REMOTE DESKTOP SERVER SIZING GUIDE

Abstract

One of the main changes in Windows Server 2008 R2 is the change from Terminal Services to Remote Desktop Services (RDS). While some of the basics are very similar or the same, there are key changes to the platform as it is now designed with the Virtual Desktop Infrastructure in mind. This document is to be consulted when configuring hardware for physical and virtual Remote Desktop servers and components (formerly known as Terminal Servers). It is to be used as a guideline, with actual configuration depending on size of databases, reports, and types of usage.

Component Overview

There are five main components to Microsoft Remote Desktop Services: Remote Desktop Session Host, Remote Desktop Connection Broker, Remote Desktop Web Access, Remote Desktop Gateway, and Remote Desktop Virtualization Host. All of these components require a Remote Desktop licensing server be installed.

1. The Remote Desktop Session Host (RDSH) is the primary host of session-based remote desktops and remote applications. It is the equivalent of the old Terminal Server. This will require the most hardware resources in a typical RDS environment, second only to Remote Desktop Virtualization Host.

2. The Remote Desktop Virtualization Host (RDVH) is responsible for hosting individual and pooled virtual desktops and is the backbone of the Microsoft VDI solution. As the system requirements for these are part of an overall virtualization solution, and have many other considerations to be reviewed, it is outside the scope of this document.

3. The Remote Desktop Connection Broker (RDCB) is the brains behind RDS. It directs user traffic between the RDSH and RDVH servers and ensures that the load is balanced between the multiple hosts.

4. The Remote Desktop Web Access (RDWA) provides access to RDS via a specified URL, usually over public as well as private internet.

5. The Remote Desktop Gateway (RDG) is the cop. It authorizes users to access various RDS components based on defined policy.

Hardware Configuration

The baseline requirements are the same for both physical and virtual servers, with the few differences noted in the appropriate sections below. Physical servers should have redundant power supplies, at least two CPU sockets, and a standalone array controller with front write-back caching enabled and at least 256 MB of on-board memory and batteries, to ensure that cached information is not lost due to power failures or component failures. The physical and virtual hardware requirements for RCB, RDWA, and RDG are the same as those of the underlying operating System. For the purpose of this document: 2 gigabit network cards, 6 GB of RAM, and 80 GB of HDD.

Processing

A good rule of thumb is one core for every 15 users, rounded up. For example, if you have 50 users, 50/15 = 3.333, therefore, four cores.

Memory

Have at least 2 GB for the Operating System. The system requirements for Office 2010 Standard include 256MB of RAM. The general processing requirement for Remote Desktop Services is 64MB of RAM per user. For the regular user, which assumes Word, Excel, Outlook, PowerPoint, and Internet, we recommend you allocate 256+ 64 +25% for overhead, or 400MB of RAM per user. So if you have 50 users, you would need 400 * 50 MB + 2 GB for the OS, or 22GB of Total Memory.

Storage

It is recommended that you use separate Remote Desktop profiles for all users and store these on your file server infrastructure as it is more apt for hosting files. For a physical server, use a pair of 10K SAS drives in a RAID 1 configuration with at least 120GB of storage. For a virtual server, a single 120GB virtual disk would be sufficient.

Networking

While a dedicated network card for Remote Desktop services is not required, it may be useful to isolate operating system/management traffic from RDS user traffic.

RDSH Farm considerations

RDSH farms are a great way to provide load balancing and redundancy for the environment. For resource planning, use the formula of 1/(number of servers-number of servers that can fail). Therefore, for a two node farm, each server has to have sufficient resources to host all users, while in a three node farm, each server need to be able to host 1/(3-1) or ½ of total users to tolerate a failure of a single server in a farm. In this case in a 9 node farm, if you want to tolerate a failure of 2 nodes, each server needs to have resources to host 1/(9-2) or $1/7^{th}$ of all the users.