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# EF Portal User Guide 2025.1



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# Introduction

Welcome to the **NI SP EF Portal User Guide**. This guide will help you navigate and utilize the latest features and updates of the EF Portal. It is designed for end-users who are not IT administrators. This guide aims to provide a comprehensive and end user-friendly overview of the new features and updates in EF Portal.

EF Portal is a portal for high performance computing applications. It enables users to submit, control and monitor their job runs in a very intuitive way. It is compatible with a variety of schedulers and works with on premise clusters as well with clusters located in the cloud.

This User Guide is showing the use of EF Portal so it is interesting for everyone dealing with high performance computing applications and for everyone who has to submit HPC job runs.

For more detailed instructions or troubleshooting, please refer to the full EF Portal Admin Guide or contact support at [info@ni-sp-software.com](mailto:info@ni-sp-software.com)

## **Contact us for EF Portal Download and Trial License:**

<https://www.ni-sp.com/ef-portal-contact/>

## **Stay Updated with Our YouTube Channel!**

For more tips, tutorials, and updates, be sure to check out our YouTube channel! We regularly upload videos to help you make the most out of the EF Portal, including step-by-step guides and feature overviews.

<https://www.youtube.com/@nispgmbh4750>

## **Subscribe and stay informed!**

# How to access the EF Portal

EF Portal is accessed via a web browser, so you don't need any specific operating system or software installed on your local machine to submit your HPC jobs.

**EF<sup>•</sup>PORTAL** HPC Workspace

EF Portal Version 2024 - Copyright 2023-2024 By NI SP Software GmbH, All Rights Reserved.

Username:

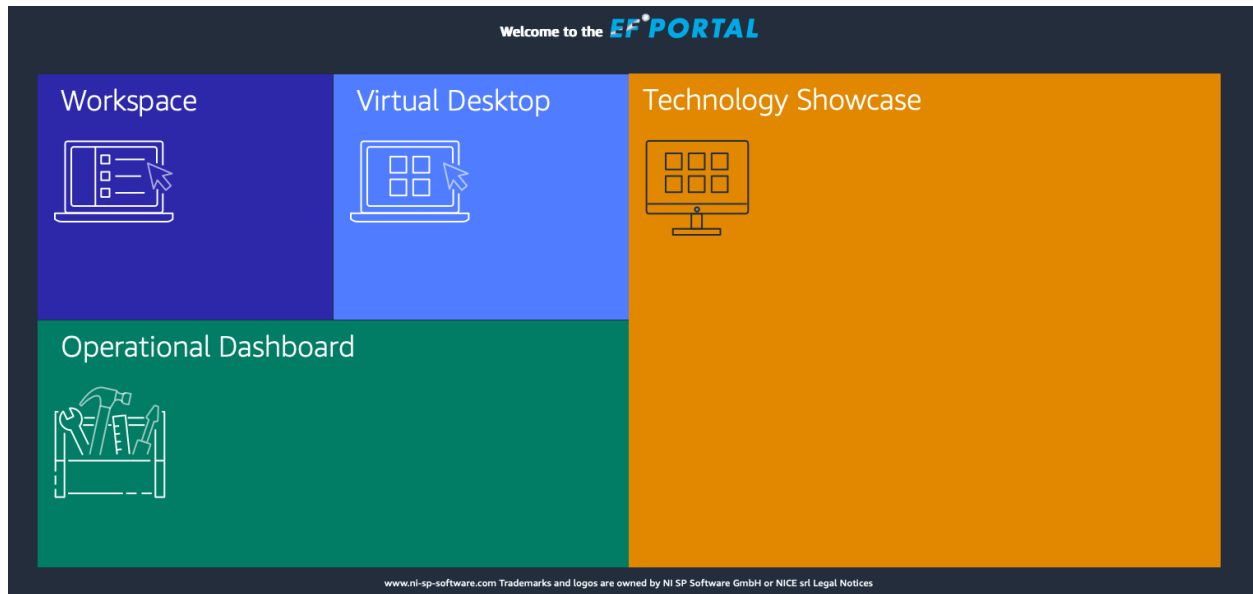
Password:

Login

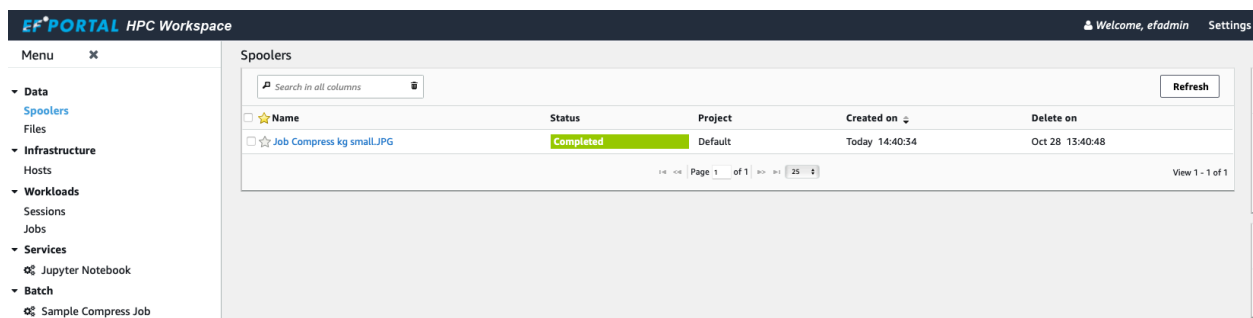
[www.ni-sp-software.com](http://www.ni-sp-software.com)

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After you have accessed the EF Portal, go to “Workspace” —>



and this opens the user interface showing the menu and all the different tools on the left hand side.



## How to submit a job

Before you submit a job it is necessary that you have all the input data you need in place. You have 2 options for providing the files to run a job:

1. For this alternative, which is probably the most common way, go directly to Menu/Batch. In our test example, we have created the ‘Sample Compress Job’. Here you have the possibility to access the data of your local machine and/or the files of your remote machine.
2. Transfer files from your local machine to the remote home directory. Then go directly to Menu/Batch for submitting a job run. In our test example, we have created the ‘Sample Compress Job’.

## Alternative 1- Transfer files from your local machine to the “Sample Compress Job”

For this alternative go directly to Menu/Batch. In our test example, we have created the “Sample Compress Job”

This opens the job submission interface. All these input fields can be customized to your needs and your typical use cases by your system administrator easily.

The screenshot shows the 'Sample Compress Job' submission interface in the EF PORTAL HPC Workspace. The interface has a dark header with the logo and user information ('Welcome, efadmin', 'Settings'). A left sidebar menu is open, showing categories like Data, Infrastructure, Workloads, Batch, and Tt3. The 'Batch' category is selected, and 'Sample Compress Job' is highlighted. The main area contains the job configuration form. It includes a 'Remote File' field with a 'Select...' button, a 'Browsing' section with a 'File to compress:' label and a 'Select files' button, and a large dashed box for file upload with the text 'Drop a file here' and a note '(this file will be uploaded to the server)'. Below these are dropdown menus for 'Compression level' (set to 'maximum') and 'Execution cluster' (set to 'cluster'). A blue 'Submit Job' button is at the bottom right.

Here you have 2 options:

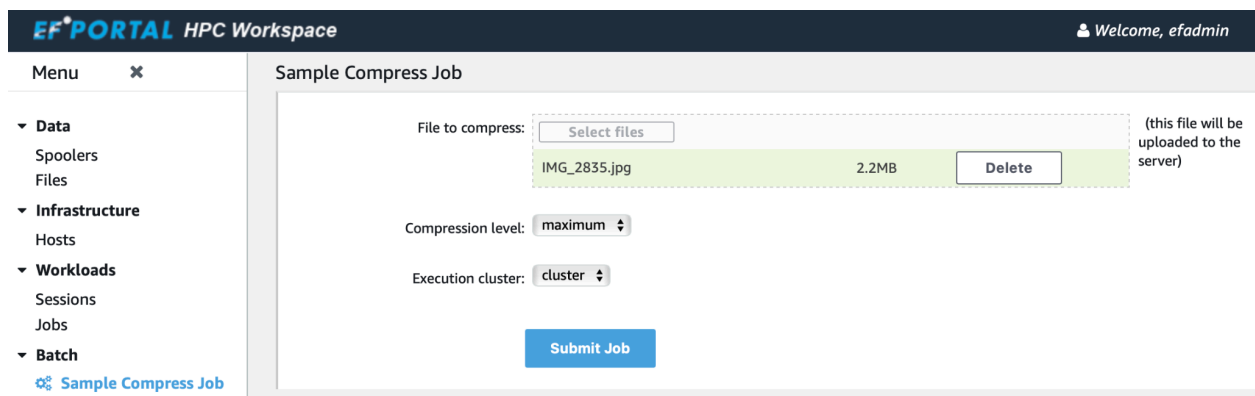
1. Remote File “Select Button”: this opens your remote home directory. Select one or more desired files and press the ‘Upload’ button
2. ”Select files Button”: this opens your local machine file manager<sup>1</sup>. Select one or more desired files and press the ‘Upload’ button

---

<sup>1</sup> Alternatively, use the drag and drop the function for uploading your files



The file IMG\_2835.jpg is now in the upload window:



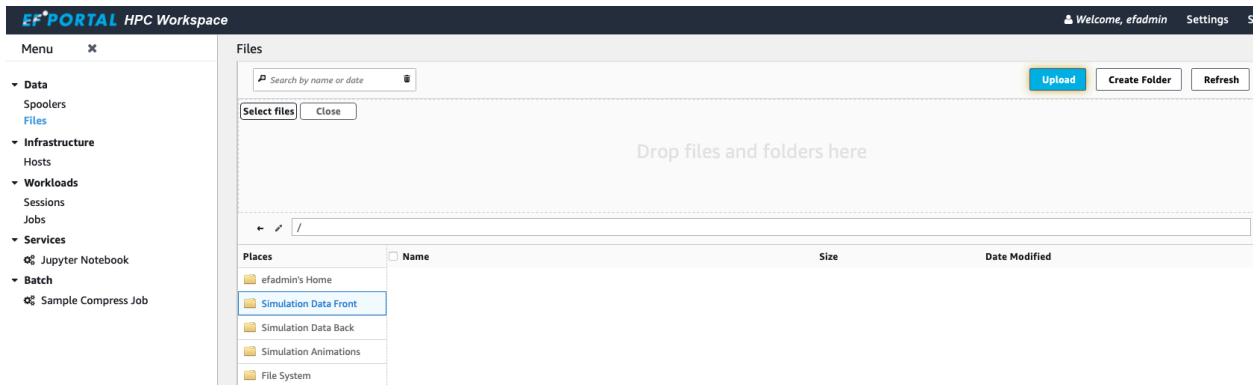
Compression Level and Execution Cluster can also be selected here for this compression job.

Press “Submit Job”, the job is executed and you will be taken directly to the Spoolers

## Alternative 2 - Transfer files from your local machine to the remote home directory and then to the “Sample Compress Job”

### How does it work?

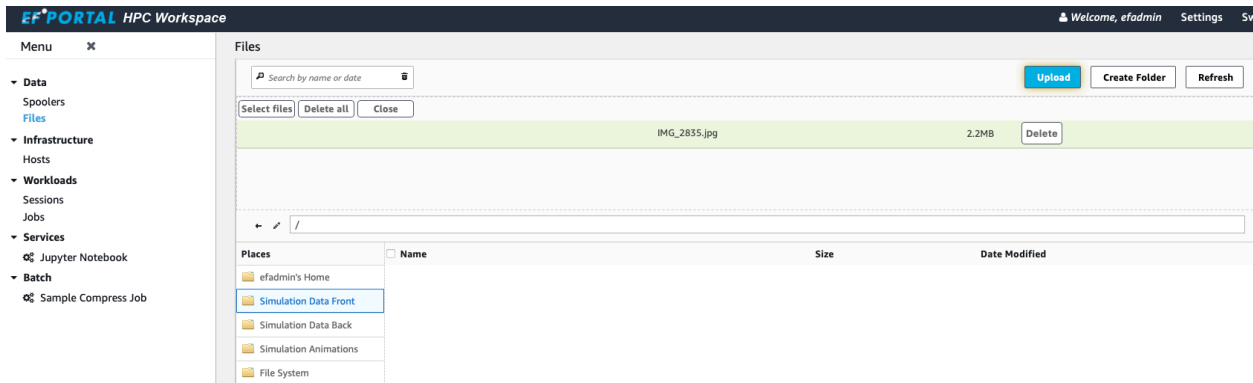
Go to Menu/Files/Places. To upload files/directories, go to the desired target directory and press the ‘Upload’ button → This opens the upload window at the upper part of the screen:



Press 'Select Files' button: this opens your local file manager. Select one or more desired files or folders and press the 'Upload' button:



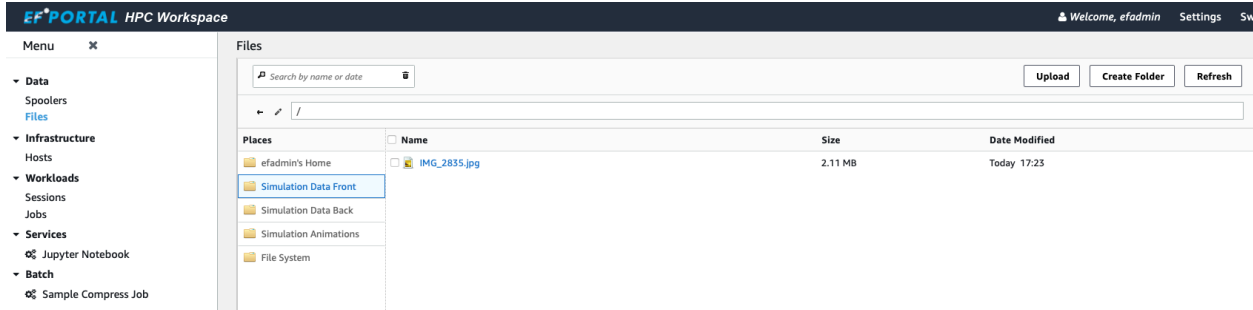
The files or directories are now in the upload window:



Now press the blue upload button and the file/folder will be stored in the target directory<sup>2</sup>

<sup>2</sup> Alternatively, use the drag and drop the function for uploading your files





The file(s) are now ready for the next step. For this go directly to Menu/Batch. In our test example, we have created the “Sample Compress Job”.

## The Batch Menu

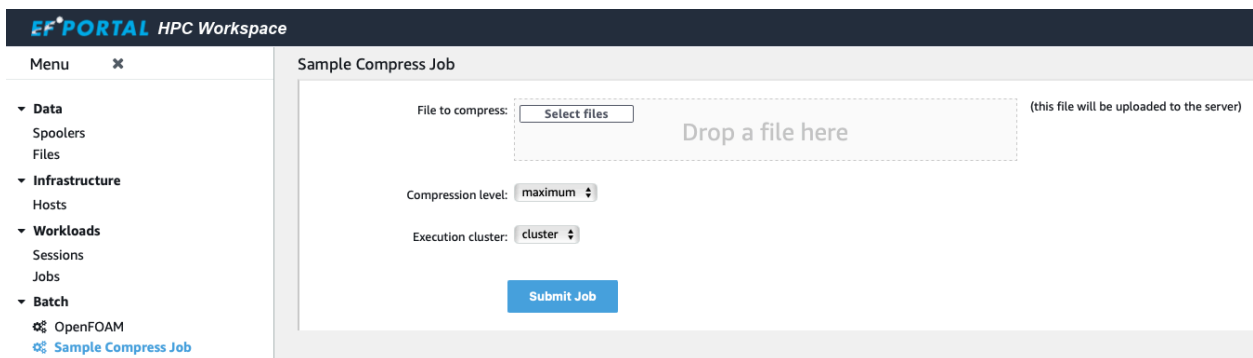
The Batch menu is your central hub for managing all your saved jobs. Here, you can view and execute your jobs. In this guide, we will explore two specific jobs in detail: 'Sample Compress Job' and 'OpenFOAM'.

Using an easy-to-use user editor, you can have your administrator create your own jobs according to your requirements. These jobs remain permanently saved for you in the batch menu.

## Executing the Sample Compress Job

The 'Sample Compress Job' is designed to compress a set of files into a specified archive format. Here's how to configure and use it:

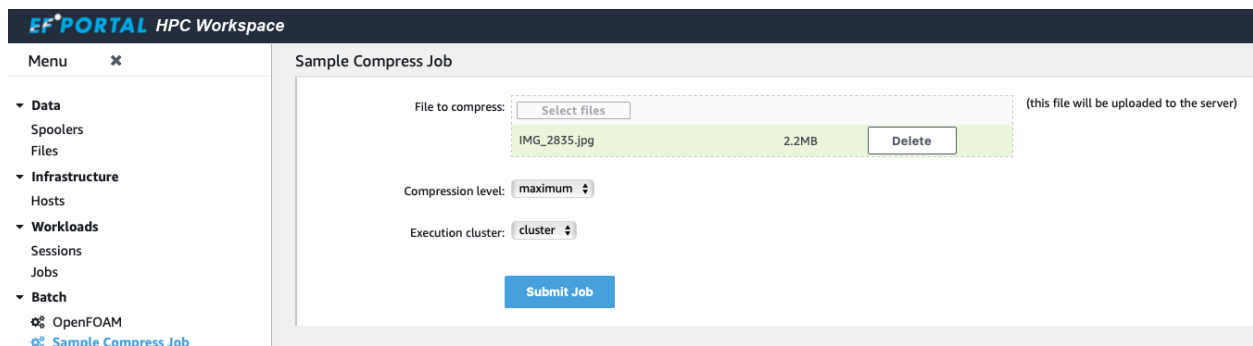
In our test example, the ‘**Sample Compress Job**’ is created in the Batch menu. For this open the ‘**Sample Compress Job**’ and press the “Select Files” Button:



This opens your browser on your local machine. Select the desired file:



The file IMG\_2835.jpg is now in the upload window:



Compression Level and Execution Cluster can also be selected here for this compression job.

Press “Submit Job”, the job is executed and you will be taken directly to the Spooler Section. For more Details on this, please see the next chapter “The Spooler Section”.

## Executing the OpenFOAM Service

The 'OpenFOAM' job is configured to run simulations using the OpenFOAM software suite.

Follow these steps to set it up and execute:

In our test example, the ‘**OpenFOAM**’ is allocated in the Batch menu. To start the job, open the OpenFOAM screen and enter the appropriate name in the Project Name field under “Launch Parameters”.

EF\*PORTAL HPC Workspace

Menu

Data

Spoolers

Files

Infrastructure

Hosts

Workloads

Sessions

Jobs

Batch

OpenFOAM

Sample Compress Job

OpenFOAM

Note: job scratch areas will be automatically cleaned after a week.

LAUNCH PARAMETERS

Job Name [\*.run, \*.clean ]:

OpenFOAM

Project Name:

projectx13

APPLICATION PARAMETERS

Version:

6.13-4

Input file:

Select...

Extra Options:

JOB PARAMETERS

Number of Cores:

1

Computing Queue:

test (UP, 0 jobs, 0 running)

Additional Job Options:

Submit

Next, you can select a versioning number in the 'Versions' field under "Application Parameters".

You have 2 options in the 'Input Files' field:

1. you can drag and drop files into the window or
2. you can use the 'Select' button to open a browser and select the desired files.

'Submit' starts the job immediately and takes you directly to the spooler section:

EF\*PORTAL HPC Workspace

Welcome, efadmin

Setting

Menu

Data

Spoolers

Files

Infrastructure

Hosts

Workloads

Sessions

Jobs

Batch

OpenFOAM

Spoolers

Search in all columns

Refresh

Name	Status	Project	Created on	Delete on
OpenFOAM	Processing	P-13-11	Today 16:10:03	Nov 20 16:10:03
OpenFOAM	Completed	P-11-11	Yesterday 18:09:11	Nov 19 18:09:11
Job Compress IMG_28356.jpg	Completed	Default	Yesterday 17:45:28	Nov 19 17:45:44
Job Compress is-this-the-meta-ai-tech-stack-v0-1kgjx57h8e...	Completed	Default	Nov 08 16:38:08	Nov 15 16:38:16
Job Compress is-this-the-meta-ai-tech-stack-v0-1kgjx57h8e...		Default	Nov 08 16:36:16	Nov 15 16:36:26

Page 1 of 1

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View 1 - 5 of 5

# The Spooler Section

The purpose of the spooler section is to manage the processing of files through a workflow. The spooler handles the queuing and execution of jobs, ensuring that your files are processed in an organized and efficient manner.

The Spooler section shows you all the information and data which is available for your job run, i.e. you see if it is still processing. The spooler section is completely customizable so for example you can define scripts which run in the background and perform actions on specific file types. The customization can be done by your system administrator.

## The Spooler Job Queue

Open the spooler section and you will see an overview of all jobs and their respective status. To get a convenient view of the jobs, you can set the desired view using the filters in the menu on the right-hand side.

### Job Overview, Error Handling and Retry:

EF PORTAL HPC Workspace

Welcome, eadmin

Settings

Switch to Admin View

Logout

Menu

Data

Spoolers

Files

Infrastructure

Hosts

Workloads

Sessions

Jobs

Batch

Sample Compress Job

Spoolers

Search in all columns

Refresh

<div><input type="checkbox"/></div> <div><div>★</div>Name</div>	Status	Project	Created on	Delete on
<div><input type="checkbox"/></div> <div><div>★</div>Job Compress 4-1 simulation results.txt</div>	Completed	Default	Today 17:29:30	Nov 14 17:31:04
<div><input type="checkbox"/></div> <div><div>★</div>Job Compress IMG_28356.jpg</div>	Completed	Default	Today 16:05:36	Nov 14 16:05:56
<div><input type="checkbox"/></div> <div><div>★</div>Job Compress ai net 900.png</div>	Completed	Default	Today 14:32:30	Nov 14 14:32:38

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Page 1 of 1

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>>

25

View 1 - 3 of 3

Filters

All

Starred

Created Today

Expiring Today

Projects

Default (3)

To view the details of each individual job, click on the desired job to call up the job details.

EF\*PORTAL HPC Workspace

Welcome, efadmin Settings Switch to Admin View Logout

Menu

Data

Spoolers

Files

Infrastructure

Hosts

Workloads

Sessions

Jobs

Batch

Sample Compress Job

Spooler: Job Compress IMG\_28356.jpg

Delete Refresh

Job Compress IMG\_28356.jpg

Project: Default

Status: Completed

Created on: Thursday, 7 November 2024 at 16:05

Expires on: Thursday, 14 November 2024 at 16:05

Data

Upload Create Folder

/

Name

Size

Date Modified

Compress Samples

--

Today 16:56

IMG\_28356.jpg.gz

2.08 MB

Today 16:05

slurm-95.out

0 bytes

Today 16:05

Jobs

Search in all columns

ID

Status

Queue

Submission Time

Running on

Job Name

95

Done

test

Today 15:05:58

FinAI

Job\_Compress\_IMG\_28356.jpg

Page 1 of 1 View 1 - 1 of 1

Click on the job name “Job Compress IMG\_28356.jpg” to open a window in which you can enter additional descriptions

Spooler: Job Compress IMG\_28356.jpg

Job Compress IMG\_28356.jpg

test run 34

Project: Default

Status: Completed

Created on: Thursday, 7 November 2024 at 16:05

Expires on: Thursday, 14 November 2024 at 16:05

Save Cancel

Click on “Expires on:” to open the calendar for the expiry date of the job.

Spooler: Job Compress IMG\_28356.jpg

Job Compress IMG\_28356.jpg

Add a description here

Project: Default

Status: Completed

Created on: Thursday, 7 November 2024 at 16:05

Expires on: Thursday, 14 November 2024 at 16:05 Keep forever...

Save

Nov 2024

Su

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Additional directories can be created here in the Data section:

▼ Data

Upload

Create Folder

←

↻

▶

☐ Name

☐ Compress Samples

☐ IMG\_28356.jpg.gz

☐ slurm-95.out

▼ Jobs

🔍 Search in all columns

🗑

Create New Folder

✕

New folder name:

2024.11.07

Cancel

Create

ID	Status	Queue	Submission Time	Running on	Job Name
95	Done	test	Today 15:05:58	FinAI	Job_Compress_IMG_28356.jpg

▼ Data

Upload

Create Folder

←

↻

▶

Name	Size	Date Modified
☐ 2024.11.07	--	Today 17:57
☐ Compress Samples	--	Today 16:56
☐ IMG_28356.jpg.gz	2.08 MB	Today 16:05
☐ slurm-95.out	0 bytes	Today 16:05

▼ Jobs

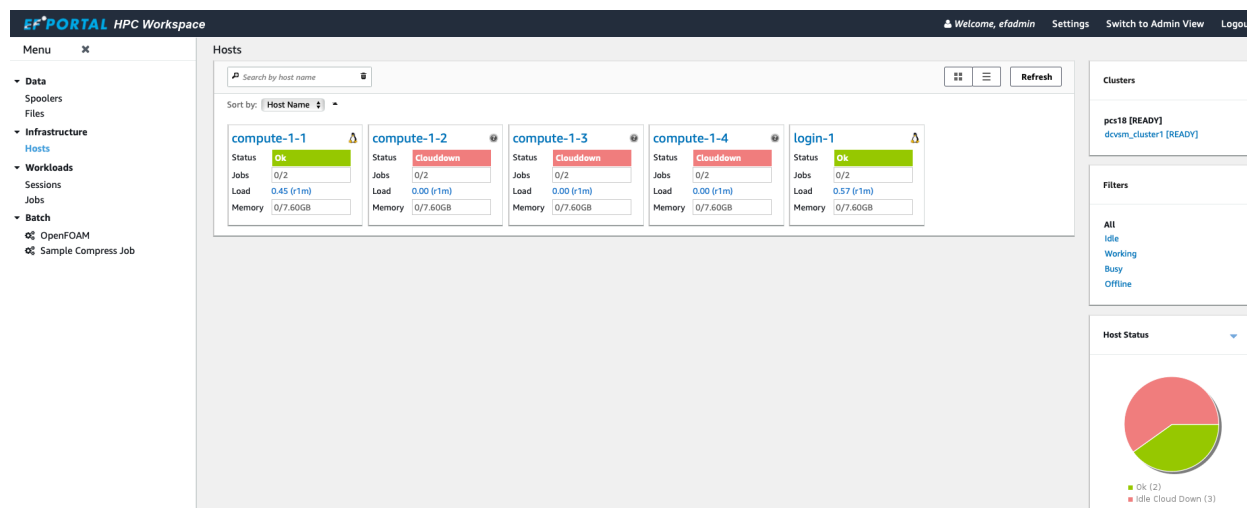
14

# Host View and GPU Monitoring

The Host View refers to the various computing nodes or servers available to you for running your computational tasks. These hosts can be part of a larger HPC infrastructure designed to provide substantial computational power and resources for complex and resource-intensive tasks. You can view and select from a list of available hosts, each with different specifications and capabilities. This allows you to choose a host that best suits your needs, whether you require high memory, GPU acceleration, or multiple cores.

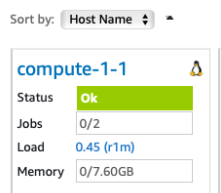
**The GPU Monitoring** feature in the EF Portal allows you to oversee the performance of GPU resources effectively. You can monitor GPU compute load and memory usage directly from the EF Portal. This feature provides insights into how efficiently the GPUs are being utilized and helps identify any performance bottlenecks.

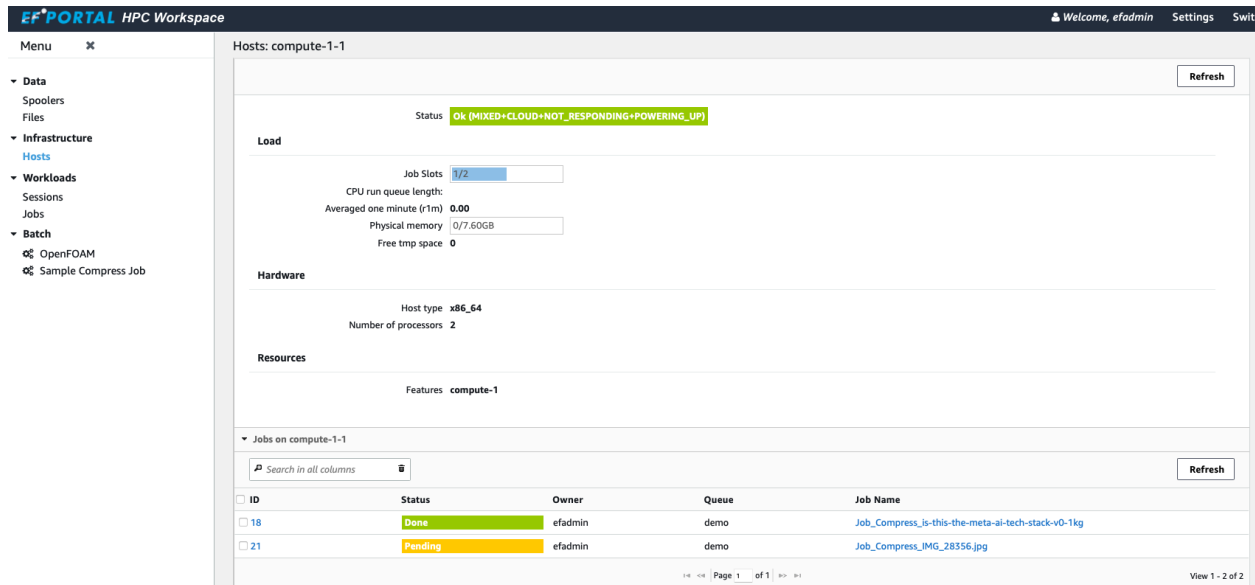
To access the Host View go to Menu/Hosts and select the required Host. In our example it is the Host “compute-1-1”:



**GPU Load Monitoring:** You can monitor the GPU compute load and memory usage directly from the EF Portal. This feature provides insights into how efficiently the GPUs are being utilized and helps identify any performance bottlenecks.

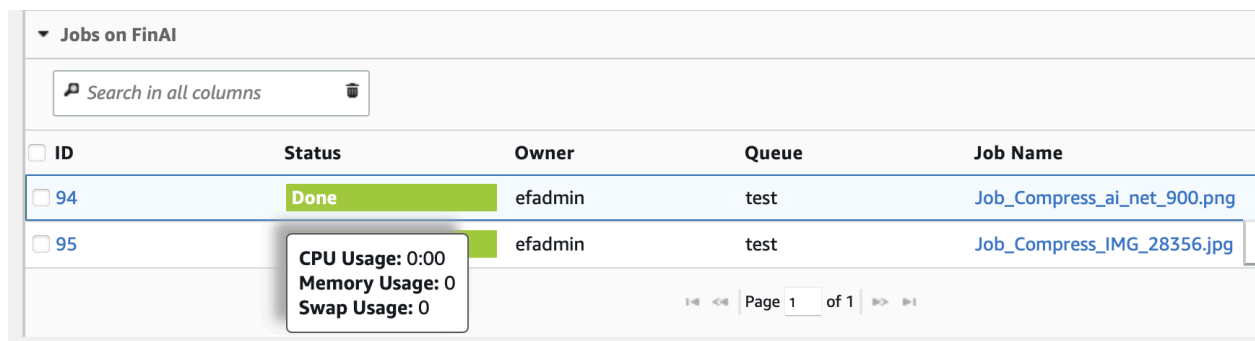
This feature is essential if you rely heavily on GPU resources for computation, providing valuable insights to enhance performance and optimize workflows. To access the host information, please click on the green ‘OK’ button:





In the job overview of the host “compute-1-1”, you can see a history of the jobs that have been run and the current/pending jobs as well.

If you move the mouse over the individual jobs, the CPU/memory/swap usage is displayed:





# General Features in File and Directory Management

The EF Portal's file manager has been improved to be more user-friendly and efficient. Here are the new features:

1. **File Spoolers:** Manage and store files locally on your computer.
2. **SSH Remote Spoolers:** Securely manage files on remote servers using SSH with encrypted connections.
3. **AWS S3 Remote Spoolers:** Manage files stored in Amazon S3, a cloud storage service.

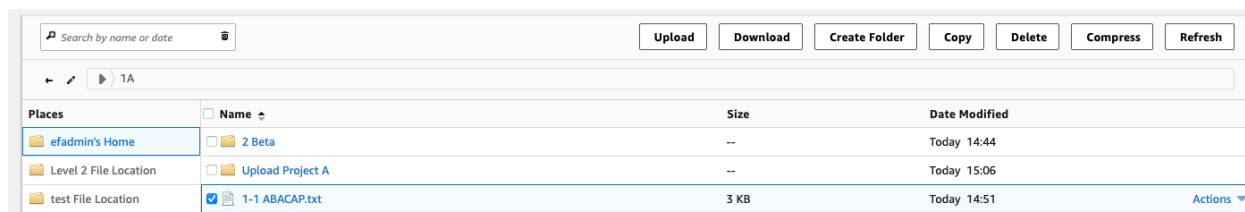
These improvements allow you to easily and securely manage your files on local systems, remote servers, and in the cloud.

## Support for Copy/Paste/Move operations on files and directories between spoolers, remote spoolers and places

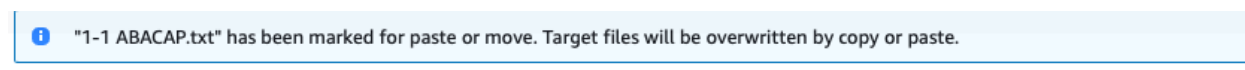
EF Portal offers copy, paste, and move operations on files and directories with ease:

**Copy/Paste/Move<sup>3</sup>:** Select files or directories and copy, paste, or move them between different spoolers or within the same spooler.

To start copy/paste/move, the file or directory must be marked in the checkbox. To start the operation, press the “Copy” button.



The execution of the copy command is confirmed with the following window:

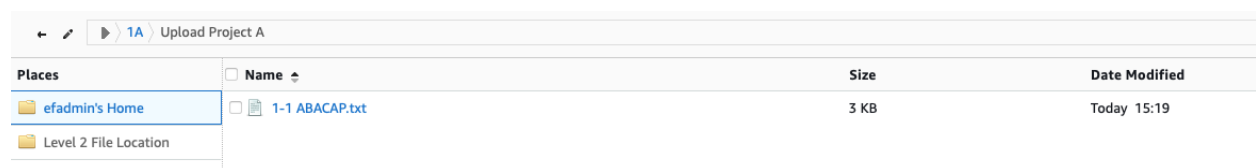


<sup>3</sup> **Please note the JSON Parser Requirement:** The `jq` parser must be installed for these operations to function. If it is not installed, the EF Portal will display a message prompting the user to install it. Please contact your local system administrator for installation.

Now go to the target directory and press either the 'Move' or 'Paste' button:



In our example, the “1-1ABACAB.txt” file is now pasted in the target directory:

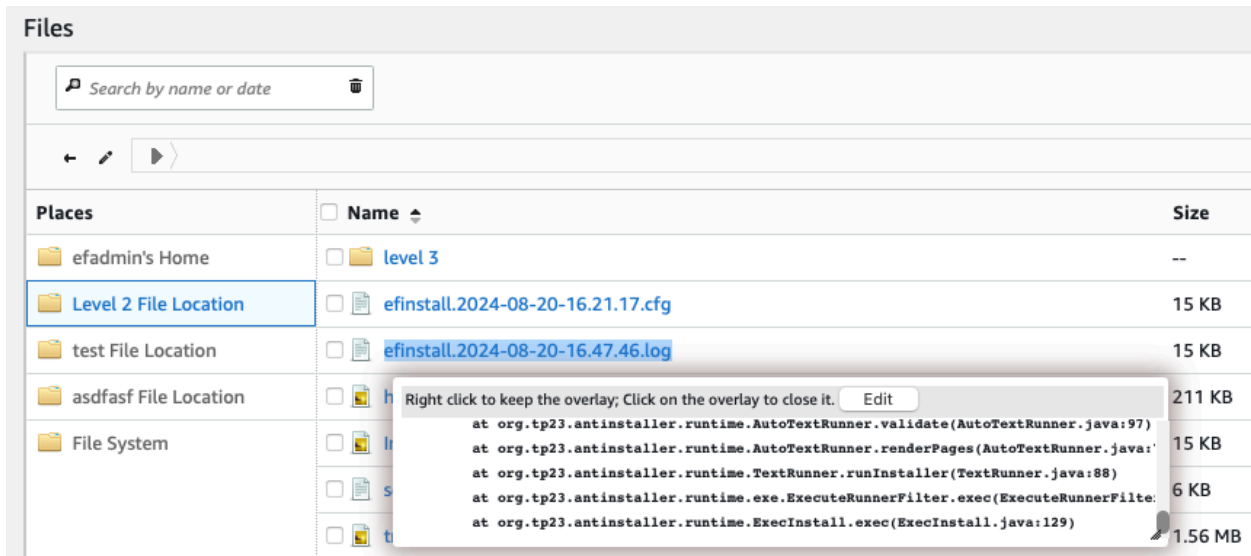


If you use the “Move” command instead of the “Paste” command, the selected file is moved to the target directory.

## Preview of data in spoolers supported for images, text and pdf as overlay in the file manager, draggable and resizable

EF Portal offers a convenient preview for text, PDF and image files. The preview appears when moving the mouse over the respective file. This feature allows you to quickly glance at file contents without having to open them, saving time and improving workflow efficiency, especially if you have a large number of files to manage.

**Hover Preview:** Hovering over a file name will display a preview of the file's contents, applicable to images, PDFs, and text files (e.g. the log file name below).



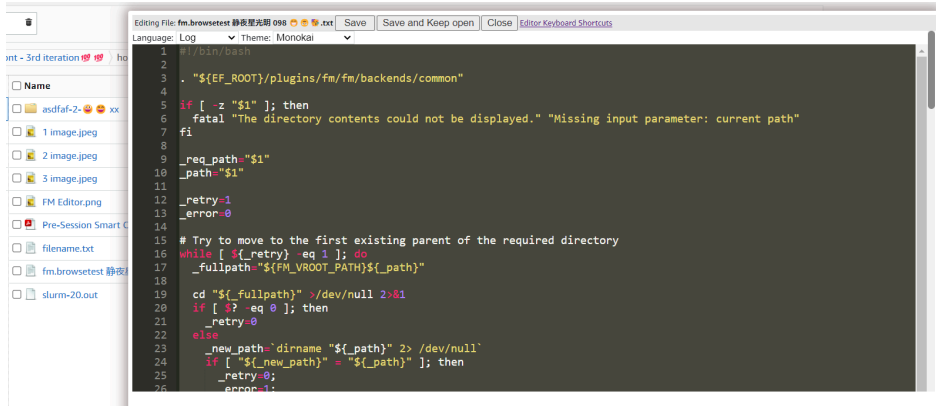
Right click keeps the overlay in position. This preview can then be moved and resized as required. You can click on the overlay to close it.

## File Editor for Text Files

The EF Portal now includes a built-in text file editor for quick and easy text file modifications:

- **Text File Editing:** When previewing a text file, you can start the built-in file editor to make changes.
- **Highlighting Modes and Themes:** The editor supports different syntax highlighting modes and themes, making it easier to edit various types of text files.
- **Save Locations:** Edited files can be saved back to their respective locations, including standard file, SSH, or S3 file locations.

This feature enhances the user experience by allowing quick edits without the need to download and re-upload files, streamlining the workflow.



## Favorite Places: Additional File and Remote Spooler Places in User File View

NI SP EF Portal introduces easy creation of additional Favorite Places to allow for quick access to local or remote file locations frequently visited. The following advantages make the "Favorite Places" feature an essential tool for every user of the EF Portal:

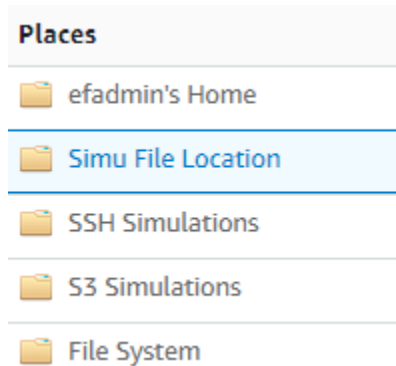
- **Quick Access:** The "Favorite Places" feature allows you to quickly and easily access frequently visited files and folders, saving valuable time and enhancing efficiency.
- **Customizable Options:** You can customize your favorite places to ensure that the most needed resources are always readily available, significantly improving usability.
- **Improved Organization:** By enabling to save frequently used locations as favorites, this feature keeps the file structure organized and manageable, making it easier to search for and manage files.
- **Flexibility and Versatility:** This functionality supports both local and remote locations, allowing you to work flexibly and efficiently, regardless of whether they are managing files on their computer or in the cloud.
- **Favorite Places:** You can add both local and remote file locations to your favorites for quick access.
- **Configuration Options:** Favorite places can be set up by:
  - There is an easy-to-use user editor with which you can create any directory structure you like.
  - Or by using a configuration file or a Bash script, allowing for flexible customization (see example below).

In the following example, the file locations Simu File Location, SSH Simulation Files and S3 Simulation Files are created under Places by putting the following configuration or code into **~/ef/ef.places** (permission 600):

A list of locations with URI and description separated by ~ (URIs should not include blanks):

```
file:///home/simu/simu_3_700/simu_results~Simu File Location
ssh://simu@simu.ni-sp.com:/home/simu~SSH Simulations
s3://@simu-bucket/~S3 Simulations
```

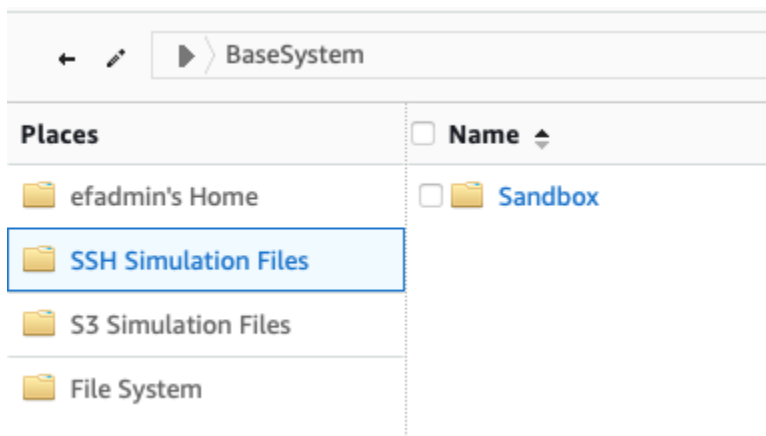
Resulting in the following additional Places:



This feature allows users to quickly access their most used directories and remote locations, enhancing workflow efficiency and user experience.

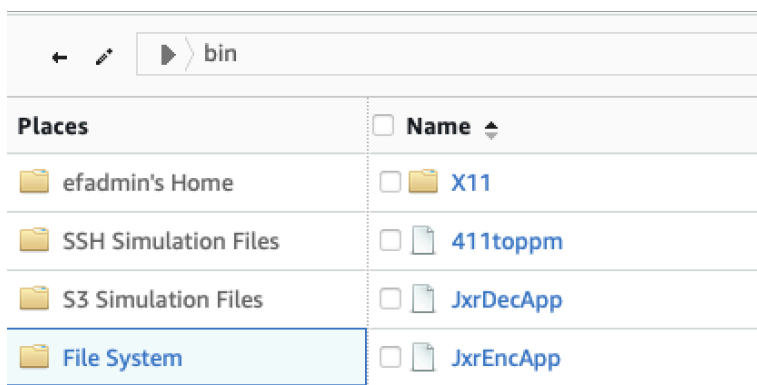
Remember last location in a file manager and spooler and return to that path when viewing the “Place”

EF Portal always remembers the last directory you have opened. The following example shows the directory “Places/SSH Simulation Files/BaseSystem”



If you open a new folder structure under Places (example below: “Places/File System/bin”) and

want to return to the previous directory, just click on the desired root directory under Places and your previous directory will be entered again.



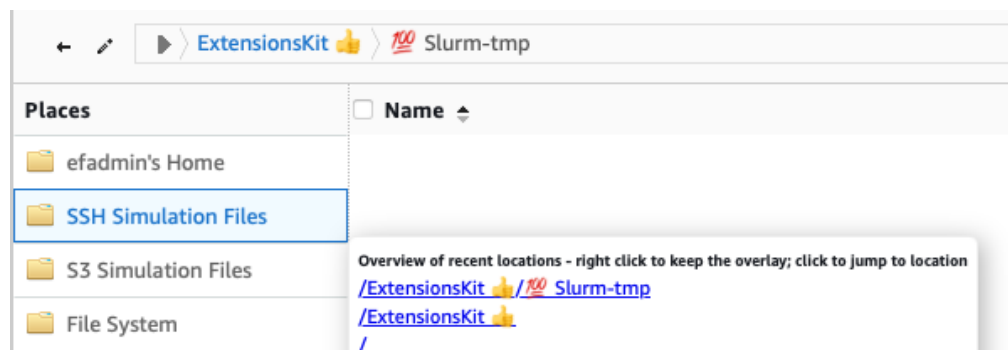
This feature saves time by eliminating the need to navigate back to frequently accessed directories, enhancing the user experience.

## Show history of paths in Places (spooler, filemanager) and allow you to jump to a selected previous locations

Keep track of your navigation history within the EF Portal:

**Path History:** If you move the mouse pointer over "Places", the file manager shows a history of up to the last 20 directories accessed by the user.

**Quick Navigation:** A right click keeps the overlay in position. Users can click on any directory in the history list to quickly jump back to it. This functionality can be toggled by hitting "t" after clicking on one of the places.



This feature allows you to easily retrace your steps, improving navigation efficiency.

## Support for UTF-8 Characters in Filenames

The EF Portal supports filenames with extended character sets:

- **UTF-8 Characters:** Filenames can include special characters and emojis, making it easier to use descriptive and diverse file names.

This support ensures that you can name your files in a way that best suits your needs, without being restricted by character limitations.

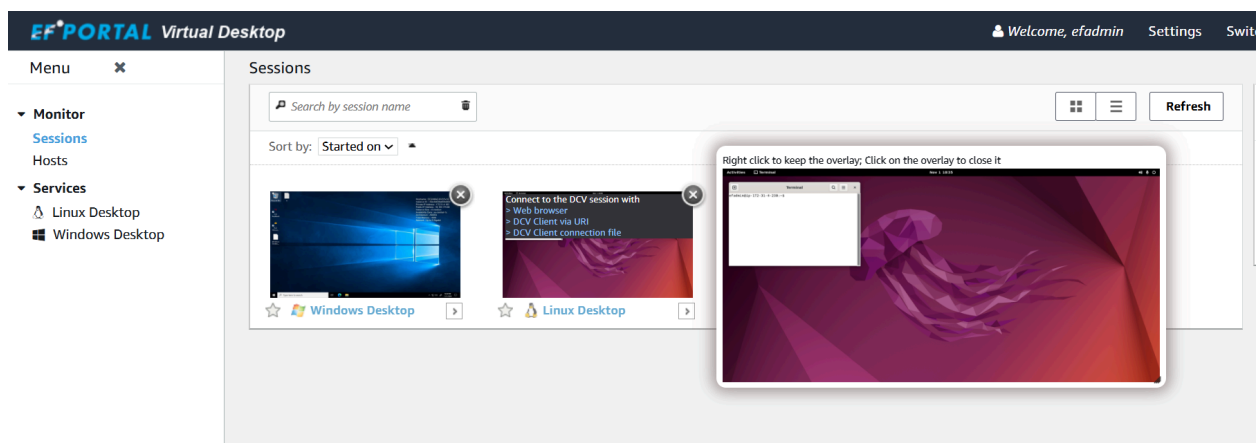


## EF Views Session Management

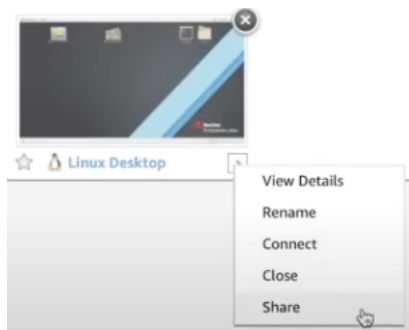
### How to access and work with EF Portal Views VDI

VDI allows users to access a virtual desktop environment hosted on a remote server. This environment replicates a traditional desktop but can be accessed from any device with an internet connection. VDI ensures that users can securely and consistently access their work environment from anywhere.

Menu/Services shows here the two available services for creating interactive desktop sessions. You may select between Linux desktop or Windows desktops depending on the configuration created by the EF Portal administrator.

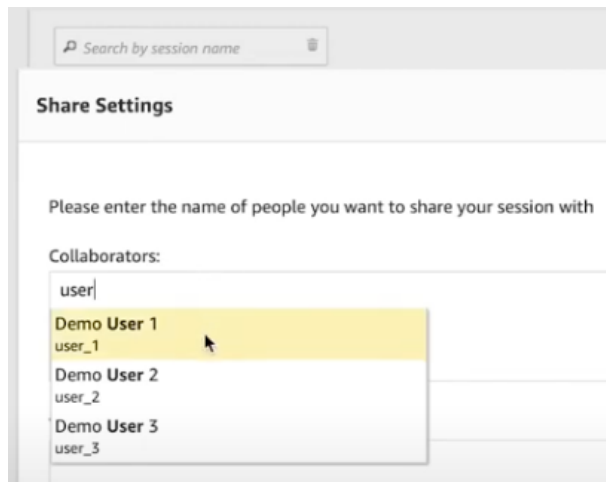


After clicking on the left menu entry for the respective desktop (see configuration options below) the desktop session is started and you can see the Linux (or Windows) session in the sessions



overview as a clickable thumbnail. For connecting to your interactive desktop session, you just have to click onto the thumbnail and the configured access mode will be used - either the web browser window will open or the native client will be started.

The thumbnail is not only clickable but also provides its own menu. The menu shows that we can not only connect or close the session but you can share the session with other users.



As soon as you start to enter a name in the “Collaborators” field you can see that a drop down is available from which you can select the users for which you want to create viewers or collaborators access to your session.

## Configuration options for client access

In the ‘Settings’, you can define the configuration of the viewer type you want to use to connect to a remote session.

Select the default NICE DCV viewer you want to use to connect to a remote session.

- DCV Client via Connection File
- DCV Client via URI
- Browser (open a new browser window)

