SlipStream: Deployments

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9 December 2014

Orsay, France

Deployments

- Building applications and describing their deployments is usually handled by a system administrator and/or developer.

- SlipStream provides the ability to describe VM images in a cloud-independent way and to group nodes into a complete system.

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Simple Time Server Deployment

- The deployment will consist of two nodes:

- Time Server
  - Simple service that serves a web page with the current time.
- Authentication Proxy
  - Proxy for time server that adds basic HTTP authentication to the system.

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Create Root Project

- Create a root project to contain all of your modules.
- Your username is a good default name.

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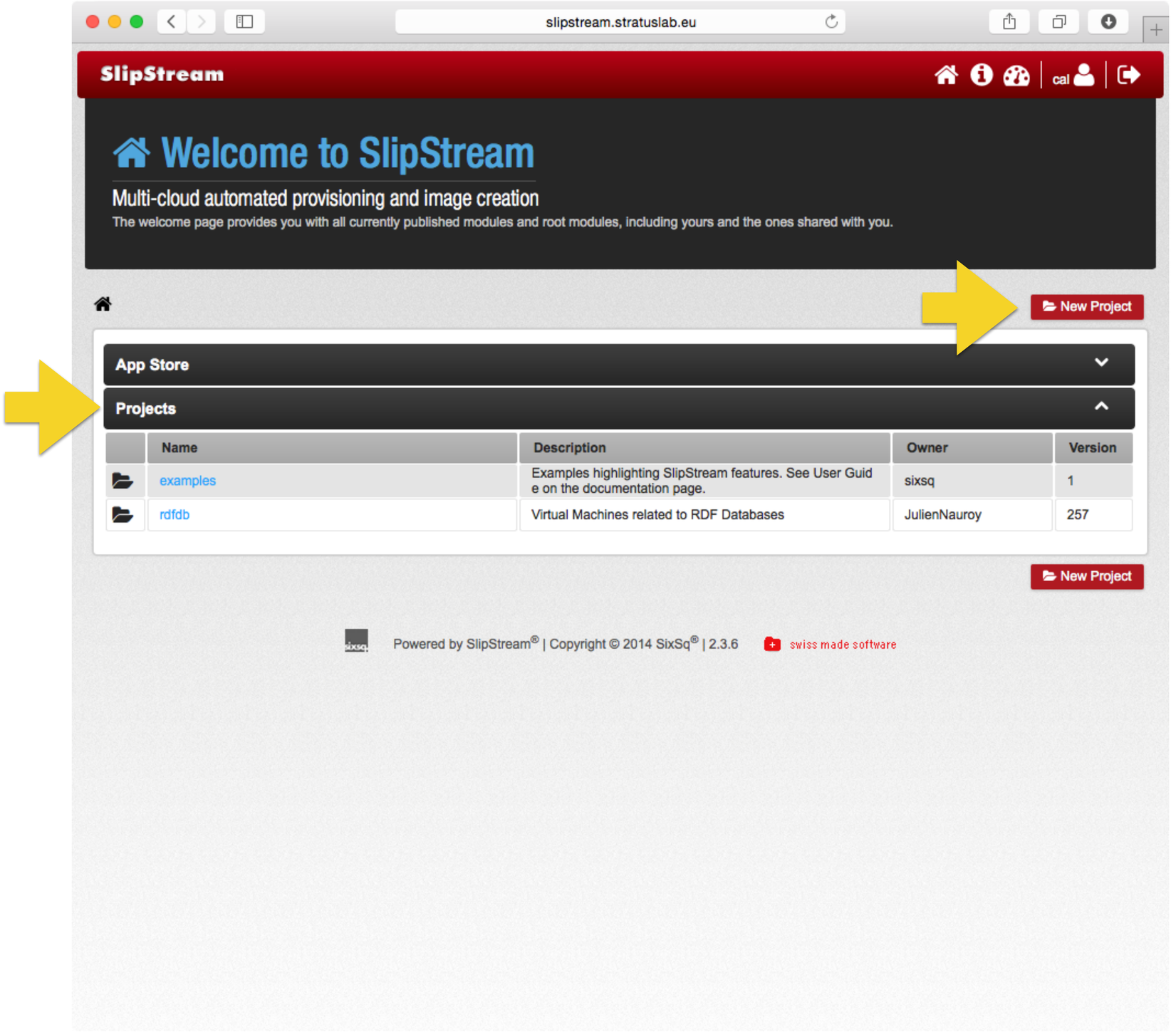
slipstream.stratuslab.eu
SlipStream
cal
Welcome to SlipStream
Multi-cloud automated provisioning and image creation
The welcome page provides you with all currently published modules and root modules, including yours and the ones shared with you.
New Project
App Store
Projects
Name
Description
Owner
Version
examples
Examples highlighting SlipStream features. See User Guide on the documentation page.
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1
rdfdb
Virtual Machines related to RDF Databases
JulienNauroy
257
New Project
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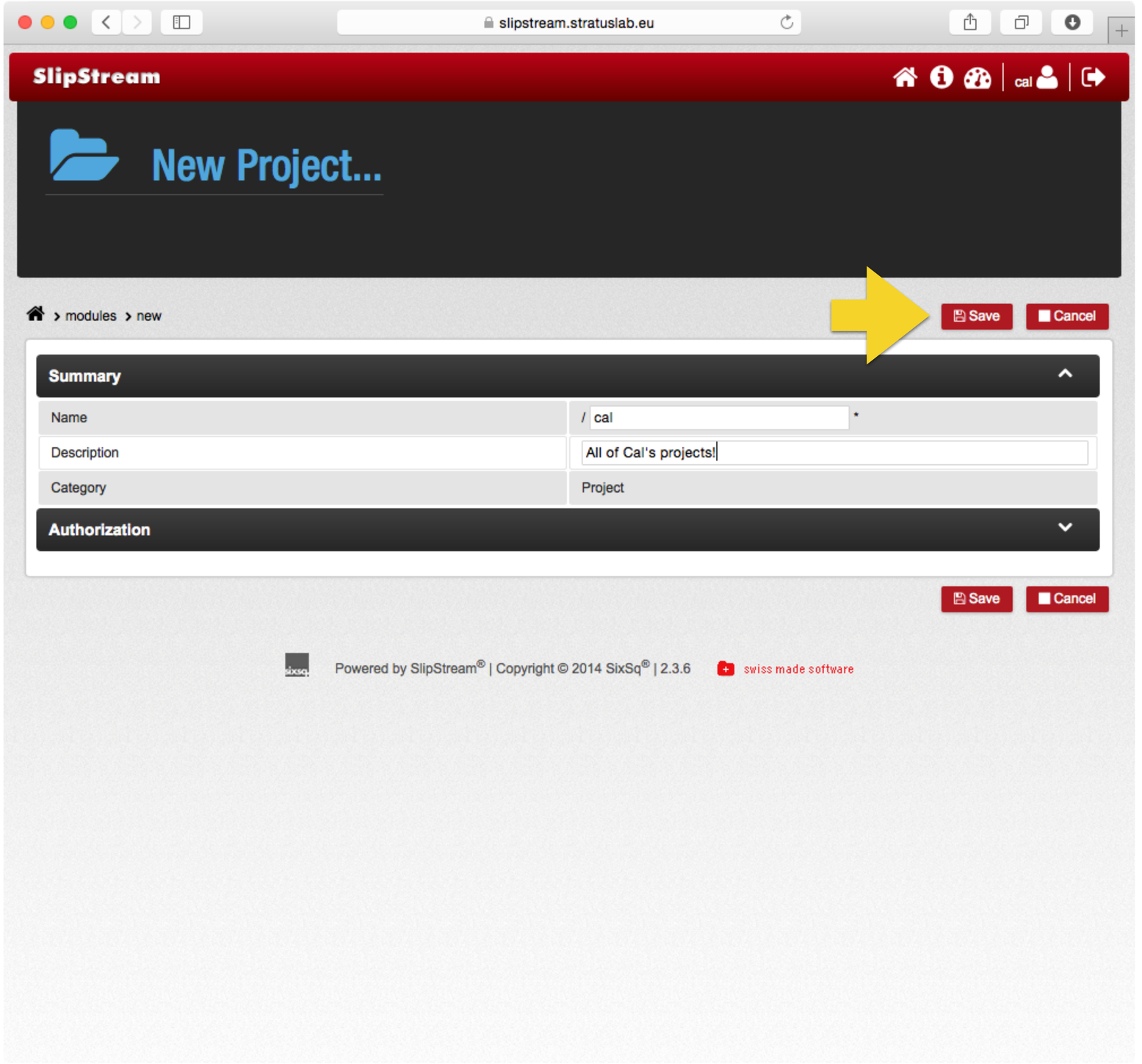
slipstream.stratuslab.eu
SlipStream
cal
New Project...
modules
new
Save
Cancel
Summary
Name
/ cal
*
Description
All of Cal's projects!
Category
Project
Authorization
Save
Cancel
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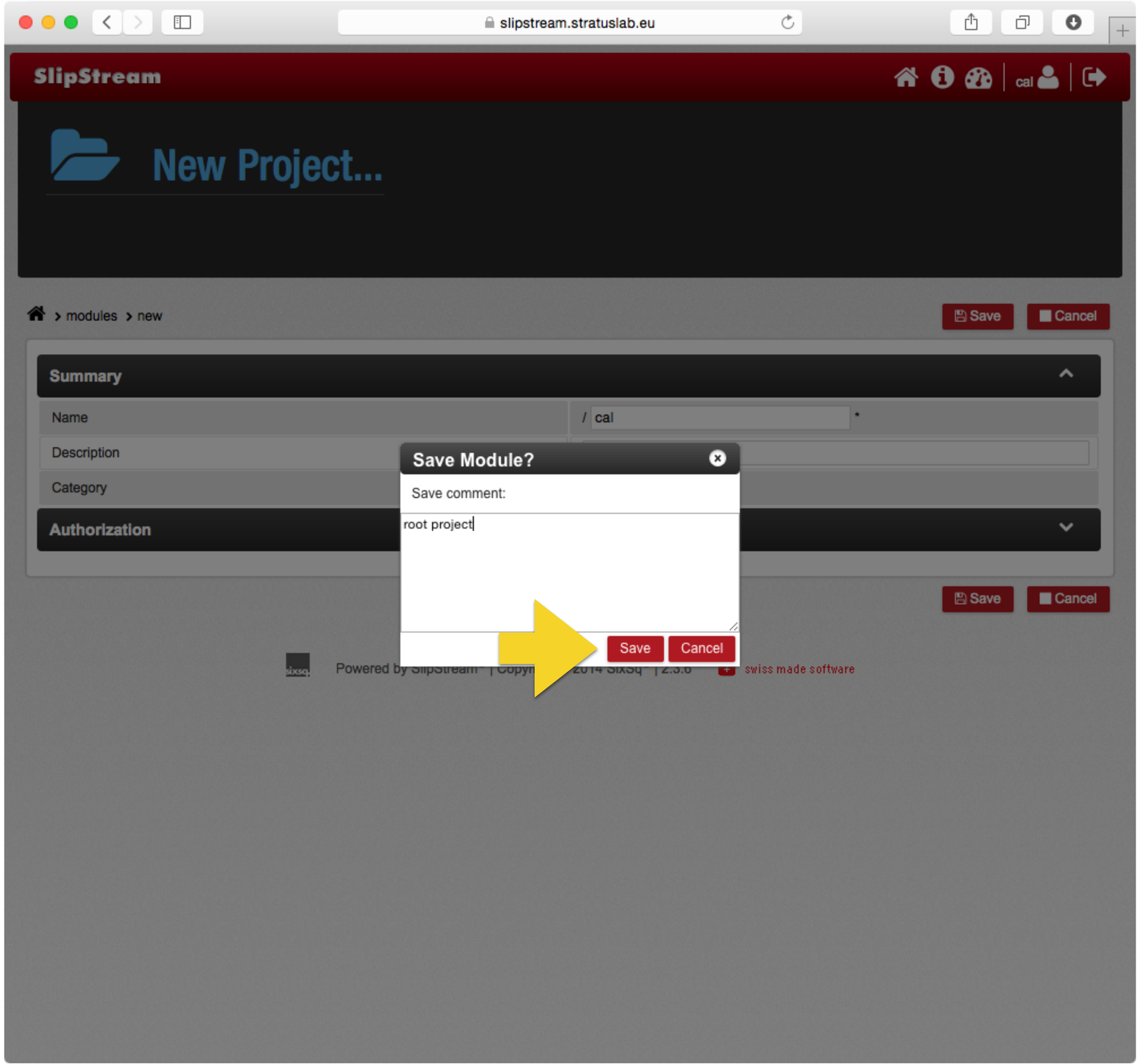
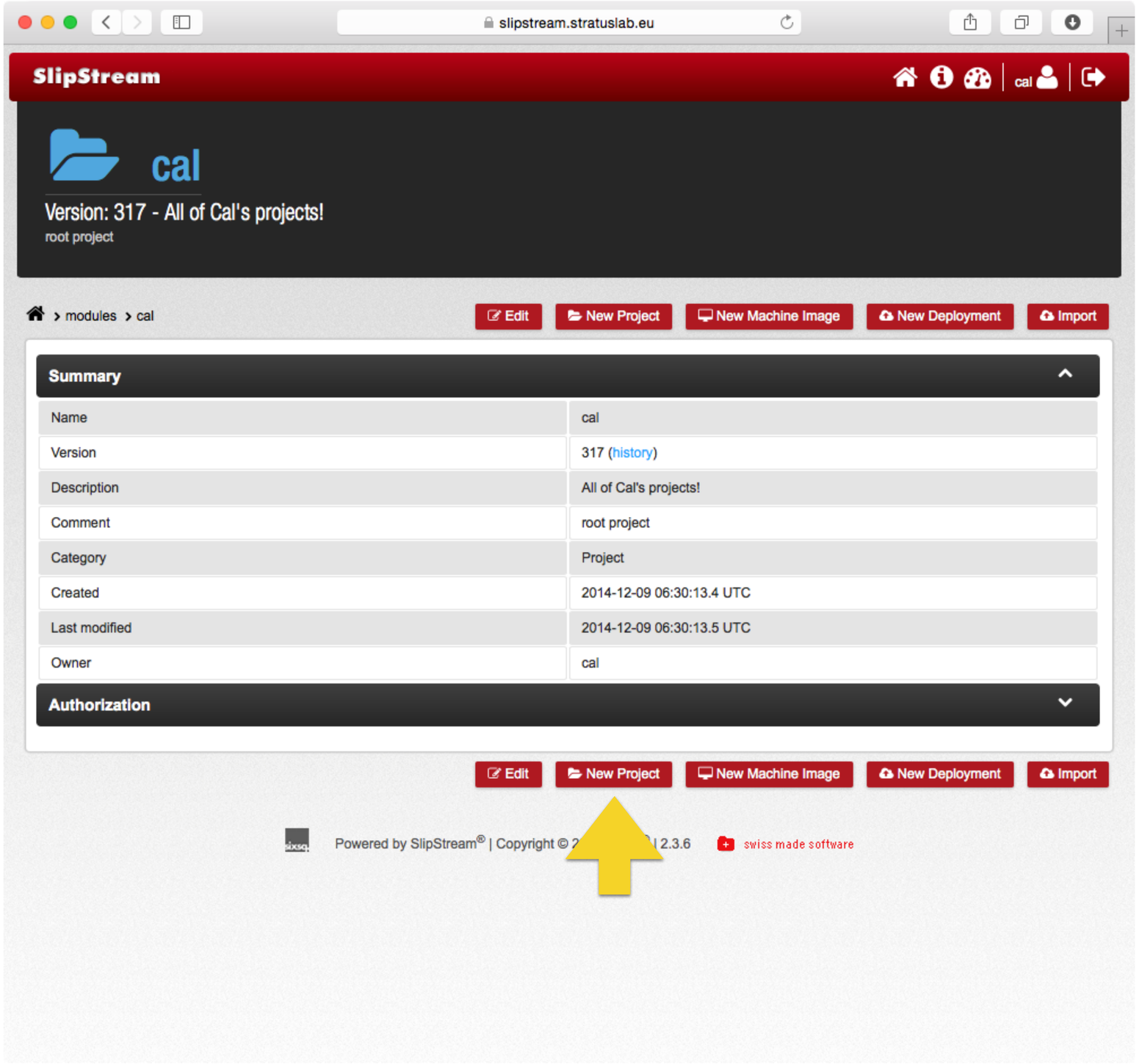

slipstream.stratuslab.eu
SlipStream
cal
New Project...
modules
new
Save
Cancel
Summary
Name
/ cal
*
Description
Category
Authorization
Save Module?
Save comment:
root project
Save
Cancel
Save
Cancel
Powered by SlipStream
swiss made software


slipstream.stratuslab.eu
SlipStream
cal
cal
Version: 317 - All of Cal's projects!
root project
modules
cal
Edit
New Project
New Machine Image
New Deployment
Import
Summary
Name
cal
Version
317 (history)
Description
All of Cal's projects!
Comment
root project
Category
Project
Created
2014-12-09 06:30:13.4 UTC
Last modified
2014-12-09 06:30:13.5 UTC
Owner
cal
Authorization
Edit
New Project
New Machine Image
New Deployment
Import
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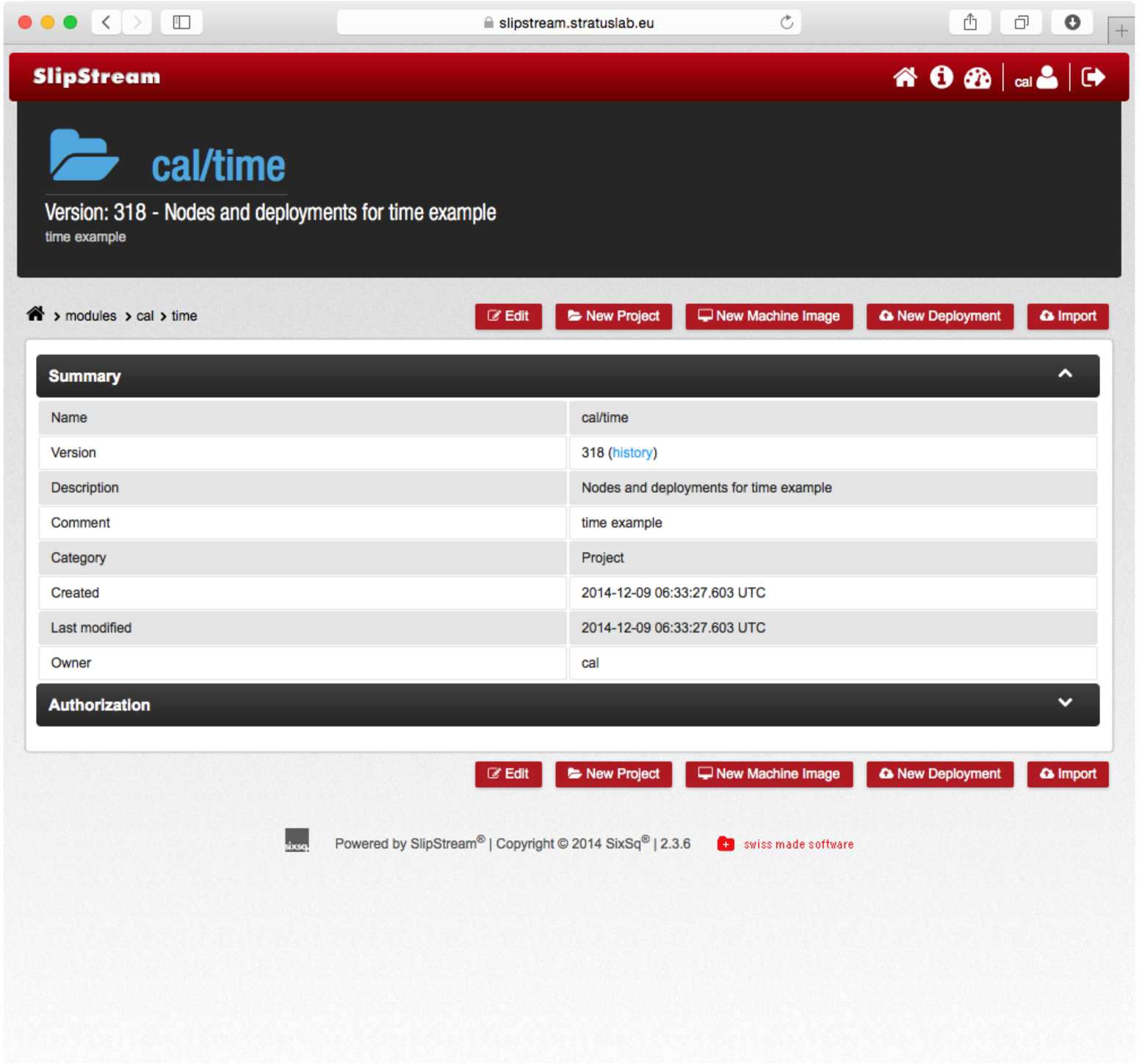
Time Project

- Within your root project, create a “time” project to hold the modules for this tutorial.

- The process is exactly the same as for creating the root project.

- You should have a screenshot like the following after you’ve created the project.


slipstream.stratuslab.eu
SlipStream
cal
cal/time
Version: 318 - Nodes and deployments for time example
time example
modules › cal › time
Edit
New Project
New Machine Image
New Deployment
Import
Summary
Name
cal/time
Version
318 (history)
Description
Nodes and deployments for time example
Comment
time example
Category
Project
Created
2014-12-09 06:33:27.603 UTC
Last modified
2014-12-09 06:33:27.603 UTC
Owner
cal
Authorization
Edit
New Project
New Machine Image
New Deployment
Import
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Create Time Server Image

- Create a time server image called “time-image” to hold the configuration for the time server.

- This machine will have nginx (a web server) installed and then configured to serve a page with the current time.

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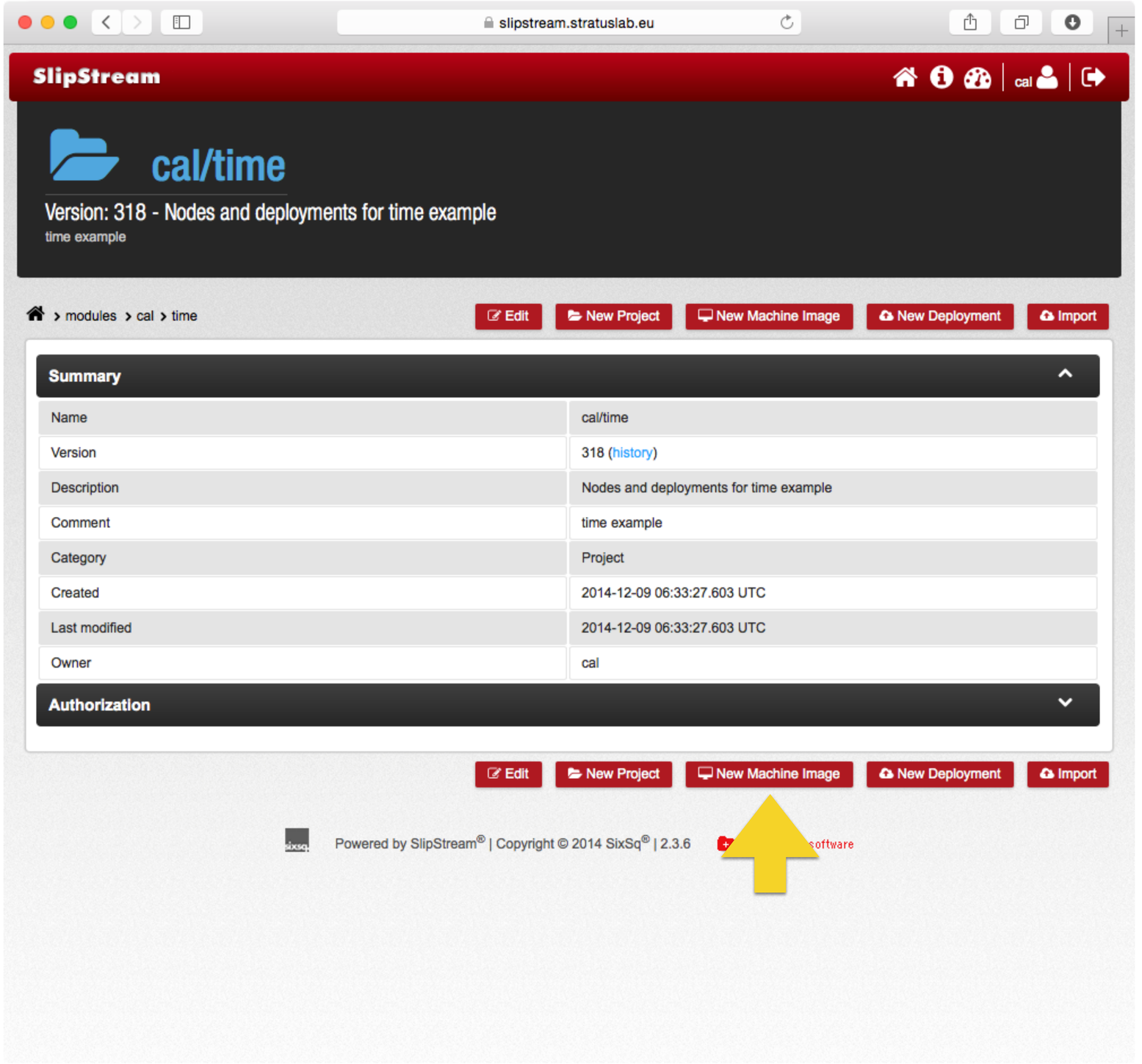
slipstream.stratuslab.eu
SlipStream
cal
cal/time
Version: 318 - Nodes and deployments for time example
time example
modules › cal › time
Edit
New Project
New Machine Image
New Deployment
Import
Summary
Name
cal/time
Version
318 (history)
Description
Nodes and deployments for time example
Comment
time example
Category
Project
Created
2014-12-09 06:33:27.603 UTC
Last modified
2014-12-09 06:33:27.603 UTC
Owner
cal
Authorization
Edit
New Project
New Machine Image
New Deployment
Import
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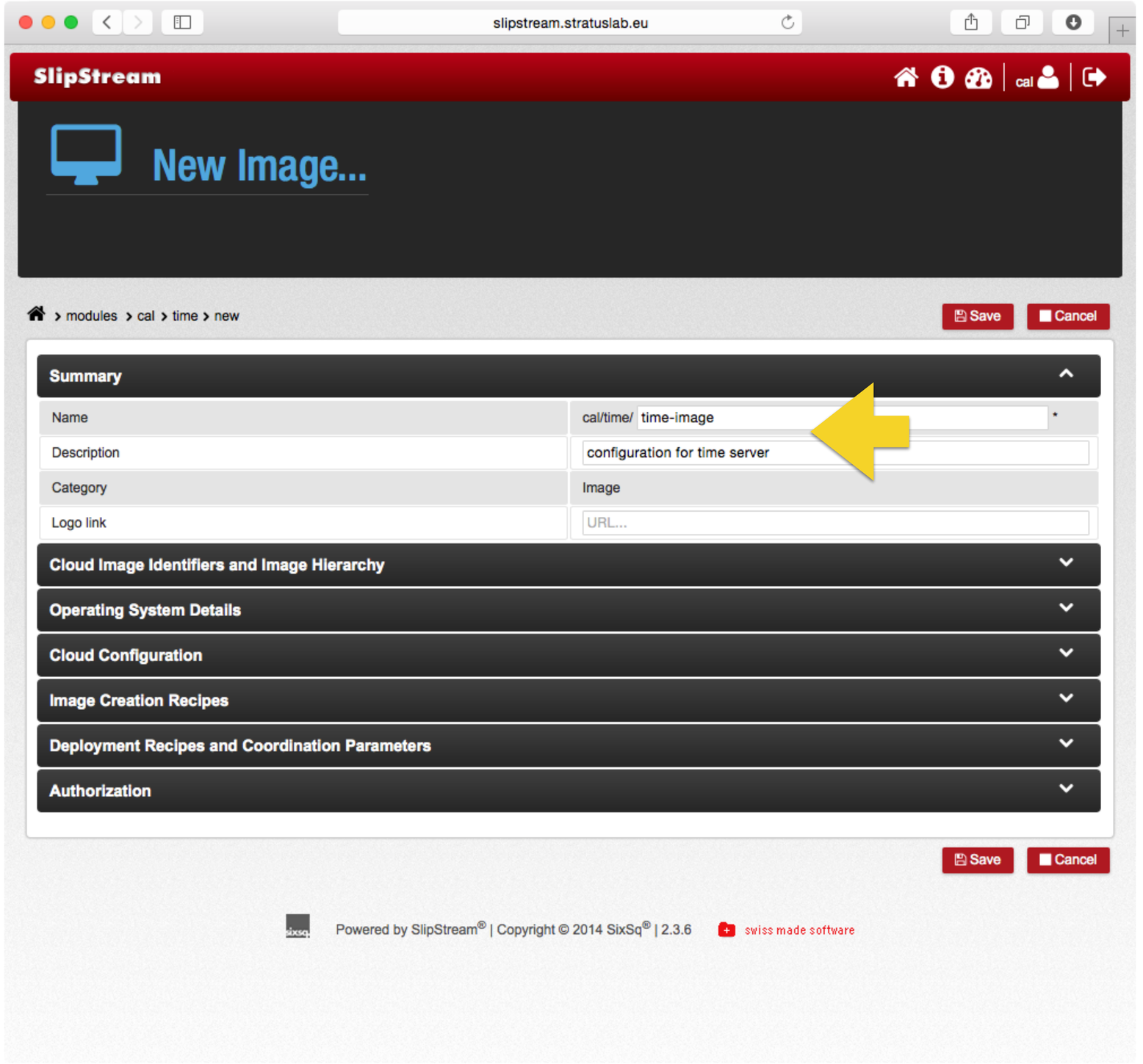
slipstream.stratuslab.eu
SlipStream
cal
New Image...
modules › cal › time › new
Save
Cancel
Summary
Name
cal/time/ time-image
Description
configuration for time server
Category
Image
Logo link
URL...
Cloud Image Identifiers and Image Hierarchy
Operating System Details
Cloud Configuration
Image Creation Recipes
Deployment Recipes and Coordination Parameters
Authorization
Save
Cancel
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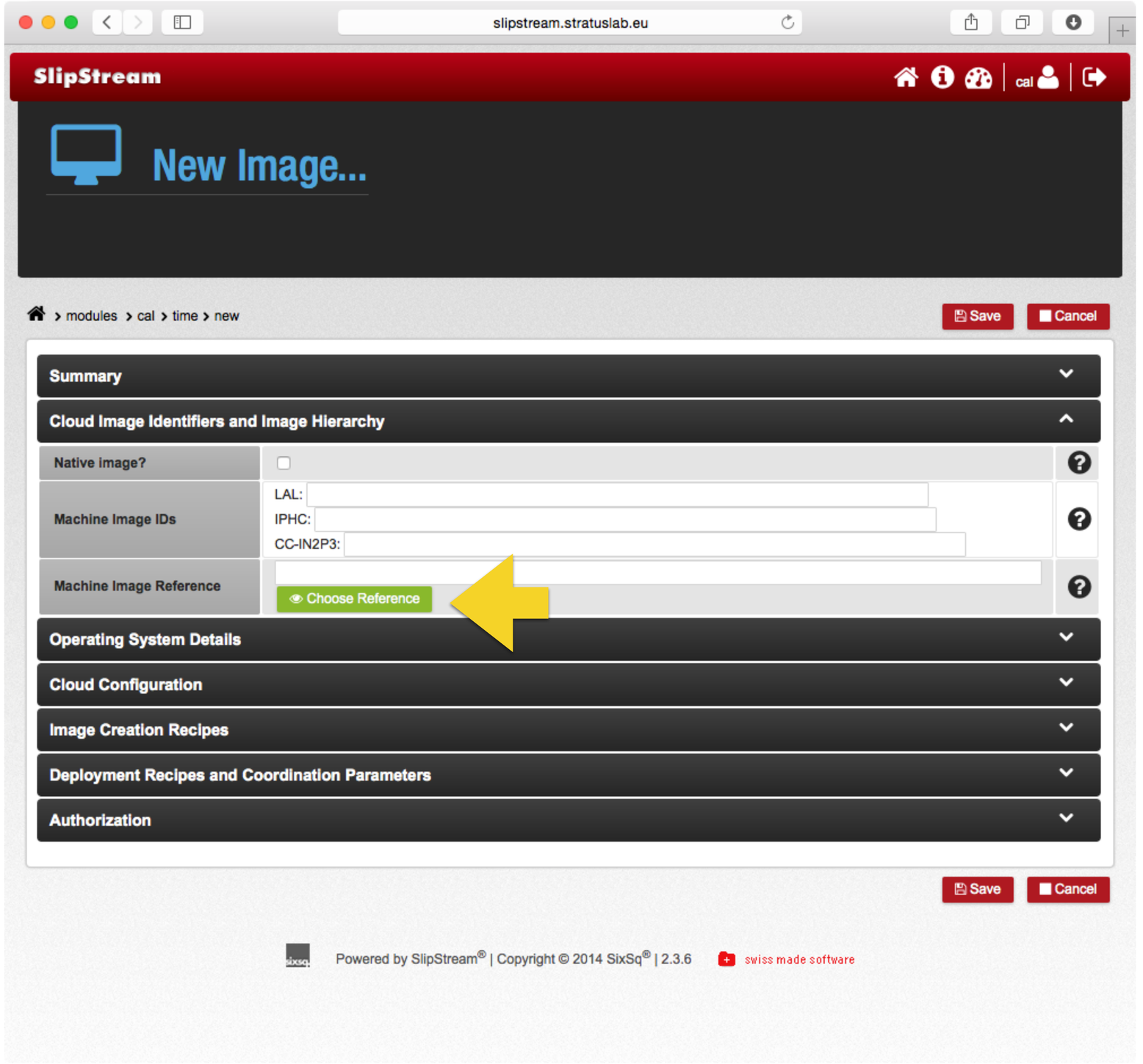
slipstream.stratuslab.eu
SlipStream
cal
New Image...
modules
cal
time
new
Save
Cancel
Summary
Cloud Image Identifiers and Image Hierarchy
Native image?
Machine Image IDs
LAL:
IPHC:
CC-IN2P3:
Machine Image Reference
Choose Reference
Operating System Details
Cloud Configuration
Image Creation Recipes
Deployment Recipes and Coordination Parameters
Authorization
Save
Cancel
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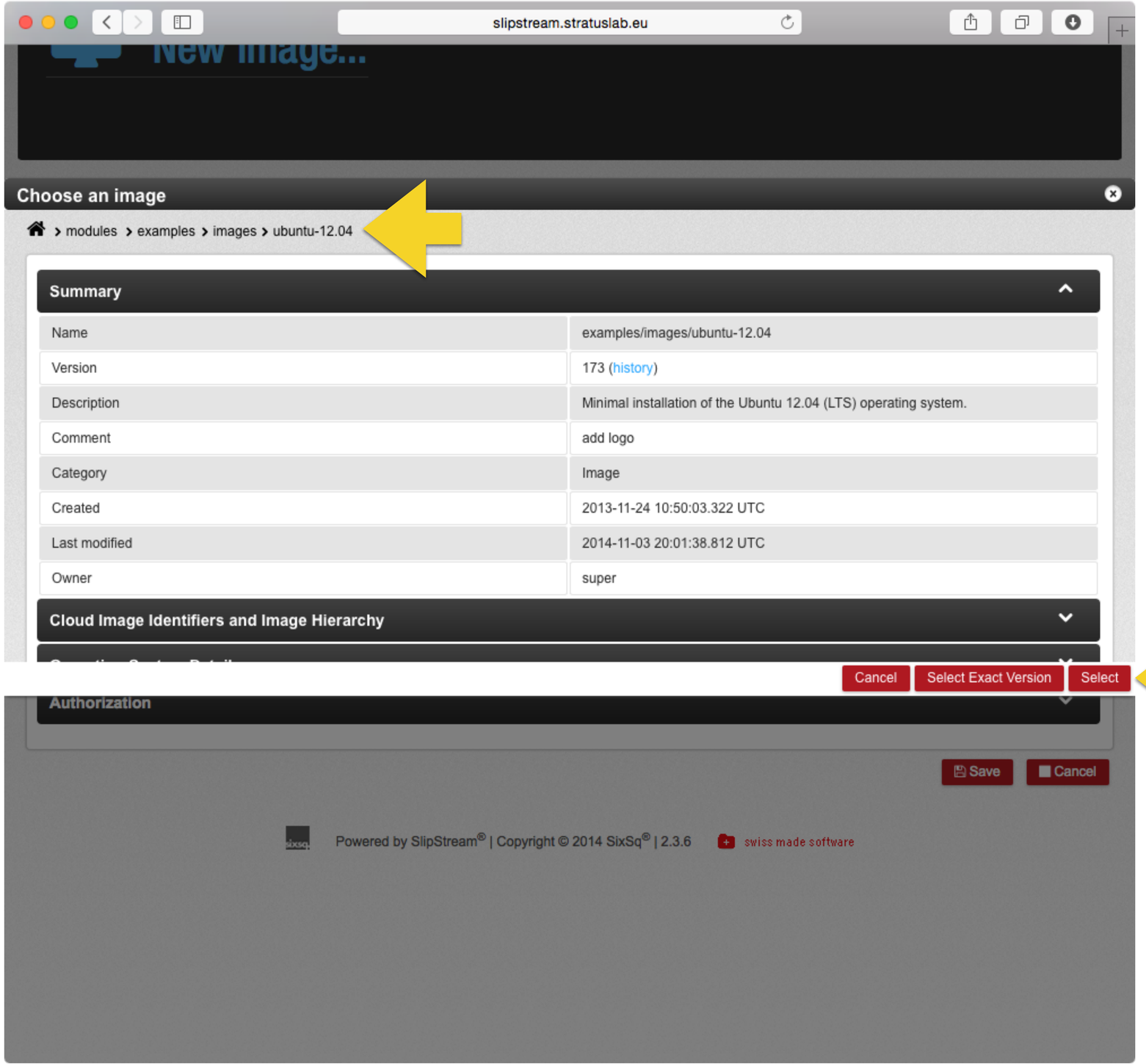
slipstream.stratuslab.eu
Choose an image
modules › examples › images › ubuntu-12.04
Summary
Name
examples/images/ubuntu-12.04
Version
173 (history)
Description
Minimal installation of the Ubuntu 12.04 (LTS) operating system.
Comment
add logo
Category
Image
Created
2013-11-24 10:50:03.322 UTC
Last modified
2014-11-03 20:01:38.812 UTC
Owner
super
Cloud Image Identifiers and Image Hierarchy
Cancel
Select Exact Version
Select
Authorization
Save
Cancel
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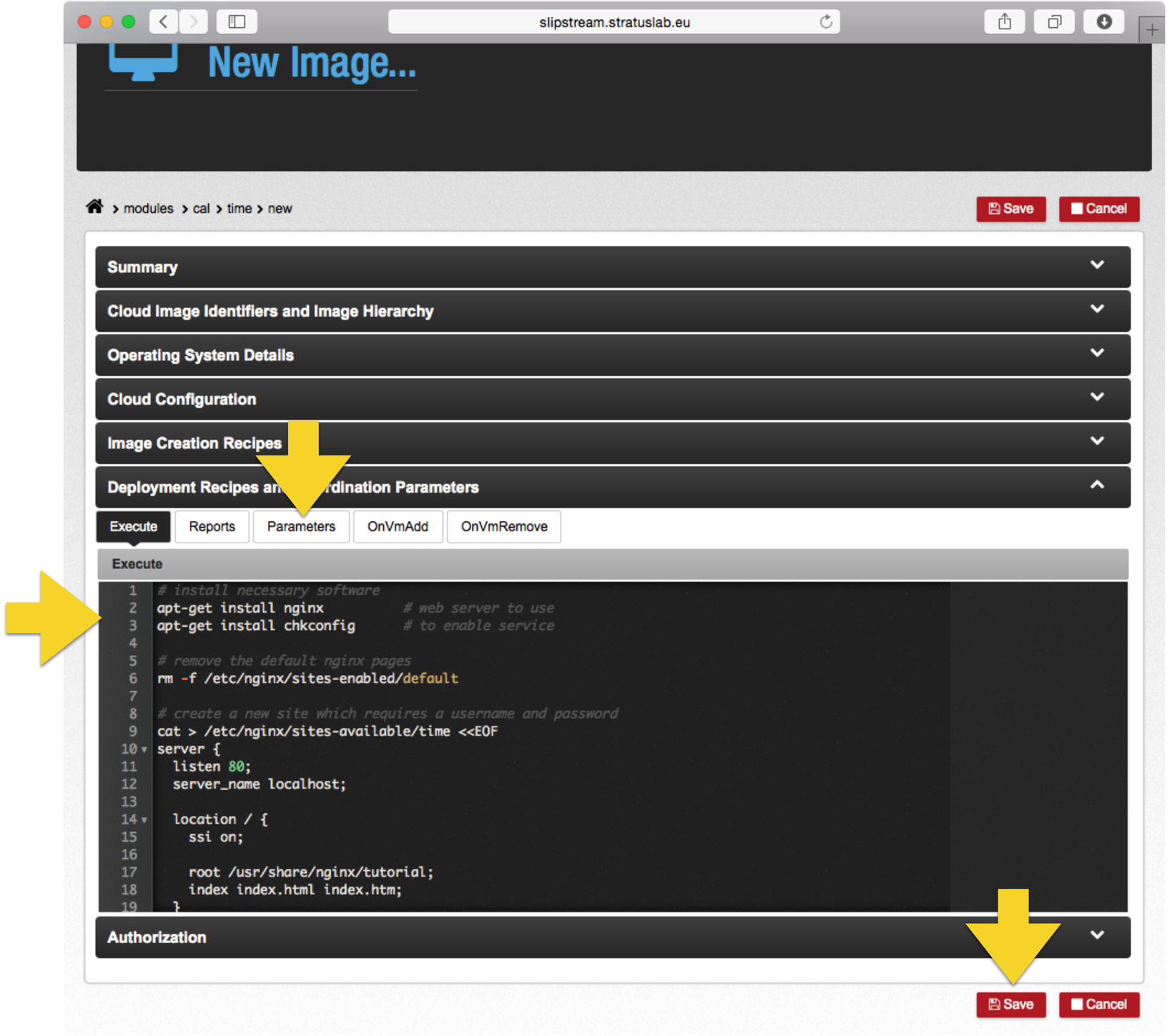

Add “url.time” output parameter!

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Try It!

- As this is a single node deployment, the image itself can be run.

- Click the “Run…” button to start an instance.
- Follow the progress and see if the service works correctly.
- If it doesn’t, check the “Reports” and/or log into the machine to understand what went wrong.

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Runtime Parameters

- For each deployment instance (run), there is a key-value pair database containing the runtime parameters.

- This database can be used to:
  - Pass parameters between different nodes
  - Inform the user of certain values
  - Synchronize actions between nodes

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SlipStream Client Commands

`ss-get`	Retrieves a value from the database, waiting if the value has not been set.
`ss-set`	Sets the value for a given parameter.
`ss-random`	Creates a random string value and optionally sets a parameter to this value.

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Special Parameters

`customstate`	Message to display for node in the SlipStream run display.
`hostname`	Automatically set by SlipStream for each of the nodes in a deployment.
`ss:url.service`	Service URL for the full deployment.
`url.*`	The value of any parameter with this name is rendered as an active link.

Create Authentication Proxy Image

- Create an authentication proxy image called “proxy-image” to hold the configuration for the proxy.

- This machine will have nginx (a web server) installed which will then proxy the web server on the time-image.
- This proxy will also require basic HTTP authentication with a username and password.

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Create Deployment

- The full deployment will have one time server and one authentication proxy.

- The proxy will need the hostname of the time server.
- The proxy must publish the username and password for the valid user in SlipStream.

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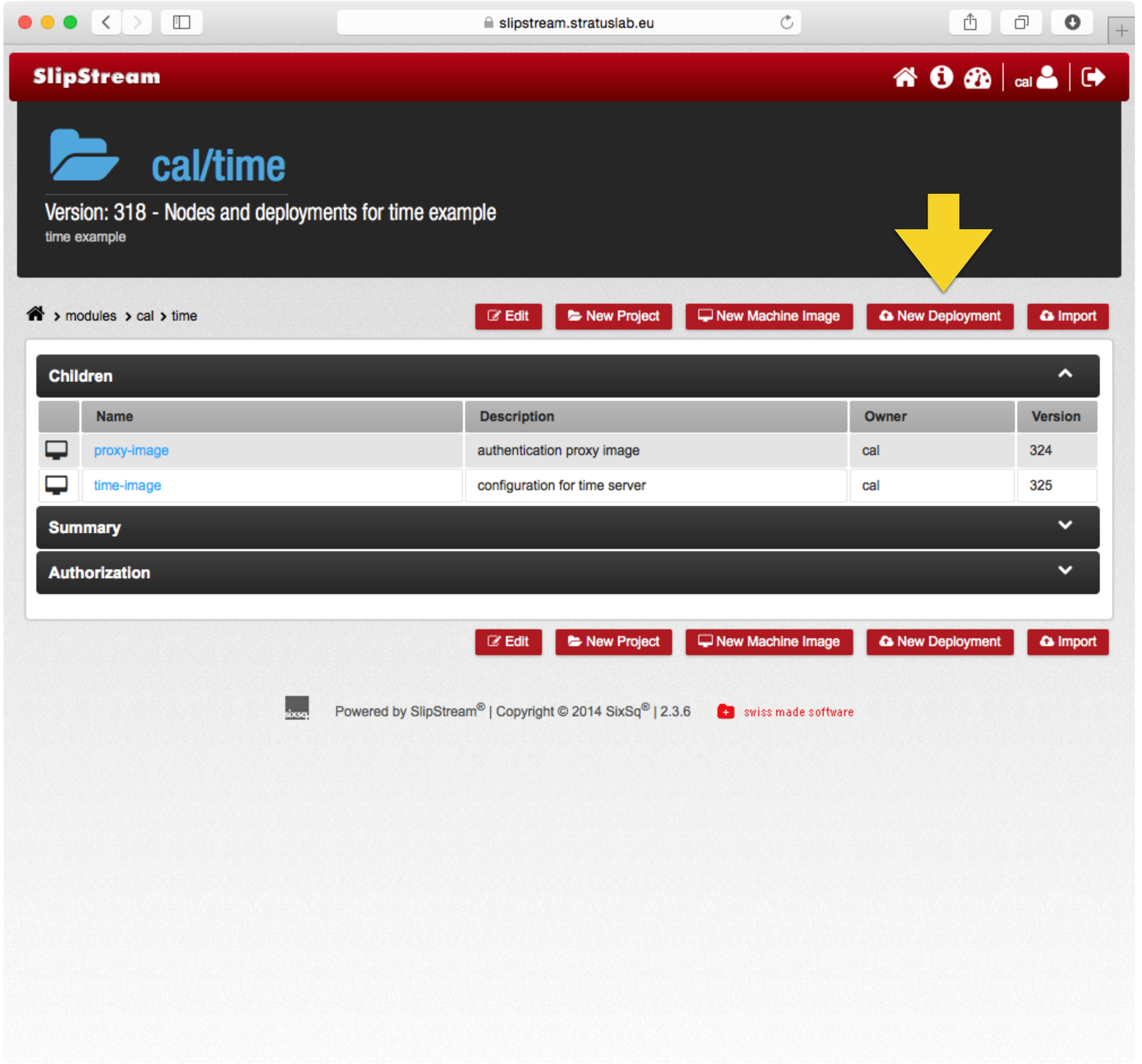
slipstream.stratuslab.eu
SlipStream
cal
cal/time
Version: 318 - Nodes and deployments for time example
time example
modules
cal
time
Edit
New Project
New Machine Image
New Deployment
Import
Children
Name
Description
Owner
Version
proxy-image
authentication proxy image
cal
324
time-image
configuration for time server
cal
325
Summary
Authorization
Edit
New Project
New Machine Image
New Deployment
Import
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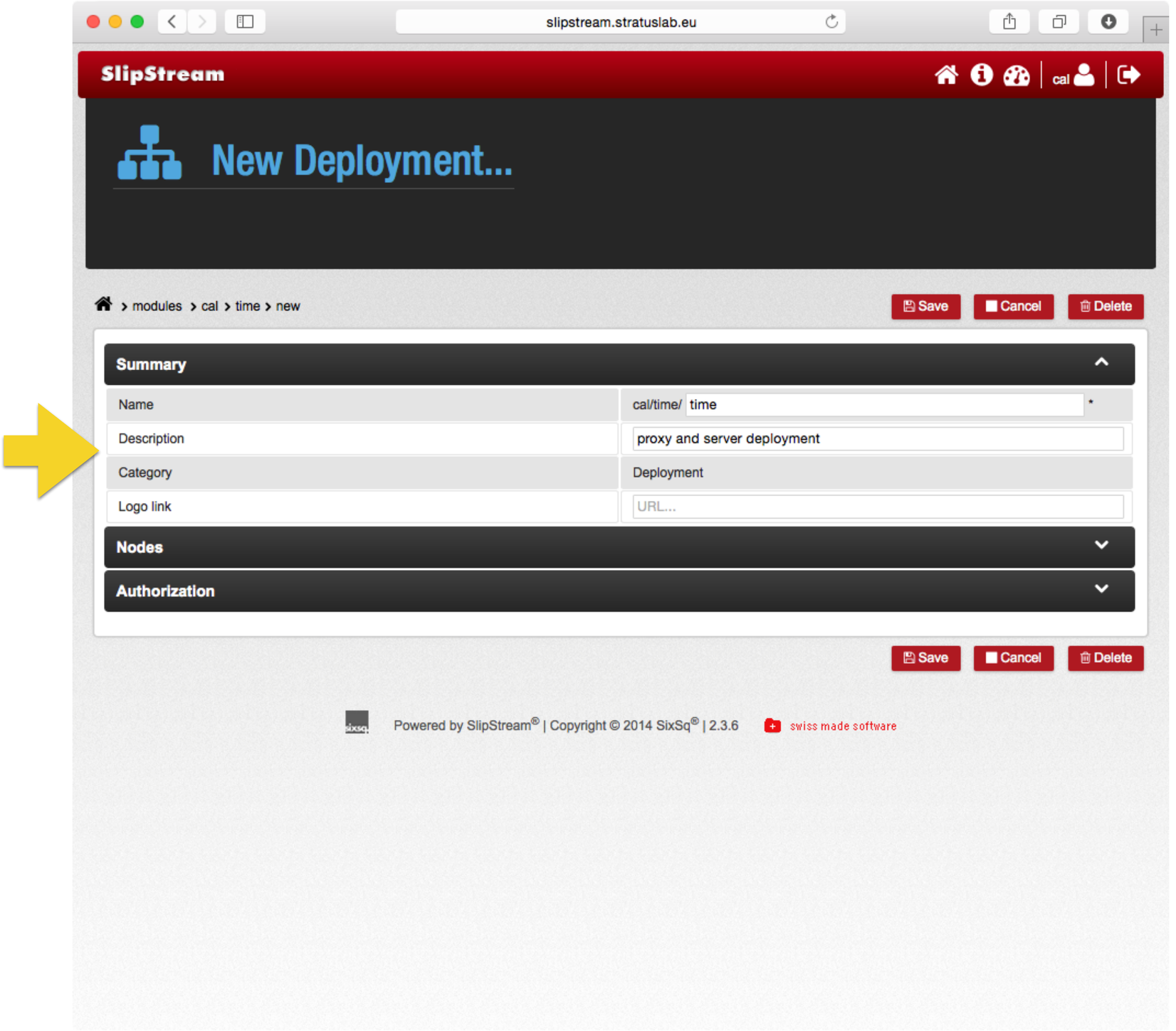
slipstream.stratuslab.eu
SlipStream
cal
New Deployment...
modules › cal › time › new
Save
Cancel
Delete
Summary
Name
cal/time/ time *
Description
proxy and server deployment
Category
Deployment
Logo link
URL...
Nodes
Authorization
Save
Cancel
Delete
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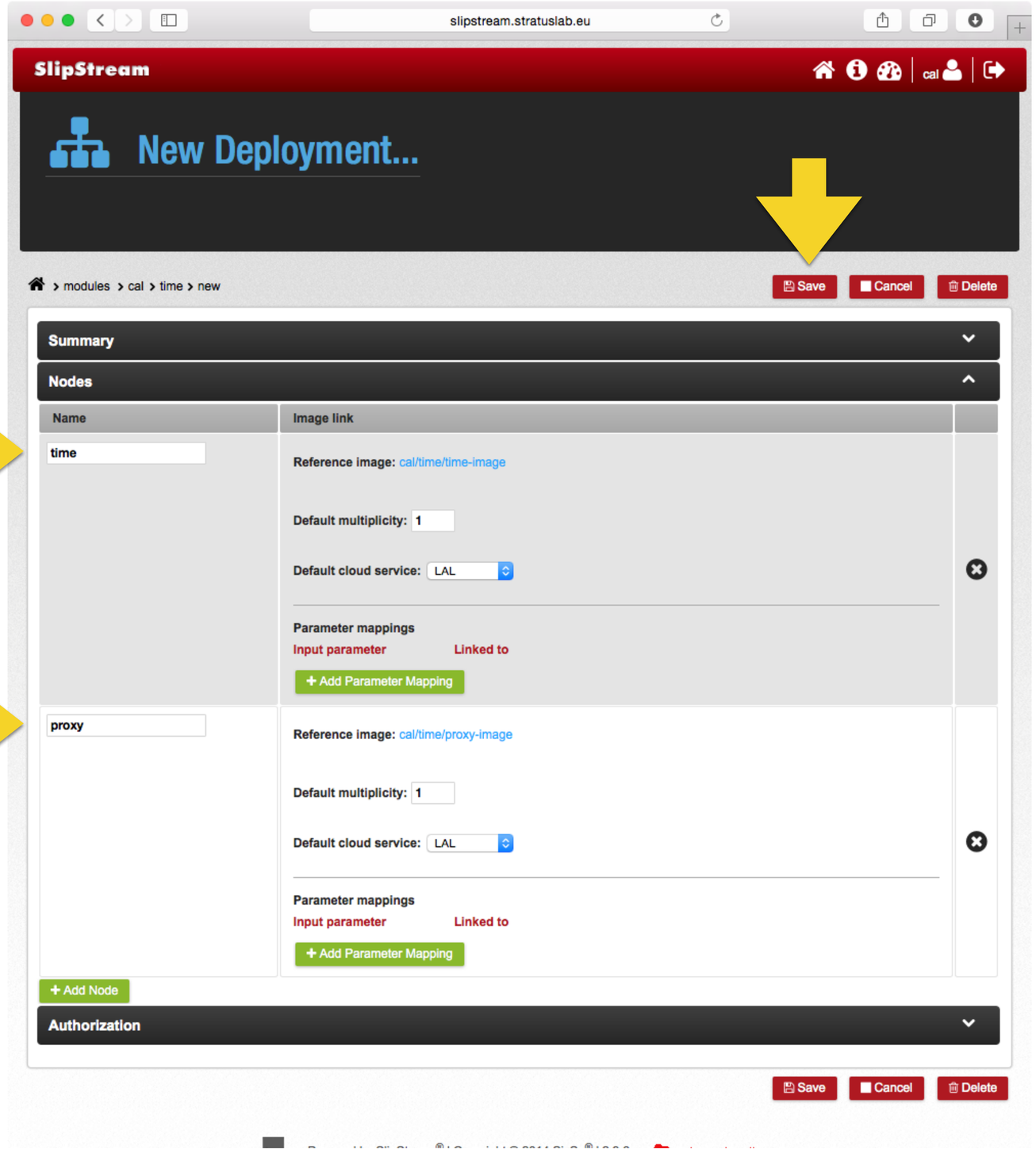
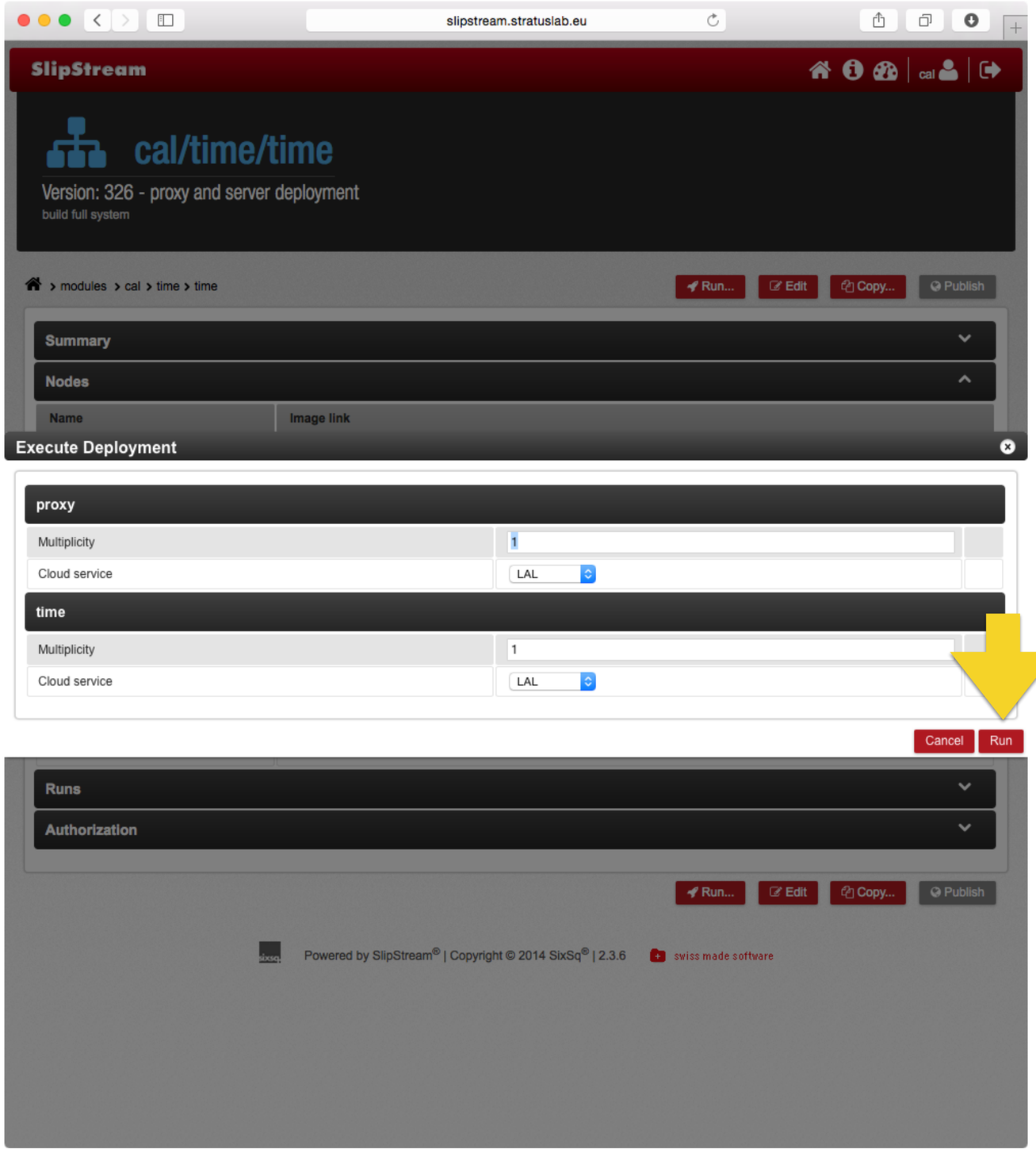
swiss made software


slipstream.stratuslab.eu
SlipStream
cal
New Deployment...
modules › cal › time › new
Save
Cancel
Delete
Summary
Nodes
Name
Image link
time
Reference image: cal/time/time-image
Default multiplicity: 1
Default cloud service: LAL
Parameter mappings
Input parameter
Linked to
+ Add Parameter Mapping
proxy
Reference image: cal/time/proxy-image
Default multiplicity: 1
Default cloud service: LAL
Parameter mappings
Input parameter
Linked to
+ Add Parameter Mapping
+ Add Node
Authorization
Save
Cancel
Delete


slipstream.stratuslab.eu
SlipStream
cal
cal/time/time
Version: 326 - proxy and server deployment
build full system
modules › cal › time › time
Run...
Edit
Copy...
Publish
Summary
Nodes
Name
Image link
Execute Deployment
proxy
Multiplicity
1
Cloud service
LAL
time
Multiplicity
1
Cloud service
LAL
Cancel
Run
Runs
Authorization
Run...
Edit
Copy...
Publish
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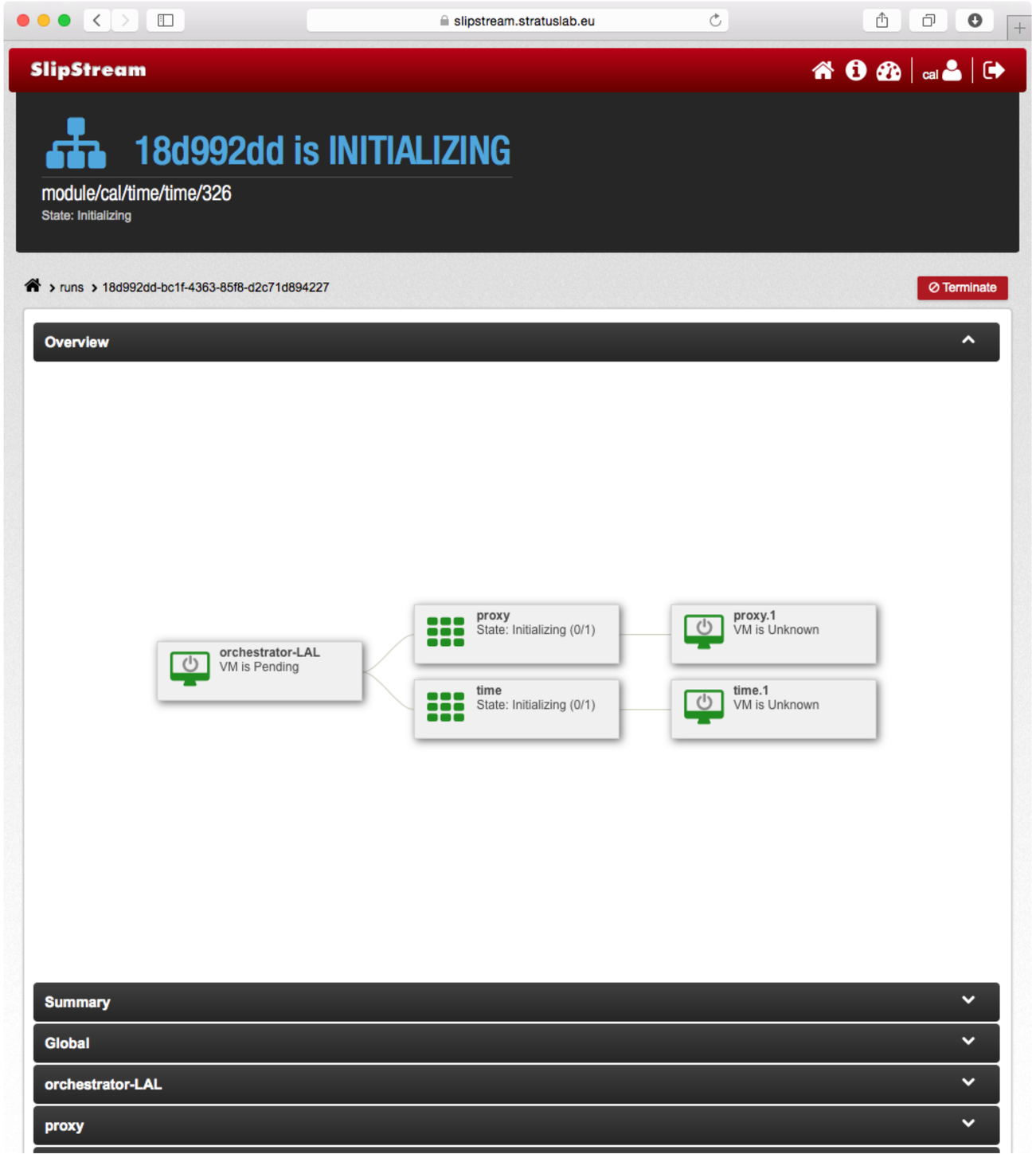
swiss made software


slipstream.stratuslab.eu
SlipStream
cal
18d992dd is INITIALIZING
module/cal/time/time/326
State: Initializing
runs
18d992dd-bc1f-4363-85f8-d2c71d894227
Terminate
Overview
orchestrator-LAL
VM is Pending
proxy
State: Initializing (0/1)
proxy.1
VM is Unknown
time
State: Initializing (0/1)
time.1
VM is Unknown
Summary
Global
orchestrator-LAL
proxy

Orchestrator

- An orchestrator handles the configuration of nodes in multi-node deployments.

- The orchestrator terminates:
  - Terminates if the deployment is not “mutable”
  - Continues if the deployment is “mutable”

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Next Step

- Understanding advanced features and roadmap

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