

Big Data - CentraleDigitalLab@LaPlateforme - 2023-2024

Using MongoDB servers of CentraleSupélec DCE using *dcejs*, *ssh* or *vscode*

Stéphane Vialle

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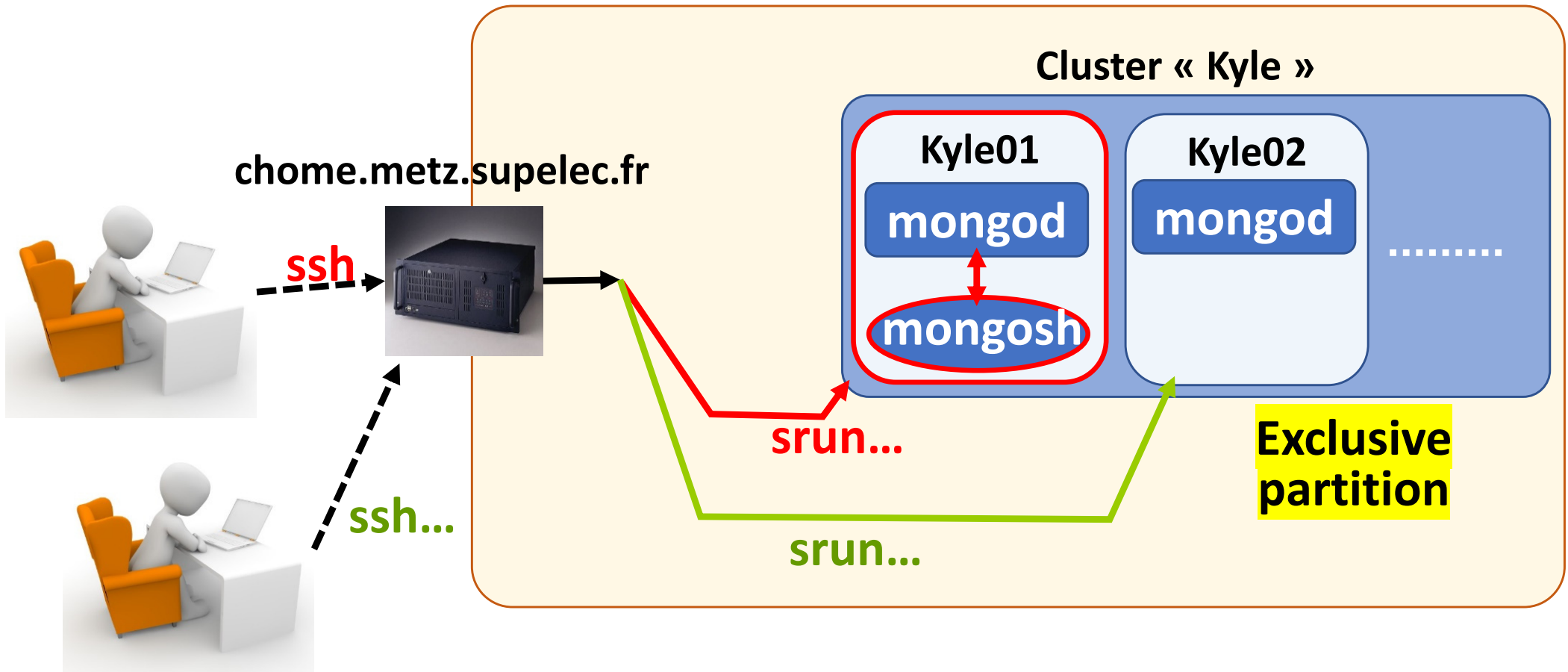
Gianluca Quercini



ÉCOLE DOCTORALE
Sciences et technologies
de l'information
et de la communication (STIC)



CPU clusters

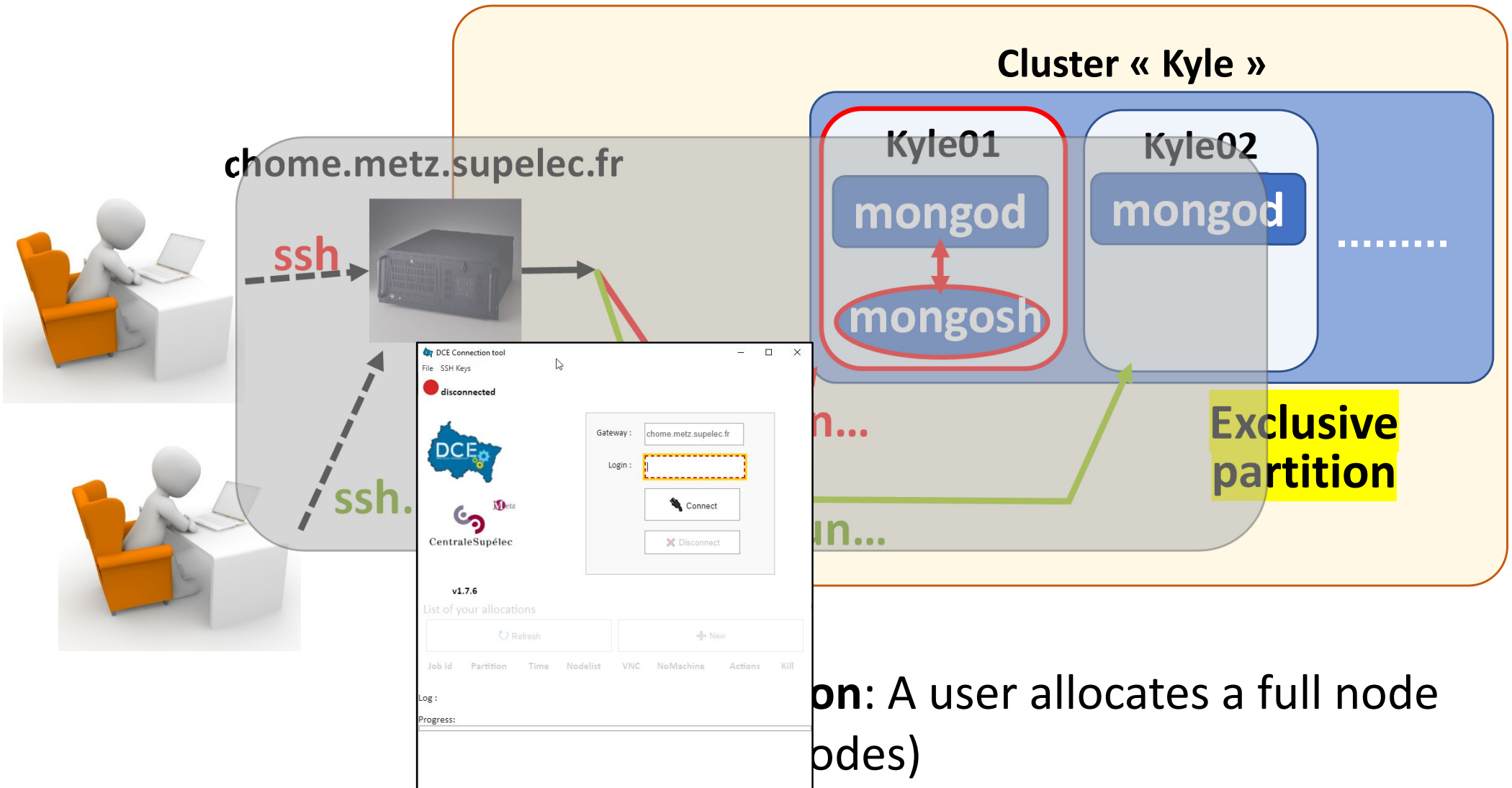


Exclusive partition: A user allocates a full node (or several full nodes)

Using MongoDB servers of CentraleSupélec DCE using *dcejs*, *ssh* or *vscode*

- **Connection to the DCE using *dcejs***
- Connection to the DCE using *ssh*
- Connection using *vscode*

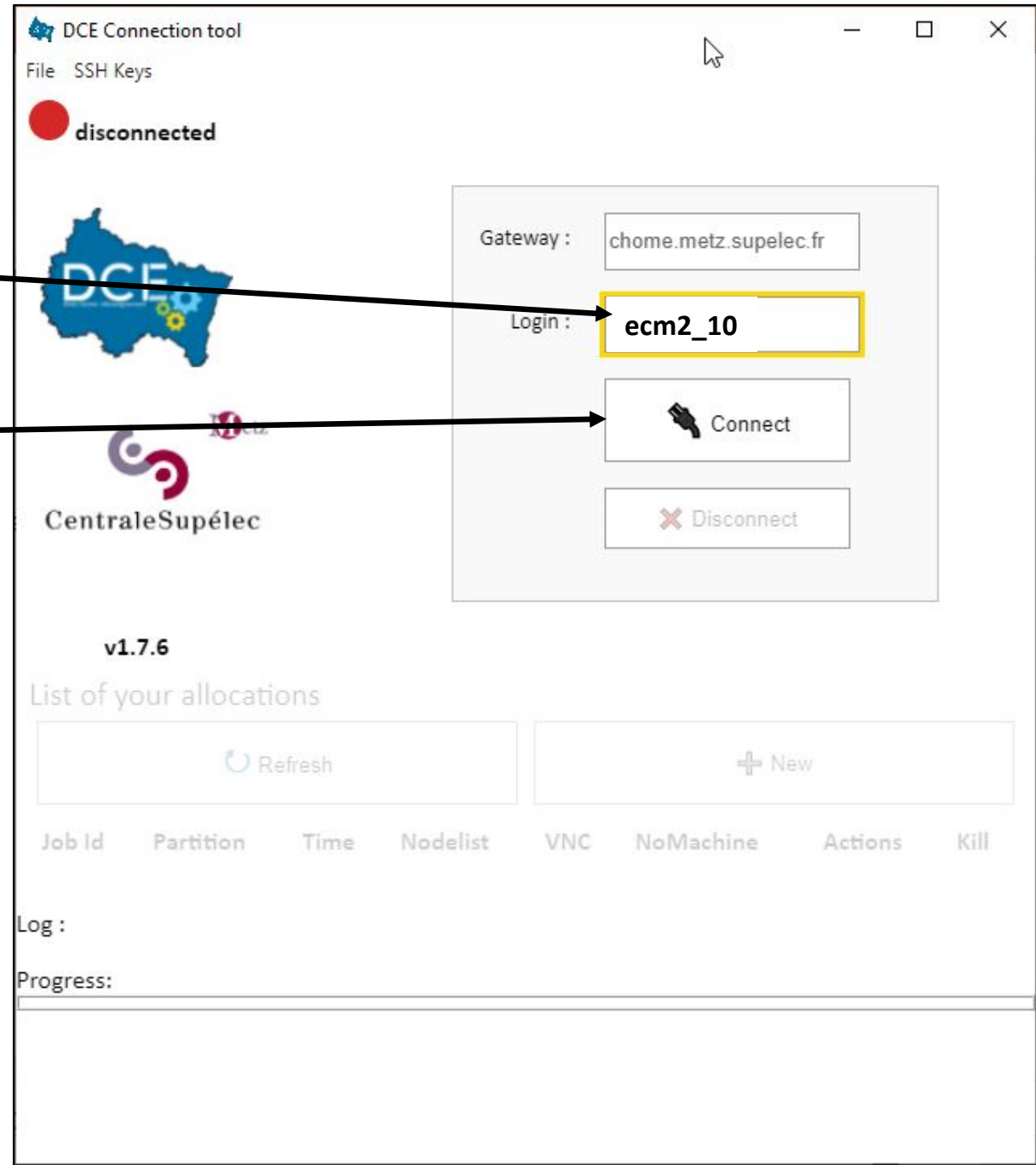
CPU clusters



CPU clusters

1. Launch dcejs

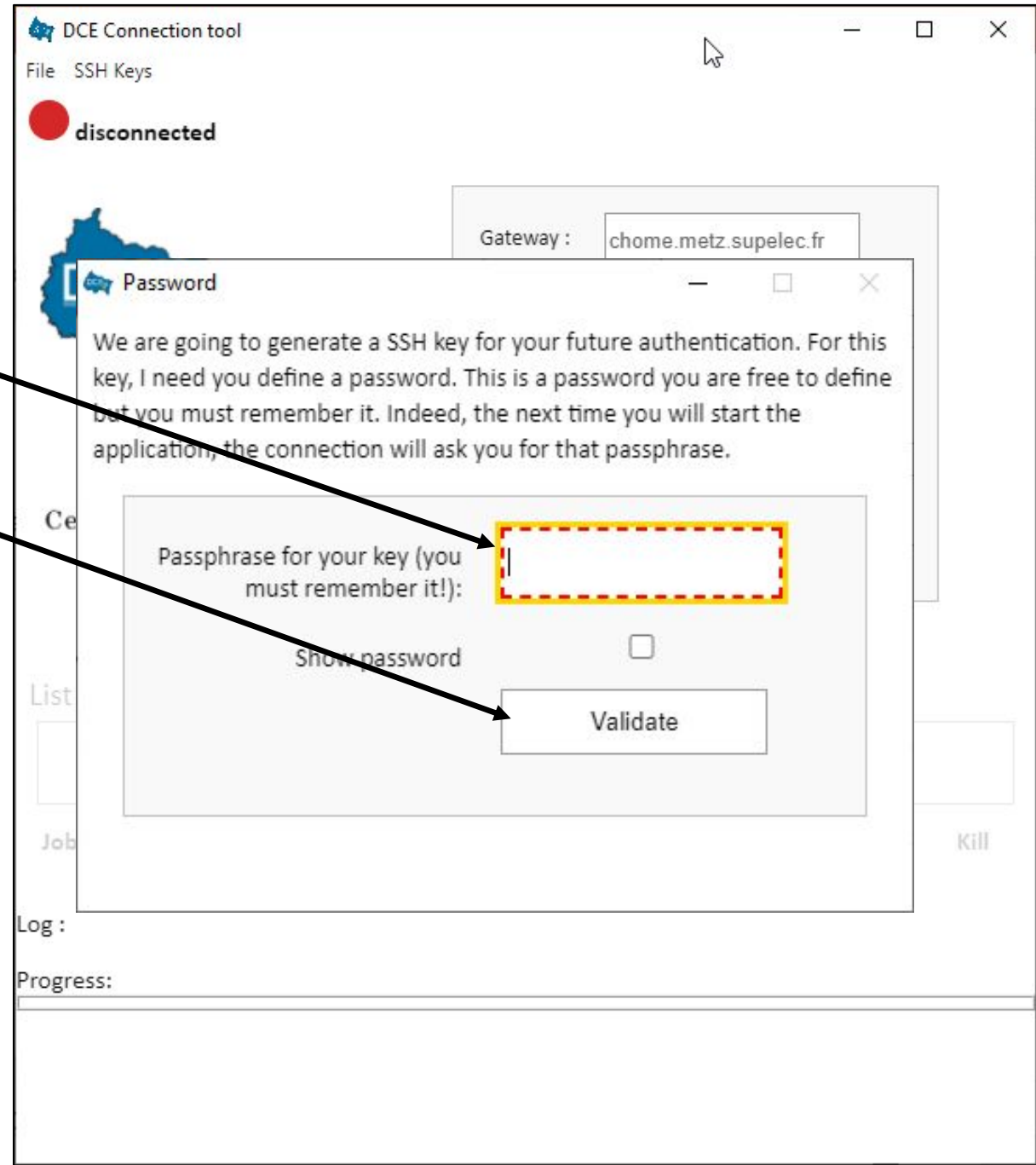
- Write your **ecm1_xx** login
- Click on « Connect »



CPU clusters

2. Launch dcejs

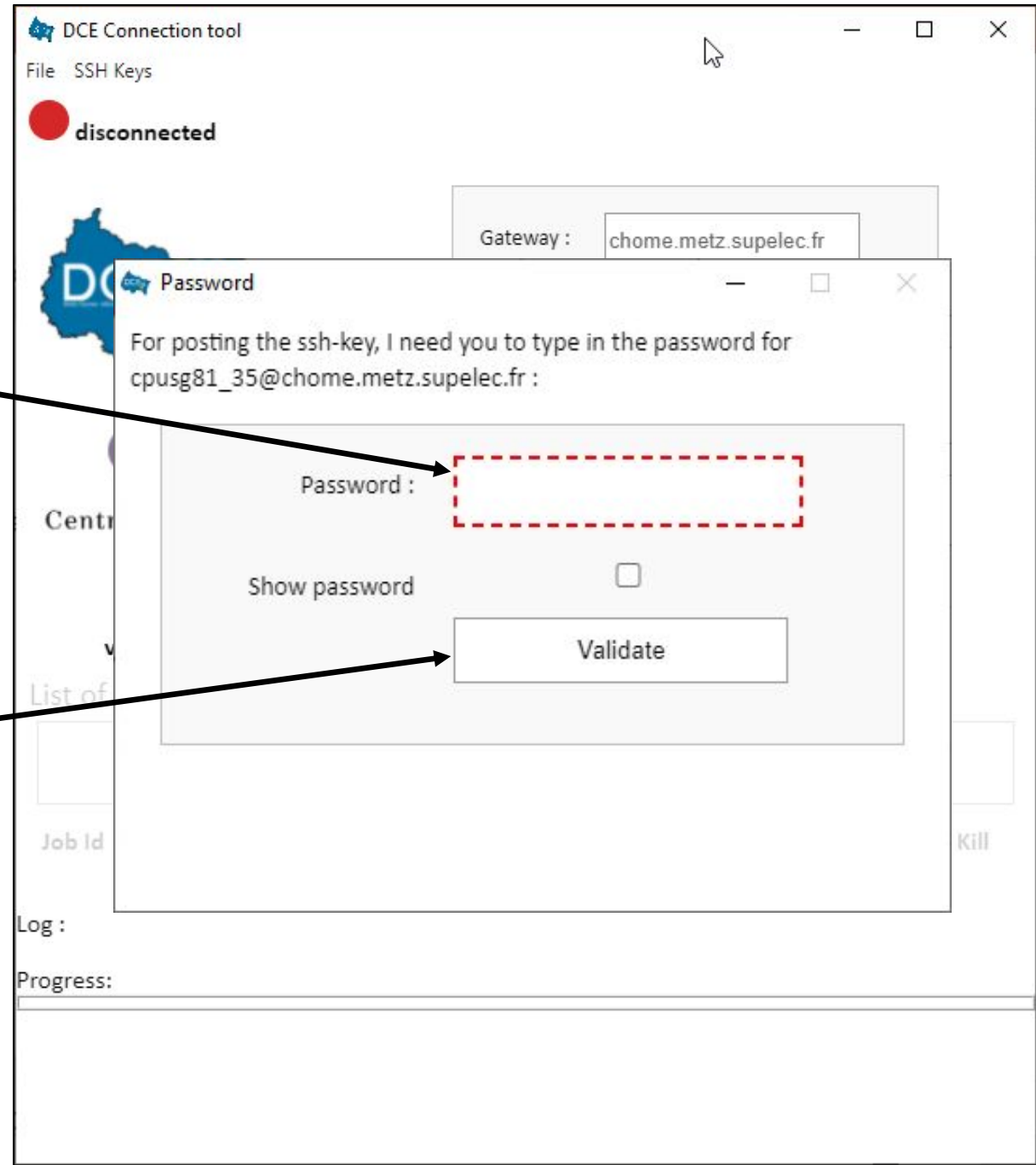
-
- Enter a passphrase
(choose a basic one)
- Click on « Validate »



CPU clusters

3. Launch dcejs

-
- During the first connexion to the DCE you will need to enter the passwd of your DCE login
- Click on « Validate »



CPU clusters

4. Launch dcejs

-
- Click on « + New » to start to allocate some computing resources

DCE Connection tool

File SSH Keys

connected

Gateway : chome.metz.supelec.fr

Login : ecm2_10

Connect

Disconnect

v1.7.6

List of your allocations

Refresh

+ New

Job Id	Partition	Time	Nodelist	VNC	NoMachine	Actions	Kill
--------	-----------	------	----------	-----	-----------	---------	------

Log : Connected to the gateway.

Progress:

CPU c

5. Launch **dcejs** during the lab

-
- Click on « With res... »
- Enter a reservation code (*ask to the Prof*)
- Open settings
- **Check the box**
- Enter: 1
- Click on « Validate »

New session

Without reservation With reservation

Please fill in the required parameters for you new allocation

Reservation

Walltime (HH:MM) (optional)

The reservation code is required

Advanced settings

exclusive

-c, --cpus-per-task

-N, --nodes 1

--qos

-n, --ntasks

Slurm command :

CPU c

5. Launch **dcejs** after the lab

-
- Click on « **Without...** »
- Select partition **cpu_tp**
- Specify **2:0** (2h)
- Open settings
- **Check the box**
- Enter: **1**
- Click on « **Validate** »

New session

Without reservation With reservation

Please fill in the required parameters for you new allocation

Partition (the maxtime is given as HH:MM or DD-HH:MM) Partition cpu_inter, M€

Walltime (HH:MM)

Advanced settings

exclusive

-C, --cpus-per-task

-N, --nodes 1

--qos

-n, --ntasks

Slurm command :

CPU clusters

6. Launch **dcejs**

-
- Click on
« Actions »
- Click on
« Start VNC »

DCE Connection tool

File SSH Keys

connected

Session handler

Start VNC

Start NoMachine

Launch Xterm

Refresh

New

Job Id	Partition	Time	Nodelist	VNC	NoMachine	Actions	Kill
3958	cpu_inter	0:04	kyle01	--	--	⊞Actions	Kill

Log : We are there, ready to work !

Progress:

CPU clusters

7. Launch **dcejs**

-
- Get the local port number

Ex: 5916

- Launch your **VNC client/viewer** with all default options

Ex: TigerVNC



The screenshot shows the 'DCE Connection tool' window. At the top, it says 'connected' with a green dot. Below that is the DCE logo and the CentraleSupélec logo. On the right, there are input fields for 'Gateway : chome.metz.supelec.fr' and 'Login : ecm2_10', along with 'Connect' and 'Disconnect' buttons. Below the logos, it says 'v1.7.6'. The main section is titled 'List of your allocations' and contains a table with columns: Job Id, Partition, Time, Nodelist, VNC, NoMachine, Actions, and Kill. The first row in the table has '3959' in Job Id, 'cpu_inter' in Partition, '0:23' in Time, 'kyle01' in Nodelist, and 'localhost:5916' in VNC. The 'localhost:5916' cell is highlighted with a red box. Below the table, there is a log message: 'Log : VNC done. Please start your viewer.' and a 'Progress:' bar at the bottom.

Job Id	Partition	Time	Nodelist	VNC	NoMachine	Actions	Kill
3959	cpu_inter	0:23	kyle01	localhost:5916	--	⊙ Actions	Kill

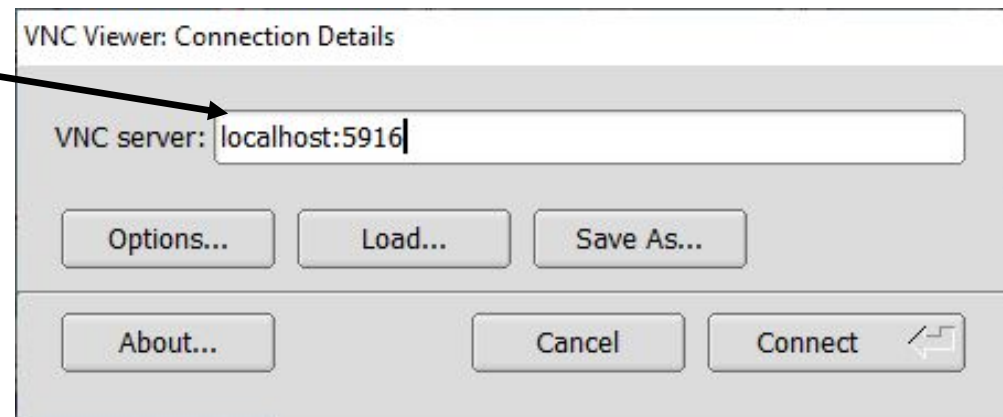
CPU clusters

8. On windows:

- Launch your **VNC client** with all default options (ex: TigerVNC on Windows)



- Enter the port number returned by dcejs



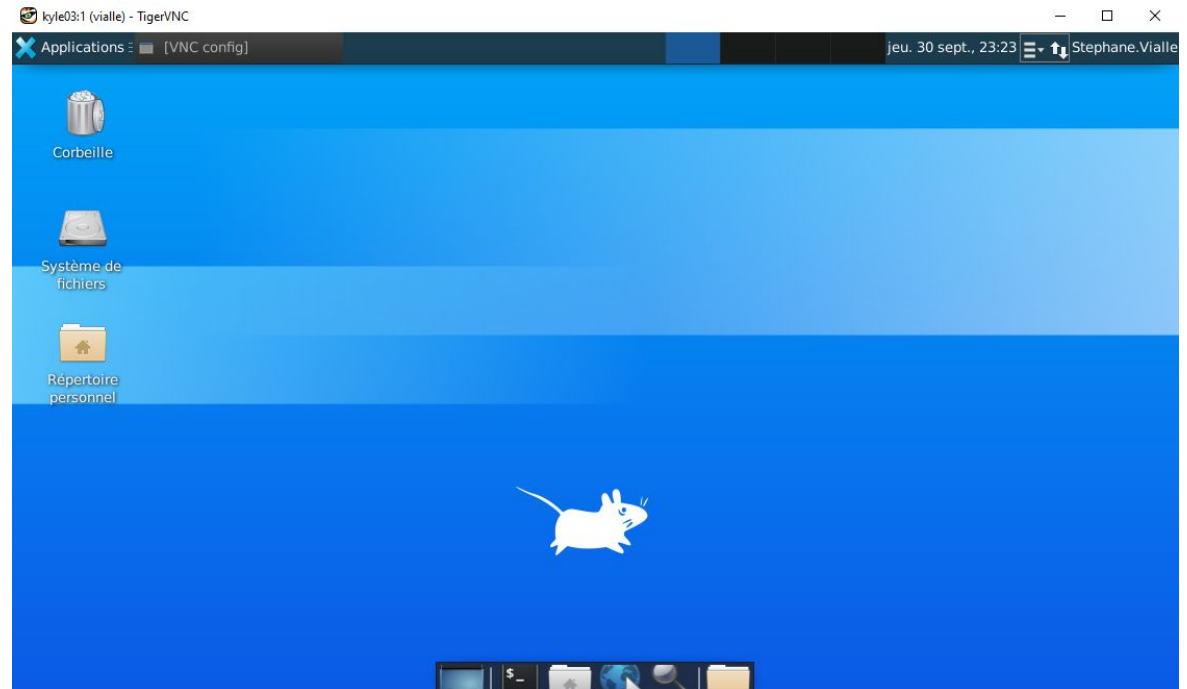
8. On Linux & Mac :

- It should be possible to just click on the port number in the dcejs window.

CPU clusters

9. The desktop of the remote DCE machine appears

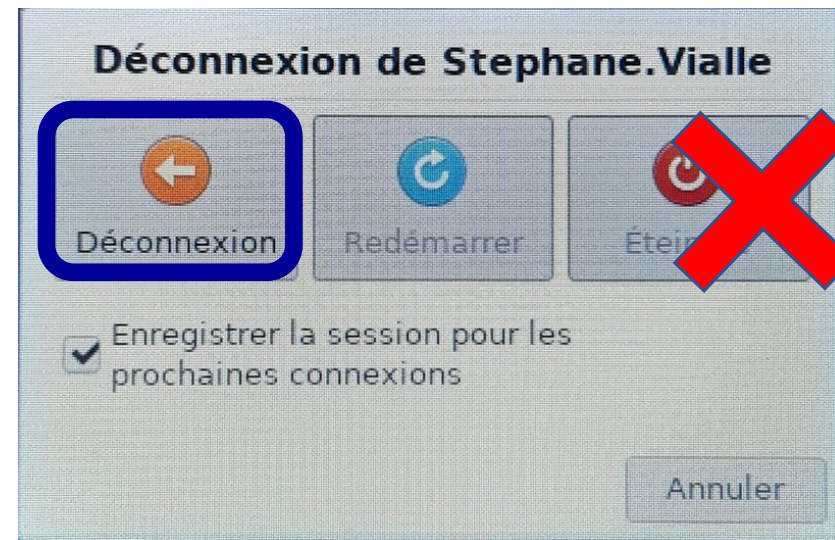
- You can launch a terminal, and an editor (code, xedit, ...)



10. When you disconnect:

NEVER shut down the machine!

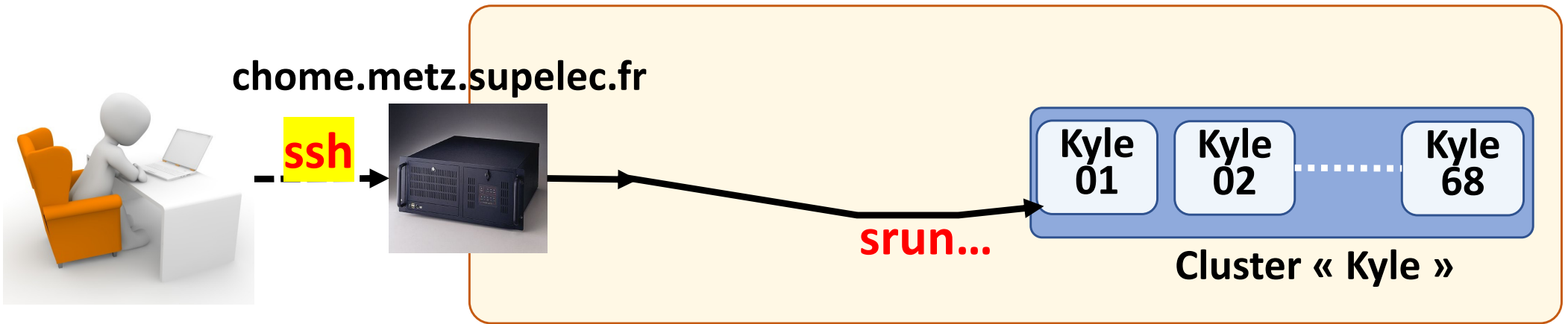
Use the disconnect button



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- Connection to the DCE using *dcejs*
- **Connection to the DCE using *ssh***
- Connection using *vscode*

Cluster connection commands

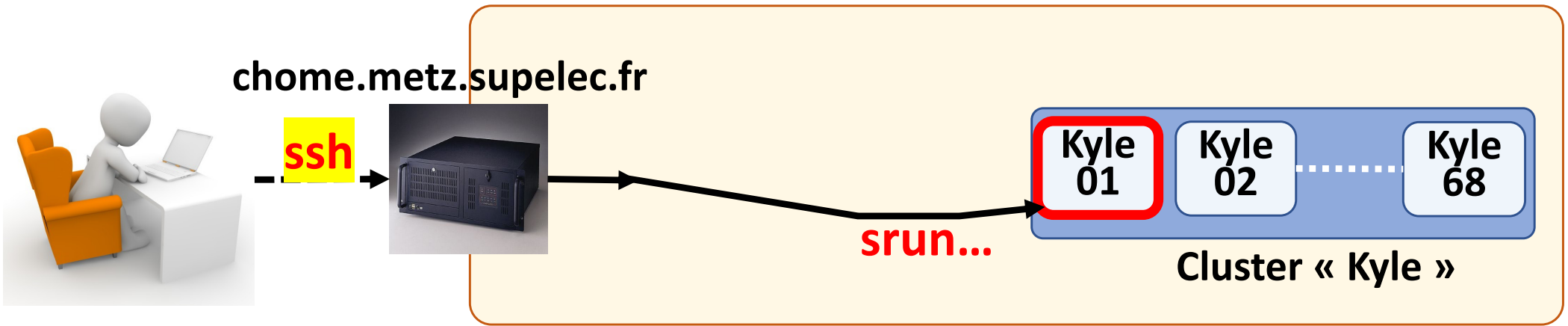


Linux/Mac → `ssh chome.metz.supelec.fr -l ecm2_1` *From ecm2_1 up to ecm2_20*

Windows → run a "powershell" and then the above command

- Old Windows →
- Download & Instal « putty »
 - « Session » menu : **phome.metz.supelec.fr**
connection type : ssh (port 22)
 - « Connection » menu: set **Enable TCP keepalives**
set **30s** between keepalives

Cluster connection commands



On *chome* **DURING** the lab:

```
srun --reservation=myCode
```

Ask to the teacher

```
-N 1 --exclusive
```

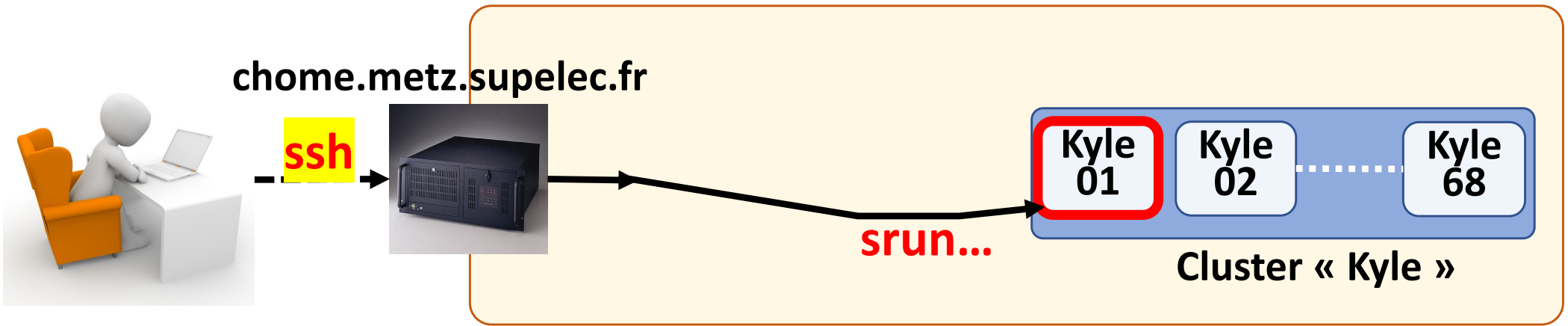
Allocate all the
cores of the node

```
--pty bash
```

Run an interactive session

Write on ONE line!

Cluster connection commands



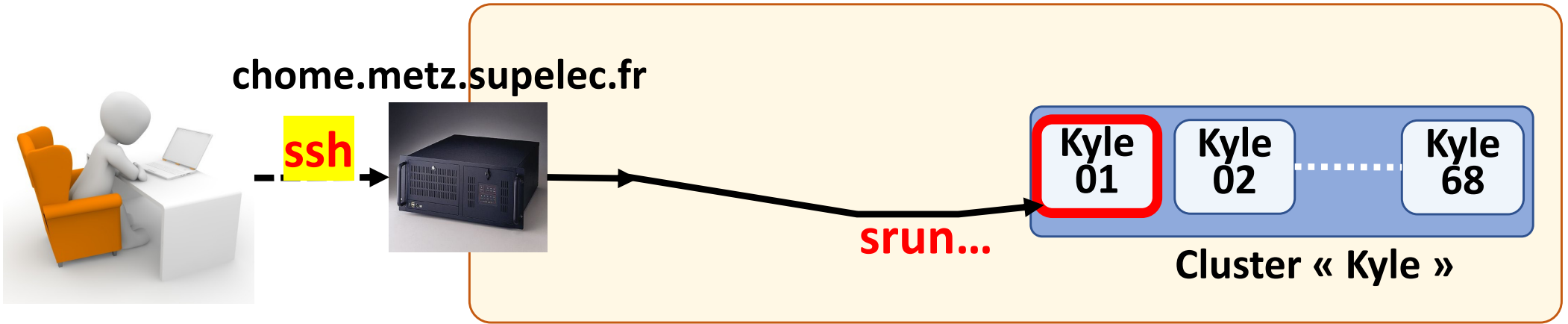
On *chome* **AFTER** the lab:

```
srun -p cpu_tp  
-N 1 --exclusive  
--pty bash
```

Partition to use
Allocate all the cores of the node
Run an interactive session

Write on ONE line!

Cluster connection commands



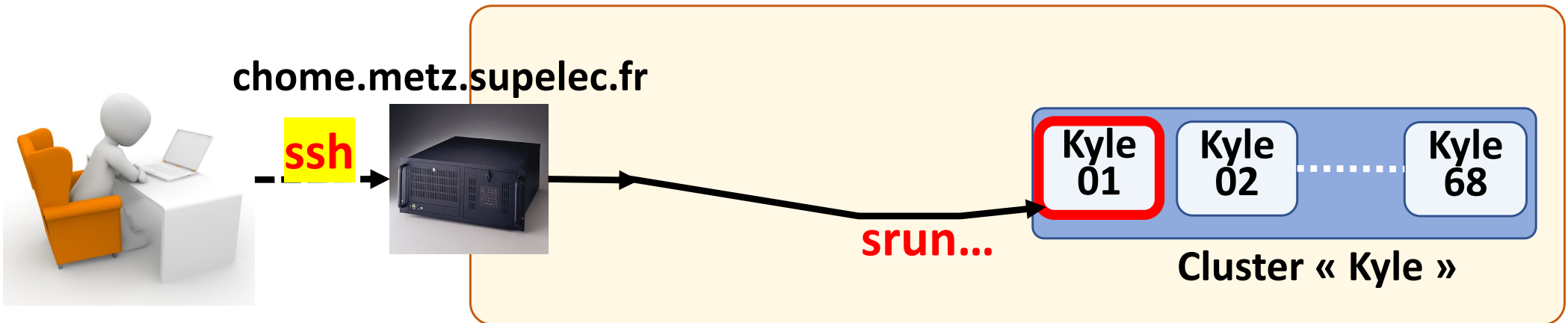
On the cluster node:

sinfo -l → information on partitions

squeue → information on job queues

scontrol show job → information on running jobs

Running mongo demon and mongo clients



Usage: **On the cluster node**

Duplicate your terminal to run the *mongod* and *mongosh* in two different terminals:

- Launch **screen**
 - Create a second terminal with Ctrl-a c
 - Go to the next screen with Ctrl-a n, and to previous one with Ctrl-a p
 - Kill a screen with Ctrl-D
 - See : <https://doc.ubuntu-fr.org/screen> for more information
- Then you run **mongod** in one terminal.
- And you run **mongosh** in the second terminal and you work in this terminal

Using MongoDB servers of CentraleSupélec DCE using *dcejs*, *ssh* or *vscode*

- Connection to the DCE using *dcejs*
- Connection to the DCE using *ssh*
- **Connection using *vscode***

Connect to the DCE, open multiple terminals and run mongo commands

Configuration and usage of vscode to reach the DCE:

<https://webtv.centralesupelec.fr/videos/how-to-connect-to-dce-with-visual-studio-code/>

1. Open a terminal on chome.metz.supelec.fr with your DCE login/passwd
2. Use the explorer to access your files (using again your DCE login/passwd)
3. Open a terminal and execute:

```
srun -N 1 --exclusive --reservation=... -pty bash
```

→ You get a terminal on a Kyle machine (« your » Kyle machine)
4. Open a second terminal on your Kyle machine from the previous terminal
5. Run mongod in one terminal and mongoimport or mongosh in the second

Using MongoDB servers of CentraleSupelec DCE (Data Center for Education)

Questions ?