Analyst Insight

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The Case for Virtualizing Your Microsoft Exchange Deployment

Much has been written about the benefits of virtualization over the last few years. Hypervisor software promises to revolutionize the datacenter by making applications mobile, providing superior disaster recovery capabilities, and allowing IT administrators to allocate computing resources more efficiently. In May 2012, Aberdeen surveyed 137 enterprises to see what applications have been deployed on virtualized servers, and to learn about the challenges they experienced and the benefits they gained.

This report will focus on the virtualization of Microsoft Exchange. Exchange has been virtualized at a much lower rate than other applications. We will examine the reasons for this difference and provide metrics on the financial and operational benefits others have gained from virtualization.

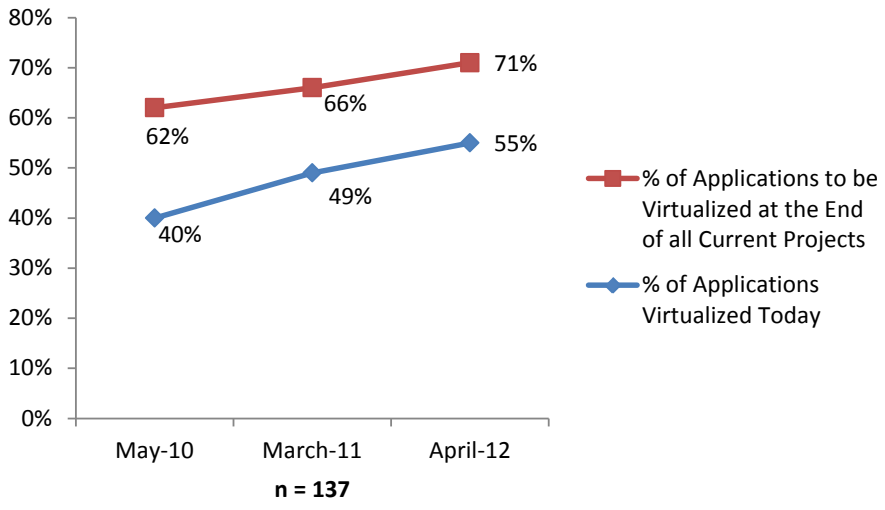
The advantages described in this report are specific to companies that deployed Microsoft Exchange on a virtualized server.

Analyst Insight

Aberdeen's Insights provide the analyst perspective of the research as drawn from an aggregated view of the research surveys, interviews, and data analysis

Server Virtualization Trends

Figure 1: Percentage of Applications Deployed on Virtualized Servers



Source: Aberdeen Group May 2012

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Aberdeen has conducted three yearly surveys of server virtualization. Deploying applications on hypervisor software for server virtualization continues at a steady pace, with April 2012 data showing just over half (55%) of all applications deployed on virtualized servers.

On average, Tier 2 applications such as test / development, web and light business applications are virtualized at high rates, generally from 50% - 65%. Tier 1 application, like email, databases, SAP, and other large enterprise apps, have average virtualization rates in the 30% – 40% range.

"Be careful, start slow but realize that almost 100% can be virtualized."

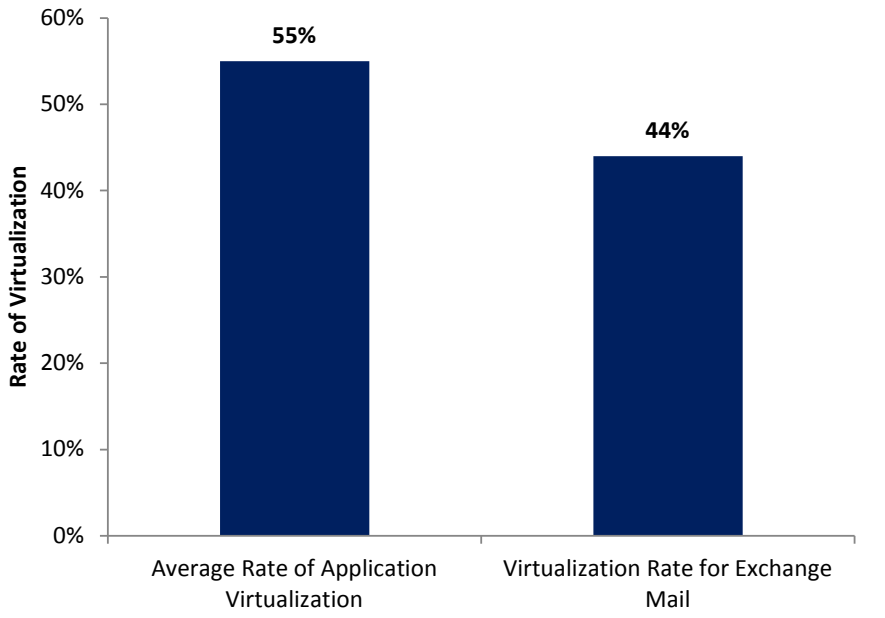
~ IT Manager, Mid-sized Government Agency, Germany

Only over the last few years have large enterprise applications like Microsoft Exchange even been able to be easily virtualized. Earlier versions of hypervisor software had severe restrictions on the number of CPUs and memory that could be allocated to support a single application. Today, most hypervisor software can support up to 32 CPUs and 1000 GB of memory, enough capacity for the vast majority of business applications. Also, companies report no hit on performance as a result of deploying an application on a hypervisor.

However, the rate of virtualizing Tier 1 applications is only slowly increasing compared to virtualization rates of Tier 2 apps. Microsoft Exchange is a prime example of a large enterprise application which has lagged behind in deployment to a virtualized server.

Virtualization of Microsoft Exchange

Figure 2: Virtualization Rates



Source: Aberdeen Group, May 2012

While the rate of virtualization for all applications is 55%, Microsoft Exchange is 25% less likely to be virtualized, at 44%. Almost two thirds of

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all Exchange deployments are on physical servers, and cannot gain the advantages virtualization brings to applications.

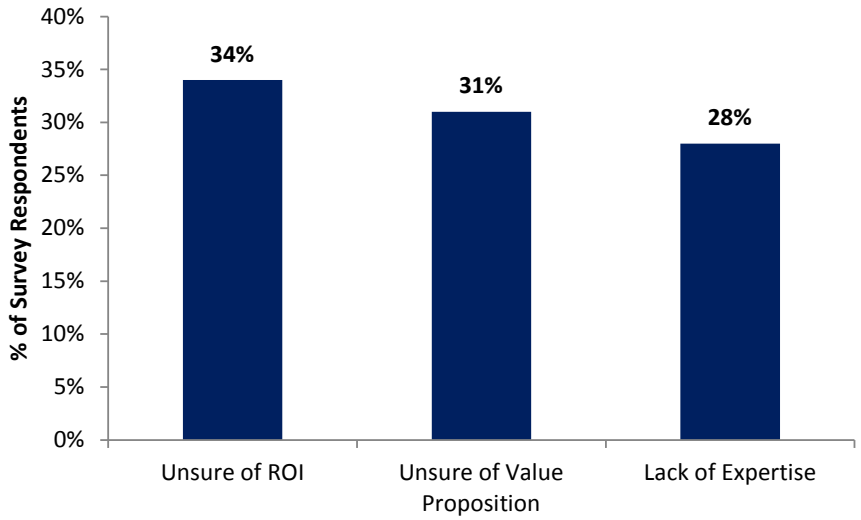
Aberdeen asked the surveyed organizations to tell us why they have not fully virtualized their infrastructure.

Reasons for not Virtualizing Applications

As highlighted in Figure 3, the reasons for not virtualizing applications fall into two categories – financial and technical.

- Financial – Surveyed companies reported they were unsure how to measure the return on investment (ROI) they would gain from spending money and resources to move their applications onto a virtualized environment. All IT investments should include an ROI calculation in the investment analysis to ensure the movement is worthwhile, and to help prioritize it against other IT projects.
- Technical – Virtualization can be a challenge particularly if a company has not deployed hypervisor software before. Microsoft Exchange is a mission application and companies are wary to experiment with this critical organizational tool.

Figure 3: Top Reasons for Not Virtualizing Applications



Source: Aberdeen Group, May 2012

We will now look at how other, more experienced organizations have overcome these challenges. First we will examine the financial and operational benefits of virtualization.

Benefits of Virtualization

The benefits of virtualization can be grouped into two categories:

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- Operational – Freeing IT from repetitive tasks, or reducing the time dedicated to those tasks, produces an economic benefit for the company. Freed IT resources can be redeployed to more important projects, such as bringing new tolls to deployment faster.
- Reduced expenses – Eliminated costs contribute to the positive ROI of a project. These reduced expenses can take two forms – Capital (CapEx - the cost of equipment paid for from a Capital Budget) and Operational (OpEx – the savings from reducing or eliminating expensive and time consuming tasks).

Figure 4 identifies benefits of virtualization as reported by those organizations that have deployed software on hypervisor software.

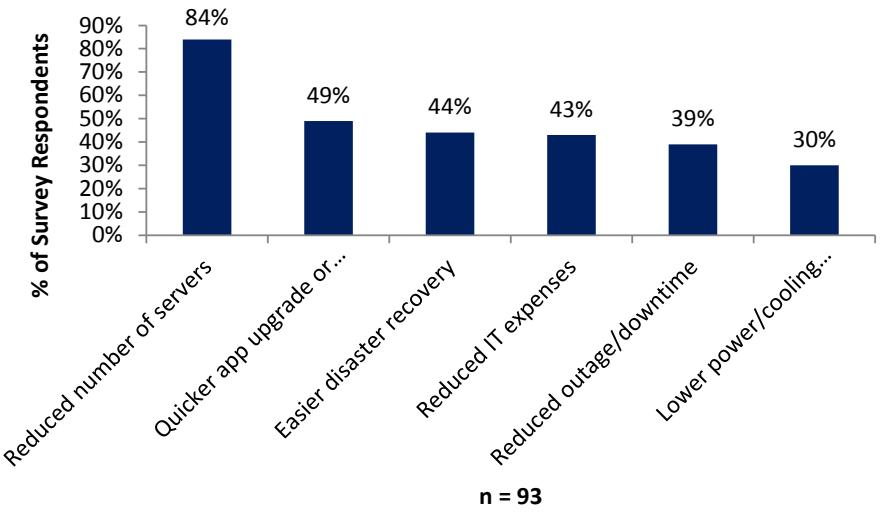
The number one benefit reported by survey respondents contributes to both operational and capital savings: reducing the number of servers in the datacenter. Eighty four percent (84%) of companies reported this gain.

This is especially relevant for Microsoft Exchange, which has multiple pieces (roles) that, when run on a non-virtualized environment, must be deployed on different hardware. In a physical (non-virtualized) Exchange deployment, you don't want these different roles on the same server for performance and application availability reasons. When shifted to a virtualized server, these roles can be deployed on a single server, since the hypervisor software treats them as fully independent software implementations.

"Set up a test platform, talk to your backup vendor and businesses that have already done what you want to do, then go for it."

~ CIO, Mid-sized Distribution Company, US

Figure 4: Benefits of Virtualization



Source: Aberdeen Group, May 2012

The other benefits fall into two primary categories:

- **Application Uptime** – Easier disaster recovery and reduced outage / downtime means that applications are up and available to support business processes more of the time. Virtualization features such as application mobility (moving running apps from one

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server to another), site recovery (moving suites of applications over the WAN) and automatic resource deployments (adding additional memory or CPUs to stressed applications) contribute to improving application uptime.

- **Reduced costs** – Faster application upgrades / installs and reduced power and cooling expenses help lower the cost of supporting applications. Having greater numbers of applications on each server, thus reducing the number of required servers is a major contributor to reducing expenses.

All these benefits will apply to a Microsoft Exchange deployment on a virtualized server. Email uptime can be improved by making email portable across servers, and even datacenters, in response to server issues. The cost of supporting Exchange can be reduced by snapshotting and cloning copies for testing upgrades, reducing the number of servers required to host the system and thus reducing the power required to support the datacenter where it resides.

Quantification of Benefits

To assist in the ROI calculations we asked survey respondents to share the performance improvements they have achieved with server virtualization. Aberdeen asked survey respondents to tell us what gains they have seen from virtualization, both in infrastructure performance and cost reduction.

Aberdeen identified the top 20% of IT organizations based on their ability to keep applications up and running. This is the gold standard for IT—application uptime is a measure of the ability to get applications deployed quickly and keep them available for end user productivity. This top 20% of survey respondents is called Best-in-Class.

Table 1 shows the average improvement in the benefits indicated in Figure 3 reported by all organizations that have deployed server virtualization, and compares them to the values achieved by the Best-in-Class.

Average organizations, and particularly the Best-in-Class, have been able to reduce their spending on server support and new application deployment. Table 1 summarizes the kind of performance advantages a company new to application virtualization can achieve over time. The Best-in-Class have highly virtualized environments, and virtualizing their Microsoft Exchange deployment contributes to these savings.

While the difference in the number of VMs supported on an average server seems to vary little (11.8 vs. 15.5), this is a 30% reduction. If this reduction can be applied across corporations, entire datacenters could be eliminated.

Mean Class Performance

The three maturity classes reported the following results in the three key performance metrics:

Average number of business interruptions in the last 12 months:

- Best-in-Class: 4
- Industry Average: 4.5
- Laggards: 5

Average age of each downtime event:

- Best-in-Class: 50 minutes
- Industry Average: 2 hours
- Laggards: 8 hours

The length application downtime was reduced since virtualizing:

- Best-in-Class: 50%
- Industry Average: 15%
- Laggards: 1%

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Table 1: Virtualization Benefits

Benefit	Average Overall Results	Best-in-Class Results
How long to deploy new applications after deploying server virtualization?	7.6 days	1.1 days
How has application downtime changed since deploying server virtualization?	- 26%	- 34%
How has the IT spending for server and application deployment changed over the last 12 months?	- 11%	- 21%
How has power consumption changed over the last 12 months?	- 4.5%	- 7.5%
Rate of server concentration (Average number of VMs per server)	11.8	15.5

Source: Aberdeen Group, May 2012

Training – A Best-in-Class Practice

The final challenge to deploying virtualization to Tier 1 applications, as stated by survey respondents in Figure 2, is a lack of technical expertise.

Server virtualization deployment and management tools are not intuitive to anyone. All organizations struggle with hiring techs experienced in new technologies, or training their own resources. Aberdeen has found that, while a minority of organizations have a formal training program for their IT staff, Best-in-Class organizations are heavy users of technical training.

Only 44% of all surveyed companies reported having a formal education program for virtualization for their IT staff, while 73% of Best-in-Class reported the same. Thirty five percent (35%) of all organizations reported that they have training and certification programs for virtualization tool administrators; two thirds (68%) of Best-in-Class do.

It is important to note that the Best-in-Class is comprised of organizations of all sizes. Not only large companies with large budgets value technical training. Over 70% of the Best-in-Class in this analysis group are Small and Mid-sized companies.

Most vendors of hypervisor software offer training on their products. Best-in-Class organizations use that training to create the tech-savvy resources needed to gain the application performance benefits described in this report.

Company Size Defined

For the purposes of this document, Aberdeen defines company size as the following:

- √ Small (less than 100 employees)
- √ Mid-sized (Between 100 and 1000 employees)
- √ Large (Greater than 1000 employees)

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Table 2: Virtualization Benefits - Operational

	Overall	Best-in-Class	Average	Laggard
Formal educational plan for IT staff in implementing virtualization	44%	73%	49%	22%
IT staff trained in measuring the effectiveness of virtualization processes	39%	73%	42%	17%
Training and certification provided for virtualization tool administrators	35%	68%	36%	15%

Source: Aberdeen Group, April 2012

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Report Summary: Virtualize your Microsoft Exchange Deployment

While organizations are steadily virtualizing their server environments, the rate of virtualization of Microsoft Exchange is lagging. Exchange is a mission-critical application, and companies should be careful before making major changes. However, virtualization is now a proven technology, and companies should realize there is much to gain from virtualizing their Exchange deployment.

Companies who have not virtualized their implementations of Microsoft Exchange should:

- **Recognize that virtualizing your Microsoft Exchange deployment brings a variety of benefits.** These include reducing expenses and improving Exchange uptime. Build the ROI case for deploying Exchange on a hypervisor using the metrics discussed in this report.
- **Train your technical resources to take full advantage of the features of the virtualization tools.** Hypervisor software has many features and capabilities. Training your IT staff on the tools will result in higher application uptimes, reduced costs, and better performance.
- **Talk to organizations that have already done it.** Forty-four percent (44%) of Exchange deployments have already been virtualized. This is not a bleeding edge project. Based on the data from Aberdeen research, even average respondents gained greatly from virtualization technology.

There are many benefits from virtualizing Microsoft Exchange. If done correctly, end-users finance, and IT operations all stand to share those gains.

Survey Respondents

Individuals answering this survey came from diverse geographies, industries and corporate roles:

Industries:

√ IT Services – 21%

√ Government – 13%

√ Healthcare/Pharm – 13%

√ Education – 11%

√ Finance/Insurance – 10%

√ Telecomm - 9%

√ Software - 8%

√ Industrial Manuf – 8%

√ Others – 7%

Roles:

√ Director and above -55%

√ Managers -21%

Geography:

√ North America: - 62%

√ EMEA - 22%

√ Rest of World - 16%

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