Tackling the digital future with managed cloud services

Coping with complexity, optimizing workloads, and exploiting potential
Relocating IT infrastructure, processes, applications, and data to a cloud brings many advantages — if done correctly. In particular, scenarios that require use of an independent data center, private cloud, and public cloud (= hybrid cloud) pose major challenges for large firms. The need to use different cloud providers at the same time (= multi cloud) can also cause difficulties for IT departments.

Managed cloud services enable companies to successfully tackle these challenges, get to grips with the complexity of different cloud environments, remain in control, guarantee security, and become more agile in development — all while reducing costs and with great flexibility and speed across platforms and operating systems.

Together with the virtualization specialists at VMware, T-Systems offers a modular, coordinated concept for managed cloud services that covers customers’ wide-ranging requirements.
Managed cloud services at a glance:

01 Future cloud infrastructure (private cloud)
FCI is based on the underlying technologies of VMware, Microsoft Azure Stack, and OpenStack (integration into multi-cloud structure possible)

02 DSI vCloud (hybrid cloud)
Management of all resources via a single interface using VMware technology

03 Managed services VMware Cloud on AWS
Links capacity of VMware infrastructure software with Amazon Web Services

04 VeloCloud/Smart SD-WAN
Simply turn your existing WAN into a virtual network without changing network provider

05 Unified Endpoint Management by Workspace ONE
Management of various terminals on one platform — based on VMware’s Workspace ONE and Airwatch technology — renders expensive parallel operation unnecessary.
Coping with complexity, optimizing workloads, and exploiting potential: managed cloud services

Oftentimes, in tackling the challenges that cloud migration brings — which can be daunting to many companies to begin with — the benefits of cloud solutions can be lost. Managed cloud services enable companies to get a grip on the complexity of hybrid cloud and multi-cloud environments, manage workloads sensibly, and become even more agile in development — all while reducing costs and maintaining flexibility and speed. The first step is to analyze companies’ IT setup in order to make it more efficient, modern, and flexible, and uncover all possible areas of potential.

Managed services for public cloud infrastructures

The diversity of options and rapid speed of development today can quickly push companies to the limits of their capacity.

Now, IT resources are available at the touch of a button in the private cloud, too — making it more or less a private environment with the look and feel of a public cloud. For companies, that means one thing: greater speed and greater agility.

Future cloud infrastructure is based on three different underlying technologies: VMware, OpenStack, and Microsoft Azure Stack. These form the core of the new generation of the private cloud, and offer companies the following benefits:

✔ Improved agility, speed, and flexibility
✔ Reduced platform and operating costs
✔ Greater resilience and increased automation for outstanding service quality
✔ Easy integration into the hybrid cloud world

After all, they also have to concentrate on developing their business, serving customers, meeting service requirements, and preparing for transformation.

With its managed cloud services, T-Systems offers the resources, skills, and methods needed for logical and efficient use of public cloud infrastructures.

Partnerships with major suppliers of virtualization technologies and cloud services facilitate a holistic approach, which will be set out in more detail in the following sections.

01 Future cloud infrastructure (private cloud)

Hybrid cloud setups are useful for those seeking an especially secure environment for their data, whether for compliance or safety reasons. T-Systems’ future cloud infrastructure forms the key linkage between legacy systems as well as private and public clouds. Their high level of standardization, cost benefits, and fully automated services and integration options make them an essential part of any hybrid cloud setup.

For a long time, the private cloud was considered slow in terms of scalability, when compared with the public cloud. That is a thing of the past with the new generation of the private cloud. It is completely software-defined. The high level of individualization and maximum security and compliance are retained, as are guaranteed availability and service level agreements. But: provision is faster.
Although the new private cloud has made a significant step forward, it does not replace the public cloud. Its high level of standardization, cost benefits, and the fact that it is not tied to any location make the open infrastructure ideal for many scenarios within a company.

The future is hybrid. The newly gained speed of the private cloud forms the ideal basis for seamless integration of existing systems and processes into hybrid cloud environments.

**DSI vCloud (hybrid cloud)**

It is clear that hybrid cloud environments will play an increasingly important role in future. Dynamic Services for Infrastructure with vCloud (DSI vCloud) makes it possible to put together virtualized IT infrastructures according to individual requirements using VMware technology, and shift between private and hybrid clouds. This means that all resources can be managed via a single interface.

**Services for an individual IaaS solution:**

**Computing power**
- Virtual machines
- Catalogs & templates
- Usage models

**Storage**
- Online data storage
- Backup integrated disk storage
- Backup as a Service
- Online snapshots of VMs

**Network and security**
- Virtual networks (VXLANs)
- Disaster recovery capability
- Flexible Internet access
- Virtual load balancer & firewall
- Private network connections
- Managed firewalls
- Distributed firewall
- Dynamic routing
- Virtual private networks

**Management**
- Self-service portal
- Managed OS
- vCloud availability (DRaaS)
- Workloads
- vCloud API
- Single sign-on / ID provider

DSI vCloud is based vCloud Director® from VMware, the industry leader in supplying virtualization software.
As a hybrid cloud solution, VMware Cloud on AWS links up the capacity of VMware infrastructure software (software-defined data center, SDDC for short) with the wide range of Amazon Web Services (AWS). This means that the customer is provided with a scalable cloud service that permits execution of traditional workloads in the public cloud.

This solution is particularly useful for companies that already work with VMware environments. However, beginners can also implement the service quickly and easily, adapting it to suit their individual needs. VMware Cloud on AWS is available worldwide.

Cloud migration made easy
One of the key benefits of VMware Cloud on AWS is the ability to seamlessly migrate existing workloads to the public cloud: The majority of all local data centers are run using the same VMware SDDC technology as used for VMware Cloud on AWS. This makes hybrid IT operation easier for companies, as there is no need to acquire new or customized hardware, transfer applications, or change existing operating models.

As a result, companies can continue using the public cloud with the same platform that they use in their own data center without any kind of interruption — a real innovation in public cloud migration.

Benefits of this solution:
- Trusted technology & processes thanks to tried-and-tested VMware technology
- Seamless portability of all vSphere-based workloads
- Customer’s own SDDC on physically separate bare metal systems
- Performance & scalability, particularly for large workloads
- Access to & integration of over 150 native AWS services.
### Let’s power higher performance with Managed Services!

<table>
<thead>
<tr>
<th>Managed Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMC Managed</td>
</tr>
<tr>
<td>Multi Tenant Capability</td>
</tr>
<tr>
<td>Networking &amp; Security Mgmt</td>
</tr>
<tr>
<td>identity &amp; Access Mgmt</td>
</tr>
<tr>
<td>24/7 Service Desk</td>
</tr>
<tr>
<td>SDDC Subscription Management</td>
</tr>
<tr>
<td>VMware Cloud on AWS</td>
</tr>
<tr>
<td>Managed AWS Account</td>
</tr>
<tr>
<td>AWS Global Infrastructure</td>
</tr>
<tr>
<td>Managed AWS Direct Connect</td>
</tr>
</tbody>
</table>

Managed Services; Source: T-Systems

**04 VeloCloud/Smart SD-WAN**

SD-WAN (software-defined WAN) is an example of an end customer service based on SDN and VNF (virtual network functions) for companies. An SD-WAN service should include the following four elements:

1. **Support for various access technologies**
   - SD-WAN is access independent, or can be described as an overlay concept, based on various access technologies. It is usable for L3-MPLS/L2-Ethernet connections and internet connections.

2. **Dynamic routing/path selection**
   - Dynamic load distribution across the different access technologies and networks (MPLS, IPsec, cloud services, etc.).

3. **Simple administration interface**
   - Provision incl. customer self-care portal; plus support for APIs and ZTP (zero-touch provisioning).

4. **Implementation of virtual network functions (VNFs)**
   - Option to implement VNFs, e.g., with regard to security, WAN optimization, cloud connectivity, etc.

With Smart SD-WAN, companies can easily turn their existing WAN into a virtual network without having to change network provider. This allows them to retain full flexibility in selecting network providers and access technologies for the corporate network — worldwide. Smart SD-WAN solutions from T-Systems make it possible to quickly adapt and centrally monitor networks, improve the performance of hybrid networks, and integrate public clouds swiftly and securely. Functions such as firewalls and network monitoring run as virtual network functions (VNFs). This saves time and money in the event of changes in the network and new application requirements.

**The right SD-WAN technology for every network**

Companies can select from a wide portfolio of SD-WAN solutions from leading technology providers, in order to meet their individual needs. T-Systems only works with verified partners, e.g., VeloCloud. In addition, experts are provided with support in selecting the right solution to implement IT strategies. Certified advisors supervise the migration, while international teams take care of operation of the software-defined network around the clock if desired. However, you also have the flexibility to organize the entire service or parts of the service yourself.
Benefits of Smart SD-WAN with VeloCloud

✔ **Optimization of hybrid networks:** SD-WAN makes it possible to dynamically and automatically split data traffic between MPLS and internet depending on application and network load. Data packets for a central IP telephony solution, for example, benefit from MPLS access with a quality-of-service function. This ensures better use of the available bandwidth of hybrid lines.

✔ **Central network configuration:** SD-WAN makes the network more agile: Administrators can configure SD-WAN devices centrally and implement changes much faster than before thanks to service chaining mechanisms. At the same time, they can monitor the network more or less in real time. Reports are also easy to compile with just a few clicks. This means that bottlenecks and disruptions can be foreseen and resolved more effectively.

✔ **Easy and secure cloud connectivity:** According to Enterprise Management Association (EMA), more than half of companies worldwide would like to connect their sites directly to the cloud instead of centrally via a data center or hub. Local internet access for connecting to public clouds is possible without SD-WAN, but has to be managed and secured on an individual basis. Companies with SD-WAN, on the other hand, can obtain reports on internet use from all sites with just a few clicks, and can configure firewalls centrally and uniformly.
Unified Endpoint Management by Workspace ONE

The management of different terminals, traditional PCs, laptops, smartphones, tablets, and new types of device poses ever greater challenges for companies. Complexity and user expectations are increasing constantly. Unified Endpoint Management by Workspace ONE provides a solution based on VMware’s Workspace ONE and Airwatch technology. It simplifies device management for administrators and users by consolidating different devices on a central platform, meaning that costly parallel operation of several platforms is not needed.

The user immediately gets a functioning standard product with flexible care-free services (i.e., advice & workshops, engineering, migration, provisioning & testing, and operation & mobilization), as well as the security of a private cloud hosted and operated in Germany. However, it can be expanded on an individual basis at any time, e.g., to include interfaces, virus protection, support, and analysis tools.

The following Workspace ONE Packages are available:

- **STANDARD**
  - Mobile device management (MDM) functions, configuration & access management, mobile single sign-on (SSO)

- **ADVANCED**
  - All standard functions, advanced Windows 10 management, mobile productivity apps, app wrapping & VMware Tunnel

- **ENTERPRISE SOLUTION**
  - (Individual offer):
    - All standard and advanced functions, intelligence, mobile flows, app publishing
Benefits of this solution:

✔ Agility: just one platform, ability to adapt quickly

✔ Compliance: centralized, uniform contextual rules, implementation in real time

✔ TCO reduction: standard product & provision in the cloud

✔ Future-proofness: solution from market leader VMware for all terminals, OSs, and use cases

✔ Simple & in real time: less complex, uniform management of all devices

✔ Apps: central app catalog with uniform app concept

✔ Productivity: mobilized processes and implementation of individual use cases

✔ Acceptance: intuitive use, single sign-on, and comprehensive support

✔ Security: maximum security, hosting in Germany, individual adaptability, auditability for accounting, local DC redundancies

✔ One-stop shop: integration, access, connectivity, terminals, migration (immediate start, implementation as a self-service or fully managed service, operation in the private cloud with service desk and SLA)
Conclusion

This combination of simplicity, security, and quality is only available from T-Systems. Intense, long-standing collaboration with VMware as a top partner ensures that the services are future-proof and completely reliable.

With its partnership with VMware, individual solutions, and services, T-Systems supports companies in coping effectively with the complexity of IT, optimizing workloads, and exploiting existing potential using the latest technological solutions.

The managed services offering is constantly being developed and expanded. With the help of T-Systems, instead of pushing companies to the limits of their capacity, the variety of options and speed of development open up a whole new world of opportunities for development and agile innovation.

VMware technologies make up a significant proportion of both self-use IT and IT operated for customers.

In short: Navigate – Implement – Farm

Navigate:
Consulting with analysis of current situation, definition of strategy & target situation, implementation planning

Implement:
Adaptation of cloud solutions, connection of different cloud environments, configuration of workloads, integration of new services

Farm:
Operation and optimization of multi-cloud and hybrid solutions

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