



## **Examples of REST Modelling (OpenStack - Compute)**

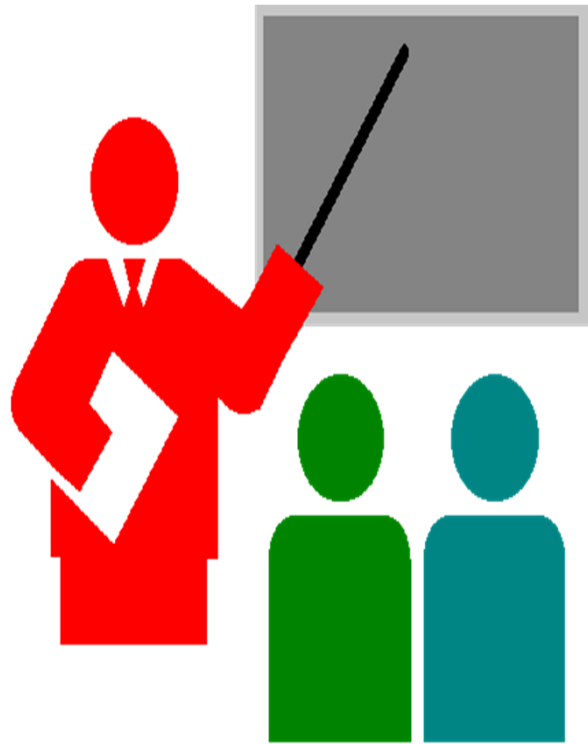
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# OpenStack Compute API



- REST Modelling procedure
- OpenStack Compute key concepts
- Applying the procedure

# The procedure – First Part

- Figure out the data set
- Split the data set into resources

# The procedure – Second Part

For each resource:

- Name the resources with URIs
- Identify the subset of the uniform interface that is exposed by the resource
- Design the representation(s) as received (in a request) from and sent (in a reply) to the client
- Consider the typical course of events by exploring and defining how the new service behaves and what happens during a successful execution

## OpenStack Compute (REST-based) Key Concepts

- OpenStack Compute is a compute service that provides server capacity in the cloud.
- Compute Servers come in different flavors (virtual hardware configuration) of memory, cores, disk space, and CPU, and can be provisioned in minutes.
- Interactions with Compute Servers can happen programmatically with the OpenStack Compute API.

# OpenStack Compute Key Concepts

- **Server:** A virtual machine (VM) instance, physical machine or a container in the compute system.
- **Flavor:** Virtual hardware configuration for the requested server. Each flavor has a unique combination of disk space, memory capacity and priority for CPU time.
- **Image:** A collection of files used to create or rebuild a server. Operators provide a number of pre-built OS images by default.

# OpenStack Key Concepts

- **Server Management:** Enable all users to perform an action on a server.

Example: ➤ Create/Delete/Resize/Reboot Server  
➤ Show Server(s) Details

- **Flavor Management:** Show and manage server flavors.

Example: ➤ Create/Delete/Update Flavor  
➤ Show Flavor(s) Details

- **Image Management:** Show details and manage images.

Example: ➤ List Images  
➤ Show Image Details  
➤ Delete Image

## Applying the procedure – Data Set

- Servers
- Flavors
- Images



## Applying the procedure – Split Data Set into Resources

- Each server is a resource
- Each flavor is a resource
- Each image is a resource
- One special resource that lists servers
- One special resource that lists flavors
- One special resource that lists images

# Applying the procedure – Name Resources with URIs

## Server URI

GET	/servers <b>List Servers</b>
POST	/servers <b>Create Server</b>
GET	/servers/detail <b>List Servers Detailed</b>
GET	/servers/ {server_id} <b>Show Server Details</b>
PUT	/servers/ {server_id} <b>Update Server</b>
DELETE	/servers/ {server_id} <b>Delete Server</b>
POST	/servers/ {server_id}/action <b>Reboot Server (reboot Action)</b>
POST	/servers/ {server_id}/action <b>Resize Server (resize Action)</b>

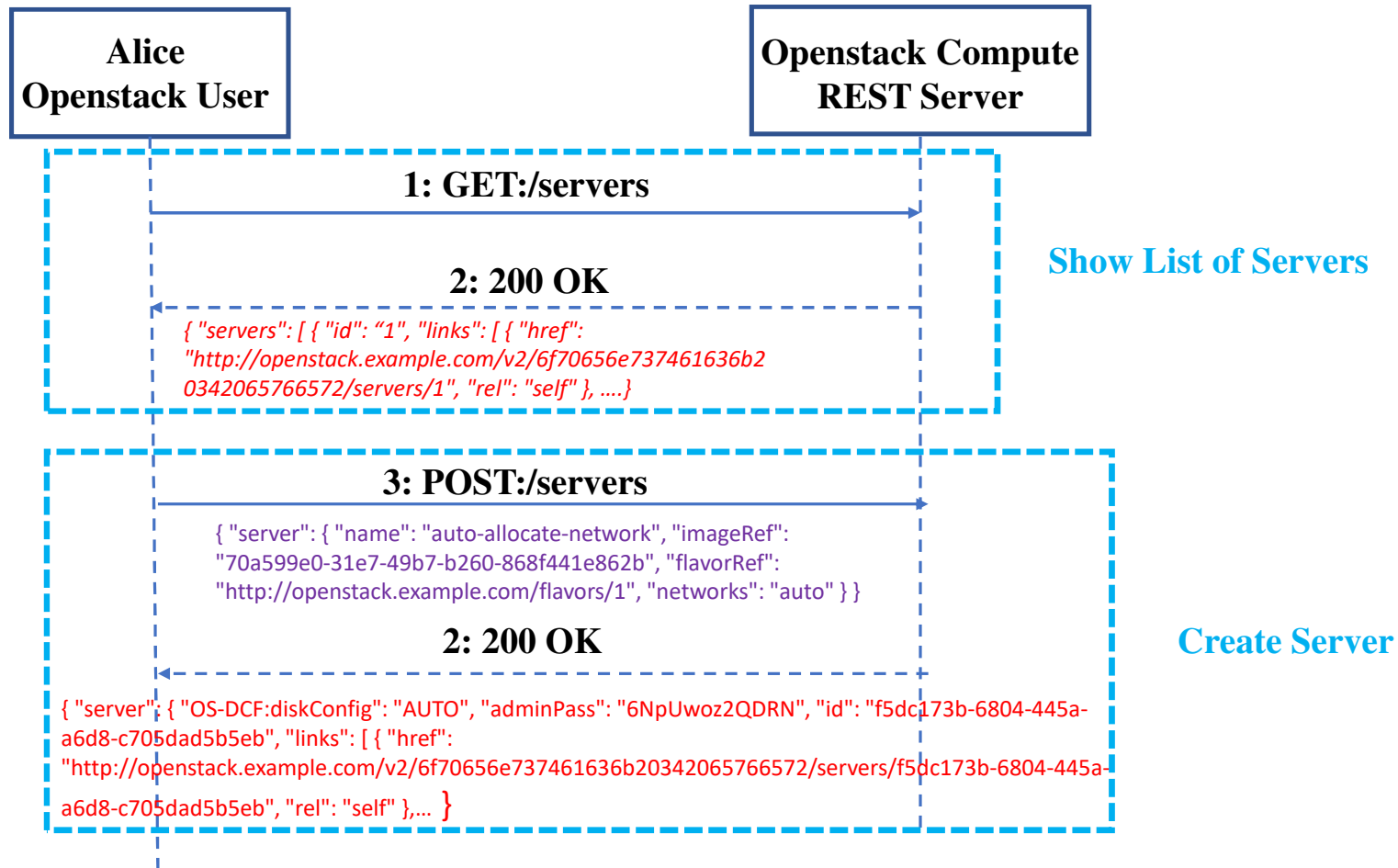
## Flavor URI

GET	/flavors <b>List Flavors</b>
POST	/flavors <b>Create Flavor</b>
GET	/flavors/detail <b>List Flavors With Details</b>
GET	/flavors/ {flavor_id} <b>Show Flavor Details</b>
PUT	/flavors/ {flavor_id} <b>Update Flavor Description</b>
DELETE	/flavors/ {flavor_id} <b>Delete Flavor</b>

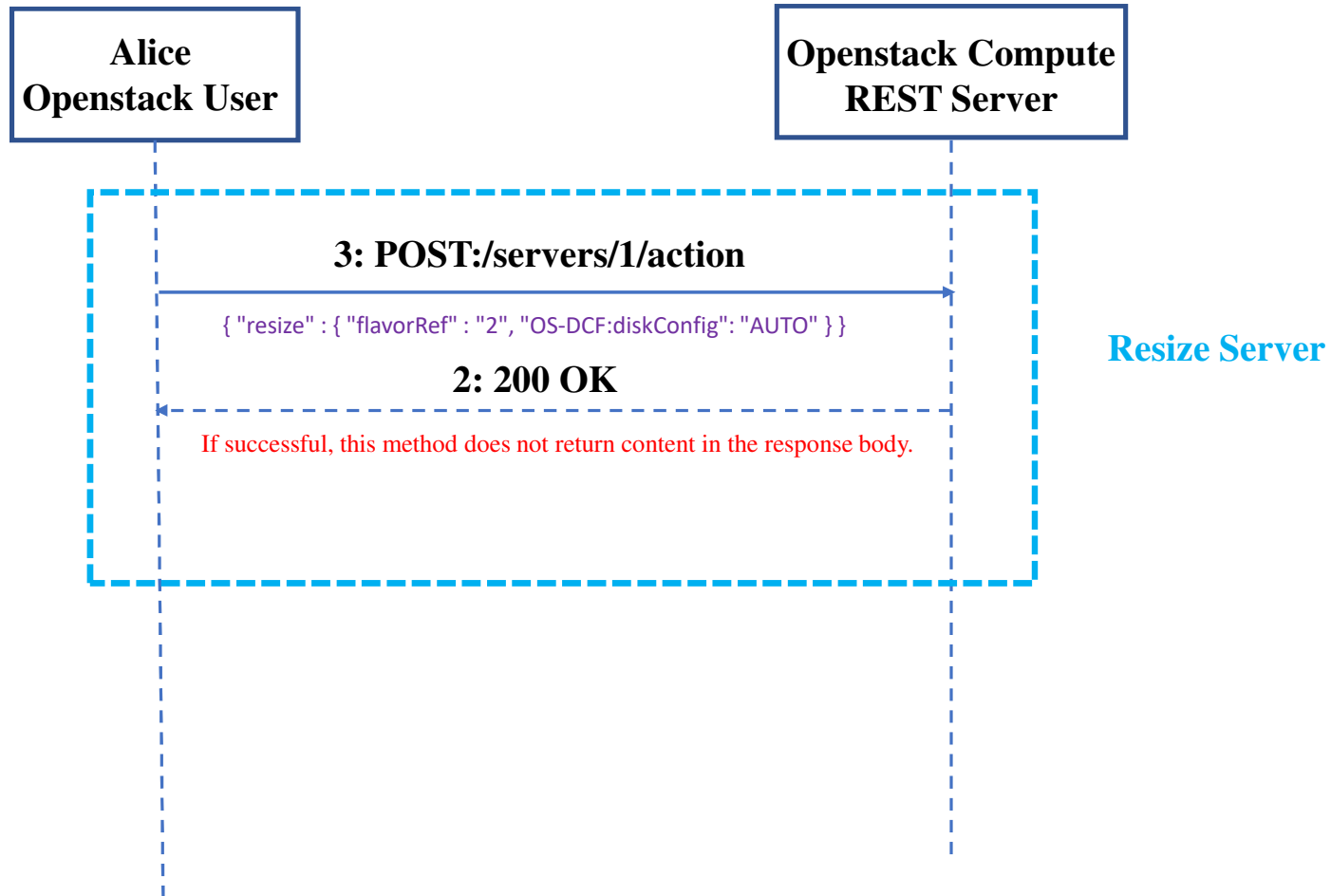
## Image URI

GET	/images/detail <b>List Images With Details</b>
GET	/images/ {image_id} <b>Show Image Details</b>
DELETE	/images/ {image_id} <b>Delete Image</b>

# Example: Listing and Creating Server



# Example: Resizing Server



# References

[https://docs.openstack.org/api-guide/compute/general\\_info.html](https://docs.openstack.org/api-guide/compute/general_info.html)

<https://docs.openstack.org/api-ref/compute/?expanded=>