

Deploying the Barracuda Load Balancer with Remote Desktop Services in Windows Server 2008 R2

Remote Desktop Services Overview

Remote Desktop Services allows users to run Microsoft Windows applications on a remote computer running Windows Server 2008 or 2008 R2. All application execution and data processing occurs on the server. Adding a Barracuda Load Balancer to your Remote Desktop Services deployment allows a farm of servers running Remote Desktop Services to have incoming session requests distributed among all servers in the farm.

Session Broker maintains a list of active and disconnected sessions. When disconnected users reconnect, they are transparently redirected and connected to the server that they were connected to earlier. This reconnection occurs even if the user is using a different client computer.

Even if you have already successfully configured Session Broker, use the instructions in this document to verify your settings. In particular, the Barracuda Load Balancer requires that Remote Desktop Session Hosts be configured to use Remote Desktop Connection Broker routing tokens. Routing tokens are used to redirect users to their existing sessions on the correct Remote Desktop Session Hosts.

Prerequisites

- Microsoft Server 2008 R1/R2 Standard, Enterprise, or Datacenter Edition
- Barracuda Load Balancer 340 and above is required
- Barracuda Load Balancer running firmware version 3.4.0.012 or higher
- Minimum one Barracuda Load Balancer, two recommended for high availability

This document assumes that you have installed your Barracuda Load Balancer(s), are connected to the web interface, and have activated your subscription(s). If you are planning to deploy Remote Desktop Services with high availability, you must first cluster your Barracuda Load Balancers. See the [Barracuda Load Balancer Administrator's Guide](#) for assistance with these steps.

Additional References

For additional information, refer to the following references:

- [Barracuda Load Balancer Administrator's Guide](#)
- [TS Session Broker load Balancing Step-by-Step Guide](#) available on the Microsoft Technet website

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Terminology

The following table lists some of the terms used in this document.

Term	Definition
Remote Desktop Services	Known as Terminal Services in Windows Server 2008 and Windows Server 2003. One of the components of Microsoft Windows that allows users to remotely access applications and data.
Fully Qualified Domain Name (FQDN)	The unique name for a specific computer or host that can resolve to an IP address, e.g. www.example.com
Service	A combination of a virtual IP (VIP) address and one or more TCP/UDP ports that the Barracuda Load Balancer listens on. Traffic arriving over the specified port(s) is directed to one of the Real Servers associated with a particular Service.
Remote Desktop or Terminal Services Session Broker (RD Session Broker or TS Session Broker)	An optional component of Remote Desktop Services. It maintains a list of active and disconnected sessions so that a disconnected user is transparently redirected and connected to the server that has its disconnected session.
Routing Token	Used to redirect users to their existing sessions on the correct Terminal Server.
Domain Controller	A server that responds to security authentication requests.
Remote Desktop Session Host (RD Session Host)	The “terminal server” (the term used by Windows Server 2008) that runs the applications for the Remote Desktop users.

Remote Desktop Services Deployment Options

Deployments of Remote Desktop Services are supported in either a **one-armed** or a **two-armed** topology. This may be either a single or multiple subnet configuration. Unless the users need to directly access individual servers, it is recommended that the servers be placed in one or more subnets reachable by the LAN port of the Barracuda Load Balancer. If users must directly access individual servers, a one-armed deployment is recommended.

Important: Direct Server Return (DSR) and Bridge Mode are **not** supported in a Remote Desktop Services deployment.

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Deployment Tasks

To deploy the Barracuda Load Balancer for Remote Desktop Services, complete the following tasks. The rest of this document contains instructions for completing these tasks.

Task	Where
Step 1. Configure Session Broker.	Do this on the Session Broker for your Remote Desktop farm.
Step 2. Configure the Real Servers.	Do this on every Real Server in the server farm.
Step 3. Configure the Remote Desktop Service on the Barracuda Load Balancer.	Do this on the active Barracuda Load Balancer.
Step 4. Test the Remote Desktop Services Installation.	Do this using a client that can access the Virtual IP address that you create in Step 3.

Note: If the Barracuda Load Balancers are clustered, the configuration between the active and passive systems is synchronized; there is no need to modify any passive Barracuda Load Balancers.

Step 1. Configure Session Broker

Session Broker provides a mechanism for a disconnected user to be reconnected to the server that has its disconnected session. Installing Session Broker improves the overall experience for end-users; installation is optional, but highly recommended.

If you choose not to deploy Session Broker, you should ensure that the Group Policy for the domain does not allow for disconnected sessions. Additionally, make sure users are limited to one connection in a Group Policy Object for your domain.

Complete these steps on the Session Broker server to ensure that its settings are correctly configured.

Install Session Broker

Install the Session Broker role service on a server by performing the following steps.

1. Go to **Start > Server Manager**.
2. Under **Server Manager (Server Name)**, click **Roles**.
3. Under **Roles Summary**, click **Add Roles**.
4. On the **Select Server Roles** page, turn on **Remote Desktop Services** and click **Next**.
5. On the **Select Role Services** page, select **Remote Desktop Connection Broker**.
6. Complete the Add Roles Wizard.

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Configure Session Broker

Set up a Session Brokerage privileges list to tell the Session Broker which computers are authorized to be brokered; perform the steps that match your environment.

1. If the Session Broker is on a server that is also a domain controller, use the following steps:
 - a. Go to **Start > Administrative Tools > Active Directory Users and Computers**.
 - b. Expand your domain and select **Users** (even though this is a group, it is still listed under **Users**).
 - c. Double-click the group **Session Broker Computers** to view its properties.
 - d. Add all of the servers in your domain that are to be used for Remote Desktop Services load balancing.

Important: You *must* add the Session Broker server to this list. Failure to do so results in the Session Broker being denied RPC privileges.

2. If the Session Broker is *not* on a server that is a domain controller, use the following steps:
 - a. Go to **Start > Server Manager**.
 - b. Expand **Configuration**, and click **Local Users and Groups**.
 - c. Click **Groups**. Double-click the group **Session Broker Computers** to view its properties.
 - d. Add all of the servers in your domain that are to be used for Remote Desktop Services load balancing.

Important: You *must* add the Session Broker server to this list. Failure to do so results in the Session Broker being denied RPC privileges.

Step 2. Configure the Real Servers

Complete the following steps on each Real Server in the server farm to identify it as a Remote Desktop Session Host.


1. Go to **Start > Administrative Tools > Remote Desktop Services > Remote Desktop Session Host Configuration**.
2. On the main screen, near the bottom of the center pane, double-click **Member of farm in RD Connection Broker**.
3. Click the **RD Connection Broker** tab.
4. Select the **Participate in Connection Broker Load-Balancing** check box.
5. In the **RD Connection Broker** field, type the FQDN for the Real Server that is running Session Broker.
6. In the **Farm name** field, enter a farm name. You must use the same farm name on *every* Remote Desktop Session Host.
7. If you are using Windows Server 2008:
 - a. Clear the **Participate in Session Broker Load-Balancing** check box.
 - b. In the **Network Adapter** drop-down, select the IPv4 IP address of the Real Server.
 - c. Clear the **Use IP address redirection** check box, and confirm your selection.

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8. If you are using Windows Server 2008 R2:
 - a. Select **Use Token Redirection** from the drop-down list.
 - b. Select the checkbox for the IPv4 address of your Real Server.

Step 3. Configure the Remote Desktop Service on the Barracuda Load Balancer

Use the following steps to add the Remote Desktop Service on the active Barracuda Load Balancer.

1. Go to the **Basic > Services** page in the web interface.
2. Add the RDP Service:
 - a. In the **Service Name** box, enter the name for the Service, e.g. RDP.
 - b. In the **Virtual IP Address** box, enter the IP address for the FQDN of your Remote Desktop Service, e.g., rdp.domain.local
 - c. Select **TCP** from the drop-down list.
 - d. In the **Port** box, enter 3389.
 - e. In the **Real Servers** box, enter the internal IP address for every Real Server running the Remote Desktop Host Role.
3. To edit the Service, click the **Edit** () icon next to the Service entry in the table. The **Service Detail** page displays. In the **Service Detail** page:
 - a. In the **General** section, set the **Service Type** to **Layer 7 – RDP**.
 - b. In the **Service Monitor** section, set the **Testing Method** to **RDP**.

Step 4. Test the Remote Desktop Services Installation

When steps 1 through 3 are successfully performed, you should be able to complete the following tests.

1. Create two test users that have permission to log into Remote Desktop Services (e.g., *testuser1* and *testuser2*).
2. Using **Remote Desktop Connection**, connect *testuser1* to the **Virtual IP Address** created in Step 3. Open Notepad and enter some text; do not close Notepad.
3. Click **Start > Disconnect**.
4. Connect *testuser2* to the **Virtual IP Address** created in Step 3.
5. Once *testuser2* is logged in, click **Start > Disconnect**.
6. Log in *testuser1* again and ensure it reconnects to the session with Notepad open.
7. Log in *testuser2* again and ensure the session reconnects to the *testuser2* session.

Your installation is now complete.