



# 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



## Management

### Operations, Monitor and Patch

- SUSE Manager
- SUSE OpenStack Cloud Monitoring
- openATTIC

### Cluster Deployment

- Crowbar
- Salt

### Orchestration

- Heat
- Kubernetes

## Application Delivery



### Custom Micro Service Applications

Kubernetes / Magnum



### Platform as a Service

Cloud Foundry



### Containers

SUSE CaaS Platform



### Private Cloud / IaaS

SUSE OpenStack Cloud



### Public Cloud

Solutions  
Optimized for  
Public Cloud  
and Scale

## Software Defined Everything



### Virtualization

KVM, Xen, VMware,  
and z/VM



### Storage

SUSE Enterprise  
Storage



### Networking

SDN and NFV



### Operating System

SUSE Linux Enterprise Server

**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/](http://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 ?

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



# 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
- Configure 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
- 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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Would it not be easier if this is all done for you ...



# Azure Marketplace templates from SUSE

Microsoft Azure

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Products > Infrastructure for SAP Netweaver and SAP HANA

## Infrastructure for SAP Netweaver and SAP HANA

SUSE

Overview Plans

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

SUSE Microsoft Solution Templates

**GET IT NOW**

**Pricing information**  
Cost of deployed template components

**Categories**  
Compute  
Databases  
Monitoring + Management

**Legal**  
License Agreement  
Privacy Policy

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 create

- several virtual machines
- virtual network and subnet
- several disks depending on the solution sizes
- if HA is used, AV Sets and load balancer

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

The SAP installation could be done manually or with the help of the included SUSE Installation Wizard. Simply call our graphical administration tool YaST2 and start the wizard.

The solution templates are based on the [MS reference architecture](#), and use the *SUSE Linux Enterprise Server for SAP Applications* premium on-demand image, which 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 Demo 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. Microsoft does not provide rights for third-party software. Also see the privacy statement from SUSE.

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Products > Infrastructure for SAP Netweaver and SAP HANA

## Infrastructure for SAP Netweaver and SAP HANA

SUSE

Overview Plans

Software plan Description

**SAP solution template 2-tier (Staged)**

This is the template for a 2-tier configuration. The template deploys 1 server for SAP HANA on Premium Storage. The machine type and the number and size of the disks depend on the T-Shirt size (Demo/Small/Medium/Large) chosen in the template. The T-Shirt sizes are based on simplified SAP sizing:

Size	Machinetype	Premium Storage
Demo	E4s_v3	7x128 GB
Small	E64s_v3	7x256 GB, 7x128 GB
Medium	Std_M64s	2x 2TB, 2x512 GB, 3x128 GB
Large	Std_M128s	12x4 TB, 2x 1 TB, 3x128 GB

**SAP solution template 3-tier (Staged)**

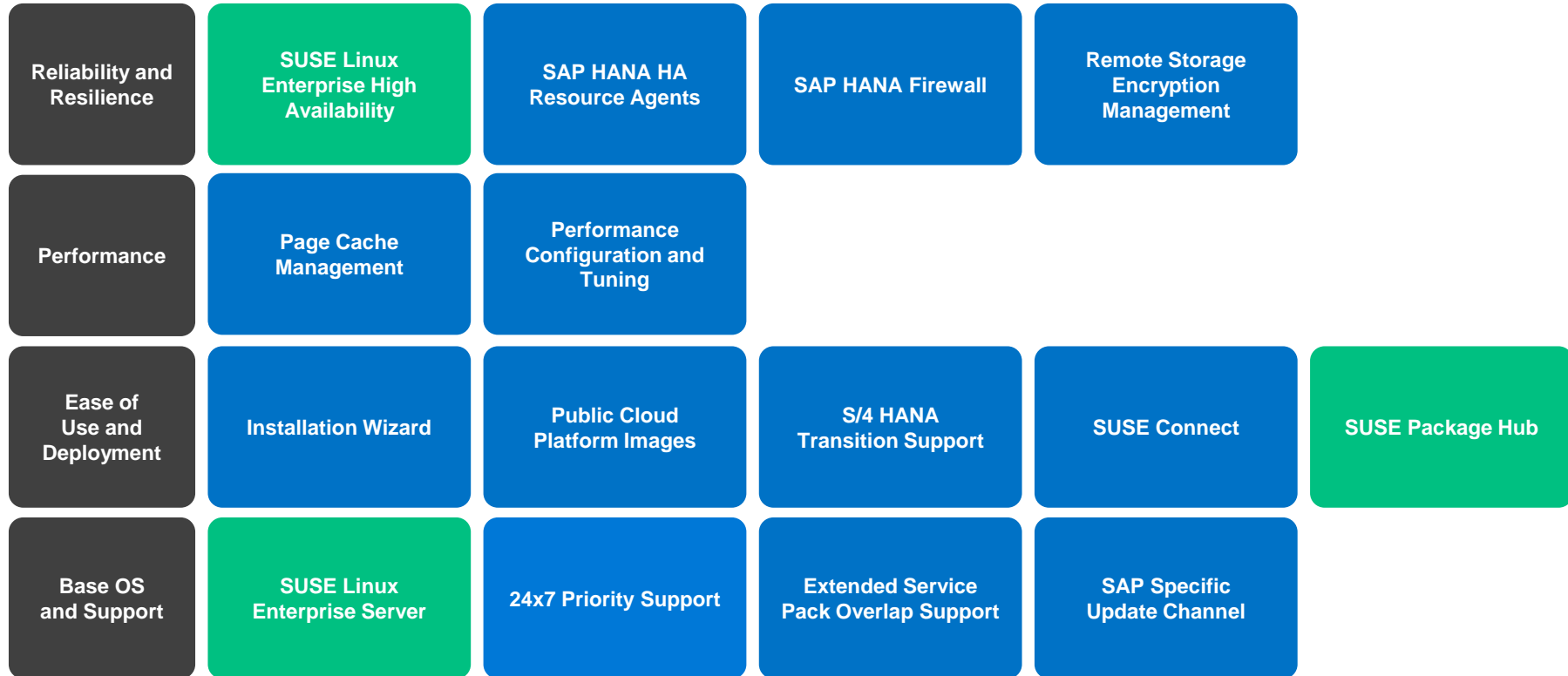
This is the template for a 3-tier configuration. The template deploys 1 DB, 1 ASCS/SCS servers and several (2-12) virtual machines that can host dialog instances. The machine type and the number and size of the disks depend on the T-Shirt size (Demo/Small/Medium/Large) chosen in the template. The T-Shirt sizes are based on simplified SAP sizing:

Size	Machinetype DB / xSCS / APP	Premium Storage
Demo	1x E4s_v3 / 1x D25_v3 / 2x D25_v3	5x128 GB/ default / 1x 128 GB
Small	1x E64s_v3 / 1x D25_v3 / 6x E64s_v3	12x128 GB/ default / 1x 128 GB
Medium	1x Std-M64s_v3 / 1x D25_v3 / 10x E64s_v3	2x 2 TB, 3x512 GB/ default / 1x 128 GB
Large	1x Std-M128s_v3 / 1x D25_v3 / 12x E64s_v3	2x4 TB, 3x1 TB/ default / 1x 128 GB

**SAP solution template 3-tier-HA (Staged)**

This is the template for a 3-tier-HA configuration. The template deploys 2 DB, 2 ASCS/SCS servers and several (2-12) virtual machines that can host dialog instances. The DB/ASCS/SCS and DI servers are placed in Availability Sets and a Load Balancer is added to the DB/ASCS/SCS server to allow HA configurations in the operating system. The

# SUSE Linux Enterprise Server for SAP Applications



SUSE Products and Services

SAP Specific Features from SUSE

# Technical details – 4 deployment sizes



Dem

0

For test and dev



Small

1



Medium

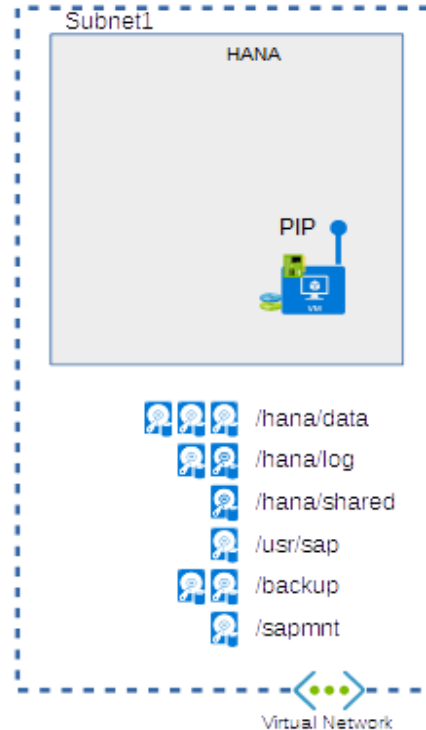


Large

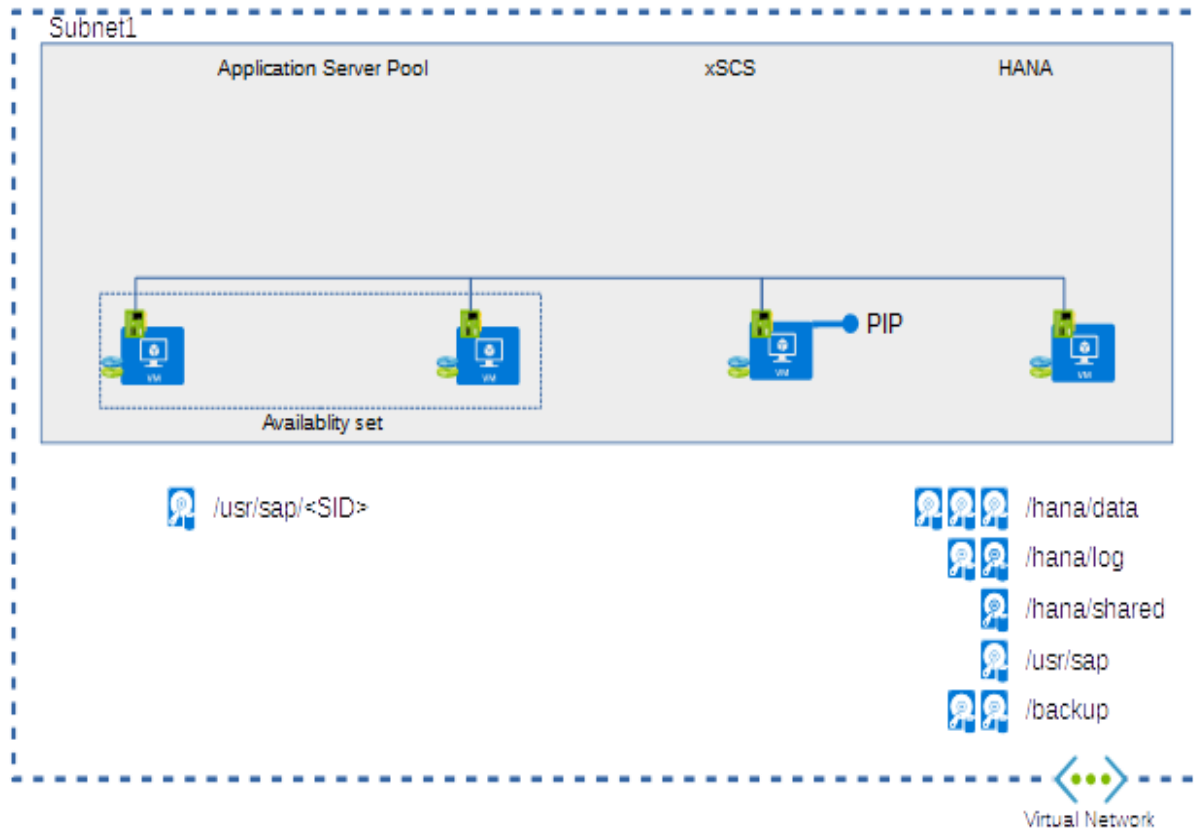
For production (SAP certified instance types)



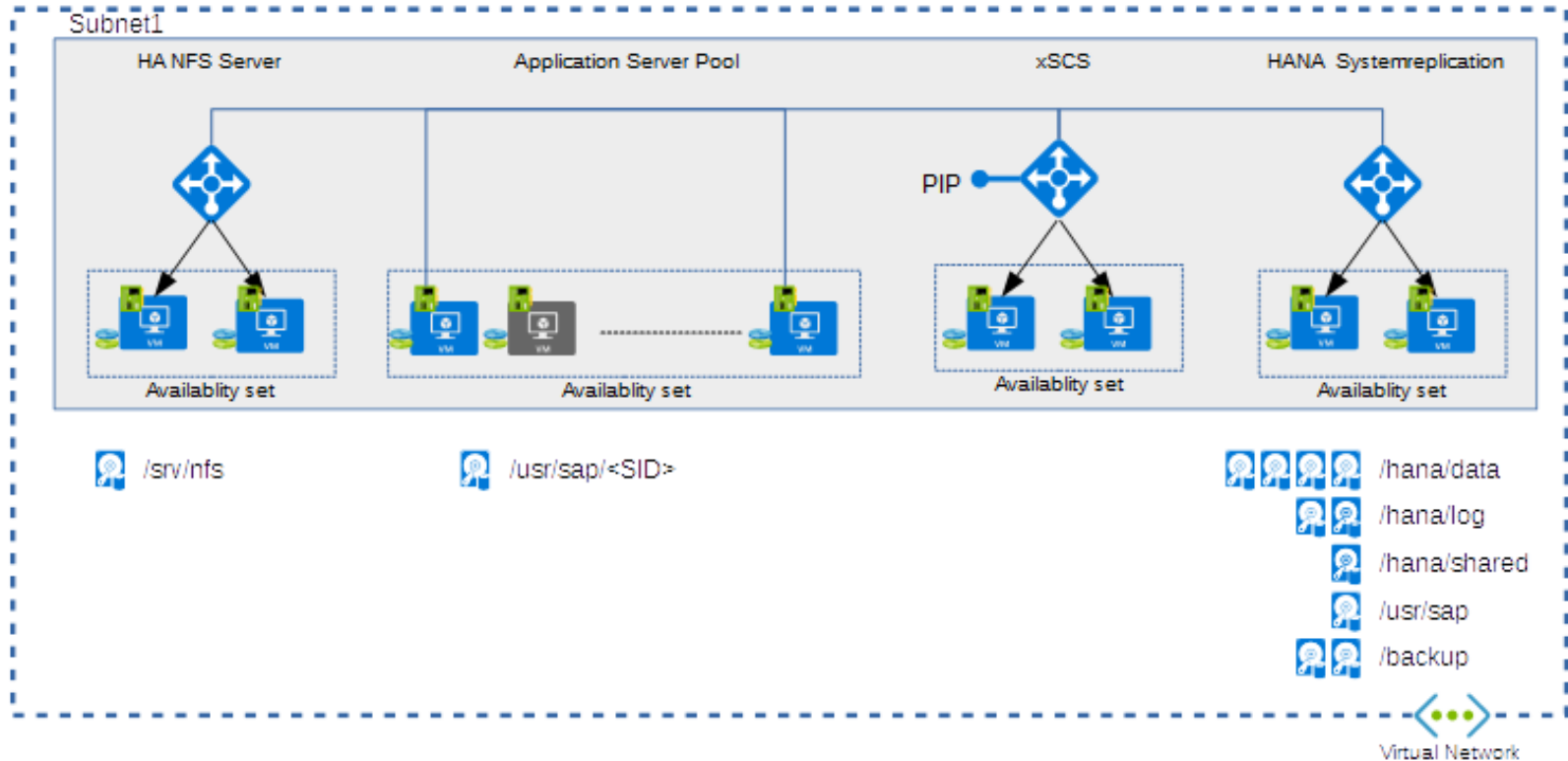
# Technical details 2-tier (=HANA) template



# 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

----

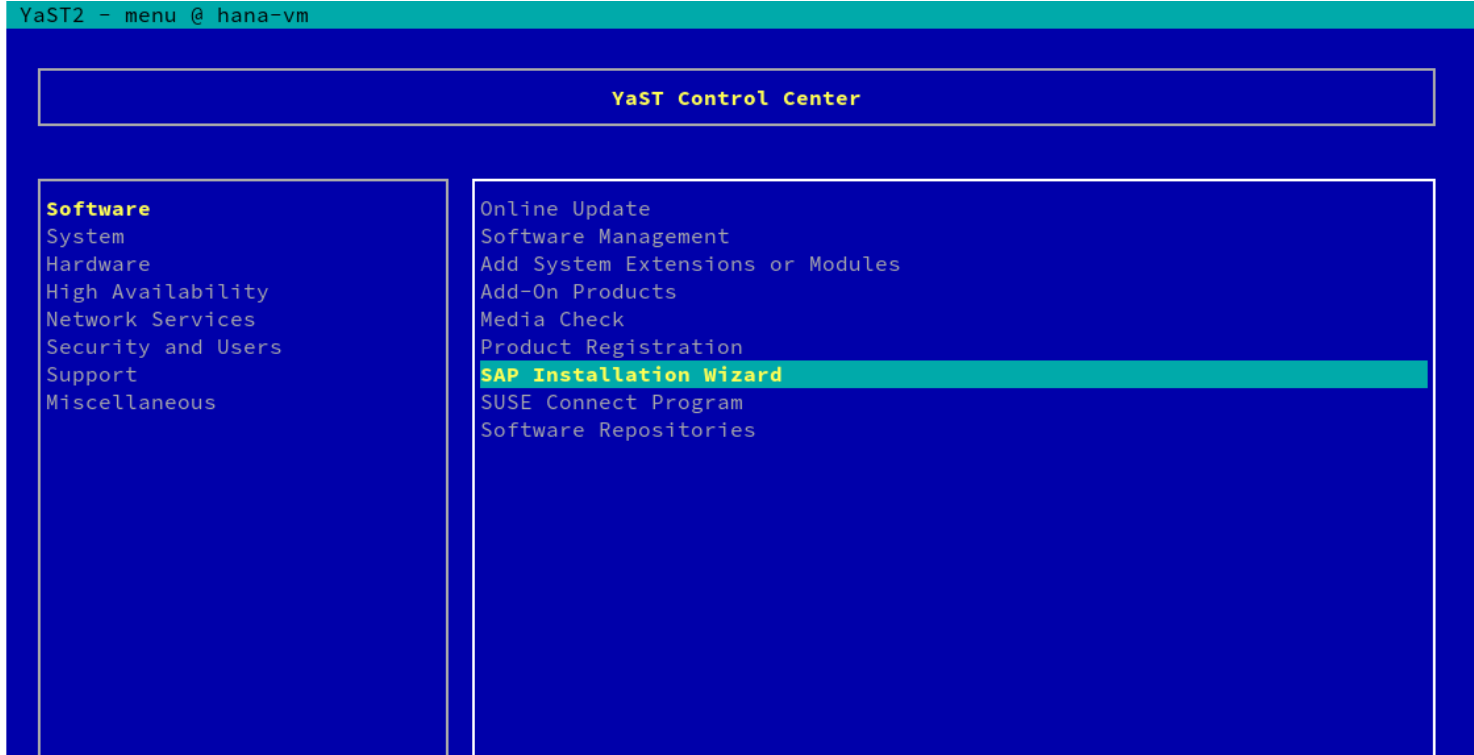
```
# df -h
```

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

----

# SAP Installation

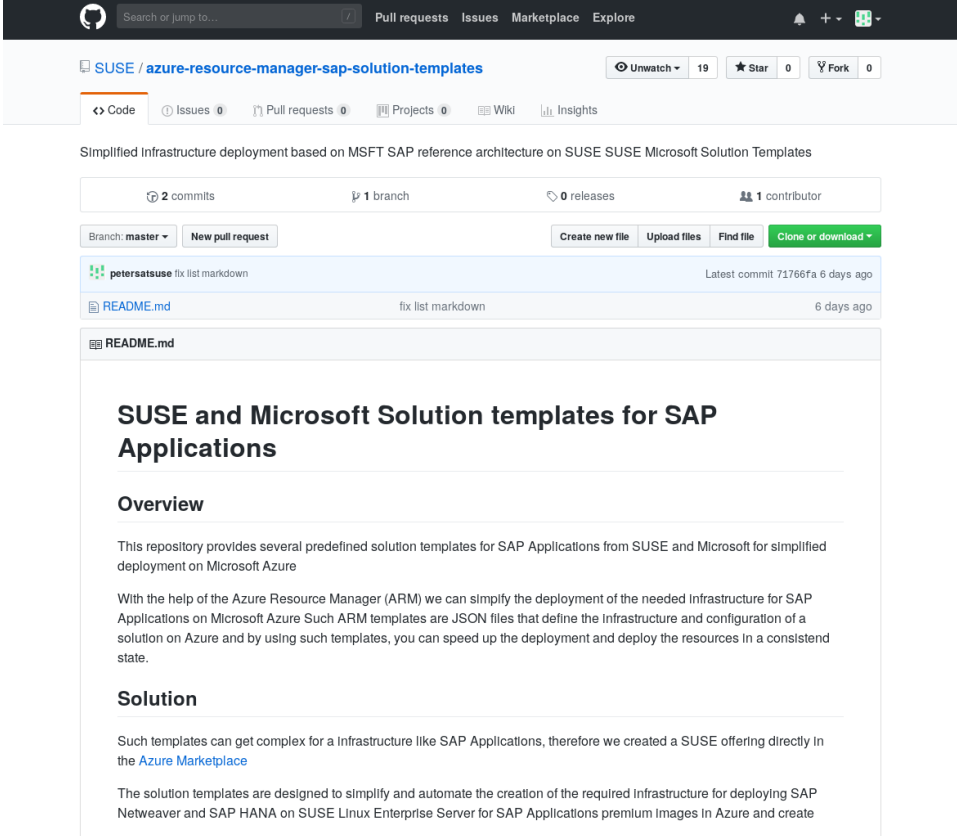
There are many ways, but it could for example be done by YaST



# 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.



The screenshot shows the GitHub interface for the repository 'SUSE / azure-resource-manager-sap-solution-templates'. The repository is public and has 19 stars and 0 forks. The main content area displays the README.md file, which is titled 'SUSE and Microsoft Solution templates for SAP Applications'. The README includes an overview section stating that the repository provides predefined solution templates for SAP Applications from SUSE and Microsoft for simplified deployment on Microsoft Azure. It also includes a solution section mentioning that the templates can be complex and are offered directly in the Azure Marketplace. The repository has 2 commits, 1 branch, 0 releases, and 1 contributor.



# Thank you!

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**Schedule a discussion with our team today! For more information e-mail:**  
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**To learn more:**  
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We adapt. You succeed.



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