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# LAMP computing

*Release 0.1*

**LAMP**

**Sep 21, 2022**



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Learning and Machine Perception team (**LAMP**) computing resources documentation. To know more about the team, check out the [official page](#).

If you're looking how to use the tunnel, check out [Remote access](#).

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**Note:** This documentation is under development.

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A lot of inspiration has been taken from great cluster documentation out there, e.g., [Princeton Research Computing](#) or the beloved [Aalto Scicomp](#).



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### 1.1 Connecting to the cluster

The main way of connecting to a cluster or any server is through Secure Shell (`ssh`), which is executed via a terminal. Basic terminal skills are assumed here. A couple more complex options have been put in place.

Method	Description	From where?
<i>SSH</i>	Standard way of connecting via command line.	Connections only from University, proxy or VPN networks.
<i>Tunnel</i>	Proxy jump server to make <code>ssh</code> (see above) available from outside again.	Whole internet.
<i>VDI</i>	“Virtual desktop interface”, (Guacamole), from there you can access your in-house machine – connect to servers and run graphical programs.	Whole internet
<i>Web portal</i>	Web-based interface to the cluster. Includes shell access.	Whole internet
<i>VPN</i>	Institutional VPN that will introduce you to the university network. You will be able to connect to servers as if you were inside the center. Third-party client needed.	Whole internet

#### 1.1.1 Getting an account

The cluster obeys CVC account system. In most cases, to use the cluster you must obtain an institutional account by contacting the IT department.

#### 1.1.2 Connecting via SSH

A regular `ssh` command looks like this

```
ssh server.cvc.es

# Using a certain username
ssh username@server.cvc.es

# Using a certain username and port
ssh username@server.cvc.es -p 12345
```

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### CVC configuration

In the CVC, the default port for ssh connections is 22345, so don't forget to specify it in your command.

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If you're inside the university network, domain names can also be used. I.e., if I were to connect to a server I could use the IP address `xxx.xxx.xxx.115` or simply:

```
ssh username@cudaahpc15 -p 22345
```

Check the assigned name of a server in [Resources](#).

You can avoid retyping your password by [setting up your private keys](#).

Even more, with OpenSSH you can make use of your `~/ssh/config` file for a more seamless connection. Check it [here](#) or search online for *ssh config file*.

### 1.1.3 Remote access

If you are outside of the university network and want to connect to a cluster or desktop computer in the CVC, connections are [not longer available](#).

But worry not, an SSH tunnel has been set to enable regular work again. First of all, mail IT services or Héctor ([hlaria@cvc...](mailto:hlaria@cvc...)) for an account.

After that, only one more flag is needed in your ssh command

```
ssh -J tunnel_user@tunnel_ip:22345 username@cudaahpc15 -p 22345
```

and you should be able to work normally.

### 1.1.4 Guacamole portal

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### 1.1.5 Web Service portal

...

### 1.1.6 VPN

...



## 1.2 Data

## 1.3 GPU computing

### 1.3.1 Resources

Node name	Node type	CPU type	Memory Configuration	Ethernet	GPUs	Disks
cud-ahpc03	Supermicro SYS-7048GR-TR	2x6 cores Xeon E5 2620 v3 @ 2.40GHz	128GB 2133	1Gbps	4x RTX 3090 24G	SSD
cud-ahpc06	Supermicro SYS-4029GP-TRT	2x10 cores Xeon Silver 4114 @ 2.20GHz	192GB DDR4-2666	20Gbps	8x A40 45G	SSD
cud-ahpc15	Supermicro SYS-4029GP-TRT2	2x16 cores Xeon Silver 4216 @ 2.10GHz	384GB DDR4-2933	1Gbps	10x RTX 6000 24G	SSD
cud-ahpc38	ASUS X99-E WS/USB 3.1	1x6 cores Xeon E5 1650 v4 @ 3.60GHz	64GB DDR4-2400	1Gbps	4x GTX 1080 Ti 11G	SSD
cud-ahpc39	ASUS X99-E WS	1x6 cores i7 6850K @ 3.60GHz	64GB DDR4-2133	1Gbps	4x GTX 1080 Ti 11G	SSD
cud-ahpc05 (audi)	Supermicro SYS-4028GR-TRT2	2x12 cores Xeon E5 2650 v4 @ 2.20GHz	128GB DDR4-2400	1Gbps	10x TITAN Xp 12G	SSD
cud-ahpc12 (audi)	Supermicro SYS-4029GP-TRT2	2x16 cores Xeon Silver 4216 @ 2.10GHz	384GB DDR4-2933	1Gbps	5x RTX 6000 24G, 5x TITAN Xp 12G	SSD

## 1.4 Recurrent events