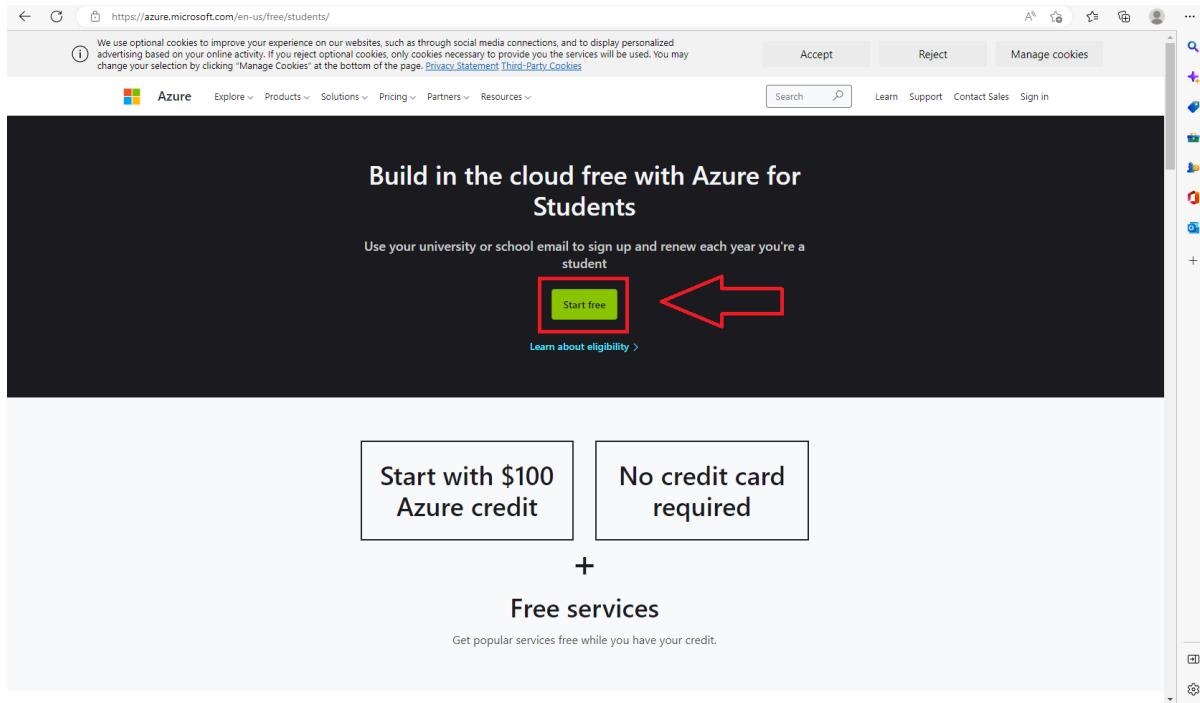
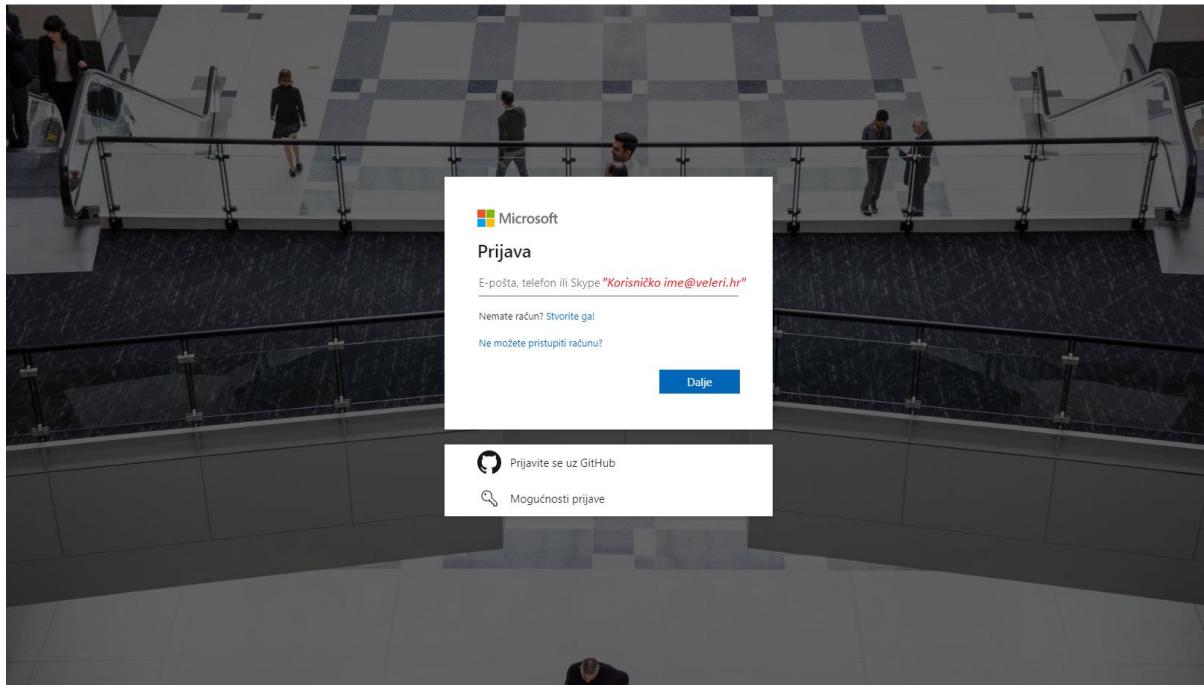


Upute za Microsoft Azure (virtual machine)

Prvi korak koji se mora napraviti je otici na stranicu [Microsoft Azure for students](https://azure.microsoft.com/en-us/free/students/). Nakon toga pritisnemo na gumb „Start free“



Sada nam se prikazuje prozor za login. U njemu upisujemo svoj email od veleučilišta (npr. „[korisničko ime“@veleri.hr](#)). Nakon što smo upisali email pritisnemo gumb „Dalje“.



Sljedeće nam se otvara prozor za prijavu od AAi@EduHr. Unutra upisujemo svoje podatke od veleučilišta (npr. „[korisničko ime“@veleri.hr](#))

A screenshot of the AAi@EduHr login page. At the top is the AAi@EduHr logo with the text "Autentikacijska i autorizacijska infrastruktura znanosti i visokog obrazovanja u Republici Hrvatskoj". Below the logo is a section labeled "KORISNIČKA OZNAKA" with a user icon input field. Underneath is a "ZAPORKA" section with a password input field featuring a lock icon and a visibility toggle. At the bottom is a large blue "PRIJAVA" button. Below the button are links for "Pomoć" and "Srce v3.0".

Nakon što smo se prijavili otvara nam se stranica od Microsoft Azure. Pritisnemo Microsoft Azure.

The screenshot shows the Microsoft Azure Education Overview page. At the top, there's a navigation bar with 'Microsoft Azure' and a search bar. Below it, the title 'Education | Overview' is displayed. On the left, a sidebar includes 'Overview', 'Learning resources' (with links to Roles, Software, Learning, and Templates), and 'Need help?' (with a Support link). The main content area has several sections:

- Student offer details:**
 - Available credits: €100 out of €100
 - Days until credits expire: 364 (Expires on 11/30/2023)
 - November costs: €0.00
- Popular solutions:**
 - Deploy a Docker container
 - Create your first Node.js app
 - Create and train a Machine Learning model
 - Build and deploy your first website
- Free Services:**
 - Azure Virtual Machines – Windows
 - Azure Blob Storage
 - Computer Vision
 - Azure App Service
- Free software:**
 - SQL Server 2019 Developer
 - Machine Learning Server 9.4.7 for Windows
 - Microsoft R Client 9.4.7
 - Agents for Visual Studio 2019 (version 16.0...)
 - Agents for Visual Studio 2019 (version 16.0...)
- Free learning paths:**
 - Data Scientist
 - AI Engineer
 - Developer
 - DevOps Engineer
- Resources:**
 - Get started guide for Azure developers
 - Pricing calculator
 - Optimize your cloud investment with cost ...
 - Explore student hub
 - FAQs

Sada smo na glavnoj stranici od Microsoft Azure. Da bi pronašli naše besplatne alate tj. Servise moramo u tražilicu potražiti „*Education*“. Kada smo odabrali „*Education*“ otvara nam se stranica gdje se nalaze naši besplatni alati.

The screenshot shows the Microsoft Azure search interface. In the search bar at the top, the word "education" is typed. Below the search bar, there are several navigation tabs: All (selected), Services (2), Marketplace (20), Documentation (28), Azure Active Directory (6), and Resources (0). On the left, there is a sidebar with sections for "Create a source", "Services" (with "Education" highlighted and boxed in red), "Marketplace", "Documentation", "Azure Active Directory", "Subscriptions", and "Microsoft Learn". The main content area displays a list of services under "Education": Intune for Education, PhishHunter for Education, SCOOLZZ, Education Framework, PathPresenter Education, Uptale for Education, CloudConnect for Education, ThingLink Unlimited for Education, Nuventive Improvement Platform (Higher Education), Key Management Services (KMS) client activation and product key..., Use the winget tool to install and manage applications, Deprecation of Basic authentication in Exchange Online, AdventureWorks sample databases - SQL Server | Microsoft Learn, Microsoft Educator Community, Minecraft Education Edition Services, Microsoft Educator Center, and Continue searching in Azure Active Directory. At the bottom, there is a "Give feedback" button.

The screenshot shows the Microsoft Azure "Education | Overview" page. At the top, there is a navigation bar with "Home", "Education | Overview", and a "..." button. Below the navigation bar, there are three main sections: "Student offer details" (status: "Retrieving information..."), "Popular solutions" (list includes Deploy a Docker container, Create your first Node.js app, Create and train a Machine Learning model, and Build and deploy your first website), and "Free Services" (list includes Azure Virtual Machines – Windows, Azure Blob Storage, Computer Vision, and Azure App Service). A red box highlights the "Explore all" button in the "Popular solutions" section. On the left, there is a sidebar with "Overview", "Learning resources" (Roles, Software, Learning, Templates), and "Need help?" (Support). On the right, there are sections for "Free software" (SQL Server 2019 Developer, Machine Learning Server 9.4.7 for Windows, Microsoft R Client 9.4.7, Agents for Visual Studio 2019 (version 16.0...), Agents for Visual Studio 2019 (version 16.0...)), "Free learning paths" (Data Scientist, AI Engineer, Developer, DevOps Engineer), and "Resources" (Get started guide for Azure developers, Pricing calculator, Optimize your cloud investment with cost ..., Explore student hub, and FAQs).

Da bismo vidjeli sve naše alate moramo pritisnuti opciju „Explore all“ pod „Free Services“. Kada smo pritisnuli, pokazuje nam se svi alati koje možemo koristiti besplatno.

The screenshot shows the Microsoft Azure Free services page. At the top, it says "Services free for 12 months with the Azure free account". Below this, there are four main service categories highlighted with red boxes:

- Windows Virtual Machine (COMPUTE)**: 750 hours, B1S. Create Windows virtual machines with on-demand capacity in seconds. [Learn more](#). [Create](#)
- Linux Virtual Machine (COMPUTE)**: 750 hours, B1S. Create Linux virtual machines with on-demand capacity in seconds. [Learn more](#). [Create](#)
- Azure Managed Disks (STORAGE)**: 64 GB x 2 (P6) solid state drives SSD storage, plus 1 GB snapshot and 2 million I/O operations. Get high performance, durable block storage for Azure Virtual Machines with simplified management. [Learn more](#).
- Azure Blob Storage (STORAGE)**: 5 GB locally redundant storage (LRS) hot block with 20,000 read and 10,000 write operations. Use massively-scalable object storage for any type of unstructured data. [Learn more](#). [Create](#)

Below these, there are more services listed:

- Key Vault (SECURITY)**: 10,000 transactions. RSA 2048-bit keys or secret operations, Standard tier. Safeguard and maintain control of keys and other secrets. [Learn more](#). [Create](#)
- Azure Media Services Encoding... (MEDIA)**: 20 output minutes. Standard encoder video or audio source file encoding. Index, package, protect, and stream video and audio at scale. [Learn more](#). [Create](#)
- Azure Database for MySQL (DATABASES)**: 750 hours of Flexible Server—Burstable B1MS Instance, 32 GB storage, and 32 GB backup storage. Host a fully managed, scalable MySQL database in Azure. [Learn more](#). [Create](#)
- Azure Database for PostgreSQL (DATABASES)**: 750 hours of Flexible Server—Burstable B1MS Instance, 32 GB storage, and 32 GB backup storage. Build intelligent, scalable apps with fully managed database for PostgreSQL. [Learn more](#). [Create](#)
- Azure SQL Database (DATABASES)**: 250 GB S0 instance with 10 database transaction units. Create a SQL Database that delivers intelligence built-in. [Learn more](#). [Create](#)
- Azure Cosmos DB (DATABASES)**
- Bandwidth (Data Transfer) (NETWORKING)**
- Anomaly Detector (AI + MACHINE LEARNING)**
- Computer Vision (AI + MACHINE LEARNING)**
- Content Moderator (AI + MACHINE LEARNING)**

Za primjer ćemo odabratи Linux virtualno mašinu. Da bi napravili virtualnu mašinu moramo prvo pritisnuti gumb „Create“. Kada smo pritisnuli otvara nam se nova stranica na kojoj se nalaze opcije za virtualnu mašinu.

The screenshot shows the "Create a virtual machine" wizard in the Microsoft Azure portal. The current step is "Basics".

Basics tab selected. Other tabs include "Tags", "Review + create".

Subscription: Azure for Students

Resource group: LinuxTest (highlighted with a red box)

Virtual machine name: LinuxTest (highlighted with a red box)

Region: (Europe) North Europe (highlighted with a red box)

Image: Ubuntu Server 16.04-LTS - Gen1 (highlighted with a red box)

Note: You will not be charged for up to 750 hours of usage for B1s VMs per month. [Learn more](#)

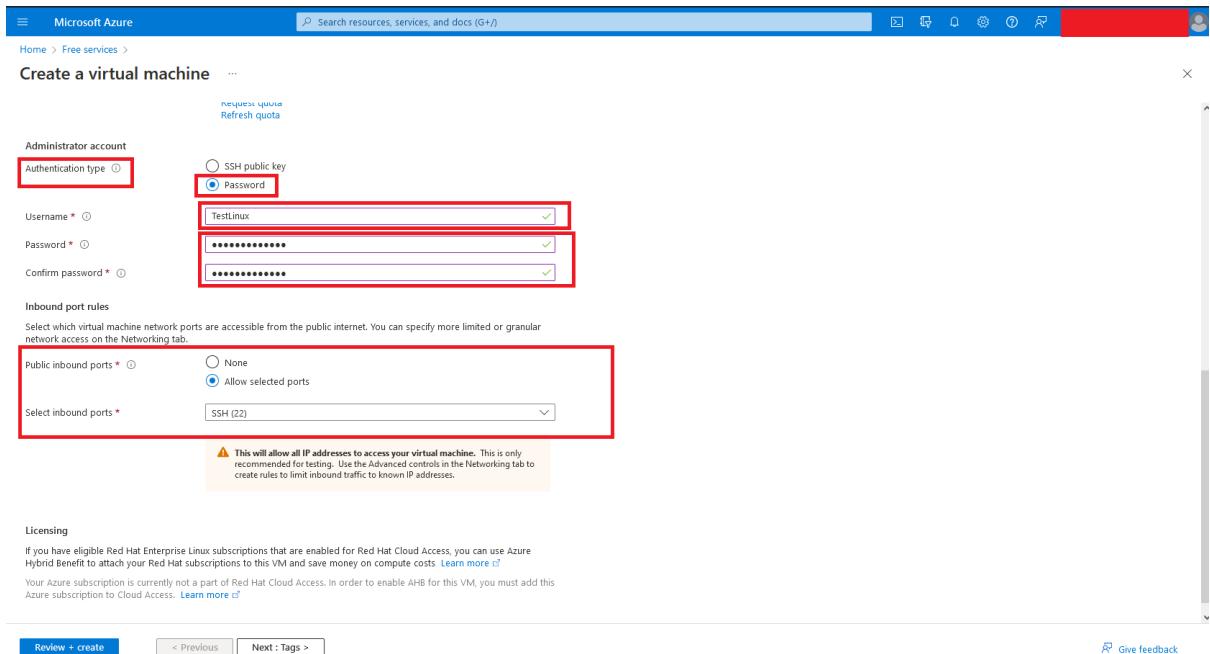
Size: Standard_B1s - 1 vcpu, 1 GiB memory (\$0.25/month) [See all sizes](#)

Administrator account: [empty field]

Buttons: "Review + create" (blue), "< Previous", "Next : Tags >", "Give feedback"

Pod opcijom „*Subscription*“ postavljamo opciju „*Azure for Students*“, a pod „*Resource group*“ moramo prvo napraviti novu grupu tako da pritisnemo „*Create new*“ i napišemo kako će se zvati. Za „*Virtual machine name*“ stavljamo kako će nam se zvati virtualna mašina. Za „*Region*“ stavljamo „*Europe*“. Za „*Image*“ možete odabrat bilo koji os koji želite.

Za opciju „*Authentication type*“ stavljamo opciju „*password*“. Za „*Username*“ i „*Password*“ stavljamo ime korisnika i lozinku s kojim ćemo se prijavljivati u virtualnu mašinu.



Kada smo ispunili sve opcije pritisnemo „*Review + create*“.

Basics Tags **Review + create**

Ako su svi podaci ispravni, na vrhu stranice će se pojaviti poruka „*Validation passed*“, to znači da su podaci ispravi i možemo napraviti virtualnu mašinu. Da bi napravili virtualnu mašinu pritisnemo gumb „*Create*“ i virtualna mašina će se napraviti.

Microsoft Azure

Search resources, services, and docs (G+)

Home > Free services >

Create a virtual machine ...

Validation passed

Basics Tags Review + create

⚠ You have set SSH port(s) open to the internet. This is only recommended for testing. If you want to change this setting, go back to Basics tab.

Ubuntu Server 16.04-LTS Standard B1s
Image 1 vcpu, 1 GiB memory

Basics

Subscription	Azure for Students
Resource group	LinuxTest
Virtual machine name	LinuxTest
Region	North Europe
Image	Ubuntu Server 16.04-LTS - Gen1
Size	Standard B1s (1 vcpu, 1 GiB memory)
Authentication type	SSH public key
Username	TestLinux
Key pair name	LinuxTest_key
Public inbound ports	SSH
Azure Spot	No

< Previous Next > Download a template for automation

Create

Kada smo pritisnuli „Create“ otvorit će se stranica na kojoj prikazuje da se virtualna mašina stvara „Deployment is in progress“, kada virtualna mašina napravi prikazat će sljedeću poruku „Your deployment is complete“

Microsoft Azure

Search resources, services, and docs (G+)

Home >

CreateVm-canonical.UbuntuServer-16.04-LTS-20221130113827 | Overview

Deployment

Overview Inputs Outputs Template

Deployment is in progress

Resource	Type	Status	Operation details
LinuxTest	Microsoft.Compute/virtualMachines	Created	Operation details
linuxtest651	Microsoft.Network/networkInterfaces	Created	Operation details
LinuxTest-vnet	Microsoft.Network/virtualNetworks	OK	Operation details
LinuxTest-ip	Microsoft.Network/publicIPAddresses	OK	Operation details
LinuxTest-nsg	Microsoft.Network/networkSecurityGroups	OK	Operation details

Give feedback Tell us about your experience with deployment

Microsoft Defender for Cloud
Secure your apps and infrastructure
Go to Microsoft Defender for Cloud >

Free Microsoft tutorials
Start learning today >

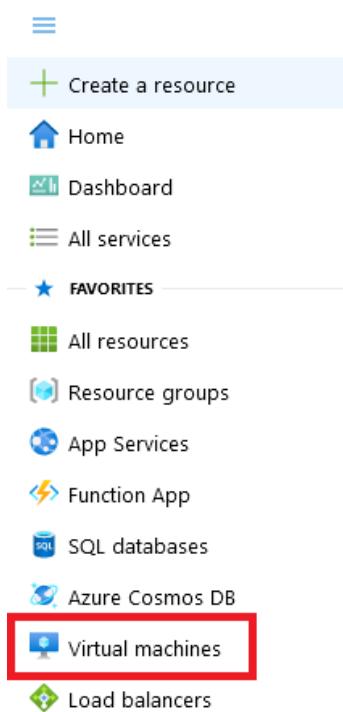
Work with an expert
Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.
Find an Azure expert >

The screenshot shows the Microsoft Azure Deployment Overview page for a deployment named 'CreateVm-credativ.debian-9-20221201082622'. A prominent message 'Your deployment is complete' is displayed in a red-bordered box. Deployment details include a start time of 12/1/2022, 8:27:01 AM, and a correlation ID. The page also lists 'Deployment details' such as auto-shutdown and monitoring recommendations, and 'Next steps' like running a script or creating another VM. On the right, there are promotional cards for Cost Management, Microsoft Defender for Cloud, and Microsoft tutorials.

Nakon šta se virtualna mašina napravila idemo u „Home“ tj. Kliknemo na „Microsoft Azure“. I onda pritisnemo opciju za prikaz izbornika u gornjem lijevom kutu.



Otvara nam se izbornik na kojem ćemo odabrat „Virtual machines“.



Otvara nam se stranica gdje možemo vidjet naše napravljene virtualne mašine. Pritisnemo na našu virtualnu mašinu da vidimo detalje.

This screenshot shows the 'Virtual machines' list page in the Azure portal. The URL is 'Home > Virtual machines' and the address bar shows 'veleri.hr (velerihr.onmicrosoft.com)'. The page includes a toolbar with 'Create', 'Switch to classic', 'Reservations', 'Manage view', 'Refresh', 'Export to CSV', 'Open query', 'Assign tags', 'Start', 'Restart', 'Stop', 'Delete', 'Services', and 'Maintenance'. There are also filter buttons for 'Subscription equals all', 'Type equals all', 'Resource group equals all', and 'Location equals all', along with an 'Add filter' button. The main area displays a table of virtual machines:

Name	Type	Subscription	Resource group	Location	Status	Operating system	Size	Public IP address	Disk
LinuxTest	Virtual machine	Azure for Students	LinuxTest	North Europe	Running	Linux	Standard_B1s	[REDACTED]	1
Test	Virtual machine	Azure for Students	Test	North Europe	Running	Linux	Standard_B1s	[REDACTED]	1

Moramo pronaći javnu IP adresu od virtualne mašine kako bismo mogli pristupit.

The screenshot shows the Azure portal interface for managing virtual machines. On the left, there's a sidebar with navigation links like Home, Create, Virtual machines, and more. The main area is titled 'LinuxTest' and shows the 'Overview' tab. Key details include:

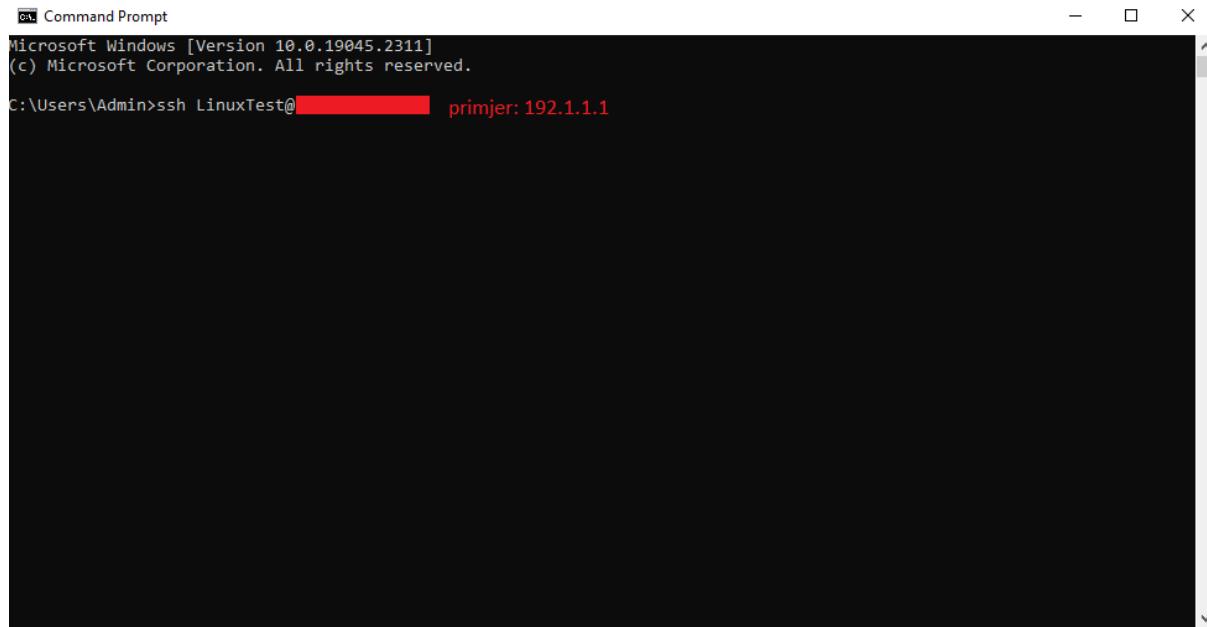
- Resource group: LinuxTest
- Status: Running
- Location: North Europe
- Subscription: Azure for Students
- Operating system: Linux (ubuntu 16.04)
- Size: Standard B1s (1 vcpu, 1 GiB memory)
- Public IP address: [REDACTED] (highlighted with a red box and a red arrow)
- Virtual network/subnet: LinuxTest-vnet/default
- DNS name: Not configured

Below the overview, there are tabs for Properties, Monitoring, Capabilities (7), Recommendations, and Tutorials. The Properties tab is selected, showing detailed configuration for the VM, Size, and Disk. The Public IP address field is again highlighted with a red box and a red arrow.

Da se spojimo na našu virtualnu mašinu moramo koristiti programe koje omogućuju spajanje sa SSH protokolom. To možemo preko CMD-a , terminala ili s drugim aplikacijama (npr. PuTTY).

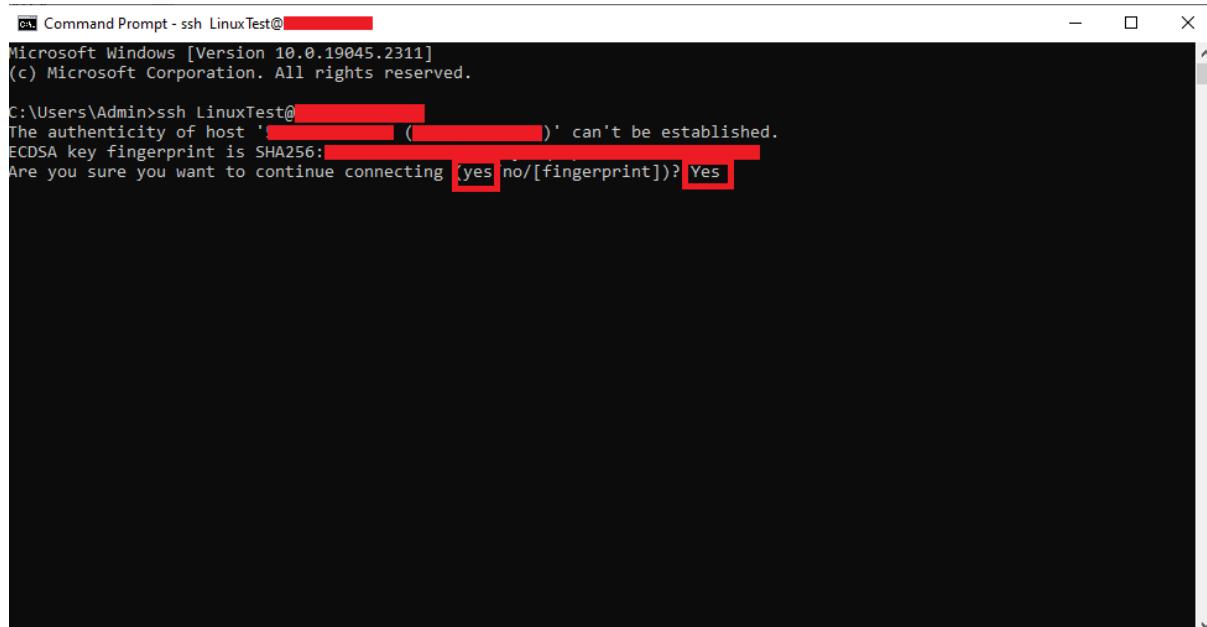
Spajanje na virtualnu mašinu sa CMD

Prvo moramo pokrenut CMD, te upisat sljedeću komandu: ssh „ime korisnika“@“javni IP od virtualne mašine“ (npr. ssh [LinuxTest@192.1.1.1](#)).



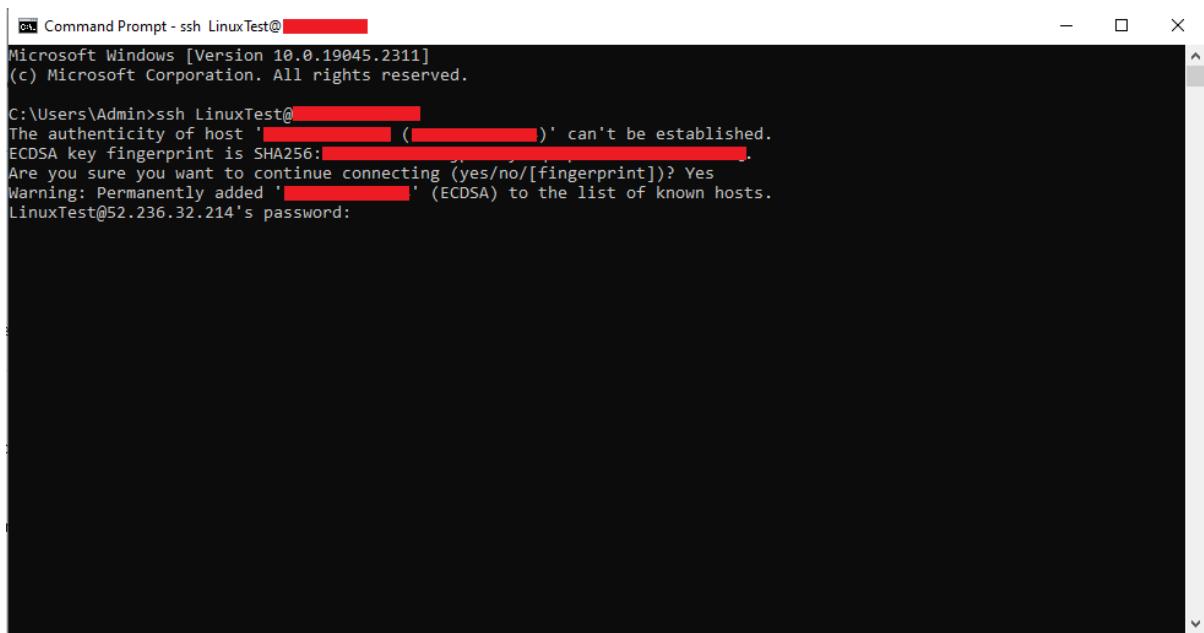
A screenshot of a Windows Command Prompt window titled "Command Prompt". The window shows the following text:
Microsoft Windows [Version 10.0.19045.2311]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Admin>ssh LinuxTest@[REDACTED] primjer: 192.1.1.1

Kada upišemo komandu i pokrenemo je prikazat će nam se poruka unutar CMD-a za koju moramo napisat „yes“ da se izvrši konekcija prema virtualnoj mašini.



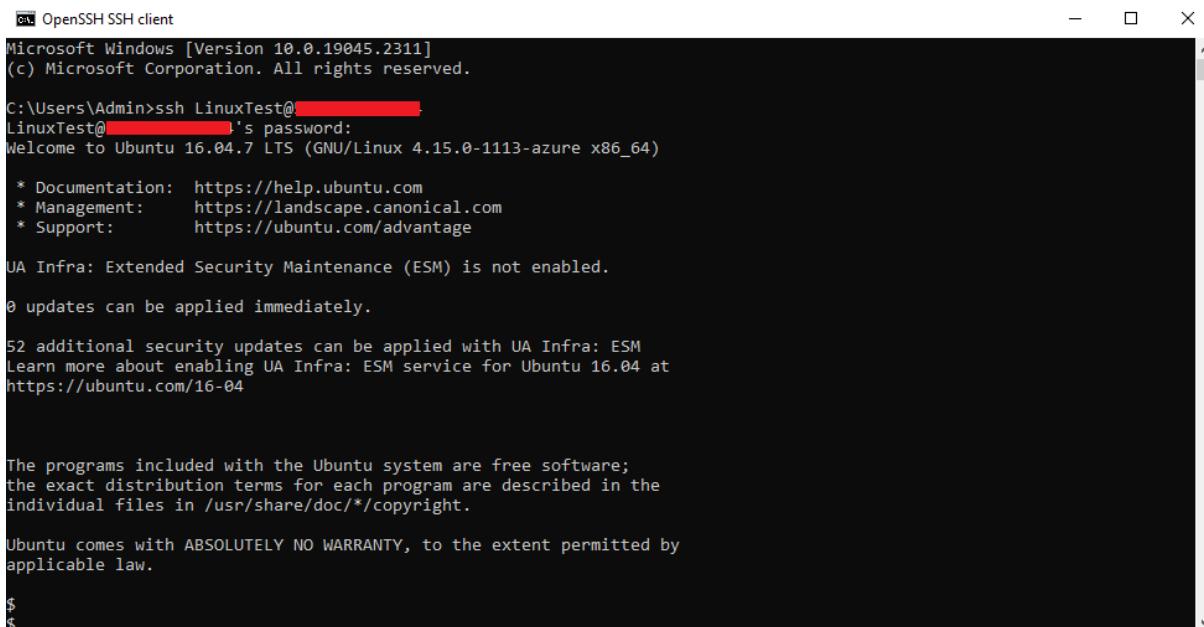
A screenshot of a Windows Command Prompt window titled "Command Prompt - ssh LinuxTest@[REDACTED]". The window shows the following text:
Microsoft Windows [Version 10.0.19045.2311]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Admin>ssh LinuxTest@[REDACTED]
The authenticity of host '[REDACTED]' ([REDACTED]) can't be established.
ECDSA key fingerprint is SHA256:[REDACTED]
Are you sure you want to continue connecting [yes/no/[fingerprint]]? Yes

Kada smo upisali „yes“ pritisnemo „Enter“ na tipkovnici i CMD će se povezati na virtualnu mašinu. Sljedeće nas pita da unesemo lozinku virtualne mašine, tj. Lozinku korisnika. Dok se upisuje lozinka, ona se neće prikazivati u CMD-u kao da nismo ništa napisali ali u stvari jesmo, nego je skriveno zbog sigurnosnih razloga. Kada smo upisali lozinku pritisnemo „Enter“ tipku nakon čega ćemo biti ulogirani.



```
Command Prompt - ssh LinuxTest@[REDACTED]
Microsoft Windows [Version 10.0.19045.2311]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Admin>ssh LinuxTest@[REDACTED]
The authenticity of host '[REDACTED] ([REDACTED])' can't be established.
ECDSA key fingerprint is SHA256: [REDACTED].
Are you sure you want to continue connecting (yes/no/[fingerprint])? Yes
Warning: Permanently added '[REDACTED]' (ECDSA) to the list of known hosts.
LinuxTest@52.236.32.214's password:
```



```
OpenSSH SSH client
Microsoft Windows [Version 10.0.19045.2311]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Admin>ssh LinuxTest@[REDACTED]
LinuxTest@[REDACTED]'s password:
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.15.0-1113-azure x86_64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/advantage

UA Infra: Extended Security Maintenance (ESM) is not enabled.

0 updates can be applied immediately.

52 additional security updates can be applied with UA Infra: ESM
Learn more about enabling UA Infra: ESM service for Ubuntu 16.04 at
https://ubuntu.com/16-04

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

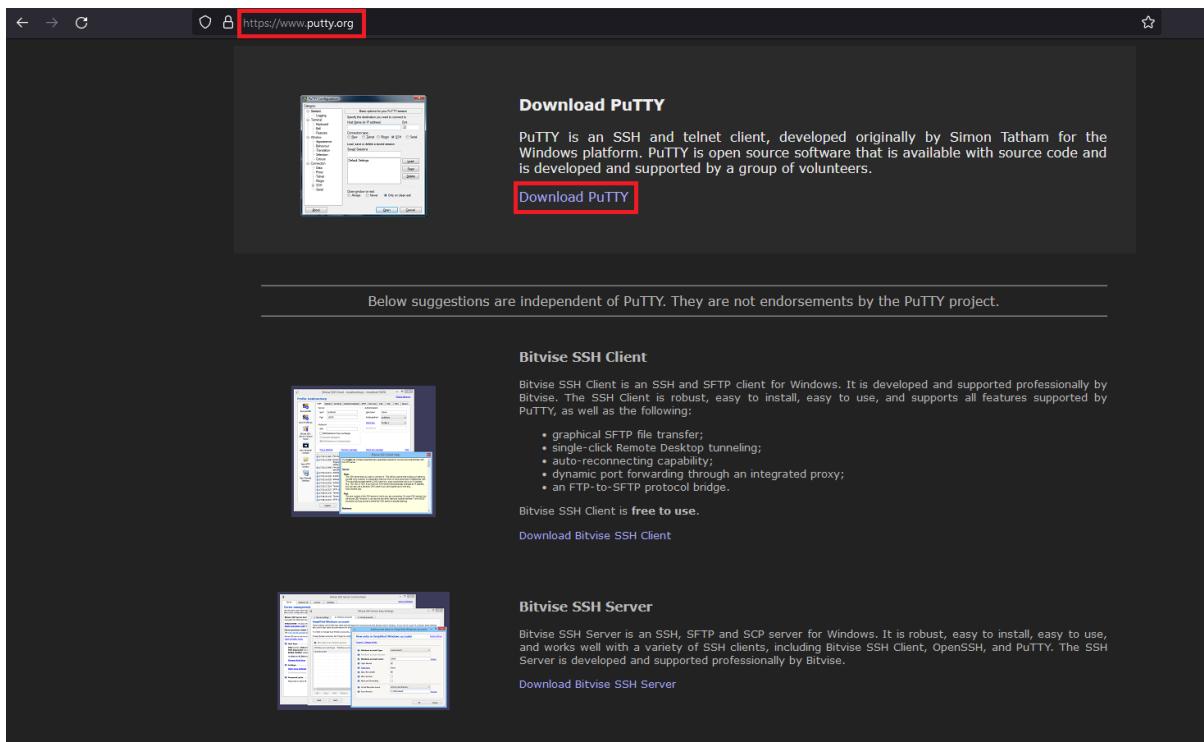
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

$
```

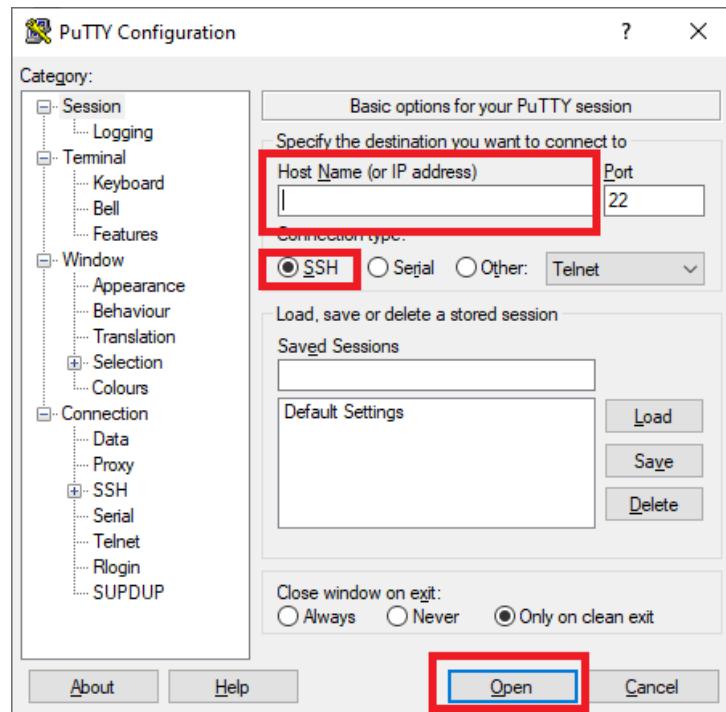
Kada smo ulogirani možemo koristiti virtualnu mašinu.

Spajanje na virtualnu mašinu sa aplikacijom PuTTY

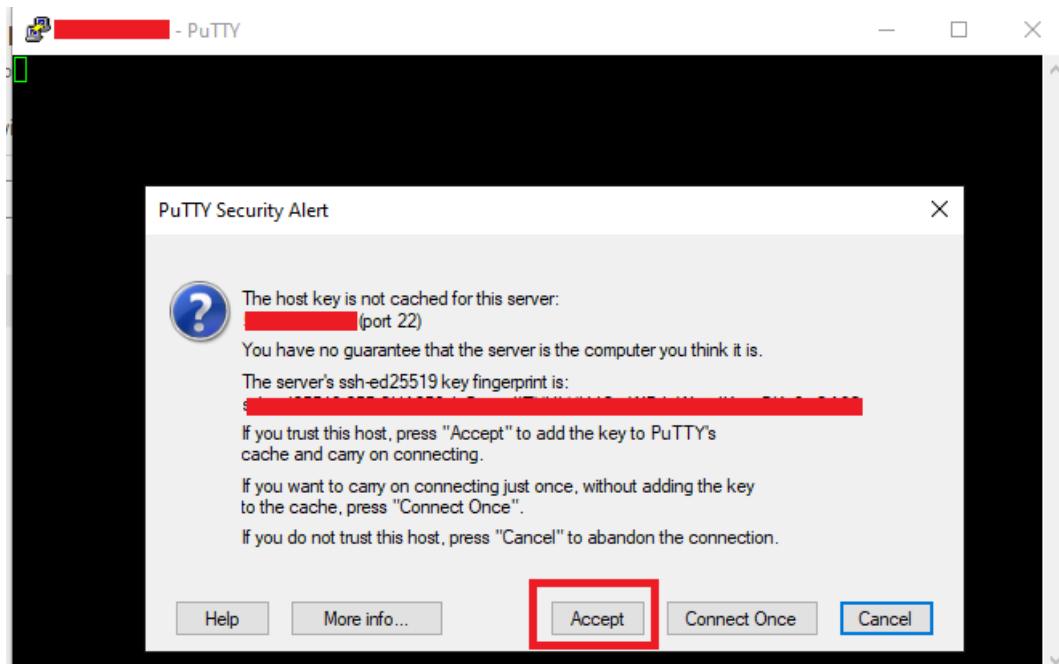
Da se spajamo na virtualnu mašinu sa PuTTY, prvo moramo preuzeti aplikaciju koju možete na ovome [linku](#).



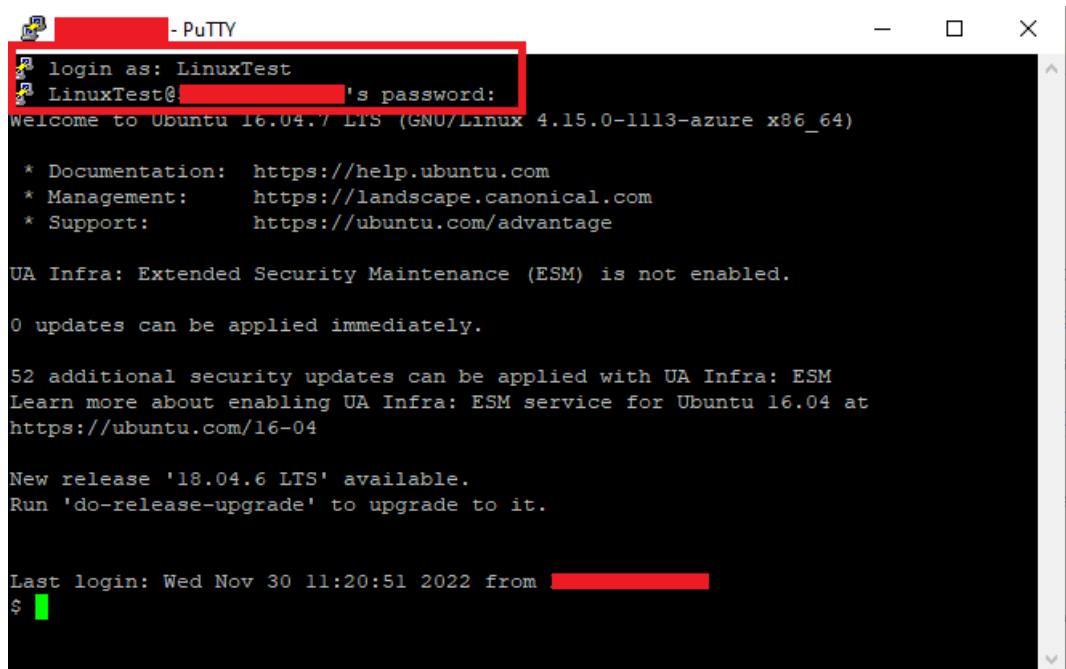
Kada se preuzeme i instalira program, pokrećemo ga i otvara se njegov prozor u kojem nas pita da upišemo IP adresu. Tu upisujemo IP adresu od virtualne mašine i pritisnemo gumb „Open“.



Otvara nam se prozor na kojem pritisnemo „Accept“ da se spojimo na virtualnu mašinu.



Postupak je isti kao i kod CMD-a, samo Šta nas prvo pita korisničko ime da unesemo pa onda tek lozinku.



The screenshot shows a PuTTY terminal window titled '- PuTTY'. The session is connected to a Linux host named 'LinuxTest'. The user has entered their password. The terminal displays the standard Ubuntu 16.04 LTS welcome message, including links for documentation, management, and support. It also informs the user that UA Infra: Extended Security Maintenance (ESM) is not enabled and that 52 additional security updates can be applied. A new release, '18.04.6 LTS', is available, and the user is prompted to run 'do-release-upgrade' to upgrade. The last login information is shown at the bottom, followed by a prompt '\$'.

```
login as: LinuxTest
LinuxTest@[REDACTED]'s password:
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.15.0-1113-azure x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

UA Infra: Extended Security Maintenance (ESM) is not enabled.

0 updates can be applied immediately.

52 additional security updates can be applied with UA Infra: ESM
Learn more about enabling UA Infra: ESM service for Ubuntu 16.04 at
https://ubuntu.com/16-04

New release '18.04.6 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Wed Nov 30 11:20:51 2022 from [REDACTED]
$
```