

Cloud Administrator & Security Engineer

SCRIPTING & DEVOPS

SCRIPTING BASH LAB

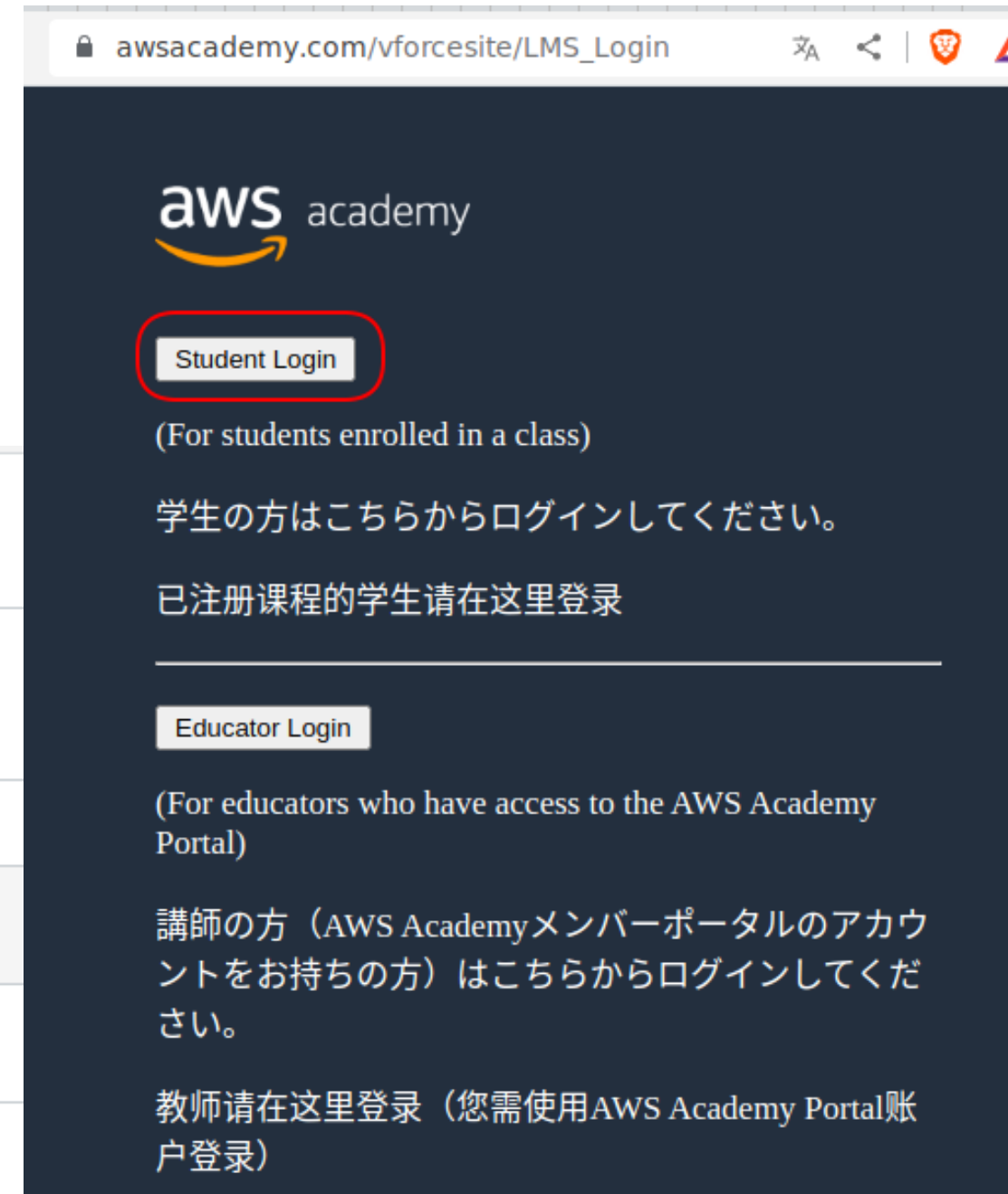
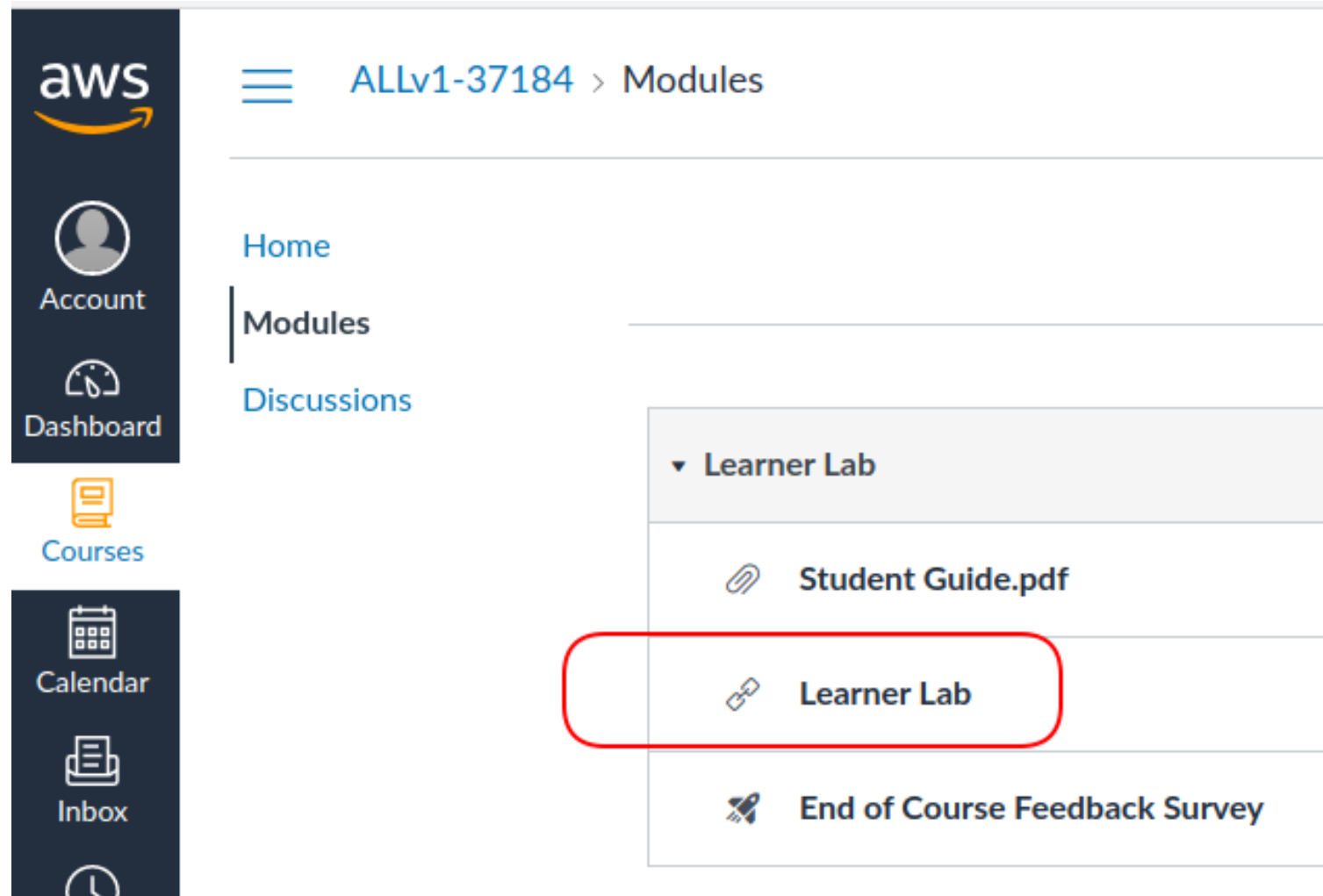
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AWS Academy access

- <https://awsacademy.instructure.com/>



AWS Academy access

- Start lab
- Open AWS Web console

The screenshot shows the AWS Academy Learner Lab interface. On the left is a dark sidebar with the AWS logo and navigation links: Account, Dashboard, and Courses. The main content area has a breadcrumb trail: ALLv1-37... > Modules > Learner Lab > Learner Lab. Below this is a horizontal bar with buttons: Start Lab (highlighted with a red box), End Lab, AWS Details, Readme, Reset, and a close icon. Below the buttons, the text 'AWS' is highlighted with a red box, followed by 'Used \$0.1 of \$100' and a timer '00:00'. The main workspace is divided into two panes. The left pane shows a terminal prompt 'ddd_v1_w_HZi_1899775@runweb71280:~\$'. The right pane shows a dropdown menu with 'EN-US' selected.

AWS Academy access

- Durata massima sessione: 4 ore
- 100 \$ budget
- Importante! Al termine, spegnere sempre i servizi e la sessione

The screenshot shows the AWS Academy Learner Lab interface. At the top, there is a breadcrumb navigation: [ALLv1-37...](#) > [Modules](#) > [Learner Lab](#). Below this, a horizontal bar contains several buttons: [Start Lab](#), [End Lab](#) (highlighted with a red circle), [AWS Details](#), [Readme](#), [Reset](#), and a close button. Below the buttons, there is a status bar showing [AWS](#) with a green dot, [Used \\$0.1 of \\$100](#), and a timer showing [04:00](#). On the left side, there is a sidebar with links: [Home](#), [Modules](#) (highlighted with a vertical bar), and [Discussions](#). At the bottom, there is a terminal window showing the command prompt `ddd_v1_w_HZi_1899775@runweb71280:~$` and a terminal window showing `ENI i-...`.

EC2

- Create EC2 instance
- Amazon Linux 2
- t2.nano
- Creare key pair

EC2 – create instance

EC2 > Instances > Launch an instance

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name

scripting

[Add additional tags](#)

▼ Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

🔍 Search our full catalog including 1000s of application and OS images

Quick Start

Amazon Linux
aws

macOS
Mac

Ubuntu
ubuntu®

Windows
Microsoft

Red Hat
Red Hat

S
>

🔍
Browse more AMIs
Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type
ami-0b5eea76982371e91 (64-bit (x86)) / ami-03a45a5ac837f33b7 (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible ▼

Description

EC2 – create instance

Create key pair ×

Key pairs allow you to connect to your instance securely.

Enter the name of the key pair below. When prompted, store the private key in a secure and accessible location on your computer. **You will need it later to connect to your instance.** [Learn more](#)

Key pair name

ttf-2023-windows

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type

- ☒ **RSA**
RSA encrypted private and public key pair
- ☐ **ED25519**
ED25519 encrypted private and public key pair (Not supported for Windows instances)

Private key file format

- ☐ **.pem**
For use with OpenSSH
- ☒ **.ppk**
For use with PuTTY

Cancel

Create key pair

EC2 – create instance

▼ Summary

Number of instances [Info](#)

1

Software Image (AMI)

Amazon Linux 2 Kernel 5.10 AMI...[read more](#)
ami-0b5eea76982371e91

Virtual server type (instance type)


t2.nano

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

 **Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of bandwidth to the internet.



Cancel

Launch instance

EC2 – create instance

Instances (1) [Info](#)

Find instance by attribute or tag (case-sensitive)

Instance state = running X Clear filters

Name	Instance ID	Instance state	Instance type	Public IPv4 DNS	Public IPv4 ...
scripting	i-0ab2b53aa889a6d68	Running	t2.nano	ec2-18-212-180-14.co...	18.212.180.14

- EC2 Instance up and running!
- Connect to the machine via SSH
- From linux:
 - `ssh -i <pem key file> ec2-user@<public IP>`

EC2 - connect via SSH

- Linux:
 - `ssh -i <pem key file> ec2-user@<public IP>`
- Windows
 - putty

EC2 - putty

- <https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html>

Package files

You probably want one of these. They include versions of all the PuTTY utilities (except the new and slightly experimental Windows pterm).

(Not sure whether you want the 32-bit or the 64-bit version? Read the [FAQ entry](#).)

We also publish the latest PuTTY installers for all Windows architectures as a free-of-charge download at the [Microsoft Store](#); they usually take a few days to appear there after we release them.

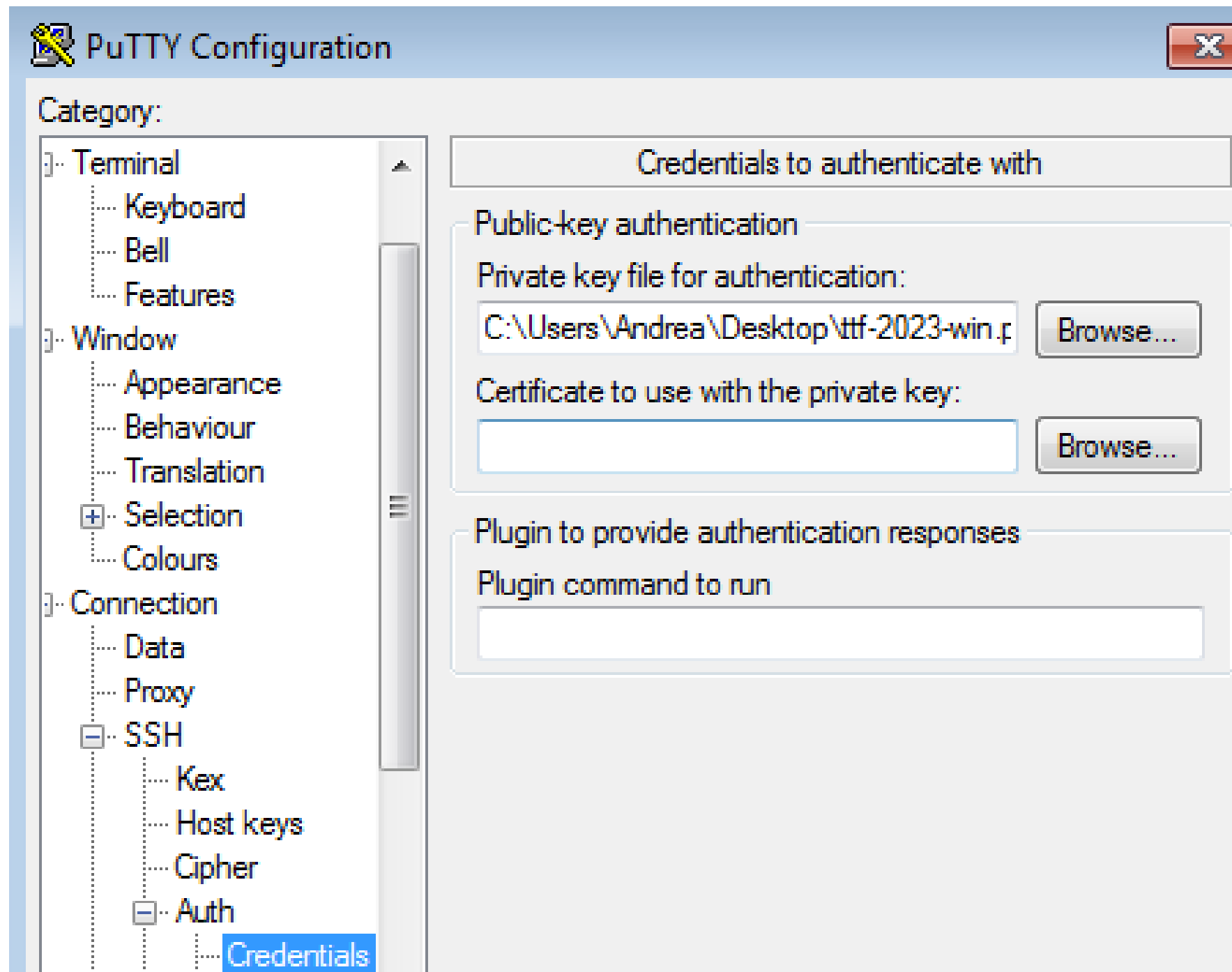
MSI ('Windows Installer')

64-bit x86:	putty-64bit-0.78-installer.msi	(signature)
64-bit Arm:	putty-arm64-0.78-installer.msi	(signature)
32-bit x86:	putty-0.78-installer.msi	(signature)

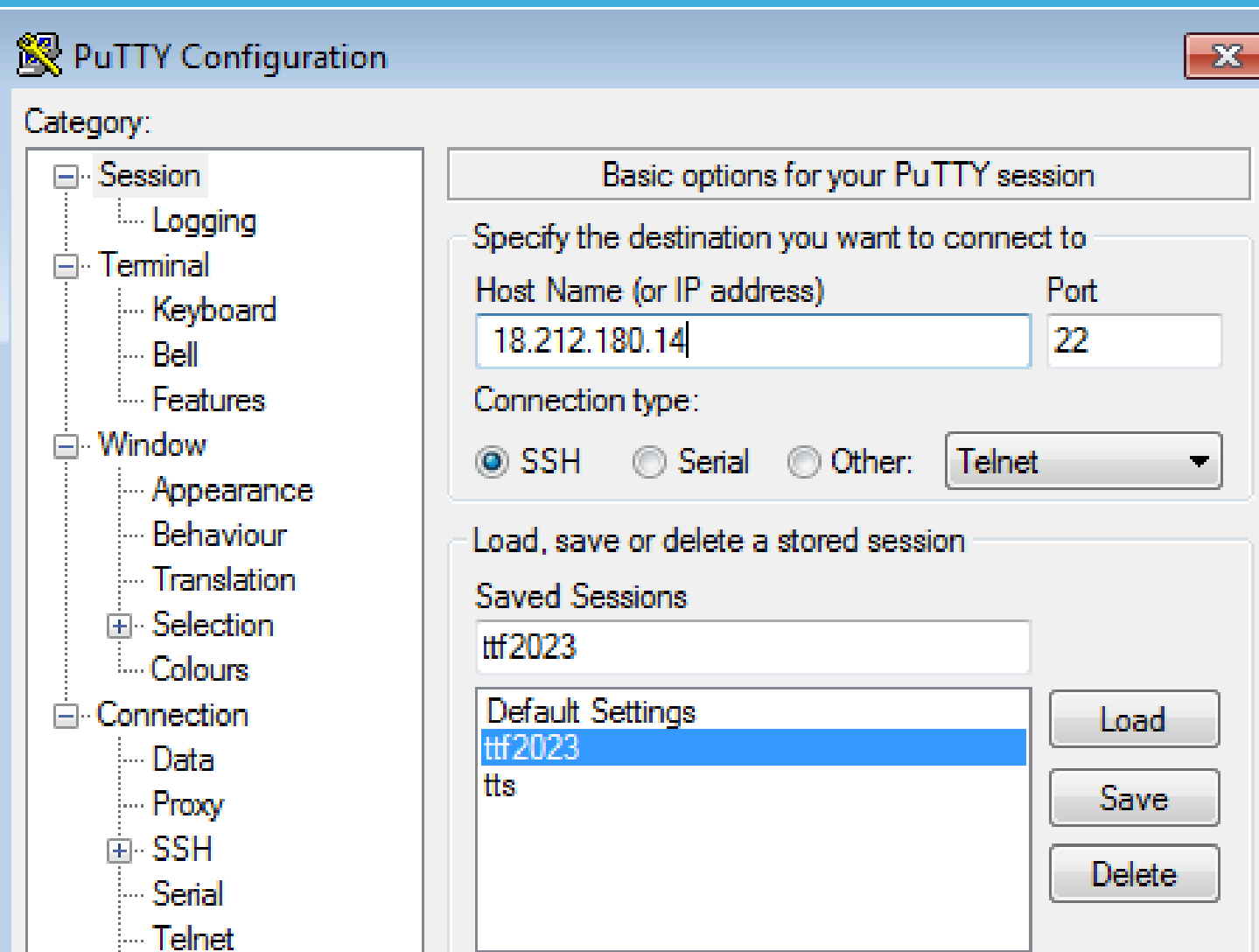
Unix source archive

.tar.gz:	putty-0.78.tar.gz	(signature)
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EC2 – Putty - add ppk key



EC2 – Putty - add connection



```
@ip-172-31-86-116:~  
as: ec2-user  
nticating with public key "ttf-2023-win"  
  
_ | _ | _ )  
_ | ( _ /   Amazon Linux 2 AMI  
_ | \ _ | _ |  
  
https://aws.amazon.com/amazon-linux-2/  
7 package(s) needed for security, out of 8 available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-172-31-86-116 ~]$
```

EC2 – data transfer

```
$ wget
```



Site Manager

General Advanced Transfer Settings

Protocol: SFTP - SSH File Transfer Protocol

Host: 10.101.210.7 Port:

Logon Type: Key file

User: ec2-user

Key file: GT_DEV_Oxygen_20190402.ppk Browse...

Background color: None

Comments:

New folder

Rename

Bash sample

- Stampare numeri da 1 a 10:

```
1 #!/bin/bash
2 printNumbers() {
3     for((i=1;i<=10;i++))
4     do
5         echo $i
6     done
7 }
8
9 printNumbers
```

Bash sample

- Varianti:
 - Stampare i numeri da 1 a n (input da tastiera)
 - Stampare i numeri da 1 a n (parametro da script) verificando che il parametro esiste
 - Stampare i numeri da n a m (parametro da script), verificando che $n < m$, e che entrambi i parametri esistano

Bash - Log Analyzer

The image is a composite of two screenshots. The top screenshot shows the Kaggle website interface. On the left is a sidebar with navigation links: 'Create', 'Home', 'Competitions', 'Datasets' (highlighted), 'Code', 'Discussions', 'Courses', and 'More'. The main content area displays a dataset titled 'web log dataset' by 'Ashadullah Shawon', updated 2 years ago. It includes a 'Data' tab, a 'Code (2)' tab, and buttons for 'Download (1 MB)' and 'New Notebook'. The bottom screenshot shows a GitHub repository page for 'andreascrivanti / ttf-scripting-devops-2023'. The 'Code' tab is selected, showing a file tree with 'data100k.csv.zip' and 'weblog.csv'. A 'Give feedback' link is visible at the bottom of the repository view.

Kaggle Dataset View:

- Dataset: web log dataset
- Online Judge (RUET OJ) Server Log Dataset
- Ashadullah Shawon • updated 2 years ago (Version 2)
- Download (1 MB)
- New Notebook

GitHub Repository View:

- Repository: andreascrivanti / ttf-scripting-devops-2023
- Branch: main
- Path: ttf-scripting-devops-2023 / data /
- Files:
 - data100k.csv.zip
 - weblog.csv
- Link: Give feedback

Bash - Log Analyzer

- <https://github.com/andreascrivanti/ttf-scripting-devops-2023/blob/main/data/weblog.csv>

```
IP,Time,URL,Staus
10.128.2.1,[29/Nov/2017:06:58:55,GET /login.php HTTP/1.1,200
10.128.2.1,[29/Nov/2017:06:59:02,POST /process.php HTTP/1.1,302
10.128.2.1,[29/Nov/2017:06:59:03,GET /home.php HTTP/1.1,200
10.131.2.1,[29/Nov/2017:06:59:04,GET /js/vendor/moment.min.js HTTP/1.1,200
10.130.2.1,[29/Nov/2017:06:59:06,GET /bootstrap-3.3.7/js/bootstrap.js HTTP/1.1,200
10.130.2.1,[29/Nov/2017:06:59:19,GET /profile.php?user=bala HTTP/1.1,200
10.128.2.1,[29/Nov/2017:06:59:19,GET /js/jquery.min.js HTTP/1.1,200
10.131.2.1,[29/Nov/2017:06:59:19,GET /js/chart.min.js HTTP/1.1,200
10.131.2.1,[29/Nov/2017:06:59:30,GET /edit.php?name=bala HTTP/1.1,200
10.131.2.1,[29/Nov/2017:06:59:37,GET /logout.php HTTP/1.1,302
10.131.2.1,[29/Nov/2017:06:59:37,GET /login.php HTTP/1.1,200
10.130.2.1,[29/Nov/2017:07:00:19,GET /login.php HTTP/1.1,200
10.130.2.1,[29/Nov/2017:07:00:21,GET /login.php HTTP/1.1,200
10.130.2.1,[29/Nov/2017:13:31:27,GET / HTTP/1.1,302
10.130.2.1,[29/Nov/2017:13:31:28,GET /login.php HTTP/1.1,200
10.129.2.1,[29/Nov/2017:13:38:03,POST /process.php HTTP/1.1,302
10.131.2.1,[29/Nov/2017:13:38:04,GET /home.php HTTP/1.1,200
```

Bash - Log Analyzer

- Provare comandi:
 - Cat
 - Tail
 - Head
 - Cut

Bash - Log Analyzer

- Realizzare script bash che:
 - Scarica il file di log da github
 - Conta il numero di righe
 - Filtra per indirizzo ip (preso come parametro) e conta le righe, ritornando le ultime 10 URL chiamate

Bash - Log Analyzer 2

- try z* commands:
 - `zcat data100k.csv.zip | head -n 2 | cut -d "," -f3-5`
- Useful links:
 - <https://devhints.io/bash>
 - <https://github.com/LeCoupa/awesome-cheatsheets/blob/master/languages/bash.sh>