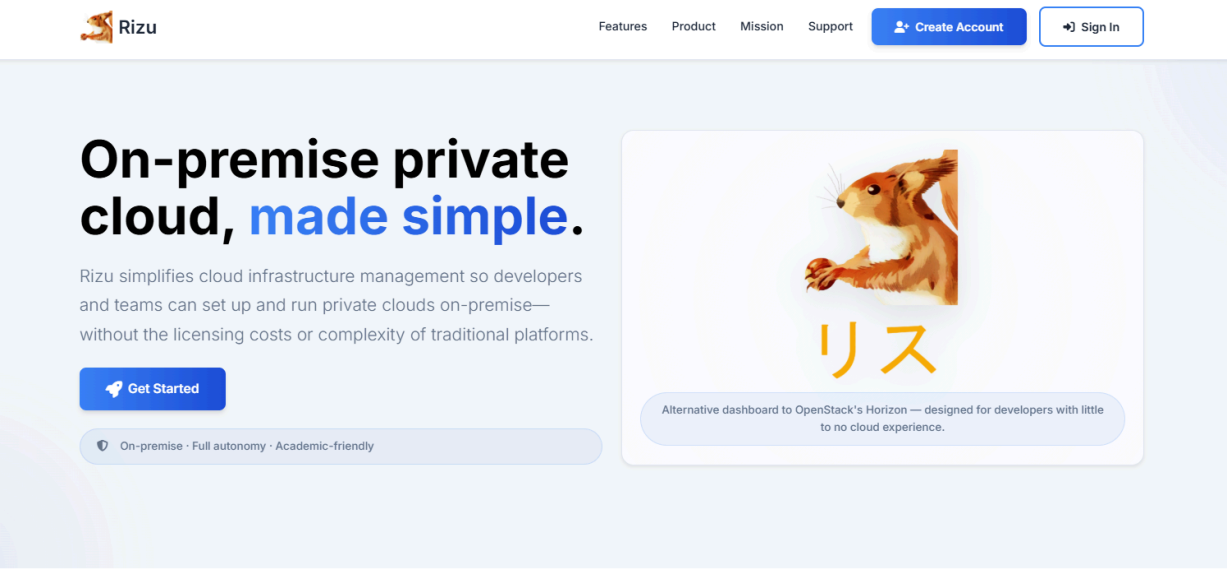
Rizu — User Manual

Table of Contents

Authorization and Account Management

How to Register

When first accessing **Rizu**, users will not immediately see any available features. Instead, they will be prompted to **register** or **log in**. This requirement exists because Rizu operates on top of an **OpenStack deployment**, which enforces strict user authentication before allowing operations such as project creation, resource instancing, or project selection.

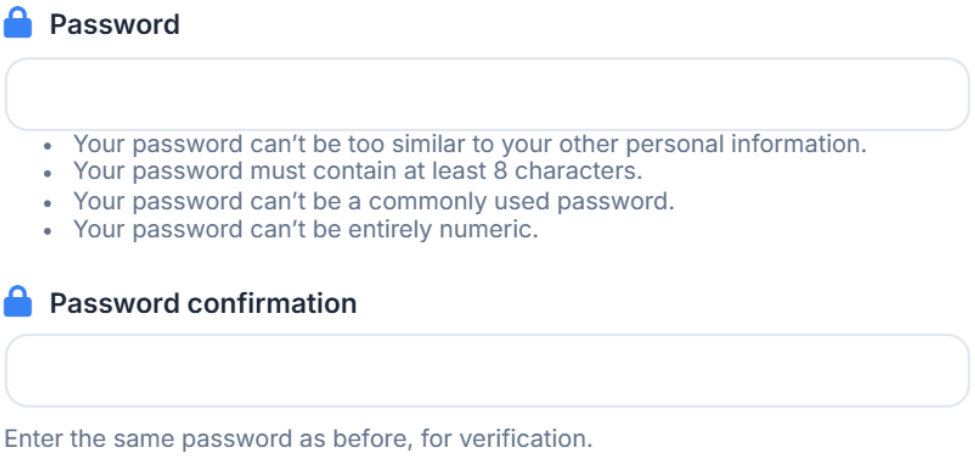


Click the **“Register”** button to be redirected to the registration form. The form requires the following information:

- **Username**
- **Email Address**
- **Role**
- **Password**

Please note:

- **Usernames must be unique** — no duplicates are allowed.
- **Passwords** must follow specific security requirements, which are displayed on the registration page.

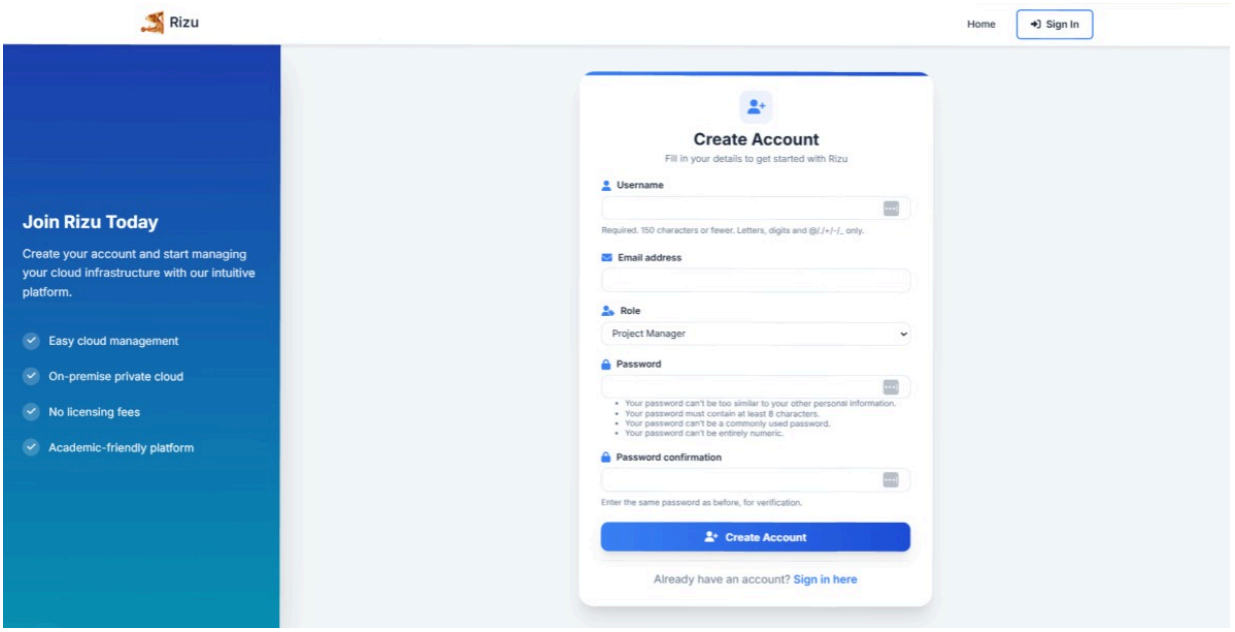


The **Role** field is critical for OpenStack integration. It determines the user's permissions within both Rizu and the underlying OpenStack environment. Users must select between two options:

- **Member**
- **Project Manager**

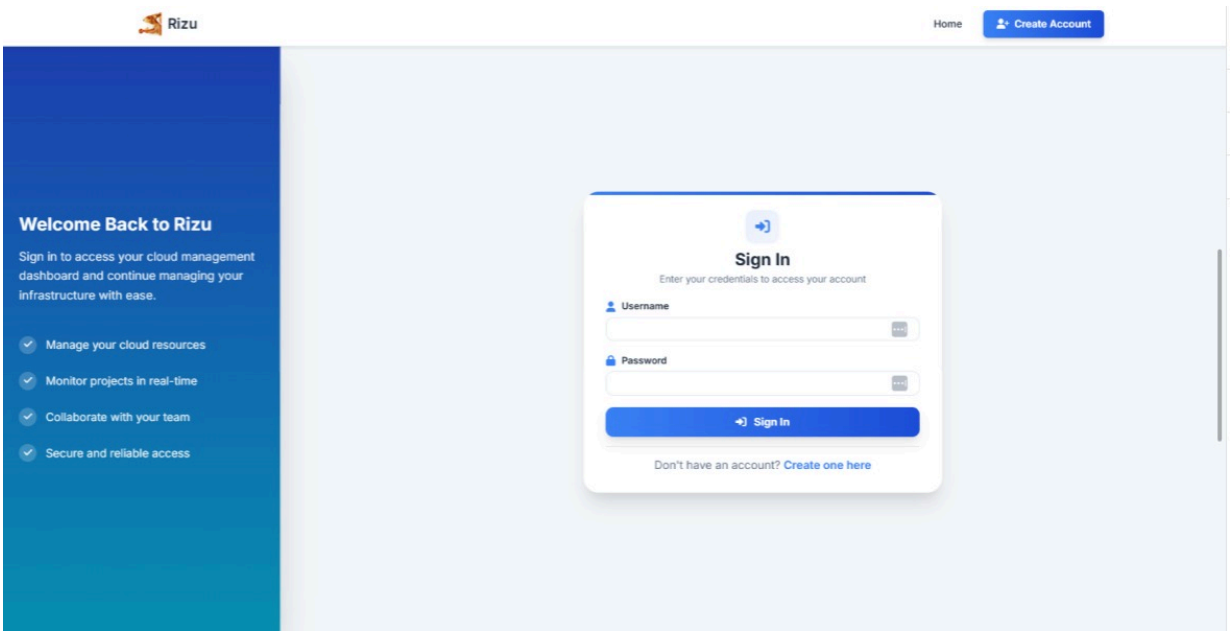
Each role comes with different capabilities and restrictions, which will be detailed in the *Role Differences* section below.

After filling in all the fields, click **"Create Account"** at the bottom of the page. Rizu will then create a corresponding user within both its internal database and the OpenStack deployment. Upon successful registration, you will be redirected back to the home page — now personalized for your new account.

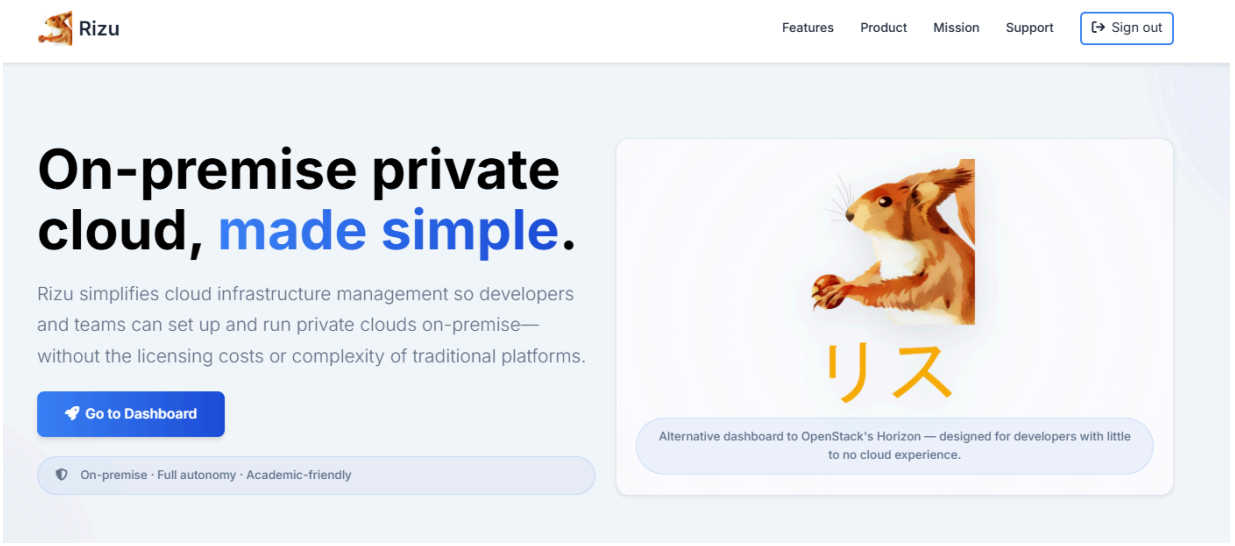


How to Log In

If you are already registered (or an existing user returning to the platform), click the **“Log In”** button to access your account.



The login form is straightforward — it only requires your **username** and **password**. Once both fields are completed, click **“Log In.”** If your credentials are correct, Rizu will grant you access and redirect you to the home page as an **authorized user**.



Role differences

Rizu distinguishes between two types of users: Members and Project Managers. These roles directly influence what actions each user can perform within both Rizu and OpenStack.

Members

Member-class users are those who select the *Member* role during registration. They possess **basic read privileges** within the OpenStack environment, configured through adjusted policy rules. In Rizu, Members are **restricted from performing administrative or infrastructural actions**, such as:

- Creating projects
- Instancing networks or routers

- Managing containers

Instead, Members can perform only two primary actions:

1. **Join existing projects**
2. **Instance Virtual Machines (VMs)**

This design ensures a controlled environment where Members can test and interact with project resources without administrative privileges. It also provides Project Managers with a realistic way to test production-like interactions between users of different access levels.

Members can join **an unlimited number of projects**, allowing flexibility in collaboration and testing across multiple environments.

Project Managers

Project Manager-class users form the core of Rizu's functionality. They are responsible for creating and managing all virtual resources and environments, enabling both Members and other Project Managers to utilize their VPCs.

Because OpenStack does not include a *Project Manager* role by default, Rizu introduces this custom role and modifies OpenStack's internal policy files accordingly.

Through these changes, **Project Managers** gain the following capabilities:

- Create and manage **Projects**
- Join existing **Projects**
- Create **Networks** (both public and private)
- Create **Routers**
- Instance **Virtual Machines (VMs)**

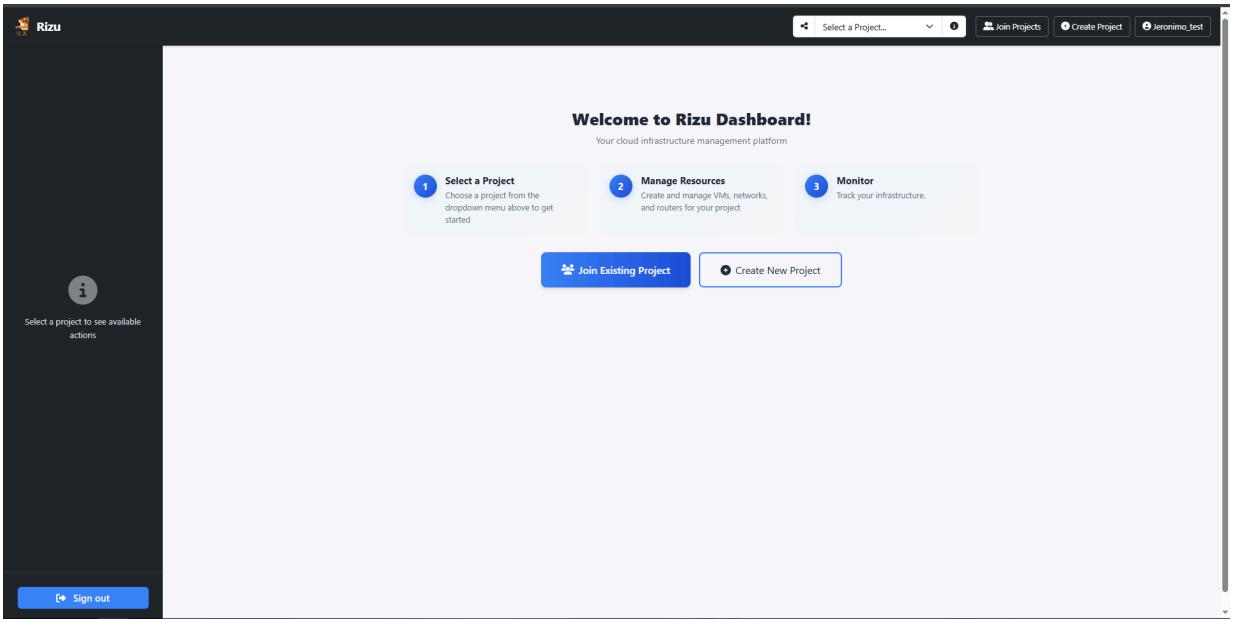
- Instance **Containers**
- Execute all necessary **GET** requests to read and retrieve deployed resources

Note:
There are specific details and exceptions regarding the **“Join Project”** action for Project Managers. These are explained in the *Joining Projects* section later in this manual.

Creating a project

Choosing a Name and Description

Once signed in as a **Project Manager**, you will be greeted by Rizu’s main dashboard, which displays several options—each corresponding to a specific feature of the platform. To begin creating a new project, click on the **“Create New Project”** button.

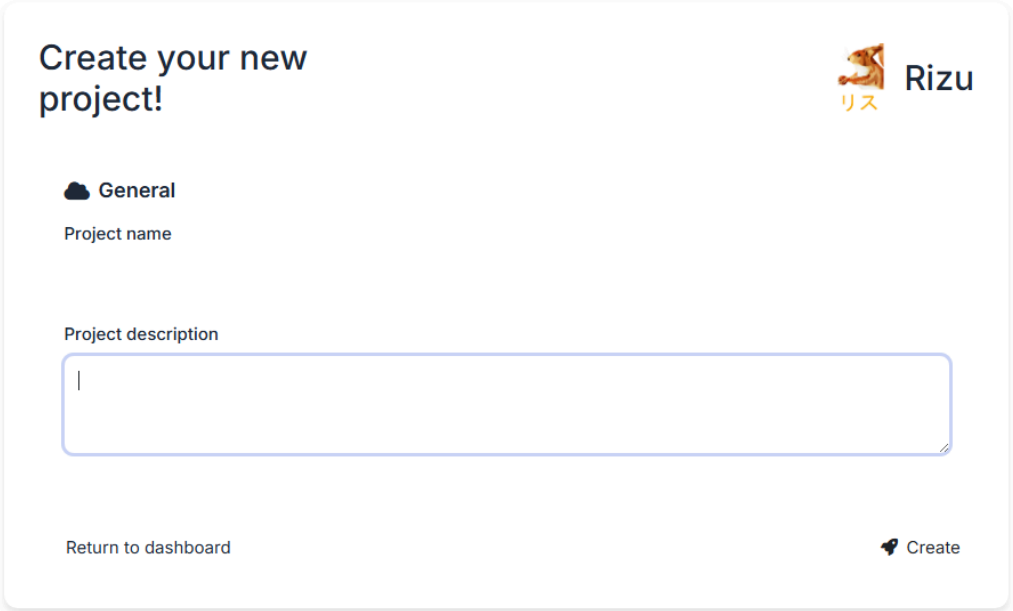


Creating a project in Rizu is straightforward. The form will prompt you to provide the following:

- **Project Name**

- **Project Description**

The only restriction for the project name is **uniqueness** — OpenStack does not allow multiple projects to share the same name. Therefore, ensure your chosen name is not already in use within the deployment.

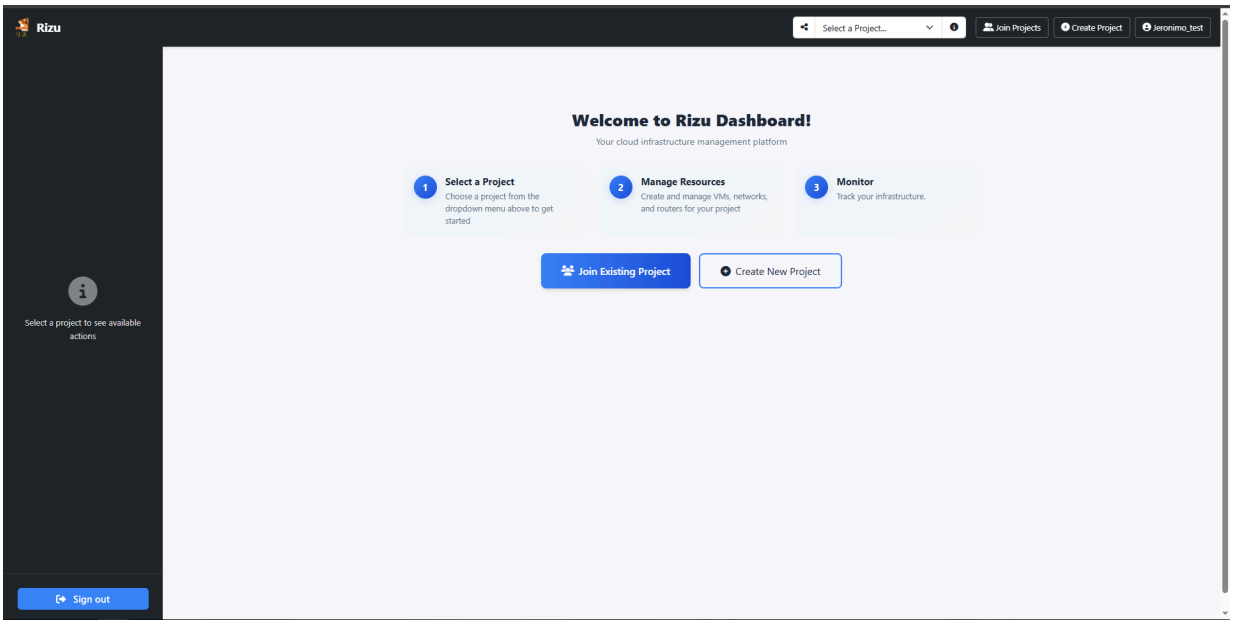


Once the form is submitted, Rizu will process the request and redirect you back to the main page. A pop-up message will then appear, indicating whether the project was created successfully.

Joining a project

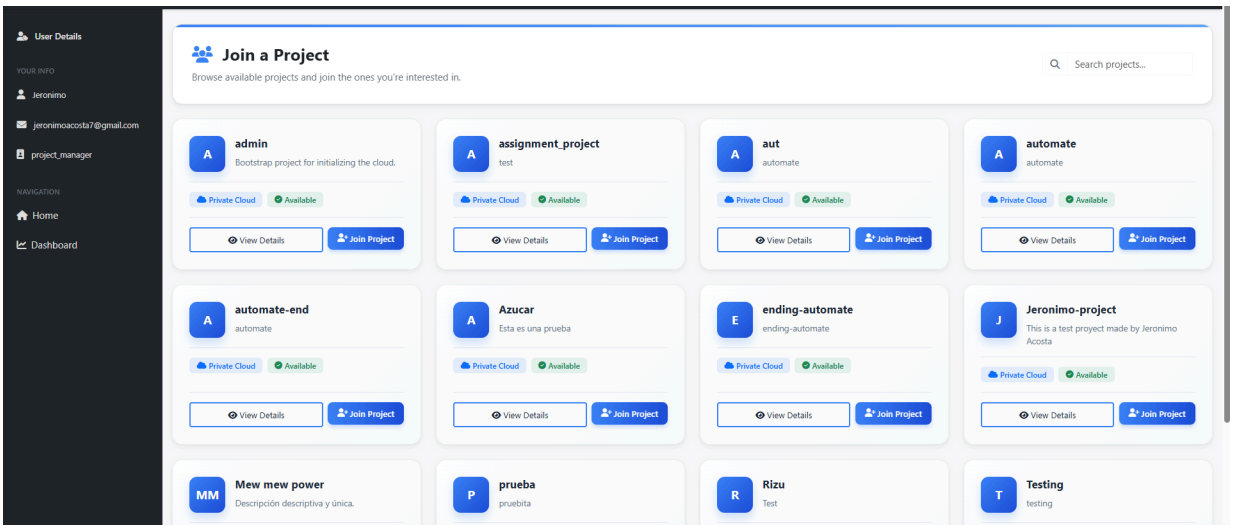
Selecting a Project to Join

After logging in — regardless of your user role — the **“Join Existing Project”** option will appear on the home page. Clicking this button will redirect you to a page listing all currently available projects within the deployment.



Each project entry includes a **name**, **description**, and a **View** button for viewing additional details. Once you have identified the project you wish to join, click the **“Join”** button next to its name.

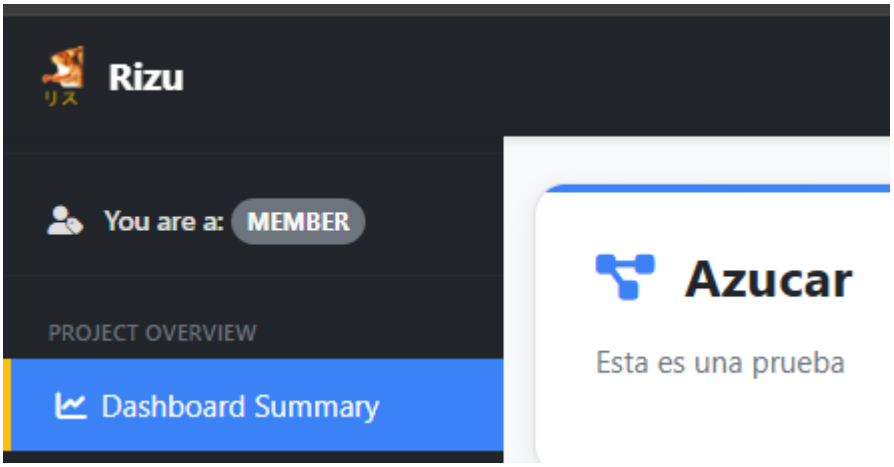
This action instructs OpenStack to associate your user account with the selected project under the **Member role**. Afterward, Rizu will redirect you back to the main page, where you can access your project’s **Dashboard** and begin working within that environment.



Joining Projects as a Project Manager

As mentioned earlier, **Project Manager-class users** have a unique behavior when joining projects.

Although the process for joining is identical to that of Members, the **role assignment** that occurs behind the scenes differs. When a Project Manager joins a project, **OpenStack automatically assigns them as a Member**, not as a Manager.



This means that, regardless of your role during registration, **joining an existing project always grants you Member-level privileges**. **Project Managers** will therefore be unable to provision any resources to the projects they have joined, except for those available to **Members** (described in the **Role Differences** section).

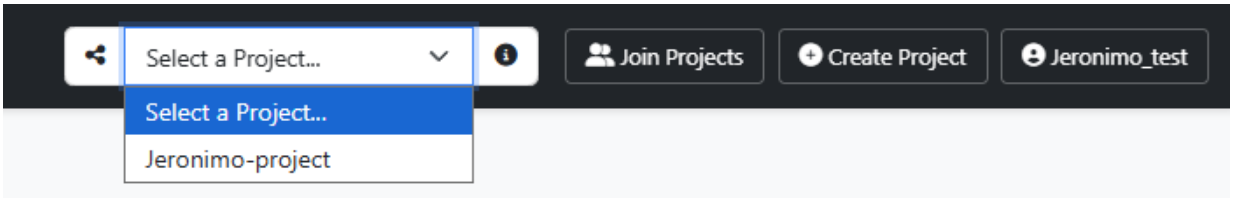
The **only** way for OpenStack to recognize a user as a **Project Manager** of a given project is if **that user created the project**.

Selecting a project

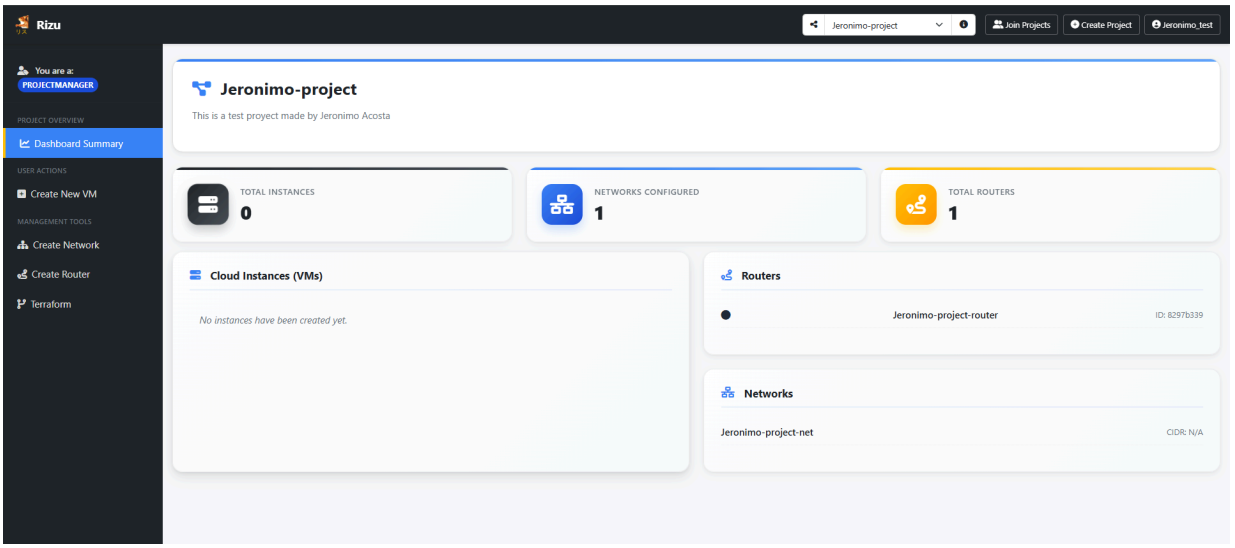
How to select a project in the dashboard

After the user either creates or joins a project, they will head over to the Rizu Dashboard, the hub of all our virtual private cloud resources.

Having clicked on the **Dashboard** button, the user will be redirected to an empty dashboard, with a project selector on the top of the right-hand side. This selector will display all the projects the user has either created or joined. To select a project, simply click on its name, and the page should pull up all the currently available resources for displaying purposes.



Only 1 project can be displayed at a time, and you must remember the caveat that binds project managers, which was discussed in the “**Joining a project**” section.

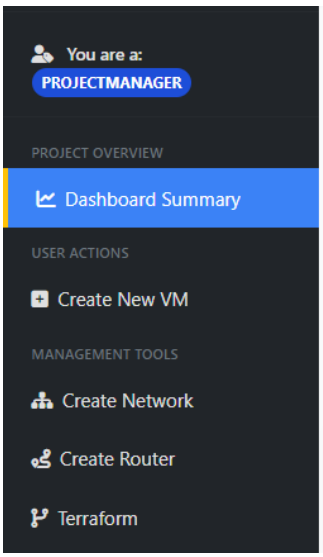


Creating a Network

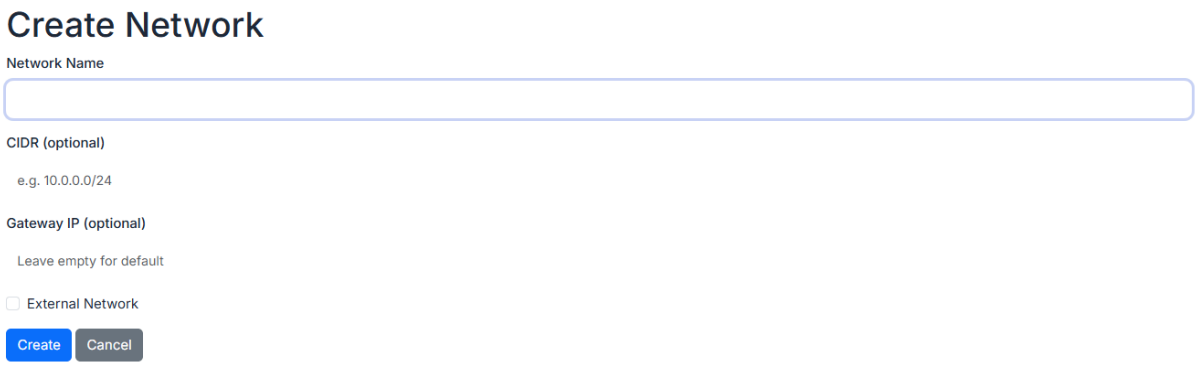
When a project is created in Rizu, the system automatically provisions an initial network for the Project Manager. If additional networks are needed, they can be created via the corresponding options on the Project Dashboard.

Private Networks

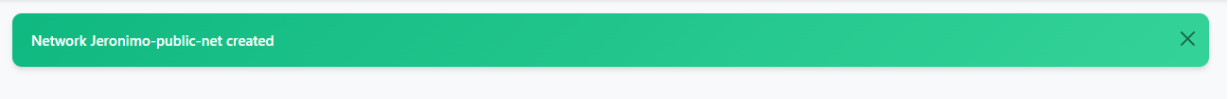
After selecting a project, the **Rizu Dashboard** displays a set of buttons on the left-hand side of the screen that let you customize your Virtual Private Cloud (VPC). To create a private network, simply click the **“Create Private Network”** button.



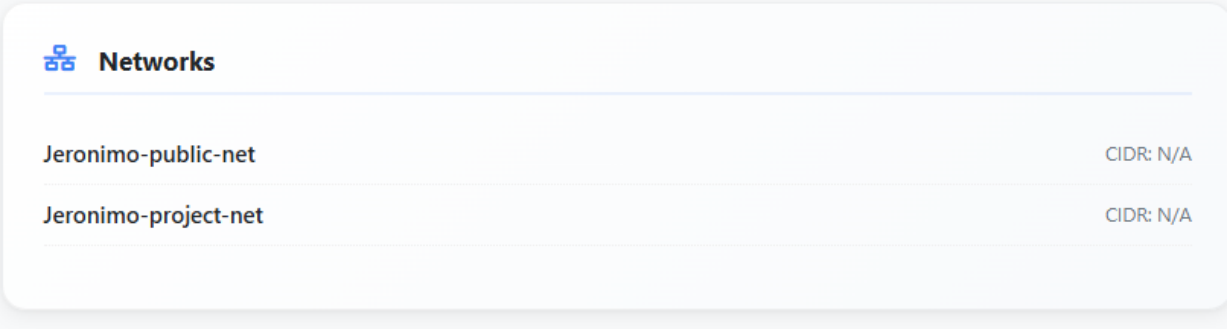
This will take you to the **Network Creation** view. While the form may present several infrastructure-related fields, creating a basic private network only requires **entering a network name**. Once you have entered the name, click **“Create”**.



After the network is successfully created, Rizu will redirect you back to the dashboard and display a **pop-up notification** confirming the creation.



Your newly created networks can be viewed at the **bottom-right section of the dashboard**, providing easy access for further configuration or management.



Public Networks

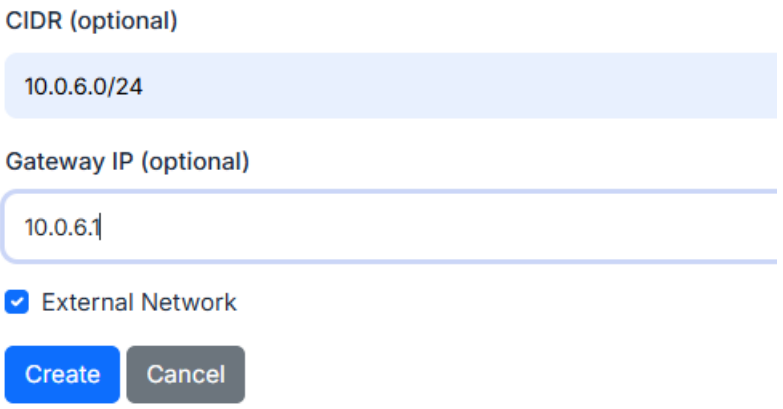
Creating a **public network** is slightly more complex than creating a private network, as it involves configuring IP addresses and other infrastructure details.

To create a public network:

1. **Assign a CIDR (IP range)** — for example, `192.168.1.0/24`.
2. **Specify a Gateway IP** — this IP must belong to the same subnet as the CIDR.
3. Check the **"External Network"** option to indicate that the network should be publicly accessible.

Important conditions to keep in mind:

- The CIDR must include a **network mask** (e.g., `/24`, `/16`).
- The Gateway IP must be **within the same subnet** as the assigned CIDR.



Once configured, click **“Create”**. Rizu will process the request and notify you upon successful creation.

Creating a Router

While every new project in Rizu comes with a **pre-configured router** for immediate use, you may choose to create a custom router to better suit your network setup.

To create a router:

1. Click the **“Create Router”** button located on the **left-hand side** of the dashboard.

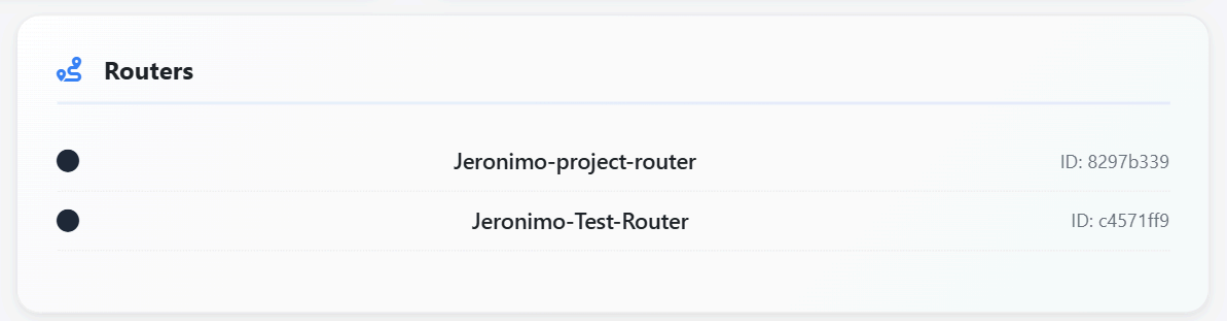
2. You will be taken to the **Router Creation** view, which contains two required fields:

    - **Name** — the identifier for your router.

    - **External Network** — the public network that the router will connect to.

The **Name** field is self-explanatory. The **External Network** field requires a **public network** to exist within your project. If no public network is available, Rizu will **prevent the router from being created**. You do not need to remember the network name, as the application will display a list of all available public networks within your project for selection.

Once both fields are completed, click **“Create”**. Rizu will then provision the router and make it available for use within your VPC.



Creating a Virtual Machine

Before heading into this section, make sure you have gone through the previous ones, since creating a VM requires both a public and private network, as well as a router.

Instancing a VM

From your **Project Dashboard**, click the **“Create VM”** button. You will be taken to the **VM Creation Form**, which contains the following sections:

- **VM Name**: Enter a unique name for your virtual machine. This name will help you identify the VM in your project dashboard and throughout your OpenStack deployment.

- **Select an Image**: Choose an existing VM image from the dropdown list. The image determines the operating system and pre-installed software for your VM.

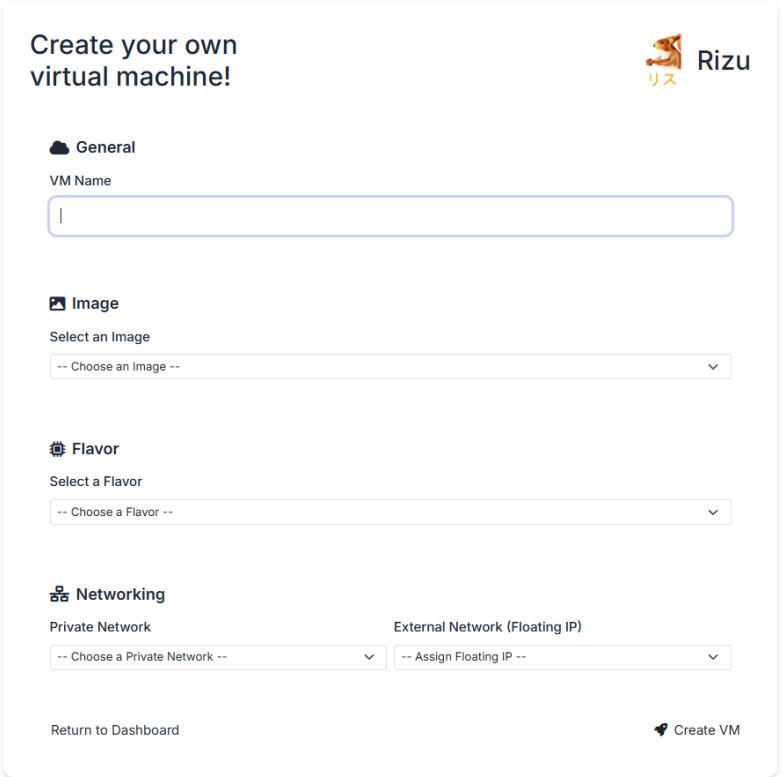
  Tip: Make sure the selected image is compatible with the flavor you plan to use.

- **Select a Flavor**: Choose a flavor from the dropdown. The flavor defines the VM's **compute resources**, including the number of CPUs, RAM, and disk space.

  Tip: Select a flavor that meets the requirements of the application you plan to run on the VM.

- **Private Network**: Select a private network from the dropdown. This network will connect your VM to other resources in your project.
- **External Network (Floating IP)**: Optionally assign a floating IP to make your VM accessible from external networks.

  Note: Assigning a floating IP is necessary if you need public access to your VM.



Once all required fields are completed:

1. Review your VM configuration.

2. Click the **“Create VM”** button at the bottom-right of the form.

Rizu will provision the VM in the background. After successful creation, you will be redirected back to the **Project Dashboard**, where the new VM will appear with its assigned networks and resources.

Creating a Cinder Block storage for your VM

The **Cinder Block Storage** interface is available only to users who have already created a Virtual Machine (VM) within their project and wish to expand its storage capacity.

Accessing the Block Storage Interface

To begin, click on the **“Create Block Storage”** button located on the **left-hand side** of the screen.
This will take you to the **Block Storage Creation Form**, where you can define the parameters of your new storage volume.

Filling Out the Block Storage Form

You will be asked to provide the following details:

- **Volume Name:**
  A descriptive name for your new storage volume.

- **Description:**
  Optional — use this field to include additional details about the purpose of the volume.

- **Storage Configuration:**
  Specify the desired size of the block storage (in GB).

  Note: Be mindful of the host’s available storage space to ensure successful creation.

- **VM Assignment:**
  Select one of your existing Virtual Machines to attach the new volume to.
  Only available VMs within your project will appear in the dropdown list.

Creating the Storage Volume

Once all fields are completed, click on **“Create Storage Volume.”**
If the operation is successful, the system will:

1. Redirect you back to the **Project Dashboard**.

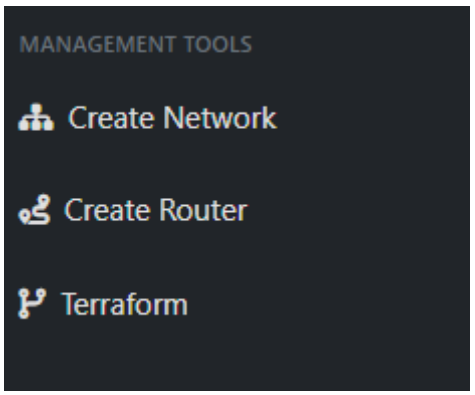
2. Display a **confirmation pop-up** indicating that the volume was successfully created and attached to the selected VM.

Using Terraform

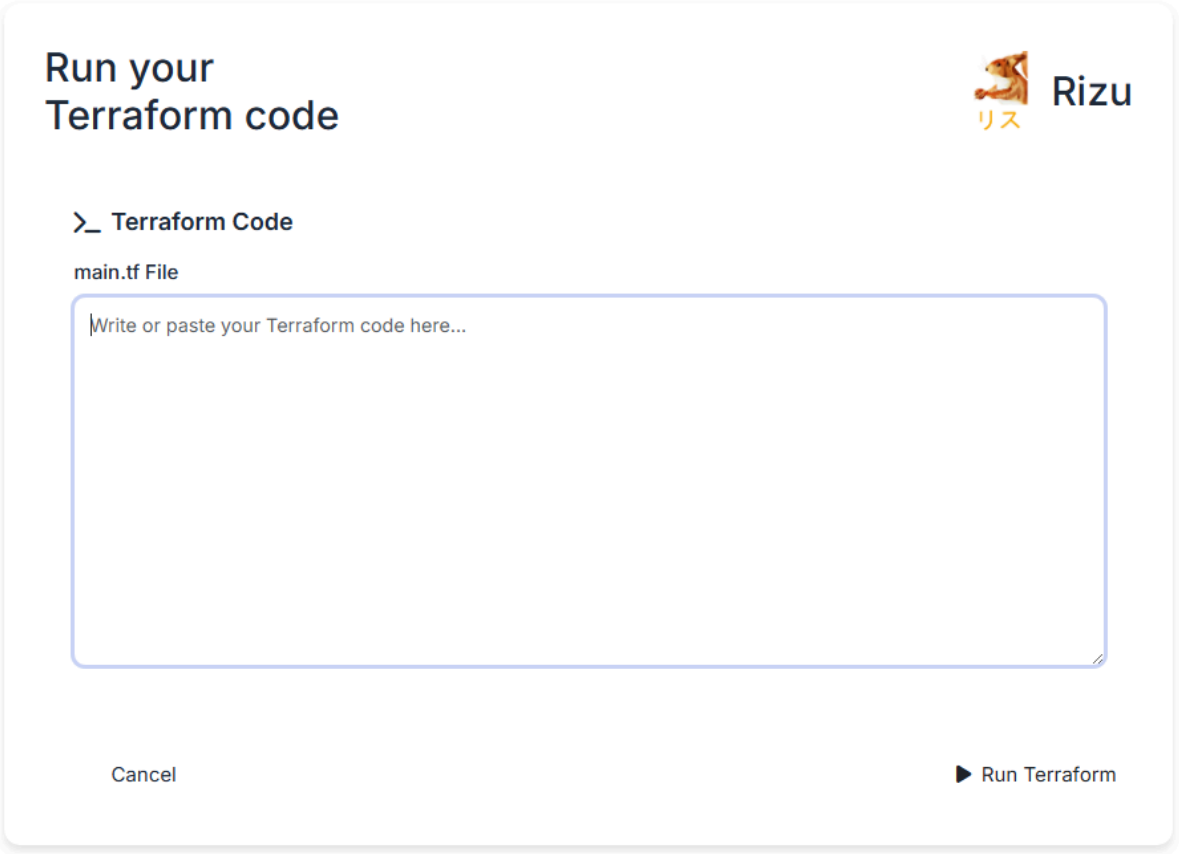
Rizu Terraform Interface (RTI)

The **Rizu Terraform Interface (RTI)** serves as Rizu’s **Infrastructure as Code (IaC)** integration layer, designed for users who prefer to **bypass the graphical interface** and work directly with **Terraform scripts**.

This feature can be accessed from the **Project Dashboard**, alongside the other project management options.



The RTI allows users to input and execute Terraform scripts directly within the application. These scripts should be **properly formatted** and **syntactically correct**, as Rizu **does not perform syntax or compilation checks**. Any errors in the script will cause the execution to fail silently or return Terraform-related errors.



Within your script, you must reference **specific environment variables** required by Rizu's OpenStack integration. For guidance, users can refer to the **example `.tf` file** located in the application's root directory, which demonstrates the correct structure and variable usage within the Rizu context.

Executing a Terraform Script

Once the Terraform code has been prepared, scroll to the bottom of the RTI and click the **"Send"** button to initiate execution. When this button is pressed, Rizu runs the script **in the background** through a sub-process, overriding the same Terraform file template mentioned earlier.

If the script runs successfully, Rizu will display an **execution summary**, detailing all **resource changes** that occurred within the OpenStack deployment — including created, modified, or destroyed resources. This provides users with clear feedback on the impact of their Terraform configuration.

Frequently Asked Questions (FAQ)

Why can't I create a project?

One of the most common issues when attempting to create a project in Rizu is a **name conflict**. Before creating a new project, check the list of existing projects in the **"Join Project"** page to ensure that no other project shares the same name.

If there is **no visible name conflict within Rizu**, the issue might originate from the underlying **OpenStack deployment**. In some cases, a project with the same name may exist in OpenStack's database but not be synchronized with Rizu. This can happen due to interrupted creation processes or failed synchronization attempts.

To resolve this issue:

1. Access your **OpenStack CLI** or **OpenStack Horizon** interface.
2. Locate and **delete the conflicting project** directly from OpenStack.
3. Return to Rizu and **try creating the project again**.

Why is my Terraform script not working?

Rizu's **Project Selector** retrieves and displays projects by querying OpenStack resources using their **unique project IDs**.
If your project does not appear in the selector, the first step is to verify that you have **joined the project correctly**.

Navigate to the **"Join Project"** page and check the project list:

- If you are not yet a member, click **"Join"** next to the project's name.
- If the system indicates that you have *already joined* but the project still does not appear, the issue is likely related to **OpenStack communication or configuration**.

In such cases, it is recommended to:

1. Check the **application output logs** for error messages.
2. Review your **OpenStack policies** to ensure proper permissions.
3. Confirm that your **internet connection** or **API endpoint configurations** are functioning correctly.

Why is my Terraform script not working?

Occasionally, users may encounter **error messages** when executing a Terraform script through the **Rizu Terraform Interface (RTI)**. In most cases, these messages are **self-explanatory** and relate directly to issues within the script itself.

Because Rizu does **not include an Infrastructure-as-Code (IaC) validation system**, it assumes that users are already familiar with Terraform syntax and workflow. If your script fails to run correctly, carefully review the error message and verify that your code follows Terraform's required structure and conventions.

For users less comfortable with Terraform, it is recommended to **return to the Project Dashboard** and use the **Rizu API or graphical interface** instead. These offer guided interactions without the need for direct Terraform scripting.

A less common — but possible — cause of RTI execution failure occurs when **Terraform is not installed** on the host machine where **OpenStack** is deployed. Since Rizu relies on the host's Terraform installation to process scripts, missing binaries will prevent execution.

To resolve this issue:

1. Install Terraform on the host machine.

2. Restart or re-run the Rizu Terraform process.

Once installed correctly, your Terraform scripts should execute without issue.