

SAP Forum 2016

Simplify Innovation:
evoluzione dei servizi
e delle architetture
Fujitsu NetApp per S4 HANA



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shaping tomorrow with you

Human Centric Innovation



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Simplify Innovation: evoluzione dei servizi e delle architetture Fujitsu NetApp per S4 HANA

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S/4 HANA & Digital Transformation

SAP S/4HANA

Unique value for business and digital transformation

Reimagined Business Decisions

Simplicity to get any insight on any data from anywhere



No more manual consolidation – all decisions on the fly and at the highest level of granularity

Reimagined Business Processes

Simplicity to focus on the essential tasks and change business processes



No more batch – all processes in real time

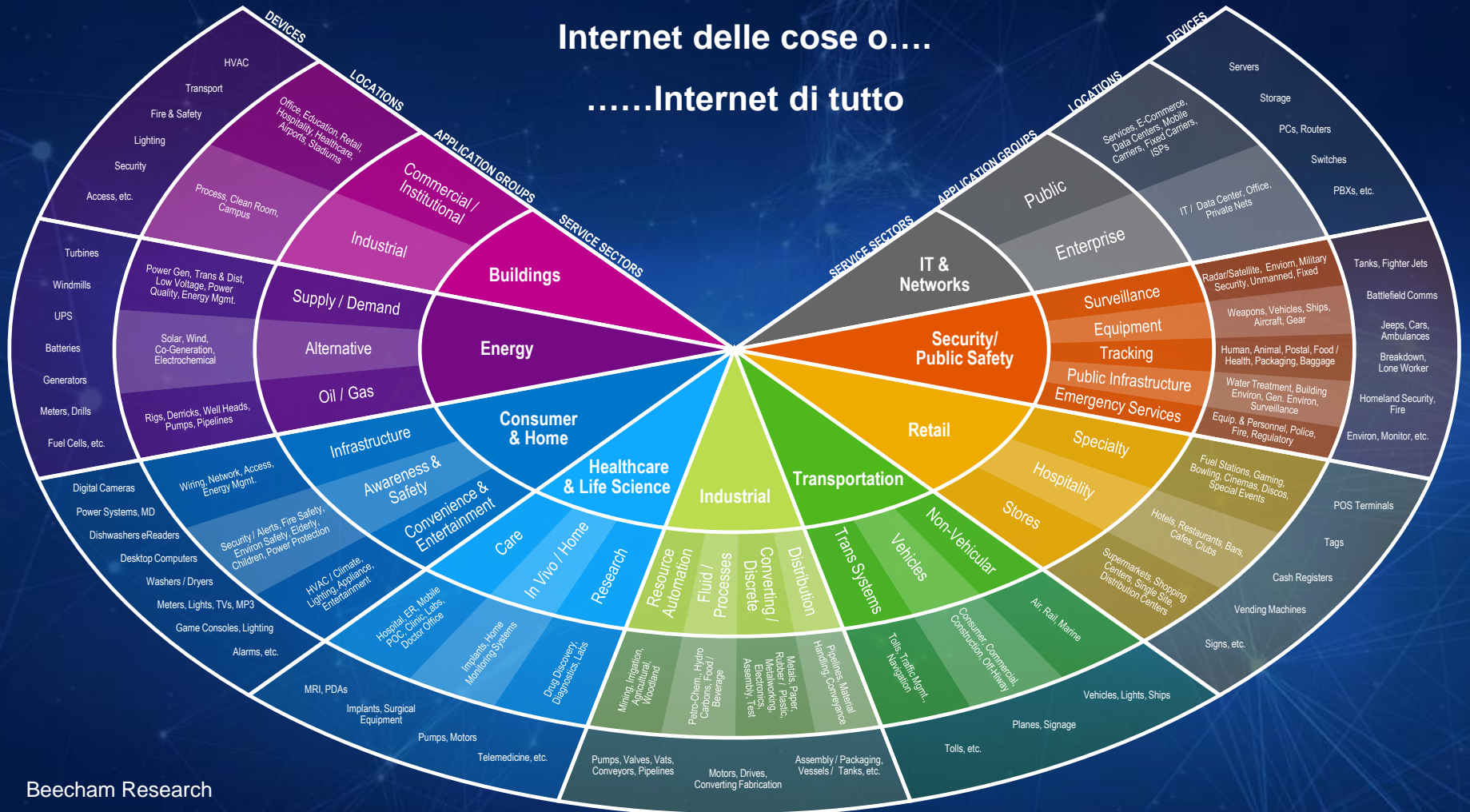
Reimagined Business Models

Simplicity to connect to people, devices, business networks



No more complex collaboration – all business connected

Internet delle cose o....Internet di tutto



Industry 4.0: La quarta Rivoluzione Industriale

1° Rivoluzione industriale



Utilizzo di macchine azionate da energia meccanica

Introduzione di potenza vapore per il funzionamento degli stabilimenti produttivi

Fine 18° secolo

2° Rivoluzione industriale



Produzione di massa e catena di montaggio

Introduzione dell'elettricità, dei prodotti chimici e del petrolio

Inizio 20° secolo

3° Rivoluzione industriale



Robot industriali e computer

Utilizzo dell'elettronica e dell'IT per automatizzare ulteriormente la produzione

Primi anni '70

4° Rivoluzione industriale



Connessione tra sistemi fisici e digitali, analisi complesse attraverso Big Data e adattamenti real-time

Utilizzo di macchine intelligenti, interconnesse e collegate ad internet

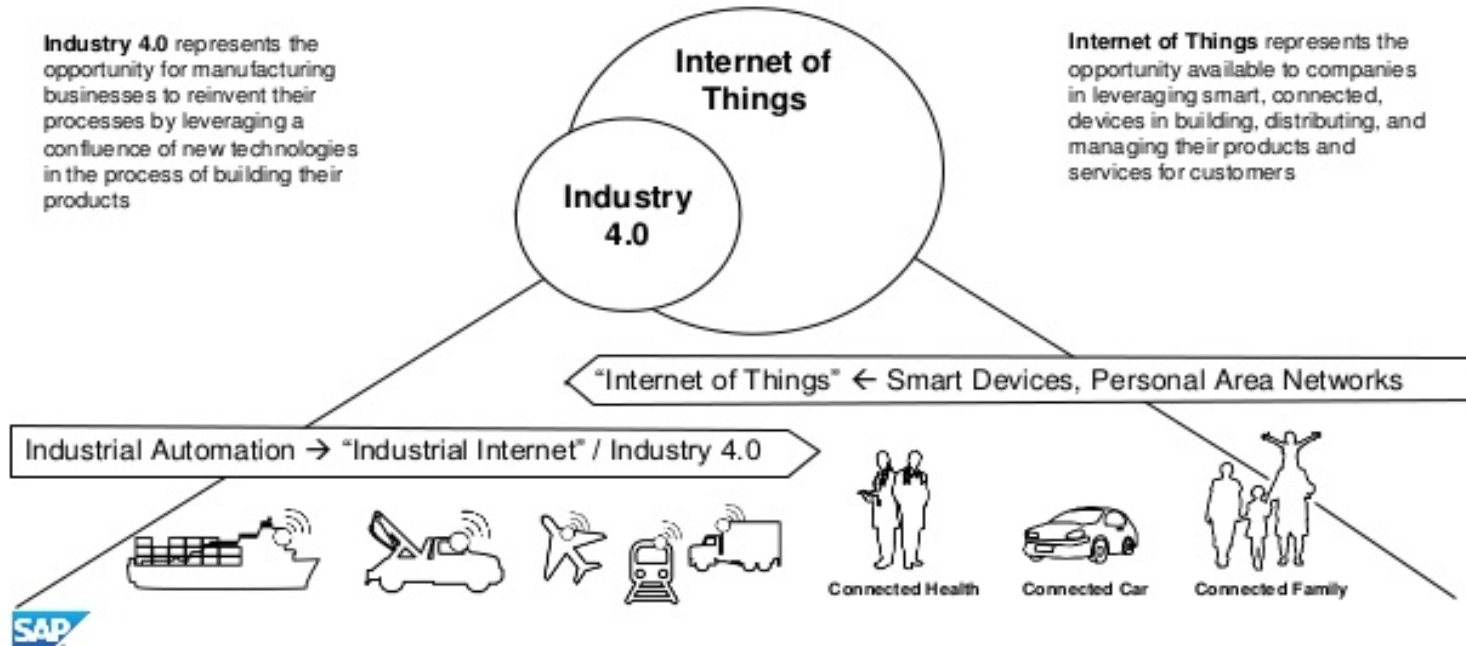
Oggi - prossimo futuro



IoT and Industry 4.0

Industry 4.0 represents the opportunity for manufacturing businesses to reinvent their processes by leveraging a confluence of new technologies in the process of building their products

Internet of Things represents the opportunity available to companies in leveraging smart, connected, devices in building, distributing, and managing their products and services for customers



IIoT: Industrial Internet of Things

INDUSTRIAL
INTERNET
OF THINGS



IIoT: Plant Management

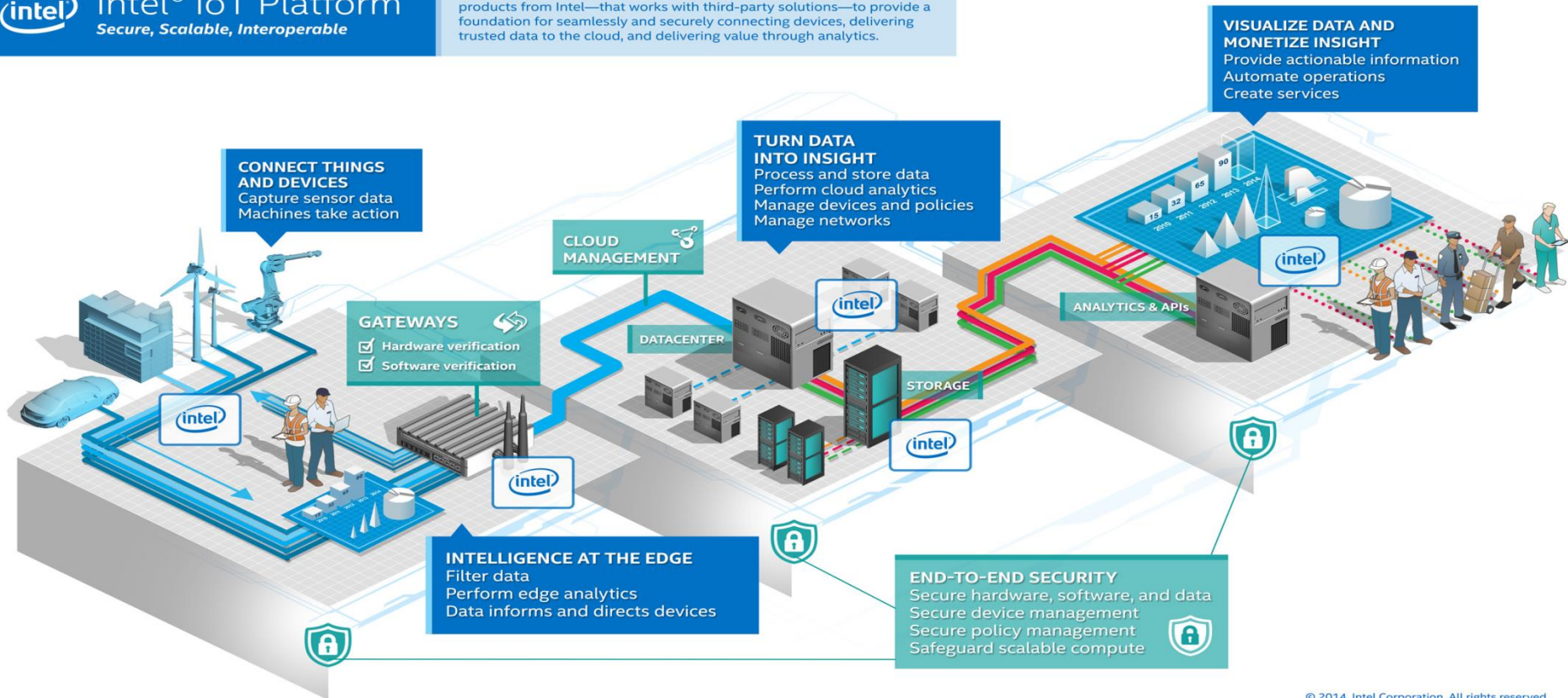


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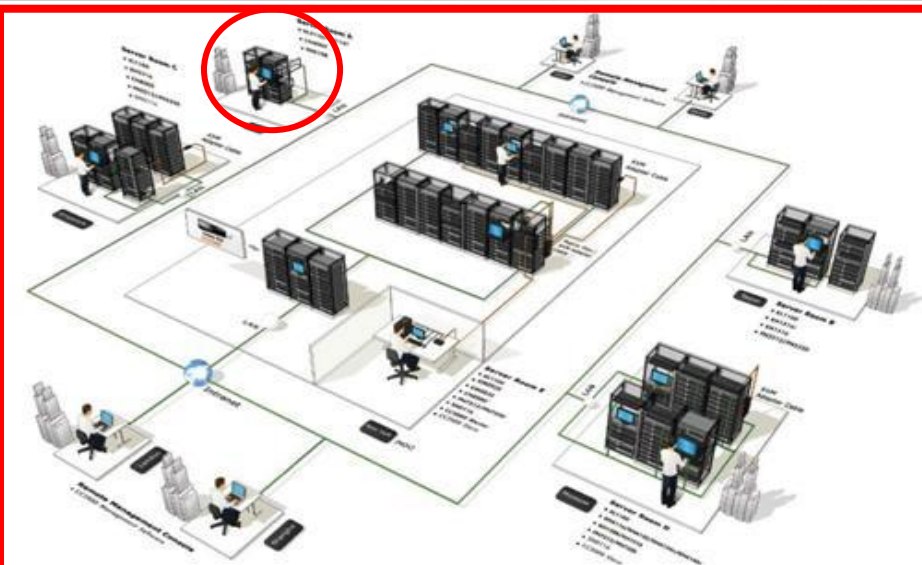


 Intel® IoT Platform
Secure, Scalable, Interoperable

The Intel® IoT Platform is an end-to-end reference model and family of products from Intel—that works with third-party solutions—to provide a foundation for seamlessly and securely connecting devices, delivering trusted data to the cloud, and delivering value through analytics.



SAP HANA Data Center Integration 1.0 vs. 2.0

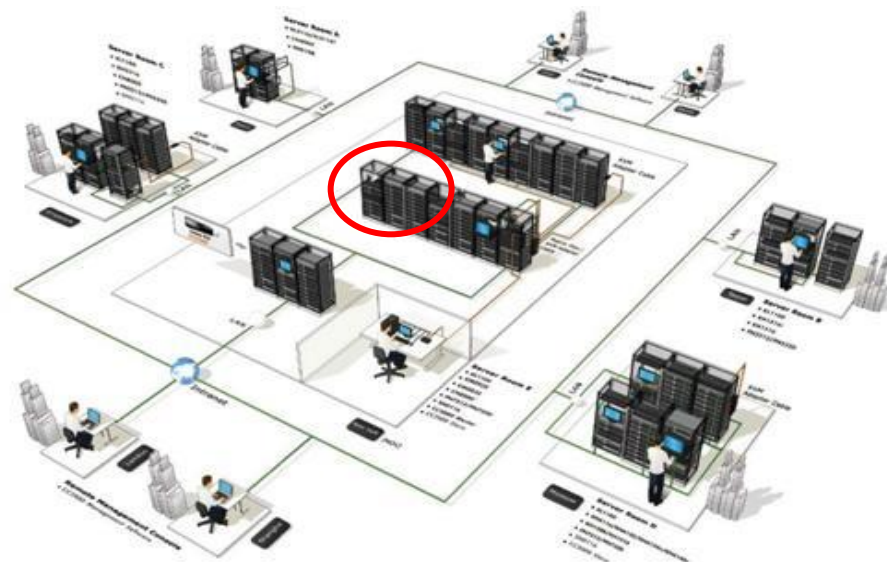


Data Center Integration 1.0

- Appliance SAP HANA con storage dedicato;
- Meccanismi di replica basati su SAP HANA System Replication;
- Si creavano delle isole che contenevano tutti i landscape SAP HANA;

Data Center Integration 2.0

- Appliance SAP HANA con storage condiviso
- I landscape SAP HANA vengono integrati all'interno delle architetture applicative non HANA;
- Utilizzo degli storage enterprise presenti;
- Meccanismi di replica basati su Storage Replication



SAP HANA Infrastructure Offering Overview

Single Node (scale up)

Fujitsu PRIMEFLEX
for SAP HANA

Fujitsu
ETERNUS
JX40

Fujitsu PRIMEFLEX
for SAP HANA

Fujitsu Server
PRIMERGY/
PRIMEQUEST
certified for
SAP HANA

Multi Node (scale out)

Fujitsu PRIMEFLEX
for SAP HANA

Fujitsu Server
PRIMERGY/
PRIMEQUEST
certified for
SAP HANA

An all-embracing operational concept

Fujitsu PRIMEFLEX
for SAP Landscapes

Single Node

Single Node

Multi Node

Fujitsu
ETERNUS
JX40

TDI Storage

An integrated system powered by the
Fujitsu FlexFrame Orchestrator software

SAP HANA Tailored **Datacenter Integration**
for Enterprise Storage

Fujitsu PRIMEQUEST 2800E



Feature Overview

Operational efficiency

- Unity of x86 efficiency and flexibility with enterprise high availability
- Eliminate costs related to the UNIX world
- New levels of energy efficiency

Mission-critical RAS features

- Physical and extended partitioning
- Active reserve system board
- Flexible I/O ensure available of PCIe devices
- Almost everything is redundant

Dynamic platform for demanding datacenter

- 8x Intel Xeon processor E7-8800 v4 product family
- Up to 12TB memory and 192 cores
- Business centric use thanks to new dynamic partitioning of resources without need for restart



Usage Scenarios

Mission
critical apps

Real time
analysis

Large scale
databases

In Memory
Solutions

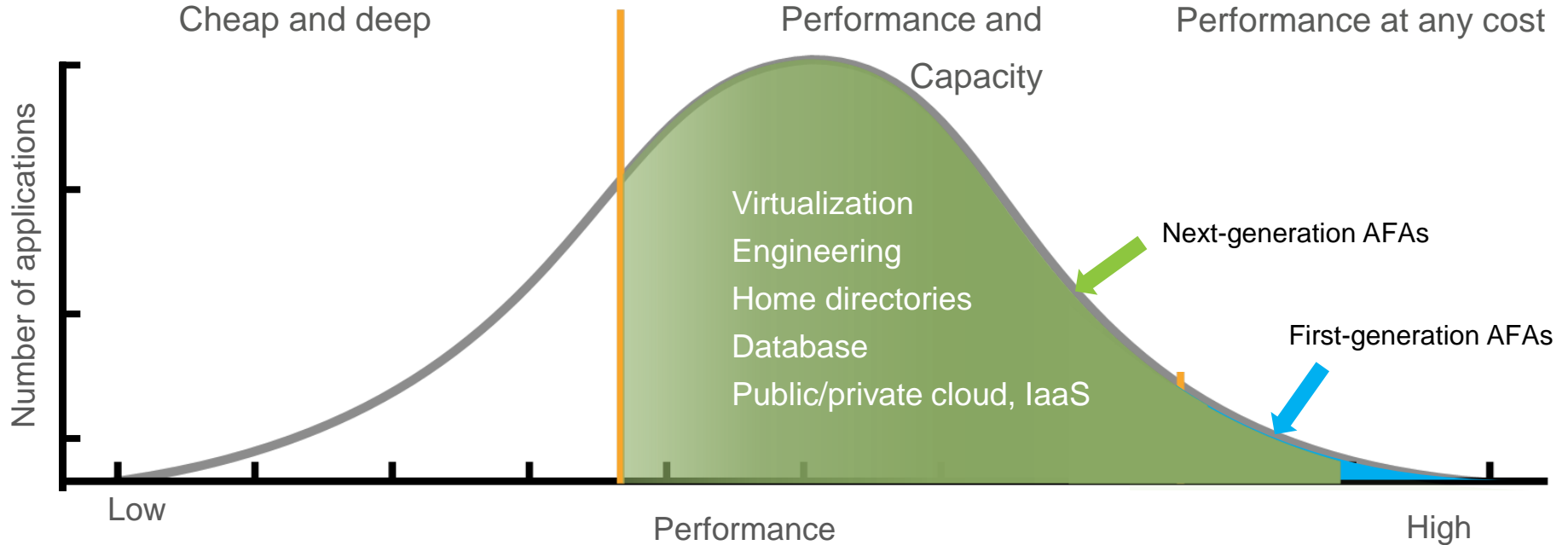
NetApp

Enterprise-Grade Solution



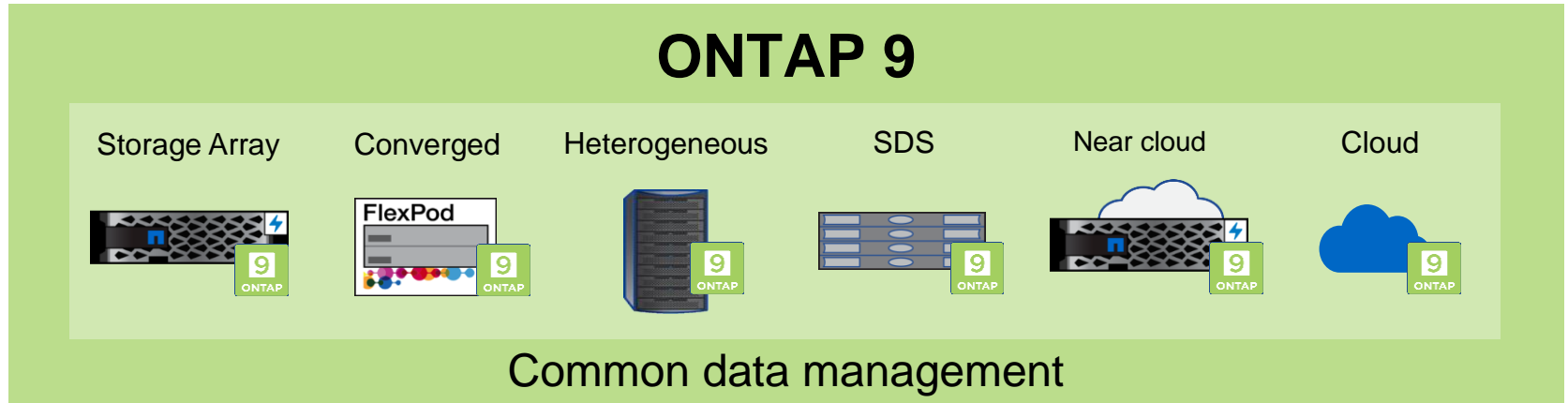
The next wave of IT Transformation – flash going mainstream

Flash is almost the same cost as SAS and is exceeding HDD capacity



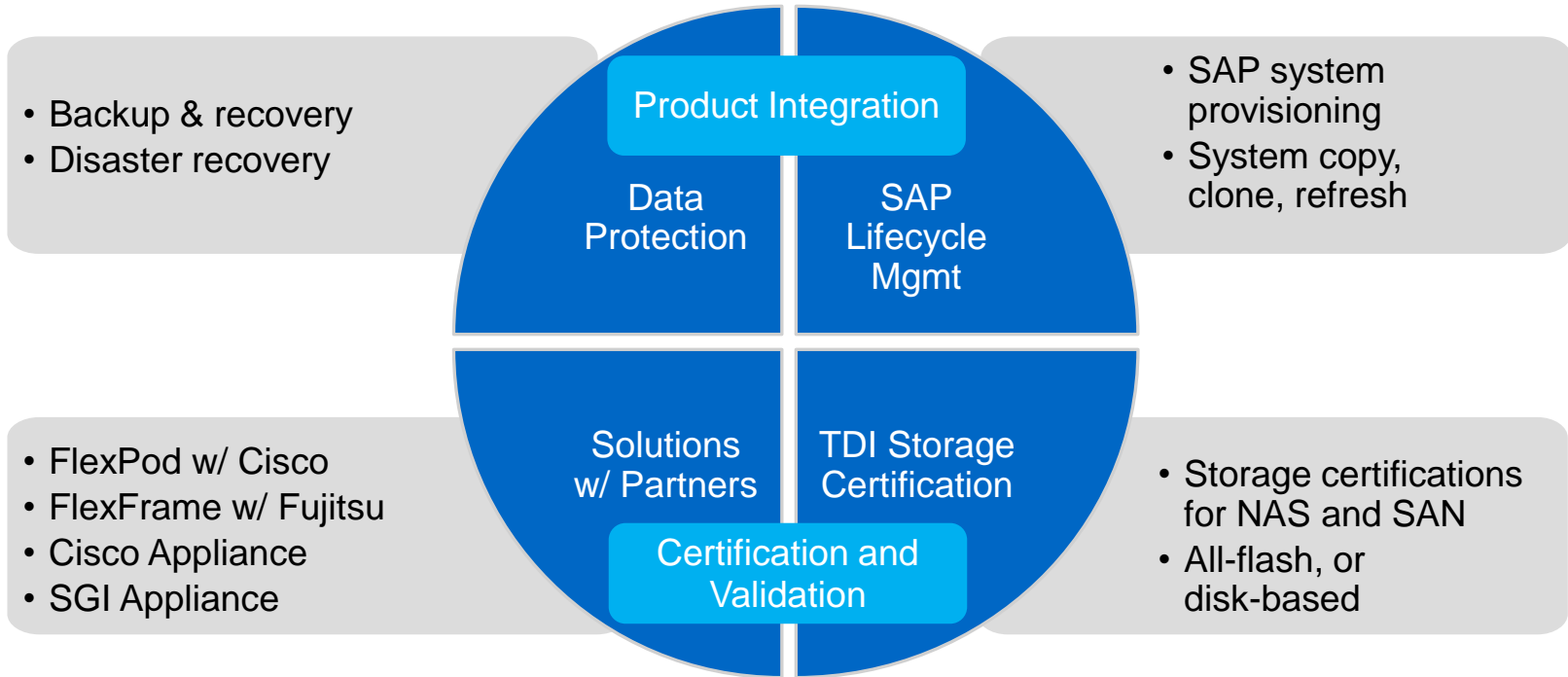
Gartner: "Select SSAs for all primary applications and workloads, but do not restrict their usage for other applications."

Standardize data management for any application, anywhere



- Across architectures, blocks or files, on flash, disk or cloud
- Across deployment models, from engineered systems to white boxes
- Across workloads, integrations with enterprise apps to next gen technologies

SAP HANA and NetApp



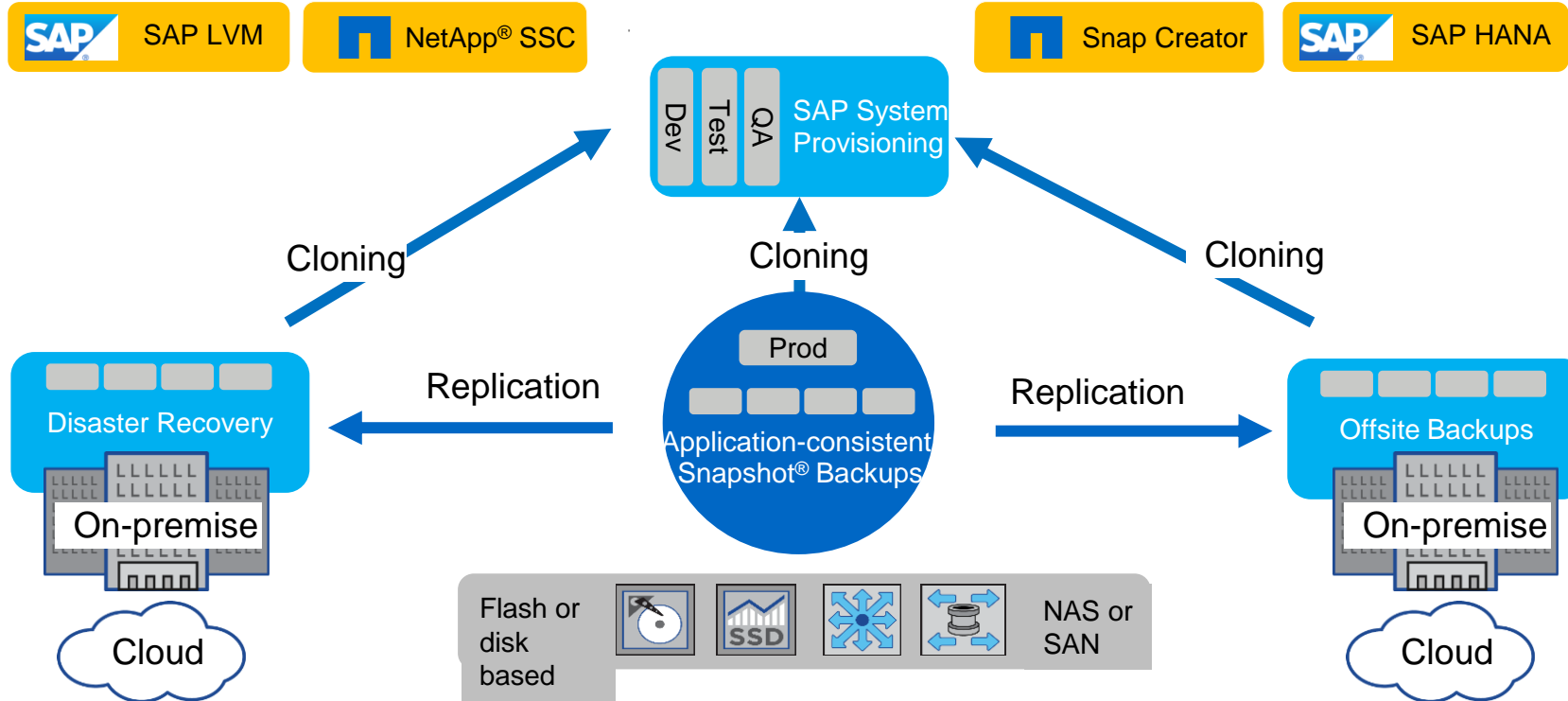
SAP HANA and NetApp Product Integration

| Operation | NetApp® All-Flash FAS and FAS product family (NAS or SAN) |
|---|--|
| Disaster recovery with synchronous storage replication | NetApp MetroCluster™ |
| Disaster recovery with asynchronous storage replication | NetApp Snap Creator® plug-in for SAP HANA |
| Backup & Recovery | NetApp Snap Creator® plug-in for SAP HANA |
| SAP system copy, clone, refresh | NetApp Snap Creator® plug-in for SAP HANA or SAP LVM with NetApp SSC * |

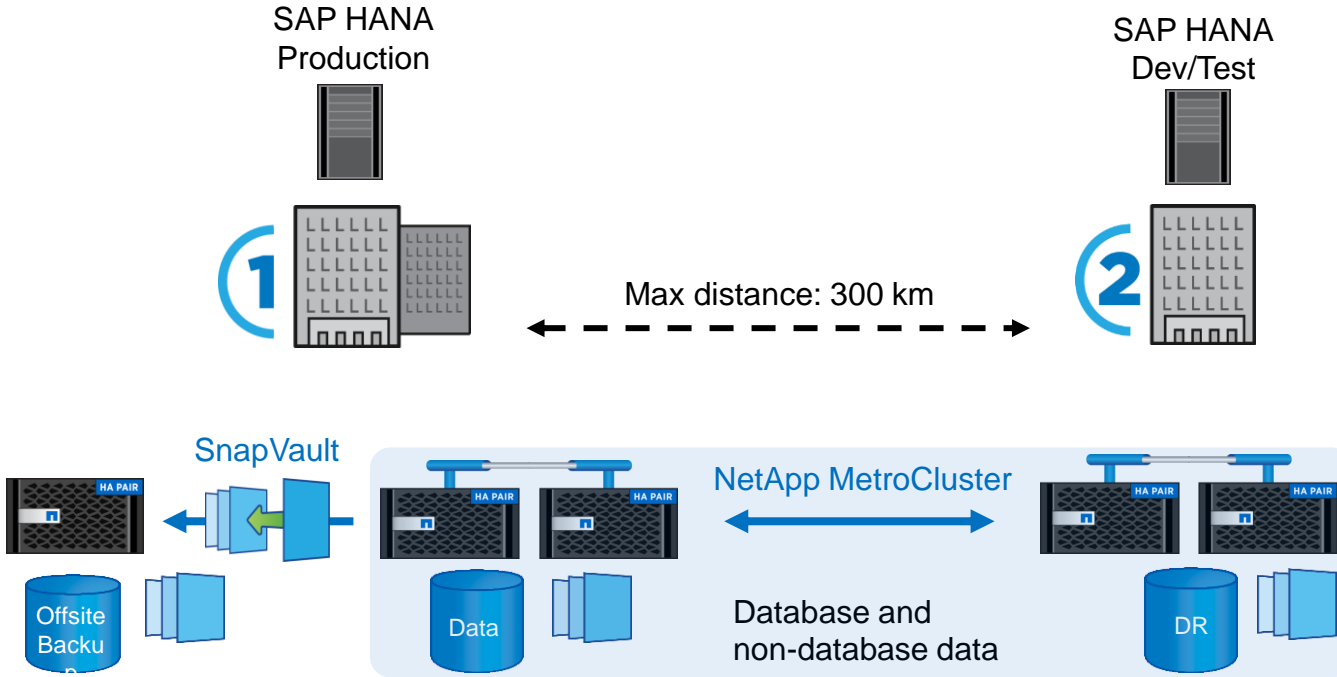
* SAP Landscape Virtual Management (LVM) and NetApp Storage Services Connector (SSC)

Combine Data Protection with Flexible SAP System Provisioning

Data Management and SAP Product Integration



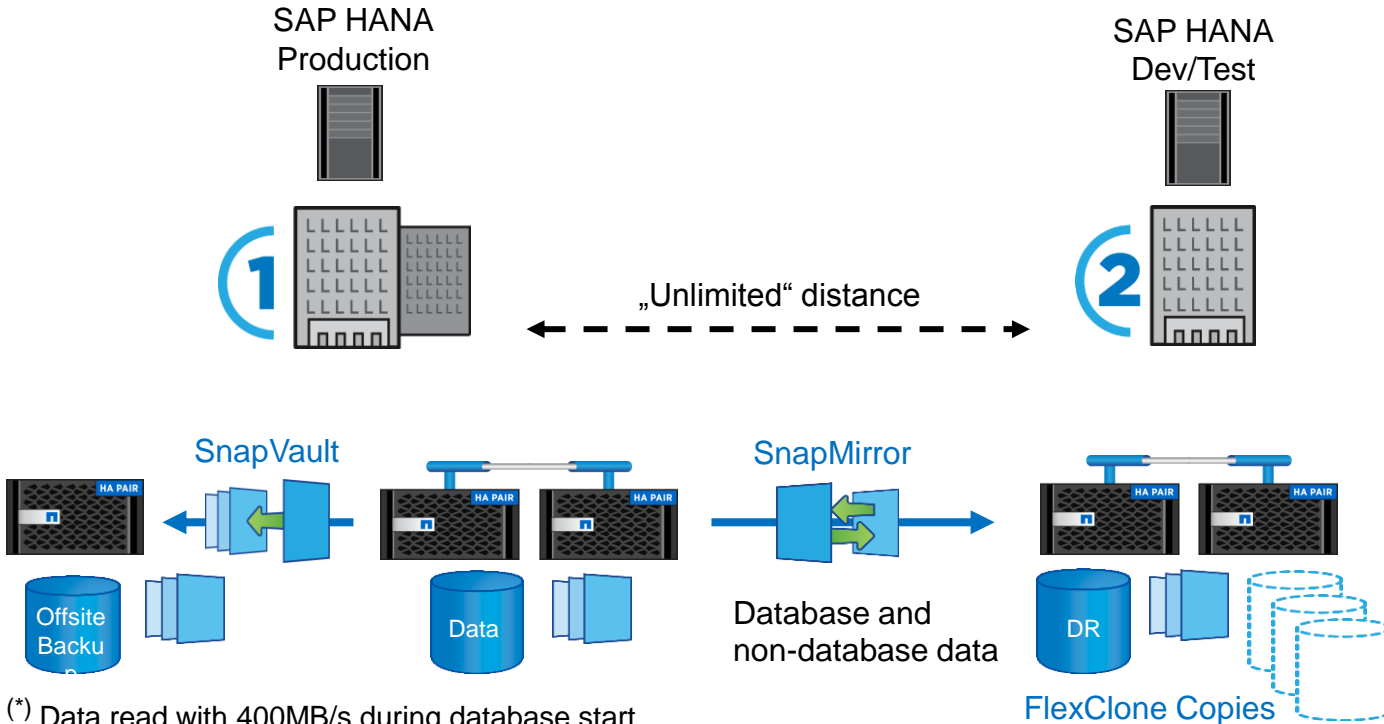
Synchronous Storage Replication



- RPO = 0
- RTO > 30 min
- Cold standby, server used for dev/test
- Cold database start ~45 min per TB (*)
- Multiple replication images to address logical corruption

(*) Data read with 400MB/s during database start

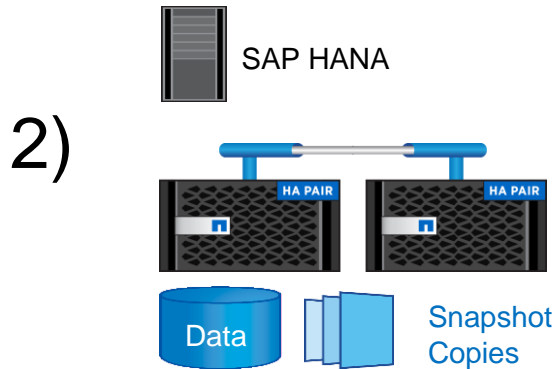
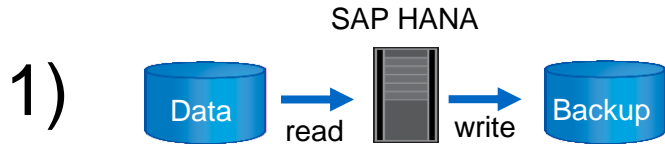
Asynchronous Storage Replication



- RPO > 30 min
- RTO > 30 min
- Cold standby, server used for dev/test
- Cold database start ~45 min per TB (*)
- Multiple replication images to address logical corruption
- DR images usable for dev/test and failover testing

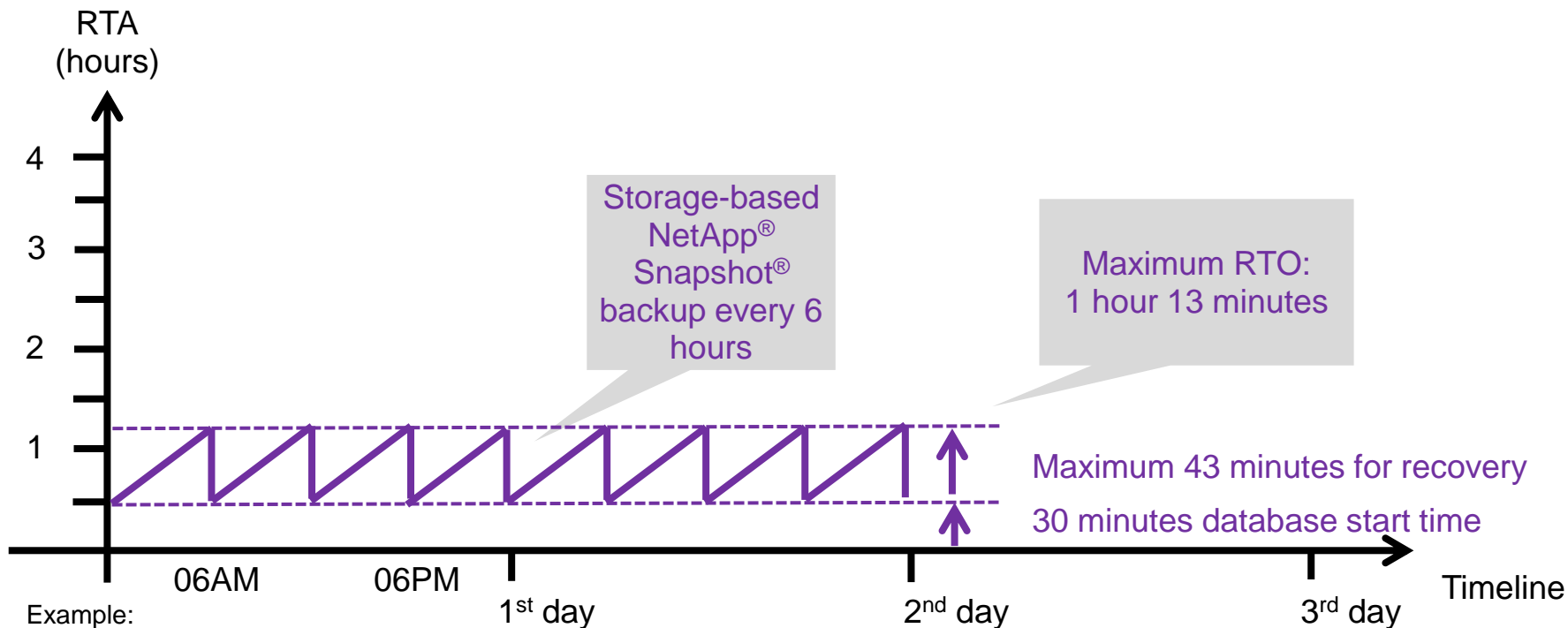
(*) Data read with 400MB/s during database start

SAP HANA Backup Options



| | File-based backup or BACKINT | Storage-based Snapshot backup |
|---|------------------------------|-------------------------------|
| Backup runtime | Hours | < 1min |
| CPU load at database server during backup | High | No load |
| Network load | High | No load |
| Restore | Hours | < 1min |
| Recovery | Hours | Reduction > 70% |
| Block integrity check | Yes | No |

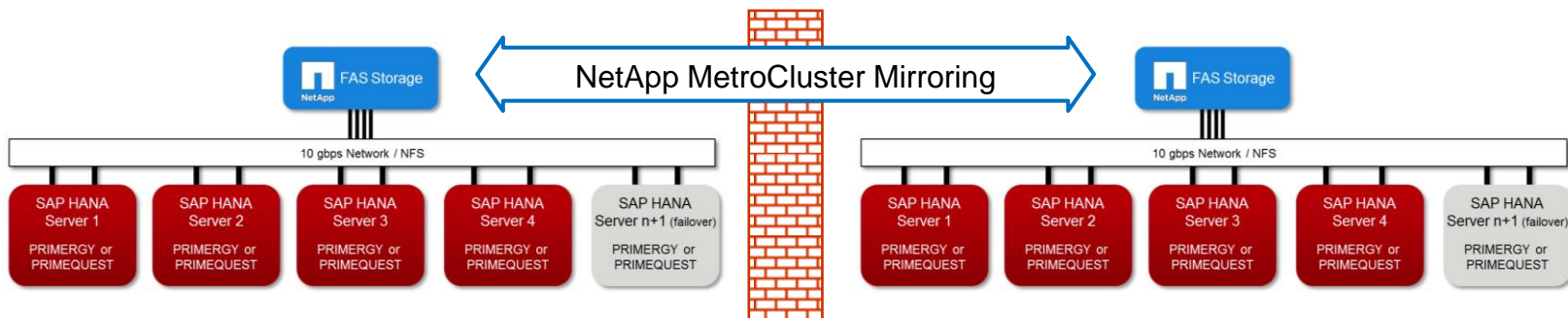
Recovery Time Objective with Snapshot Based Backup (2TB Database)



Example:
Logs per day: 50% of database size
Forward recovery with 100MB/sec

Availability - SAP-certified Disaster Tolerant Solution

- Safeguards business continuity
 - Zero data loss with NetApp MetroCluster up to 200KM distance
 - Certified storage replication for long range DR (>200KM)
 - Guided recovery process for fast return to normal operation
- Expedient investment
 - Non-productive use of fail-over system during normal operations



 **Fujitsu is an expert for all kinds of business- and mission critical set-ups**



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Thank you for listening