



redhat.



# **SAP HANA on Red Hat Enterprise Linux in Mission Critical Environments**

**Markus Koch**

**Senior Solution Architect**

**OEM Partners & Strategic ISVs**

**[mkoch@redhat.com](mailto:mkoch@redhat.com)**

# AGENDA

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What is SAP HANA

2

Why Red Hat for SAP HANA

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Solution Components

4

Accelerate Development

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Q & A

# What is SAP HANA?

# What is SAP HANA?

A runtime platform, an in-memory database, and a development platform

SAP's strategic direction: Upcoming version of Business Suite includes HANA

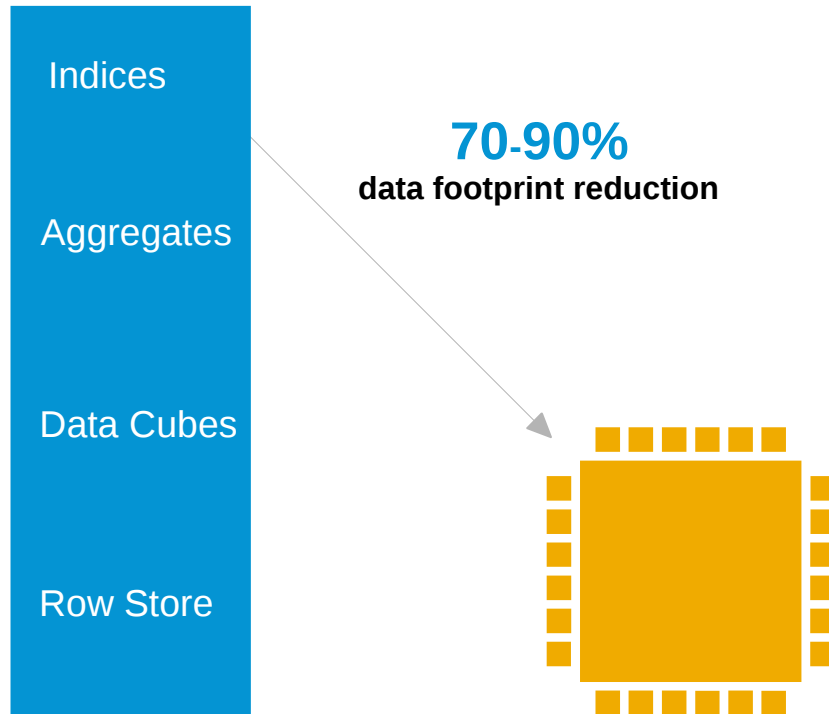
- SAP Business Suite 4 SAP HANA (SAP S/4HANA)

# SAP HANA Simplification

Reduce data footprint

OLAP and OLTP on one platform

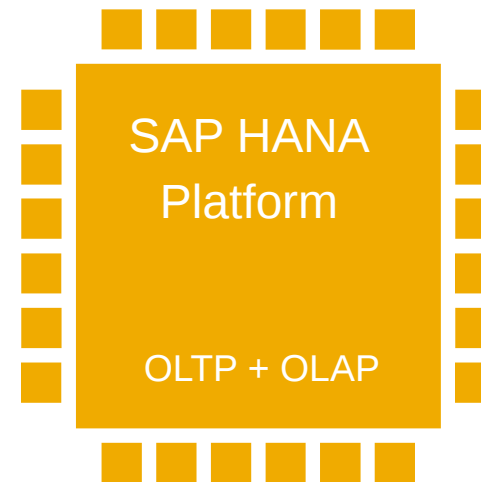
SAP Business Suite  
on Any Database



Transactions

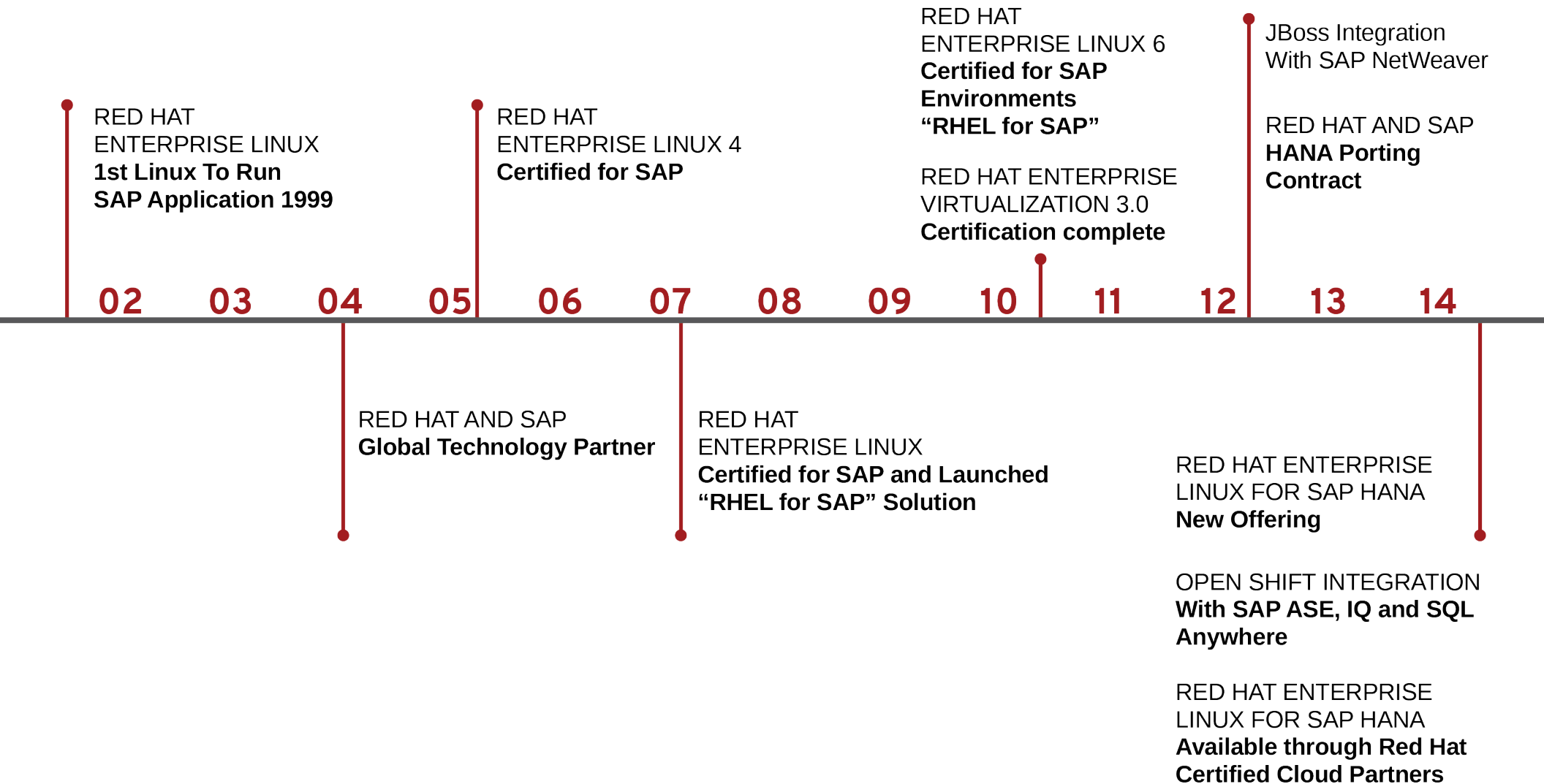
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101101010  
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101100110  
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Analytics



# Why Red Hat for SAP HANA?

# Red Hat and SAP: More Than a Decade of Innovation



# Red Hat and SAP: Two Market Leaders

## Red Hat

> 90% of Fortune 500 rely on Red Hat

100% of Fortune 500 companies In the airlines, commercial banks, financial data services, healthcare (insurance and managed services), and telecom industries are Red Hat customers

63% of paid Linux market

## SAP

74% of world's transaction revenue touches an SAP system

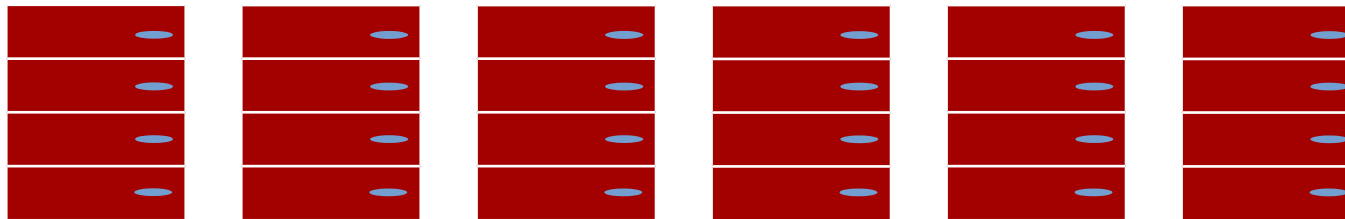
SAP customers include:

- 87% of Fortune Global 2000
- 98% of 100 most valued brands
- 100% of the top Dow Jones top scoring sustainability companies

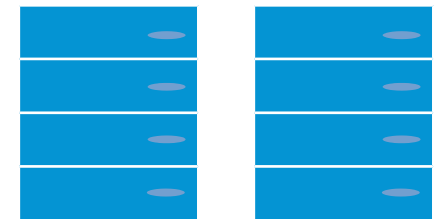


# Red Hat: A Complete Fit for Your Overall Landscape

Red Hat Datacenter



SAP Landscape



Red Hat Enterprise Linux

Red Hat Enterprise Virtualization

Red Hat JBoss Middleware

OpenShift

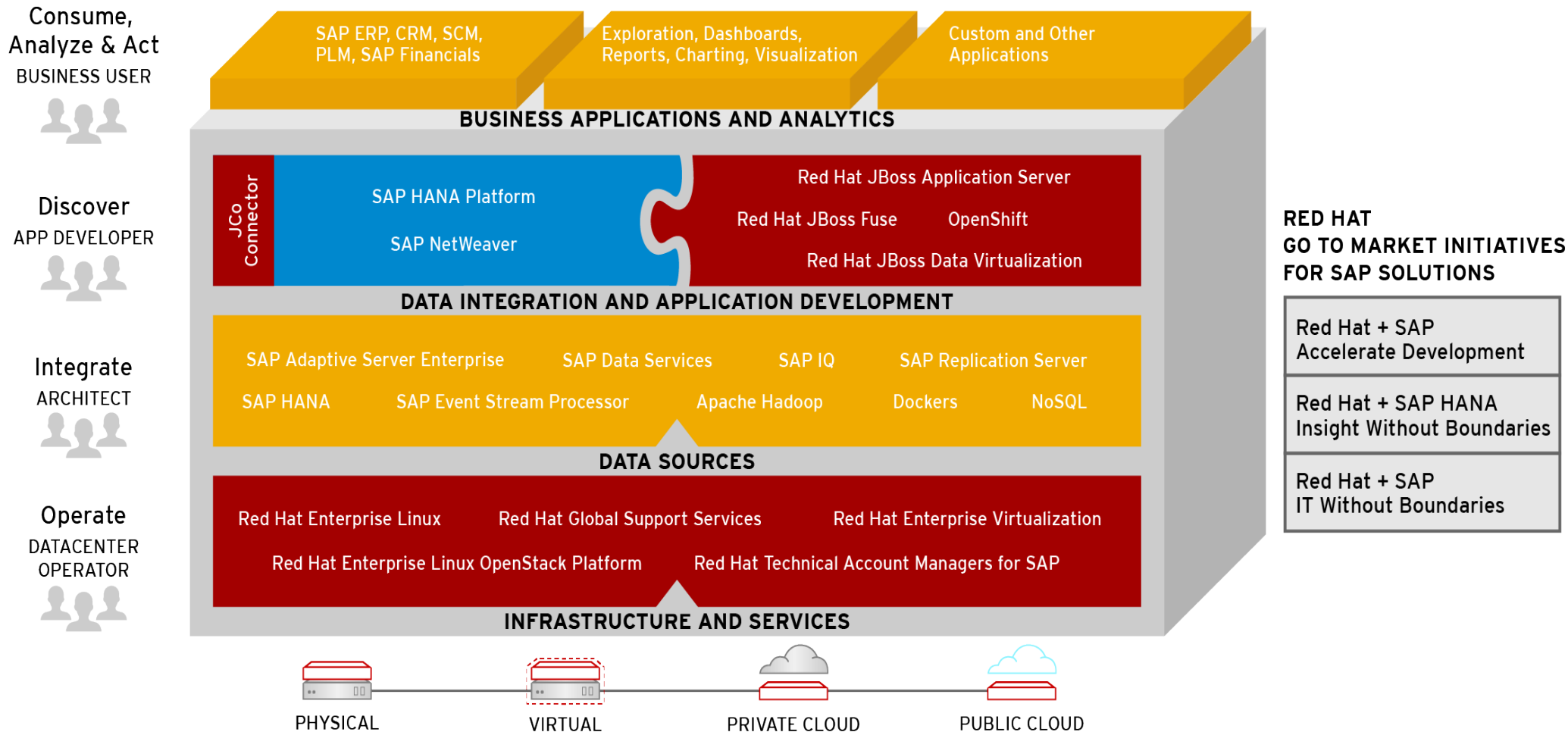
Red Hat Enterprise Linux for SAP Applications

Red Hat Enterprise Linux for SAP HANA

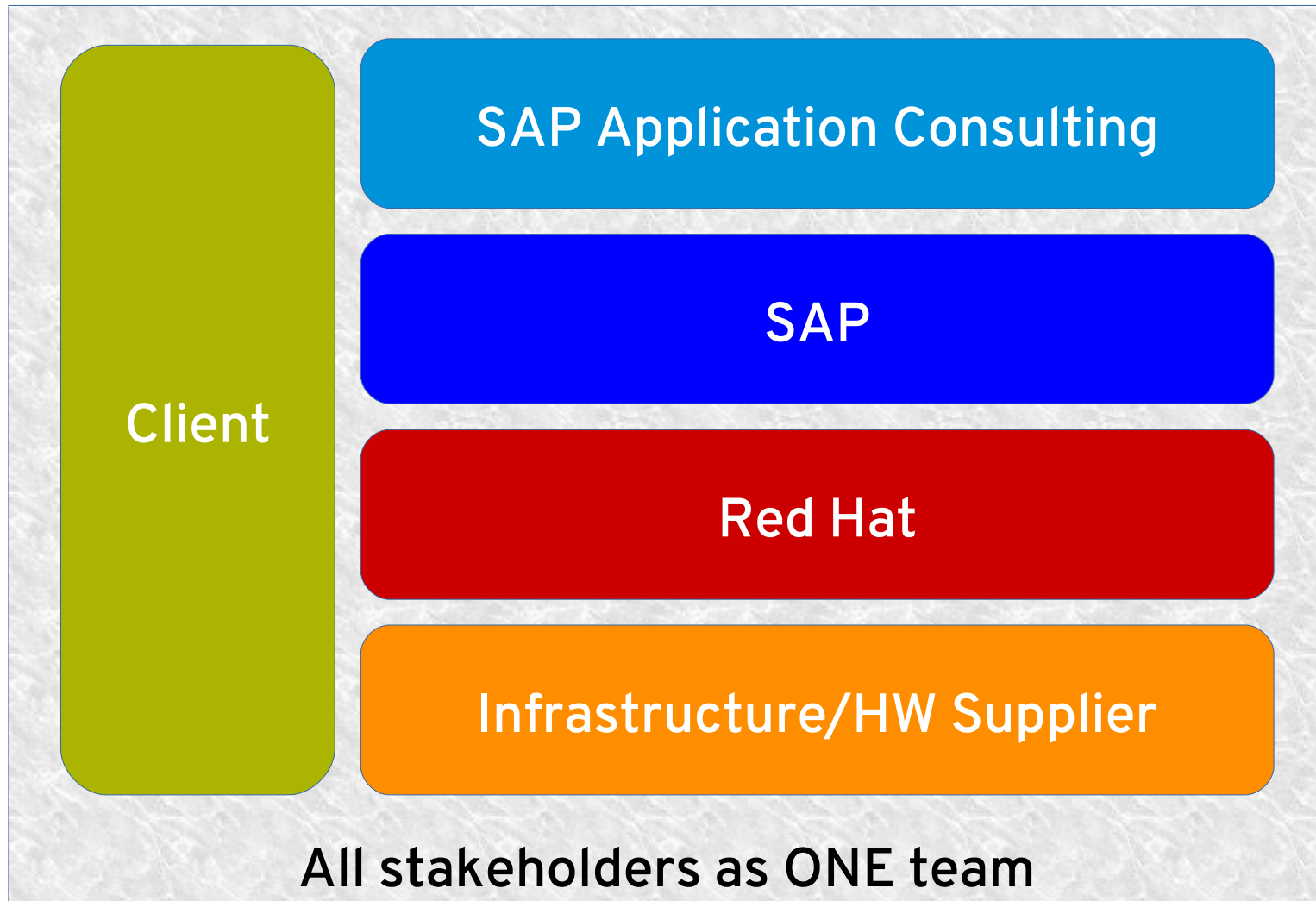
OpenStack

Use **open source** as your de facto **architecture** for **SAP and beyond**

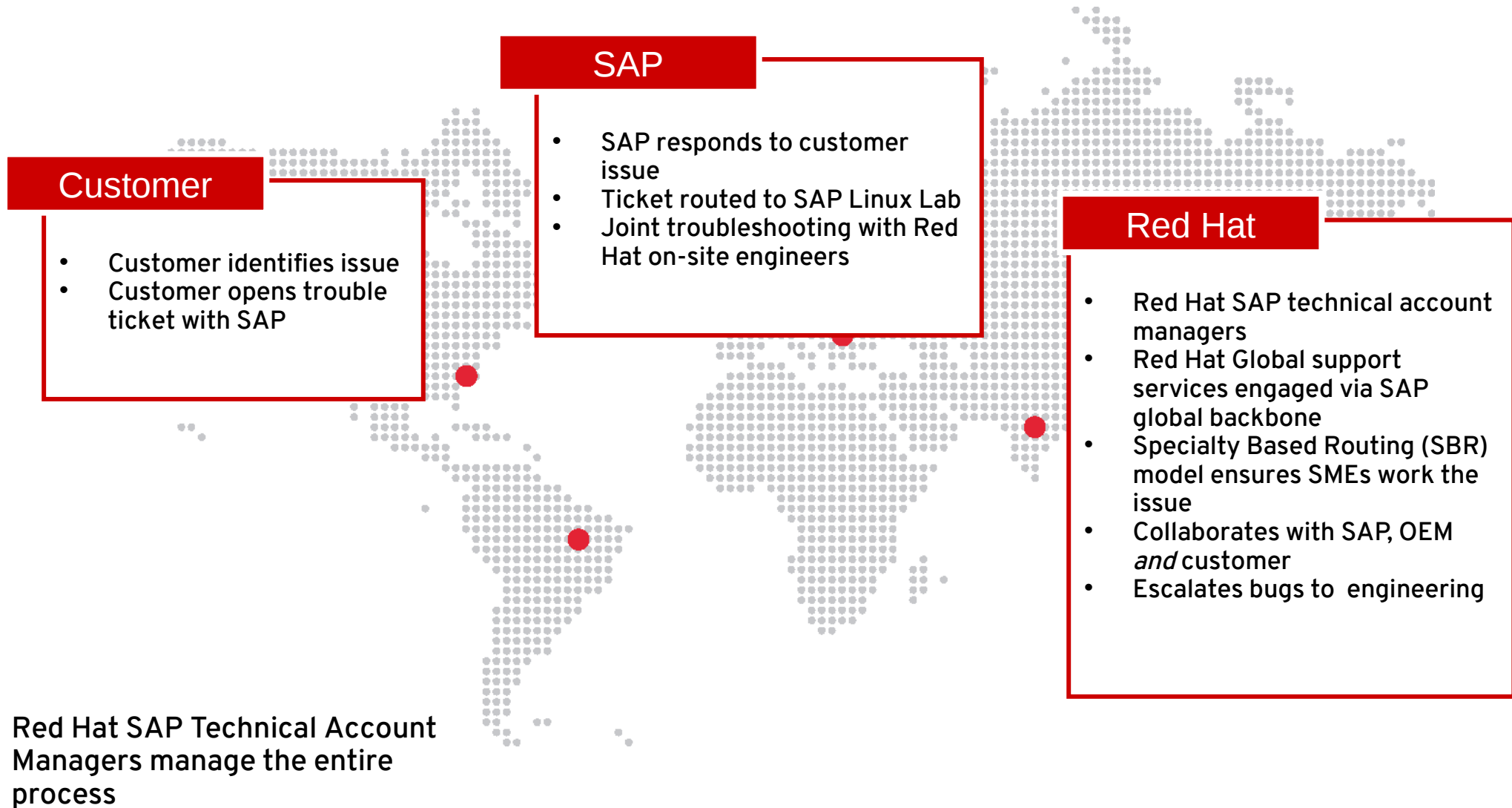
# Red Hat: Unleashing Real-Time Business Value



# Project SetUp Good Practise



# Global Integrated Support: Support Simplified



# Technical Account Manager (TAM) – Benefits

TAM for SAP	Details
TAM for SAP	<ul style="list-style-type: none"><li>• Enjoy a direct relationship with a SAP-trained TAM specialist with deep experience in Red Hat Enterprise Virtualization for SAP and Red Hat Enterprise Linux for SAP solutions. These specialists also have SAP Solution Manager background knowledge</li><li>• Prevent issues before they occur with proactive planning, Red Hat SAP–related roadmap meetings, and Red Hat and SAP solution architecture reviews</li><li>• Coordinate support services for ticket resolution and joint customer escalation</li><li>• Direct path to Red Hat Global Support Services and the SAP support team, as well as early access to Red Hat Enterprise Linux for SAP or Red Hat Enterprise Virtualization software</li><li>• Use Red Hat and SAP best practices to find out what's coming next from Red Hat relative to SAP solutions, including SAP notes, patches, and current benchmarks</li></ul>

# Solution Components

# Solution Components

## RHEL for SAP HANA

- Scalable File System Add-On (with the XFS filesystem)
- Tuned profiles optimize HANA performance
- Required for HANA deployments (contains required binary to install HANA)

## Add-ons

- Smart Management  
Automates lifecycle management of Red Hat Enterprise Linux systems
- High Availability  
Provides on-demand failover services between nodes within a cluster, making applications highly available

# SAP HANA Deployment Options

## On-Premise

### Appliance

### TDI

- Virtualization options available
- More than 170 certified hardware configurations



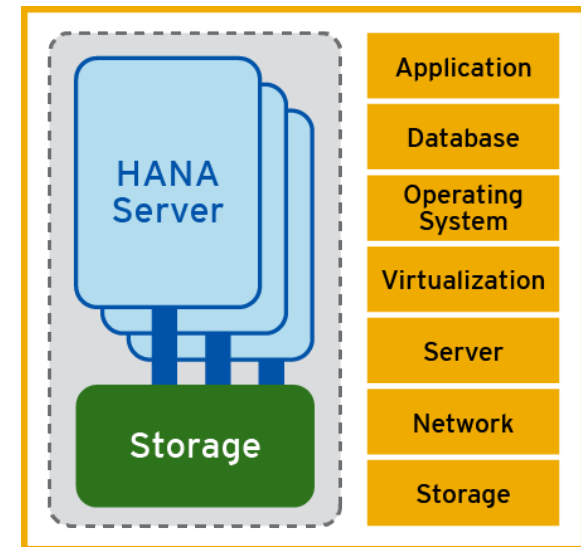


# Appliance

Dedicated, certified hardware configuration with SAP HANA and Red Hat Enterprise Linux preinstalled

Best for customers who want

- Fast time to value
- Simple deployment model
- Certified configuration delivered by hardware partner



# Tailored Datacenter Integration (TDI)

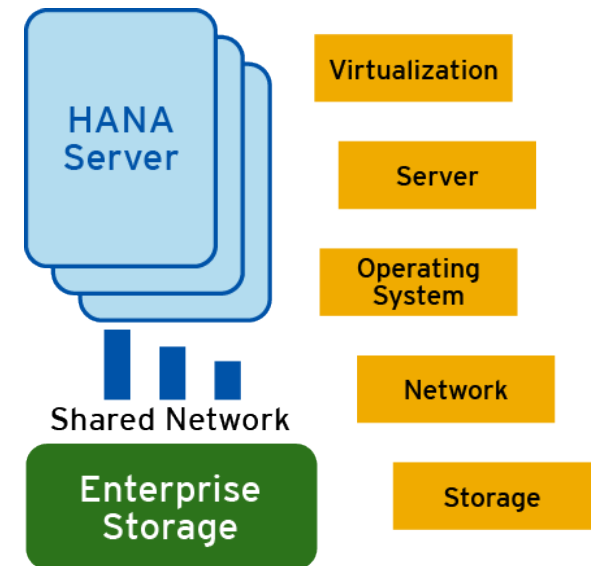
Run SAP HANA on customer's hardware

Choose from certified components

SAP HANA installed by a certified installer

Best for customers who want

- Flexibility for large-scale deployments
- To leverage existing hardware
- Architectural control



# Cloud

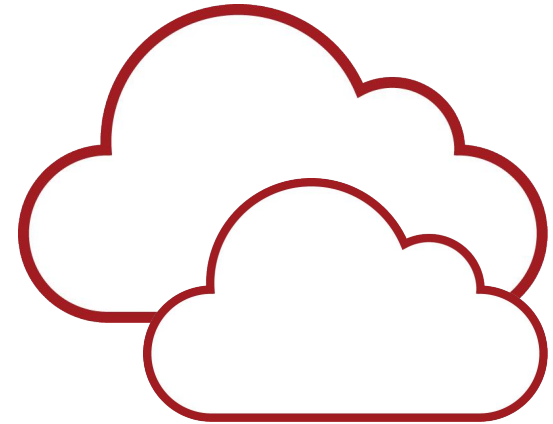
Run SAP HANA on Red Hat  
Enterprise Linux in the cloud

Red Hat Certified Cloud Providers

SAP Certified Cloud Partners

Best for customers who

- Want to shift CAPEX to OPEX
- Low startup costs
- Fast time to value
- Global deployment



# SAP HANA High Availabilty

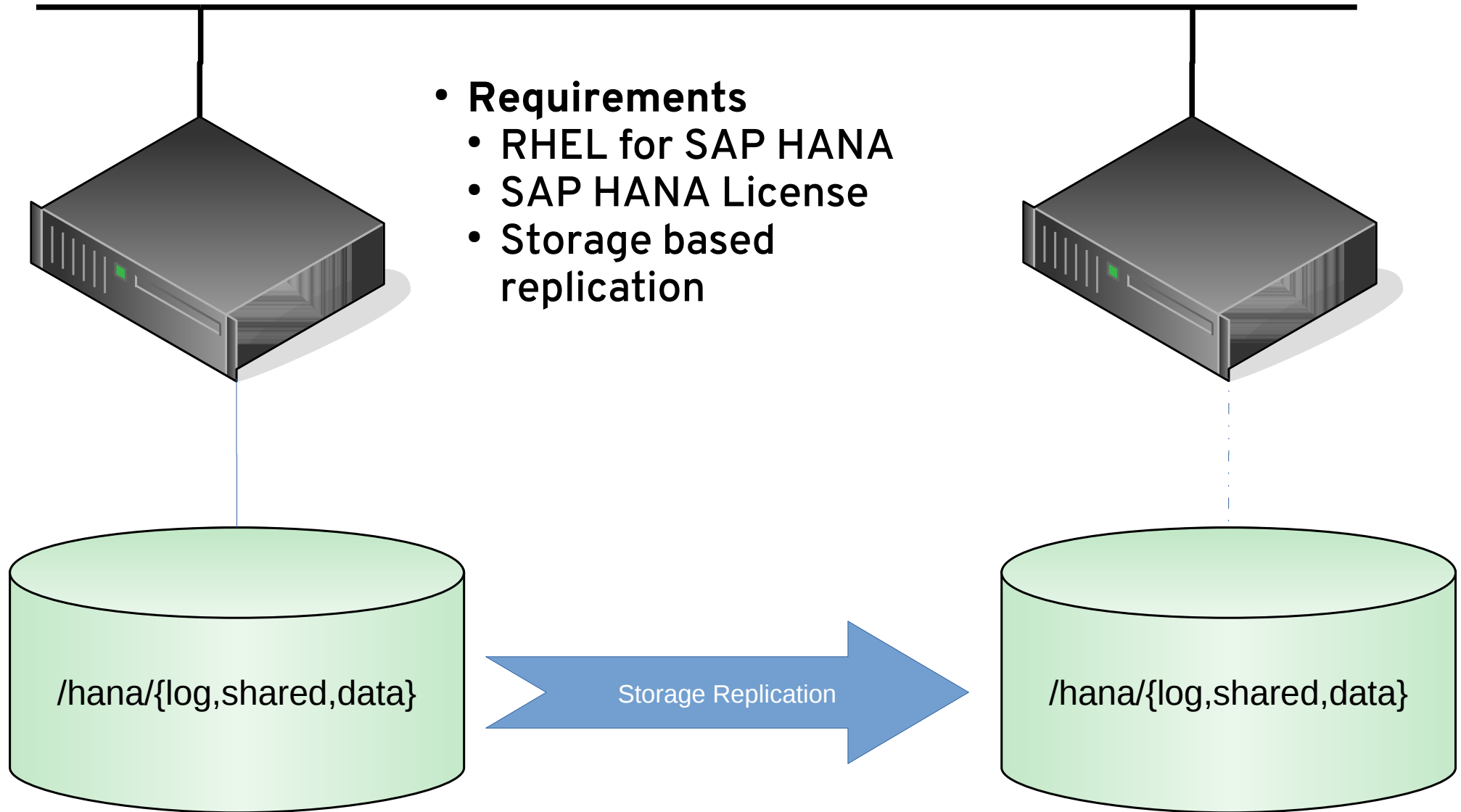
These things are different

- High Availabilty
- Disaster Recovery

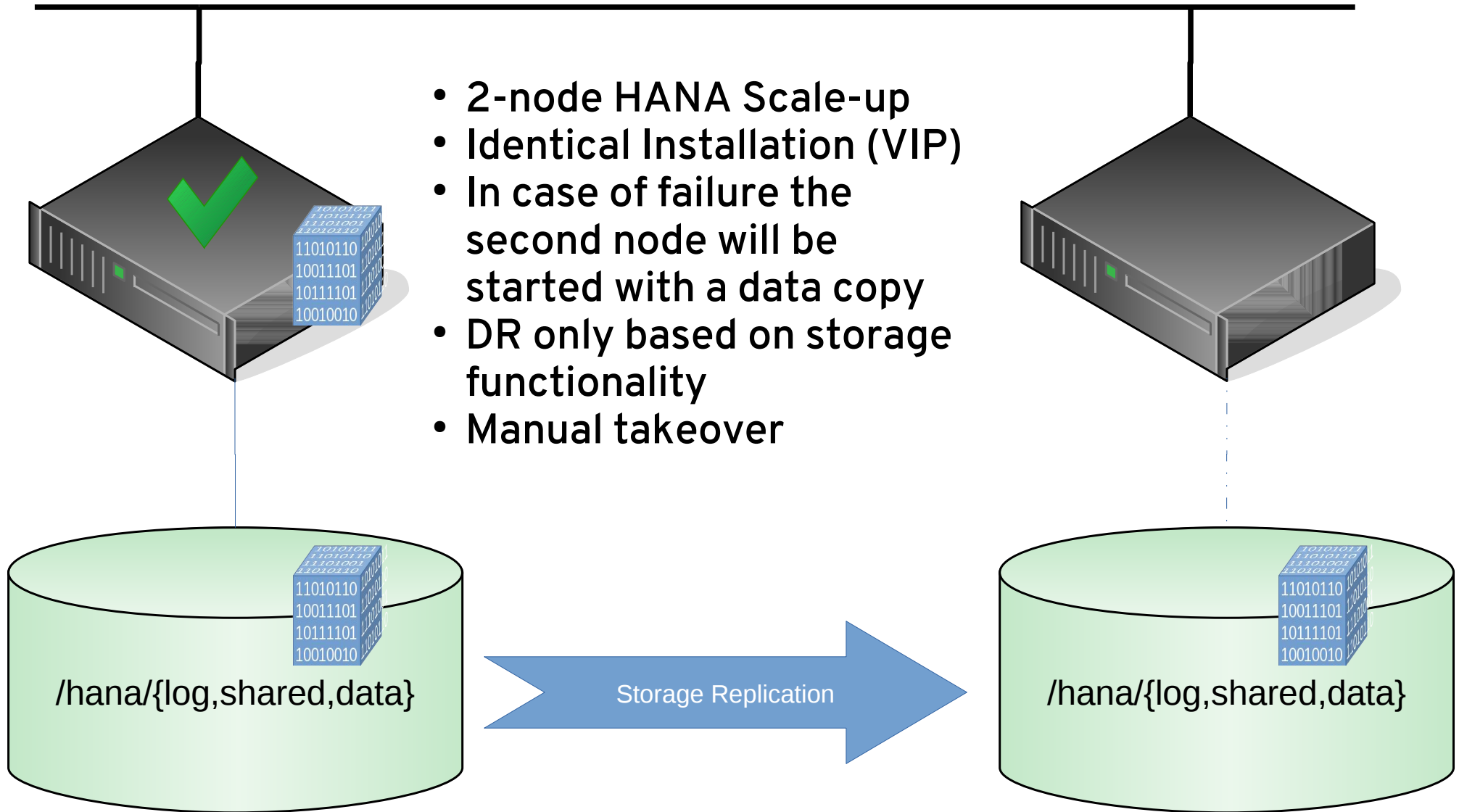
Approaches for increasing HANA availabiliy

- Storage Replication (dependant on storage vendor)
- Scale-Out (Auto-Host Failover, built-in)
- SAP HANA System Replication (built-in, but the failover is not integrated)

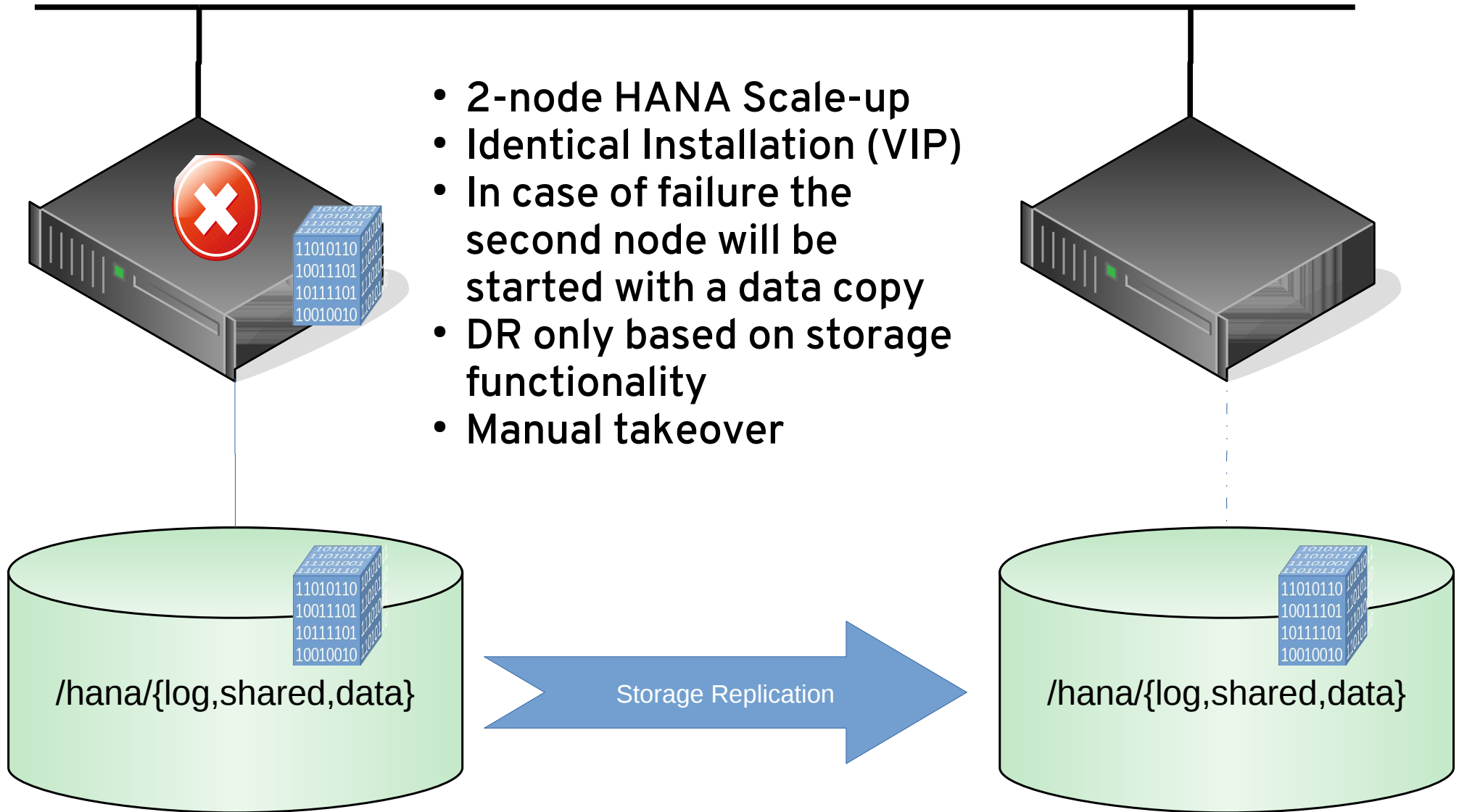
# Desaster Recovery Scenario



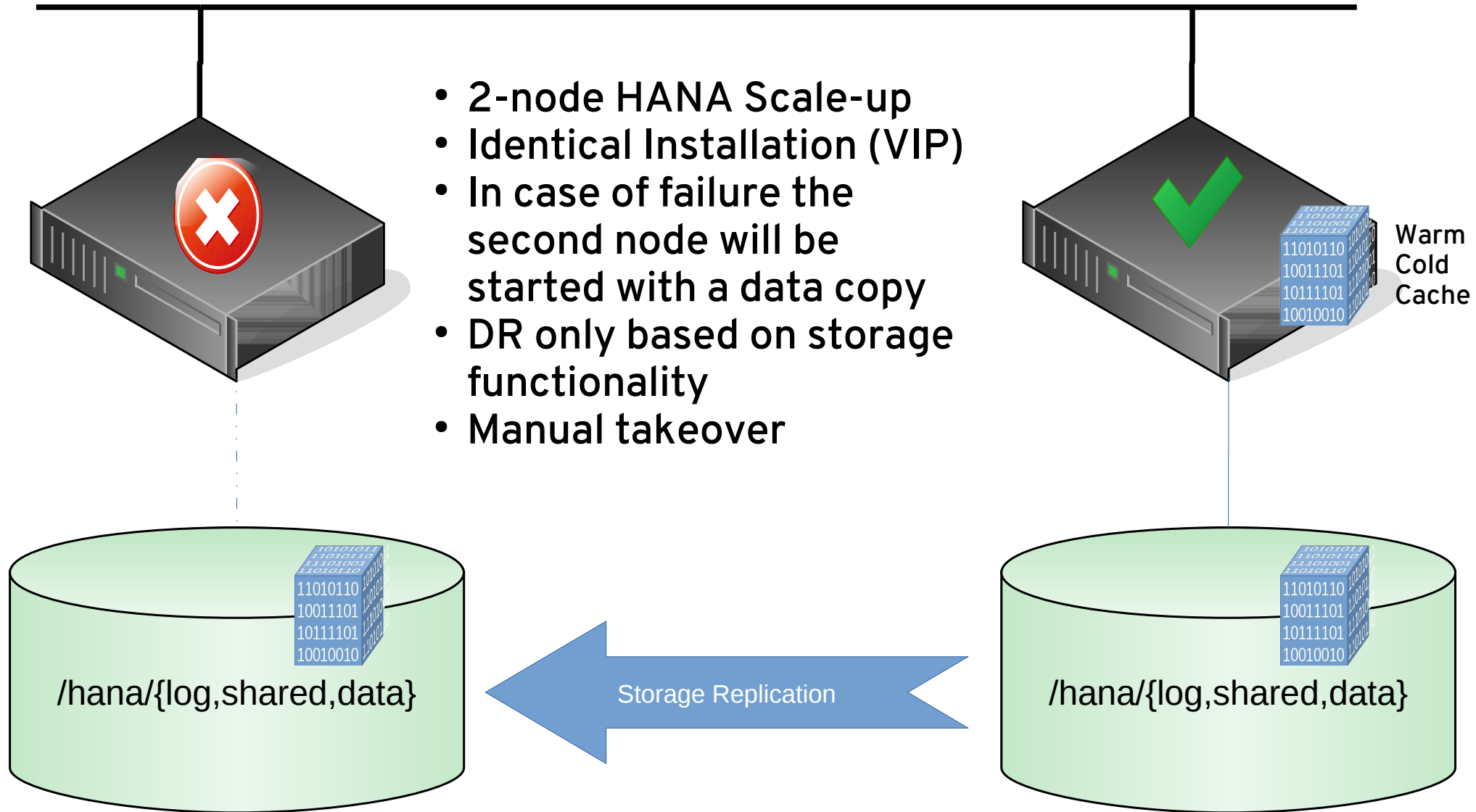
# Desaster Recovery Scenario



# Desaster Recovery Scenario

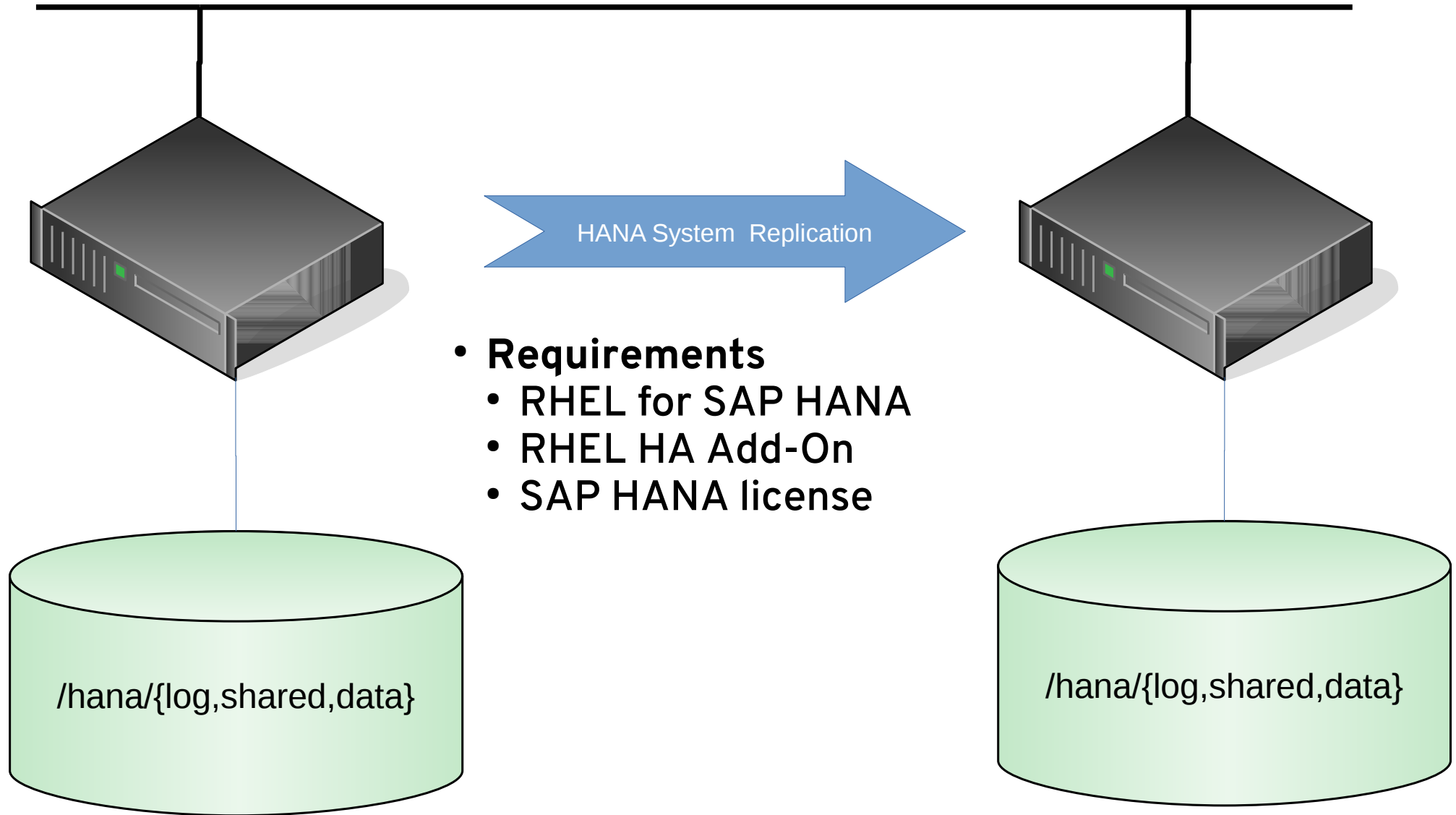


# Desaster Recovery Scenario

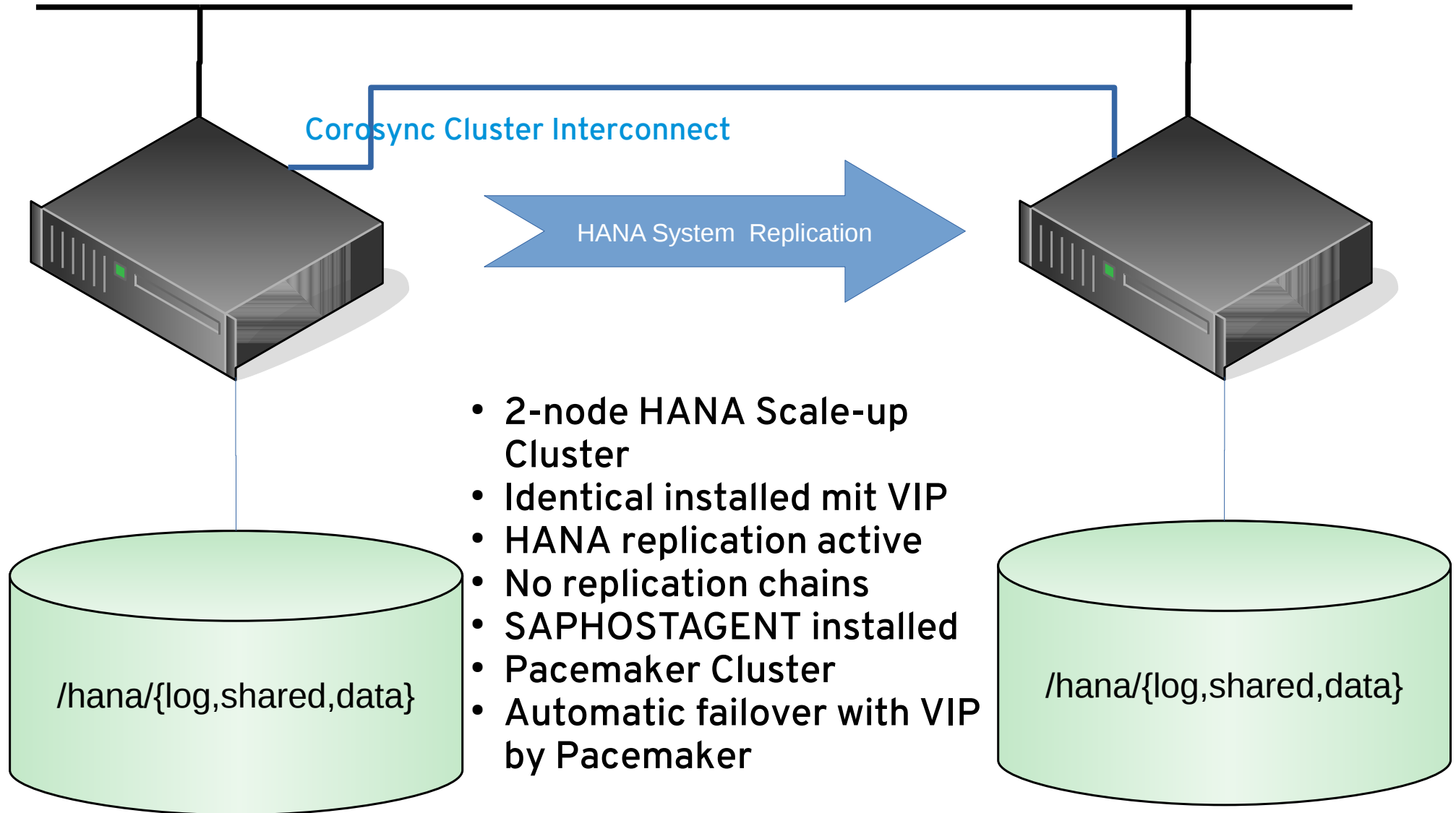




# High Availability Recovery Scenario

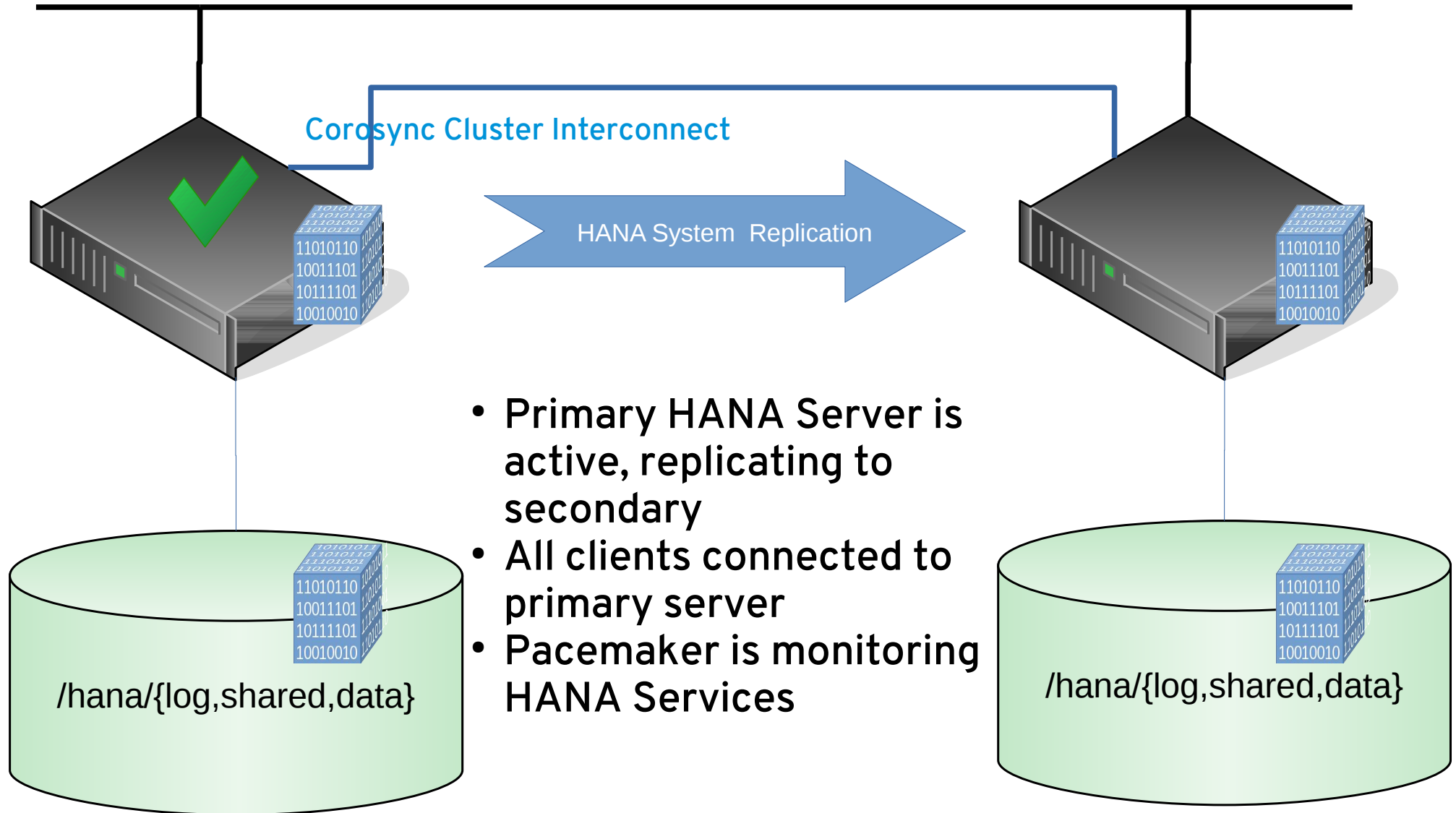


# High Availability Recovery Scenario

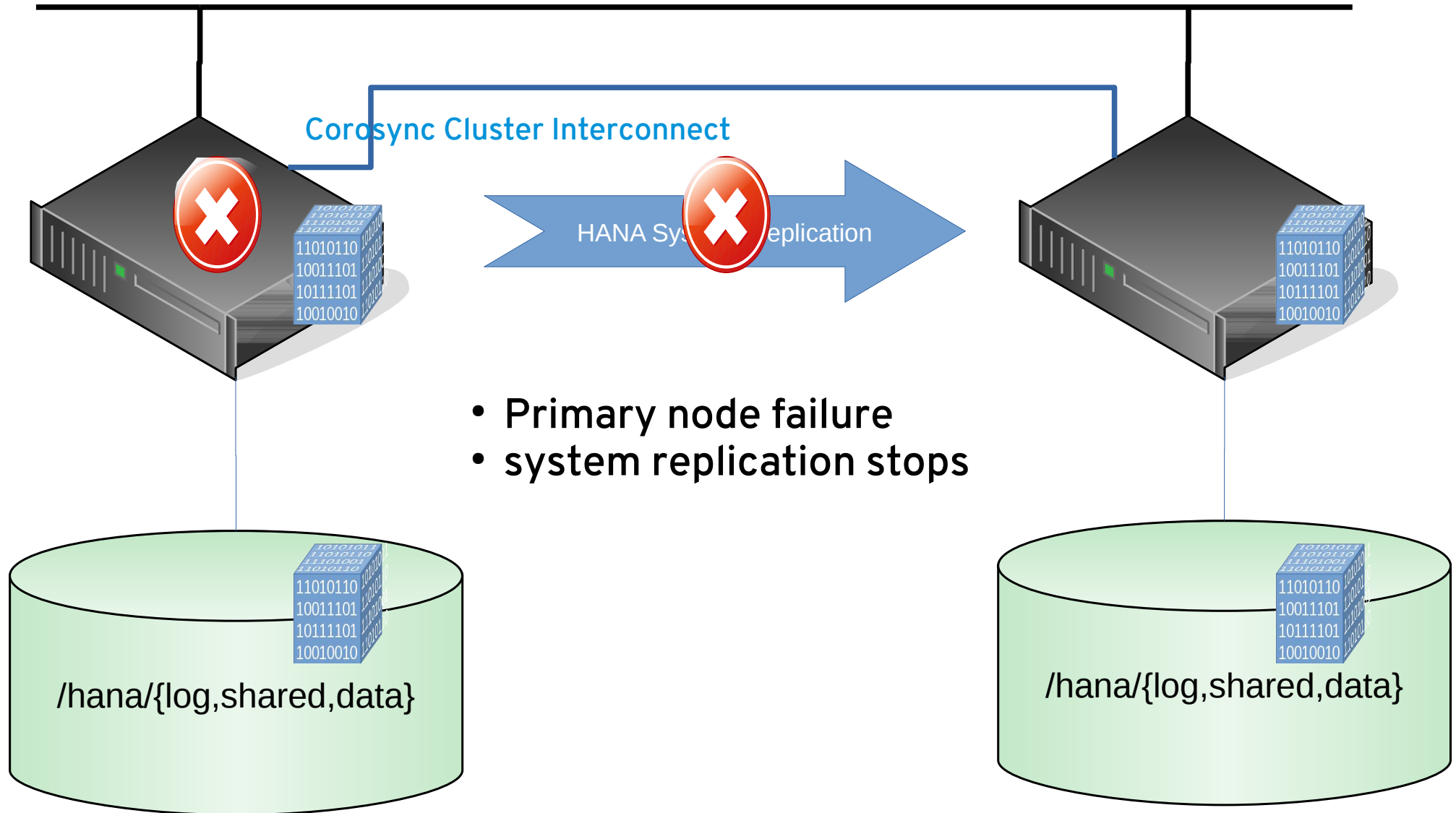


<https://access.redhat.com/articles/47987>

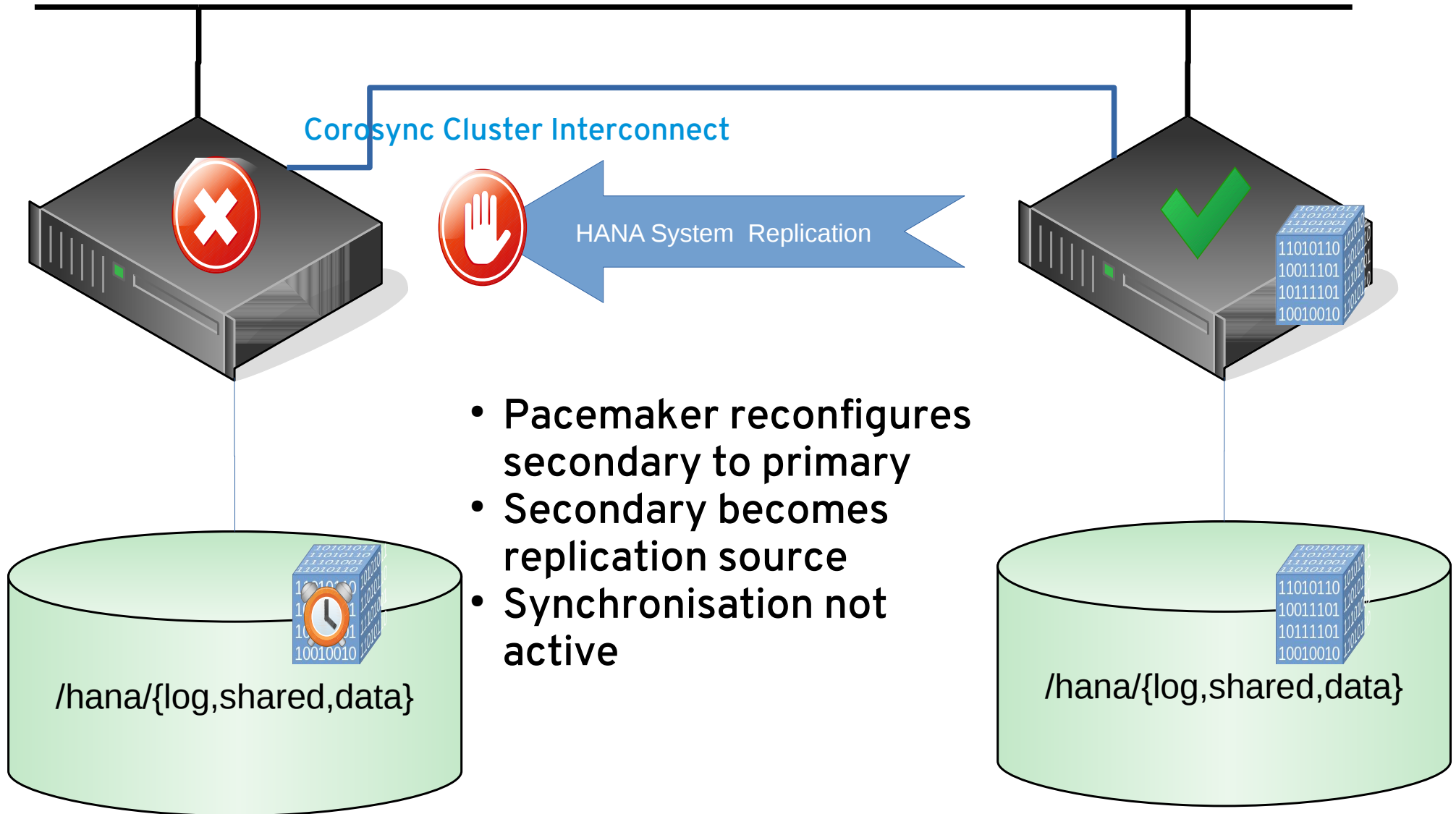
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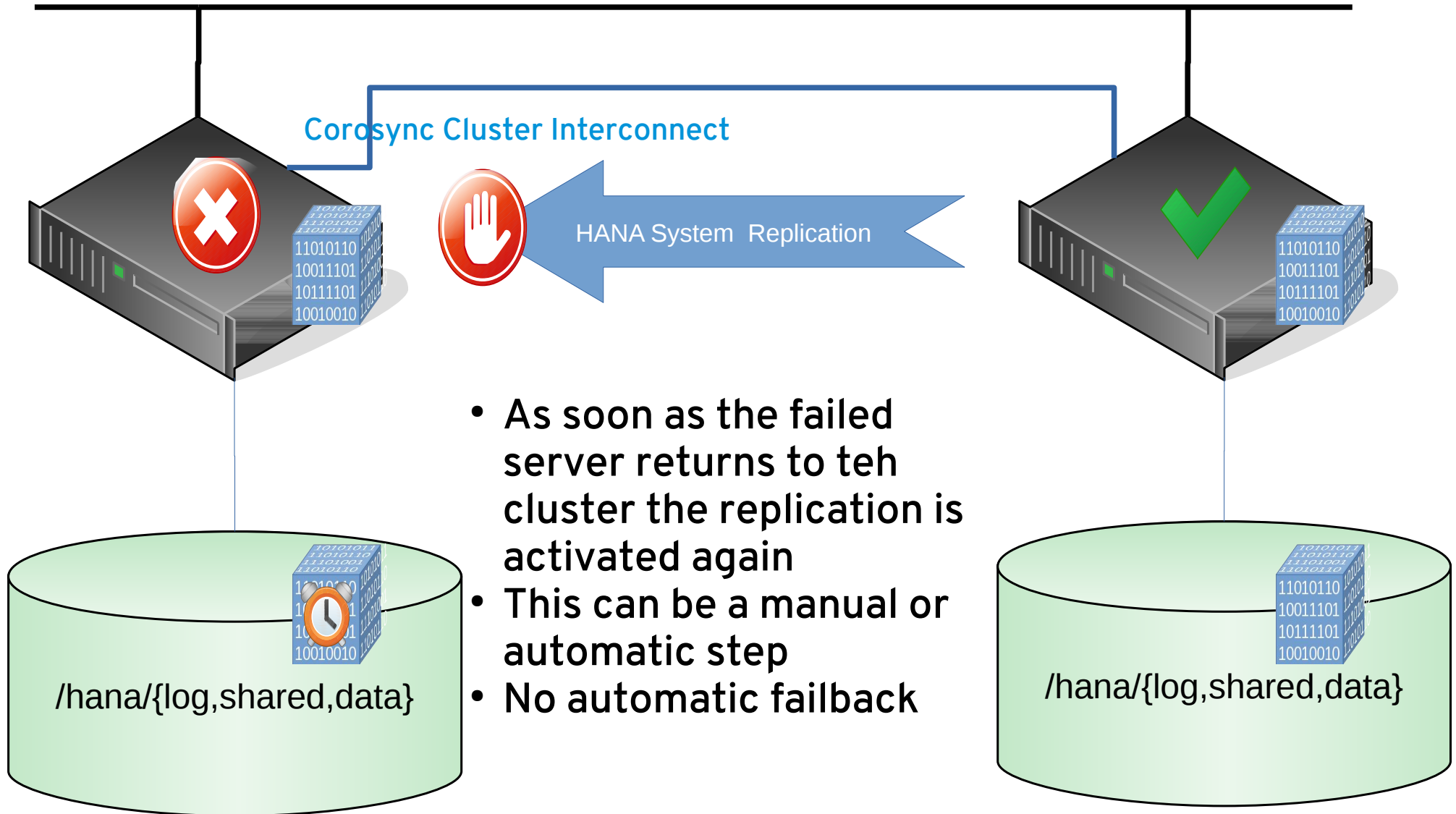
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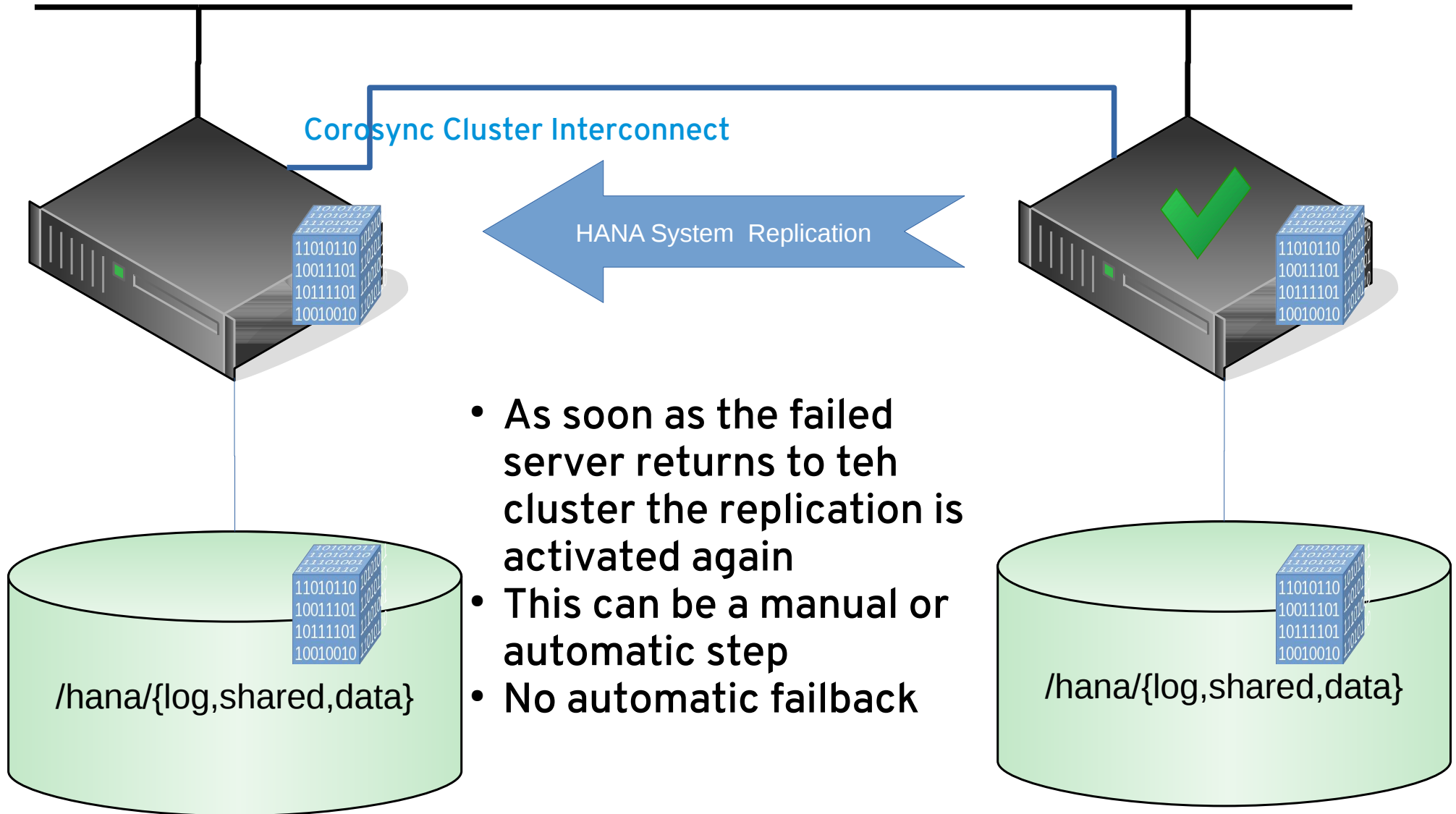
# High Availability Recovery Scenario



# High Availability Recovery Scenario



# High Availability Recovery Scenario



# Comparison

## DR

- Cold start of database => long time to full performance
- Typically manual (or scripted) failover
- Simple & robust

## HA-Setup

- Minimizes downtime
- Automatic failover
- Pacemaker cluster setup required (know how)
- Failover testing required



# Further Reading

SAP Note 2009879 - SAP HANA Guidelines for RedHat Enterprise Linux (RHEL) Operating System

SAP Note 2013638 - SAP HANA DB: Recommended OS settings for RHEL 6.5

SAP Note 2001528 - Linux: SAP HANA Database SPS 08 revision 80 (or higher) on RHEL 6 or SLES 11

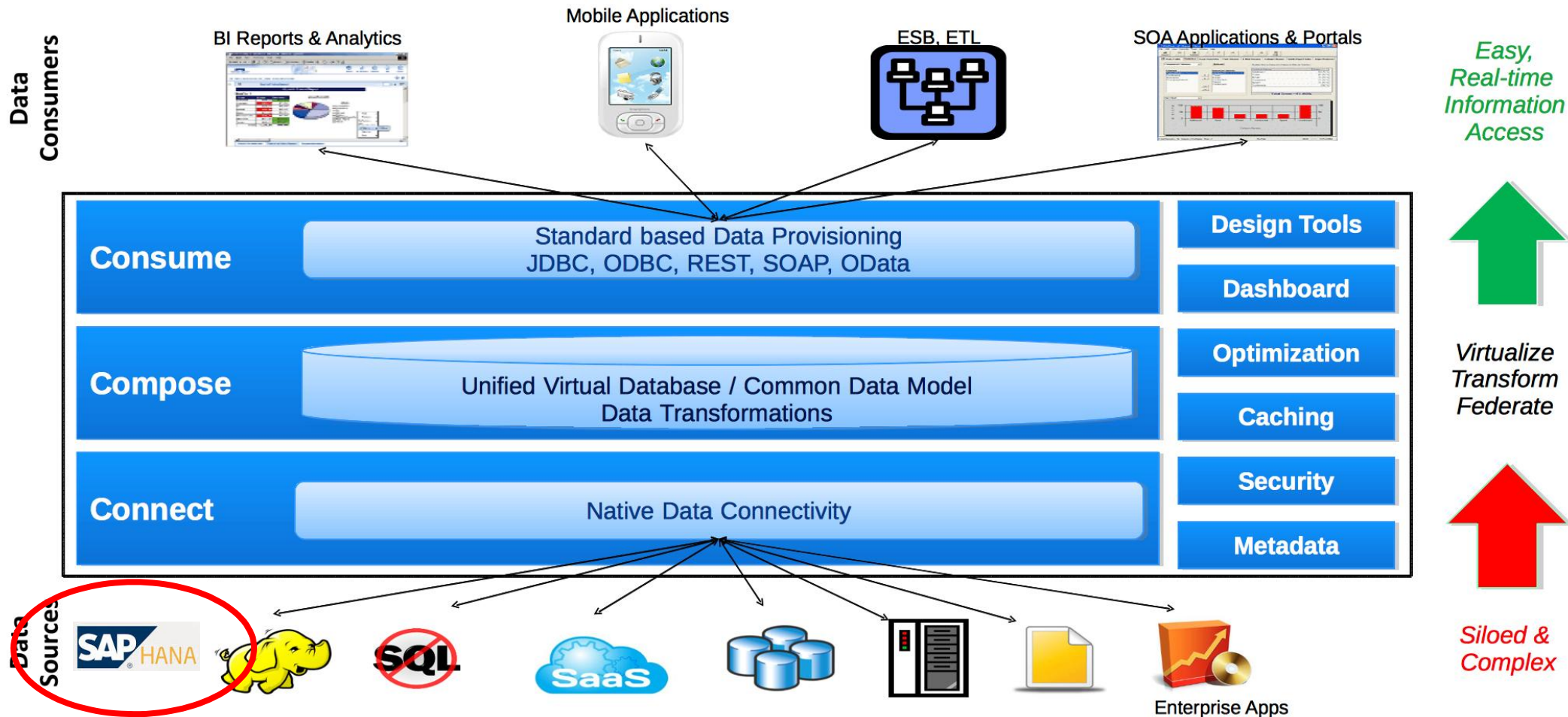
Availability and Scalability - SAP HANA Administration Guide  
- SAP Library

How to Perform System Replication for SAP HANA

Automated SAP HANA System Replication with Pacemaker  
cookbook: available soon

# **Application Development in SAP environments**

# SAP HANA Translator by JBoss Data Virtualization



Data Virtualization software virtually unifies data spread across various disparate sources; and makes it available to applications as a single consolidated data source.

# Red Hat Documentation/ further Reading

## Red Hat Homepage in SCN

- <http://scn.sap.com/docs/DOC-37811>

## SAP Performance benchmarks

- <http://global.sap.com/solutions/benchmark/bweml-results.htm>
- <http://global12.sap.com/solutions/benchmark/sd2tier.epx>

## HANA certification page

- <http://scn.sap.com/docs/DOC-52522>

## SAP Certified HA-Interface Solution

- <http://scn.sap.com/docs/DOC-31701>

# Standardize to simplify your entire landscape.

- Standardize your operating system across all SAP deployments in your IT estate **to reduce the complexity.**
- Deploy the same OS in both existing and evolving IT estates, from development through production.
- Standardize the stack from operating system through application database.
- Standardization across all workloads (not just SAP) creates an agile infrastructure designed for scale.
- Standardization enables IT to ramp up more quickly on new technologies (e.g., SAP HANA).

# KEY TAKEAWAYS

## RED HAT SOLUTIONS FOR SAP ...

1

Provides one data management and application platform for ALL solutions

2

Offers standardization across all workloads (not just SAP) creates an agile infrastructure designed for scale

3

Delivers a flexible, stable, and secure foundation for your entire SAP infrastructure including SAP HANA

4

Helps standardize and accelerate development of apps for SAP

## QUESTIONS?