SAP HANA-AS-A-SERVICE

CERTIFIED SAP HANA INFRASTRUCTURE IN A PAY-PER-USE MODEL

NRB

DARING TO COMMIT

SAP HANA

ABOUT SAP HANA

SAP HANA is an in-memory database that allows fast processing of massive amounts of real-time data. The in-memory computing engine allows HANA to process data stored in RAM as opposed to reading it from a disk. This enables the application to provide instantaneous results from customer transactions and data analyses.

LIMITATIONS OF THE "ALL-IN-A-BOX" APPLIANCE DELIVERY MODEL

Today, the majority of SAP HANA installations are hosted on appliances.

While the appliance delivery is easy and comfortable, it might introduce some limitations regarding hardware flexibility and it may require changes to your established IT operation processes. Indeed, the "all-in-one-box" approach has limitations. Firstly, hardware upgrades are not possible unless foreseen at the time of the architecture definition. The server needs to be correctly sized for its entire lifetime from the very beginning. Secondly, the CAPEX business model implies that you invest heavily upfront. Last but not least, support can be tricky with sometimes unclear sharing of responsibilities with your hardware provider.

In short, an appliance might not be the right delivery model for every SAP customer.

SAP HANA-AS-A-SERVICE (HaaS)

NRB offers SAP HANA-as-a-Service, a platform for running SAP HANA in a pay-per-use model.

The service is provided

- in a Tailored Datacenter Integration (TDI) model
- in full OPEX (Operational Expenditure) – through a monthly leasing of SAP HANA services' capacity
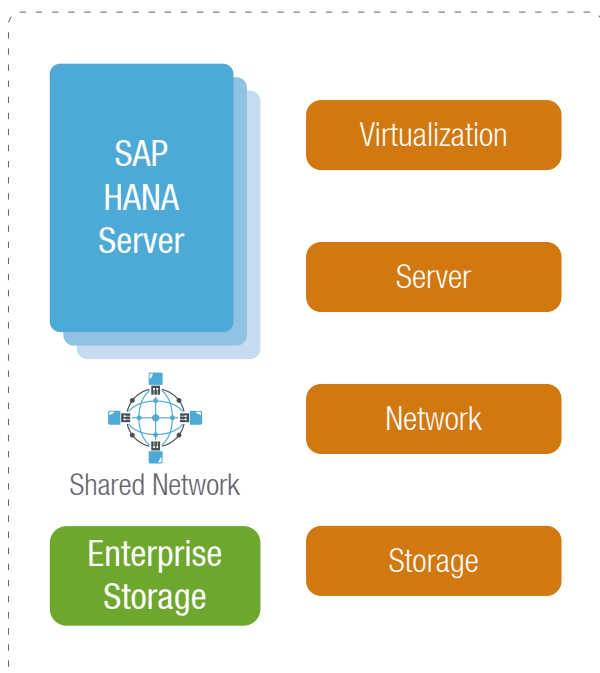
SAP HANA-as-a-Service is by default based on shared infrastructure. It enables granularity and flexibility in terms of SAP HANA server size evolution and engagement.

SAP HANA-as-a-Service can also be provided on dedicated infrastructure. This is the case when the RAM capacity per virtual server at the start of the service exceeds 1TB, when the capacity on a shared infrastructure exceeds 2TB of RAM for one virtual server or for a configuration "à la carte". Capacity limitations are evaluated periodically and are subject to changes.
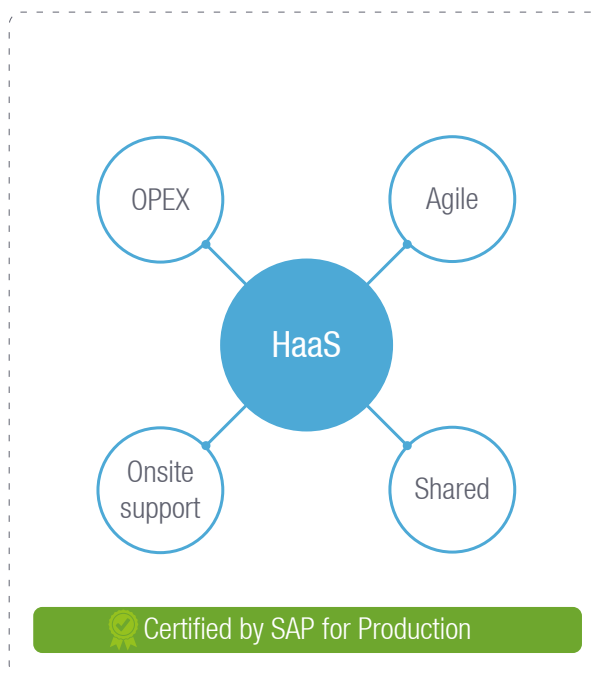
ADVANTAGES OF A TAILORED DATACENTER INTEGRATION MODEL

Tailored Datacenter Integration (TDI) offers an alternative approach for deploying SAP HANA. Compared to appliances, TDI provides SAP HANA providers like NRB with more flexibility in selecting the hardware components for compute servers, storage, and network and thus for optimising customer solutions. This means more agility, shared resources, onsite support, all made available in an OPEX pricing model. You benefit from performant infrastructure in a pay-per-use model.
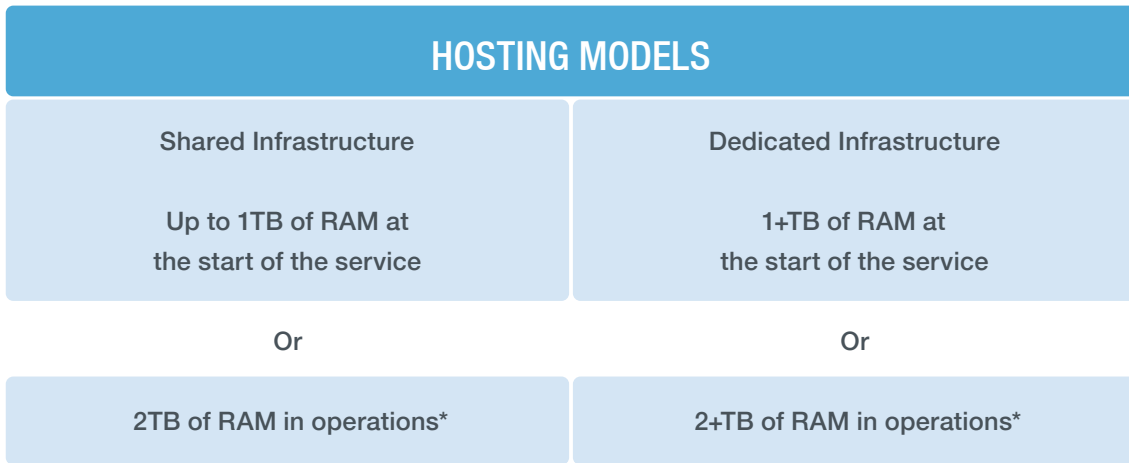

TDI = HaaS

SAP HANA Server
Virtualization
Server
Shared Network
Network
Enterprise Storage
Storage

HaaS = advantages

OPEX
Agile
HaaS
Onsite support
Shared
Certified by SAP for Production

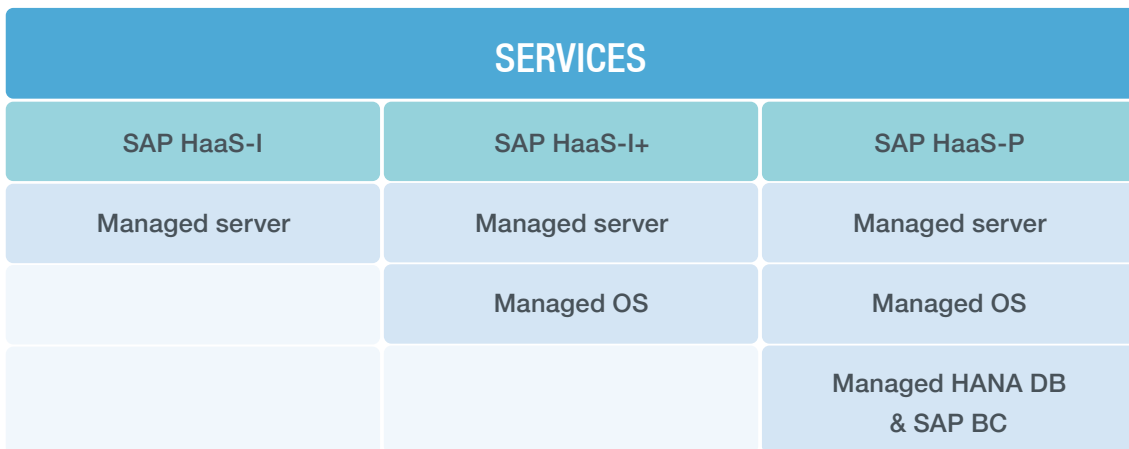# CHOOSE YOUR PREFERRED HOSTING MODEL AND LEVEL OF SERVICE

TWO HOSTING MODELS AND 3 LEVELS OF SERVICES

Depending on your RAM capacity and specific requirements in terms of resilience or configuration, you will opt for a shared or dedicated infrastructure.

HOSTING MODELS	
Shared Infrastructure Up to 1TB of RAM at the start of the service	Dedicated Infrastructure 1+TB of RAM at the start of the service
Or	Or
2TB of RAM in operations*	2+TB of RAM in operations*

When it comes to NRB services, you will be able to choose between

- hosting services (SAP HaaS-I)
- managed Operating System on top of server capacity (SAP HaaS-I+)
- SAP BC services for the technical management of a SAP HANA database and related SAP systems (SAP HaaS-P)

SERVICES		
SAP HaaS-I	SAP HaaS-I+	SAP HaaS-P
Managed server	Managed server	Managed server
	Managed OS	Managed OS
		Managed HANA DB & SAP BC

*For dedicated infrastructure or specific 'à la carte' configurations.

HOSTING MODELS

HaaS SHARED INFRASTRUCTURE

The shared infrastructure consists of a number of physical servers running one or more virtual servers (VMs – or Virtual Machines). Virtual servers are assigned to a single customer. Their configuration (combination of CPU, RAM, Disks, Network) is certified to run a SAP HANA database in production as a single instance or as a **M**ulti-Tenant **D**atabase **C**ontainer (MDC).

NRB provides SAP certified virtual servers for running SAP HANA systems with an initial requirement of less-than-1TB of RAM for one virtual server (VM). Capacity limitations are evaluated periodically and are subject to changes.

For customers

- payment is set up per configured VM and configured vRAM
- virtualisation and OS licence are included
- SAP & SAP HANA licences and related costs are not included

Disaster recovery parameters

- Recovery Time Objective (RTO) = 2 h
- Recovery Point Objective (RPO) = 0 (last committed transaction)

The engagement period for the shared infrastructure service model is 1 month.

HaaS DEDICATED INFRASTRUCTURE

If the VM requires more than 1TB of RAM initially or if the VM exceeds 2TB of RAM whilst being on shared servers, customers are offered a dedicated SAP HANA infrastructure. This is also the case when a specific configuration is required such as high availability for instance.

Dedicated physical servers are

- physical servers without a virtualisation layer
- dedicated to a single customer and are therefore "private"
- configured (combination of CPU, RAM, Disks, Network) and certified to run a SAP HANA database in production

Customers

- pay per dedicated server
- have their OS licence included
- do not have SAP & SAP HANA licences and related costs included

Disaster Recovery parameters depend on the chosen configuration.

The engagement period for a dedicated infrastructure service model is four years by default.

LEVELS OF SERVICE

NRB offers 3 levels of service:

- **SAP HaaS-I:** SAP HANA-as-a-Service – IaaS
- **SAP HaaS-I+:** SAP HANA-as-a-Service – Managed OS (or IaaS+)
- **SAP HaaS-P:** SAP HANA-as-a-Service – Platform (or PaaS)

SAP HaaS – IaaS (HaaS-I)

You access a certified platform to run SAP HANA with the appropriate OS and compute power (VCPU and CRAM) in a pay-per-use model. With this model, you are responsible for executing SAP certification scripts as a pre-requisite for running SAP HANA in a production environment. Such a condition necessitates the involvement of a Certified SAP Consultant who can be supplied by NRB.

SAP HaaS-I+ (MANAGED OS)

Next to the basic hosting services (compute requirements, data protection, patching and anti-virus capabilities), the managed OS offering (or IaaS+) provides the customer with the ability to deploy SAP HANA application stacks onto the SAP HANA cloud infrastructure.

With this model, you are responsible for executing SAP certification scripts as a pre-requisite for running SAP HANA in a production environment. Such a condition necessitates the involvement of a certified SAP Consultant who can be supplied by NRB.
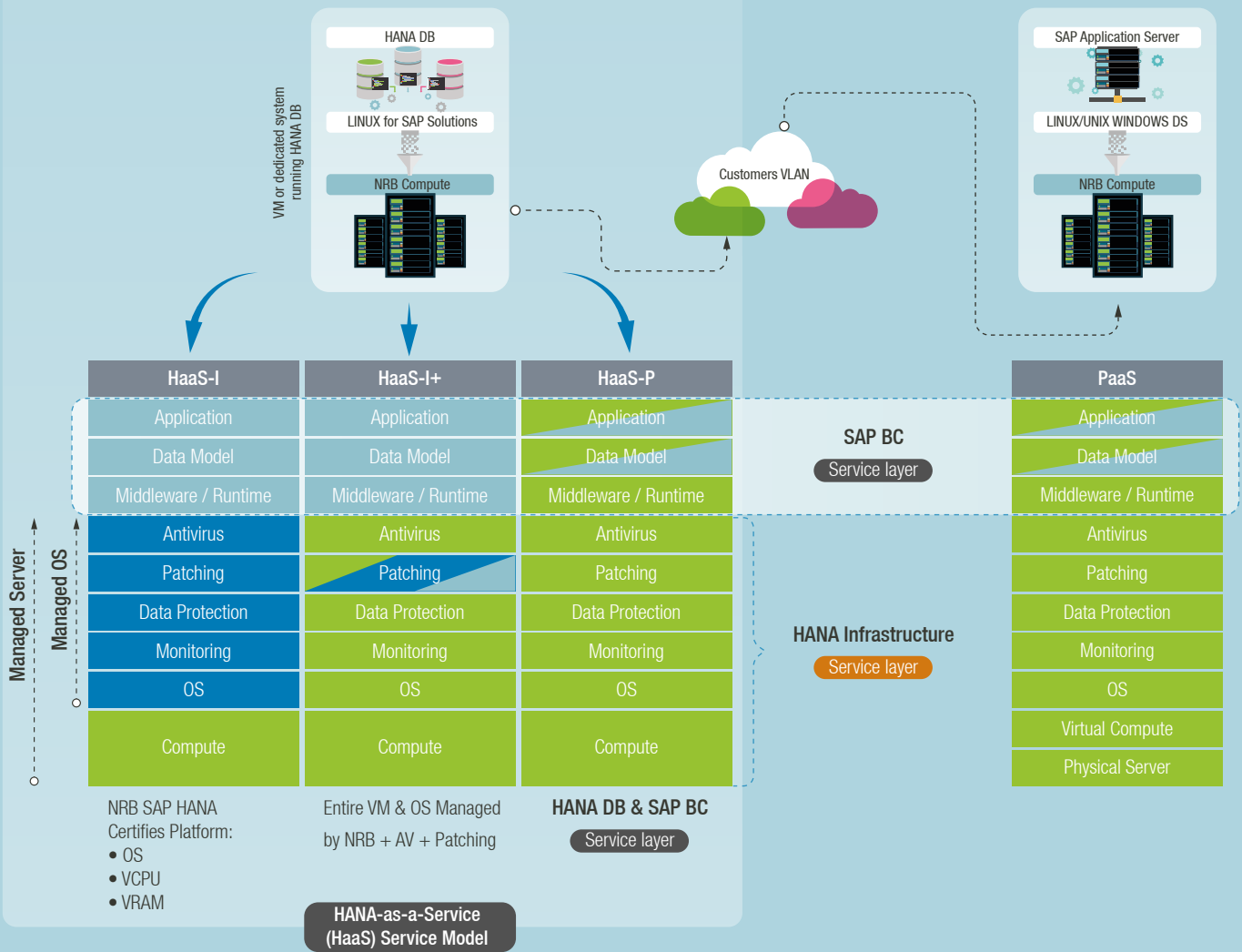
SAP HaaS-P WITH SAP BC SERVICES

SAP HaaS-P includes SAP BC services for the technical management of SAP HANA databases and related SAP systems.

NRB manages the runtime while you manage the functional aspects (the data model and application).

POSSIBLE INFRASTRUCTURE SERVICE MODELS FOR SAP HANA (SHARED OR DEDICATED)

HANA DB

LINUX for SAP Solutions

NRB Compute

VM or dedicated system running HANA DB

Customers VLAN

SAP Application Server

LINUX/UNIX WINDOWS DS

NRB Compute

HaaS-I	HaaS-I+	HaaS-P		PaaS
Application	Application	Application		Application
Data Model	Data Model	Data Model	**SAP BC** Service layer	Data Model
Middleware / Runtime	Middleware / Runtime	Middleware / Runtime		Middleware / Runtime
Antivirus	Antivirus	Antivirus		Antivirus
Patching	Patching	Patching		Patching
Data Protection	Data Protection	Data Protection	**HANA Infrastructure** Service layer	Data Protection
Monitoring	Monitoring	Monitoring		Monitoring
OS	OS	OS		OS
Compute	Compute	Compute		Virtual Compute
				Physical Server

Managed Server

Managed OS

NRB SAP HANA
Certifies Platform:
• OS
• VCPU
• VRAM

Entire VM & OS Managed
by NRB + AV + Patching

HANA DB & SAP BC
Service layer

**HANA-as-a-Service
(HaaS) Service Model**

Total Management of SAP HANA VM or Physical and SAP - The technical aspects of the application and
data model (i.e SAP-BC) - are managed by NRB. The functional aspects are managec by the clients.

■ NRB standard service
■ NRB optimal service
■ Customer controlled

SAP Solution Service Models
NRB Enterprise Services
v.15.01

WHY CHOOSE SAP HANA-AS-A-SERVICE?

SAP HANA-as-a-Service provides you with a robust, SAP-certified, in-memory cloud solution. This competitive advantage allows
you to

- deploy rapidly
- provision in an agile mode
- scale memory capacity
- pay in a "As-You-Use" model
- remain within a private & secured cloud, located in Belgium Tier 3+ Datacenter

NRB IS CERTIFIED PARTNER FOR SAP HANA OPERATIONS SERVICES
AND HOSTING SERVICES

SAP® Certified
in Hosting Services

SAP® Certified
in SAP HANA® Operations Services

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9001:2015
Quality
Management

ISO/IEC
27001
Information Security
Management

FS 706532   IS 706533