RACKSPACE MIGRATION MANAGER User Guide

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Many businesses are seeking assistance from certified experts to get the most out of Amazon Web Services (AWS). Migration, architecture design, security, and operations can take your focus away from your core business.

The Rackspace Migration Manager is the answer for businesses migrating from Rackspace to AWS. The Rackspace Migration Manager blends technology, automation, and expertise to move from the Rackspace Public Cloud to AWS and 24x7x365 operations backed by AWS certified engineers and architects.

Rackspace provides the tooling, process, and support that enables you to migrate from Rackspace Public Cloud to AWS while maintaining the Fanatical Support® you expect from Rackspace. Rackspace can also provide Rackspace Professional Services to help you with your migration.

To learn more about Rackspace Fanatical Support or AWS, see the Rackspace support home page.

Cloud migration overview

With the Rackspace Migration Manager, Rackspace provides an easy self-service migration tool. In this initial phase, the Rackspace Migration Manager is built specifically for customer migrations from the Rackspace Public Cloud to Fanatical Support for Amazon Web Services (AWS).

The Rackspace Migration Manager is intuitive and easy to navigate, and provides a quick and secure migration between Rackspace and Fanatical Support for AWS. With a little planning on your part, the Rackspace Migration Manager steps you easily through the migration process.

The migration process leverages both Rackspace and AWS APIs to securely move resources. The customer's existing resources can be migrated offline, which minimizes corruption of the

migrated data, or online with no downtime (but note that data can be corrupted if heavy writes occur during migration).

Using the Rackspace Migration Manager, simply select the resources that you want to migrate from the Rackspace Public Cloud to Fanatical Support for AWS. We will provide you with our recommended Fanatical Support for AWS environment setup, but you are free to customize configurations as well. Along the way, the Rackspace Migration Manager keeps you informed of the current pricing of your selected resources and what you can expect for pricing after you have migrated to Fanatical Support for AWS. Finally, simply schedule the best time for your migration to take place, and track progress as resources begin migrating from the migration dashboard within the manager tool.

During the migration, you can see the status of your migration, percentage completion of the resources, and any resources that have errored during migration. You can also cancel mid-flight migrations and re-initiate migrations if you'd like.

Note: While you use this tool, you are creating a second infrastructure within AWS for which you are billed. After the migration is completed, you need to confirm all data has moved completely and shut off your Rackspace Public Cloud resources to stop billing for them.

As always, you can reach out to your support team if you have any questions about how the tooling works or to resolve any problems you encounter of the migration tooling.

Professional Services

If you want additional help with the migration, Rackspace Professional Services are available to handle the migration by providing an end-to-end service that includes discovery, planning, testing, data, and configuration.

Best practices for migration

As Rackspace Professional Services has worked on migration projects for our customers, they have discovered some best practices for migrating between cloud platforms quickly and effectively. This article provides a list of some of those best practices.

The Rackspace Migration Manager uses the "re-host" method for migration. This method moves an application to AWS by making little or no changes to its architecture and configuration. Re-hosting is sometimes called “lift and shift”. This method is well suited for applications with well-defined architectures, where components and data are strongly coupled between each other. This method allows enterprises to take in-house and highly-customized applications and replicate them in the AWS cloud without modifying their design.

Other migration approaches are available by engaging with Rackspace Professional Services.

Phase 1: Before the migration

1. Share why the migration is important to the organization. To do so, you must have a clear understanding of how the migration will affect your organization's strategy.
2. Decide on a cloud governance model, which is a view of IT governance focused on accountability, defining decision rights and balancing benefit or value, risk, and resources in an environment embracing cloud computing.
3. Identify your organization’s information security needs. Use the right controls for the needed security.
4. Train the staff early for a smoother transition and so they can help answer questions early on.
5. Determine how operations will take place in AWS. Doing so early helps your big-picture thinking so you can ensure your environments align with the business strategy.
6. Determine what your current IT assets are and if you are going to include them in the migration. Determine what discovery tools to use. Doing this helps the migration planning efforts and minimizes the possibility of missing a dependency during the migration.
7. Select the right partner to help you with the migration. Look for those that have the technical expertise and experience migrating to AWS.

Phase 2: Migration

1. Start small and simple. For example, you might migrate small workloads first, migrate one server at a time, or migrate the pieces that will benefit most from the new environment first. The more your staff becomes comfortable with AWS services, the easier it will be to gain acceptance internally. This requires consistency and transparency.
2. Provide as much automation as possible. Determine what can be automated and give your team the power to make it so.
3. Adjust internal processes to embrace this change.
4. Use fully managed services wherever possible.

Phase 3: After the migration

1. Have a monitoring strategy in place that monitors your most important items. Monitoring data will enable you to make good decisions about performance and costs.
2. Use the monitoring tools that best fit the business. Your operations people will thank you in the long run, and your business owners will have clearer data points to base their decisions on.
3. Leverage Rackspace support. The Rackspace Technical Account Managers are invaluable resources. They get to be part of your broader virtual cloud team and can provide a source of technical information and guidance.

For mass migrations (migrating many applications at one time)

1. Have teams, tools, and processes that are centered around the migration activities.
2. Provide leadership and set benchmarks for the migration.
3. Provide onboarding for new team members when the project is in full swing.
4. Consider many different criteria when deciding on the migration strategy for a particular application -- business objectives, the roadmap, risk, costs, and so on. You will either make a decision to move the application as-is or modify it in some fashion.
5. Try to use best practices for resiliency and cost savings, and abstract the underlying infrastructure when you can. Some common options are auto-scaling, load-balancing, multi-AZ scenarios, and right-sizing EC2 instances.
6. Find patterns and create blueprints for them. Migration patterns will emerge based on the strategy chosen. Create re-usable blueprints for those patterns. Share them with the migration teams.
7. Test your applications. Each application component should go through predetermined, well-documented tests. Sign-off from the business owners will be a lot smoother if you ask the application owners to provide you with the test plans early on in the project. A template that is used by all application owners would be best. Update the template with their specific testing requirements.
8. Be sure that there is great communication with all the teams involved. Document all migration decisions and make sure everyone agrees with them. Be sure that the teams across the organization, including those not directly involved in the migration, are aware of

any down time, changes of IP addresses, or URLs. Also, let any third parties that might have access to your systems know what is going on.

What to expect during migration to AWS

When you use the Rackspace Migration Manager to move from Rackspace to Amazon Web Services (AWS), consider the following aspects of the migration.

Timeline

The migration timeline depends on the size of the instances that are being migrated, network speeds, and the amount of data (for example, a system disk or CBS volumes).

Downtime

If you choose to use *live migrate*, no downtime of the Rackspace Public Cloud is expected. Otherwise, the instance will be down while the disk is cloned. The length of the downtime is dependent on the size of the instances being migrated.

Note: When live migrate is enabled, the Rackspace Migration Manager does not shut down the instance before migrating the image. As a result, file system integrity on the migrated image cannot be guaranteed.

Costs and fees

There is a cost for the support VM that is created for each server that is being migrated.

You are also responsible for the cost of the transfer bandwidth to AWS during a migration.

Note: After migration, there will be billable resources in AWS and in Rackspace Public Cloud that will incur additional costs. It is your responsibility to remove any resources that you do not need in order to reduce or remove billable resources from AWS or Rackspace Public Cloud or both. Rackspace will not issue credits for resources that you forget to remove.

If any temporary resources created by the migration are not automatically deleted, you need to delete these resources to avoid the costs.

Responsibilities

The terms and conditions indicate that Rackspace is not responsible for the migration. You must verify that all data was migrated. You are also responsible for all costs, and must check the security of the resources that have been migrated. Additionally, you are responsible for updating application and DNS configurations to use any new IP addresses in AWS.

Note: Rackspace will *not* perform OS-level actions to get your application or server working on AWS. Most, if not all, servers will need to have work done by you due to the IP address changes that occur. Rackspace Support will not handle these changes.

Scheduling a migration

You can schedule a migration in the Rackspace Migration Manager Control Panel.

Different migration types

Currently, the Rackspace Migration Manager provides only a "lift and shift" migration. This type of migration replicates an existing Rackspace Public Cloud application in AWS, without redesigning the application.

Product, flavor, and OS support in Rackspace Migration Manager

The initial launch of Rackspace Migration Manager includes support for migrating the following Rackspace Public Cloud products and features to Amazon Web Services (AWS).

Products

The following Rackspace Public Cloud products are supported for migration with Rackspace Migration Manager:

- Cloud Servers
- Cloud Networks
- Cloud Block Storage attached volumes

Flavors

The following table lists the Cloud Servers flavors that are supported for migration with Rackspace Migration Manager.

Note: I/O flavors are currently not supported because ephemeral disks cannot be migrated.

Flavor class	Flavor	Supported?
Standard	512 MB	Yes
Standard	1 GB	Yes
Standard	2 GB	Yes
Standard	4 GB	Yes
Standard	8 GB	Yes
Standard	15 GB	Yes
Standard	30 GB	No
Memory	15 GB	Yes
Memory	30 GB	Yes
Memory	60 GB	Yes
Memory	120 GB	Yes
Memory	240 GB	Yes
Compute	3.75 GB	Yes
Compute	7.5 GB	Yes
Compute	15 GB	Yes
Compute	30 GB	Yes
Compute	60 GB	Yes
General Purpose	1 GB	Yes
General Purpose	2 GB	Yes
General Purpose	4 GB	Yes
General Purpose	8 GB	Yes
OnMetal Servers	All	No

Operating systems

The following OSs are supported for migration with Rackspace Migration Manager:

- CentOS 6
- CentOS 5
- Debian 7

- Debian 6
- Ubuntu 14.04
- Ubuntu 12.04

Mapping of Rackspace resources to Amazon Web Services resources

This article helps you map Rackspace infrastructure products to Amazon Web Services (AWS) infrastructure as a service (IaaS) products. Being aware of this information should make your migration as seamless as possible.

In the initial release of the Rackspace Migration Manager, the products in the following table are supported for migration. Note that Amazon products are different than Rackspace products so these estimates are best approximations. You should pay attention to your environment and make changes as needed. Over time, we expect to add more products to this table at which point we will map back to AWS products in the same way.

Rackspace product	Corresponding AWS product
Cloud Servers product Cloud Servers API	Amazon EC2
Cloud Networks product Cloud Networks API	Amazon VPC
Cloud Block Storage product Cloud Block Storage API	Amazon EBS

Mapping of Rackspace Cloud instance types to Amazon EC2 instance types

The following table maps Rackspace Cloud instance types to equivalent Amazon EC2 instance types so that you can select an appropriate instance size for your AWS Cloud.

Rackspace instance type	EC2 instance type
Standard: 512 MB RAM, 20 GB HDD, 1 vCPU1 GB RAM, 40 GB HDD, 1 vCPUPerformance: 1 GB RAM, 20 GB SSD, 1 vCPU	Micro: 613 MB RAM, up to 2 ECUs, EBS storage, 64 bit
Standard: 2 GB RAM, 80 GB HDD, 2 vCPUsPerformance: 2 GB RAM, 40 GB and 20 GB SSDs, 2 vCPU	M1 Small: 1.7 GB RAM, 1 ECU, 160 GB local storage, 32 or 64 bit
Standard: 4 GB RAM, 160 GB HDD, 2 vCPUsPerformance: 4 GB RAM, 40 GB and 40 GB SSDs, 4 vCPU	M1 Medium: 3.75 GB RAM, 2 ECUs, 410 GB local storage, 32 or 64 bit
Standard: 8 GB RAM, 320 GB HDD, 4 vCPUsPerformance: 8 GB RAM, 40 GB and 80 GB SSDs, 8 vCPU	M1 Large: 7.5 GB RAM, 4 ECUs, 850 GB local storage, 64 bit
Standard: 15 GB RAM, 620 GB HDD, 6 vCPUsPerformance: 15 GB RAM, 40 GB and 150 GB SSDs, 4 vCPU	M1 Extra Large: 15 GB RAM, 8 ECUs, 1690 GB local storage, 64 bit
Standard: 15 GB RAM, 620 GB HDD, 6 vCPUsPerformance: 15 GB RAM, 40 GB and 150 GB SSDs, 4 vCPU	M3 Extra Large: 15 GB RAM, 13 ECUs, EBS storage, 64 bit
Standard: 30 GB RAM, 1200 GB HDD, 8 vCPUsPerformance: 30 GB RAM, 40 GB and 300 GB SSDs, 8 vCPU	M3 Extra Double Large: 30 GB RAM, 26 ECUs, EBS storage, 64 bit
Standard: 15 GB RAM, 620 GB HDD, 6 vCPUsPerformance: 15 GB RAM, 40 GB and 150 GB SSDs, 4 vCPU	High-Memory Extra Large: 17 GB RAM, 6.5 ECUs, 420 GB storage, 64 bit
Standard: 30 GB RAM, 1200 GB HDD, 8 vCPUsPerformance: 30 GB RAM, 40 GB and 300 GB SSDs, 8 vCPU	High-Memory Double Extra Large: 34 GB RAM, 13 ECUs, 850 GB local storage, 64 bit

Fanatical Support

If you need assistance mapping from Rackspace resources to AWS resources, contact Rackspace Support.

FAQ for migration from Rackspace to AWS

Get quick answers to common questions about migrating from Rackspace to Amazon Web Services (AWS).

General

Why are you helping customers move from your public cloud to AWS?

Rackspace provides expertise and support for the world's leading clouds, including our OpenStack public cloud, AWS, Google Cloud Platform, and Microsoft Azure. Rackspace gives customers a choice of the leading clouds and helps them find the best fit for each of their workloads. Rackspace constantly seeks new ways to serve customers, often starting with a beta program. At the moment, we're working on a beta program to provide a smoother migration for our customers who are interested in AWS infrastructure but want to continue to tap our expertise, tooling, and support through our popular [Fanatical Support® for AWS service] (https://www.rackspace.com/en-us/managed-aws).

Will you eventually decommission your public cloud?

Rackspace has made no decision to decommission our public cloud. We continue to invest in it with development, engineering, and operations resources. We are simply making it easier for customers who want to migrate to AWS infrastructure to do so, while keeping the Rackspace expertise and support that they value.

Is it true that your sales representatives are no longer available to new buyers of your public cloud?

No, that is not true. We continue to sell our OpenStack public cloud through sales representatives and through our website.

Beta migration from Rackspace to AWS

How can I participate in the beta migration program or learn more about it?

Like any beta program, this one is limited in the number of customers that it can accommodate. If you want to participate in the beta program or learn more about it, engage with your account manager, who will work with the beta program leader to evaluate your need for the beta migration program.

What happens after the beta program? Are you considering a decommission of your public cloud then?

See the answer for "Will you eventually decommission your public cloud?".

Will you also build better migration capabilities for other public clouds, such as Azure and Google?

Rackspace is excited about our [Fanatical Support for Azure offering] (https://www.rackspace.com/en-us/microsoft/managed-azure-cloud) and [Managed Services for Google Cloud Platform] (https://www.rackspace.com/managed-google-cloud). Our assessment is that AWS is the preferred destination for most of our customers who want to migrate today, so our strategy is to begin with solutions in the area with the highest demand and evaluate other migration opportunities across a variety of platforms.

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