



Blazar

Project Update, Open Infrastructure Summit Denver

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NTT
DOCOMO Euro-Labs

What is Blazar?

- **Blazar provides Reservation as a Service**
- Created in 2013 under the name Climate
- Revived at the Barcelona Summit in 2016
- Official project since September 2017 (Queens release cycle)

- Supports reservation of compute resources (whole hosts and instances)
- Guarantees resource availability for a future event
- Example use cases:
 - Telecom NFV
 - Large-scale experimental testbed (Chameleon)

- 21 commit authors and 30+ reviewers in the Stein cycle



BLAZAR
an OpenStack Community Project

OpenStack Stein

User features

- Floating IP reservation (*feature preview: will be complete in Train*)
- Support for affinity in instance reservation

Operator features

- Resource allocation API
 - Allows operators to know the reserved state of their cloud resources
- Integration with the Placement API
 - More efficient and less intrusive integration with Nova

How does Blazar work?

Instance reservation

- Add compute host(s) to be managed by Blazar:
 - \$ blazar host-create test_host
- > A new Resource Provider is created in Placement

```
$ blazar host-list
```

```
+-----+-----+-----+-----+
| id | hypervisor_hostname | vcpus | memory_mb | local_gb |
+-----+-----+-----+-----+
| 1 | test_host          | 2     | 4937      | 79       |
+-----+-----+-----+-----+
```

```
$ openstack resource provider list
```

```
+-----+-----+-----+
| uuid | name              | generation |
+-----+-----+-----+
| xxx  | test_host         | 3          |
| yy   | blazar_test_host | 0          |
+-----+-----+-----+
```

How does Blazar work?

Instance reservation

- Reserve a number of instances with specific flavor sizing:
 - `$ blazar lease-create --reservation resource_type=virtual:instance ,vcpus=1,memory_mb=1024,disk_gb=20 ,amount=2,affinity=True test_lease`

-> Blazar creates a custom flavor for users to launch instances

```
$ blazar lease-list
```

id	name	start_date	end_date
xxx	test_lease	2019-05-01T15:23:00.000000	2019-05-02T15:23:00.000000

```
$ openstack flavor list --private
```

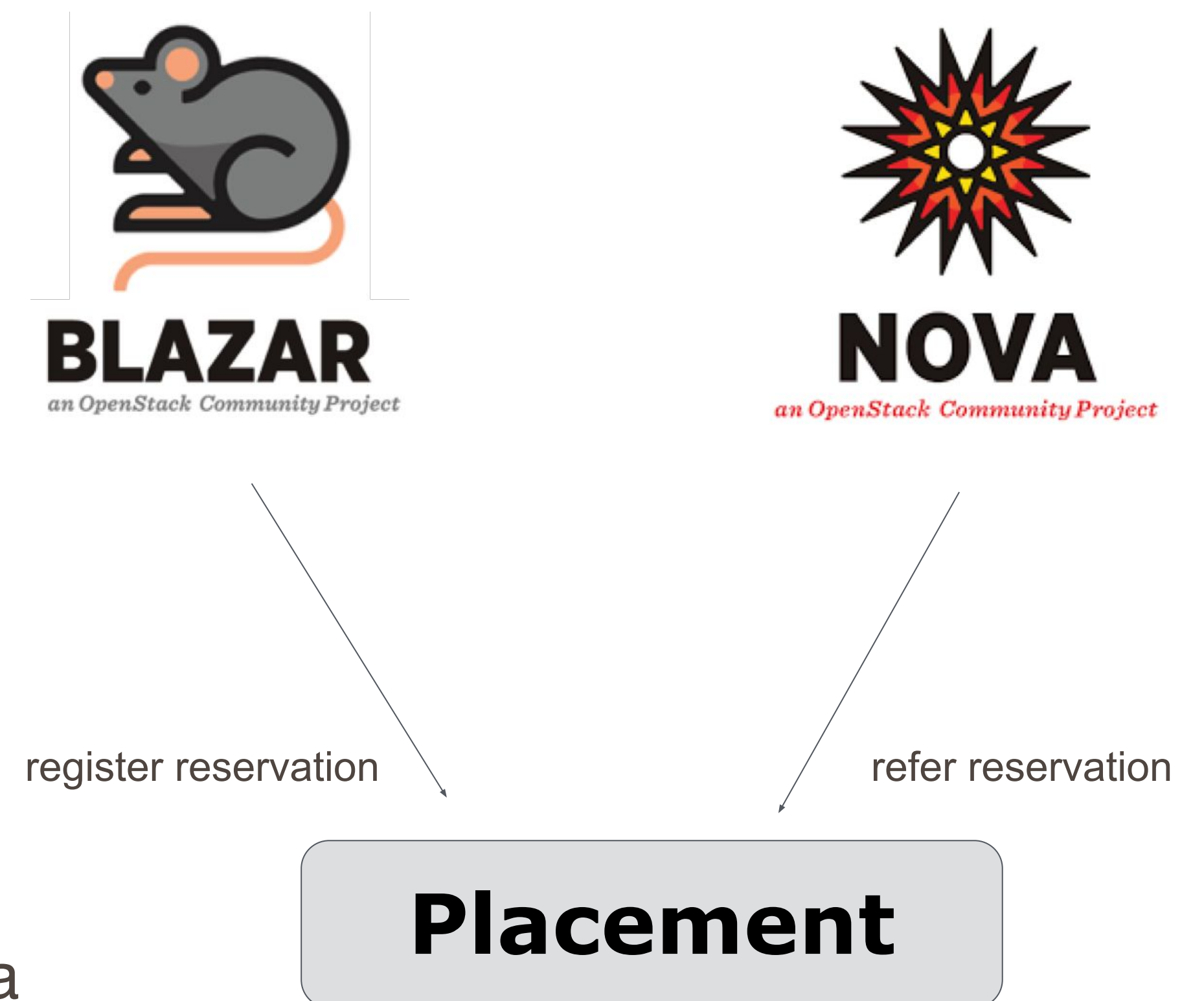
ID	Name	RAM	Disk	Ephemeral	VCPUs	Is Public
yyy	reservation:zzz	1024	20	0	1	False

Beyond Stein (Train and further)

- Handling of quotas
- Compatibility with Ironic via placement aggregates
- Preemptible instances on unreserved resources
- Handle more resource types:
 - Add network segment reservation
 - Support reservation of volumes (Cinder)
- Support for High Availability deployments

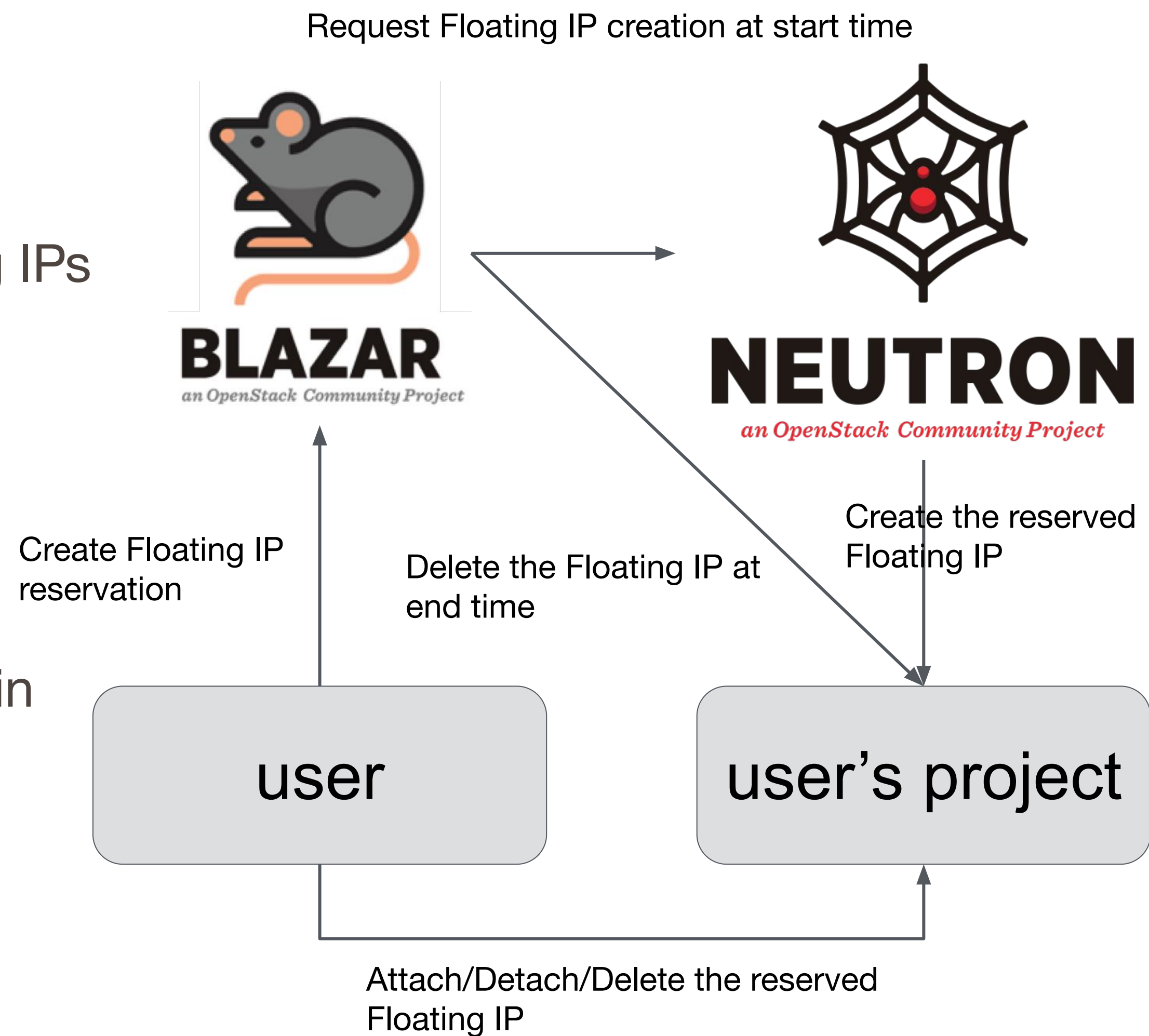
Cross-Project Work (Placement)

- Instance reservation
 - No Dependency on specific Nova filters
 - ServerGroupAntiAffinityFilter
 - AggregateInstanceExtraSpecsFilter
 - AggregateMultiTenancyIsolationFilter
 - Affinity-policy improvements
 - Reserving multiple instances on the same host now supported
- Host reservation
 - Removal of BlazarFilter and Host Creation in Blazar
 - Need for “Negative Aggregate Filter” in Placement/Nova
 - Targeted in Train+ release



Cross-Project Work (Neutron)

- Floating IP reservation
 - New resource type in reservations: virtual:floatingip
 - Same operations for users to handle reserved floating IPs
 - Parameters for floating IP reservation
 - public network ID
 - amount of IPs to reserve
 - required floating IPs (optional)
- Implementation incomplete: completion planned for Train
 - No support for Update Lease API
 - Missing CLI support
 - Incomplete documentation



How to give feedback

- Attend the Blazar IRC meetings
 - every Tuesday at 0900 UTC freenode channel #openstack-meeting-alt
 - new meeting proposed with America-friendly time:
 - on Thursday in odd weeks at 1600 UTC in #openstack-meeting-alt
- Talk to us in freenode #openstack-blazar
 - Tell us about your users' or your own requirements/needs
 - Tell us about issues you are facing
- Report bugs
 - <https://bugs.launchpad.net/blazar>

How to contribute

- Read the contributors guide
 - <https://docs.openstack.org/blazar/latest/contributor/contribution.html>
- Help with
 - [Code review](#)
 - [Bug triage](#)
 - Improving the docs and test coverage
- Attend the weekly Blazar IRC meeting or talk to us in freenode #openstack-blazar

Q&A

Thank you!



openstack



@OpenStack

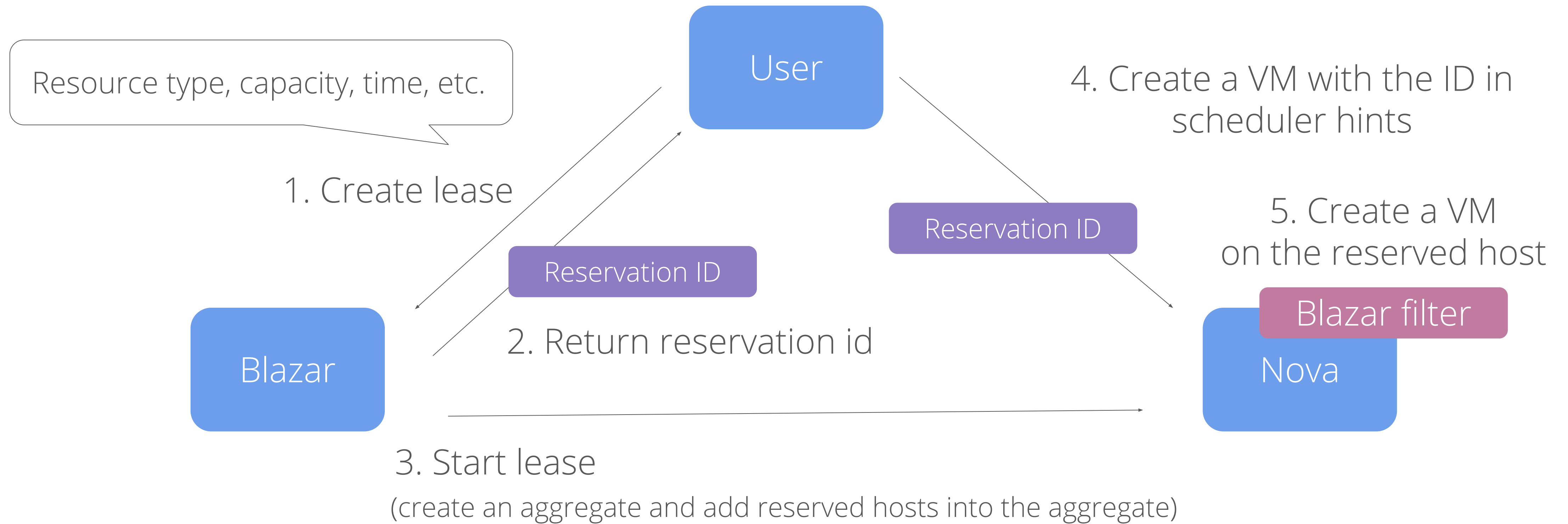


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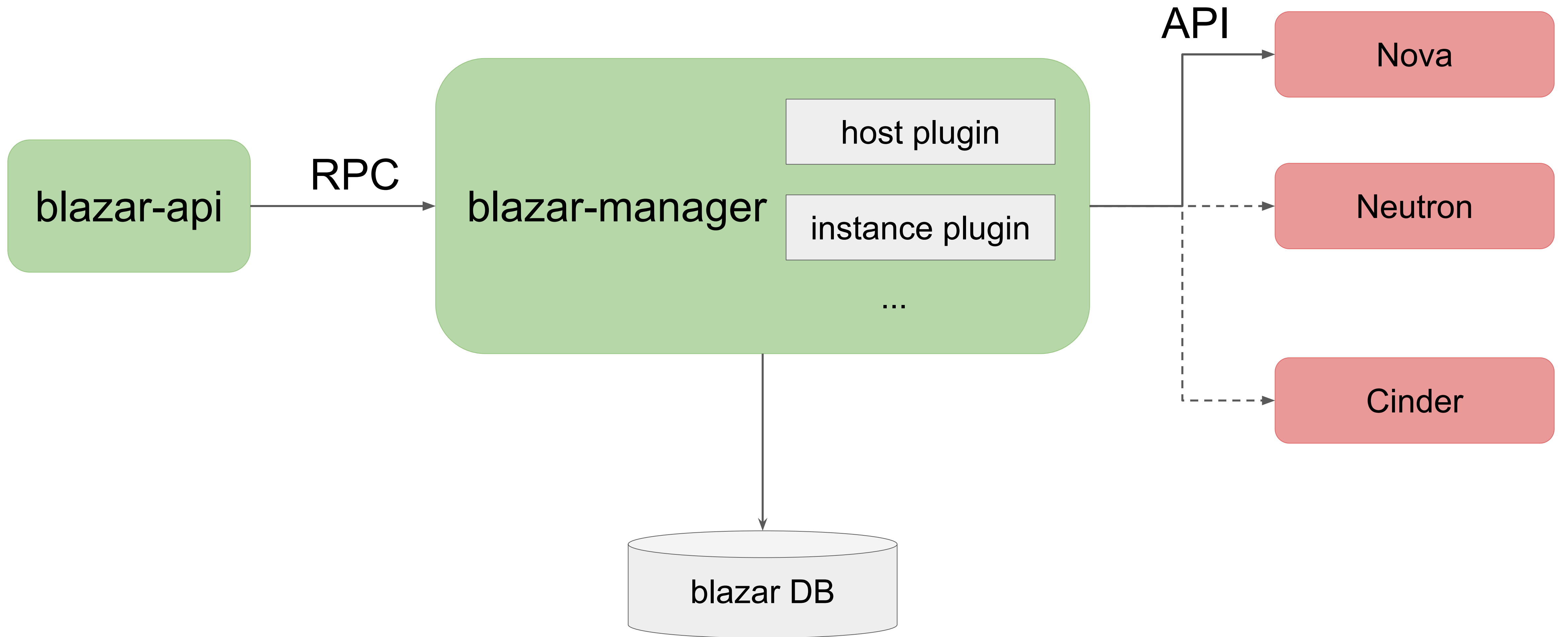


OpenStackFoundation

Flow of reservation and lease



Architecture



Use cases

- **Chameleon project** (<http://www.chameleoncloud.org>)
 - Large-scale testbed for computer science research
 - Blazar guarantees resource availability for experiments
- **OPNFV Promise project** (<https://wiki.opnfv.org/display/promise/Promise>)
 - Resource reservation and management project for quality of network services
 - Blazar guarantees resource availability for VNF deployments

