Preparing to integrate and run SAP ERP, HANA, and RISE in multi-cloud using IBM Cloud, AWS, Azure, and Google Cloud

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Agenda

Best Explanation of Cloud You Ever Heard
        The World will be Multi-cloud
                The 5 ways to move to the Cloud

SAPs Journey to the Cloud
        How Global Cloud Providers effect SAP
                SAP Modernization with Cloud

AI and SAP

Q & A

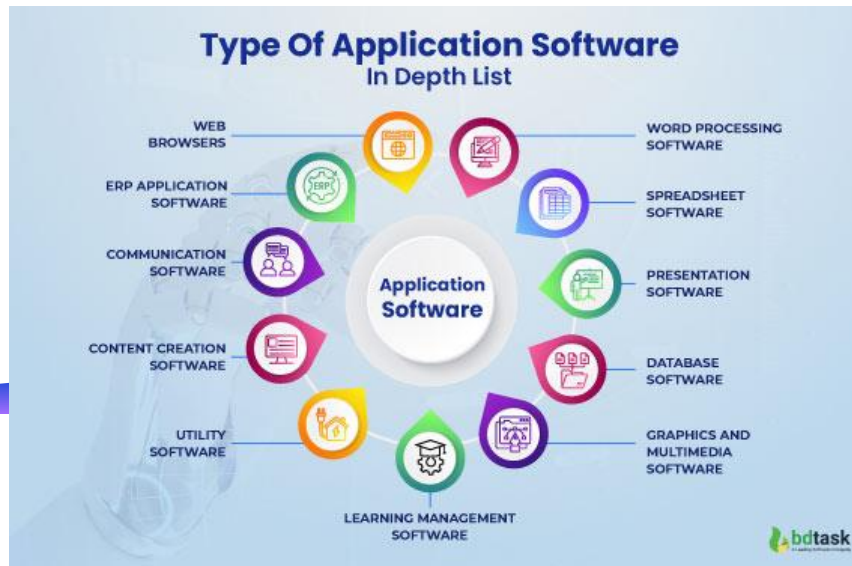# Best Explanation of Cloud you have ever Heard

IBM

Things the World said were Fads

Self Driving Vehicles

Indoor Lighting/Electricity

IBM

The World Will Be Multi-Cloud

Type Of Application Software
In Depth List

- WEB BROWSERS
- ERP APPLICATION SOFTWARE
- COMMUNICATION SOFTWARE
- CONTENT CREATION SOFTWARE
- UTILITY SOFTWARE
- LEARNING MANAGEMENT SOFTWARE

Application Software

- WORD PROCESSING SOFTWARE
- SPREADSHEET SOFTWARE
- PRESENTATION SOFTWARE
- DATABASE SOFTWARE
- GRAPHICS AND MULTIMEDIA SOFTWARE

bdtask

Compliance & Risk posture

Workload Protection

Threat Detection

Data Protection

Automation & Integration

Entitlement Management

3rd-and 4th-party Risk Management

Across hybrid multicloud deployments

On-premises

IBM **Cloud**

IBM Cloud Satellite

aws

Azure

Google Cloud

The journey to SAP S/4HANA begins with the move to Cloud

Moving to Cloud is not a hosting renewal; it is an opportunity to enhance the landscape

- Start the move of SAP workloads to Cloud

- Reduce effort on existing SAP workloads

- Re-focus the SAP teams on creating the future SAP landscape

- Design and drive modernization to suit the business, selecting Cloud capabilities to fit

Subscription-based cloud service for infrastructure

Multi-cloud strategy for SAP S/4HANA

Deployment option for SAP S/4HANA on-premise solution

Available in SAP S/4HANA public cloud offerings

Move from own data center to cloud infrastructure

Elasticity and scalability of infrastructure

*

Expected TCO savings – economy of scale
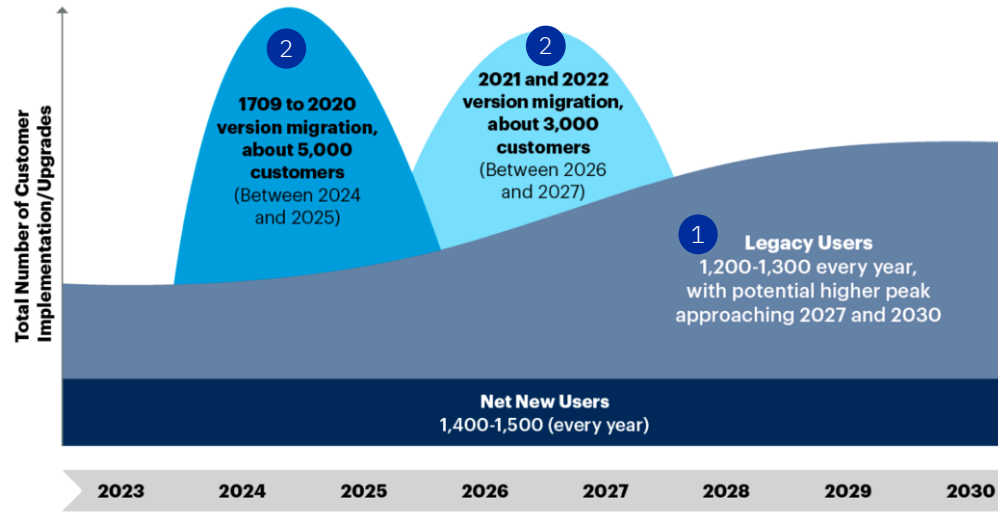
IT can focus on innovation, not infrastructure

SAP ERP modernization – Trends

With end of SAP ECC mainstream support by 2027 and avg. 2 years to modernize to S/4HANA, customers need to determine their modernization strategy NOW!!!

Different Customer Categories Implementing or Upgrading SAP S/4HANA
Illustrative

Total Number of Customer Implementation/Upgrades

2 — 1709 to 2020 version migration, about 5,000 customers (Between 2024 and 2025)

2 — 2021 and 2022 version migration, about 3,000 customers (Between 2026 and 2027)

1 — Legacy Users 1,200-1,300 every year, with potential higher peak approaching 2027 and 2030

Net New Users 1,400-1,500 (every year)

2023 2024 2025 2026 2027 2028 2029 2030

Source: Gartner

1 — Lift and shift SAP ECC to cloud and ECC to S/4HANA move

2 — S/4HANA version upgrade

Shared Responsibility Model

	On Premises	IaaS	PaaS	SaaS
Applications	Client or partner managed	Client or partner managed	Client or partner managed	IBM Managed
Data	Client or partner managed	Client or partner managed	Client or partner managed	IBM Managed
Runtime	Client or partner managed	Client or partner managed	IBM Managed	IBM Managed
Middleware	Client or partner managed	Client or partner managed	IBM Managed	IBM Managed
OS	Client or partner managed	Client or partner managed	IBM Managed	IBM Managed
Virtualization	Client or partner managed	IBM Managed	IBM Managed	IBM Managed
Servers	Client or partner managed	IBM Managed	IBM Managed	IBM Managed
Storage	Client or partner managed	IBM Managed	IBM Managed	IBM Managed
Networking	Client or partner managed	IBM Managed	IBM Managed	IBM Managed

Legend: Client or partner managed | IBM Managed

https://cloud.ibm.com/docs/overview?topic=overview-shared-responsibilities

One IBM Cloud Architecture: It's All About the Apps

One IBM Cloud Journey Approach
② Modernize **existing applications**

▼

Modernization Dimensions it's more than just new Cloud-Native Code

Infrastructure "Run"	Processes + Tool Automation	Architecture "Code"
RUN		{} CODE

▼

(A) Rehost, Replatform	**(B) Re-Tool, Re-train**	**(C) Refactor, Rearchitect, Rewrite**
Migrate "Lift & Shift" to Public: move as much as you can to IBM Cloud to take advantage of OpEx	DevOps Practices Continuous Delivery, Continuous Testing, Continuous Monitoring	New User Interfaces (Uis): Mobile New Digital Storefronts: APIs New Architecture: Microservices New Cognitive Capabilities **(AWS/MSFT default)**

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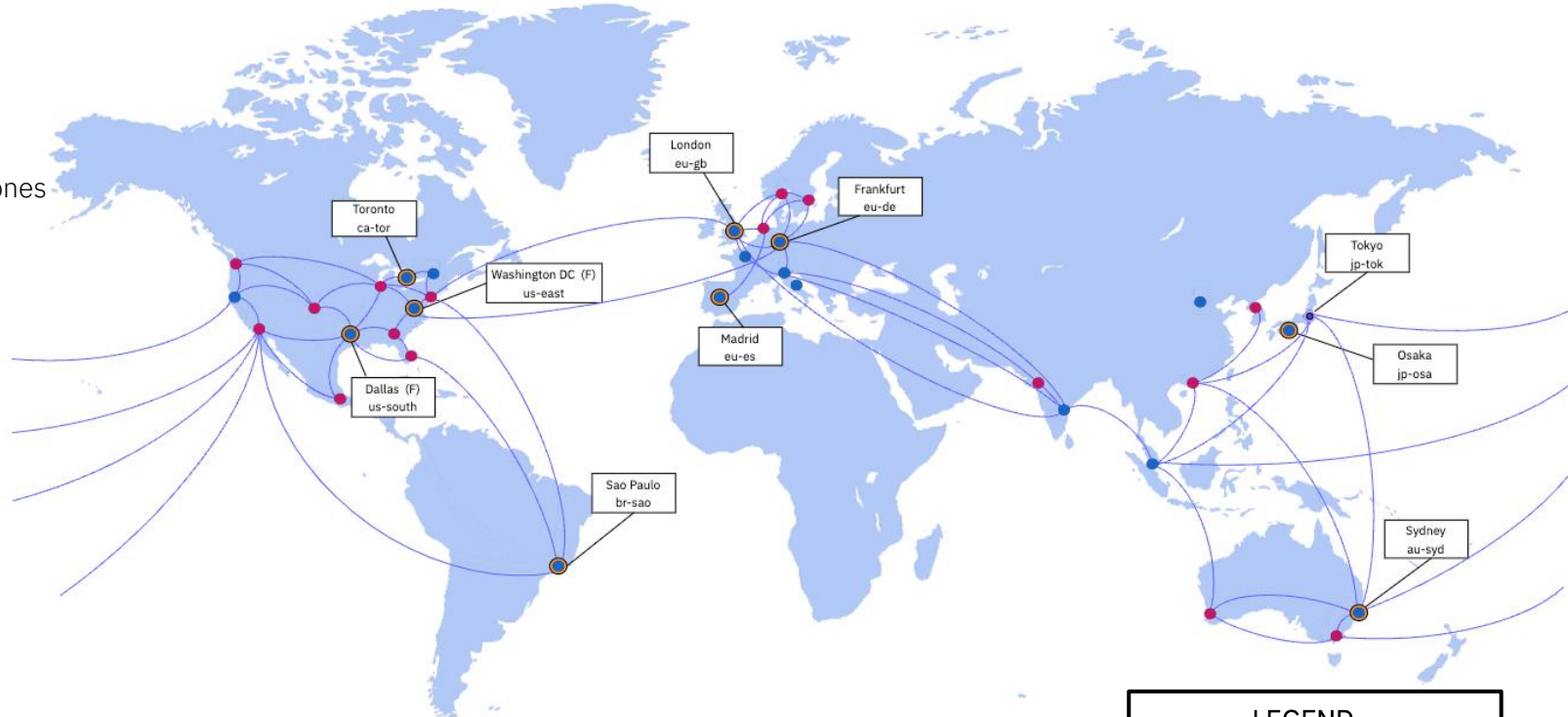*

Expected TCO savings – economy of scale

IT can focus on innovation, not infrastructure

IBM Cloud regions and zones

IBM Cloud

- 46 data centers
- 27 availability zones
- 10 regions

IBM Cloud regions

Americas
- Washington DC (F)
- Dallas (F)
- Sao Paulo
- Toronto

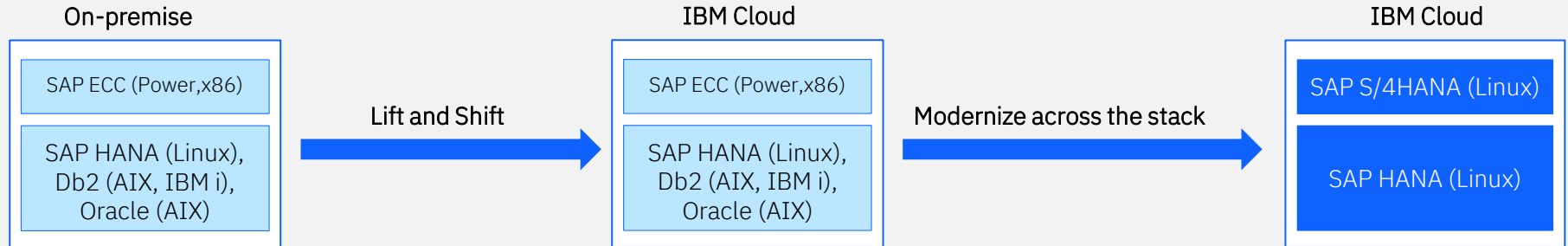### Europe
- Frankfurt
- London
- Madrid

Asia Pacific / Oceanic
- Osaka
- Sydney
- Tokyo

LEGEND
- Multizone region
- Data center & Network PoP
- Network PoP
- (F) Federal data center

SAP ERP modernization on IBM Cloud

On-premise

- SAP ECC (Power,x86)
- SAP HANA (Linux), Db2 (AIX, IBM i), Oracle (AIX)

Lift and Shift →

IBM Cloud

- SAP ECC (Power,x86)
- SAP HANA (Linux), Db2 (AIX, IBM i), Oracle (AIX)

Modernize across the stack →

IBM Cloud

- SAP S/4HANA (Linux)
- SAP HANA (Linux)

Key motivators to move to IBM Cloud

- Modernize applications and integrate with transformational cloud technologies
- Reduce IT CAPEX spend with upcoming server/OS/Database end of service
- Accelerate cloud migration and mitigate risks by maintaining investments in Power and x86 landscape
- Migrate to HANA to meet SAP's 2027 deadline

Journey from ECC on AnyDB → S/4HANA in Cloud
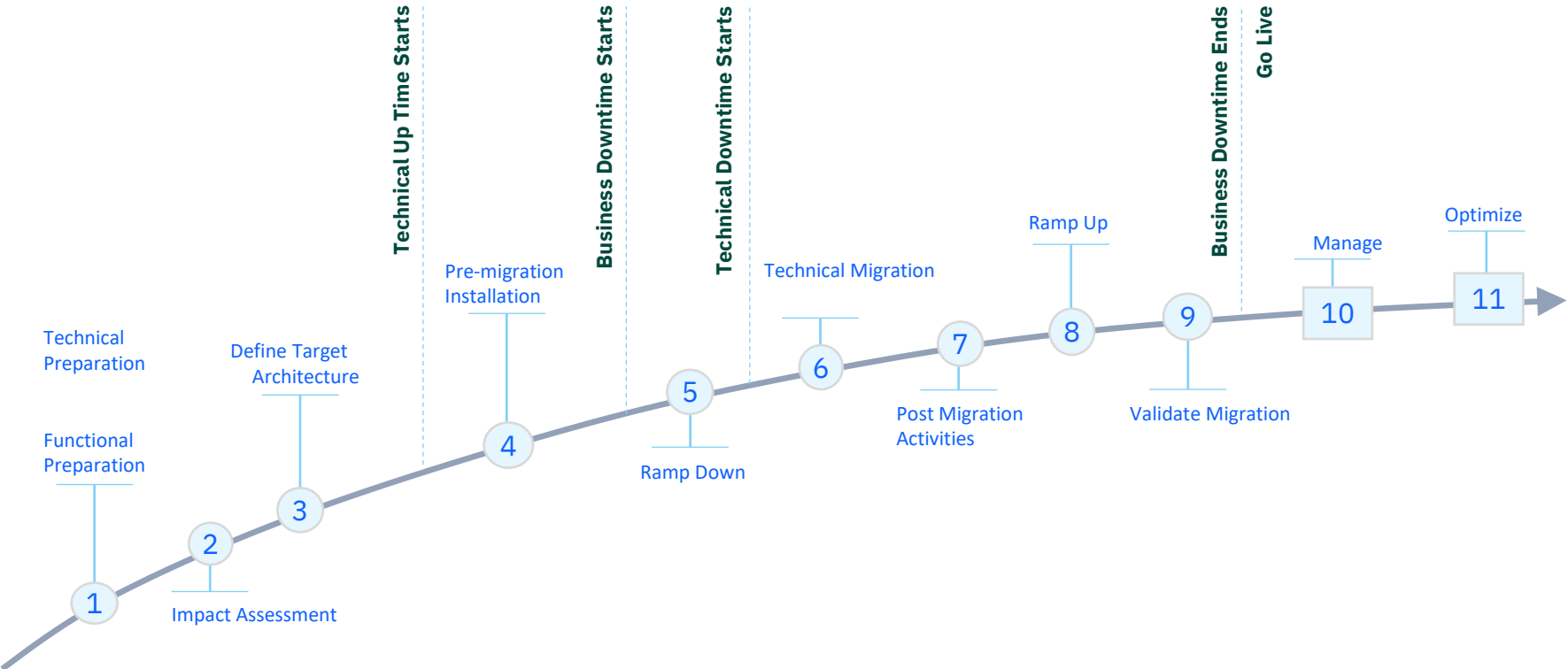
IBM Cloud infrastructure for SAP
- Only Cloud for RISE with SAP on both Power and x86 environments

RISE with SAP – Premium Supplier Option

IBM Power Virtual Server

- RISE with SAP premium supplier option
- Only cloud to offer SAP-certified IaaS on Power
- Maintains the performance and uptime of the Power platform
- Supports granular scale-up memory options from 128GiB to 22.5TiB in a virtualized environment
- Allows for Like-to- Like migration for existing Power Customers

IBM Cloud VPC

- RISE with SAP premium supplier option
- x86 VSIs are available to support HANA workloads
- Ultra high-performance network is the differentiator, perfect for NetWeaver platform application servers
- Deploy SAP HANA db backup to Cloud Object Storage on IBM Cloud VPC with automation for enhanced scalability, resiliency, and storage

SAP Certified VMware Solutions

- Only Cloud provider certified to run production SAP workload on VMware
- Optimized performance with high agility, resiliency, and elasticity
- Secure Single-tenants with VMware clusters
- 90K Customers run on VMware clusters. Each node can scale up to 6TB

SAP Certified x86 Bare Metal Servers

- Offered in 2, 4, or 8 socket configurations
- Offered in scale-up with 192 GB of RAM up to 12TB of RAM
- Available with Intel Optane DC Persistent Memory
- Offer scale-out up to 60TB

Cloud Gives you flexible Cost and Performance...
...to meet your business needs

Server Size

Current Business

Growth

Peak Demand

Off Peak

$$$

128GB/200TB

96GB/200TB

$$

$

64GB/100TB

64GB/100TB

$

Over Time

*Eliminate Initial Sizing and Future Growth Engineering Effort

Automate SAP systems deployment

50 → 0.5

Reduce the SAP systems deployment effort from over 50 person days to 0.5 person days** and avoid costly configuration errors with automated deployment.

* Using IBM Schematics, Terraform and Ansible
** Typical Automation Deployment Experience

	Discovery and preparation	Migration	Manage and Optimize

Automated components	Description	Outcome	Elapsed Time
VPC, network, Bastion/Install Host, Landing Zone & Workspaces	Secure VPC network, Bastion/Install Host for SAP install kits	Creates initial network for infrastructure and SAP deployment	Minutes (client responsible for SAP install kits)
SAP-certified infrastructure	PowerVS and/or x86, storage volume creation/mounting, network services and connectivity, apply SAP specific HW/OS settings	Infrastructure and Operating Systems ready for SAP system installation	Minutes to an hour (depends on infrastructure complexity)
SAP system installation	SAP databases (HANA, ASE, Db2, Oracle..) SAP applications (NetWeaver, S/4, BW/4) Cluster management for HA (Pacemaker) DB replication for HA/DR (HSR, HADR) Integration (AAS, BU, SolMan..)	Logon to SAP	3 hours or less (some take only minutes, AAS for example)

Deploy AnyDB or SAP HANA databases in IBM Power Virtual Server

On-premise data center

SAP ERP Databases

AIX — Oracle

IBM i — Db2

Linux — SAP HANA

Power Virtual Server workspace

1 Export OS Image [PowerVC]

IBM Cloud Storage Bucket — OS Image

2 Import image file into your boot image catalog

Virtual Server Instances
- SSH Keys
- Boot images
- Storage volumes
- Subnets

3 Create LPAR from image

5 Install DB SW and Create DB

LPAR created from image

6 Replicate data from source with native database replication or 3rd party tools

4 Create and attach shared volumes for database

Storage: IBM Flashstorage

Highest available throughput in the Cloud (as of 02-28-2024)

Top 10 SAPS for Cloud, Virtualized instances

Instance	SAPS
IBM Power Virtual Server E1080	1311850
IBM Power Systems Virtual Server E980	907820
Google Cloud Bare Metal - o2-ultramem-896-metal	892270
IBM BI.S4.H8.6000	550670
Amazon EC2 u-6tb1.metal	480600
Amazon EC2 u-6tb1.112xlarge	475500
Amazon EC2 r7a.48xlarge	432980
Amazon EC2 m7a.48xlarge	429720
Amazon EC2 u-6tb1.56xlarge	380770
Amazon EC2 m7i.48xlarge	306020

IBM's approach to SAP security

13 layers of security to ensure full coverage from regulatory and compliance to most technical aspects of security hardening for SAP

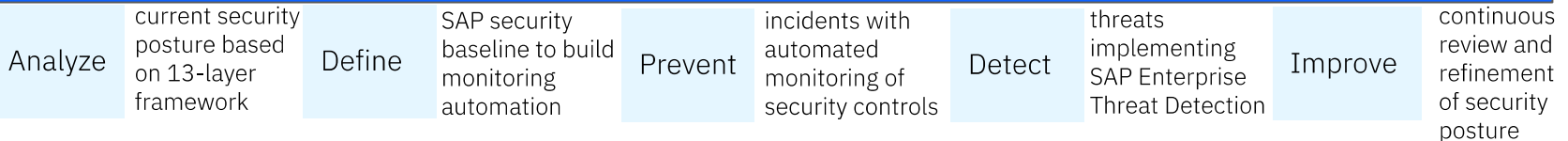| Compliance		Cyber Security				
1. Governance	3. Data Privacy	5. Authentication	7. Application Server (NW)	9. Data Encryption	11. Vulnerability Management	13. Cloud Security and Hosting
2. Access Management	4. CCM / Monitoring	6. Application Security	8. SAP HANA Security	10. Network and Communications	12. Infrastructure Security	
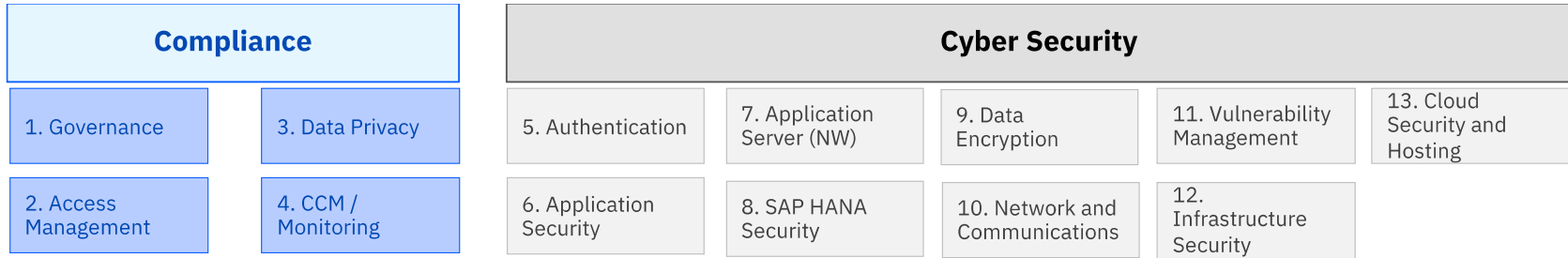
IBM Cloud

Govern resource configurations and centrally manage compliance

Gain complete authority over data at rest, in transit and in use

Deploy locally and scale globally with resilient and highly available infrastructure

IBM Security services

Analyze — current security posture based on 13-layer framework

Define — SAP security baseline to build monitoring automation

Prevent — incidents with automated monitoring of security controls

Detect — threats implementing SAP Enterprise Threat Detection

Improve — continuous review and refinement of security posture

AI Use Cases ready to use or in progress with SAP

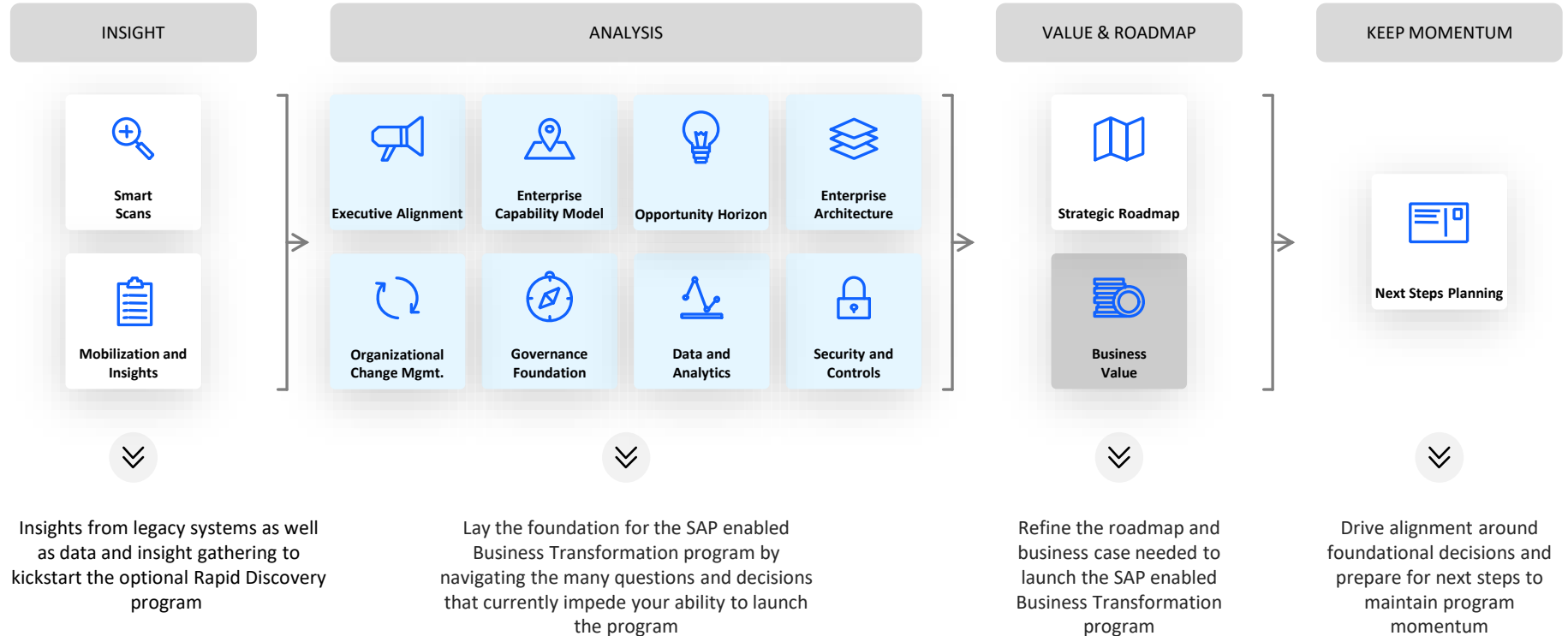| Replenishment Advisor ✅	Procurement Advisor ✅	HR automation ✅
Help manufacturing clients to improve on stock warehouse planning accuracy with Watson Assistant and ML	Enable occasional users to create a Purchase Request with all necessary data to proceed it with SAP Ariba. Help procurement to select the right supplier	Reduce manual work and automate recruiting, sourcing and nurturing job candidates.
watsonx.ai - Signavio Use Signavio process repository to create a domain specific model. Use SAP HANA search to create summaries and answer client/domain specific questions	**Watson Assistant – BTP** ✅ Enable Watson Assistant usage in BTP based, custom coded solutions	**Generic Assets – Building Blocks** ✅ • hand over Security credentials between chatbot and SAP system • how to do an odata call from Watson Assistant • how to do a REST call from Watson Assistant • BTP Asset - build a simple app on BTP which includes watsonx prompt call and returns feedback
WA + watsonx.ai + SAP BRIM Help consumers to get faster response about new and existing contracts from their utility, telco, automotive OEM supplier	WA + watsonx.ai + SAP BW Enable more users to work with reports and support them with AI based decision support.	WA + watsonx.ai + SAP MM Smart product advisor which helps seller to select the right product out of hundreds or thousands options. E.g. which plastic for a certain use case.
Regulatory compliance Understand regulatory requirements and reduce risks and proactively respond to regulatory changes	AI based product quality Mgmt Analyze all factors which influences quality of products. Create root cause analyses and provide issue solution.	Preventive Maintenance ✅ By leveraging the integrated solution of Watson Assist + watsonx with SAP and peripheral systems, the manufacturing company can proactively detect and address issues before they happen.

Get started with Rapid Discovery to kick off your transformation journey

Rapid Discovery uncovers server inventory in the data center and allows you to start a strategic conversation with your clients.

INSIGHT	ANALYSIS	VALUE & ROADMAP	KEEP MOMENTUM

INSIGHT
- Smart Scans
- Mobilization and Insights

ANALYSIS
- Executive Alignment
- Enterprise Capability Model
- Opportunity Horizon
- Enterprise Architecture
- Organizational Change Mgmt.
- Governance Foundation
- Data and Analytics
- Security and Controls

VALUE & ROADMAP
- Strategic Roadmap
- Business Value

KEEP MOMENTUM
- Next Steps Planning

Insights from legacy systems as well as data and insight gathering to kickstart the optional Rapid Discovery program

Lay the foundation for the SAP enabled Business Transformation program by navigating the many questions and decisions that currently impede your ability to launch the program

Refine the roadmap and business case needed to launch the SAP enabled Business Transformation program

Drive alignment around foundational decisions and prepare for next steps to maintain program momentum

Tools for Server Inventory Collection

Collect your SAP and non-SAP infrastructure estate inventory as a starting point to design the target architecture.

Source	Collection Tool Examples
Any Source	Manual
VMware	RVTools
Power Systems	HMC Scanner
Any Source – In-depth Analysis	IBM Rapid Discovery with SNP Crystal Bridge
SAP HANA	SAP HANA Report (ran in SE38)
SAP	SAP Early Watch Reports
SAP	Quicksizer (Greenfield)