

White Paper

Ever Heard of the Hybrid IT Company?

Should I go on-premises, off-premises or cloud? More and more often, the ideal answer will be to go for a blend of different models. But how should my hybrid scenario look like? Which questions to answer to get out of the workload placement dilemma? And what is Fujitsu's role with Hybrid IT? Let us look behind the curtains.



Content

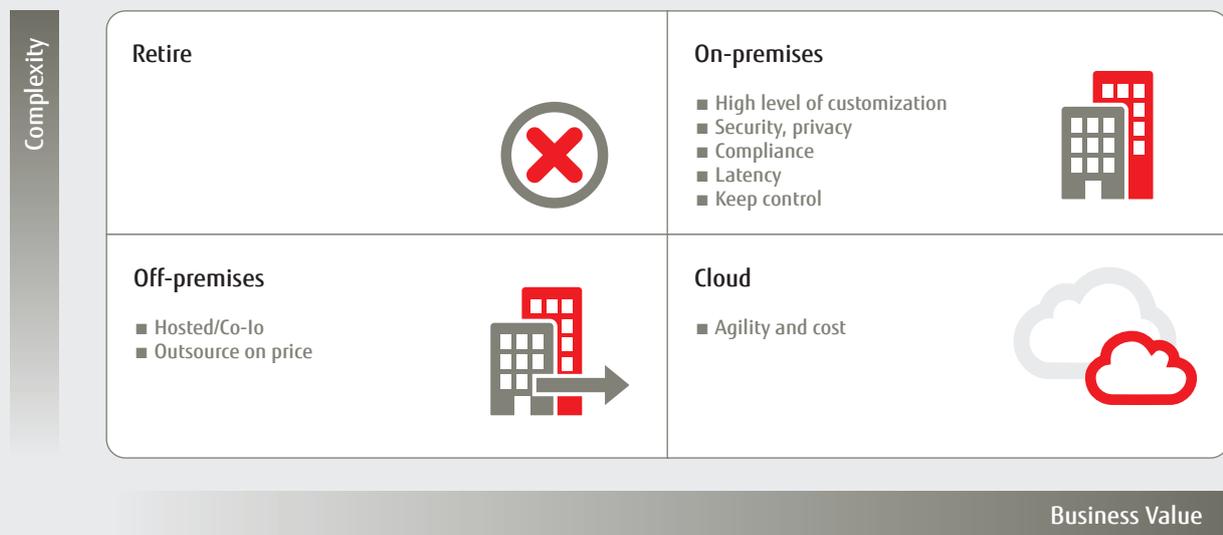
The workload placement dilemma	2
Hybrid IT increases systems availability, scalability and agility	3
Workload placement over time	3
What is needed to get out of the workload placement dilemma?	4
What's Fujitsu's Role?	4
Workload placement: On-premises	4
Integrated Systems reduce complexity, time, risk and cost	4
Operation of FUJITSU-based infrastructures and more	6
Hosting your data center infrastructure – managed by Fujitsu or self-managed	6
Workload placement: Cloud	6
But what is the right approach for you?	6
How to migrate workloads between infrastructures?	7
Different workload placement options:	
How do they fit together?	7
Hybrid IT enables failsafe data protection	7
Summary	8

The workload placement dilemma

Running all workloads in your on-premises data center is a thing of the past. Today's organizations have different workload placement options. Besides your data center on-premises, you may run your workloads off-premises, hosted in the data center of a service provider, and of course there is the option to consume IT services from the cloud. It's not that one option is better than the other. Each of the options has its place, because the workloads as such may be very different.

But where to place which workload? As this question is not always easy to answer, people are inclined to speak of the workload placement dilemma. Of course, different organizations may have different sourcing strategies which strongly influence the answer where to place workloads. But often it is the workload itself that influences its placement. There are two dimensions which are decisive when it comes to the question of workload placement: It is the complexity of the workload and the business value it will generate.

Complex workloads are those which require a high level of customization, which have to meet special security, privacy and compliance demands, for which you want to keep full control, and for which low latency is essential. If they create real value for your business, they will be predestinated to be run on-premises. If they don't create business value, the recommendation will be to retire them.



Less complex workloads which are needed to create business value should run in the cloud, because cloud stands for agility and cost-effectiveness. Workloads which are less complex and generate lower business value may be outsourced on price and run off-premises in the data center of a hosting provider.

As an organization is typically faced with all these different types of workloads, it is not about the question either or where to place their workloads; the ideal answer will rather be to go for a blend of different sourcing models. And this is exactly what hybrid IT is about.

Hybrid IT increases systems availability, scalability and agility

It's also worth mentioning that hybrid IT increases systems availability, scalability and agility. For critical workloads running in your on-premises data center, you may use redundant resources in the cloud to enhance availability levels. Doing so, you will turn your business-critical applications into mission-critical applications.

If you have to cope with peak workloads occurring only now and then, there will be no need for high buffers of server and storage capacities. You may scale your infrastructure immediately by adding resources in the cloud.

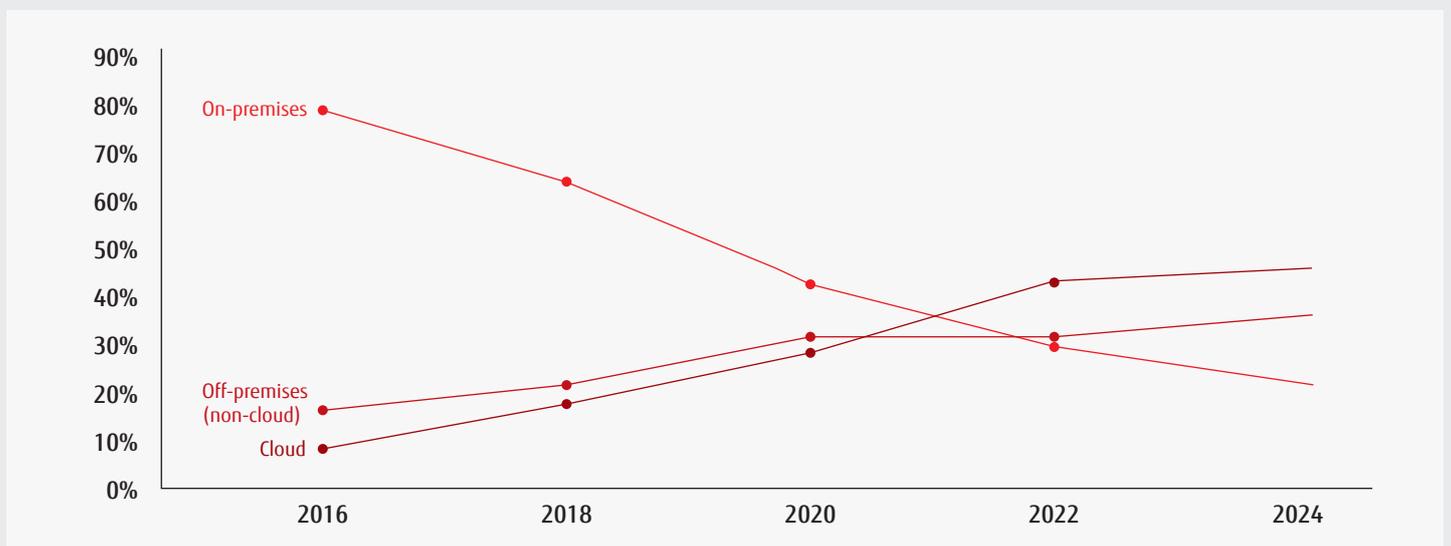
When a fast or even ad-hoc adaptation of IT to new demands is needed, new projects (e.g. in the analytics area) can be immediately started e.g. based on DevOps in the cloud. This rapid prototyping increases the agility of your organization.

However, there are also organizations developing their customer facing apps in a DevOps fashion internally in a private cloud, and push the production systems to a public cloud provider. The reason is that for the development critical data is needed which must always reside on-premises.

Availability	Scalability	Agility
<ul style="list-style-type: none"> ■ Use redundant resources in cloud to enhance availability levels for critical workloads ■ Turn business-critical into mission-critical apps 	<ul style="list-style-type: none"> ■ Cope with peak workloads occurring only now and then ■ No need to buy highest server and storage capacities 	<ul style="list-style-type: none"> ■ Fast (ad-hoc) adaption of IT to business demands (e.g. DevOps, analytics)
		

Workload placement over time

While in the past the on-premises placement of workloads was the dominating option, its share has been decreasing over time in favor of cloud and other forms of off-premises IT (such as hosting). Analysts predict that by 2021 the 3 workload placement options will be at par in terms of spending. Moreover, analysts predict that by 2020, 90% of organizations will adopt hybrid infrastructure, which underlines that the world is going hybrid.



What is needed to get out of the workload placement dilemma?



Let us now turn to the question what is needed to get out of the workload placement dilemma. Basically it is just about answering a bunch of questions, such as

- Where to move which workloads to optimize performance and efficiency?
- Which infrastructure products for on-premises?
- How to deploy new infrastructures rapidly?
- Who will manage which infrastructures?
- Who will host my infrastructures?
- Where to get my cloud services from?
- How can I migrate to cloud in the most effective way?
- How to bring different workload placement options together?
- How will my data protection strategy alongside Hybrid IT look like?

What's Fujitsu's Role?

After having set the scene and addressed hybrid IT in general, we are going to investigate Fujitsu's role in hybrid IT.



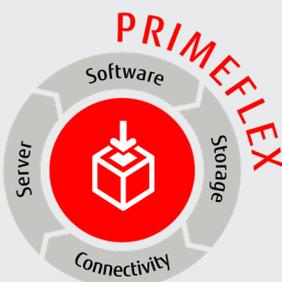
Workload placement: On-premises

With its data center products, such as x86 PRIMERGY standard servers and mission-critical PRIMEQUEST servers, its ETERNUS storage systems, networking technologies from market-leading partners, such as Extreme Networks, Broadcom and Cisco, and software developed by Fujitsu itself or best of breed alliance partners, Fujitsu is able to build complete data centers on your premises. Fujitsu's Infrastructure Manager (ISM) and product-related services supplement Fujitsu's data center products. No matter which service level you demand for, choose from a variety of service offerings, such as response services, recovery services or complete infrastructure support. If you as an international or even global company are looking for a consistent onsite support across all your locations, Fujitsu will do.



Integrated Systems reduce complexity, time, risk and cost

It is an open secret that building a data center infrastructure is increasingly complex. Components such as servers, storage, network components and software need to be selected from a myriad of options, procured and integrated. Moreover, extensive tests are conducted, because the compatibility of the individual components is not always guaranteed. This in turn requires a deep knowledge of all components involved and an understanding of their interdependencies on each other, if you do all this on your own. Consequently, such a do-it-yourself approach would always present businesses with multiple risks.



There is a better and more cost-effective solution:

FUJITSU Integrated System PRIMEFLEX – a pre-defined, pre-integrated and pre-tested combination of data center components, such as servers, storage, network connectivity and software. All typical activities, such as infrastructure design, component integration and testing have been conducted before project start. The onsite activities

are correspondingly confined to the deployment of the Integrated System and the integration into the production environment. This reduces complexity, shortens time to production, minimizes risk, and contributes to operational efficiency, better resource utilization and considerable cost savings.

In all its Integrated Systems activities, Fujitsu focuses on topic areas which are critical and of high relevance for its customers. These areas are Virtualization and Private Cloud, SAP Environments, as well as Analytics and Artificial Intelligence.

The subsequent figure shows the PRIMEFLEX line-up of systems and their mapping to the topic areas mentioned.

General purpose

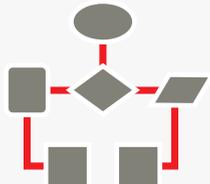
Virtualization and Cloud

- PRIMEFLEX for VMware vSphere
- PRIMEFLEX for VMware vSAN
- PRIMEFLEX for VMware Cloud Foundation
- PRIMEFLEX for Microsoft Azure Stack HCI
- PRIMEFLEX for Microsoft Azure Stack Hub
- PRIMEFLEX for Nutanix Enterprise Cloud

Purpose built

SAP

- PRIMEFLEX for SAP Landscapes
- PRIMEFLEX for SAP HANA



PRIMEFLEX systems in the virtualization and cloud segment provide customers with freedom of choice, not only in terms of the virtualization software, but also regarding the type of convergence, i.e. classic-converged and hyper-converged infrastructure systems. Moreover, in the context of classic-converged systems, customers can choose between all-flash storage and hybrid storage.

All PRIMEFLEX integrated systems are “hybrid IT enabled” on the infrastructure level thanks to the core technologies inherent in these systems.



Operation of FUJITSU-based infrastructures and more

Different organizations may have different strategies with regard to infrastructure management. There are organizations that have the resources, skills and capabilities to manage their infrastructures on their own, while others don't have these prerequisites. In this case, Fujitsu will manage and operate your data center infrastructure for and instead of you.



Hosting your data center infrastructure – managed by Fujitsu or self-managed

If you intend to place some of your workloads off-premises, e.g. those which are less complex workloads and provide only limited business value, Fujitsu as a hosting provider will make one of its data centers available for you. In this case it is up to you to decide, if you want to manage the respective infrastructure on your own or get it managed by Fujitsu. Comparing off-premises and on-premises, there is basically only one difference which is the location. All the other options are completely identical.



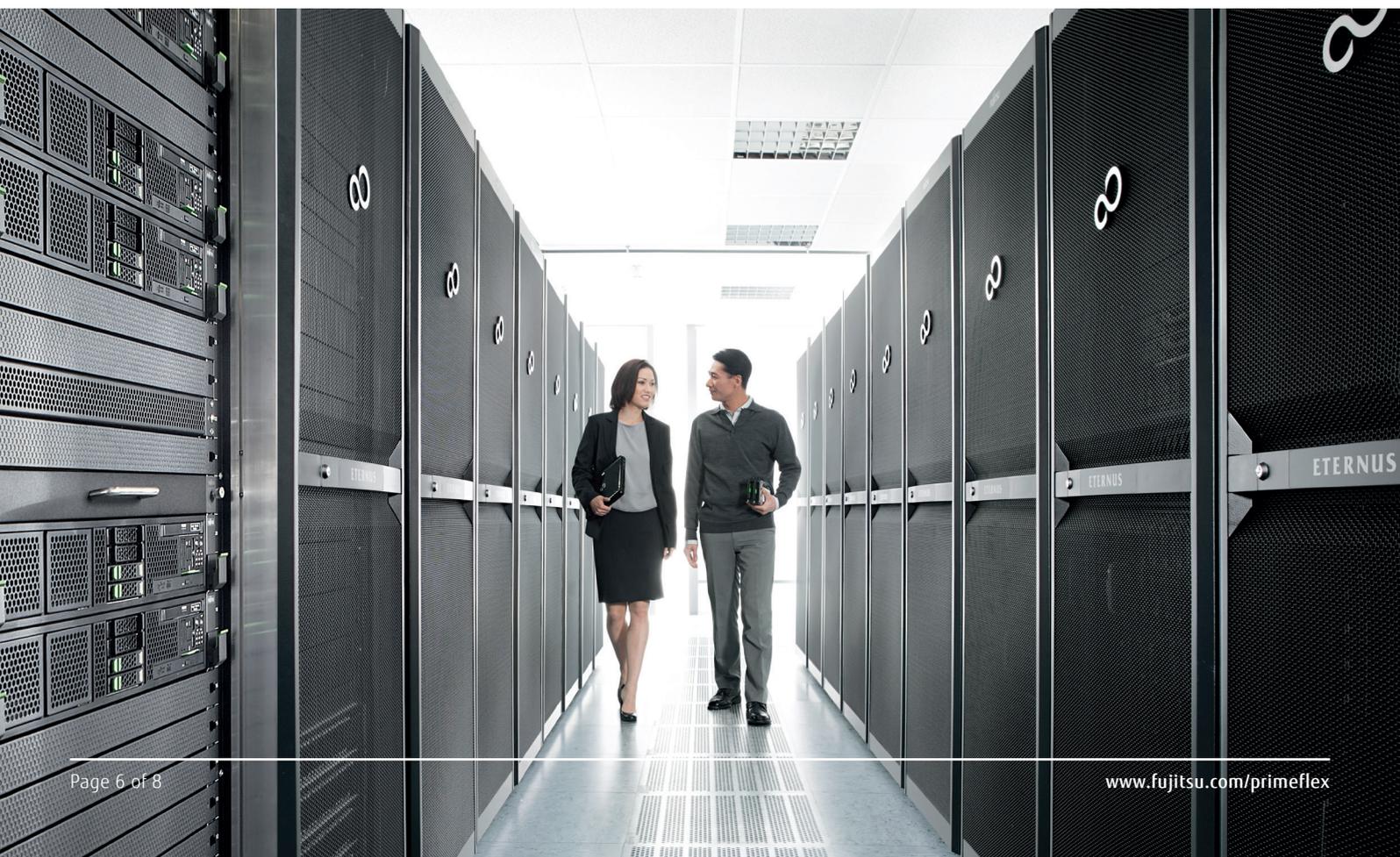
Workload placement: Cloud

Fujitsu's capabilities include building, hosting and operating data center infrastructures. As a multi-cloud service provider, Fujitsu delivers cloud-based services through its collaboration with strategic cloud providers, including Microsoft, VMware, Amazon Web Services, SAP and Oracle.



But what is the right approach for you?

By now we have discussed all the workload placement approaches and also demonstrated that Fujitsu is able to support you with all of them. But what is the right approach for you? The recommendations given at the beginning of this whitepaper are certainly a valuable guidance that helps at a certain extent, but do not cover every details you may be faced with. In order to get you on the right track Fujitsu offers Hybrid IT consulting services whose objective is to identify your ideal solution jointly with you by co-creation. You can be absolutely sure that you will experience a neutral consulting without a hidden agenda. As Fujitsu is able to support you with all flavors of hybrid IT, we have no reason at all to push you into a direction which is not ideal for you.





How to migrate workloads between infrastructures?

After you have once decided which workloads currently running on-premises or off-premises you intend to move into the cloud, our Hybrid IT migration services will simplify your lives. Based on proven processes and tools, we will help migrate your workloads between different infrastructures.

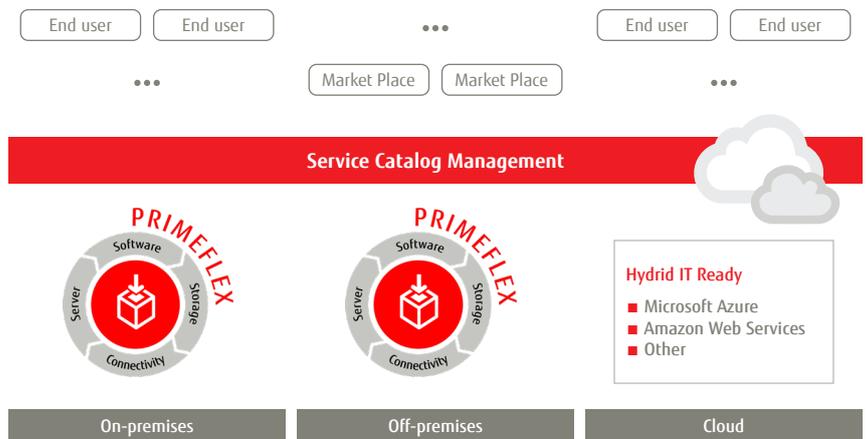


Different workload placement options: How do they fit together?

So far so good. But if you use a blend of different workload placement options, how will they all fit together?

Here Fujitsu's Service Catalog Management comes into play. It is about a self-service portal with subscription, billing and reporting features which abstracts workload placement from the end user who consumes the IT services. The service catalog management makes it fully transparent for the end user where the IT services he consumes are delivered from, be it the on-premises data center, any off-premises data center or any 3rd party cloud service. Hence, Fujitsu's Service Catalog Management is the core component which makes every PRIMEFLEX integrated system "Hybrid IT Ready".

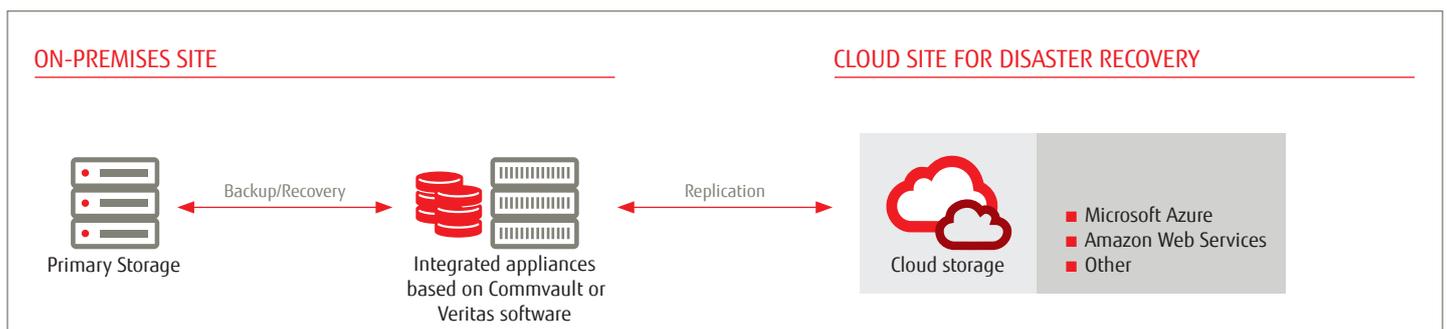
It goes without saying that Fujitsu will look after the orchestration of all hybrid IT services, if customers demand for it.



Hybrid IT enables fail-safe data protection

Hybrid IT is a great concept for fail-safe data protection. Many IT organizations have deployed data protection appliances in addition or as an alternative to tape libraries in order to have data copies outside of production storage. However best practice is to have a third copy on another physical site in case the main site fails completely during a disaster. However not all organization can afford to run a dedicated DR infrastructure. In this case the cloud can be a viable alternative. In such a scenario the IT organization backs-up production data on a data protection appliance. The appliance automatically triggers an additional copy to a cloud service provider. If only the

production storage fails then a fast data recovery directly from the appliance can be conducted on the main site. Should the whole site fail, then the last line of defense will sit in the cloud. Recovery time from the cloud takes of course much longer but still recovery is possible at all. Fujitsu's integrated backup appliances – powered by Commvault and Veritas software – delivers embedded capabilities for disaster recovery by offering access to several cloud providers such as Microsoft or Amazon.



Summary

Hybrid IT is a simple term, but incorporates many ingredients. These are data center products, such as servers, storage, network and software. These may be integrated systems, reducing complexity, time and risk when building data center infrastructures, and increasing operational efficiency. Product-related services are needed as a supplement to the products.

As not every organization has the resources, skills and capabilities to manage his infrastructure, Managed Infrastructure Services may be required. Hosting services are needed, if you don't have enough space on your premises. Cloud services are needed whenever new IT services should become available fast and cost-effectively.

Hybrid IT consulting services may be needed to identify the optimum blend of sourcing options. And workload migration services are demanded to move workloads between infrastructures in a simple manner. And last but not least: a service catalog management which brings all sourcing options together making the consumption of IT services fully transparent for the end user.

Fujitsu covers all of this, being a one-stop shop for Hybrid IT.

In order words: Fujitsu has the full potential to be your IT company.
If you are interested in Hybrid IT, you should have a word with us.

