7 Milestones: Getting started with Rackspace Cloud

An electronic version of this document is available at community.rackspace.com.

We recently asked our Cloud Launch Team to provide us with a checklist of all of the most pertinent information that they try to convey to their customers. What we received was an amazingly thorough guide to getting started with Rackspace - this team is incredibly talented, and it's well worth your time to have a conversation with them.

To best communicate their notes, we have broken the list down into sections based on milestones our customers experience throughout the first 60 days of their time at Rackspace. Additionally, we have linked out to other Community and Knowledge Center content for additional information and context.

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Milestone 1: Welcome to Rackspace!

The very first step in your customer journey is creating a cloud account with Rackspace. We try to contact everyone of our new customers, personally, to welcome them to Rackspace, and provide immediate assistance to those that need it, so make sure that the contact information you provide is accurate. We also recommend that you take the time to speak with one of our Launch Managers to discuss your plans, and work with them to meet your goals.

Account activation tips

- Ensure your primary contact's email address is valid. This is where all ticket updates and communications will be sent
- Whitelist 'rackspace.com' and 'rackspacecloud.com' to ensure delivery to your mailbox
- Understand the different account roles.
- Add your technical contact(s) to the account so that they can work with our support team when needed
- Make sure their contact information is correct
- Suggestion: Setup a distribution list 'rackspace@yourdomain.com' for instance so all communication is delivered to the correct team members

Initial call with a launch manager (strongly recommended)

We invite you to join a call with one of our Launch Managers. They are available to all of our customers for the first 60 days after your account is created, free of charge. During an initial call, the Launch Managers will work with you to discover the following (among other things):

- Service Strategy: learn about your business, support expectations, end user experience
- Demand Management: learn about your traffic patterns of business, website activity, hosting priorities
- Financial Management: learn about your new vs. existing projects, hosting budget, compliance requirements, budget planning
- Supplier Management: how was your previous hosting experience? Why did you choose Rackspace? Do you need to migrate anything to Rackspace?
- Service Level Management: discuss implementation activities, downtime tolerance, go live date
- Capacity Management: load balancers, horizontal computing, modularity
- Continuity Management: load testing, GET v. POST testing, HA v. continuous operation
- Security Testing: network access, user access, cryptographic controls, patching, etc.
- Availability Management: monitoring, backups

Next steps

In the next chapter we will discuss best practices for migrating your application to Rackspace, or building it here from scratch.

Milestone 2: Building your application on Rackspace

After you've signed up and spoken with our Launch Team, you'll be ready to jump in and start building your application. Here are a few resources that might be helpful:

Control Panel

- Cloud Control Panel - This is your control panel to manage your cloud infrastructure.
- Use Role Based Access Control (RBAC) to allow the correct stakeholder access to only the services he or she needs to access.

Migration assistance

If your application is already live at another provider, we can potentially offer some limited help migrating from another hosting provider to Rackspace. We also work with some professional services partners who can provide additional help. Contact your Launch Manager or Account Team for more information.

For those of you who want to take a DIY approach to migrating to Rackspace, we have the following guides available:

- Migrating a Linux server
- Migrating a Windows server

Modularize your application

We strongly recommend creating a modular application - it's one of the 5 Pillars of Cloudiness. Modularizing your application can eliminate a single point of failure, and allow for significantly faster scaling if necessary. Here are a few tips for making a modular application.

- Decouple your database from your web/app servers by using a Cloud Database or a separate cloud server running your database. Additionally, look to Object Rocket for hosted MongoDB or Redis
- Build at least two web/app servers for redundancy and uptime
- Place a Cloud Load Balancer in front of your web/app servers for horizontal scalability
- Use a messaging queue for asynchronous processes

Sending email from your application

If your application sends any email messages - think "Welcome!" emails, password resets, or weekly digests - then you'll need to configure your application to do that. We have a few tips for best results:

- To avoid blacklists, relay your mail through MailGun rather than sending directly from your cloud servers
- Use Rackspace Cloud Office for employee mailboxes and collaboration, if needed. (IMAP, Exchange, Google Apps for Work, and Office 365 are available)

Security

Security needs to happen at every level. Make sure to take the time to secure

Account level

- Setup role-based access control for your team Use strong passwords and security questions/answers for each team member Infrastructure level Keep software and security patches up to date
- Configure 2-factor authentication

Server level

- Practice basic server security
- Lock down your firewalls manually or with a service such as Dome9 or CloudPassage

Application level

- Secure user authentication manually or with a tool like Stormpath
- Secure application communication with SSL
- Use strong passwords and rotate them often (here's a fun example)

- Keep up to date with security patches
- Filter out malicious traffic to your sites with tools like CloudFlare or Incapsula

Backups & Monitoring

Just as important as beginning or migrating your app to Rackspace is protecting that app with a solid backup and monitoring plan.

Backups

Backups are important if you need to restore your site should a server fail for any reason. There are many ways to backup your site and content. We recommend using a combination of server images, file-level differential backups, and configuration management to achieve a robust, comprehensive backup strategy.

We recommend that you use Cloud Backup on the following directories:

Linux

- Web/App servers: Verify/configure backup jobs for your Web/App servers /home /root /etc /var/www
- Database servers: Verify/configure Database backups (frequent backups and long retention are recommended)
- /home
- /root
- /etc
- /var/lib/mysqlbackup (For servers with a mySQL database. Managed Operations customers automatically dump the db to this location. Managed Infrastructure customers can configure the same backup using Holland.)

Windows

- Verify/configure backup jobs for your Web/App servers C:\inetpub
- Verify/configure Database backups (the location you are dumping your database files) frequent backups and long retention are recommended

Backing up block storage

Block storage is a great way to increase the amount of storage space your application can use. Content in a storage volume can be included in Cloud Backup, and the volumes can also be saved as image snapshots. If you're using Cloud Block Storage, please check and double check that everything is backed up and configured to resume in the event of a reboot.

- Verify/configure backup of any Cloud Block Storage volumes
- Verify that your attached Cloud Block Storage volumes reconnect after reboot
- Verify that your services start back up after reboot

Monitoring

Monitoring can alert you if your site becomes non-responsive. Customers with our Managed Operations service level can choose to atuomatically alert Rackspace Support when monitoring notices anything amiss.

- URL Check: Add a Cloud Monitoring check for your site's URL to ensure your site is responding
- New Relic: Sign up for a free New Relic account at http://newrelic.com/rackspace Install New Relic's server and application monitoring agents on your cloud servers

Next steps

The next 3 milestones can vary greatly from customer to customer. Some customers go straight from opening an account to business as usual in immediate succession. Others have additional demands - high traffic events, or new feature launches, for example - that expand and prolong these milestones. In the next three chapters we will outline the process of switching public traffic to Rackspace, scaling for high traffic events, and resuming steady state operations.

Milestone 3: Launch on Rackspace

Moving your applications to Rackspace is the first step to launching your app at Rackpsace; "turning it on" is the next step. If your application is currently hosted elsewhere, you will need to point your DNS to Rackspace. Here are some steps we recommend for launching on Rackspace.

Pre-launch

A little bit of planning goes a long way, so make sure you lower your TTLs and update your local hosts file.

- Change local host file - In order to view your content exactly as it will be presented to your consumers, you will likely need to modify your local hosts file on your desktop. This will override global DNS, which will allow you to visit your site as it appears live on Rackspace, prior to shifting DNS to Rackspace. Any existing customers will continue to the existing site.
- Lower TTLs - The TTL (Time to Live) determines how long your DNS information is cached in each DNS host. A long TTL when you try to switch to Rackspace could potentially mean yourapplication's visitors would continue to be sent to your previous hosting provider. Lowering the TTL allows changes to be made more frequently. Lower the TTL ASAP, so that the DNS change will happen as fast as possible.

Now it's time to test, test, test. Does everything work as planned? What's different than your current host? Hopefully it's better, but if not, what needs to be changed? Test, iterate, and test some more until you're ready to launch.

Launch Day

Once everything is tested, it's time for launch. The actual switch will vary based on your current DNS host, so check with them. Of course we encourage you to use Rackspace Cloud DNS (either as a primary or backup DNS provider), but you do not need to host your DNS with us.

- Determine exactly what will be switched and backup your current DNS configuration. Make sure you get all components.
- If you're switching all of your DNS hosting, make sure your email and other systems configurations have been moved.

How to configure Rackspace DNS for Rackspace Cloud

1. In your MyCloud control panel, add your domain and copy your existing records
2. Ensure your domain's A record is pointing to your cloud load balancer
3. Move your site to Rackspace
4. At your domain registrar, update your nameservers to 'dns1.stabletransit.com' & 'dns2.stabletransit.com' - **Once this step completes (5 minutes to 48 hours depending on DNS host) anyone visiting your domain will be directed to the server(s) at Rackspace. Make sure to do this step last, when you are ready to send traffic to Rackspace.**

Post Launch

- Verify all systems are still in production
- Immediately contact Rackspace Support if anything is not working.

Next steps

For most customers, the next step is to continue along in a steady state; business as usual. For other customers the next step involves preparing for a high traffic event - a seasonal or marketing related spike in site visitors. For those customers we have some specific advice for a successful high traffic event in chapter 4; for everyone else, we have a steady state guide in chapter 5.

Milestone 4: High traffic event

For some customers, launching a site is only the first leg, not the finish line.For some customers, the goal is a major event with publicity of some sort driving traffic. This might be their launch date as it occurs when they point their DNS; For others it might occur days or weeks later, corresponding with an episode of Shark Tank, a press release or some other kind of announcement. Whenever your event happens, we want you to succeed. Here are a few tips and tricks we've collected.

Be aware of possible issues that can occur during high traffic events & solutions to remedy

- Over-saturation of traffic to Web01 from other web servers
- Resource exhaustion & contention
- Reboot check

Create awareness of event in advance

- Document time, POCs, config summary, tactical plans, proactive configuration of backups & domain monitoring, and pre-work by adding cloud load balancers & databases.

Scaling from 1 server to multiple servers

- Seed config
- Load balancer and multiple servers
- Scale DB/add replication

Test, test, and test some more

We always recommend testing, but testing becomes more important as you scale up for a high traffic event. Below are our recommendations on load testing and optimizing before an event. Don't hesitate to reach out to Rackspace for additional recommendations while preparing for a high traffic event.

Load Testing

- Run a baseline test load test using Load Impact, Loader.io, Apica LoadTest, or another load testing service - you should know how your application works under normal conditions so you can better estimate how additional traffic will impact the app.
- Examine your test results and make appropriate changes to your configuration (adjust Apache MaxClients etc.)
- Run an additional load test after tuning your configuration to get an idea of how much traffic your site/app can handle

Optimizing

- Serve static files from the Rackspace CDN to improve performance and load speeds
- Introduce one or more caching layers within your configuration
- Use a third party tool such as CloudFlare or Incapsula to cache and optimize your web content at the DNS level

If anything goes wrong

The old saying is that the best offense is a good defense, so we highly recommend that you contact Rackspace early, as soon as you know about an upcoming event. This will allow us to work with you to develop a plan for addressing any issues that might come up. Let us know when the event is scheduled, who will be your primary point of contact, how to get in touch with that person, etc. The more we know ahead of time, the better. If anything does go wrong, call support immediately - we'll be much better able to address the issue if you're on the phone, than if we're trying to figure out who you are based on your angry tweet.

Next steps

After the high traffic events are completed, it's time to scale back down for steady state traffic. We'll cover that, and more, in the next chapter.

Milestone 5: Steady State

At milestone 5, we've reached the point where the customer is completely up and running on Rackspace. For many customers, this milestone occurs immediately after going live. For others, it's after one or more high traffic events. For others still, continually fluctuating traffic *is* steady state. Whenever this milestone occurs for you, there are some additional actions we recommend taking to make sure everything runs smoothly for you for as long as you are at Rackspace.

Scaling back

If you've just completed a high traffic event - congratulations! Hopefully everything went well. Likely you'll not need to continue on with the expanded infrastructure you've built for to accommodate the enhanced traffic; if you do, then you've just had a very successful event. If you've followed our guides for scaling up, you can follow them in reverse to scale back down. We recommend staggering the scale down, so that you don't scale your app too low to handle your traffic.

Milestone 6: First billing cycle

After 30 Days, you will receive your first cloud invoice. If you have any questions with your first invoice, contact your Launch Manager

Notes about billing

- Cloud servers are billed at an hourly rate until they are deleted from the account
- Managed Infrastructure accounts have a $50 minimum support fee
- Managed Operations: SysOps accounts have a $500 minimum support fee
- Your monthly invoices will be available via your MyCloud Control panel (for security, we will not email you a copy of your invoice)
- You can get a more detailed report by downloading the invoice as a CSV.
- You can view an estimation of your current charges in the Current Usage page of the MyCloud control panel (Account > Usage Overview)

Milestone 7: Graduation to main support

After the first 60 days, you will graduate from our Cloud Launch Program. Our Launch Managers will hand you off to our main support and account teams, which will continue to work with you as long as you are our customer.

We also recommend that you take this opportunity to double check all of your backup and monitoring configurations.

Monitoring Review

Make sure there are URL checks for all of your primary domains. Make sure you know the instant anything happens.

Complete full Backups Review

- Web servers, DB servers, CBS,etc.
- Remember, a plan is just a hunch unless you test it. Run a fire drill to practice getting your app back online in the event of an event or a maintenance window.