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Instrumente Structurale
2014-2020

Resources allocation for Deep Learning and Big Data applications in CloudUT



UNIVERSITATEA TEHNICĂ
DIN CLUJ-NAPOCA



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- Introduction
- Resources available in CloudUT
 - VM without dedicated software
 - Specialized VMs – CloudUT specific solutions
- Access to resources in CloudUT
- CloudUT Center
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 - CloudUT Center Website
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Introduction

- CloudUT infrastructure
 - provides support for research activities in UTCN
 - resources are not available for didactic activities
- CloudUT beneficiaries
 - research groups and research projects
 - PhD students
 - master or undergraduate students involved in research activities within UTCN research groups
- CloudUT resources management
 - subject to CloudUT use policies
 - consultancy in resources configuration is provided by CloudUT experts
 - resources requests / issues reporting are managed by CloudUT Center
 - access to resources is secured through VPN access

Resources available in CloudUT

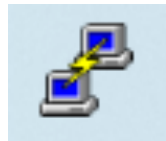
- VM without dedicated software
 - generic VM configurations
 - optional: opt for a preinstalled operating system (from a predefined list)
- Specialized VMs – CloudUT specific solutions
 - Spatial Data Analysis through Visual Analytics techniques
 - Deep Learning for Artificial Vision using Matlab or PyTorch
 - Services for IoT data gathering and analysis
 - Web Hosting as a Service
 - Data processing management and distribution over Virtual Machine Networks
 - Advanced simulation platform based on Ansys

Access to resources in CloudUT

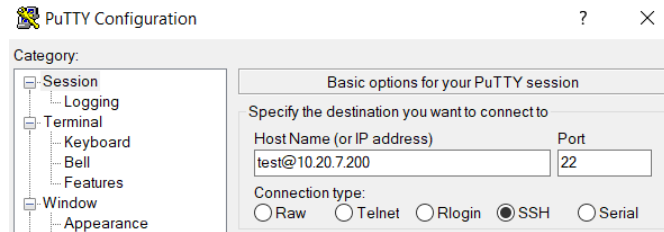
- VPN



OpenVPN



Putty



Terminal SSH / CLI

```
root@ubuntu: /home/cty
ether 00:50:56:b7:62:ba txqueuelen 1000 (Ethernet)
RX packets 40891214 bytes 19713561013 (19.7 GB)
RX errors 0 dropped 2667 overruns 0 frame 0
TX packets 22780361 bytes 15045877224 (15.0 GB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

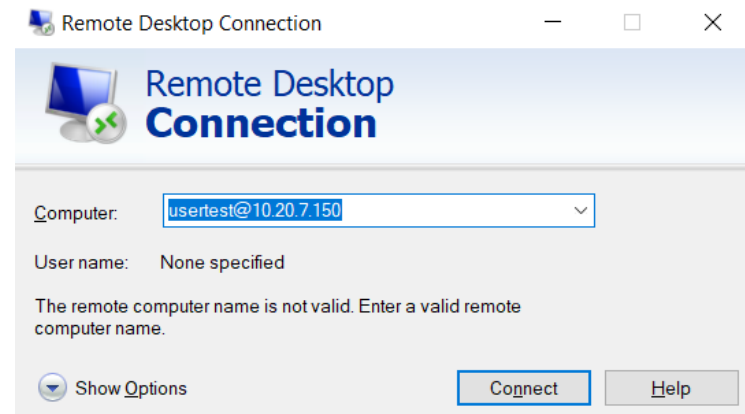
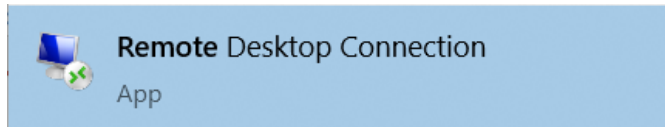
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
inet 127.0.0.1 netmask 255.0.0.0
inet6 ::1 prefixlen 128 scopeid 0x10<host>
loop txqueuelen 1000 (Local Loopback)
RX packets 42571 bytes 2262594 (2.2 MB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 42571 bytes 2262594 (2.2 MB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

vethc247d92: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
inet6 fe80::90d2:e0ff:fe4c:51f6 prefixlen 64 scopeid 0x20<link>
ether 92:d2:e0:4c:51:f6 txqueuelen 0 (Ethernet)
RX packets 2178142 bytes 5078411724 (5.0 GB)
RX errors 0 dropped 0 overruns 0 frame 0
TX packets 2736670 bytes 4726673060 (4.7 GB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@ubuntu: /home/cty#
```

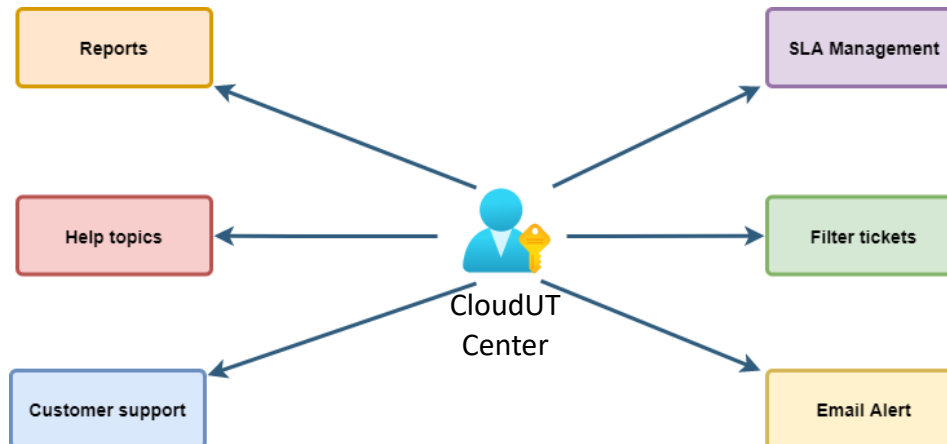
Access to resources in CloudUT

- RDP



CloudUT Center

- dedicated organizational structure
 - monitors and maintains CloudUT infrastructure
 - provides support for CloudUT beneficiaries
 - facilitates easy access to available resources
 - ensures efficient use of CloudUT infrastructure
 - on request, provides cloud-related consultancy for beneficiaries



CloudUT Center Website

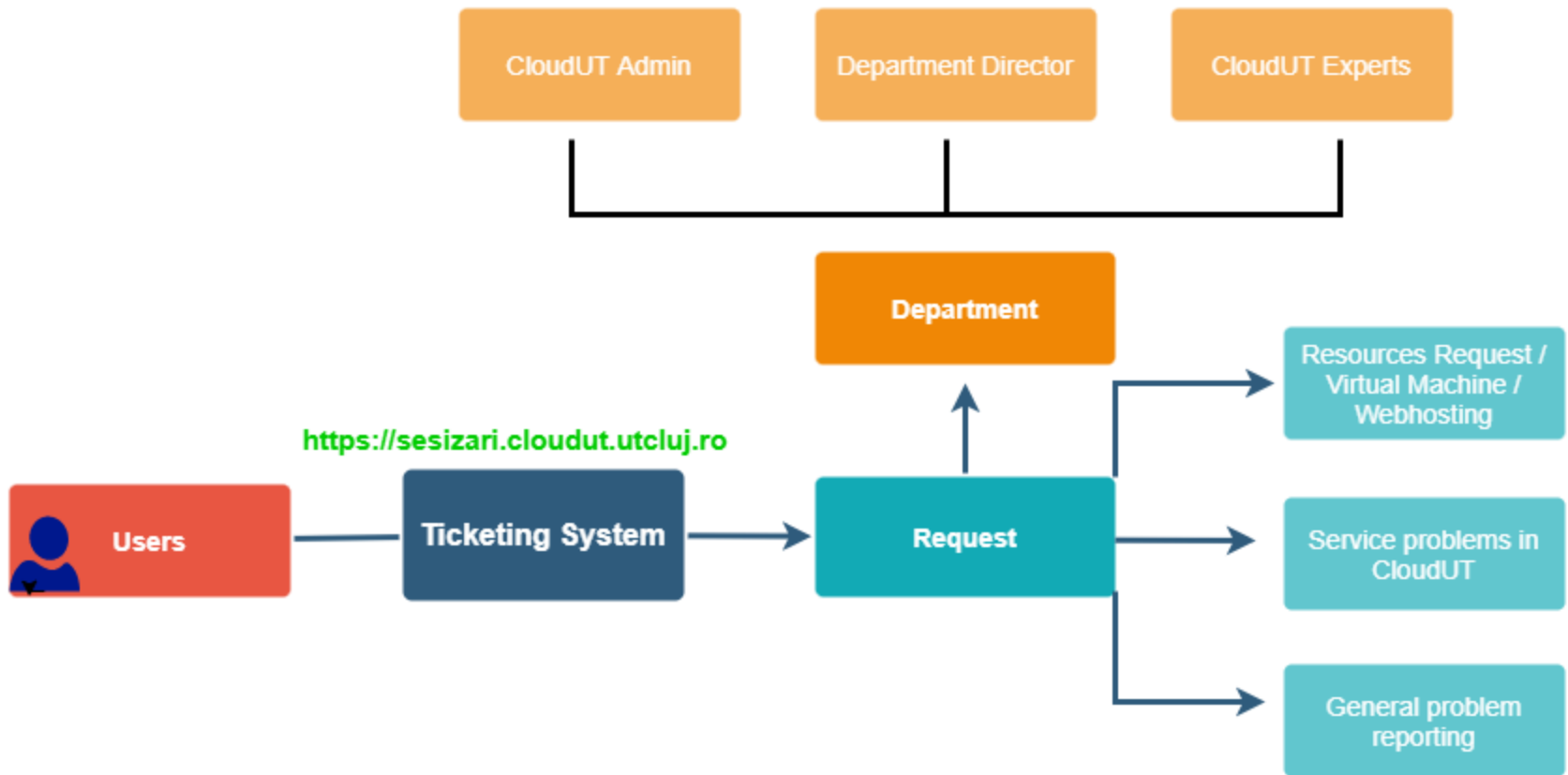
- <https://cloudut.utcluj.ro/>
- central access point
 - consult CloudUT use terms and procedures
 - identify best configuration for your needs
 - learn about CloudUT dedicated applications and services
 - reduced setup time through preconfigured templates
 - improved security
 - optimized hardware and software stacks
 - specialized consultancy available
 - initiate resources allocation request
 - contact support

CloudUT Ticketing System

Features:

- A centralized platform for requests;
- Ability to create a ticket by sending an email to a predefined alias;
- Web forms for creating self-service tickets for applicants;
- Automatic responses to inform applicants that their ticket has been created;
- A means of tracking communications between applicants and support agents;
- Visibility of the applicant to the ticket status;
- Data for reporting and analysis.

CloudUT Ticketing System



Demo



Conclusions

- CloudUT infrastructure is dedicated for research activities in UTCN
- CloudUT VM resources can be accessed only through VPN
- CloudUT Center
 - provides support for all CloudUT beneficiaries
 - maintains CloudUT infrastructure and responds to issues
 - can be contacted through
 - CloudUT Center Website
 - CloudUT Ticketing System
- Authentication using LDAP



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Thank you for your attention!



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