

EVIDEN

Software Suites

# Jarvice

## User Guide

Release V1

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## **Chapter 1. Overview**

JARVICE is an advanced cloud computing platform designed to orchestrate large-scale computational and data-heavy tasks, such as High Performance Computing (HPC) and AI workloads.

It efficiently allocates resources, schedules tasks, scales dynamically, optimizes performance, and provides monitoring and reporting tools. With features like Kubernetes integration, multi-cloud support, enhanced security measures, Jarvice enables users to efficiently manage and deploy complex workloads across public, hybrid, and multi-cloud environments.

Jarvice offers access to a vast application marketplace containing HPC and AI/ML applications. Moreover, users can also build their own applications using the PushToCompute interface. Jarvice caters to the needs of wide range of users such as enterprises, supercomputing centers, and research institutions that need powerful computing capabilities and management of large-scale HPC workloads.

The key features offered by Jarvice are broadly categorized under the following sections of the platform:

- Compute
- Dashboard
- Push To Compute
- Account



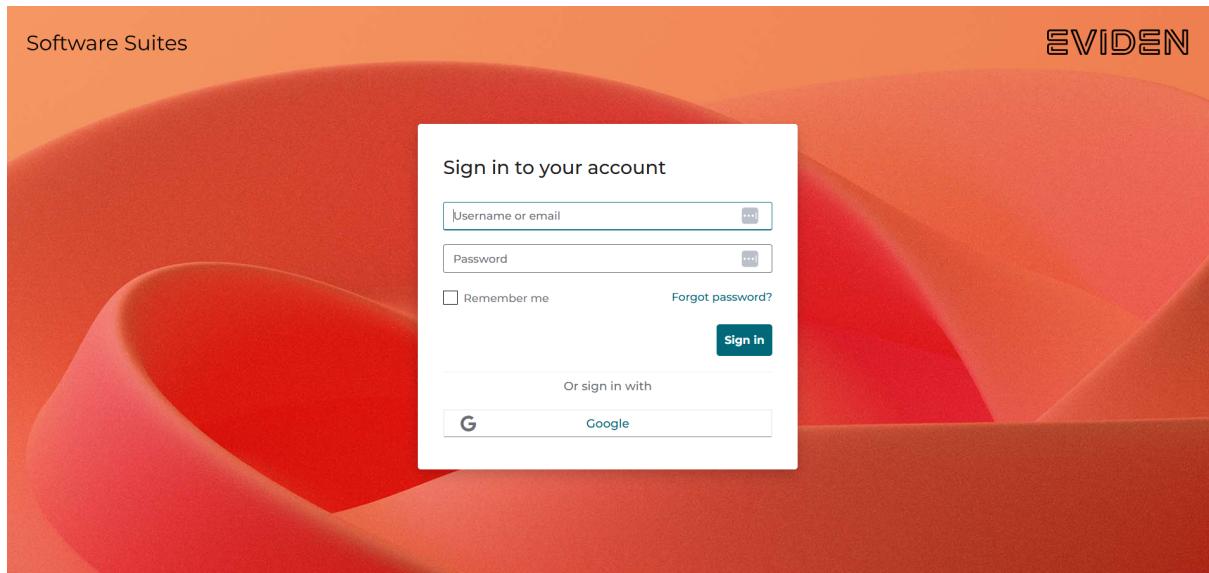
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## Chapter 2. Getting Started

To get started, users must sign in to the platform. This chapter guides new users through the initial steps required to begin working on Jarvice and provides an overview of the interface components that will be used across different sections.

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### 2.1 Logging In



Each user is assigned a unique username and password. To access their account, users must sign in using these credentials. Jarvice also supports Single Sign-On(SSO) through external providers such as Google.

**Note:**

SSO via other identity providers, such as LDAP, can be configured through Keycloak.

## 2.2 Navigating the Interface

After signing in, the landing page displays the Compute section by default. The user interface consists of the following:

- Top menubar
- Side navigation menu
- Sub-menu
- Content view

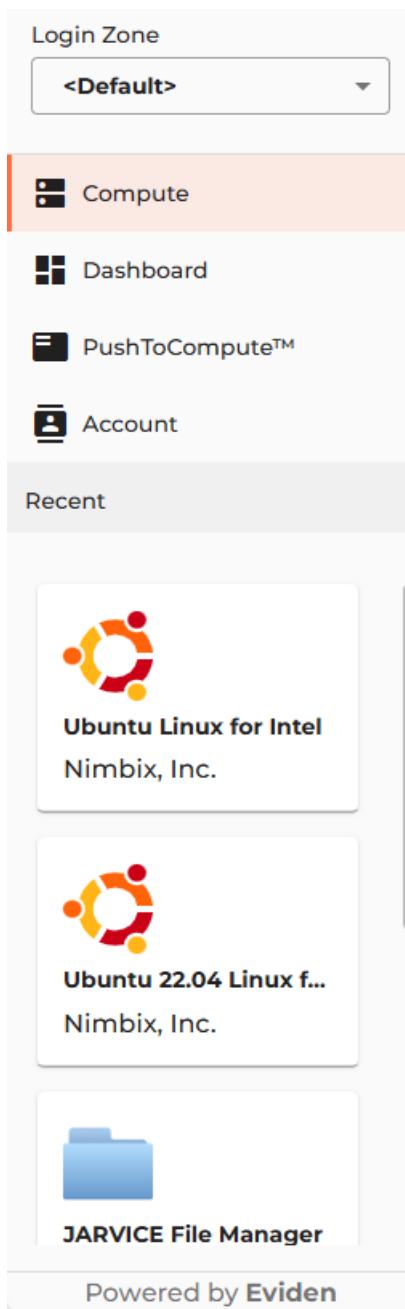
### 2.2.1 Top Menubar



This menu bar at the top of a page in Jarvice allows users to switch between UI visual modes, view notifications, and access their user profile settings.

- **Collapse menu:** Collapses the left navigation menu and primarily shows icons of the functional areas of Jarvice, and app icons without descriptive text.
- **Switch mode:** Select dark or light theme.
- **Notifications:** Shows the list of system notifications (information, warnings and errors)
- **User Profile:** Consists of user account settings and logout options, specifically:
  - Profile
  - Reset all dialog preferences
  - Enable support helper
  - About
  - Logout

## 2.2.2 Side Navigation Menu



This navigation pane is the primary way to access various sections of the platform. It consists of the following:

- **Login zone:** A zone is typically a geographical area within which compute and other resources are located. Each user has access to the zones in which the logged-in user has vaults. The dropdown at the top left enables user to choose their zone - when selected, the system logs out and logs in again into the selected zone automatically.

**Note:**

When a job is launched, only machines belonging to the clusters within the zone can be selected. This ensures that the data accessed in the vault storage does not cross zone boundaries to reach the compute nodes. This is important for performance, network bandwidth conservation, and can also be used as a cordoning system for security.

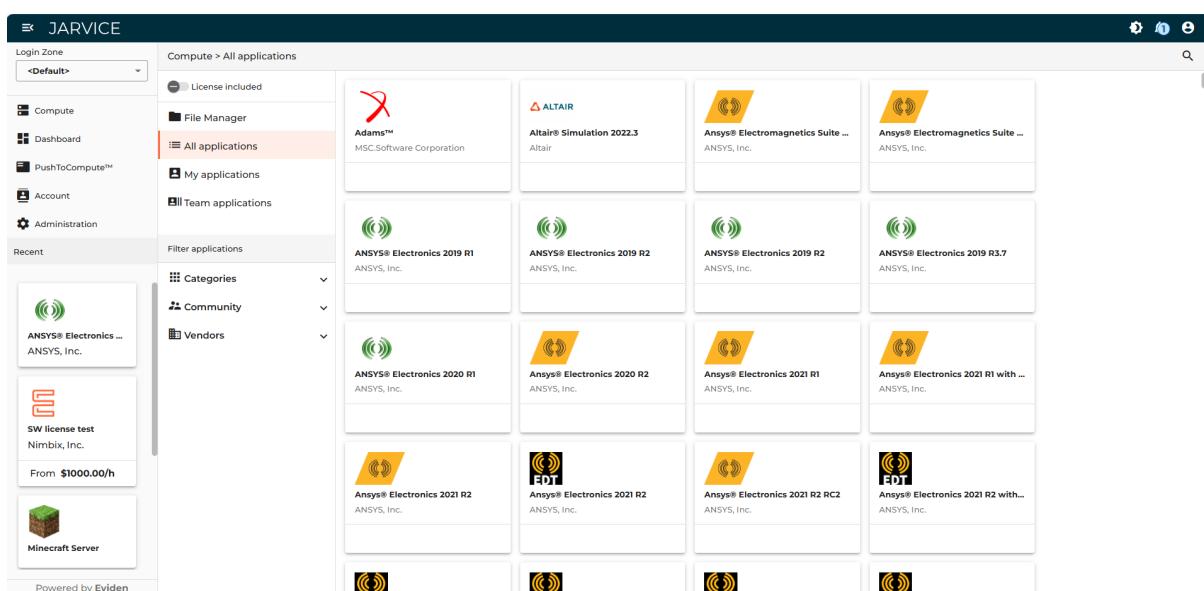
- **Compute:** View and run apps that are available on the Jarvice deployment (these include pre-deployed apps as well as public PushToCompute apps created later).
- **Dashboard:** Monitor and manage jobs running on a cluster.
- **PushToCompute:** Create custom containerized apps in Jarvice which can also be shared with a users team, or published on the deployment (by a system administrator).
- **Account:** Manage user settings, preferences, and credentials.
- **Recent applications:** Displays the five most recently used applications, allowing users to re-launch these applications easily without navigating through the application catalog again.

**Note:**

For details on sub-menu and content view, refer to the [Compute](#) section.

## Chapter 3. Compute

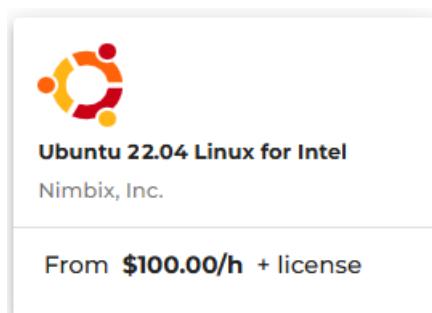
The Compute view shows a catalog of applications predeployed on the Jarvice deployment. Additionally, users can integrate their own applications to the Compute catalog by using the [PushToCompute](#) feature. Users can create tailored processes or workflows to run applications and share these workflows with others.



The screenshot shows the Jarvice Compute view. On the left is a sidebar with a 'Login Zone' dropdown set to 'Default', a 'Compute' section, a 'Recent' section containing icons for ANSYS Electronics, SW license test, and Minecraft Server, and an 'Administration' section. The main area is titled 'Compute > All applications' and features a search bar. A filter sidebar on the left includes a 'License included' toggle, a 'File Manager' section, and categories like 'All applications' (which is selected and highlighted in red), 'My applications', and 'Team applications'. Below this are sections for 'Filter applications' (Categories, Community, Vendors) and 'Recent' applications. The main content area displays a 4x4 grid of application tiles. Each tile contains an icon, the application name, and the vendor. The applications shown are Adams™, ALTAIR Simulation 2022.3, Ansys® Electromagnetics Suite, Ansys® Electromagnetics Suite, ANSYS® Electronics 2019 R1, ANSYS® Electronics 2019 R2, ANSYS® Electronics 2019 R2, ANSYS® Electronics 2019 R3.7, ANSYS® Electronics 2020 R1, ANSYS® Electronics 2020 R2, ANSYS® Electronics 2021 R1, ANSYS® Electronics 2021 R1 with ..., Ansys® Electronics 2021 R2, Ansys® Electronics 2021 R2, Ansys® Electronics 2021 R2 RC2, and Ansys® Electronics 2021 R2 with ...

This section primarily displays an application catalog with applications shown as individual tiles, and a left pane that lists categories for filtering the catalog.

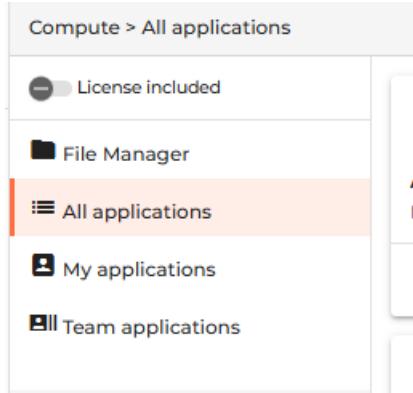
Jarvice provides some applications with pre-included software licenses, meaning the license cost is included in the application's pricing. For other applications, users must have their own paid software licenses. To filter applications with pre-included software license, the **License included** toggle can be enabled. Such applications have the suffix '+ license' displayed on the cost label.



A detailed view of an application tile for 'Ubuntu 22.04 Linux for Intel' by Nimbix, Inc. The tile features the Ubuntu logo at the top, followed by the text 'Ubuntu 22.04 Linux for Intel' and 'Nimbix, Inc.'. At the bottom, it shows the price 'From \$100.00/h + license'.

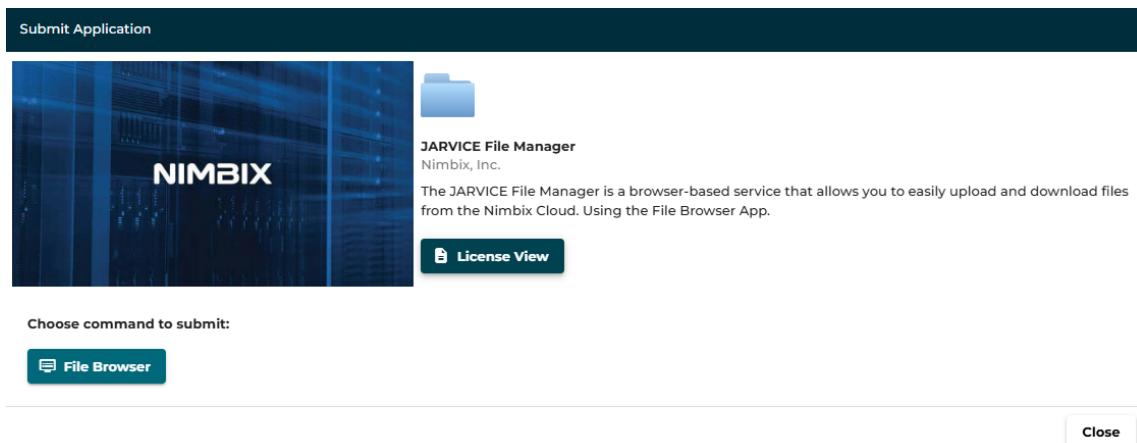
### 3.1 File Manager

Jarvice File Manager is a web-based file management tool that allows users to easily upload/download and manage files from the Nimbix cloud.



To connect to the File manager, follow these steps:

1. On the left pane, click **File Manager**. The **Submit Application** window opens.



2. Click on **File Browser**.
3. Under the *General* tab, configure the Jarvice-specific options as required.

**Submit application**

**JARVICE File Manager**

**File Browser**  
Launch this service to upload and download files via your web browser

**General**    **Optional**    **Storage**    **Preview Submission JSON**

**Projects**  
Job project — **<None>**

**External Projects**  
Job external project — **<None>**

**Machines**  
Machine type\* — **1 core, 4GB RAM (n1-standard-32 fractional) (n0)**

Cores\* — **1** **1** **160 \$0.15/h**

Nodes: 1, 4GB RAM, 0 GPUs

**Parameters**

Use Dark Mode

**Back**    **Close**    **Submit**

4. For **Parameters**, select **Dark mode** check box if preferred.
5. Under the *Optional* tab, you can enter the details of Jarvice-specific parameters.

**Submit application**

**JARVICE File Manager**

**File Browser**  
Launch this service to upload and download files via your web browser

**General**    **Optional**    **Storage**    **Preview Submission JSON**

**Parameters**

Job label

Wall time limit  
HH:MMSS

Request Job IP Address  
If checked, requests job ip address as well as a connect link to allow for non-HTTPS clients (e.g. SSH, VNC); note that the underlying infrastructure may not support assigning IP addresses to jobs and may ignore this request

Use RSA instead of ED25519 keys for SSH between nodes  
Use only if application's SSH services does not support ED25519 keys.

Window size  
**2533x1232**

IP Adress Tag

If your service provider or system administrator provisioned a static IP address for you, and you wish to assign it to this job, please enter the tag name associated with it; note that the behavior for multiple jobs with the same address request is undefined.

**Back**    **Close**    **Submit**

Additionally, you can enter the application-specific parameters for File Manager such as Session timeout time, and Starting directory.

License Feature  
must be feature:count[,feature:count,...]/[timeout] where count is 1 or higher and timeout is in seconds, 0 or higher, 0 meaning never; count must be specified for each feature, while timeout is optional and defaults to 60

Session Timeout Time  
2h  
Used to allow for large file uploads. Time must end with either 's', 'm', or 'h' and must be continuous.

Starting Directory

[Back](#) [Close](#) [Submit](#)

6. Under the *Storage* tab, select the desired vault and click **Submit**. The Jarvice File Manager job gets queued and will start running on the cloud in a short time.
7. Once running, the Job status shows **Processing**.
8. Hover the mouse over the job preview pane on the right and click **Connect**. A new browser tab opens with the File Manager user interface.

## 3.2 Application Catalog

The Application catalog offers a vast list of HPC applications from multiple vendors, providing diverse range of software solutions to enhance the capabilities of the computing environment. Users can browse and search for an application by using the search box on the top right corner of the page.

Compute > All applications

License included

File Manager

All applications

My applications

Team applications

Filter applications

Categories

Community

Vendors

Adams™  
MSC.Software Corporation

ALTAIR  
Altair® Simulation 2022.3  
Altair

Ansys® Electromagnetics Suite ...  
ANSYS, Inc.

Ansys® Electromagnetics Suite ...  
ANSYS, Inc.

ANSYS® Electronics 2019 R1  
ANSYS, Inc.

ANSYS® Electronics 2019 R2  
ANSYS, Inc.

ANSYS® Electronics 2019 R2  
ANSYS, Inc.

ANSYS® Electronics 2019 R3.7  
ANSYS, Inc.

ANSYS® Electronics 2020 R1  
ANSYS, Inc.

ANSYS® Electronics 2020 R2  
ANSYS, Inc.

Ansyst® Electronics 2021 R1  
ANSYS, Inc.

Ansyst® Electronics 2021 R1 with ...  
ANSYS, Inc.

Ansyst® Electronics 2021 R2  
ANSYS, Inc.

Ansyst® Electronics 2021 R2 RC2  
ANSYS, Inc.

Ansyst® Electronics 2021 R2 with...  
ANSYS, Inc.

### 3.2.1 Application Views

To organize the application catalog based on ownership of the applications, select from the following menus on the left pane:

- **All applications:** Displays the complete list of applications available in the application marketplace.
- **My applications:** Displays the list of applications owned by the signed-in user.
- **Team applications:** Displays the list of applications owned by the team that the signed-in user is a part of.

### 3.2.2 Filter Applications

To filter the application catalog based on type of the applications, select from the following menus on the left pane. The nested folder structure of the menus provides an organised way to navigate and locate relevant applications quickly.

- **Categories:** Contains applications filtered by domain or specific software type. Common categories include AI, Machine Learning, HPC, etc.
- **Community:** Typically contains public domain, open source applications or applications that were created and shared by the users of the Jarvice deployment.
- **Vendors:** Contains a list of vendors to filter the applications by owner of the application.

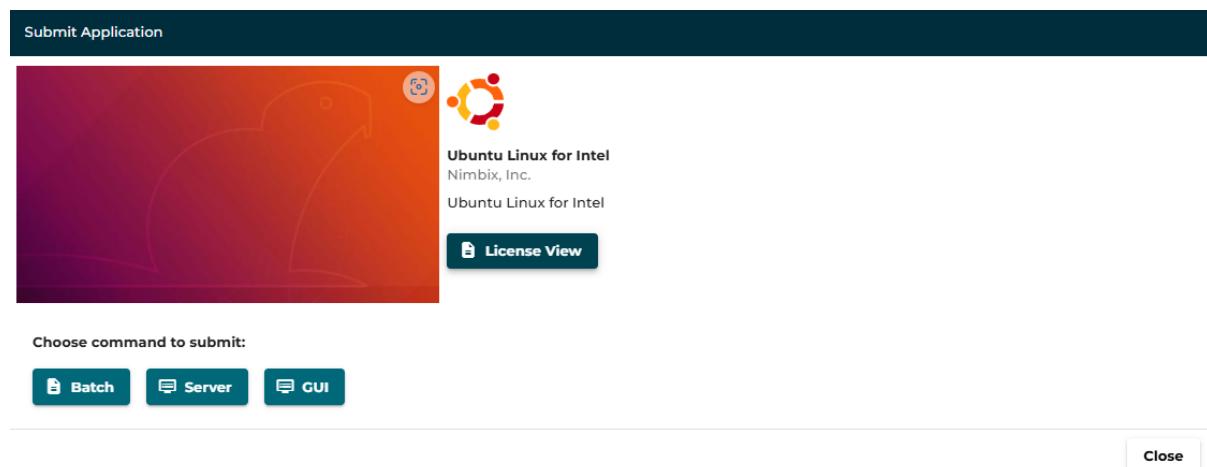
#### Note:

The category names can be defined in the application definition file by the application provider. For more information, see [PushToCompute](#).

### 3.2.3 Application Submission Details

From the application catalog, users can run desired applications by providing the configuration details needed to submit and manage an application within the Jarvice computing environment. For example, project information, job priorities, compute requirements, etc.

When you click on any application from the application catalog, if the application includes a EULA from the vendor, a license agreement is shown. User must accept the conditions to proceed. Once accepted, the Submit Application window opens, and the license agreement dialog is not shown again.



This window displays application name, vendor name, a brief description of the application and the following buttons:

- **License View:** Displays licenses used by the application that are mandatory to include (if any). This is applicable for components of the application that may be under some public license.
- **Choose command to submit:** Displays various command options that correspond to different execution environment or modes. These commands are predefined in the application definition file by the application provider. The commands displayed might vary for different applications depending on the type of the application and the compute environment needed to run the command.

Here is an example of the default commands for a Nimbix desktop based application (e.g. Ubuntu Desktop):

- **Batch:** Used to run a command line application that executes and terminates, without any user interaction.
- **Server:** Intended for non-interactive server applications that are meant to run until the user terminates them and provide functionality (typically a network service).
- **GUI:** Similar to Batch, except that the application run is typically an interactive Graphical User Interface (GUI).

The submission information is broadly categorized in the following sections.

### 3.2.3.1 General

Here the user specifies the required settings for the job execution like resource allocation, and the mandatory parameters for the application. The following are related to the Jarvice platform:

- **Projects:** Project associated with the current job. This is used to group jobs for license based queuing.
- **External Projects:** An external project associated with the current job. Used to track the resource usage and deduct the costs from the related project's budget.
- **Machines:** Machine type and Cores needed for the job. The **Machine type** dropdown lists all machine types authorized for the logged-in user by the system admin or the team admin. Also, users can select cores only within the limit defined by the team admin or system admin. If entered value exceeds the allowed limit, an error message is displayed.

Submit application

ANSYS® Electronics 2019 R3.7

Electronics Desktop (Batch)

Launch a Batch Job for Electronics Desktop

General    Optional    Storage    Preview Submission JSON

Machines

Machine type\*

1 core, 4GB RAM (n3khill)

Cores\*

3

Value is out of range

2 \$3.00/h

Nodes: 3, 12GB RAM, 0 GPUs

Parameters

ANSYS Version\*

2019 R3

Project Input File\*

Electronics Desktop Project File

Furthermore, this section may contain parameters specific to the corresponding application. For example, a parameter such as ANSYS Version for Ansys app.

### 3.2.3.2 Optional

Captures additional information that is optional to launch to a job. The following fields are the optional details related to the Jarvice platform:

- **Job label:** A string attached to the job that can be used to search for or filter the job by. Enter such label name, if any. If the job label is not specified during submission, a default job label can be substituted based on a file type parameter. For more information, refer to [Default job label](#).
- **Time limit:** The time that can be set in HH:MM:SS format for the job to terminate automatically after the scheduled time limit is reached. Enter the required time limit.
- **Request Job IP Address:** Creates a new IP address for a job and allows connection through SSH and VNC. Used for apps having a graphical user interface. Select the checkbox to request for an IP address for the job.
- **RSA:** Specify the SSH key format RSA/ED for SSH between modes.
- **Window size:** Enter the preferred window size, if any.
- **IP Address Tag:** If you have a static address provisioned that you want to assign to this job, enter the tag name associated with it

Furthermore, there are application specific parameters such as licence feature.

- **License feature:** Specify the license feature required for the application (for license based queuing) along with the count and timeout.

#### 3.2.3.2.1 Default Job Label

This is an optional feature that enables applications to assign a default label to jobs, when no label is explicitly provided during submission. The **jobdefaultlabel** field in the AppDef file is used to define the default label.

Optionally one can insert a special substitution placeholder within the label, that will be filled in with the either the full path or filename of a FILE parameter.

The substitution is specified with the following syntax:

- %FILE\_<parameter>\_NAME% for filename
- %FILE\_<parameter>\_PATH% for file path

%..% represents a placeholder for dynamic substitution. The substituted value contains the following components:

- `FILE`: Reserved keyword indicating a File type AppDef parameter.
- `\_`: Delimiter separating substitution arguments.
  - **first argument:** AppDef parameter name without any leading - symbol before the parameter name in the AppDef.
  - **second argument:** One of the keywords - PATH or NAME.

For example, consider a parameter -ShellScript with the value /test/main/a. You could specify %FILE\_ShellScript\_NAME% to get a and %FILE\_ShellScript\_PATH% to get /test/main/a as the substituted job label.

Submit application

Ansys® Electronics 2022 R2.2

Electronics Desktop (Shell Script)

Launch a non-interactive Job with a shell script for Electronics Desktop

General    Optional    Storage    Preview Submission JSON

<None>

Machines

Machine type\* Cypress MCO (cypress\_0)

Cores\* 1

Nodes: 1, 4GB RAM, 0 GPUs

Parameters

Ansys Version\* 2022 R2.2

Shell Script\* test/main/a

Shell Script to run

Back    Cancel    Submit

Dashboard > Current

Refresh Every 10s    Expand all    Collapse all

1–1 of 1    Page 1

**Ansys® Electronics 202...  
edtshell**

Job No. 2936    Queued

Machine cypress\_0

Submitted 2025-11-05 05:12:22 PM

Cores/Node 1

Label test/main/a

Vault ephemeral

2022 R2.02 Electromagnetics

ANSYS

Electronics Desktop

00:00 x 1 nodes

**Note:**

You can freely combine arbitrary text and multiple substitutions with different parameter names within the job label if needed.

This setup ensures that the submitted jobs are labeled clearly and consistently.

### 3.2.3.3 Storage

Captures storage information including details about associated vaults and external data as follows:

- **Vault:** Every user is configured with one or more vaults that provide storage for running jobs. Currently, only one vault can be allocated per job. A vault can be ephemeral or persistent.
  - **Read only:** Select to set the read only permissions to a PVC vault in case of shared vaults.
- **External Data:** External data sources that were added to the Account section of Jarvice can be entered here to link it to a job.

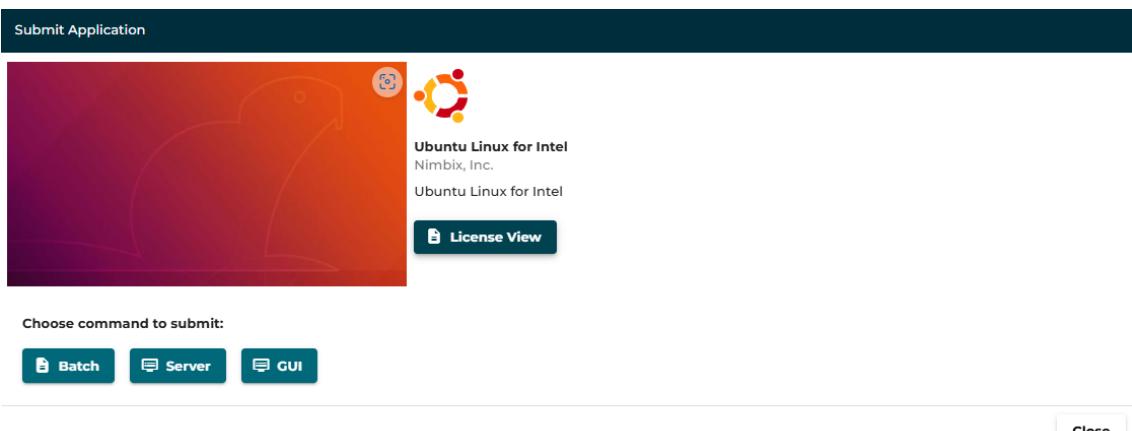
### 3.2.3.4 Preview Submission

Displays the json code with the compute and storage requirements that were entered. The code can be copied by clicking on the copy icon on the right corner of the tab which can then be saved and used with the Jarvice API.

## 3.3 Run an application

To run an application from the application marketplace, follow these steps:

1. Click on desired application. For instance, search for and click on **Ubuntu Linux for Intel**. The Submit Application tab opens.



2. Under **Choose command to submit**, click on an execution command of your choice, for instance, **Server**.

#### Note:

The commands used to run an application are predefined in the application definition file by the author. If the computing environment is not suitable for a command, the command is disabled. Therefore, the commands displayed for different applications might vary depending on the type of the application.

3. In the *General* tab, under **Projects**, select the project associated to the job you want to submit, if any.

Submit application

Ubuntu Linux for Intel

Server

Launch a session with all boot services, including SSH (if installed). Connection address and credentials will appear in your web browser once available.

General      Optional      Storage      Preview Submission JSON

**Projects**  
Job project  
<None>

**External Projects**  
Job external project  
<None>

**Machines**  
Machine type  
Cypress MCO (cypress\_0)

Cores\*  
1      1      2      3      4      5      6      7      8      9      10      11      12      13      14      15      16      17      18      19      20      21      22      23      24      25      26      27      28      29      30      31      32      33      34      35      36      37      38      39      40      41      42      43      44      45      46      47      48      49      50      51      52      53      54      55      56      57      58      59      60      61      62      63      64      65      66      67      68      69      70      71      72      73      74      75      76      77      78      79      80      81      82      83      84      85      86      87      88      89      90      91      92      93      94      95      96      97      98      99      100      101      102      103      104      105      106      107      108      109      110      111      112      113      114      115      116      117      118      119      120      121      122      123      124      125      126      127      128      129      130      131      132      133      134      135      136      137      138      139      140      141      142      143      144      145      146      147      148      149      150      151      152      153      154      155      156      157      158      159      160      161      162      163      164      165      166      167      168      169      170      171      172      173      174      175      176      177      178      179      180      181      182      183      184      185      186      187      188      189      190      191      192      193      194      195      196      197      198      199      200      201      202      203      204      205      206      207      208      209      210      211      212      213      214      215      216      217      218      219      220      221      222      223      224      225      226      227      228      229      229      230      231      232      233 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     316      316      317      317      318      318      319      319      320      320      321      321      322      322      323      323      324      324      325      325      326      326      327      327      328      328      329      329      330      330      331      331      332      332      333      333      334      334      335      335      336      336      337      337      338      338      339      339      340      340      341      341      342      342      343      343      344      344      345      345      346      346      347      347      348      348      349      349      350      350      351      351      352      352      353      353      354      354      355      355      356      356      357      357      358      358      359      359      360      360      361      361      362      362      363      363      364      364      365      365      366      366      367      367      368      368      369      369      370      370      371 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     427      427      428      428      429      429      430      430      431      431      432      432      433      433      434      434      435      435      436      436      437      437      438      438      439      439      440      440      441      441      442      442      443      443      444      444      445      445      446      446      447      447      448      448      449      449      450      450      451      451      452      452      453      453      454      454      455      455      456      456      457      457      458      458      459      459      460      460      461      461      462      462      463      463      464      464      465      465      466      466      467      467      468      468      469      469      470      470      471      471      472      472      473      473      474      474      475      475      476      476      477      477      478      478      479      479      480      480      481      481      482      482      483      483      484      484      485      485      486      486      487      487      488      488      489      489      490      490      491      491      492      492      493      493      494      494      495      495      496      496      497      497      498      498      499      499      500      500      501      501      502      502      503      503      504      504      505      505      506      506      507      507      508      508      509      509      510      510      511      511      512      512      513      513      514      514      515      515      516      516      517      517      518      518      519      519      520      520      521      521      522      522      523      523      524      524      525      525      526      526      527      527      528      528      529      529      530      530      531      531      532      532      533      533      534      534      535      535      536      536      537      537      538      538      539      539      540      540      541      541      542      542      543      543      544      544      545      545      546      546      547      547      548      548      549      549      550      550      551      551      552      552      553      553      554      554      555      555      556      556      557      557      558      558      559      559      560      560      561      561      562      562      563      563      564      564      565      565      566      566      567      567      568      568      569      569      570      570      571      571      572      572      573      573      574      574      575      575      576      576      577      577      578      578      579      579      580      580      581      581      582      582      583      583      584      584      585      585      586      586      587      587      588      588      589      589      590      590      591      591      592      592      593      593      594      594      595      595      596      596      597      597      598      598      599      599      600      600      601      601      602      602      603      603      604      604      605      605      606      606      607      607      608      608      609      609      610      610      611      611      612      612      613      613      614      614      615      615      616      616      617      617      618      618      619      619      620      620      621      621      622      622      623      623      624      624      625      625      626      626      627      627      628      628      629      629      630      630      631      631      632      632      633      633      634      634      635      635      636      636      637      637      638      638      639      639      640      640      641      641      642      642      643      643      644      644      645      645      646      646      647      647      648      648      649      649      650      650      651      651      652      652      653      653      654      654      655      655      656      656      657      657      658      658      659      659      660      660      661      661      662      662      663      663      664      664      665      665      666      666      667      667      668      668      669      669      670      670      671      671      672      672      673      673      674      674      675      675      676      676      677      677      678      678      679      679      680      680      681      681      682      682      683      683      684      684      685      685      686      686      687      687      688      688      689      689      690      690      691      691      692      692      693      693      694      694      695      695      696      696      697      697      698      698      699      699      700      700      701      701      702      702      703      703      704      704      705      705      706      706      707      707      708      708      709      709      710      710      711      711      712      712      713      713      714      714      715      715      716      716      717      717      718      718      719      719      720      720      721      721      722      722      723      723      724      724      725      725      726      726      727      727      728      728      729      729      730      730      731      731      732      732      733      733      734      734      735      735      736      736      737      737      738      738      739      739      740      740      741      741      742      742      743      743      744      744      745      745      746      746      747      747      748      748      749      749      750      750      751      751      752      752      753      753      754      754      755      755      756      756      757      757      758      758      759      759      760      760      761      761      762      762      763      763      764      764      765      765      766      766      767      767      768      768      769      769      770      770      771      771      772      772      773      773      774      774      775      775      776      776      777      777      778      778      779      779      780      780      781      781      782      782      783      783      784      784      785      785      786      786      787      787      788      788      789      789      790      790      791      791      792      792      793      793      794      794      795      795      796      796      797      797      798      798      799      799      800      800      801      801      802      802      803      803      804      804      805      805      806      806      807      807      808      808      809      809      810      810      811      811      812      812      813      813      814      814      815      815      816      816      817      817      818      818      819      819      820      820      821      821      822      822      823      823      824      824      825      825      826      826      827      827      828      828      829      829      830      830      831      831      832      832      833      833      834      834      835      835      836      836      837      837      838      838      839      839      840      840      841      841      842      842      843      843      844      844      845      845      846      846      847      847      848      848      849      849      850      850      851      851      852      852      853      853      854      854      855      855      856      856      857      857      858      858      859      859      860      860      861      861      862      862      863      863      864      864      865      865      866      866      867      867      868      868      869      869      870      870      871      871      872      872      873      873      874      874      875      875      876      876      877      877      878      878      879      879      880      880      881      881      882      882      883      883      884      884      885      885      886      886      887      887      888      888      889      889      890      890      891      891      892      892      893      893      894      894      895      895      896      896      897      897      898      898      899      899      900      900      901      901      902      902      903      903      904      904      905      905      906      906      907      907      908      908      909      909      910      910      911      911      912      912      913      913      914      914      915      915      916      916      917      917      918      918      919      919      920      920      921      921      922      922      923      923      924      924      925      925      926      926      927      927      928      928      929      929      930      930      931      931      932      932      933      933      934      934      935      935      936      936      937      937      938      938      939      939      940      940      941      941      942      942      943      943      944      944      945      945      946      946      947      947      948      948      949      949      950      950      951      951      952      952      953      953      954      954      955      955      956      956      957      957      958      958      959      959      960      960      961      961      962      962      963      963      964      964      965      965      966      966      967      967      968      968      969      969      970      970      971      971      972      972      973      973      974      974      975      975      976      976      977      977      978      978      979      979      980      980      981      981      982      982      983      983      984      984      985      985      986      986      987      987      988      988      989      989      990      990      991      991      992      992      993      993      994      994      995      995      996      996      997      997      998      998      999      999      1000      1000

Nodes: 1, 4GB RAM, 0 GPUs

No parameters to display

Back      Close      Submit

**Submit application**

 Ubuntu Linux for Intel

**Server**  
Launch a session with all boot services, including SSH (if installed). Connection address and credentials will appear in your web browser once available.

General	Optional	Storage	Preview Submission JSON
<b>Parameters</b>			
<input type="text" value="Job label"/> <input type="text" value="Wall time limit"/> HH:MM:SS			
<input type="checkbox"/> Request Job IP Address <small>If checked, requests job ip address as well as a connect link to allow for non-HTTPS clients (e.g. SSH, VNC); note that the underlying infrastructure may not support assigning IP addresses to jobs and may ignore this request</small>			
<input type="checkbox"/> Use RSA instead of ED25519 keys for SSH between nodes <small>Use only if application's SSH services does not support ED25519 keys.</small>			
<input type="text" value="Window size"/> 2021x944			
<input type="text" value="IP Adress Tag"/> <small>If your service provider or system administrator provisioned a static IP address for you, and you wish to assign it to this job, please enter the tag name associated with it; note that the behavior for multiple jobs with the same address request is undefined.</small>			
<a href="#">Back</a>		<a href="#">Close</a>	<b>Submit</b>

8. Under the *Storage* tab, choose the desired vault and then select the following checkbox as required:
  - Read only: Select to set the read only permissions to a PVC vault in case of shared vaults.
9. For **External Data**, enter the external data sources.

**Submit application**

 Ubuntu Linux for Intel

**Server**  
Launch a session with all boot services, including SSH (if installed). Connection address and credentials will appear in your web browser once available.

General	Optional	Storage	Preview Submission JSON
<b>Vaults</b>			
<input type="text" value="Vault*"/> persistent			
<input type="checkbox"/> Read only <input type="checkbox"/> Force			
<b>External Data</b>			
<input type="text" value="External Data Sources"/>			
<a href="#">Back</a>		<a href="#">Close</a>	<b>Submit</b>

10. The *Preview Submission JSON* tab displays the JSON code with the compute and storage requirements that were entered. The code can be copied by clicking on the copy icon on the right corner of the tab, saved and used with the Jarvice API.

The screenshot shows the Jarvice application submission interface. At the top, there is a dark header bar with the text "Submit application". Below it, there is a section for "Ubuntu Linux for Intel" with a logo. The main area has a title "Server" with a small icon. A note below says "Launch a session with all boot services, including SSH (if installed). Connection address and credentials will appear in your web browser once available." There are four tabs at the top of the main form: "General", "Optional", "Storage", and "Preview Submission JSON". The "Preview Submission JSON" tab is currently selected and highlighted in light blue. It contains a large text area with a JSON configuration. The JSON starts with:

```
{  
  "app": "jarvice-ubuntu",  
  "staging": false,  
  "application": {  
    "command": "Server",  
    "geometry": "2021x944"  
  },  
  "machine": {  
    "type": "cypress_0",  
    "nodes": 1  
  },  
  "vault": {  
    "name": "persistent",  
    "readonly": false,  
    "force": false  
  },  
  "job_ext_data": "",  
  "user": {  
    "username": "████████",  
    "apikey": "████████████████████████████████████████"  
  }  
}
```

At the bottom of the form, there are three buttons: "Back", "Close", and a prominent green "Submit" button.

11. Click **Submit**. The job starts running. Then, the Dashboard opens and the job tile is displayed along with the job status.

## Chapter 4. Dashboard

Dashboard serves as a centralized interface for tracking and managing computational jobs running on a cluster. It gathers real time data and provides a clear view of job statuses, resource utilization, and system performance in one place.

The screenshot shows the JARVICE dashboard interface. On the left is a sidebar with navigation links for Compute, Dashboard, PushToCompute™, and Account. Below the sidebar are three recent projects: Ubuntu 22.04 Linux for Intel Server, Ubuntu Linux for Intel, and JARVICE File Manager. The main content area displays two active jobs:

Job Type	Machine	Status	Submitted	Start Time	Job No.
Ubuntu 22.04 Linux for Intel Server	cypress_0	Processing	5/16/2025 7:16:47 AM	5/16/2025 7:17:28 AM	6004439
JARVICE File Manager	n0	Processing	5/16/2025 7:16:11 AM	5/16/2025 7:16:45 AM	6004438

On the right side, there are sections for Jobs (Current), History, By Label, Ext Projects Team Jobs, Reports, and Stats. The Stats section includes metrics like Team total (0), JOBS RUN (0), CPU TIME (0), and a network status bar (@nimbix.net).

The dashboard can be broadly categorized under two sections - jobs and stats.

### 4.1 Jobs

A job is an instance of a schedulable process on the Jarvice platform. After an application is submitted, a job is launched, queued, and then begins running. The Jobs section includes various views such as current jobs, job history, job filters, and reports. These views are categorized under the following menu items.

The screenshot shows the Jarvice dashboard interface. On the left, there is a sidebar titled 'Jobs' with the following options: Current (highlighted with a red border), History, By Label, Team Jobs, Ext Projects Team Jobs, and Reports. Below the sidebar is a 'Stats' section. Under 'Stats', it says 'Team total (3)'. Below that is a 'JOBS RUN' section showing '3' jobs. It includes icons for time, cost, and computer, followed by 'CPU TIME 80:41:20'.

### 4.1.1 Current

Displays all submitted jobs that are actively running.

This screenshot shows the 'Current' job list view. At the top, there are buttons for Refresh (Every 10s), Expand all, and Collapse all. The page number is 1 - 3 of 3. The main area displays three job entries:

Job Details	Status	Job Number	Actions
JARVICE File Manager filebrowser Machine n0 Cores/Node 1 Label label1	Queued !	Job No. 6004018	
00:00 x 1 nodes	Resource limits reached for this account		
JARVICE File Manager filebrowser	Queued !	Job No. 6004017	1 nodes
JARVICE File Manager filebrowser	Processing	Job No. 6004016	00:02 1 nodes ...

Dashboard > Current

C Refresh Every 10s ▾ Expand all Collapse all 1 – 3 of 3 Page 1

JARVICE File Manager filebrowser	Status Queued !	Job No. 6004018 1 nodes
JARVICE File Manager filebrowser	Status Resource limits reached for this account	Job No. 6004017 1 nodes
JARVICE File Manager filebrowser	Status Processing	Job No. 6004016
Machine n0 Cores/Node 1 Label label1	Submitted 5/7/2025 7:59:48 PM Started 5/7/2025 8:01:12 PM CPU Usage 0% Memory 4.00 GB Address 34.57.248.140	

00:02 x1 nodes

Each job in the dashboard is displayed as job tile, summarizing key information. Job tiles offer two display modes: collapsed view and expanded view.

#### 4.1.1.1 Collapsed View

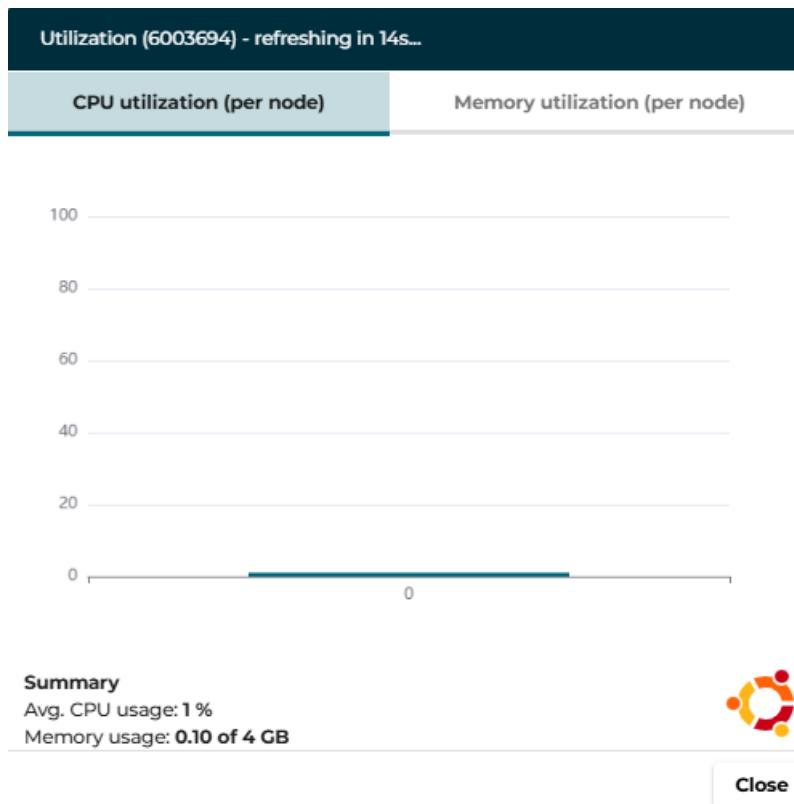
Each job tile displays the following details and quick actions in collapsed view:

##### Details shown

- **Application name:** Name of the application
- **Status:** The current state of the job. After job submission, the status moves through stages such as queued, processing, and completed. For complete information on job statuses and substatuses, refer to [Job Status](#).
- **Job No:** A unique identifier assigned to a job at submission for tracking purposes
- **Nodes:** Number of nodes selected

##### Quick actions

-  **Show Job Metrics:** Shows a bar graph of CPU and Memory utilization per node by the job. Appears only after job starts processing.



- **Copy job:** Opens the General configurations section of the application submission dialog, enabling cloning of the job.

Submit application

Ubuntu Linux for Intel

Server

Launch a session with all boot services, including SSH (if installed). Connection address and credentials will appear in your web browser once available.

General      Optional      Storage      Preview Submission JSON

**Projects**

Job project: test!

**Machines**

Machine type\*: 1 core, 8GB RAM (CPU only) (micro)

Cores\*: 1      1      8 \$1.01/h

Nodes: 1, 8GB RAM, 0 GPUs

No parameters to display

Back      Close      Submit

The form is titled "Submit application" and specifies "Ubuntu Linux for Intel". It includes a "Server" section with a note about SSH access. There are four tabs: "General", "Optional", "Storage", and "Preview Submission JSON". The "General" tab is active, showing fields for "Projects" (containing "test!"), "Machines" (set to "1 core, 8GB RAM (CPU only) (micro)"), and "Cores" (set to 1, with a slider showing 8 units at \$1.01/h). Below these, it lists "Nodes: 1, 8GB RAM, 0 GPUs" and "No parameters to display". At the bottom are "Back", "Close", and "Submit" buttons.

- **Shutdown job:** Terminates the job. Appears only after the job starts processing.
- **Cancel:** Appears only when the state of the job is queued and shutdown the job when selected.

#### 4.1.1.2 Expanded View

Along with the collapsed view information, each job tile displays submission time details, runtime details, and quick actions in expanded view.

##### Submission time Details

- **Machine:** The selected Machine type
- **Cores/Node:** Number of cores selected
- **Label:** A string attached to the job that can be used to search for or filter the job by. If an application has a file parameter, a **Use file as job label** checkbox appears. It can be used to set the content of the first file parameter as the job label
- **Project:** Name of the project associated with the job
- **External Project:** Name of the external project associated with the job, if any

##### Runtime Details

- **Submitted:** Date and time at which the application is submitted
- **Started:** Date and time at which the job starts running
- **CPU Usage:** Percentage of processing power used
- **Memory:** Storage space allocated to the job
- **Address:** Public IP address of the job. Appears only if address is requested prior, and is used for apps with graphical user interface
- **Time limit:** The job will be terminated after the set time limit is reached

##### Quick actions

-  **Connect:** Provides a way to access the job's user interface through VNC or webpage.
-  **Copy password to clipboard:** The password is used to authenticate with VNC to establish the connection for GUI jobs.



-  **Open job information dialog:** Opens an information window that enlists alternative ways of connecting to the application environment through TigerVNC client and secure shell.

**Job information**

**Click Here to Connect**

Alternatively, you may connect securely with a TigerVNC client:

VNC server: none:  
Password:

Please note that the password is case sensitive and should not contain any leading or trailing spaces when entered. It is recommended that you copy and paste it from above directly into the TigerVNC Viewer password prompt to ensure accuracy.

[Click here to download TigerVNC Viewer](#)

**Alternative Connection Methods**

You may also connect via Secure Shell:

Address: bird\_user1@none  
Password:

You may optionally install an SSH public key for password-less access by clicking on your username in the top right of the portal, then Account Settings, then SSH Keys to manage your SSH keys.

[Close](#)

- **Copy public remote access link:** Provides access to the job through a public link.

**Note:**

These quick actions appear only after the job starts running.

### Click to Connect

When you hover over the application image on the right side of the tile, **Click to connect** button appears. It allows you to access the running application in a new window.



**Note:**

The Click to connect option is available only for interactive jobs\*. An interactive job can either be VNC view of a GUI application or a web application. For non-interactive jobs, the standard output is displayed in form of text in the same job tile.

### 4.1.2 History

Displays the list of jobs that were run in the past along with essential job details such as job number, application name, status, and substatus.

Dashboard > History

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Job No.: 127333		JARVICE File Manager filemanager	Status: <span style="border: 1px solid black; padding: 2px;">Terminated</span>	<span style="font-size: 2em;">□</span> <span style="font-size: 1.5em;">▼</span>	
Job No.: 124923		JARVICE File Manager filemanager	Status: <span style="border: 1px solid black; padding: 2px;">Terminated</span>	<span style="font-size: 2em;">□</span> <span style="font-size: 1.5em;">▼</span>	
Job No.: 124922		JARVICE File Manager filemanager	Status: <span style="border: 1px solid black; padding: 2px;">Terminated</span>	<span style="font-size: 2em;">□</span> <span style="font-size: 1.5em;">▼</span>	
Job No.: 121869		Ubuntu Linux for Intel Server	Status: <span style="border: 1px solid black; padding: 2px;">Terminated</span>	<span style="font-size: 2em;">□</span> <span style="font-size: 1.5em;">▼</span>	
Job No.: 121868		ubuntu Server	Status: <span style="border: 1px solid red; padding: 2px;">Completed with error</span>	<span style="font-size: 2em;">□</span> <span style="font-size: 1.5em;">▼</span>	
Job No.: 121867		Hello World App Hello	Status: <span style="border: 1px solid green; padding: 2px;">Completed</span>	<span style="font-size: 2em;">□</span> <span style="font-size: 1.5em;">▼</span>	
Job No.: 121646		rep_movsd-nf_v2.shell nextflow_shell	Status: <span style="border: 1px solid black; padding: 2px;">Terminated</span>	<span style="font-size: 2em;">□</span> <span style="font-size: 1.5em;">▼</span>	
Job No.: 121645		jarvice-batch Batch	Label: voluminous_stonebreaker	Status: <span style="border: 1px solid green; padding: 2px;">Completed</span>	<span style="font-size: 2em;">□</span> <span style="font-size: 1.5em;">▼</span>
Job No.: 121644		jarvice-batch Batch	Label: voluminous_stonebreaker	Status: <span style="border: 1px solid green; padding: 2px;">Completed</span>	<span style="font-size: 2em;">□</span> <span style="font-size: 1.5em;">▼</span>
Job No.: 121643		jarvice-batch Batch	Label: voluminous_stonebreaker	Status: <span style="border: 1px solid green; padding: 2px;">Completed</span>	<span style="font-size: 2em;">□</span> <span style="font-size: 1.5em;">▼</span>

By default the job tiles are collapsed, you can expand the job tile to see the complete job output, start time, end time, and wall time.

Furthermore, you can clone the job by clicking on the clone icon. This opens the job submission dialog autofilled with the submission parameters. If required, users can make minimal changes in the input parameters and run the job, to reduce the time needed to fill all the input parameters while running a new job.

#### 4.1.3 By Label

Displays the jobs filtered by the job label. For more information refer to *Optional Parameters*.

Dashboard > By Label

**Jobs without label**  
1 job

**Test**  
1 job

Dashboard > By Label

Jobs without label					<span style="background-color: red; color: white; padding: 2px 5px;">Terminate all</span>	
<input type="checkbox"/>	Job No.	Application	Command	Start time	Status	
<input type="checkbox"/>	6003781	Ubuntu Linux for Intel	Server	2025-04-29 09:48:01	<span style="border: 1px solid blue; padding: 2px;">Processing starting</span>	<span style="font-size: 2em;">□</span>

Test					<span style="background-color: red; color: white; padding: 2px 5px;">Terminate all</span>	
<input type="checkbox"/>	Job No.	Application	Command	Start time	Status	
<input type="checkbox"/>	6003782	Hello World App	Hello	-::-	<span style="border: 1px solid green; padding: 2px;">Submitted</span>	<span style="font-size: 2em;">□</span>

#### 4.1.4 Team Jobs

Displays all the jobs that are run by team members of the logged-in user.

#### 4.1.5 Ext Projects Team Jobs

Displays jobs grouped by external projects owned by the logged-in user.

#### 4.1.6 Reports

Enables users to view billing reports for any time period with various filtering options.

The screenshot shows the 'Reports' section of the Jarvice dashboard. At the top, there's a header bar with 'Dashboard > Reports'. Below it is a form titled 'Choose Time Period'. It includes dropdown menus for 'Select a time range' (set to 'Current Month') and 'Time Offset from UTC' (set to '+00:00'). There are also two radio buttons: one selected for 'Normally billed Jobs' and another for 'External Project Jobs'. Below these are two more radio buttons: 'Compute Usage' (selected) and 'External Resource Usage'. At the bottom right of the form are two buttons: 'Generate Report' and 'Generate Itemized Report'. In the center of the page is a large magnifying glass icon with a search symbol inside, and below it is the text 'Click Generate to fetch report'.

#### 4.1.7 Choose Time Period

Reports can be generated for predefined timeframes or for arbitrary time periods by specifying the start and end dates manually as follows:

- Current month
- Previous month
- Custom date range

##### 4.1.7.1 Using Filters

Reports can be generated by filtering jobs based on their type, such as regular jobs and external project jobs.

The screenshot shows the 'Reports' section of the Jarvice dashboard. It includes a 'Choose Time Period' dropdown set to 'Current Month' and a 'Time Offset from UTC' dropdown set to '+00:00'. Below these are two radio button groups: 'Normally billed Jobs' (selected) and 'External Project Jobs'. A dropdown menu under 'External Project' shows options like 'External Project' and '<All Projects>'. At the bottom, there are two radio buttons: 'Compute Usage' (selected) and 'External Resource Usage'. On the right, there are 'Generate Report' and 'Generate Itemized Report' buttons.



Click Generate to fetch report

#### 4.1.7.2 Generating Report

A report is a summary of job activity, resource usage, and billing details, generated either on a per user or per job basis. The reports can be generated based on the type of jobs such as normally billed jobs and external project jobs.

#### 4.1.8 Normally Billed Jobs

Select Normally Billed Jobs to generate team based billing reports for the standard jobs that were run in the selected time period. Moreover, the reports can be categorized depending on type of resources used: Compute and External Resource.

##### 4.1.8.1 Compute Usage

Utilization of compute resources is billed and grouped by users or jobs. Users can click on any of the following buttons accordingly:

- Generate Report:** Displays the usage and billing of compute resources on a per user basis.

The screenshot shows the 'Compute Usage' report. It includes a 'Choose Time Period' section with 'Current Month' and '+00:00' selected. Below this are radio buttons for 'Normally billed Jobs' (selected) and 'External Project Jobs'. At the bottom, there are buttons for 'Export as CSV', 'Generate Report' (disabled), and 'Generate Itemized Report'.

**Summary**

Compute Time	CPU Time	Job Count	Compute Cost	App Cost	External Resource Cost	Total Cost
2022:51:53	22297:38:50	248	\$26,981.59	\$26,899.44	\$0.00	\$53,881.03

**Report**

User	Billing Code	Email	Job Count	Compute Time	CPU Time	Compute Cost	App Cost
[Redacted]	0	@nimbix.net	1	00:01:28	00:01:28	\$0.00	\$0.00
[Redacted]	0	@nimbix.net	1	00:02:00	00:02:00	\$0.01	\$0.00
[Redacted]	0	@nimbix.net	4	00:03:50	00:03:50	\$0.02	\$0.00
[Redacted]	0	@nimbix.net	4	00:05:59	00:05:59	\$0.01	\$0.00

- **Generate Itemized report:** Displays the project details, machine details, and billing costs on a per job basis.

The screenshot shows the 'Reports' section of the Jarvice dashboard. At the top, there are filters for 'Choose Time Period' (Current Month, +00:00) and job types ('Normally billed Jobs' selected). Below these are buttons for 'Compute Usage' (selected) and 'External Resource Usage'. A summary table provides a high-level overview of costs:

Compute Time	CPU Time	Job Count	Compute Cost	App Cost	External Resource Cost	Total Cost
2022:51:53	22297:38:50	248	\$26,981.59	\$26,899.44	\$0.00	\$53,881.03

The 'Itemized Report' section displays detailed logs for each job, including Start Time, Job Number, Owner, Payer, External Project, Billing Code, App, Label, Project, Machine, Compute Time, CPU Time, Compute Cost, and App Cost. The data is as follows:

Start Time	Job Number	Owner	Payer	External Project	Billing Code	App	Label	Project	Machine	Compute Time	CPU Time	Compute Cost	App Cost
5/1/2025 9:31:38 AM	6003867	[REDACTED]			99	khill-ubuntu		cypress_0		00:01:56	00:01:56	\$0.01	\$0.00
5/1/2025 9:31:38 AM	6003868	[REDACTED]			99	khill-ubuntu		cypress_0		00:01:56	00:01:56	\$0.01	\$0.00
5/1/2025 9:53:29 AM	6003870	[REDACTED]			0	jarvice-ubuntu		cypress_0		31:47:21	31:47:21	\$12.40	\$0.00
5/1/2025 10:47:24 AM	6003871	[REDACTED]			0	jarvice-ubuntu	Test label	cypress_0		30:53:12	30:53:12	\$12.05	\$0.00

### 4.1.8.2 External Resource Usage

Utilization of external resources is billed and grouped by resources or individual instance of usage. The cost incurred is a supplementary cost, which is calculated as an aggregate over the billing period. Users can click on any of the following buttons as required:

- **Generate Report:** Displays the usage and aggregate cost of external resources used, on a per resource basis.

The screenshot shows the 'Reports' section of the Jarvice dashboard. At the top, there are filters for 'Choose Time Period' (Current Month, +00:00) and job types ('Normally billed Jobs' selected). Below these are buttons for 'Compute Usage' and 'External Resource Usage' (selected). A summary table provides a high-level overview of costs:

Compute Time	CPU Time	Job Count	Compute Cost	App Cost	External Resource Cost	Total Cost
2022:51:53	22297:38:50	248	\$26,981.59	\$26,899.44	\$314,546.00	\$368,427.03

The 'Report' section displays resource usage details, including Resource, Price, Usage, and Cost. The data is as follows:

Resource	Price	Usage	Cost
kns_cpu	200	643.49	\$128,698.00
kns_ram	100	1858.48	\$185,848.00

- **Generate Itemized Report:** Displays the resource details and billing costs per individual instance of usage.

**Choose Time Period**

Select a time range: Current Month | Time Offset from UTC: +00:00

Normally billed Jobs  External Project Jobs

Compute Usage  External Resource Usage

**Summary**

Compute Time	CPU Time	Job Count	Compute Cost	App Cost	External Resource Cost	Total Cost
2022-51:53	22297:38:50	248	\$26,981.59	\$26,899.44	\$314,546.00	\$368,427.03

**Itemized Report**

Payer	Resource	Timestamp	Price	Unit	Usage	Cost
[redacted]	kns_cpu	5/6/2025 10:11:25 AM	200	cpu/h	0.49	\$98.00
[redacted]	kns_ram	5/6/2025 10:11:25 AM	100	Gb/h	1.45	\$145.00
[redacted]	kns_cpu	5/7/2025 9:29:06 AM	200	cpu/h	1.21	\$242.00
[redacted]	kns_ram	5/7/2025 9:29:06 AM	100	Gb/h	3.45	\$345.00

## 4.1.9 External Project Jobs

Select Externally Billed Jobs to generate reports of billing for external project jobs that were run in the selected time period.

The reports on resource utilization of these jobs can be categorized under:

### 4.1.9.1 Compute usage

Utilization of compute resources in external project jobs is tracked and billed per project or per job basis.

- **Generate Report:** Displays the usage and aggregate cost of compute resources used on a per external project basis.

**Choose Time Period**

Select a time range: Current Month | Time Offset from UTC: +00:00

Normally billed Jobs  External Project Jobs

Compute Usage  External Resource Usage

**Summary**

Compute Time	CPU Time	Job Count	Compute Cost	App Cost	External Resource Cost	Total Cost
39:50:28	39:50:28	7	\$5.98	\$0.00	\$0.00	\$5.98

**Report**

Ext project	Job Count	Compute Time	CPU Time	Compute Cost	App Cost
test2	1	29:17:19	29:17:19	\$4.39	\$0.00
asdfsadfs	6	10:33:09	10:33:09	\$1.58	\$0.00

- **Generate Itemized Report:** Displays the usage and billing of compute resources on a per job basis. Each job's metrics will be an individual entry.

Dashboard > Reports

**Choose Time Period**

Select a time range: Current Month | Time Offset from UTC: +00:00

Normally billed Jobs  External Project Jobs

External Project: <All Projects>

Compute Usage  External Resource Usage

[Export as CSV](#) [Generate Report](#) [Generate Itemized Report](#)

**Summary**

Compute Time	CPU Time	Job Count	Compute Cost	App Cost	External Resource Cost	Total Cost
39:50:28	39:50:28	7	\$5.98	\$0.00	\$0.00	\$5.98

**Itemized Report**

Start Time	Job Number	Owner	Payer	External Project	Billing Code	App	Label	Project	Machine	Compute Time	CPU Time	Compute Cost	App Cost
5/1/2025 9:42:16 AM	6003869	[REDACTED]	[REDACTED]	test2	jarvice-filmanager	label1	cfdf1	n0	29:17:19	29:17:19	\$4.39	\$0.00	
5/5/2025 3:48:32 AM	6003890	[REDACTED]	[REDACTED]	asdfasdfs	jarvice-filmanager	label1	cfdf1	n0	05:55:57	05:55:57	\$0.89	\$0.00	
5/5/2025 9:42:38 AM	6003891	[REDACTED]	[REDACTED]	asdfasdfs	jarvice-filmanager	label1	cfdf1	n0	01:44:09	01:44:49	\$0.19	\$0.00	
5/5/2025 11:36:43 AM	6003896	[REDACTED]	[REDACTED]	asdfasdfs	jarvice-filmanager	label1	cfdf1	n0	01:59:16	01:59:16	\$0.30	\$0.00	

### 4.1.9.2 External Resource usage

Utilization of external resources in external project jobs is tracked and billed per project or an individual instance of usage.

Dashboard > Reports

**Choose Time Period**

Select a time range: Current Month | Time Offset from UTC: +00:00

Normally billed Jobs  External Project Jobs

External Project: <All Projects>

Compute Usage  External Resource Usage

[Generate Report](#) [Generate Itemized Report](#)

**Summary**

Compute Time	CPU Time	Job Count	Compute Cost	App Cost	External Resource Cost	Total Cost
00:00:00	00:00:00	0	\$0.00	\$0.00	\$0.00	\$0.00



- Generate Report:** Displays the usage and aggregate cost of compute resources used on a per project basis.
- Generate Itemized Report:** Displays the resource details and billing costs per individual instance of usage.

The Summary view pane appears on the top of the report view and summarizes the costs for both compute and external resources. After the reports are generated, they can be exported in the CSV file format.

## 4.2 Stats

The Stats section provides an overview of various performance statistics related to the user's and the team's job activities in the last billing period.

The screenshot shows the 'Jobs' section of the Jarvice interface. A red box highlights the 'Stats' card, which displays aggregate statistics for the team. The card includes a dropdown menu set to 'Team total (3)', a 'JOBS RUN' count of 3, and three icons for CPU time, cost, and wall time. Below the card, other options like 'Current', 'History', 'By Label', 'Team Jobs', 'Ext Projects Team Jobs', and 'Reports' are visible.

When **Team total** is selected from the dropdown, the aggregate statistics for all jobs run by the entire team is displayed. Similarly, when **individual total** is selected from the dropdown, the statistics specific to user's activities is displayed.

For both individual and team total, the following job metrics are displayed:

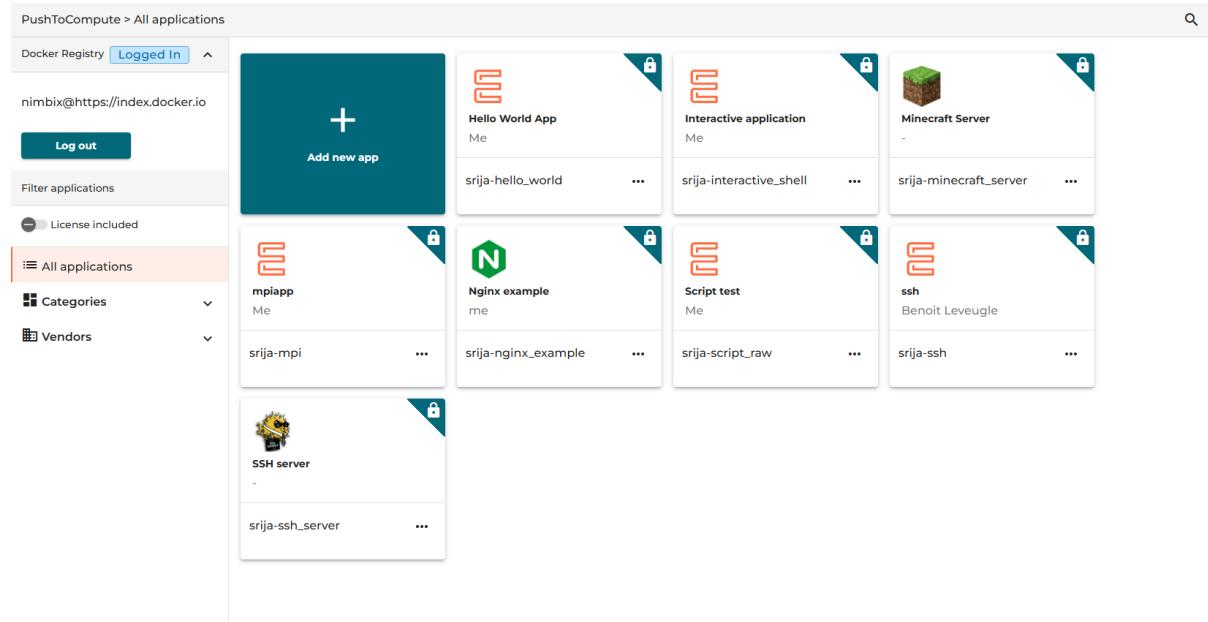
- **Jobs run:** Total number of jobs executed
- **CPU time:** Total amount of CPU time consumed by the jobs, indicating the amount of processing power utilized
- **Cost:** Total cost incurred from running the jobs
- **Wall time:** Total running time of the job



## Chapter 5. Push To Compute

The Push To Compute feature enables users to create and import their own containerized applications in Jarvice. This feature is enabled to the users who have developer access, provided by the system admin.

To run these jobs on the Jarvice platform, applications must be packaged as docker images and stored in a container registry of user's choice. Alternatively, users can also use the Jarvice platform to build these images directly from a git repository. Once the image is available, it can be pulled into the Jarvice platform by using the PushToCompute interface. After the image is pulled, the application is imported and is ready to be used on the platform.



The screenshot shows the 'PushToCompute > All applications' interface. On the left, there is a sidebar with 'Docker Registry' (Logged in), 'Log out', 'Filter applications', 'License included', and dropdown menus for 'Categories' (selected) and 'Vendors'. The main area displays a grid of application cards:

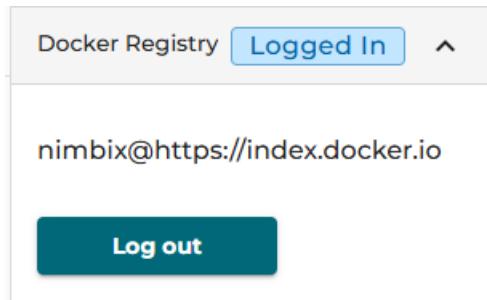
Category	Name	Owner	Actions
Add new app			
Hello World App	srija-hello_world	Me	...
Interactive application	srija-interactive_shell	Me	...
Minecraft Server	srija-minecraft_server	-	...
mpiapp	srija-mpi	Me	...
Nginx example	srija-nginx_example	me	...
Script test	srija-script_raw	Me	...
ssh	srija-ssh	Benoit Leveugle	...
SSH server	srija-ssh_server	-	...

## 5.1 Docker Registry

To import an application container image from a container registry, firstly, the user must be logged-in to their docker or artifact registry. There are two ways to login to a registry:

### 5.1.1 Using Password

1. In the **Server field**, specify the docker registry. The default is <https://index.docker.io>
2. Enter the **username**.
3. Enter the **password** and click **Login**. `Username@ServerLocation` is displayed under Docker Registry, and the user is logged in.



### 5.1.2 Using JSON key

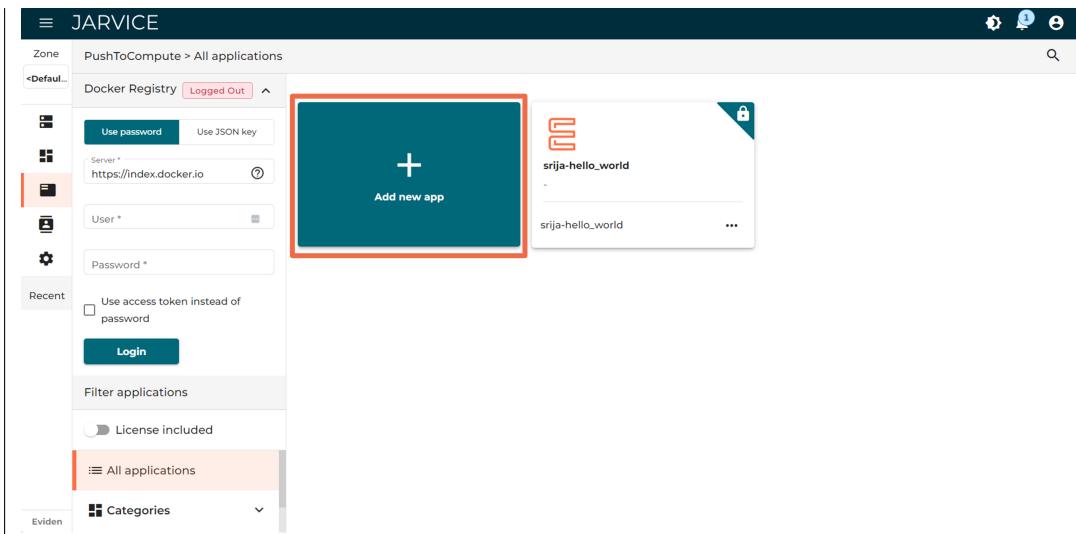
1. The **Server** field is autofilled to be <https://us-docker.pkg.dev>.
2. Upload the **key** (typically json authentication file).
3. Click **Login**.

---

## 5.2 Import Application

To add an application to Jarvice, firstly, the application entry must be created and then the corresponding container image in the docker registry must be imported into the Jarvice deployment. To do so, follow these steps:

1. Click **Add new app**.



- Under the **General** tab, in the Id field, enter a unique identifier for the application.

The screenshot shows the 'Add Application' form. The 'General' tab is selected. The 'Id' field contains 'hello\_world'. The 'Docker Repository' field contains 'docker.io/ /app-hello\_world:v1'. Other tabs like 'Details' and 'APPDEF' are visible at the top. At the bottom, there are 'Cancel' and 'Save' buttons.

- For existing docker image, enter the **Docker Repository** location. Alternatively, to build the container from source, for **Git Source URL**, enter the URL for a Git repository containing the source for a Jarvice Application.
- Under the **Details** tab, you can enter the name, short description of the application, author name, and category manually.

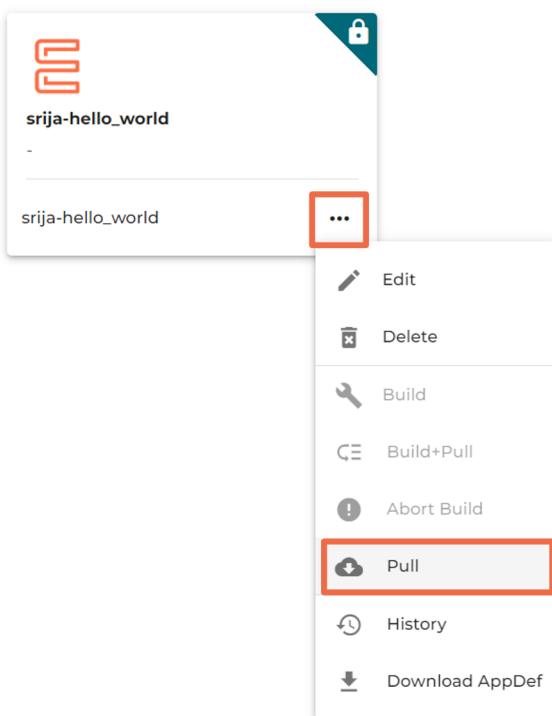
The screenshot shows the 'Edit Application' form. The 'Details' tab is selected. It has fields for 'Name' (Hello World App), 'Description', 'Author', and 'Categories' (Select/Add category...). Other tabs like 'General' and 'APPDEF' are visible at the top. At the bottom, there are 'Cancel' and 'Save' buttons.

- Alternatively, you can upload the **appdef.json** file from your system and save the file to autofill the details.

**Note:**

If you have manually updated the image icon from the UI, the icon from the uploaded appdef will overwrite it.

6. Then click **Save**. The application is now registered in Jarvice.
7. On the hamburger menu of the application card, click one of the following depending on whether you want to build the image or pull the docker image from repository.
  - Click **Pull** to pull the application image from chosen docker repository.



- Click **Build+Pull** to build an image from the source code of the docker file and then pull the image.
8. In the popup that appears, click **Pull**. This operation runs in the background and usually takes a while to complete.

## Pull

Are you sure you wish to pull repository  
`docker.io/ [REDACTED]/app-hello_world:v1`  
into application [REDACTED]-hello\_world ? 

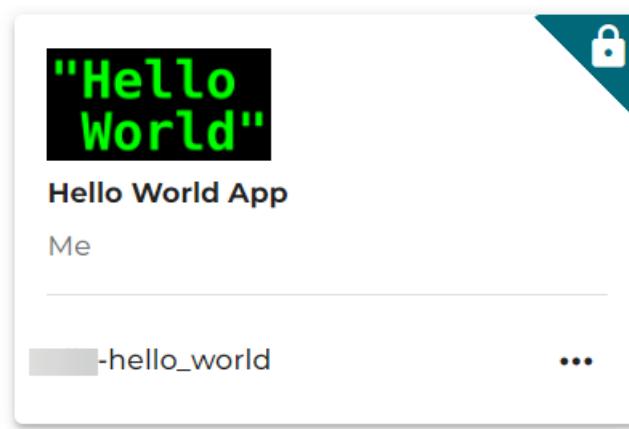
[https://jarvice-developme \[REDACTED\]](https://jarvice-developme [REDACTED]) 

You can also copy this link to use as a web hook in the future

[Cancel](#)

[Pull](#)

- Once the image is pulled, the application logo is updated.



- To monitor the status of the Build and Pull operations, choose the **History** option described below.

The creator of the application can run it from the PushToCompute view in the same way as on the Compute view. For more information, refer to *Application Submission Process* and *Dashboard*.

Once created, the application can be *edited* as needed. All settings, except for the application ID, can be freely modified.

## 5.3 Access Application

Note that the application is private to the user who created it and is only accessible from their PushToCompute page. There are two ways to make it available to other users:

1. The user must select the **Team Visible** option when creating/editing the app. This makes it available to other members of the user's team on the Compute page.
2. A system administrator must mark the application as public, which makes it available to all users on the platform.

For security and stability reasons, if an application is edited, its public status is reverted until the system admin marks it public. The typical best practice is for a system admin to completely validate any new or changed application before making it public.

---

## 5.4 App actions

### 5.4.1 Edit / Delete Application

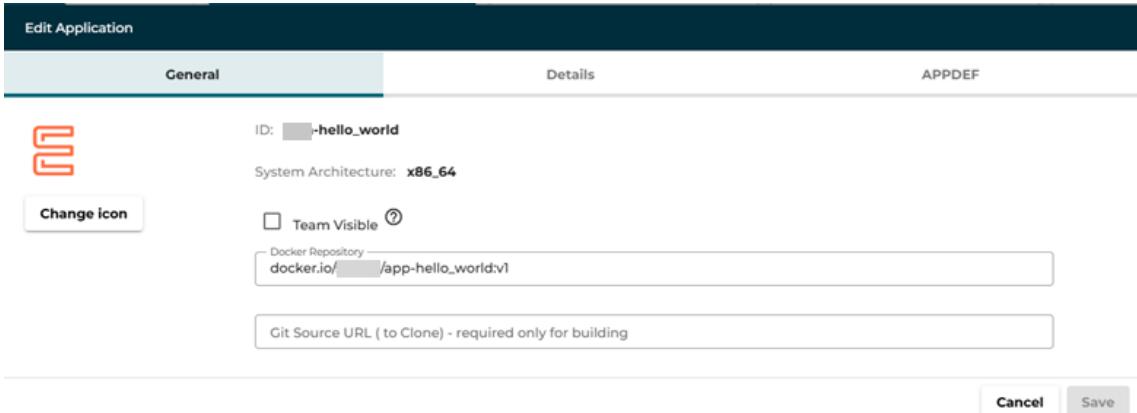
The application details can be edited by clicking on the hamburger menu, and then selecting **Edit**.

Under the **General** tab, you can edit the following:

- **Change icon:** App icon image can be modified by uploading a new image from the filesystem.
- **Team Visible:** When selected, the application will be visible to the team members in their compute page. Public applications are visible to team members regardless.
- **Docker Repository:** Address of the docker image of the app in a container registry can be modified.
- **Git Source URL:** Address of the app image in a git repository can be modified.

Under the **Details** tab, along with the name, description, author name, you can configure the following:

- **Licensed:** If the app is licensed, the check box can be selected.
- **Categories:** Add or modify the category of the application by which it can be filtered amongst other applications.

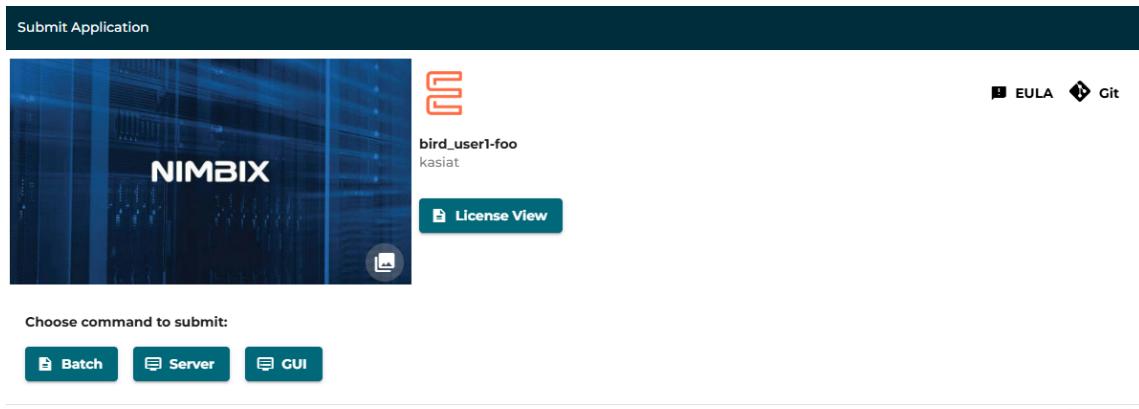


The screenshot shows the 'Edit Application' dialog box with the 'General' tab selected. The tab bar also includes 'Details' and 'APPDEF'. The 'General' section contains the following fields:

- ID:** `app-hello_world`
- System Architecture:** `x86_64`
- Change Icon:** A button to upload a new icon, currently showing a placeholder icon.
- Team Visible:** A checkbox that is unchecked.
- Docker Repository:** A text input field containing `docker.io/app-hello_world:v1`.
- Git Source URL (to Clone) - required only for building:** An empty text input field.

At the bottom right are 'Cancel' and 'Save' buttons.

Furthermore, you can also edit end user license agreement and GitHub Source URL from the Submit application window.

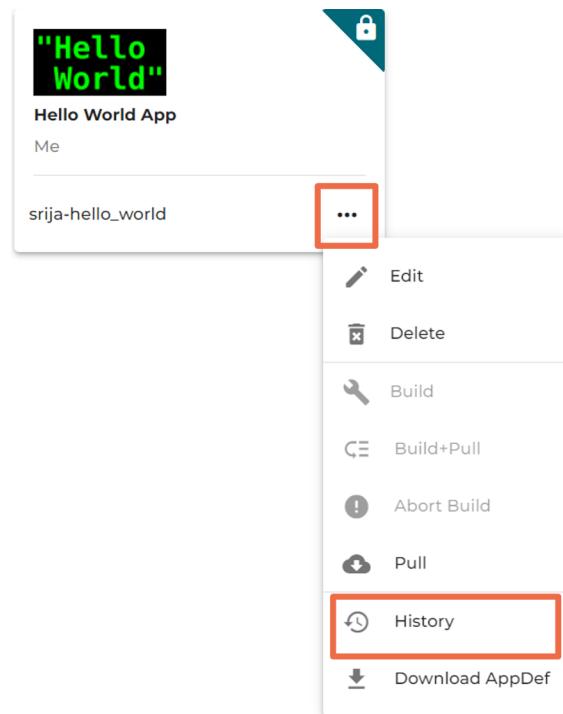


- **EULA:** Click on EULA to change, delete, or download the end user license agreement.
- **GitHub:** Click on Git to reproduce the application. The app's source code from the git repository that is specified earlier in the Git Source URL textbox, can be cloned. Alternatively, you can also pull the container image from the docker container that was given earlier in the docker repository textbox.

Similarly, to delete an application, click **Delete**.

#### 5.4.2 Check Application History

The application's pull/build logs can be viewed by clicking on the burger menu, and then selecting **History**.



### Pull History

Output will refresh automatically every 15 seconds:

```
20 minutes ago: Pull completed - docker.io/[REDACTED]/app-hello_world -> hello_world.app
20 minutes ago: Pull status - docker.io/[REDACTED]/app-hello_world -> hello_world.app: /etc/NAE/AppDef.json is valid.
20 minutes ago: Pull status - docker.io/[REDACTED]/app-hello_world -> hello_world.app: Validating /etc/NAE/AppDef.json.
20 minutes ago: Pull started - docker.io/[REDACTED]/app-hello_world:v1 -> hello_world.app
21 minutes ago: Pull scheduled - docker.io/[REDACTED]/app-hello_world:v1 -> hello_world.app
6 days ago: Pull failed - docker.io/[REDACTED]/app-hello_world -> hello_world.app: Authorization required or image manifest does not exist
6 days ago: Pull started - docker.io/[REDACTED]/app-hello_world:v1 -> hello_world.app
6 days ago: Pull scheduled - docker.io/[REDACTED]/app-hello_world:v1 -> hello_world.app
```

[Close](#)

### 5.4.3 Download AppDef

The application definition file can be downloaded directly by clicking on the burger menu, and then clicking **Download AppDef**.

#### Note:

For the complete guide on building an application from scratch, refer to [applications tutorial](#)<sup>1</sup>.

<sup>1</sup> [https://jarvice.readthedocs.io/en/latest/apps\\_tutorial/](https://jarvice.readthedocs.io/en/latest/apps_tutorial/)

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## Chapter 6. Account

The Account view provides users with the access to manage their personal settings, integrations, and preferences related to their profile and data access. It allows users to configure their profile, create external projects, manage SSH keys, set up notifications, securely store credentials, and integrate external data sources.

The account menu contains the following menu items in the left navigation pane:

- *Profile*
- *External Projects*
- *Notifications*
- *SSH Keys*
- *Vaults*
- *External Data*

---

### 6.1 Profile

This section allows users to view and update user details, regenerate API key for authentication, and choose active notification types. The personal details of the user such as Full Name, Company, Phone can be added in this section.

The screenshot shows the 'Account > Profile' page. On the left, a sidebar lists navigation items: Profile (selected), External Projects, Notifications, SSH Keys, Vaults, and External Data. The main content area is divided into three sections: 'Profile' (containing fields for Full Name, Company, and Phone), 'Authentication' (containing fields for Username and API Key, with a 'Regenerate' button), and 'Active Notification Types' (a list of checkboxes for various events like Job submitted, Job started, etc.). Both the Authentication and Active Notification Types sections have an 'Update' button at the bottom.

## 6.1.1 Authentication

This section displays the credentials used to access Jarvice via API. The credentials including Username and and API Key are greyed-out in the view.

The API Key is a secure token used to authenticate requests to Jarvice API. For security reasons, if you want to invalidate the current key and generate a new one, click the **Regenerate** button. It disables the old key and replaces it with the new one.

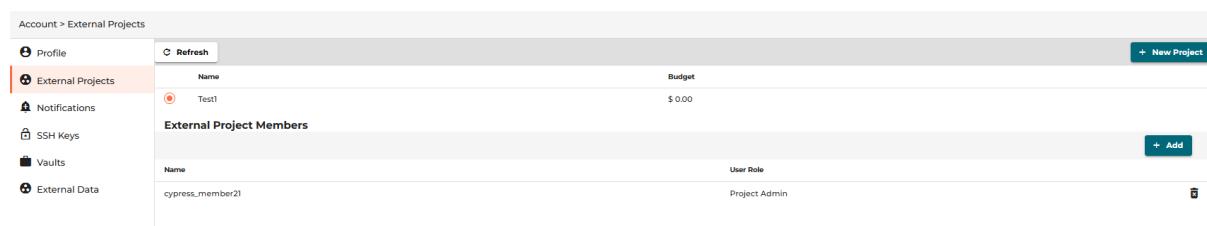
## 6.1.2 Active Notification Types

This section lists various events during and after the job submission process for which notifications can be set up. The Notification events can be selected as required.

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## 6.2 External Projects

External projects are designed to group multiple users who are allocated a common budget to the projects. They provide a billing model where the usage costs are tracked and deducted from the project's overall budget.



The screenshot shows the 'External Projects' section of the account settings. A single project named 'Test1' is listed with a budget of '\$ 0.00'. Below it, the 'External Project Members' section shows two members: 'cypress\_member21' with a 'Project Admin' role. There are buttons for 'Refresh', '+ New Project', '+ Add', and a trash icon.

This view displays the projects that the logged-in user is the owner of. The project name, budget, members, and roles of the members are displayed.

**Note:**

If the logged-in user is a member of a project but not an admin or the project owner, the project is not displayed here.

## 6.2.1 Create new project

To create a new project, follow these steps:

1. Click the **New Project** button on the top-right corner of the page. The **Add Project Popup** appears.



The screenshot shows the 'Add Project' popup. It has a 'Name' input field containing 'Test'. At the bottom are 'Cancel' and 'Save' buttons.

2. In the popup, enter the **name** of the project.
3. Click **Save**.

To add more members to an existing project, click on **Add** button under the **External Project Members**, look for the selected project, and then add the name of the user. To provide the Project Admin role to the added user, enable the **Project Admin** checkbox.

## 6.3 Notifications

Notifications related to application events as configured in the *Profile* section will be notified to the user through email.

In this view, users can add their email addresses by clicking on the **Add** button.

The existing email addresses can also be deleted by enabling the checkbox and then clicking on the **Delete** button.

## 6.4 SSH Keys

Enables users to deploy SSH public keys onto jobs. Generally, when a job is launched, the SSH key will be copied to the job environment.

### 6.4.1 Add New SSH Key

Users can add a new SSH key using the following steps:

1. Click on the **New** button. The **Add SSH Key** popup appears.

2. Click **Load from file**, and select the public key file from the local system.
3. Click **Save**.

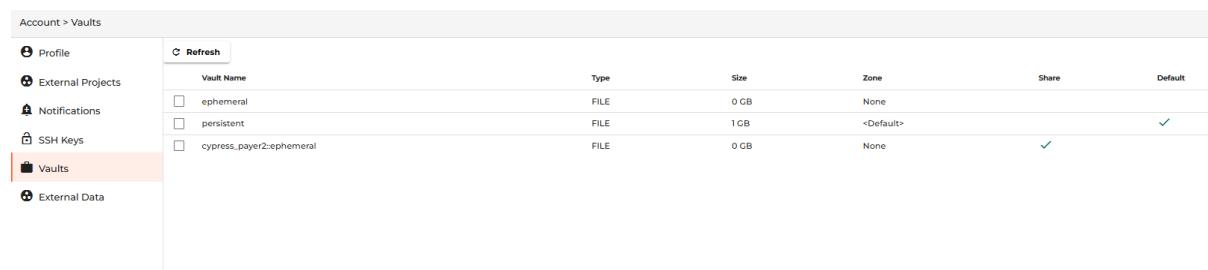
## 6.4.2 Deploy Key

While adding an application using the PushToCompute feature, when user provides source repository such as Git or bitbucket, it often needs authentication (for private repositories). Deploy key is a public key that authorizes Git pulls from the user account. To view the deploy key, click on the **Fetch deploy key** button.

---

## 6.5 Vaults

This view displays existing vaults and their details such as type, size, and zone.



Account > Vaults						
Profile	External Projects	Notifications	SSH Keys	Vaults	External Data	

**Vault Name**

Vault Name	Type	Size	Zone	Share	Default
ephemeral	FILE	0 GB	None		
persistent	FILE	1 GB	<Default>		
cypress_payer2:ephemeral	FILE	0 GB	None		

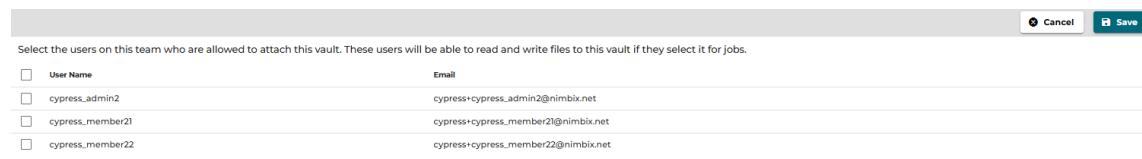
Furthermore, users can select a vault and perform the following actions:

- **Share:** Enables sharing the vault with team members. Users will be able to read and write file to this vault.



Vault Name	Type	Size	Zone	Share	Default
ephemeral	FILE	0 GB	None		
persistent	FILE	1 GB	<Default>		
cypress_payer2:ephemeral	FILE	0 GB	None		

- **Set Default:** Sets the selected vault as the default vault.



Select the users on this team who are allowed to attach this vault. These users will be able to read and write files to this vault if they select it for jobs.

User Name	Email
cypress_admin2	cypress+cypress_admin2@nimbix.net
cypress_member21	cypress+cypress_member21@nimbix.net
cypress_member22	cypress+cypress_member22@nimbix.net

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## 6.6 External Data

This view displays the external data sources outside the Jarvice platform and allows addition of new external data sources.

The screenshot shows the Jarvice web interface. On the left is a sidebar with a 'Recent' section containing a 'JARVICE File Manager' item. The main content area is titled 'Account > External Data'. It features a table with two columns: 'Name' and 'Type'. There is one entry in the table: 'External Projects'. At the top right of the table is a blue '+ Add' button.

For instance, apps in the AI or genetic domain often require access to large data sets that are stored on a public storage and are too large to be stored in a vault. In such cases, information related to the storage mechanisms can be passed to the jobs, allowing apps to access external data more flexibly. The information passed to the jobs is exposed to the apps as environment variables, making integration seamless.

### 6.6.1 Adding External Data

To add a new external data source, follow these steps:

1. Navigate to **Account > External Data**.
2. Click **Add**. The Add External Data popup appears.

The screenshot shows a modal dialog titled 'Add External Data'. Inside the dialog, there are four input fields: 'Name\*' (with 'External Project' typed in), 'Type\*' (a dropdown menu), 'default\_key' (with 'mykey' typed in), and 'Value' (an empty field). At the bottom right of the dialog are 'Cancel' and 'Save' buttons.

3. In the popup, enter the following details:
  - **Name:** Unique identifier for the name of external data source.
  - **Type:** Predefined types of the external data sources - gcs, s3, custom.
  - **default\_key:** Value of the default key.
4. Based on type of the external data source selected, enter the following details:
  - If GCS is selected, enter the values of google\_application\_credentials and google\_cloud\_project keys.

Add External Data

Name*	data1
Type*	gcs
Key google_application_credentials	Value SOME_GCS_CRED
Key google_cloud_project	Value SOME_GCP_PROJECT

**Cancel** **Save**

- If S3 is selected, enter the values of access\_key\_id, secret\_access\_key, default\_region keys.

Add External Data

Name*	
Type*	s3
access_key_id	Value
secret_access_key	Value
default_region	Value

**Cancel** **Save**

- If custom is selected, enter the custom code in the text box.

Add External Data

Name*	data2
Type*	custom
<pre>{   "foo_id": "someid@someservice/somepath",   "foo_cred": "qwertv123" }</pre>	

**Cancel** **Save**

- Click **Save**. An external data source can be linked to a job by entering the name of the data source in the external data field under the Storage tab of the application submission process.

Submit application

Ubuntu 22.04 Linux for Intel

**Batch**  
Run a batch command using /bin/bash. The output may be monitored directly in your web browser.

**Storage**

**Vaults**  
Vault\* ephemeral  
Selected Vault is not listable

Read only  
 Force

**External Data**  
External Data Sources  
[Add external data source(s)]

- data1
- data2

**Buttons:** Back, Close, Submit

## 6.6.2 Types of External Data Sources

The drop-down under **Type** displays predefined types of external data sources/mechanisms that hold datasets of files that an application may need during execution.

- **gcs:** Google Cloud Storage
- **s3:** Amazon Simple Storage Service
- **custom:** Other Custom Storage Service



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## Chapter 7. Job Status

Once an application is submitted and a job is launched, the job will be queued, then starts processing and then completed. At any given moment, a job can be in one of the following statuses:

- **Queued:** Initial status of the job after the job is submitted.
- **Processing:** After the required resources and licenses are available, when the job starts running, the status changes to processing.
- **Completed:** After the job runs successfully, the status changes to completed.
- **Completed with error:** When a job finishes running but with an error, then the status changes to completed with error.
- **Terminated:** When a job is forcefully shutdown, then the status of the job appears as terminated.
- **Canceled:** When a submitted job is stopped forcefully before the job starts processing, then the status of the job changes to canceled.

---

### 7.1 Substatus

A job can have various substatuses that provide further specific information about the current status of a job. The substatus of a job is indicated by the icon beside the status.

#### 7.1.1 Queued

-  - Resource limits reached for this account
-  - Requested license features currently available
-  - Suspended by user
-  - Temporarily suspended by license manager
-  - Job crossed external project budget warning level

### **7.1.2 Terminated**

-  - Termination requested by user
-  - Job shutdown due to external project overrun