SUSE

Accelerate SAP S/4HANA Migration And Safeguard SAP Landscape with SUSE

Scott Johnson
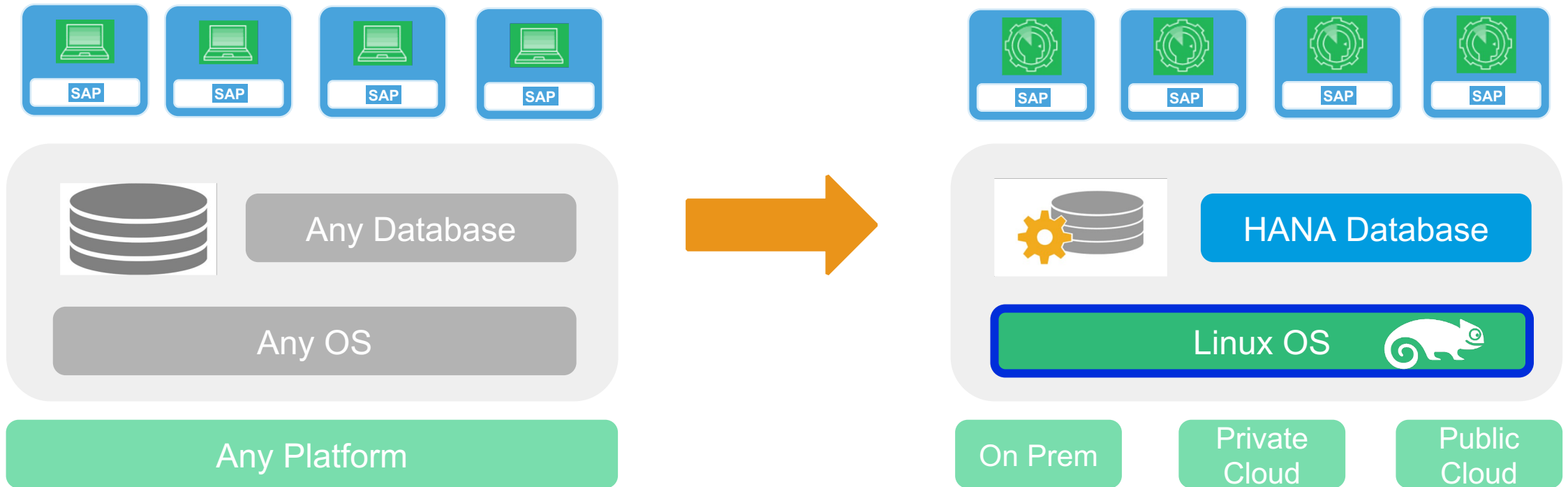Area Sales Director

Download the presentation FREE!

# Why Platform Choice Matters – Accelerate & Reduce Risk

- SAP requires migration to SAP HANA by 2027
- **SAP HANA is only certified on Linux, SUSE first, the development platform**
- Roughly 40,000 customers running SAP ERP need to migrate, still 50%+ haven't started
- SUSE helps accelerate the migration, reduce risk in Day 2 operations, safeguard the SAP landscape

| SAP | SAP | SAP | SAP |

Any Database
Any OS

| Any Platform |

HANA Database
Linux OS

| On Prem | Private Cloud | Public Cloud |

* Based on an ASUG survey in Feb 2022: 31% are live, 13% have started to move, 42% have plans to move, 12% have plans on hold, 3% currently have no plans to move

Challenges in SAP S/4HANA Migration

- **Long learning curve** in the new environment (OS, Infra, etc.)

- **Downtime** from planned maintenance, security patching, and unplanned infrastructure glitches

- **Many requirements** to follow to be SAP compliant

- SAP HANA and Applications are complex and **resource demanding**

- **High Availability** deployments fail and cause outage

- **Lack of visibility and insights** into the SAP landscape, especially HA

- **Configuration drifts** in High Availability cause outage
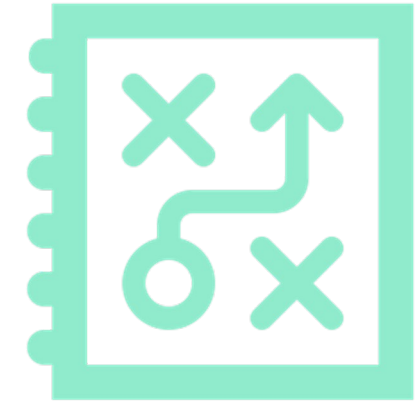
Challenges Business Operations are Facing

$1.9M

Example: Cost of lost productivity[1]

$40M

Cost of 1 million record data breach[2]

70%

Of end users think that new IT projects shouldn't take more than 2 weeks to roll out[3]

Cloud AI/ML/IoT

Emerging technologies require new processes, tools and skills

- Up to 17 outages / day prior to implementing SAP S/4HANA
- 150 employees affected by every application outage

- $350M cost if 50M records are compromised
- 75% of U.S. consumers demand data protection

- Manual processes
- Risk of "Shadow IT"
- Time to deploy new services

- More infrastructure instances
- Increasing maintenance time
- New cloud skills
- Not enough experienced staff

[1] "The Total Economic Impact™ of SAP S/4HANA," Forrester, 2019
[2] "2018 Cost of a Data Breach Study: Global Overview," IBM
[3] "Three Essential Steps to a Software Defined Data Center," Network World, 2014

Why SUSE Linux for SAP workloads?

SUSE is the market leader **trusted by 85% of SAP HANA workloads** – for customers this means that likely issues are already fixed, and patches are provided for most situations

Long established **SAP co-innovation partner** - **SAP develops on SUSE** and runs majority of their own systems on top of SUSE Linux.

Thought leadership for SAP workloads, being first on High-Availability, new HW technology like Persistent memory and latest CPU features, automation, monitoring and configuration compliance

Secure - attested by the highest levels of certifications and compliances like Common Criteria EAL4+, DISA/STIG, FIPS and SLSA 4

Integrated and consistent wherever you need it – from on-prem, to cloud, to edge for your SAP and non-SAP needs
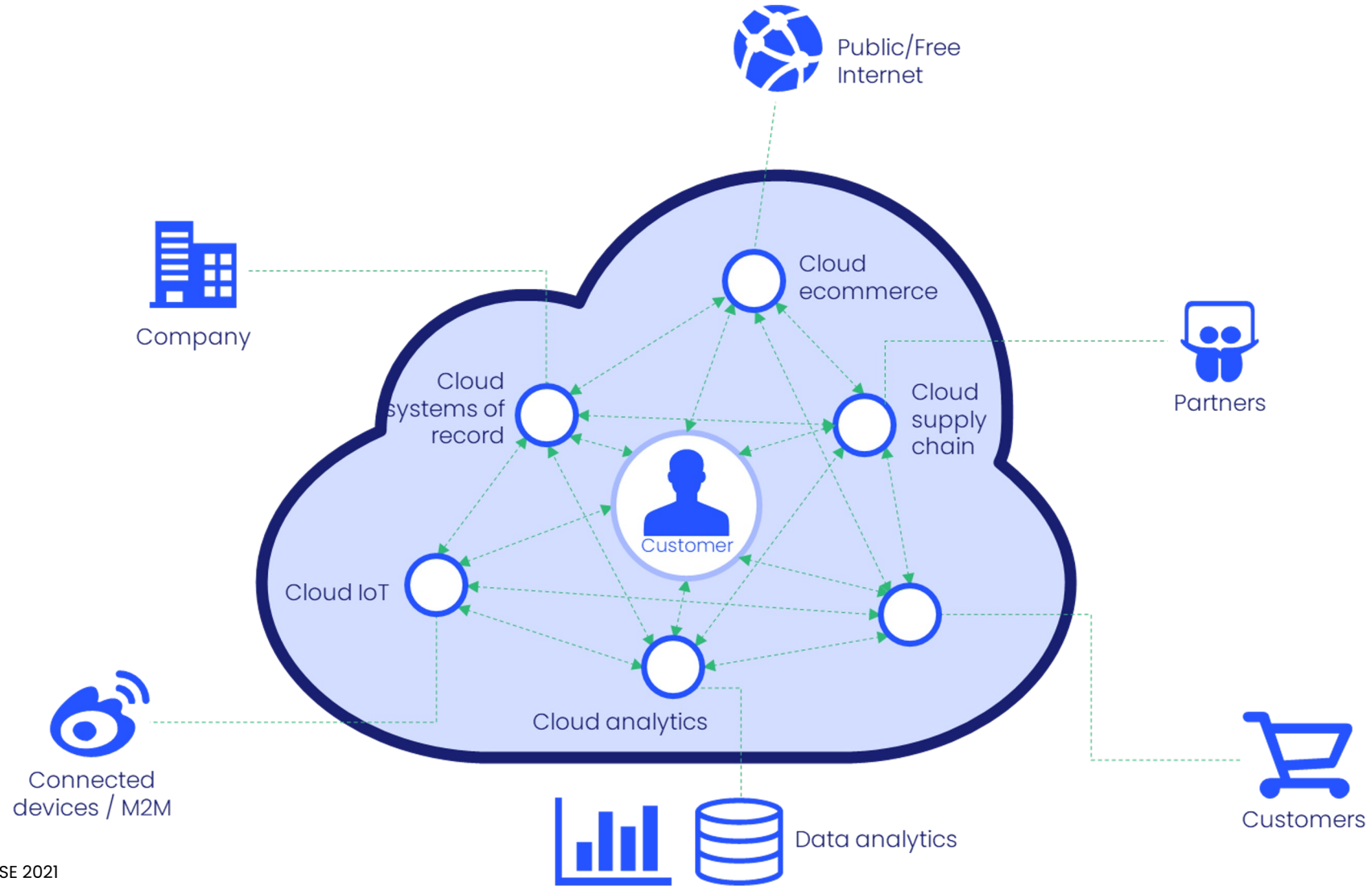
SUSE: Digital Disruption and Transformation

The Cloud: Powers the Connected Economy

Cloud Native Landscape

App Definition and Development
- Database
- Streaming & Messaging
- Application Definition & Image Build
- Continuous Integration & Delivery

Orchestration & Management
- Scheduling & Orchestration
- Coordination & Service Discovery
- Remote Procedure Call
- Service Proxy
- API Gateway
- Service Mesh

Runtime
- Cloud Native Storage
- Container Runtime
- Cloud Native Network

Provisioning
- Automation & Configuration
- Container Registry
- Security & Compliance
- Key Management

Platform
- Certified Kubernetes - Distribution
- Certified Kubernetes - Hosted
- Certified Kubernetes - Installer
- PaaS/Container Service

Observability and Analysis
- Monitoring
- Logging
- Tracing
- Chaos Engineering

Serverless

Kubernetes Certified Service Provider

Kubernetes Training Partner

Members

CNCF Incubating — KV, Vitess, NATS, HELM, CoreDNS, etcd, gRPC, envoy (Graduated), LINKERD, Jaeger, OpentTracing, ROOK, cri-o, CNI, HARBOR, Open Policy Agent, TUF

CNCF Graduated — kubernetes, envoy, fluentd, containerd, Prometheus

CLOUD NATIVE Landscape
Redpoint / Amplify

This landscape is intended as a map through the previously uncharted terrain of cloud native technologies. There are many routes to deploying a cloud native application, with CNCF Projects representing a particularly well-traveled path.

l.cncf.io

The Rise of Edge Computing

Telecom

Defense

Automotive
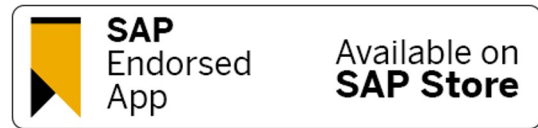
Healthcare

Retail

Manufacturing
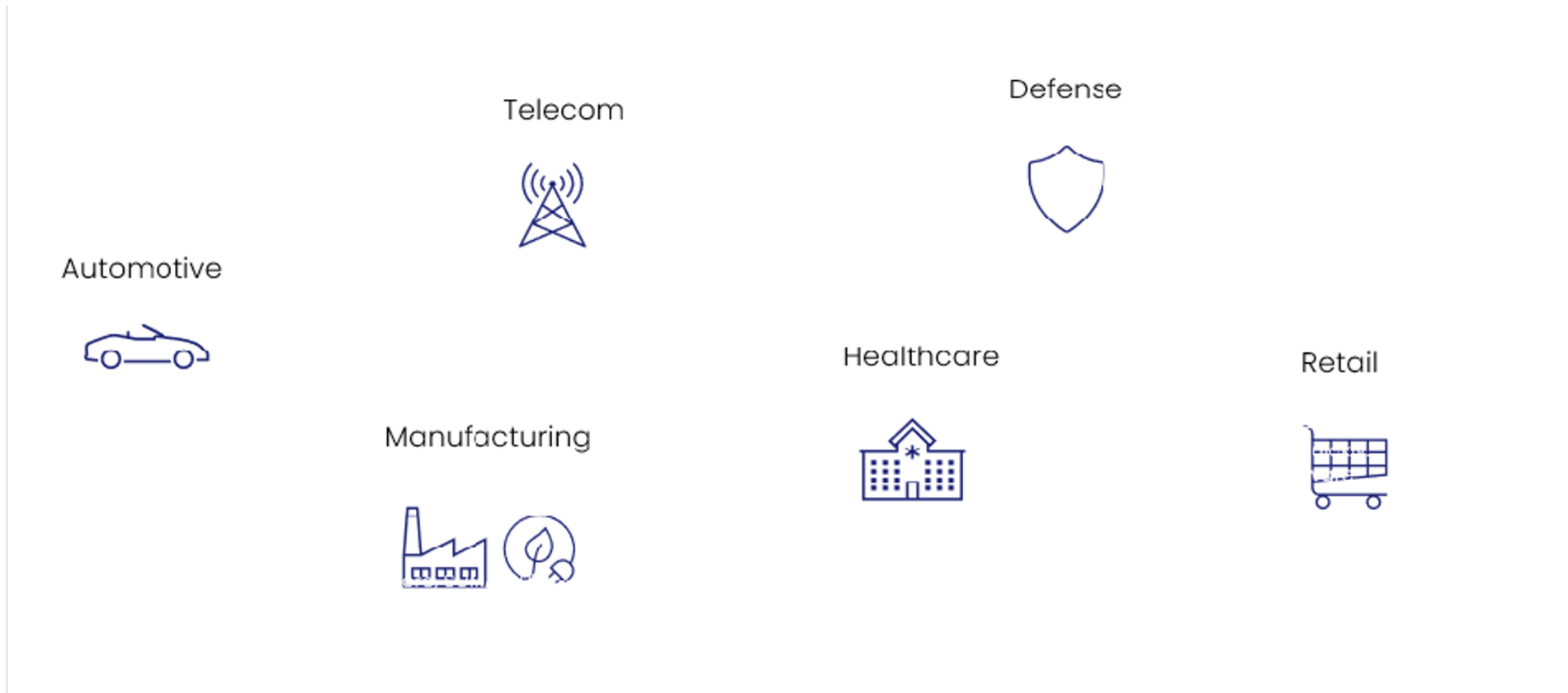
Digital Disruption

- **Digital disruption** is an effect that changes the fundamental expectations and behaviors in a culture, market, industry or process that is caused by, or expressed through, digital capabilities, channels or assets. (Gartner)
- ChatGPT, Amazon, Uber, Netflix, Apple
- Blockchain, Artificial Intelligence, Sustainable Tech, IoT

SUSE – Managing Digital Disruption with Open Source

SAP Endorsed App

Available on SAP Store

SUSE – World's Largest Independent Open-Source Company

SUSE solutions are powering thousands of enterprise customers' mission-critical workloads, including electronic banking systems and enterprise applications, autonomous vehicles, satellite operation centers, and life-saving medical devices.

Acquired Rancher in 2020

RANCHER®

Acquired NeuVector in 2021

NeuVector

FAST FACTS

- 13 out of 15 largest FinServ firms
- 14 out of 15 largest aerospace firms
- 10 out of 10 largest automotive firms
- 13 out of 15 largest pharma firms
- 5 out of 5 largest technology firms

- 19% YoY growth for SUSE
- 88% YoY growth for SUSE Rancher
- 50% ACV growth in cloud
- Member of CNCF board and TOC
- An independent leader in open source – SUSE SA (FRA)

PARTNERSHIPS

aws   Microsoft   Google   Alibaba Cloud   arm

Hewlett Packard Enterprise   ORACLE®   HUAWEI   vmware   DXC.technology

DELL   SAP   intel   IBM   FUJITSU

AMD   CISCO   HCL   NVIDIA   Lenovo

INDUSTRY INITIATIVES & ASSOCIATIONS

CLOUD NATIVE COMPUTING FOUNDATION   OPEN CONTAINER INITIATIVE   THE LINUX FOUNDATION   LF NETWORKING   ELISA ENABLING LINUX IN SAFETY APPLICATIONS

O-RAN ALLIANCE   5GAA Automotive Association   gaia-x   OpenPOWER   OPEN MAINFRAME PROJECT   openHPC

Trusted By Customers Across All Industries

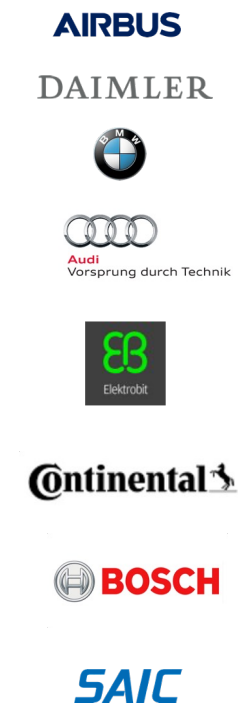| Finance	Information Technology	Media and Entertainment	Healthcare	Government / Defense	Retail	Telecom	Manufacturing & Automotive	Technology and other industries
American Express	Cisco	AMC	Cerner	BAE Systems	Carrefour SA	Bell	Airbus	Schneider Electric
Aviva	Intel	CNN	CVS Health	Lockheed Martin	Office Depot OfficeMax	Comcast	Daimler	Siemens
Baillie Gifford	Nvidia	Genentech	Airbus	Carhartt	Cox	BMW	Schlumberger
Deutsche Bank	Qualcomm	Disney	Illumina	DB Bahn	Shoppers Drug Mart	DXC.technology	Audi Vorsprung durch Technik	Honeywell
Fidelity Investments	Samsung	NBC	Imagia		Kroger	Ericsson	Elektrobit	RioTinto
HSBC	SAP	Nielsen	Invisalign	Ministry of Children, Community & Social Services	M&S EST. 1884	Optus	Continental	Tyco
Mizuho	ServiceNow	Johnson&Johnson		Wing On Founded 1907	Orange		Burton
Raymond James	Sophos	Ubisoft	Raytheon Technologies	Walgreens Boots Alliance	Telstra	Bosch	BASF We create chemistry
TD Bank	Teradata	Merck		United States Air Force	Walmart	T Mobile	SAIC	DuPont
US Bank	Zillow	Ziff Davis	Pfizer		Hasbro	Verizon		

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Case Study

Microsoft Optimizes SAP HANA Performance with SUSE

- SAP has trusted SUSE as a partner longer than any other open source company (since 1999)—their breakthrough database, SAP HANA, was built using SUSE Linux Enterprise Server.
- Microsoft felt reassured that the open source solutions they invested in were enterprise-hardened, robust and supported 24-7.
- SUSE was the only Linux solution that supplied high availability support for SAP applications running in Azure.
- SUSE Consulting and Training

SUSE Solutions to Accelerate SAP S/4HANA Migration

SUSE's Value Prop for SAP

ACCELERATE

- Automated SAP landscape deployment
- Built-in best practices to speed up provisioning and reduce errors
- Reduce deployment from months or weeks to days

MINIMIZE DOWNTIME

- Developer of HA solutions
- Reduce planned and unplanned downtime
- Streamline lifecycle and security management

MAXIMIZE INSIGHTS

- Gain insights into SAP HA clusters - unique in the market
- Proactive validation and monitoring on the SAP landscape, prevent outage from accumulation of minor issues

Market Leadership, Innovation & Agility

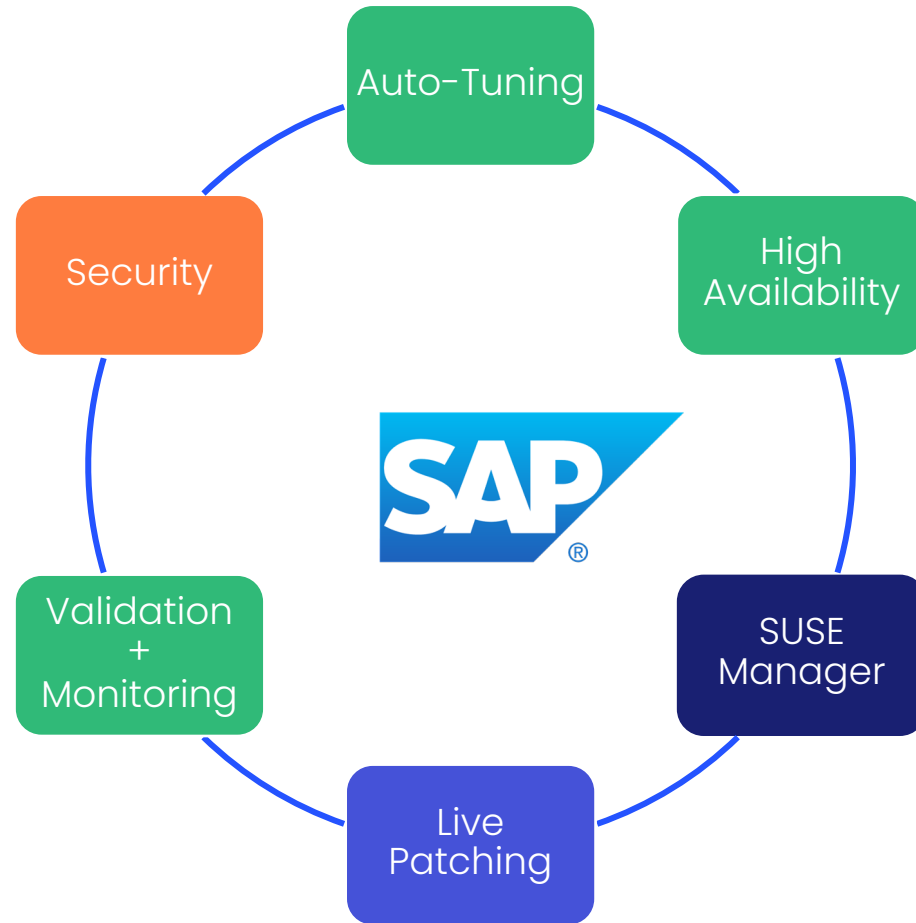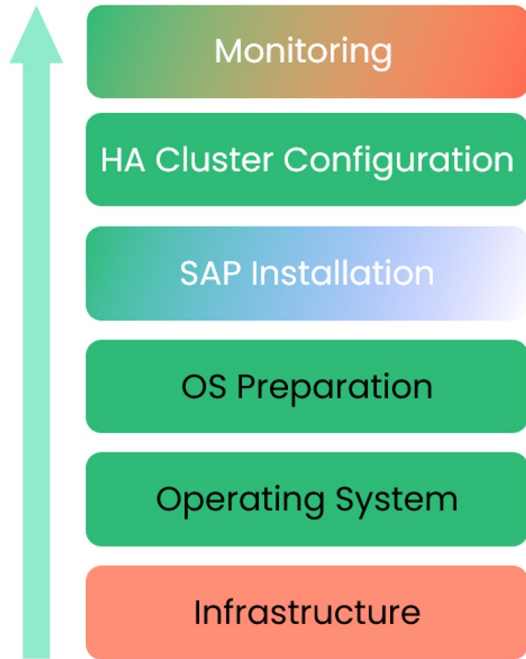## SAP HANA, SAP Data Intelligence, SAP Business One developed on SUSE

SUSE always the 1st to market with SAP:

- SAP Deployment Validation and Monitoring (2022)
- Azure Automation Framework for SAP (co-dev, 2021)
- SAP Data Intelligence Validated on Rancher RKE (2021)
- Full SAP Automation & Monitoring (2020)
- Azure Monitor for SAP (co-dev, 2020)
- GCP SUSE High Availability Extension (HAE) (2020)
- IBM PMEM for SAP HANA (2019)
- IBM Power VM for SAP HANA (2019)
- Azure VM HA SBD Fencing (2018)
- Azure HANA Large Instance (HLI) (2018)
- Intel Optane™ for SAP HANA (2018)
- Certified KVM for SAP HANA (2018)
- Live kernel patching for SAP (2017)
- First AWS EC2 OS for SAP (2015)
- SAP HANA System Replication HA (2014)
- Open-Source HA for NetWeaver (2012)
- OS for SAP HANA (2011)

SUSE's Market Leadership

- **70%** of all SAP applications on Linux
- **85%** of SAP HANA installations
- **90%** of SAP on Azure
- **99%** of IBM Power Platform
- **100%** of SAP Business One deployments
- Reference Platform of "RISE with SAP"
- SUSE powers SAP's Internal and External systems
- 300+ Success Stories and Case Studies
- 20+ years of collaborative innovation with SAP
- SAP's Reference Development Platform

Safeguard Your SAP Landscape & Operations

SUSE Linux Enterprise Server for SAP Applications

Best Linux to support your SAP workloads

Simplicity

Provide a simple and robust configuration of OS for key SAP workloads

SAP Tooling

Enhanced tools around SAP workloads to simplify adoption of SAP solutions on SUSE Linux

Strength

Stable and reliable, error proof foundation for SAP S/4HANA, SAP HANA and SAP NetWeaver

High Availability

Improve reliability and TCO through new and improved HA scenarios for SAP HANA and SAP NetWeaver

Ecosystem Standardization

Drive consistency of tools and features over delivery channels

Deployment automation and monitoring

Streamlined initial setup of SAP applications on SUSE Linux and ongoing monitoring of the solution

SUSE Linux Enterprise Server For SAP Applications

SAP Endorsed App — Available on SAP Store

Direction ←——→ Execution

Security

Certification

- The only general-purpose OS that's **EAL 4+** certified

Hardening

- Hardening Based on **STIG** and **CIS**
- Pre-hardened images of SLES4SAP available on AWS/Azure/GCP marketplace
- Partners can also create custom images using the profile *

- https://github.com/ComplianceAsCode/content/blob/master/products/sle15/profiles/pcs-hardening-sap.profile

Confidential Computing

- The first Enterprise Linux OS to support confidential computing
- Azure: DCesv5 and ECesv5-series Confidential VMs with Intel TDX, SLES 15 SP5 & SLES4SAP 15 SP5
- SAP validation on the roadmap

SAP Validation & Monitoring - Trento
(part of SLES for SAP)

Trento is the Day 2 Operations Manager for customers' HANA and S/4HANA deployments

Configuration checks

Check system configurations against best practices and visualize problems; Provide recommendations.

Monitoring of SAP Landscape

Provide key metrics for SAP systems with alerting; include cluster resources to avoid outage

Visualization of complete SAP environment

Presents complete SAP environment, clusters, systems and their relations in a familiar way.

AI based system checks and recommendations

AI based analysis of log files and systems to detect errors and bottlenecks – and provide recommendations .based on industries' best practices.

Can be deployed anywhere

Containerized Application that can be deployed wherever customers' SAP landscapes exist – on-prem or in the cloud

Ease of use

Single click install; easy to use web UI. Discovers servers, clusters, systems and full landscapes.

SUSE Manager

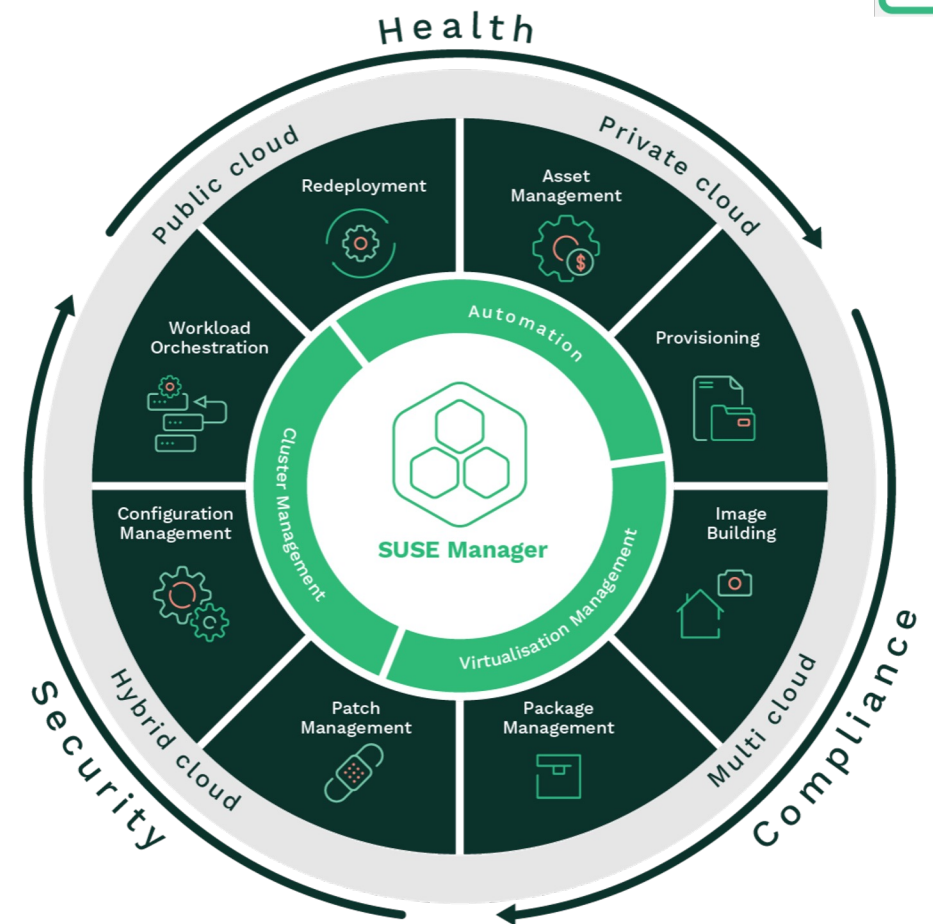Single tool management solution for Linux

SUSE, Red Hat, CentOS & Ubuntu
    – the only tool able to do this

CVE and openSCAP Audit
    – keep the systems secure

Content Lifecycle
    – one click promotion Dev -> QA -> Prod

Manage everywhere
    – on prem, cloud, edge

Audit and patch Container images
    - Docker, dev/ops, Kubernetes

Live Patching – Update without Disruption

APPLICATIONS

- Update applications without disruption, when prerequisites are met, and the user space live patching toolkit is used

LIBRARIES

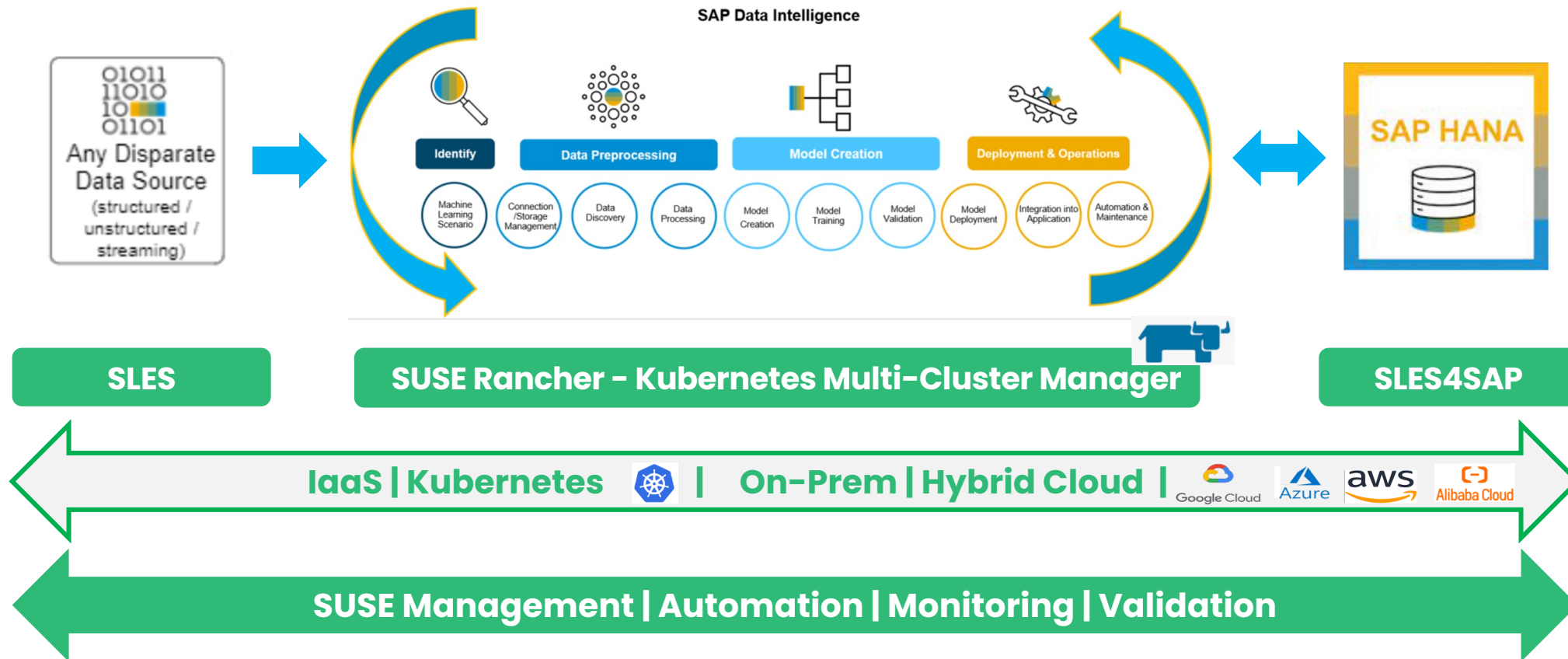- Update key libraries (e.g., glibc, openSSL, dependencies of HANA) without disruption

LINUX KERNEL

- Update the Linux kernel without disruption

User Space Live Patching ONLY available from SUSE

SAP Data Intelligence built on Kubernetes

SAP Data Intelligence

Identify | Data Preprocessing | Model Creation | Deployment & Operations

Machine Learning Scenario · Connection /Storage Management · Data Discovery · Data Processing · Model Creation · Model Training · Model Validation · Model Deployment · Integration into Application · Automation & Maintenance

Any Disparate Data Source (structured / unstructured / streaming)

SAP HANA

SLES

SUSE Rancher – Kubernetes Multi-Cluster Manager

SLES4SAP

IaaS | Kubernetes | On-Prem | Hybrid Cloud | Google Cloud · Azure · aws · Alibaba Cloud

SUSE Management | Automation | Monitoring | Validation

Rancher Prime

Innovate Everywhere

Multi-cluster Management

Rancher Multi-cluster Manager unifies clusters to ensure consistent operations, workload management, and enterprise-grade security
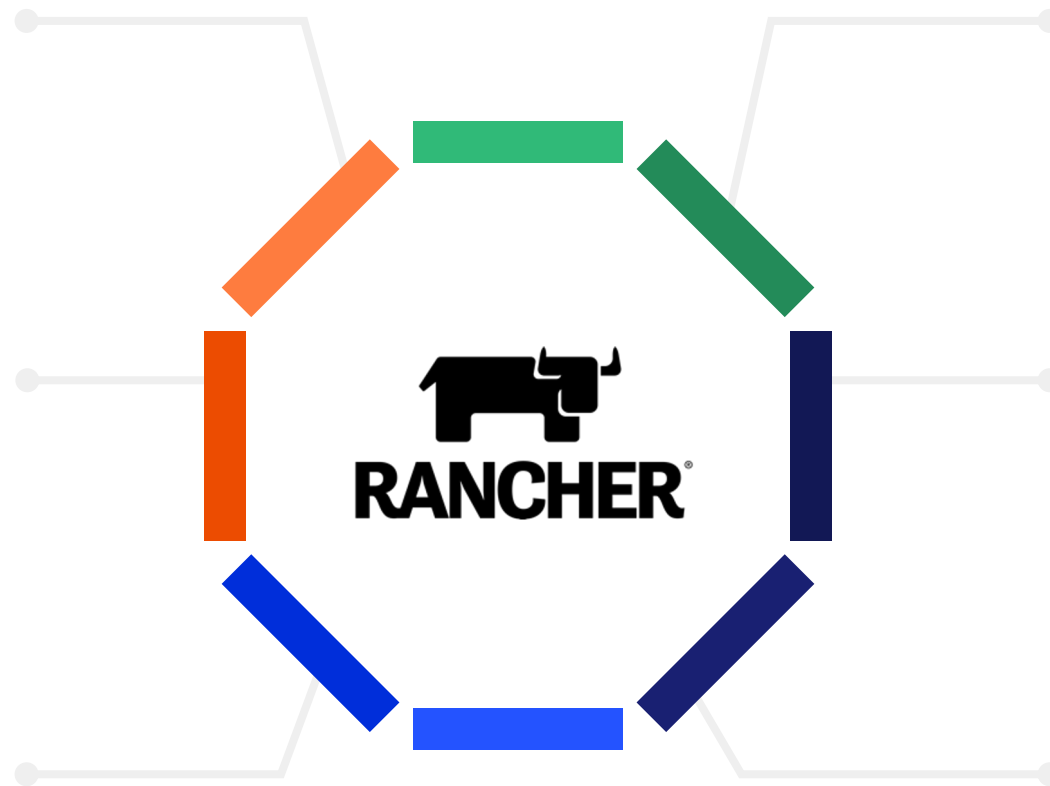
Edge

Leveraging the agility and software delivery from the Datacenter is making its way to branch offices, cell towers and satellites.

Single Cluster

Rancher provides a consistent experience for Kubernetes clusters on the desktop, edge , or datacenter.

One Dashboard

Rancher provides a consistent interface for managing and interacting with the cluster. Providing a gateway to Kubernetes native apps through the catalog.

Installs Everywhere

Rancher can be installed on any CNCF certified cluster.

Scaled Management

Rancher provides a graphical interface for managing smaller environments. The built in GitOps engine allows deployments to scale up to thousands of clusters.

RANCHER®

SUSE Helps Accelerate SAP S/4HANA Migration

AGILITY, RELIABILITY & SECURITY

- Timely HANA certification; No gap
- Robust cloud images and update infrastructure
- Developer of solutions for planned and unplanned downtime
- Federal security standard certified

DEPLOY SAP SERVICES FASTER

- Automated SAP landscape deployment in on-prem, hybrid, and public cloud environment
- Built-in best practices to speed up provisioning and avoid errors

STRENGTHEN OPERATIONS

- Proactive validation & monitoring to avoid outage
- Real time insights and perf optimization
- Best practice driven patching and upgrade
- Integrated support with SAP; Fast response with purpose-built tools; Developer expertise to quick resolution

COST OPTIMIZATION OPTIONS

- BYOS
- PAYG in Cloud Marketplace
- PAYG Discount on long term commitment

Customer Stories

- **SAP SE** [delivers efficiency and cost-savings to customers worldwide with SUSE](#)
- **Microsoft** runs SAP on SUSE: https://www.suse.com/success/microsoft/
- **Walgreens** testimonial below, presented at SAPphire 2022

High-Availability journey

Lesson learned: All key stakeholders should be at the same table and work together

Problem	Actions & Resolution	Outcomes
During migration project major stability issues occurred due to unsupported High-Availability system setup	SUSE experts team got pulled into the project and have found the issues quickly and proposed mitigations • Storage based replication to stabilize system (Microsoft provided) • Joint development and testing of HANA multi-site replication cluster support with WBA and other clients • Ongoing meetings to monitor progress and get all partners in sync	• Human factor become prominent: people were somewhat resistant to adjust plans • missing expertise for managed service caused additional issues • Positive experience with SUSE in multiple crit-sit where all parties worked together to identify root cause for system outages and solve the problem in the way for WBA

SUSE's Thought Leadership in SAP Solutions

- SUSE's SAP Best Practice Library: https://documentation.suse.com/sbp/sap/

- Blogs on SAP Solutions: https://www.suse.com/c/tag/towardszerodowntime/

- Recent blogs on HA solutions
    - Emergency Braking for SAP HANA Dying Indexserver
    - SLES for SAP OS patching procedure for Scale-Up Perf-Opt HANA cluster
    - Optimal SAP HANA maintenance procedure using handshake takeover for SUSE clusters
    - SUSE HA for SAP HANA scale-up cost-optimized improved
    - SAP HANA Cockpit with SUSE HA integration greatly improves data integrity
    - SAP HANA Scale-Out Upgrade Details
    - Handover for the Next Round – SAP on SUSE Cluster and systemd Native Integration
    - First certified simple-mount cluster ever!
    - SAP HANA Scale-Out System Replication Multi-Target Upgrade
    - SAPHanaSR Scale-Out for Multi-Target Architecture and Principles
    - SAP HANA Scale-Out System Replication for large ERP Systems
    - Simple Mount Structure for SAP Application Platform
    - Good news! Updated Guide for SAP HANA Performance Optimized Scenario
    - Yes! SAP Web Dispatcher High Availability on Premise and Cloud!
    - SAP HANA Cost-optimized – An alternative Route is available

SUSE

Thank you

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