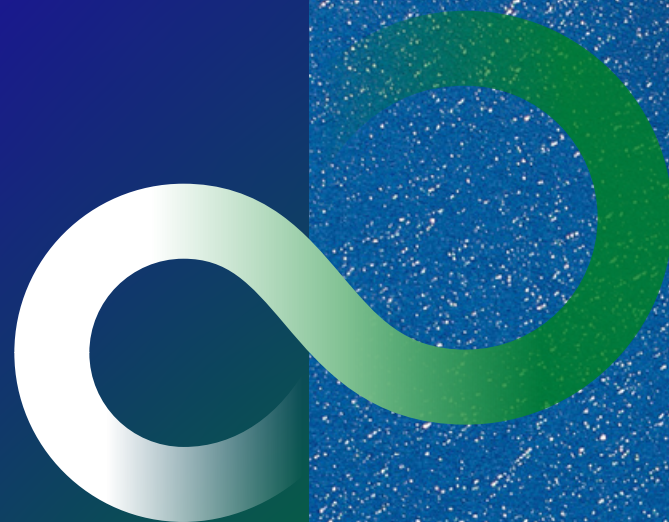# PRIMEFLEX
for Nutanix
Enterprise Cloud

FUJITSU

Start

NUTANIX

PRIMEFLEX for Nutanix Enterprise Cloud

How Nutanix hyper-converged infrastructure simplifies IT across multiple clouds

IT is increasingly being asked to spend less time on infrastructure and allocate more time and budget to application services that add business value. Despite a continuous stream of IT hardware and software enhancements, infrastructure challenges faced by IT teams continue to rise. The IT infrastructure and virtualization software required to meet the needs of business is complex and expensive, and data center management has become painful. Far too much time and effort are focused on just keeping the lights on.

Legacy infrastructure – with separate storage, storage networks, and servers – is not well suited to meet the growing demands of enterprise applications or the fast pace of modern business. The silos created by traditional infrastructure have become a barrier to change and progress, adding complexity to every step from ordering to deployment to management. New business initiatives require buy-in from multiple teams, and IT needs have to be predicted 3-to-5 years in advance. As most IT teams know, this is almost impossible to get right. In addition, vendor lock-in and increasing licensing costs are stretching budgets to the breaking point.

So how do organizations create value from their IT infrastructure? Systems such as PRIMEFLEX for Nutanix Enterprise Cloud offer a way out of this dilemma, with:

- **Cloud-like infrastructure consumption**
- **Predictable performance**
- **Built-in, robust security**
- **Seamless Application Mobility**
- **Proven support for Enterprise Applications**

Inherent complexity

Inefficient silos

Forklift scaling

Painful management

Solved by hyper-converged infrastructure

PRIMEFLEX for Nutanix Enterprise Cloud

Why You Should Care

It is time for a different approach. Enterprise IT teams today are looking for ways to deliver on-premises IT services with the speed and operational efficiency of public cloud services such as Amazon Web Services (AWS), Microsoft Azure and Google Cloud Platform. Taking cues from web giants, hyper-converged infrastructure combines x86-based compute and storage resources with intelligent software to eliminate common pain points associated with legacy infrastructure.

Nutanix delivers a comprehensive enterprise cloud platform that bridges the wide gap between traditional infrastructure and public cloud services and the fast emerging edge cloud. The PRIMEFLEX for Nutanix Enterprise Cloud delivers turnkey infrastructure that integrates servers, storage and virtualization along with end-to-end systems and operations management capabilities. This allows enterprises to deploy infrastructure in minutes, and shift the focus to applications that power the business. While Hyper-converged infrastructure is not an end point in itself, it is the fundamental building block for enterprise cloud.

This eBook gives an overview of the hyper-converged solution offered by the PRIMEFLEX for Nutanix Enterprise Cloud, and walks through how different features and functionality work to provide a fast, highly scalable and efficient data center solution spanning across private, public and edge clouds for enterprises of all sizes.

The IT infrastructure challenges

How do I reduce infrastructure complexity?
Eliminate separate pieces assembled from multiple suppliers and different technologies with Hyper-converged infrastructure. Simplify troubleshooting, support and avoid the waste of valuable time by reducing the numbers of vendors you need to contact.

How do I easily find IT talent?
Hyper-converged infrastructure can be administered by anyone on your IT team. No longer are specialized storage, virtualization or server skills required.

How do I get more out of my IT budgets?
Hyper-converged infrastructure shrinks footprint saving space, cooling, power and the number of devices to managed, licensed and supported.

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What would your organization do if it could...

Simplify on-premises IT to be as easy as public cloud services?

With Hyper-converged Infrastructure be able to start quickly, scale easily and just pay as you grow.

Run your apps without specialized hardware?

Industry standard-based compute/storage nodes run any app at any scale.

Reduce the cost of infrastructure?

One-click upgrades, backups and expansion save OPEX. Pay as you grow saves CAPEX.

Streamline backups and enable disaster recovery?

Backup to other nodes, other clusters or the cloud anywhere, globally.

Increase application availability?

Resilient, self-monitoring, self-healing systems keep apps running.

PRIMEFLEX for Nutanix Enterprise Cloud is a turnkey integrated system that includes all the hardware and software to simplify deployment across a range of choices from private, public and edge cloud infrastructure. It combines high performance, energy efficient Fujitsu PRIMERGY standard x86 servers and the Nutanix Enterprise Cloud platform. This powerful combination delivers enterprise-ready services for compute, storage, networking, virtualization and security along with simple, one-click management capabilities.
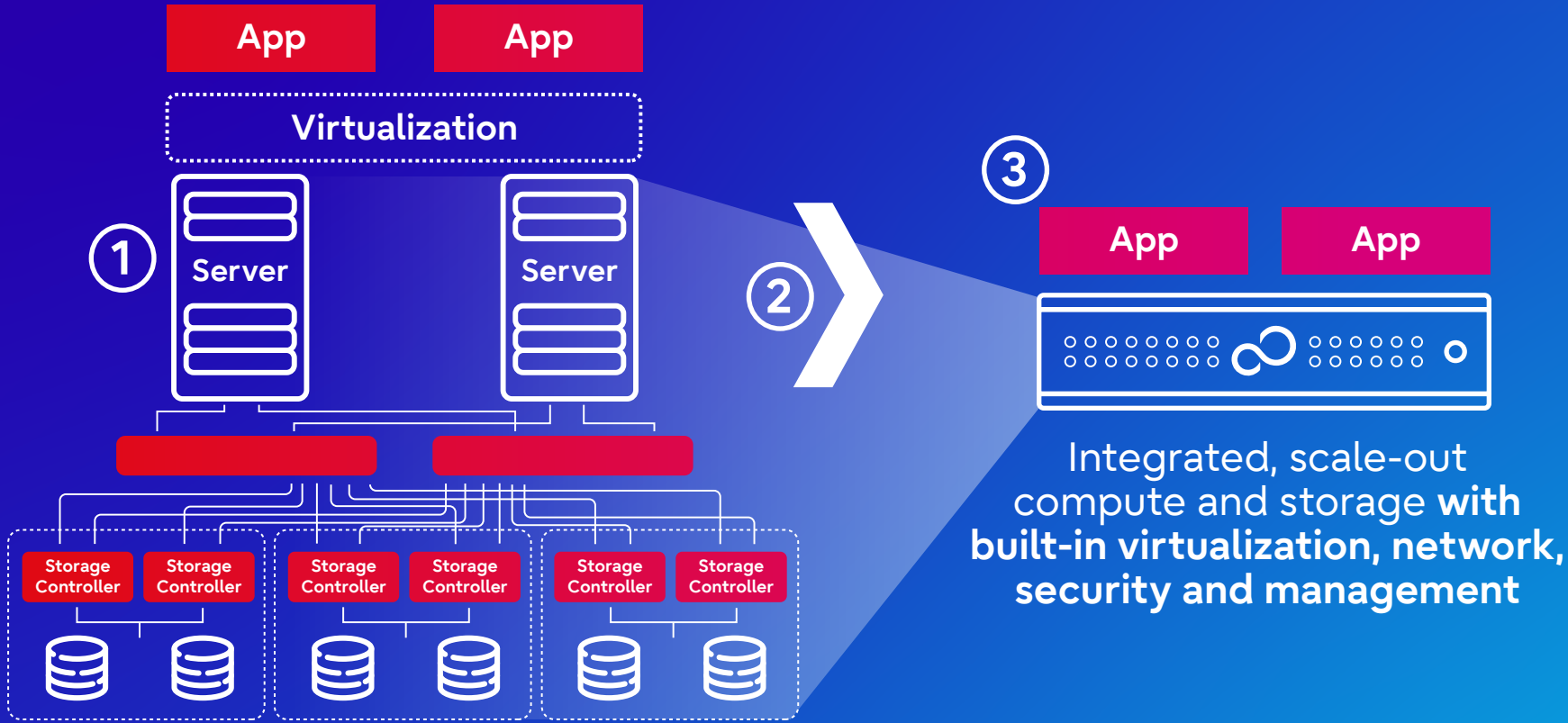
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Simplicity of hyper-converged infrastructure

1 Inherent complexity of a SAN-based infrastructure with separate silos of storage, networking, servers, virtualization, management and data services.

2 Integrated into a simple appliance building block.

3 The result is a simple to start, easy to scale, predictable cost Hyper-converged infrastructure that can be used to run private, public and edge clouds.

Integrated, scale-out compute and storage **with built-in virtualization, network, security and management**

5

PRIMEFLEX for Nutanix Enterprise Cloud

Hyper-converged questions and challenges

For application owners

Will this new infrastructure be able to support my applications and get them up and running quickly?
PRIMEFLEX for Nutanix Enterprise Cloud runs all standard x86 applications at any scale. Also, it is simple to add more nodes and install them in minutes to load up new applications.

How reliable is this infrastructure? Will I have much down time with my applications?
PRIMEFLEX for Nutanix Enterprise Cloud has built-in resiliency and self-healing, as well as snapshots, backup and disaster recovery included. Down time is reduced by 97% compared to traditional infrastructure according to IDC.*

For system administrators

How difficult is it to learn to use the PRIMEFLEX for Nutanix Enterprise Cloud infrastructure?
All operations are consolidated onto a single intuitive management console. Many operations simply require a single click. There are no complex commands to learn.

If PRIMEFLEX for Nutanix Enterprise Cloud is so simple to operate, won't it put me out of a job?
We all have too much to do, especially System Administrators. Using this infrastructure will give you back your nights and weekends and free you up to do more value-added IT work for the business.

For C-level executives

What are my operational savings by adopting this new infrastructure?
Deploying PRIMEFLEX for Nutanix Enterprise Cloud will lead to a 60% reduction in the cost of operations over five years based on a recent IDC study.*

How fast will this investment in new infrastructure pay for itself?
The investment in PRIMEFLEX for Nutanix Enterprise Cloud will pay-off quickly within seven months based on a recent IDC study.*

PRIMEFLEX for Nutanix Enterprise Cloud

Enterprise cloud use cases

Transactional and big data analytic applications

Business-critical workloads rely on transational and analytic databases such as Oracle, Microsoft SQL Server, Postgres SQL, MySQL, Cassandra and MongoDB plus business applications from leading companies such as SAP, Oracle and Microsoft, for financials, ERP, CRM and e-commerce. Infrastructure requirements to run these business critical applications are the most demanding.

The benefits of hyper-converged infrastructure

• **Better performance:** Lower latency design means faster response time on transactions and queries.

• **Higher availability:** Built-in self-healing, backup and disaster recovery capabilities provide better uptime for applications than traditional infrastructure.

• **Endless scalability:** Applications can run at any scale of total data, size of active data set or compute needed.

• **Simple management:** Installation, deployment, backup and ongoing management can be done with just a few clicks. This speeds up application deployment and capacity expansion.

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Enterprise cloud use cases

How Virtual Desktop Infrastructure (VDI) is streamlining business

VDI eases the desktop management burden by centralizing and securing desktop computing. It speeds provisioning and updates and allows for a centralized customization of the desktop for groups of users with common needs. It also provides built-in recovery for desktops in case of a disastrous outage.

- **Economical entry point:** The per node, scale-out infrastructure is optimized for a lower per-user cost.

- **Easy scalability:** The "pay as you grow" model helps achieve correct sizing the first time, and as the number of users grows.

- **Predictable performance:** Easily align to the demands of different user profiles with the flexibility provided by storage and compute-optimized nodes.

- **Quick capacity:** Scale capacity-optimized nodes independently of compute-oriented nodes, and grow storage on demand to support virtual user desktops.

- **Fine-grained monitoring:** Diagnose and resolve bottlenecks, with granular visibility from the storage layer to the VM, and maintain optimal virtual desktop performance.

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Enterprise cloud use cases

Messaging and collaboration

Critical productivity applications like email and collaboration, from vendors such as Microsoft, are increasingly complemented by unified communications solutions from Avaya, Cisco and Microsoft. Hybrid email deployments give the ability to extend administrative content to the cloud, providing the seamless look and feel of a single email environment, but spanning on-premises and online email infrastructure.

- **Consistent performance:** Ability to support hybrid storage enables predictable response times across the entire mailbox database.

- **Continuous access:** Resilient design provides the ability to recover individual mailboxes and continuous access to the application even if the site goes down.

- **Predictable scalability:** Scale-out per node architecture with selectable density and capacity enables messaging and collaboration applications to grow steadily.

- **Automated management:** Auto-balancing across nodes eliminates manual intervention to continually optimize and rebalance storage and mailboxes.

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Enterprise cloud use cases

Home-grown, custom applications

In-house developed applications based on Java, .NET and other languages are critical for the business to meet customer demands. These include using middleware and open source and commercial databases to support a distributed design. In addition to running applications fast, keeping software developers and testers constantly productive is important. Thus it's critical to have a "no wait" infrastructure that leverages flash storage for active data.

- **Constant copies:** Given the mission critical nature of these applications, snapshots, backup copies and off-site data replication are necessary to ensure business continuity.

- **Simple scalability:** Application workloads inevitably grow in total data, size of the active data set, and the compute needed. Keeping users and developers productive means scaling must happen without downtime.

- **Management efficiency:** Consolidating infrastructure to run theses applications is a top priority to optimize costs. Condensing applications as much as possible, in an easy-to-manage virtualized environment, ensures adequate utilization of compute and storage resources.

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Organizations of all sizes – not just the corporate giants – can use hyper-converged infrastructure and Enterprise Cloud to simplify their IT infrastructure.

Advantages

➔ **Scalable:** Start small and grow compute and storage without limit.
➔ **Cost Effective:** Pay as you grow architecture enables you to simply add capacity when you need it.
➔ **Flexible:** Support for any application at any scale using all popular hypervisors.
➔ **Fast:** With compute close to storage, automated tiering and load balancing applications run at top performance.

Drawback

➔ Few companies can do a complete swap-out of their legacy SAN-based infrastructure. Thus, most start with a single project requiring new infrastructure and then add more workloads over time.

Solution

To free up time and resources to focus on the applications and services that power their business, organizations need a more flexible and cost-saving infrastructure. That infrastructure must be so simple as to seem invisible.

PRIMEFLEX for Nutanix Enterprise Cloud drives faster time-to-market for important IT initiatives, delivering benefits that were once only possible with public clouds.

PRIMEFLEX for Nutanix Enterprise Cloud bridges the efficiency and performance gaps between enterprise data centers, distributed locations at the edge and public clouds, delivering a single software fabric that unifies multiple clouds.

It does this by:

• Integrating server, storage, networking and virtualization resources into a turnkey hyper-converged solution

• Running any application at any scale

• Delivering all of the infrastructure services that your applications need

• Running virtualized, bare metal or containerized

• Spanning private, public and edge clouds

• Deploying in less than 60 minutes

PRIMEFLEX for Nutanix Enterprise Cloud profile

• Nutanix Acropolis Cloud OS data services software

• Nutanix Prism Management software

• Nutanix Calm Orchestration software

• Fujitsu Server PRIMERGY

• Choice of popular hyervisors: VMware ESXi and Nutanix AHV

• Kubernetes container support

PRIMEFLEX for Nutanix Enterprise Cloud

Benefits of PRIMEFLEX for Nutanix Enterprise Cloud

Can you imagine making your complex IT infrastructure so simple it appears invisible?

- No silos due to simple, standards-based infrastructure with tightly integrating compute, storage and virtualization
- Seamless operations with all data services built-in
- Resilient, self-healing infrastructure avoids constant manual intervention

Can you hear application owners complimenting you on the speed with which you procure and set-up new infrastructure to roll-out their applications?

- Quick provisioning due to all-inclusive, single vendor offering covering compute, storage and data services
- Fast, easy growth through per node infrastructure expansion
- Simple, self-service VM set-up

Can you visualize your system administrators going home on time at night, and not coming in on the weekends, because the infrastructure is so simple and error-proof?

- Simple installation in less than an hour
- Easy one-click software upgrades
- Fool-proof one-click backup
- Quick one-click VM conversion
- Time-saving one-click database migration
- Valuable one-click network virtualization, security and automation

...and keeping your investment manageable and flexible?

- Pay as you grow architecture lets you start small and simply add to it when you need it
- Virtualization and Container capabilities keep infrastructure consumption cost-efficient
- Built-in compression, deduplication and thin-provisioning of storage optimize your investment

The solution:
PRIMEFLEX for Nutanix Enterprise Cloud combines Nutanix software-defined hyper-converged infrastructure software with Fujitsu Server PRIMERGY, creating infrastructure building blocks that can easily span private, public and edge clouds to efficiently run enterprise applications.
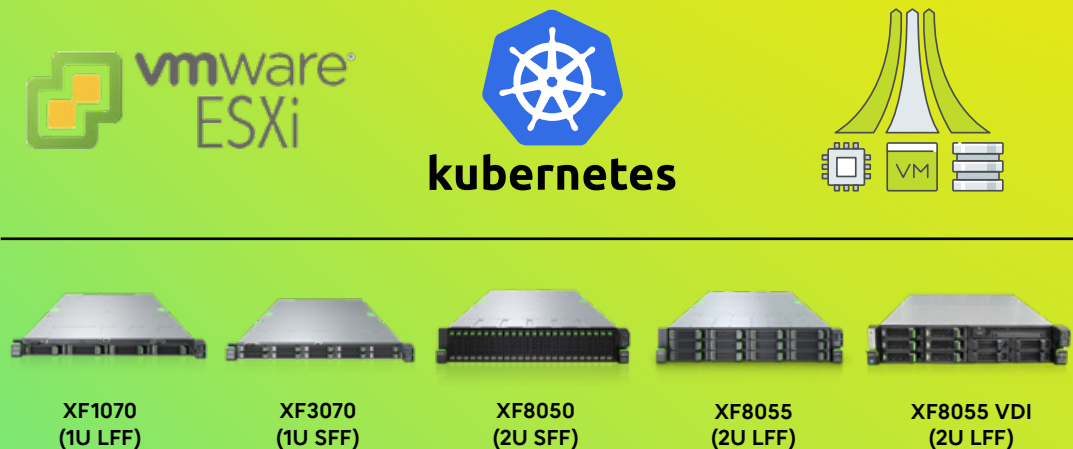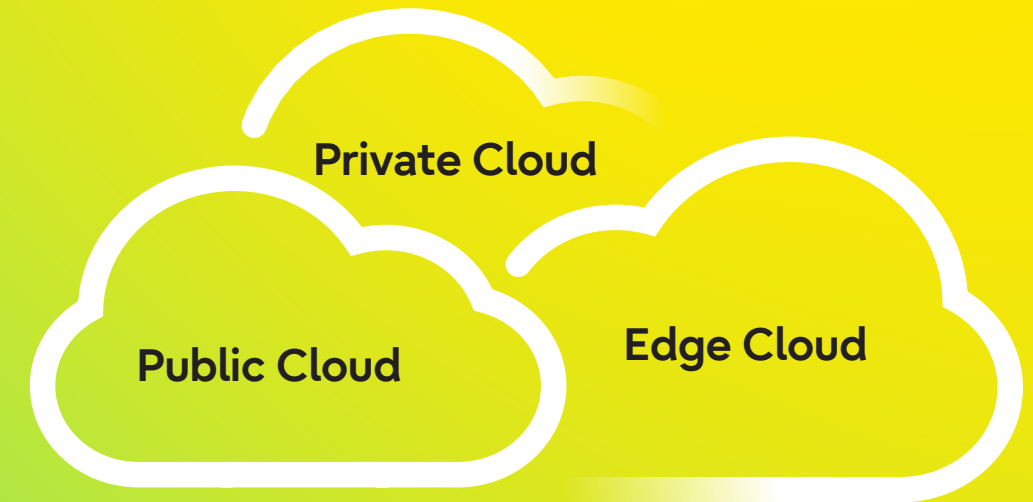
Components of PRIMEFLEX for Nutanix Enterprise Cloud

Depending on your requirements, we will provide your solution either with compute-optimized or storage-heavy system nodes to match workload characteristics. These systems come built-in with Nutanix Acropolis Cloud OS data services, Prism Management and Calm Orchestration software. Combined with Fujitsu Server PRIMERGY hardware this forms a hyper-converged infrastructure to span your private, public and edge clouds.

You benefit from a turnkey, pre-configured and pre-tested appliance based on industry standard components, with system support and all-round lifecycle management.

- **Nutanix Acropolis Cloud OS data services software**
- **Nutanix Prism management software**
- **Nutanix Calm orchestration software**
- **Fujitsu Server PRIMERGY hardware**
- **Choice of popular hypervisors: VMware ESXi and Nutanix AHV**
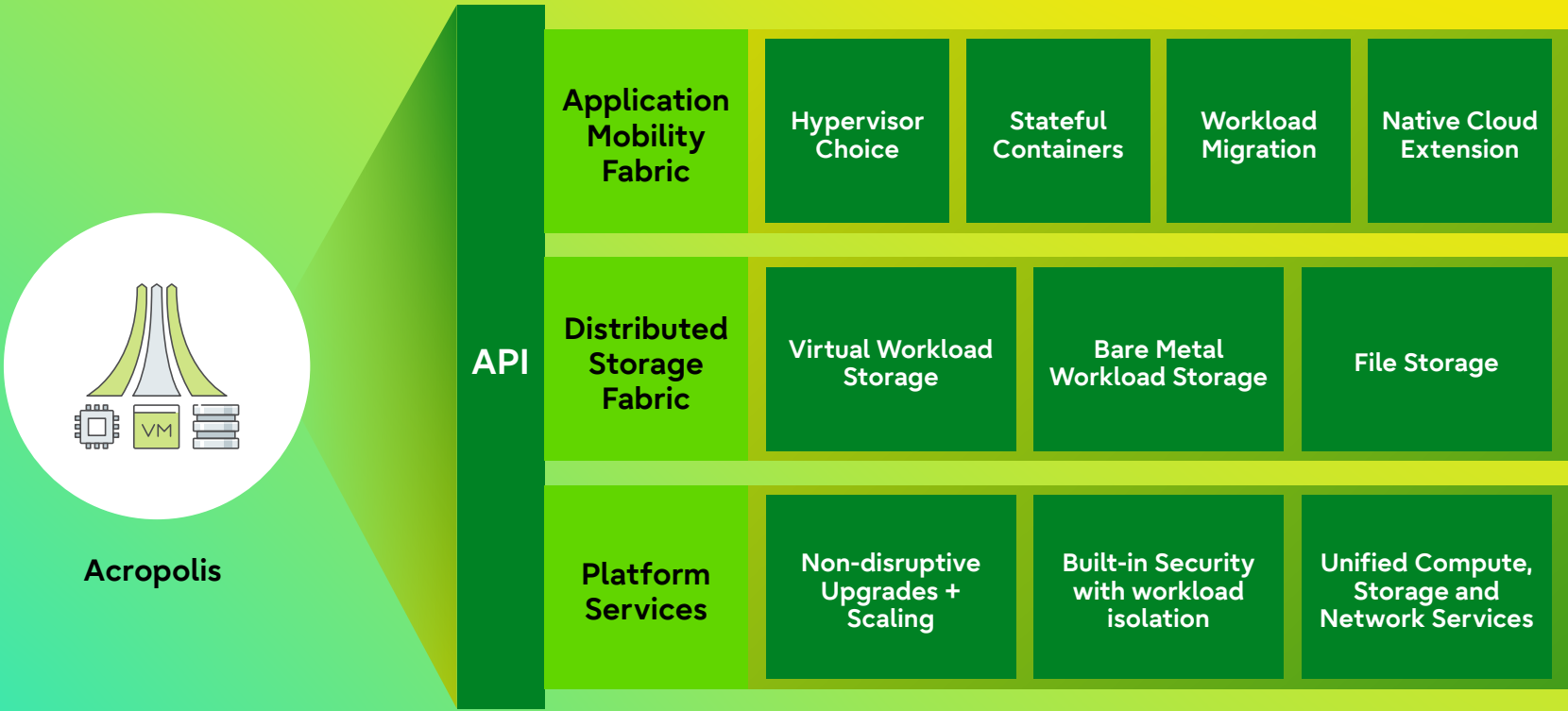- **Kubernetes container support**

Private Cloud

Public Cloud

Edge Cloud

vmware ESXi

kubernetes

| XF1070 (1U LFF) | XF3070 (1U SFF) | XF8050 (2U SFF) | XF8055 (2U LFF) | XF8055 VDI (2U LFF) |

PRIMEFLEX for Nutanix Enterprise Cloud

Components of PRIMEFLEX for Nutanix Enterprise Cloud

Nutanix Acropolis Cloud OS data services software

Nutanix Acropolis combines feature-rich software-defined storage with built-in virtualization in a turnkey hyper-converged infrastructure solution that can be deployed out-of-the-box in 60 minutes or less. Eliminate the need for standalone SAN or NAS-based storage, reduce the complexity of legacy virtualization management and lower virtualization costs by up to 80%.
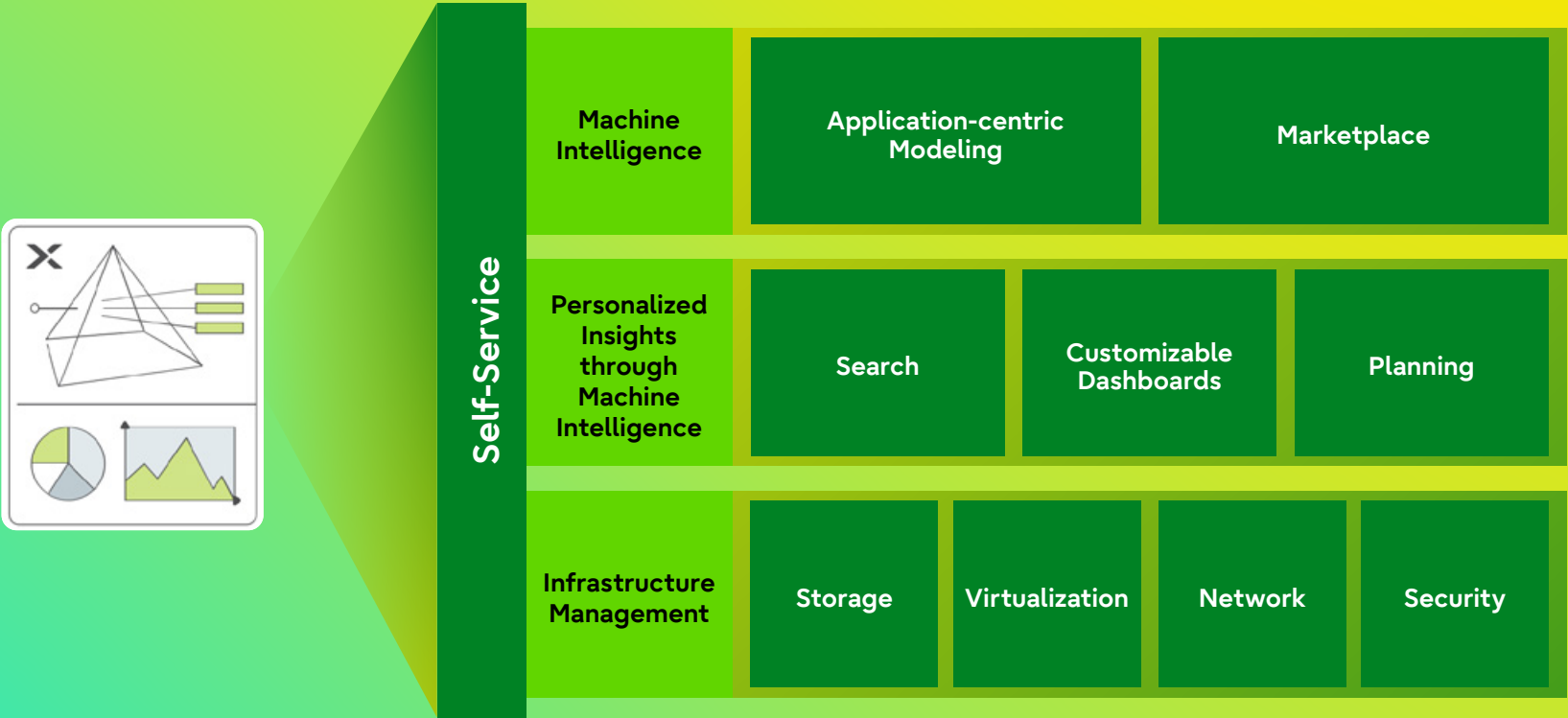
Acropolis

API

Application Mobility Fabric	Hypervisor Choice	Stateful Containers	Workload Migration	Native Cloud Extension
Distributed Storage Fabric	Virtual Workload Storage	Bare Metal Workload Storage	File Storage	
Platform Services	Non-disruptive Upgrades + Scaling	Built-in Security with workload isolation	Unified Compute, Storage and Network Services	

PRIMEFLEX for Nutanix Enterprise Cloud

Components of PRIMEFLEX for Nutanix Enterprise Cloud

Nutanix Prism Management software

Nutanix Prism is an end-to-end management solution for virtualized data center environments that streamlines and automates common workflows, eliminating the need for multiple management solutions across data center operations. Powered by advanced machine learning technology, Prism analyzes system data to generate actionable insights for optimizing virtualization and infrastructure management.

Self-Service			
Machine Intelligence	Application-centric Modeling	Marketplace	
Personalized Insights through Machine Intelligence	Search	Customizable Dashboards	Planning
Infrastructure Management	Storage	Virtualization	Network	Security

PRIMEFLEX for Nutanix Enterprise Cloud

Components of PRIMEFLEX for Nutanix Enterprise Cloud

Nutanix Calm orchestration software

Nutanix Calm adds native application orchestration and lifecycle management to the Nutanix Enterprise Cloud Platform. Calm decouples application management from the underlying infrastructure – enabling applications to be easily deployed into private or public cloud environments. The addition of advanced application management to the Nutanix platform turns common tasks into repeatable automations accessible to all IT teams, without giving up control across the infrastructure stack.

Calm brings advanced policy-based governance, allowing automatic application provisioning into public clouds, with full visibility of cost and utilization. Organizations can intelligently balance renting versus buying when making infrastructure decisions. A common framework for modeling both applications and infrastructure breaks down rigid IT silos and accelerates the overall time to production for critical applications and services.

Automate. Empower. Relax.

Automate the deployment and management of applications in private and public clouds.

Empower multiple teams with one-click self-service provisioning o applications.

Centralize governance and traceability with role-based access control.

Gain visibility into public and private cloud consumtion and cost.

Components of PRIMEFLEX for Nutanix Enterprise Cloud

Fujitsu Server PRIMERGY hardware

Fujitsu Server PRIMERGY provides the most powerful and flexible data center solutions for companies of all sizes, across all industries and for any type of workload. This includes versatile rack-mount servers powered by Intel® Xeon® processors. These offerings deliver proven quality along with a wide range of innovation. The combination provides the highest efficiency by cutting operational cost and complexity. They also provide more agility in daily operations turning IT into a business advantage.

	XF1070 (1U LFF)	XF3070 (1U SFF)	XF8050 (2U SFF)	XF8055 (2U LFF)	XF8055 VDI (2U LFF)
Nutanix Software	Nutanix Cloud Platform (NCI, NCM and more)				
CPU	1x 4th Generation Intel Xeon	2x 4th Generation Intel Xeon			
GPU (for VDI)	–	–	5x NVIDIA L4	6x NVIDIA L4	2x NVIDIA A16, A100, A40 or L40
Memory	96GB - 4096GB	128GB - 8192GB			
Storage	4x3.5" drives All-Flash or Hybrid	10x 2.5" drives All-NVMe, All-Flash or Hybrid	24x 2.5" drives All-Flash or Hybrid	12x 3.5" drives All-Flash or Hybrid	6x 3.5" drives All-Flash or Hybrid
Networking	10GbE, 25GbE or 100GbE				
Hypervisors	Nutanix AHV, VMware ESXi				

PRIMEFLEX for Nutanix Enterprise Cloud

PRIMEFLEX for Nutanix Enterprise Cloud – providing the simplest way to deploy

Fujitsu Implementation Services

To enable a fast time to production of your PRIMEFLEX for Nutanix Enterprise Cloud solution, Fujitsu offers a standardized ImplementationPack with a single order code and price tag covering the creation of a low-level design, the installation including all hardware and software components, the option to deploy workloads provided by the customer, and the handover of all documentation upon successful completion of the project. The new PRIMEFLEX Implementation Desk along with the easy-to-use web-based PRIMEFLEX Deployment Portal makes infrastructure deployment faster, more reliable and secure. Experience from many successful project implementations clearly shows that a well-executed and documented implementation is an important pre-requisite for delivering high-quality infrastructure support services and ultimately for improved customer satisfaction.

Fujitsu Infrastructure Support

Fujitsu is your single point of contact for PRIMEFLEX for Nutanix Enterprise Cloud. With the Fujitsu SolutionPacks, Fujitsu provides a standardized infrastructure solution support offering that goes beyond just support for single hardware and software components. It covers also the dependencies between the individual components of the technology stack. A unique solution identifier for PRIMEFLEX for Nutanix Enterprise Cloud allows our support teams to make solution-level decisions when working with these sometimes complex systems. For example, this enables us to route support calls to specialized, solution aware support engineers making for easier support interactions with speedier resolution times.

PRIMEFLEX for Nutanix Enterprise Cloud

PRIMEFLEX for Nutanix Enterprise Cloud – providing the simplest way to deploy

Choice of delivery options

To ensure a smooth deployment and easy maintenance of your integrated system, PRIMEFLEX for Nutanix Enterprise Cloud includes a mandatory on-site implementation service and an infrastructure solution support service that provides a single point of contact for support for the complete technology stack. Companies who have sufficient resources in their IT department to deploy and maintain the IT infrastructure on their own, can choose the PRIMEFLEX Essentials option without an implementation service and solution support. The choice is yours – simply select the delivery option you need.

Fujitsu Financial Solutions

Fujitsu offers a complete range of financing solutions, such as IT leasing, trade-in, buy back or even cloud-like financing models. With Fujitsu uSCALE, the pay-per-use consumption model is no longer a domain of the cloud. Fujitsu is now helping organizations to achieve pay-per-use agility across their entire IT landscape, including their on-premises data center.

PRIMEFLEX

Implementation Services	Infrastructure Support

+   **+**

PRIMEFLEX Essentials*

*Certified hardware & software including component support

PRIMEFLEX for Nutanix Enterprise Cloud

Why choose PRIMEFLEX for Nutanix Enterprise Cloud for IT infrastructure?

To avoid disparate IT infrastructure that increases in complexity as businesses grow, data center customers increasingly see multi-cloud, software-defined systems as the go-to-alternative. PRIMEFLEX for Nutanix Enterprise Cloud is a turnkey integrated system that includes all the hardware and software to simplify deployment across a range of choices from private, public and edge cloud infrastructure. It combines high performance, energy efficient Fujitsu PRIMERGY standard x86 servers and the Nutanix Enterprise Cloud platform that delivers enterprise-ready services for compute, storage, networking, virtualization and security in combination with cost-effective lifecycle management capabilities.

Traditional SAN:
Costly complexity and difficult management of separate components

Hyper-converged Infrastructure:
Nutanix software on Fujitsu Server PRIMERGY hardware creates cloud-ready infrastructure building blocks that simplify IT, allowing you to focus on the applications and services that power your business

Converged Infrastructure:
Pre-configured in a rack cabinet, but still the costly complexity of separate components

Fujitsu as a trusted advisor: value for your business

- Powerful and scalable platform for enterprise applications
- Comprehensive, secure and simple infrastructure management
- Ready to run integrated system that can be rapidly brought into production
- Reduction of operational cost and complexity: Customizable pre-validated and pre-tested infrastructure
- Strategic IT and business consulting, and integration and maintenance services

Learn more about
PRIMEFLEX for Nutanix Enterprise Cloud:

www.fujitsu.com/global/nutanix

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