FANATICAL SUPPORT FOR RACKSPACE PRIVATE CLOUD POWERED BY VMWARE

vmware®

Rackspace®

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OVERVIEW

Rackspace Private Cloud Powered by VMware® (RPC-VMware or RPC-V) is a single-tenant private cloud built on VMware Cloud Foundation that enables full software-defined data center (SDDC) capabilities, including VMware virtualized compute, storage, networking and cloud management.

RPC-V is built on VMware Validated Designs, which are based on best practices, making deployments more predictable and lower-risk. Continuous updates allow for the most up-to-date VMware capabilities through lifecycle management of VMware components, thereby helping to improve users' security posture.

RPC-V allows IT organizations to benefit from the capabilities of a VMware-based private cloud, without having to invest time, energy and resources building and managing the ongoing operations of running and optimizing VMware software and the underlying physical infrastructure that powers it. This frees up customers' IT resources to focus on higher-value activities, such as automating service delivery and other innovation initiatives, so that they can deliver great outcomes for their business at a lower TCO and with less risk when compared to building it themselves in their own data center.

IT operations teams benefit from VMware's software-defined technology and the agile infrastructure deployment model for physical and virtual infrastructure that comes with working with Rackspace. Legacy and non-cloud-native applications can be operated with cloud-like agility, without requiring IT teams to sacrifice their existing investments in VMware skills, tools and software.

REGION AVAILABILITY

Rackspace Private Cloud Powered by VMware is available to customers worldwide with infrastructure hosted in one of our nine data centers located throughout North America, Europe and APAC. Customers can also choose to have a fully managed VMware private cloud in their own data center or colocation facility with Rackspace Private Cloud Everywhere Powered by VMware. Contact a Rackspace representative if you have questions about supported regions.

SERVICE LEVEL MANAGEMENT

Rackspace offers 24x7x365 support for RPC-VMware. Rackspace is one of VMware's largest global Cloud Provider Program partners, with elevated access to technical specialists for rapid resolution of unexpected software-related issues within the VMware stack.

Rackspace's VMware-Certified Professionals (VCPs) assist in the architecture, deployment and troubleshooting of the RPC-VMware environment. Rackspace monitors and maintains the VMware software stack, including installing and configuring the RPC-VMware services and any add-on services, backing up and restoring the VMware service VMs as needed, and monitoring the hypervisors for hardware issues and availability.

Rackspace manages and supports the physical infrastructure and the ESXi hypervisors. VMs or other virtual systems deployed, configured or created by you within the RPC-VMware environment do not qualify for Rackspace managed services unless specifically enabled by an add-on service. Services for VMs such as OS or application monitoring, OS patching, antivirus and backups are your responsibility unless you have purchased an add-on that provides that service.

The following table describes the features that Rackspace provides as a managed service to you in RPC-VMware.

FEATURES PROVIDED AS MANAGED SERVICES

FEATURE	DESCRIPTION
High Availability (HA)	HA clustering is set up by Rackspace.
Dynamic Resource Scheduler (DRS)	DRS clustering is set up by Rackspace.
vStorage API for Array Integration (VAAI)	VAAI is available if it is supported on the storage array.
Distributed Switch™	Rackspace configures the distributed virtual switch and distributed port groups to which customers can connect VMs.

SPHERES OF SUPPORT

There are two parties involved in supporting your RPC-VMware environment, specifically:

• You, the customer (including any in-house IT resources)
• Rackspace – our VMware-certified support experts

The following table describes each area of Rackspace Private Cloud Powered by VMware and the responsibilities of each party.

AREA	MANAGED BY RACKSPACE	MANAGED BY CUSTOMER
Virtualization	· Management service VMs and appliances	· Customer-created VM troubleshooting · Remote administration of customer-created VMs
Hardware	· Manage delivery of equipment · Procure, inventory spare parts and break-fix equipment · Rackspace Dedicated Server (hypervisor) · Rackspace Fully Managed Dedicated NAS · Rackspace Fully Managed Dedicated SAN · Rackspace Fully Managed Shared SAN	
Network	· Architecture design, review and consultation · Configure physical routing and switching equipment · Allocate public and private IP blocks for guest OS VMs · Manage physical firewalls · Manage physical load balancers · Manage physical intrusion-detection systems · Monitor bandwidth consumption · Troubleshoot network connectivity · Manage physical firewall rule set (co-managed with customer)	· IP management of IP blocks assigned for all guest OS VMs · Manage physical firewall rule set · Manage VM DNS
Monitoring	· Configure and respond to infrastructure monitoring (ping and port) · Configure and respond to RPC-VMware services monitoring	· Provide, configure and respond to monitoring of the OS and applications on compute VMs · Monitor for capacity utilization and request additional capacity in advance
Operating Systems		· Provision guest OS · Ensure OS licensing compliance · Patch OS
Security	· Maintain RPC-VMware security	· Maintain security specifications for VMs

ROLES AND PERMISSIONS

To implement the separation of customer and Rackspace duties in RPC-VMware, Rackspace uses built-in and custom roles in the vCenter Server. Rackspace assigns you a maximum permission role (customer role) and any lesser privileged roles that you request for specific users or groups.

Customers have permissions to create, delete and manage VMs within their private cloud. Rackspace manages and maintains the ESXi hosts, the vCenter® Server, Platform Services Controller and additional management VMs as required by the RPC-V solution. Customers therefore have limited permissions on hosts and management servers.

Specific resource pools and folders are created to house customer-created VMs and ensure separation from management VMs. In support of this separation, customers are granted permissions to create, delete and manage VMs in the Compute-Resource Pool and Network-Resource Pool and in the Workloads, Templates and Networking VMs folders.

If required for organizational or resource-management purposes, customers can create new resource pools below the Compute-Resource Pool and Network-Resource Pool and new folders below the Workloads, Templates and Networking VMs folders.

The following permission sets are predefined in the vCenter Server:

• Customer Access
• VM Power User
• VM User
• Read Only

The following table shows which vCenter Server permissions are available to each role.

VCENTER PERMISSIONS AND ROLES

PERMISSION	CUSTOMER ACCESS	VM POWER USER	VM USER	READ ONLY
Alarms	Full access	No access	No access	No access
Datastore	Limited access	Limited access	No access	No access
Folder	Full access	No access	No access	No access
Network	Limited Access	No access	No access	No access
Performance	Full access	No access	No access	No access
Resource	Full access	No access	No access	No access
Scheduled Task	Full access	Full access	Full access	No access
Tasks	Full access	Full access	Full access	No access
vApp	Full access	No access	No access	No access
Virtual Machine	Full access	Full access	Limited access	No access
Data Center	Limited access	No access	No access	No access
Global	Limited access	Limited access	Limited access	No access
Host	Limited access	No access	No access	No access
Sessions	Limited access	No access	No access	No access
Storage Views	Limited access	No access	No access	No access
Datastore Cluster	Full Access	No access	No access	No access
Distributed Virtual Switch	No access	No access	No access	No access
Distributed Virtual Port Group	No access	No access	No access	No access
ESX Agent Manager	No access	No access	No access	No access
Extension	No access	No access	No access	No access
vCenter Inventory Service	No access	No access	No access	No access
vSphere Update Manager	No access	No access	No access	No access
VRM Policy	No access	No access	No access	No access
vService	No access	No access	No access	No access
vSphere Tagging	Full Access	No access	No access	No access

RPC-VMWARE COMPATIBILTY

RPC-VMware might not be compatible with all Rackspace products and services. Contact your Rackspace support specialist for detailed information about whether any specific Rackspace product is compatible with your RPC-VMware environment.

RPC-VMWARE COMPATIBILITY WITH THIRD-PARTY PRODUCTS

You can access RPC-VMware by using various VMware services APIs. You can use any third-party management, orchestration or other tool that is compatible with these APIs. In this case, the functionality of any such tool is limited by the RPC-VMware features and capabilities as described in this service guide. Ensure that the VMware services API versions of your environment are compatible with the third-party tools that you want to use.

RPC-VMWARE COMPATIBILITY WHEN ELEVATED PERMISSIONS ARE NEEDED

In some cases, existing role permissions provided by Rackspace do not allow a custom or third-party tool to function. Contact the Rackspace account team to determine if role permission adjustments are possible.

RPC-VMWARE AUTHENTICATION METHODS

RPC-VMware customers have two choices for vCenter authentication. When your private cloud is being built, you have the option to use either a Rackspace-provided directory service or your own Active Directory service.

Rackspace support still authenticates to your RPC-VMware cloud with the Rackspace-hosted directory service. Your directory service is added as an additional authentication source. You must also indicate the groups and roles to be assigned in vCenter from the vCenter roles.

ARCHITECTURE

CORE COMPONENTS

RPC-VMware is a dedicated, per-customer instance of the VMware software-defined data center (SDDC) stack. As such, RPC-VMware includes as standard the ESXi hypervisor running on dedicated hardware, VMware vSphere®, VMware vSAN™ software-defined storage platform, VMware NSX® software-defined networking platform, and VMware vRealize® Operations™ capacity management and performance analysis platform. Other services, including VMware vRealize Automation™ and Managed Backup for customer virtual machines, are available as optional add-ons to RPC-VMware. Further details on the components included as standard are found below.

RPC-VMWARE COMPONENTS

RPC-VMware is composed of a single dedicated VMware vSphere cluster managed by a dedicated vCenter Server. RPC-VMware provides core components and, optionally, one or more add-on components. The core components and some of the optional add-on components require management services, such as vCenter Server, Platform Services Controller (PSC) and NSX Manager. These must run in the same cluster as your workloads. The services must always have access to sufficient compute resources or the RPC-VMware functionality and availability will be at risk. To address this requirement, the core and optional add-on management services run in a designated cluster resource pool, which guarantees access to sufficient resources. The management services can consume more compute resources in the future as VMware releases newer versions of their software.

Rackspace manages and maintains the RPC-VMware product's VMware services and infrastructure resources. Any changes to settings or configurations of the VMware-hosted services, networking, storage and compute systems must be requested by opening a ticket with Rackspace Support.

You can view and manage your virtual systems that you provision from the RPC-VMware services user interfaces (UIs) and APIs.

VMWARE VSAN FOR RPC-VMWARE

VMware vSAN is an enterprise-grade, hyper-converged software-defined storage solution optimized for VMware VMs that is natively embedded in the vSphere hypervisor. vSAN provides service-level and policy management at the VM and virtual machine disk (VMDK) level, provides performance quality of service (QoS) capability at the VM level, and allows enterprise-grade scalability for capacity and performance without the need for a large upfront investment.

vSAN enables the use of the Rackspace Private Cloud Powered by VMware (RPC-VMware) environment to manage and provision storage through self-service, and to also offer role-based self-service access to other users within the organization. vSAN allows storage policy to be set for availability, performance and QoS at the VM and VMDK levels, while eliminating the concept of LUN, volume and RAID to make storage provisioning and management simple for use by a VMware administrator. In addition, vSAN also allows for integration into VMware vRealize Operations and vRealize Automation to provide end-to-end software-defined data center (SDDC) manageability and service delivery.

Reference Getting Started with vSAN for RPC-VMware for more information.

VMWARE NSX FOR RPC-VMWARE

VMware NSX is the network virtualization platform for the software-defined data center (SDDC), delivering the operational model of a VM for entire networks. With NSX, network functions including switching, routing and firewalling are embedded in the hypervisor and distributed across the environment. This effectively creates a "network hypervisor" that acts as a platform for virtual networks and services.

Like the operational model of VMs, virtual networks are programmatically provisioned and managed independently of underlying hardware. NSX reproduces the entire network model in software, enabling any network topology — from simple to complex multi-tier networks — to be created and provisioned in seconds. Users can create multiple virtual networks with diverse requirements, leveraging a combination of the services offered via NSX to build inherently more secure environments.

Reference Getting Started with NSX for RPC-VMware for more information.

VMWARE VREALIZE OPERATIONS FOR RPC-VMWARE

VMware vRealize Operations helps you manage performance utilization and capacity visualization of the Rackspace-hosted virtualized infrastructure. vRealize Operations Endpoint Operations Management provides additional visibility into the guest-OS layer and helps you monitor in-guest services on your supported VMs.

vRealize Operations collects and analyzes information from multiple data sources and uses advanced analytics algorithms to learn and recognize the "normal" behavior of every object that it monitors. Through dashboard views and reports, you can view details to make informed decisions in the following areas:

- Issue resolution and root-cause analysis
- Environment health and advanced warning of potential issues
- Capacity management and forecasting

vRealize Operations uses management packs to collect, analyze and present data from many VMware and third-party data sources, which provides a holistic view of the RPC-VMware infrastructure and workloads.

Reference Getting Started with vRealize Operations for RPC-VMware for more information.

The following table describes the management services for the core components of RPC-VMware. Your private cloud includes these services.

MANAGEMENT SERVICES FOR CORE COMPONENTS

SERVICE	DESCRIPTION
Management resource pool	A cluster resource pool where all the required and optional management services reside. The resource pool is used to restrict access and to manage resources for the management services. The resource pool and the VMs running in it are required and are managed by Rackspace. Management services, such as VMware vCenter Server and the Platform Services Controller (PSC), are requirements for providing and managing RPC-VMware. These services must always have access to sufficient compute resources or the RPC-VMware functionality and availability will be at risk. To address this requirement, the resource pool is configured to reserve a sufficient amount of CPU and memory resources. The amount of reserved resources could be increased in the future as VMware releases newer versions of their software.
Management network	A single VLAN segment behind your firewall that is used exclusively for the management of RPC-VMware. Rackspace requires network access to management services and infrastructure for monitoring, troubleshooting and resolution of issues. The customer and Rackspace co-manage the firewall rules. You must not modify the firewall rule set in a manner that prevents Rackspace from accessing the management network and infrastructure; otherwise, you will negatively impact the service level agreement. If you do interrupt Rackspace network access by a change to firewall rules, Rackspace will revert or alter the customer-created firewall rule/s and endeavor to contact you about the change. This is required due to VMware license reporting requirements for your environment.
vCenter Server virtual appliance	Provides centralized visibility, proactive management and extensibility for VMware vSphere from a single console. vCenter Server is accessible from the vSphere client and the vSphere API.
Platform Service Controller virtual appliance	Provides identity management for users and applications that interact with VMware vSphere and licensing services to RPC-VMware. The Platform Services Controller is paired directly with the vCenter Server, and as such, does not require a separate management interface.
NSX® Manager virtual appliance	The NSX Manager provides the graphical user interface (GUI) and the REST APIs for creating, configuring and monitoring virtual network components.
Virtual Machine Recovery (VMR) virtual appliance	Enables image-based backup of the management services. It allows Rackspace to quickly recover management services. This VMR appliance is for use only by Rackspace and does not back up any of the VMs created by the customer on the compute cluster. No customer access is provided to the VMR appliance.
Jump Server	Rackspace uses this system to gain access into your cluster to maintain the management services. No customer access is provided.
vRealize Operations Manager virtual appliance	The vRealize Operations Manager virtual appliance provides all vRealize Operations Manager functionality, enabling activities such as checking the health of the hosted VMware environment, performing capacity planning, and proactively eliminating performance bottlenecks. It is accessible via a web interface.

The following table describes the management services for the optional add-on components of RPC-VMware that require the provisioning of additional virtual machines in the cluster. Your private cloud might include one or more of these services if you have selected any of the add-on components listed. Add-on components that are not listed do not require additional services to be provisioned in the management resource pool.

MANAGEMENT SERVICES FOR OPTIONAL COMPONENTS

SERVICE	DESCRIPTION
vRealize Automation virtual appliance and IaaS server	The vRealize Automation virtual appliance and IaaS server are included if your RPC-VMware cloud includes the vRealize Automation add-on feature. The vRealize Automation add-on feature provides cloud automation, such as the ability to provide VMs and applications, as on-demand services. The vRealize Automation appliance provides a management user interface, a single sign-on (SSO) service, and a vRealize Orchestrator instance for vRealize Automation. It is accessible via a web interface and a REST API. The vRealize Automation IaaS server enables the rapid modeling and provisioning of servers in the private cloud as directed by the vRealize Automation appliance. It includes workers and agents to integrate with vSphere and other infrastructure components.
vRealize Business for Cloud virtual appliance	The vRealize Business™ for Cloud virtual appliance is included if your RPC-VMware cloud includes the vRealize Business for Cloud add-on feature. vRealize Business for Cloud is a cloud planning, budgeting and cost visibility tool that helps to make decisions for your private cloud. It is used to establish costs and pricing, make cost base decisions, and provide information for chargeback. It is accessible via a web client and a public API.

VMware Site Recovery Manager server	The VMware Site Recovery Manager™ server is included if your RPC-V cloud includes one of our DR for RPC-V products. VMware Site Recovery Manager is the VMware solution to enable application availability and mobility across sites in private cloud environments. Site Recovery Manager is an automation software that integrates with an underlying replication technology to provide policy-based management, non-disruptive testing and automated orchestration of recovery plans. This provides simple and reliable recovery and mobility of virtual machines between sites with minimal or no downtime.
vSphere Replication Manager and appliances	VMware vSphere Replication™ is a hypervisor-based, VM-centric replication with customizable recovery point objective and multiple point-in-time recovery, natively integrated with Site Recovery Manager and included with the DR for RPC-V products. One manager appliance and up to nine additional replication appliances may be provisioned depending on the size of your protected workload.
Additional Virtual Machine Recovery (VMR) virtual appliances	Managed Backup for RPC-V is an optional add-on that enables image-based backup of the virtual machines created by the customer in RPC-V. It allows Rackspace to quickly recover VMs when requested. Multiple appliances will be added to your environment to enable this service. The VMR appliances are for use only by Rackspace. No customer access is provided to the VMR appliances.

ARCHITECTURAL GUIDANCE AND IMPLEMENTATION

The following diagram shows the architecture of RPC-VMware as configured with optional add-on components. Rackspace will help design, build and deploy your VMware solution.
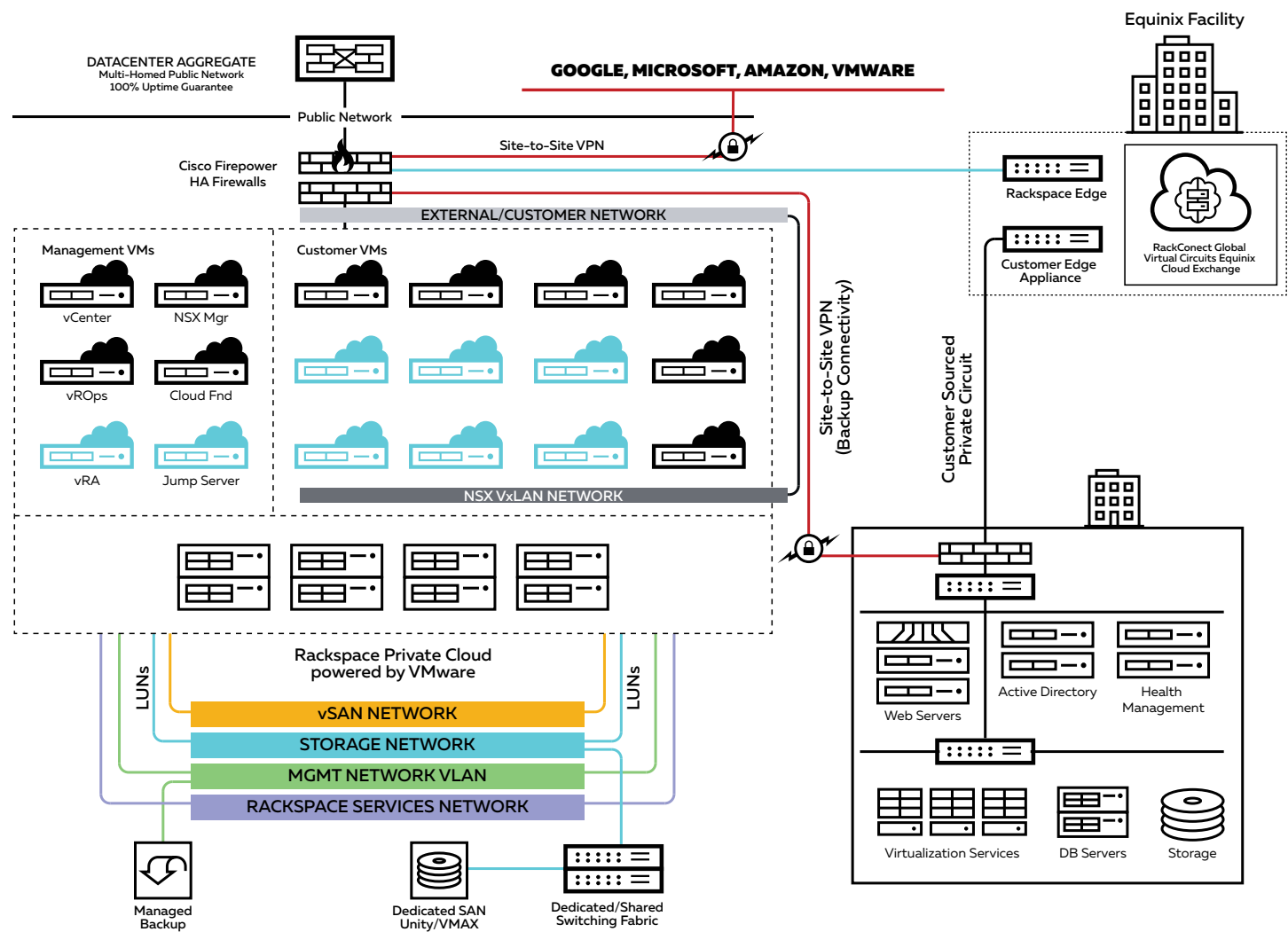
SUPPORTING YOUR VMWARE ENVIRONMENT

TICKETING PROCESS

One of the primary ways that you can interact with Rackspace is by creating a ticket in the Rackspace Customer Portal (https://racker.my.rackspace. com/portal/home). Once logged in, click the "Tickets" button from the menu to create a new ticket or view an existing ticket. Our automated systems will also create tickets for events on your account that require either your attention or the attention of a Rackspace employee. You can also call the 24x7x365 Support Team at any time.

Incident Response: All customer–submitted requests are automatically categorized as Standard requests. Rackspace will respond to your support requests in the following time frames:

Standard: If your site is functioning within acceptable parameters, but you require assistance in loading software or have a help desk–type question, we will respond to your request within four hours.

Urgent: If your server or site is accessible but in a reduced state (timeouts or slow response), we will respond to your support request within one hour.

Emergency: If you cannot access your server or site from the public internet, we will respond within 15 minutes.

Note: For requests that require an urgent or emergency classification, please call the 24x7x365 support line directly.

Source: Dedicated Hosting Services Product Terms (https://www.rackspace.com/information/legal/DedicatedHostingTerms)

INCIDENT MANAGEMENT

Incident management refers to the management of incidents where restoration of services is the primary objective. Rackspace endeavors to restore normal service as quickly as possible when an incident occurs.

Rackspace will apply a consistent approach to all incidents, except where a specific approach has been previously agreed upon with you in accordance with your accounts runbook. Incidents can be initiated by named account contacts and you can expect the following from the Rackspace Incident Management process:

- All incidents are logged in tickets accessible via the Rackspace Customer Portal (https://racker.my.rackspace.com/portal/home). Rackspace support teams will investigate the incident in accordance with your service level, once logged.
- Priority for tickets entered manually via the Customer Portal is initially set to "Standard." Should you desire an escalation of priority, please phone your Rackspace support team or your assigned Service Delivery Manager. Incidents logged with a specific priority will not be changed to another priority without the agreement of all parties involved.
- Prior to investigation, Rackspace support will carefully review instructions on your account (documented via the account runbook).
- Rackspace will collaborate with you as well as with any third parties you nominate as technical contacts on your account to resolve the incident.
- At all times, you will have visibility into which support engineer is working on the incident.
- Rackspace support teams will communicate regularly with you throughout the incident, detailing their findings and any actions taken.
- If a support engineer is unable resolve an incident, they may escalate the incident at any time until resolution is achieved. This escalation may be hierarchical (to a more–senior engineer or the Service Delivery Manager) or functional (involving specialized technical expertise from other functional groups or VMware).
- The action required to resolve an incident will vary depending on investigative findings. In some cases, a proposed solution may be complex or cause additional disruptive impact to your VMware environments. In these cases, the incident will be handled as a change through the Rackspace change management process, and you will be consulted to determine the time window during which the solution or change may be implemented. Alternately, you may be required to take action to resolve the incident, which will be communicated should such a need occur.
- An incident is deemed closed when you confirm that it is resolved. This is achieved through the incident ticket being set to "Solved" status. You may also phone into the 24x7x365 support line to discuss a change and request a ticket be created.

INCIDENT MANAGEMENT PROCESS
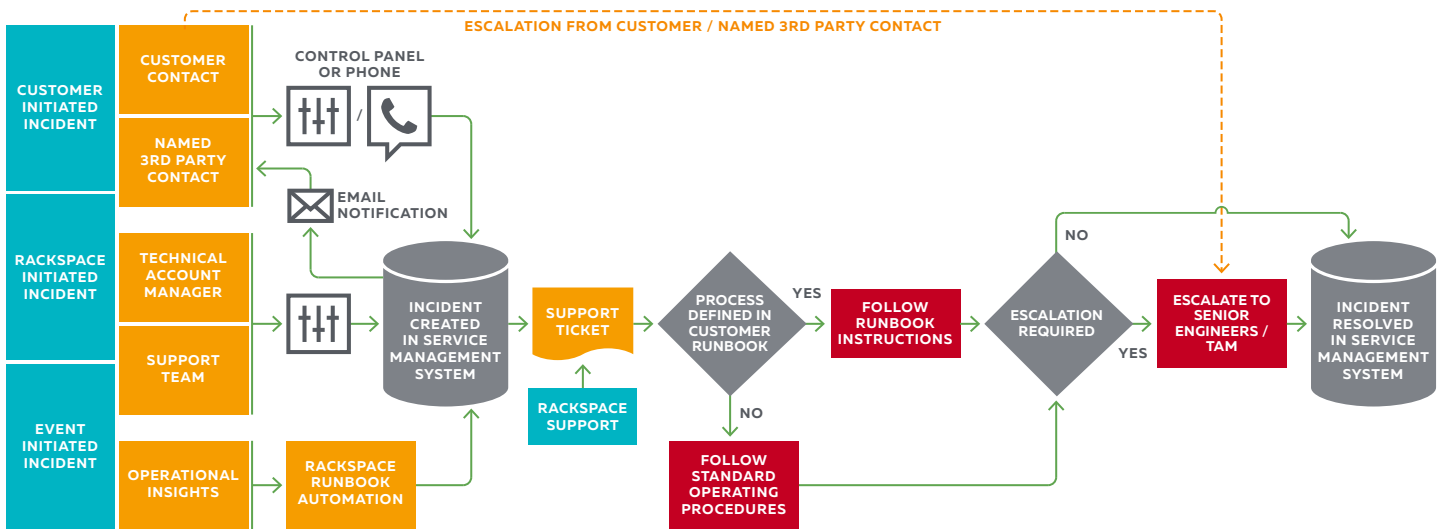
CHANGE MANAGEMENT

Change management includes a standardized set of procedures that enables Rackspace to deliver efficient and prompt handling of all changes in an organized manner to help ensure minimum impact on the services.

- Your Rackspace Service Delivery Manager will be available to work with you on all operational, technical and commercial changes to the environment.

- All changes will be managed through the Rackspace ticketing systems. This supports long-term tracking of all information and the optimum delivery of services through the various lifecycle processes of deployment, change management, incident management, etc.

- Rackspace will raise a ticket accessible via the Rackspace Customer Portal for changes that are owned or initiated by Rackspace. Conversely, you can raise a ticket for situations where Rackspace support is required for any changes owned and initiated by your business. You may also call the 24x7x365 support line to discuss a change and request a ticket be created.

- Rackspace will organize the support engineers with specific domain expertise to manage the change as scheduled, keeping you fully informed on progress.

- For changes or upgrades to your own internal infrastructure, you are responsible for coordinating with your internal resources and third-party contacts to manage the change as scheduled, keeping Rackspace informed of the progress via a Rackspace support ticket.

PATCHING

Rackspace will periodically patch or upgrade the various Rackspace-provided services in your Rackspace Private Cloud Powered by VMware (RPC-VMware) environment. These services will be patched or upgraded to the most recent Rackspace-supported version as needed and to address critical vulnerabilities.

Rackspace will try to obtain your consent before patching or upgrading the environment to ensure that actions are performed at a convenient time for you. This process will not require any scheduled downtime for virtual systems deployed by you in your environment, but it might temporarily impact the availability of the various user interfaces and APIs of the RPC-VMware services. The patching or upgrade of hosts might affect the performance of virtual systems deployed by you in your environment if the patch or upgrade requires a host to be restarted. Performance should return to normal when host patching or upgrading is complete.

BACKUPS

RPC-V management components are backed up daily by an image-based CommVault backup solution as well as by utilizing VMware-provided backup mechanisms for individual components. Rackspace will determine when it is necessary to restore management service components from backups. Backups for virtual machines that customers create are not provided unless the optional Managed Backup for RPC-V service is purchased.

ADD-ON COMPONENTS

VMWARE VREALIZE AUTOMATION FOR RPC-VMWARE

VMware vRealize Automation is a cloud automation product that can be included as an optional component in Rackspace Private Cloud Powered by VMware (RPC-VMware). It can be used to provide cloud-based services on demand via self-service consumer catalogs. These services can include typical data-center operations, such as deploying virtual machines (VMs), applications and infrastructure, as well as anything for which you can build a workflow in vRealize Orchestrator.

VMWARE VREALIZE BUSINESS FOR RPC-VMWARE

VMware vRealize Business is a cloud planning, budgeting and cost product that can be included as an optional add-on component in Rackspace Private Cloud Powered by VMware (RPC-VMware). It is used to establish costs and pricing, make cost-based decisions, and provide information for chargeback. It is accessible via a web client and a public API.

ADD-ON SERVICES

MANAGED BACKUP FOR RPC-VMWARE

The Managed Backup (MBU) service provides image-based (snapshot) backups of the VMs that you provision in the RPC-VMware environment. After it is configured, the service backs up all discovered VMs on a daily basis and retains versions according to the retention policy that you selected when purchasing the add-on. The service also enables image-level restores of an entire VM so that your workload is recovered as quickly as possible.

RACKSPACE HOURLY DBA SERVICE FOR RPC-VMWARE

The Rackspace Hourly DBA Service enables you to leverage the DBA expertise at Rackspace with 24x7x365 availability on a pay-as-you-go basis. Rackspace Hourly DBA Service is available for MySQL, Oracle, and Microsoft SQL Server databases hosted on your Rackspace Private Cloud Powered by VMware (RPC-VMware) environment.

DISASTER RECOVERY FOR RPC-VMWARE

The Rackspace Disaster Recovery for RPC-V add-on comes in both a customer-managed and Rackspace-managed solution. For both services, VMware Site Recovery Manager and vSphere Replication are added to two RPC-V environments in two different Rackspace data centers.

GUEST OS SERVICES FOR RPC-VMWARE

Customers may purchase additional Rackspace-managed Guest OS Services for their RPC-VMware-hosted VMs. To enroll VMs in the desired services, a portal is provided that allows the VMs to be selected, services to be enrolled indicated, and administrator/root equivalent OS credentials provided. Rackspace will provide the following guest OS services as selected by you for your compute VMs:

MANAGED OS ADMINISTRATION

When a VM is enrolled in OS Administration, Rackspace will create a CMDB record of the VM and securely store the customer-provided OS login credentials so that our OS system administrators can log in to the OS and perform the desired OS services upon request.

MANAGED OS PATCHING

Rackspace provides a managed OS patching service for supported operating systems. Rackspace tests all patches in lab environments before applying them monthly to customer environments. The patching schedule is agreed upon by the customer. Rackspace will configure the guest OS to use Rackspace-provided patching sources in order to deliver and install the approved patches.

MANAGED OS MONITORING

Rackspace will install, configure and respond to monitoring alerts from an installed OS agent for OS and application alerts and conditions on compute VMs.

ANTIVIRUS LICENSING

Rackspace will install an OS antivirus agent on the selected VMs to provide you with antivirus services. Rackspace makes no guarantees as to the effectiveness of the antivirus service.

Please refer to the Dedicated Hosting Services Product Terms (section 6) for specific SLAs: https://www.rackspace.com/information/legal/DedicatedHostingTerms

MIGRATION ASSISTANCE

Transitioning from an existing environment to RPC-VMware requires specific expertise and resources skilled in technology transformation, migration planning and risk mitigation. For an additional fee and with assistance from other businesses where needed, Rackspace will own the process of migrating your applications to VMware. Please engage your sales representative for further information regarding pricing and timelines.

CUSTOM DEVOPS PROFESSIONAL SERVICES

Rackspace has extensive experience working with DevOps methodologies, practices and toolchains and can assist customers, via a Professional Services engagement, in adopting DevOps methodologies and practices inside their own organizations.

Rackspace DevOps Professional Services has two methods of delivering DevOps outcomes for customers:

- Working with you to identify and implement any additional custom tooling necessary to achieve your business goals
- Assisting you in evaluating and assessing the maturity of DevOps practices within your organization if you are in the early stages of your DevOps journey

You can expect the following from our Professional Services engagement:

- Creation of in-depth customization for your application utilizing the Microsoft DevOps toolchain
- Assistance in the writing of customized configuration management code using third-party tools
- Implementation and customization of continuous integration/continuous deployment (CI/CD) toolchains using third-party tools
- Custom plug-in integration between DevOps and ChatOps tools like Slack

APPENDIX

FREQUENTY ASKED QUESTIONS

GENERAL

Q: **How do I access RPC–V?**

A: You can access RPC–V only through a VPN connection to Rackspace.

Q: **What Rackspace data centers provide RPC–V?**

A: RPC–V is available in the IAD, DFW, LON, ORD, SDY and HKG data centers.

Q: **Are backups included with RPC–V?**

A: RPC–V management environments are automatically protected by an image–based CommVault backup solution as well as by utilizing VMware–provided backup mechanisms for individual components. Backups for virtual machines that customers create are not provided unless the optional Managed Backup for RPC–V service is purchased.

Q: **Is an antivirus solution included with RPC–V?**

A: Optional antivirus software can be licensed and installed to protect guest operating systems.

Q: **How can I migrate virtual machines to RPC–V?**

A: You can migrate data to Rackspace by using a number of VMware and third–party solutions. For more information about migrating to RPC–V, contact Rackspace Support.

Q: **Where can I find a list of known issues for RPC–V?**

A: Known issues are listed in the release notes for each version of vSphere. You can find your version number by clicking Help > About in vCenter. For more information, see the VMware vSphere Documentation.

ARCHITECTURAL

Q: **Are RPC–V environments deployed in a high availability (HA) configuration?**

A: Yes, RPC–V environments are deployed in an HA configuration.

Q: **Is there a limit to the number of VMs per environment?**

A: Rackspace does not impose a limit on VMs per environment. We can provide recommendations for best practices to maintain optimal performance.

Q: **Can I access vCenter API?**

A: Yes. You can access the vCenter and vSphere APIs, subject to permissions restrictions on a user account.

Q: **Can I add ESXi hypervisors in my data center to an RPC–V environment?**

A: By default, only hypervisors provided by Rackspace can be added; please contact Rackspace support for additional details.

Q: **Can I manage vCenter plug-ins and add my own third-party plug-ins?**

A: This will depend on the vCenter permissions required by the particular plug-in. See the vCenter Permissions and Roles

section for more details about the customer role permissions provided. Rackspace may be able to assist you in registering the plug-in with your vCenter server.

Q: Are storage RDMs supported?

A: Yes, you can get support for raw device mappings (RDMs) by opening a support ticket with our storage and virtualization team.

INTEGRATION

Q: What other VMware products are supported?

A: RPC-V allows customers to use other VMware products like vRealize Automation and VMware Site Recovery Manager, which are optional add-ons.

Q: Is Rackspace RackConnect supported with RPC-V?

A: Yes.

MONITORING

Q: How are RPC-V components monitored?

A: The management infrastructure is monitored by using the following combination of tools:

- Web service monitors are created to ensure that any web services associated with RPC-V are available. If they become unavailable, the monitoring service alerts Rackspace virtualization engineers to investigate and resolve the issue.
- Ping monitors ensure hypervisor availability and alerts are sent to Rackspace virtualization engineers when devices don't respond to ping requests.
- Monitoring services are configured to inspect vCenter alarms and alerts are sent to Rackspace virtualization engineers for alarms raised in vCenter.

Q: Is monitoring provided for my VMs?

A: Rackspace will provide monitoring for VMs if you select the optional Guest OS Services Monitoring add-on.

Q: How do I know if RPC-V resources are low?

A: RPC-V includes the VMware vRealize Operations (vROps) suite of performance monitoring and planning tools. vROps provides advanced reporting and forecasting capabilities, and the ability to set alerts to notify you when resources are low. These tools can be useful for optimizing resources and identifying performance bottlenecks. Rackspace can help you with the use of other monitoring software as needed.

ABOUT RACKSPACE

Rackspace is the #1 provider of IT as a service, in today's multi-cloud world. We deliver certified expertise and integrated managed services across public and private clouds, managed hosting and enterprise applications. Because Rackspace partners with the leading technology providers, including Alibaba®, AWS, Google, Microsoft®, OpenStack®, Oracle®, SAP® and VMware®, we are uniquely positioned to provide unbiased advice on the technologies that will best serve each customer's specific needs. Rackspace was named a leader in the 2017 Gartner Magic Quadrant for Public Cloud Infrastructure Managed Service Providers, Worldwide and has been honored by Fortune, Glassdoor and others as one of the best places to work. Based in San Antonio, Texas, Rackspace serves more than 150,000 business customers, including a majority of the Fortune 100, from data centers on five continents.

Learn more at www.rackspace.com or call us at **1–800–961–2888**.