codilime CREATING VALUE

RBAC in Neutron and Tungsten Fabric

Tungsten Fabric Users Group

Who we are

Intro

- we work at CodiLime
  - services, consulting, development, teams
  - SDN/NFV, cloud-native, DevOps

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What you'll find in this talk

Intro

- CodiLime's R&D work
- Neutron RBAC feature
- use-cases
- Tungsten Fabric implementation
- Neutron plugin API

Our roadmap

RBAC in Neutron and TF

1. **the use-case**
2. Neutron RBAC
3. Tungsten Fabric RBAC
4. Neutron plugin API
5. the integration

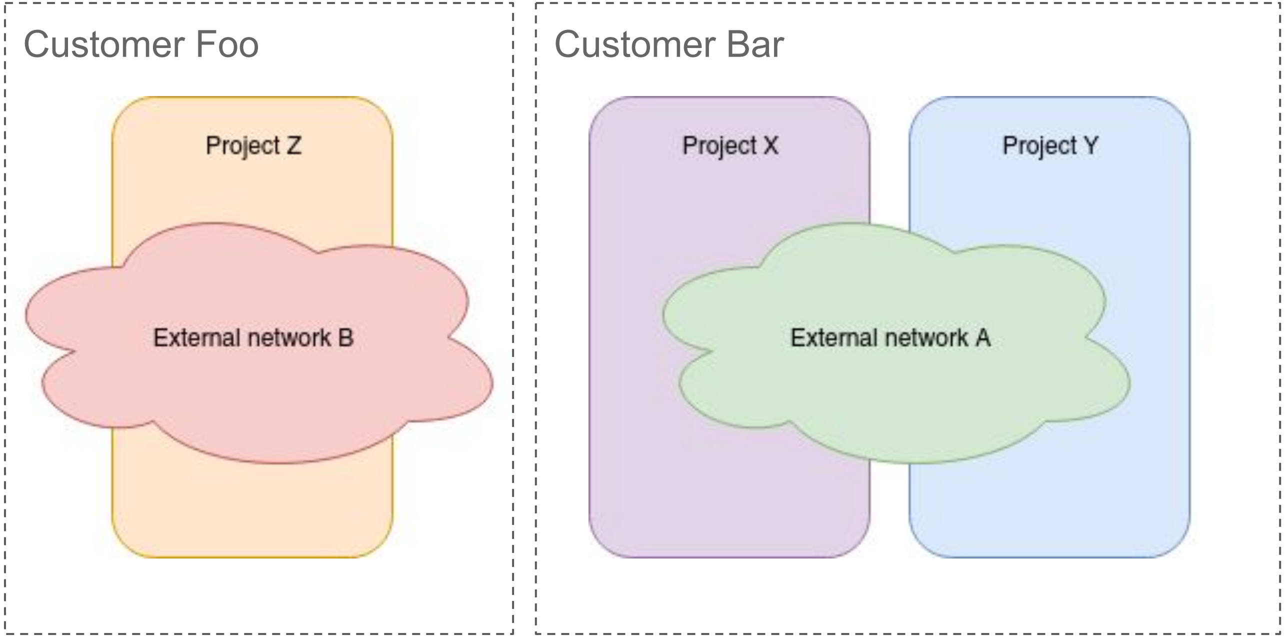
The use-case

Motivation

- multi-tenant public cloud provider service
- floating IP pool assigned to a customer
- customer uses multiple tenants
- additional considerations:
  - operations
  - self-service

The use-case

Motivation



Our roadmap

RBAC in Neutron and TF

1. the use-case
2. **Neutron RBAC**
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Neutron access modes

RBAC in Neutron

- 'shared' network attribute
- accessible in all projects or single project
- but... there is RBAC

Neutron RBAC: model

RBAC in Neutron

```
+-------------------+--------------------------------------+
| Field             | Value                                |
+-------------------+--------------------------------------+
| id                | afdd5b8d-b6f5-4a15-9817-5231434057be |
| name              | None                                 |
| project_id        | 61b7eba037fd41f29cfba757c010faff     |
| target_project_id | target project UUID                  |
| action            | access_as_external                   |
| object_type       | network                              |
| object_id         | network UUID                         |
+-------------------+--------------------------------------+
```

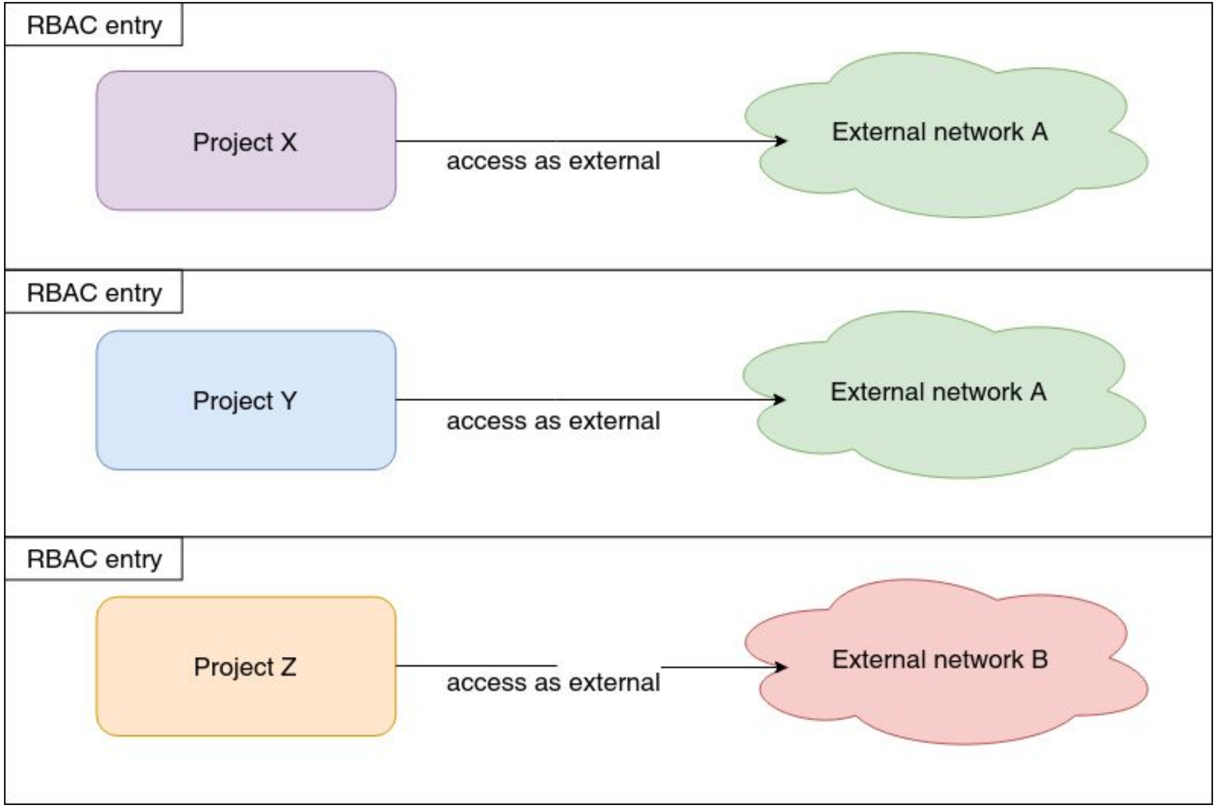
Neutron RBAC: model

RBAC in Neutron

```
+-------------------+--------------------------------------+
| Field             | Value                                |
+-------------------+--------------------------------------+
|                   |                                      |
|                   |                                      |
|                   |                                      |
| target_project_id | target project UUID                  |
| action            | access_as_external                   |
|                   |                                      |
| object_id         | network UUID                         |
+-------------------+--------------------------------------+
```

Neutron RBAC: model

RBAC in Neutron



Neutron RBAC: configuration

RBAC in Neutron

```
$ openstack network rbac create \
    --target-project [target_project_id] \
    --action access_as_external \
    --type network [network_id]

+-------------------+--------------------------------------+
| Field             | Value                                |
+-------------------+--------------------------------------+
| id                | afdd5b8d-b6f5-4a15-9817-5231434057be |
| name              | None                                 |
| project_id        | 61b7eba037fd41f29cfba757c010faff     |
| target_project_id | [target_project_id]                  |
| action            | access_as_external                   |
| object_type       | network                              |
| object_id         | [network_id]                         |
+-------------------+--------------------------------------+
```

Our roadmap

RBAC in Neutron and TF

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Tungsten Fabric RBAC

RBAC in TF

- there is also an RBAC concept in TF
- it has to be enabled globally
- entirely changes the way of dealing with objects and authentication

Tungsten Fabric RBAC: model

RBAC in TF

- each object has an ACL
  - R - read
  - W - create, update
  - X - link, reference

Tungsten Fabric RBAC: configuration

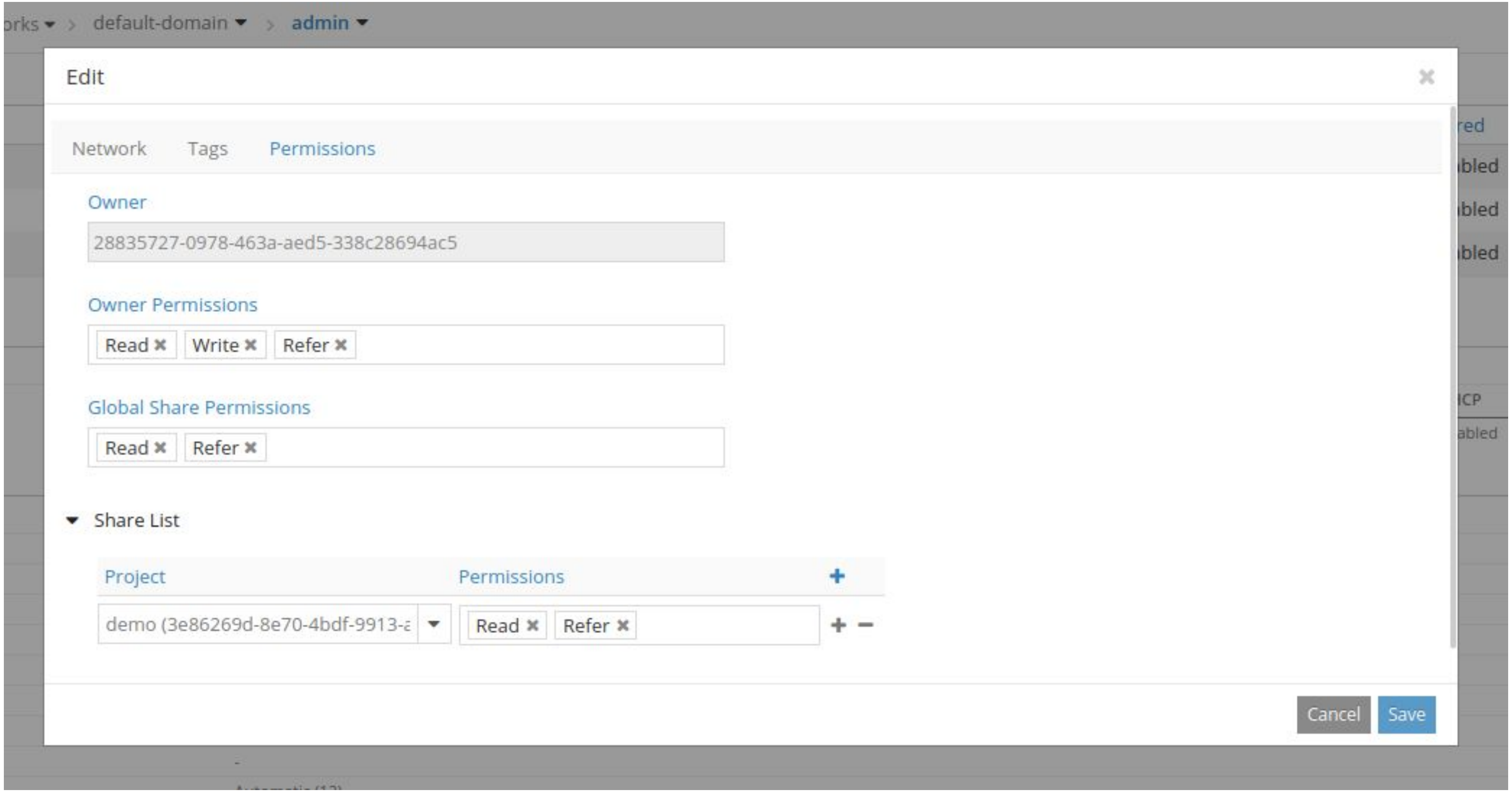
RBAC in TF

/etc/contrail/contrail-api.conf

```
aaa-mode = rbac
```

Tungsten Fabric RBAC: configuration

RBAC in TF



Edit

Owner

28835727-0978-463a-aed5-338c28694ac5

Owner Permissions

Read ✖ Write ✖ Refer ✖

Global Share Permissions

Read ✖ Refer ✖

Share List

Project	Permissions
demo (3e86269d-8e70-4bdf-9913-ε	Read ✖ Refer ✖

Our roadmap

RBAC in Neutron and TF

1. the use-case
2. Neutron RBAC
3. Tungsten Fabric RBAC
4. **Neutron plugin API**
5. the integration

Plugin API background

Neutron plugin API

- core plugin being deprecated in favor of ML2 and mechanism drivers
- well-defined and restricted API
- can connect multiple SDN backends to single Neutron

Neutron plugin configuration

Neutron plugin API

/etc/neutron/neutron.conf

```
core_plugin = ml2
service_plugins = opencontrail-router
```

/etc/neutron/plugins/ml2/ml2_conf.ini

```
[ml2]
mechanism_drivers = opencontrail
```

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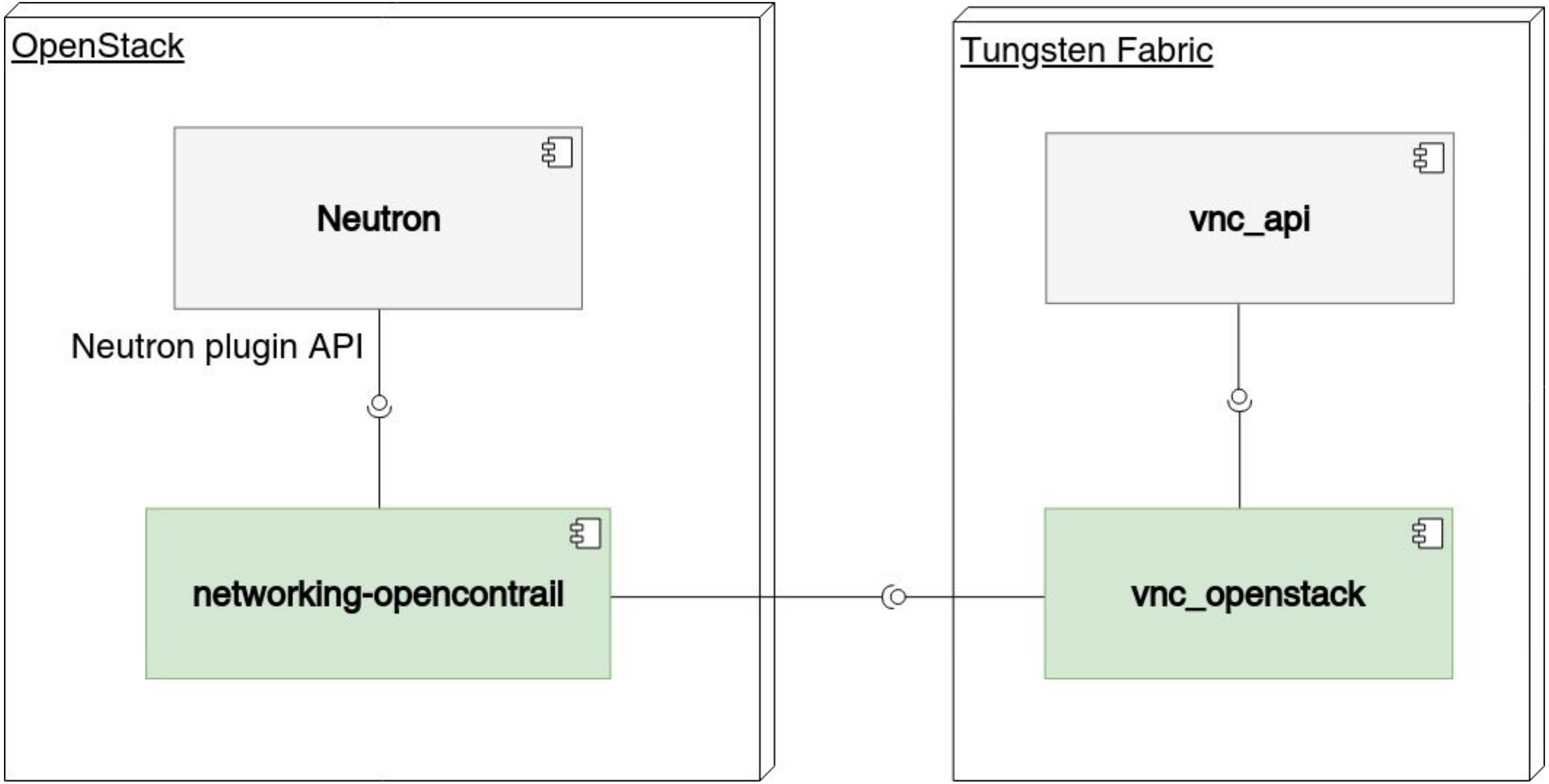
Example integration plan

- service plugin callbacks
- data flowing to the `vnc_openstack` module without major modifications
- translation being done in `vnc_openstack`
- native calls to `vnc_api`

The integration

Neutron to TF



Wrap-up

Outro

- Neutron has RBAC
- Tungsten has RBAC too
- how to implement integrations using the ML2/service plugin interface

Q&A