

# Citrix Secure Developer Spaces™





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## Citrix Secure Developer Spaces™

August 26, 2025

Citrix Secure Developer Spaces, formerly known as Strong Network is a secure, cloud-based development environment (CDE) platform that enhances developer productivity while maintaining enterprise-grade security. It provides fast onboarding through preconfigured workspaces that are accessible from anywhere—ideal for hybrid and remote teams.

The platform helps protect source code, credentials, and data by eliminating local dependencies and enforcing strong access controls. Its container-based environments integrate with common DevOps tools, CI/CD workflows, and security models such as Zero Trust. Organizations can reduce costs associated with laptops, maintenance, and security software, while gaining real-time visibility and governance over the development lifecycle.

## **Getting Started**

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## **Overview**

Citrix Secure Developer Spaces (SDS), formerly known as the Strong Network platform, is a secure, cloud-based development environment (CDE) designed to enhance developer productivity while maintaining enterprise-grade security. The platform's primary's purpose is to streamline the provisioning and management of coding environments, allowing organizations to boost efficiency and collaboration among internal and external teams.

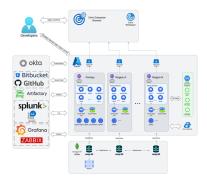
It provides fast onboarding through preconfigured, container-based workspaces that are accessible from anywhere, making it ideal for hybrid and remote teams. The platform can be deployed flexibly on public or private clouds and self-hosted servers, and it even supports fully air-gapped modes for high-security settings.

By centralizing development resources and eliminating local dependencies, SDS helps protect source code, credentials, and intellectual property. It enforces strong access controls and integrates with security models like Zero Trust, reducing the risk of data leaks and supporting DevSecOps practices.

Ultimately, the platform helps organizations reduce costs associated with high-spec laptops, maintenance, and security software, while gaining real-time visibility and governance over the development lifecycle. Its environments seamlessly integrate with common DevOps tools and CI/CD workflows to improve IT efficiency, developer productivity, and overall governance.

## **Architecture Diagram**

#### August 29, 2025



The architectural diagram of a CDE has the following components:

- One Kubernetes cluster with auto-scaling node and storage Container Storage Interface(CSI) driver capacity to host the SDS platform and workspace.
- A container registry
- · MongoDB database
- Code repositories, for example, Bitbucket or GitHub
- Optional: Additional Kubernetes clusters set up in different regions to ensure global access with optimized network latency.
- Optional: An identity provider (SAML), such as Okta
- · Optional: Observability
- Optional: Private access using Citrix Workspace, Enterprise Browser, or SPA

The key components of SDS - the Cloud Development Environment (CDE) Platform include Kubernetes clusters, a container registry, and a MongoDB database. You can leverage resources from any cloud service provider, use your hardware in a data center, or even use a hybrid.

The core components of the Azure-based sample deployment depicted in the architecture diagram above are:

- Azure Kubernetes Services for platform and regions
- Service node pool with two Standard\_D8as\_v5 VMs
- Workspace node pool with Standard\_D16as\_v5 VMs with auto-scaling
- Azure Container Registry
- Premium Tier
- Geo Replication peers
- MongoDB Atlas cluster
- M10 (2 GB RAM, 8 GB Storage) with auto-scaling
- · Read-only nodes for regions

If you are not using Azure, you can choose from the following alternatives:

- · Kubernetes Cluster:
  - Amazon Elastic Kubernetes Service
  - Google Kubernetes Engine
- · Container Registry
  - Amazon Elastic Container Registry
  - Google Container Registry

#### Note:

Further deployment guidance and best practices can be found on Citrix Tech Zone

## **Citrix Secure Developer Spaces Setup Guide**

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This repository contains various guides on how to set up the Citrix Secure Developer Spaces platform. It is intended for administrators of the platform.

Need help? Support Center

## **Technical Requirements**

- An AWS, Azure, GCP account or any on-prem Kubernetes (Openshift, Tanzu) deployment with appropriate permissions for cloud infrastructure
- Kubernetes cluster, version 1.20+, we can share the cluster with other applications (not recommended)
- Ingress gateway: we are using the Nginx ingress controller Welcome Ingress-Nginx Controller.

  NetScaler and Istio gateway are supported as well.

Network Policy: we are relying on the networking.k8s.io/v1 API. If not available you can install: Calico ( [Project Calico

Tigera - Creator of
Calico](https://www.tigera.io/project-calico/))
or (Cilium) (Cilium - Cloud Native, eBPF-based
Networking, Observability, and Security)

•

- Persistent Volume Claims API, for creating persistent volumes.
- In case of AWS, Amazon Linux should be used for Kubernetes nodes.

Helm CLI tool for deploying the product, we provide a helm chart to our customers.

Installing

Helm](https://helm.sh/docs/intro/install/)

Installation guide: [Helm

•

- Two DNS domains with appropriate SSL certificates (optional but recommended for PoC deployment), one is a wildcard domain. We recommend the following: example.com and \*.proxy.example.com
- For production deployments it is recommended to use a MongoDB Atlas subscription for database management, for PoC by default we deploy an internal MongoDB container
- For production deployments it is recommended to use an identity provider (SAML or OIDC), such as Okta, for identity and access management. Email/password identities

You should also be able to access the following URLs needed for the installation:

- Our license server is at: api.enterprise.strong.network
   It is used to get a license and generate a temporary access token to the artifactory where we store images. It is also possible to perform the installation (production or PoC) without having access to this endpoint and in that case we can supply you with an offline license.
- europe-docker.pkg.dev/strong-network-release/images is the artifactory URL hosted on GCP. We have mirrors in the US and Asia, if needed: asia-docker.pkg.dev/strong-network-release/images and us-docker.pkg.dev/strong-network-release/images
- **gs://strong-network-helm-chart** (https://storage.cloud.google.com/strong-network-helm-chart/)

It is a Google bucket where the helm chart is stored

• The installer itself is stored on dockerhub under our account: https://hub.docker.com/r/strongnetwork/strong\_installer(docker\_pull\_strongnetwork/strong\_installer)

The exact list of URLS that you should be able to access is:

Helm chart package:

https://storage.cloud.google.com/strong-network-helm-chart/ninjahchart-2025.5.4.tgz

List of service images:

europe-docker.pkg.dev/strong-network-release/images/browser\_in\_browser:2025.5.4 europe-docker.pkg.dev/strong-network-release/images/cloud\_editor\_sidecar\_proxy:2025.5.4 europe-docker.pkg.dev/strong-network-release/images/frontend:2025.5.4 europe-docker.pkg.dev/strong-network-release/images/sn\_enterprise\_bundle:2025.5.4

## Workspace Images:

europe-docker.pkg.dev/strong-network-release/images/ws-images/android\_studio:2.2.5 europe-docker.pkg.dev/strong-network-release/images/ws-images/cloud\_editor\_generic:2.2.9 europe-docker.pkg.dev/strong-network-release/images/ws-images/goland\_go:2.2.5 europe-docker.pkg.dev/strong-network-release/images/ws-images/intellij\_java:2.2.5 europe-docker.pkg.dev/strong-network-release/images/ws-images/intellij\_ultimate:2.2.5 europe-docker.pkg.dev/strong-network-release/images/ws-images/phpstorm\_php:2.2.5 europe-docker.pkg.dev/strong-network-release/images/ws-images/pycharm\_python:2.2.5 europe-docker.pkg.dev/strong-network-release/images/ws-images/webstorm\_image:2.2.5

#### Installer Image:

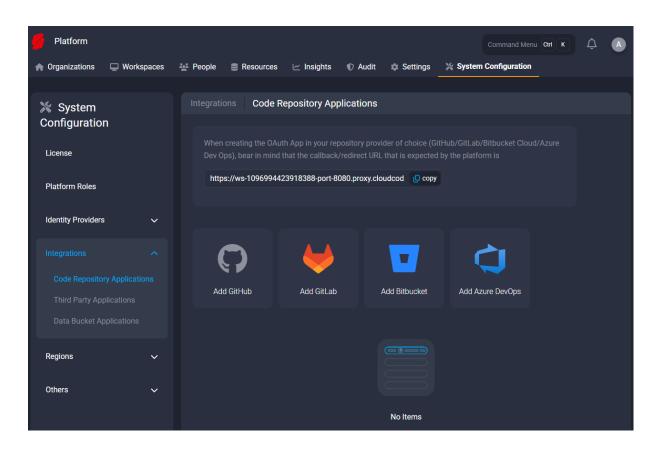
strongnetwork/strong\_installer:2025.5.4

## **Setup Code Repository Applications**

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This folder contains a list of guides on how to set up different code repositories:

- GitHub
- GitLab
- Bitbucket
- Azure DevOps



## **Azure Dev Ops integration as Code Repository Provider**

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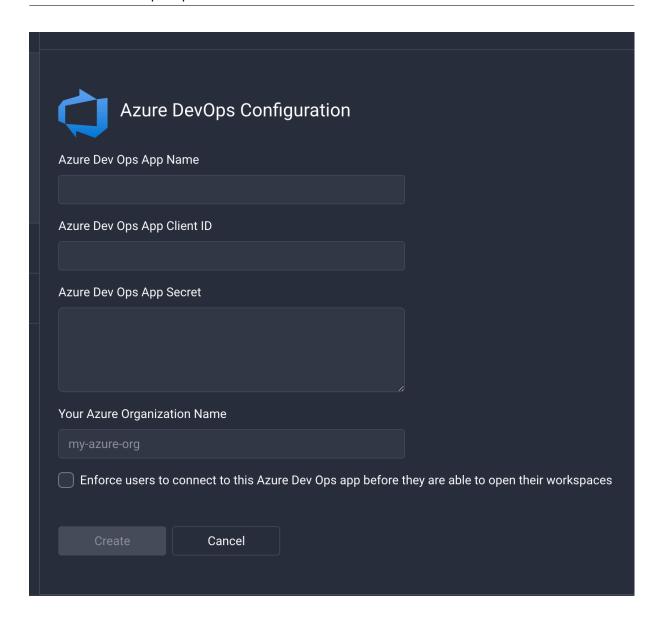
Follow these steps to create an OAuth App in Azure DevOps to connect it to the platform.

- Using an Azure DevOps account, go to the following link:
   Register an application
- Click on the "Add consumer" button and set the following fields:
  - **Company Name:** Your company"™s name.
  - **Application Name:** The name you want to give to the application. It will be public.
  - Application Website: Set to https://example.com/oauth/apps/callback (replace example.com with the proper domain name).
  - Authorization Callback URL: Set to https://example.com/oauth/apps/callback (replace example.com with the proper domain name). This URL can be found in the admin panel of the Strong Network platform.
  - Authorized Scopes: Code (read and write) and Project and team (read
     ).

- Once done, click the "Create Application" button. You will be presented with the Client ID (called App ID) and the Secret (called Client Secret) after clicking the "Show" button. Enter these fields in the Admin configuration of the Strong Network™ platform.
  - Register an application
  - https://example.com/oauth/apps/callback
- Specify the Azure Organization name. This application can only access repositories under this
  specific organization. To access repositories from different organizations, create multiple Azure
  DevOps Code Repository Applications, each with its corresponding organization name. You may



Paste Client ID, App Secret and Organization name from steps above:



# **Bitbucket Cloud Integration as Code Repository Provider**

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Follow these steps to create an OAuth App in Bitbucket Cloud to connect it to the platform:

- Navigate to OAuth Consumers:
- Using a Bitbucket account, go to the main organization settings and then to "OAuth consumers"
- You can follow this https://bitbucket.org/[YOUR\_DOMAIN\_NAME]/workspace/settings/api to reach this menu directly.

#### · Add a New Consumer:

- Click on the "Add consumer" button and set the following fields:
  - Name: The name you want to give to the application. It will be public.
  - Callback URL: The URL should have a structure similar to https://example.com/oauth/apps/callback, where "example.com" should be replaced with the proper domain name. This URL can be seen from the admin panel of the Strong Network platform.
  - This is a private consumer: This should already be selected by default; leave it as it is.
  - **Scopes:** Select "Read"under the Account section and "Write"under the Repositories section. This can also be checked in the Strong Network™ Platform when clicking the "Add Bitbucket"button.

#### • Complete the Registration:

• After clicking the "Save" button, you will be presented with the Client ID (called Key) and Secret, which you need to enter in the platform configuration.

## Bitbucket Server or Data Center Integration as Code Repository Provider

In this section, we will see how to connect the Strong Network platform to a self-hosted Bitbucket instance:

#### Configure Strong Network Platform:

- Go to the Strong Network platform settings and open the "Code Repository Applications" menu.
- Click on the "Add Bitbucket" button.
- Select the checkbox for "Bitbucket Server or Data Center (self-hosted)".
- Set the Following Fields:
- **Bitbucket App Name:** It can be anything. This is what users will see when using this Code Repository Provider.
- **Custom Domain:** Enter the URL where the Bitbucket instance is hosted. If no scheme is given, HTTPS will be chosen by default.
- **Enforce Users to Connect:** If selected, users will need to connect to Bitbucket before they can open their workspaces. This can prevent misconfiguration/permission issues on the user side.

#### · Complete the Registration:

- Click the "Create" button to complete the configuration on the Strong Network platform side.
- Save the "Bitbucket Server Public Key" for later use. This can also be found in the edit menu after clicking the "Create" button.

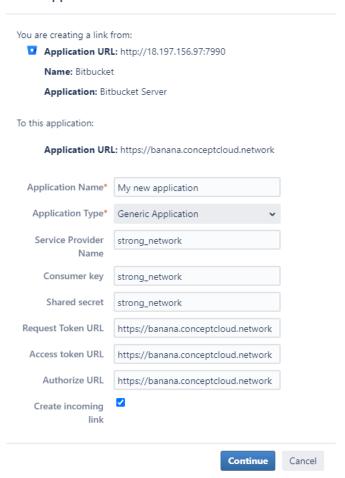
#### Configure Bitbucket Instance (Version 7.20 or Later):

- Go to Administration > Applications > Application Links and click on "Create link":
  - Application Type: External application
  - **Direction:** Incoming
  - Click on continue
  - Set a unique name
  - Redirect URL: Set to https://example.com/oauth/apps/callback, where "example.com" should be replaced with the proper domain name.
  - Application Permissions: Account: Write, Repositories: Admin
  - After clicking the "Save"button, enter "strong\_network"for both Client ID and Client Secret.

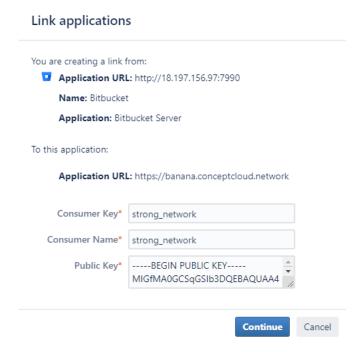
#### • Configure Bitbucket Instance (Version 7.20 or Earlier):

- Go to Administration > Application Links.
- Enter the platform URL (e.g., https://example.com, where "example.com" should be replaced with the proper domain name).
- Click on "Create new link". If you see a "No response received" error, ignore it and click Continue.
- In the following menu, enter:
  - Application Name: It can be anything.
  - Application Type: Generic Application
  - **Service Provider Name:** It can be anything (recommended: "strong\_network").
  - **Consumer Key:** Set to "strong\_network".
  - **Shared Secret:** Set to "strong\_network".
  - Request Token URL: Set to http://example.com, where "example.com" should be replaced with the proper domain name.
  - Access Token URL: Set to http://example.com, where "example.com" should be replaced with the proper domain name.
  - Authorize URL: Set to http://example.com, where "example.com" should be replaced with the proper domain name.
  - Check "Create incoming link" and click Continue.

## Link applications



- In the following menu, enter:
  - Consumer Key: Set to "strong\_network".
  - Consumer Name: Set to "strong\_network".
  - **Public Key:** Enter the value that can be seen in the platform.



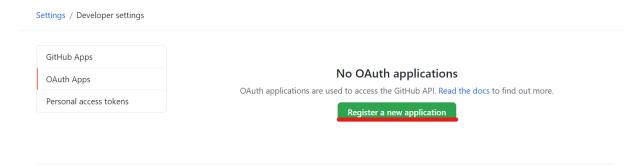
- · Complete the Configuration:
- Click on Continue. The configuration is complete.

## **GitHub Integration as Code Repository Provider**

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Follow these steps to create an OAuth App in GitHub to connect it to the platform:

- Navigate to Developer Settings:
- Using a GitHub account, go to its settings and then to "Developer settings".
- Inside this menu, click on "OAuth Apps".
- You can follow this https://github.com/settings/developers to reach this menu directly.



• Register New Application:

- Click on "Register new application" and you will be presented with a screen to set:
  - Application Name: At your discretion.
  - Homepage URL: The main route of the domain where the platform is running.
  - Authorization Callback URL: The URL should have a structure similar to https://example.com/oauth/apps/callback, where "example.com" should be replaced with the proper domain name (same as the Homepage URL).

# Register a new OAuth application

# Application name \* Your application name

Something users will recognize and trust.

Homepage URL \*

https://example.com

The full URL to your application homepage.

#### Application description

Application description is optional

This is displayed to all users of your application.

#### Authorization callback URL \*

https://example.com/oauth/apps/callback

Your application's callback URL. Read our OAuth documentation for more information.

Register application

Cancel

#### • Complete the Registration:

- When this process is done, click on the green button "Register application".
- You will be redirected to a new application page where you can see the Client ID and generate the Secret that needs to be set in the platform configuration.
- Give Organization Access:

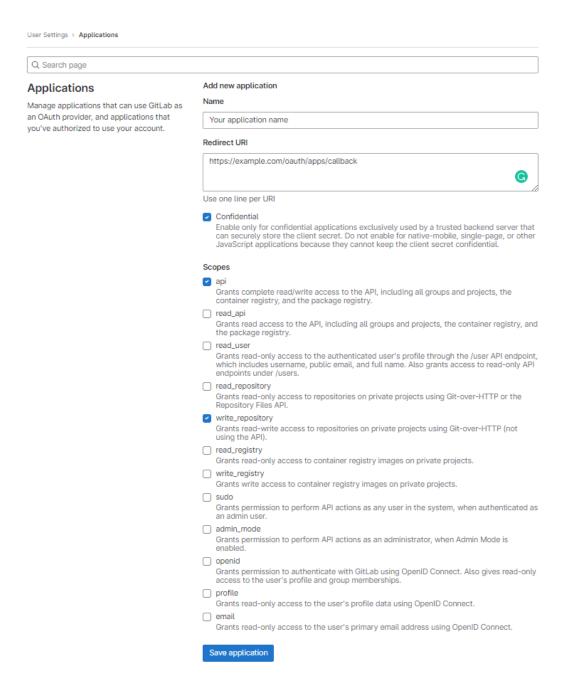
• You will need to grant the organization access to this newly created OAuth app in the organization you want to connect to the platform.

## **GitLab Integration as Code Repository Provider**

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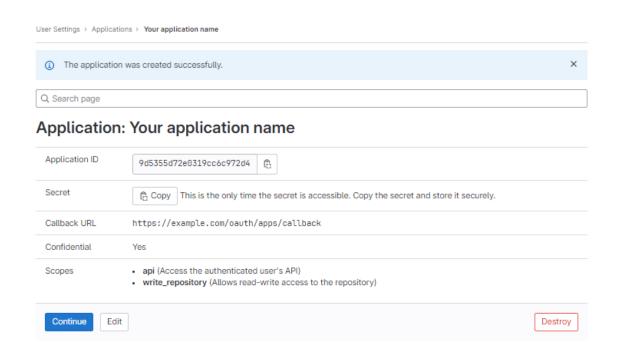
Follow these steps to create an OAuth App in GitLab to connect it to the platform:

- Navigate to Applications:
- Using a GitLab account, go to user settings and then to "Applications".
- You can follow this https://gitlab.com/-/user\_settings/applications to reach this menu directly.
- · Create a New OAuth App:
- Click on "New application" and set the following fields:
  - Name: The name you want to give to the application. It will be public.
  - Redirect URI: The URL should have a structure similar to https://example.com/oauth/apps/callback, where "example.com" should be replaced with the proper domain name.
  - Confidential: This should already be selected by default; leave it as it is.
  - **Scopes:** Add the api and write\_repository scopes. These are needed to automatically deploy deployment keys.



## Complete the Registration:

• After clicking the "Save application" button, you will be presented with the Client ID (called Application ID) and Secret, which you need to enter in the platform configuration.



## **Configure Platform Login**

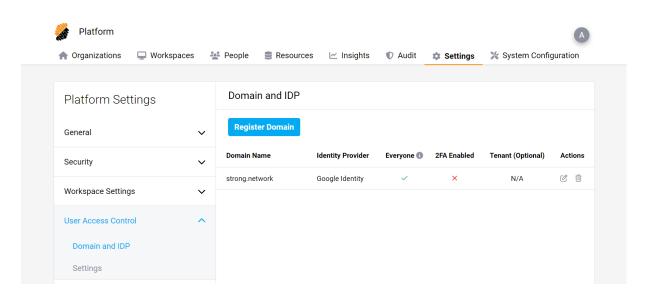
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## **Configure Login for Users**

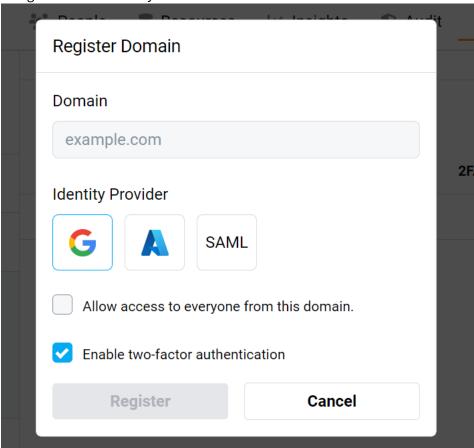
There are five ways users can log in to the platform:

- Google OAuth provider
- Microsoft OAuth provider (Azure)
- SAML
- OpenID Connect
- · Username and password

After configuring the Identity Provider of choice (any of the first 4 options), it can be used to authenticate users of specified domains. These can be configured under User Access Control, in the submenu "Domain and IDP".



If a domain is added, it means that when adding a user to the platform, that user will authenticate using the chosen Identity Provider.



In this menu, you may choose to check "Allow access to everyone from this domain" which will create user accounts on the fly, without the need to create the account beforehand. This is called Just-in-Time provisioning. This new user will not have any organization or project assigned to them.

You may also enable two-factor authentication which will use OTP on any user from the specified domain. If two-factor authentication is desired, we recommend setting it up either in your Identity Provider or in the platform to avoid asking the user to do the process twice.

## **Google Configuration as Identity Provider (OIDC)**

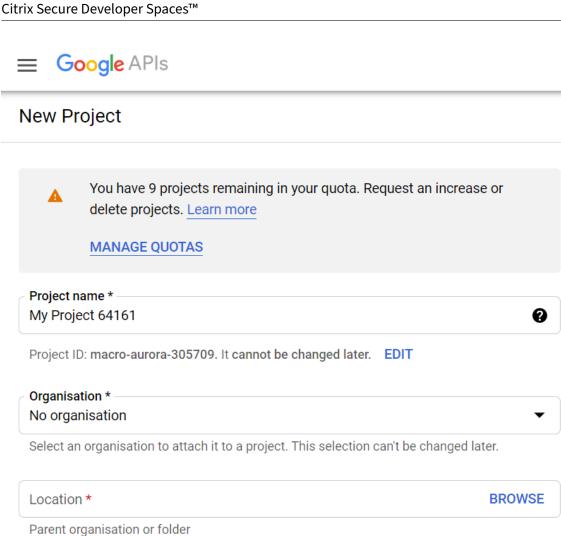
August 28, 2025

To create an OAuth Client to use Google as an Identity Provider, follow these steps to obtain the OAuth Client ID and Secret required in the platform configuration:

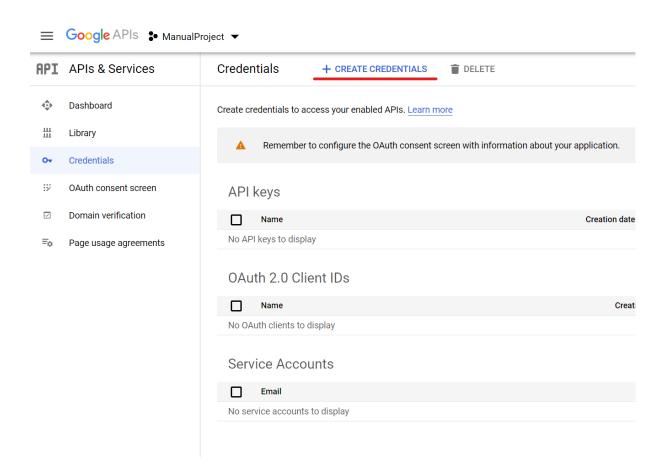
• Go to the Google API Console and create a new project (or use an existing one). The project name, organization, and location are left at your discretion.

CREATE

CANCEL



• Inside the project, click on "+ Create Credentials" and select "OAuth client ID" from the submenu.



• You will be presented with a warning to first configure an OAuth consent screen. Click on it. Select an external consent screen and click create. Fill in the fields at your discretion. The app name will be seen by users trying to log in to the platform.

# App domain

To protect you and your users, Google only allows apps using OAuth to use Authorised Domains. The following information will be shown to your users on the consent screen.

Application home page

Provide users a link to your home page

Application privacy policy link

Provide users a link to your public privacy policy

Application Terms of Service link

Provide users a link to your public Terms of Service

## Authorised domains (2)

When a domain is used on the consent screen or in an OAuth client's configuration, it must be pre-registered here. If your app needs to go through verification, please go to the <u>Google Search</u> Console to check if your domains are authorised. Learn more about the authorised domain limit.

+ ADD DOMAIN

# **Developer contact information**

Email addresses \*

These email addresses are for Google to notify you about any changes to your project.

SAVE AND CONTINUE

CANCEL

- In the authorized domain, specify the domain in which the platform is deployed.
- Click on "Save and Continue"in the following menus without adding anything until you reach the summary page, then click on "Back to Dashboard".
- Click on "Publish App".

## OAuth consent screen

eeee / EDIT APP

# Publishing status @

## **Testing**

**PUBLISH APP** 

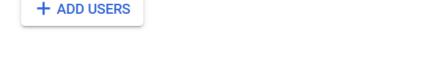
# User type

External 2

MAKE INTERNAL

## Test users

While publishing status is set to 'Testing,' only test users are able to access the app. Allowed user cap prior to app verification is 100, and is counted over the entire lifetime of the app. Learn more

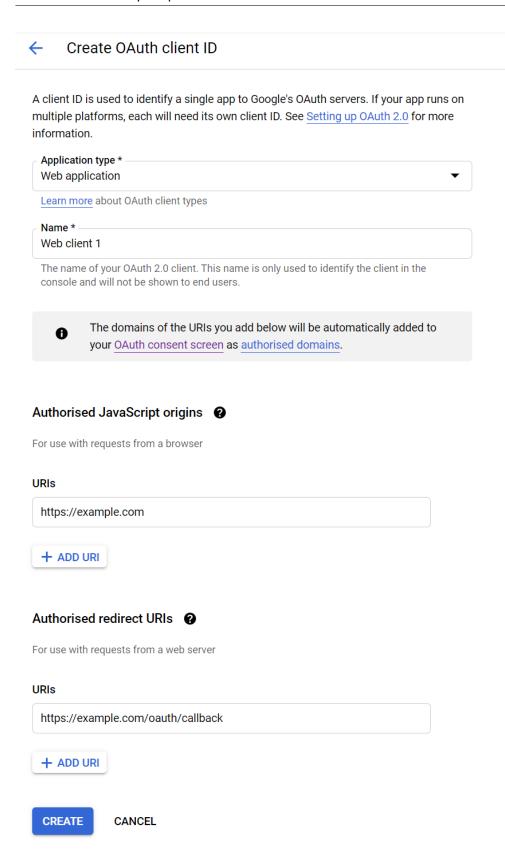


🔲 0 users (0 test, 0 other) / 100 user cap 🔞



- Return to the Credentials page and create the credentials for an OAuth client ID.
- On this page, set the application type to "Web application". The name is left at your discretion.
- In "Authorised JavaScript origins", specify the domain name in which the platform is deployed. In "Authorised redirect URIs", enter the redirect URL, similar to:

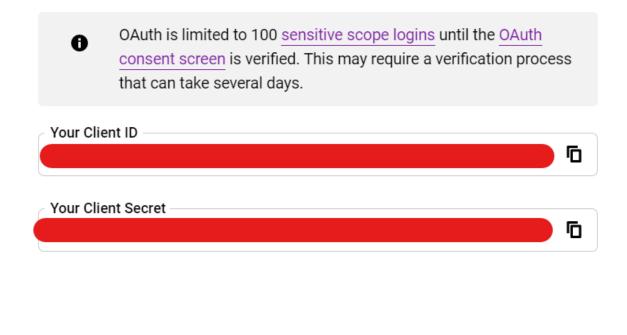
- https://example.com/oauth/callback
- Where "example.com" should be set to the proper domain name.



• Click on "Create" and note the Client ID and Secret for the platform configuration.

# OAuth client created

The client ID and secret can always be accessed from Credentials in APIs & Services



# **Microsoft Azure Configuration as Identity Provider (OIDC)**

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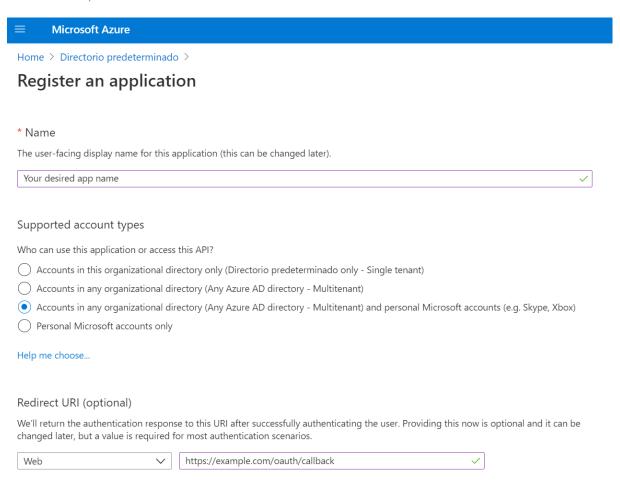
The platform supports integration with Azure Active Directory for logging in with your Microsoft Azure account. To configure it:

- Go to the Microsoft Azure portal.
- Navigate to the Azure Active Directory.

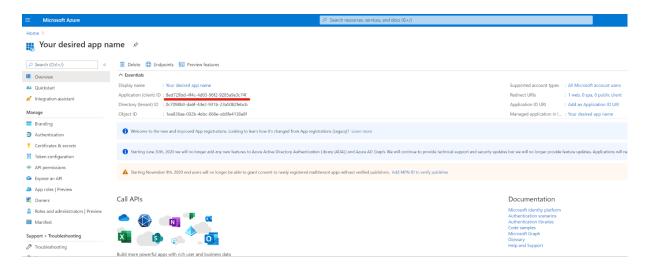
OK

Overview Getting started Preview hub X Diagnose and solve problems Manage Users Groups **External Identities** Roles and administrators Administrative units Enterprise applications Devices App registrations Identity Governance Application proxy Licenses Azure AD Connect Custom domain names Mobility (MDM and MAM) Password reset Company branding 🛱 User settings Properties Security

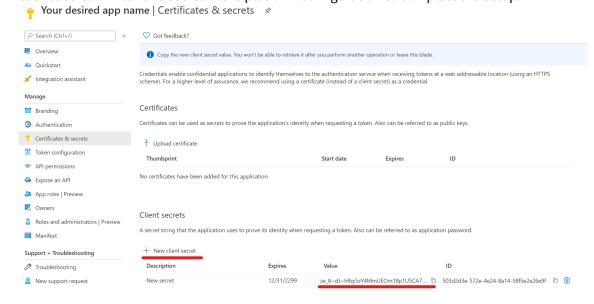
- Click on "App registrations" and then "New registration". Set the following:
- App name: Choose a name that will be publicly visible to users logging into the platform.
- **Supported account types:** We recommend selecting "Accounts in any organizational directory (Any Azure AD directory Multitenant) and personal Microsoft accounts (e.g., Skype, Xbox)" to allow registered users to log in with their public domain accounts.
- Redirect URI: Set the selector to "Web" and enter a URI similar to https://example.com/oauth/callback.



- Click on "Register" at the bottom.
- On the next page, note the OAuth Client ID for the platform configuration.



• To obtain the secret, go to "Certificates & secrets" of the newly created app and click on "New client secret". Enter this secret in the platform configuration to complete the setup.



#### Single Logout (SLO) for Microsoft Azure

To enable Single Logout for the OIDC flow with Azure, configure the following:

- To log out users from Microsoft when they log out of the Strong Network™ platform, add another URL in the Redirect URI section with just the domain name used by the Strong Network platform.
   This URL is used to redirect users back after they log out of their Microsoft accounts.
- Add the optional claim called "login\_hint" to the ID token:
- Go to "Token configuration" and click on "Add optional claim".
- Select ID as token type and then select "login\_hint".

- To log the user out of the Strong Network platform when they log out of their Microsoft account, add the optional claim called "sid" to the ID token type.
- Add a Logout URL under the "Authentication" menu with the structure https://[domain\_name]/auth/logout, where domain\_name is the domain under which you have the Strong Network platform. This endpoint will be called by Microsoft when a user logs out to also log out the user from the Strong Network platform.

## **OpenID Connect Configuration as Identity Provider (OIDC)**

August 28, 2025

This platform supports integration with OpenID Connect for logging in.

## **Registering the Application**

- Go to the OpenID Provider's Developer Portal.
- Navigate to the Applications or Clients section.
- Click on "Create New Application" or equivalent. Set the following:
- **App Name**: Choose a name that will be displayed to users logging in.
- Application Type: Select "Web Application".
- Redirect URIs: Add the following URI to handle login redirects: https://example.com/oauth/callback
- Logout Redirect URI: Add the following URI to handle logout redirects: https://example.com/auth/logout
- · Save the application.

Note the Client ID and Client Secret generated during this process. These will be required for platform configuration.

#### **Configuring Scopes and Claims**

Under the Scopes or Permissions section of your application, ensure the following scopes are included:

- openid
- email
- profile
- Any additional scopes your platform requires.

Configure claims if necessary. Common claims include:

- sub: Unique identifier for the user.
- email: User's email address.
- name: Full name of the user.
- preferred\_username: Username or handle.

## **Enabling Single Logout (SLO)**

To enable Single Logout (SLO) for OpenID Connect:

Navigate to the Advanced Settings or Logout Configuration section.

Enable Single Logout if supported by the provider.

Add the Logout Redirect URI configured earlier:

```
https://example.com/auth/logout
```

Optionally, add the following claims to the ID token:

- sid: Session identifier.
- logout\_hint: Provides context for logging out.

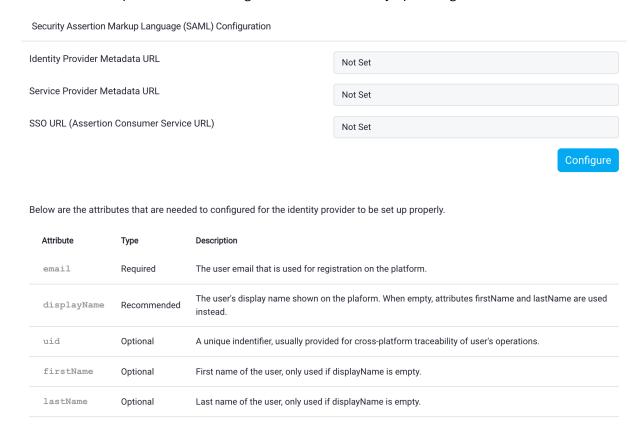
#### **SAML Service Provider**

August 28, 2025

To seamlessly onboard your users already registered in Okta to the Strong Network Platform using the SAML 2.0 protocol, follow these steps:

- Configure Your SAML Identity Provider:
  - **Single Sign-On URL:** Set to http(s)://example.strong.network/saml/acs where "example.strong.network" is the domain where the platform is deployed.
  - Audience URI: Set to http(s)://example.strong.network/saml/metadata
  - Attribute Statements:
  - email: This attribute is mandatory, and the configuration won't work without it.
  - **firstName:** Optional; if not set, the email will be used as the username.
  - lastName: Optional; if not set, the email will be used as the username.
- Configure the Strong Network™ Platform:
  - Log in to the platform as the administrator.

- Navigate to http(s)://example.strong.network/platform/system\_configuration/saml\_sp or click on System Configuration -> SAML Service Provider Configuration.
- Click on the "Configure" button to upload the metadata of your SAML Identity Provider. You can upload it either through a metadata URL or by uploading a .xml file.



The SAML configuration is now complete and ready to use.

# **Nginx Ingress Recommended Settings**

August 28, 2025

This is a recommended Nginx configuration to speed up the platform in customer deployments. A default configmap exists in the ingress-nginx namespace, typically named ingress-nginx-controller. The name may vary depending on how the ingress was installed on the cluster.

```
1 kubectl edit configmap ingress-nginx-controller
```

#### The configmap data:

```
1 apiVersion: v1
2 data:
```

```
allow-snippet-annotations: "true"
enable-brotli: "true"
keep-alive: 120s
keep-alive-requests: "10000"
use-gzip: "true"
use-http2: "true"
kind: ConfigMap
```

## **Third Party Application Setup**

August 28, 2025

**Jfrog Integration Setup** 

## **Register JFrog as Third Party App**

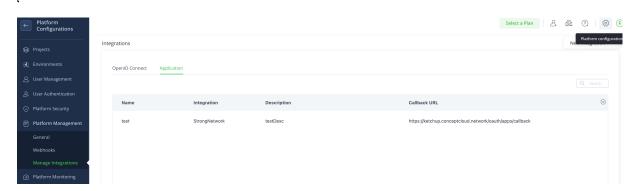
August 28, 2025

You can follow these steps to connect your JFrog instance and the Strong Network™ Platform.

At the moment this configuration can only be done in self-hosted JFrog instances or by asking the JFrog support team in the SaaS version.

Log in to your JFrog deployment as the admin go to Platform Management, then Manage Integrations. Go to the tab called "Application". You can also follow the link:

 $https://[your\_domain\_name].jfrog.io/ui/admin/configuration/integrations$ 

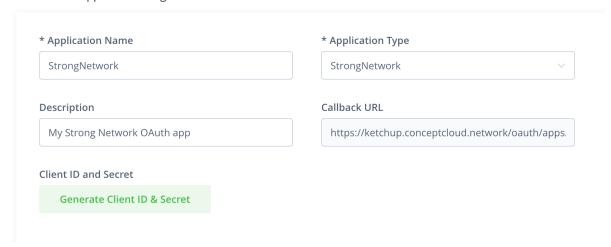


Click on "New Integration" of type "Application" and fill in the following fields:

- Application Name: Up to you.
- Application Type: Select the template you added in the values.yaml file.

- **Description:** Up to you.
- Callback URL: You can find it in the Third Party Applications admin menu in the Strong Network
  platform and has the format of https://[your\_strong\_network\_domain]/oauth/
  apps/callback

#### Create New Application Integration

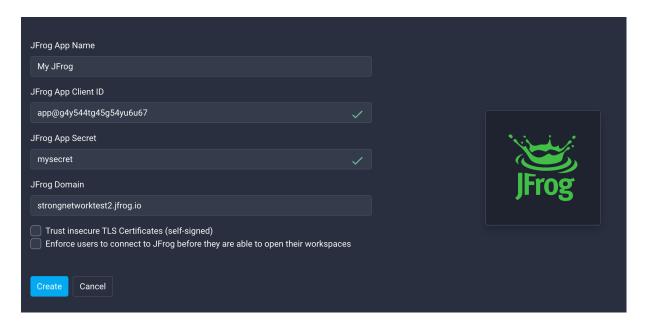


Click on **Generate Client ID & Secret** and copy the values.

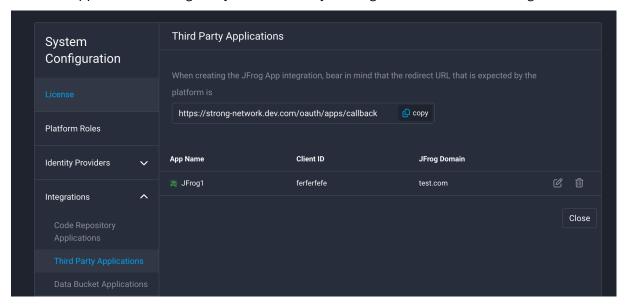
Lastly, log in as admin in the Strong Network Platform, go to System Configuration → Third Party Applications, and select JFrog. You will need to introduce:

- Name: Up to you, it will be displayed to the platform users
- Client ID and Secret: Values copied from JFrog
- **Domain:** Your JFrog domain

You can choose if you want the platform to trust insecure TLS certificates in case your JFrog deployment doesn't have a valid certificate. You may also want users to always connect to JFrog before they access their workspaces, in this case, they will get a popup where they have to connect before opening them. If you don't select this option they will get the popup but can dismiss it.

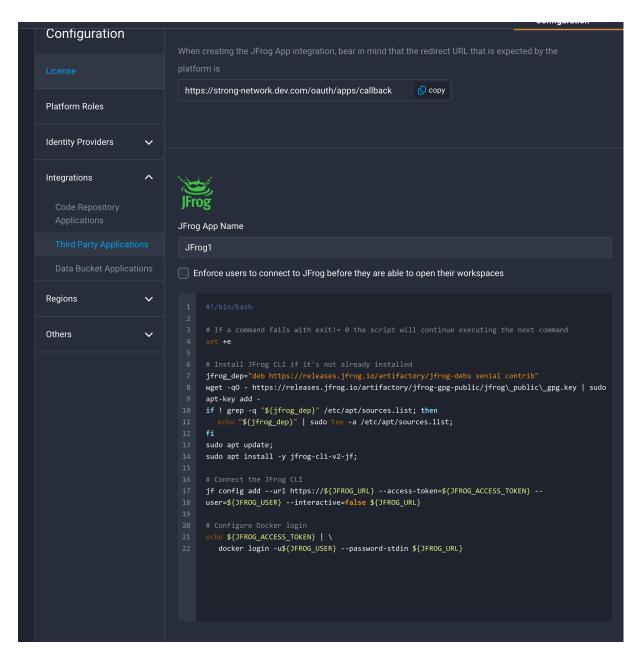


When the application is configured you can edit it by clicking on the edit icon on the right side.



You will see a menu in which you can change some settings. In said menu, you may change the default JFrog startup script. This is a script that will run in every workspace that is owned by a user who has connected their JFrog account. It can be useful to set up specific configurations in all workspaces, for example, to configure the different programming languages to fetch the dependencies from your JFrog platform. Each user can build on top of this script, to customize it to their own needs.

If this default script is updated it will be automatically changed for users who haven't defined their custom script.



Finally, if you want to save the changes click on "Save".

Now JFrog is configured across the Strong Network Platform, ready to be used seamlessly by the users.

## How to Use this Guide

This guide is here to provide you with a description of the main functions provided by Citrix Secure Developer Spaces.

The guide covers the initial setup, configuration and general usage of workspaces, which are online

Cloud Development Environments (CDEs) available for coding and data science. Workspaces can be accessed using a cloud IDE, include Microsoft Visual Studio Code, all Jetbrains' IDEs or through an SSH connection from a local installed IDE (see remote development for Microsoft Visual Studio Code)

This documentation is generally organized in a manner that follows the platform's UI pages. This provides a natural way to find information once on one of the platform's pages.

#### Content

- Platform
- Organization
- Project
- Overview Page

### **Platform Level**

August 28, 2025

The platform is organized in organizations and projects. A series of operations are readily available at platform level. For example, workspaces, resources and users can be managed at platform-level by users

with a platform role, such as the administrator or the security officer. Governance metrics such as insights and audit logs are also

aggregated at the platform level.

The platform administrator has a view on all workspaces running on the platform, i.e. across organizations and projects, so that they can be updated rapidly, e.g. container configuration. The administrator can also have an overall view on the onboarded users.

Resources can be managed at the platform level so that they become available across organizations and projects. This applies to all types of resources supported by the platform.

Insights and audits dashboards are available at the platform level, allowing metrics to be selected and aggregated across organizations and projects.

Finally, a variety of settings and operations are relevant at the platform level. For example, these include global workspace settings regarding performance and security, global authentication settings, and compliance functions, to name a few.

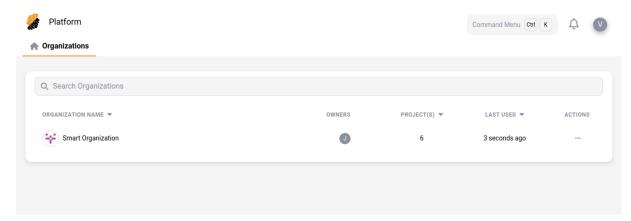
- View Organizations
- Platform Settings

## **View Organizations**

Organizations can be viewed at the level of the platform and listed in a table.

An administrator can create an organization.

Click on the Strong Network™ logo to **view your organizations** to which you belong.



Organizations List

## Platform Settings Admin

For comprehensive control over your Platform's configurations, visit the dedicated Platform Settings page.

# **Organizations**

August 28, 2025

The platform allows administrators and platform owners to organize projects into organizations. An **Organization** is the main entity regrouping projects, developers, resources, and security rules for one development project.

- Organization's Characteristics
- View Organization's Projects
- Create an Organization
- Organization Settings

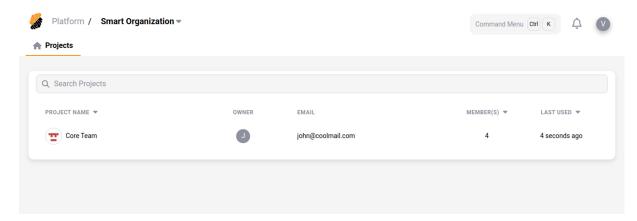
### **Organization's Characteristics**

An organization is defined by the following characteristics:

- Organization Name,
- Organization owner,
- · Organization owner's email,
- Project(s) that it contains,
- · Resources, such base containers, policies, etc.

## **View Organization's Projects**

In a project, by clicking on the name of your **organization** at the top left corner of the screen, you can display all of the **projects** contained in it.



## Create an Organization Admin

You can create an organization by pressing the "Add New Organization" button.

You will need to select the following information:

- Organization Name,
- Owner. i.e. any user with the right permissions to own an organization.

### Info

To create an organization, you must be an **Admin**.

An **Admin** can create an organization on behalf of an owner with the permissions to be the **Organization Owner**.

# Organization Settings Admin

For comprehensive control over your Organization's configurations, visit the dedicated Organization Settings page.

## **Projects**

August 28, 2025

A **Project** within an Organization regroups developers, resources, and security rules. The aim of a project is to provide the development team with all resources required for development, as well as access control and governance mechanisms to the project owner.

- Project's Characteristics
- Create a Project
- Project Settings

## **Project's Characteristics**

A project is defined by the following characteristics:

- · Name,
- Project owner, i.e. any user with the right permissions to own a project,
- Project owner's email,
- **Member(s)**, i.e. the user belonging to the project,
- Resources, including workspaces, base containers, repositories, etc.

## Create a Project Admin

You can create a project by pressing the "Add New Project" button.

You will need to select the following information:

- · Project Name,
- **Owner**, i.e. any existing user on the platform or a new user (to onboard).

#### Info

To create a project, you must be an **Organization Owner**.

An **Admin** can create a project and assign it to a user.

## Project Settings Project Owner

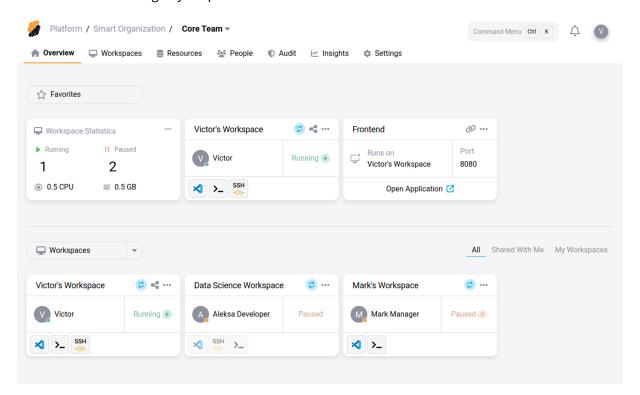
For comprehensive control over your Project's configurations, visit the dedicated Project Settings page.

# **Overview Page**

## August 28, 2025

The Overview page is the first page displayed when you access the platform's user interface. It contains the essential components to allow quick access to resources such as workspaces, apps, secure web apps and metrics.

The **Overview Page** is customizable. All components can be reordered according to your preferences.

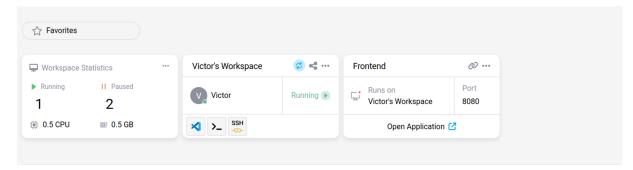


- Display Sections
  - Favorites
  - Workspaces
  - Workspace Apps
  - People & Other Metrics

## **Display Sections**

#### **Favorites**

The **Favorites** section displays your personal favorite list of components, from any section of the **Overview Page**.



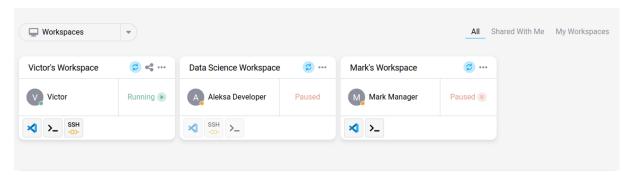
- To add an element to your list, click its "..." button and "Add to Favorite".
- To remove an element from your list, click its "..." button and "Remove from Favorite".

#### Tip:

Entries in the list of favorite components can only be components on the **Overview Page**.

### Workspaces

The **Workspaces** section displays all the project's Workspaces to which you have access.

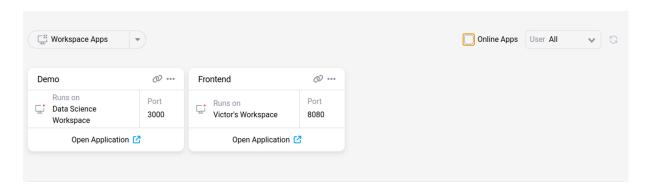


To only view your workspaces, select "My Workspaces".

- To create a new workspace click on the "Workspaces" drop-down menu.
- To manage workspaces, view Manage Workspaces.

### **Workspace Apps**

The **Workspace Apps** section displays all the project's workspace apps to which you have access.

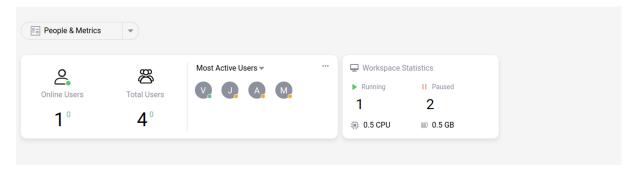


To only view your own, or any online workspace apps select "My Apps" or "Online Apps" respectively.

- To create a new workspace app click the "Workspace Apps" drop-down menu.
- To manage a workspace app click its "..." button.

### **People & Other Metrics**

The **People & Metrics** section displays statistics about the users in the project and metrics about resources' utilization.



## People metrics display:

- The amount of project users online.
- The total amount of project users.
- Statistics about the amount of users online over the past seven days.

### Workspace metrics displays:

- · How many workspaces are running or paused.
- The current total CPU and RAM usage for your Project.

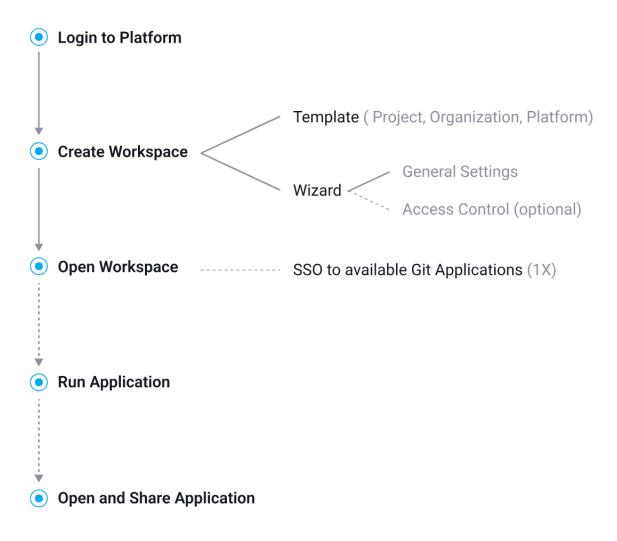
Check the Insights Page for more detailed metrics.

# **Self-Served Developer**

August 26, 2025

### Developer

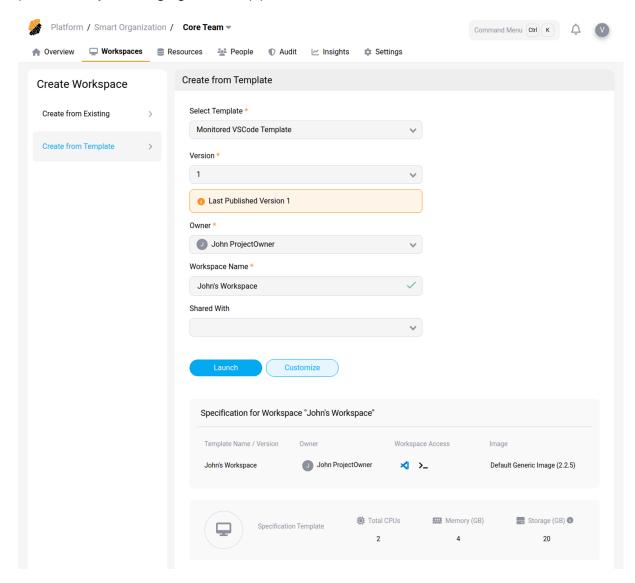
This workflow exemplifies the most common onboarding case: a developer with the permission to create workspaces, i.e. a self-served onboarding process. This is typically an "internal" developer with permissions to access resources associated with the project, e.g. containers, services, secrets, etc. These resources are set up by the project owner and self-served developers are able to configure a workspace's access control setting.



- 1. Log In & Create a Workspace
- 2. Configure Workspace Settings (Optional)
- 3. Access Workspace & Connect Platform Applications
- 4. Run, Open and Share Applications (Optional)

### 1. Log In & Create a Workspace

After logging in –having already been added to a project on the platform –the developer can independently create a workspace. This can be done using one of the pre-defined templates available on the platform or by following a guided setup process.

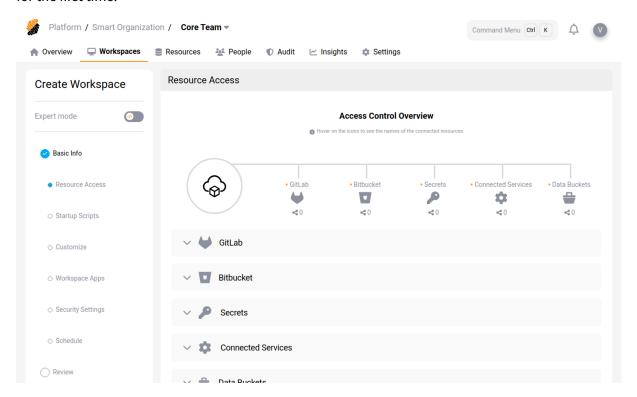


### 2. Configure Workspace Settings (Optional)

Through the guided setup (the wizard), the developer can configure the workspace's general settings, which include naming the workspace, selecting a specification template, and adjusting sharing preferences. Additionally, the developer can establish access controls to their entitled resources, covering options for git repositories, applications, services, and secrets.

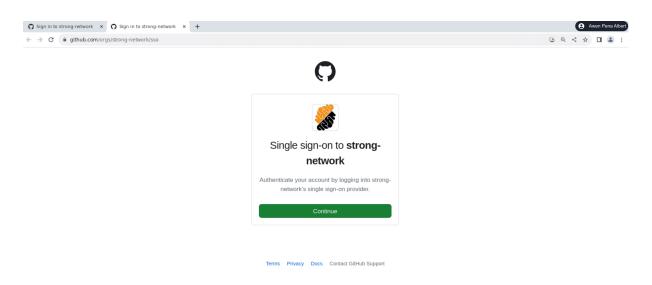
Implementing access control is not mandatory and can be addressed when the workspace is accessed

### for the first time.



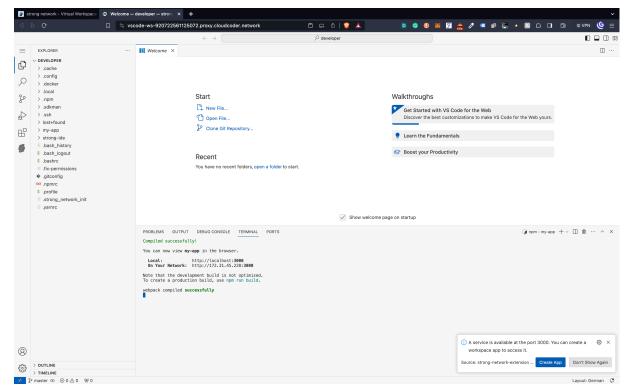
## 3. Access Workspace & Connect Platform Applications

When first accessing a workspace, the developer may employ the single sign-on feature to gain entry to one or more gate applications linked to the platform, contingent upon the applications made available by the administrator.



## 4. Run, Open and Share Applications (Optional)

Once workspace access is secured, the developer is permitted to execute and, where authorized, access and share applications.

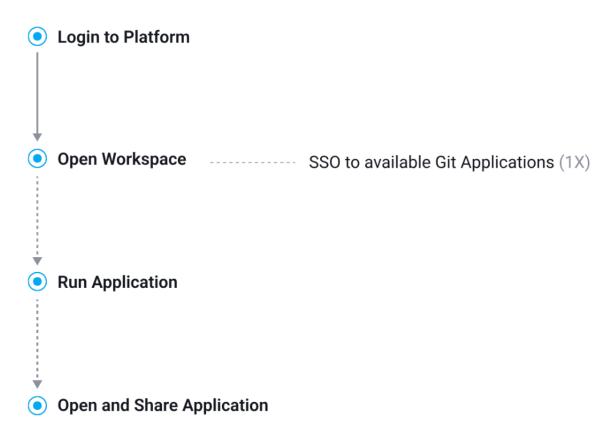


## **Guest Developer**

August 26, 2025

### Developer

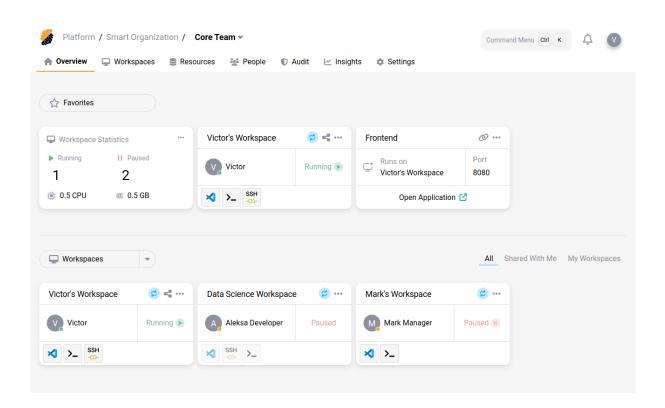
This workflow exemplifies a particular onboarding case: a "guest" developer with permissions limited to access pre-configured workspaces, i.e. pre-set and immutable settings spanning resource access to security. This is typically a temporary developer, a contractor or an external collaborator. The entire workspace set-up is defined by the project owner and created in anticipation of onboarding the developer. Expectedly the developer cannot edit the workspace settings.



- 1. Log In & Access Workspace
- 2. Connect Platform Applications (Optional)
- 3. Run, Open and Share Applications (Optional)

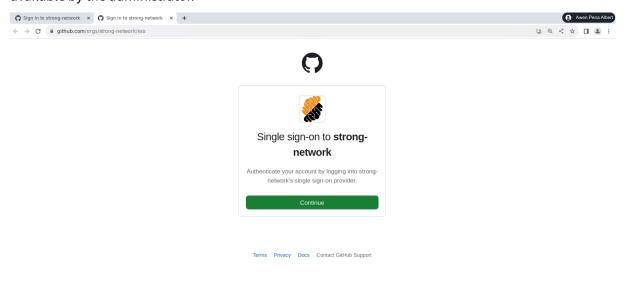
### 1. Log In & Access Workspace

After logging in —having already been added to a project on the platform —the developer can access his assigned workspaces.



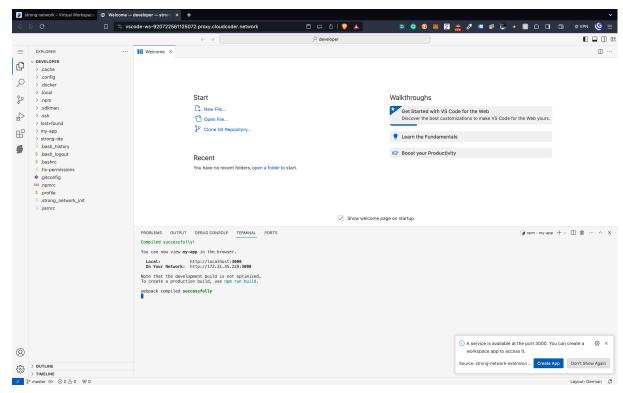
## 2. Connect Platform Applications (Optional)

When first accessing a workspace, the developer may employ the single sign-on feature to gain entry to one or more gate applications linked to the platform, contingent upon the applications made available by the administrator.



## 3. Run, Open and Share Applications (Optional)

Once workspace access is secured, the developer is permitted to execute and, where authorized, access and share applications.

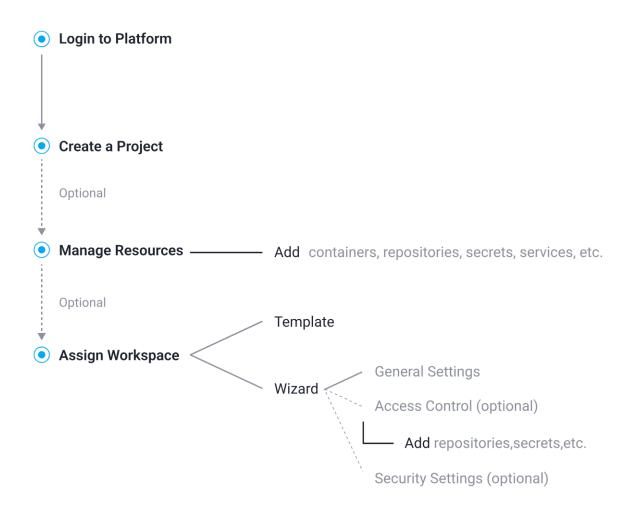


# **Project Owner**

August 26, 2025

### Project Owner

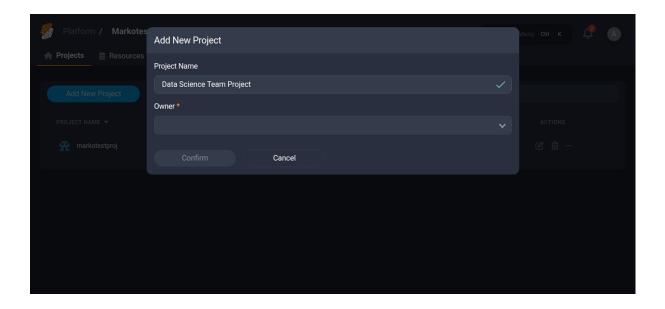
This workflow exemplifies the onboarding case of a project owner. Users with this role can create and edit settings of all the project's workspaces, including the workspace's access control and security settings. The project owner also creates workspaces for "guest" developers. In addition, he can manage resources for the project, such as importing containers, git repositories, secrets, etc.



- 1. Log In & Create a Project
- 2. Manage Resources (Optional)
- 3. Assign a Workspace (Optional)
- 4. Configure Workspace Settings (Optional)

## 1. Log In & Create a Project

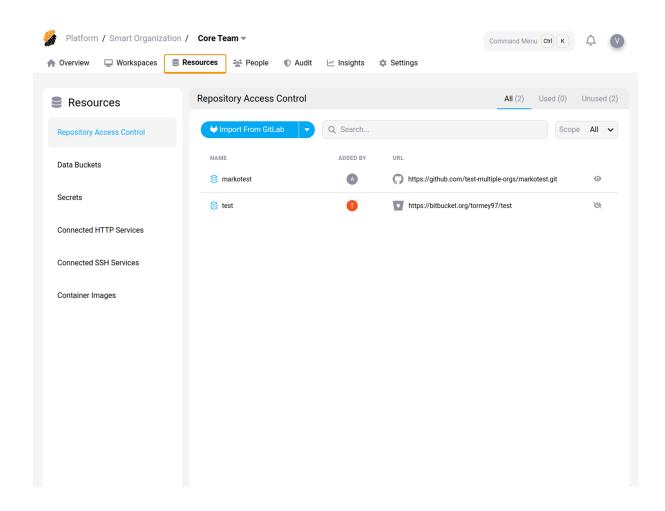
Upon logging in —having been affiliated with an organization on the platform —the project owner is equipped to establish a project for their team.



## 2. Manage Resources (Optional)

Additionally, a project owner can add and manage the resources leveraged by the development team.

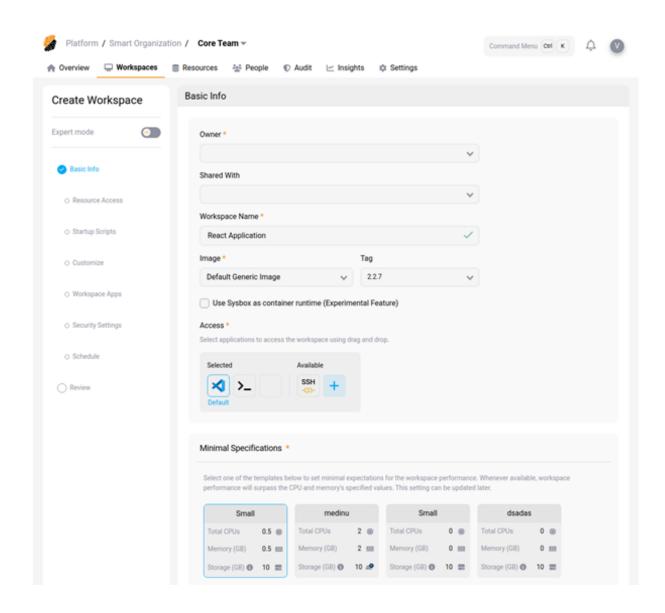
Resources on the platform encompass code repositories, secrets, services, and data buckets. The project owner is responsible for determining user permissions, and stipulating who can view or alter resources to prevent unauthorized access.



## 3. Assign a Workspace (Optional)

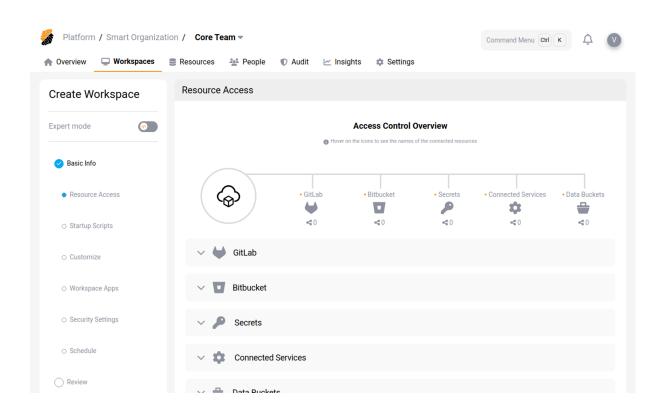
The project owner can create and assign a workspace to any user, however since developers with the permission Workspace:Manage Personal create their own workspaces (self-service), a project owner most commonly creates workspaces for developers without this permission, i.e. in order to onboard freelancers and contractors under a lesser permission model.

Therefore, project owners will create a workspace with a template or the workspace wizard and assign it to a user who is not entitled create it by himself.



### 4. Configure Workspace Settings (Optional)

When the project owner creates a workspace on behalf of another user as explained in the previous section, he likely needs to set-up the access control and security settings. If the workspace is assigned to a user with the permission Workspace: Access (the user cannot create his/her own workspaces), the user won't be able to change the access control settings.



## What Is a Workspace?

### August 1, 2025

A workspace is a Cloud Development Environments (CDEs) available for coding and data science. Workspaces can be accessed using a cloud IDE or through an SSH connection from a local installed IDE.

Workspaces are running online on top of a virtual machine and managed using a container orchestrator for resilience. The performance of a workspace, i.e. compute and storage capabilities, are set by the specifications of the underlying virtual machine.

Workspaces are technically speaking virtual processes, with the aim of replacing the use of a virtual machine for code development and data science. They are lightweight and so that they can be started and paused much quicker than a VM counterpart.

A Workspace is defined by the following characteristics:

- Basic Information: such as name, owner, sharing options,
- CPU/RAM/Storage: performance allotted to the workspace.
- Ports: ports to run applications on,
- Status: i.e.running, deploying, or paused

## Where to go next

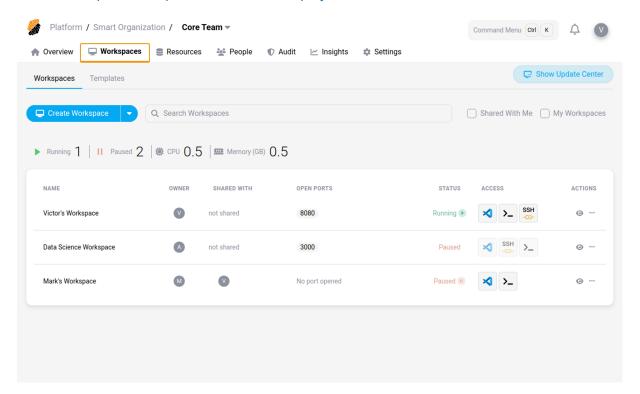
- Get to know the Workspaces page
- Create a Workspace
- Manage Workspaces
- Workspace Apps
- Use templates
- Use a Workspace
- SSH into your workspace

## **Workspaces Page**

August 26, 2025

In the scope of a project, the **Workspaces Page** displays all workspaces created for that particular project to which you have access or you can view, depending on your permission level.

This includes personal workspaces and the workspaces shared with you. In some cases, it also includes workspace's Templates available in the project.



Below the search bar are displayed the number of running and paused workspaces, as well as how

much total CPU and GB of RAM is being used.

## Where to go next

- Create a Workspace
- Manage Workspaces
- Create and manage Workspace Apps
- Create and manage templates

## **Create a Workspace**

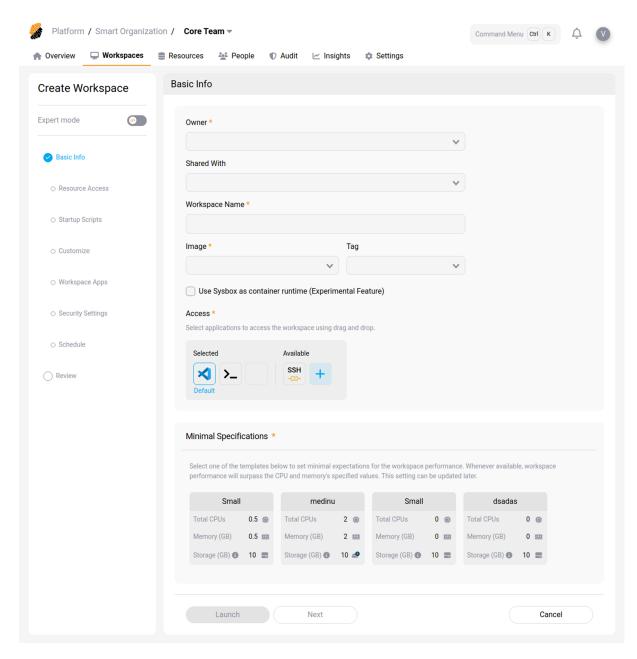
August 26, 2025

A workspace is created from the Workspaces Page. A workspace is, in essence, an online Cloud Development Environment (CDE) accessible via a Cloud IDE, a terminal or an SSH connection. Using an SSH connection is possible from a locally installed IDE supporting development from a remote container.

- Basic Set-Up
  - Basic info
  - Resource Access Control
  - Data Loss Prevention Permission: Security::Manage
  - Custom Work Schedule
  - Launch it
- From an existing Workspace
- From a template

## **Basic Set-Up**

You can create a workspace by pressing the "**Create Workspace**" button.

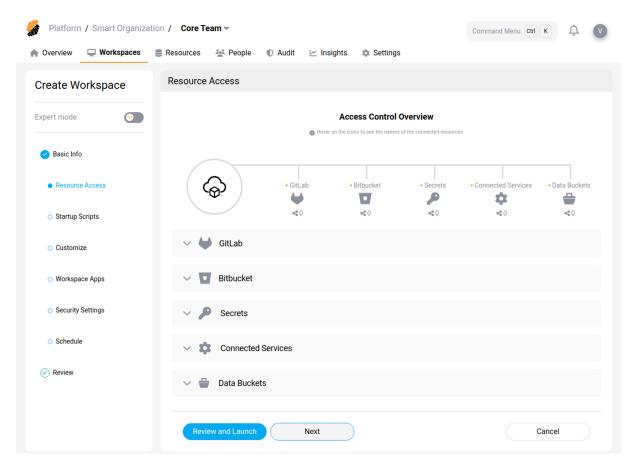


You will need to select the following information:

### **Basic info**

- 1. Workspace Name
- 2. Embedded Cloud IDE
- 3. User Sharing Options
- 4. Docker Image
- 5. Image Version
- 6. Minimal Resource Specifications

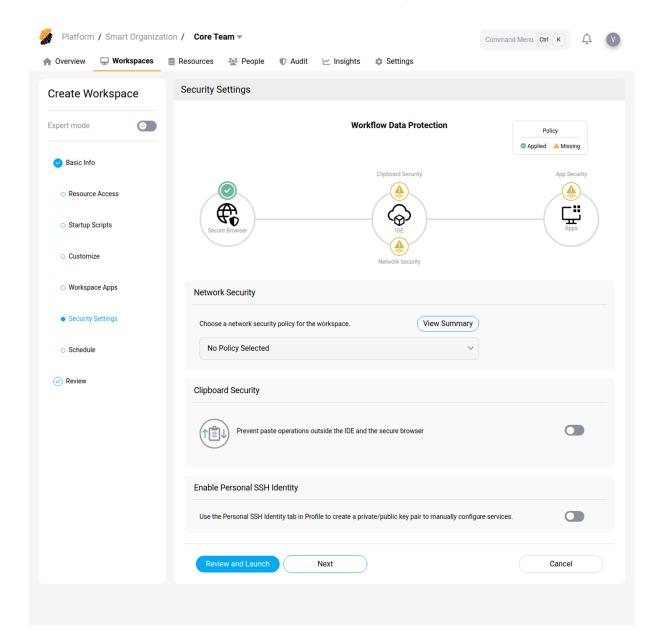
#### **Resource Access Control**



You can attach various project resources to your workspace. Resources must have been previously added to the project. In addition, you might need the appropriate access rights to access them.

You can add the following resource:

- Git Applications And Repositories: You can connect the entire GIT applications available from your platform or single repositories that have been previously imported to the project's or organization's resources. Additionally, you can specify a default folder location within your workspace where the Git files will be cloned.
- Secrets: You can import secrets to the workspace as files or environment variables in the workspace. Choose from existing secrets or create a new one.
- Connected HTTP and SSH Services: You can connect services to appear as environment variables in the workspace. Supported and available services are part of the project's and organization's resources and depend on the platform's configuration.
- **Startup Script**: Finally, you can set-up a startup script to be executed automatically at workspace's boot time. This allows you to customize the software available in the container.



### Data Loss Prevention Permission: \_Security::Manage\_

In the Data Loss Prevention section you can configure the security of your workspace.

## Under **Security Settings** you can configure:

- **Network Policy**: Select a network policy to enforce on the workspace. Network policies are part of the project's and organization's resources and are defined by the user with the Security::Manage permission. In particular, policies allow you to control outbound network traffic from the workspace.
- **Clipboard Security**: Prevent pasting outside of the IDE and the Secure Browser for this workspace.

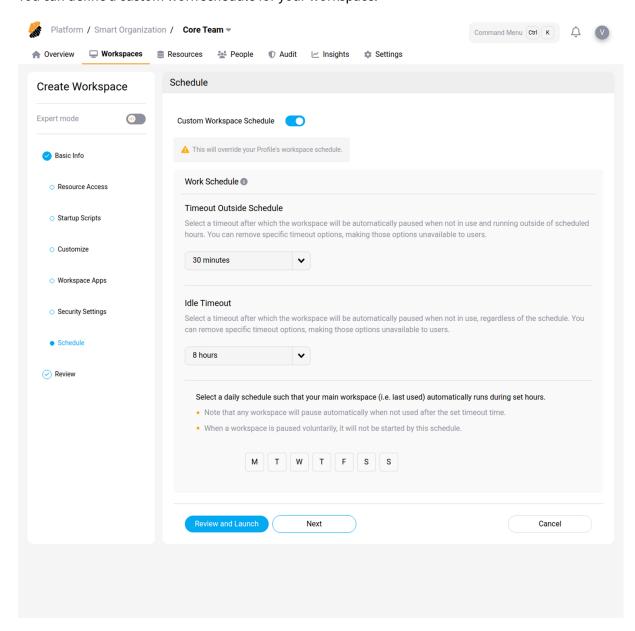
• Apps Security: Configure Workspace Apps to be accessed only through the Secure Browser.

Under Secure Access Management you can configure:

- Enable Remote Development Over SSH: Allow connection to the workspace via SSH.
- **Enable Personal SSH Identity**: Allow users to use their personal SSH identity from within the workspace.

#### **Custom Work Schedule**

You can define a custom work schedule for your workspace.



#### Launch it

Finally, review your Workspace configuration, and launch it. Your workspace will be automatically deployed.

You can edit its configuration at any time from the Overview or Workspaces pages.

## From an existing Workspace

You can create a workspace from an existing one by pressing the "**Create from Existing**" button on the drop-down button of the "**Create Workspace**" button.

You will need to provide the following information:

- 1. Workspace to Copy
- 2. Owner for the Workspace

#### Tip

Click on "Customize" to edit the workspace as if you were creating it from scratch.

Once done, press the "Launch" button.

## From a template

You can create a workspace from an existing one by pressing the "Create from Template" button on the drop-down button of the "Create Workspace" button.

You will need to provide the following information:

- 1. Template Name
- 2. Owner for the Workspace

### Tip

Click on "Customize" to edit the workspace as if you were creating it from scratch.

Once done, press the "Launch" button.

# **Manage Workspaces**

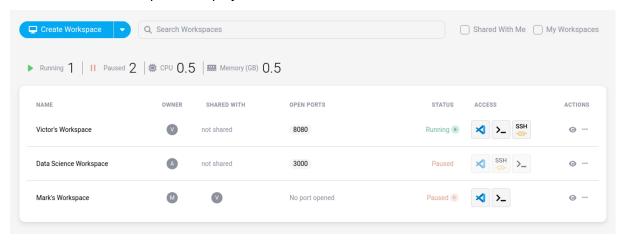
August 1, 2025

Workspaces are managed from the Overview and Workspaces pages. Once one or more workspaces have been assigned to you, they appear on both pages mentioned above. The last used workspace will be automatically started based on the schedule in your profile. In addition, a workspace might be paused automatically based on the settings of your platform after a period of inactivity.

### **View Workspaces**

The list of your workspaces (owned by you or shared with you) is displayed on the Overview and Workspaces pages.

The status of the workspace is displayed next to its name.



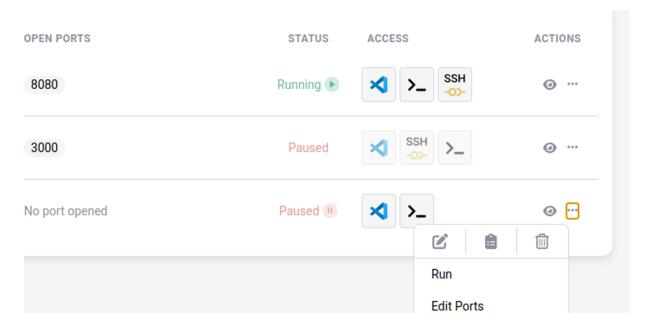
- To **open a paused workspace**, click on the "**start**"button. This will open the workspace's Cloud IDE in your browser.
- To **open a running workspace**, click on the "**running**"button. This will open the workspace's Cloud IDE in your browser.
- To open your workspace using a CLI terminal, click on the drop-down menu next "running text" and then on the "Open Terminal" button.

### **Workspaces Actions**

By clicking on the "..." icon on a workspace, you can select additional actions as explained below.

- **Run** or **Pause** allow you to start and pause the workspace, respectively.
- Edit allows you to change the workspace's ettings as selected when creating it.
- **Delete** erases its configuration and local files. You will need to confirm the action by inserting the name of the workspace.
- Edit Ports lets you manage workspace apps running on the ports of your workspace.
- **Personalize Environment** lets you update the [IDE configuration file] based on your profile settings (*Only if Workspace is yours*).

- **Update** redeploys the workspace to synchronize it with its latest configuration.
- **Share** lets you share the workspace access with another project's user. Learn how to work with a shared workspace (*Only if Workspace is yours*).
- **Save As Template** lets you save the workspace's configuration as a template for later reuse (requires the *Workspaces::Manage Project* permission).



# **Workspace Apps**

August 26, 2025

A workspace app lets you access a local application running on a port of your Workspace.

Depending on your workspace security's settings, your workspace app might open in a separate tab of your

web browser or in the Secure Browser. You can have multiple workspace apps attached to a single workspace, each accessing an application running on a different port.

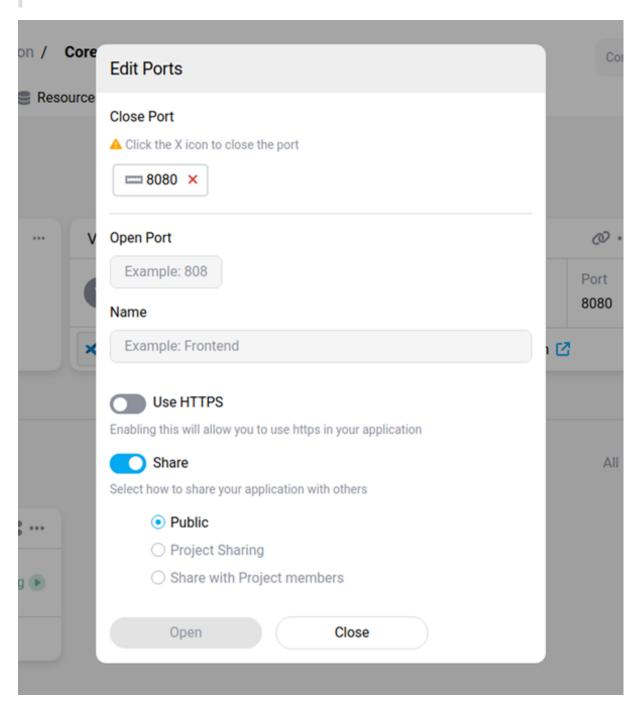
### **Create a Workspace App**

You can create a workspace app by pressing the "**Create Workspace App**" button from the Overview Page by selecting the drop-down menu next to "Workspace Apps".

### Tip:

You can create a workspace app by clicking the "..." icon and select **Edit Ports** from a

Workspace on the Overview or Workspaces Pages.



You will need to enter the following information:

- 1. Port where the app is running,
- 2. Name for the app,
- 3. **Use HTTPS** to allow to use https in the application,
- 4. **Share** to allow others to access the application (Public, Project Sharing or Share With Projectmate).

### Tip:

When you create an app for a Node Js project, make sure the port number is the same as the one opened in the localhost of the workspace.

### **Share a Workspace App**

You can share a workspace app when creating it or by editing an existing one.

To update the properties of a workspace app, click the "..." icon and on the **Edit Ports** button from one of your workspaces.

There are two sharing options:

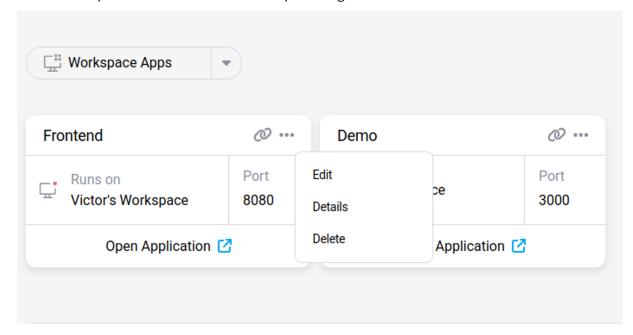
- With a **group of users**: public (any external user) or project (all of your project-mates).
- With a specific user.

Granting access to one of your workspace apps does not provide access to the workspace running the app. To share a workspace with another user, check out the share a Workspace section.

### **Delete a Workspace App**

You can delete a workspace app from the Overview Page by pressing the "..."icon and clicking the **Delete** button.

You can also delete a workspace app from a Workspace by clicking the "…"icon and select **Edit Ports** from a Workspace on the Overview or Workspaces Pages.



# **Templates**

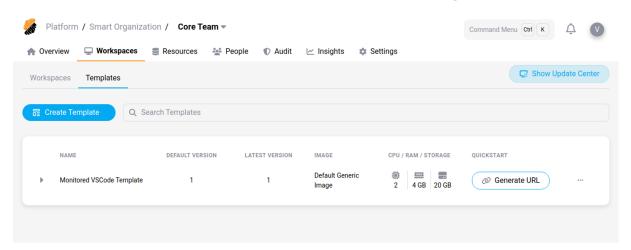
August 26, 2025

A **Template** is a particular workspace configuration stored for later reuse. They are useful to quickly create new workspaces with the same configuration as a previous one.

- View Templates
- Default Templates
- Create a Template Permission: Workspaces::Manage Project
- Create a Workspace from a Template

## **View Templates**

Templates are displayed in the "Templates" section of the Workspaces Page.



A template is defined by the following characteristics:

- Basic Information: name, container image, CPU/RAM/Storage settings, and description,
- Class Level: confidential or regulated,
- Workspace Configuration: All the other elements describing a workspace.

### **Default Templates**

There are a few example templates provided in a standard project: Monitored VSCode, Restricted VSCode and Inspected VSCode. They are provided as examples with the characteristics below:

Name	Image	CPU / RAM / Storage	Description
Monitored VSCode Template	Default Generic Image	2 CPU / 4 GB / 20 GB	This is a standard template to create an instance of a fully-updated Ubuntu container with monitored traffic and clipboard.
Restricted VSCode Template	Default Generic Image	2 CPU / 4 GB / 20 GB	This is a standard template to create an instance of a fully-updated Ubuntu container with restricted traffic with a series of exceptions (apt, npm, pip) and monitored clipboard.

### Warning

For the **Inspected VSCode Template**, applications using certificates in custom locations (folders) in the container will likely fail. Contact your administrator for more details.

## Create a Template Permission: \_Workspaces::Manage Project\_

On the Workspaces Page, in the "Templates" section, you can create a template by clicking on the "Create Template" button.

You will be asked to follow the same steps as if you were creating a workspace from scratch.

### Tip

You can save a workspace as a Template by clicking on the "..." button and on **Save As Template**.

## **Create a Workspace from a Template**

You can create a workspace from an existing one by pressing the "Create from Template" button on the drop-down button of the "Create Workspace" button.

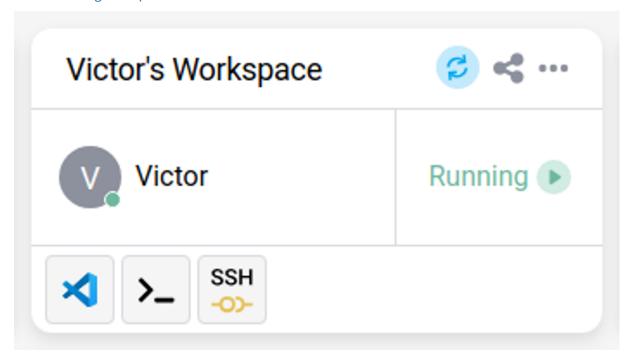
# **Coding in a Workspace**

## August 26, 2025

The easiest way to code in a workspace is through a Cloud IDE. A Cloud IDE runs directly in the web browser and does not require other software installation on the endpoint, i.e. your development machine. Alternatively, a workspace can be accessed via an SSH connection from a locally installed IDE that allows "remote development". See how it works in Microsoft vscode.

## **Cloud-Based Integrated Development Environments (Cloud IDEs)**

The platform supports a series of Cloud IDEs that might differ based on your particular deployment. Typically supported IDEs are Microsoft Visual Studio Code and Jetbrains'IDEs. Note that the version of The vscode running in the web browser is the same as the one available for local installation (including the marketplace). Hence, you can refer to any available documentation online to understand its functioning and options.



### Tip:

To access a workspace using the Cloud IDE attached to it, just click the button indicating the workspace execution status. This is only possible if you own or have shared access to the workspace.

#### **Import Local Files in a Cloud IDE**

The ability to import local files in the Cloud IDE depends on the setting of your platform. The most common way to do so is to simply drag a file from a user interface such as a browser, to the IDE interface. Please contact the platform administrator to inquire about potential security restrictions imposed on such an operation.

### **Workspace Access Using SSH With a Local IDE**

You can access your workspace using SSH via a locally installed IDE such as Microsoft VSCode or using JetBrains Gateway. For this, you must register a SSH authentication key to your account in your Profile Page.

Once the key has been registered, you can access the workspace via a two-factor authentication process. This process ensures that you are indeed accessing your workspace remotely and at preventing an authorized user to do so.

You can find a full guide on how to SSH into your Workspace here.

### **Work With a Shared Workspace**

After sharing a workspace, you may work with other users in the same workspace.

Working in a shared workspace is similar in a way to use work simultaneously in the same document.

The benefit of doing so is that it provides a way to co-edit content, also known as **peer editing**.

#### Tip:

When modifying files on the same workspace, **changes are displayed in real-time**. You may see who is accessing the workspace live from the "(*show component*)".

#### **Recover a deleted Workspace**

After deleting a Workspace, you may recover it for 7 days from the Project Settings.

#### Note:

Only a project owner can recover a workspace. If you do not have the necessary privileges, please contact the owner of your project.

# **SSH Into Your Workspace**

#### August 26, 2025

This guide provides instructions for accessing your workspace via SSH, enabling you to edit code directly using a local command-line editor. This process requires the generation of an SSH Key pair.

- 1. Generate an SSH Key Pair on UNIX and UNIX-like Systems
- 2. Upload Your Public Key to the Platform
- 3. Authorize Your Workspace to Use Your SSH Key
- 4a. Connect to Your Workspace Using a Shell
- 4b. Connect to Your Workspace via SSH Using VSCode
  - 4b.1. Install the VSCode SSH Extension
  - 4b.2. Initiate a New SSH Connection from the VSCode SSH Extension
  - 4b.3. Input the SSH Command into the Extension Prompt
  - 4b.4. Select the Default SSH Configuration
  - 4b.5. Click the "Connect" Button after the Host is Added
- 4c. Connect to Your Workspace via SSH Using JetBrains Gateway
  - 4c.1. Install JetBrains Gateway
  - 4c.2. Begin a New SSH Connection
  - 4c.3. Create an SSH Configuration
  - 4c.4. Enter the Host and Username Information
  - 4c.5. Choose Authentication Method and Test Your SSH Configuration
  - 4c.6. Select an SSH Configuration
  - 4c.7. Verify Your SSH Configuration and Connect to Your Workspace
  - 4c.8. Choose and Download the JetBrains IDE
  - 4c.9. Access Your Workspace

#### 1. Generate an SSH Key Pair on UNIX and UNIX-like Systems

• To generate an SSH key pair on UNIX and UNIX-like systems, run the ssh-keygen command in your terminal:

#### 1 ssh-keygen

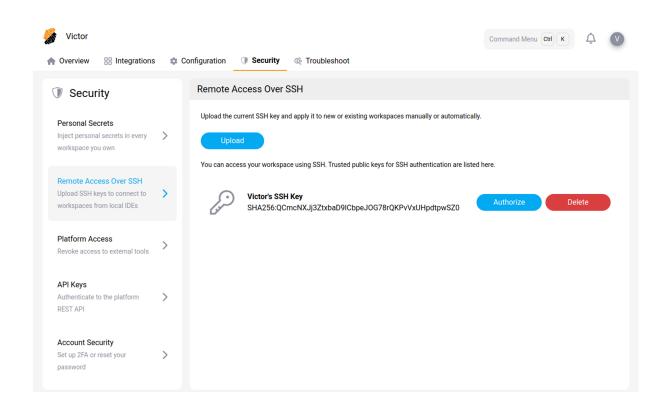
• The terminal will suggest a default path and file name (for example, /home/user\_name/.ssh/id\_rsa). To accept the default path and file name, press Enter. If you want to specify a different path and file name, enter those details and then press Enter.

- The command prompts you to enter a passphrase. Although optional, it's recommended to set a passphrase for additional security against unauthorized use of your private key.
- If you set a passphrase, you will be prompted to enter it again for confirmation. If you didn't set a passphrase, simply press Enter.
- The command generates an SSH key pair a public key and a private key and saves them in the specified path. The public key file name is automatically created by appending .pub to the private key file name. For instance, if the private key file is named id\_rsa, the public key file will be named id\_rsa.pub.

#### 2. Upload Your Public Key to the Platform

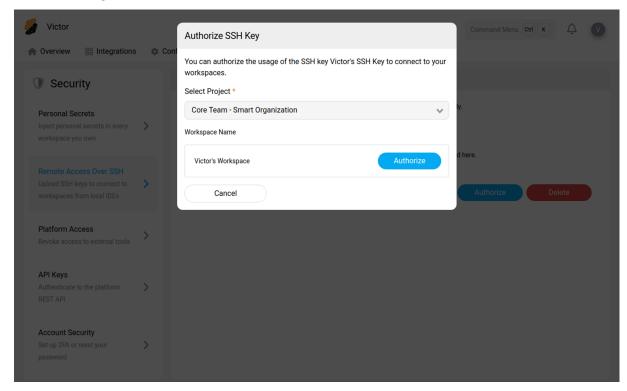
Once your SSH Key pair is generated, you need to upload it to the SSH Keys Section in your Profile.

The key begins with 'ssh-rsa', 'ecdsa-sha2-nistp256', 'ecdsa-sha2-nistp384', 'ecdsa-sha2-nistp521', 'ssh-ed25519', 'sk-ecdsa-sha2 nistp255@openssh.com' or 'sk-ssh-ed25519@openssh.com'.



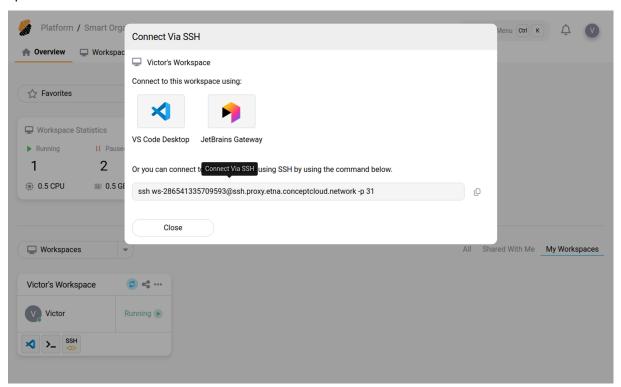
# 3. Authorize Your Workspace to Use Your SSH Key

After uploading your SSH key to your profile, you need to authorize your workspace(s) to access it.



# 4a. Connect to Your Workspace Using a Shell

Navigate to the Running Actions List of Your Workspace and select the "Connect With SSH" option. This action will display the ssh command that you need to establish an SSH connection to your Workspace.



Input this command in your terminal.

```
● ● ● ■ wepzen — developer@ws-932331191353506-0: ~ — ssh ws-932331191353506@ssh.proxy.cloudco...

(base) wepzen@Awens-MacBook-Pro ~ % ssh ws-932331191353506@ssh.proxy.cloudcoder.network

developer@ws-932331191353506-0:-$
```

Once this is done, you will have successfully established an SSH connection to your Workspace!

# 4b. Connect to Your Workspace via SSH Using VSCode

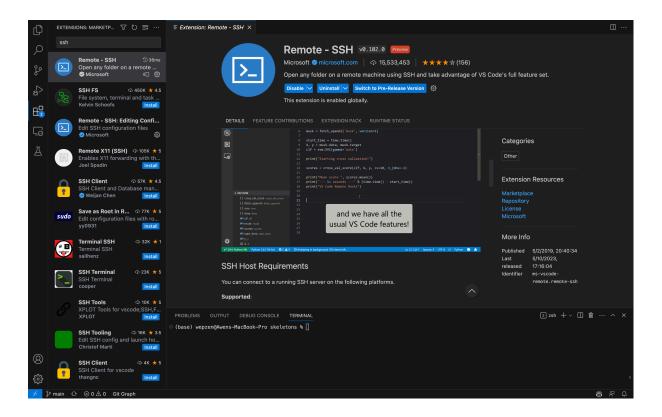
This section provides a detailed walkthrough on setting up an SSH connection to your workspace using the VSCode SSH extension.

Tip

Note that you can execute the same steps directly from your terminal, beginning with step 5b.3.

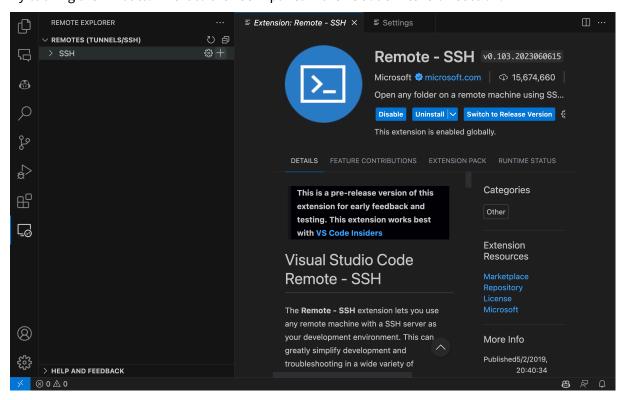
#### 4b.1. Install the VSCode SSH Extension

To SSH into your workspace directly from your local VSCode IDE, you can download the Microsoft SSH Extension. This extension replicates the usual SSH command you would perform from your terminal, but allows you to work directly within your local VSCode.



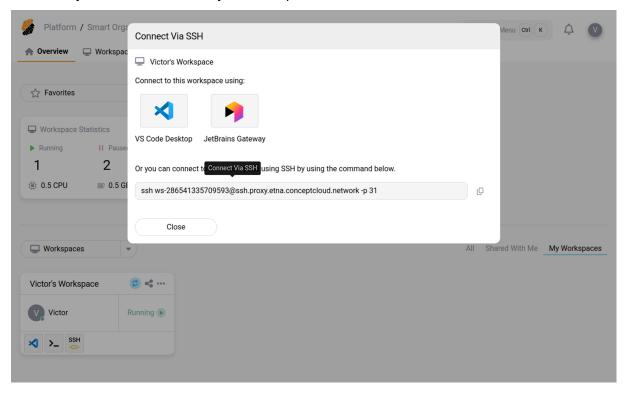
#### 4b.2. Initiate a New SSH Connection from the VSCode SSH Extension

By clicking the "+"button next to the "SSH"panel in the VSCode Extension section.

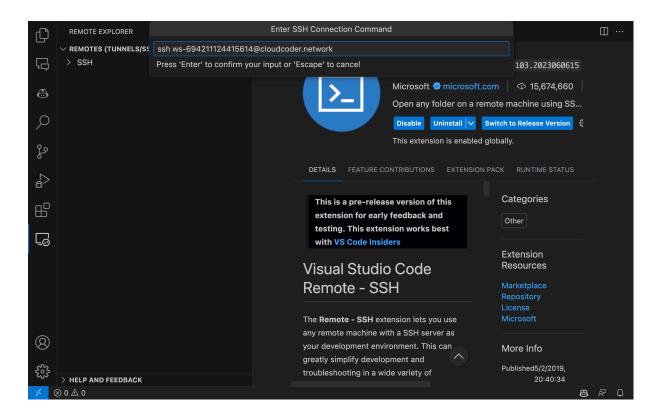


# 4b.3. Input the SSH Command into the Extension Prompt

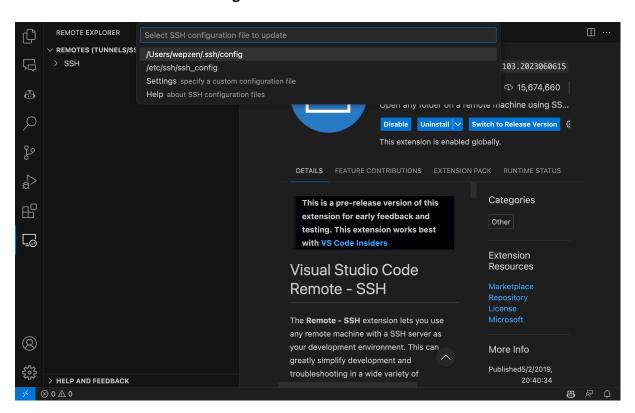
From your Workspace's Running Actions List select the "Connect With SSH" option to display the ssh command you need to connect to your Workspace via SSH.



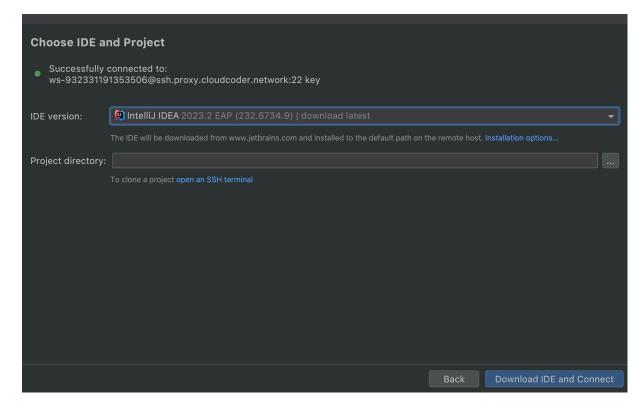
Enter this command in the VSCode extension prompt.



#### 4b.4. Select the Default SSH Configuration



#### 4b.5. Click the "Connect" Button after the Host is Added



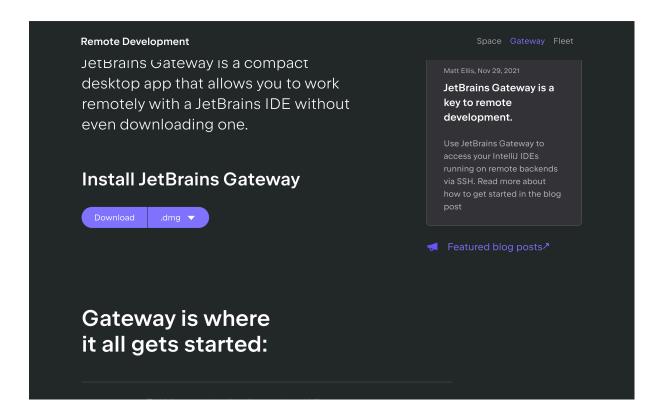
You are successfully connected to your Workspace with SSH!

# 4c. Connect to Your Workspace via SSH Using JetBrains Gateway

This section offers a comprehensive guide on establishing an SSH connection to your workspace using JetBrains Gateway.

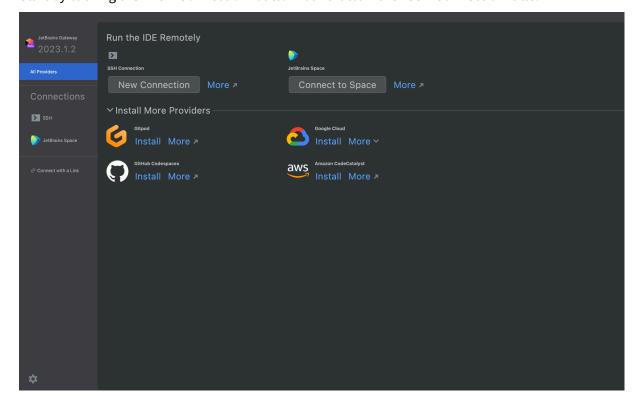
### 4c.1. Install JetBrains Gateway

To access your workspace directly from your local JetBrains IDE, download JetBrains Gateway. This software enables SSH connection to your workspace using JetBrains.



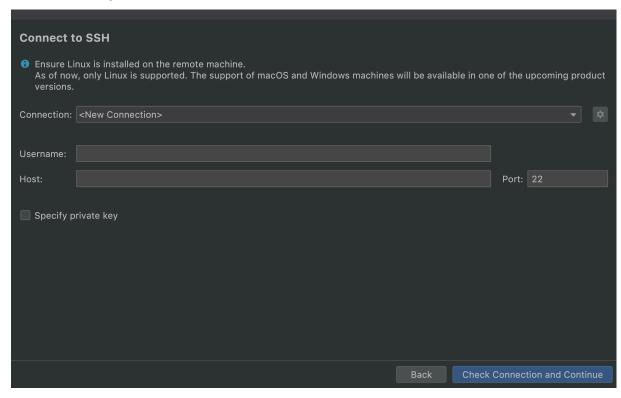
#### 4c.2. Begin a New SSH Connection

Start by clicking the "New Connection" button found below the "SSH Connection" title.



# 4c.3. Create an SSH Configuration

Click the "settings icon" next to the "New Connection" option.

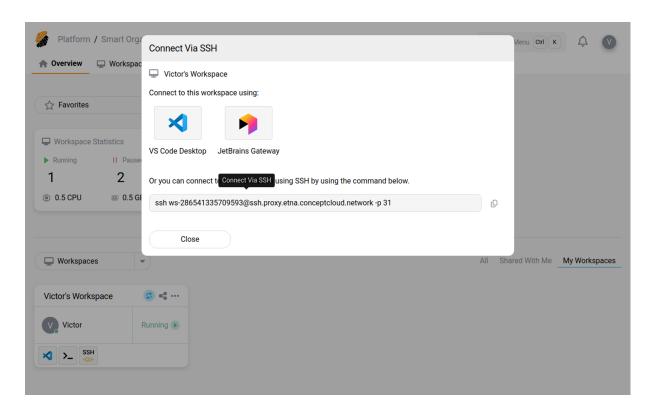


Then click the "+"icon to add a new SSH configuration.



#### 4c.4. Enter the Host and Username Information

Select the "Connect With SSH" option from your Workspace's Running Actions List to view the shh command necessary for the SSH connection to your workspace.

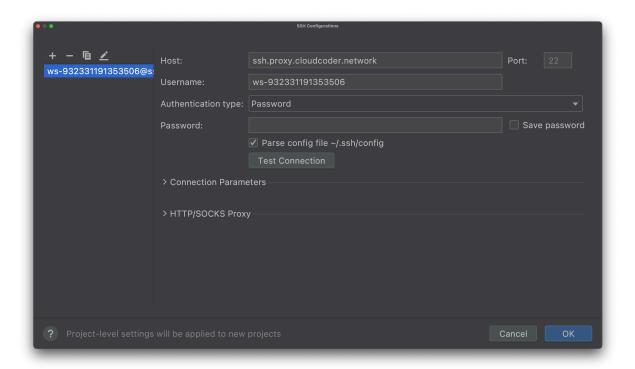


Enter the command details into the SSH configuration settings.

# Tip

- Host = second part of the command (example: ssh.proxy.cloudcoder.network)
- Username = first part of the command (example: ws-694211124415614)

Disregard the ssh and @ characters.

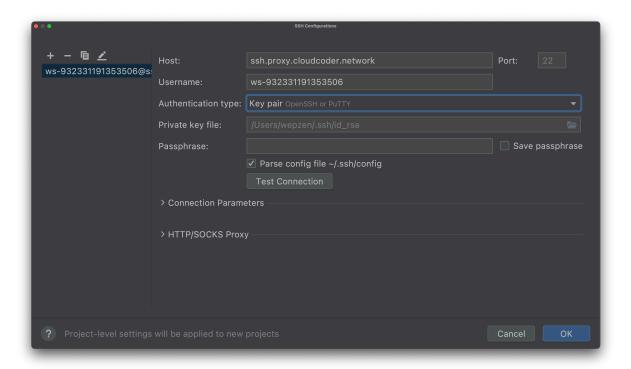


# 4c.5. Choose Authentication Method and Test Your SSH Configuration

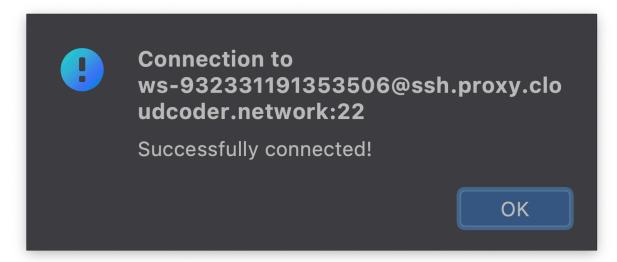
Select "Key Pair" as the "Authentication type" and provide the path for your key (the default field can be left as is).

#### Warning

By default, the "Password" option is selected as the authentication method.

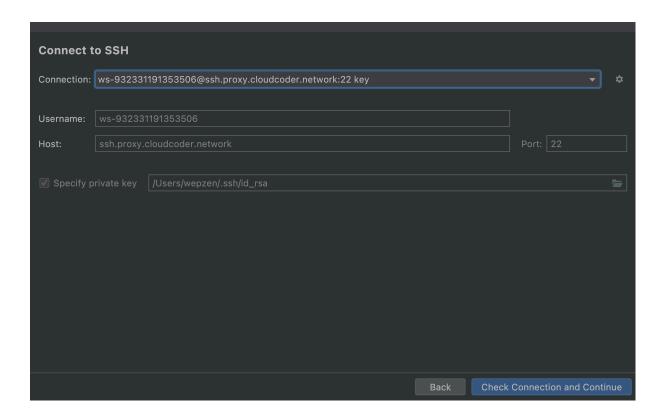


After filling in the "Host", "Username", and "Authentication method" fields, test your SSH configuration by clicking the "Test Connection" button. You should see the following:



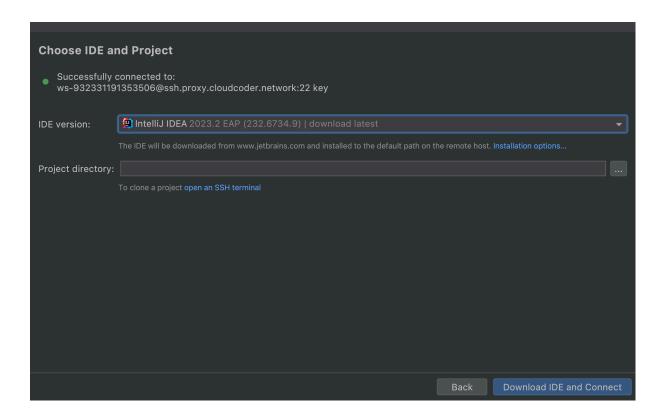
#### 4c.6. Select an SSH Configuration

Upon validating your SSH configuration by clicking "Ok", select your new configuration as the "Connection" in the "Connect to SSH" menu.



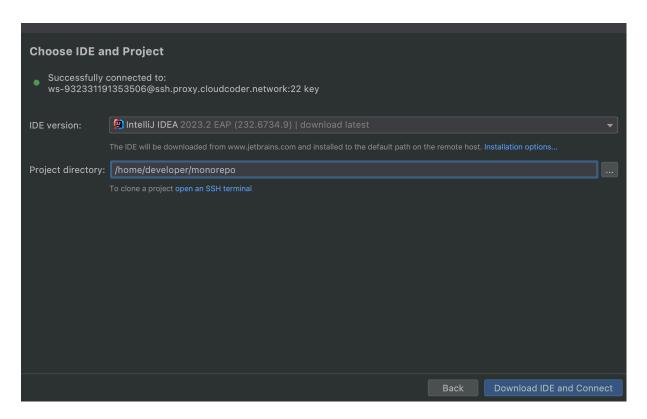
# 4c.7. Verify Your SSH Configuration and Connect to Your Workspace

Validate your connection by clicking the "Check Connection and Continue" button. If the connection is successful, you will be directed to the following screen:



#### 4c.8. Choose and Download the JetBrains IDE

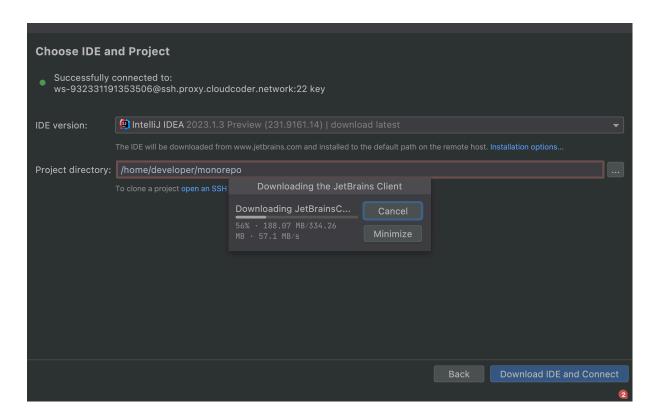
On the successful connection screen, select the JetBrains IDE you wish to use and the folder you intend to open.



Confirm your selections by clicking "Download IDE and Connect". The following screen indicates that the IDE is being downloaded to your workspace.

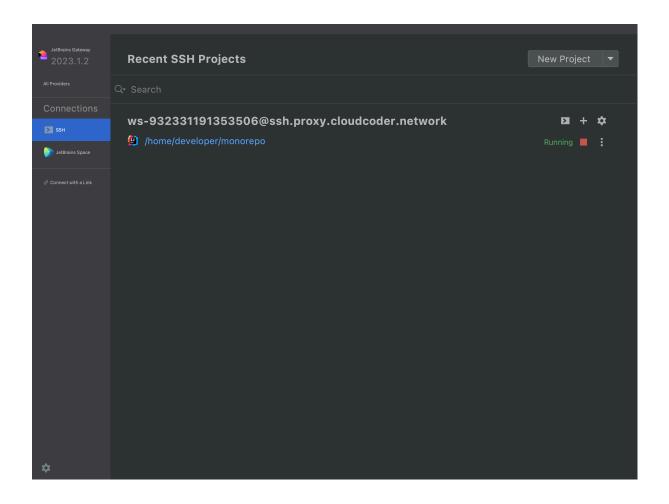
# Tip

The IDE is downloaded to your workspace, not to your local machine.



### 4c.9. Access Your Workspace

After the completion of the IDE installation, you can now access your workspace via JetBrains Gateway!



# **Resources Page**

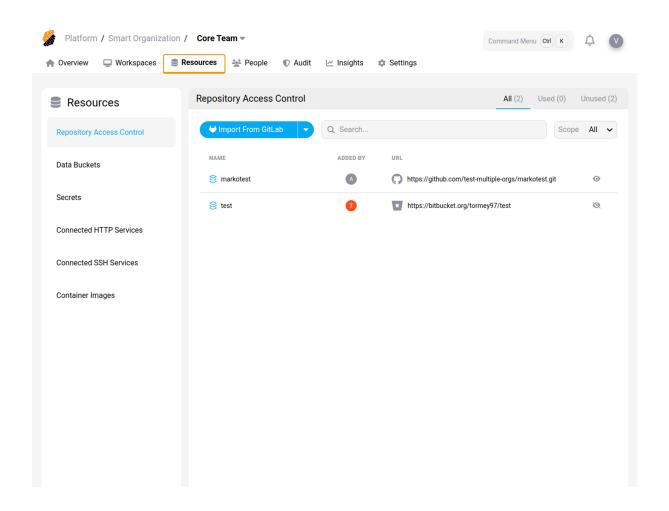
On the resources page, you can view and manage the different resources used in the project.

Resources are used to define workspace properties such as container configuration and network policies, or the information available to users for development

such as code repositories, data buckets, secrets and services. Resources are managed at three levels of granularity depending on the intended scope of use: platform, organization and project.

Resources are attached to a workspace during the setup and update process. When resources are accessible to users, this process is a means

to define a fine-grain access control policy on an individual workspace basis.



#### Content

- Repository access control
- Data buckets
- Secrets
- Connected HTTP services
- Connected SSH services
- Container images

# **Code Repositories**

# August 26, 2025

Code repositories are used for storing, tracking, and collaborating on source code developed using software development projects. The format supported by the

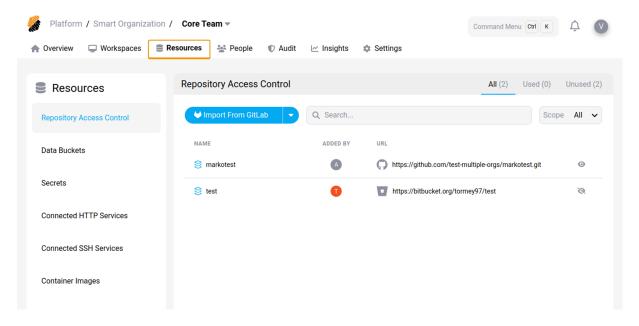
platform to manage source code repositories is GIT. Therefore assets from providers using this format can be imported to the platform and attached to

workspaces. Currently, providers such as GitHub, GitLab and BitBuckets are supported. In addition, you can import GIT repositories manually by providing the necessary information.

- View Repositories
- Import a Repository Permission: Resources::Import

# **View Repositories**

Code Repositories whose information has been imported in the project are displayed in the table. You may search for one or filter those used in workspaces.

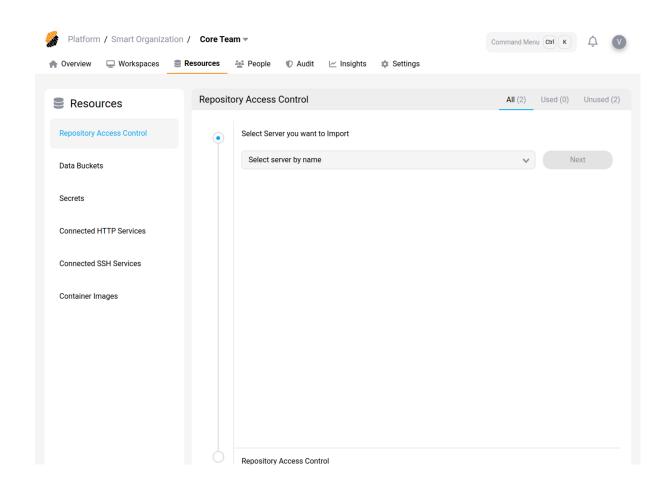


A code repository is defined by the following characteristics:

- **Basic information**: Information such as name, scope of use (platform, organization or project), the user who added it, GIT service provider e.g. GitHub, GitLab, BitBucket, URL.
- Class Level: This option defines the visibility for the repository based on the user's permissions.
- **Asset Information**: This option allows for providing a description of the repository.

### Import a Repository Permission: \_Resources::Import\_

You can import a code repository by pressing the "**Import Repository**" button. Make sure to select the actual provider, i.e. GitHub, GitLab or Bitbucket. The remote GIT application is scanned for code repositories and you can import the repo information by clicking the button next to the name.



#### **Data Buckets**

July 8, 2025

A **Data Bucket** is used for general, unstructured storage of data online. This is basically a folder in S3 format that is commonly used to store and access

large datasets. Most cloud vendors offer S3 data buckets as a general storage data mechanism. The platform supports buckets from vendors such as Azure, Google

and Amazon Web Services. They are particularly popular for Data Science applications.

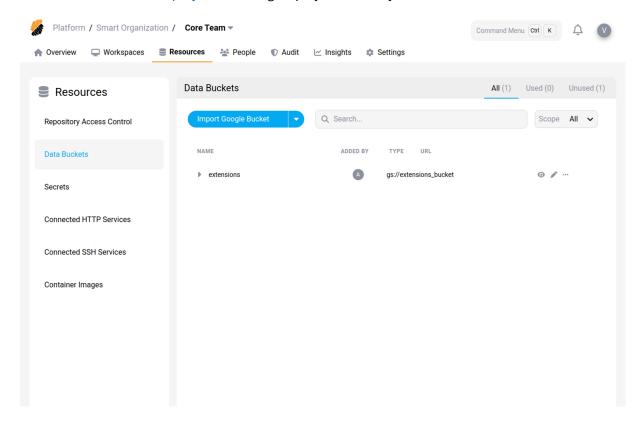
Data Buckets allow you to use your external datasets inside a workspace. A data bucket attached to a workspace is automatically mounted as a folder to the container's filesystem.

As for the other types of resources, data buckets are first imported to the platform such that they become available when creating or updating the configuration of a workspace.

- View Data Buckets
- Import a Data Bucket Permission: Resources::Manage

#### **View Data Buckets**

Data Buckets used in the project are being displayed. You may filter those in use.



A Data Bucket is defined by the following characteristics:

- Basic information: Information such as name, the user who added it, service provider (Google, Amazon or Microsoft) and URL.
- Class Level: This option defines the visibility for the container based on the user's permissions.
- Permissions: This option lets you define access to a data bucket as read or read and write.
- Asset Information: This option allows for providing a description of the data bucket.

The platform provides a mechanism to create versions of buckets. A new version is created when data is uploaded to a bucket from a workspace (with write access).

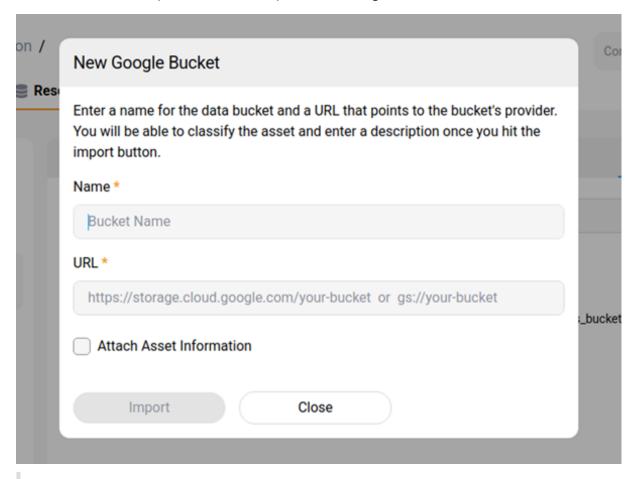
By clicking on a bucket you can see a list of versions followed by basic details (creation date, size, status, connections) as well as its content by clicking on the *book icon*.

# Import a Data Bucket Permission: \_Resources::Manage\_

You can import a bucket by pressing the "**Import Bucket**" button. Make sure to select the correct provider of your bucket (Google, Amazon or Microsoft).

You will need to enter the following information:

- 1. Name, a name to identify the data bucket, and a
- 2. **Bucket URL** that points to the Cloud provider's storage location.



#### Info

When importing Amazon buckets, you need to specify its region to optimize the data access performance.

#### **Secrets**

#### August 26, 2025

Secret management allows developers to securely store sensitive data such as passwords, keys, and tokens, in a protected environment with access controls capabilities.

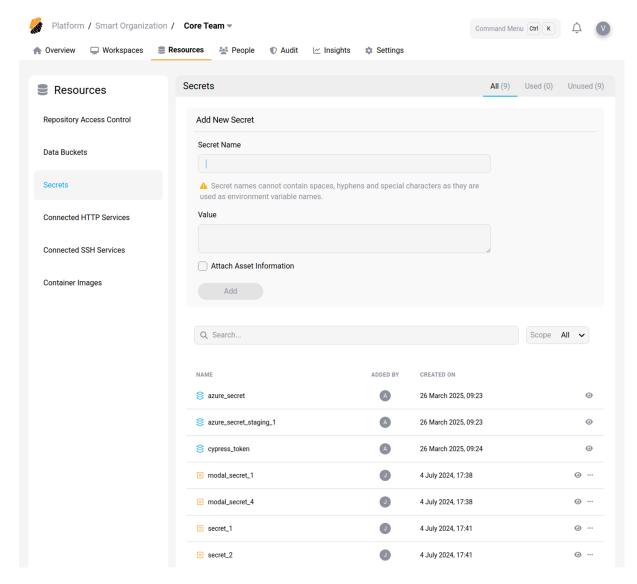
Generally, the term "secret" points to any necessary credentials (e.g. cryptographic keys, tokens and password) necessary to authenticate with a service during the development process. The storage of secrets is a service that can be provided by the platform or

by an external mechanism. Once registered on the platform, secrets attached to workspaces are available in the container's filesystem as environment variables or files. This section explains how secrets are managed by the platform, but note that your platform might use an external service for that purpose.

- View Secrets
- Add a New Secret Permission: Resources::Manage

#### **View Secrets**

Secrets used in the organization or project are displayed in a table. You may search for one or filter those used in workspaces.

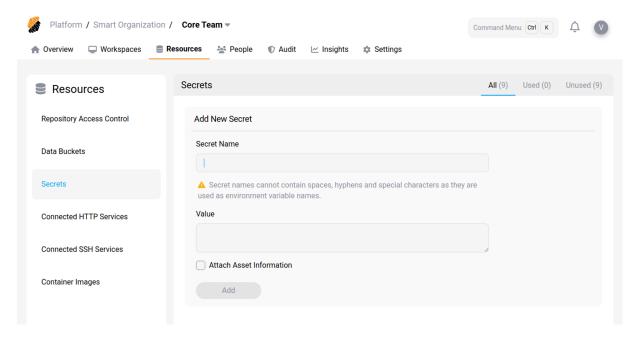


A Secret is defined by the following characteristics:

- **Basic information**: Information such as name, the user who added it, scope of use (platform, organization or project).
- Class Level: This option defines the visibility for the secret based on the user's permissions.
- Asset Information: This option allows for providing a description of the secret.

#### Add a New Secret Permission: \_Resources::Manage\_

You can create a secret at the top of the **Secret Page**.



You will need to enter the following information:

- 1. Name, a name to identify the secret,
- 2. Value:, i.e. the secret's value, and an
- 3. **Asset information**, a description of the secret.

#### **Connected HTTP Services**

July 8, 2025

**Connected HTTP Services** consist of services used for the implementation of software applications. These services are typically providing functions, data or host access via APIs over the HTTP network protocol.

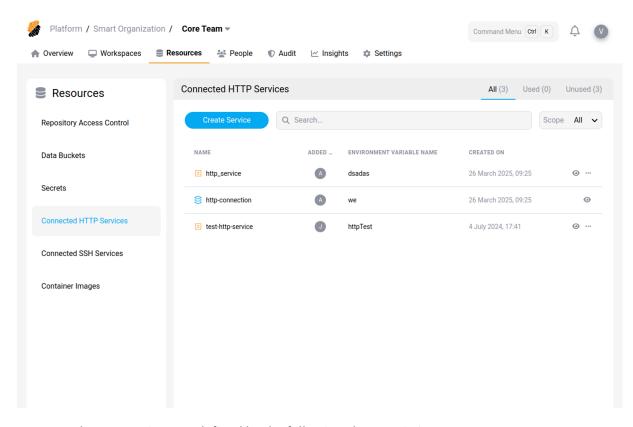
#### Tip

The nature and protocol of services that can be attached to workspaces depend on your platform's implementation.

As it is the case with other types of resources, HTTP services are attached to workspaces during the creation or the update of the workspace's settings.

- View Connected HTTP Services
- Add an HTTP Service Permission: Resources::Manage

#### **View Connected HTTP Services**



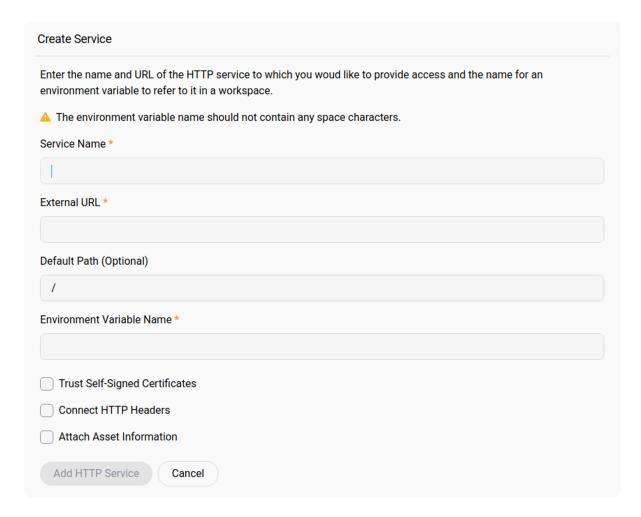
Connected HTTP services are defined by the following characteristics:

- Basic information: Name, scope of use (platform, organization or project), URL and tag.
- **Class Level**: This option defines the visibility for the service based on the user's permissions.
- Asset Information: This option allows for providing a description of the container.
- **Environmental Variable Name**: This allows access to the service simply by naming an environment variable.

# Add an HTTP Service Permission: \_Resources::Manage\_

You can register a service by selecting "**New HTTP Service**" and provide the following information:

- 1. Name, a name to identify the service,
- 2. **Service URL** that points to the service location,
- 3. **Environment Variable Name**, to name the service in the context of the container's environment,
- 4. **HTTP headers (optional)**, used to pass authentication data when necessary to access the service.
- 5. **Asset Information**, used to provide a description of the service.



#### **Connected SSH Services**

August 26, 2025

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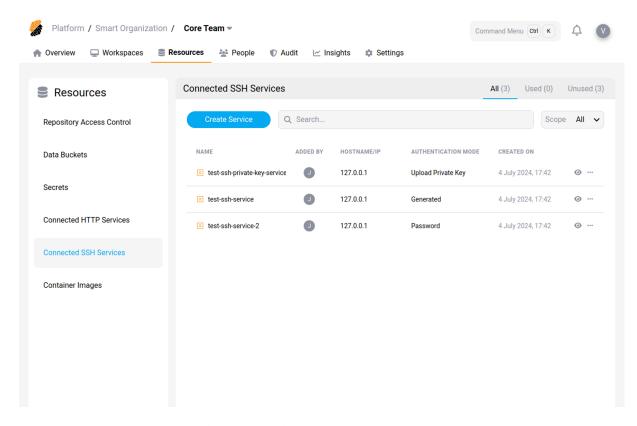
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- View Connected SSH Services
- Add an SSH Service Permission: Resources::Manage

#### **View Connected SSH Services**



Connected SSH services are defined by the following characteristics:

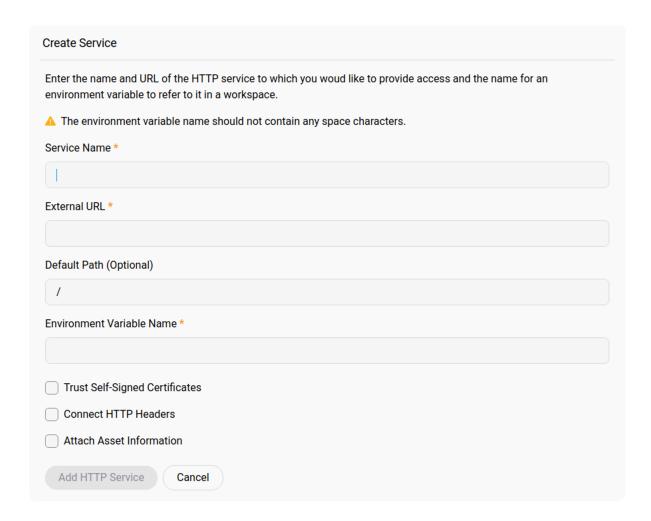
- Basic information: Name, scope of use (platform, organization or project), URL and tag.
- Class Level: This option defines the visibility for the service based on the user's permissions.
- Asset Information: This option allows for providing a description of the container.
- **Environmental Variable Name**: This allows access to the service simply by naming an environment variable.
- · Hostname/IP: The IP address or hostname of the SSH host,
- Authentication Mode: the mechanism to authenticate with the service.

### Add an SSH Service Permission: \_Resources::Manage\_

You can register a connected service by selecting "New SSH Service".

You will need to enter the following information:

- 1. Name, a name to identify the host,
- 2. **SSH Username**, a username to access the host,
- 3. Hostname or IP address of the SSH service, that points to the host location,
- 4. Port number the SSH service is running on, a port number for the service,
- 5. **Authentication method**, an authentication method to access the service, and choose one of the methods:
  - "Generated": A pair of keys will be generating when adding the SSH service
  - "Upload Private Key": Upload the private key that will be used to authenticate you to the ssh service
  - "Password": Insert the password associated to your ssh username previously entered
- 6. **Asset Information**, a description of the service.



# **Container Images**

#### August 1, 2025

Container images or also Cloud Development Environments (CDEs) are used to define the configuration of a development environment. Typically, CDEs define all the software dependencies necessary for building the intended application once implemented. Users create workspaces with such an image as "blueprint", and begin contributing code to the project within this context.

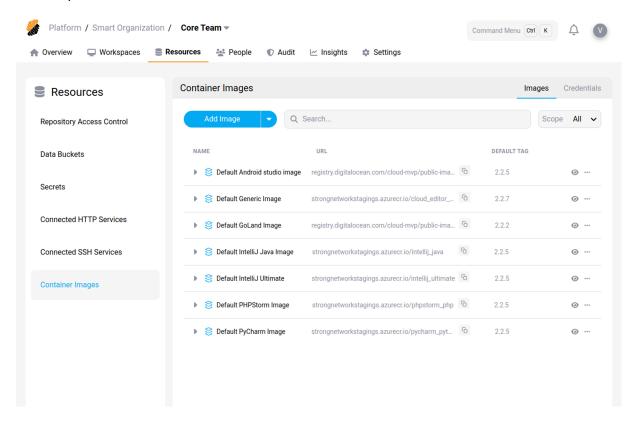
CDE images are imported from a registry as part of the resources available to users on the platform. Registries are either public or private.

For private registries, you need to provide credentials to authenticate properly before importing the image. Public registries, by definition, do not need credentials.

- View CDE Images
- Add a CDE Image Permission: Security::Manage
- View Registry Credentials
- Add a Registry Credential Permission: Security:: Manage

#### **View CDE Images**

The panel displays the available CDE images in the project. You may search for one or filter those used in workspaces.



A CDE image is defined by the following characteristics:

- Basic information: Name, scope of use (platform, organization or project), URL and tag.
- **Class Level**: This option defines the visibility for the CDE image based on the user's permissions
- Asset Information: This option allows for providing a description of the CDE.

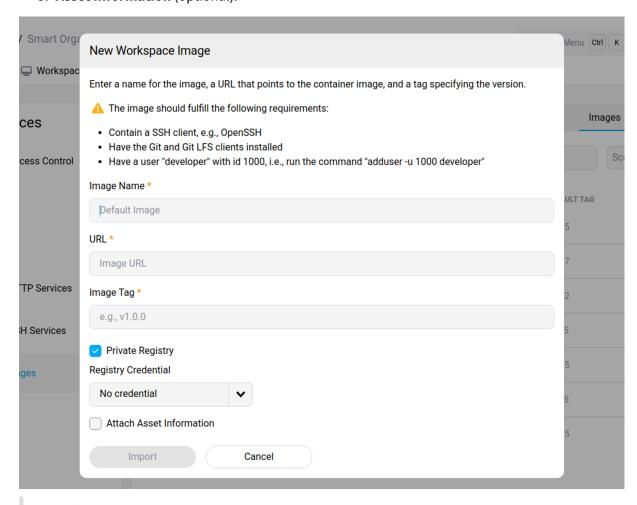
By clicking on a CDE image, you can see a list of the CDE's versions followed by basic details such as imported date, status.

# Add a CDE Image Permission: \_Security::Manage\_

You can add a CDE image by pressing the "Add New Image" button.

You will need to provide the following information:

- 1. Name, a name to identify the CDE,
- 2. Images URL, that points to the CDE's location,
- 3. Image's latest tag,
- 4. Private registry (optional),
- 5. Asset Information (optional).



#### Warning

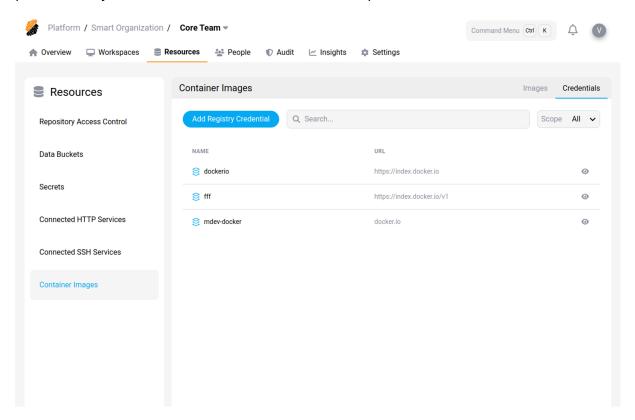
The CDE image should fulfill the following requirements:

- 1. It should contain an SSH client.
- 2. It should have both GIT and GIT LFS clients installed.
- 3. It should have a user named "developer" with ID 1000 (this is obtained by running the command "adduser -u 1000 developer).

You can edit or delete a CDE image by clicking on the "..." icon next to its class level.

# **View Registry Credentials**

To display credentials used in the project click on the "**Credentials**" button on the top right of the panel. You may search for one or filter those used in workspaces.



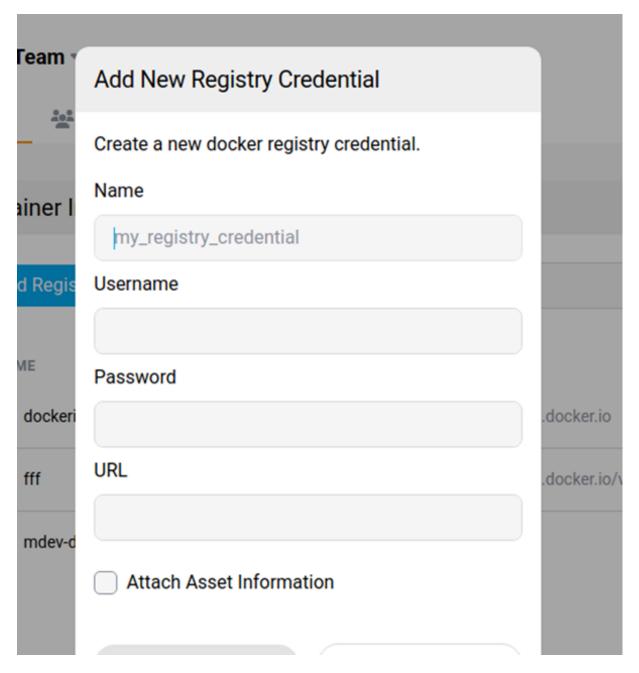
A Registry Credential is defined by the following characteristics:

- 1. Name,
- 2. Scope and
- 3. a **URL**.

For security purpose, no credentials are directly exposed or available for consultation.

# Add a Registry Credential Permission: \_Security::Manage\_

You can add a Registry Credential by pressing the "Add Registry Credential" button.



You will need to enter the following information:

- 1. **Name**, to identify the credentials when needed during the registration of a CDE image,
- 2. Username:, and
- 3. Password:, as credential values, and an
- 4. **URL**: where the authentication is performed.
- 5. **Asset information**, a description of the registry credential.

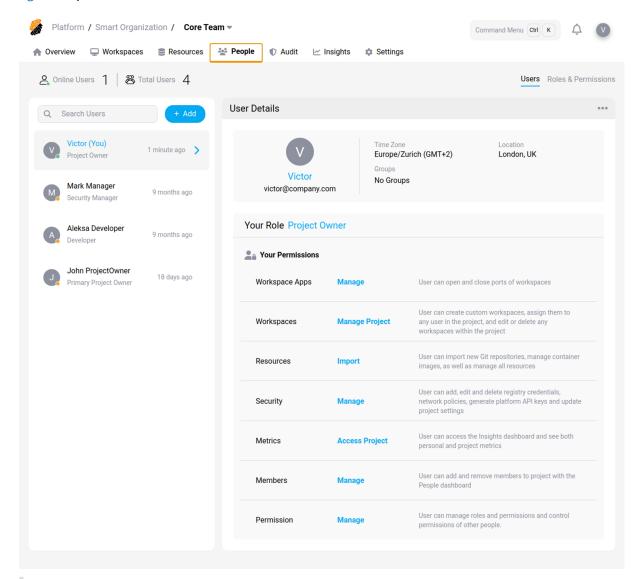
## **People Page**

The People page contains information about users onboarded to a project, an organization or the entire platform. Switching projects or organizations therefore updates the membership in the table.

You can see the role, permissions and public details for each user in the View User panel.

This page provided typical team management functions to users with the appropriate permissions. The *project owner* has permissions to update the roles of the users in the project.

In addition, the project owner can create new roles or update existing ones from the Permission Management panel.



#### Info:

A regular user can view all of the roles in the project and the associated permissions even if he

does not have the *Members::Manage* permission.

## Content

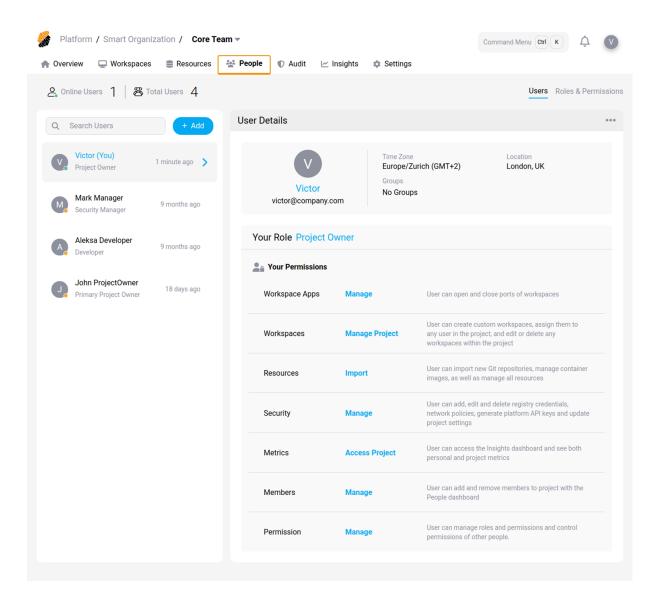
- View Users panel.
- Access Control panel.

## **Users**

August 26, 2025

Users participating in the project or organization are displayed in the table at the top of the People page.

You can see the role, permissions and public details for each user.



- Search for Users
- Onboard a User in a Project Permission: Members:: Manage
- Remove a User Permission: Members:: Manage
- Public Details
- Roles and Permissions

#### **Search for Users**

You can look for a specific user in the project using the search bar or by browsing the tabs.

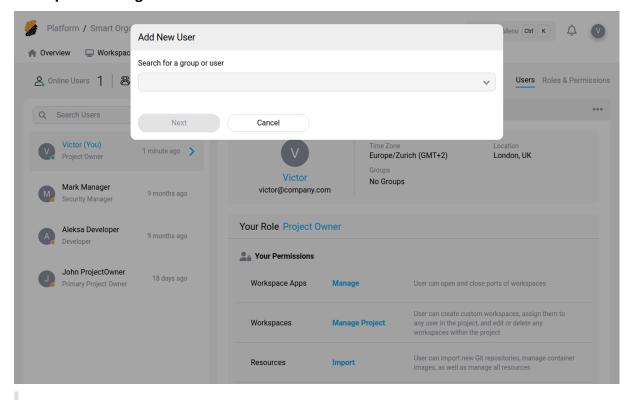
Recent activity and roles are displayed next to the username. Counts of connected users and total users are visible above the search bar.

## Onboard a User in a Project Permission: \_Members::Manage\_

By clicking on the "Add New User" button, you will be prompted to enter the email address of the user to be added. Based on the email's domain name, an appropriate identity provider (IdP) is selected. Domain names have to be registered with the Settings menu at platform-level to attach it to the correct IdP.

When the domain is not detected, a temporary password can be generated for the user. This password will have to be communicated to the user, unless a mechanism to do so is available with your instance.

Each user must be assigned a role in the scope of a project during the onboarding process. Once a user has been onboarded in the project, a workspace can be assigned to her or She can create a workspace on her own granted she has the appropriate permission, at least **Workspaces::Manage Personal**.

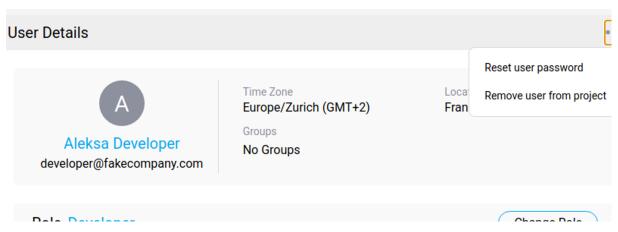


#### Tip

You can set an expiration date to the participation of the user in the project. Once the date is passed, the user won't have access to the project, the workspaces or to any resource associated with it.

## Remove a User Permission: \_Members::Manage\_

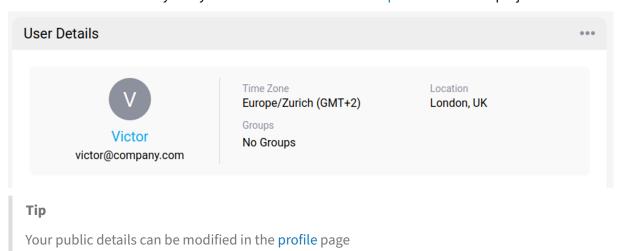
By clicking on the "…"icon on the top right of the user detail you can remove him from the project. The user won't have access to the project or to any resource associated with it. The user is however still in the platform database. To fully remove a user from the platform, the user has to be removed from the list of users, i.e. People Dashboard, when accessed at the platform level. This can be done with a user with a platform-level role such as *admin* or *security officer*.



#### **Public Details**

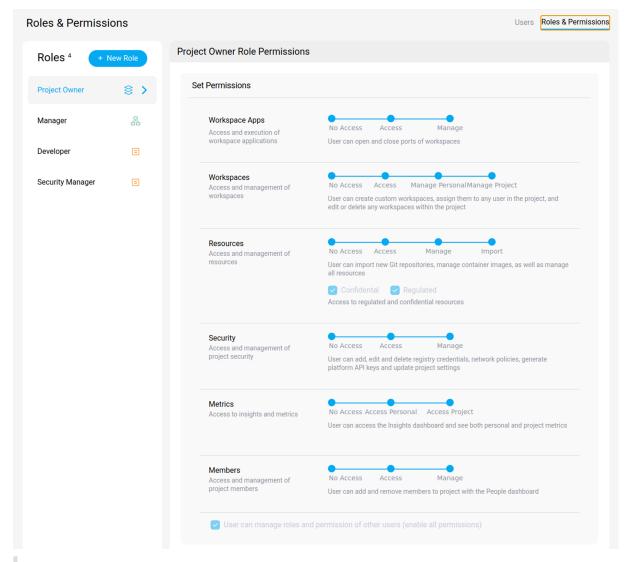
On the user profile you can see his email address, time-zone and location.

These details are visible by everyone with the Members::Access permission in the project.



## **Roles and Permissions**

On the user profile you can view your current role in context of the currently selected project.



### Tip

Tip for privileged users with permission Members::Manage

The user role can be modified using the user table found on the people page.

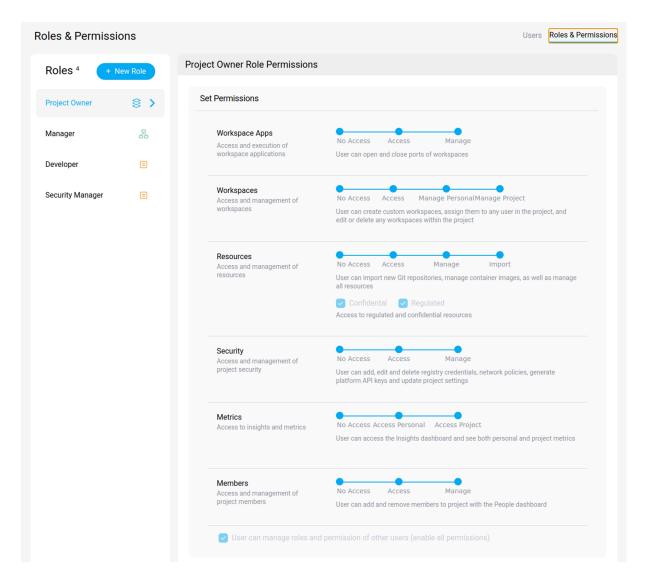
Refer to the Access Control page for more details around the access control policies on the platform.

#### **Access Control**

## August 1, 2025

Roles and permissions in the organization are displayed on the People page.

If you are a *project owner*, you can create new roles or update existing ones from the access control panel.

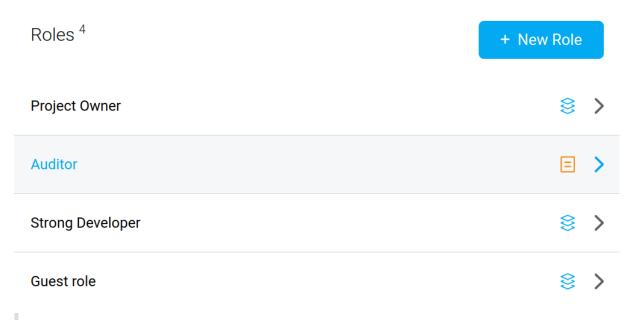


- Roles
- Default roles
- Create a new role Project Owner
- Permissions

### **Roles**

Roles define a set of permissions given to a user or a group of user.

They allow to determine the rights given to each user. Roles are project bound. This means that the same user may have a different role depending on the project. Roles defined on the project level are only available within that project.



#### Warning

Roles are a crucial element to consider when securing your resources. Roles must be attributed following a **least privilege** policy to avoid any unwarranted access.

#### **Default roles**

There are 4 default roles in a standard project: **Guess**, **Developer**, **Manager** and **Project Owner**. They are meant for the following use:

- **Guest**: The guest role allows a user to view the platform without having access to sensitive data or the ability to make any modifications.
- **Developer**: The "default" developer will be able to create workspaces based on admin-defined project rules.
- Manager: The manager has all the tech lead's permissions.
- **Project Owner**: The project owner has all the manager's permissions, in addition to accessing the project's audit and manage the user's security feature, such privilege elevation.

To each role is attached the set of permissions described below.

Refer to the permissions section for an explanation about each permission.

Permission	Guest	Developer	Manager	Project Owner
Workspace Apps::Access	Yes	Yes	Yes	Yes

Permission	Guest	Developer	Manager	Project Owner
Workspace	Yes	Yes	Yes	Yes
Apps::Manage				
Workspaces::Access	Yes	Yes	Yes	Yes
Workspaces::Manage Personal	No	Yes	Yes	Yes
Workspaces::Manage Project	No	Yes	Yes	Yes
Resources::Access	Yes	Yes	Yes	Yes
Resources::Manage	No	Yes	Yes	Yes
Resources::Import	No	No	No	Yes
Resources::Regulated	No	Yes	Yes	Yes
Resources::Confidential	No	Yes	Yes	Yes
Security::Access	No	Yes	Yes	Yes
Security::Manage	No	No	No	Yes
Metrics::Access Personal	No	Yes	Yes	Yes
Metrics::Access Project	No	No	Yes	Yes
Members::Access	No	Yes	Yes	Yes
Members::Manage	No	No	Yes	Yes

# Create a new role Project Owner

By clicking on the button at the top left of the **access control** panel, you can create a new role. Select a name and the set of permissions that characterize the new role.

## Warning

Granted permissions must follow a **least privilege** policy.

Be careful when naming a role, a poorly chosen name can be misused and end up giving too much privilege to a user.

#### **Permissions**

Permissions describe the rights given to a user for a specific access.

## Project Owner Role Permissions Set Permissions Workspace Apps No Access Manage Access Access and execution of workspace applications User can open and close ports of workspaces Workspaces Access Manage Personal Manage Project Access and management of workspaces User can create custom workspaces, assign them to any user in the project, and edit or delete any workspaces within the project Resources No Access Access Manage Import Access and management of resources User can import new Git repositories, manage container images, as well as manage all resources Confidental Regulated Access to regulated and confidential resources Security Manage No Access Access Access and management of project security User can add, edit and delete registry credentials, network policies, generate platform API keys and update project settings Metrics No Access Access Personal Access Project Access to insights and metrics User can access the Insights dashboard and see both personal and project metrics Members No Access Access Manage Access and management of project members User can add and remove members to project with the People dashboard User can manage roles and permission of other users (enable all permissions)

Please find below the detail of each access mentioned above.

Permissions	Description		
Workspace Apps::No Access	The user cannot access apps running on the workspace.		
Workspace Apps::Access	The user can access and view apps shared with the user by other users.		
Workspace Apps::Manage	The user can open and close ports of workspace		
Workspaces::No Access	User cannot access workspaces		
Workspaces::Access	User can access workspaces assigned to her, but cannot edit properties or modify access control to resources, or delete her workspace.		
Workspaces::Manage Personal	User can create personal workspaces (i.e. with admin pre-defined characteristics), manage access control to the project resources, and delete personal workspaces.		
Workspaces::Manage Project	User can create custom workspaces and assign to any user in the project. The user can edit or delete any workspaces in the project.		
Resources::No Access	The user cannot access the Resources dashboar and see registered resources.		
Resources::Access	The user can access the Resources dashboard and see registered resources, but cannot edit of delete them.		
Resources::Manage	The user can access the Resources dashboard and see, edit and delete project repositories, secrets, external services and data buckets.		
Resources::Import	The user can import new git repositories, container images and SAML connected apps, a well as manage all resources.		
Resources::Regulated	The user can access resources registered as regulated, i.e. falling under some regulations		
Resources::Confidential	The user can access resources registered as confidential such as intellectual property, etc		
Security::No Access	The user does not have access to security metrics.		
Security::Access	The user has access to the Audit dashboard, define network policies (Resource Dashboard) but cannot add, edit or delete them.		

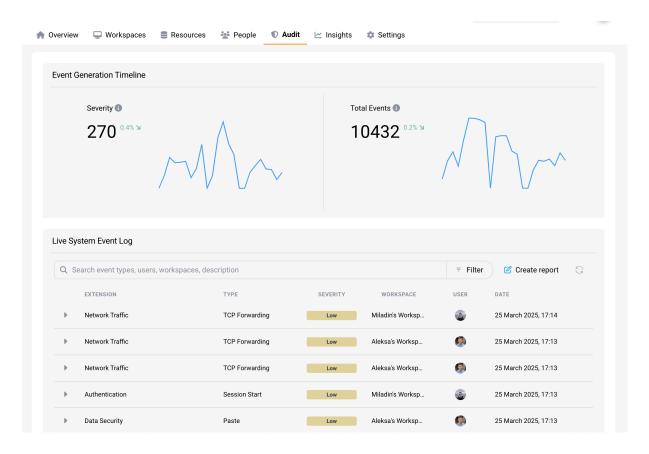
Permissions	Description		
Security::Manage	The user can add, edit and delete workspace		
	images, registry credentials, network policies,		
	generate platform API keys and update project		
	settings.		
Metrics::No Access	The user has no access to the Insights dashboard.		
Metrics::Access Personal	The user has access to the Insights dashboard		
	and see only personal metrics.		
Metrics::Access Project	The user has access to the Insights dashboard		
	and see both personal and project-level metrics.		
Members::No Access	The user cannot see the project's members (no		
	People dashboard).		
Members::Access	The user can see the project's members in the		
	People dashboard.		
Members::Manage	The user can add and remove members to the		
	project with the People dashboard.		

# **Audit Page**

August 1, 2025

Permission: \_Security::Access\_

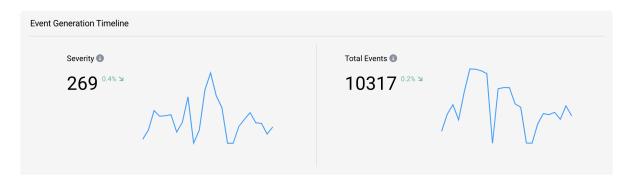
The **Audit page** provides insights into the security of your **Project**, including a **Event Generation Timeline** graph that illustrates the timeline of events triggered by workspaces within the current project. Additionally, the **Live System Event Log** presents a table displaying detailed logs of each event.



- Event Generation Timeline
- Event Logs
- Filtering Logs
- Log Display

## **Event Generation Timeline**

The event generation timeline are two graphs, where the first one shows the severity level of triggered events over time, and the other displays the total amount of triggered events over time.

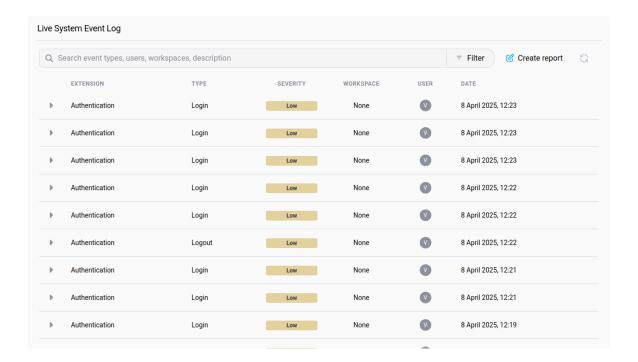


#### **Event Logs**

The **Live System Event Log** displays records of security events triggered by workspaces within a specific project. These events can take many forms, such as clipboard monitoring or network alerts, like a DNS request. These logs are significant as they have the ability to uncover potential security vulnerabilities.

#### Tip

Events are triggered once you enabled the option "Log and record outbound network traffic" for the associated Network Policy.



#### **Filtering Logs**

The log view allows users to easily filter and search through the system's event logs.

This feature makes it very convenient to identify possible issues, troubleshoot and also to monitor the usage of the system in a more granular level. To display filter options, press the "**Filter**"button located at the top right of the **Live System Event Log** panel.

Filter logs by:

- Type of the event,
- Severity level,
- Workspace from where the event was triggered,
- User that triggered the event,

• Date and time at which the event was triggered.

In addition to filtering logs, you can search through them by typing key words in the search bar below the date range (e.g. search for a specific user).

#### Log Display

The log view provides detailed information about each event that occurs within the system. For each log, you can view the following information:

- 1. **Type**: What kind of event was triggered,
- 2. **Severity**: Severity level of the event,
- 3. Workspace: Workspace from where event was triggered,
- 4. **User**: User who triggered the event,
- 5. **Date**: Date and time at which the event was triggered,
- 6. **Description**: Describes action that triggered the event.

To view more details about an event, press the dropdown menu button to the left of the event's log.

# **Insights Page**

The **Insights Page** displays information about the activity of the **Project**'s members, resource allocation and container process' metrics. The information displayed on this page depends on the implementation of the platform in your organization. This section provides a general view of the information commonly found across deployments.

#### Info

Depending on your permissions within the project, some of this information may not be available.

## Content

- Resource Allocation Permission: \_Metrics::Access Project\_
- Container Process Metrics

## **Resource Allocation**

August 1, 2025

## Permission:\_Metrics::AccessProject\_

Within the **Resource Allocation** tab, you can view the current usage of resources by your workspace.

• Resource Allocation Graph

## **Resource Allocation Graph**



You can also view a sortable list of the total consumption based on activities for each workspace in the project.

#### Note

Each workspace is assigned a CPUs/Memory/Memory specification. You can see the current level of usage for workspaces in the project in the Workspace Consumption list.

## **Container Process Metrics**

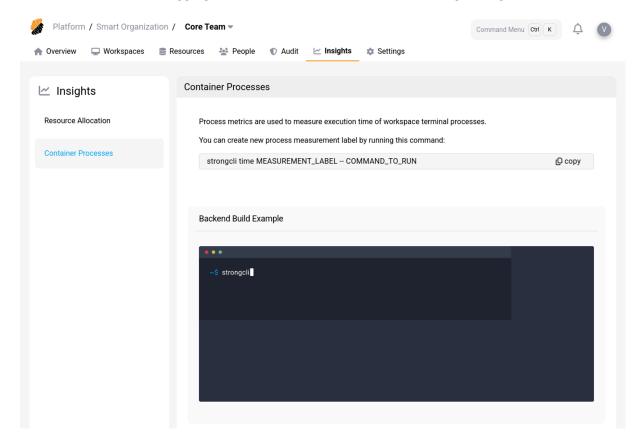
August 1, 2025

The section **Container Process** displays time metrics registered using the platform Command Line Interface (CLI) **strongcli** available in developers workspaces.

Metrics are registered using the 'time' option and become available in the Insight dashboard's section **Container Process**. This CLI is typically used in scripts

embedded in the project containers such that, at startup a selection of processes can be registered for performance assessment. Once registered in a fleet of

workspaces, metrics are aggregated and eventually displayed in the Insights page.



- Track a Container Process
- · Insights'Period
- Container Process Insights
  - Average
  - Total

## **Track a Container Process**

You can track the execution time of container processes in workspaces using the platform's Command Line Interface (CLI) **strongcli**.

Use the following command to do so:

```
1 > strongcli time LABEL -- COMMAND_TO_RUN
```

#### Where:

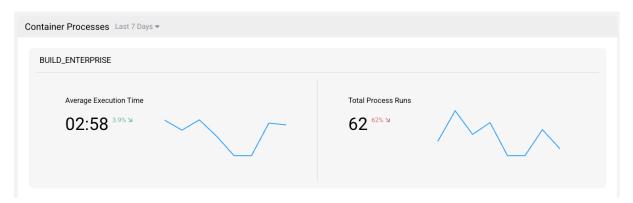
- LABEL: This allows setting a label to identify the process in the Insight dashboard,
- **COMMAND\_TO\_RUN**: The terminal command for which you would like to measure the execution time.

This registers a new process for your workspace among the **container processes** and measures its execution time.

## Insights'Period

After selecting a container process, you can vary the span of the statistics from a 7-day execution average to a yearly average.

• Click on the drop-down menu to the right of "Last 7 days" to change the evaluation period.

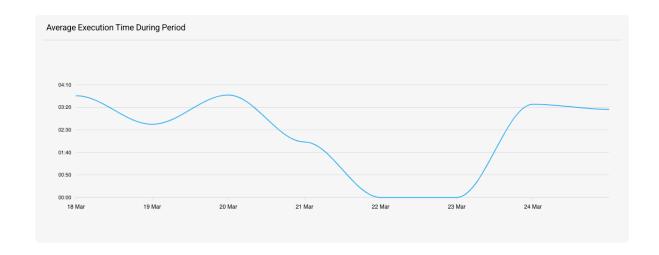


Based on selected period, the graph scale will be adapted accordingly.

## **Container Process Insights**

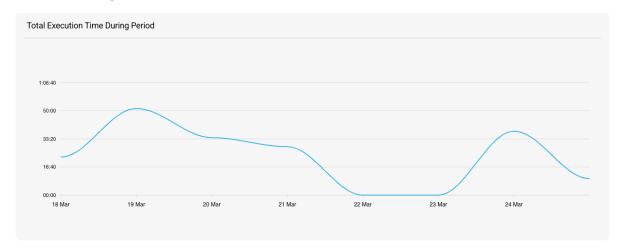
#### **Average**

The "average execution time" graph in the container Process section of the Insight dashboard shows the average amount of time it took for a command to be executed within a developer's workspace, as recorded by the platform's Command Line Interface (CLI). The period of time displayed on the average execution time graph can be adjusted, allowing you to view metrics for a specific date range.



#### **Total**

The "total execution time" graph in the **container process** section of the Insight dashboard shows the total amount of time the command has been executed in a developer's workspace. The period of time displayed on the total execution time graph can be adjusted, allowing you to view metrics for a specific date range.



# **Profile and Account Settings**

The **Profile and Account Settings** pages lets you manage personal data and set preferences around your work habits. For example, you can set-up a work schedule such that your workspace is automatically deployed at pre-set hours.

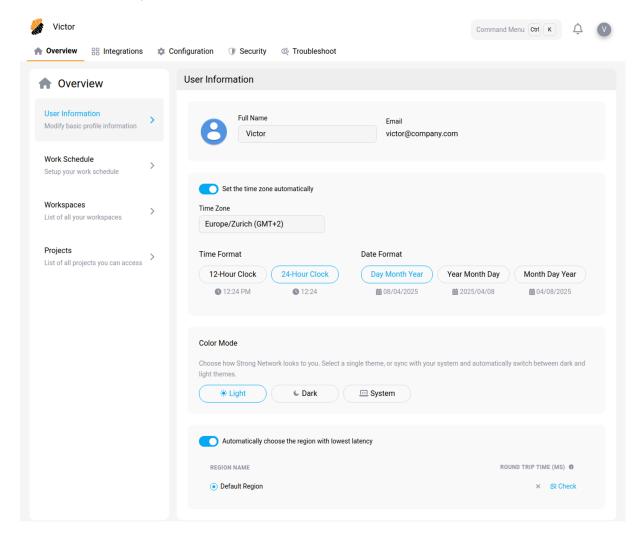
The profile is used also to store any personal configuration files such as .bashrc, etc needed to customize your workspaces.

In addition, you can use the profile to record IDE configurations, including installed plug-ins, and replicate them across workspaces. Finally, the profile is the

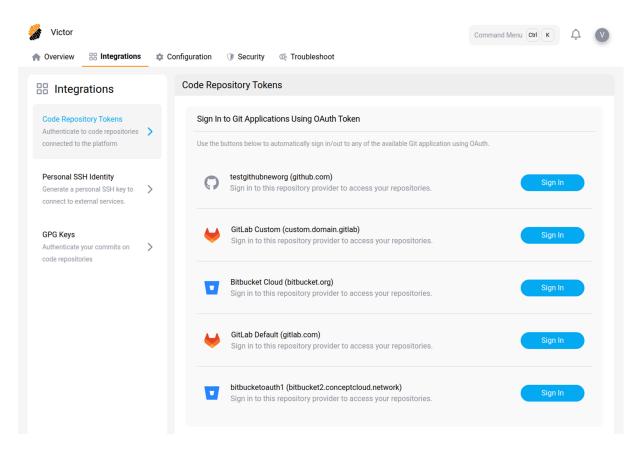
place to manage the different authentication tokens and access keys to authenticate to GIT applications attached to

the platforms and accessible from the workspaces.

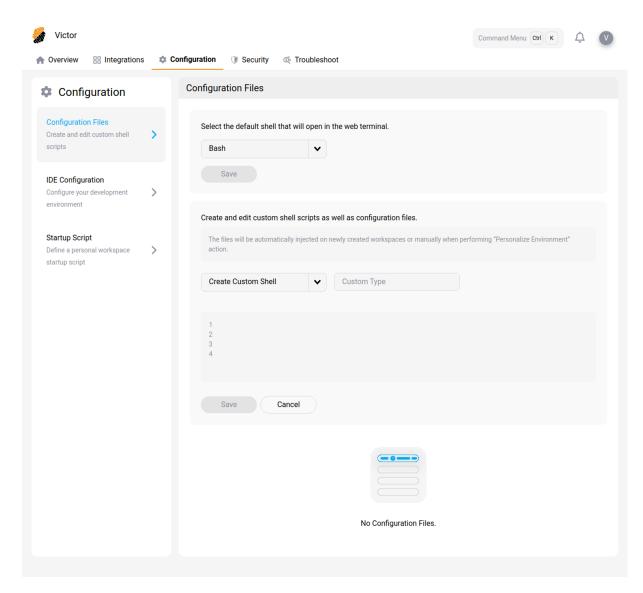
The **Overview Page** allows you to edit personal information, define a work schedule, view owned workspaces and project membership.



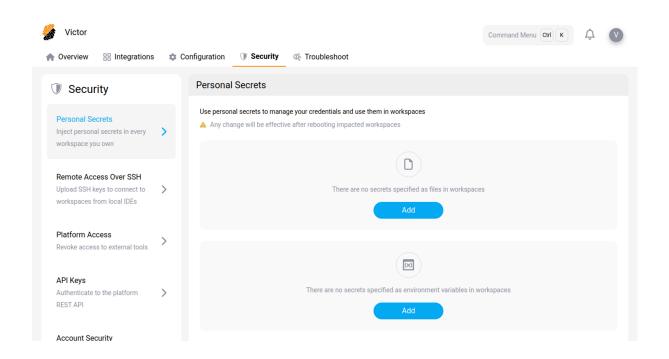
The **Integration Page** allows you to create and edit different authentication tokens, personal SSH identity and GTG keys.



The **Configuration Page** allows you to create and edit custom configuration files, IDE configurations and workspace startup scripts.



The **Security Page** allows you to create and edit API keys, SSH keys and personal secrets.



#### Content

- Overview Page
- Integration Page
- Configuration Page
- Security Page

## **Profile Overview**

August 26, 2025

The **Profile Overview Page** serves as a comprehensive summary of the user's information, their workspace ownership and project membership.

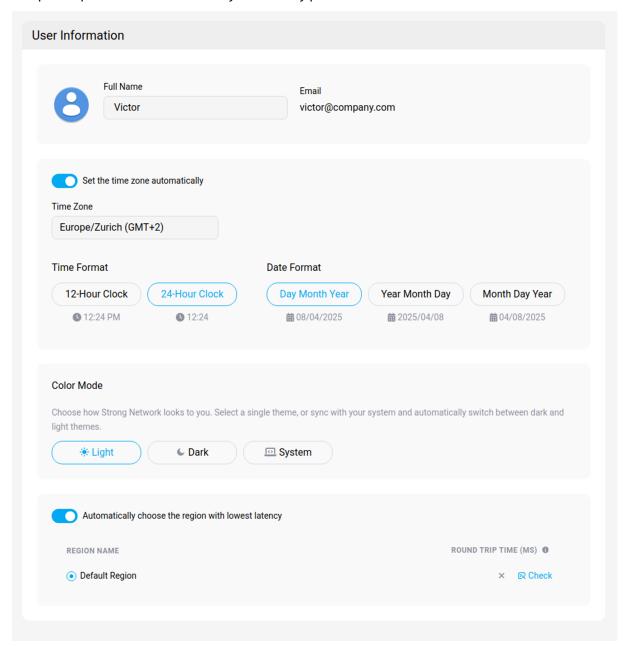
- User Information
- Work Schedule
- Workspaces
- Projects

#### **User Information**

In the **User Information** section you can modify your user's name and time zone.

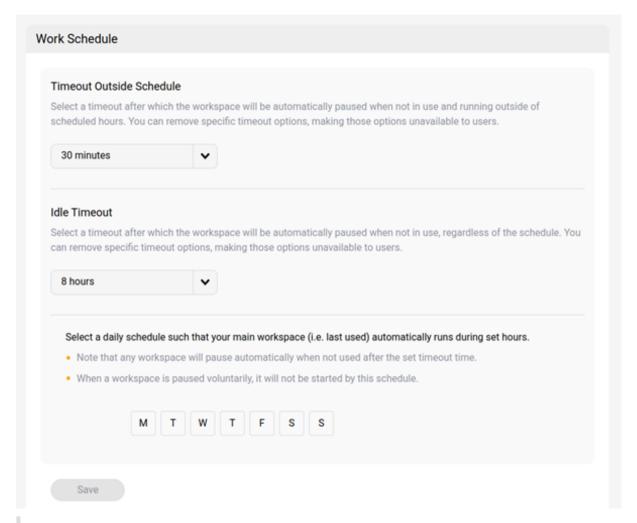
The email linked to your profile cannot be modified.

The profile picture is retrieved from your identity provider when available.



#### **Work Schedule**

In the **Work Schedule** section, you can configure your profile's work schedule. During set hours your main workspace (i.e. last used) is automatically deployed.



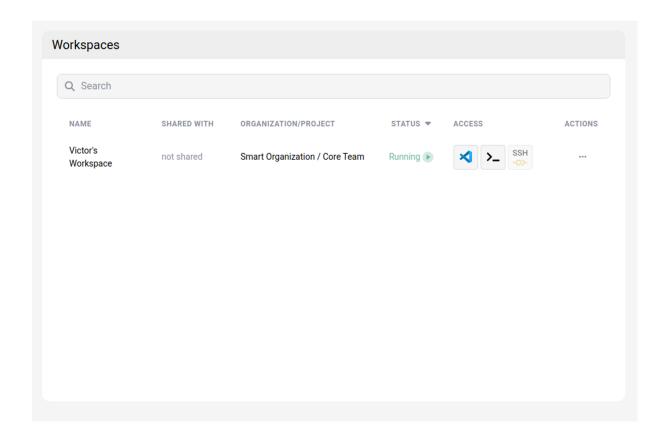
#### Tip:

Workspaces will pause automatically when not used for over a pre-set time, typically 60 minutes, depending on the setup of your platform.

When a workspace is paused voluntarily, it will not be impacted by the schedule.

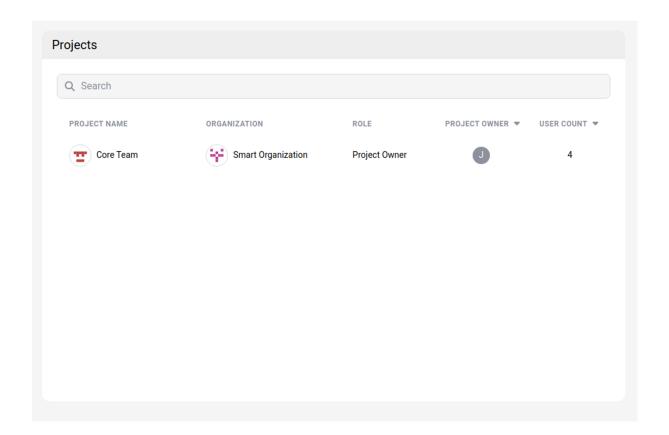
## Workspaces

In the **Workspaces** section, you can find details about your individual workspaces across all projects that you are a part of. By selecting the "…"option on a specific workspace, you can directly perform actions such as running, pausing, editing, viewing details, or deleting the workspace.



## **Projects**

The **Projects** section displays information about every project that you are a member of, within the organizations to which you belong. This includes details such as the project name, the organization hosting the project, your role within the project, the project owner, and the number of users involved in the project. By clicking on a project's name, you can access its dashboard for more information.



# Integration

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In the **Integration Page** you can manage the different access keys, secrets and tokens that are linked to the user's profile.

This includes **Code Repository Tokens**, **Personal SSH Identity** and **GPG Keys**. The keys and tokens are used to authenticate and authorize access to different services, such as remote repository applications. By managing their keys, tokens and secrets in one location, users can easily keep track of which ones are being used, for what purpose and can revoke or add new ones as needed. The page also allows the user to view, create, and remove them, to manage access levels and to have an overview of their expiration date. This helps to ensure that only authorized users have access to the necessary resources and services, and that access is revoked when necessary.

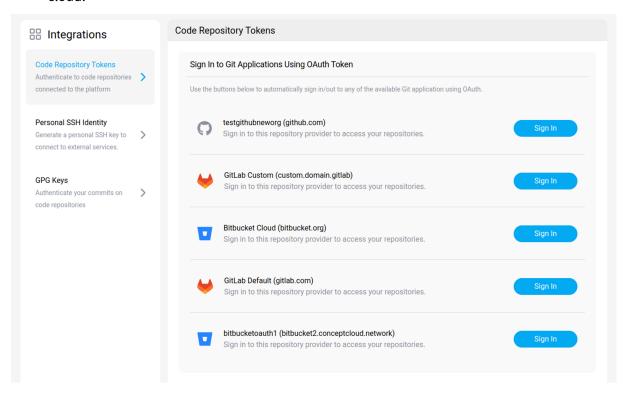
- Code Repository Tokens
- Personal SSH Identity
- GPG Keys

## **Code Repository Tokens**

Under Code Repository Tokens, you can configure authentication, using OAuth Authentication Tokens or Personal SSH Keys, to the following git providers:

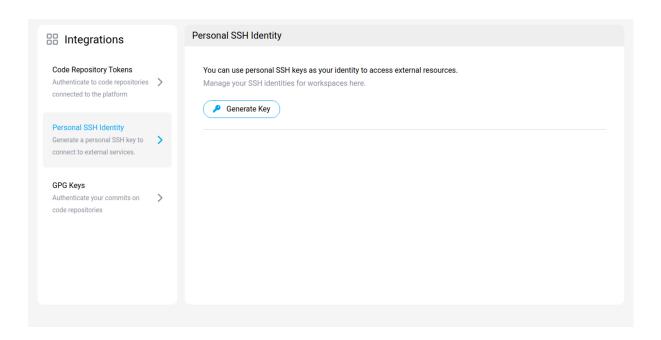
- · GitHub,
- · GitLab,
- and Bitbucket.

For certain of these git providers, you have the option to choose between the 'Default'or 'Internal' options. An 'Internal Service' is self-hosted, whereas a 'Default Service' is hosted on the cloud.



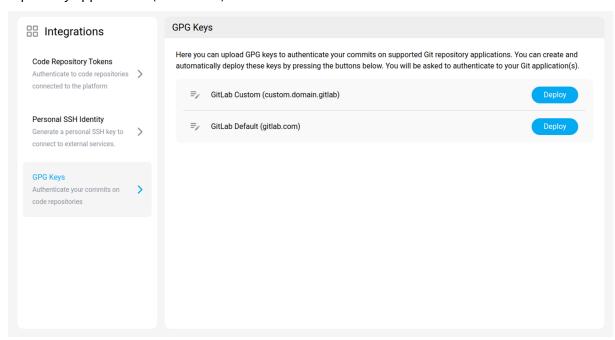
## **Personal SSH Identity**

You can generate a personal SSH key to authenticate yourself when accessing external resources. The SSH key will be applied to new or existing workspaces.



## **GPG Keys**

You can generate and automatically deploy GPG keys to authenticate your commits on supported Git repository applications (i.e. GitHub).



# **Configuration**

August 26, 2025

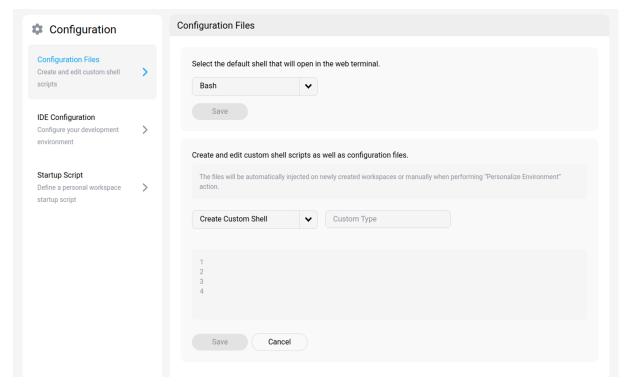
The **Configuration Page** is used to create and edit custom shell scripts and configuration files, configure your IDE and define personal workspace startup scripts. You can also configure additional settings (e.g. theme) by clicking on the profile picture on the top right of the screen.

- Configuration Files
- IDE Configuration
- Startup Script
- Theme
- Language

## **Configuration Files**

Personal configuration files can be managed from the **Profile Settings**.

These files can be injected in any new or existing workspaces automatically using the ... icon and the option **personalize environment**.



You can edit and manage typical shell scripts attached to Linux-based environments such as:

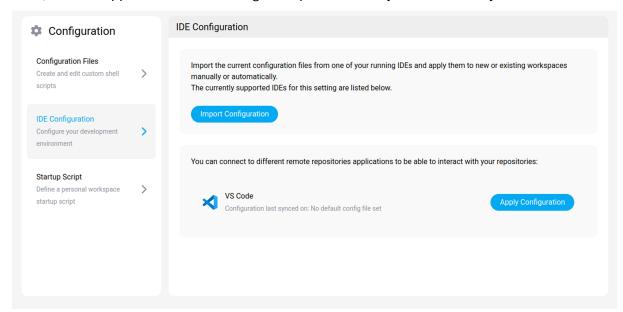
· .bashrc,

- · .zshrc,
- .profile, or any file of your choice using the
- · custom: option.

## **IDE Configuration**

IDE configuration files can be managed from the **profile settings**. A configuration must be initially imported from a **running** workspace.

Then, it can be applied to new or existing workspaces manually or automatically.



Currently supported IDEs are:

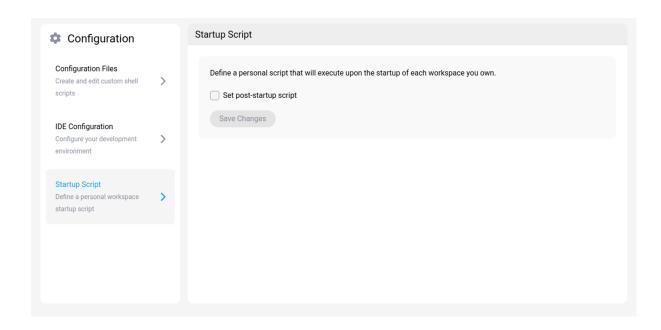
- VSCode,
- · any IDEs from Jetbrains.

## **Startup Script**

You can define a personal script that will be executed upon each startup of the workspaces that you own

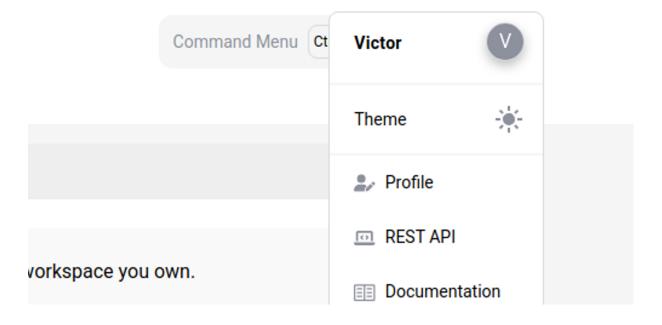
Tip:

Note that if you defined a startup script for a given workspace, then it will override this one



#### **Theme**

Two color themes for dashboards are available in the **Profile Menu**. You can switch between a **light** and **dark** theme for the User Interface (UI) display.



## Language

A language for the UI can be selected from the footer. Supported languages for the platform UI are:

· English,

· French.

## **Security**

August 26, 2025

In the **Security Page** you can manage the different access keys, secrets and tokens that are linked to the user's profile.

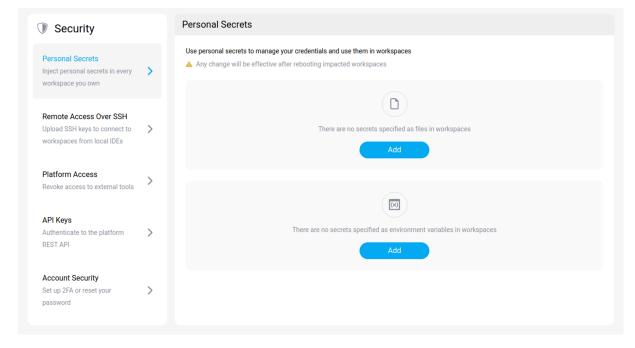
This includes **Personal Secrets**, **Remote Access Over SSH** keys, **API Keys** and **GPG Keys**. By managing their keys, tokens and secrets in one location, users can easily keep track of which ones are being used, for what purpose and can revoke or add new ones as needed. This helps to ensure that only authorized users have access to the necessary resources and services, and that access is revoked when necessary.

- Personal Secrets
- Remote Access Over SSH
- API Keys

#### **Personal Secrets**

Under **Personal Secrets**, you can manage your secrets.

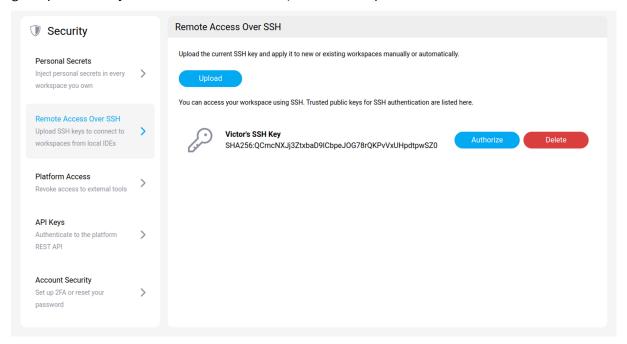
You add secrets that appear as files in your workspace, or add them as environment variables.



#### **Remote Access Over SSH**

You can access your workspace using SSH, which allows you to run VSCode locally. Trusted public keys for SSH authentication are displayed in this section. Each key is linked to your profile.

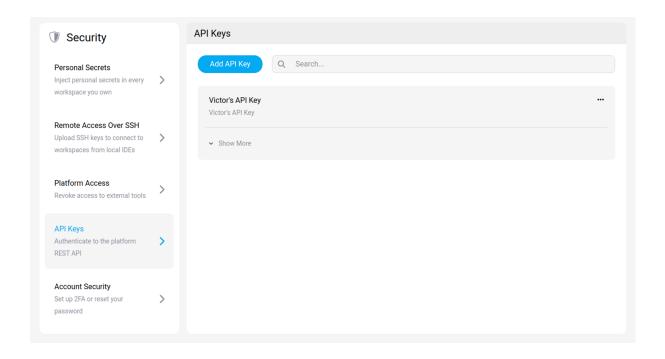
One benefit of accessing your workspace using SSH is flexibility. By allowing you to run VSCode on your local machine, you can still leverage the powerful hardware of the remote machine and still not give up on security. View SSH Into Your Workspace to set it up.



#### **API Keys**

An **API key** is a unique identifier used to establish a connection to an API call. Once connected, the API service will be available in your workspaces.

API keys are used to authenticate the source of a request and make sure that the API is only used as intended. API keys are often used by web and mobile apps to connect to web-based services and retrieve or update data.



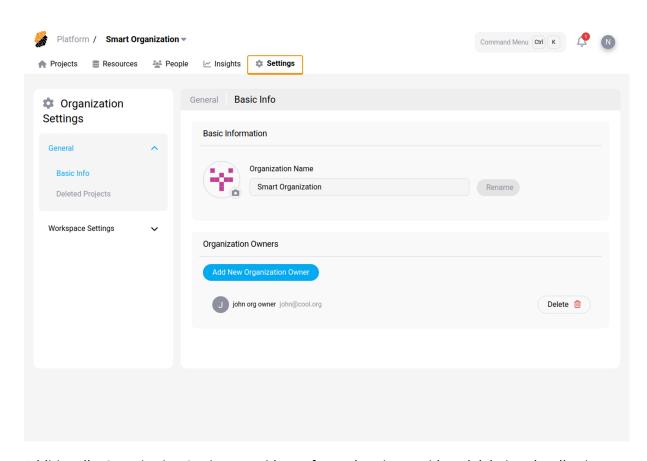
# **Organization General Settings**

## August 1, 2025

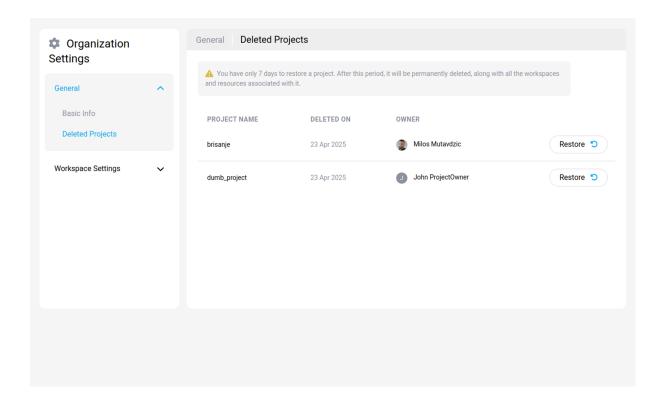
## Admin

The Organization Settings serve as the overarching control center for administering and standardizing configurations across all projects within the organization. By defining settings at the organizational level, you can enforce a consistent set of protocols, security measures, and resource limitations that will automatically apply to each new and existing project. This ensures uniform compliance and operational efficiency throughout the organizational ecosystem.

For detailed configurations at the project level, please refer to the Project Settings page.



Additionally, Organization Settings provide a safeguard against accidental deletions by allowing you to recover deleted projects for up to 7 days. After this period, the projects are permanently deleted. This recovery window helps prevent the permanent loss of project data.



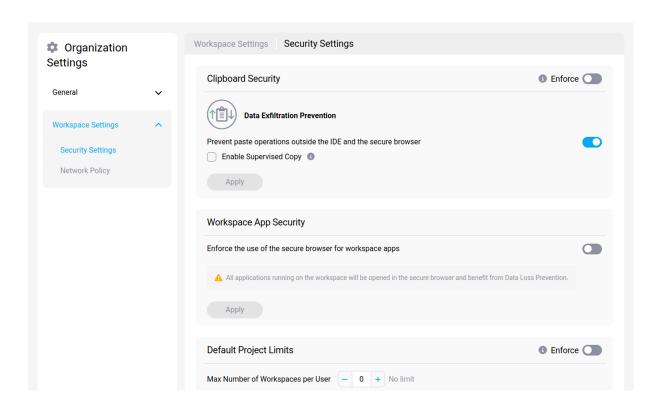
# **Workspace Settings**

#### August 26, 2025

This section focuses on configuring settings for workspaces that apply across the entire organization. Define organization-wide security policies governing aspects like data handling and access, and establish network policies to control workspace traffic consistently for all projects within the organization.

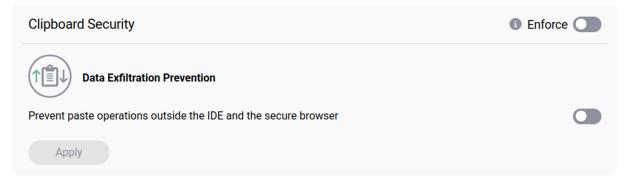
#### **Security Settings**

In the "Workspace Settings" section, the "Security Settings" enable you to implement multiple policies including Clipboard Monitoring, Workspace App Security, and Default Project Limits. These policies can be enforced to establish a foundational level of security across all workspaces within your project.



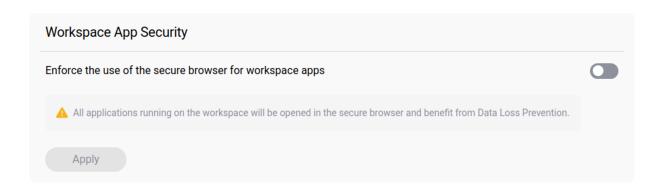
### **Clipboard Security**

Clipboard Security implements Data Loss Prevention policies to safeguard against data leaks by disabling the ability to paste content from the IDE and secure browser into external applications.



#### **Workspace App Security**

Workspace App Security allows you to mandate the use of a secure browser for workspace applications, ensuring that developers can share the applications they are developing in a protected environment. When used in conjunction with the Clipboard Security policy, this feature helps to prevent any potential data exfiltration from workspace applications.



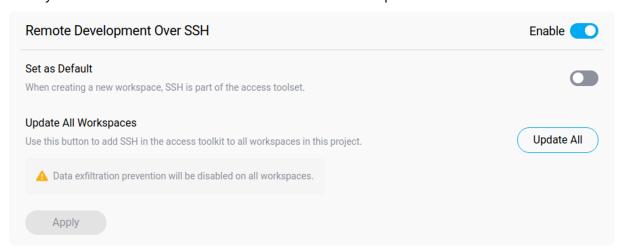
## **Default Project Limits**

Default Project Limits can be set to cap the number of workspaces a user can create. This not only aids in resource monitoring and reduces unnecessary workspace proliferation but also contributes to cost efficiency by avoiding the operation of unused workspaces.



#### **Enable Remote Development Over SSH**

Remote Development Over SSH gives you the option to permit or deny developers the ability to connect to their workspaces via SSH. While convenient for certain tasks, this feature must be used judiciously as it can reduce the effectiveness of local IDE data loss prevention measures.

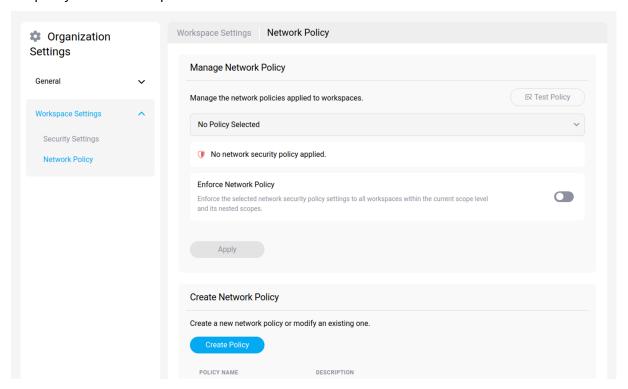


## **Network Policy**

Network policies are attached to workspace and enable fine-grained network traffic control. Network traffic is identified using combinations

of IP addresses, port and domain names. Once a network policy is attached to a workspace, all **out-bound** traffic is enforced by the rules in

the policy and the workspace's user cannot circumvent the restrictions.



#### **Default Network Policies**

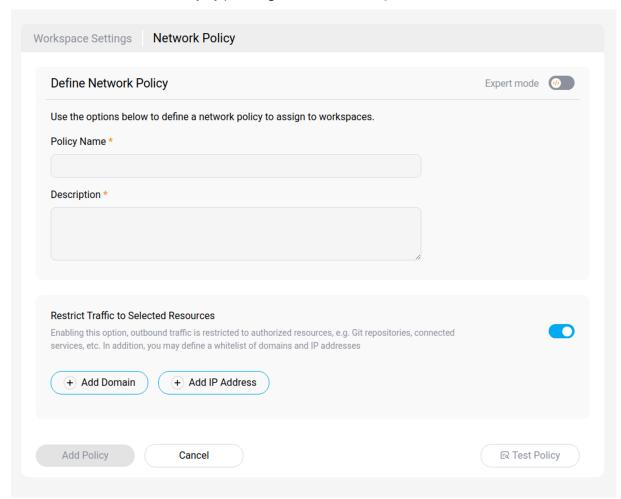
Three default policies are available in a project. An administrator can create a new Network Policy if needed.

Name	Scope	Description
<b>Monitor Traffic</b>	Project	This is a standard policy to
		monitor the outgoing traffic to
		the workspace. It will cause the
		generation of log events in the
		Audit dashboard.

Name	Scope	Description
Restrict Traffic	Project	This is a standard policy to
		restrict outgoing traffic from
		the workspace. It will block all
		traffic except to attached
		repositories and domains.
		Failed network requests are
		shown in the log events in the
		Audit dashboard.

# **Add a Network Policy**

You can create a Network Policy by pressing the "Create Policy" button.



You will need to enter the following information:

- 1. Name, a name to identify the policy,
- 2. Description,

#### Warning

Be careful when naming and describing a new policy. A misleading name can end up in giving too many permissions to a user.

- 1. Log and record outbound network traffic (default),
- Restrict Traffic to Selected Resources (optional),
   All traffic will be restricted, except for end systems added to your whitelist
- Add each application that you want to whitelist
- · Add Domains that you want to whitelist, and indicate whether to include subdomains
- Add IPs that you want to whitelist

#### **Edit or Delete a Network Policy**

You can edit or delete a Network Policy by clicking on the "..." icon next to its class level.

# **General Settings**

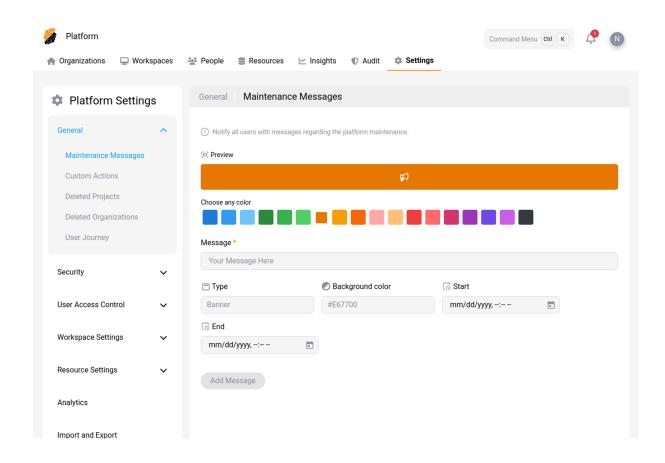
July 8, 2025

This section covers fundamental platform-wide configurations. Here, administrators can manage **Maintenance Messages**, configure **Custom Actions**, handle the recovery of **Deleted Projects** and **Deleted Organizations**, and adjust settings related to the initial **User Journey**. These settings govern the overall operational aspects and user experience defaults of the platform.

- Maintenance Messages
- Custom Actions
- Deleted Projects
- Deleted Organizations
- User Journey

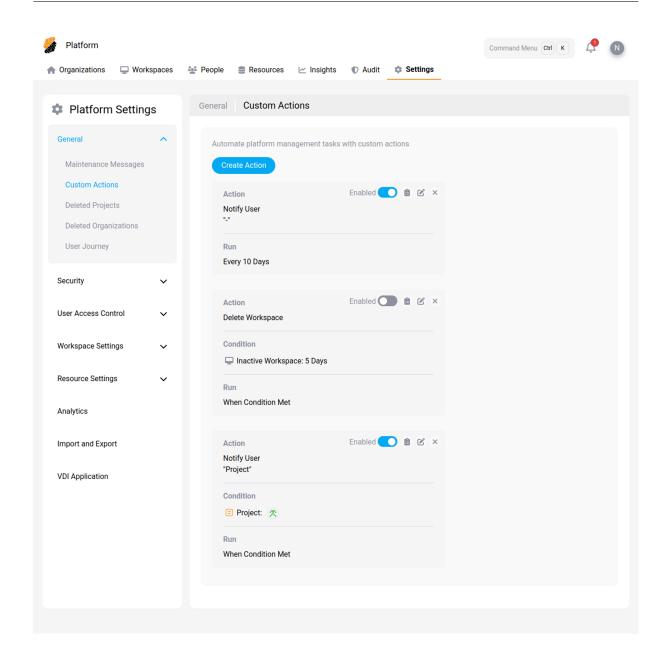
#### **Maintenance Messages**

You can configure and display maintenance messages to users. These messages can inform users about scheduled downtime, ongoing maintenance activities, or other important platform-wide notifications.



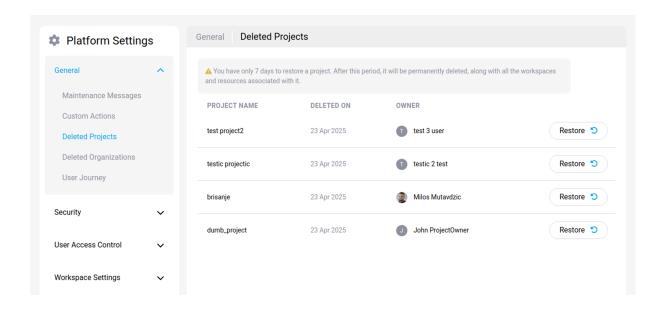
#### **Custom Actions**

Configure custom actions that can be triggered within the platform. This allows for extending platform functionality with specific automated tasks or integrations tailored to your organization's workflows.



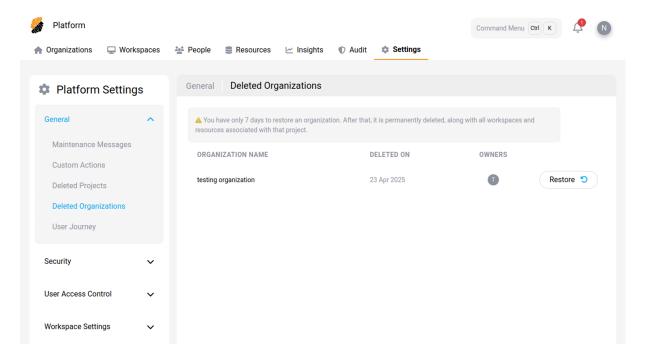
# **Deleted Projects**

You can recover a deleted project for a period of 7 days on the **Deleted Projects** tab. Simply press the **Recover** button the right of the project you want to restore.



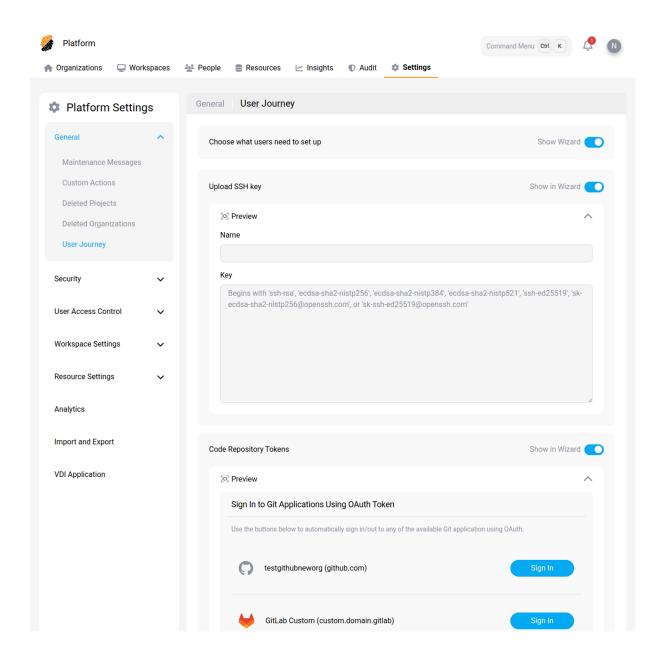
#### **Deleted Organizations**

You can recover a deleted organization for a period of 7 days on the **Deleted Organizations** tab. Simply press the **Recover** button to the right of the organization you want to restore.



#### **User Journey**

This section allows administrators to configure the initial setup wizard presented to users upon their first interaction with the platform.



# **Security Settings**

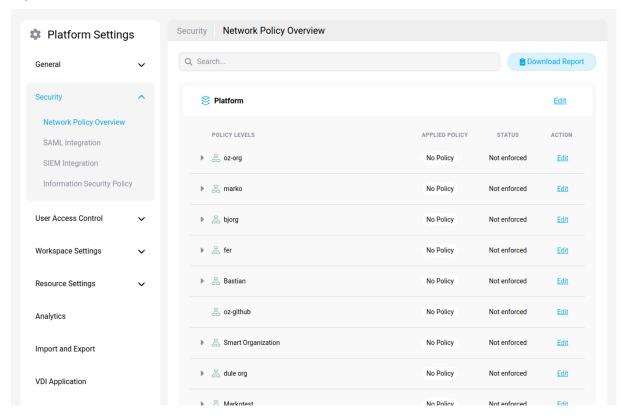
#### August 1, 2025

Configure critical security parameters for the entire platform. This includes managing **SAML Integration** for secure web application access via RBI, setting up **SIEM Integration** for centralized logging, getting a **Network Policy Overview**, and establishing platform-wide **Information Security Policy** settings. These settings are essential for protecting platform resources and ensuring secure user access.

- Network Policy Overview
- SAML Integration
- SIEM Integration
- Information Security Policy

#### **Network Policy Overview**

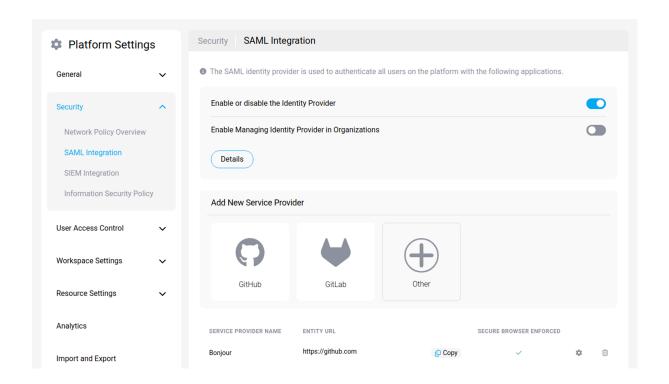
Get a summary view of the network policies currently applied across the platform. This overview helps administrators quickly understand the existing network security configurations and rules at a high level.



#### **SAML Integration**

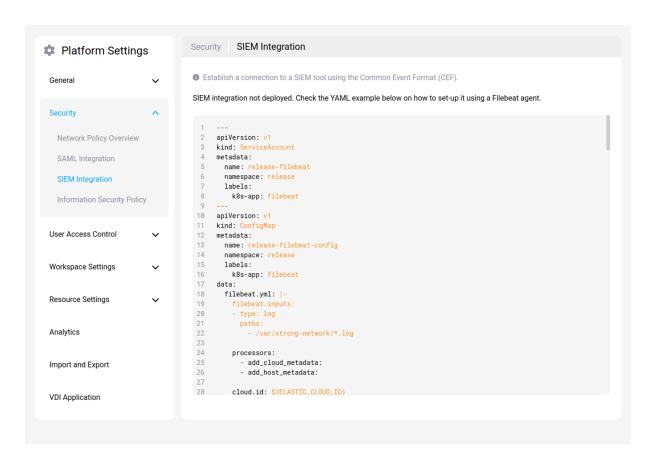
The **SAML Integration** section is responsible for authenticating all users on the platform when accessing web applications. Users access these Web Applications through Remote Browser Isolation (RBI), known on the platform as the "Secure Browser". The Secure Browser offers DLP-enabled access to any sensitive domains, such as GitHub, Jira, and GitLab. Users are restricted to accessing these Web Applications solely through the platform, prohibiting access via external browsers.

Administrators have the option to enable or disable a pre-configured identity provider. They can also allow organizations to oversee their own identity providers.



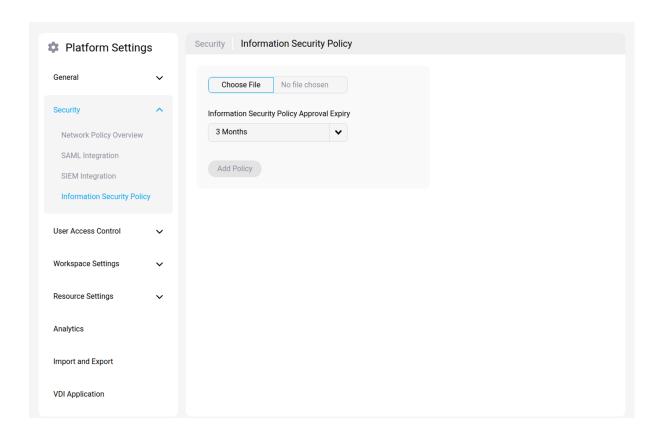
## **SIEM Integration**

Configure the integration of the platform with your Security Information and Event Management (SIEM) system. This allows for forwarding logs and security events from the platform to your central SIEM for monitoring, analysis, and alerting.



# **Information Security Policy**

Define and manage the information security policies enforced by the platform. This section may include settings related to data handling, access controls, and compliance standards that users and the system must adhere to.



#### **User Access Control**

#### August 1, 2025

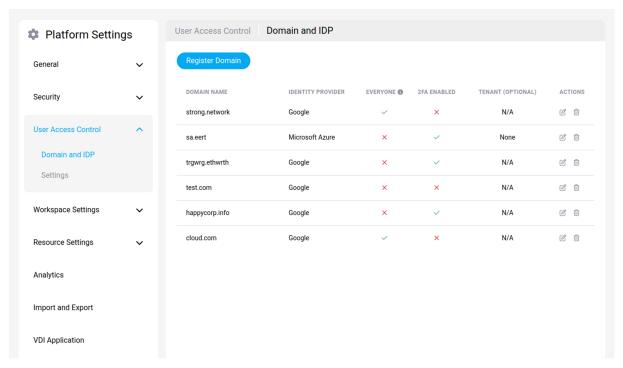
Manage how users authenticate and what they can access at the platform level. This involves configuring **Registered Domains and Identity Providers** (IDPs), including multi-factor authentication, and setting platform-wide rules via **User Access Control Settings** which encompass compliance features, platform constraints, and container image URL constraints.

- Domain and IDP
- User Access Control Settings

#### **Domain and IDP**

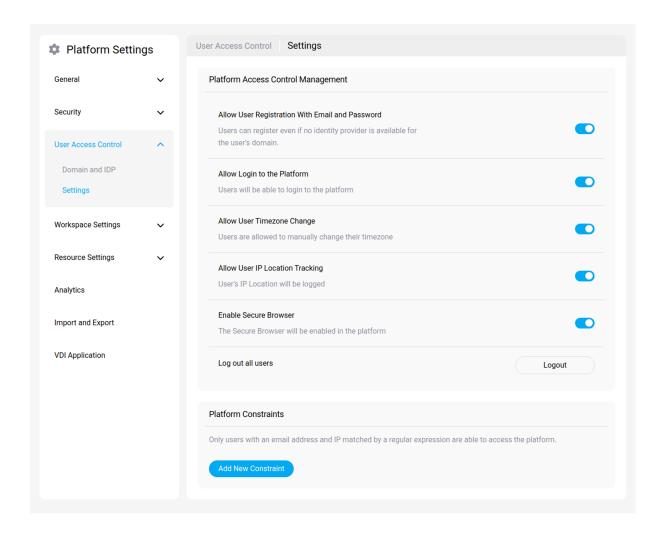
The **Registered Domains and Identity Providers** section offers a centralized control over user authentication processes. By defining specific domain names from which your users originate, you can associate them with a corresponding identity provider (IDP). As a result, users from the designated domain will be authenticated using the chosen IDP.

This section allows you to set access permissions based on specific domains and also offers the option to enable two-factor authentication, enhancing overall security.



# **User Access Control Settings**

The **User Access Control Settings** section offers features essential for meeting compliance requirements. These features encompass *Platform Access Control Management* and *Platform constraints*.



# **Workspace Settings**

July 8, 2025

Define the rules and defaults that govern individual workspaces created within the platform. Configure workspace-specific **Security Settings** like clipboard control and SSH access, manage **Schedule Settings** for workspace uptime, set policies via **Workspace Apps Settings**, define allowed **Workspace Specification** options (CPU/RAM), control workspace **Network Policy**, and manage workspace-specific **Registry Access**.

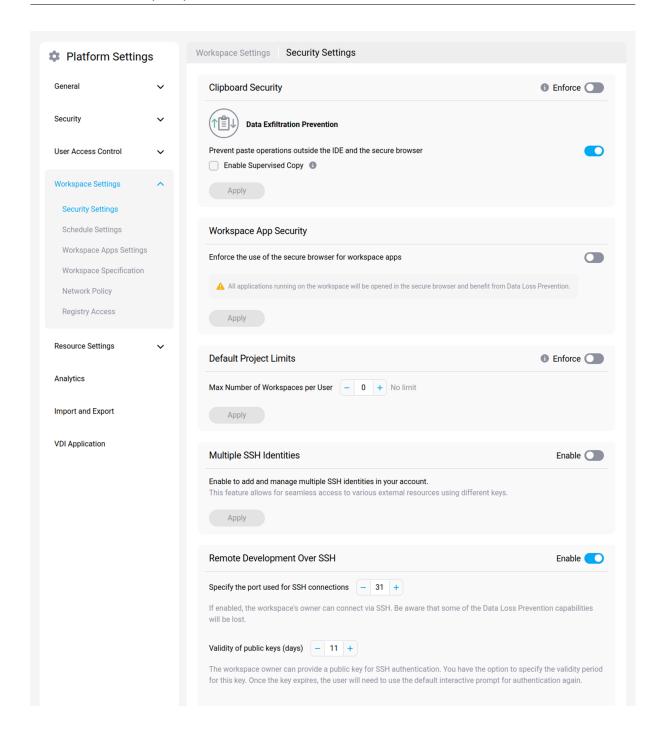
- Security Settings
- Schedule Settings
- Workspace Apps Settings
- Workspace Specification
- Network Policy

• Registry Access

# **Security Settings**

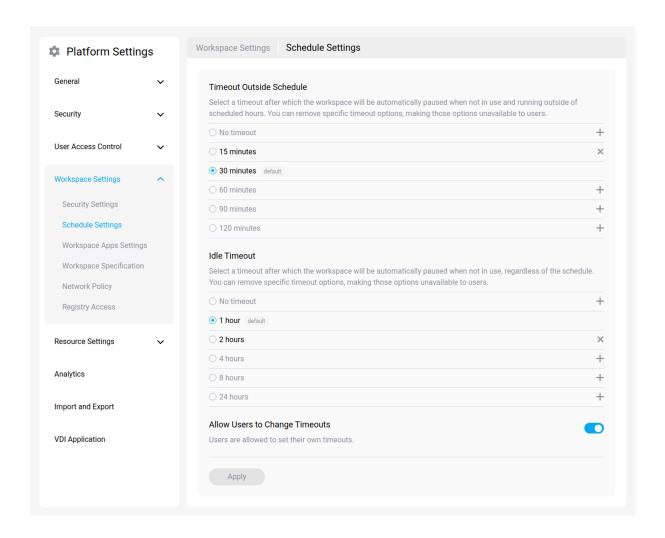
The **Security Settings** let you enforce security rules within underlying organizations and projects.

- 1. Clipboard Security: If enabled, users are prevented from pasting content outside of the IDE and the Secure Browser.
- 2. Personal Key Settings: If enabled, it permits workspace owners to use their personal OAuth tokens to authenticate with external repositories.
- 3. Default Project Limits: If enabled, it restricts users to a specified maximum number of workspaces, ensuring resource conservation.
- 4. Connect via SSH: If enabled, it grants the workspace's owner permission to connect via SSH. However, it's crucial to note that certain Data Loss Prevention functionalities might be compromised.



## **Schedule Settings**

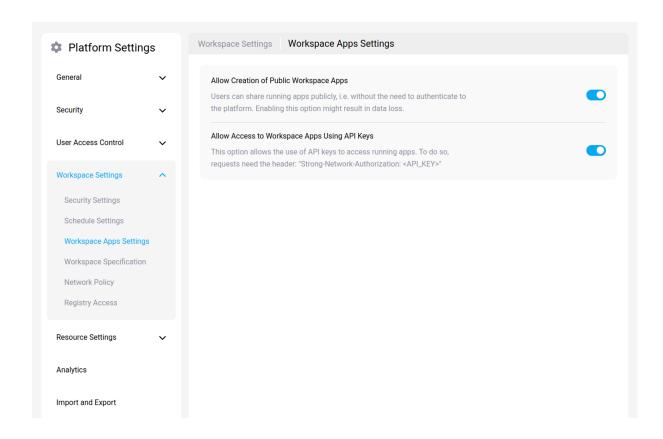
Configure automatic scheduling for workspaces, such as setting operational hours or defining autoshutdown policies. This helps manage resource consumption and ensures workspaces are only running when needed.



#### **Workspace Apps Settings**

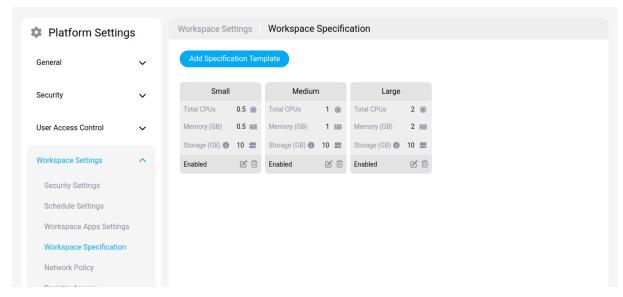
The **Workspace Apps Settings** section establishes guidelines for Workspace Apps within underlying organizations and projects.

- Allow Creation of Public Workspace Apps: This feature permits users to share active apps with the public, meaning there's no requirement for authentication to the platform. However, activating this option may lead to potential data loss.
- Allow Access to Workspace Apps Using API Keys: This option grants users the ability to utilize API keys for accessing active apps. When doing so, requests should include the header: "Strong-Network-Authorization:".



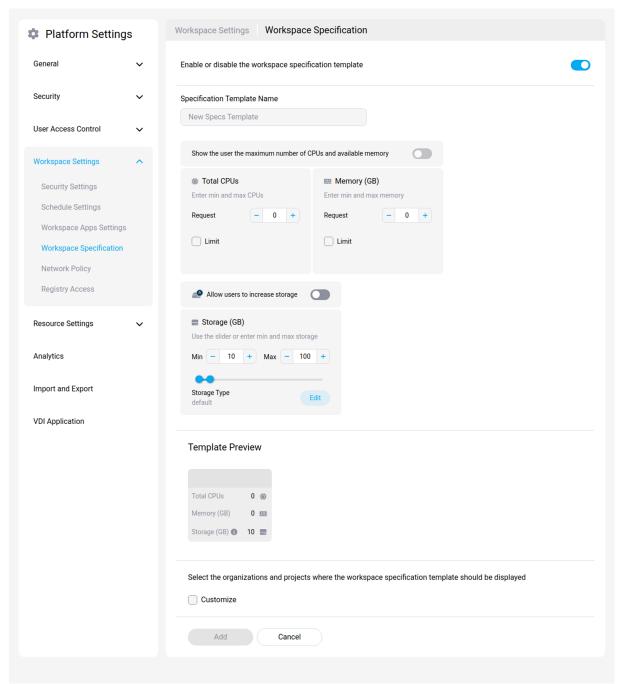
## **Workspace Specification**

The **Workspace Specification** section allows administrators to create predefined templates that define resource allocations for workspaces.



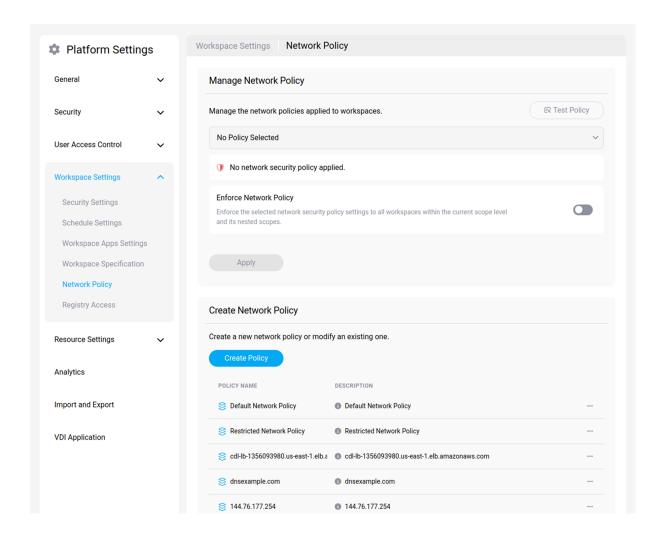
When creating a template, you can set both initial 'request' values and maximum 'limit' values for CPU, RAM, and storage. You can also customize template availability, restricting specific templates to cer-

tain organizations or projects. When users later create a new workspace, they will only see the templates applicable to their context.



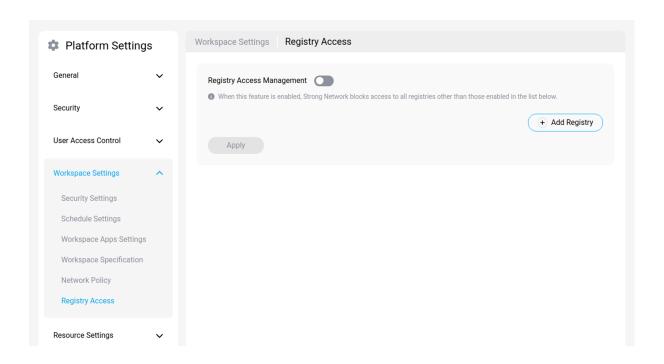
## **Network Policy**

Define specific network policies that apply to workspaces created within the platform. This allows administrators to control network traffic flow, segment networks, and enforce security rules at the workspace level.



#### **Registry Access**

Manage and control which container image registries workspaces are allowed to pull images from. This enhances security by ensuring that only trusted and approved image sources are used within development environments.



# **Resource Settings**

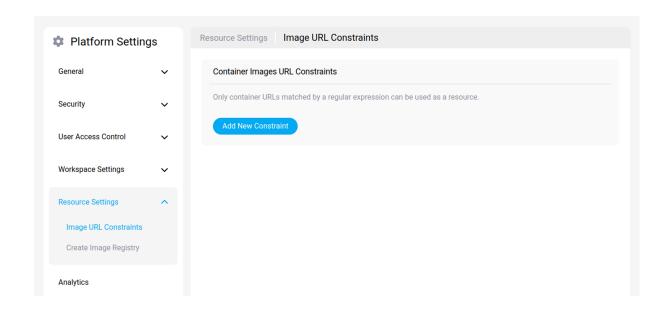
August 1, 2025

Control access to external resources used by the platform and workspaces. Primarily, this involves **Registry Access Management** (restricting allowed registries) and configuring connections to private registries via **Create Image Registry**.

- Image URL Constraints
- Create Image Registry

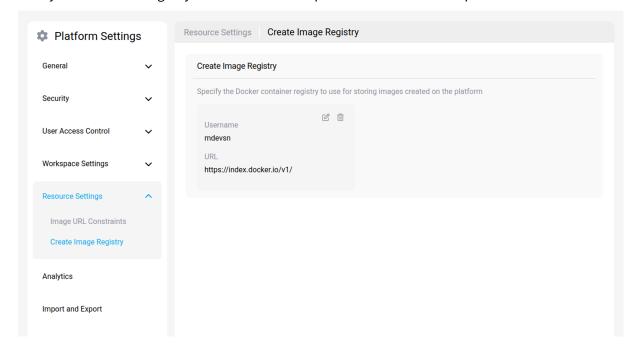
## **Image URL Constraints**

The **Image URL Constraints** section lets administrators ensure that their developers only access registries that are allowed. When this feature is enabled, Strong Network™ restricts access to all registries except those explicitly permitted in the list provided.



# **Create Image Registry**

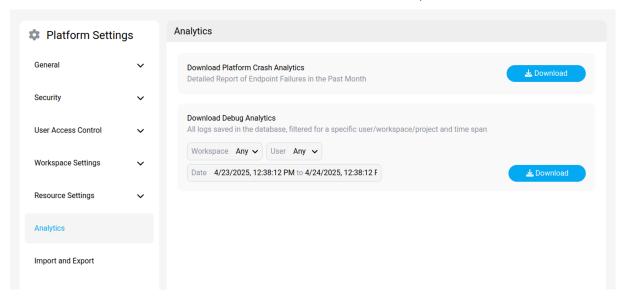
Configure and manage connections to private or custom container image registries. This section allows you to add new registry credentials and endpoints for use across the platform.



# **Analytics**

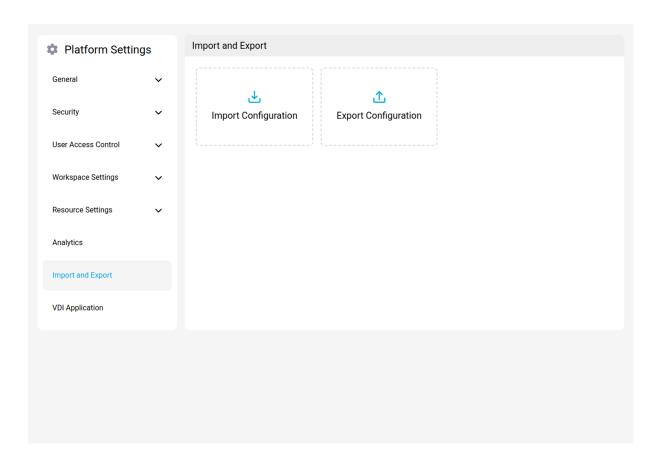
July 8, 2025

The **Analytics** section allows you to download crash analytics for the platform as a CSV file. This document offers detailed information about the recorded errors on the platform.



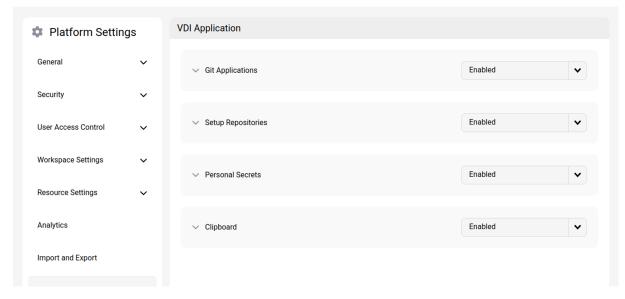
## **Import and Export**

This section provides options for importing and exporting platform configurations or data. This can be useful for backups, migrations, or sharing settings between different platform instances.



# **VDI Application**

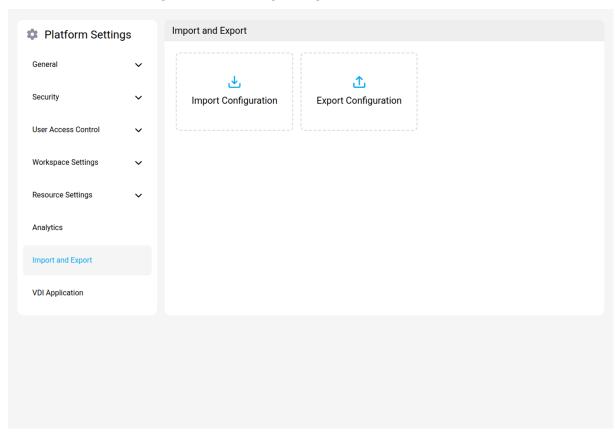
Configure settings related to Virtual Desktop Infrastructure (VDI) Agent accessible through the platform.



# **Import and Export**

## August 1, 2025

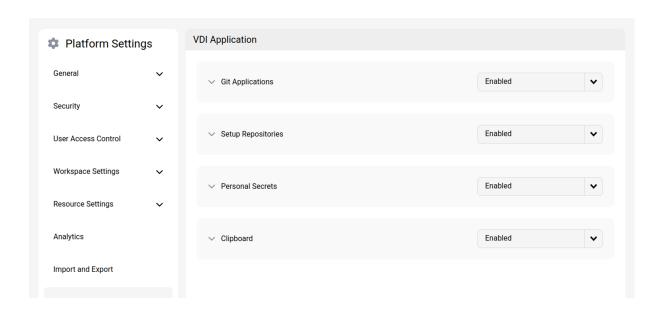
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# **VDI Application**

# August 26, 2025

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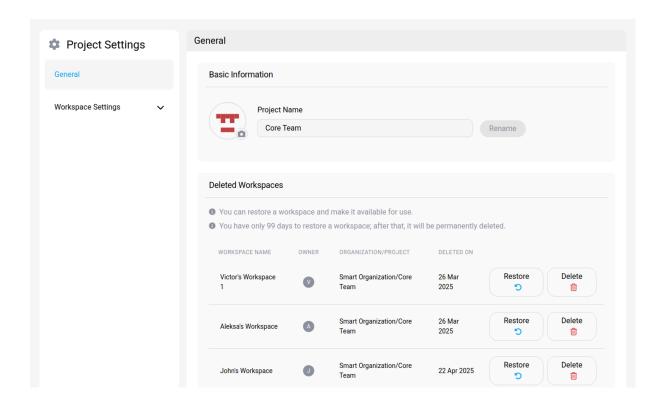


# **Project General Settings**

August 1, 2025

In the Project General Settings, you can update your project's name within the Basic Information panel.

Additionally, workspaces that have been deleted can be restored within seven days of their deletion. After this period, they will be permanently deleted.



# **Workspace Settings**

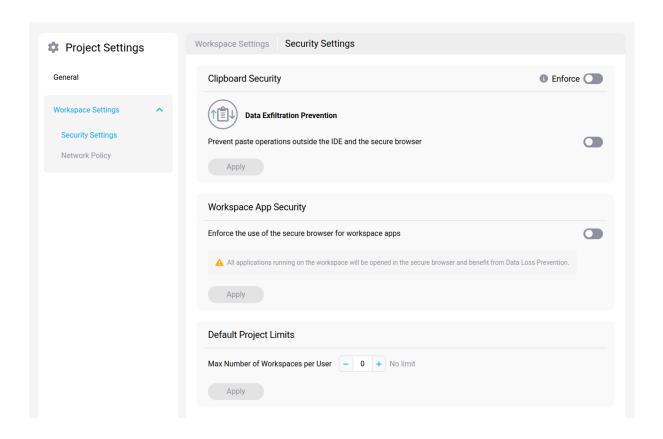
#### August 26, 2025

This section allows you to configure workspace settings specifically for this project. Define project-level security policies for data handling and access, and establish network policies to control workspace traffic within the context of this project.

- Security Settings
- Network Policy

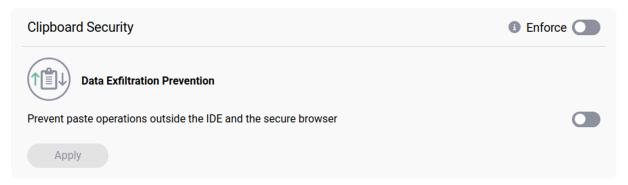
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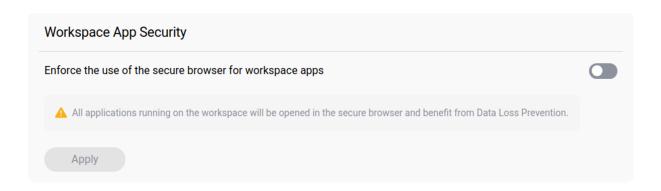
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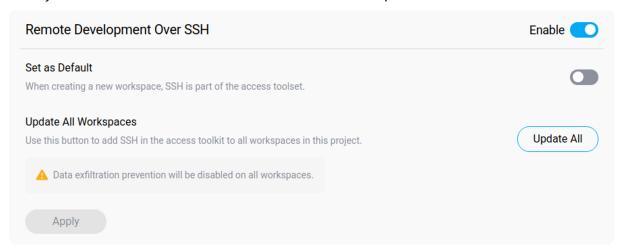
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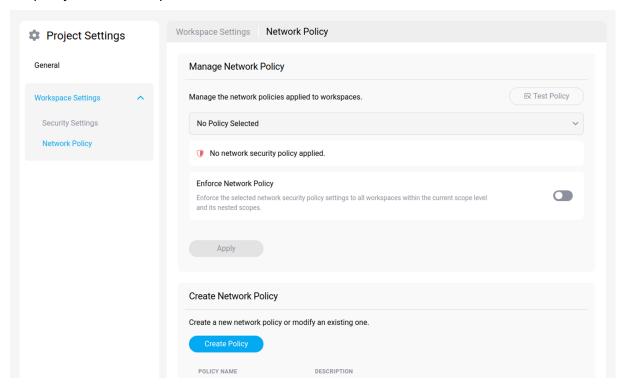


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#### **Default Network Policies**

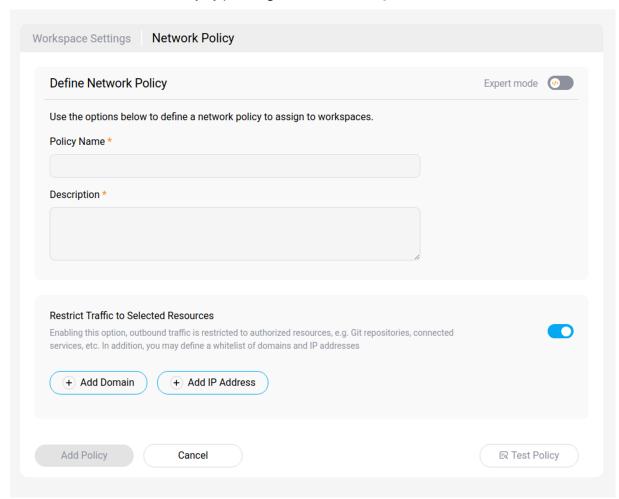
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Name	Scope	Description
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		Failed network requests are
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# **Add a Network Policy**

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#### **Edit or Delete a Network Policy**

You can edit or delete a Network Policy by clicking on the "..." icon next to its class level.

# Help

In the help section, you can find the resources you need to make the most of the platform. Whether you're a beginner or an advanced user and find the documentation unhelpful, there are alternative options to get help.

• You can use the troubleshooting tool in case you experience problems.

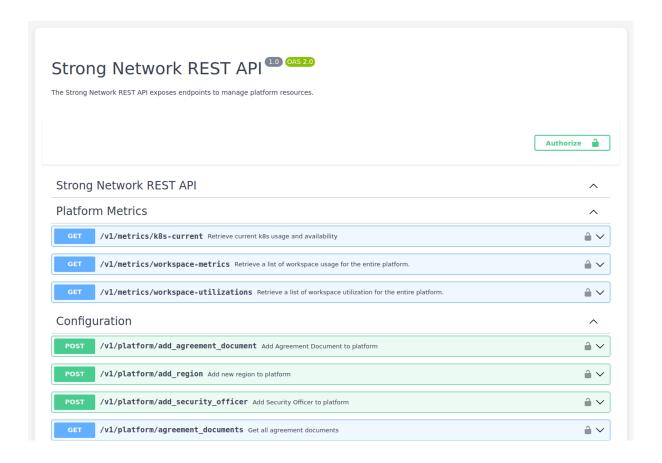
## **REST API**

August 1, 2025

The Strong Network™ platform can be fully controlled and integrated via an API of over 150 endpoints (detailed on the platform's API page) for complete control of enterprise applications and integration with security and analytics tools such as Splunk, Sumologic, etc.

Info:

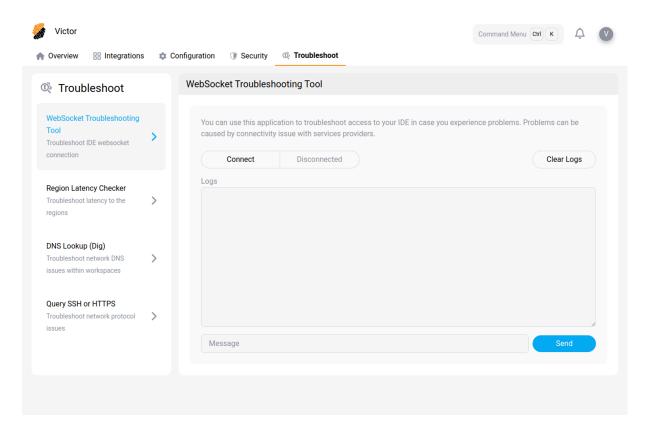
Only users authenticated on the Strong Network Platform can have access to the API documentation.



# **IDE Troubleshooting Tool**

#### August 26, 2025

In the Profile Settings you can setup the IDE WebSocket Troubleshooting Tool. You can use this application to troubleshoot access to your IDE in case you experience problems. Problems can be caused by connectivity issues with service providers.



You can also troubleshoot latency to regions with the **Region Latency Checker** tool.



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