From server-virtualization to private cloud

Chandan Mehta

FUJITSU

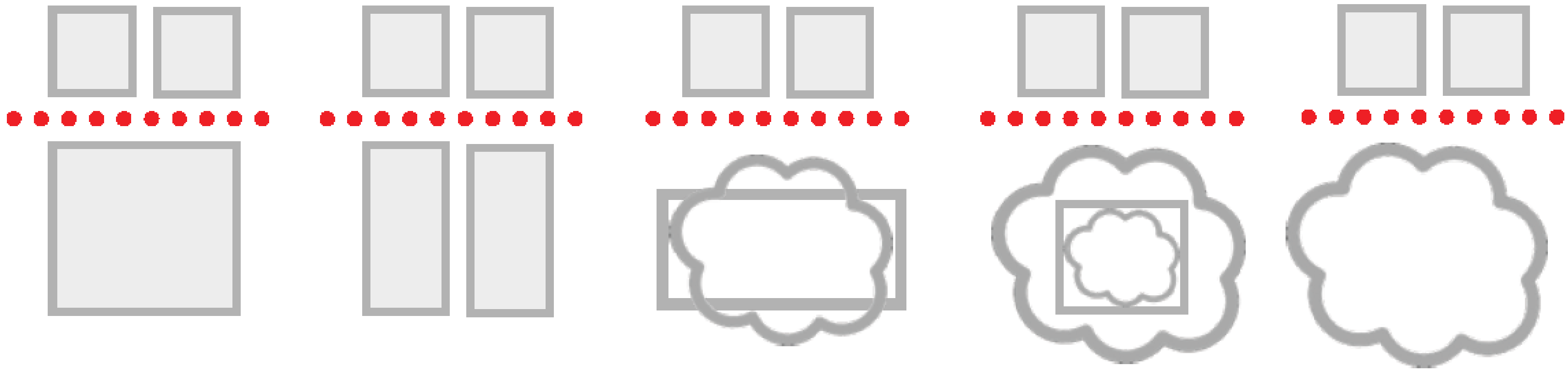
shaping tomorrow with you

Flexibility
Agility
Hybrid Cloud
Virtualization
Dynamic
Growth
Innovation
Capacity
Business Intelligence
Infrastructure
Shared
Cost
IT reshaping Business
Global Cloud
Business Processes
Platform
Collaboration
Capacity
On Demand
Trusted Cloud
Smart Sourcing
Hosting
Data backup
Private Cloud
Application Services
Efficiency

From server-virtualization to private cloud

Chandan Mehta
Director Product Management
Fujitsu Technology Solutions
Middle East.

Gartner: virtualization leads to cloud



Stage 1:
Server Virtualization

- Hardware efficiency
- Capital and energy costs

Stage 2:
Distributed Virtualization

- Flexibility and speed
- Automation
- Operational cost
- Reduced downtime

Stage 3:
Private Cloud

- Self-service
- Service standardization
- IT as a business
- Usage-based metering

Stage 4:
Hybrid Cloud

- Capital and operational cost
- Overdrafting on demand

Stage 5:
Public Cloud

- No capital cost
- Total usage flexibility
- Low barrier to entry

Gartner.

Source: Gartner (Thomas Bittman) Private Cloud Computing: Driving a strategy, February, 2011

What fits for me?

Server-virtualization

- Would its enhanced usage be sufficient for me?

Private cloud

- Does it solve my problems?

What about your requirements?

Flexibility

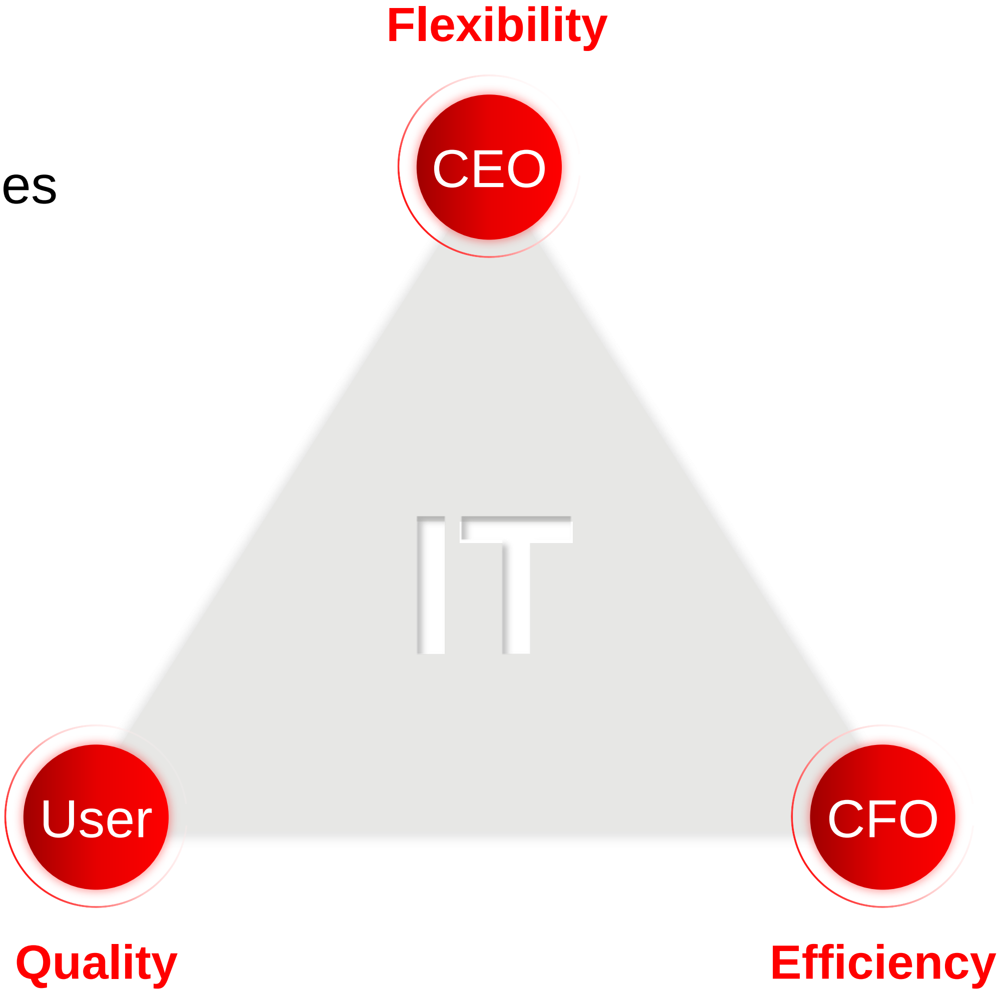
- New business demands
- Rapidly adapt services
- Time-to-production of new services

Efficiency

- Reduce complexity and cost
- Transparency
- Minimized risk
- Compliance

Quality

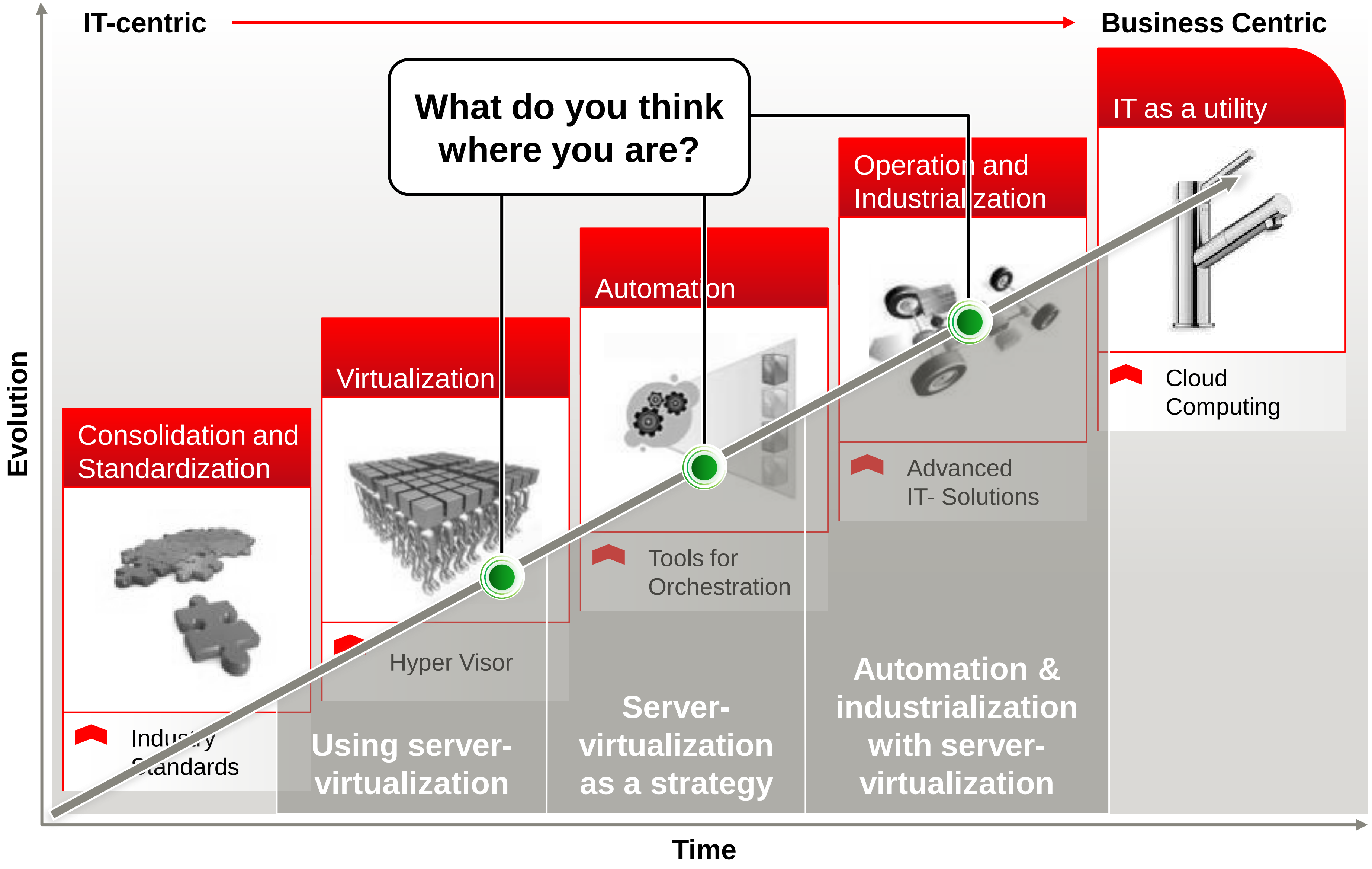
- Improved service levels
- Productivity
- End user satisfaction


Flexibility
CEO
IT
User
CFO
Quality
Efficiency

Server-virtualization could solve your problems

Better utilization of physical resources ■ Lower IT operation costs (energy, space, …)	Efficiency
A homogeneous separation layer ■ Old services can be used on new hardware	Flexibility
Many automation options ■ Standardize routine jobs	Quality
Easy deployment ■ E.g. "offline" software deployment	Efficiency
Easy scalability ■ New services are available in minutes	Flexibility
Easy to implement availability solutions ■ Uniform SLA's through application independence	Quality

Virtualization states



IT-centric → **Business Centric**

What do you think where you are?

Consolidation and Standardization

- Industry Standards

Virtualization

- Hyper Visor

Automation

- Tools for Orchestration

Operation and Industrialization

- Advanced IT- Solutions

IT as a utility

- Cloud Computing

Using server-virtualization

Server-virtualization as a strategy

Automation & industrialization with server-virtualization

Evolution

Time

Let’s take a look at cloud computing

Cloud: Consuming IT as a Utility

Pay per use

Elastically Scalable

Self Service

Private
just for you

Community
selectively shared

Public
shared with anyone

Hybrid – a combination

IaaS

PaaS

SaaS

BPaaS

What do you expect from a private cloud?

Cloud: Consuming IT as a Utility

Pay per use

Elastically Scalable

Self Service

- Are you looking for ‘Pay per use’ or cost transparency?
- Does any self service solve your business or IT requirements?
- What is the scalability you need?

Agreed so far?

What to do next?

Why should I look for in a partner?

Customers speak :

"The Fujitsu solution has transformed our server environment, reduced our carbon footprint and is expected to save us £500.000,- in the first year alone."

Karen Charlton, Senior Technical Specialist, Imperial Tobacco

"Thanks to virtualization and Fujitsu's stable storage systems, our IT runs securely and smoothly – and the performance is exceptional. We felt that we were in good hands during the consulting process."

Frank Rabe, Acting National Chief Executive, DLRG

"The project should enable OPEGIEKA to implement advanced R&D projects. Those will include application of cloud computing and the SOA architecture in geodetic, analytical, and decision-support systems."

Sebastian Stybel, Chief Network Administrator, OPEGIEKA Sp. z.o.o.

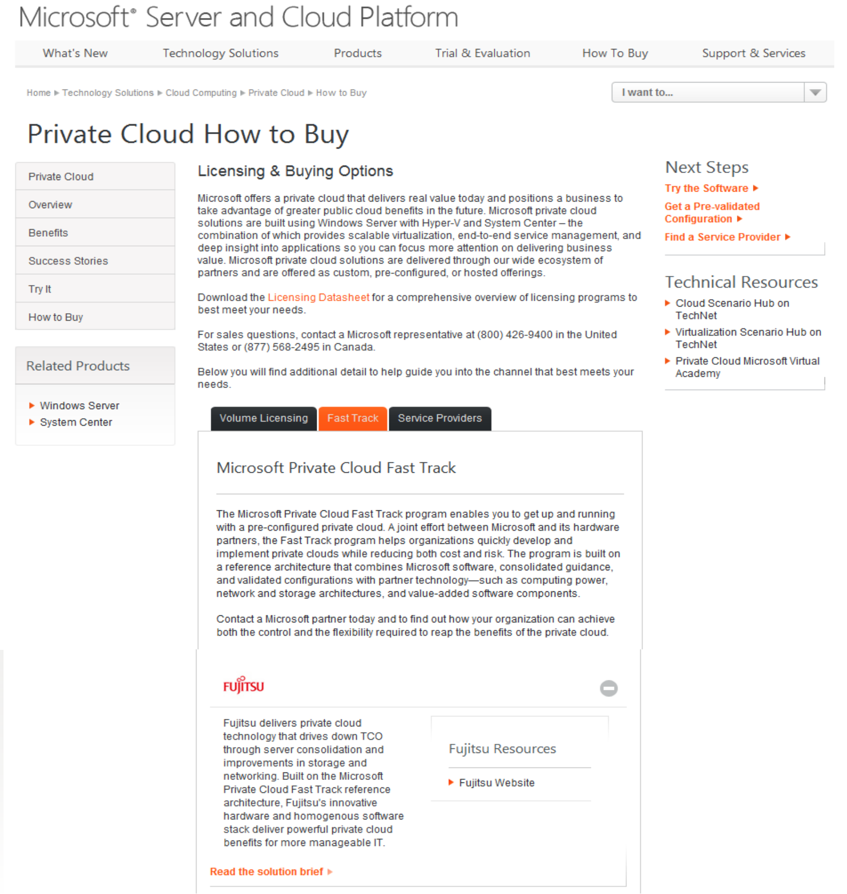
"The solution Fujitsu delivered was absolutely perfect for us. We were able to double performance, maintain around-the-clock availability, cut power consumption by half and reduce operating costs. And we were able to do all that quickly and economically."

António Marques, IT Manager, Linha de Cuidados de Saúde (LCS)

Fujitsu private cloud reference architectures

Microsoft Private Cloud Fast Track

- Selected reference architectures especially for Microsoft environments



Microsoft® Server and Cloud Platform

What's New | Technology Solutions | Products | Trial & Evaluation | How To Buy | Support & Services

Home ▸ Technology Solutions ▸ Cloud Computing ▸ Private Cloud ▸ How to Buy

I want to...

Private Cloud How to Buy

- Private Cloud
- Overview
- Benefits
- Success Stories
- Try It
- How to Buy

Related Products

- Windows Server
- System Center

Licensing & Buying Options

Microsoft offers a private cloud that delivers real value today and positions a business to take advantage of greater public cloud benefits in the future. Microsoft private cloud solutions are built using Windows Server with Hyper-V and System Center – the combination of which provides scalable virtualization, end-to-end service management, and deep insight into applications so you can focus more attention on delivering business value. Microsoft private cloud solutions are delivered through our wide ecosystem of partners and are offered as custom, pre-configured, or hosted offerings.

Download the Licensing Datasheet for a comprehensive overview of licensing programs to best meet your needs.

For sales questions, contact a Microsoft representative at (800) 426-9400 in the United States or (877) 568-2495 in Canada.

Below you will find additional detail to help guide you into the channel that best meets your needs.

Volume Licensing | Fast Track | Service Providers

Microsoft Private Cloud Fast Track

The Microsoft Private Cloud Fast Track program enables you to get up and running with a pre-configured private cloud. A joint effort between Microsoft and its hardware partners, the Fast Track program helps organizations quickly develop and implement private clouds while reducing both cost and risk. The program is built on a reference architecture that combines Microsoft software, consolidated guidance, and validated configurations with partner technology—such as computing power, network and storage architectures, and value-added software components.

Contact a Microsoft partner today and to find out how your organization can achieve both the control and the flexibility required to reap the benefits of the private cloud.

FUJITSU

Fujitsu delivers private cloud technology that drives down TCO through server consolidation and improvements in storage and networking. Built on the Microsoft Private Cloud Fast Track reference architecture, Fujitsu's innovative hardware and homogenous software stack deliver powerful private cloud benefits for more manageable IT.

Fujitsu Resources

- Fujitsu Website

Read the solution brief ▸

Next Steps

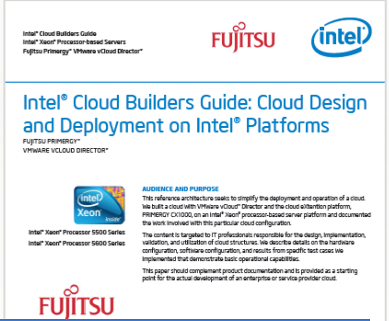
- Try the Software ▸
- Get a Pre-validated Configuration ▸
- Find a Service Provider ▸

Technical Resources

- Cloud Scenario Hub on TechNet
- Virtualization Scenario Hub on TechNet
- Private Cloud Microsoft Virtual Academy

Intel Cloud Builder Program

- Ongoing enhancements



Intel® Cloud Builders Guide
Intel® Xeon® Processor-based Servers
Fujitsu Primergy® VMware vCloud Director®

Intel® Cloud Builders Guide: Cloud Design and Deployment on Intel® Platforms

FUJITSU PRIMERGY®
VMWARE VCLOUD DIRECTOR®

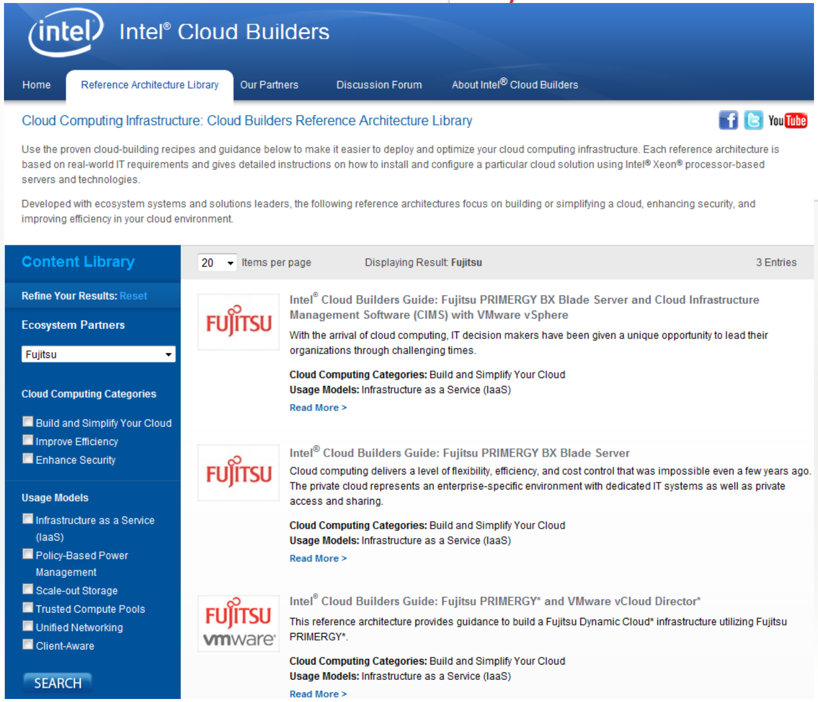
Intel® Xeon® Processor 5500 Series
Intel® Xeon® Processor 5600 Series

AUDIENCE AND PURPOSE

This reference architecture seeks to simplify the deployment and operation of a cloud. We built a cloud with VMware vCloud® Director and the cloud eXtention platform, PRIMERGY CX1000, on an Intel® Xeon® processor-based server platform and documented the work involved with this particular cloud configuration.

The content is targeted to IT professionals responsible for the design, implementation, validation, and utilization of cloud structures. We describe details on the hardware configuration, software configuration, and results from specific test cases we implemented that demonstrate basic operational capabilities.

This paper should complement product documentation and is provided as a starting point for the actual development of an enterprise or service provider cloud.



Intel® Cloud Builders

Home | Reference Architecture Library | Our Partners | Discussion Forum | About Intel® Cloud Builders

Cloud Computing Infrastructure: Cloud Builders Reference Architecture Library

Use the proven cloud-building recipes and guidance below to make it easier to deploy and optimize your cloud computing infrastructure. Each reference architecture is based on real-world IT requirements and gives detailed instructions on how to install and configure a particular cloud solution using Intel® Xeon® processor-based servers and technologies.

Developed with ecosystem systems and solutions leaders, the following reference architectures focus on building or simplifying a cloud, enhancing security, and improving efficiency in your cloud environment.

Content Library

Refine Your Results: Reset

Ecosystem Partners: Fujitsu

Cloud Computing Categories

- ☐ Build and Simplify Your Cloud
- ☐ Improve Efficiency
- ☐ Enhance Security

Usage Models

- ☐ Infrastructure as a Service (IaaS)
- ☐ Policy-Based Power Management
- ☐ Scale-out Storage
- ☐ Trusted Compute Pools
- ☐ Unified Networking
- ☐ Client-Aware

SEARCH

20 Items per page | Displaying Result: **Fujitsu** | 3 Entries

Intel® Cloud Builders Guide: Fujitsu PRIMERGY BX Blade Server and Cloud Infrastructure Management Software (CIMS) with VMware vSphere

With the arrival of cloud computing, IT decision makers have been given a unique opportunity to lead their organizations through challenging times.

Cloud Computing Categories: Build and Simplify Your Cloud
Usage Models: Infrastructure as a Service (IaaS)

Read More >

Intel® Cloud Builders Guide: Fujitsu PRIMERGY BX Blade Server

Cloud computing delivers a level of flexibility, efficiency, and cost control that was impossible even a few years ago. The private cloud represents an enterprise-specific environment with dedicated IT systems as well as private access and sharing.

Cloud Computing Categories: Build and Simplify Your Cloud
Usage Models: Infrastructure as a Service (IaaS)

Read More >

Intel® Cloud Builders Guide: Fujitsu PRIMERGY® and VMware vCloud Director®

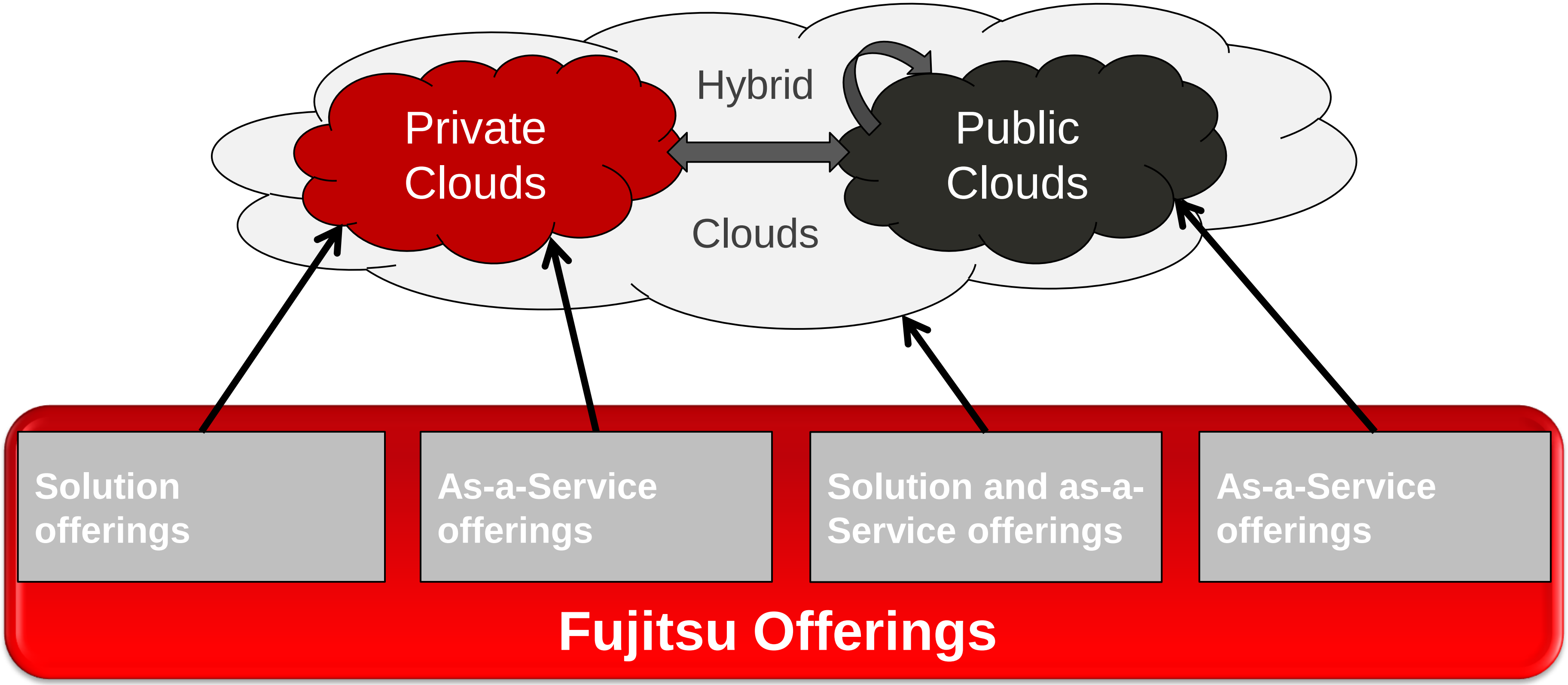
This reference architecture provides guidance to build a Fujitsu Dynamic Cloud® infrastructure utilizing Fujitsu PRIMERGY®.

Cloud Computing Categories: Build and Simplify Your Cloud
Usage Models: Infrastructure as a Service (IaaS)

Read More >

Fujitsu supports various cloud approaches

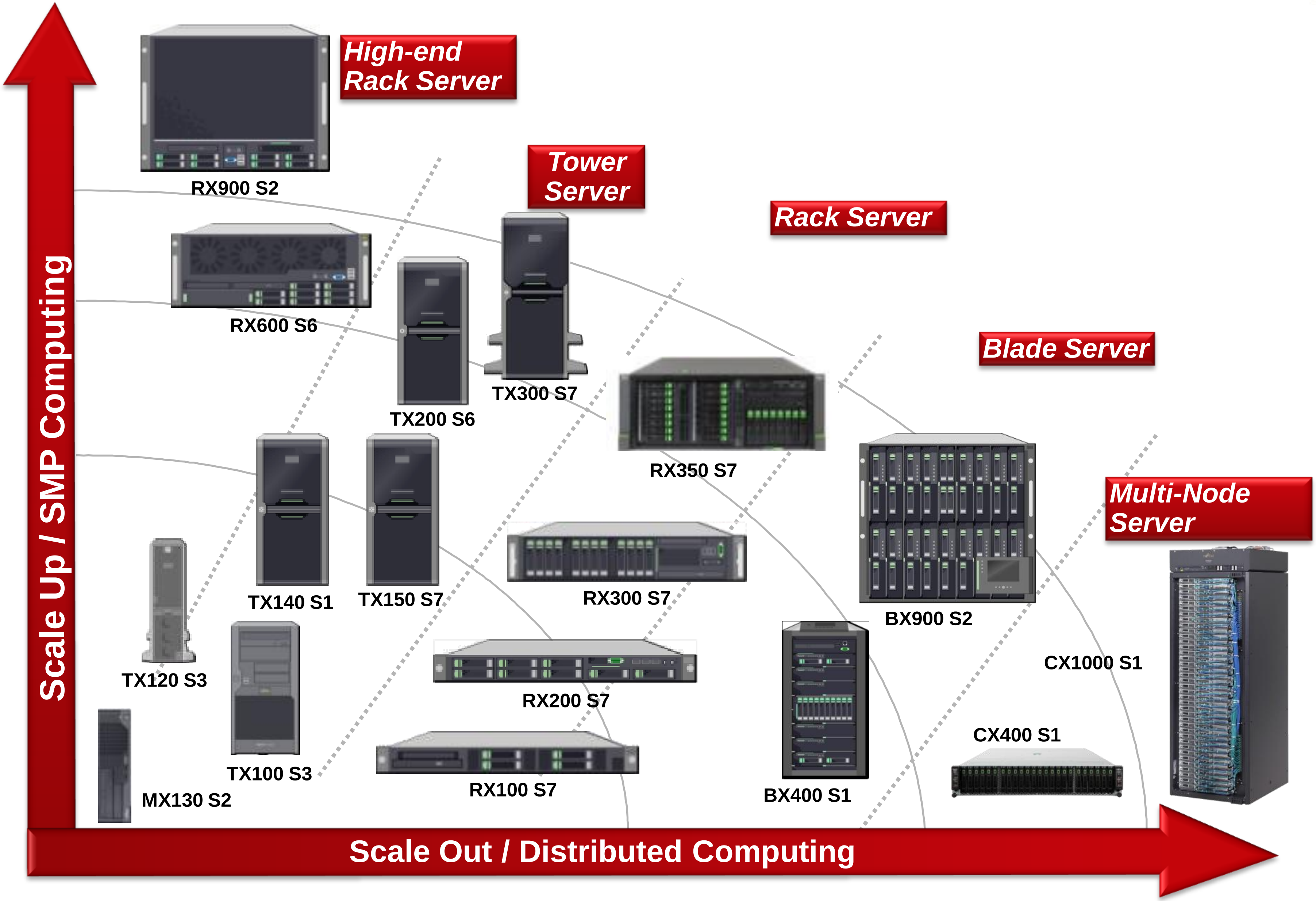
Cloud has many flavors and several dimensions


Hybrid
Private Clouds
Public Clouds
Clouds
Solution offerings
As-a-Service offerings
Solution and as-a-Service offerings
As-a-Service offerings
Fujitsu Offerings

Why Fujitsu?

- Many years of experience – coming from mainframe virtualization and as a cloud service provider
- Best of breed platforms
  - PRIMERGY, ETERNUS, various clients, …

PRIMERGY – the virtualization and cloud platform



Scale Up / SMP Computing

Scale Out / Distributed Computing

High-end Rack Server

RX900 S2

RX600 S6

Tower Server

TX300 S7

TX200 S6

TX140 S1

TX150 S7

TX120 S3

TX100 S3

MX130 S2

Rack Server

RX350 S7

RX300 S7

RX200 S7

RX100 S7

Blade Server

BX900 S2

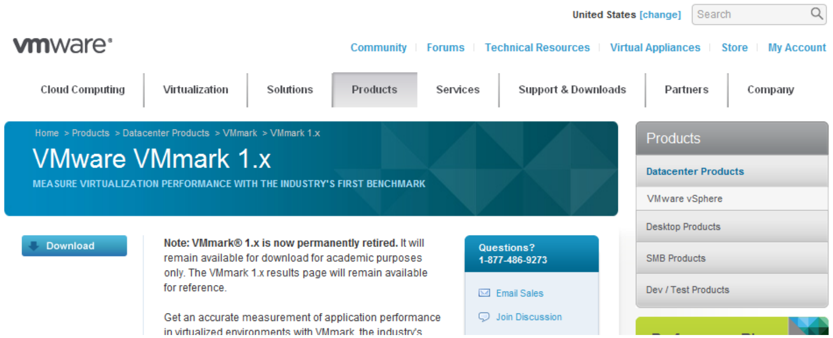
BX400 S1

Multi-Node Server

CX1000 S1

CX400 S1

PRIMERGY virtualization power


United States [change]
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vmware
Community | Forums | Technical Resources | Virtual Appliances | Store | My Account
Cloud Computing
Virtualization
Solutions
Products
Services
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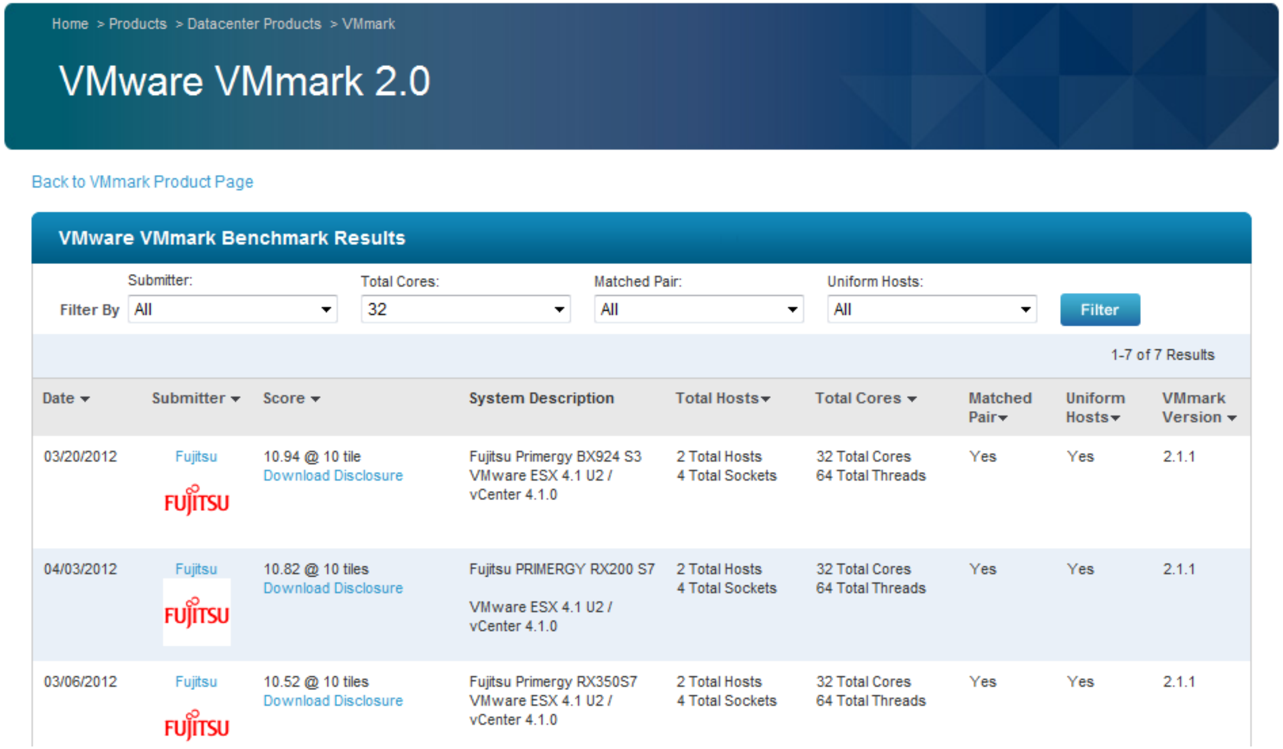
Partners
Company
Home > Products > Datacenter Products > VMmark > VMmark 1.x
Download
Questions?
1-877-486-9273
Email Sales
Join Discussion
Products
Datacenter Products
VMware vSphere
Desktop Products
SMB Products
Dev / Test Products

VMware VMmark 1.x

MEASURE VIRTUALIZATION PERFORMANCE WITH THE INDUSTRY'S FIRST BENCHMARK

Note: VMmark® 1.x is now permanently retired. It will remain available for download for academic purposes only. The VMmark 1.x results page will remain available for reference.

Get an accurate measurement of application performance in virtualized environments with VMmark, the industry's


Home > Products > Datacenter Products > VMmark
Back to VMmark Product Page
Filter

VMware VMmark 2.0

VMware VMmark Benchmark Results

Filter By Submitter: All; Total Cores: 32; Matched Pair: All; Uniform Hosts: All

1-7 of 7 Results

Date	Submitter	Score	System Description	Total Hosts	Total Cores	Matched Pair	Uniform Hosts	VMmark Version
03/20/2012	Fujitsu FUJITSU	10.94 @ 10 tile Download Disclosure	Fujitsu Primergy BX924 S3 VMware ESX 4.1 U2 / vCenter 4.1.0	2 Total Hosts 4 Total Sockets	32 Total Cores 64 Total Threads	Yes	Yes	2.1.1
04/03/2012	Fujitsu FUJITSU	10.82 @ 10 tiles Download Disclosure	Fujitsu PRIMERGY RX200 S7 VMware ESX 4.1 U2 / vCenter 4.1.0	2 Total Hosts 4 Total Sockets	32 Total Cores 64 Total Threads	Yes	Yes	2.1.1
03/06/2012	Fujitsu FUJITSU	10.52 @ 10 tiles Download Disclosure	Fujitsu Primergy RX350S7 VMware ESX 4.1 U2 / vCenter 4.1.0	2 Total Hosts 4 Total Sockets	32 Total Cores 64 Total Threads	Yes	Yes	2.1.1

VMmark 1.x – closed 12/2010 with Fujitsu as No. 1 in all participated performance categories:

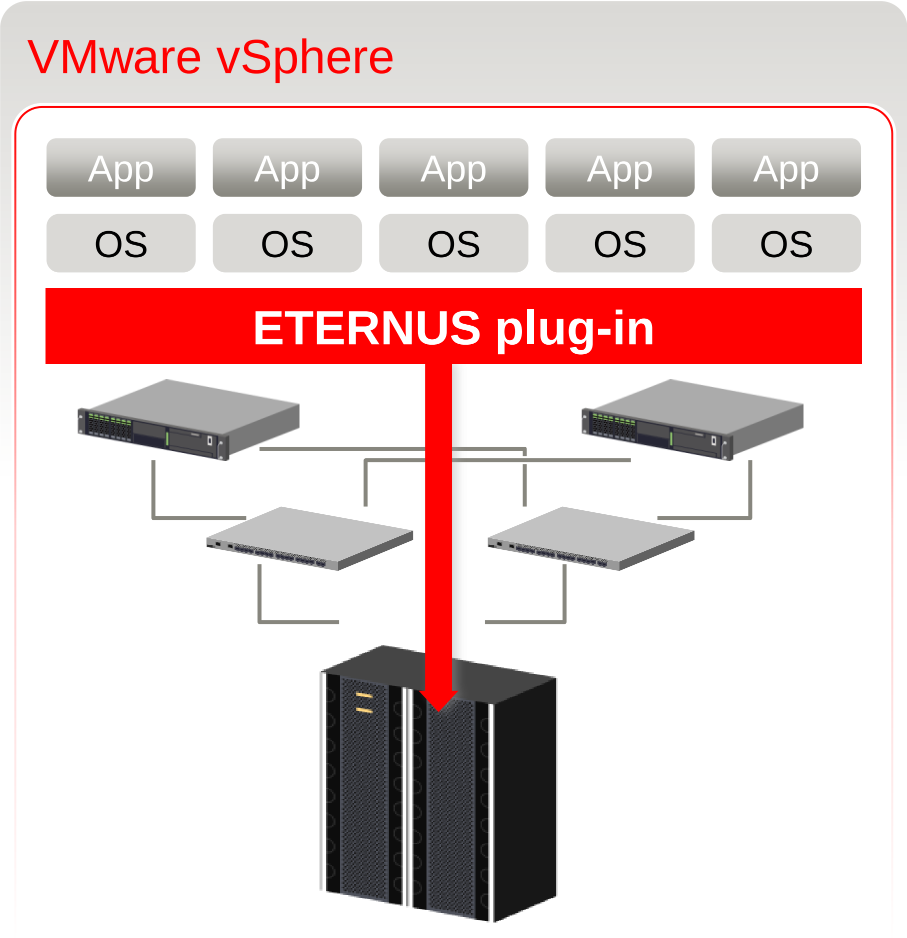
8, 12, 16, 24 and 32 cores

VMware VMmark 2.0 screenshot as of April 25th, 2012

ETERNUS optimized for virtualization

ETERNUS DX is integrated into VMware supporting the VAAI plug-in (vStorage APIs for Array Integration)

The ETERNUS DX remote copy functionality simplifies the implementation of disaster recovery concepts

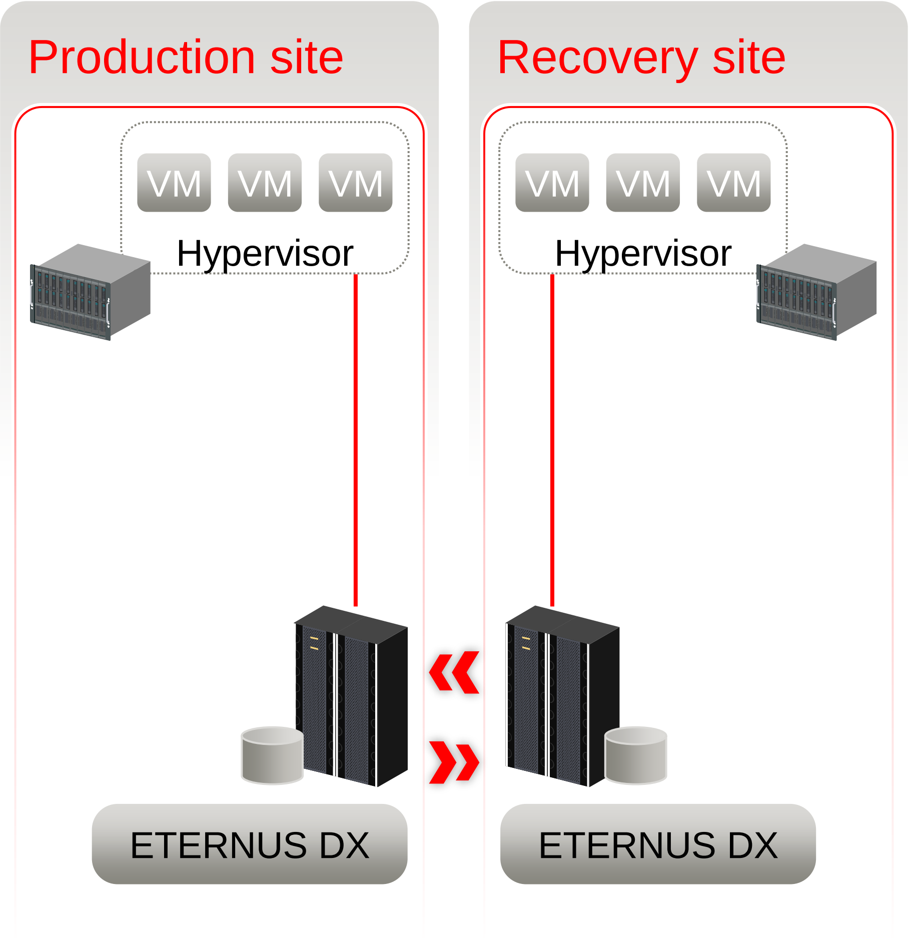


VMware vSphere

App App App App App

OS OS OS OS OS

ETERNUS plug-in



Production site

VM VM VM

Hypervisor

ETERNUS DX

Recovery site

VM VM VM

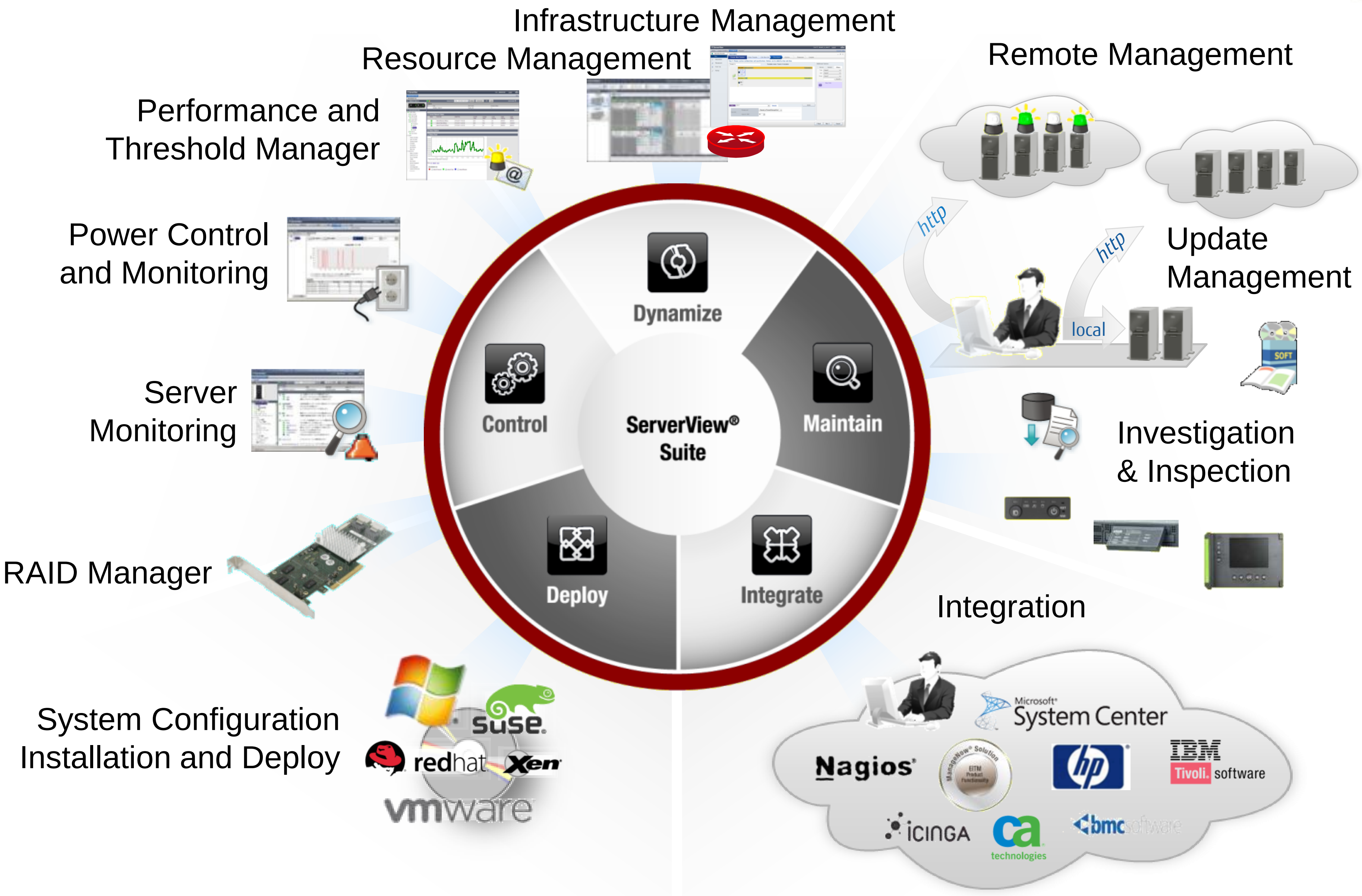
Hypervisor

ETERNUS DX

Why Fujitsu?

- Many years of experience – coming from mainframe virtualization and as a cloud service provider
- Best of breed platforms
  - PRIMERGY, ETERNUS, various clients, …
- Virtualization utilizing and extending offerings
  - ServerView Suite
  - ETERNUS CS, Zero Clients, FlexFrame for SAP, ….
  - DI Blocks
  - Dynamic Infrastructures for VMware vCloud

Fujitsu PRIMERGY ServerView Suite



Infrastructure Management

Resource Management

Remote Management

Performance and Threshold Manager

Power Control and Monitoring

Update Management

Server Monitoring

Investigation & Inspection

RAID Manager

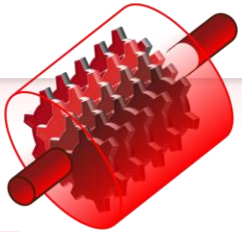
Integration

System Configuration Installation and Deploy

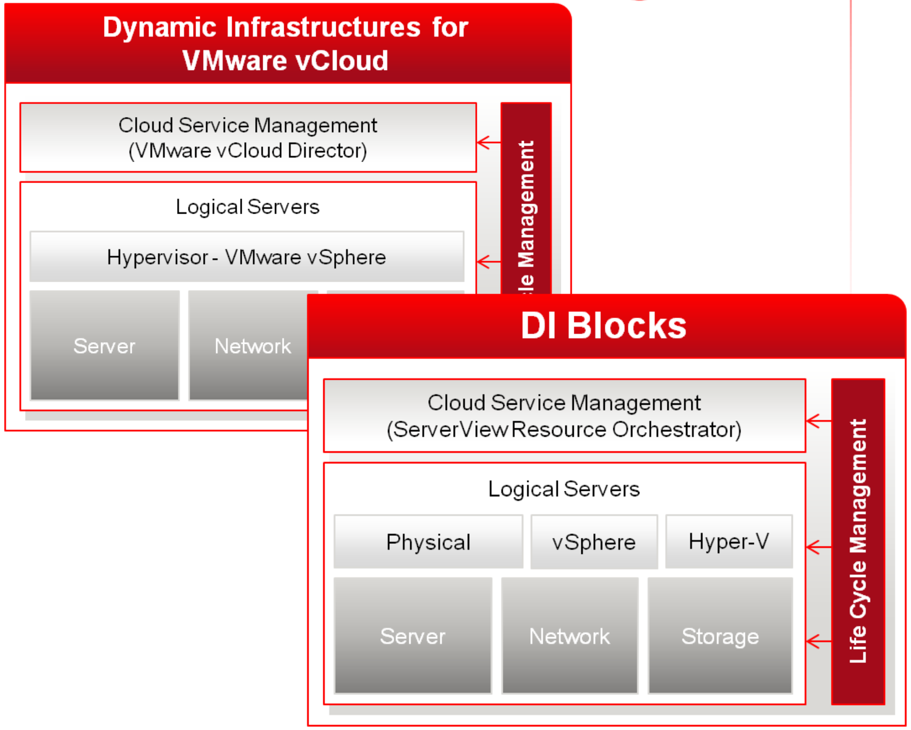
ServerView® Suite
Dynamize
Control
Maintain
Deploy
Integrate
http
http
local
SOFT
suse
redhat
Xen
vmware
Microsoft System Center
Nagios
ManageNow Solution
hp
IBM Tivoli. software
icinga
ca technologies
bmc software

Fujitsu’s Integrated Private Cloud Platforms

Get the complete engine not single pieces !

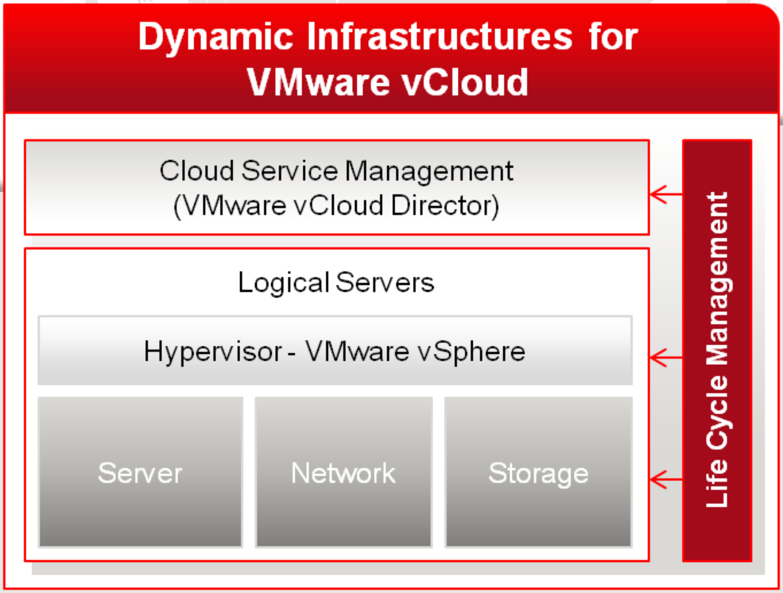


- Validated IT infrastructure
  - Servers, network, storage and management software
  - Pre-integrated and pre-tested
- Life-cycle management for the complete infrastructure
  - Consistent and verifiable setup, update and upgrade of all solution components
- Cloud service management
  - Resource pool management
  - Self-service provisioning


Dynamic Infrastructures for VMware vCloud
Cloud Service Management (VMware vCloud Director)
Logical Servers
Hypervisor - VMware vSphere
Server
Network
le Management
DI Blocks
Cloud Service Management (ServerView Resource Orchestrator)
Logical Servers
Physical
vSphere
Hyper-V
Server
Network
Storage
Life Cycle Management

Reduces implementation risk, time to production, maintenance efforts and associated costs

DI Blocks / Dynamic Infrastructures for VMware vCloud



Dynamic Infrastructures for VMware vCloud

Cloud Service Management (VMware vCloud Director)

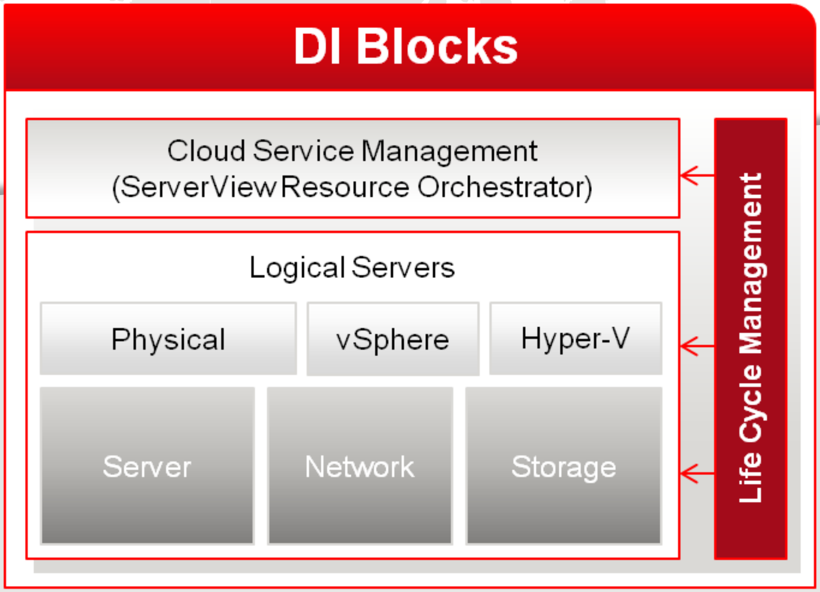
Logical Servers

Hypervisor - VMware vSphere

Server | Network | Storage

Life Cycle Management

- Dedicated for VMware vSphere environments



DI Blocks

Cloud Service Management (ServerView Resource Orchestrator)

Logical Servers

Physical | vSphere | Hyper-V

Server | Network | Storage

Life Cycle Management

- Flexible platform support (physical / multi-hypervisor)

Increasing the level of integration and flexibility to serve versatile requirements

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  - DI Blocks
  - Dynamic Infrastructures for VMware vCloud
- Comprehensive service portfolio
  - All steps from various assessments services up to managed and cloud services

Standard services

Technical IT Infrastructure services

Technical IT Infrastructure Services

Consult	Design	Build	Operate	Maintain
Customer Briefing		Hardware Installation		
Configuration & Sizing		Upgrade Services		
Solution Preview	Solution Specification	Solution Implementation	Solution Contract	
Strategy Workshop	Migration Specification	Migration Service	Go Live Services	Service Pack/ Contract Hardware
Inspection Services Tool based Assessment	Inspection Services Tool based Modeling	Inspection Services Tool based Verification	Operational Consulting & Optimization	
Assessment IT Infrastructure	Operational Specifications	Operational Implementation	Health Check Services	Service Pack/ Contract Hardware
Solution Concept		Audit Service	Managed Services	
Proof of Concept		Rollout Services	Customer specific Trainings	
Project Management			Service Level Management	

Financial TCO and ROI Services

Consult	Design	Build	Operate	Maintain
ROI Estimate	ROI Predict	ROI Deliver		
TCO/ROI Evaluation				

Start of your journey to the cloud

What it is?

A workshop to accelerate and substantiate your decision-making for cloud computing and how to start successfully implementing this in your organization.

Benefits

- Quickly gain expert advice on the advantages that cloud computing can offer you today
- Accelerate your decision-making for cloud computing versus other IT sourcing options
- Gain valuable input in supporting your IT sourcing strategy

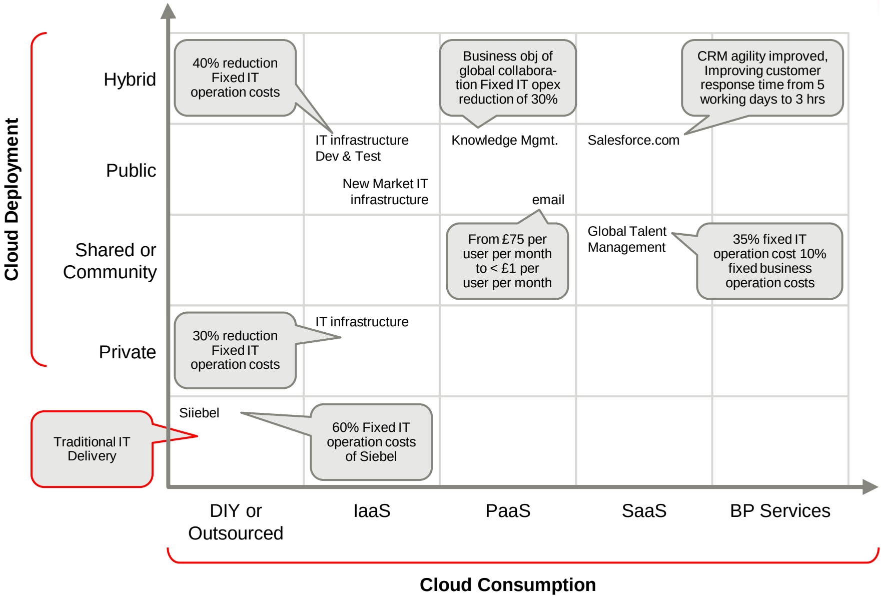
Participants

- Fujitsu cloud consultants
- Business and IT strategic decision makers from the customer organization

Deliverables

You receive a report clearly detailing:

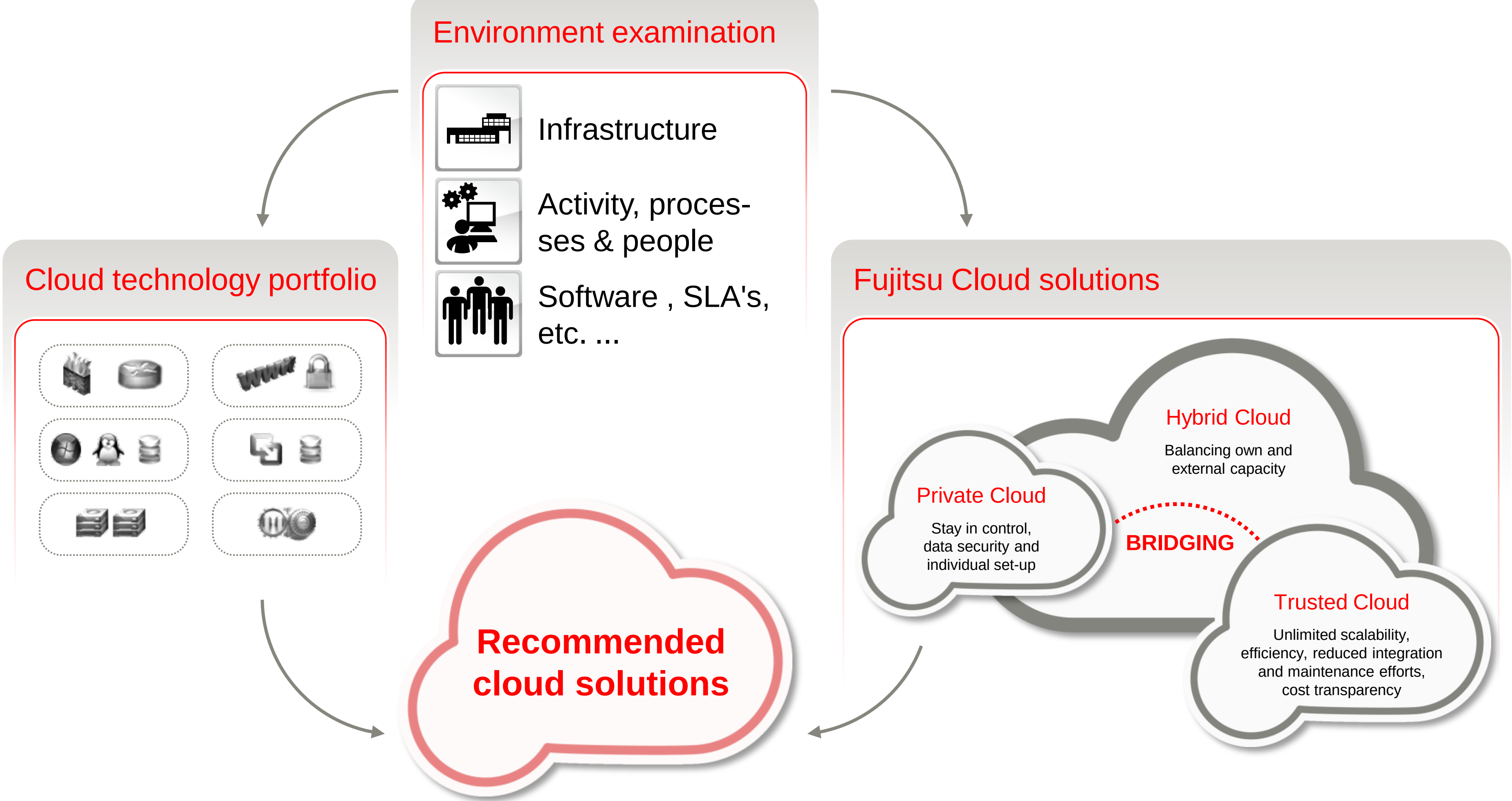
- A business benefits analysis for cloud computing for your organization
- Sourcing options matching your discrete IT services, detailing compatibility to cloud and non-cloud delivery models
- Prioritization of existing processes to a possible cloud delivery model
- An executive cloud strategy for the organization


Cloud Deployment
Hybrid
Public
Shared or Community
Private
Traditional IT Delivery
DIY or Outsourced
IaaS
PaaS
SaaS
BP Services
Cloud Consumption
40% reduction Fixed IT operation costs
IT infrastructure Dev & Test
New Market IT infrastructure
Business obj of global collabora-tion Fixed IT opex reduction of 30%
Knowledge Mgmt.
email
CRM agility improved, Improving customer response time from 5 working days to 3 hrs
Salesforce.com
From £75 per user per month to < £1 per user per month
Global Talent Management
35% fixed IT operation cost 10% fixed business operation costs
30% reduction Fixed IT operation costs
IT infrastructure
Siiebel
60% Fixed IT operation costs of Siebel

Possible next (or first) step

Cloud Readiness Assessment

- This service examines your infrastructure based on current workloads and applications assessment to determine the readiness and the appropriate targeted cloud environment & solution



Environment examination

Infrastructure

Activity, processes & people

Software , SLA's, etc. ...

Cloud technology portfolio

Fujitsu Cloud solutions

Hybrid Cloud

Balancing own and external capacity

Private Cloud

Stay in control, data security and individual set-up

BRIDGING

Trusted Cloud

Unlimited scalability, efficiency, reduced integration and maintenance efforts, cost transparency

Recommended cloud solutions

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  - DI Blocks
  - Dynamic Infrastructures for VMware vCloud
- Comprehensive service portfolio
  - All steps from various assessments services up to managed and cloud services
- Close cooperation with all market leaders – to have the best solution for your individual need

A strong global partner ecosystem

FUJITSU

Leveraging strong alliances with leading global players, we are even better positioned to serve our customers…

Microsoft
SAP
intel
CISCO
ORACLE
NetApp
Symantec
BROCADE
vmware
redhat
Novell
CITRIX

This is an excerpt from our global partner list

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- Comprehensive service portfolio
  - All steps from various assessments services up to managed and cloud services
- Close cooperation with all market leaders – to have the best solution for your individual need
- "Made in Germany", worldwide capabilities

R&D and manufacturing at the heart of Europe

FUJITSU

Global responsibility for PRIMERGY x86 server and ETERNUS storage business centralized in Europe

- Close to our customers and their needs
- Quick response times and direct contact to R&D
- Backed up by our global R&D capabilities:

A continued commitment to quality - Made in Europe

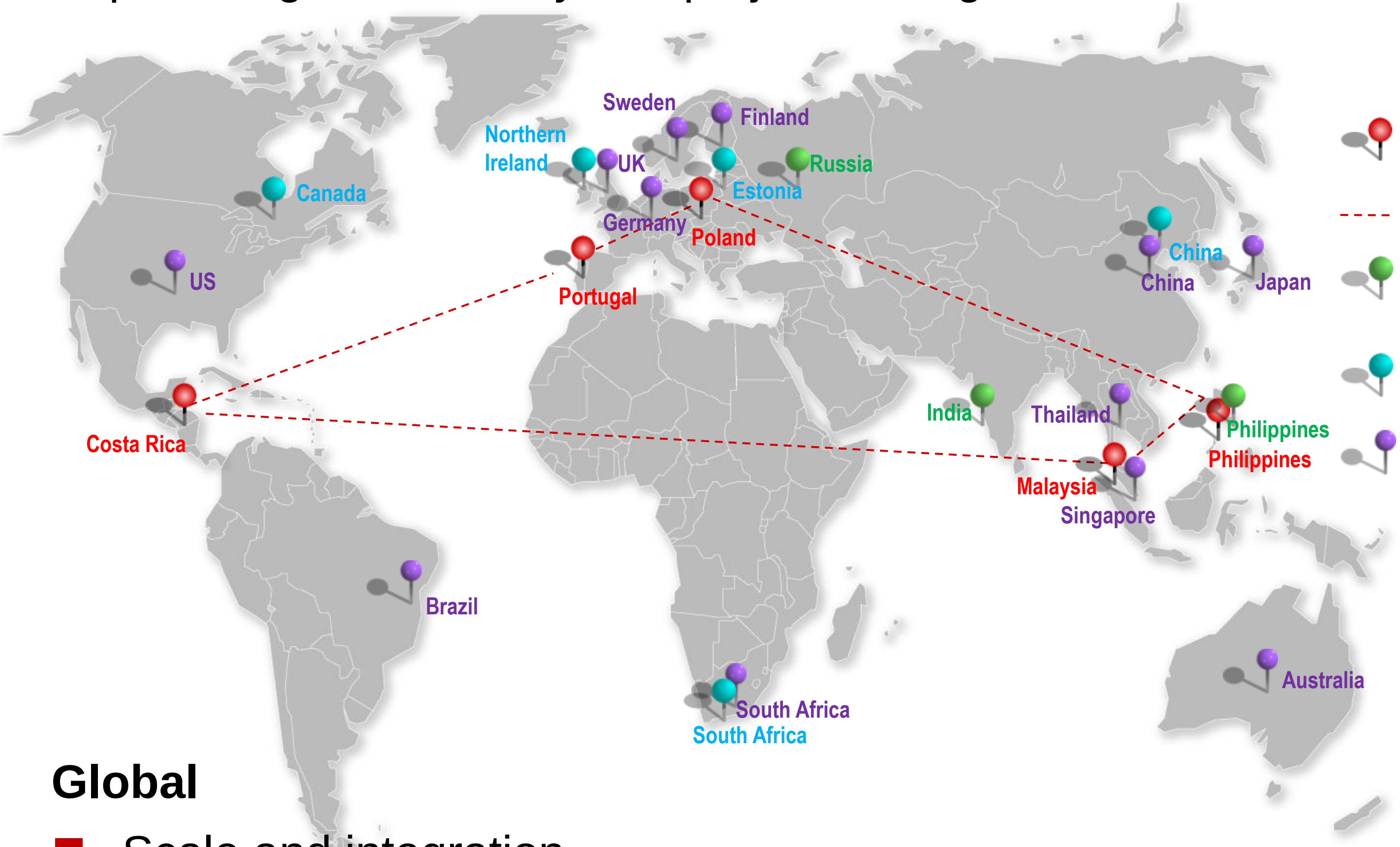
- Europe’s most modern manufacturing facility for business PCs, notebooks and servers
- Built-to-order (BTO) for business customers, Configure-to-order (CTO) for retail/partners
- Made4you for special requests
- Unique integrated Management System delivering the highest standards
  - ISO 9001 – Quality management, ISO 14001 – Environmental management
  - ISO 20000 – IT Service Management, ISO 27001 – Information Security Management

WHARTON INFOSYS BUSINESS TRANSFORMATION AWARD
the european supply chain excellence awards 2003
DIE FABRIK DES JAHRES
Deutscher GEO Award
BAYERISCHER QUALITÄTSPREIS
DIE BESTE FABRIK
INSEAD Wirtschafts Woche

2003 2005 2006 2003

Expanding globally…

As a global company, we assure security and trust.
We provide global delivery and project management.


Sweden
Finland
Northern Ireland
UK
Russia
Estonia
Canada
Germany
Poland
US
Portugal
China
China
Japan
Costa Rica
India
Thailand
Philippines
Philippines
Malaysia
Singapore
Brazil
Australia
South Africa
South Africa

● 5 multi-lingual service desks supporting 29 languages

- - - - Potential for a “follow the sun” service

● 3 global delivery centers (remote infrastructure management and applications management)

● 5 regional delivery centers

● Fujitsu data centers*

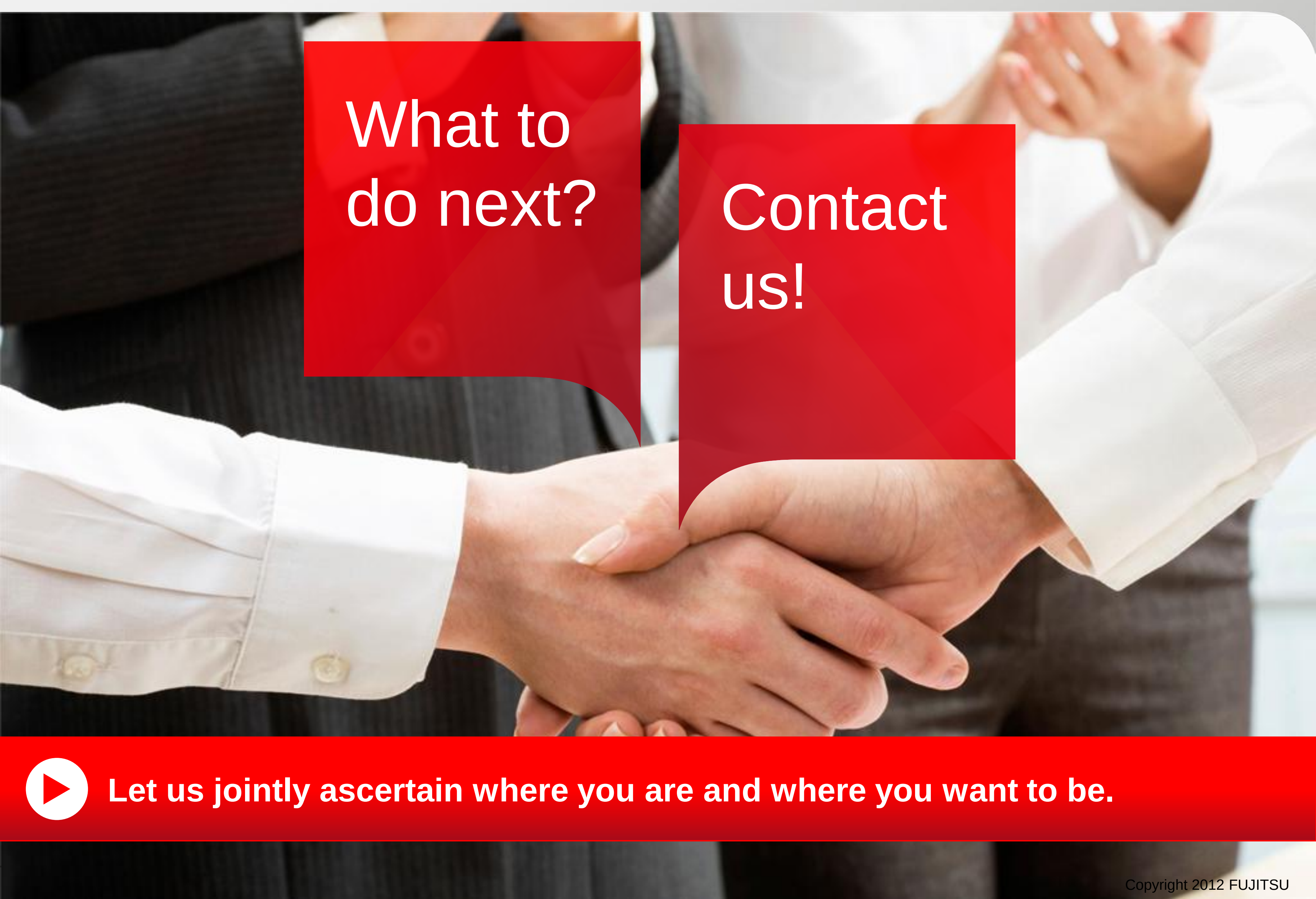
Pins denote country not city; presence not number of locations

Global

- Scale and integration
- Knowledge, assets and expertise
- Delivery capabilities
- Project management

*A representative selection of our main data center locations..

Agreed so far?

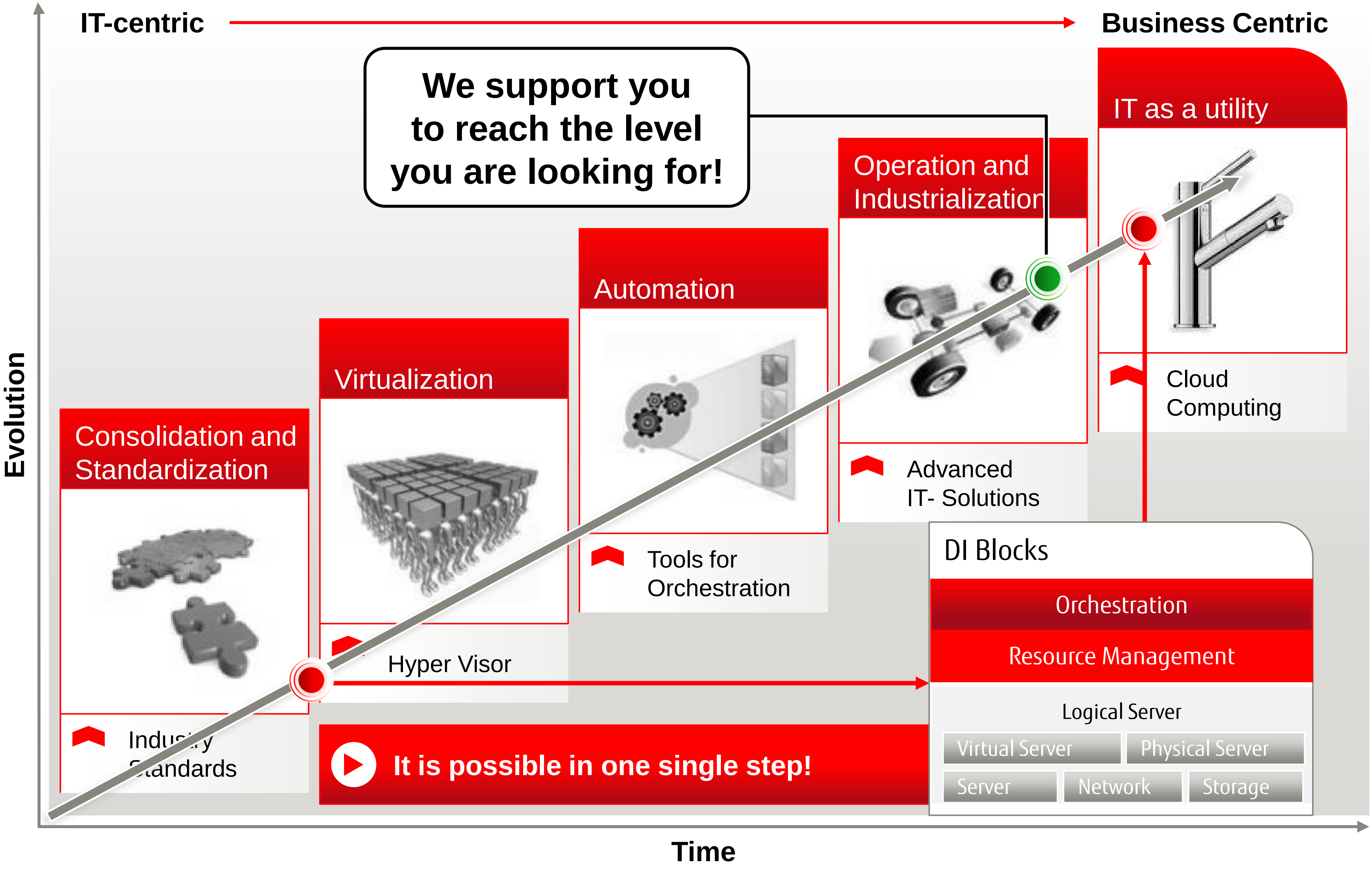


What to do next?

Contact us!

Let us jointly ascertain where you are and where you want to be.

Summary



Evolution

IT-centric → **Business Centric**

We support you to reach the level you are looking for!

Consolidation and Standardization
- Industry Standards

Virtualization
- Hyper Visor

Automation
- Tools for Orchestration

Operation and Industrialization
- Advanced IT- Solutions

IT as a utility
- Cloud Computing

DI Blocks

Orchestration
Resource Management
Logical Server
Virtual Server Physical Server
Server Network Storage

It is possible in one single step!

Time

FUJITSU

shaping tomorrow with you