Pre-Configured Converged Infrastructure Solutions Drive Agility

An IDC InfoBrief, Sponsored by Tech Data and NetApp | July 2017

IDC
Analyze the Future

IT Speed/Agility is the Top Performance Indicator

In 2015, IDC surveyed over 500 organizations to identify their top IT performance indicators. Improved speed and agility topped the list, closely followed by reducing capital costs and improving the ROI/TCO of IT solutions.

Converged infrastructure — pre-integrated hardware that combines compute, storage, and networking capabilities — is one way organizations are achieving these objectives. The promise here is to provide a holistic view of infrastructure, improving utilization, reducing management costs, and increasing business agility via faster provisioning and time to market metrics.

This concept has proven to be attractive to North American businesses, with **converged systems seeing 11.7% CAGR (five-year compound annual growth rate) versus the 1.3% overall growth rate** for traditional IT infrastructure.

The ongoing digital transformation of organizations is leading to a shift in how and where we deploy our workloads.

Any converged infrastructure solution needs to be cloud-aware; that is, capable of augmenting the hybrid cloud environments that are so critical to both traditional workloads as well as 3rd Platform pillars such as Big Data and analytics, social business, and mobility.

This IDC InfoBrief explores the benefits of converged infrastructure, and how Tech Data is accelerating organizations' agility by delivering FlexPod Modular Integration (FMI).

Top IT performance indicators

What is Converged?

IT and business operations are becoming increasingly interconnected. Enterprises are leveraging IT capabilities to differentiate in the market and deliver new products and services to their customers. Given the fast paced and challenging business environment, CIOs and IT executives have identified converged systems as a viable solution to improve datacenter utilization and business agility.

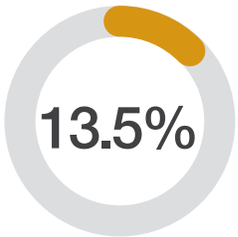
According to a recent IDC survey, on average organizations witness an improvement of 13.5% in their hardware capacity utilization due to their use of a converged IT infrastructure.

Converged systems are vendor-certified systems containing server hardware, disk storage systems, networking equipment, and basic element/systems management software. They can be based on the technology of a single vendor or multiple vendors. But all the four core technologies (servers, storage systems, networking, and management software) are sold at the time of the initial sale.

IDC divides the converged systems market into three segments: certified reference systems, integrated systems, and hyperconverged systems.

Certified reference systems, such as FlexPod, are frameworks and configuration templates. While these systems contain all four technology pillars, they are shipped in many pieces. The partner or customer has to put all the components together, which takes expertise and time, particularly if any of the components are defective.

In contrast, **integrated and hyperconverged systems are pre-built and shipped to clients as a single unit.** The FlexPod Modular Integration (FMI) from Tech Data extends the same convenience to the FlexPod solution. So you get the best of both worlds — the flexibility of a reference architecture along with the convenience of a pre-built and pre-configured solution.



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FlexPod Modular Integration (FMI) Reduces Design Complexity

Tech Data with Cisco and NetApp, launched FlexPod Modular Integration (FMI) in 2017, with the goal of accelerating time to value for FlexPod users. Breaking the mold of a traditional sale and delivery of dozens of boxes from multiple vendors, **FMI delivers a pre-configured, pre-integrated, racked and cabled solution in a single SKU that is ready to deploy upon delivery.**

Tech Data partners help customers determine which of the Frameworks is most appropriate, and the simplified process delivers the finished product ready for installation.

FMI uses Nexus 93180YC switches, Cisco UCS 5108 chassis, and NetApp FAS2650A, AFF A200 or AFF A300 storage arrays. The particular specifications of each of these products varies depending on the anticipated load, resulting in four Baseline Module profiles as shown in the chart on page 5.

By simplifying the design process, Tech Data partners can offer end users single invoices, even single SKUs, of "customer ready" converged deployments with a team of pre- and post-production engineers specifically trained on these products to expedite sale, configuration, delivery, and install. **End-user and partner support is also simplified through FlexPod Cooperative support** — a partnership between NetApp, Cisco, Microsoft, VMware, Citrix, and Red Hat — designed to simplify and streamline support for FlexPod systems.

FlexPod Modular Integration (FMI) Baseline Models

Model	Storage	Fabric Interconnect	Chassis	Blade	Switch
FMI-100	FAS2650A 4 x 960GB SSD + 20 x 900 GB SAS; 8.7 TB Usable; 10/80K base/max IOPS Up to 2 additional expansion shelves DS224C (24 x 900GB, 10K SAS)	Options: 1) 10G - F16324 2) 10G - F16248UP	Options: 1) 5108 (Mini) Min Max = 1 / 1 2) 5108 w/ 2208 FEX Min / Max = 1 / 2	B200M4 - CPU 2660, 256 GB RAM Blade QTY's: 1) 5108; Min/Max = 3/8 2) 5108 w/ 2208; Min / Max = 3/16	Nexus 93180YC-EX-B Includes 2 switches with 8 40G QFMs each NXOS-7.3(3)4
FMI-200	AFF A200 12 x 960GB SSD; 5.9 TB Usable; 48/93K base/max IOPS Up to 2 additional expansion shelves: DS224C-AF (24 x 960GB, SSD)	Options: 1) 10G - F16324 2) 10G - F16248UP	Options: 1) 5108 (Mini) Min Max = 1 / 1 2) 5108 w/ 2208 FEX Min / Max = 1 / 2	B200M4 - CPU 2660, 256 GB RAM Blade QTY's: 1) 5108; Min/Max = 3/8 2) 5108 w/ 2208; Min / Max = 3/16	Nexus 93180YC-EX-B Includes 2 switches with 8 40G QFMs each NXOS-7.3(3)4
FMI-300	AFF A200 24 x 960GB SSD; 17.2 TB Usable; IOPS TBD Up to 2 additional expansion shelves: DS224C-AF (24 x 960GB, SSD)	10G - F16248UP	5108 w/ 2208 FEX Chassis QTY's: Min / Max = 1 / 2	B200M4 - CPU 2660, 256 GB RAM Blade QTY's: 1) If using 5108 w/ 2208, Min/Max = 3/16	Nexus 93180YC-EX-B Includes 2 switches with 8 40G QFMs each NXOS-7.3(3)4
FMI-400	AFF A300 12 x 3.8TB SSD; 27.2 TB Usable; 68/295K base/max IOPS Up to 2 additional expansion shelves: DS224C-AF (24 x 3.8 TB, SSD)	10G - F16248UP	5108 w/ 2208 FEX Chassis QTY's: Min / Max = 1 / 2	B200M4 - CPU 2660, 256 GB RAM Blade QTY's: 1) If using 5108 w/ 2208, Min/Max = 3/16	Nexus 93180YC-EX-B Includes 2 switches with 8 40G QFMs each NXOS-7.3(3)4

FlexPod Modular Integration (FMI) Reduces Deployment Time

By simplifying the order and build process, Tech Data partners offer customers quicker deployment, faster time-to-value, and an overall better customer experience. According to Tech Data, FMI can reduce a standard converged deployment from 60+ days (order to deploy) to only 17 days on average for any of the Frameworks, each with the same pre-sales, service and support.

Reduced deployment times increases IT responsiveness, improves ROI, and increases internal service levels to line of business managers hoping to manage workloads and deploy apps in a hybrid environment.

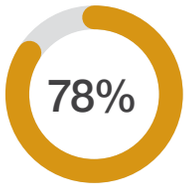
FlexPod Modular Integration (FMI) Empowers Data Mobility in a Hybrid Cloud World

IDC has identified hybrid cloud implementations as the dominant modality for successful enterprises in the recent CloudView 2016 study.

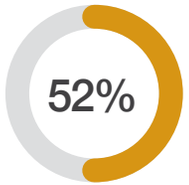
- **58% of all organizations surveyed** are embracing cloud, using public or private cloud for more than one or two small applications or workloads, up from 24% 14 months ago
- **Over 70% of heavy cloud users** are thinking in terms of a "hybrid" cloud strategy.

The FMI solution leverages the power of NetApp's data fabric technology to seamlessly manage data across hybrid modes — from on-premise to cloud deployments, between clouds, and even between cloud providers, allowing businesses the flexibility to choose particular partners, technologies, and applications as appropriate to their needs.

Managing data in a hybrid and multi-cloud environment can be a daunting task for end users, as evidenced by further survey data:



of cloud users surveyed said that it's critical or extremely important to manage data across multiple clouds



of Amazon Web Services users said in a separate survey that they'd already moved some of their AWS assets in-house, or to another cloud provider

of cloud users rate their ability to move data across multiple clouds as good or excellent

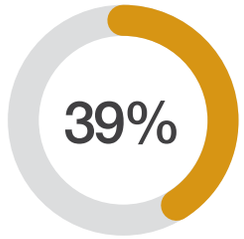
FlexPod Modular Integration (FMI) Empowers Data Mobility in a Hybrid Cloud World (continued)

Critically, data protection can be vastly improved with a cloud-aware fabric. FlexPod Modular Integration (FMI) empowers organizations to utilize innovative ways to protect their production data through backups, snapshots, replicas, archives, and non-production test and dev instances within their own datacenters and across their cloud environments. By understanding the relationships between these data protection workloads, organizations can determine where data footprints can be reduced for greater agility or complexity and cost reduction, or where maximum availability, disaster recovery, or business continuity rules require more robust data protection capabilities.

Converged Systems Reduce Cost, Improve ROI

Given the pre-built and pre-configured nature of the FlexPod Modular Integration (FMI), they can be **deployed quickly using a modular building-block approach to rapidly scale up resources and workloads.** Thus these converged systems provide benefits from both a cost and a strategic perspective.

- Because these systems are pre-built and pre-configured, they can be best optimized to support a particular workload or application, improving resource utilization
- Converged systems typically come with a single management software that allows for holistic management across all the components of the system that reduces ongoing operating expenses, reducing TCO and improving ROI
- Due to the pre-built nature of the solution, they require less cabling and storage space than traditional datacenter designs, also resulting in lower power and cooling expenses
- The modular nature of the solution means that organizations can build a solution that is right-sized for their requirements, avoiding over-provisioning and under-utilization



of IDC survey respondents identified lower operating costs as a significant business benefit being delivered by their converged system solution.

Beyond Cost Savings

Beyond the shorter time-to-value metric and the greater operational efficiency that these systems deliver, they can also offer benefits from a strategic angle.

- Converged systems offer vendor validated designs that reduce the time to deployment of mission critical applications thus improving business agility.
- Given the vendor-optimized nature of the systems, converged solutions offer reduced complexity, and easier lifecycle upgrades.
- The reduced complexity and easier management means that IT staff can be more productive and look beyond "keeping the lights on."
- One aspect of disaster recovery is the ability to quickly and reliably recreate the necessary systems at a second location. A converged system will help you achieve this objective.
- Due to the modular architecture of converged systems, they are better suited to support future expansion through both scale-up and scale-out strategies.
- The pre-configured nature of converged also makes for better workload balancing across all components, reducing I/O system bottlenecks. This helps with performance optimization and helps meet service levels.

25.3% of organizations believe that converged systems enable them to better allocate IT staff to more strategic and innovative projects.

38.4% of organizations said converged solutions provide better business continuity and disaster recovery.

Converged IT infrastructure improved IT staff productivity by 11.4% on average

Challenges and Opportunities

While the adoption of converged systems has moved quickly from evaluation to mainstream use, there are still some concerns that could slow growth in this segment.

- One of the strongest concerns raised by organizations is the higher upfront costs and the lack of clarity around the ROI for converged projects. Vendors can help assuage this concern by helping the clients better understand the total lifecycle cost of the system and help them build a complete ROI analysis of the purchase. Typically, organizations underestimate the staff time required to build and configure systems as well as the opportunity cost of having staff do this instead of focusing on activities that provide more value to the business.
- There is also some concern among clients about a single vendor lock in or a single point of failure, but vendors can help clients get around this concern by highlighting the agility and reliability of converged systems and also the seamless support offered by FlexPod.
- Some customers are also concerned about the lack of maturity of this product segment. But FlexPod is in a great position to alleviate this concern by highlighting its success in this segment. Not only has this segment grown over the past few years, but also **FlexPod has gained market share in North America in the converged segment over each of the last three years.**
- Minimum configuration (scale) may make these solutions unsuitable for smaller customers or branch solutions. Vendors and partners should help customers complete a due diligence of their requirements before going down this route.
- In spite of the multi-vendor solution that FlexPod offers, it is still a pre-built reference architecture, and some customers may prefer to go with a “best of breed”, piecemeal solution. While such a solution may be appropriate in some situations, customers should be keep in mind the higher integration cost and effort that such a solution may entail.

Recommendations

IDC believes that converged infrastructure solutions are an important foundation to support business agility by enabling 3rd Platform technologies such as hybrid cloud. As is often the case, the technology is only part of the solution; personnel and process considerations must be made as well. To be successful in driving business value in the next era, the server, storage, and networking groups cannot continue to operate separately and must be able to work cohesively to improve the IT environment.

What to look for in a partner

- Expertise, including certifications, on the entirety of the integrated offering
- An ability to demonstrate the business value of the converged system, through ROI calculators, proof of execution, and/or customer success stories
- Broad product offerings to allow end users to evaluate different options, product sets, and vendors

What to look for in a solution

- Details on level of integration of components, especially with regards to management capabilities (single-view dashboard, for example)
- Workload capabilities and key metrics for compute capabilities, storage capacity, and storage and network IO
- A product roadmap indicating scalability and future-proofing of the product offering

Assess the Benefits of Pre-Configured Converged Systems

IDC recommends that organizations discuss the value of pre-configured, converged infrastructure solutions such as FlexPod Modular Integration (FMI) with their IT provider.

Key considerations include:

- Significantly faster sourcing than standard converged systems
- Rapid deployment and installation due to pre-integration
- Improved IT responsiveness and productivity
- Reduced operational costs, especially with regards to management and support
- Improved data mobility in hybrid cloud environments
- Streamlined technical support

For more information on FlexPod Modular Integration (FMI) by Tech Data, please visit the Tech Data FlexPod Modular Integration (FMI) Briefcase.

For general inquiries or technical questions, call 1-855-GO-FLEXPOD (1-855-463-5397).