

<b>NOMACHINE</b>	Setting up highly available remote access to virtual desktops load-balanced among multiple Linux hosts	
<b>Prepared by:</b> Silvia Regis	<b>N°:</b> D-705_018-STT-HLB	
<b>Approved by:</b> Sarah Dryell	<b>Last modified:</b> 2017-11-03	<b>Amended:</b> A



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This document is intended to provide general guidelines for understanding which NoMachine products and licenses are necessary to provide highly available remote access to virtual desktops and single applications distributed among multiple Linux host. The remote computer can be your own physical or virtual machine either on-premises or hosted in a cloud.

### Definitions

A NoMachine **virtual desktop** is an individual instance of the remote desktop. Instead of running a virtual instance of the whole remote desktop, it's also possible to execute **single applications**. These functionalities are available only with NoMachine servers on Linux in the 'NoMachine Terminal Server' family.

	Feature
<b>NoMachine Enterprise Terminal Server</b>	Provide access to virtual desktops running on this server host and/or on remote Terminal Server Node installations
<b>NoMachine Terminal Server Node</b>	Support virtual desktops and single applications, can work only in conjunction with an Enterprise Terminal Server

To set up a multi-host environment made of **NoMachine Terminal Server Nodes** (TSN) it's necessary to have **NoMachine Enterprise Terminal Server**. With Enterprise Terminal Server it's possible to automatically load-balance virtual desktops among such remote TSN hosts using a number of formulas: plain round-robin, weighted round-robin and custom algorithms or based on load average. It's also possible to let users choose the Terminal Server Node manually.

In this document we will see what is necessary to set-up a NoMachine Enterprise Terminal Server infrastructure and maintain high-availability of virtual desktops by means of a second Enterprise Terminal Server, associated to the first one in an active/passive failover cluster. If the active Enterprise Terminal Server fails, this second Enterprise Terminal Server takes its place to grant business continuity.

### A schematic diagram

# NOMACHINE

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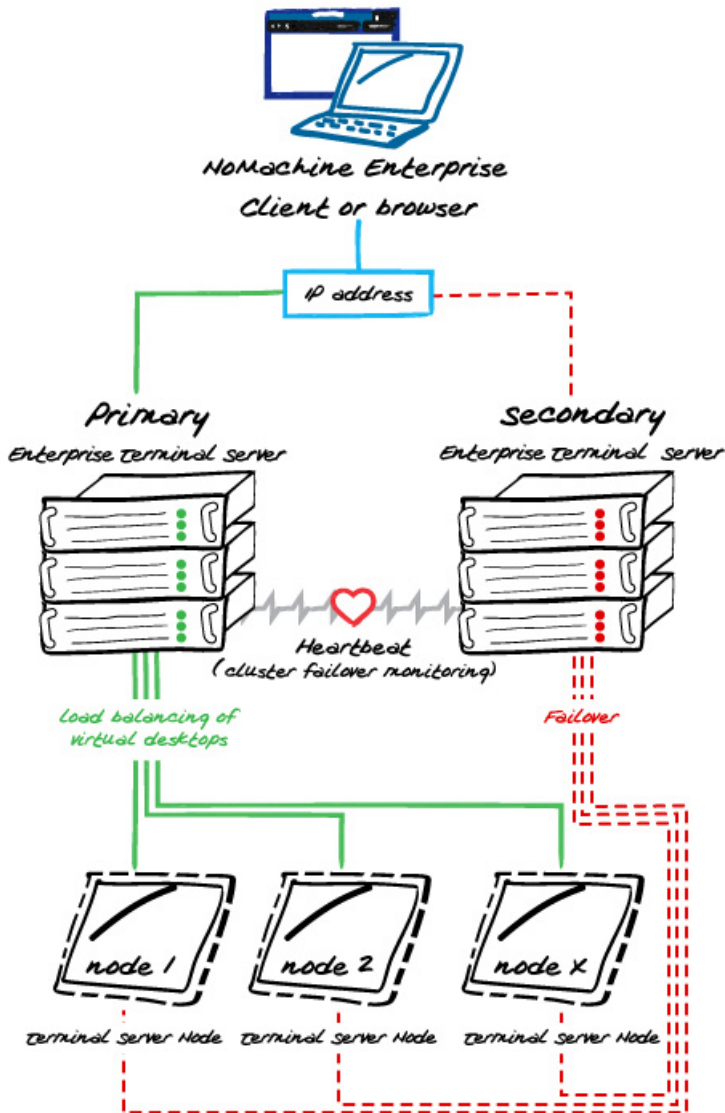
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This solution is suitable for medium/large business.

## Licensing

Pre-requisite for load-balancing virtual desktops among remote Linux machines and high-availability are:

**1 NoMachine Enterprise Terminal Server** license for Linux

**1 NoMachine Enterprise Terminal Server** for the secondary Linux server host if you need to set-up the failover cluster for HA virtual desktops

**2+ NoMachine Terminal Server Nodes** licenses for Linux

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On the end-user's computer install NoMachine Enterprise Client (which is free to use) or connect by the web via browser.

### Minimum requirements

This scenario typically has installed:

- 1 NoMachine Enterprise Terminal Server on Linux host (1 machine called "A").
- 1 NoMachine Enterprise Terminal Server on Linux host (1 machine called "B").
- 1 NoMachine Terminal Server Node on Linux host (1 machine called "C").
- 1 NoMachine Terminal Server Node on Linux host (1 machine called "D").

The NoMachine failover cluster is established between machine A and B. The active NoMachine server will provide access to the virtual desktops distributed between machine C and D.

You need 2 Enterprise Terminal Servers to make a cluster: one server is the primary server, active and able to manage connections and dispatch user sessions among the Terminal Server Node hosts. The other server is the secondary server, passive and not operative. The secondary server becomes operative only when the primary server goes down, thus taking its place. A valid NoMachine license is necessary on both servers, since the secondary server is not shut down but ready to replace the primary server in the case of failover.

If you don't need HA:

### Licensing

Pre-requisite for load-balancing virtual desktops among remote Linux machines without high-availability are:

**1 NoMachine Enterprise Terminal Server** license for Linux

**1+ NoMachine Terminal Server Nodes** licenses for Linux

On the end-user's computer install NoMachine Enterprise Client (which is free to use) or connect by the web via browser.

### Minimum requirements

This scenario typically has installed:

- 1 NoMachine Enterprise Terminal Server on Linux host (1 machine called "E").
- 1+ NoMachine Terminal Server Node on Linux host (1 machine called "F").

The NoMachine Enterprise Server will load-balance virtual desktops between its host (machine E) and

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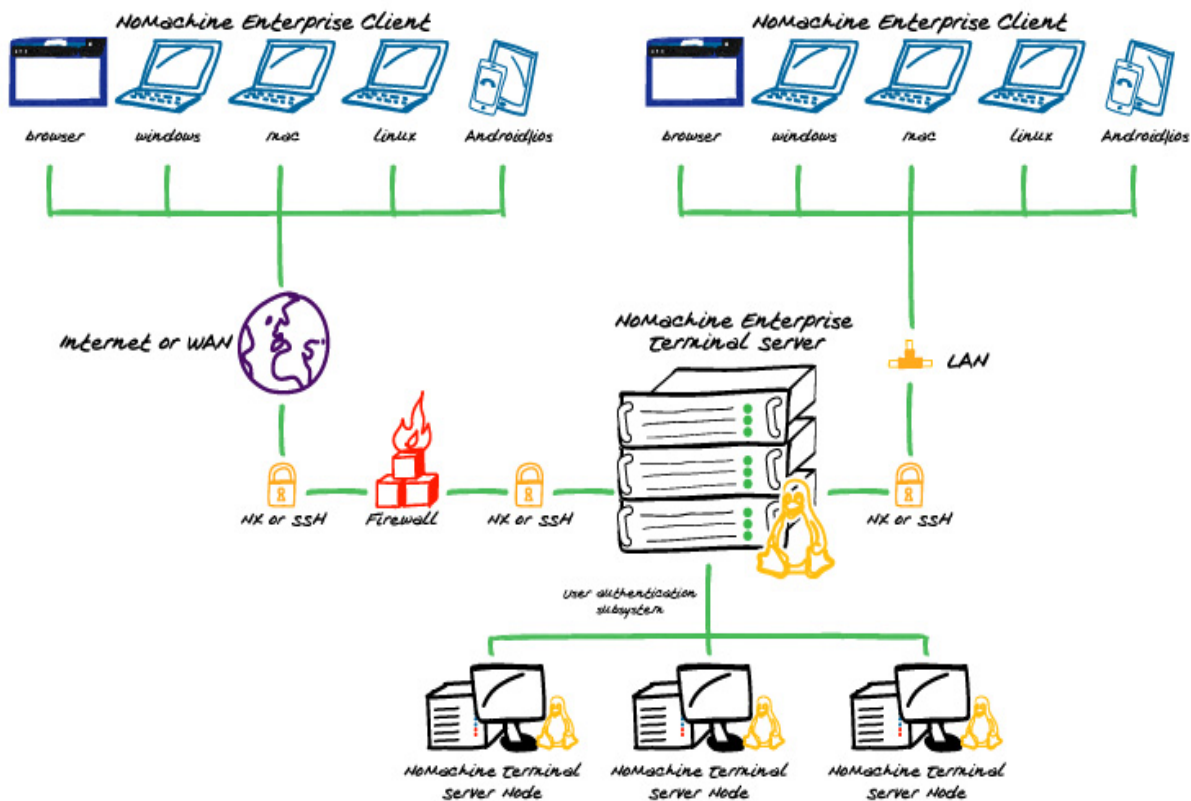
machine F. It's also possible to let user choose if creating the virtual desktop on machine E or F.

### TIPS

All NoMachine hosts can be either a physical computer or a virtual machine.

Multiple NoMachine Enterprise Terminal Servers, even in different geographical locations, can be federated under a Cloud Server, which provides a single point of access to different subsystems.

This diagram shows a multi-node (Terminal Server Nodes) environment with a single point of access, NoMachine Enterprise Terminal Server.



*Users can create their own virtual desktop, or run single Linux applications on any of the Terminal Server Nodes. The Enterprise Terminal Server can select the node automatically to load-balance sessions or let the user decide.*