Dev/test environments for SAP workloads on Azure

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In this article

This example shows how to establish a dev/test environment for SAP NetWeaver in a Windows or Linux environment on Azure. The database used is AnyDB, the SAP term for any supported DBMS (that isn't SAP HANA). Because this architecture is designed for non-production environments, it's deployed with just a single virtual machine (VM) and it's size can be changed to accommodate your organization's needs.

For production use cases review the SAP reference architectures available below:

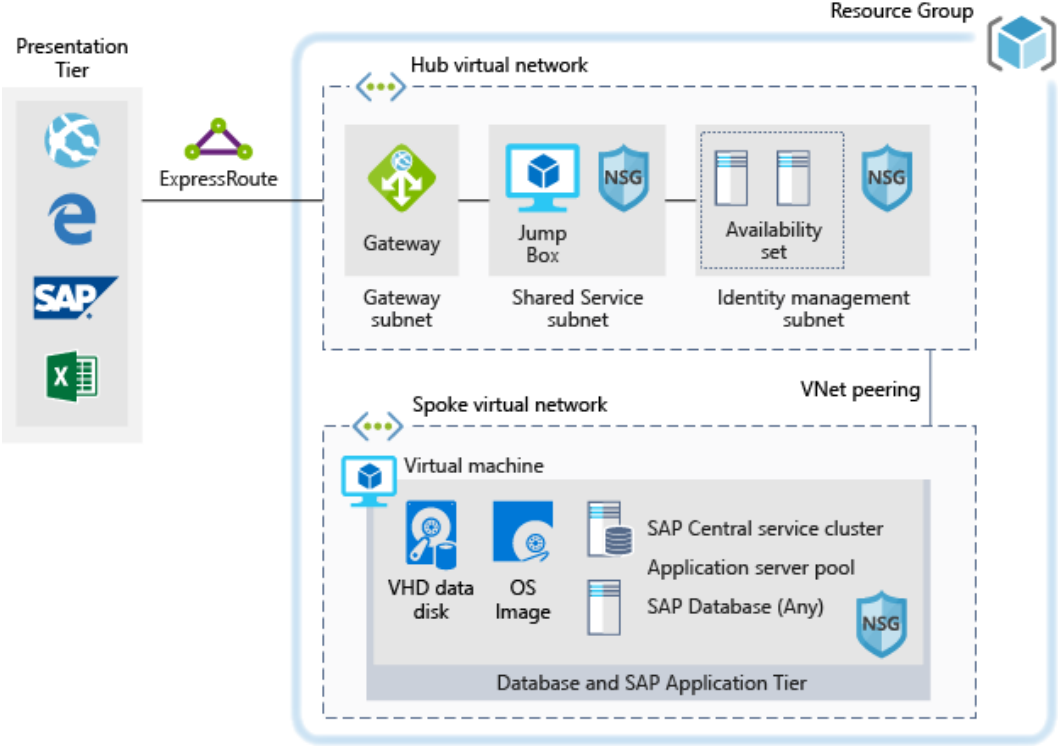
- SAP NetWeaver for AnyDB
- SAP S/4HANA
- SAP on Azure large instances

Relevant use cases

Other relevant use cases include:

- Non-critical SAP non-productive workloads (sandbox, development, test, quality assurance)
- Non-critical SAP business workloads

Architecture



This scenario demonstrates provisioning a single SAP system database and SAP application server on a single virtual machine. The data flows through the scenario as follows:

1. Customers use the SAP user interface or other client tools (Excel, a web browser, or other web application) to access the Azure-based SAP system.
2. Connectivity is provided through the use of an established ExpressRoute. The ExpressRoute connection is terminated in Azure at the ExpressRoute gateway. Network traffic routes through the ExpressRoute gateway to the gateway subnet, and from the gateway subnet to the application-tier spoke subnet (see the hub-spoke network topology) and via a Network Security Gateway to the SAP application virtual machine.
3. The identity management servers provide authentication services.
4. The jump box provides local management capabilities.

Components

- Virtual Networks are the basis of network communication within Azure.
- Virtual Machine Azure Virtual Machines provides on-demand, high-scale, secure, virtualized infrastructure using Windows or Linux Server.
- ExpressRoute lets you extend your on-premises networks into the Microsoft cloud over a private connection facilitated by a connectivity provider.
- Network Security Group lets you limit network traffic to resources in a virtual network. A network security group contains a list of security rules that allow or deny inbound or outbound network traffic based on source or destination IP address, port, and protocol.
- Resource Groups act as logical containers for Azure resources.

Considerations

Availability

Microsoft offers a service level agreement (SLA) for single VM instances. For more information on Microsoft Azure Service Level Agreement for Virtual Machines SLA For Virtual Machines

Scalability

For general guidance on designing scalable solutions, see the scalability checklist in the Azure Architecture Center.

Security

For general guidance on designing secure solutions, see the Azure Security Documentation.

Resiliency

For general guidance on designing resilient solutions, see Designing resilient applications for Azure.

Pricing

To help you explore the cost of running this scenario, all of the services are pre-configured in the cost calculator examples below. To see how the pricing would change for your particular use case, change the appropriate variables to match your expected traffic.

We have provided four sample cost profiles based on amount of traffic you expect to receive:

Size	SAPs	VM Type	Storage	Azure Pricing Calculator
Small	8000	D8s_v3	2xP20, 1xP10	Small
Medium	16000	D16s_v3	3xP20, 1xP10	Medium
Large	32000	E32s_v3	3xP20, 1xP10	Large
Extra Large	64000	M64s	4xP20, 1xP10	Extra Large

> **Note**
>
> This pricing is a guide that only indicates the VMs and storage costs. It excludes networking, backup storage, and data ingress/egress charges.

- Small: A small system consists of VM type D8s_v3 with 8x vCPUs, 32-GB RAM and 200-GB temp storage, additionally two 512 GB and one 128-GB premium storage disk.
- Medium: A medium system consists of VM type D16s_v3 with 16x vCPUs, 64-GB RAM and 400-GB temp storage, additionally three 512 GB and one 128-GB premium storage disk.
- Large: A large system consists of VM type E32s_v3 with 32x vCPUs, 256-GB RAM and 512-GB temp storage, additionally three 512GB and one 128-GB premium storage disk.
- Extra Large: An extra large system consists of a VM type M64s with 64x vCPUs, 1024-GB RAM and 2000-GB temp storage, additionally four 512 GB and one 128-GB premium storage disk.

Deployment

Click the link below to deploy the solution.

Deploy to Azure

> **Note**
>
> SAP and Oracle are not installed during this deployment. You will need to deploy these components separately.