



# **Reference Configuration for Parallels Remote Application Server (RAS) on Scale Computing HC3**

Reduces cost and complexity of remote application delivery to any client, anywhere.

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### Executive summary

Virtual Desktop Infrastructure (VDI) can help many large-scale business and organizations simplify client image management, improve data security, and enable remote connectivity from any device and, in some cases, provide some cost savings. However, the initial up-front cost of implementing the hardware, such as servers, robust storage, and networking, required to support hundreds if not thousands of concurrent users, can be substantial. Additionally, most traditional VDI and application publishing software solutions are very complex, requiring several weeks to implement and full-time system administrators to manage.

Considering the initial capital expense and overall complexity involved in implementing a traditional VDI solution, it's no wonder that many cost-conscious customers, particularly small and medium business, have not adopted this traditional approach. However, with the emergence of software defined, hyperconverged platforms, such as the Scale Computing HC3 platform, and affordable comprehensive virtual desktop and application publishing solutions, such as Parallels® Remote Application Server (RAS), the cost and complexity of virtual desktop infrastructure has been greatly reduced. Compared to traditional solutions, implementing Parallels Remote Application Server can save most organizations up to 70% in overall infrastructure and annual licensing costs.



**Figure 1.** Parallels RAS: How applications and VDI are delivered to end users using Microsoft® Remote Desktop Session Host (RDSH)

**Target audience:** This document is intended for those IT decision makers as well as architects and implementation personnel who want to understand a Parallels and Scale Computing approach to client virtualization and benefit from a pretested solution. The reader should have a solid understanding of client virtualization, familiarity with both Parallels products and VMware® vSphere products, and an understanding of sizing/characterization concepts and limitations in client virtualization environments.

**Document purpose:** The purpose of this document is to describe a Reference Configuration highlighting recognizable benefits to technical audiences. This Reference Configuration describes solution testing that was performed in January 2018.

## CHAPTER 2

### Solution overview

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### Scale Computing HC3 Platform

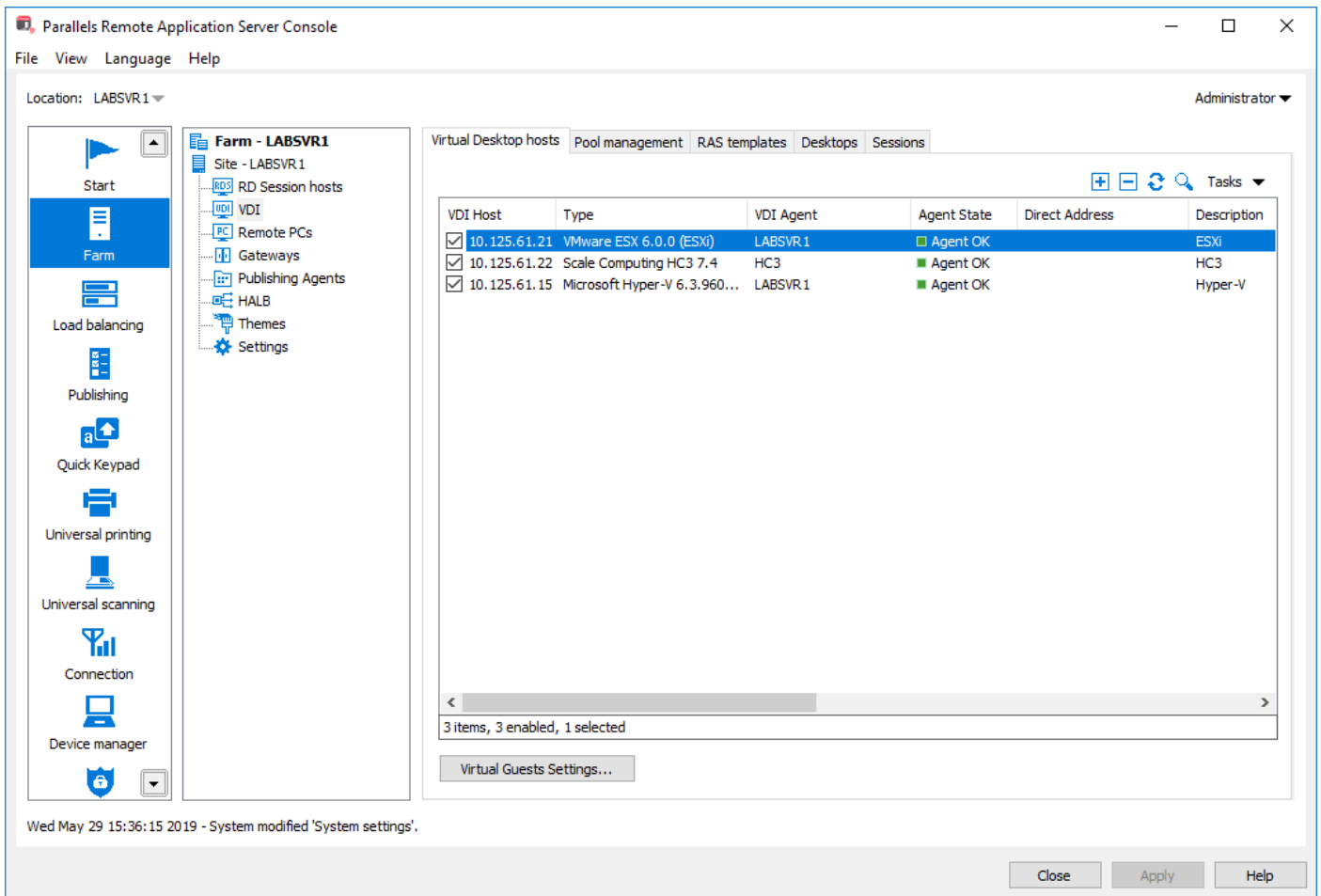
Scale Computing is a leader in edge computing, virtualization, and hyperconverged solutions worldwide. HC3® eliminates the need for traditional virtualization software, disaster recovery software, servers, and shared storage. The platform is self-healing, automatically correcting infrastructure problems in real-time, enabling applications to achieve maximum uptime. When ease-of-use, high availability, and TCO matter, Scale Computing HC3 is the ideal infrastructure solution.

### Parallels Remote Application Server

Parallels Remote Application Server was specifically designed with hyperconverged platforms in mind. The solution’s overall simplicity enables customers to control critical VDI, application streaming, printing, and reporting features, all from a simple and intuitive user interface. Its management console with an immediate and synoptic view allows any IT administrator to accomplish complex tasks easily. Intuitive wizards facilitate a fast setup, allowing IT staff to quickly and easily deploy applications and servers. Parallels Remote Application Server supports continuous availability, resource-based load balancing, universal printing, and unlimited reporting. By centralizing virtual application and desktop control, Parallels Remote Application Server enables IT staff to provide seamless mobile access while increasing security and reducing IT costs. Parallels Remote Application Server is a comprehensive all-in-one solution that can provide any organization with a simple turnkey solution and implementation methodology.

### Parallels Remote Application Server Designer

Parallels Remote Application Designer is an automated tool that shows the solution topology, including Publishing Agents, Gateways, VDI hosts, and other assets.



**Figure 3.** Parallels Remote Application Server Console general overview

**Table 1.** Key Elements of the Parallels Remote Application Server Console

Item	Description
1	This section lists categories. Selecting a category will populate the right pane with elements relevant to this category.
2	This section becomes available only for the Farm and the Publishing categorie The navigation tree allows you to browse through the objects related to that catgory.
3	This information bar displays the site you are currently logged into and the user account being used for the connection. Also note the “Press Apply to commit the new settings” message in the middle (in red). The message is displayed when you made changes to one or more objects/items but did not commit them to Parallels Remote Application Server. Click the Apply button (at the bottom of the screen) to commit the changes. If there are no currently pending changes, the message is not displayed.

Create Parallels RAS Template Wizard - Properties

**Parallels®**

Template name:

Maximum guest VMs:

Number of guest VMs deployed on the wizard completion:

Guest VM name:  %ID%

E.g. W10-0019

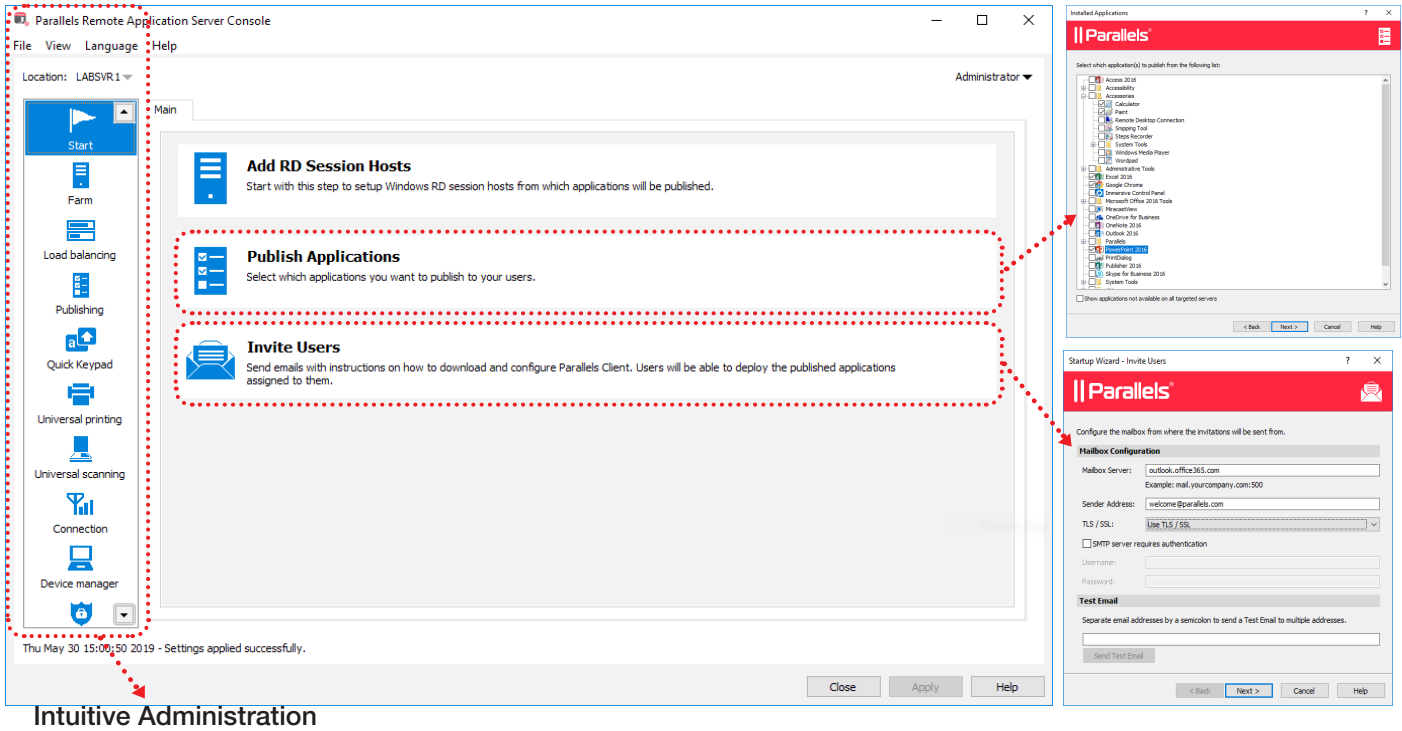
Clone method:  Create a full clone  
 Create a linked clone

< Back   Next >   Cancel   Help

Item	Description
1	Template size with max number of guests.
2	Deployment approach using Full or Linked clones.

## Solution simplicity

Parallels has simplified several major administration tasks for Remote Application Server by using automated wizards. The new wizard feature fully automates the process to add new RDSH, publish applications, add gateways, and implement other solution components. These wizards are available in the “Start” button as well as in each solution component. Therefore, these repeated tasks can be accomplished quickly and accurately.



**Figure 4.** Wizards and simplicity to virtualize and deliver applications using Parallels Remote Application Server

The wizards also automatically install required software when a new RDSH is added. This method assures only what is needed will be installed on each server role. For VDI use cases it is required to connect first to Scale Computing HC3 API and create “RAS Templates”

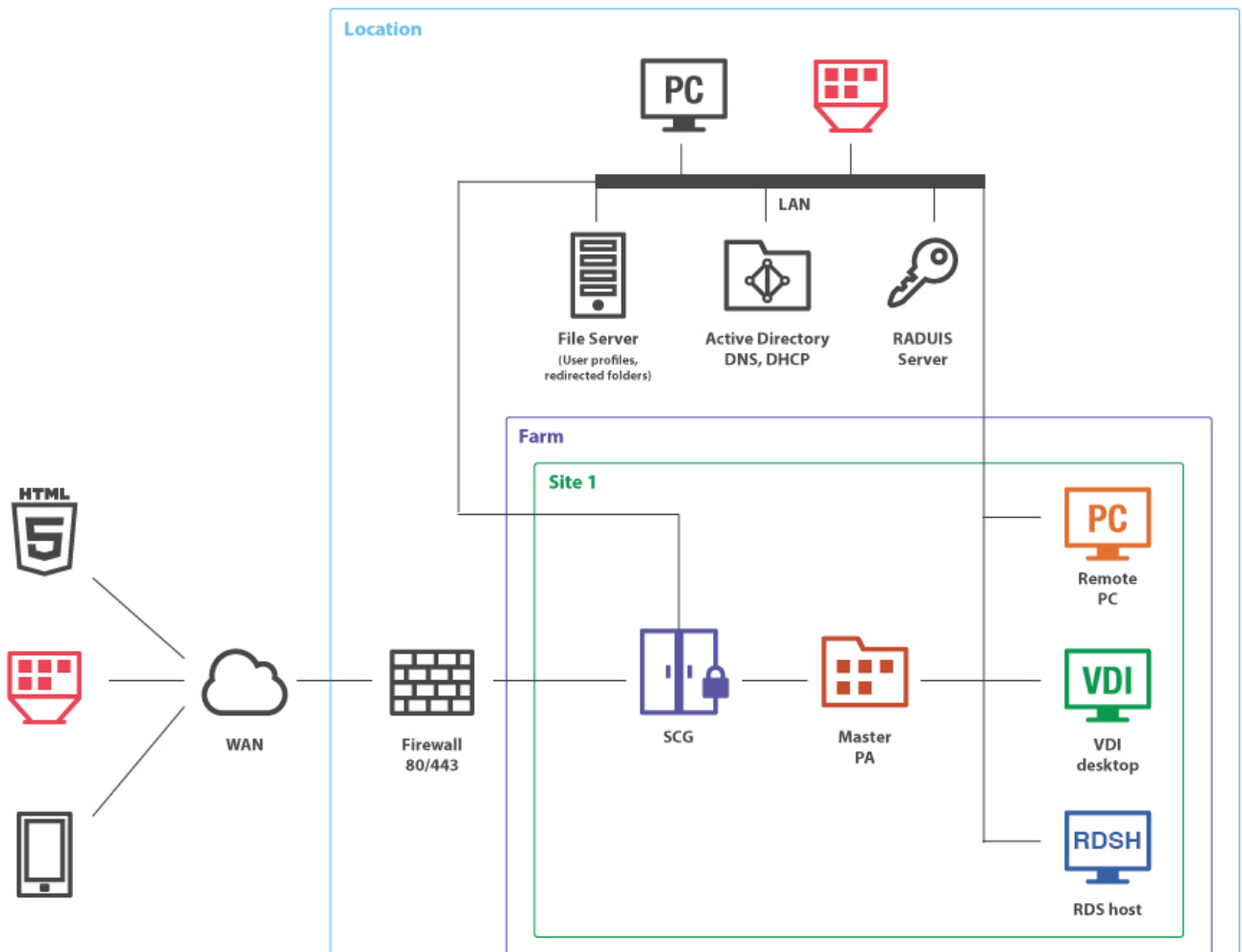
## Solution diagram / Components

User Access is offered in three modes: web portal access, HTML5 access, or direct access using Parallels Remote Application Server Client. All modes run together, and customers can choose the best and easiest method for their end users.

Farm is a collection of Remote Application Server (RAS) components maintained as a logical entity with a unique database and licensing. A Remote Application Server farm can contain multiple sites, which can be administered by different administrator.







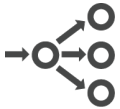





This solution is ideal for high availability environments with more than 300 concurrent users securely connected using Secured Socket Layer (SSL) mode. Each client gateway instance should optimally handle up to 500 concurrent users. This can be scaled horizontally accordingly.






Both LAN and WAN users connect to the virtual address of a high availability and load balancing virtual appliance in an internal network.



**Figure 6.** Typical Parallels Remote Application Server high availability deployment.



<b>Parallels RAS Server Components</b>	
	A server hosting RAS Publishing Agent. May also host other Parallels RAS components depending on a deployment.
	RAS Secure Client Gateway (including HTML5 gateway) used for secure (SSL) client connections.
	Private RAS Secure Client Gateway, used for direct client connections.
	RD Session Host with RAS RD Session Host Agent installed.
	A remote Windows computer with RAS Remote PC Agent installed. Not to be confused with Converted PC described below (a similar icon in red color).
	Virtual Desktop Infrastructure (a VDI host with a hypervisor running virtual machines). Each virtual machine must have RAS Guest Agent installed.
	High Availability Load Balancing. An appliance that provides load balancing for RAS Secure Client Gateways.
<b>Parallels RAS Client Devices</b>	
	A desktop computer (Windows, Linux, Mac) with Parallels Client installed.
	A PC with Windows converted to a thin-client-like OS. Not to be confused with a remote PC described above (a similar icon in orange color).
	A converted PC (same as above) with Kiosk mode enabled.
	HTML5 enabled web browser.
	Mobile device (iOS, Android).

Other Components	
	Active Directory, DNS, and DHCP server(s).
	RAS Reporting Server (uses Microsoft SQL Server).
	RADIUS server (used for second-level authentication).
	File server for storing user profiles and redirected folders.
	Firewall (ports 80 and 443 are open).

## Case studies

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### Education

Parallels Remote Application Server provides staff, students, and faculty in educational institutions with a software solution to access virtual applications, data, and desktops securely and easily, from major hypervisors as well as Microsoft Remote Desktop Services (RDS).

Staff and students can access coursework and learning resources from home, through any device they already own, or even through a browser on a shared workstation. Parallels Remote Application Server helps academic institutions of all sizes reduce their capital and operating expenses while improving the learning process.

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**“I like the simple, straightforward way Parallels performs the functions it’s designed to perform.”**

**David Walker, Director of Technology, Telfair County Schools**

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### Healthcare

Parallels Remote Application Server equips healthcare providers with a software solution that securely delivers medical applications and patient information from local to cloud. It also delivers on-the-go access to applications like EMRs, revenue cycle management solutions, CPOE systems, and imaging viewers on any device, from anywhere—at a clinic, ER, or even from home.

**Additionally, it gives healthcare professionals the tools to improve patient care while saving time, enhancing security, and reducing the total cost of ownership.**

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**“Using our Remote Application Server solution allows us to grow up rather than out.”**

**Chris Worth, Intuitive Medical, Abilene Diagnostic**

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## Managed Service Providers

Parallels Remote Application Server provides managed service providers with a software solution for delivery of hosted workspace services from major hypervisors as well as Remote Desktop Services. Deliver the rich hosted workspaces demanded by customers and ease the transition from on-premises solutions to hosted services. Enhance your service portfolio with application hosting, desktop-as-a-service, and mobility solutions. Encourage customers to forget about on-premises complexities by adopting subscription-based hosted services.

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**“Cost savings and simplicity were the #1 benefits of the switch to Parallels RAS. Moreover, Parallels RAS offered better management of infrastructure with an intuitive and centralized dashboard.”**

**David Walker, Director of Technology, Telfair County Schools**

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## Enterprises

Parallels provides an affordable and easy-to-use software solution for delivery of virtualized applications and desktops from major hypervisors as well as Remote Desktop Services. Using the Parallels solution, small and medium-sized businesses can benefit from significant cost savings and added value through employee mobility and increased productivity.

**Parallels Remote Application Server is a simple and flexible solution that allows businesses to achieve a virtualized application and desktop environment without a significant.**

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**“With Parallels Remote Application Server, licensing costs have significantly reduced. We are able to easily create a stable network environment that is easy to deploy and manage.”**

**Dale Hobbs, Manager, Network and Security Systems at LUSH Handmade Cosmetics**

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## Summary

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## Summary

The decentralization of resources, including applications and devices, has caused customers to rethink how to deliver an optimal end-user experience. Beyond this, user behaviors have also changed, including where they work and on what device they prefer to work. Scale Computing and Parallels have addressed these challenges. This Reference Configuration for Remote Application Server (RAS) on Scale Computing HC3 builds off the strength and versatility of Remote Application Server (RAS) technology and leverages years of Scale Computing innovation delivering client virtualization solutions. HC3 is ideally suited for the performance and scalability requirements of Parallels Remote Application Server (RAS) deployments requiring architectural flexibility, extreme performance, and rapid and simple scaling.

For customers looking to achieve superior VDI performance without the high cost and complexity of traditional hardware and software, Scale Computing HC3 combined with Parallels Remote Application Server (RAS) provides a turnkey approach. This combined solution provides businesses with a cost-effective methodology to scale their environments quickly and easily. Whether you support 50 or several thousand concurrent end users, the solution scales to meet the demands of your organization.

When compared to the cost of traditional virtual desktop and application publishing solutions, Parallels RAS can reduce overall licensing costs by up to 70 percent, further increasing ROI. In a very short timeframe, IT managers can publish applications and desktops using intuitive configuration wizards, and manage RDSH and VDI-hosted sessions, all from a single pane of glass. Built-in high availability load balancing features provide continuous availability, resource-based load balancing, and complete end-to-end reporting. The Parallels RAS Client supports a wide range of Windows®, Apple Mac, Linux®, Android and Google® Chrome client operating systems, enabling end users to access any application or file, from any device, anywhere.

## Resources and additional links

### Scale Computing

[scalecomputing.com/solutions](https://scalecomputing.com/solutions)

### Parallels

[parallels.com](https://parallels.com)

### Parallels Remote Application Server

[parallels.com/products/ras/](https://parallels.com/products/ras/)