How to Design Data Protection for a Software-Defined, Digital Data Center

Beginning an infrastructure modernization project may seem daunting. Forward-looking IT organizations understand technologies and business demands are quickly changing, yet IT budgets and hardware refresh timelines might not be moving as fast.

Is there a manageable balance to creating a software-defined, digital data center model, while working within a timeframe that accommodates budget, staff and timelines?

When we’re talking about the protection, management, recovery and discovery of your data, the answer is an emphatic yes.

Enterprises can move to a more modern IT environment, yet manage data with steps that are strategic, agile, scalable, and secure. Best of all, data management can be modernized without interruption to the day-to-day business that drives revenue.

Explore 4 ways to align data protection into a software-defined, digital data center.

1) Simplify infrastructure with unified data management, whether on-premises, in the cloud or hybrid

2) Support growth initiatives with flexibility for mergers/acquisitions or geographic expansion

3) Improve service to line of business owners who need help with data management

4) Reduce data protection costs while driving innovation

Simplify infrastructure with unified data management, whether on-premises, in the cloud or hybrid

Over the years, how many data management products have crept into the IT infrastructure? Sometimes acquisitions, line of business purchases or regional office decisions bring multiple data management systems into the enterprise.

Take a hard look at the disparate systems supporting on-premises data or cloud data. Multiple systems mean multiple headaches. It’s hard to determine what data is managed in each environment. Reporting is piecemeal and time consuming. Managing policies – whether basic organizational policies or stringent compliance policies – takes staff and time. That staff time – and the varying price points of disparate vendors – may also mean projects go over budget.

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A first step in infrastructure modernization is reviewing fractured systems. Aim for a complete, unified view of data across your on-premise data centers and your public or private cloud storage locations.

Modern data management technologies offer a comprehensive approach to managing data, regardless of location. Combine data protection, management, recovery and discovery into a comprehensive system.

Eliminate point products with varying SLAs and fees, consolidate into a complete offering that provides modern conveniences with consistent policies across data locations. Look for a solution that includes automation and orchestration for simply powerful data management across your organization.

**Support growth initiatives with flexibility for mergers/acquisitions or geographic expansion**

Organizational change constantly drives infrastructure modernization planning. Whether a geographic expansion, a merger or an acquisition, IT needs to plan for growth.

The most strategic asset in many mergers is data. IT teams need flexibility to quickly and consistently apply policies, assign storage, and verify data movement.

Newly acquired companies bring in new applications, including SaaS based applications that need to have complete data backup, archiving, and recovery. Ensure your data management strategy includes application backup – whether the application data is born in the cloud or moved to the cloud.

For a geographic expansion, be sure you can support data governance policies in new regions. Setting up a public cloud data backup plan for a new geography may be part of the strategy. Look for a consistent, secure, and reliable data management offering to safeguard data on the move and data at rest.

**Improve service to line of business owners who need help with data management**

Line of business owners have 2 critical issues – knowing how to manage data and understanding how to find data when a legal discovery scenario arises.

Today line of business buyers can purchase public cloud support with the swipe of a credit card. SaaS apps that run key parts of the business – marketing, product development – create critical company data that must be managed, protected and archived.

Give business owners access to their cloud-based data, while also protecting the data from unauthorized access. Ensure your data protection system includes role-based access control integrated with Microsoft Active Directory so you can simplify sign-on for users while also strengthening security. Only choose a data protection vendor that offers embedded encryption capabilities that can be comprehensively applied or selectively applied by policy.

When financial or legal issues require business units to produce data, it can be a harrowing and time consuming process. Minimize risk and exposure by providing a single, integrated platform for enterprise search and eDiscovery across the full range of devices, apps and file types.

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Look for fine-grained indexing and classification to hold just the data that’s relevant when you’re required to place a legal hold on company information. IT can be the hero to legal and financial teams by providing fast, reliable, and defendable proof of data discovery and retention.

**Reduce data protection costs while driving innovation**

One goal of infrastructure modernization is to be prepared for the next big thing that IT needs to manage. Data volumes are rapidly expanding due to higher volumes of video, mobile, and SaaS data.

Imagine what can be coming soon: marketers are working with virtual reality for advertising. Facilities teams are interested in cost savings from internet of things initiatives. Artificial intelligence drives customer support and customer sales. Each new innovation creates more data for IT to manage.

Consider the most cost-effective ways to consolidate the data center and reduce costs:

- Replace point products with a comprehensive data management solution that can support on-premises, cloud and hybrid data management models.

- Automate and orchestrate processes, including application policies, data archiving rules, and lifecycle management – freeing up staff to focus on more strategic, innovative projects.

- Shift from tape to cloud, making data backup and recovery more accessible, cost-effective and less of a physical impediment in your data center.

- Use flexible cloud resources to burst processes that make sense, such as disaster recovery testing. When a disaster recovery test is scheduled, spin up cloud resources for the testing, then turn them off when the test is complete. Instead of reserving data center space for an actual disaster, plan for a push-button cloud disaster recovery strategy that saves money and provides more flexibility.

**Software-Defined Data Center Models Must Include a Data Management Strategy**

While data backup and recovery has been around for several years, savvy vendors like Commvault have evolved to consistently support the demands organizations make on IT teams.

IT needs to deliver results to the business, while reducing cost and providing the operational visibility –Commvault provides the powerful, comprehensive, yet simple approach to end-to-end data management, protection, and insight.

Any software-defined data center model includes a strategic data management plan. Organizations of all sizes and around the globe choose Commvault. Only Commvault provides a comprehensive, strategic and fully integrated solution that empowers IT for today’s data management and poises IT for an agile, supportive and impactful role in the future.

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Gartner’s 2017 research shows I&O leaders and infrastructure professionals how to modernize, support, optimize and continuously improve predominantly Mode 1 data center projects that encapsulate compute storage and network infrastructure.

**Scope**

Infrastructure modernization focuses on what is needed to support mission-critical and other applications and operations, addressing pressure driven by mobile and exploding data growth.

It includes:

- Building an infrastructure strategy that encompasses all aspects of modernization — including data center facilities, compute, storage and network infrastructure.
- Best practices regarding modernizing, managing and migrating the hardware that occupies the data center, extending infrastructure to encapsulate related management, operations and security.
- Employing best practices in areas such as virtualization with hypervisors and containers, simplification, open source and data management.
- Understanding the impact of external factors such as big data, Internet of Things (IoT), blockchain and mobile on infrastructure modernization.
- Implementing an infrastructure strategy, as needed, that is composable, agile, scalable and responsive to change — while still supporting the core business values of cost optimization and simplification.
- Continuing to industrialize the requisite support of Mode 1 applications and operations and the impact of Mode 2 with the “serverless,” digital data center, cloud deployments, industrialization of IT and edge computing.
- Aligning the advantages, risks and realities toward the vision of the software-defined infrastructure and data center.

Source: Gartner (January 2017)
Analysis

Infrastructure modernization is focused on the challenges faced by organizations in the areas of server, storage, network, facilities, virtualization and consolidation. Implicit in Figure 1 is the role that networking plays to connect all aspects of this — within Mode 1, as well as between Mode 1 and Mode 2 across IoT and edge-computing deployments.

Mobile and the proliferation of data are having a dramatic impact and putting pressure on the supporting IT infrastructure. Becoming a digital business cannot happen merely by extending what IT has historically done, and many I&O organizations cannot continue to scale by doing business as usual. This evolution requires two modes of IT, one based on core transactions and systems of record (Mode 1), and the other on fast and agile high-frequency systems of innovation and engagement (Mode 2). Both modes are not merely important — they are critical, and the subtle shading in Figure 1 is meant to convey that there is not necessarily a simple “black and white” distinction. This initiative focuses on support of Mode 1 while acknowledging the need for organizations to also implement an agile Mode 2 approach.

Top Challenges and How Gartner Can Help

I&O leaders and their organizations face relentless pressure to improve service, support growth initiatives and simplify infrastructure, all while reducing costs. To overcome these challenges, leaders must compose, structure and motivate an I&O organization to operate with a view toward end-to-end results and impacts.

What are the best approaches to modernizing an organization’s infrastructure and data center capacity?

I&O leaders should view digital data centers as bigger than the physical data center they have within the four walls of their enterprise — an overall software-defined, digital data center model. It is about implementing a strategy that is composable, ultra-agile, scalable and responsive to change — the core requirements to support the new wave of digital business. Once true bimodal dexterity is established, then and only then can you determine the right technologies and products to implement, such as the use of containers and/or hypervisors.

A prudent data center strategy incorporates the best of both worlds, for the right reasons, at the right time. A key recommendation is to segment workload types to determine what services can be delivered by which platform, given the constraints of functionality, service levels, security, audit and compliance.

Planned Research

- Hype Cycle for Infrastructure Strategies
- Hype Cycle for Compute Platforms
- How IBM’s Next-Generation Mainframe Will Impact Customers
- Market Snapshot for Server Virtualization
- Modern Architecture Approach for Your Storage Infrastructure Modernization and Simplification
- Top Emerging Trends That Will Impact Your Data Center
- Modernizing Legacy Mode 1 ERP Infrastructure

What are the biggest challenges that I&O executives face in continuing to support and enhance Mode 1 applications and operations?

The business world is being rocked by the digital transformation underway, and this is having a profound impact on the parts of an organization required to support the business — most notably IT and the I&O organization. I&O must play a critical role if its organizations are to be competitive in their markets. The pace of change is relentless and accelerating, as factors such as mobile, cloud, big data, real-time analytics and the IoT are affecting business profoundly. While not all organizations may feel immediate pressure for Mode 2 operations, almost every organization is tasked with supporting Mode 1.

I&O infrastructure is tasked with delivering rock-solid quality services for today’s systems of record — those business applications that are the lifeblood of today’s business results. At the same time, I&O must be prepared to quickly support systems of innovation and insight — those modernized and emerging business applications that could very well be the foundation of the business for years to come.
Successful organizations are those that can continuously improve support of those applications — and do so within a constrained budgetary environment, such as DevOps. Gartner research highlights emerging technologies and best practices that enable organizations to modernize infrastructure while optimizing cost and mitigating risk.

 Planned Research

- Strategies to Reduce Your Data Center Energy Consumption
- What Are the Key Data Center Trends in the Next Five Years
- Magic Quadrant for X86 Virtualized Infrastructure
- Market Guide for Containers
- Market Clock for Bimodal Compute Platforms
- Market Clock for Bimodal Infrastructure

Which vendors will remain or become my strategic infrastructure partners over the next five years?

Our research examines the competitive landscape of the complex compute, storage and network marketplaces and how emerging vendor alternatives can impact buying, organizational and management behaviors (Nutanix, Simplivity, Pivot3). We explore the contrast between different established vendor strategies — how some vendors are going private, at least partly, to avoid the scrutiny of the financial markets; how some vendors are pursuing acquisitions to increase critical mass and achieve operational savings; and how some vendors are breaking themselves up to create greater agility and divest themselves of businesses that are marginally profitable and/or out of line with corporate direction (Dell EMC, HPE, IBM). We also will offer research discussing the challenges to traditional vendors’ business models posed by original design manufacturers (ODMs) Foxconn Technology Group, Supermicro, Inspur and how ODMs’ activities can influence end-user buying decisions.

What opportunities exist and what areas should I prioritize for cost reduction and optimization in my Mode 1 operations?

Enterprises face many choices when evaluating server, storage and network contracts, and this will become more complicated as the lines between classes of products start to blur. Vendor mergers, acquisitions and partnerships also can wreak havoc on procurement strategies.

However, it is not only about acquisition costs. Best practices in operational processes and management tools (topics such as what are the most cost-effective ways to consolidate data centers) also will be addressed, along with decisions about how many vendors to work with for a given environment and how best to utilize personnel. Understanding the impact of the changes in vendor lineups and the inevitable changes going forward is important to the effort to manage costs.
### Table 1. Related Priorities

<table>
<thead>
<tr>
<th>Priority</th>
<th>Focus</th>
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<tbody>
<tr>
<td>Planning, Sourcing and Managing Communications Services</td>
<td>This initiative covers planning, sourcing and managing IP-based wireline and wireless voice, video and data services supporting endpoints connecting to digital business and IoT initiatives.</td>
</tr>
<tr>
<td>Infrastructure Agility</td>
<td>The infrastructure agility initiative focuses on Mode 2 of bimodal — which tends to be exploratory, but potentially transformative — as the foundational IT platform for digital businesses.</td>
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<tr>
<td>Optimize IT Operations and DevOps to Drive Business Value</td>
<td>Optimizing IT operations and DevOps to drive business value focuses on managing the infrastructure and operational processes needed to deliver IT capabilities that enable business outcomes.</td>
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<tr>
<td>Infrastructure Delivery Strategies</td>
<td>Infrastructure delivery details the planning, sourcing and delivery of solutions and services, both on-premises, as well as externally supplied, including colocation, hosting and the cloud.</td>
</tr>
</tbody>
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Source: Gartner

### Planned Research

- New Opportunities to Simplify IT
- How to Quickly (but Roughly) Estimate Savings From Data Center Consolidation
- Toolkit: RFP for Enterprise Backup Software and Integrated Appliances

### Representative Analysts

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Source: Gartner Research, G00323134, Philip Dawson, Arun Chandrasekaran, Bob Gill, 11 January 2017
About Commvault

Commvault is a leading provider of data protection and information management solutions, helping companies worldwide activate and drive more value and business insight out of their data. With solutions and services delivered directly and through a worldwide network of partners and service providers, Commvault solutions comprise one of the industry’s leading portfolios in data protection and recovery, cloud, virtualization, archive, file sync and share.

Commvault has earned accolades from customers and third party influencers for its technology vision, innovation, and execution as an independent and trusted expert.

Without the distraction of a hardware business or other business agenda, the Commvault sole focus on data management has led to adoption by companies of all sizes, in all industries, and for solutions deployed on-premises, across mobile platforms, to and from the cloud, and provided as-a-service.

Commvault employs more than 2,700 highly skilled individuals across markets worldwide, is publicly traded on NASDAQ (CVLT), and is headquartered in Tinton Falls, New Jersey in the United States. To learn more about Commvault – and how it can help make your data work for you – visit www.commvault.com.