Licensing, Compliance & Audits in the Cloud Era

Survey Methodologies & Results
Purpose

VMTurbo conducted this survey to investigate the challenges organizations face maintaining software licensing compliance in today’s rapidly-growing scale-out virtualized and cloud environments, as well as the strategies they employ to meet these challenges. Our hope is that the results will instigate a data-driven conversation across the broader virtual and cloud community.

Sample

The data in this report were collected through a survey conducted from October 1, 2015 to October 12, 2015. The 1,460 survey respondents came from across the Enterprise IT and data center landscape. Respondents are of 18 years of age and older. In order to reveal the range in characteristics, respondents were identified demographically by their business and environment characteristics, such as role, business type, hosts in production, and virtual machines in production. This sample represents organizations spanning SMB to large enterprise, with various roles and responsibilities in those organizations.

Procedure

This survey recruited participants from an internal email database. Participants were given an opportunity to win a home lab by entering their email address at the completion of the survey. Additionally, participants were given the option to participate in a one-on-one interview subsequent to completing the survey. While the survey successfully recruited a significant sample size, the distribution of the sample weighs highly in System Administrator as a role and was well-distributed across business types, with Professional Services as the majority. Data were collected electronically through an online survey. The survey itself was designed internally by a team, which included software licensing subject matter experts, and individuals with experience managing software license compliance in previous positions.

Survey Flow

The data in this survey report were collected within a twelve day period. Progression through the thirty-two survey questions depended on a respondent’s identification of the enterprise software they currently license. All respondents were asked the same questions about the licensing model, clarity/fairness/value of licensing model, and audit frequency of each software vendor they identified as currently using. Respondents were also given the opportunity to answer in open format any additional commentary on each vendor’s licensing model and auditing practices.

Citing this Survey

We welcome your use of the results in this survey as you share insights with members of the broader IT community. Please reference VMTurbo and include our homepage URL, vmturbo.com, as you do so. A downloadable version of the complete dataset is available at https://github.com/vmturbo/VMTurboSurvey. Thank you.
In October 2015, VMWare conducted an industry survey titled Licensing, Compliance & Audits in the Cloud Era. The survey aimed to explore trends among three related themes:

1. How are organizations managing license compliance today and what are their greatest challenges?
2. Which vendor is perceived as the most difficult overall?
3. Across vendors, what significant differences in licensing models and audit rates exist, and how do these impact sentiments toward each vendor with respect to perceived clarity, fairness, and value of their offerings?

Several high-level findings are below.

**Findings Summary**

- 51% of respondents self-check to ensure software license compliance *Once Per Year or Only When Audited By the Vendor*
- 41% of respondents identified *Visibility Into License Consumption* as their greatest challenge maintaining compliance, followed by *License Policy Management*
- 61% of respondents identified Microsoft as the most difficult vendor to maintain compliance for, attributed to its large portfolio and diverse licensing models
- Oracle’s licensing model was deemed *Least Fair* across all polled vendors, with an average score of 1.8/4.0
Results

Demographics

HIGHLIGHTS

- 51% of respondents are in a System Administrator role
- Industry verticals were distributed with majority concentrations in Professional Services, MSP, Education & Nonprofit, and Other

- System Administrator: 51.4%
- Other: 16.0%
- Consultant: 14.0%
- IT Director: 11.9%
- CIO/CTO: 3.8%
- Application Developer: 2.1%
- IT VP: 0.8%

N = 1,460

- Professional Services: 18.2%
- Other: 12.5%
- MSP/Cloud Provider: 11.0%
- Education & Nonprofit: 10.8%
- Government & Public Sector: 9.9%
- Financial Services & Insurance: 9.7%
- Manufacturing & Industrial: 9.7%
- Healthcare: 8.4%
- Retail & Consumer Products: 3.8%
- Energy & Utilities: 3.4%
- Entertainment & Media: 2.8%

N = 1,460
HIGHLIGHTS

- 53% of respondents have an environment with at least 25 hosts and 500 VMs
- 2% of respondents have environments with more than 1,000 hosts and 20,000 VMs

<table>
<thead>
<tr>
<th>Hosts (%)</th>
<th>VMs (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 25</td>
<td>&lt; 500</td>
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<tr>
<td>47.5</td>
<td>2.3</td>
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<tr>
<td>8.8</td>
<td>4.4</td>
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<tr>
<td>2.7</td>
<td>3.6</td>
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<td>2.3</td>
<td>1.2</td>
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<td>1.2</td>
<td>1.0</td>
</tr>
</tbody>
</table>

N = 1,460
Results

Demographics

HIGHLIGHTS

- 23% of participants spend more than $500,000 USD annually on software licensing
- 77% of respondents have played a role in managing enterprise software licenses, which served as a qualifying question. This yielded n = 1,038 of N = 1,460 initial participants.

Annual Software Licensing Spend (USD)

- 44% of respondents spend $0-99,999
- 20% spend $100,000-249,999
- 13% spend $250,000-499,000
- 15% spend $500,000-1M
- 9% spend > $1M

N = 1,460
Ironically, the pain of software licensing in the physical world gave rise to the need for virtualization, which in turn gave rise to the new pain of software licensing. According to Gartner, Enterprise Software is a $300B+ annual industry, due in no small part to the liquidity of virtualization and all of the licensing requirements it creates.

Prior to virtualization, applications and operating systems were licensed for the specific piece of infrastructure on which they were intended to run. Wherever that application was installed, it lived and ran permanently.

Today, most software vendors remain steadfast in this approach, which is to say, every piece of infrastructure on which their application could potentially run - requires licensing. Since virtualization increases the number of places a workload could theoretically run, it also increases the number of places that must be licensed.

Organizations small and large must devise license containment strategies that can altogether destroy the benefits of virtualizing in the first place. Our survey aimed to better understand these strategies, and investigate the differences between vendors’ approaches to keeping customers both running and happy.
Results

License Compliance: Measurement & Challenges

HIGHLIGHTS

- 66% of participants cite Visibility Into License Consumption & License Policy Management as their greatest challenges
- 51% of participants check to ensure license compliance Once Per Year or Only When Audited By the Vendor

Q8: What is your greatest challenge in maintaining license compliance?

- Workload and Cluster Growth: 41%
- License Policy Management: 25%
- Visibility Into License Consumption: 16%
- Failover and HA Scenarios: 12%
- Other: 5%

n = 1,038

Q7: How frequently does your organization check to ensure it is license compliant?

- Once per Month: 11%
- Once per Quarter: 13%
- Once per Half: 25%
- Once per Year: 40%
- Only When Audited: 11%

n = 1,038

n = 1,038
Results

License Compliance: Tactics

**HIGHLIGHTS**

- 61% of respondents identified Microsoft as the vendor for which it is most difficult to maintain license compliance.
- Running workloads on dedicated clusters was ranked the most effective license compliance method, with 35% of respondents ranking it #1.

Q9: In your experience, for which software vendor is it most difficult to maintain license compliance?

Q10: Please rank the following license compliance methods from MOST EFFECTIVE = 1 to LEAST EFFECTIVE = 4

- Running licensed workloads on dedicated clusters
- Licensed workload pinning and affinity rules
- Running licensed workloads on bare metal (i.e. avoid virtualizing)
- Manually inventorying and migrating licensed workloads

* n = 1,038
Results

Vendor Profile: IBM

Q11: Does your company license enterprise software from IBM?
- Yes: 26%
- No: 74%

Q12: How does your organization license these IBM products? (Check all that apply)
- Per User: 26.52%
- Per Device: 30.68%
- Per VM: 20.08%
- Per CPU Socket/Core: 56.44%
- Other: 7.95%

Q13: Please rate IBM on each of the following aspects of its software licensing model.

(1 = Poor and 4 = Excellent)
- Fairness: 2.12 / 4.0
- Clarity: 2.17 / 4.0
- Value: 2.12 / 4.0

Q14: Have you ever been audited by IBM for software license compliance?
- Yes: 28%
- No: 72%
Results

Vendor Profile: Microsoft

Q16: Does your company license enterprise software from Microsoft?

- Yes: 95%
- No: 5%

n = 1,024

Q17: How does your organization license these Microsoft products? (Check all that apply)

- Per User: 61.22%
- Per Device: 51%
- Per VM: 35.51%
- Per CPU Socket/Core: 61.43%
- Other: 6.43%

n = 949

Q18: Please rate Microsoft on each of the following aspects of its software licensing model.

- Fairness: 2.21 / 4.0
- Clarity: 1.99 / 4.0
- Value: 2.26 / 4.0

(1 = Poor and 4 = Excellent)

n = 949

Q19: Have you ever been audited by Microsoft for software license compliance?

- Yes: 42%
- No: 58%

n = 949
Results

Vendor Profile: Oracle

Q21: Does your company license enterprise software from Oracle?

- Yes: 33%
- No: 67%

n = 994

Q22: How does your organization license these Oracle products? (Check all that apply)

- Per User: 23.24%
- Per Device: 18.96%
- Per VM: 16.82%
- Per CPU Socket/Core: 72.78%
- Other: 8.87%

n = 327

Q23: Please rate Oracle on each of the following aspects of its software licensing model.
(1 = Poor and 4 = Excellent)

- Fairness: 1.83 / 4.0
- Clarity: 1.93 / 4.0
- Value: 1.86 / 4.0

n = 327

Q24: Have you ever been audited by Oracle for software license compliance?

- Yes: 28%
- No: 72%

n = 327
Results

Vendor Profile: VMware

Q26: Does your company license enterprise software from VMware?

- Yes: 18%
- No: 82%

Q27: How does your organization license these VMware products? (Check all that apply)

- Per User: 9.36%
- Per Device: 18.72%
- Per VM: 26.72%
- Per CPU Socket/Core: 85.1%
- Other: 3.69%

Q28: Please rate VMware on each of the following aspects of its software licensing model. (1 = Poor and 4 = Excellent)

- Fairness: 2.90 / 4.0
- Clarity: 2.78 / 4.0
- Value: 2.78 / 4.0

Q29: Have you ever been audited by VMware for software license compliance?

- Yes: 13%
- No: 87%
In this section, we compare each of the four tested vendors side by side, and share selections from the open response portions of our survey.

If you would like to read more about license compliance best practices, check out our eBook, *Performance-Driven Licensing: A Method for Assuring Compliance & Performance While Minimizing Licensing Spend* by clicking here.
Analysis

IBM, Microsoft, Oracle, & VMware

Audit Rate by Vendor

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Audit Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM</td>
<td>27.65%</td>
</tr>
<tr>
<td>Microsoft</td>
<td>41.73%</td>
</tr>
<tr>
<td>Oracle</td>
<td>27.52%</td>
</tr>
<tr>
<td>VMware</td>
<td>12.56%</td>
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</tbody>
</table>

Clarity, Fairness, & Value of Licensing Models by Vendor (1 = Poor and 4 = Excellent)

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Clarity</th>
<th>Fairness</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM</td>
<td>2.12</td>
<td>1.99</td>
<td>1.99</td>
</tr>
<tr>
<td>Microsoft</td>
<td>2.17</td>
<td>2.02</td>
<td>1.86</td>
</tr>
<tr>
<td>Oracle</td>
<td>2.21</td>
<td>1.82</td>
<td>2.78</td>
</tr>
<tr>
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<td>2.12</td>
<td>2.26</td>
<td>2.78</td>
</tr>
</tbody>
</table>

Policies & Constraints IN COMPLIANCE:
IBM, Microsoft, Oracle, & VMware

VMware Loved, Oracle Loathed, Microsoft Liked

Of the N = 1,460 original survey participants, 1,038 passed the qualifying question of Have you ever played a role in obtaining, inventorying, or renewing enterprise software licenses for your current or previous organization?

Of these, n = 264, n= 949, n= 327, and n= 812 identified as licensing IBM, Microsoft, Oracle, and VMware enterprise software, respectively. Despite the difference in these sample sizes, each sample is large enough for statistical significance and for the sake of this analysis, assumed characteristic of the vendor customer base it represents. Furthermore, when we compare Audit Rate and perceived Clarity/Fairness/Value across vendors, the comparative differences are consistent with the anecdotal reports from each customer base.

At a high level, there is an apparent inverse relationship between a vendor's Clarity/Fairness/Value score and its Audit Frequency. VMware, whose scores were highest across the board, also audits its customers least frequently. VMware’s licensing model is also the most consistent Oracle, whose scores were lowest across the board, audits its customers second most frequently after Microsoft.

Why, then, are Microsoft’s scores not the lowest? Our explanation is in the structure of Microsoft’s numerous licensing models. Microsoft’s expansive product portfolio - spanning databases, virtualization, and end user computing - bears an equally expansive set of licensing models. This is reflected in Question 17, when more than 50% of Microsoft users identified using each of three separate licensing models (Per User, Per Device, and Per CPU Socket/Core) in their current Microsoft deployment. No other vendor exhibited this pattern.

Therefore, while Microsoft does audit its customers most frequently at 42%, our belief is that customers are slightly more understanding - relative to those of Oracle - given the complex overlay of licensing models and need for frequently assuring compliance. A closer look at open response data gleans insight into the quantitative responses. The following are unedited quotations from actual respondents. To view all responses, please see the full dataset available at https://github.com/vmturbo/VMTurboSurvey.

Notable mentions on Question 9 included Adobe, Autodesk, EMC, Cisco, Citrix, McAfee, and Sophos.

“There are changes happening in the "PVU" model, but not for all software products that use it. Growth of cores per socket has made it VERY much untenable moving forward.”

“They don’t provide complimentary service to analyze and recommend the level of licensing, without some form of paid service.”

“In most cases IBM can’t explain the model to you or you’ll get different answers to the same question from different people.”
“IBM changes the policy so frequently, we have to constantly obtain new quotes to keep in compliance.”

Microsoft

“With 8 different licensing programs (Partner*3, SPLA, OEM, MSDN, Volume, Retail), we had to train the Microsoft Auditor”

“Their licensing models are just too confusing. Whenever a company has certifications for licensing specialists, that should be a red flag that their licensing has gotten out of hand.”

“The license engagement process was quite painful. The room for error in software deployments is zero. Microsoft is pretty unforgiving if you deploy the Professional version of a product when you are licensed for the Standard version, even if you are not using any of the additional features provided to you by the upgraded version. There is no transparency on who at Microsoft is making licensing decisions should you challenge something in the engagement.”

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“Just awful. Their business model seems to be under provision then audit for ransom.”

“Oracle is the worst company to deal with for anything. If they can find a way to squeeze a dollar out of an agreement, they will do it.”

“Oracle is the definition of evil empire.”

“Oracle’s licensing model is still based on the old principles of licensing. Licensing virtual infrastructures is very expensive and inefficient.”

“Unfair in every aspect for us in research and education.”

VMware

“License by CPU is much better than it used to be (licensed by RAM). Even so, sometimes it’s confusing with modern multi-core CPUs to be certain of counts.”

“Practices require us to consume and oversize our requirements past what our needs and growth are for the next 5 years. EA process is the worst we have experienced.”

“Prefer to have features offered a la carte instead of expensive bundles”

“It’s relatively fair, but quite expensive.”

“Never any complaint about VMWare. Licensing is quite flexible, and great price per VM. Note, I’ll alternate preferring VMWare and Microsoft about 4 times a year... they’re really neck and neck for us, very hard to compare.”

“Clarity and modularity appreciated.”

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About VMTurbo

VMTurbo's Application Performance Control system enables customers to manage cloud and enterprise virtualization environments to assure application performance while maximizing resource utilization. VMTurbo's patented technology continuously analyzes application demand and adjusts configuration, resource allocation and workload placement to meet service levels and business goals. With this unique understanding into the dynamic interaction of demand and supply, VMTurbo is the only technology capable of controlling and maintaining an environment in a healthy state.

The VMTurbo platform first launched in August 2010 and now has more than 40,000 users, including many of the world's leading money center banks, financial institutions, social and e-commerce sites, carriers and service providers. Using VMTurbo, our customers, including JP Morgan Chase, Travelport, and Thomson Reuters, ensure that applications get the resources they need to operate reliably, while utilizing their most valuable infrastructure and human resources most efficiently.

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