

COLUMBIA UNIVERSITY

Department of Electrical Engineering

EE Computing Lab Remote Access

Table of Contents

- OVERVIEW..... 3**
- CUIT VPN Service..... 3**
- Linux Basic Knowledge & Resourse 3**
- Install the Enterprise Client 4**
 - Prerequisites.....4
 - Windows Installations & Maintenance.....5
 - MacOS Installations & Maintenance6
- Setup a Connection 7**
 - 1) Creating New Connections7
 - 2) Connecting Virtual Desktop Session.....8
 - I. Situation 1: 10
 - II. Situation 2: 10
 - 3) You are connected!12
- Feedback 12**

OVERVIEW

In addition to remote01.ee.columbia.edu-remote02.ee.columbia.edu, lab computers cadpc01.ee.columbia.edu-cadpc42.ee.columbia.edu can be directly accessed using the method below. You can use the [remote lab workstation status page](#) to help you identify open machines with lower usage.

In order to access the labs remotely, you firstly need to have an active computer account at EE Computer Lab System and access to Columbia CUIT VPN. Then you'll use a NoMachine Enterprise Client to create/connect to a virtual desktop running on lab workstations. NoMachine Enterprise Client is a client that works on Windows, Mac OS X, and Linux. SSH protocol is used for the connections.

CUIT VPN Service

*Our lab workstations are behind firewall and all SSH traffic from off-campus network will be blocked, so, if you want to remote access from off-campus network, you need first connect to CUIT VPN first before following the instructions shown in this guide. Nevertheless, you can directly access our lab workstations without VPN if you are on campus network, i.e. Campus **Secure** WiFi, or wired network, etc.*

You can find detail information about how to setup and use CUIT VPN Service through CUIT website, <https://www.cuit.columbia.edu/install-vpn>.

Linux Basic Knowledge & Resource

The lab workstation is running Red Hat Enterprise Linux (RHEL) Operating System. If you are not familiar with Linux OS, we suggest you use the resource shown as below to take a tutorial:

- Linux Tutorial for Beginners: Introduction to Linux Operating System (<https://www.youtube.com/watch?v=V1y-mbWM3B8>)
- UNIX Tutorial for Beginners <http://www.ee.surrey.ac.uk/Teaching/Unix/>

Install the Enterprise Client

This session provides instructions to install, update and uninstall the enterprise client package.

Prerequisites

Supported Operating Systems

Windows 32-bit/64-bit Vista/7/8/8.1/10/11

Windows Server 2008/2012/2016/2019

Mac OS X Intel 64-bit 10.9 to 10.11/macOS Intel 10.12 to 12.x

Linux 32-bit and 64-bit

RHEL 6.0 to RHEL 9

CentOS 6.0 to CentOS 8.5

CentOS Stream 8 to CentOS Stream 9

SLED 11 to SLED 15

SLES 11 to SLES 15

openSUSE 11.x to openSUSE 15.x

Fedora 10 to Fedora 36

Debian 5 to Debian 11

Ubuntu 8.04 to Ubuntu 22.04

Hardware requirements

Intel Core2 Duo or AMD Athlon Dual-Core or equivalent

1 GB RAM

Network connection (either a LAN, or Internet link: broadband, cable, DSL, etc...)

Hard Disk Space required on disk:

Windows 85 MB

Linux 80 MB

Mac 80 MB

Compatibility Between Client/Server Versions

It's however strongly suggested to upgrade both client and server to the last version, in order to benefit from all the features sported by the newest version.

Windows Installations & Maintenance

INSTALL

Download the NoMachine Enterprise Client EXE package from the [NoMachine web site](#) and double click on the package icon: the Setup wizard will take you through the installation.

UPDATE

There are two ways to update your current installation:

I. Automatic updates

You can update your installation from our repositories. Just run the NoMachine UI from your Programs Menu and access the Settings -> Updates panel. Then click on the 'Check now' button.

At every startup, NoMachine Enterprise Client checks our repositories to verify if updates are available or checks the repositories every two days. If updates are available, the server will issue a dialog informing that a new version is available but **it will never automatically update the current installation.**

Checking for updates can be disabled from that dialog by selecting the 'Don't ask again for this version' option or in the Updates panel by unchecking the 'Automatically check for updates' option.

Detailed instructions for configuring the Automatic Updates are available in a separate document in the Configuration section at: <https://www.nomachine.com/all-documents> .

II. Update with NoMachine packages

Alternatively, download the latest available package from the NoMachine web site and click on the executable file to launch Setup. As for the installation, Setup will guide you through all steps necessary for updating your installation.

UNINSTALL

On Windows 10 and 11 right click on Start button choose Apps and Features and scroll down to 'NoMachine'. Select it and uninstall. Otherwise open the search box, type 'Control panel' to open it. Then go to Programs, Programs and Features and uninstall NoMachine from there.

On Windows 8 you can use the Search box from the Charms bar on the right side of the screen: type Control Panel to open it. Then access the Programs - 'Uninstall a program' panel.

MacOS Installations & Maintenance

INSTALL

Download the NoMachine Enterprise Client package for your macOS from the [NoMachine web site](#) and double click on the package icon to mount the disk image. Next double-click on the package to install it; the Installer will take you through the installation.

UPDATE

There are two ways to update your current installation:

I. Automatic updates

You can update your installation from our repositories. Just run the NoMachine UI from your Programs Menu and access the 'Settings' -> 'Updates' panel. Then click on the 'Check now' button.

At every startup, NoMachine Enterprise Client checks our repositories to verify if updates are available. In this case, the server will prompt a dialog informing that a new version is available but **it will never automatically update the current installation.**

Checking for updates can be disabled from that dialog by selecting the 'Don't ask again for this version' option or in the Updates panel by unchecking the 'Automatically check for updates' option.

Detailed instructions for configuring the Automatic Updates are available in a separate document in the Configuration section at: <https://www.nomachine.com/all-documents> .

II. Update with NoMachine packages

Alternatively, download the latest available package from the NoMachine web site and click on the executable file to launch Setup. As for the installation, Setup will guide you through all steps necessary for updating your installation.

UNINSTALL

To uninstall the Enterprise Client, drag and drop NoMachine from Applications to trash or select 'Move to trash' from the mouse button menu. This will uninstall all the NoMachine software.

Setup a Connection

All workstations, including *remote01 ~ 02*, *cadpc01 ~ cadpc42* and *micro01 ~ micro35* are running *NoMachine Workstation service*, which allows up to 4 simultaneous virtual desktops on each host. If you find it is over the quota while trying to connect to one host, please use the [remote lab workstation status page](#) to identify another host.

In addition, to be able to login to the remote computer, you also need to have a valid EE Computer Lab account and connect to [Columbia CUIT VPN](#).

1) Creating New Connections

To connect the first time to the remote computer, or to create a new connection, click on 'Add' button at top left:

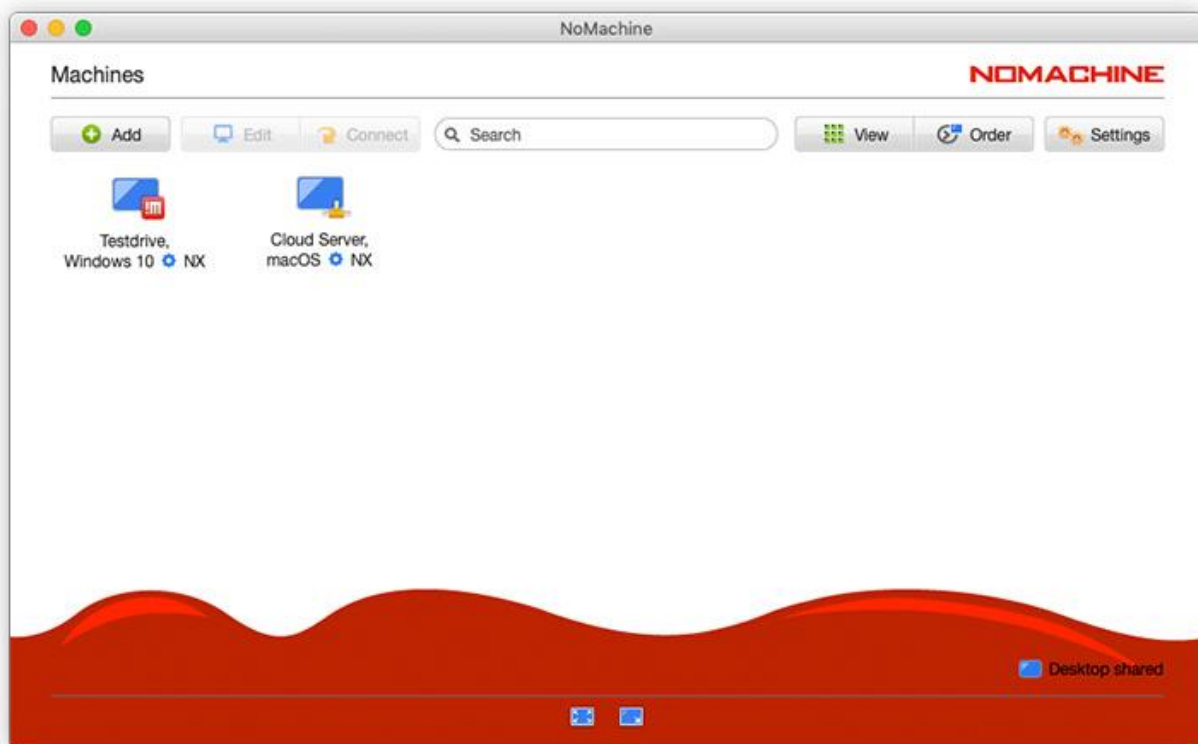


Figure 1: NoMachine Client First Opening Panel

Provide the relevant information: a name for the connection (for you to easily remember), the workstation hostname you want to connect to, then choose to use the SSH protocol, instead of NX or HTTPS. After providing all necessary information, press +Add icon.

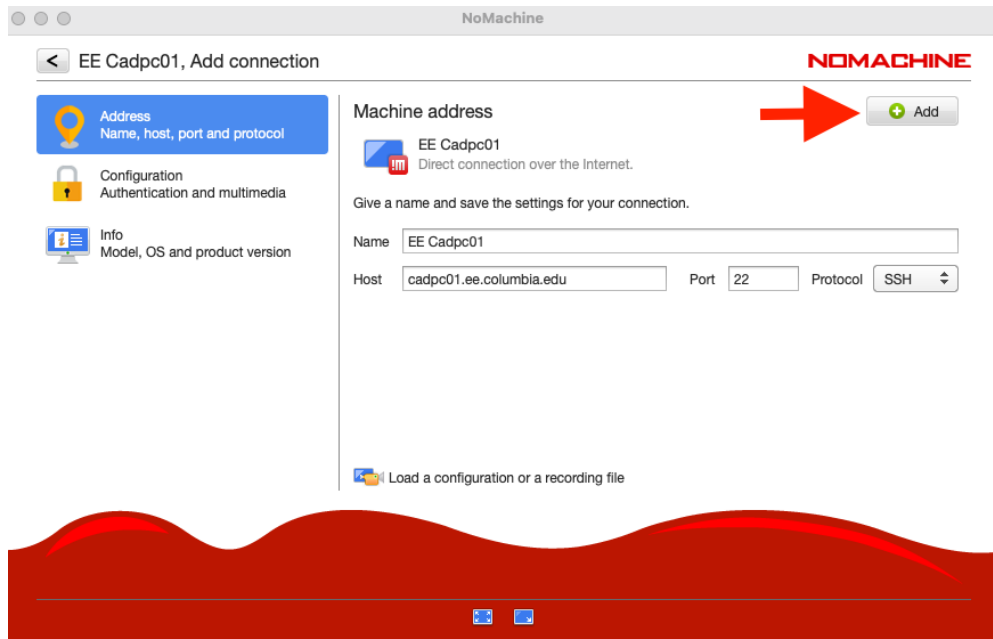


Figure 2: Example - Connection for Cadpc01

2) Connecting Virtual Desktop Session

Once the connection is created, it will be listed in the first opening panel of the client, 'Machines':

To connect to the remote computer, double-click on the connection icon. Or right-click on the icon and opens a context menu where you can choose "Start connection"

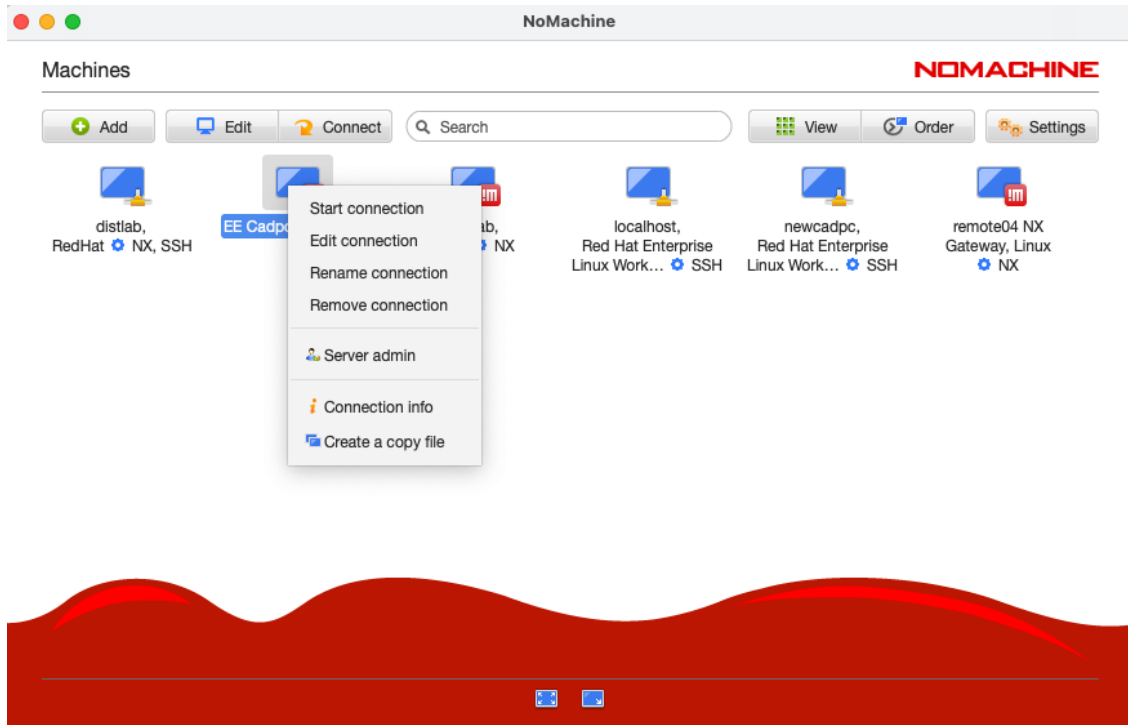


Figure 3: Choose and Connect to a Virtual Desktop Session

You will be prompted to log in. Use the credentials for your EE Computer Lab account, click 'OK' and wait a few more seconds while NoMachine connects you to the lab workstation

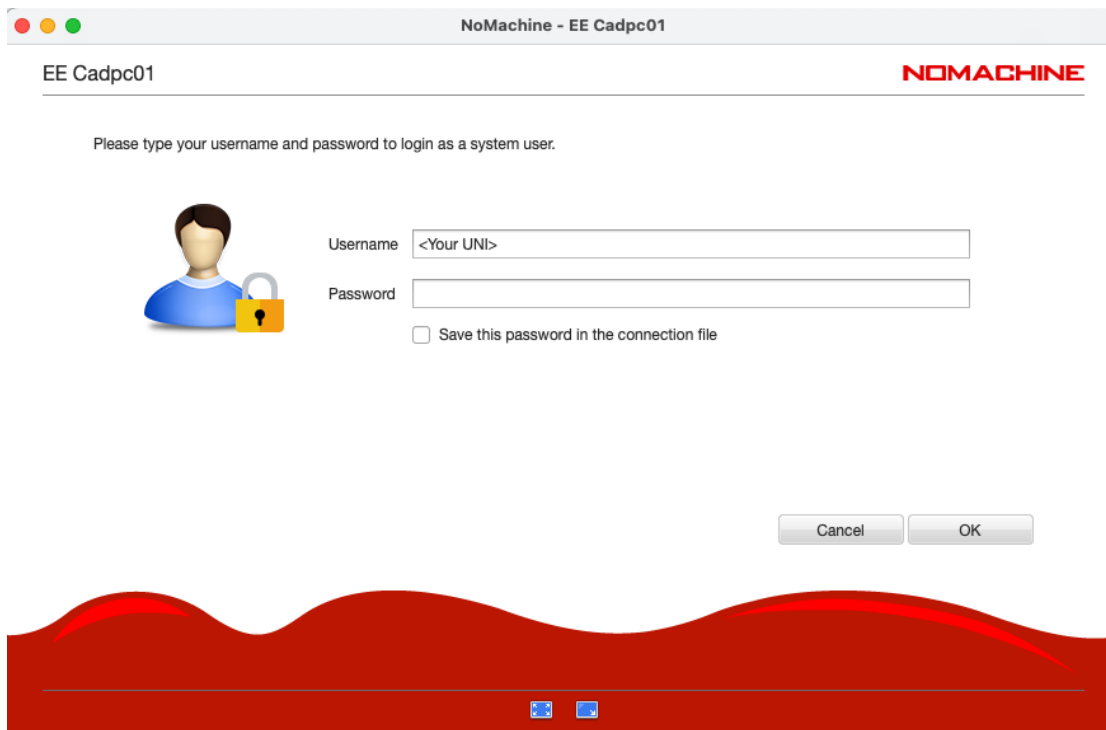


Figure 4: Insert the credentials of your EE Account

Once you successfully log in to NoMachine terminal server, you may see two different panels.

I. Situation 1:

If you have created a virtual desktop and it is still running, you will see a panel with “My desktops”. You can just double-click the virtual desktop icon to reconnect to it

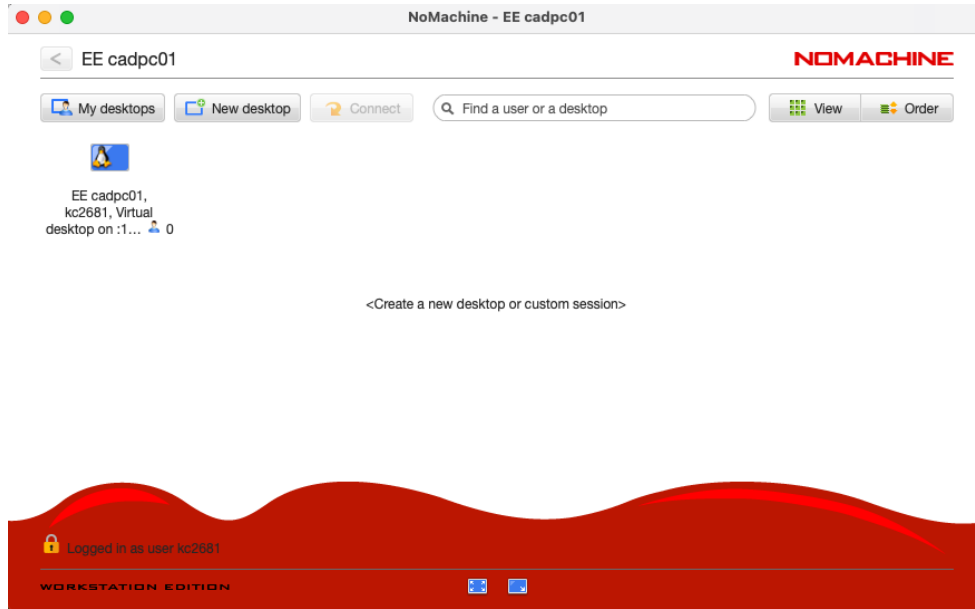


Figure 5: Connect to existing virtual desktop

II. Situation 2:

If you do not have running a virtual desktop on the host, you will be able to choose between creating a **virtual desktop** or a **custom session** as shown below. Click on 'Create a new virtual desktop'.

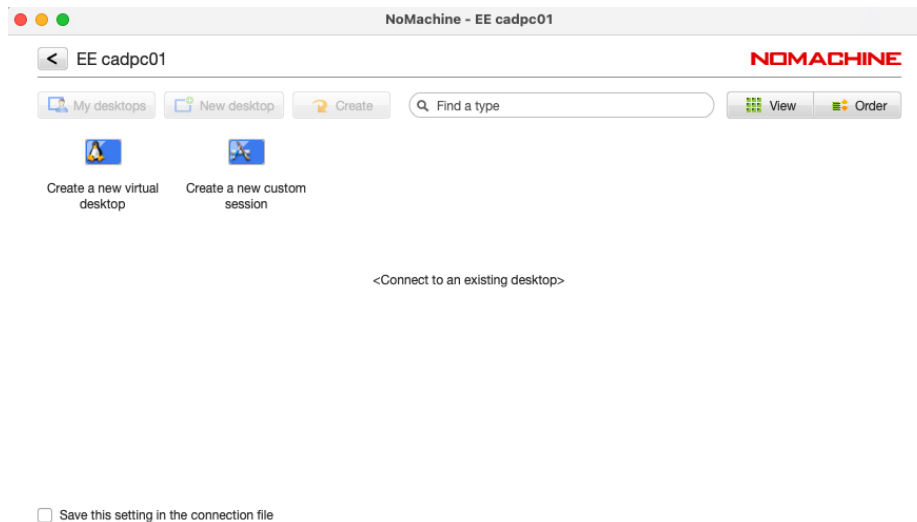


Figure 6: Create a new virtual desktop

Click 'OK' to accept the default setting for the upcoming windows

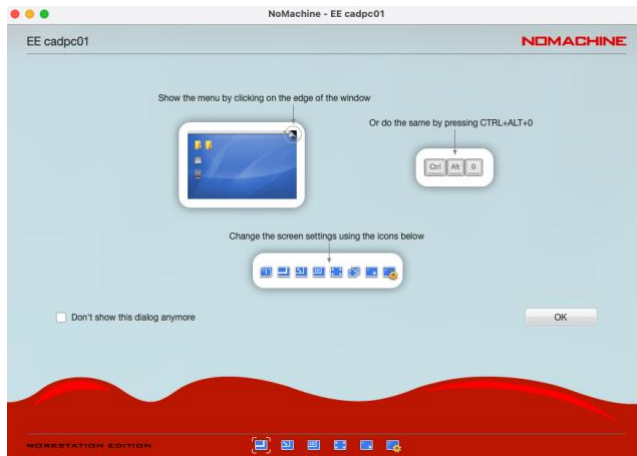


Figure 7: Follow-up panel 1

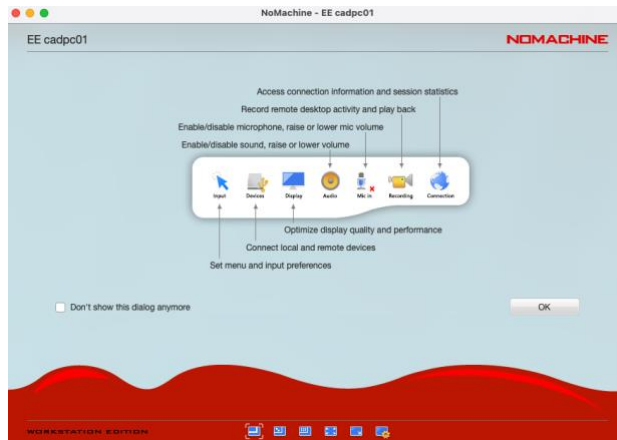


Figure 8: Follow-up panel 2



Figure 9: Follow-up panel 3

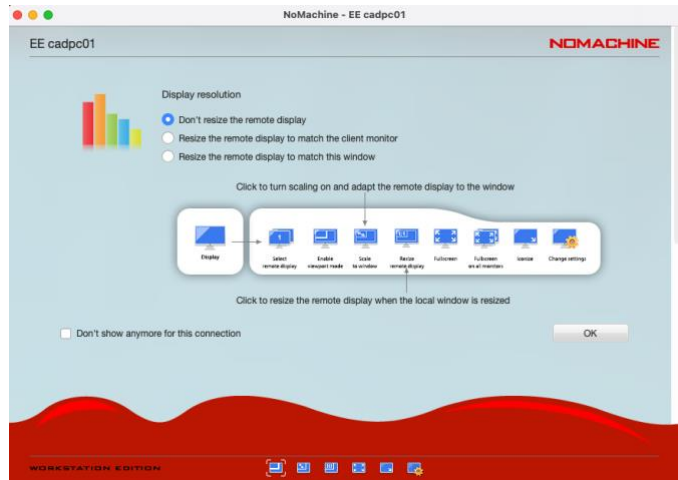


Figure 10: Follow-up panel 4

3) You are connected!

You are now connected to the remote desktop and work on the EE Lab workstations for your courseworks.

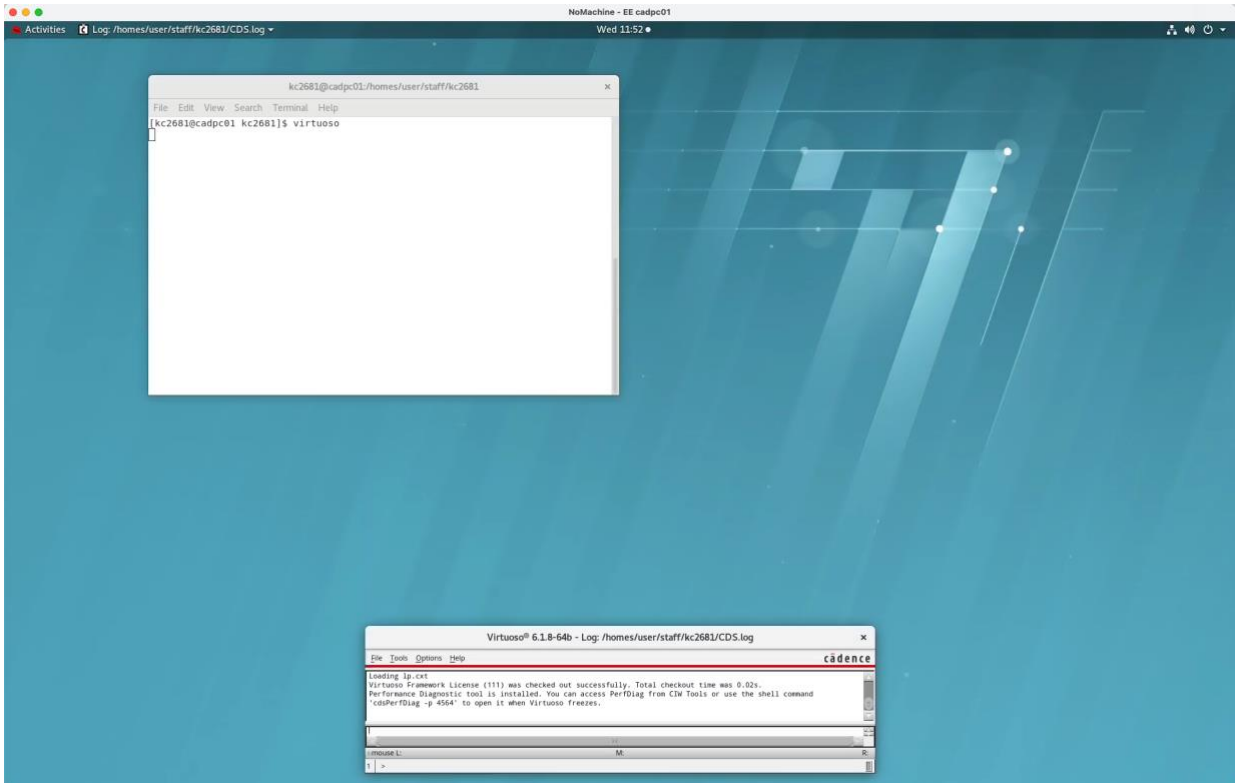


Figure 11: Control the remote desktop

Feedback

If you have any question and suggestion in regard to this user guide, please feel free to submit an IT ticket to helpdesk@ee.columbia.edu.

