



White Paper

ThinRDP Load Balancing

Introduction

Load balancing and Fault-tolerance are methodologies to distribute workload across multiple services to achieve optimal resource utilization, avoid overload and allow the system to operate properly in the event of failure of some of its components.

This White Paper is intended to show you how to create a network configuration using a combination of Round-Robin DNS and the Load Balancing feature included in ThinRDP Server.

Round-Robin DNS

Round-Robin DNS is a simple method of load balancing, where a list of IP addresses are associated with a single domain name. The list is continuously permuted, so the returned IP address varies for each DNS response.

ThinRDP's Load balancing feature

ThinRDP Server can be configured in two basic ways: normal mode and load balancing mode.

Normal mode

This is the default mode in which one single ThinRDP Server centralizes all the web requests and the same server creates and processes all the RDP connections.

Load balancing mode

In this mode, ThinRDP must be installed in two or more servers that will participate in the load balancing / fault-tolerance scenario. Two possible roles can be configured:

- **Connection Broker:**
Under this role, ThinRDP responds to all web-pages requests and, when an RDP connection to a remote desktop is solicited, it selects the appropriate Connection Server to forward that request. The final RDP connection is done through the chosen Connection Server.
In case any established connection fails, or a Connection Server falls down, the Broker will be able to reconnect to the Server with the highest availability at a that moment.
All the system settings and profiles are centralized and stored on this server.
- **Connection Server:**
Under this role, ThinRDP processes forwarded RDP connections only. This server is responsible for establishing and processing the RDP connections assigned by the Connection Broker. All Connection Servers must have their IPs public to the client's Web Browser, so that once the RDP connection has been assigned by the server, the browser can redirect its request to this new server.

Architectures

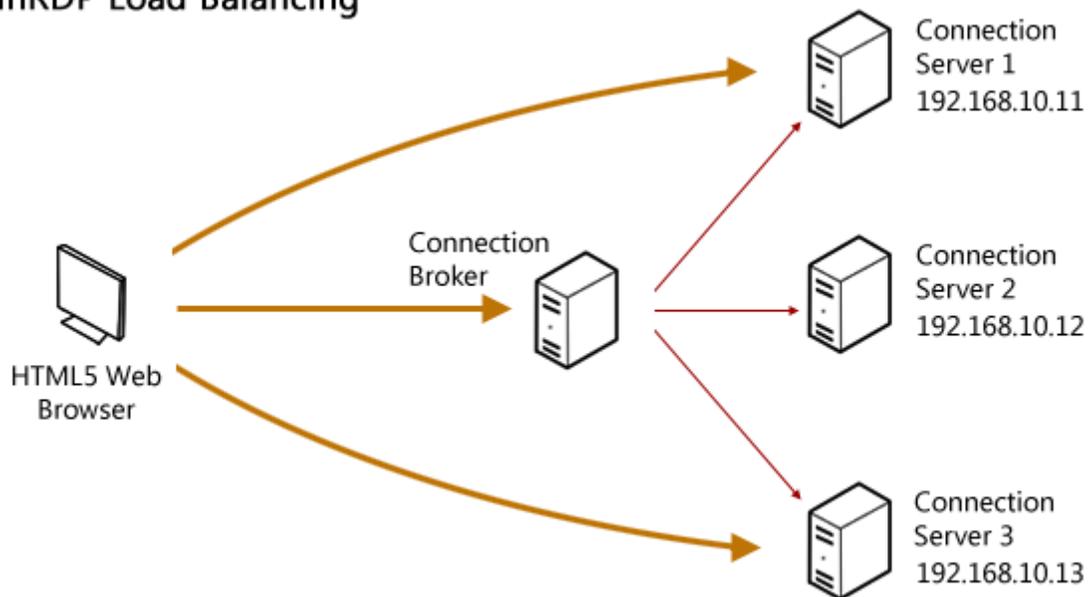
Here, we present three possible load balancing architectures. The decision on the architecture that will be used is an essential step to be able to plan the hardware scheme and configure the system to work in a distributed way.

ThinRDP's Load Balancer only

With ThinRDP's load balancing feature, RDP connections are evenly distributed across multiple Connection Servers. This architecture is composed by a single Connection Broker and multiple Connection Servers.

The image below illustrates the ThinRDP's Load Balancer architecture:

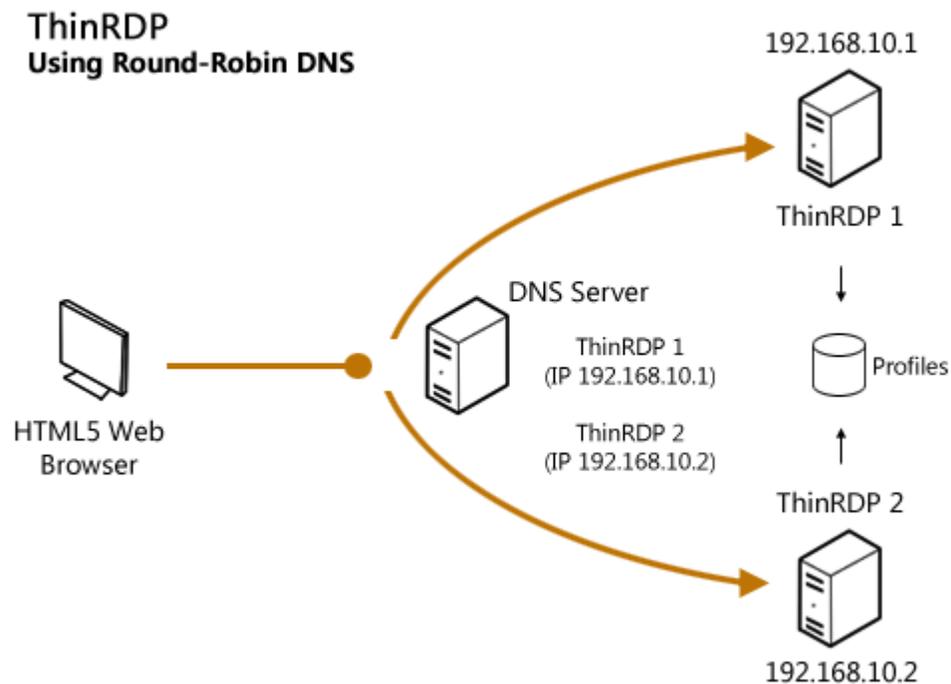
ThinRDP Load Balancing



Round-Robin DNS only

In this case, the DNS will be in charge of distributing load to a number of ThinRDP Servers. Each ThinRDP Server needs to be configured in such way that they can share the profiles database.

The image below shows how the "Round-Robin DNS" architecture works:

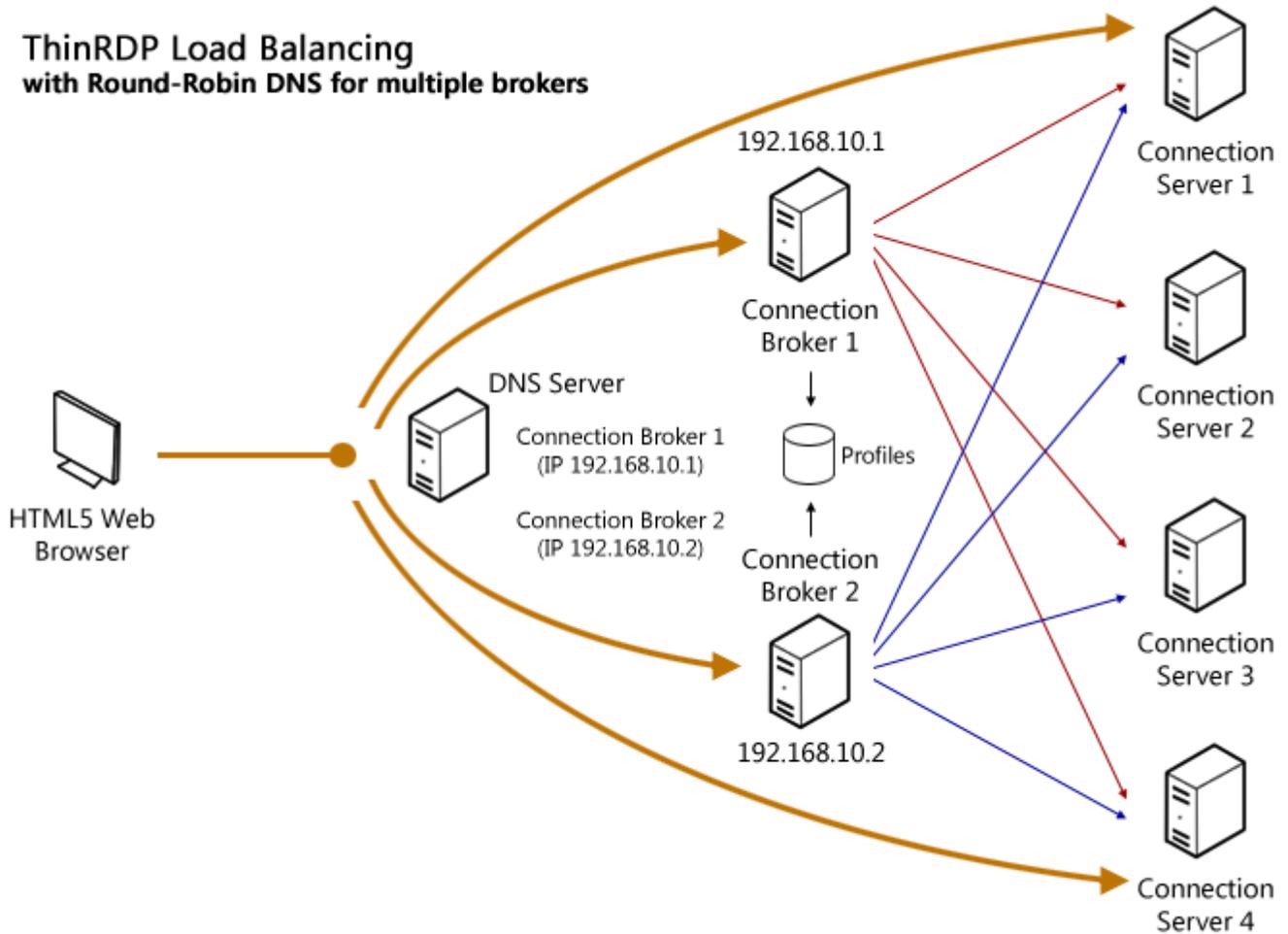


Round-Robin DNS + ThinRDP's Load Balancer

The combination of the other two architectures will shape this one. It combines the ThinRDP Load Balancer to allow load balancing and failover among the RDP connections and the Round-Robin DNS scheme to allow multiple Connection Brokers.

This architecture requires multiple Connection Servers, multiple Connection Brokers and the DNS Server with the domain name associated to all the available Brokers IP's.

Take a look below on how this architecture is structured:



Conclusion

Some of the benefits of using the Load Balancing architectures are:

- Avoiding overload by distributing the connections among different servers,
- Minimizing response time,
- Providing more reliability (redundancy) and
- Enabling Failover Control

Complete Reference:

Find the complete reference on the ThinRDP Server Guide under the link: <http://www.cybelesoft.com/helps/thinrdp/server>