Approaches towards a Sovereign European Cloud

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T Systems

Let's power higher performance

Part of Deutsche Telekom

Agenda

- **Company Overview: T-Systems‘ journey from platform provider to digital enabler**
- **Sovereignty Areas: Definition & Requirements**
- **T-Systems Sovereign Platform Portfolio**
- **From Europe to Europe: Secure, Sovereign & Reliable**
- **Deep Dive OTC: A European Hyperscaler Alternative**
- **Deep Dive FCI: Next Generation Private Cloud**

T-Systems is the B2B focused part of Deutsche Telekom AG. T-Systems is an internationally operating IT-Services provider.

T-Systems‘ journey from platform provider to digital enabler

Our Vision

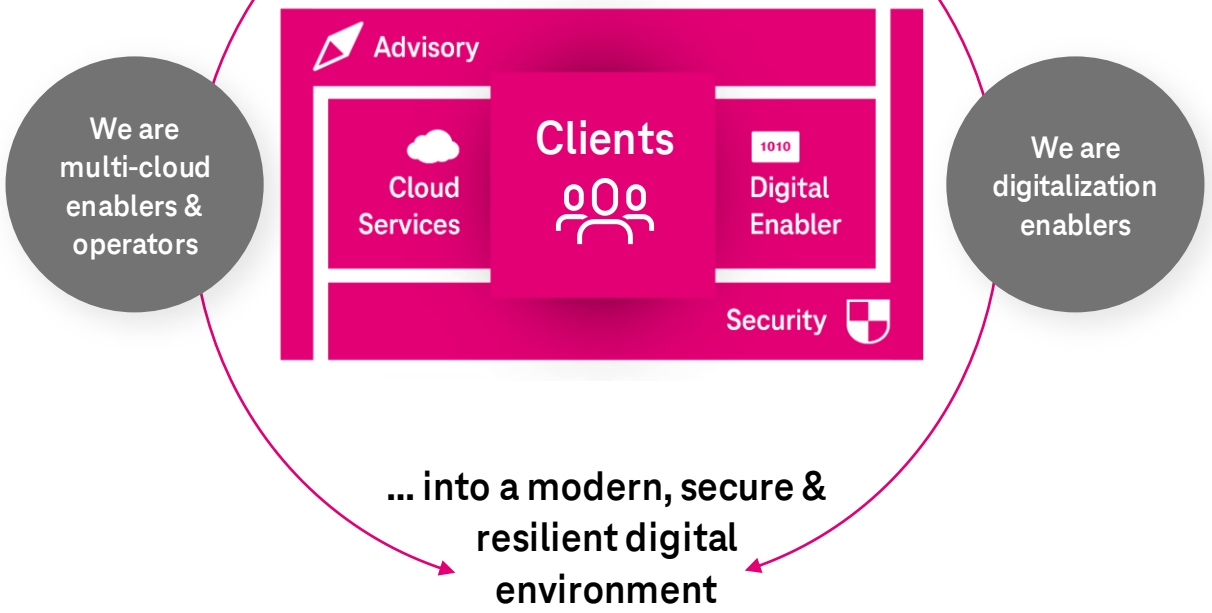
Most reliable ICT solutions provider with best technology **and industry expertise**

Our Mission

We enable organizations **to reach full potential through digitalization**

- **Data sovereignty**
- **Innovation with an open partner ecosystem**
- **Secure operational excellence**

We partner with our clients on their journey …



… into a modern, secure & resilient digital environment

- **Learning & relentless improvements**
- **#peoplemakeithappen Agility and T-Mindset**
- **Sustainability & Diversity**

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Cloud Services is a global team across almost 20 countries

20+ Years
experience in cloud & infrastructure services

Looking after
500+ Clients
across all industries and Fortune100

Being part of
Top 10%
in Customer Satisfaction

1 **Cloud Services Portfolio Unit***

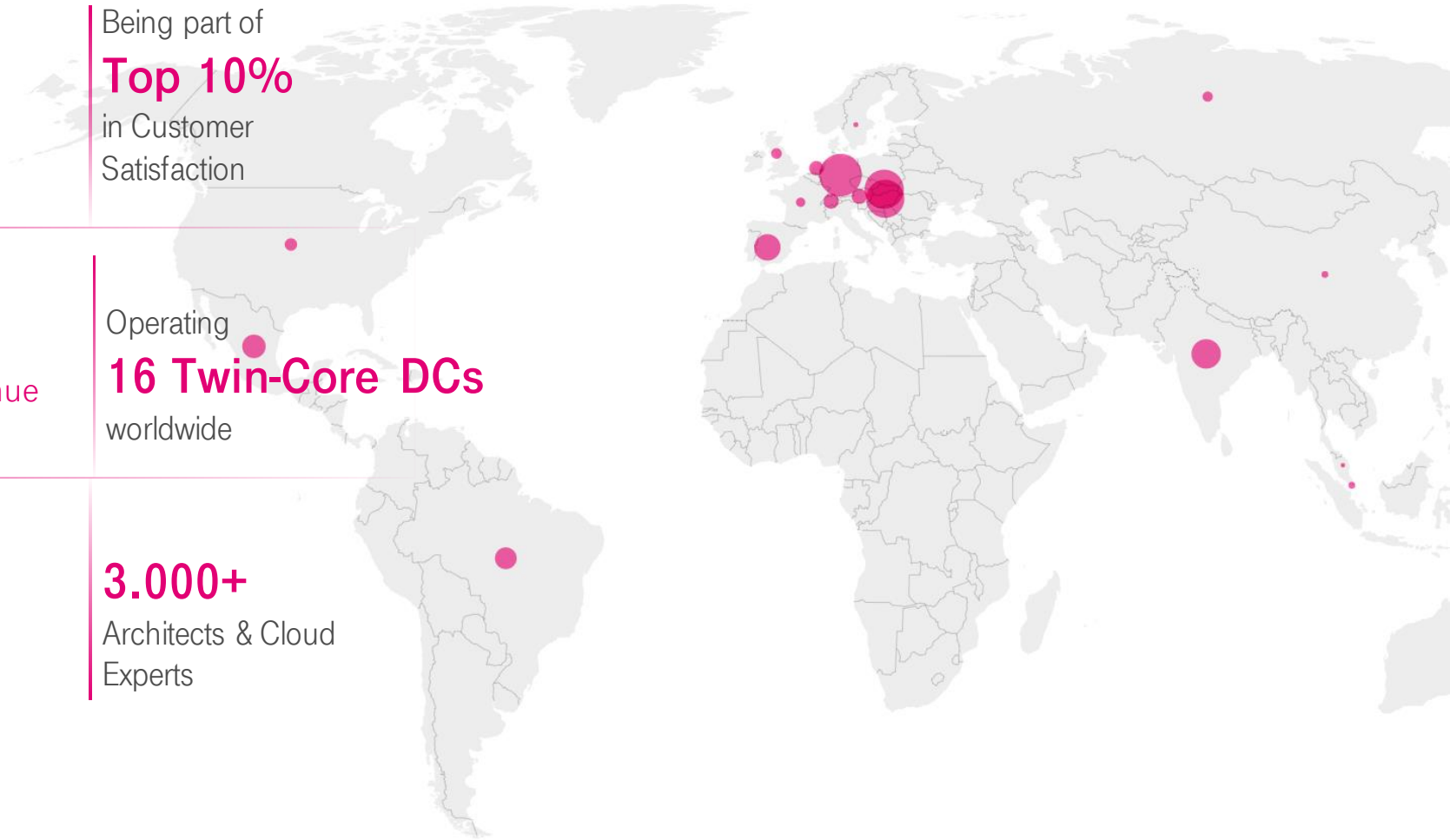
2 **BN€** Revenue

Operating
16 Twin-Core DCs
worldwide

~10.000
Employees in 20 countries

78%
Employees outside of Germany

3.000+
Architects & Cloud Experts



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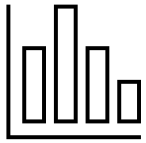
Sovereignty Areas: Definition & Requirements

Operational Sovereignty

- Is the degree to which a customer organization has **transparency into and control it over the provider's operations.**



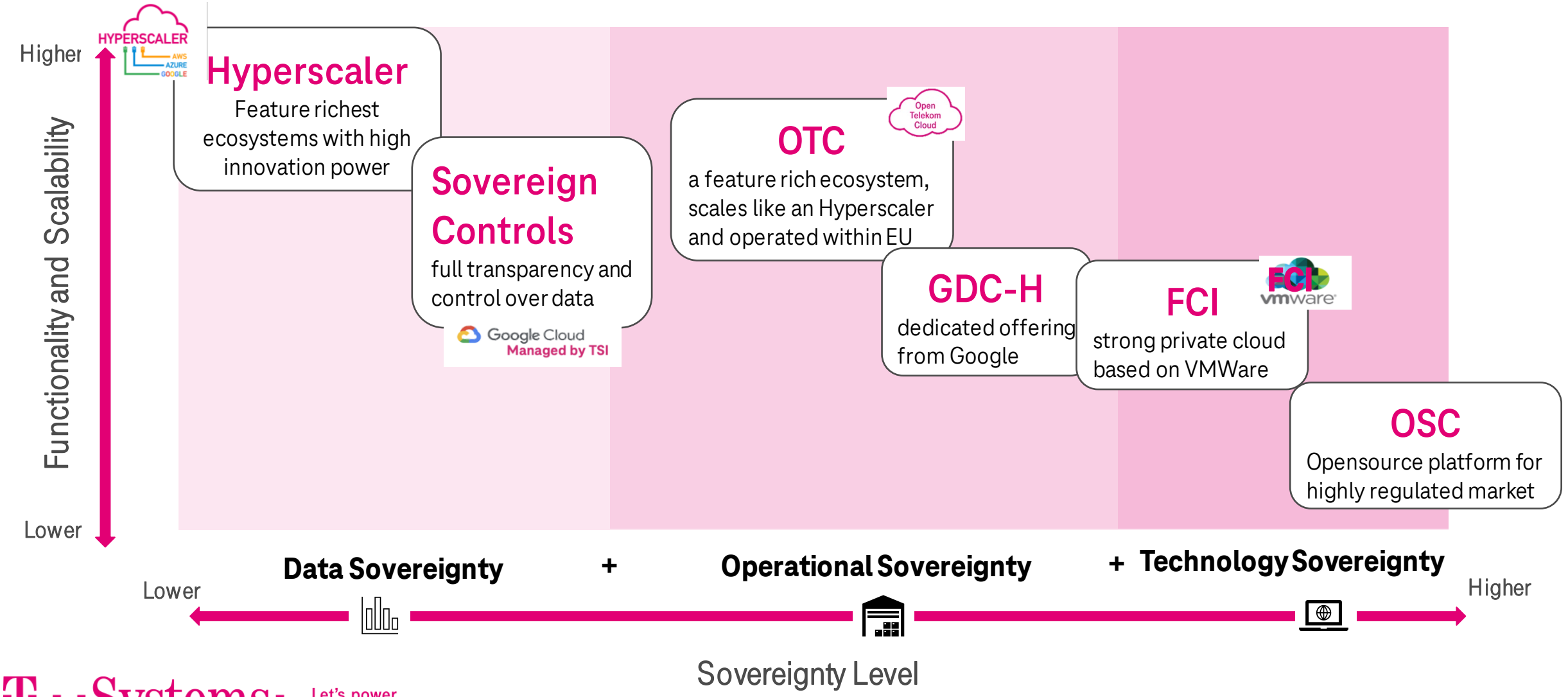
Data Sovereignty

- confers that **information is subject to the rules of its originating jurisdiction** (regardless of its actual location).

Technology Sovereignty

- is the degree to which a customer organization can **assure the continuity and control its rights to technological autonomy.**

T-Systems has multiple sovereign solutions addressing different levels of sovereignty



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From Europe for Europe: Secure, Sovereign & Reliable

§ GDPR compliant

Sovereign

Secure

Reliable

- Operation in European data centers
- Managed by Telekom (EU only)
- Audited data protection according to European law

- Sovereignty over data & encryption - data sovereign
- Open platform due to OpenStack - technology sovereign
- Operated by Telekom - operationally sovereign

- Independently tested security
- Meets industry-specific requirements

- 99,95% Availability
- 24/7 available
- Zero Outage – Quality Assurance Program

✓ Data privacy

✓ Data security

✓ Legal certainty

✓ Schrems II compliant

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OTC a European Hyperscaler Alternative

Open Telekom Cloud

>4.000 contracts

~100.000VMs

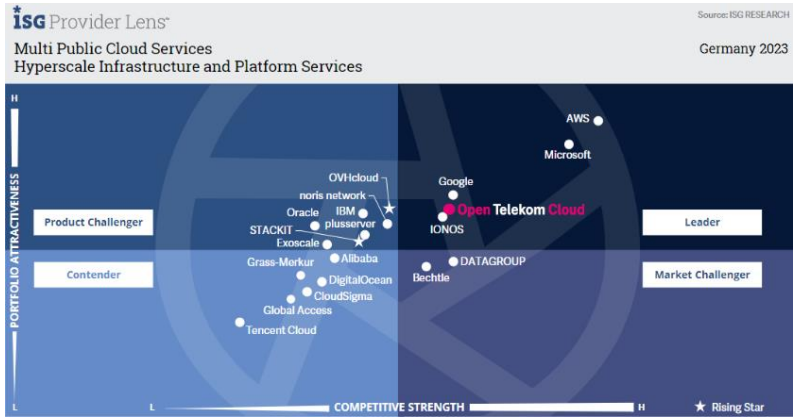
> 140 Mio. Enduser

≈ 830 PB Storage

Locations: DE, NL, CH*

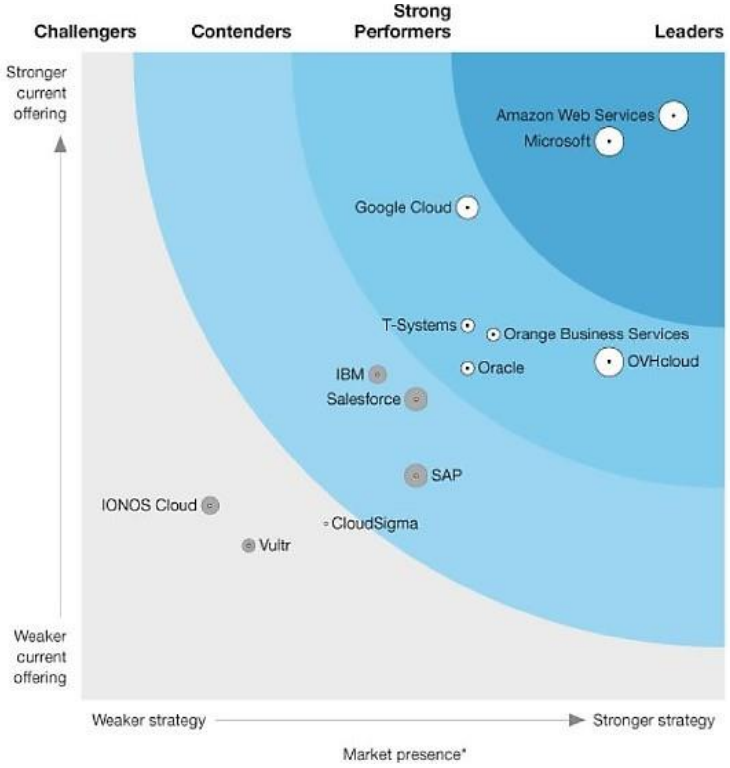
> 4.369.000 GB RAM

Open Telekom Cloud is ranked as Leader together with US-hyperscalers



"T-Systems is continuously expanding the offering on its innovative public cloud platform, Open Telekom Cloud, for the European market."
Wolfgang Heinhaus ISG

Forrester judges Open Telekom Cloud Strong Performer in market



- OTC is often used as **"additional" cloud platform in customer's multi-cloud strategy to gain and ensure sovereignty** by having a Non-US hyperscaler in operation to deliver their products / services
- GDPR / DSGVO Compliance (AVV – "Auftragsdaten-verarbeitung" Only EU personal)

*CH Region is a Community Cloud

Certified & Secure

CLOUD DATA PROTECTION LEVEL 2

EU Cloud Code of Conduct
Data processing in accordance with Art. 28 and 40 GDPR

Bundesamt für Sicherheit in der Informationstechnik

C5 Type 2
Cloud Computing Compliance Criteria Catalogue

KRITIS

IT Security Act 2.0 Compliance
KRITIS-compliant hosting

Our Services

Compute

- Virtual machines
- Images for VMs
- Dedicated Hosts
- Automatic Scaling
- Bare Metal Server
- Functions

Container

- Container
- Container Image Repo

Network

- Private Network
- Direct Connect
- Network Endpoint
- Virtual Private Network
- Internet-gateway
- Load Balancer
- NAT Gateway
- Private Link Access Service
- Domain Name Service

Management

- Identity & Access Mgmt.
- Status Dashboard
- Ressource Monitoring & Alarming
- Ressource management
- Financial Dashboard
- Online Calculator
- Logging
- Log Tank
- Ressource Tags
- Ressource Templates

Application

- Application management & monitoring
- Notifications
- Distributed Event Streaming
- API-Gateway

Analysis

- MapReduce
- Data Ingestion
- Data Warehouse
- Cloud Search
- Data Lake Insight
- Data Processing Governance & Management

Storage

- Block storage
- Disaster Recovery
- Object storage
- Backup
- File storage

Database

- Relational
- Distributed Database
- In Memory
- Document-oriented
- Large Scale DB
- Database migration

Security

- Anti-DDoS
- Database Security
- Key Mgmt/ Encryption
- Web Application Firewall

Artificial Intelligence

- ModelArts
- Optical Character Recognition

FCI – Next Generation Private Cloud

Future Cloud Infrastructure

Next Generation Private Cloud

FCI combines ease of use of a public cloud, with more control, tenant separation, flexibility and cost predictability.

Utilizing VMware's Software Defined Datacenter stack as an Ecosystem for no vendor lock-in.

Scales with business needs regardless of the location (On-Premise or hosted within T-Systems Tier-3 twin core DataCenters).

Advantages:

- 100% virtualization of IT assets
- Infrastructure-as-a-code on boarding process manages X-cloud complexity
- IT Blueprint Repository
- Hybrid ready platform optimized for, but not limited to, legacy hosting
- Advanced migration technology
- Intelligent automation

BSI - IT Grundschutz

Certified since June 2024.

Bundesamt für Sicherheit in der Informationstechnik

SAP enabled

SAP on FCI for government.

SAP

Hybrid by Design

Combines speed and agility with trusted security, seamless integration and transparency

Manage X-Cloud Complexity

Repository of IT Blueprints modelling IT landscapes of the customer

Unlock Faster Value

Zero downtime migrations to FCI to immediately address legacy and digitization challenges

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BACKUP

What is Future Cloud Infrastructure (FCI)?
FCI Product Family Platforms and Services Overview

FCI Platforms

FCI Dedicated

- Dedicated SDDC (*1) per customer based on VMware Cloud Foundation (VCF) with D3 and optional D4 support model
- Twin core Option (2nd Availability Zone) with auto failover for DR avoidance
- Direct Management access for customer, including API access and automation engine and observability tooling
- Maximum Flexibility and Privacy through single Tenancy
- Always up-to-date platform

FCI Shared

FCI Shared offers VMware powered Secure multi-tenant Managed hosting of different (small) customers within a single SDDC for small scale efficiency with a need for

- Managed SAP multi and hybrid cloud services (SMHC)
- Managed SDDC operations

NEW: FCI FLEX for customer self-management in a shared environment now available

FCI On–Premise

Deployment and operation of VMware based private cloud solutions in customer-owned data centers in 2 flavors:

- On-Premise delivers a VCF based SDDC comparable to FCI Dedicated but in a customer Datacenter.
- FCI On-Premise Robo is an entry Solution to address small on-premise hosting needs of customers without a need for a complete SDDC

(*1) Software Defined Datacenter

FCI Additional Services

- Business Continuity Services (BCS)
- Managed Cloud OS (MCOS)
- Storage Services (File as a Service, Object Storage)
- Private Cloud Management (Managed SDDC, Managed Blueprints)

Other Services (*2)

- Multi-Cloud Connectivity (MCCP)
- Application Services, incl SAP
- Managed Container as a Service
- Security Services

(*2) examples of other Services delivered through “other” (non FCI) Portfolios for/on FCI

FCI are secure and reliable private cloud services, based on VMware’s ECO-System – that gives customers the possibility to decrease operational efforts and reduce complexity for their current hybrid cloud environments while increasing agility and speed.

T-Systems offers sovereign multi-cloud solutions out of Germany

DSGVO konforme BSI C5 zertifizierte Public Cloud auf Basis Open Source aus dem Telekom Rechenzentrum in Magdeburg/Biere.

Customer Landing Zone auf einer BSI zertifizierten Private-Cloud.

Von da aus Nutzung von Workloads und Services auf souveränen Public Clouds.

Souveräne Public-Cloud mit einem großen Katalog an datenschutzkonformen Services auf der Google-Cloud-Plattform.