How Parallels Remote Application Server Enhances Microsoft RDS

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Introduction

In 2001, Microsoft® introduced the RDP protocol, a proprietary protocol that allowed users to access an operating system's desktop remotely. Since then, Microsoft has come a long way, developing Remote Desktop Services to facilitate remote desktop access. Formerly known as Terminal Services, RDS consists of a number of tools and services that allow businesses to build an application and virtual desktop delivery solution that their users can access remotely.

However, the Microsoft RDS solution leaves a lot to be desired. This white paper looks at the pain points of Microsoft RDS solutions, and how systems administrators can use Parallels® Remote Application Server to enhance their RDS infrastructure and provide the functionality their businesses need to give their users the flexibility they need to be more productive.

Overview of Microsoft Remote Desktop Services

Since the launch of Windows Server® 2008, the offerings under the Microsoft Remote Desktop Services (RDS) banner have been made up of a suite of different server roles, mainly consisting of the following:

*   **Remote Desktop Session Host:** An RD Session Host server is the server that hosts Windows-based programs or the full Windows® desktop for Remote Desktop Services clients. Users can connect to an RD Session Host server to run programs, save files, and even use network resources. Users can access an RD Session Host server from within a corporate network or from the Internet by using Remote Desktop Connection or by using RemoteApp.

*   **Remote Desktop Virtualization Host:** An RD Virtualization Host integrates with Hyper-V® to provide virtual machines by using RemoteApp and Desktop Connection. An RD Virtualization Host can be configured so that each user in your organization is assigned a unique VM, or so that users are redirected to a shared VM pool where a VM

*   is dynamically assigned.

*   **Remote Desktop Licensing:** An RD Licensing server manages the Remote Desktop Services client access licenses that are required for each device or user to connect to a Remote Desktop Session Host server.

*   **Remote Desktop Connection Broker:** An RD Connection Broker is a role service that allows users to reconnect to their existing sessions in a load-balanced RD Session Host server farm. This prevents a user with a disconnected session from being connected to a different RD Session Host server in the farm and starting a new session. It also enables you to evenly distribute the session load among RD Session Hosts.

*   **Remote Desktop Web Access:** RD Web Access enables users to access the RemoteApp and Desktop Connection features through the Start menu on a computer that is running Windows 7, or through a web browser. RemoteApp and Desktop Connection provides a customized view of RemoteApp programs and virtual desktops to users. RD Web Access also includes Remote Desktop Web Connection, which enables users to connect remotely from a web browser to the desktop of any computer to which they have Remote Desktop access

Setting Up an Application and Virtual Desktop Delivery Solution with RDS

On its own, the Remote Desktop Session Host only allows users to connect to the server remotely and access its desktop and installed applications. To set up a connection broker infrastructure with RDS systems, administrators have to install and micromanage all of the roles mentioned above.

Microsoft RDS Pain Points

Server (TS) Load Balancing – In order to deliver remote desktops and applications, it is necessary to have at least two session groups (more servers). The Remote Desktop connection broker manages the distribution between the different servers in the farm. Unfortunately, it has limited capability, only allowing the distribution of the connections based on session count and server weight (powerful and less powerful servers in the farm).

Gateway Load Balancing - Network Load Balancing (NLB) can be used to load balance the network traffic among multiple gateways. NLB can only detect networking interface failure; it does not track the health of the gateway service. If a particular gateway fails, NLB cannot detect the failure and will still route requests to that gateway. End user service level can degrade as NLB continues to send network traffic to the broken node.

Non-Windows client - Microsoft RDS does not have a Linux® client that can deliver applications and desktops to Linux OS-based workstations or thin clients. Right now, the only option for IT administrators looking for wider client support is to look for other solutions on top of RDS. As such, those businesses looking to move toward the adoption of a multi-platform approach can do so by delivering resources through HTML5-compatible browsers that can be immediately accessed from any device.

Beyond Terminal Server - RDS can connect users to remote desktops and applications hosted on Terminal Servers or Hyper-V. However, such a solution seldom meets organization demands, and many IT organizations are looking for a more comprehensive approach that includes VDI delivery from other hypervisors. For businesses requiring wider application and desktop deployment, RDS is not able to offer a single point of reference that can adequately service the IT requirements of the organization.

Control over the UX - Each RDS release has exposed new options for customizing users' interaction with applications and desktops; however, these options lack the granularity required to tackle complex setups and businesses. RDS runs inefficiently when you need to manage bandwidth used within the protocol and the amount of bandwidth used on a per-user basis, especially when you need advanced environment management or to load balance the server system.

Lack of administrative automation - Remote application servers are unlike most servers in the datacenter in that regular users are given direct access. For this reason, remote application servers require extra administrative attention if they're to successfully deliver desktops and applications. Such attention warrants automation, particularly as size and complexity increases. In order to offer the native feeling of locally installed applications, the application delivered needs to have automatically configured features such as session prelaunch automation.

The Technology Gap

Even when set up as a fully blown connection broker infrastructure, Microsoft RDS has a number of pain points for systems administrators. These include the following:

Difficult to install and set up: The process of installing and setting up a virtual desktop and application delivery solution with Microsoft RDS is lengthy and complex. It requires systems administrators to install and configure several different servers and server roles and to install additional software to support the setup. Because of the complexity this process, systems administrators have to be very well versed in this technology.

Difficult to manage: A Microsoft RDS solution is made up of several different software components which administrators have to individually configure via different management consoles, and by logging in to different servers. Thus, managing the whole setup can be a difficult process, and, in most cases, third-party solutions to cover necessary features such as reporting and load balancing are required.

Limited client management: Microsoft provides systems administrators with a range of tools that allow administrators to shadow users' sessions and assist them. Because the Microsoft RDS solution does not have centralized logging or client management solutions, it is difficult for systems administrators to troubleshoot non-user-related problems or have complete control of the end user terminal and what the users can access.

Difficult to scale up: To scale up a Microsoft RDS infrastructure or configure load balancing and high availability features, systems administrators need to install and configure additional software components such as the Microsoft NLB and Microsoft Cluster.

How Parallels Remote Application Server Enhances Your Microsoft RDS Infrastructure

Parallels Remote Application Server is an application and virtual desktop delivery solution that allows systems administrators to create a private cloud from which they can centrally manage the delivery of applications, virtual desktops, and business-critical data.

Parallels Remote Application server is well known for its ease of use, low license costs, and feature list. This section highlights some of the enhancements Parallels Remote Application Server offers when used in conjunction with the Microsoft RDS solution.

Parallels Remote Application Server Enhances the Process of Installing & Setting Up Your RDS Environment

Even in the early stages of planning, Parallels Remote Application Server has a lot to offer. Parallels Remote Application Server allows businesses to set up an application and virtual desktop delivery solution in just a few hours, thanks to the following features:

Straightforward licenses: Forget confusing licensing packages—Parallels Remote Application Server licensing is priced per user, and all features and components needed to build and scale up the farm are included.

Simple Wizard-based installation: Parallels Remote Application Server is installed through a standard MSI file, and the user is guided through a wizard that greatly simplifies the installation process. Any additional components that need to be installed can be installed from the same installation file.

Centralized configuration console: To manage, monitor, and scale up the Parallels Remote Application Server farm, systems administrators only have to use a single interface, the Parallels Remote Application Server configuration console. Even when installing new components or configuring a multisite environment, systems administrators do not need to log in to other remote servers. The ability to manage everything from a central location gives systems administrators more control over the farm.

Auto-configuration of Terminal Servers: Systems administrators do not have to install and configure any server roles. Parallels Remote Application Server automatically installs the server roles that are needed, such as the Remote Desktop Session Host on the servers from where applications and desktops are published.

Requires less hardware: Parallels Remote Application Server is a very low-resource application delivery solution and requires minimal resources, meaning that it can be installed and run on a single server.

Parallels Remote Application Server Enhances Application Publishing and Delivery

Parallels Remote Application Server uses Microsoft's own Remote Desktop Protocol and RDS role to publish applications. Parallels Remote Application Server enhances these features through its own set of application publishing features and management tools, which allows systems administrators to provide a better experience for their users.

Using Parallels Remote Application Server, systems administrators can:

Publish applications which are installed in different paths on different servers, allowing them to publish any type of application, even if it is custom or legacy.

Monitor the usage of published applications and also limit the number of instances, or when it can be launched by users. This allows administrators to control the infrastructure's resources, all while ensuring that all software licenses are respected and controlled so that users can access resources without the risk of violating laws or the applications not being functional.

Easily implement filtering rules to restrict access to published applications using a variety of criteria. With the Parallels Remote Application Server, systems administrators can restrict access to an application by user or group, MAC or IP address, client software, gateway, and more, for a segregated and secure stream.

Publish legacy applications from desktop operating systems. Many businesses, big or small, use certain legacy applications that only run on Windows proprietary desktop computers such as Windows 7, 8, and 10. With Parallels Remote Application Server, administrators can easily publish legacy and any other type of application from desktop operating systems.

Parallels Remote Application Server Enhances End User Software Deployment

End user software deployment is one of the most problematic tasks for systems administrators when setting up an application delivery and virtual desktop solution. This is because of the number of variables of the different hardware and operating systems the solution has to work on. This is another area which Parallels Remote Application Server addresses, making it much easier for systems administrators to manage.

Support for a Wider Variety of Operating Systems and Mobile Devices

Your users will appreciate that Parallels client software can be installed on popular operating systems such as Windows, Mac®, and Linux. It can also be installed on virtually any type of mobile device, such as the popular Android™ and iOS phones and pad computers, and Raspberry Pi devices.

By supporting almost any type of operating system and device, Parallels Remote Application Server gives systems administrators the flexibility they need, allowing them to easily and effectively manage end user equipment and meet their budgetary requirements, despite any constraints there might be.

Automating the Deployment

Parallels Remote Application Server has a simple solution to the deployment problem: It allows system administrators to **automatically deploy and configure end user clients.** Administrators can send an email to all users with the client's download links from the Remote Application Server server console. The email includes a link that, once clicked, automatically configures the Parallels client on the user's device. Hence, to use a delivered application, users only need to launch the client, and then authenticate and double-click the icon of the application they would like to use.

Multisite Support

Parallels Remote Application Server allows systems administrators to **centrally manage different farms in different physical locations.** This gives system administrators in a multisite environment the flexibility they need to better utilize all available resources, because users from one site can access published applications and virtual desktops on another site.

Parallels HTML5 Client

Parallels Remote Application Server also has a clientless HTML5 Client portal. Users can access the published applications and virtual desktops via the HTML5 Client portal by using an HTML5-compatible browser, such as Google Chrome™, Firefox®, or Internet Explorer®. The HTML5 Client portal is a clientless solution, and all sessions run via a HTML5 component; therefore, as long as end users have an Internet connection and a browser, they can access the published resources.

The HTML5 Client gives users the freedom to use any type client they want and to work from any location they want as long as there is an Internet connection.

How Parallels Remote Application Server Enhances Virtual Desktop Publishing and VDI Solutions

Like Microsoft RDS, Parallels Remote Application Server is a connection broker solution. This means that it relies on other hypervisor solutions to deliver a VDI solution. Parallels Remote Application Server has been designed in line with the features businesses need to manage and automate most VDI processes, including support for a wide variety of hypervisors.

Parallels Remote Application Server Supports Different Hypervisors

Parallels Remote Application Server supports hypervisors from Citrix® and VMware® as well as Microsoft's own Hyper-V. This means that systems administrators can build a VDI solution using a wide range of technologies, thus ensuring that companies have the best, most personalized setup that utilizes the best technology for them and keeps their costs within their budgetary requirements.

Automating the VDI Solution

With Parallels Remote Application Server, systems administrators can also automate the creation, startup, and deletion of virtual desktops. By automating this process, systems administrators ensure that users do not have to wait for their machine to be created and booted up for them to work, thus resulting in the least possible downtime

Parallels Remote Application Server also allows systems administrators to configure the automated deletion of unused VMs, so that no resources are wasted and there is always enough hard disk space available to cater for new machines.

Parallels Remote Application Server Enhances Client Management & Helpdesk Support

If there is one thing that system administrators agree on, it is that they hate providing helpdesk support. Helpdesk support takes a lot of time, which ideally should be spent on maintaining and improving the IT infrastructure. Moreover, a lack of tools reduces troubleshooting and helpdesk support to a type of guess work. Hence, when you have a large and complex infrastructure such as an application delivery and virtual desktop solution, it is important that it also has the right tools to simplify client management and helpdesk support.

Client Management

Similar to Microsoft's solution, Parallels Remote Application Server allows systems administrators to shadow their users' sessions. However, with Parallels Remote Application Server, administrators are not limited to Windows operating systems. They can also remotely start, shutdown, and restart end user terminals and even configure policies for the client users.

Helpdesk Support

Parallels Remote Application Server has its own centralized logging system, which is separate from that of the operating system's. This separate authentication system allows systems administrators to easily identify any issues that are impacting the user connection and experience or the published resources. It also helps them easily correlate existing problems with infrastructure changes, thus making troubleshooting much easier and resulting in less disruption for users.

User endpoint lockdown: By locking down the users' endpoint, systems administrators can limit the applications the users can use. In a Microsoft RDS setup, it is possible to partially lock down user terminals; however, this requires a lot of manual work. On the other hand, in a Parallels Remote Application Server environment, administrators can lock down and convert traditional PCs into thin client-like endpoints, where an alternative desktop is used to simplify access to available published resources.

Reports

Reports are vital to businesses. They allow management to keep track of employees' productivity, and also allow administrators to monitor the infrastructure usage, enabling them to plan ahead and ensure that they always have enough resources to cater for user needs. Once configured, systems administrators can use Parallels Remote Application Server reporting to generate a wide variety of reports including user session activity, devices used, session activity on the server, server health reports, and many more.

Parallels Remote Application Server Makes Load Balancing, High Availability, and Scalability Look Easy

An application delivery and virtual desktop solution needs to be easily scalable so that it can cater for user demand and always be available. With such a solution, even a minimal amount of downtime can be crippling to an employee's productivity. However, this problem can be avoided with high availability and an easily scalable solution, which reduces downtime to a bare minimum through a system of backups for the server. Such an offering is not difficult to configure and maintain, and consequently does not drain company finances.

Load Balancing in Parallels Remote Application Server

An out-of-the-box installation of Parallels Remote Application Server load balances all of the incoming connections. Before redirecting an incoming connection to a particular server, Remote Application Server checks the application usage, CPU load, and memory usage of all servers, and redirects the connection to the least busy server. System administrators do not have to configure anything.

High Availability in Parallels Remote Application Server

To build a high availability solution with Parallels Remote Application Server, systems administrators still have to install additional components. This whole process is very easy, especially since all the required components such as the gateways and backup Publishing Agent can be installed from the central Remote Application Server configuration console. This means that administrators do not have to log in to the new servers to configure them one by one, greatly reducing setup time and the risk of human error.

Systems administrators can also use Parallels HALB virtual appliances to load balance the incoming connections between the gateways. The HALB appliances can also be used as SSL off loaders and can be managed from the central configuration console.

Scaling Up the RDS Infrastructure with Parallels Remote Application Server

When building an application and virtual desktop delivery solution, it is important to think of scalability. Businesses grow, and so does their user base. With a scalable solution, systems administrators do not have to rethink and rebuild the farm each time they need to cater for more users.

Parallels Remote Application Server was designed with scalability in mind. Adding new components to the farm is very easy, and Parallels Remote Application Server also supports multisite environments. Systems administrators can set up different Remote Application Server sites in different physical locations and centrally manage all sites. In a multisite environment, users can also access published objects from sites to which they are not directly connected.

Parallels Remote Application Server Enhances the Security of Your RDS Infrastructure

Even though it is often overlooked, the security of an IT infrastructure is vital to every business. IT security involves more than just protecting your business assets from malicious hackers and attacks; it also involves the ability of systems administrators to control employee access and keep track of everything that is happening on their IT infrastructure.

Authentication

Parallels Remote Application Server provides systems administrators with a wide variety of authentication mechanisms. Administrators can integrate third-party authentication servers such as DeepNet, SafeNet, and RADIUS to authenticate users. Users can also use a smart card as a means of authentication when using both Windows and Linux.

By being able to support third-party authentication servers, systems administrators can segregate the different roles of the IT infrastructure, reinforcing its security.

Filtering Access to Published Applications and Virtual Desktops

The larger the user environment, the more important filtering is. In a typical organization, systems administrators need to have all the necessary tools to restrict user access.

When using Parallels Remote Application Server, systems administrators are not limited to filtering access only by Active Directory users and groups. They can filter incoming connections via IP address, gateway, client type, MAC address, and more. Systems administrators can also limit the number of concurrent sessions an application can run, or when users can access the application.

Central Administrative Logging

All of the changes and actions of every Parallels Remote Application Server administrator are recorded in a central log. This audit trail can be used to ease the troubleshooting process and can also be used for security purposes by allowing administrators to track back any changes that were made to the Parallels Remote Application Server farm.

Use Parallels Remote Application Server to Enhance Your Microsoft RDS Infrastructure

As this white paper highlights, Parallels Remote Application Server allows you to enhance your Microsoft Remote Desktop Services infrastructure, enabling you to offer a far better application and virtual desktop delivery solution.

Parallels Remote Application Server, which is built around Microsoft's own RDP protocol, allows systems administrators to do more in less time. Since it is much easier to implement and use, systems administrators can manage and easily scale up the Parallels Remote Application Server farm without requiring any specialized training, and because of its extensive feature list and multisite support, they can build solutions that meet the requirements of any enterprise, regardless of its size and scale.