Abstract:
The Evolution of Server Virtualization

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Introduction

Research Objectives

While a significant volume of market research has been published on the general use and benefits of server virtualization, much less information is available about the specific effects of this technology on various supporting infrastructure components—such as servers, storage, and networking—or its impact on information security, business applications, and general IT processes. As a result, it is has often been difficult for IT users and vendors to fully anticipate its impact on these ancillary technologies, including the ongoing challenges and requirements that result from server virtualization implementations.

In order to assess the current state of the server virtualization market, ESG recently surveyed 463 North America-based senior IT professionals representing large midmarket (500 to 999 employees) and enterprise-class (1,000 employees or more) organizations. All respondents were personally responsible for managing or overseeing IT products, services, and strategies and their organizations had to be current users of server virtualization technology. Additionally, respondents were required to have in-depth knowledge of at least one virtualization adjacent technology area—including server, storage, and networking infrastructure; information security; or business applications—in the context of server virtualization technology.

Specifically, ESG’s survey asked:

- What is the current state of server virtualization deployments? For example, what percentage of servers has actually been virtualized to date? How many different applications are being run in virtual environments? Are most virtual machines run in production or test/development environments?
- How do users expect these metrics to change over the next 24 months?
- What specific applications and workloads have been virtualized to date? Are users satisfied with their progress with respect to deploying tier-1 applications on virtual servers?
- How satisfied are organizations with their server virtualization initiatives?
- What benefits have organization realized as a result of deploying server virtualization technology?
- What metrics do organizations use to gauge their success with server virtualization?
- What challenges do organizations still face when it comes to server virtualization?
- How has virtualization changed organizations’ IT infrastructure processes?
- How is virtualization technology impacting organizations’ infrastructure management processes and tools?
- What are the critical factors that respondents believe are preventing their organization from using virtualization technology more pervasively? What developments need to take place in order to enable more widespread server virtualization usage?
- How do the answers to these questions vary by IT functional group—i.e., what are the key challenges and virtualization enablers in terms of server, storage, networking, security, and application perspectives?
- Are certain organizations further along in their server virtualization sophistication and success and, if so, why? What are the characteristics and best practices that separate these organizations from the rest of the market? What steps can organizations take to move further along the virtualization maturity curve?

For more details, please see the Research Methodology and Respondent Demographics sections of this report.
Research Methodology

To gather data for this report, ESG conducted a comprehensive online survey of IT professionals from private- and public-sector organizations in North America (United States and Canada) between July 14, 2010 and July 29, 2010. To qualify for this survey, respondents were required to have day-to-day knowledge of their organization’s server virtualization environment and strategy including topics such as total number of virtual machines, applications running on virtual machines, hypervisor(s) deployed, and supporting infrastructure considerations. All respondents were provided an incentive to complete the survey in the form of cash awards and/or cash equivalents.

After filtering out unqualified respondents, removing duplicate responses, and screening the remaining completed responses (on a number of criteria) for data integrity, ESG was left with a final total sample of 463 IT professionals.

Please see the Respondent Demographics section of this report for more information on these respondents.

Note: Totals in figures and tables throughout this report may not add up to 100% due to rounding.
Respondent Demographics

The quantitative information presented in this report is based on 463 qualified respondents. More details on these respondents and their organizations are below.

Respondents by Number of Employees

A view of survey respondents by their organization’s total worldwide employees is shown in Figure 1.

Figure 1. Survey Respondents, by Number of Employees

<table>
<thead>
<tr>
<th>Number of Employees</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 to 999</td>
<td>12%</td>
</tr>
<tr>
<td>1,000 to 2,499</td>
<td>18%</td>
</tr>
<tr>
<td>2,500 to 4,999</td>
<td>15%</td>
</tr>
<tr>
<td>5,000 to 9,999</td>
<td>17%</td>
</tr>
<tr>
<td>10,000 to 19,999</td>
<td>12%</td>
</tr>
<tr>
<td>20,000 or more</td>
<td>26%</td>
</tr>
</tbody>
</table>


Respondents by Annual Revenue

The annual revenue of respondents’ organizations is shown in Figure 2.

Figure 2. Survey Respondents, by Annual Revenue

<table>
<thead>
<tr>
<th>Annual Revenue</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>$100 million to $499 million</td>
<td>14%</td>
</tr>
<tr>
<td>$500 million to $999 million</td>
<td>17%</td>
</tr>
<tr>
<td>$1 billion to $4.999 billion</td>
<td>22%</td>
</tr>
<tr>
<td>$5 billion to $9.999 billion</td>
<td>11%</td>
</tr>
<tr>
<td>$10 billion to $19.999 billion</td>
<td>9%</td>
</tr>
<tr>
<td>$20 billion or more</td>
<td>16%</td>
</tr>
<tr>
<td>Not applicable (e.g., public sector, nonprofit)</td>
<td>3%</td>
</tr>
<tr>
<td>Less than $100 million</td>
<td>7%</td>
</tr>
</tbody>
</table>

Respondents by Industry

Respondents were asked to identify their organization’s primary industry. In total, ESG received completed, qualified responses from individuals in 19 distinct vertical industries, plus an “Other” category. Respondents were then grouped into the broader categories shown in Figure 3.

Figure 3. Survey Respondents, by Industry

What is your organization’s primary industry? (Percent of respondents, N=463)

- Manufacturing, 25%
- Financial (banking, securities, insurance), 24%
- Business Services (accounting, consulting, legal, etc.), 9%
- Communications & Media, 8%
- Health Care, 7%
- Government (Federal, National, State, Province, Local), 6%
- Retail/Wholesale, 6%
- Other, 16%


Respondents by Total Number of Physical Servers

The number of total physical servers (whether production or test/development) in respondents’ organizations is shown in Figure 4.

Figure 4. Survey Respondents, by Total Number of Physical Servers

Approximately how many total physical servers are supported by your IT organization? (Percent of respondents, N=463)

- More than 5,000, 10%
- 2,501 to 5,000, 6%
- 1,001 to 2,500, 9%
- 501 to 1,000, 13%
- 251 to 500, 15%
- 101 to 250, 15%
- 50 to 100, 18%
- 25 to 49, 9%
- Less than 25, 4%

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