SAP and Open Hybrid cloud
by Red Hat
Michele Cito, EMEA Business Development Manager for SAP Cloud and Service Providers, Red Hat
SAP and Open Hybrid Cloud by Red Hat

Michele Cito
EMEA SAP Channel BDM
SAP customers must migrate to SAP HANA platform and S/4 HANA (Application Suite) by 2025

- This requires abandoning Oracle, DB2, and Microsoft SQL Server
- Linux is the only certified operating system for HANA
  - customers need to migrate from AIX, HP-UX, Solaris and from Windows
- ca. 250,000 SAP customers still need to do the migration to HANA
- ca. 25% of SAP systems still run on Unix
Customer journey to Digital Transformation

- Enabling new business insights
- Powering the Intelligent Edge
- Making Hybrid IT simple
- Making the Datacenter efficient

- Containers / PaaS
- Integration / Big Data / IoT
- Hybrid Cloud / IaaS
- Automation / Proactive Management
- Standardize and Optimise IT Infrastructure
Red Hat Enterprise Linux for SAP Solutions

- RHEL for SAP HANA, S/4 HANA, and Business Apps workloads
- High Availability
- Smart Management for lifecycle management
- Red Hat Insights for proactive optimization
- 4 Y Update Services for SAP Solutions
- Integrated support process
- SAP specific contents (resource agents, tuned profiles, ...)

SLA choices:
- Premium (7X24 production)
- Standard (5X12 non prod)

Per “socket pair” stackable models:
- 2 sockets or 2 virtual machines

Virtual Datacenter model
- 2 sockets/Hypervisor
- Unlimited guests

SAP certified Server Hardware
- CISCO
- FUJITSU
- IBM
- HUAWEI
- DELL
- VCE
- Hewlett Packard Enterprise

Certified Cloud Service Providers
- Amazon
- Microsoft Azure
- Google Cloud Platform
- ...
RHV: Virtualization for SAP

- **Better Service Levels**
  - Reduce downtime caused by failing server hardware

- **Faster time-to-value**
  - Rapid provisioning: deploy within hours vs. days
  - Template provisioning ensures consistency and scalability across environments

- **Lower TCO**
  - Greater utilization of existing resources and infrastructure

*Christoph Theis, Head of SAP Services, Finanz Informatik Technologie Services:*

“To deliver the absolute reliability and fast performance that our financial services and insurance custom expect for their critical enterprise transactions, we needed a robust virtualization platform. Choosing Red Hat Virtualization means that we can deliver a high-performing, cloud-based SAP HANA solution that meets our customers' requirements, and can do so in a cost-effective manner.”
Red Hat Management Portfolio

**Build a Trusted & Secure Red Hat Environment**
- Manage the Red Hat Lifecycle
- Provision & Configure at Scale
- Standardize Your Environment

**Deliver Services Across Your Hybrid Cloud**
- Hybrid Cloud Management
- Self-Service Provisioning
- Policy-driven Compliance

**Centralize Automation Governance**
- Centralized Control
- Team & User Delegation
- Audit Trail

**Prevent Critical Issues Before They Occur**
- Continuous Insights
- Verified Knowledge
- Proactive Resolution
Accelerate & automate service delivery

- customer value -

Support the business more effectively
- better support evolving business initiatives by drastically reducing the amount of manual work required, e.g. Setting up a SAP (HANA) instance including best practices and tuning within less than 10 min.

Increase speed and efficiency
- Less manual work leads to faster service and resource delivery and accelerated time to market for new products, e.g. reduce implementation time e.g. for 6 node HANA scale-out environment from 7 to 3 days
- This also allows IT staff to refocus on strategic innovation, rather than remedial and day-to-day tasks.

Consistency
- Automation improves the accuracy and reliability of IT operations and provides more consistent execution, deployment, operation, and life-cycle management across all aspects of your infrastructure, e.g. enabling faster deployment of changes into the production landscape and regular security updates in production environment with identical staging / production environments

Simplicity
- Ansible is easy to use for any member of your organization. With a simple, human-readable automation language, anyone in your organization can automate with Ansible, no retraining required.
SAP HANA standard installation process

HARDWARE ➔ LINUX (OS) ➔ SAP HANA ➔ VALIDATION ➔ MAINTENANCE

- On Site construction
- Installation & Configuration
- Installation & Configuration
- Validation & Customization
- Maintenance & Updates

Individually for each server and environment!
SAP HANA optimized installation process with Ansible

- HARDWARE
- On Site construction
- LINUX (OS), SAP HANA, VALIDATION
- Installation & Configuration
- Installation & Configuration
- Maintenance & Updates
- MAINTENANCE
- Validation & Customization

Automation for the whole environment

Link to Ansible SAP Playbooks
Red Hat Insights: proactive resolution

- In-depth analysis of the SAP infrastructure enables proactive management
- Mitigate risk / ensure compliance (e.g. configuration drifts)
- Increase stability and performance
- Automate IT remediation of critical issues through Ansible Playbooks
- also on RHEL instances deployed on AWS or Azure

https://access.redhat.com/blogs/2184921/posts/2849871
Customer journey to Digital Transformation

- Enabling new business insights
- Powering the Intelligent Edge
- Making Hybrid IT simple
- Making the Datacenter efficient

Components:
- Hybrid Cloud / IaaS
- Automation / Proactive Management
- Integration / Big Data / IoT
- Containers / PaaS

Brands:
- SAP HANA
- SAP S/4 HANA
- SAP Leonardo
- SAP Data Hub
3. Side-by-Side Extensibility

Side-by-side extensibility with a Paas approach based on SAP HANA Cloud Platform has benefits and is recommended whenever customers and partners want to:

- Integrate SAP S/4HANA business processes with other cloud applications from SAP (for example, SAP SuccessFactors and SAP Ariba solutions) and with third-party applications
- Develop freestyle extension applications with a high degree of flexibility and using a rich set of services (for example, cloud portal or mobile documents)
- Design and build an SAP Fiori and mobile user experience for existing solutions (on-premise or cloud) using a browser-based tool (SAP Web IDE)
- Benefit from a separate software lifecycle (pace-layered IT)

Business-related examples of utilizing the side-by-side benefits include:

- Reaching out to external users and consumers (for example, customer service portal)
- Enriching standard processes with before and after steps (for example, customer service)

Note: As of now, triggering in SAP S/4HANA needs to be done by means of in-app extensibility

- Bridging applications between cloud and on premise
- Developing new stand-alone cloud apps

3.1 SAP HANA Cloud Platform

SAP HANA Cloud Platform is SAP’s in-memory Paas offering. It enables customers, partners, and developers to build, extend, and run next-generation applications on SAP HANA in the cloud. It can be used for extensions of cloud and on-premise applications. With flexible subscription models and optional services for apps, database, and infrastructure, SAP HANA Cloud Platform provides instant access to the full power of SAP HANA.

SAP HANA Cloud Platform comprises infrastructure services (for example, cloud operations, data backup, compliance, and service-level agreements), database services provided by SAP HANA (such as in-memory analytics, text search, planning, predictive and stored procedures), and application services (for example, cloud portal, security, document, administration, and development tools). Powerful integration services are available with SAP HANA Cloud Platform, integration service.

SAP HANA Cloud Platform is the default choice for building an extension for any cloud solution from SAP. Developers can use Java, HTML5, or native SAP HANA extended application services combined with the underlying open API layer and powered by SAP HANA. Below you will find a complete list of services for SAP HANA Cloud Platform.

3.2 New User Interfaces and Extension Applications

There are two main use cases in SAP S/4HANA where the SAP HANA Cloud Platform will be used as an extension platform.

1. New and adopted user interfaces

   Often, customers and partners need to do significant structural adaptations to SAP-delivered Fiori user interfaces, or they may even want to create completely new user interfaces on top of the released open APIs. Another important use case is custom- or partner-specific UI theming by use of the UI theme designer. SAP HANA Cloud Platform provides the relevant environment and tools for these use cases.

2. Extension applications

   In most cases, net-new business processes and scenarios cannot be addressed with in-app extensibility. Side-by-side extension applications are a means to allow the highest possible extension flexibility. In general, extension applications on SAP HANA Cloud Platform consist of static resources and a connection to a back-end system using Representational State Transfer (REST)-based and Simple Object Access Protocol (SOAP)-based Web services (on premise and on demand). The UI development toolkit for HTML5 (SAPUI5) and SAP Fiori apps with a data connection to an Open Data Protocol (OData) service exposed by the back-end system of SAP S/4HANA Cloud are examples here. To use the full business functionality coming with SAP S/4HANA, selected traditional APIs such as business application programming interfaces (BAPIs) and intermediate documents (IDs) will be exposed as well. The set of available APIs depends on the SAP S/4HANA deployment options and the activated scope. SAP S/4HANA on premise will provide the broadest scope, which is close to the existing SAP ERP Central Component (SAP ECC) scope. SAP S/4HANA Cloud will provide an adapted scope.

As of now (Q3/2016), partners or customers can use SAP HANA Cloud Platform as an extension platform for both on premise and the cloud.

SAP S/4HANA integrates with SAP HANA Cloud Platform through the SAP HANA cloud connector that is already preconfigured. Also, SAP Gateway technology, used to expose OData services to SAP HANA Cloud Platform, is already installed and preconfigured in SAP S/4HANA. For complex landscapes, SAP HANA Cloud Platform, integration service, offers a hub-based approach for integration of SAP and non-SAP solutions.
Side By Side Extensibility

From SAPinsider:
"The “cloud” part of SAP Cloud Platform is a concept that is here to stay and is becoming more and more common for new extension solutions rolled out by SAP and its partners. Even if cloud (SAP S/4HANA or otherwise) is nowhere on the roadmap, customers need to ask themselves whether it’s a good idea to continue building wholesale ABAP-based enhancements directly within their SAP business suite systems. As SAP S/4HANA and other SAP and non-SAP business suite systems trend toward a SaaS model, customers need to be thinking about a holistic, enterprise-wide strategy for enhancements that can grow and adapt with the business. For some customers, an SAP S/4HANA migration project could be the perfect catalyst to drive these changes as they move forward.

Full Article @: https://sapinsider.wispubs.com/Assets/Articles/2019/August/Migrating-Custom-ABAP-Code-to-SAP-S4HANA?utm_source=WIS&utm_medium=Email&utm_campaign=Alert-08-27-19&mkt_tok=eyJpIjoiWWpWaU5EbG1ZekExTnpGailsInQiOiJKR0RpRHFyZDBCeyUZkdmlkxNGlCdERCR1NYMEdsbU5zTENJUTB0ZWdITnQwQXJtZ1FlPbXRCTIIITjIjWkVqRE9UMWt1OFVyK0NYOENxSkwyS1pV0hSQQt3o3U9pQ1c3KytiSmRkaZzWmTqzFEuUYMDg4aDYSNUE8R2FyIyJ9"
SAP Side-by-Side Extensibility with OpenShift Platform

From SAP TechEd 2019 Las Vegas
Reference Architecture for SCP On-Prem in 2Q2020 (Installable in customer data center)

Highlights:
- 2Q 2020 (Target)
- Intelligent Enterprise use cases initially
- Innovation use cases delivered in stages, details tbd
- Will run in client datacenter as cloud solution
- OpenShift based
Businesses leaders and analysis see the “internet of things” (IoT) delivering competitive advantage.

The IoT is becoming a competitive marketplace weapon. The focus of is shifting to external improvements (customer experience, revenue generation).

Capturing (ROI) from the IoT is challenging due to complexities in designing and deploying solutions, and difficulties in establishing direct cause-and-effect relationships for business results.
Where is Red Hat positioned in IoT development tools?

**Figure 6. The Top Five Vendors of Open Source Tools for IoT Development**

Who Are the Leading Vendors of Open Source Tools for IoT Development?
The Top Five Vendors, Percent of Mentions

- **Red Hat**: 76%
- **Google**: 68%
- **Microsoft**: 63%
- **Oracle**: 56%
- **IBM**: 53%

*Source: 2017 Worldwide IoT Innovation Survey, N=253*
Role of Integration in SAP environments

SAP shows customers the intelligent enterprise, and S/4HANA is surprisingly not at the center

SAP: SAPPHIRE NOW 2018
Orlando, Fla., June 5-7, 2018

Integration is a core component in bringing the intelligent enterprise to fruition. While integration between SAP applications is one aspect of this, the reality is that many customers use applications from a variety of different vendors. SAP is addressing the integration challenge associated with multi-vendor environments by bolstering SAP Cloud Platform’s ability to connect with third-party applications. SAP launched SAP Cloud Platform Open Connectors, an API integration platform, based on an OEM deal SAP has to leverage Cloud Element’s catalog of over 150 APIs. This is a very timely announcement, given SAP’s recently heightened rivalry with Salesforce, which acquired Integration Platform as a Service vendor MuleSoft in early May.
Enable new business insights

Businesses leaders continue to believe that fragmented, siloed IT environments block their ability to make informed business decisions.

- 74% of IT leaders said their data landscape is so complex that it limits agility.
- 86% said they were not getting the most out of their data.
- 50% believe that data is inaccessible to a wide variety of business stakeholders.

2686169 - Prerequisites for installing SAP Data Hub 2  Version 16 from Apr 4, 2019 in English

Solution

The following sections define the platforms SAP Data Hub 2 can run on. For products that can be integrated with SAP Data Hub 2, please refer to SAP Note 2693555.

SAP Data Hub 2.4 is released for use on the following Container Application Platforms with persistent storage provided by their respective dynamic volume provisioning. Temporary restrictions are marked with (R-xxx).

- SAP Data Hub 2.4: Google Kubernetes Engine (GKE) with Kubernetes 1.10 and 1.11 on Google Cloud Platform.
- SAP Data Hub 2.4: Amazon Elastic Container Service for Kubernetes (EKS) with Kubernetes 1.10 and 1.11\(^{(2)}\) on Amazon Web Services.
- SAP Data Hub 2.4: Microsoft Azure Kubernetes Service (AKS) with Kubernetes 1.10 and 1.11 on Microsoft Azure.

Partners and/or SAP can perform a dedicated verification of SAP Data Hub 2 on full-stack Kubernetes platforms. For SAP Data Hub 2.4, the verification has been completed for:

- Cisco Container Platform 2.2 on Hyperflex 3.0/3.5 and Flexpod with Scality Ring 7.4

Partners and/or SAP can perform a dedicated verification of SAP Data Hub 2 on Kubernetes and storage platforms. For SAP Data Hub 2.4, the verification has been completed for:

- Red Hat OpenShift Container Platform 3.10 with Ceph RBD or GlusterFS\(^{(1)}\). See SAP Note 27555247 for details.
- SUSE CaaS Platform 3.0 with SESt\(^{(1)}\). See SAP Note 2776522 for details.
Red Hat is recognized as the Leader in Container Platform Suites

Red Hat is recognized as Leader in the overall Container Platform Software Suites, on strategy, current offering and Market Presence.

When we restrict the analysis to Kubernetes and SAP certified platforms, the gap with the competition is even more relevant!
Supporting you through the whole Digital Transformation journey

- Open integration
- Dev Ops
- Virtualization
- Operating System

- Side by Side Development
- Micro Services Development
- Containers Mgmt

- SAP HANA
- SAP S/4 HANA
- SAP Leonardo
- SAP Data Hub

- Open integration
- Dev Ops
- Open integration
- Containers Mgmt

- Automation
- Hybrid Cloud Management
- Red Hat OpenShift
Thank you

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