Simplified Deployment of Azure Infrastructure for SAP Applications

Accelerate your SAP on Azure HANA project with SUSE Microsoft Solution Templates

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SUSE Software-Defined Infrastructure
An Open, Flexible Infrastructure Approach

**Application Delivery**

- **Custom Micro Service Applications**
  - Kubernetes / Magnum

- **Platform as a Service**
  - Cloud Foundry

**Management**

- Operations, Monitor and Patch
  - SUSE Manager
  - SUSE OpenStack Cloud Monitoring
  - openATTIC

- **Cluster Deployment**
  - Crowbar
  - Salt

- **Orchestration**
  - Heat
  - Kubernetes

**Software Defined Everything**

- **Virtualization**
  - KVM, Xen, VMware, and z/VM

- **Storage**
  - SUSE Enterprise Storage

- **Networking**
  - SDN and NFV

- **Operating System**
  - SUSE Linux Enterprise Server

**Public Cloud**

Solutions Optimized for Public Cloud and Scale

**Physical Infrastructure:** Server, Switches, Storage
Why SUSE for SAP ?
The Smart Choice for SAP Workloads

- Recommended and supported operating system for SAP HANA
- 17+ years of joint development at the SAP LinuxLab
- Joint collaboration on Cloud Foundry
- Marketshare
  - 90%+ for SAP HANA
  - 100% for SAP Business One on HANA
  - 70%+ for SAP on Linux
- SAP IT runs on SUSE Linux Enterprise
  www.suse.com/success/stories/sap-se/
Why SUSE and Microsoft?
Hardened, Secure, Reliable Enterprise Linux on Microsoft Azure

Guaranteed service levels and seamless support directly from SUSE engineers

Available on demand or through existing Enterprise Agreements

Solutions built for security and scale:

• **SUSE Linux Enterprise Server HPC** - optimized for performance with Linux RDMA drivers using Microsoft Infiniband

• **SUSE Linux Enterprise Server for SAP Applications** - available on Azure on Large Instances for high performance, SAP HANA production workloads

• **SUSE Manager** reduces complexity of managing on-premise, private network, and Linux on public cloud from a single pane of glass

• **Quickstart Templates**: Apache Spark Machine-Learning Clusters, and more on Github
Why SUSE for SAP on Azure?
### Why SUSE and Azure for SAP?

<table>
<thead>
<tr>
<th>Deep Relationship with SAP</th>
<th>Enterprise Grade Security</th>
<th>Optimized for High-Performance</th>
<th>High-Availability + Scalability</th>
<th>Trusted and Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>17+ years of engineering collaboration, SAP recommends SUSE as the OS for SAP HANA</td>
<td>Encryption of data volumes for SAP apps, robust SUSE infrastructure on Azure for patches / updates</td>
<td>Installation wizards for the SAP landscape, fine-tuning of components needed for SAP HANA</td>
<td>High availability is included in SUSE Linux for SAP with add-on option for live patching and GEO clustering</td>
<td>Best in-class cloud support with availability of Long Term Service Pack Support (LTSS)</td>
</tr>
<tr>
<td>20+ year relationship and SAP certified IaaS</td>
<td>A trusted cloud with 57% of Fortune 500 companies relying on</td>
<td>Supporting the largest SAP HANA workloads on public</td>
<td>Deploy rapidly in more than 30 regions with reliable cloud</td>
<td></td>
</tr>
</tbody>
</table>
SAP Solution Templates

Simplified deployment directly from the Azure Marketplace
Steps to build a SAP Infrastructure on Azure

There are still a lot of tasks in order to create a infrastructure...

- Create Azure Resource Group
- Create Virtual Network(s)
- Create Subnets
- Create Availability Sets
- Create Loadbalancers
- Create virtual network cards
- Create virtual machines
- Create data disks
- Create service principle
- Create file share for SAP Media
- Configure the SUSE Linux systems
- Install additional software
- Get latest updates
- Create (LVM) disk layout
- Create filesystems
- Create fstab entries
- If HA, create cluster
  - Configure basic cluster
  - Configure fencing
  - Create cluster rules for SAP application
  - Test cluster setup
- Install SAP software
- Configure SAP software
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Infrastructure for SAP Netweaver and SAP HANA

Overview

SUSE

Infrastructure based on MS SAP reference architecture on SLES for SAP Applications

SUSE Microsoft Solution Templates

Get the most from your SAP HANA and SAP business application software with decreased downtime, greater operating efficiency and accelerated innovation with the reliability, availability and serviceability of SUSE Linux Enterprise Server for SAP Applications.

The solution templates are designed to simplify the creation of the needed infrastructure to deploy SAP Netweaver and SAP HANA on SUSE Linux Enterprise Server for SAP Applications premium images in Azure. The template creates:

- Several virtual machines
- Virtual network and subnet
- Several disks depending on the solution size
- FAB is used, All Sets and load balancer

You need to provide the needed SAP modules and licenses by yourself.

The SAP installation could be done manually or with the help of the included SUSE installation Wizard. Simply call our practical administration tools and get started.

The solution templates are based on the MS SAP reference architecture, and use the SUSE Linux Enterprise Server for SAP Applications premium on-demand image, with includes priority support, updates and patches from SUSE.

Virtual machines created from this template incur per-hour support fees, in addition to Azure platform fees.

An Azure support plan is required (developer or above). Support incidents are initiated through Azure Support.

Note: Please be aware that the templates require a high amount of resources, therefore an increase of your quota might be necessary.

The Deluxe and Small sizes are for non-production, the medium and large will use certified machine types for production.

Legal Terms

By clicking the Create button, I acknowledge that I am getting this software from SUSE and that the legal terms of SUSE apply to it.

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Learn More

Technical details – 4 deployment sizes

Dem
For test and dev

Small

Medium
For production (SAP certified instance types)

Large
Technical details 2-tier (=HANA) template
Technical details 3-tier template
Technical details 3-tier HA template
Technical details – example filesystem

Below how it looks like directly on the system for the size medium

```bash
# df -h

<table>
<thead>
<tr>
<th>Filesystem</th>
<th>Size</th>
<th>Used</th>
<th>Avail</th>
<th>Use%</th>
<th>Mounted on</th>
</tr>
</thead>
<tbody>
<tr>
<td>devtmpfs</td>
<td>213G</td>
<td>8,0K</td>
<td>213G</td>
<td>1%</td>
<td>/dev</td>
</tr>
<tr>
<td>tmpfs</td>
<td>319G</td>
<td>0</td>
<td>319G</td>
<td>0%</td>
<td>/dev/shm</td>
</tr>
<tr>
<td>tmpfs</td>
<td>213G</td>
<td>18M</td>
<td>213G</td>
<td>1%</td>
<td>/run</td>
</tr>
<tr>
<td>tmpfs</td>
<td>213G</td>
<td>0</td>
<td>213G</td>
<td>0%</td>
<td>/sys/fs/cgroup</td>
</tr>
<tr>
<td>/dev/sda2</td>
<td>29G</td>
<td>1,7G</td>
<td>26G</td>
<td>7%</td>
<td>/</td>
</tr>
<tr>
<td>/dev/sda1</td>
<td>976M</td>
<td>46M</td>
<td>880M</td>
<td>5%</td>
<td>/boot</td>
</tr>
<tr>
<td>/dev/sdb1</td>
<td>851G</td>
<td>73M</td>
<td>808G</td>
<td>1%</td>
<td>/mnt/resource</td>
</tr>
<tr>
<td>/dev/mapper/vg--datalog-lv--datalog--0</td>
<td>1,1T</td>
<td>34M</td>
<td>1,1T</td>
<td>1%</td>
<td>/hana/data</td>
</tr>
<tr>
<td>/dev/mapper/vg--datalog-lv--datalog--1</td>
<td>461G</td>
<td>33M</td>
<td>461G</td>
<td>1%</td>
<td>/hana/log</td>
</tr>
<tr>
<td>/dev/sdg1</td>
<td>512G</td>
<td>33M</td>
<td>512G</td>
<td>1%</td>
<td>/hana/shared</td>
</tr>
<tr>
<td>/dev/sdf1</td>
<td>64G</td>
<td>33M</td>
<td>64G</td>
<td>1%</td>
<td>/usr/sap</td>
</tr>
<tr>
<td>/dev/sdi1</td>
<td>1,0T</td>
<td>33M</td>
<td>1,0T</td>
<td>1%</td>
<td>/hana/backup</td>
</tr>
<tr>
<td>/dev/sdh1</td>
<td>64G</td>
<td>33M</td>
<td>64G</td>
<td>1%</td>
<td>/sapmnt/ABC</td>
</tr>
<tr>
<td>tmpfs</td>
<td>43G</td>
<td>0</td>
<td>43G</td>
<td>0%</td>
<td>/run/user/1000</td>
</tr>
</tbody>
</table>
```

----
SAP Installation

There are many ways, but it could for example be done by YaST
To be able to include this in your own workflow ...

The templates will become public available in github.

Feel free to contribute to the project through pull-requests.
Thank you!
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Sr. Technical Architect
peters@suse.com

Schedule a discussion with our team today! For more information e-mail: azure@suse.com

To learn more:
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