

***SUSE Linux Enterprise Server 12 SP5  
(x86-64) as guest os on Oracle KVM***



## Introduction

This document provides details for installing SUSE Linux Enterprise Server 12 SP5 as a guest os on Oracle KVM. Details are provided for Intel(x86-64) versions of both Oracle KVM and SUSE Linux Enterprise Server 12 SP5. If you encounter issues or have general questions, please post your query to [suse-oracle@listx.novell.com](mailto:suse-oracle@listx.novell.com).

Official Oracle product documentation is available at: <http://docs.oracle.com>.

## Hardware Requirements

Requirement	Minimum
CPU	64-bit dual-core CPU
Physical Memory	16 GB
NIC	1 network interface card (NIC) with bandwidth of at least 1 Gbps
Hard Disk space	100 GB local writable hard disk
Disk space in /tmp	1 GB
Swap space	1 GB

## Software Requirements

### SUSE

- SUSE Linux Enterprise Server 12 SP5 (x86-64)  
(<http://download.suse.de/install>)

### Oracle

- Oracle Linux 7 update 6(with Unbreakable Enterprise Kernel Release 5 Update 1 or later)  
(<https://edelivery.oracle.com>)
- Oracle Linux Virtualization Manager Release 4.2.8 package  
([https://yum.oracle.com/repo/OracleLinux/OL7/ovirt42/x86\\_64/ovirt-release42.rpm](https://yum.oracle.com/repo/OracleLinux/OL7/ovirt42/x86_64/ovirt-release42.rpm))

## Testing Machine Hardware Information

Dell Laptop Precision 5530  
CPU: 6 \* Intel(R) Core(TM) i7-8850H CPU @ 2.60GHz  
RAM: 32 GB  
NIC: 2  
Local HDD: 1TB + 512GB

# Setup

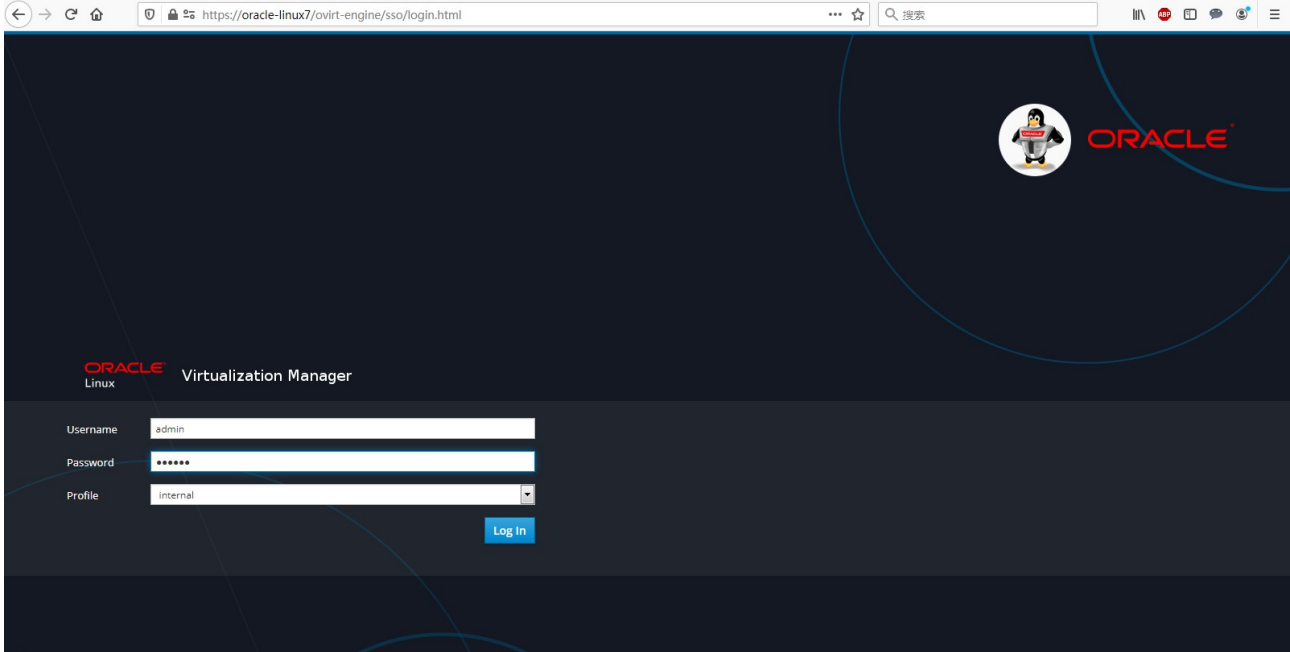
## 1. Installing Oracle Linux Virtualization Manager.

To install Oracle Linux Virtualization Manager, following the steps at:

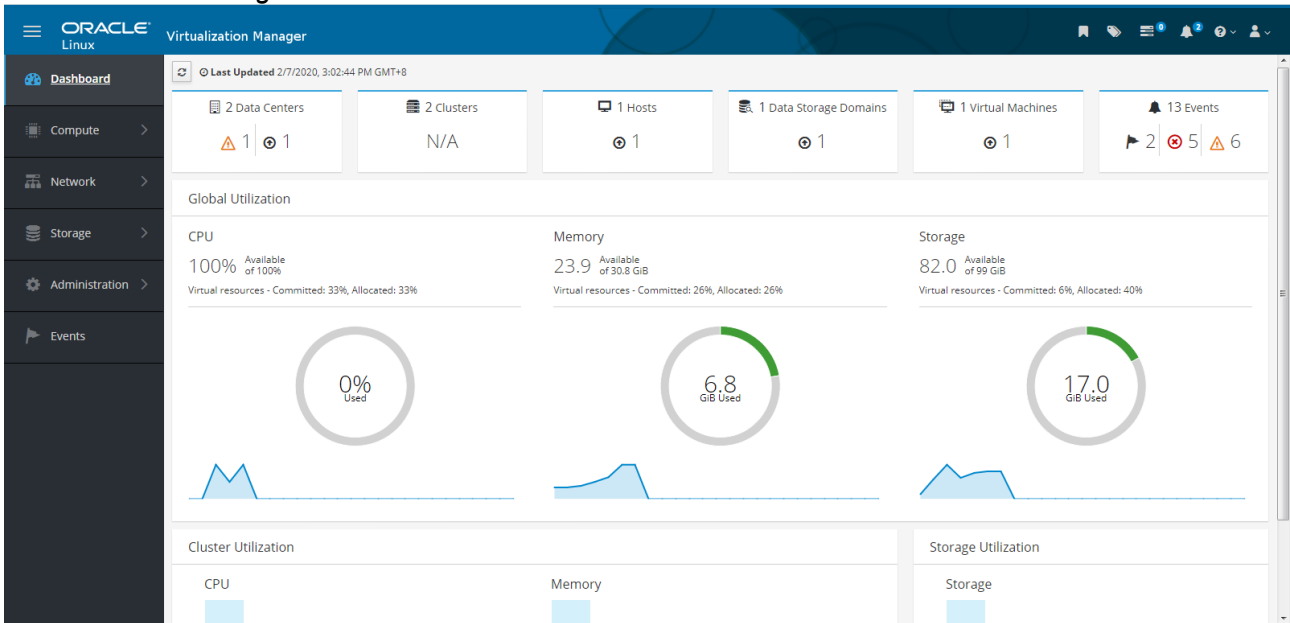
<https://docs.oracle.com/en/virtualization/oracle-linux-virtualization-manager/install/manager-install.html>.

## 2. Logging in to the Administration Portal.

**Screenshot:** *Logging into the Administration Portal to verify that the configuration was successful.*



**Screenshot:** *Viewing Dashboard*



### 3. Installing Oracle Linux KVM compute host.

To install Oracle Linux KVM compute host, following the steps at:

<https://docs.oracle.com/en/virtualization/oracle-linux-virtualization-manager/install/manager-install.html>.

### 4. Preparing Storage for a KVM Compute Host.

To configure a KVM compute host to use local storage/NFS/iSCSI/FCP, following the steps at:

<https://docs.oracle.com/en/virtualization/oracle-linux-virtualization-manager/getstart/storage-tasks.html>.

### 5. Creating a New Virtual Machine through Oracle Linux Virtualization Manager.

Screenshot: VM General info

<b>General</b> >	Cluster	SuSE_Test-Local	
<b>System</b>			<i>Data Center: SuSE_Test-Local</i>
<b>Initial Run</b>	Template	Blank   (0)	
<b>Console</b>	Operating System	SUSE Linux Enterprise Server 11+	
<b>Host</b>	Instance Type	Custom	
<b>High Availability</b>	Optimized for	Server	
<b>Resource Allocation</b>	Name	SLES12-SP5	
<b>Boot Options</b>	Description	SLES12-SP5 on Oracle KVM	
<b>Random Generator</b>	Comment		
<b>Custom Properties</b>	VM ID		
<b>Icon</b>	<input type="checkbox"/> Stateless <input type="checkbox"/> Start in Pause Mode <input type="checkbox"/> Delete Protection		
<b>Foreman/Satellite</b>	Instance Images	SLES12-SP5_Disk1: (40 GB) creating (boot)	Edit + -
<b>Affinity Labels</b>	Instantiate VM network interfaces by picking a vNIC profile.		
	nic1	ovirtmgmt/ovirtmgmt	+ -
Hide Advanced Options		OK Cancel	

Screenshot: VM System info

<b>General</b>	Cluster	SuSE_Test-Local
<b>System</b>		<i>Data Center: SuSE_Test-Local</i>
<b>Initial Run</b>	Template	Blank   (0)
<b>Console</b>	Operating System	SUSE Linux Enterprise Server 11+
<b>Host</b>	Instance Type	Custom
<b>High Availability</b>	Optimized for	Server
<b>Resource Allocation</b>	Memory Size	8192 MB
<b>Boot Options</b>	Maximum memory	8192 MB
<b>Random Generator</b>	Total Virtual CPUs	2
<b>Custom Properties</b>	<a href="#">Advanced Parameters</a>	
<b>Icon</b>	<b>General</b>	
<b>Foreman/Satellite</b>	Hardware Clock Time Offset	default: (GMT+00:00) GMT Standard Time
<b>Affinity Labels</b>	<input type="checkbox"/> Provide custom serial number policy	
<a href="#">Hide Advanced Options</a>		<a href="#">OK</a> <a href="#">Cancel</a>

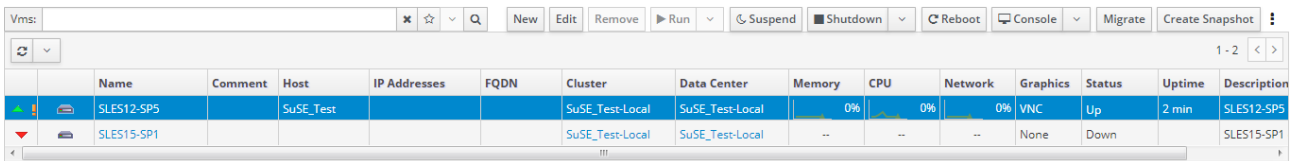
Screenshot: VM Boot Options

Edit Virtual Machine		✕
<b>General</b>	Cluster	SuSE_Test-Local
<b>System</b>		Data Center: SuSE_Test-Local
<b>Initial Run</b>	Template	Blank   (0)
<b>Console</b>	Operating System	SUSE Linux Enterprise Server 11+
<b>Host</b>	Instance Type	Custom
<b>High Availability</b>	Optimized for	Server
<b>Resource Allocation</b>	<b>Boot Sequence:</b>	
<b>Boot Options</b>	First Device	Network (PXE)
<b>Random Generator</b>	Second Device	[None]
<b>Custom Properties</b>	<input type="checkbox"/> Attach CD	SLE-15-SP1-Installer-DVD-x86_64-GM
<b>Icon</b>	<input checked="" type="checkbox"/> Enable menu to select boot device	
<b>Foreman/Satellite</b>	<b>Linux Boot Options:</b>	
<b>Affinity Labels</b>	kernel path	
	initrd path	
	kernel parameters	

Select **Network(PXE)** from the **First Device** drop-down list. For this example scenario, we install **SLES 12 SP5(x86-64)** through the pxe network.

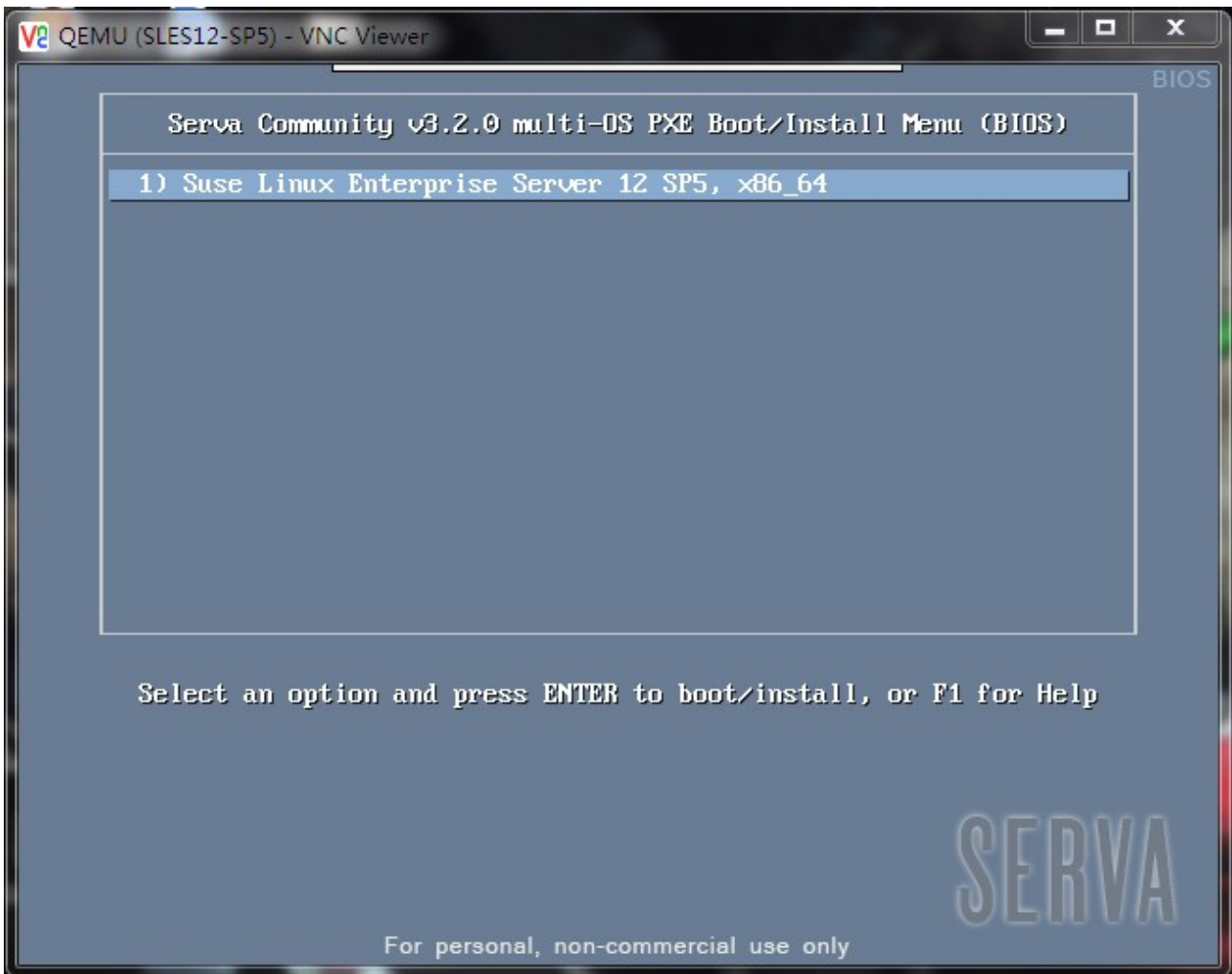
## 6. Installing the SuSE Linux Enterprise Server 12 SP5 (x86-64) Guest OS

1). Run the VM, then open a console connect to the virtual machine.



The screenshot shows a virtual machine management interface with a table of VMs. The table has columns for Name, Comment, Host, IP Addresses, FQDN, Cluster, Data Center, Memory, CPU, Network, Graphics, Status, Uptime, and Description. Two VMs are listed: SLES12-SP5 and SLES15-SP1.

Name	Comment	Host	IP Addresses	FQDN	Cluster	Data Center	Memory	CPU	Network	Graphics	Status	Uptime	Description
SLES12-SP5		SuSE_Test			SuSE_Test-Local	SuSE_Test-Local	0%	0%	0%	VNC	Up	2 min	SLES12-SP5
SLES15-SP1					SuSE_Test-Local	SuSE_Test-Local	--	--	--	None	Down		SLES15-SP1



(**Note:** The following error occurred while starting the virtual machine.

"Error message: The name org.fedoraproject.FirewallD1 was not provided by any .service files"

✘	Feb 7, 2020, 2:32:07 PM	Failed to run VM SLES15-SP1 (User: admin@internal-authz).	54	admin@inte
!	Feb 7, 2020, 2:32:07 PM	Failed to run VM SLES15-SP1 on Host SuSE_Test.	151	admin@inte
✘	Feb 7, 2020, 2:32:07 PM	VM SLES15-SP1 is down with error. Exit message: The name org.fedoraproject.FirewallD1 was not provided by any .service files.	119	

Workaround: Restart "libvirtd" service.

```
[root@oracle-linux7 ~]# systemctl status libvirtd
● libvirtd.service - Virtualization daemon
  Loaded: loaded (/usr/lib/systemd/system/libvirtd.service; enabled; vendor preset: enabled)
  Drop-In: /etc/systemd/system/libvirtd.service.d
           └─unlimited-core.conf
  Active: active (running) since Fri 2020-02-07 14:02:08 CST; 32min ago
  Docs: man:libvirtd(8)
        https://libvirt.org
  Main PID: 2951 (libvirtd)
  Tasks: 17 (limit: 32768)
  CGroup: /system.slice/libvirtd.service
          └─2951 /usr/sbin/libvirtd --listen

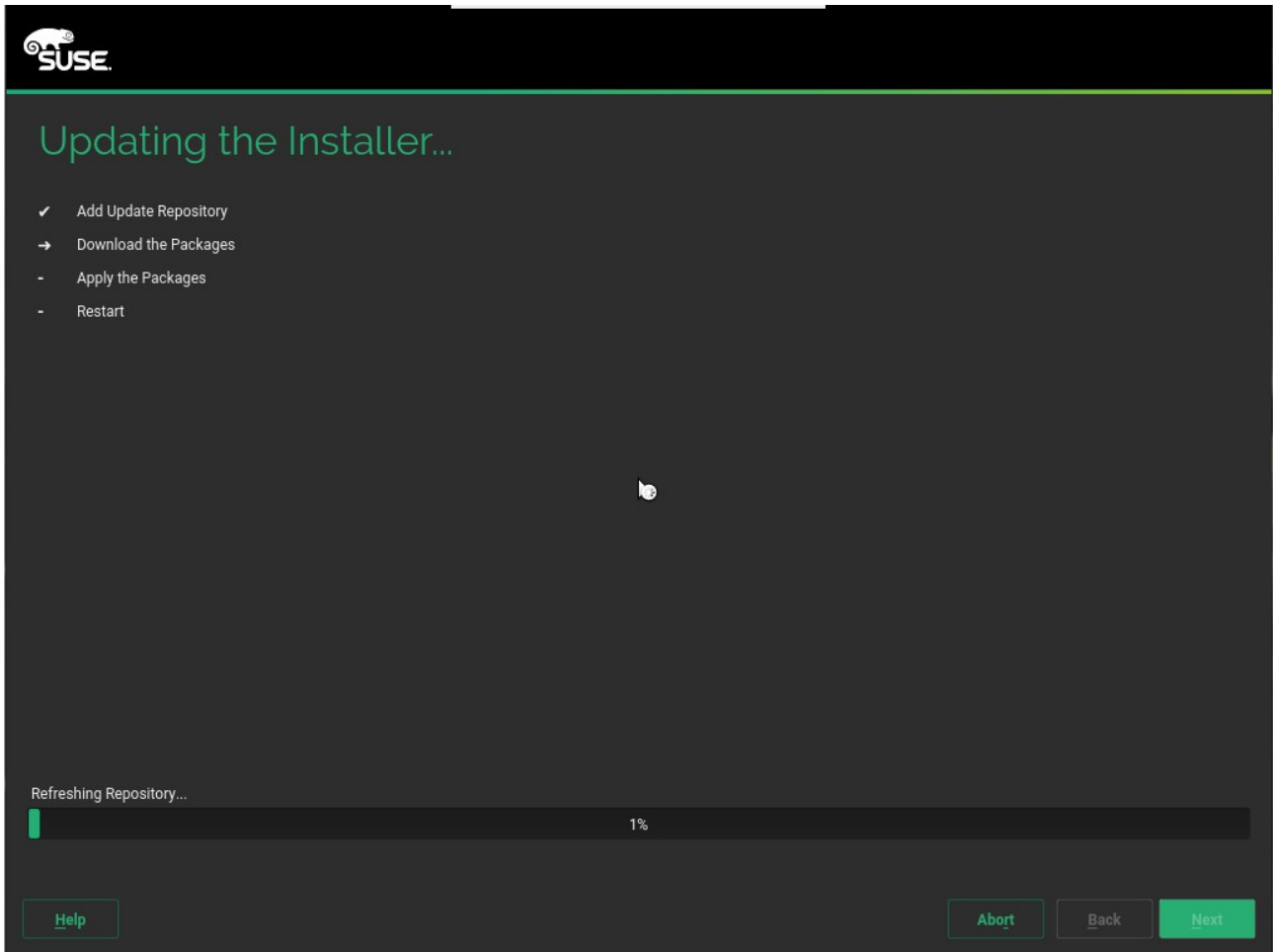
Feb 07 14:01:56 oracle-linux7 systemd[1]: Starting Virtualization daemon...
Feb 07 14:02:08 oracle-linux7 systemd[1]: Started Virtualization daemon.
Feb 07 14:32:07 oracle-linux7 libvirtd[2951]: libvirt version: 5.0.0, package: 16.el7 (Unknown, 2019-10-16-01:59:38, jenkins-10-147-72-125-08df36f4-a784-4f9f-aa95-553f9a793e6a)
Feb 07 14:32:07 oracle-linux7 libvirtd[2951]: hostname: oracle-linux7
Feb 07 14:32:07 oracle-linux7 libvirtd[2951]: The name org.fedoraproject.FirewallD1 was not provided by any .service files
[root@oracle-linux7 ~]# systemctl restart libvirtd
[root@oracle-linux7 ~]# systemctl status libvirtd
● libvirtd.service - Virtualization daemon
  Loaded: loaded (/usr/lib/systemd/system/libvirtd.service; enabled; vendor preset: enabled)
  Drop-In: /etc/systemd/system/libvirtd.service.d
           └─unlimited-core.conf
  Active: active (running) since Fri 2020-02-07 14:34:44 CST; 2s ago
  Docs: man:libvirtd(8)
        https://libvirt.org
  Main PID: 6265 (libvirtd)
  Tasks: 17 (limit: 32768)
  CGroup: /system.slice/libvirtd.service
          └─6265 /usr/sbin/libvirtd --listen

Feb 07 14:34:38 oracle-linux7 systemd[1]: Starting Virtualization daemon...
Feb 07 14:34:44 oracle-linux7 systemd[1]: Started Virtualization daemon.
[root@oracle-linux7 ~]#
```

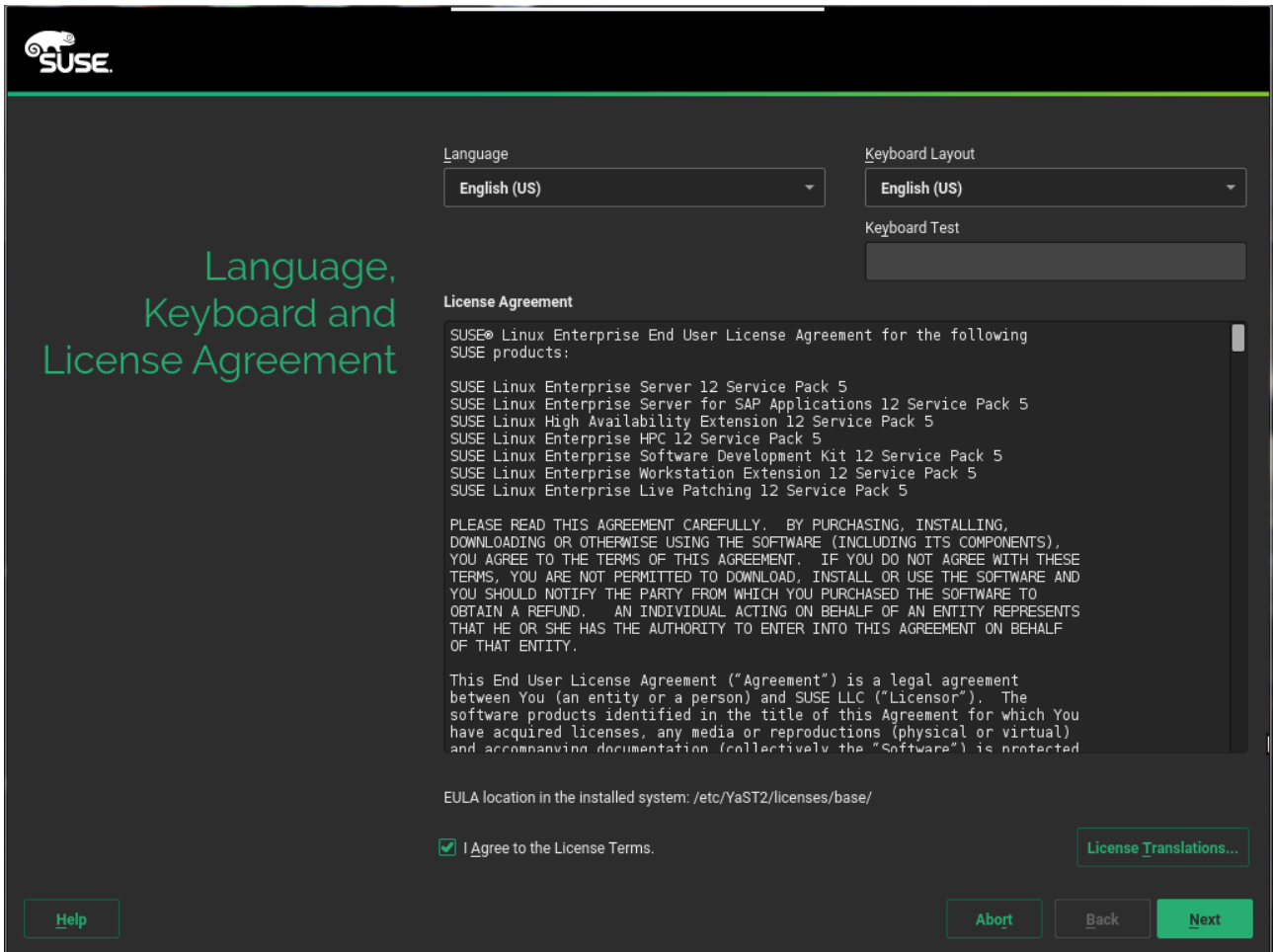
)



2). Updating the Installer.



3). Installation steps – Language,Keyboard and License Agreement.



4). Registration.

**SUSE**

Network Configuration...

# Registration

SUSE Linux Enterprise Server 12 SP5

Please select your preferred method of registration.

Register System via scc.suse.com

E-mail Address

Registration Code

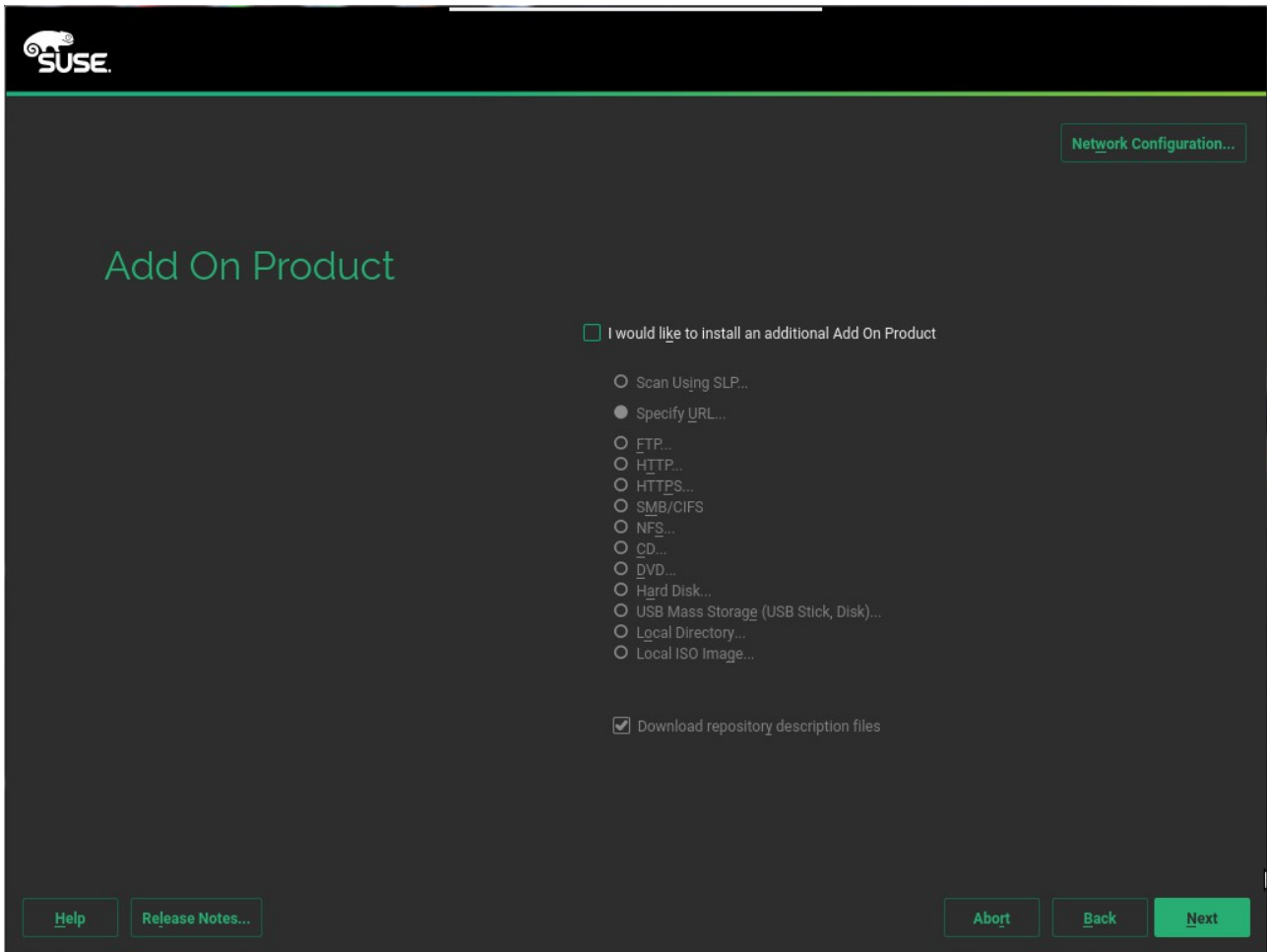
Register System via local SMT Server

Local Registration Server URL

Skip Registration

Help Release Notes... Abort Back Next

5). Add On Product.



6). System Role.

The screenshot shows a dark-themed window titled "System Role" with the SUSE logo in the top left. The main content area explains that System Roles are predefined use cases. Three options are listed, each with a radio button and a list of features:

- Default System**
  - GNOME environment, with Btrfs root (/) partition
  - Separate /home partition (XFS) for disks larger than 20GB
- KVM Virtualization Host**
  - Kernel-based hypervisor and tools
  - No separate /home partition
- Xen Virtualization Host**
  - Bare metal hypervisor and tools
  - No separate /home partition

At the bottom, there are five buttons: "Help", "Release Notes...", "Abort", "Back", and "Next".

7). Suggested Partitioning.

**Suggested Partitioning**

- Create swap volume /dev/sda1 (2.01 GiB)
- Create root volume /dev/sda2 (15.70 GiB) with btrfs
- Create volume /dev/sda3 (22.28 GiB) for /home with xfs
- Create subvolume @/boot/grub2/i386-pc on device /dev/sda2
- Create subvolume @/boot/grub2/x86\_64-efi on device /dev/sda2
- Create subvolume @/opt on device /dev/sda2
- Create subvolume @/srv on device /dev/sda2
- Create subvolume @/tmp on device /dev/sda2
- Create subvolume @/usr/local on device /dev/sda2
- Create subvolume @/var/cache on device /dev/sda2
- Create subvolume @/var/crash on device /dev/sda2
- Create subvolume @/var/lib/libvirt/images on device /dev/sda2 with option "no copy on write"
- Create subvolume @/var/lib/machines on device /dev/sda2
- Create subvolume @/var/lib/mailman on device /dev/sda2
- Create subvolume @/var/lib/mariadb on device /dev/sda2 with option "no copy on write"
- Create subvolume @/var/lib/mysql on device /dev/sda2 with option "no copy on write"
- Create subvolume @/var/lib/named on device /dev/sda2
- Create subvolume @/var/lib/pgsql on device /dev/sda2 with option "no copy on write"

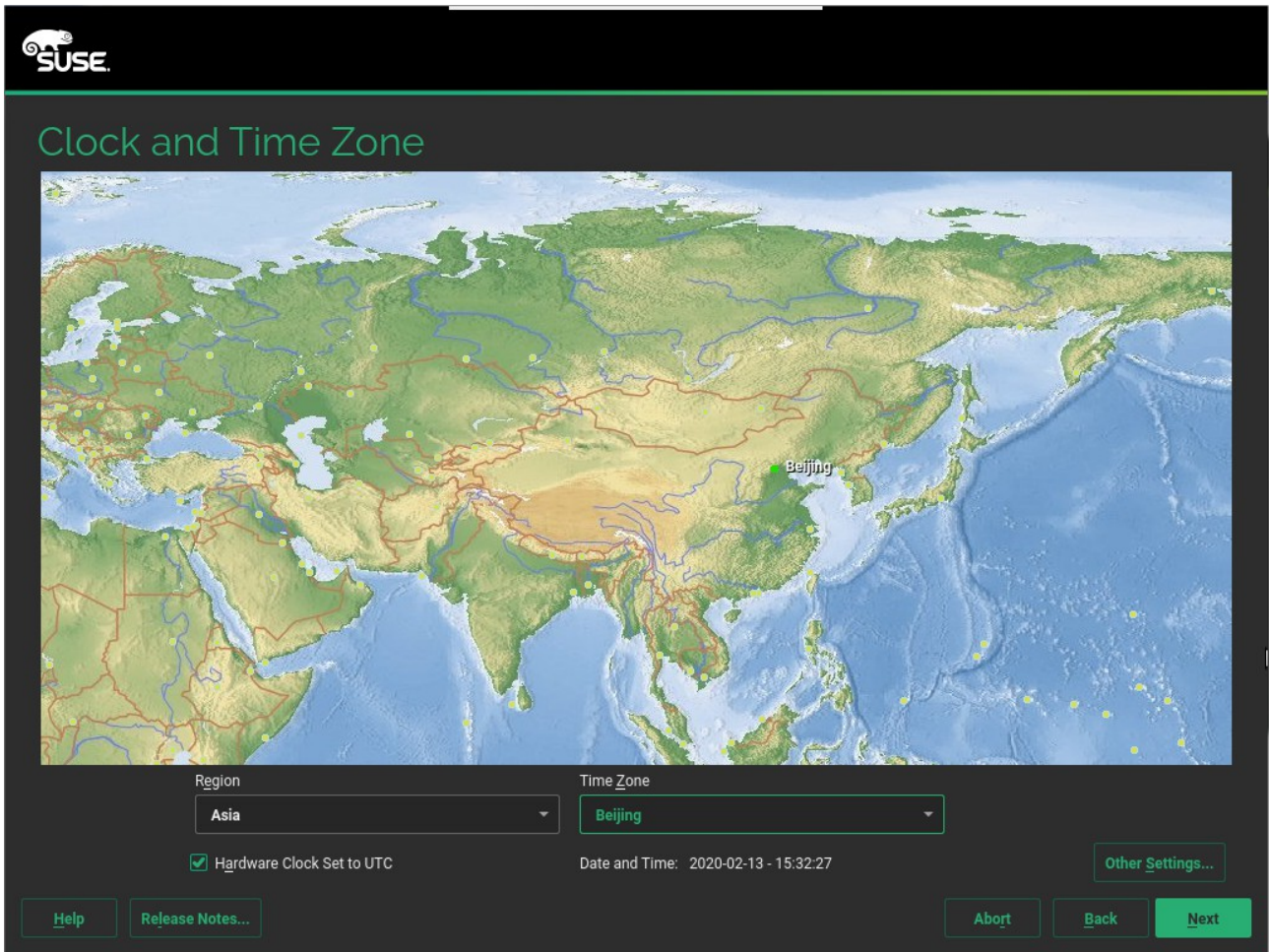
[Edit Proposal Settings](#)

[Create Partition Setup...](#)

[Expert Partitioner...](#)

[Help](#) [Release Notes...](#) [Abort](#) [Back](#) [Next](#)

8). Clock and Time Zone.



9). Local User

**SUSE**

## Local User

Create New User

User's Full Name  
novell

Username  
novell

Password  
•••••

Confirm Password  
•••••

Use this password for system administrator  
 Automatic Login

Skip User Creation

[Help](#) [Release Notes...](#) [Abort](#) [Back](#) [Next](#)



10). Installation Settings.

**SUSE**

# Installation Settings

Click a headline to make changes.

### Software

- Product: SUSE Linux Enterprise Server 12 SP5
- Patterns:
  - + Help and Support Documentation
  - + Base System
  - + AppArmor
  - + 32-Bit Runtime Environment
  - + Minimal System (Appliances)
  - + YaST2 configuration packages
  - + GNOME Desktop Environment
  - + X Window System
- Size of Packages to Install: 3.1 GiB
- Downloading from Remote Repositories: 874.7 MiB

### Booting

- Boot Loader Type: GRUB2
- Enable Trusted Boot: no
- Status Location: /dev/sda2 ("/")
- Change Location:
  - Do not install bootcode into MBR ([install](#))
  - Install bootcode into "/" partition ([do not install](#))

### Security

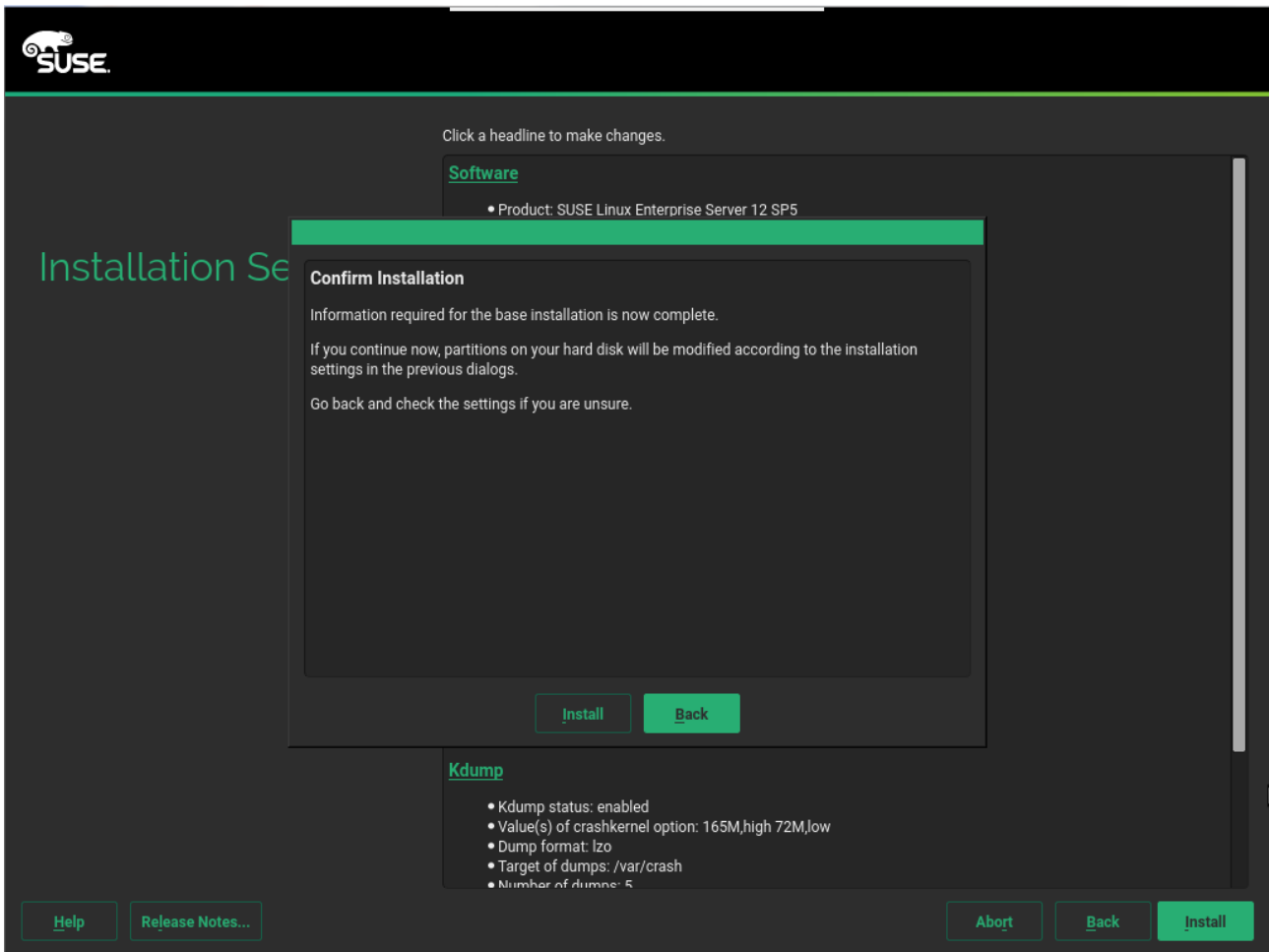
- CPU Mitigations: [Auto](#)
- Firewall will be disabled ([enable](#))
- SSH service will be enabled ([disable](#))

### Kdump

- Kdump status: enabled
- Value(s) of crashkernel option: 165M,high 72M,low
- Dump format: lzo
- Target of dumps: /var/crash
- Number of dumps: 5

[Help](#) [Release Notes...](#) [Abort](#) [Back](#) [Install](#)

11). Confirm Installation.



12). Performing Installation.

**Performing Installation**

**Details** | SLES12-SP5 Release Notes

Media	Remaining	Packages	Time
<b>Total</b>	<b>3.128 GiB</b>	<b>1665</b>	
SLES12-SP5-12.5-0 Medium 1	3.128 GiB	1665	

**Actions performed:**

- Installing apparmor-docs-2.8.2-51.18.3.noarch.rpm (installed size 411.8 KiB)
- Downloading boost-license1\_54\_0 (download size 17.9 KiB)
- Installing boost-license1\_54\_0-1.54.0-26.6.1.noarch.rpm (installed size 1.3 KiB)
- Downloading branding-SLE (download size 5.6 KiB)
- Installing branding-SLE-12-13.3.1.noarch.rpm (installed size 1.6 KiB)
- Downloading btrfsprogs-udev-rules (download size 58.6 KiB)
- Installing btrfsprogs-udev-rules-4.5.3-24.27.noarch.rpm (installed size 387 B)
- Downloading desktop-translations (download size 494.5 KiB)
- Installing desktop-translations-13.1-32.1.noarch.rpm (installed size 4.92 MiB)
- Downloading glibc-i18ndata (download size 3.18 MiB)
- Installing glibc-i18ndata-2.22-100.15.4.noarch.rpm (installed size 10.91 MiB)

Installing glibc-i18ndata-2.22-100.15.4.noarch.rpm (installed size 10.91 MiB)  
100%

Installing Packages... (Remaining: 3.128 GiB, 1665 packages)  
10%

[Help](#) [Abort](#) [Back](#) [Next](#)

Wait for the installation to finish.

13). After finish installing the SUSE Linux Enterprise Server 12 SP5 guest OS, return to the **Virtual Machines** pane, highlight the row for this virtual machine, and click **Edit**. The **Edit Virtual Machines** dialog box opens. Click the **Boot Options** tab on the sidebar of the dialog box to specify the boot sequence for the virtual device and then change **Network(PXE)** to **Hard Disk** from the **First Device** drop-down list.

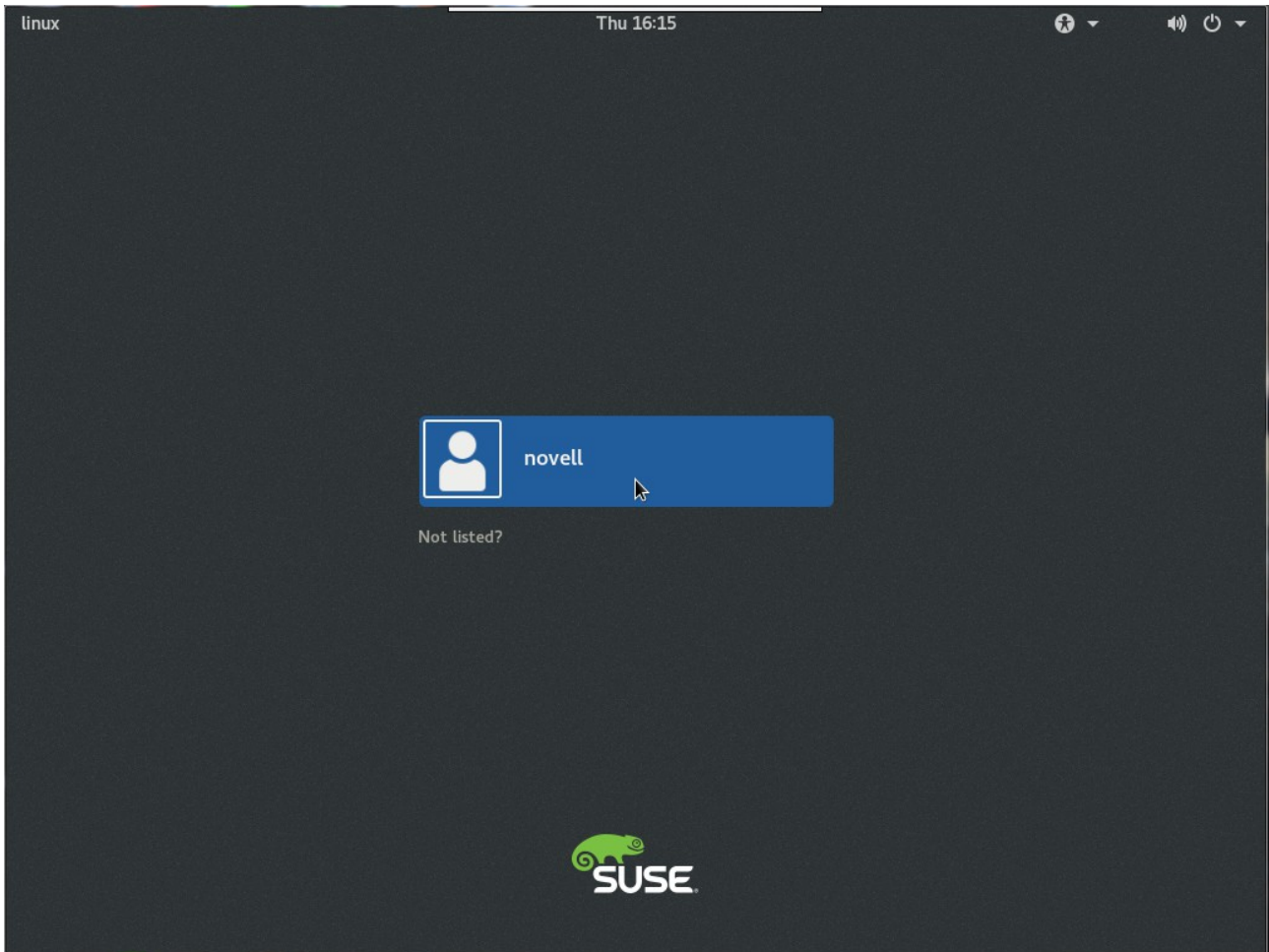
Edit Virtual Machine
✕

<b>General</b>	Cluster	SuSE_Test-Local <span style="float: right;">▼</span>
<b>System</b>		<i>Data Center: SuSE_Test-Local</i>
<b>Initial Run</b>	Template	Blank   (0) <span style="float: right;">▼</span>
<b>Console</b>	Operating System	SUSE Linux Enterprise Server 11+ <span style="float: right;">▼</span>
<b>Host</b>	Instance Type	Custom <span style="float: right;">▼</span>
<b>High Availability</b>	Optimized for	Server <span style="float: right;">▼</span>
<b>Resource Allocation</b>	<b>Boot Sequence:</b>	
<b>Boot Options</b> <span style="float: right;">&gt;</span>	First Device	Hard Disk <span style="float: right;">▼</span>
<b>Random Generator</b>	Second Device	[None] <span style="float: right;">▼</span>
<b>Custom Properties</b>	<input type="checkbox"/> Attach CD	SLE-15-SP1-Installer-DVD-x86_64-GM <span style="float: right;">▼</span> <span style="float: right;">↻</span>
<b>Icon</b>	<input checked="" type="checkbox"/> Enable menu to select boot device	
<b>Foreman/Satellite</b>	<b>Linux Boot Options:</b>	
<b>Affinity Labels</b>	kernel path	<input style="width: 100%;" type="text"/>
	initrd path	<input style="width: 100%;" type="text"/>
	kernel parameters	<input style="width: 100%;" type="text"/>

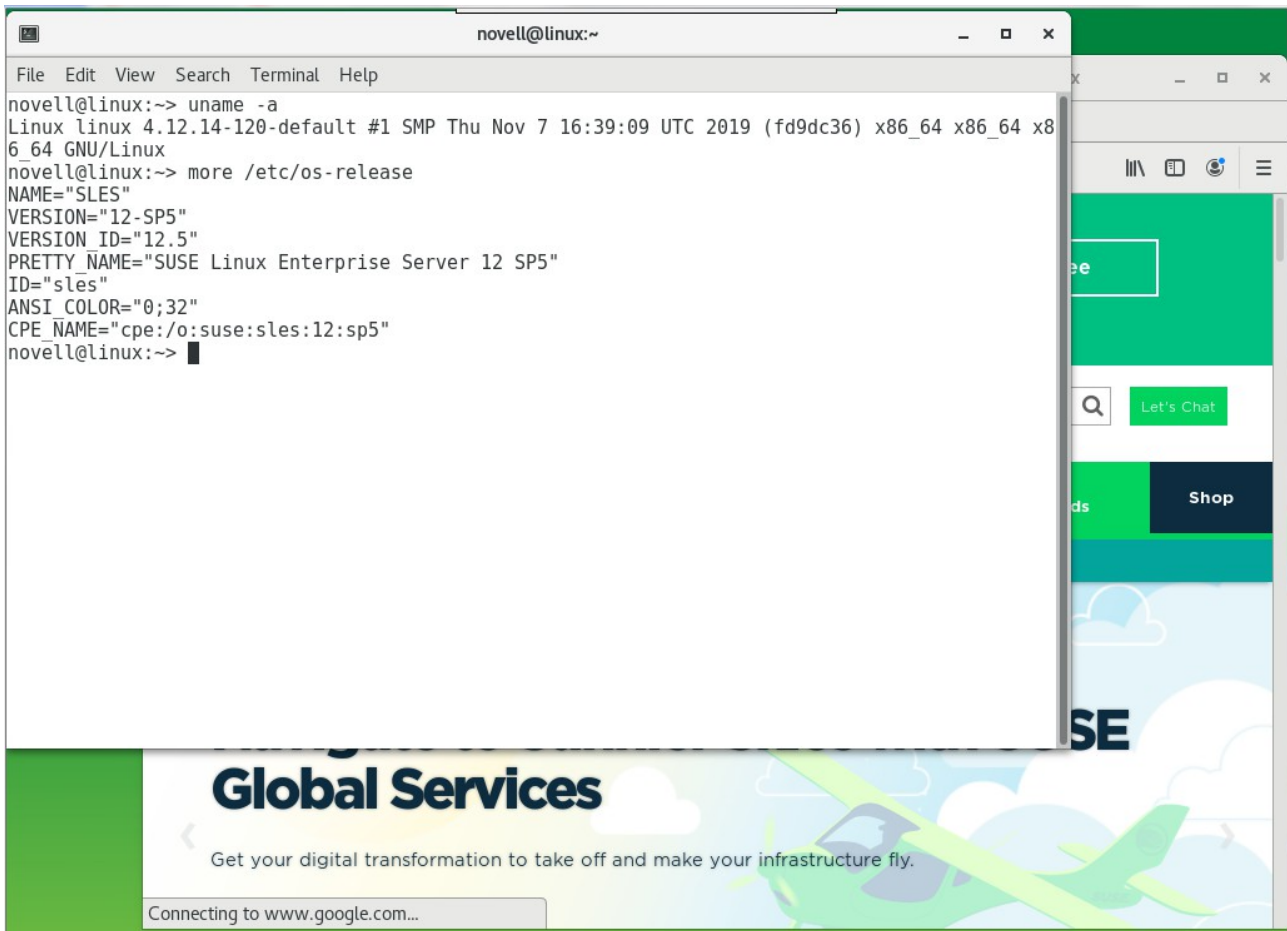
14). Run the virtual machine and start SLES12 SP5 guest OS.



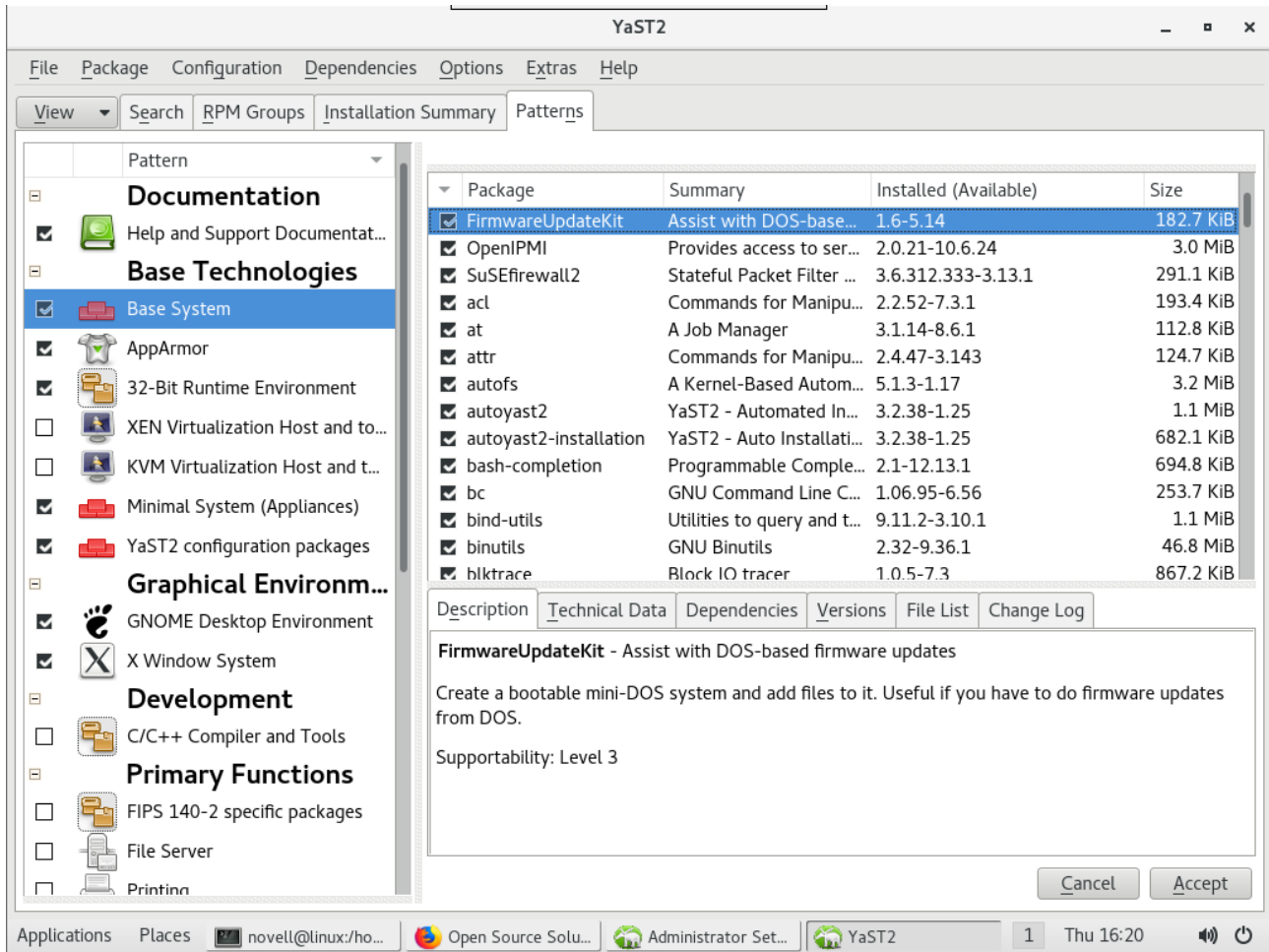
15). Logging into the system.



16). Check the OS release information and kernel version.

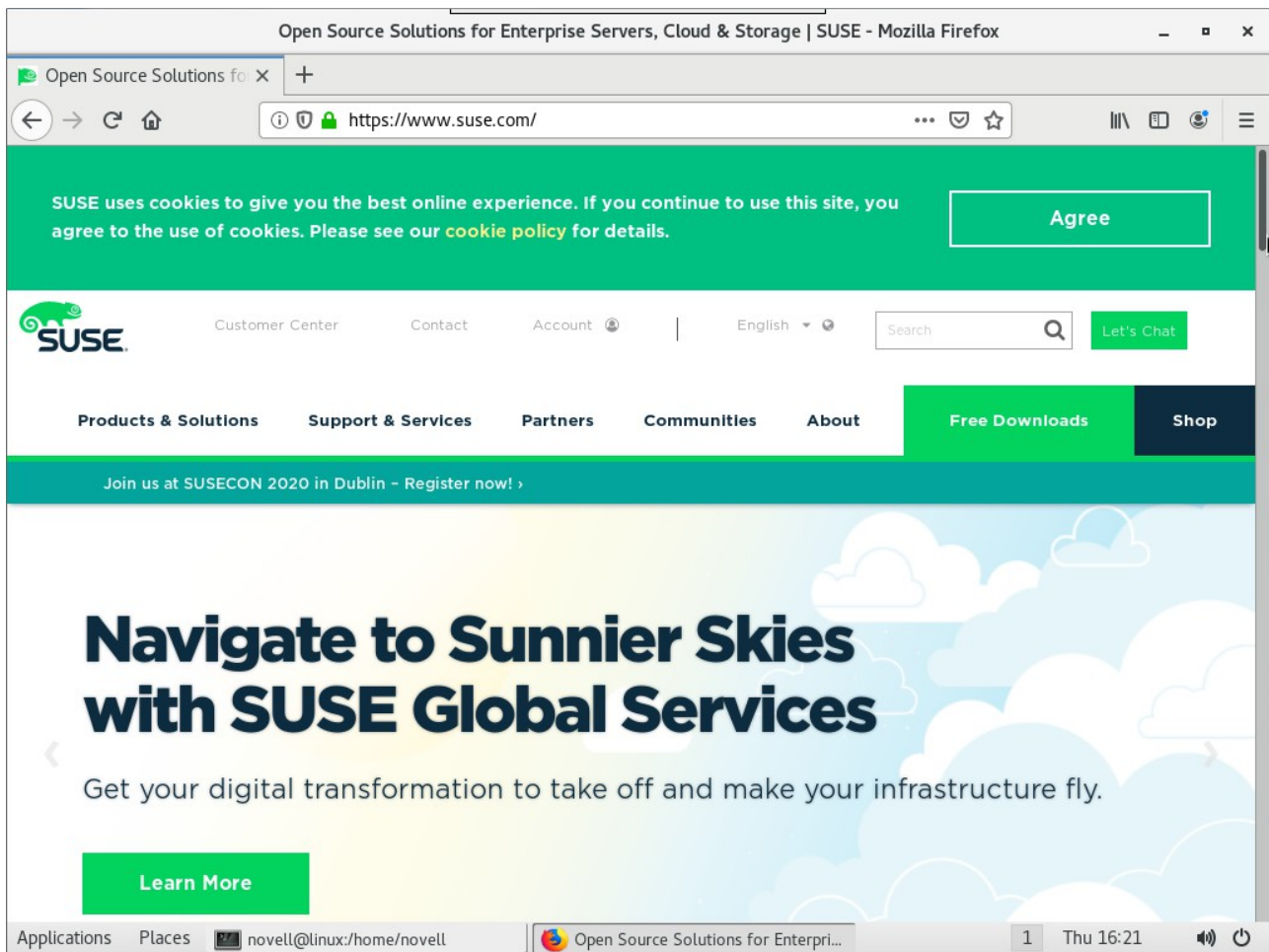


17). In Yast2, the Software Installed as shown below.





18). Open a browser and visit an external website.



**Thank you !**  
**SUSE ISV Engineering Team**  
**Feb 14th, 2020**  
<https://www.suse.com>