
LAMP computing

Release 0.1

LAMP

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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](#).

Note: This documentation is under development.

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 <i>ssh</i> (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
```

CVC configuration

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

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@cudahcp15 -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...`) for an account.

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

```
ssh -J tunnel_user@tunnel_ip:22345 username@cudahcp15 -p 22345
```

and you should be able to work normally.

1.1.4 Guacamole portal

...

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