



BIO-PORTAL

Simplified Cloud Portal for First-time Users

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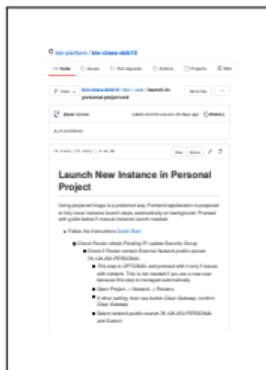
CESNET

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- Many users access the cloud with a single appliance in mind
- Horizon (openstack GUI) is too complex – especially for newbies
- Even worse, openstack lacks the concept of *templating*
- Numerous minor steps (or at least checks) must be taken (and understood) before instantiating a VM
 - Choose the right project
 - Choose the right image
 - For custom or community images this cannot even be done in Horizon
 - Reserve and assign a public IP address
 - Assign (possibly even generate) an SSH key pair
 - Choose (or at least confirm) network
 - Edit metadata
 - Copy and paste or even modify the `cloud-init` script
 - ...

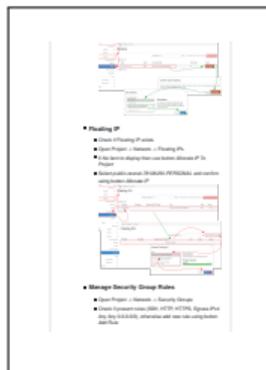




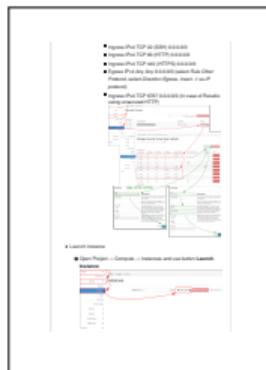
Launch New Instance in Personal Project

Using pre-installed images to provision any Amazon EC2 instance is supported in this tool. However, you must also understand the background. Please see [this link](#) for more details on how to launch an instance.

- Click on the **Launch** button
- Click **Launch** button **Flighting IP** under **Security Group**
- Click **Launch** button **Amazon Linux AMI**
- The image is **AMI** (Amazon Machine Image) and must be in the same region as the instance. There is no support for cross-region AMIs. (AMI ID is **ami-31587433**)
- Click **Project** **Personal** **Project**
- Click **Launch** button **Amazon Linux AMI** under **Amazon Linux AMI**
- Click **Launch** button **Amazon Linux AMI** under **Amazon Linux AMI**



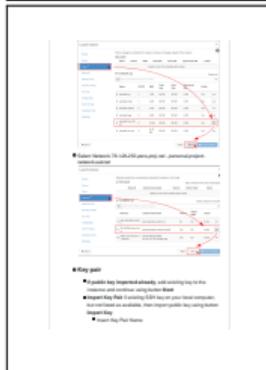
- Flighting IP**
 - Click **Flighting IP** button
 - Click **Project** **Personal** **Project**
 - Click **Launch** button **Amazon Linux AMI** under **Amazon Linux AMI**
 - Click **Launch** button **Amazon Linux AMI** under **Amazon Linux AMI**
- Storage Security Group Rules**
 - Click **Project** **Personal** **Project**
 - Click **Launch** button **Amazon Linux AMI** under **Amazon Linux AMI**
 - Click **Launch** button **Amazon Linux AMI** under **Amazon Linux AMI**



- Launch Instance**
 - Click **Project** **Personal** **Project**
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- Target first-time, low-scale users
- Start by choosing from supported appliances
- **Wizard style** – only ask for input that is truly necessary
 - Extract attributes from environment or ask
 - Pre-fill options or at least limit choice
 - e.g., choose from 2 suitable VM sizes rather than 10
 - Make suggestions, explain what is going on
- Always prefer the new VM over old ones (old = expendable)
 - Assume user is in a rush
 - “Steal” IP addresses, suggest deletion of resources to free quotas, ...
- Make sure the VM is ready & tell the user what to do next
 - E.g., ssh to this IP address ...



- 1st generation in 2019
- Named for the first bioinformatics use case
 - Custom, isolated, desktop-like environment for non-tech students
 - Originally implemented in OpenNebula
- Supported appliances hard-wired
 - Only single-machine deployments
 - Leave genericity for later \implies more time to think
- Fall back to Horizon for more complicated issues
- <https://bio-portal.metacentrum.cz>



Bioconductor
Deb 9

Bioconductor
Deb 10

Clean
Windows

Clean
Ubuntu

Overview

Limit Summary

Mail = sustr4@cesnet.cz, Name = sustr

Used Free



Floating_ips

Used Free



Instances

Used Free



Cores

Used Free



Ram

Machine name: gw CPUS used: 2 RAM used: 4096MB Image:

- **Comming soon**
- **New backend based on HashiCorp's  Terraform**
 - Makes it easier to accept appliances developed by 3rd parties
 - Enables support for multi-machine deployments
 - Additional pilot use case: *hadoop*
 - Single machine
 - Virtual cluster

- **Comming soon**
- **New generation of the frontend**
 - Applying what we learned about user-friendliness
 - More exceptional situations covered by the wizard
 - Yes, SSH key generation will finally be supported
 - Minimalistic set of features to manage existing VMs
 - Reassign IP addresses (return stolen IPs)
 - Delete machines
 - Appliance organizer – tagging
 - Extra care to avoid mimicking/replacing Horizon
 - ... but still fall back to Horizon for more complicated issues



Dashboard
LOG OUT

Create new instance

+ CREATE UBUNTU
+ CREATE WINDOWS
+ CREATE CUSTOM INSTANCE

Overview

Limits

Floating IPs 0/1



Instances 1/5



Cores 2/10



RAM 16384/25600 MB



Instances

Instance name	Floating IP	Cores	RAM	Action
Bioconductor	None	2	16 GB	⋮



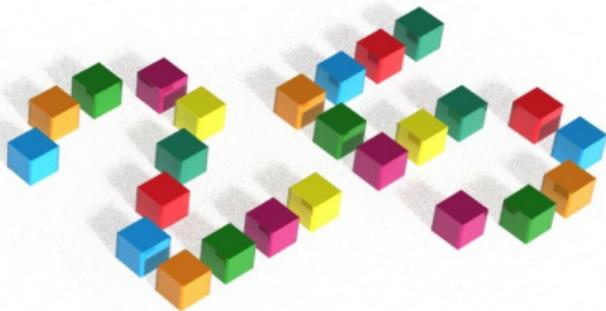
■ Adding new appliances

- Campaign to add numerous bioinformatics appliances
- Hadoop clusters
- Other suggestions appreciated

■ Open to use cases

- Are you preparing an appliance for unskilled users?
- Do you have a course to teach?
- Have you been worrying about having to support your team?

⇒ **The simplified portal might be your answer.**



Questions?

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Thank you for your attention!

