SAP DATA HUB ON RED HAT

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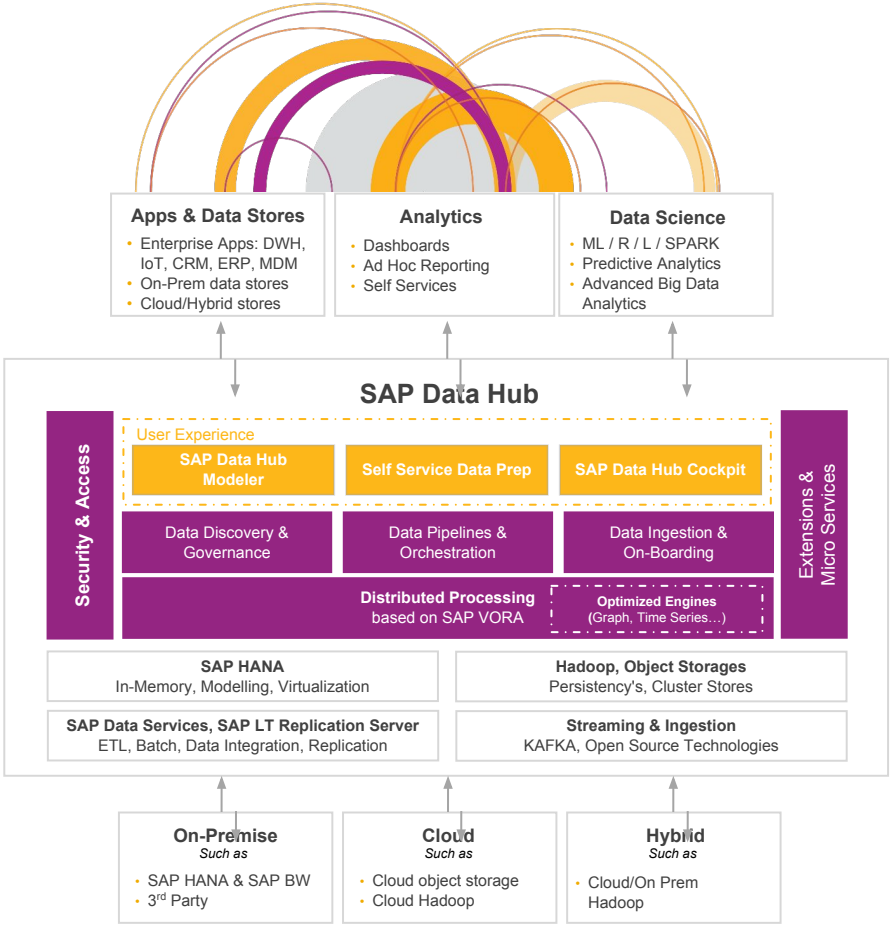
AGENDA

- SAP Data Hub Overview
- SAP Vora Overview
- Red Hat Support and Certifications for Data Hub
- Use Cases
- Roadmap
- Why Red Hat
- Resources

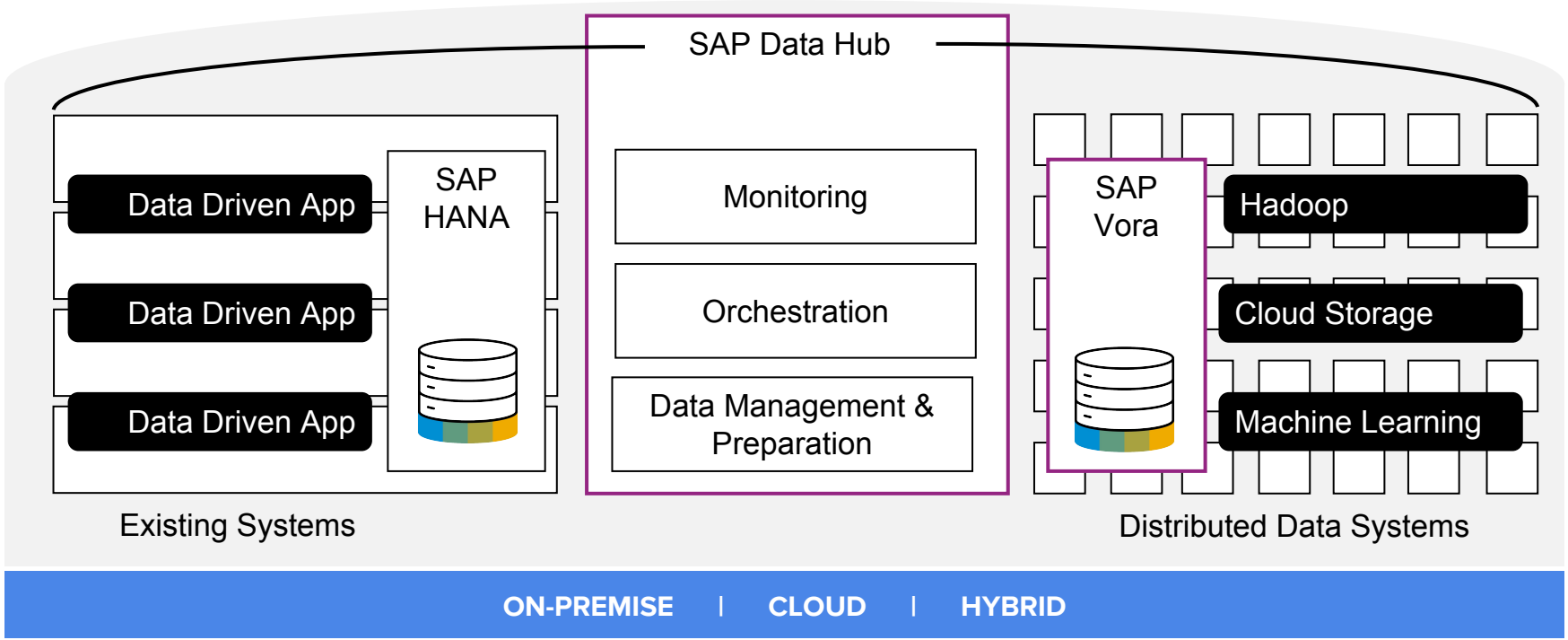
SAP Data Hub Overview

Define data driven processes across complex enterprise landscapes

- Access on-premises, cloud, or hybrid data sources – SAP or non-SAP (Amazon, Hadoop)
- Leverage robust enterprise integration capabilities
- Connect easily to SAP data management and application solutions as data sources
- Connect to SAP and non-SAP applications and analytic solutions as endpoints

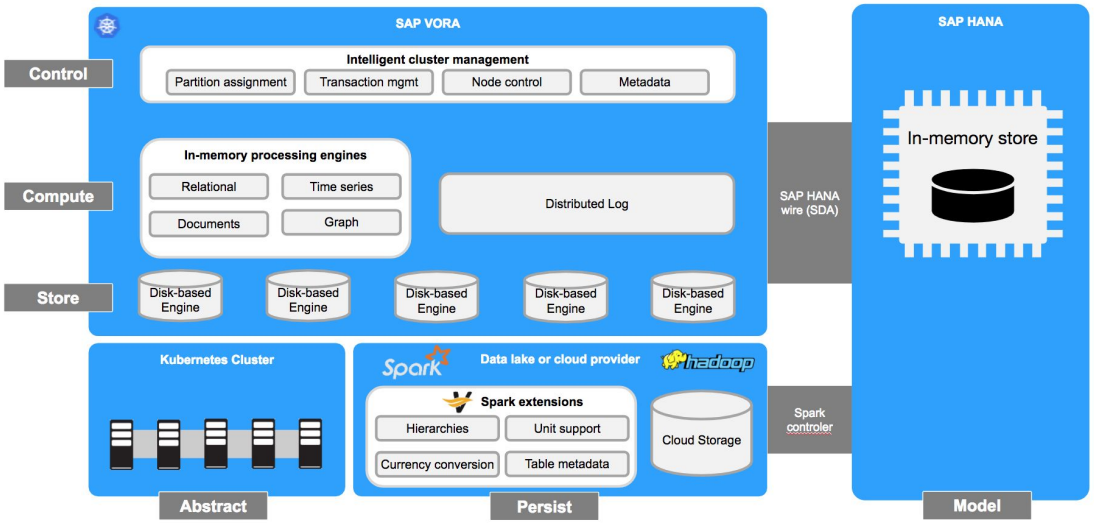


Integrate, Orchestrate and Manage Big Data Infrastructures



SAP Vora Overview

- In-memory, distributed computing solution for Big Data
- Part of SAP Data Hub
- There is no more public marketing for SAP Vora, but only SAP Data Hub
- SAP Vora 2.x is containerized and developed on Kubernetes
- Red Hat conducts SAP Vora 2.x validation on OpenShift Container Platform (OCP)



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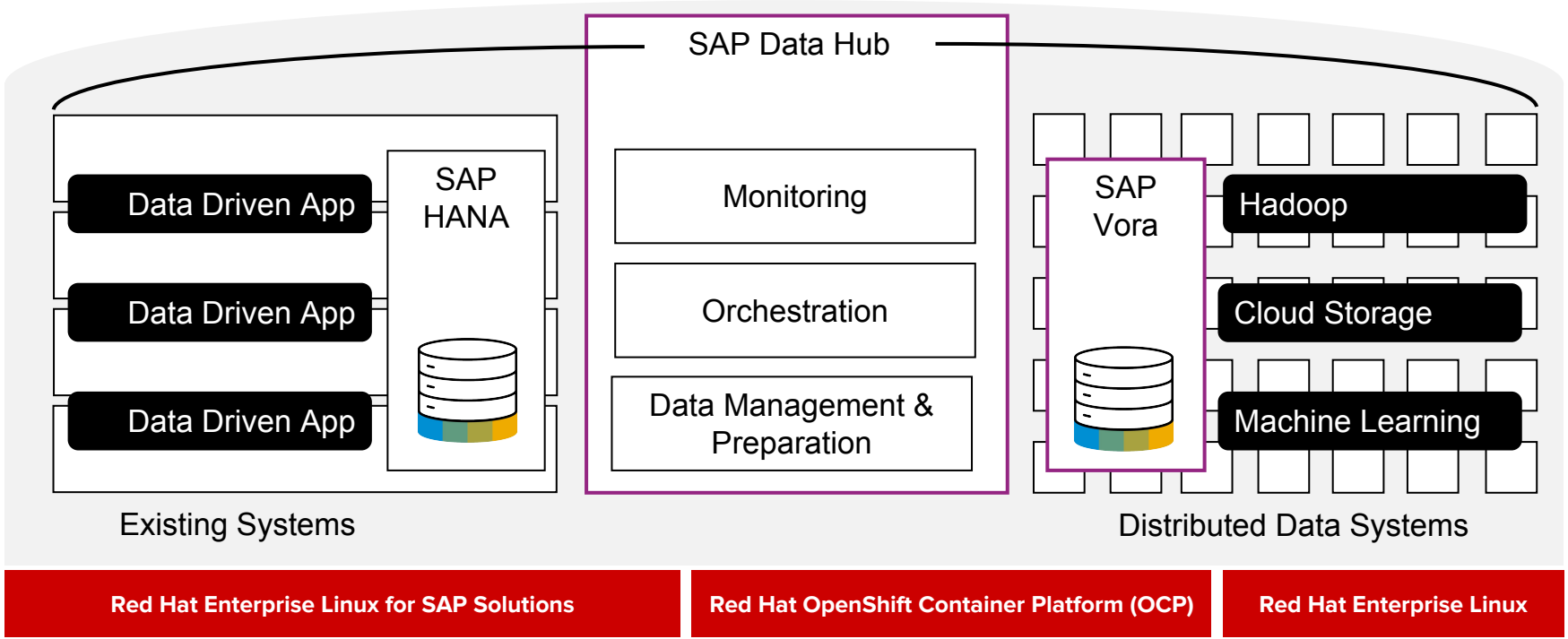
Red Hat Support and Certifications



SAP Vora Product Availability Matrix (PAM)

- SAP Vora PAM will only mention supported Kubernetes version
- It's up to Red Hat to validate OCP

Supported Infrastructure, Container, and Hadoop Platforms

Version of SAP Vora	Infrastructure Platform	Container Application Platform for Distributed Runtime[6]	Required Hadoop Services for Vora Spark Integration
2.1	On premise (x86-64 architecture)	Kubernetes 1.7.x[16]	see table below
2.x[14]	Google Cloud Platform	Google Kubernetes Engine	
2.x[14]	Microsoft Azure	Microsoft Container Service	
2.y[13]	Amazon Web Services	Amazon Elastic Container Service for Kubernetes	

Required Hadoop Services for Vora Spark Integration

Version of SAP Vora	WebHDFS, YARN, HDFS[2][3]	Spark[2][3]	Java[2]
2.1	as of Hadoop 2.7.0 or higher	2.1	8

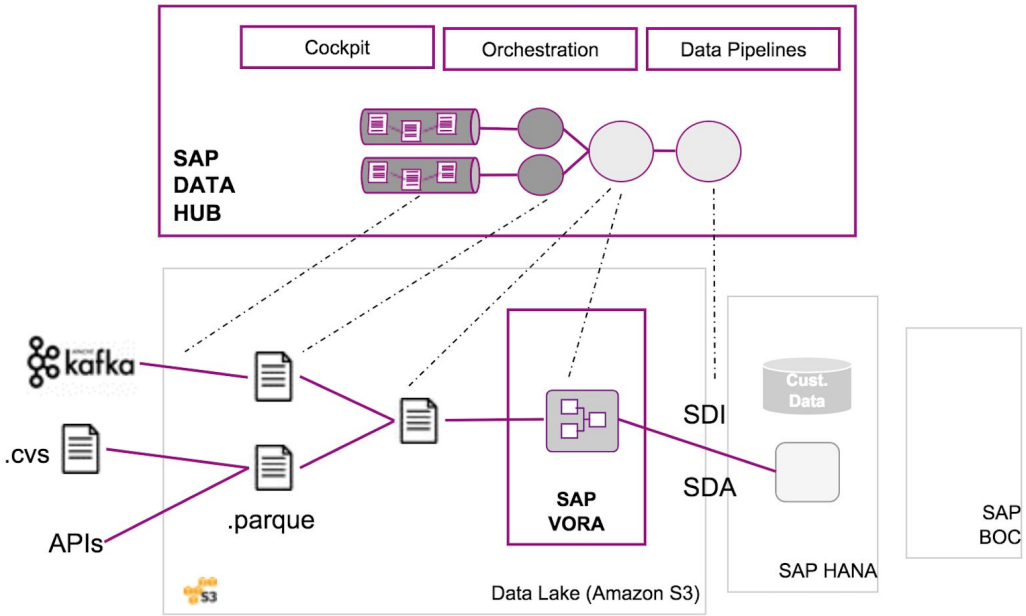
SAP Vora / Red Hat OCP Validation Matrix

- The following matrix has been validated by Red Hat

SAP Vora	Red Hat OCP	Notes
SAP Vora 2.0	OCP 3.6	Installation Guide
SAP Vora 2.1, 2.2	OCP 3.7	Installation Guide

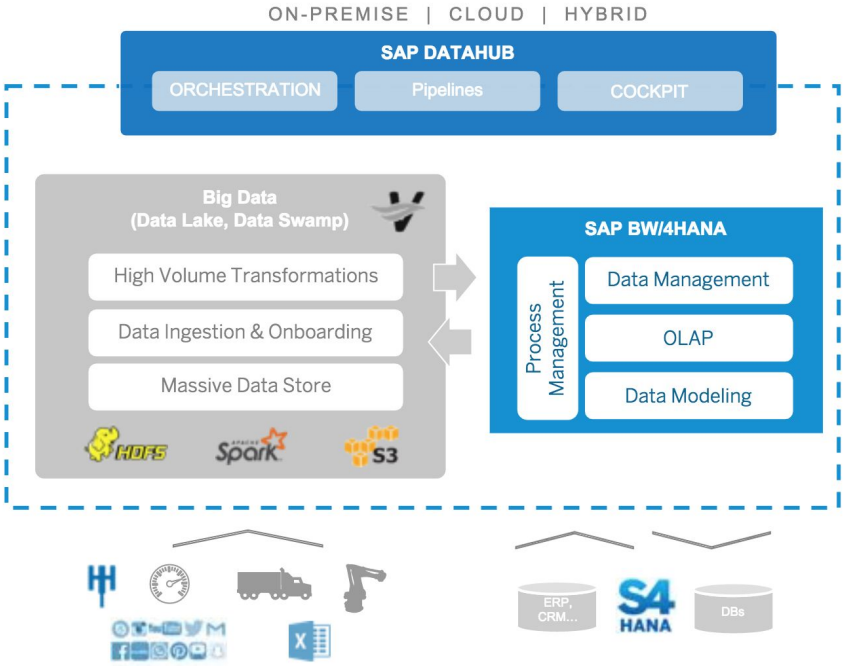
Use Case: Streaming and Processing IoT Data

- How to understand customer behavior and to drive insightful decisions?
- Solution with SAP Data Hub
  - Refine business value from data ingestion to enterprise applications
  - Visual modeling environment
  - Governance and Data Management
  - Orchestration and scheduling to define automated data driven processes



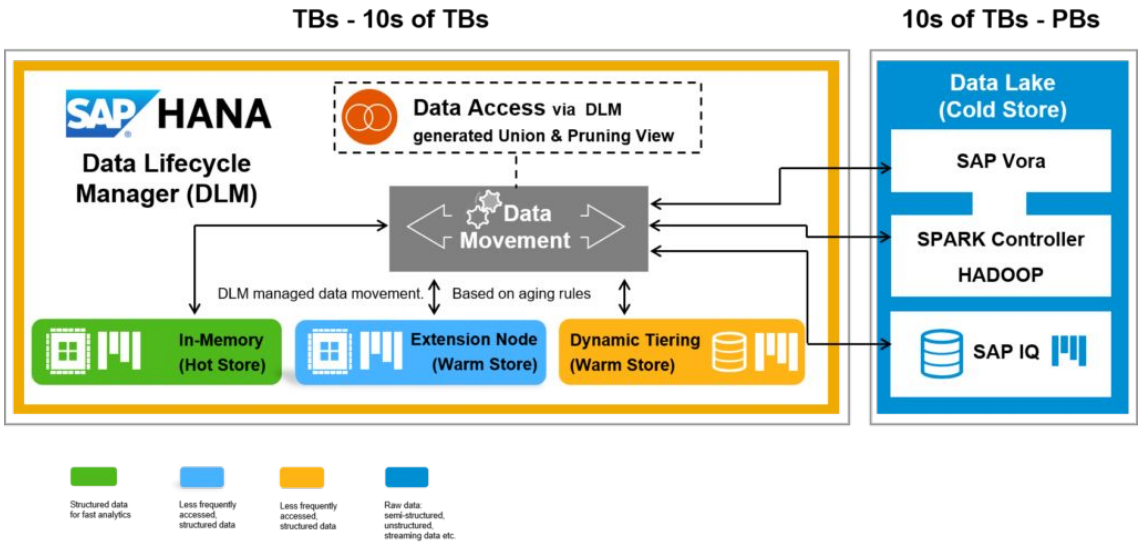
Use Case - Big Data Warehouse

- Build a modern, open, and hybrid DWH offering any data
- BW/4HANA as modern and simplified core data warehouse solution
- Implement and execute high volume transformations on Big Data Clusters Data Lake
- Leverage Big Data landscapes for data onboarding and ingestion
- Data Hub as orchestration and refinery application to address end to end processes



Use Case - Tiered HANA Management

- SAP HANA Dynamic Tiering
  - Utilize lower cost disk storage for historical data within a single SAP HANA database, or even a single multistore table.



SAP Data Hub Roadmap

Product road map overview - key themes and capabilities

Recent innovations

Data pipelines & processing
- Modelling of data pipelines and flows (e.g. data quality, prep., embedded scripts) for Big Data
- Distributed execution via SAP Vora
- Content lifecycle & management

Orchestration
- Workflows across landscape
- Remote scheduling for SAP BW/4HANA & SAP Data Services

Data discovery
- Visually browsing for data in the landscape, data profiling with predefined KPIs to check quality

Hub management
- Cockpit with unified monitoring for complete landscape
- Define zones & logical systems
- Adapter framework for connections
- Access control management

2017 – Planned innovations

Orchestration
- Remote process scheduling for native SAP HANA scenarios

Security
- Policy creation & security logging

Meta data governance
- Unified information catalog

Self services with SAP Agile Data Preparation
- Self service data prep with SAP Agile Data Preparation
- Integration with SAP Analytics Cloud

Data pipelines & streaming
- Streaming integration (Kafka)
- Further operations: delete, Data Lifecycle Management, SAP BW data exchange
- Embedding SAP Predictive Analytics models & machine learning
- Extensible operator concepts
- Container based delivery

2018 – Product direction

SAP Data Hub in the cloud
- SAP Cloud Platform (PaaS)

Data ingestion & on-boarding
- Enhancement of connection framework with inbuild data loading via SAP Data Services

Open source integration
- Embracement and integration of key technologies (e.g. Ranger/Atlas)

Meta data governance
- Data lineage for complete Big Data stack
- Search and crawling for sources

Integration with enterprise applications
- Process orchestration with integration to IoT, SAP S/4HANA, SAP Master Data Governance etc.

2019 – Product vision

SAP Data Hub as a service
- Offering as a service in SAP Cloud Platform (SaaS)

Enterprise information management
- Unifying existing capabilities and data integration portfolio
- Definition of governance rules

Business & industry content
- Delivery of content for business scenarios and industry use cases

Integration with enterprise applications
- Further end to end scenarios
- Interfaces and integration support for 3rd party applications

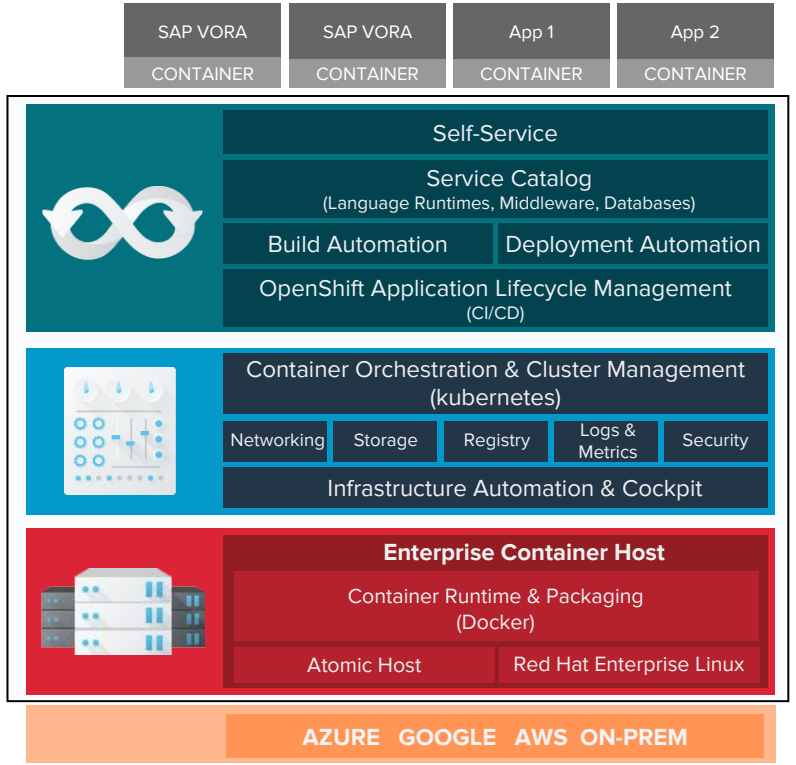
Big Data applications
- Enabling data driven & automated Big Data enterprise applications

This is the current state of planning and may be changed by SAP at any time.

Why Red Hat for SAP?

- Market Leadership
  - RHEL, 70% commercial market
  - OCP, enterprise grade PaaS
  - And more … (management tools, automation, etc.)
- Standardization
  - As seen on the roadmap, with the integration between SAP S/4HANA (BW/4HANA) and SAP Data Hub, it's more important than ever to choose the right next-generation platform for your digital transformation journey
- Support
  - Award winning support organization
  - Integrated support process with SAP
  - SAP TAM

What Else Does A “Containerised” SAP Data Hub System Need To Run?



APPLICATION

DEVELOPER & DEPLOYMENT TOOLCHAIN

APPLICATION CONTAINER PLATFORM

OPERATING SYSTEM

COMPUTE RESOURCES
(CPU, RAM, NETWORK, DISK)

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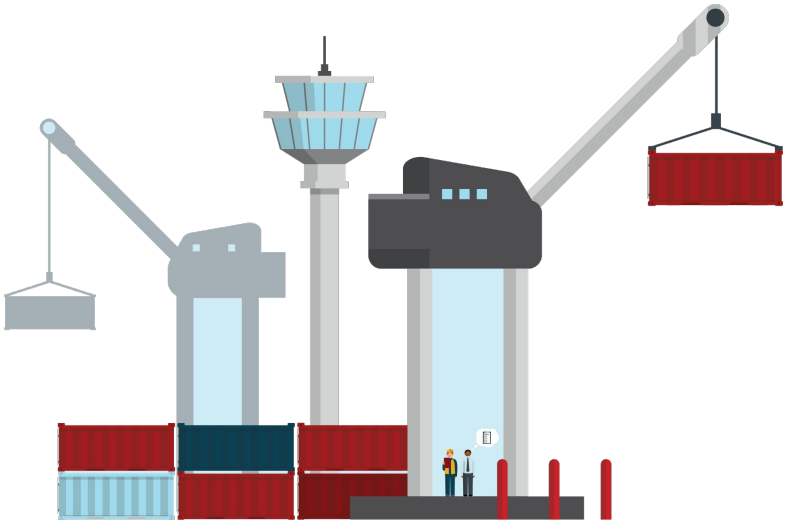
Build, Deploy, And Manage At Scale

WITH RED HAT OPENSHIFT CONTAINER PLATFORM

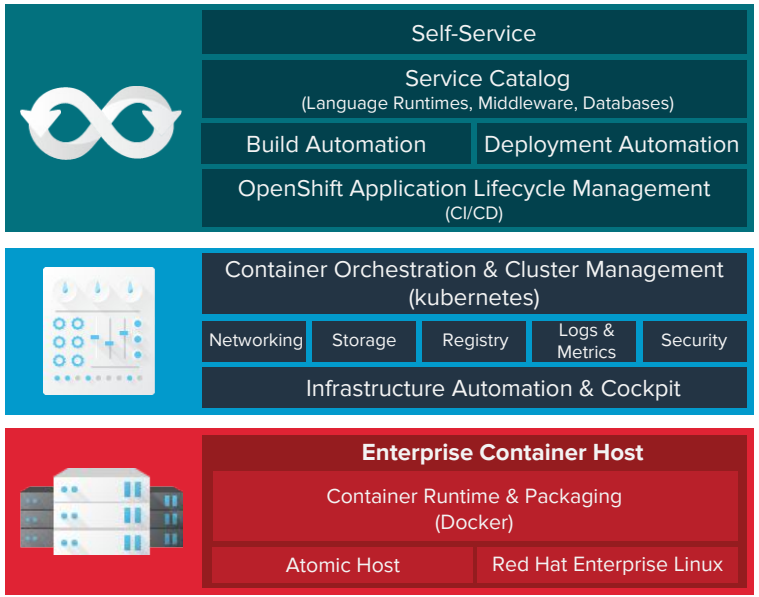


The industry's most secure and comprehensive enterprise-grade container platform based on industry standards, Docker, Kubernetes and Red Hat Enterprise Linux.

RED HAT® OPENSHIFT Container Platform

"Next Generation Hybrid Cloud Operating System"

Address InfoSec & DevOpsSec



1. Container Host & Multi-tenancy
2. Container Content
3. Container Registries
4. Building Containers
5. Deploying Containers
6. Container Platform
7. Network Isolation
8. Storage
9. API Management
10. Federated Clusters

[Ten Layers of Red Hat Container Security Whitepaper]

Resources

- SAP Vora Product Availability Matrix
  - https://support.sap.com/content/dam/launchpad/en_us/pam/pam-essentials/SAP_Vora_PAM.pdf
- SAP Note 2213226
  - Prerequisites for installing SAP Vora: Supported Infrastructure, Container, and Hadoop Platforms
  - https://launchpad.support.sap.com/#/notes/2213226
- SAP Vora Technical Documents - Generic
  - https://help.sap.com/viewer/p/SAP_VORA
- SAP Vora Installation Guide on OCP
  - Install SAP Vora 2.0 on OCP 3.6
    - https://access.redhat.com/articles/3320071
  - Install SAP Vora 2.1 on OCP 3.7
    - https://access.redhat.com/articles/3299301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THANK YOU

Data Hub Components

Cockpit

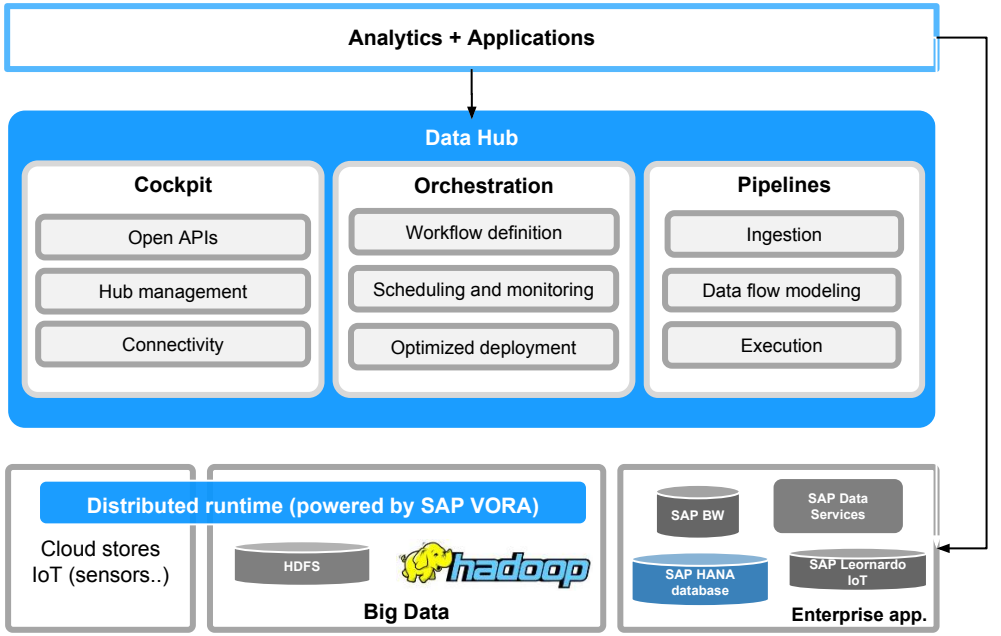
- Hybrid System Management (role-based hub)
- Zone supervision & security
- Data discovery

Orchestration

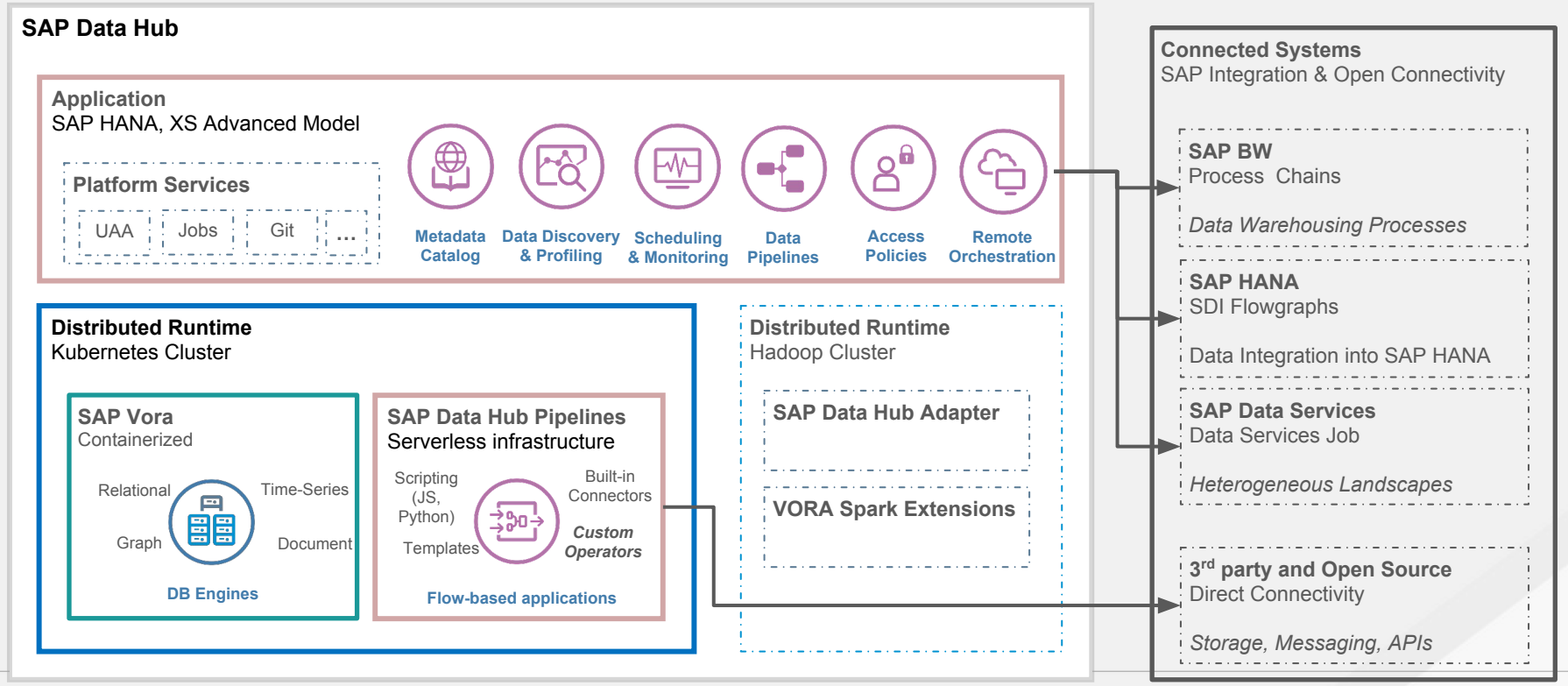
- Workflow definition
- Scheduling and monitoring
- Pipeline deployment (zone-dependent)
- File-system operations (HDFS, S3, local, …)

Data Pipelines

- Data ingestion and integration
- Pre- and post-processing
- Complex Algorithms and service endpoints



SAP Data Hub
Architecture View



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