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## OVERVIEW

Many businesses want to realize the power of OpenStack® without the challenge and expense of managing it themselves. Some lack the technical expertise or capacity to operate OpenStack infrastructure, tools and applications while others may have the ability, but prefer to maintain focus on their core business. Many larger businesses choose a multi-phased journey to the cloud, requiring transition and management services that can adapt to an evolving set of needs.

To meet these needs, Rackspace® Private Cloud (RPC) Powered by OpenStack blends technology and automation, plus human expertise, to deliver ongoing architecture, security and 24x7x365 operations backed by OpenStack-certified engineers and architects.

Rackspace delivers OpenStack as a managed service, with industry-leading SLAs, to any data center in the world. Rackspace is the leading operator of OpenStack, with over 1 billion server hours of experience operating OpenStack clouds at scale for many of the world's largest and most recognized companies.

## OUR SERVICE LEVEL

Rackspace Private Cloud Powered by OpenStack is backed by **Fanatical Support**®, the specialized expertise and 24x7x365, results-obsessed customer service that's been a part of our DNA since 1999. Our exceptional customer service means that we're in it with you every step of the way. From initial design to ongoing management of your production environment, we manage your cloud so you can focus on your core business. Our operations engineers proactively monitor and help maintain the health of your cloud by providing installation, configuration, patching, updating, troubleshooting and capacity planning services.

## SLAs

- An industry-leading 99.99% OpenStack API uptime guarantee
- 15-minute live response time to emergency tickets
- 100% network uptime\*
- 100% availability for critical infrastructure systems\*
- 1-hour replacement of any failed hardware component\*\*
- 10-hour replacement of any failed hardware component\*\*\*

\*Rackspace data centers and Rackspace-supported colocation facilities only

\*\* Rackspace data centers only

\*\*\* For Rackspace-managed infrastructure in customer and third-party data centers

## TOOLING AND AUTOMATION

Through deployment, monitoring, management and maintenance, your RPC operations team uses proven tools and automation techniques to keep your cloud running efficiently.

**Ansible** – Rackspace is the creator of the OpenStack Ansible® project and one of the leading upstream contributors to the project. Using the proven OpenStack Ansible deployment methodology to deploy your cloud in an automated fashion provides increased consistency, reduced complexity and greater ease in customizing the install to meet your needs.

**Rackspace Monitoring** – Our monitoring service for RPC allows you to create custom settings based upon your cloud environment requirements. Monitoring also helps ensure that your disk space, disk utilization, CPU idle time, memory capacity and OpenStack services are all operating within optimal parameters. Rackspace Monitoring integrates with the Rackspace notification system to automatically generate tickets for our RPC operations engineers, directing them to deal with any issues that are detected.

**AppFormix Analytics Platform** – Rackspace has partnered with Juniper Networks to include AppFormix with all Rackspace Powered by OpenStack Private Cloud (RPC-O) deployments. AppFormix is a cloud service optimization tool that provides capacity management, chargeback reporting and advanced monitoring across OpenStack services and data plane nodes for software-defined infrastructure. OpenStack administrators can create detailed usage reports by project, department or individual hosts to gain better visibility into operational performance and infrastructure resources, helping to ensure their cloud is performing as expected.

## MYRACKSPACE CUSTOMER PORTAL

As a Rackspace Private Cloud customer, you can access everything related to your RPC account via the MyRackspace® portal, located at <https://my.rackspace.com>.

The MyRackspace portal allows you to:

- Create and manage linked Rackspace accounts, including Dedicated and Public Cloud
- Raise tickets for quick help resolving any service issues
- Manage users or view invoices and payment history

## HUMAN EXPERTISE

Rackspace Private Cloud Powered by OpenStack gives you critical access to highly skilled technicians who deliver ongoing service and support for your cloud.

### Your Fanatical Support Team

**Dedicated account manager:** Possesses an in-depth knowledge of your environment and serves as your "go-to" resource for questions, issues or planning needs for your cloud (e.g., expanding, upgrading).

**Deployment engineer:** Manages the implementation process for your environment from contract to cloud deployment.

**OpenStack administrator:** Performs technical deployments within Rackspace or customer data centers, including the installation and configuration of the chosen OpenStack projects into the environment created by the deployment engineer.

**OpenStack architecture advisor:** Provides workload-specific guidance for planning, designing and architecting a private cloud environment to meet your unique needs.

**OpenStack operations engineers:** Deliver 24x7x365 operations support from certified experts in managing and operating OpenStack clouds.

### Optional Resources

**Dedicated OpenStack architect:** A trusted advisor who provides technical engineering expertise and oversees all aspects of the configuration and implementation of your OpenStack cloud. Your dedicated OpenStack architect develops a deep understanding of your private cloud environment and manages the growth and stability of your cloud with insightful data analysis, troubleshooting and best practices.

## OPERATIONS CONTACTS

- Ticketing: <https://my.rackspace.com>
- Phone: 1-800-633-1021
- Coverage: 24x7x365

## SERVICE OPERATIONS

Once you've deployed your cloud environment, the service operations phase deals with the day-to-day management of your Rackspace Private Cloud.

**Customer runbooks:** During the implementation process, Rackspace will collaborate with you to create a customized runbook. This runbook defines the Rackspace operations team's standard operating procedures for working with you on monitoring alerts and includes custom escalation procedures in accordance with best practices and your business needs. Your customized runbook will include your cloud configuration (e.g., software details, Ansible playbooks, device locations, architecture) as well as key technical and executive contact information. It also contains a list of any customized items in your environment, escalation processes and a change-management log to document all changes to your environment.

**Monitoring:** Our team of OpenStack experts proactively monitors and maintains the health of your cloud 24x7x365. As part of your cloud deployment, our monitoring service will continually check your disk space, disk utilization, CPU idle time and memory usage. Additionally, the monitoring service will verify that the OpenStack services (e.g., Horizon, Keystone, Neutron, etc.) and other services (e.g., Galera, RabbitMQ, etc.) in your cloud are responding to calls as intended. To help ensure the service meets your needs, your dedicated account manager will work with you to customize your settings based on the requirements of your cloud environment. Using these settings, our monitoring service issues an alert if a warning or failure occurs, or when a threshold is exceeded. Depending upon the severity assigned to each alert, your Rackspace operations team will respond within the associated live response time, guaranteed.

**Incident management** – When an incident occurs, Rackspace works to quickly restore normal service. Your operations team will apply a consistent approach to all incidents, except where your custom runbook includes a specific response agreed to by you and Rackspace.

- Incidents initiate in one of three ways:
  - Named customer contacts
  - Rackspace
  - Event management tools (e.g., Rackspace Monitoring)

- All incidents are logged in tickets accessible via the MyRackspace customer portal. Rackspace operations teams will investigate the incident in accordance with the agreed service level, once logged.
- Priority for tickets entered manually via the MyRackspace customer portal is initially set to "Standard." If you desire an escalation of priority, please call your Rackspace operations team or your dedicated account 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 operations will carefully review instructions on your account (documented via the custom runbook and account management guidelines).
- Rackspace will collaborate with you and any third parties you nominate as technical contacts through the MyRackspace customer portal to resolve the incident.
- At all times, you will have visibility into which operations engineer is working on the incident.
- The Rackspace operations teams will communicate regularly with you throughout the incident, detailing their findings and any actions taken.
- If an operations engineer is unable to 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 dedicated account manager) or functional (involving specialist technical expertise from other functional groups).
- 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 RPC environment. 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, and we will communicate with you if this is the case.
- An incident is considered closed when you confirm that it is resolved and the incident ticket is set to "Solved" status.

**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 your services.

- Your dedicated account manager will be available to work with you on all changes.
- All changes will be managed through the Rackspace ticketing and change management systems. This supports long-term tracking of all information and the optimal delivery of services through the various lifecycle processes of deployment, change management, incident management, etc.
- Rackspace will raise a ticket accessible via the MyRackspace customer portal for changes that are owned or initiated by Rackspace. Conversely, you should raise a ticket for situations where the Rackspace operations team is required to make any changes owned and initiated by your business. You may also call in to the 24x7x365 support line to discuss a change and request that a ticket be created.
- Rackspace will organize the operations engineers with the specific domain expertise to manage the change as scheduled, keeping you fully informed on progress.

### Rackspace access to your environment

In the course of providing Fanatical Support to your OpenStack private cloud environment, Rackspace may, from time to time, need to access that environment. When we do access your environment, we do so with strict adherence to certain best-practice security guidelines.

- **Access to hypervisor and virtual machines** – Rackspace does not log in to or support customer's virtual machines (instances). Rackspace engineers will log in to any supported control plane nodes, compute nodes and storage nodes when necessary to troubleshoot and resolve infrastructure issues. All logins to your environment are tracked, logged and recorded at the individual level, so you know who is working in your environment.
- **Access to data center** – Whenever we need to log in to either the customer, third-party or Rackspace data center, Rackspace will employ a two-factor single sign-on (SSO) token to connect through Balabit™ gateways (using secure shell keys and specifically identified and listed engineers) to the data center bastion device. On the customer side of the environment, the firewall will be open to that specific bastion IP address via a VPN tunnel.

### Upgrades, security and vulnerability management

- **Upgrades:** Your Rackspace operations team will upgrade your cloud from previously installed versions of Rackspace OpenStack to the next version. Skip-version upgrades are not supported by default, and there are special considerations for RPC deployments in customer data centers.
- **Security:** RPC OpenStack software releases are fully hardened to provide improved security. Additionally, your Rackspace operations team will provide host operating system hardening through the application of official security patches, as well as ensure all API calls are encrypted and require public SSL certificates if necessary.
- **Vulnerability management:** Your Rackspace operations team will help you develop a customized patching plan that meets your unique needs and usage patterns. This includes the following OpenStack services:
  - Cinder Block Storage
  - Glance Image Service
  - Heat Orchestration
  - Horizon Dashboard
  - Keystone Identity Service
  - Neutron Networking
  - Nova Compute
  - Octavia Load Balancing
  - Swift Object Storage

**Cloud scaling and optimization** : Your RPC operations team will provide recommendations to scale and improve the performance of your environment to meet your needs. This may include future-proofing your cloud through capacity planning and assisting with the benchmarking of your OpenStack

services as needed.

**Maintenance:** Periodically, your cloud environment may need to undergo maintenance to provide updates to function as designed. These are typically routine and scheduled, although occasionally an emergency maintenance may be required.

- **Scheduled maintenance:** Rackspace will collaborate with you and your change management team to create a unified change management process that works for both companies. The Rackspace process includes problem identification, scope of impact, maintenance preparation and maintenance review before scheduled maintenance execution.
- **Emergency maintenance:** Rackspace, from time to time, will need to perform an emergency maintenance. This might be necessary to address or prevent incidents that are currently impacting your environment, or that may impact it in the future. Rackspace will provide you with as much notice and information as possible before the maintenance. Examples of emergency maintenance include data center infrastructure issues or highly critical security vulnerabilities. We will make every effort to coordinate this maintenance with you.

**Monthly account reviews:** Your dedicated account manager will set up a recurring monthly meeting with you to review your account, discuss your cloud performance metrics and utilization, help you plan for the future and audit and update your runbook as necessary. The review will be based upon the following agenda:

- Support tickets
- Monitoring alerts
- Upcoming maintenance events
- SLA measurement
- Potential cost optimization
- Rackspace OpenStack best-practice recommendations
- Recent environment changes
- Upcoming events
- Rackspace announcements

## RESPONSE-TIME SLAS

Rackspace will respond to your requests submitted to us via ticket in the following time frames:

**Emergency:** If your RPC instances are failing or your cloud is partially or wholly inoperable, we will respond to your request within **fifteen minutes**.

**Urgent:** If you are unable to launch new RPC instances or cannot terminate new instances, we will respond to your request within **one hour**.

**Standard:** If you are experiencing delays in launching new RPC instances or you are having difficulty interacting with the OpenStack API, we will respond to your request within **four hours**.

## ADDITIONAL SERVICES

**Dedicated OpenStack architect** – A trusted advisor who provides technical engineering expertise and oversees all aspects of the configuration and implementation of your OpenStack cloud. Your dedicated OpenStack architect develops a deep understanding of your private cloud environment and manages the growth and stability of your cloud with insightful data analysis, troubleshooting and best practices.

**Professional services** – These services help you accelerate your cloud adoption and modernize, automate and optimize your environment. Our professional services are grouped into the following categories:

1. **Application modernization** – Modernize an application to run on your OpenStack private cloud and conduct application and infrastructure assessments from basic to full-spectrum security hardening, performance tuning and environmental health checks.
2. **Agile methodology** – Helps you transform traditional “waterfall” development processes into a continuous integration/continuous delivery (CI/CD) pipeline.
3. **Big data** – Provides you with best practices and consultation for designing, deploying and running big data solutions (e.g., Hadoop®, Cassandra®, Elasticsearch®, Redis®, MongoDB®) on an OpenStack private cloud.
4. **Authentication and federation** – Integrate your existing authentication solutions (e.g., Active Directory, LDAP) into your OpenStack private cloud and help to design federated authentication models for infrastructure and applications across multiple clouds using Active Directory or LDAP.
5. **Advanced cloud optimization** – Provides best practices for encapsulating an application with Docker containers and helps you achieve compliance targets by providing a security architecture template that can be customized for your specific infrastructure design.

**Training** – As the leader in OpenStack technology, Rackspace provides comprehensive OpenStack technical training to help you deploy and manage

your Rackspace Private Cloud. Topics range from an introduction to OpenStack to Neutron networking. OpenStack training provides hands-on experience, including multiple activities using real-world situations in a lab environment. Each course is conducted in person and on-site at either the customer’s location or Rackspace headquarters. Contact [training@rackspace.com](mailto:training@rackspace.com) to learn more.

# APPENDIX 1

## SUPPORTED OPENSTACK PROJECTS AND RELATED TECHNOLOGIES

Rackspace Private Cloud Powered by OpenStack includes the following services:

OPENSTACK PROJECTS	
<b>Compute (Nova)</b>	Provision and manage large networks of virtual machines.
<b>Dashboard (Horizon)</b>	Provides administrators and users a graphical interface to access, provision and automate cloud-based resources.
<b>Object Storage (Swift)</b>	Provides redundant, scalable object storage using clusters of standardized servers capable of storing petabytes of data.
<b>Block Storage (Cinder)</b>	Provides persistent block-level storage devices for use with OpenStack compute instances. Includes OpenStack Block Storage (Cinder) drivers for Cinder/LVM, Ceph RBD, EMC VNX2 and NetApp FAS.
<b>Networking (Neutron)</b>	Pluggable, scalable, API-driven network and IP management. Manage flat and VLAN provider networks; flat, VLAN and VXLAN overlay (tenant) networks; and layer-3 agents for routing, NAT and floating IP addresses.
<b>Image Service (Glance)</b>	Provides discovery, registration and delivery services for disk and server images. Supports a variety of common image formats (Raw, AMI, VHD, VDI, VMDK, OVF, qcow2).
<b>Identity Service (Keystone)</b>	Provides a central directory of users, mapped to the OpenStack services they can access. Also integrates with existing OpenLDAP services for user authentication.
<b>Orchestration (Heat)</b>	Allows application developers to describe and automate the deployment of infrastructure via templates.
<b>Bare-Metal Compute (Ironic)</b>	Provision and manage bare-metal compute resources.
<b>Load Balancing (Octavia)</b>	Load Balancing as-a-Service (LBaaS). Provides the ability to provision load balancing resources to be used with compute (Nova) resources.
<b>DNS Service (Designate)</b>	DNS as-a-Service (DNSaaS). Provides the ability to provision DNS resources within your OpenStack cloud.
RELATED TECHNOLOGIES	
<b>Ansible</b>	A software platform for configuring and managing computers combining multi-node software deployments, ad-hoc task execution and configuration management.
<b>AppFormix</b>	Fully integrated OpenStack analytics and optimization platform.
<b>Ceph</b>	Software storage platform that implements object storage on a single distributed computer cluster and provides interfaces for object, block and file level storage. Ceph is a completely distributed operation without a single point of failure offering scalability to the exabyte level.
<b>EMC VNX</b>	A unified general-purpose platform built for consolidation of mixed workloads. Intended for broad integration, the VNX supports a wide variety of protocols including block and file access methods, automated tiering, automated provisioning, storage analytics, encryption and virtual integration.
<b>NetApp Filers</b>	A network attached storage (NAS) appliance that serves the general-purpose storage platform allowing consolidation of workloads. Filers support most standard file and block-based protocols such as NFS and iSCSI.
<b>NetApp SolidFire</b>	An all-flash storage system, designed to be the foundation for your private cloud infrastructure, allowing for independent scaling and the ability to guarantee application performance to thousands of apps simultaneously.

# APPENDIX 2

## SPHERES OF SUPPORT OVERVIEW

**R = RESPONSIBILITY**

**O = OPTIONAL**

**P = ACTIVE PARTICIPANT/COLLABORATION IN ACTIVITY/EVENT**

**I = INFORMED OF SERVICE**

	CUSTOMER DATA CENTER		RACKSPACE DATA CENTER		3rd PARTY DATA CENTER		RACKSPACE-SUPPORTED 3rd PARTY DATA CENTER	
CUSTOMER CARE SERVICES	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE
24x7x365 Fanatical Support®	I	R	I	R	I	R	I	R
Dedicated account manager	I	R	I	R	I	R	I	R
Dedicated OpenStack architect – additional service offering	I	R	I	R	I	R	I	R
Scheduled monthly account reviews (MARs)	P	R	P	R	P	R	P	R
As a joint exercise on the MAR, customer is responsible for keeping Rackspace account team up to date about planned changes to their website/applications to mitigate any capacity risks	R	P	R	P	R	P	R	P
Monitoring of hosted configuration and response to hardware monitoring events	P	R	P	R	P	R	P	R
Monitoring of RPC infrastructure configuration and response to monitoring events (node OS and KVM hypervisor)	I	R	I	R	I	R	I	R
Application of all relevant security patches to the RPC framework	I	R	I	R	I	R	I	R
Backup of RPC framework and configuration	I	R	I	R	I	R	I	R
Server virus scanning	R	I	O	O	O	O	O	O
Third-party security audit upon implementation	R	P	R	P	R	P	R	P

## SPHERES OF SUPPORT OVERVIEW

	CUSTOMER DATA CENTER		RACKSPACE DATA CENTER		3rd PARTY DATA CENTER		RACKSPACE-SUPPORTED 3rd PARTY DATA CENTER	
CUSTOMER CARE SERVICES	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE
Firewall management	R	P	P	R	P	P	P	P
Manage VPN access	R	P	P	R	P	P	P	R
Intrusion detection	R	I	R	I	I	I	I	I
DDoS mitigation	R	I	I	R	I	I	I	R
Server compromise checks on demand	P	R	P	R	P	R	P	R
Customer host deployment project managed by a deployment engineer	R	P	I	R	R	I	I	R
Extensive implementation planning and assistance	P	R	P	R	P	R	P	R
Access to operations and system engineers for developing, planning and managing your environment	I	R	I	R	I	R	I	R
Ticketing system available through the Rackspace customer portal	I	R	I	R	I	R	I	R
Online ticketing and ticket archival	I	R	I	R	I	R	I	R
Custom monthly trend reporting and monitoring	I	R	I	R	I	R	I	R
Provide template for environment runbook	P	R	P	R	P	R	P	R
DATA CENTER LAYER								
Provide and maintain data center (DC) facility	R	I	I	R	I	I	I	P
Provide and maintain cooling and redundancy	R	I	I	R	I	I	I	P
Provide and maintain power and redundancy	R	I	I	R	I	I	I	P
Provide and maintain physical security for DC	R	I	I	R	I	I	I	P
Provide or procure bandwidth	R	I	I	R	I	I	I	P
Negotiate redundant bandwidth providers	R	I	I	R	I	I	I	P



## SPHERES OF SUPPORT OVERVIEW

	CUSTOMER DATA CENTER		RACKSPACE DATA CENTER		3rd PARTY DATA CENTER		RACKSPACE-SUPPORTED 3rd PARTY DATA CENTER	
DATA CENTER LAYER	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE
Procure power and network connectivity gear	R	I	I	R	I	I	I	P
Physically install equipment (HW/FW/LB/IDS)	R	I	I	R	I	I	I	P
Purchase fiber (for SAN)	R	I	I	R	I	I	I	P
Run fiber (connection from SAN to cabinet)	R	I	I	R	I	I	I	P
Deploy patch panel in cabinet (for SAN)	R	I	I	R	I	I	I	P
Cable cabinet to equipment	R	I	I	R	I	I	I	P
Cross-connect equipment for multiple cabinets	R	I	I	R	I	I	I	P
Monitor power consumption	R	I	I	R	I	I	I	P
Remote hands	R	I	I	R	I	I	I	P
Schedule maintenance (e.g., cable)	R	P	P	R	P	P	P	P
NETWORKING LAYER								
Architecture design, review and consultation	P	R	P	R	P	R	P	R
Configure routing and switching equipment	R	P	I	R	I	I	I	R
Provision IP block	R	I	I	R	I	I	I	R
Configure initial IP on devices	R	I	I	R	I	I	I	R
Modify IP on provisioned devices	R	I	I	R	I	I	I	R
Configuration of firewall	R	I	I	R	I	I	I	R
Configuration of software defined networking (Neutron) in RPC	R	P	P	R	P	R	P	R
Base configuration of load balancer	R	I	I	R	I	I	I	R
Base configuration of IDS	R	I	I	R	I	I	I	R

## SPHERES OF SUPPORT OVERVIEW

	CUSTOMER DATA CENTER		RACKSPACE DATA CENTER		3rd PARTY DATA CENTER		RACKSPACE-SUPPORTED 3rd PARTY DATA CENTER	
NETWORKING LAYER	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE
Maintain core routing and switching equipment	R	I	I	R	I	I	I	R
Maintain/administer firewall	R	I	I	R	I	I	I	R
Maintain environment routing and switching equipment	R	I	I	R	I	I	I	R
Maintain/administer load balancer	R	I	I	R	I	I	I	R
Maintain/administer IDS	R	I	I	R	I	I	I	R
Manage/monitor bandwidth usage and consumption	R	I	I	R	I	I	I	R
Manage authoritative DNS	R	I	I	R	I	I	I	R
Troubleshoot Rackspace network connectivity	P	R	P	R	P	R	P	R
Troubleshoot network and security device issues	R	I	I	R	I	P	I	R
Troubleshoot software defined network RPC setup/configuration	R	P	I	R	I	R	I	R
Maintain IP address VLANs configuration and details for use in the LAN solution	R	I	I	R	I	I	I	R
Active Watch, GLBA, HIPAA, PCI-CISP, PCI-DSS, SOX compliance reporting	R	P	R	P	R	P	R	P
Encryption key management	R	I	I	R	I	R	P	R
MONITORING CAPABILITY								
RPC advanced system performance monitoring proactively identifies RPC node performance issues	I	R	I	R	I	R	I	R
24x7x365 incident response with customized emergency instructions/ immediate reactions	P	R	I	R	I	R	I	R
Customized notification preferences and customer-driven specifications	P	R	I	R	I	R	I	R
Disk capacity monitoring and alerting	P	R	I	R	I	R	I	R
OpenStack services monitoring	I	R	I	R	I	R	I	R

## SPHERES OF SUPPORT OVERVIEW

	CUSTOMER DATA CENTER		RACKSPACE DATA CENTER		3rd PARTY DATA CENTER		RACKSPACE-SUPPORTED 3rd PARTY DATA CENTER	
MONITORING CAPABILITY	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE
Email alerts	I	R	I	R	I	R	I	R
Ticketing alerts	I	R	I	R	I	R	I	R
Load balancer monitoring (ping)	I	R	I	R	I	R	I	R
Provide CPU performance utilization reporting	I	R	I	R	I	R	I	R
Local storage management	R	P	I	R	I	P	I	P
Ability for RPC log manager to send logs to customer-provided logging product of choice	I	R	I	R	I	R	I	R
<b>DEVICE LAYER</b>								
Manage delivery of equipment	R	P	I	R	P	P	I	P
Firmware updates	R	P	P	R	P	R	P	R
Inventory spare parts (on-site or with vendor)	R	I	I	R	R	I	I	R
Break/fix	R	P	I	R	I	P	I	R
Equipment procurement	R	I	I	R	R	I	I	R
Equipment inventory	R	I	I	R	R	I	I	R
Returns to OEM for defective items	R	I	I	R	R	I	I	R
Equipment disposal	R	I	I	R	R	I	I	R
<b>STORAGE CAPABILITY</b>								
Storage capability enhancements and maintenances	R	P	I	R	I	R	I	R
Establish and maintain storage monitoring and alerting system	R	P	I	R	I	R	I	R
Monitor and maintain the storage infrastructure	R	P	I	R	I	R	I	R

## SPHERES OF SUPPORT OVERVIEW

	CUSTOMER DATA CENTER		RACKSPACE DATA CENTER		3rd PARTY DATA CENTER		RACKSPACE-SUPPORTED 3rd PARTY DATA CENTER	
STORAGE CAPABILITY	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE
Performance analysis of storage devices	R	P	I	R	I	R	I	R
Managed object storage (Swift)	I	R	I	R	I	R	I	R
Managed block storage (Cinder)	I	R	I	R	I	R	I	R
Shared storage devices used as a Cinder backend	R	P	I	R	I	R	I	R
<b>HYPERVISORS OS LAYER</b>								
Equipment imaging (Kickstart)	R	I	I	R	I	P	I	P
OS issue troubleshooting	P	R	I	R	I	R	I	R
Remote administration	R	P	P	R	P	R	P	R
Scheduled maintenance	R	P	P	R	P	R	P	R
Patching	I	R	I	R	I	R	I	R
Maintain OS upgrades	P	R	I	R	I	R	I	R
Re-kick server	R	I	I	R	R	P	I	R
OS vendor escalation	I	R	I	R	I	R	I	R
<b>RACKSPACE PRIVATE CLOUD SERVICES</b>								
Workload-specific guidance for planning, designing and architecting a private cloud environment to meet customer's needs	P	R	P	R	P	R	P	R
Performance and utilization information about your environment and technical guidance on scaling your private cloud infrastructure proactively for future growth or high-traffic events, including bursting to public cloud	P	R	P	R	P	R	P	R
RPC technical training from RPC architect specific to customer's RPC environment	P	R	P	R	P	R	P	R

## SPHERES OF SUPPORT OVERVIEW

	CUSTOMER DATA CENTER		RACKSPACE DATA CENTER		3rd PARTY DATA CENTER		RACKSPACE-SUPPORTED 3rd PARTY DATA CENTER	
	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE
<b>IMPLEMENTATION</b>								
Custom deployment managed by implementation specialist	P	R	P	R	P	R	P	R
MyRackspace portal walkthrough and training – ticket manager, billing, knowledge base	P	R	P	R	P	R	P	R
RPC launch assistance, walkthrough and knowledge base training	P	R	P	R	P	R	P	R
Implementation team and customer team will create and agree to a deployment timeline	P	R	P	R	P	R	P	R
Schedule and participate in weekly status calls until all environments are online	P	R	P	R	P	R	P	R
Complete account services questionnaire	P	R	P	R	P	R	P	R
<b>CHANGE MANAGEMENT</b>								
Rackspace account team will work closely with customer team on all operational and technical changes	P	R	P	R	P	R	P	R
Rackspace will open a ticket in the ticketing system viewable and accessible 24x7x365 by the customer in case of changes that are owned or initiated by Rackspace	P	R	P	R	P	R	P	R
Customer will open a ticket in the customer portal where Rackspace operations engineers are required for any changes owned and initiated by the customer	R	P	R	P	R	P	R	P
Customer can call the 24x7x365 support line to discuss a change and request a ticket to be created and executed by Rackspace	P	R	P	R	P	R	P	R
All changes will be managed through a Rackspace ticket for full documentation and long-term tracking	P	R	P	R	P	R	P	R
Customer team responsible for the change will coordinate their own internal resources and the resources of their third parties to manage the change as scheduled, keeping Rackspace informed of the change's progress via the customer portal	R	P	R	P	R	P	R	P

## SPHERES OF SUPPORT OVERVIEW

	CUSTOMER DATA CENTER		RACKSPACE DATA CENTER		3rd PARTY DATA CENTER		RACKSPACE-SUPPORTED 3rd PARTY DATA CENTER	
	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE
<b>INCIDENT MANAGEMENT</b>								
Rackspace will apply a consistent approach to all incidents reported, except where a specific approach has been outlined in the customer runbook	P	R	P	R	P	R	P	R
Incidents will be logged via the Rackspace ticketing system and investigated by 24x7x365 Rackspace operations teams in accordance with the agreed service levels	I	R	I	R	I	R	I	R
Rackspace will work closely with customer team to resolve the incident as quickly as possible	P	R	P	R	P	R	P	R
Incidents with a specific priority will not be changed to another priority without both parties agreeing to it	P	R	P	R	P	R	P	R
With customer approval Rackspace will take action to resolve the incident based on investigation findings	P	R	P	R	P	R	P	R
When action is required by the customer to resolve an incident, clear communication will take place between Rackspace account team and customer team	R	P	R	P	R	P	R	P
Rackspace will work cooperatively with the customer and its third parties nominated as technical contacts listed in the customer portal	P	R	P	R	P	R	P	R
An incident cannot be closed without the customer having the opportunity to confirm that they agree the incident has been resolved (Confirmed Solved)	R	P	R	P	R	P	R	P
<b>PROBLEM MANAGEMENT</b>								
Rackspace and customer will proactively work together to seek to prevent the occurrence of incidents, problems and errors to help ensure a permanent resolution is found	P	R	P	R	P	R	P	R

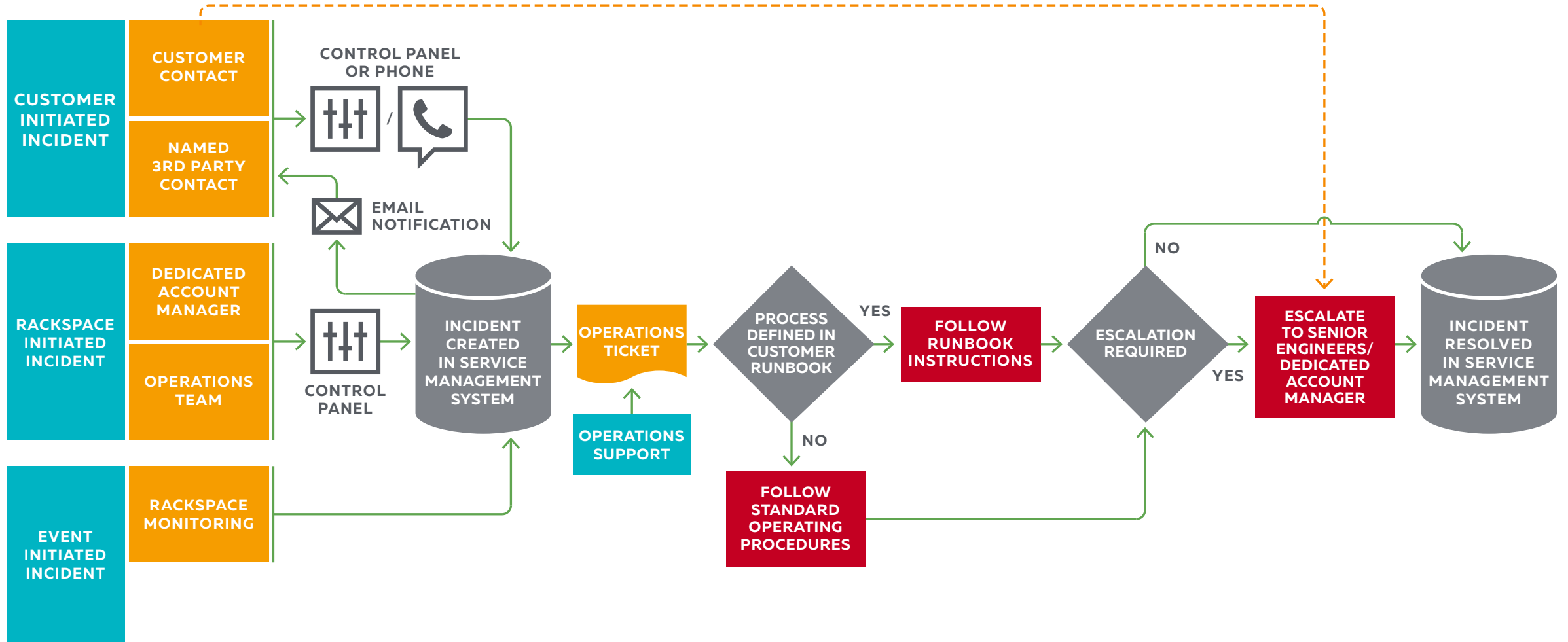
## SPHERES OF SUPPORT OVERVIEW

	CUSTOMER DATA CENTER		RACKSPACE DATA CENTER		3rd PARTY DATA CENTER		RACKSPACE-SUPPORTED 3rd PARTY DATA CENTER	
	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE	CUSTOMER	RACKSPACE
<b>ESCALATION MANAGEMENT</b>								
Rackspace will provide clear lines of escalation for the customer in the implementation document and in the customer portal	I	R	I	R	I	R	I	R
<b>QUALITY ASSURANCE</b>								
All Rackspace environments are subjected to a strict testing and quality control process during the build and implementation phases	I	R	I	R	I	R	I	R
All planned deployments, changes or maintenances go through a multi-factor quality check process to ensure reliability and quality of the change	I	R	I	R	I	R	I	R
All high availability environments undergo high availability (HA) testing before they are approved	I	R	I	R	I	R	I	R
Rackspace relies on an NPS (Net Promoter Score) driven customer loyalty approach to ensure that our customers are heard and our best practices reflect the diverse needs of our customers	P	R	P	R	P	R	P	R

# APPENDIX 3

## OPERATIONS REQUEST (INCIDENT) MANAGEMENT AND RESOLUTION PROCESS

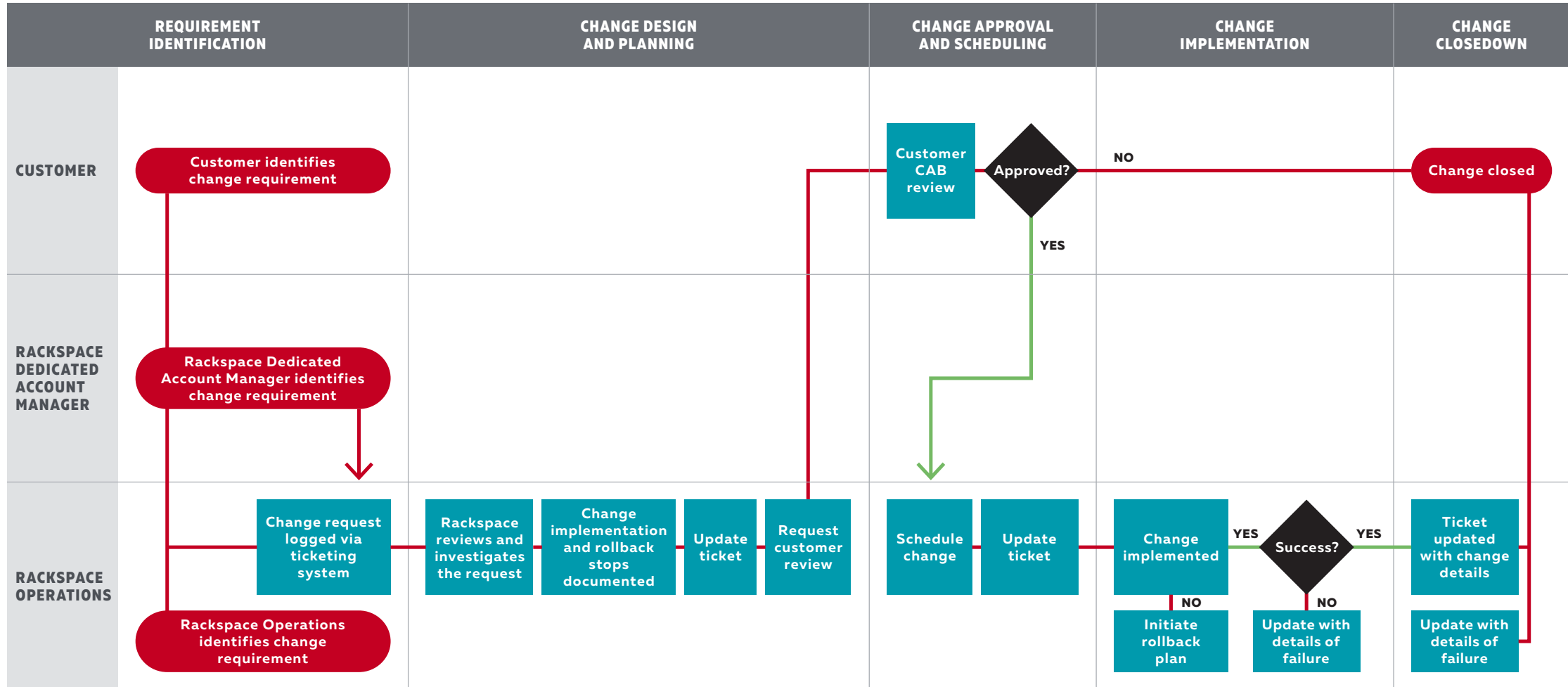
### ESCALATION FROM CUSTOMER / NAMED 3RD PARTY CONTACT





# APPENDIX 4

## CHANGE REQUEST MANAGEMENT PROCESS



## ABOUT RACKSPACE

Rackspace is modernizing IT in today's multi-cloud world. By delivering IT as a service, we help customers of all industries, sizes and locations, across private and public sectors, realize the power of digital transformation without the complexity and expense of managing it on their own. Our comprehensive portfolio of managed services across applications, data, security and infrastructure on the world's leading public and private cloud platforms enables us to provide unbiased expertise. Rackspace has been honored by Fortune, Forbes, Glassdoor and others as one of the best places to work. Learn more at [www.rackspace.com](http://www.rackspace.com).

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