Technical white paper

Windows Server Technologies for High-Availability & Failover

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Introduction

Several technologies exist to ensure that the Remote Desktop Services (RDS) infrastructure can be run in a high-availability configuration. This paper introduces software high-availability options for each of the RDS components and provides links to further information.

Round robin DNS

Some RDS components can be enhanced for high availability with the assistance of round robin DNS. When DNS lookup of the server hostname is performed, the DNS server will change the answer for which IP address to try first. In this manner, different clients will get a different answer, which tends to spread the load across the server pool.

For more information about configuring round robin DNS, go to http://technet.microsoft.com/en-us/library/cc787484.aspx.

Network Load Balancing

Although round robin DNS can be helpful in supporting high-availability for RDS, in some situations, Network Load Balancing (NLB) is recommended instead. Because round robin DNS is unaware if a given host is up or down, the client can end up spending time attempting to contact a server that is offline. NLB allows multiple servers to appear on the network as if they were a single IP address, and incoming connections are spread over the NLB cluster while ensuring that new incoming traffic is not sent to an offline cluster member.

For more information about NLB, go to one of the following websites:

- NLB with Windows Server 2008: http://technet.microsoft.com/en-us/library/cc725691.aspx
- NLB with Windows Server 2012: http://technet.microsoft.com/en-us/library/hh831698.aspx

RD Session Host and RD Virtualization Host

Remote Desktop Session Host (RD Session Host) servers and Remote Desktop Virtualization Host (RD Virtualization Host) servers can be configured to use a farm. RD Connection Broker is essential for this type of deployment and is responsible for spreading the load across the cluster members.

To see a checklist for creating an RD Session Host farm using RD Connection Broker, go to http://technet.microsoft.com/en-us/library/cc753891.aspx.

RD Connection Broker

RD Connection Broker is an essential component for RDS farm deployments. This broker is responsible for specifying which server incoming clients should be sent to.

RD Connection Broker supports a special high-availability mode. This should be configured when it is desirable to not have the broker be a single point of failure.

To see a checklist for creating an RD Session Host farm using RD Connection Broker, go to http://technet.microsoft.com/en-us/library/cc753891.aspx.

For more information about RD Connection Broker in high-availability mode, go to http://blogs.msdn.com/b/rds/archive/2012/06/27/rd-connection-broker-high-availability-in-windows-server-2012.aspx.

Dedicated farm redirection using an RD Session Host server

It can also be beneficial to use a dedicated farm redirection RD Session Host server in front of the farm. This helps reduce the load on the farm servers and resolve the issue of connecting to a server where a user is already logged in. Microsoft suggests installing this component on the same server as RD Connection Broker because the load for the redirection will be minimal.

Running a dedicated farm redirection server will not impact the ability to use RDP to administer that server. By connecting to the Admin console, an administrator can bypass the redirection and connect directly to the server in question. Connection to the Admin console can be performed by:

- HP ThinPro—Select the **Attach to admin console** checkbox in the RDP Connection Manager for the desired RDP connection.
- Windows with MSTSC—Run the following command from the Command Prompt: `mstsc.exe /admin`

The dedicated redirection server itself can be run in high-availability. Round robin DNS and NLB can both be used to achieve this.

For more information about dedicated farm redirection, go to http://technet.microsoft.com/en-us/library/dd834806.aspx.

RD Licensing

High availability of the RD Licensing component depends on the type of licensing in use. For more information, go to http://social.technet.microsoft.com/wiki/contents/articles/21180.rd-licensing-demystified-how-it-works.aspx.

RD Gateway

Remote Desktop Gateway (RD Gateway) provides a convenient mechanism to permit access to RDP resources without requiring a VPN for Internet and home users, or any similar case where users on a lower-security network require access to RDP resources on a higher-security network.

RD Gateway clustering can be performed by utilizing NLB. Furthermore, an SSL bridge can be used with RD Gateway to offload SSL processing to a front-end server, thus also permitting gateway functionality without requiring the gateway itself to be directly accessible from the WAN.

Round robin DNS should not be used to cluster the gateway. This will lead to cases where the client will randomly fail to connect thru the gateway.

For information about improving TS Gateway (now RD Gateway) availability using NLB, go to http://blogs.msdn.com/b/rds/archive/2009/03/24/improving-ts-gateway-availability-using-nlb.aspx.

For information about enabling SSL Bridging on the RD Gateway server, go to http://technet.microsoft.com/en-us/library/cc772387.aspx.

RD Web Access

Remote Desktop Web Access (RD Web Access) is often used with farm and RemoteApp configurations. This component provides a method of exposing a list of resources for use by remote users. In a WAN configuration, RD Web Access typically sits alongside RD Gateway at the edge of the network.

RD Web Access high availability can be achieved by using Round robin DNS, NLB, or SSL Bridging.

For more information about high-availability deployment options for Microsoft VDI, go to http://blogs.msdn.com/b/rds/archive/2010/03/01/microsoft-vdi-high-availability-deployment-options.aspx.

For more information

For more information about HP thin client software, go to the following:

- HP thin client software and operating system website:

  http://www8.hp.com/us/en/thin-clients/software-and-os.html

- HP Support Center (for documentation, search for the thin client model and see the corresponding Manuals page):

  http://www.hp.com/go/hpsc

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