CONVERGED DATA CENTER
SOLUTIONS AND SERVICES

Transform Your Data Center into a Strategic Asset
Your data center is tasked with doing more—more efficiently—than ever before. An exponential increase in data—and the need to accurately extract valuable information from that data in real time—has taxed storage infrastructure to its limit. No organization is immune to the demands of next-generation tools and applications with high performance appetites. Faced with all of these pressures, your data center must integrate new storage technologies and processes—or risk putting your organization at a disadvantage.

Connection’s Converged Data Center Practice offers solutions and services to help you create a more efficient, agile organization. Drawing on more than 35 years of experience as an industry leader, we can recommend strategies to streamline processes throughout the storage and backup environment, ensure greater reliability, and optimize the value of your data center.
Our team of experts offers assessments, analysis, and technology planning and integration to help transform your data center into a strategic asset. We can help you take an informed look at your storage challenges and identify an intelligent, manageable, yet cost effective approach. We’re able to recommend greater efficiencies throughout the storage and backup environment using assessment-focused services that uncover savings and streamline processes.

Turn to our Converged Data Center specialists for expertise to help you solve your toughest challenges, including:

- **Runaway Data Growth**—Data growth is a major concern for many IT organizations, and how that data is protected is extremely important. Innovations in backup technologies are driving changes in how backups are being managed, and we can help you evolve with technology and get the most out of your infrastructure.

- **New Demands on Efficiency and Scalability**—With tighter security regulations, records retention, and the need for better storage management, you are tasked with figuring out how to get a handle on your storage so it doesn’t become an overwhelming burden. Our assessments and services provide easy-to-understand information about your data growth and usage. We can help you make changes and improvements that reduce costs, shorten backup and recovery times, and accelerate performance and operational efficiency.

- **Growing Management Complexity**—Managing your organization’s data is an ever-present challenge—one that takes valuable time and resources away from projects that can drive innovation. As the amount of data your users create continues to grow, so does the need for a storage environment that operates at maximum efficiency. Our experts can help you reduce complexity, optimize your initial investment, and get the most out of your existing storage approach.
Areas of Expertise

Connection has qualified experts and implementation experience for a breadth of data center solutions across diverse industries and customers of all sizes. Our Converged Data Center services make it easy to adopt and implement the industry’s highest performing infrastructure technologies to keep your organization’s data center running efficiently and effectively.

Read on to discover more about each of our Converged Data Center Practice offerings, including:

- Converged Infrastructure ➔ p. 5
- Private and Hybrid Cloud ➔ p. 8
- Data Protection and Business Continuity ➔ p. 10
- Enterprise Disk Arrays and Storage Networking ➔ p. 12
- Desktop Virtualization ➔ p. 14
Traditional data center infrastructure is not keeping pace with the demands of modern organizations—especially when it comes to information. The legacy models of data centers are modular in approach, built around silos of technology, such as servers, storage, and networking. Today these silos are becoming converged, bringing together components in a tightly integrated fashion and delivering a new model for a modern data center strategy.

This wave of innovation rivals the transition from mainframe to x86 architecture. A converged approach enables organizations to harness the power of information technology in a way never before possible. This transformation is the answer to many of the pressures and limitations faced by IT professionals today.

10-Second Takeaway: The Benefits
Converged infrastructure solutions bring technologies together into a packaged set of offerings that is much easier to:

- Deploy
- Integrate
- Manage

Convergence in the data center enables organizations to be simultaneously more flexible, more efficient, and get higher performance, while better applying management strategies. Additionally, hyper-convergence takes the concept even further, enabling the massive scalability of convergence to now be consumed by an organization of a smaller size.

Potential Implementation Challenges

- High complexity of data center technologies
- Difficult to navigate the wide array of options
- Need to leverage existing IT investments wherever possible
Converged Infrastructure

Why Partner with Connection?

Organizations need a trusted advisor to help them design the right solution. That’s where our Converged Data Center Practice can step in. The depth of our expertise within the practice is one of the best values that we can bring to an engagement. If you are trying to identify which type of converged data center solution will be the best fit for your needs, we have the skills and experience to help. We will look at your existing environment and make a great set of informed recommendations to transform your data center.

Gain In-Depth Experience—Our experts have seen countless types of environments, and that experience is a tremendous benefit. The average tenure of our system engineers in the Converged Data Center Practice is more than ten years—and our practice has a number of engineers that have been in the industry for 35 years. This depth of experience is a key differentiator, and it offers our clients an advantage.

Maximize Your Investment—We understand converged infrastructure, as well as the underlying components, so we can provide recommendations that make the best use of your existing investments. We will enhance or augment your current technology with a contemporary approach based on converged infrastructure, hyper-converged, private cloud, and software-defined methodologies that delivers maximum performance and value.

Our Customer-Centric Process

Our consulting methodology was designed in-house, drawing on more than 35 years of experience working with organizations of all sizes and across a wide variety of industries. The first step in any successful project is to define goals and business requirements from an IT perspective. We conduct this discovery process in a workshop format. Business consultants and system engineers work together to document business goals, identify challenges with existing IT infrastructure, and plot a course for data center transformation based on those criteria.
We perform a Cloud Readiness Assessment. This service helps us determine which applications and workloads are best suited for public, private, or hybrid cloud approaches. This assessment deeply investigates the existing environment, examining applications and workloads—and their dependencies.

Our experts conduct further workshops with stakeholders to produce a deliverable document that articulates all of the findings of the process, and the proposed solution architecture. Next, we help implement those solutions, supporting the implementation with hardware, software, professional services, and project management.

Our Expertise and Certifications
The engineers in our Converged Data Center Practice hold the highest level of certification possible across the latest solutions from our strategic vendors, including Hewlett Packard Enterprise, EMC, Microsoft, Cisco, Nutanix, SimpliVity, VMware, and many more.

Our Master Accredited System Engineers are experts in HPE Converged System, HPE Cloud System, and the new HPE hyper-converged offerings. We’re also deeply certified with Cisco Unified Computing System (UCS) technologies and have several top-level certified EMC engineers on staff.

Because we are vendor-agnostic, we offer solutions from a wide range of partners, including emerging vendors. We have several certified engineers with the leading hyper-converged platforms, Nutanix and SimpliVity. Highlighting our pursuit of the latest, most innovative technologies, we were one of the very first SimpliVity deployment partners in the industry.

However, our expertise goes beyond certification. Our experts have real-world experience building, designing, and implementing solutions for customer environments of all sizes and segments—from the public sector and small business environments to Fortune 100 organizations.

Certifications

- Cisco Data Center Storage Networking Design Specialist
- Cisco Unified Computing Technology Support Specialist
- Cisco Data Center Unified Fabric Design Specialist
- Cisco Data Center Design Specialist
- Cisco Certified Network Professional Data Center
- HP AIS, Server Automation
- HP APP, HP Enterprise Solutions
- HP ASE, Server Solutions Architect
- HP ATP, BladeSystem Solutions Integrator
- HP Master ASE, HP ProLiant High Availability and Clustering Solutions
It’s a simple fact that today’s IT departments are tasked to do more for less—whether that means reduce costs through innovative technologies or getting more value from existing infrastructure. When budgetary constraints are combined with the need to support mainstream software applications and provide new options for users to consume services, many organizations are hungry for strategies that will enable them to be more flexible, scalable, and efficient.

Cloud technologies offer that performance, and organizations of every size want to utilize the power of the public cloud for its resiliency and always-on service level. However, organizations also need to enhance their on-premises data centers for privacy, security, and self-service provisioning. They need to effectively deliver end-user services in a traditional data center environment, public cloud, or a combination of both.

10-Second Takeaway: The Benefits

Private, public, and hybrid clouds enable organizations to increase agility, efficiency, and to make their infrastructure more effective.

- **Private cloud**: offers greater manageability, self-service provisioning, and scalability that is ideal for organizations with strict regulatory or privacy requirements
- **Public cloud**: delivers excellent scalability, affordability, and resiliency

- **Hybrid cloud**: enables organizations to aggregate resources while continuing to be confident in their security boundaries

Potential Implementation Challenges

- Cloud environments are inherently challenging to build
- Wide array of choices when selecting private or hybrid cloud technologies
- Difficult to take advantage of existing infrastructure
Why Partner with Connection?

Connection believes that the hybrid cloud is the future of IT. The ability to bridge private cloud infrastructure with the always-on availability and dynamic scalability of the public cloud is too promising to ignore. However, organizations need a trusted advisor to help them design the right solution. That's where our Converged Data Center Practice can step in. We've structured our investments, partnerships, and expertise to deliver best-in-class cloud solutions.

We can help you discern, design, and deliver the best private and hybrid computing solutions for your organization. There are no one-size-fits-all versions of any cloud technology. That's why we view private and hybrid computing technologies as raw materials you can use to achieve desired outcomes.

Our Expertise and Certifications

Connection combines unbiased expertise and best-of-breed partners. As a technology company with more than 30 years of experience, we leverage our deep partnerships with industry veterans and born-in-the-cloud newcomers to deliver the right solution.

Our private and hybrid solutions are best-in-class. Our understanding of available technologies is very deep. While we remain agnostic, we are extremely knowledgeable across many leading industry technologies. Our partnerships include industry experts like Cisco, Dell, EMC, Hewlett Packard Enterprise, HOSTING, NaviSite, and VMware.

Certifications

- EMC Cloud Architect Virtualized Infrastructure Specialist
- EMC Cloud Infrastructure and Services Associate
- Microsoft Certified Technology Specialist: Windows Server 2008 R2, Server Virtualization
- Nutanix Platform Professional
- SimpliVity Implementation Certified Professional
- VMware Certified Advanced Professional—Data Center Design
- VMware Certified Professional—Data Center Virtualization
We live in the digital age, where reliable access to information drives decision making, fuels collaboration, and speeds innovation. Your organization runs on data. To continue operating in the event of a disaster, you need to protect your information systems. However, planning for business continuity and disaster recovery (BC/DR) can be a real challenge. Although hardware has become more resilient and virtualization has increased service and application portability, most organizations’ BC/DR plans still adequately fail to deliver the level of protection required.

10-Second Takeaway
• Sophisticated approaches to business continuity and disaster recovery combine data protection and disaster recovery into a single process.
• Disaster recovery is not just an array and a piece of software. It is a process, a methodology, and a system of governance.
• Sound approaches to BC/DR utilize technology coupled with process, ongoing testing, and adjustments to respond to changes over time.

Potential Implementation Challenges
• Without expert guidance and regular procedure testing, BC/DR plans might not deliver the performance required or expected.
• Without proper planning, BC/DR projects can spiral out of control in scope and cost.
• Failure to adequately protect your organization can have lasting consequences.

Why Partner with Connection?
Wherever your organization is in the BC/DR lifecycle, from initial policy to periodic testing, we can help you devise and implement a tested and validated plan. Our on-staff experts have built BC/DR solutions for organizations of all sizes and offer on-premises or cloud-based options—inclusive of backup, disaster recovery, replication, and failover.

Connection has decades of experience to address your BC/DR concerns. We have expert consultants on staff that design, test, and validate BC/DR plans—giving you the confidence and peace of mind that your organization is protected. We use specific information about your environment, goals, and budget to determine the best solution for your organization. We then craft the most appropriate BC/DR solution, based on your unique needs.

Our Customer-Centric Process
Connection’s unique, five-step approach to BC/DR planning will help you gain key insights into your environment and current preparedness level and devise and implement a customized strategy.
Data Protection and Business Continuity

5 Steps to Business Continuity and Disaster Recovery Preparedness

1. **Business Impact Assessment**—The first stage starts with a business impact analysis to clarify risk from a business operations perspective and identify the losses to productivity and operations should those risks occur.

2. **BC/DR Policy Assessment and Creation**—The next step is to translate business requirements into actual IT requirements. For example, if application (A) must be up within four hours, then the IT department knows that application (A) must be protected to a specific level.

3. **Disaster Recovery Solution Design**—We translate the policy into a solution architecture based on key business requirements. The service levels required can be converted to actual physical, virtual, and logical infrastructure design.

4. **Disaster Recovery System Integration**—We implement the solution design as planned, to your exact specifications and schedule. At this point, we begin to implement the design.

5. **Disaster Recovery Testing**—Once the design is implemented, many organizations erroneously believe they have a complete disaster recovery plan in place. However, the lifecycle is not complete until the plan is tested. A successful BC/DR plan requires a dedication to ongoing testing and processes in place that allow you to adapt to changes over time. Connection helps customers through the entire BC/DR journey, from assessment and design to testing.

Our Expertise

Connection’s data protection and business continuity solutions are best in class. Our understanding of technologies is very deep. While we remain agnostic, we are extremely knowledgeable across many leading industry technologies. Our partnerships include industry experts like Dell, EMC, Hewlett Packard Enterprise, Symantec, and Veeam. We have seen countless customer environments and selectively employ the most appropriate solution for your needs. We pride ourselves on recommending the very best solution, independent of brand.
The need for efficient, reliable, and cost-effective storage solutions has never been greater. Today's IT departments face competing demands to increase storage capacity, boost performance, and reduce costs per gigabyte.

Additionally, runaway data growth is the new reality. Managing your organization's data is an ever-present challenge. As the amount of data users create continues to grow, so does the need for a storage environment that operates at maximum efficiency. With tighter security regulations, records retention, and the need for better storage management, organizations need to get a handle on their storage.

A modern storage infrastructure is no longer a luxury. It's no longer just a competitive advantage. It's a necessity. Today's storage technologies—including flash, traditional spinning disk, and hybrid disk arrays—offer the performance you need to capture data, analyze it, process it, extract the valuable knowledge from it, and then make business decisions and be able to deliver back to your organization in real-time.

10-Second Takeaway: The Benefits

In a modern hybrid-flash disk array, a small number of extremely high-performance disks are paired with cost-effective, extremely high-capacity disks and special software. The end result is a storage solution that delivers high performance and high capacity at a lower cost per I/O and per gigabyte stored than traditional arrays.

Potential Implementation Challenges

- Pressure to leverage existing investments in traditional disk arrays
- Difficulty identifying the right workloads or applications to optimize performance with flash
- Moving to flash requires a shift in IT mindset and skill set

Why Partner with Connection?

Connection can help you design, build, and implement a storage solution that fits your exact needs. Our engineers are certified and skilled at developing storage solutions that build efficiencies into your IT environment. They have expertise and experience in developing storage consolidation solutions, virtualization solutions, tiered storage solutions, disaster recovery solutions, and more.

Our experts can assess your environment to identify the actual root cause of your storage concerns. For example, we can discover the bottleneck in your workload, and then apply flash where it’s appropriate. This type of approach will yield benefits that offer an order of magnitude increase in performance. There may be other situations where we recommend another approach to
address your storage needs. Our objective as a trusted advisor is to identify the best solution for each unique environment and desired strategic outcome.

Our Customer-Centric Process

Utilizing an industry-leading consulting methodology that Connection designed in-house, our team of experts will help you define your storage goals and business requirements from an IT perspective. We conduct this discovery process in a workshop format, where business consultants and system engineers work together to identify business goals and current IT infrastructure challenges. Then we can plot a course for storage modernization based on those criteria and the unique needs of your environment.

Following the discovery process, we conduct a Data Storage Assessment that provides easy-to-understand information about data growth and usage. We deeply investigate your environment, compare it to best practices, and offer a strategic plan to optimize performance and remediate any issues.

We also offer a three-level Storage Modernization and Refresh Toolset (S.M.A.R.T.) designed to identify and evaluate the benefits your unique environment will achieve through storage modernization.

Our Expertise and Certifications

Connection’s Converged Data Center Practice offers in-depth expertise in enterprise disk array and storage networking technologies. While we remain agnostic, we are extremely knowledgeable across the many leading technologies. Our partnerships include industry experts like Brocade, Cisco, Dell, EMC, and Hewlett Packard Enterprise.

Certifications

- Dell Compellent Storage Center Advanced Administrator
- Dell Compellent Certified Installation Professional
- EMC Implementation Engineer, Backup, and Recovery Avamar Specialist
- EMC Implementation Engineer, Data Domain Specialist
- EMC Implementation Engineer, Isilon Solutions Specialist
- EMC Implementation Engineer, RecoverPoint Specialist
- EMC Implementation Engineer, VNX Solutions Expert
- EMC Technology Architect, Backup and Recovery Solutions Specialist
- EMC XtremIO Flash Storage Solutions Certification
- HP 3PAR Family ServiceOne Solution Qualification
- HP Master ASE Storage Solutions Architect
- HP StoreVirtual Service and Solution Qualification
- Symantec Technical Specialist Backup Exec
- Symantec Technical Specialist Enterprise
- Symantec Technical Specialist NetBackup
- Veeam Certified Engineer

Enterprise Disk Arrays and Storage Networking
More than ever, IT departments want to realize the benefits of desktop virtualization: cost savings, ease of management, improved security, and platform independence. IT has been delivering desktops to end users through various technologies for more than 20 years—but today’s desktop virtualization is very different. It brings new features, functionality, and performance to the end-user experience. In reality, the VDI story has changed to the end-user computing (EUC) story. VDI is still a powerful tool for users with network connectivity, but EUC now addresses other aspects—from a disconnected user to a modern application delivery system that gives us single sign-on access to applications, content, and desktops through devices with HTML5 browsers.

### 10-Second Takeaway: The Benefits

- Streamline desktop management with real-time application delivery.
- Deliver real-time user profiles to virtual desktops.
- Enhance graphics by sharing a server’s graphics card with multiple virtual desktops.
- Access your virtual desktop from any modern browser, making it possible to check in to work from anywhere.

### Potential Implementation Challenges

- Difficult to get started
- Hard to identify where VDI will be the best fit for your organization
- Requires specific hardware and can be time and resource intensive
Why Partner with Connection?

Without a proper assessment to determine where and how VDI will fit into your environment, it can be difficult to realize the complete benefits of desktop virtualization. The right IT partner can help ensure your implementation delivers the benefits you want, including more granular control for the IT department, better performance for the end user, and greater flexibility in the way users access their workspaces and applications.

Connection’s Virtual Desktop Assessment and, more importantly, our Proof of Concept methodology provide the confidence you need to make an informed VDI investment. We can help you evaluate desktop virtualization technology so you know what’s right for your needs, and help you test it so you know it’s going to work in your environment. Our experts provide exceptional support and guidance, so that when you deploy your VDI to the user community, they’re going to have a great experience and the new end-user computing environment is going to be widely accepted.

Our Customer-Centric Process

Our Virtual Desktop Infrastructure Assessment provides a clear overview of an environment’s server, storage, and network requirements, and identifies ideal desktop candidates to virtualize. This provides a sound starting point and helps organizations make fact-based implementation decisions with data derived from their own applications and deployed assets.

In order to gather a complete picture of machines, users, and applications, we use a data gathering and measurement tool to collect information about the environment. This data includes an inventory of machines and applications, network latency, graphics intensity, disk I/O, CPU average use, login delay, and much more.

Our VDI assessment methodology is designed to take the collected data and turn it into meaningful information. Each desktop is analyzed for how well it fits into a virtualized environment. Following best practices, we identify any desktops and users that are not good candidates for the first wave of
VDI and start with the best fit desktops/users. We provide remediation for any desktops/users that are less than ideal candidates and evaluate their readiness for the next round of virtualization.

Next, we can perform a Proof of Concept (PoC). Our PoC helps customers circumvent the common challenges of finding and acquiring the appropriate hardware to test VDI in their environment. Connection has developed a PoC Appliance (PoCA) that ships pre-staged with a complete VDI environment. The PoCA allows you to immediately begin testing applications in your own environment. An installed analytics tool captures and quantifies effects to the infrastructure as applications and features are enabled and tested—a critical data point in successful data-driven decisions about VDI in your organization.

Our VMware Certified Professional engineers will assist and train your team through startup of the appliance, provide support during the 45-day PoC, and will help with the appliance shutdown. Once the PoC is up and running, our experts will:

- Teach you how to install applications into the master image
- Show you how to provision desktop pools for testing
- Demonstrate the Acceptance Criteria that you have determined is important in your environment

Understanding what is happening in the infrastructure while the PoC is running is critical to being able to make a data-driven decision on whether VDI is a good fit for your infrastructure. Our reports provide an accurate and methodical way to measure the effects of applications and features on the underlying infrastructure. We are able to monitor performance data, such as memory, CPU, disk I/O, and graphics intensity. This data allows for quantitative validation of results and assessment of the environment before and after a specified time period—providing comparisons of consumption by application and user groups.

**Our Expertise and Certifications**

Connection’s Converged Data Center Practice offers a wealth of resources and expertise. Our technologists understand the full suite of modern data center technologies, and they know that VDI is more than just a software implementation. Serving as an extension of your team, our experts can help you extract the full value from your IT investments and deliver a new kind of competitive advantage and success never before possible with legacy IT models.

**Certifications**

- Citrix Certified Administrator, XenApp
- Citrix Certified Administrator, XenDesktop
- Citrix Certified Administrator, XenServer Enterprise
- VMware Certified Associate - Desktop (VCA-DT)
- VMware Certified Associate - Workforce Mobility (VCA-WM)
- VMware Certified Professional
- VTSP - DaaS (Desktop as a Service)
About Connection

As a leading National Technology Solutions Provider, we've been trusted for more than 35 years to connect people with technology that enhances growth, elevates productivity, and empowers innovation. Connection, a Fortune 1000 company, is a go-to provider for more than 300,000 products and services from 1,600 manufacturers. Our experts lead with solution selling for small- to medium-sized businesses, enterprises, and the public sector across all verticals, from healthcare and retail to higher education and everything in between.

Connection™
Business Solutions
we solve IT™

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1.800.800.0019 Public Sector Solutions

Complete technology solutions and services for every need.

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