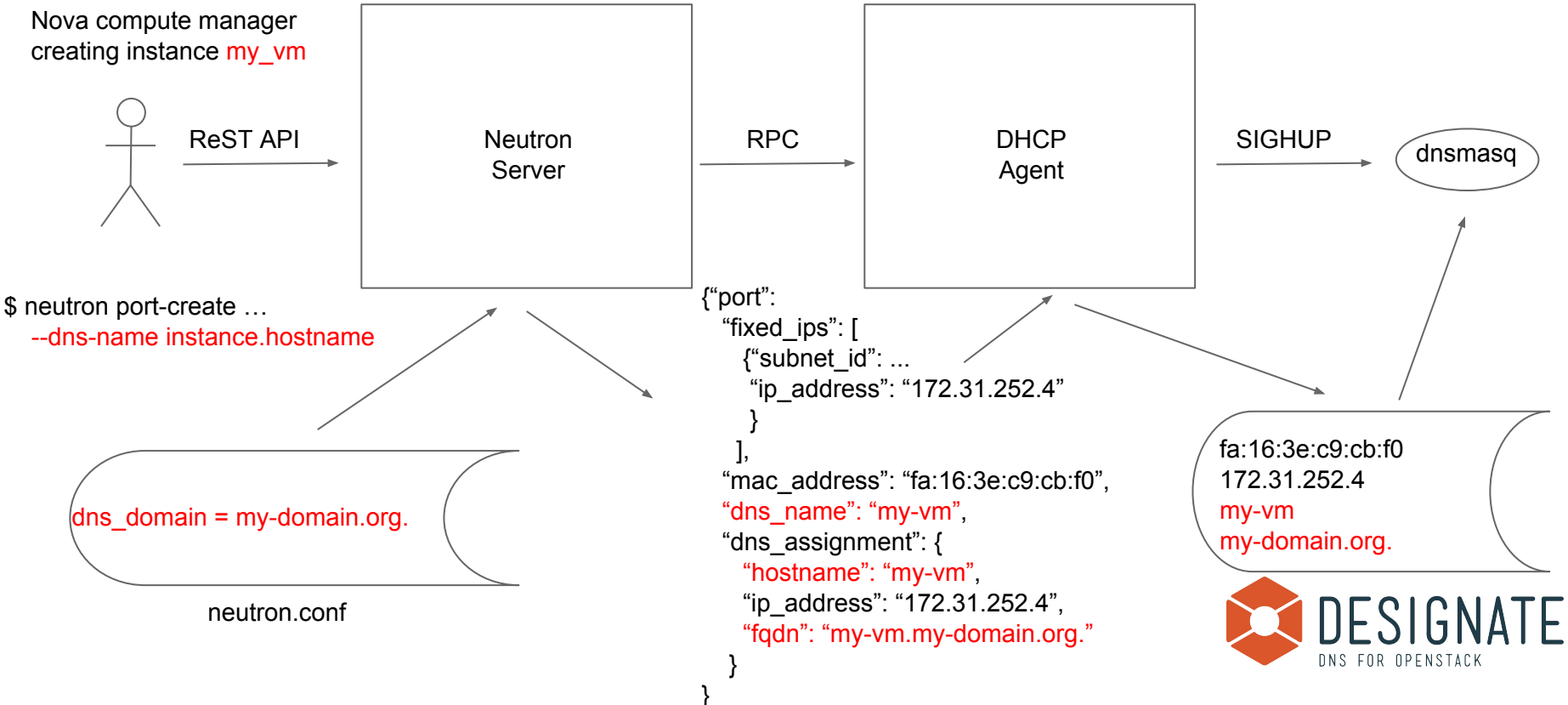
Neutron's internal DNS with Nova in Mitaka



Let’s confirm...

$ nova list

$ neutron port-list --device-id <instance-uuid>

$ neutron port-show <port-uuid>

Use case 1: Floating IPs are published with associated port DNS attributes

$ neutron net-update
--dns-domain my-domain.org.

{“network”:
...
“name”: “tenant1-network”,
“dns_domain”: “my-domain.org.”,
“id”: “b06b4967-ba73-4567-b060-cf6a9d7ecac6:
...
}

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Let’s create a zone and update network

```
$ openstack zone create --email
  malavall@us.ibm.com nova-neutron.org.
$ neutron net-list
$ neutron net-update <net-uuid>
  --dns-domain my-domain.org.
$ neutron net-show <net-uuid>
```

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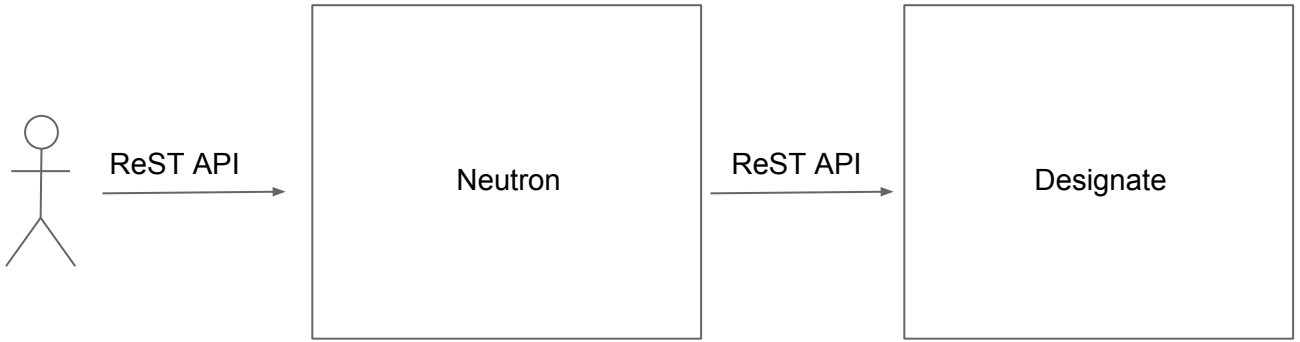
Use case 1: Floating IPs are published with associated port DNS attributes



$ neutron floatingip-create …
--port-id b9a82377-a89f-4b02-93ec-3573333f70c6

{“floatingip”:
“dns_domain”: “”,
“dns_name”: “”,
“fixed_ip_address”: “172.31.252.4”,
“floating_ip_address”: “172.31.255.10”,
...
}

In zone nova-neutron.org.:
record type: A
name: my-vm.my-domain.org.
data: 172.31.252.4

In zone 252.31.172.in-addr.arpa.
record type: PTR
name: 4.252.31.172.in-addr.arpa.
data: my-vm.my-domain.org.

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Let’s confirm...

```
$ neutron floatingip-create <net-uuid>
  --port-id <port-uuid>
$ openstack recordset list nova-neutron.org.
$ source openrc.admin
$ openstack recordset list
  252.32.172.in-addr.arpa.
```

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Other two use cases supported

- Floating IPs are published in the external DNS service
- Ports are published directly in the external DNS service
- We will cover them in depth during Thursday's presentation:
  - “Integration of Neutron, Nova and Designate: How to Use It and How to Configure It”
  - Austin Convention Center - Level 4 - Ballroom D
  - 1:30pm - 2:10pm

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Useful Links

General OpenStack Links:

How to Contribute Primer: https://wiki.openstack.org/wiki/How_To_Contribute

Gerrit Workflow Primer: https://wiki.openstack.org/wiki/Gerrit_Workflow

Join the OpenStack Foundation: https://www.openstack.org/join/

Code Review: https://review.openstack.org/ Search for “project:openstack/designate”

Designate Specific Links:

Bug Tracker: https://bugs.launchpad.net/designate

Feature Tracker: https://blueprints.launchpad.net/designate

Specs: https://github.com/openstack/designate-specs

Documentation: http://docs.openstack.org/developer/designate

DevStack: http://docs.openstack.org/developer/designate/devstack.html

Git (Server): https://github.com/openstack/designate

Git (Client): https://github.com/openstack/python-designateclient

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Getting Involved - Bare Necessities

- Get a good IRC client.. You'll need it.
  - Join #openstack-dns and introduce yourself :)
- Attend the weekly IRC meetings:
  - Wednesdays @ 17:00 UTC in #openstack-meeting-alt
  - Agenda - https://wiki.openstack.org/wiki/Meetings/Designate
- File a bug/blueprint for your idea - Then add it to the agenda...
  - It's OK to only have a rough sketch of the idea - that's usually enough to begin discussions.

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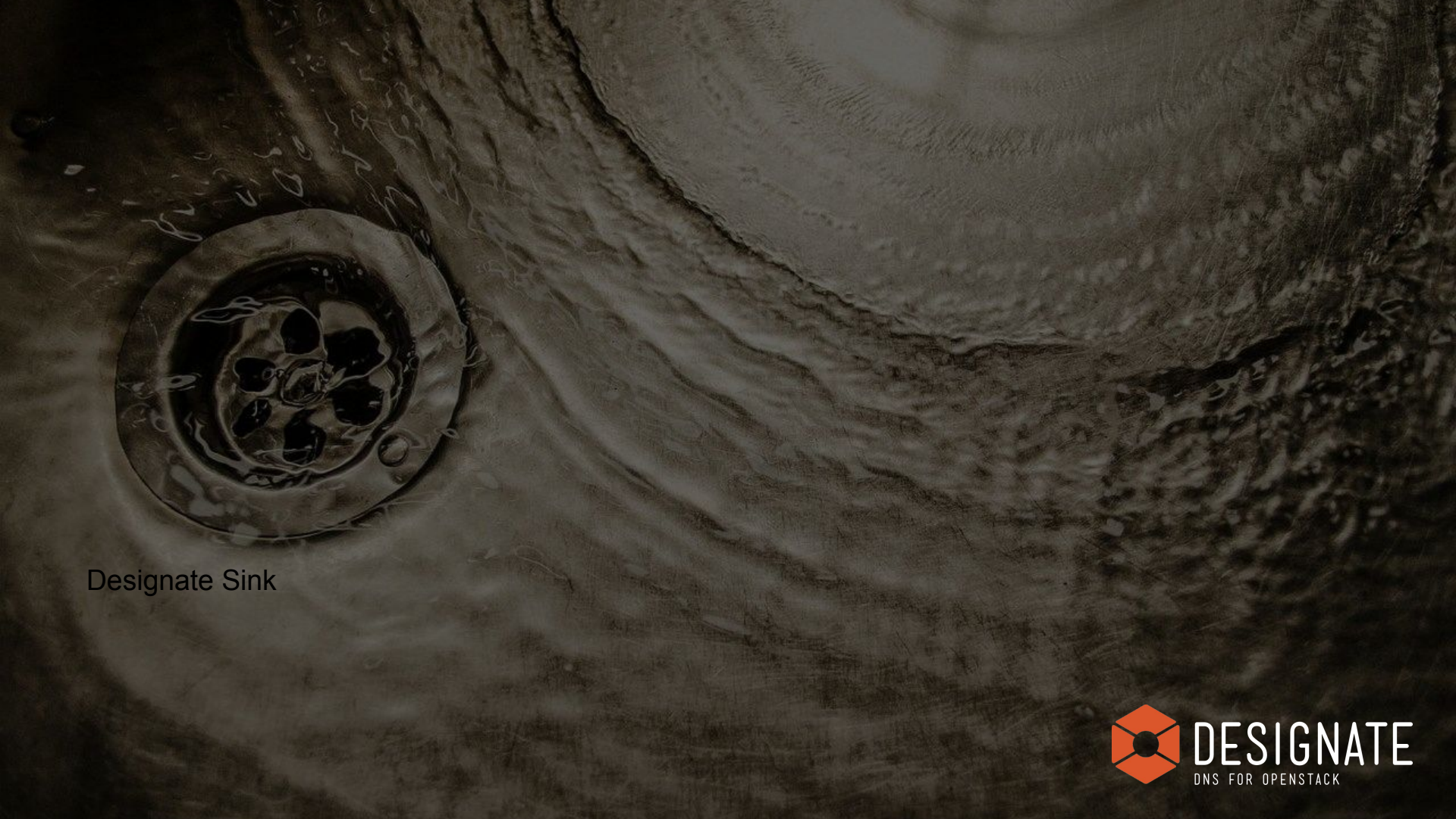

Designate Sink

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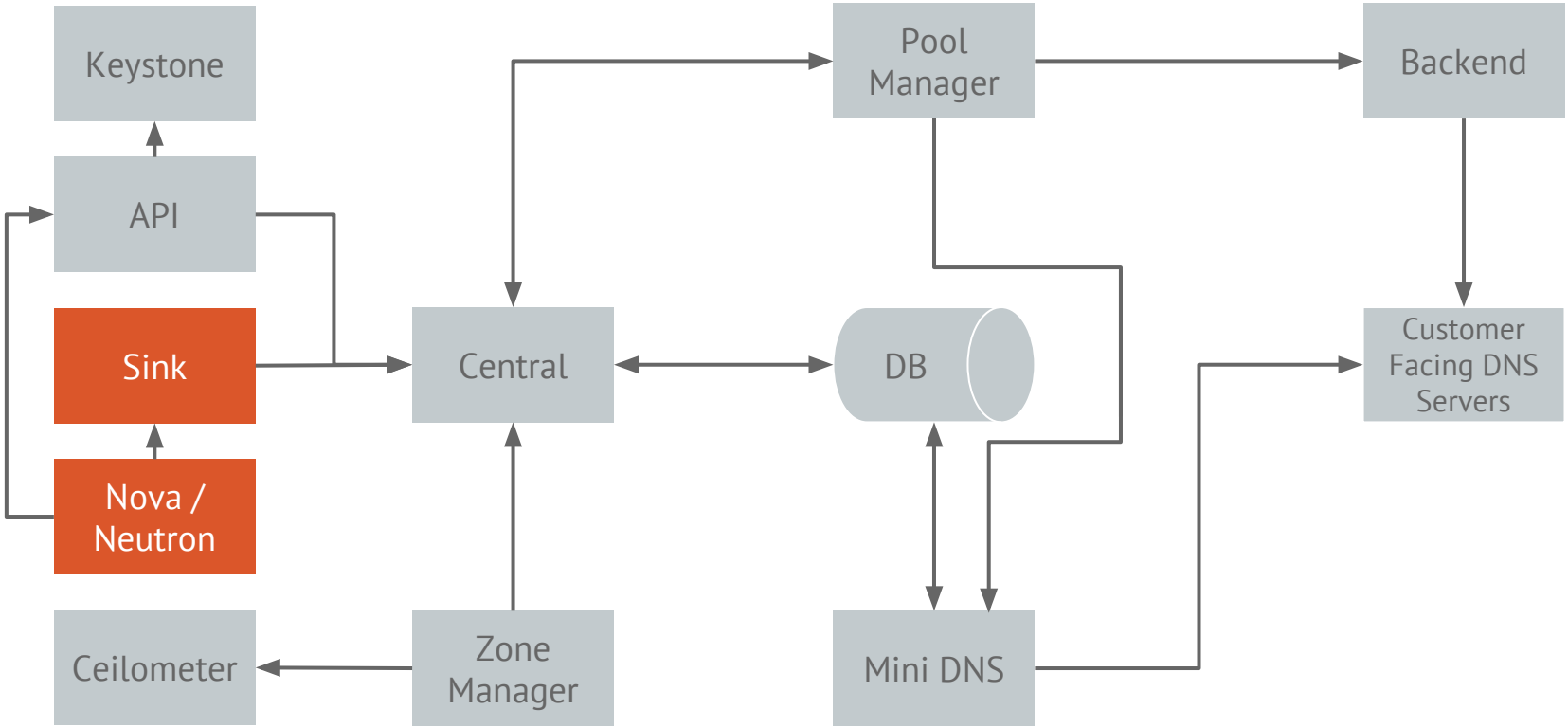

What are we configuring?

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Designate Sink and Notification Handlers

- Designate Sink consumes notification events from:
  - Nova
  - Neutron
  - Any other service which emits events
- Designate Sink turns events into DNS operations.
- What events and what DNS operations are performed are determined by custom notification handlers, two basic samples are provided:
  - nova_fixed
  - neutron_floatingip
- Sink is pluggable - The intent is for organisations to write a plugin that reflects their specific use case.

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Nova Configuration Changes

- Enable notifications for Designate in nova.conf:

```
[DEFAULT]
notification_driver = nova.openstack.common.notifier.rpc_notifier
notification_topics = notifications
notify_on_state_change = vm_and_task_state
```

- Events that the designate notification_handler looks for:
  - compute.instance.create.end
  - compute.instance.delete.start

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Neutron Configuration Changes

- Enable notifications for Designate in neutron.conf:

```
[DEFAULT]
notification_driver = neutron.openstack.common.notifier.
rpc_notifier
notification_topics = notifications
```

- Events that the designate notification_handler looks for:
  - floatingip.update.end
  - floatingip.delete.start

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Designate Configuration Changes

- Enable Designate Sink in designate.conf:

```
[service:sink]
enabled_notification_handlers = nova_fixed, neutron_floatingip
```

- Enable Nova notification handler in designate.conf:

```
[handler:nova_fixed]
domain_id = <uuid of domain>
notification_topics = notifications
control_exchange = 'nova'
format = '%(display_name)s.%(domain)s'
```

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Designate Configuration Changes (continued)

- Enable Neutron notification handler in designate.conf:

```
[handler:neutron_floatingip]
domain_id = <uuid of domain>
notification_topics = notifications
control_exchange = 'neutron'
format = '%(display_name)s.%(domain)s'
```

- Restart Designate Sink:
  - `sudo restart designate-sink`

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Creating and Deleting VM

- Setup the environment for the user1 user:
  - `source openrc.user1`
- List the images:
  - `nova image-list`
- List the flavors:
  - `nova flavor-list`
- Create the VM instance:
  - `nova boot testvm --image <image-id> --flavor <flavor-id>`
  - `nova list`
- Show the records:
  - `designate domain-list`
  - `designate record-list example.com.`
  - `dig @localhost testvm.example.com.`

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Create and Delete VM (continued)

- Delete the VM instance:
  - `nova delete testvm`
  - `nova list`
- Show the records:
  - `designate domain-list`
  - `designate record-list example.com.`
  - `dig @localhost testvm.example.com.`

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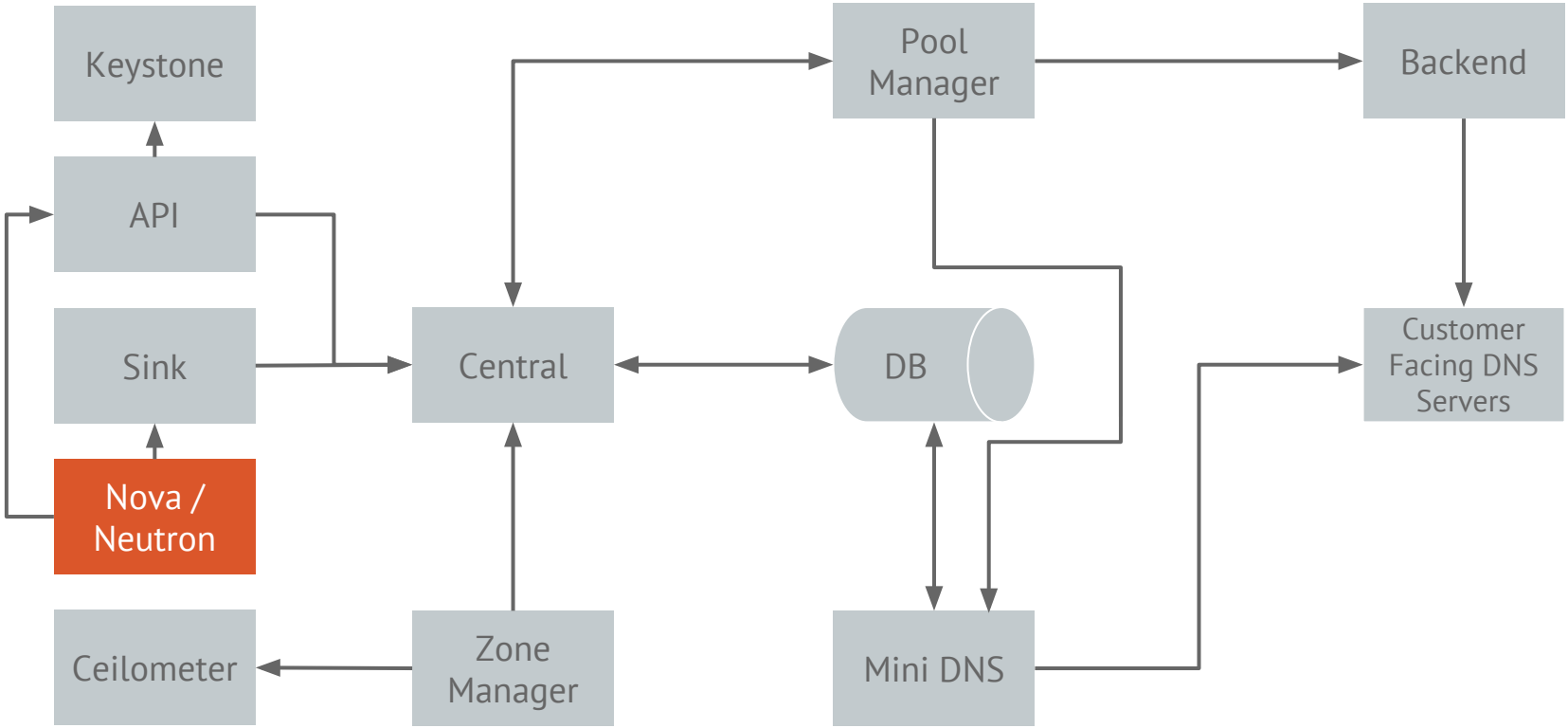

What are we configuring?

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