OpenStack Lab Exercise Answers - Dashboard (Horizon)

# Q1: Use the Horizon Dashboard to manage OpenStack resources (instances, networks, volumes). How does Horizon simplify the management of an OpenStack environment compared to the CLI?

Managing OpenStack Resources in Horizon:  
  
1. \*\*Instances:\*\*  
 - \*\*Create, View, and Manage Instances:\*\* Users can easily launch, resize, pause, stop, and terminate instances through the Horizon interface by navigating to the \*\*"Project"\*\* tab under \*\*"Compute"\*\* > \*\*"Instances"\*\*.  
 - \*\*Snapshots and Backups:\*\* Creating snapshots of running instances is as simple as selecting the instance and choosing \*\*"Create Snapshot"\*\* from the actions menu.  
 - \*\*Instance Monitoring:\*\* Horizon provides an overview of instance status, CPU, and RAM usage, and IP addresses, making it easy to monitor resources at a glance.  
  
2. \*\*Networks:\*\*  
 - \*\*Network Management:\*\* Users can create and manage networks, subnets, and routers under \*\*"Project"\*\* > \*\*"Network"\*\* > \*\*"Networks"\*\*. Horizon offers a visual interface to link networks to instances and configure networking rules.  
 - \*\*Floating IPs:\*\* Floating IPs for external access can be allocated and associated with instances through a few clicks in the dashboard.  
  
3. \*\*Volumes:\*\*  
 - \*\*Manage Volumes:\*\* Under \*\*"Project"\*\* > \*\*"Volumes"\*\*, users can create, attach, detach, and delete volumes. The dashboard allows for easy volume management and provides a clear view of volume status and associated instances.  
 - \*\*Snapshots and Backups:\*\* Like instances, users can create volume snapshots and backups directly from the Horizon interface.

How Horizon Simplifies OpenStack Management Compared to the CLI:  
  
- \*\*User-Friendly Interface:\*\* Horizon provides a graphical interface that allows users to perform actions through simple clicks and forms, making it accessible for non-technical users or beginners.  
- \*\*Reduced Complexity:\*\* Many CLI commands require users to remember syntax and parameters, whereas Horizon abstracts this complexity and provides intuitive dropdowns and input fields for resource creation and management.  
- \*\*Visual Monitoring:\*\* Horizon allows users to visually monitor resources (CPU, RAM usage, instance states, etc.) without needing to parse through command-line outputs.  
- \*\*One-Stop Management:\*\* Horizon centralizes all OpenStack services (compute, network, storage, etc.) in one place, enabling easy access to all resources from a single dashboard.

# Q2: Customize the Horizon dashboard to add a custom theme or logo for your organization. What files need to be modified to achieve this?

Steps to Customize the Horizon Dashboard:  
  
1. \*\*Customizing the Logo:\*\*  
 - Replace the default OpenStack logo with a custom logo by editing the following file:  
 ```  
 /usr/share/openstack-dashboard/openstack\_dashboard/static/dashboard/img/logo.png  
 ```  
 - Place your organization’s logo in this directory and ensure the file is named \*\*logo.png\*\*. You may need to adjust the size of the logo to fit the default dimensions of the dashboard.  
  
2. \*\*Customizing the Horizon Theme:\*\*  
 - Horizon’s appearance is controlled through CSS and SCSS files. You can customize colors, fonts, and layout by modifying these files:  
 ```  
 /usr/share/openstack-dashboard/openstack\_dashboard/static/dashboard/scss/\_variables.scss  
 ```  
 - This file contains theme variables like `$brand-primary` (for primary color), `$navbar-bg` (for navigation bar background color), and other elements you can modify to align with your organization's branding.  
  
3. \*\*Modifying HTML Files (Optional):\*\*  
 - If you need to modify the structure of the Horizon pages (such as adding custom links or text), you may need to edit the Django templates. These are located in:  
 ```  
 /usr/share/openstack-dashboard/openstack\_dashboard/templates  
 ```  
  
4. \*\*Rebuild and Restart Horizon:\*\*  
 - After making changes to the static files, you need to collect and compress the static assets:  
 ```  
 sudo python manage.py collectstatic  
 sudo python manage.py compress  
 ```  
 - Restart the Horizon service to apply the changes:  
 ```  
 sudo systemctl restart apache2  
 ```  
  
Key Files to Modify:  
- \*\*Logo:\*\* `/usr/share/openstack-dashboard/openstack\_dashboard/static/dashboard/img/logo.png`  
- \*\*SCSS Variables (for theming):\*\* `/usr/share/openstack-dashboard/openstack\_dashboard/static/dashboard/scss/\_variables.scss`  
- \*\*Django Templates (for structure changes):\*\* `/usr/share/openstack-dashboard/openstack\_dashboard/templates`