Parallels Remote Application Server

Reference Configuration for Parallels RAS on Scale Computing

Parallels International GmbH
Vordergasse 59
8200 Schaffhausen
Switzerland
Tel: + 41 52 672 20 30
www.parallels.com

Contents

CHAPTER 1

Executive Summary

This document is intended for IT decision makers as well as architects and implementation specialists who want to learn about the Parallels and Scale Computing approach to client virtualization and benefit from a proven solution. The reader should have a solid understanding of client virtualization, familiarity with both Parallels Remote Application Server and SC//HyperCore products, and an understanding of sizing/characterization concepts and limitations in client virtualization environments.

The purpose of this document is to describe the solution testing that was performed using Parallels RAS 19.1 and SC//HyperCore 9.1 in January 2022.

CHAPTER 2

Introduction

Virtual desktop infrastructure (VDI) can help organizations enable remote app access from any device, improve data security, simplify client image management, and, in some cases, provide cost savings.

However, the initial up-front cost of implementing the necessary hardware—such as servers, robust storage, and networking devices 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.

The cost and complexity of virtual desktop infrastructure can be reduced by using hyperconverged (software-defined, unified systems that combine storage, computing, networking, and management elements) platforms.

How applications and VDI are delivered to end users using Microsoft® Remote Desktop Session Host (RDSH) in Parallels RAS

CHAPTER 3

Solution Overview

In This Chapter

Scale Computing HyperCore

Scale Computing HyperCore brings together servers, storage, virtualization, and disaster recovery into a single, feature-rich solution. The heart of SC//HyperCore is the HyperCore™ operating system, which includes a fully integrated KVM-based hypervisor for virtualizing both Windows and Linux machines. Features such as live VM migration, high availability, snapshot scheduling, VM backup and quick recovery make SC//HyperCore an ideal solution for VDI deployment.

Together, Scale Computing and Parallels RAS streamline the deployment and maintenance of IT infrastructure. Parallels RAS Console provides a unified and intuitive user interface with a customizable set of tools to make remote applications easily available to end users. Automated image optimization, auto-provisioning, auto-scaling, and configuration wizards help to reduce the IT resource needed.

Parallels RAS

Parallels RAS was specifically designed with hyperconverged platforms in mind. The solution's overall simplicity enables customers to control critical VDI, application publishing, printing, and reporting features, all from a simple and intuitive user interface.

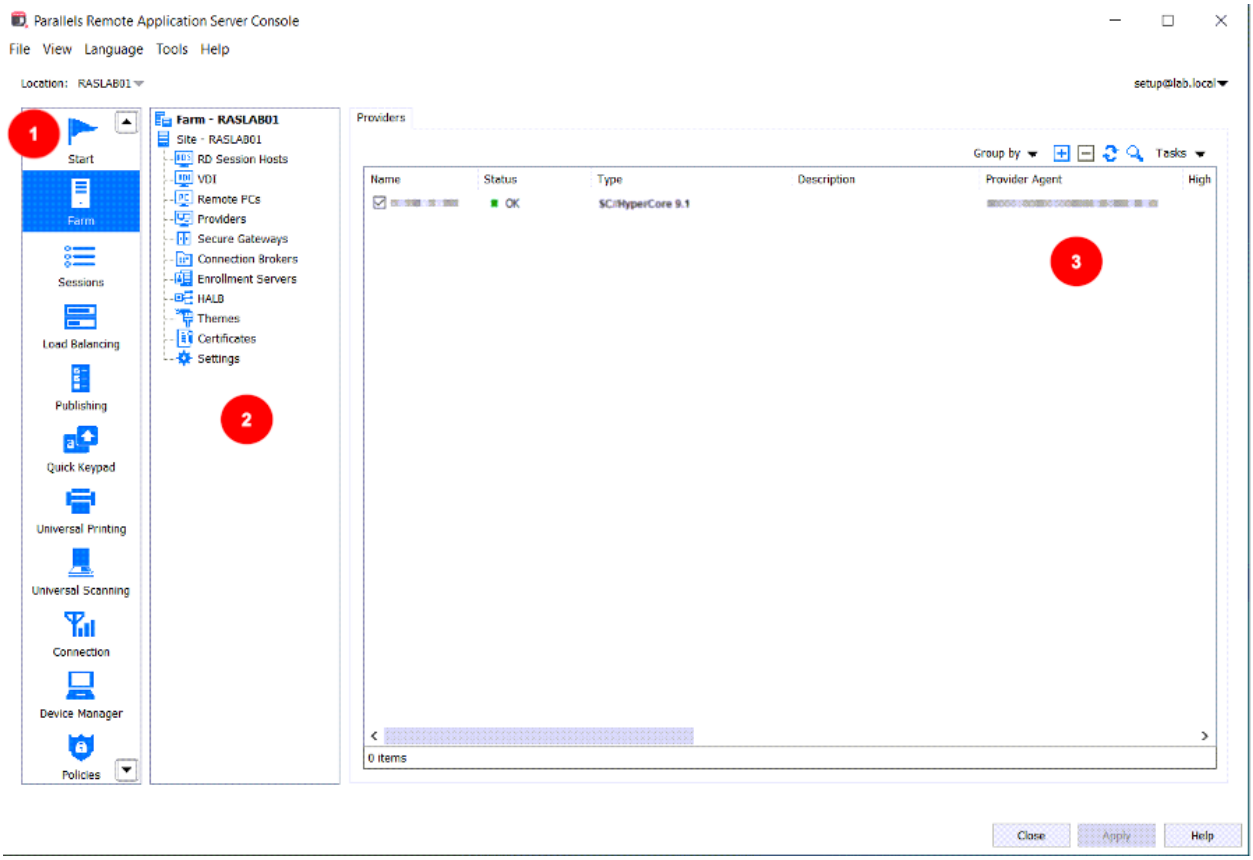
Its centralized management console allows an IT administrator to easily accomplish management tasks of any complexity. Fast setup of system components allows IT professionals to quickly deploy servers and applications.

Parallels RAS supports continuous availability, resource-based load balancing, universal printing, and comprehensive reporting. By centralizing virtual application and desktop control, the solution enables IT professionals to provide seamless mobile access while increasing security and reducing IT costs.

Parallels RAS enables users to productively work in applications and desktops from any operating system with Parallels Client for Windows, macOS, Linux, iOS/iPadOS, Android, Chrome OS, and any HTML5-capable web browser. Features such as ultra-fast login, accelerated opening of files, fast application response, effortless multitasking, hassle-free printing, and secure access, all contribute to streamlining of work processes and increased productivity.

Parallels RAS Console

The Parallels RAS Console is the primary interface used to configure, manage, and run Parallels RAS. It can be used to manage Farms, Sites, RD Session Hosts, VDI, published resources, client connections, and more.



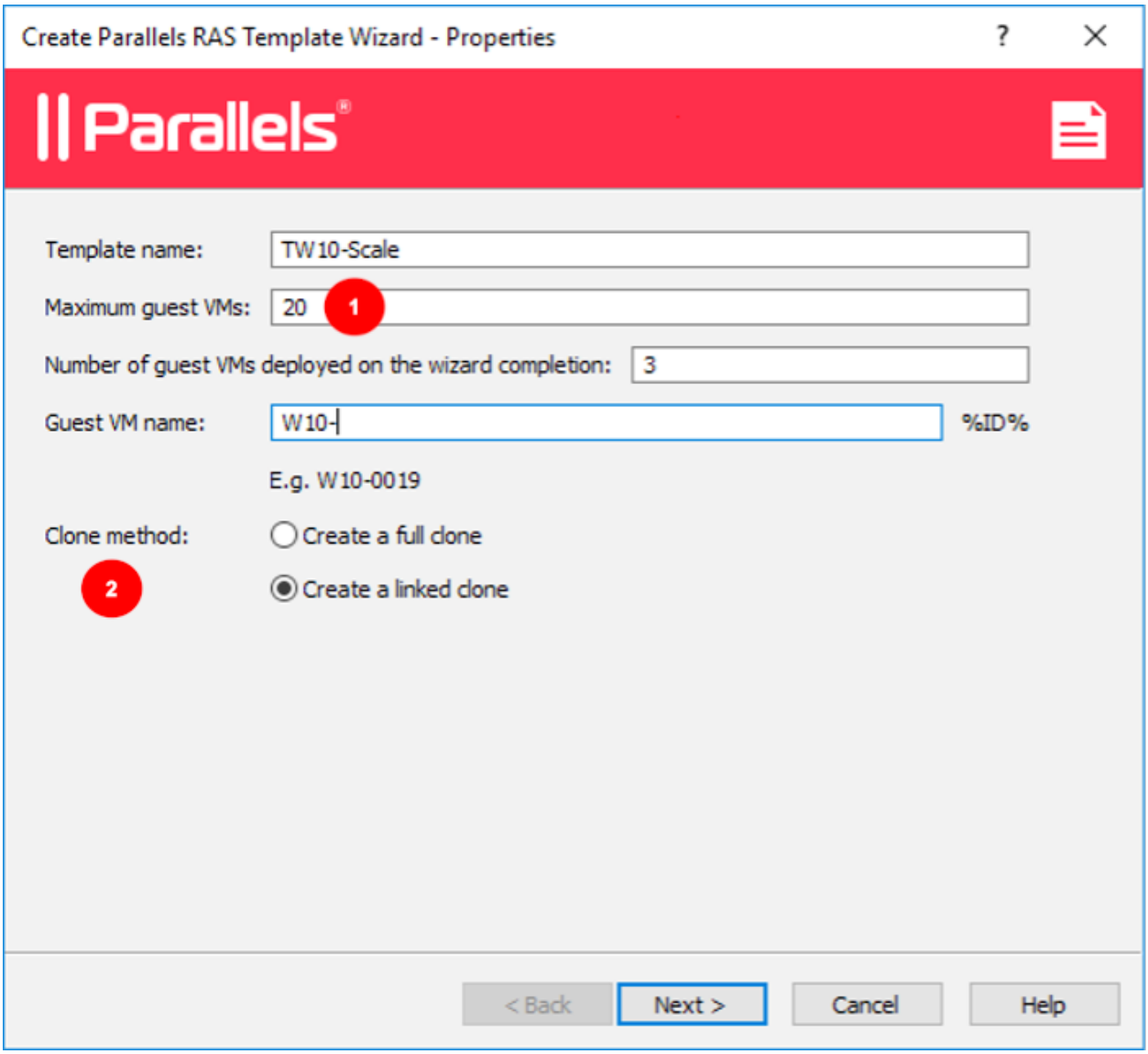
Parallels RAS Console general overview

Key elements of the Parallels RAS Console:

1. This section lists categories. Selecting a category will populate the right pane with elements relevant to that category.

2 This section (the middle pane) is available only for the **Farm** and the **Publishing** categories. The navigation tree allows you to browse through objects related to that category.

3 This information bar displays the Site you are currently logged into, and the user account being used for the connection. Whenever you make changes to one or more objects/items, click the **Apply** button (at the bottom of Parallels RAS Console) to commit the changes. If here are no current pending changes, the message is not displayed.

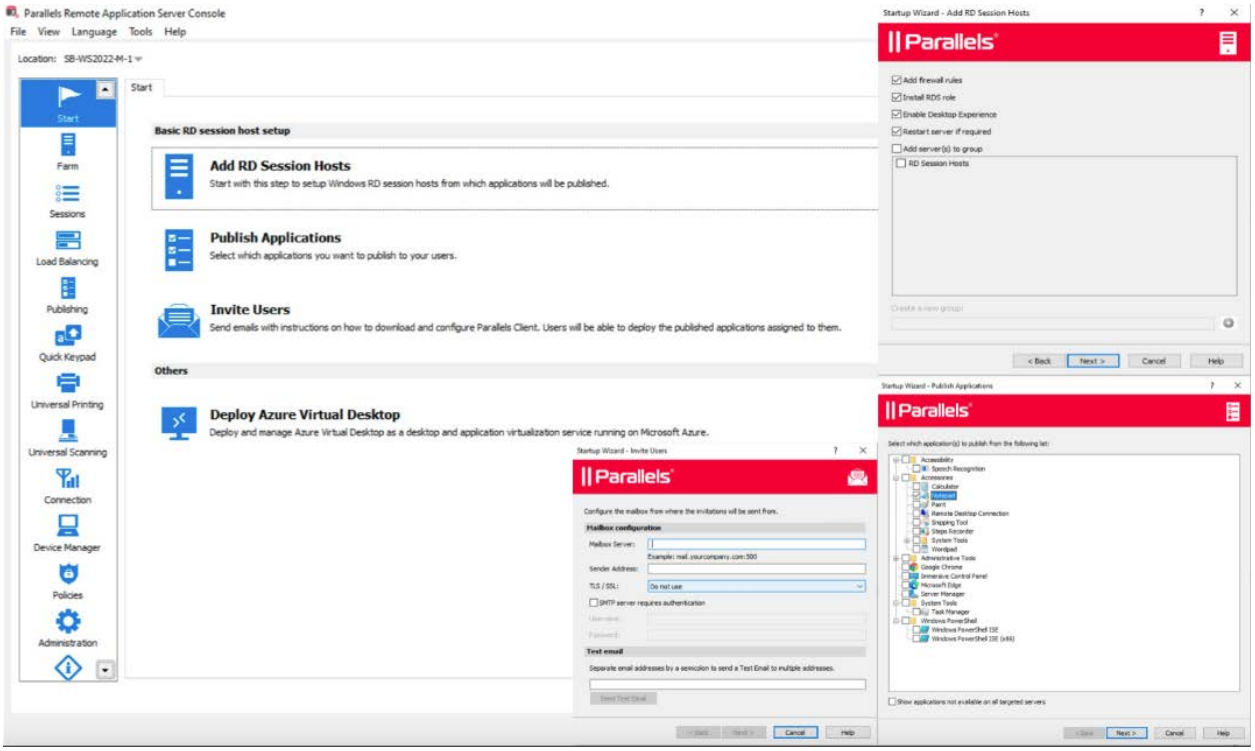


1 Capacity settings for the template.

2 Deployment approach using Full or Linked clones.

Parallels simplify several major administration tasks within Parallels RAS by using wizards. The wizards simplify the process of adding new RD Session Hosts, publishing applications, deploying RAS Secure Gateways and High Availability Load Balancers (HALB) as well as setting up and configuring other solution components.

Wizards are available by selecting the Start category in the left pane.



Wizards and simplicity to virtualize and deliver applications using Parallels RAS

The wizards also automatically install the required software when a new RD Session Host is added.

For VDI use cases, you're required to first connect to SC//HyperCore API and create RAS Templates. For providers, Scale Computing recommends using the address with round-robin load balancing between Scale Computing nodes in order to achieve high availability. When this is configured, should one node fail, the Parallels RAS Provider Agent can still communicate with all nodes in the cluster.

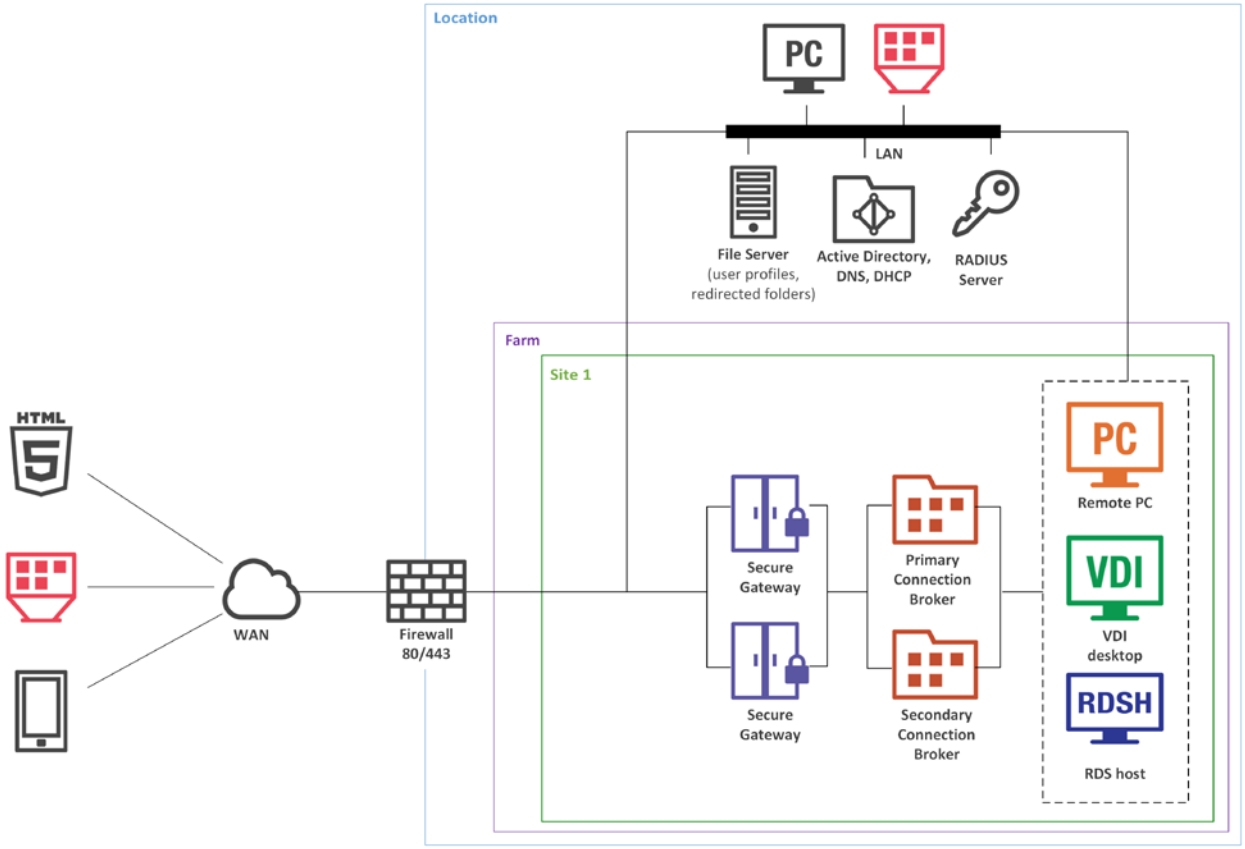
Parallels RAS solution diagram and components

In Parallels RAS, users can access published resources using one of the following methods: (1) Web access via an HTML5-capable browser; (2) Launching the native Parallels Client application directly; (3) Using the Web Client to launch the native Parallels Client. All three methods can be made available independently of each other, so Parallels RAS administrators can choose a method that is best for their users.

Key components of Parallels RAS include:

- **Farm** is a collection of Parallels RAS components maintained as a logical entity with a unique database and licensing. Parallels RAS Farm can contain multiple Sites, which can be administered by different administrators.
- **Site** is a managing entity usually based on a physical location. Each Site consists of at least RAS Connection Broker, RAS Secure Gateway (or multiple gateways), and agents installed on RDSHs, VDIs, and PCs. When using multi-tenancy, RAS Secure Gateways are not required at the Farm level.
- **Parallels RAS Console** is an application that provides a centralized graphical user interface and enables configuration and maintenance of Parallels RAS. In addition, administrators can now use RAS Management Portal from any device.
- **RAS Connection Broker** is a required component in every site of a RAS Farm that provides access to published applications and desktop load balancing. If it has the primary role in the first Site of the Farm, it also keeps the Farm configuration database and Farm licensing. High availability can be achieved by adding secondary Connection Brokers to each site.
- **RAS RD Session Host Agent** is an application installed on a Microsoft RDSH that enables publishing of the host resources (i.e., applications and desktops). RAS RD Session Host Agent collects information needed by the Connection Broker from the Microsoft RDSH and transmits it to when required.
- **Remote PC Agent** is an application installed on a physical host (e.g., a laptop or PC) or a VM that enables publishing of the host resources. The Remote PC Agent collects information needed by the Connection Broker from the Remote PC host and transmits it when required.
- **RAS Guest Agent** is an application installed in the guest operating system of a VM, which is used as a VDI template on a hypervisor. The guest agent enables resource publishing from the VDI hosts and collects information required by the Connection Broker.
- **RAS Provider Agent** is responsible for managing the hypervisor through its native API and exchanges information with the Connection Broker. The API maps, deploys, removes, and auto-scales Parallels RAS VM resources.
- **RAS Secure Gateway** is a required component of Parallels RAS. It tunnels all traffic between itself and the Parallels Client into SSL and tunnels Microsoft Remote Desktop Protocol (RDP) traffic to the Connection Broker and User Portal. Several RAS Secure Gateways can work in high availability mode with Parallels high availability load balancing (HALB) and other load balancer solutions.

This solution is ideal for high availability environments with 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 high availability and load balancing virtual appliance in an internal network.



Typical Parallels RAS high availability deployment

Parallels RAS Server Components	
	A server hosting RAS Connection Broker. May also host other Parallels RAS components depending on a deployment.
	RAS Secure Gateway (including User Portal) used for secure (SSL) client connections.
	Private RAS Secure 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.
Parallels RAS Client Devices	
	A desktop computer (Windows, Linux, Mac) with Parallels Client installed.
	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).
	RADIUS server (used for second-level authentication).
	File server for storing user profiles and redirected folders.
	Firewall (ports 80 and 443 are open).

CHAPTER 4

Use Cases

In This Chapter

Education

Parallels RAS provides staff, students, and faculty in educational institutions with a software solution to easily and securely access virtual applications, data, and desktops published on virtual machines and RD Session Hosts.

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 RAS helps academic institutions of all sizes reduce their operating expenses while improving the learning process.

Healthcare

Parallels RAS equips healthcare providers with a software solution that securely delivers virtual medical applications and patient information from local devices to cloud. It also delivers on-the-go access to applications like EMRs, revenue cycle management solutions, computerized provider order entry (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.

Managed Service Providers (MSPs)

Parallels RAS provides MSPs with a software solution for delivery of hosted workspace services from major hypervisors as well as Remote Desktop Services. It enables MSPs to deliver the rich hosted workspaces customers want and ease the transition from on-premises solutions to hosted services.

MSPs can enhance their service portfolio with application hosting, Desktop-as-a-Service, and mobility solutions and help customers overcome on-premises complexities by adopting subscription-based hosted services.

Enterprise organizations

Parallels RAS 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, businesses of all sizes can benefit from significant cost savings and added value through employee mobility and increased productivity.

Parallels RAS is a simple and flexible solution that allows organizations to achieve a virtualized application and desktop environment without a significant investment.

CHAPTER 5

Summary

The decentralization of resources, including applications and devices, has led organizations to rethink how to deliver an optimal end user experience. The modern workforce has also changed, including where employees work and what device(s) they prefer to use.

Scale Computing and Parallels have addressed these challenges. This Reference Configuration for Parallels RAS on SC//HyperCore builds off the strength and versatility of the Parallels RAS technology and leverages years of Scale Computing innovation delivering client virtualization solutions.

SC//HyperCore is ideally suited for the performance and scalability requirements of Parallels 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, SC//HyperCore combined with Parallels 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 can be scaled to meet the demands of your organization.

When compared to the cost of traditional virtual desktop and application publishing solutions, Parallels RAS can significantly reduce overall licensing costs, further increasing return on investment (ROI). In a 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.

Index