ObjectRocket by Rackspace Enables Companies to Manage More for Less

A Multi-customer Study

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Executive Summary

This study was designed to analyze the total cost of ownership (TCO) for customers who have purchased ObjectRocket by Rackspace® managed services offerings. Crimson Consulting interviewed ten companies, from startups to established industry leaders. While the rest of the paper will present an aggregated TCO model based on data from users of relational, NoSQL, and Big Data technologies, here are some of the overall highlights:

- NoSQL MongoDB users would spend **472% more** over three years for an unmanaged, on-premises implementation, compared to an ObjectRocket managed solution.
- NoSQL Redis users would spend **657% more** over three years for an unmanaged, on-premises implementation, compared to an ObjectRocket solution.
- Relational database users would spend **227% more** over three years for an unmanaged, on-premises implementation, compared to an ObjectRocket solution.

In addition to the cost savings we report in this paper, all of the IT professionals Crimson interviewed reported business benefits of the elastic ObjectRocket offerings that allowed them to:

- Scale up without incurring acquisition or labor costs
- Get specialized services that might otherwise be difficult to obtain
- Concentrate on their business

Challenges

The people Crimson interviewed reported these as the top challenges they faced when deciding to use database and data services:

Top Challenges ObjectRocket Helps With	% of Responses
Resources availability	60%
Resources expertise	50%
Existing hardware limitations	40%
Databases and data availability	30%
Turnaround on new requests	20%
Databases/data access performance	20%

The TCO Model

For the purposes of this study, Crimson used a standard model for total cost of ownership (TCO) that tracks costs across enterprise boundaries over a three-year cycle.

The model examines three major cost categories: acquisition, labor costs, and indirect costs.

Revenue loss related to lack of service (due to downtime, planned or unplanned) is important indirect cost. While all of the people were very clear on the impact this had on their business, information collected during interviews did not contribute to a meaningful data analysis and Crimson decided to zero it down, assuming from TCO modeling that both solutions provide equal levels of availability.

The model includes:

1. Acquisition costs
   - Hardware and software licenses
   - Hardware and software support
   - Datacenter cost

2. Labor costs
   - Initial installation, configuration, integration, data migration
   - Ongoing operational support that includes database environment maintenance/management, security management, monitoring/reporting

3. Indirect costs
   - HR overhead
   - Training

Several people Crimson interviewed said they use more than one type of database technology. For the purposes of this model, we have used these basic server configurations for comparison purposes over a three-year timeframe. We used the free version of MySQL for analysis, but we believe similar estimates for hardware, labor and indirect costs can be used for other relational databases with similar configurations. In addition, we assumed for TCO modeling that 50% of the cost of the storage array and SAN switches will be used for database cluster configuration.

Memory options for ObjectRocket's relational database configurations don't cover operating system memory overhead, while on-premises customers typically have to overprovision servers with additional resources, including memory, to cover overhead and future growth. This representative configuration has 32GB allocated only to the database, with another 32GB to cover OS overhead. Because memory is inexpensive it often makes sense to overprovision to avoid costly servers upgrades in the future.

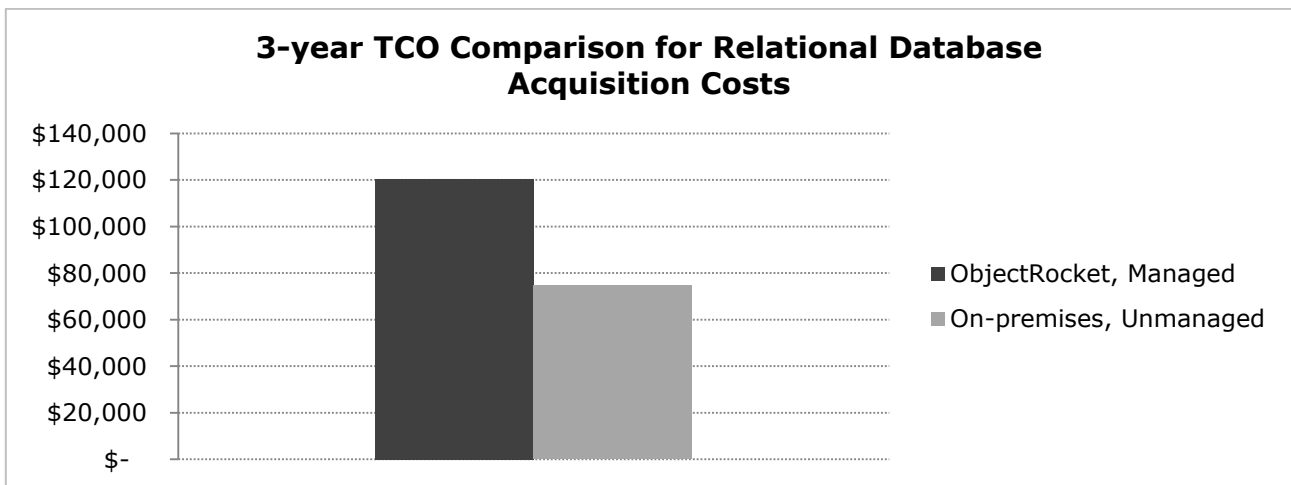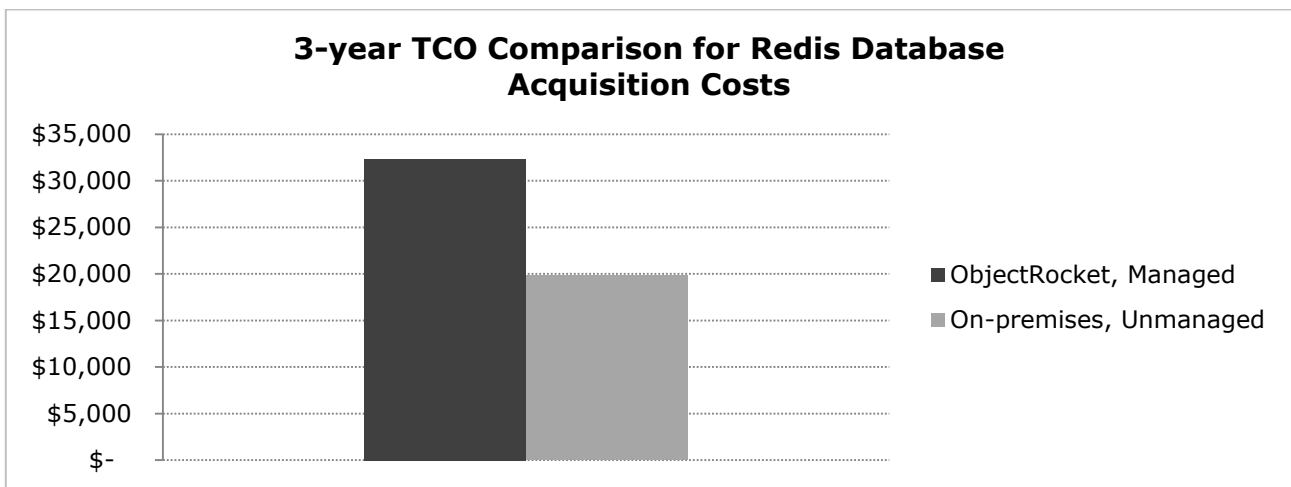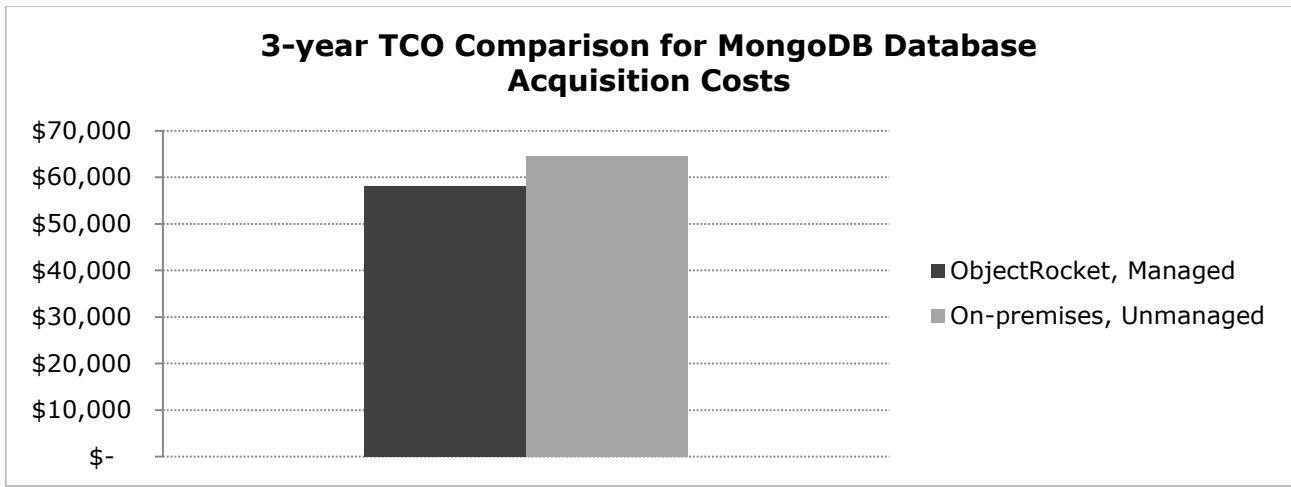|	NoSQL MongoDB	NoSQL Redis	Relational (MySQL)
ObjectRocket configuration	• 150GB with 10% annual growth • Replica set with 1 master, 2 secondary servers	• 10GB with 10% annual growth • Cluster with 3 servers	• Managed relational database service with 300GB and 10% annual growth • 2-server database cluster with MySQL

On-premises, unmanaged	**Servers**
	• 3 servers:
	  – Dell™ PowerEdge R630
	  – 1 Intel® Xeon® E5-2643
	  – 64 GB RAM
	  – 4-120GB SSD drives
	  – Red Hat Enterprise Linux
		Servers
		• 3 servers, 25% dedicated to Redis database:
		  – Dell PowerEdge R730
		  – 2 Intel Xeon E5-2687
		  – 64GB RAM
		  – 2-200GB SSD drives
		  – Red Hat Enterprise Linux
			Servers
			• HA database cluster with 2 servers, master and replica
			  – Dell PowerEdge R730
			  – 2 Intel Xeon E5-2687
			  – 64GB RAM
			  – 2-200GB SSD drives
			  – Windows Server® 2012 SE
			  – 300GB of shared storage for the cluster
			  – 2 Intel X710 dual-port 10Gb cards
			Storage Array
			• Dell PowerVault MD3800i 10Gb iSCSI
			• 12TB raw storage, 50% used for database

How ObjectRocket Managed Data Services Impact TCO

Using the TCO model, Crimson computed the following cost comparison using ObjectRocket hosted database solutions. Though lack of service is part of the TCO model, and interviewees did talk about impact their ObjectRocket hosted solution had on their experience in this area, we did not include it in the data model. We did this because the information did not contribute to a meaningful data analysis. For that reason, we assumed that the cost of downtime was the same for compared configurations for TCO modeling purposes, even though interviewees did tell us that they experienced substantially less downtime with ObjectRocket. In addition, though we did interview Big Data customers, we did not have much user data for them. So we have included what data we have in the summary chart below and quoted the interviewees. We discuss the three main areas of our TCO model in following sections.

3-year TCO Comparison for NoSQL, BigData, Relational Database Configurations
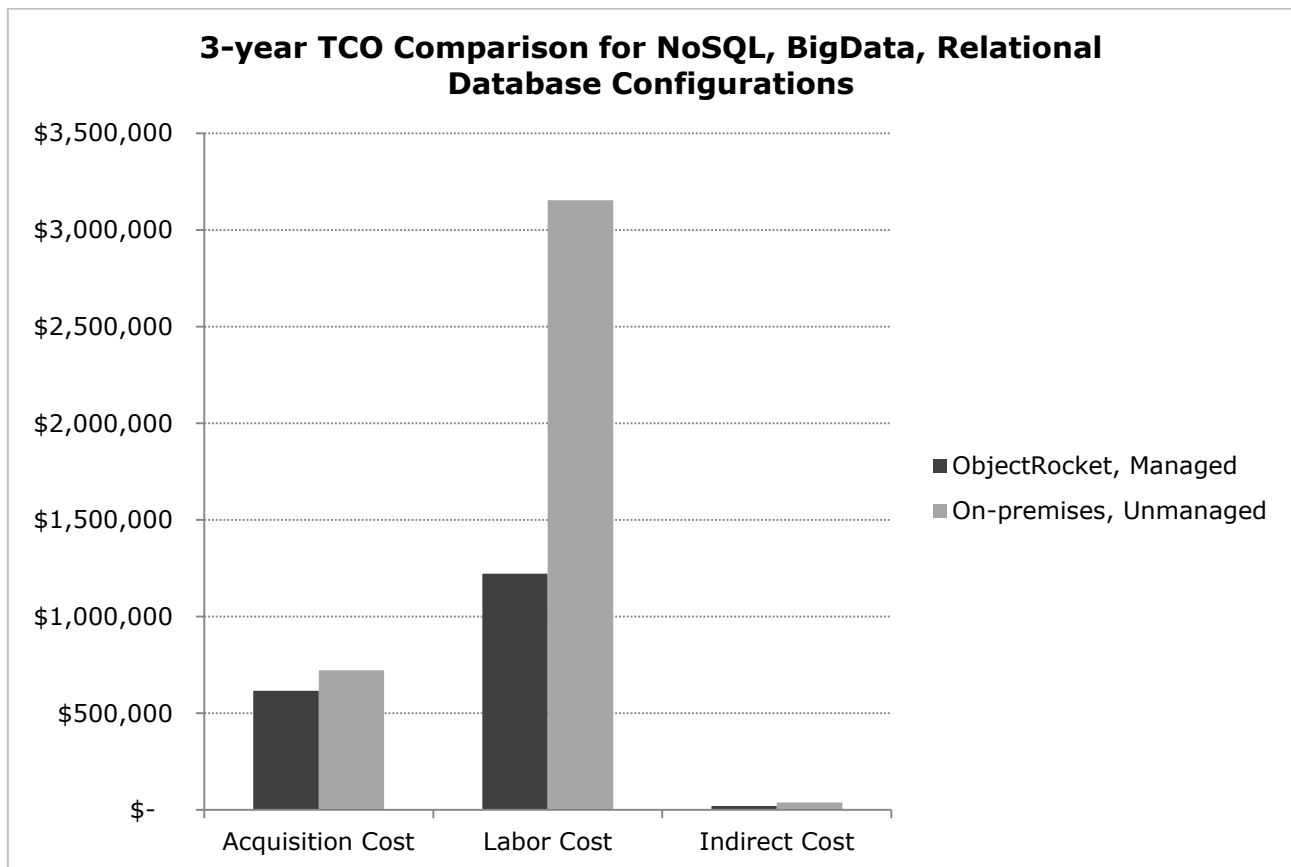
This summary shows overall TCO costs users achieved while using the hosted technologies offered by ObjectRocket. The following sections show breakdowns for the various TCO categories.

Acquisition Costs

3-year TCO Comparison for MongoDB Database Acquisition Costs

- ObjectRocket, Managed
- On-premises, Unmanaged

3-year TCO Comparison for Redis Database Acquisition Costs

- ObjectRocket, Managed
- On-premises, Unmanaged

3-year TCO Comparison for Relational Database Acquisition Costs

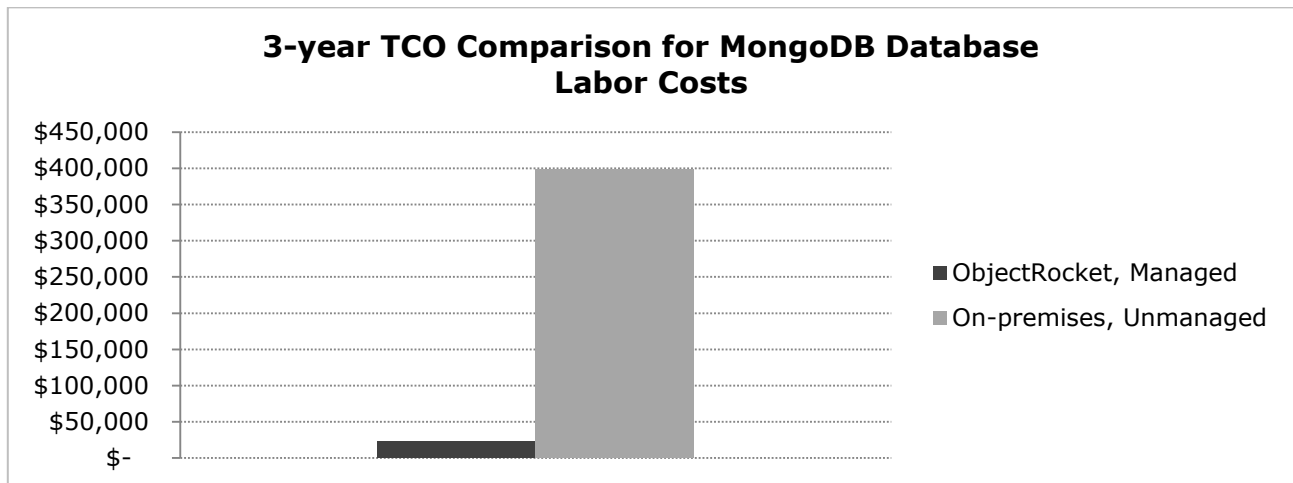- ObjectRocket, Managed
- On-premises, Unmanaged

According to the professionals we interviewed, acquisition costs for MongoDB unmanaged solutions are 11% higher than a managed ObjectRocket solution. These users were able to eliminate purchase outlays for hardware, plus reduce direct initial costs for hardware, and eliminate or reduce support costs for hardware and software.
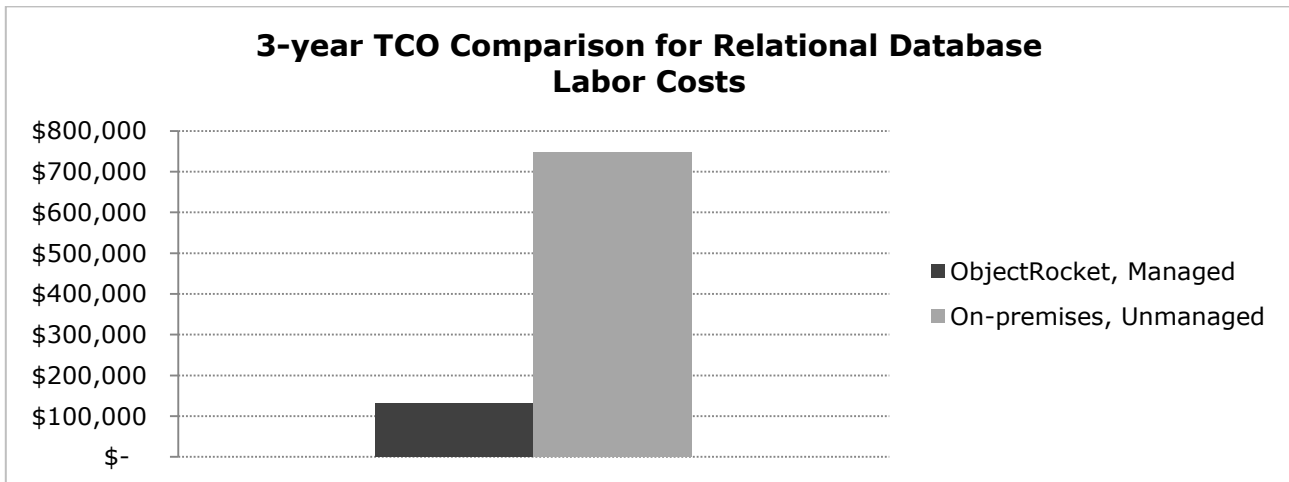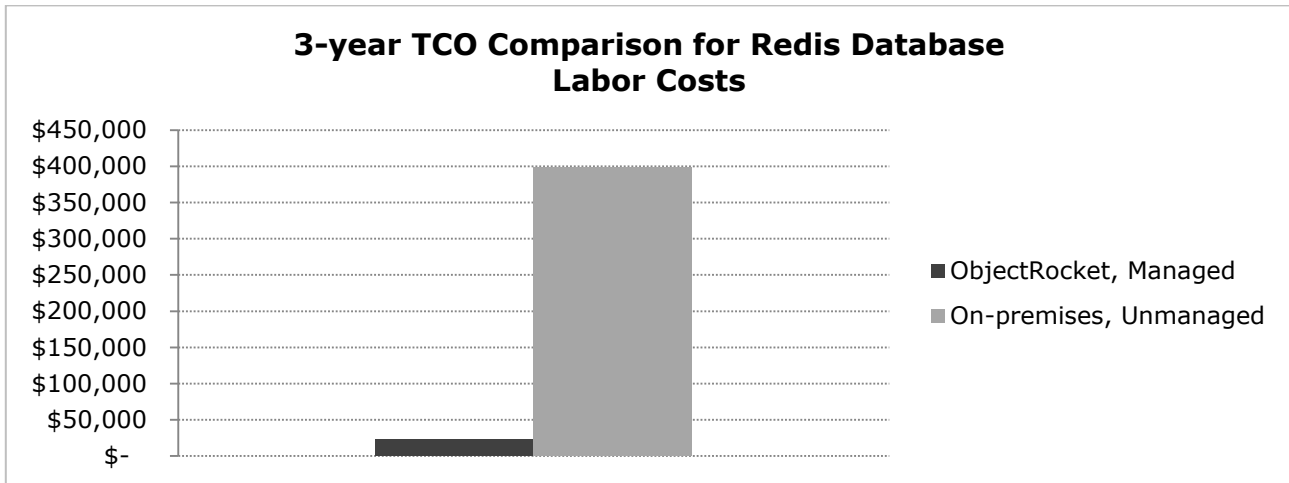
However, because most Redis users share infrastructure with other applications, on-premises acquisition costs are lower by 39%. Relational users for unmanaged solutions share storage arrays with other applications too. Combined with the licensing costs, this made the acquisition cost 38% lower for unmanaged relational solutions as well.

What is less easy to quantify, but certainly a prevalent practice, is overprovisioning. Due to the high cost of on-premises deployment, and the fact that it's a lengthy process to configure and test, many companies pay for infrastructure they don't need yet. Otherwise unexpected growth can find them short on capacity. Either way, it's an expensive solution. And one that our interviewees found ObjectRocket completely solved.

It also solved the choice of hardware and software. As one interviewee put it, "ObjectRocket helps you make the right choice on infrastructure—procuring the hardware, deploying and migrating to the new architecture for hardware refreshes—especially important in technologies that change rapidly."

Labor Costs

3-year TCO Comparison for MongoDB Database Labor Costs

Legend: ObjectRocket, Managed / On-premises, Unmanaged

Y-axis: $- to $450,000

**3-year TCO Comparison for Redis Database
Labor Costs**

- ObjectRocket, Managed
- On-premises, Unmanaged

**3-year TCO Comparison for Relational Database
Labor Costs**

- ObjectRocket, Managed
- On-premises, Unmanaged

For all technologies, the biggest changes in TCO costs were in labor. Changes in initial configuration and management activities after moving to ObjectRocket resulted in 54 to 1,612% of cost avoidance. Labor costs for on-premises, unmanaged configurations include a 2,112% increase in integration spending, and 1,601% more for management for MongoDB and Redis users.

Relational database users would spend 465% more for labor costs, including an increase in integration spending of 332%, and 469% more for management. These costs included the following areas:

Integration from initial database planning to installation and data migration
Users reported that they had to do very little. ObjectRocket handled the provisioning and configuration of the servers. They set them up, added the monitoring tools, and started tracking them. As one interviewee told us, "If I say, 'I need to build a new database server. I want it to be this type of database. And can you build it in our staging environment by Friday so we can start playing with it and figure out how to get it to production?' ObjectRocket can do that." A relational user said, "ObjectRocket did all of the initial setup and configuration. All we did was migrate our applications."

Some savings came from better architectural decisions when signing up for the service, and the flexibility to change over time. For example, a failure to plan for sharding early on in a MongoDB implementation can be costly to fix as an in-house system grows. Scaling horizontally for a horizontal cluster requires architects to plan how to best split data onto different servers, when to shard those workloads, and how to select the best shard keys for each one. This is something ObjectRocket customers can now rely on their managed services for.

This sort of planning and expertise also helps to optimize the performance of their solution over time. Experienced experts in every technology offered to provide guidance on complex challenges such as shard key selection, query optimization, security, and more. This helps customers make the best decisions on issues such as replica sets, shards; or whether and when to move to a custom-designed dedicated rack—all with SSL-enabled connections to ensure high availability, scalability, and security.

Maintenance and management

For many of the professionals we talked to, this was a significant category in both cost and concern. One said that, once the actual [on-premises] server is up and running, the man hours to perform maintenance were "huge." He estimated his department spent 25% of their time on support, maintenance, and hygiene—a cost that was reduced to next to nothing with ObjectRocket by Rackspace. While many didn't want to add headcount, one small company was nervous about the alternatives—working with contractors or hiring temporary employees—saying they might "leave us in the dust." The use of time and resources was another consideration. One interviewee said, "We're tracking tens of billions of transactions a day, and we don't have anyone in house who's managing the servers. That is a cool testament of what you can get with a managed provider like ObjectRocket."

One interviewee provided yet another example of a cost that's often hidden, telling us, "Moving the data between our web hosts and our databases incurred a transfer fee. So every time our application servers made a request there was a cost associated. When you do that a million times a day, it adds up. Now, we don't have that cost because we moved all of our servers to ObjectRocket."

24x7 IT support for database environment

This can be an expensive proposition for any company, but the smaller firms we talked to admitted that there was just no way they could afford it without ObjectRocket. But it's one thing to promise it, and another to deliver. On this count, customer satisfaction was very high, "The turnaround on new requests is fantastic. I don't think I've ever had to wait more than ten minutes to get a response to anything." As one relational user noted, "We get a vast amount of expertise from the different support teams. If I need a DBA right now, I can get a DBA right now and not have to go negotiate some contract to do so. If we need a network person or a Windows person, they're always right there. Plus, ObjectRocket is there to actually figure out what kind of expertise we need—what kind of issue we have and what kind of expertise we need to handle it."

Division of labor between in-house team and ObjectRocket

Companies with in-house talent were able to use personnel more efficiently, and for more strategic priorities. As two relational database users put it, "When we looked for DBAs before, we were looking for someone with a lot of infrastructure experience and design. Now that ObjectRocket has taken care of most of the infrastructure piece, we look more for development and design." "In moving to ObjectRocket we did not need our system administrators anymore, so we were able to fill those seats with developers." Another said they actually saved headcount, "We get away with only nine IT people because of the partnership with ObjectRocket. We would not be able to do everything we do on a daily basis without the support we get from them." He added, "To maintain the same amount of stability and reliability I have today, I'd need a team between 25 and 30 people if I brought all that work in house."

"Probably the biggest cost saver is that we don't have to hire someone to manage the Mongo database. We don't have to do any of that management and tuning because ObjectRocket does it all as part of their package."

Indirect Costs

With this TCO model, we also attempted to capture indirect savings such as less office space, less HR engagement, and more. For example, one interviewee noted that they saved money because they didn't have to train new hires in the latest database technologies.

Lack of Service Costs

While few of the people we interviewed had actual figures for the cost of downtime, all of them were very clear on the impact this had on their business. So, while we didn't model it because the information did not contribute to a meaningful data analysis, here is what interviewees told us they experienced with ObjectRocket.

The business costs ranged from lost transactions to a loss of credibility for users and advertisers. Plus there was the labor cost to get service restored. So all of the professionals we interviewed said the stability of the service was critical for them. One relational database user explained that the database at their old provider was not stable enough for the data that was going through it, and added, "When we moved to ObjectRocket the DBA service and database was much, much better and we were able to sustain a higher and longer load." Others agreed, saying, "We saw an improvement in our SLA, service levels when we switched to ObjectRocket." Other relational users explained it this way, "We actually don't see outages because they get solved so quickly. By the time we see it in the logs, ObjectRocket has already done a server restart as they have configured our cluster to automatically fail over. So a lot of these things just don't happen." "In moving to ObjectRocket we went to two physical servers running four virtual servers that could hop around if we had problems with our physical servers. Before that, we were not necessarily set up for disaster recovery. The one time we did have a hardware issue at ObjectRocket, there was no downtime for it because of the redundancy setup. If we were on premises in our old setup, we would have had downtime because of that."

Another component of downtime costs is the availability and quality of the support customers receive. Again, the users we interviewed report that this is better with ObjectRocket because they're more proactive and involved in issue resolution. One interviewee reported that their old provider would recommend fixes and then leave it up the customer's internal staff to implement them. ObjectRocket helps resolve the issues as part of their support. Another agreed, saying about their relational database, "ObjectRocket is very proactive.

> *"We've never had an unplanned outage with ObjectRocket and I don't think I could say the same if we were managing the solution ourselves. I can't tell you how much that saves me on Rolaids from all the heartburn about worrying whether the servers are going down."*

They monitor our database and have a monthly review to see if there's anything that can be improved." Still another said planned downtime was more predictable with ObjectRocket. So they know what to expect "with a very good rate of accuracy."

Other Business Benefits

In addition to the TCO topics, professionals interviewed for this whitepaper noted a variety of other benefits. Though they couldn't quantify them, they nonetheless rated them as very important to their business success. These included:

Flexibility

Customers said they can purchase a host server or managed services. They can also customize the server to meet their needs. As one interviewee said, "If we want to have more hard drives, we don't have to use something like block storage that decreases the read-write ability. That was one of the major benefits of going to the managed environment." Another agreed, noting that it's also quite quick and easy, "If we need a new database, we just create a new database or new collection. Everything provisions itself. It scales automatically. And it's instant. It's not more than the push of a button."

A relational user cited another way his ObjectRocket service provides flexibility, "If we agree to a price point per month for two or three years, but six months in I have a big change in my environment, they will look at what they can change to meet my new needs. The price points will be different. But they don't beat me up by making me completely pay off what I was only halfway through in the original agreement. They just swap it out. Most providers won't work with you like that at all." Another says ObjectRocket helps them stay up to date. "We have regular calls about new technologies that could help us solve issues. We discuss where we can use any cloud service coming out of ObjectRocket. Often, the cloud services they offer let us continue to stretch the envelope."

Availability

As we noted in the section on lack of service, downtime can cost companies a lot. So several professionals spoke about the 100% network availability and industry-leading database SLAs they get from ObjectRocket. One relational database user attributed that to the managed service, saying, "ObjectRocket has DBAs who can work with our infrastructure team to build the right solution that can maintain our SLA for our customers. Between their infrastructure team and their database team, they really know what works and what makes the database work."

"Through ObjectRocket managed services, we're able to go over our infrastructure and set up a scalability outline to make sure our servers are up and running at a high availability. We've improved our end-user service by leaps and bounds by having a much beefier system with more RAM and hard drive space than we could get in the cloud. It saved us time, headache, and a lot of late nights that we would have to be troubleshooting these things."

One-stop Infrastructure

Because ObjectRocket essentially provides all the infrastructure and services a company needs, customers were free to focus on other aspects of their business. One interviewee described it this way, "We have around

"We're spending less time to manage our infrastructure. So we can concentrate on building our application instead."

2.3 million users on the application—using it all the time, all across the world. We would need to have multiple people to manage our infrastructure. But we don't have to have that because of ObjectRocket. ObjectRocket is our tech support, but more than that. And that allows us to keep doing what we do best, without having to worry about infrastructure."

Another relational user agrees, saying, "ObjectRocket reduces complexity for us. We have a layer where we sit on top, and underneath that layer the hardware and the physical environment we don't need to understand. We also don't need to pay in an area where we wouldn't have a competitive advantage. If we did it ourselves we wouldn't do it as well."

Unmatched Support

With a single point of contact for everything, ObjectRocket makes any kind of database easier than anybody else. As one interviewee told us, "They offer a level of support that's not even available from competitors." Another said, "ObjectRocket is probably

the best support we have. They're involved. The last provider we had, we would ask them to fix something. And they'd say there's no problem. An hour later we'd fix it ourselves. We don't have those issues with ObjectRocket." One of the relational users put it this way, "ObjectRocket kind of gave a new definition of what a managed service is supposed to look like."

People told us that ObjectRocket has better people, better domain knowledge of customer operations and databases, and better communication with client infrastructure teams. The infrastructure and DBA teams work together to solve issues for the customer. For example, a relational user told us a story that compared ObjectRocket to a prior hosted service. "We used to have bad performance problems because the old host had critical loads on shared storage with a noisy neighbor. ObjectRocket engineers ask way better questions and really unpack our situations. We know absolutely today that a given workload A absolutely cannot be on a shared node, but workload B is no problem. So we can get the best of both worlds because we still like to keep it inexpensive where we can. But where a particular workload is so critical I'll pay what I have to. I cannot ever have a noisy neighbor."

In addition, because all data stays inside data center, it improves performance and security.

ObjectRocket even offers a network security team that can help customers do everything down to adding users to the VPN.

Conclusions

One comment sums up what we heard well. This IT professional told us, "We'd have to spend millions of dollars to spin up our own clusters. On top of that there's the management cost. Now we can pivot more easily with ObjectRocket in the mix. They're a terrific source of knowledge and they take care of us quite well."

Having this allowed users to focus on their own applications and business. As one relational customer explained, "We would need a data center as a physical building or a room in the building. We would need a facilities manager, and to get air conditioning and electricity. We would need hardware engineers and spare parts. I just wouldn't even go there. It's a financial issue, but we don't want to focus our energy on infrastructure." He also noted that, with customers in 190 countries and Antarctica, they needed a provider with the global reach ObjectRocket offers.

Crimson found that, instead of paying for the traditional TCO costs of equipment and labor, customers pay for space. With Managed Data Services, everything else is included. Some of the IT professionals we spoke to had tried other services, but they didn't get the performance they needed. They did with ObjectRocket. One Big Data customer said she got two to three times more efficiency from the same number of servers. And a relational user talked about the value, compared to another provider they'd used, "Previously I was told I would get these managed services. But all I got was servers and resources. With ObjectRocket, it wasn't just hot air. We actually got what they said plus much more."

A relational user also spoke to the business benefits of using ObjectRocket. "For us the biggest cost we have is time to market. If we think about saving 10% off hardware costs but having a migration project which occupies us for three months, that's just not a space where we can play."

One of the relational interviewees also spoke to quality. "ObjectRocket gets it done right the first time. Before ObjectRocket something would get done, and we would deal with the pain — even put customers at risk. Then we'd finally get it right and have a whole bunch of collateral damage along the way. We don't have any of that collateral damage anymore."

Another relational user summed it up well, "The benefits are having our systems monitored by knowledgeable people 24/7. Being in a data center that is as compliant as a ObjectRocket data center, we don't have to worry about resource time to get things done. We're right now going through upgrades to our existing systems that I wouldn't be able to do if I had just used our internal team. We really never had the expertise in to do configuration changes to our database setup like SQL server settings. ObjectRocket will do that for us now as part of the performance tuning and optimization."

An interviewee noted that the ObjectRocket certifications allowed them to pursue business they might not have qualified for before. "All the policies and procedures they have in place as part of their audits, were thing that we did not have."

This level of performance, cost savings, and flexibility allowed customers to grow on ObjectRocket. As one interviewee said, "Everything's on ObjectRocket. It's a sweet deal."

About Crimson Consulting Group

We help executives achieve market leadership

Crimson is management consulting firm focused on technology marketing. Our clients include Adobe, Cisco, Dell, eBay, Google, HP, IBM, Intel, Microsoft, Oracle, SAP, Seagate, Symantec, Verizon, and others. We are experts in the marketing of technology solutions.

For more information, contact:

Crimson Consulting Group

(650) 759-2230

tkeleher@crimsonmarketing.com

Appendices

About ObjectRocket Managed Data Services

ObjectRocket by Rackspace allows companies to tap the power of the cloud, without having to hire experts in dozens of complex technologies. Their solutions give each customer the best fit for its unique needs—whether on single- or multi-tenant servers, or a combination of those platforms.

ObjectRocket Managed Data Services gives customers database experts who work with them to match the right database to the right use case. Experts architect the database, and put it on a platform optimized for performance, scalability, and availability. They also offer the industry's widest array of databases, deployment options, and service levels—with managed offerings of the most popular databases on public or private clouds:

Relational—ObjectRocket provides rapid development and deployment of new SQL applications, and maximize consolidation density with a completely optimized database stack. They provide a fast, scalable, fully managed service to rapidly provision performance-oriented databases using:

- Oracle
- Microsoft SQL
- MySQL

To sign up for a cloud account, go to: https://cart.rackspace.com/cloud?cp_id=cloud_databases.

NoSQL— ObjectRocket offers a managed database-as-a-service (DBaaS) platform engineered specifically for MongoDB. The pre-configured, high-performing MongoDB instances scale automatically in the cloud. Customers can run demanding database workloads on the cloud without suffering from the performance issues that often result from hosting high I/O database workloads because platform is tuned for MongoDB performance at every level of the technology stack, with a fully redundant, container-based, all-PCIe flash infrastructure.

The Redis solution is a managed DBaaS platform simplifies application development by offering optimized, preconfigured Redis instances in the cloud. The managed solution includes built-in, space-saving optimizations.

In addition, ObjectRocket offers Cassandra and Elasticsearch. For a free trial of ObjectRocket, visit: http://objectrocket.com/free-trial

Big Data—The ObjectRocket Managed Big Data Platform is an enterprise-ready service based on the Hortonworks Data Platform (HDP) for Hadoop. Each environment is custom-designed to fit customers' exact requirements. ObjectRocket constantly adds new and requested open-data platforms that work alongside Hadoop and Spark. Sign up for a free consultation at the bottom of the page at https://www.rackspace.com.

About this Study

For this study, Crimson Consulting interviewed ten IT professionals about their ObjectRocket by Rackspace managed data services solutions. Crimson focused on defining, clarifying, and quantifying the benefits of the new managed-service solutions as experienced or expected by users. The companies were in various parts of the world, were anywhere in the lifecycle from startup to established industry leader, and used a variety of different technology implementations. For more information on interviewees, see the chart below.

Type of Organization Interviewed	Title of Interviewee
Big Data solutions provider	CTO
Mobile application provider	Lead Architect
Marketing automation firm	VP of Operations
Social discovery network	CTO
Social and dating application	Director of Operations
Medical research and analysis	Director of Analytics
Loyalty marketing company	Director of Application Development
Online auction firm	Director of Operations
Academic publisher	CTO
Incentive programs firm	VP of Technology