Strategies for Successful Migration to Public Clouds
Lessons Learned from Industry Leaders

RESEARCH BY:

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What can organizations that have successfully migrated existing on-premises VMs to public clouds tell us about benefits and strategies for successful execution?

78% realize payback in one year or less.

Benefits go beyond cost savings to include increased business innovation and application performance.

Detailed planning and dependency assessments increase success.

Partnering with public cloud service providers helps avoid speed bumps.

Consistent operational controls across on-premises and public cloud infrastructure maximize staff productivity and end-to-end service levels.
Who are these experts in migrating to public cloud?

IDC surveyed 204 US-based enterprise senior IT and DevOps decision makers with experience in successfully migrating existing on-premises VMs to public clouds.

**Typical environment for survey participants:**

- Selected for experience in implementing (79%) or evaluating (21%) migration of existing on-premises VMs to public clouds
- On average, these organizations currently run more than 1,000 simultaneous VMs across both on-premises and cloud platforms
- By 2023, they expect that 65% of VMs will be deployed in public clouds

Survey conducted September 2021. All participants represent organizations with 1,000 or more employees.

Survey Participant Profile

<table>
<thead>
<tr>
<th>Average Distribution of Existing VMs Across On-Premises and Public Cloud</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-Premises Data Centers</td>
</tr>
<tr>
<td>Public Cloud Infrastructure</td>
</tr>
</tbody>
</table>

Survey conducted September 2021. All participants represent organizations with 1,000 or more employees.
Survey Highlights

What did the survey tell us about best practices for migrating existing on-premises VMs to public clouds?

<table>
<thead>
<tr>
<th>Goals</th>
<th>include increased business agility, resiliency, and ability to modernize applications as typically the most important drivers.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benefits</td>
<td>spanning improved business resiliency, application modernization, speed, and flexible, on-demand scale.</td>
</tr>
<tr>
<td>Planning</td>
<td>is essential to assess workload requirements, dependencies, and skills readiness.</td>
</tr>
<tr>
<td>Partnering</td>
<td>with public cloud service providers provides access to proven best practices that reduce time and risk.</td>
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<tr>
<td>Consistent operations</td>
<td>to maximize runtime performance and efficiency across hybrid environments.</td>
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</tbody>
</table>
What business and IT goals are motivating decisions to migrate existing on-premises VMs to public clouds?

**Top five goals driving migrating of VMs to public cloud**

Q: You indicated you have completed or are actively considering migration of existing on-premises VM workloads to public cloud infrastructure. What are/were the most important goals driving this effort?

(\% of respondents)

- **Improve overall business resiliency with access to scalable, on-demand public cloud infrastructure**: 53\%
- **Accelerate application modernization**: 51\%
- **Gain faster access to innovation delivered as cloud services**: 50\%
- **Reduce total cost of infrastructure ownership and operations**: 45\%
- **Reduce time to make IT resources available to business and developers**: 45\%

Migration programs are typically motivated by much more than simple infrastructure cost savings.

**Top business goals:**

- Overall resiliency
- Faster application modernization
- Scalability
- Access to innovative cloud services

\(n = 204,\) Source: IDC Migration to Public Cloud Thought Leadership Survey; September 2021
78% of organizations realize migration payback in 12 months or less.

Payback timeframes for migrating existing VMs to the public cloud

Q: How would you characterize the type of financial benefits your organization has experienced or hopes to experience from migrating on-premises VMs to public clouds?

(67 of respondents)

- 3 months or less: 32% (4%)
- 4 to 6 months: 18% (8%)
- 7 to 12 months: 18% (18%)
- Over 12 months: 8% (37%)
- No specific ROI or payback expectation/unsure: 4% (45%)

ROI calculations should consider application and infrastructure performance, cost, innovation, and operations.

Greatest impact on financial payback or ROI calculations

Q: Which of the following have the most impact on your financial payback or ROI calculations?

(67 of respondents)

- Improve availability and performance: 56% (56%)
- Reduce cost of data center facilities: 54% (54%)
- Simplify and unify vendor management: 50% (50%)
- Continuous access to new technologies and innovation: 48% (48%)
- Supplement internal IT staffing: 45% (45%)

n = 204, Source: IDC Migration to Public Cloud Thought Leadership Survey, September 2021
Migration planning needs to start by understanding application modernization roadmaps.

Over next two years VM migration strategies will vary based on workload requirements

Q: Which statement best defines your organization’s preferred approach to VM migration to public cloud over the next two years?

(% of respondents)

- 40% One-time planned lift-and-shift projects moving on-premises VMs to public cloud platforms without refactoring for containers
- 39% Frequent, bi-directional migration of existing VMs between public clouds and on-premises infrastructure using vMotion or other automation platforms
- 16% One-time planned lift and shift projects that refactor VM workloads to run in containers and Kubernetes
- 5% VMs that will be decommissioned because the application is being moved to a third-party SaaS application/other

Some workloads will be refactored for cloud-native container platforms while others will not.

Planning efforts need to recognize that each workload has unique requirements.

One-time lift-and-shift projects move existing workloads from on-premises to public cloud.

Ongoing bi-directional movement across on-premises and public cloud to support scale, performance, and cost optimization.

n = 204, Source: IDC Migration to Public Cloud Thought Leadership Survey, September 2021
Engage early and often with business and DevOps stakeholders to fully understand and address their concerns.

**Q:** Which of the following concerns about business risk management and change control have the most impact on your overall decision-making process about migrating existing on-premises VMs to public cloud?

<table>
<thead>
<tr>
<th>Concern</th>
<th>(% of respondents)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public cloud vendor ability to address cyber security threats</td>
<td>42%</td>
</tr>
<tr>
<td>Ability to recover data if the migration fails</td>
<td>41%</td>
</tr>
<tr>
<td>Ensuring that public cloud infrastructure refresh cycles do not disrupt business application stability and performance</td>
<td>36%</td>
</tr>
<tr>
<td>Mean time KPIS for problem resolution</td>
<td>35%</td>
</tr>
<tr>
<td>Coordination with broader change control and service request management processes</td>
<td>33%</td>
</tr>
<tr>
<td>Concerns about vendor lock-in constraining innovation</td>
<td>33%</td>
</tr>
<tr>
<td>Regulatory and security requirements</td>
<td>33%</td>
</tr>
<tr>
<td>Risk from losing control over infrastructure assets and architectures</td>
<td>32%</td>
</tr>
<tr>
<td>Managing vendor accountability</td>
<td>31%</td>
</tr>
<tr>
<td>Business centric SLAs</td>
<td>30%</td>
</tr>
</tbody>
</table>

Engaging the full range of business, DevOps, and IT stakeholders throughout the process speeds migrations while protecting the business.

Finance teams may slow approvals if questions linger about business and security.

Planning

Finance teams may slow approvals if questions linger about business and security.

n = 204, Source: IDC Migration to Public Cloud Thought Leadership Survey; September 2021
Communication and collaboration across the organization are required to anticipate the full scope of application performance dependencies.

Top application performance dependencies to consider

Q: When actually migrating existing on-premises VMs to public clouds, what factors related to application performance dependencies are most likely to slow or prevent implementation? (% of respondents)

- Security and compliance audits: 44%
- Compatibility issues with VM format and runtime environments between on-premises and public cloud: 39%
- API and connector dependencies don’t migrate well: 38%
- Data management or recovery requirements: 37%
- Application dependencies on legacy OS, emulators, etc. requires application updates: 36%

Avoid unexpected delays with collaborative planning across the organization:
- IT Ops
- Cloud SREs
- DevOps
- LOB Analysts
- Security
- Compliance

n = 204, Source: IDC Migration to Public Cloud Thought Leadership Survey; September 2021
Maximize time to value by planning ahead for staff training, data integration, security, compliance, and connectivity requirements.

### Top five factors impacting VM migrations timeline

**Q:** What specific factors have the greatest impact on the time it takes to implement existing on-premises VM workload migrations to public clouds? (% of respondents)

<table>
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<th>Factor</th>
<th>% of Respondents</th>
</tr>
</thead>
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<tr>
<td>Completing internal IT and cloud operations staff training and certifications</td>
<td>42%</td>
</tr>
<tr>
<td>Data integration</td>
<td>41%</td>
</tr>
<tr>
<td>Ensuring data privacy and regulatory compliance</td>
<td>38%</td>
</tr>
<tr>
<td>Maintaining stable, reliable connectivity with other in-house applications</td>
<td>38%</td>
</tr>
<tr>
<td>Internal security reviews and signoffs</td>
<td>35%</td>
</tr>
</tbody>
</table>

*Prioritize enabling investments:*

- Training
- Data integration
- Data privacy and security
- Stable connections with other existing workloads

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n = 204, Source: IDC Migration to Public Cloud Thought Leadership Survey, September 2021
Partnering with public cloud service providers helps to ensure success.

Top strategies for overcoming VM migration challenges

Q: How has your organization overcome challenges that slowed or potentially prevented migration?

- Invested in hiring, training, and upskilling internal staff: 43%
- Implemented modular project approach to implement incrementally: 42%
- Took advantage of public cloud provider planning, support, and transition services: 37%
- Built deep strategic partnership with public cloud provider to influence roadmaps and bug fixes: 36%

n = 204, Source: IDC Migration to Public Cloud Thought Leadership Survey, September 2021
### Key questions to ask your public cloud providers:

#### Top public cloud dependencies to consider

<table>
<thead>
<tr>
<th>Q: When actually migrating existing on-premises VMs to public clouds, what factors related to your public cloud provider’s capabilities are most important to assess? (% of respondents)</th>
<th>51%</th>
<th>43%</th>
<th>39%</th>
<th>37%</th>
<th>37%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roadmap and timelines for desired features that are not yet available</td>
<td>Unsupported application dependencies</td>
<td>Determining destination landing zones within public cloud</td>
<td>Application performance stability</td>
<td>Level of technical support provided</td>
<td></td>
</tr>
</tbody>
</table>

n = 204, Source: IDC Migration to Public Cloud Thought Leadership Survey, September 2021
Consistent Operations Delivers Continuous Value

Once migration is completed, day-to-day performance and management consistency across on-premises and public cloud resources are needed to deliver continuous business value.

Benefits of unified management control plane across all VMs in public clouds and in on-premises data centers

Q: Why is it very important or mission critical to have one unified management control plane across all VMs, regardless of whether they run in public clouds or on-premises data centers? (% of respondents)

- Ability to seamlessly integrate workflows across locations: 49%
- VM/Cloud administration efficiency/productivity is better with one set of tools: 43%
- Ability to extend cloud-based configurations, templates, and automation to on-premises resources without needing to rewrite for on-premises deployment: 43%
- Better insight into full-stack dependencies from application to infrastructure: 43%
- Faster end-to-end troubleshooting and problem remediation: 42%
- More consistent integrations with CI/CD pipelines and automations: 42%
- Ability to automate security policies and configurations consistently: 41%

Importance of unified management control plane across on-premises and cloud-based VMs

Q: In terms of your overall migration strategy, how important is the availability of one unified management control plane across all VMs, regardless of whether they run in public clouds or on-premises data centers? (% of respondents)

- Very important: 52%
- Mission critical: 33%
- Less important: 14%

n = 204, Source: IDC Migration to Public Cloud Thought Leadership Survey, September 2021
Business outcomes and KPIs will be used to judge long-term success.

Most important things organizations can do to ensure the long-term success of their VM workload migration strategy

Q: What are the three most important things organizations such as yours can do to ensure the long-term success of your VM workload migration strategy?

(% of respondents)

- Fully consider the operational and business agility benefits beyond direct hardware replacement costs: 45%
- Implement most current versions of VM and management control software before migration: 45%
- Build deep strategic partnership with public cloud provider: 44%
- Maximize use of automation and AIOps/observability: 43%
- Invest in new staffing and skills early in the process: 39%

Consideration of corporate sustainability goals is becoming significant in building the business case

Q: To what extent do corporate sustainability goals impact your organization’s decisions about VM workload migration?

(% of respondents)

- High impact: 36%
- Low/limited impact: 33%
- Moderate impact: 31%

n = 204, Source: IDC Migration to Public Cloud Thought Leadership Survey, September 2021
About Google Cloud VMware Engine

Google Cloud VMware Engine is the fast, easy path to a multi-cloud infrastructure. The solution empowers customers to provision VMware software-defined datacenter workloads and applications in Google Cloud within minutes. With the service, customers can quickly accelerate their cloud migration without changes to their applications, lowering their risk and at lower cost. Customers can also run production applications across VMware-based private, public, and hybrid cloud environments, with streamlined access to Google Cloud Platform services to modernize applications. Google Cloud VMware Engine is a Google-native solution sold by Google and its authorized partners.

To learn more about the Google Cloud VMware Engine visit:

https://cloud.google.com/vmware-engine
Mary Johnston Turner is Research Vice President, Future of Digital Infrastructure, part of IDC’s Future Enterprise research team. She analyzes how Enterprise IT and business strategies are taking advantage of ubiquitous, autonomous cloud infrastructure solutions deployed across dedicated data center and shared public service environments.

Her practice emphasizes the voice of the Enterprise customer, based on surveys and in-depth analysis of best practices related to how Enterprises are changing the ways they source, secure, and optimize digital infrastructure solutions. Her research emphasizes consideration of how pay-as-you-go collaborative consumption-based subscriptions, cross-cloud control planes, and enterprise infrastructure governance models are enabling Enterprises to better align infrastructure investments with critical business outcomes and innovation priorities.

More about Mary Johnston Turner