SuSE Linux Enterprise Server 15 SP1 on Oracle KVM

# SUSE Linux Enterprise Server 15 SP1 (x86-64) as guest os on Oracle KVM



# Introduction

This document provides details for installing SUSE Linux Enterprise Server 15 SP1 as a guest os on Oracle KVM. Details are provided for Intel(x86-64) versions of both Oracle KVM and SUSE Linux Enterprise Server 15 SP1. If you encounter issues or have general questions, please post your query to <u>suse-oracle@listx.novell.com</u>.

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

# **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 15 SP1 (x86-64) (http://download.suse.de/install)

### Oracle

• Oracle Linux 7 update 6(with Unbreakable Enterprise Kernel Release 5 Update 1 or later) (<u>https://edelivery.oracle.com</u>)

• Oracle Linux Virtualization Manager Release 4.2.8 package (<u>https://yum.oracle.com/repo/OracleLinux/OL7/ovirt42/x86\_64/ovirt-release42.rpm</u>)

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

#### 2. Logging in to the Administration Portal.

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



#### Screenshot: Viewing Dashboard

	Virtualization Manager				< ( ) ▪	≫ ≡° <b>≜</b> ° ∂∽ <b>≛</b> ∽
Dashboard	C O Last Updated 2/7/2020, 3:02:44	4 PM GMT+8				
i Commute	2 Data Centers	2 Clusters	🖵 1 Hosts	👼 1 Data Storage Domains	😨 1 Virtual Machines	13 Events
	<u>∧</u> 1 ⊙ 1	N/A	<b>⊙</b> 1	<b>⊙</b> 1	<b>⊙</b> 1	▶ 2 😣 5 🔥 6
🚠 Network >	Global Utilization					
Storage >	CPU		Memory		Storage	
	100% Available of 100%		23.9 Available of 30.8 GiB		82.0 Available of 99 GiB	
	Virtual resources - Committed: 33%,	Allocated: 33%	Virtual resources - Committed: 26	96, Allocated: 2696	Virtual resources - Committed: 6%, All- 	ocated: 40%
F Events	Q	% sed		6.8 Jib Used	17 Gib	,0 ised
					<u> </u>	
	Cluster Utilization				Storage Utilization	
	CPU		Memory		Storage	
						-

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

To install Oracle Linux KVM compute host, following the steps at: <u>https://docs.oracle.com/en/virtualization/oracle-linux-virtualization-manager/install/manager-install.html</u>.

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

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

#### Screenshot: VM General info

Edit Virtual Machine		×	
General >	Cluster	SuSE Test-Local	
System		Data Center: SuSE_Test-Local	
Initial Run	Template	Blank   (0) -	
Console	Operating System	SUSE Linux Enterprise Server 11+ V	
	Instance Type © 3	Custom 🗸	
Host	Optimized for	Server ~	
High Availability	Name	SLES15-SP1	
Resource Allocation	Description	SLES15-SP1 on Oracle KVM	
Boot Options	Comment		
Random Generator	VM ID 616a17fb-5c43-4e20-a64d-ddb4edfec421		
Custom Properties	Stateless Start in Pause Mode Delete Prot	ection	
lcon	Instance Images SLES15-SP1_Disk1: (10 GB) existing (boot) Edit		
Foreman/Satellite	SLES15-SP1_Disk2: (30 GB) existing		
Affinity Labels	Instantiate VM network interfaces by picking a vNIC profile.		
	nic1 ovirtmgmt/ovirtmgmt v	+ -	

### Screenshot: VM System info

Edit Virtual Machine				×
General	Cluster		SuSE_Test-Local	~
System >			Data Center: SuSE_Test-Local	
Initial Run	Template		Blank   (0)	~
	Operating System		SUSE Linux Enterprise Server 11+	~
Console	Instance Type	63	Custom	~
Host	Optimized for		Server	~
High Availability	Memory Size	63	8192 MB	
Resource Allocation	Maximum memory 🟮	83	8192 MB	
Boot Options	Total Virtual CPUs 🐧	63	2	
	Advanced Parameters			
Random Generator	Hardware Clock Time Offset ()		(GMT+00:00) GMT Standard Time	~
Custom Properties	Provide custom serial number policy ()			
Icon				
Foreman/Satellite				
Affinity Labels				

Edit Virtual Machine				>
General	Cluster		SuSE_Test-Local	~
System			Data Center: SuSE_Test-Local	
Initial Run	Template		Blank   (0)	~
	Operating System		SUSE Linux Enterprise Server 11+	~
Console	Instance Type	63	Custom	~
Host	Optimized for		Server	~
High Availability	Boot Sequence:			
Resource Allocation	First Device		CD-ROM	~
	Second Device		[None]	~
Boot Options	Attach CD		SLE-15-SP1-Installer-DVD-x86_64-GM ~	e
Random Generator	Enable menu to select boot device	Enable menu to select boot device		
Custom Properties	Linux Boot Options:			
	kernel path			
Icon	initrd path			
Foreman/Satellite	kernel parameters			
Affinity Labels				

#### Screenshot: VM Boot Options

The **Attach CD** check box is selected with the appropriate ISO file chosen from the drop-down list. For this example scenario, **SLE-15-SP1-Installer-DVD-x86\_64-GM-DVD1.iso** is selected.

### 6. Installing the SuSE Linux Enterprise Server 15 SP1(x86-64) Guest OS

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

	Virtualization Manager				R 🗞 🖻	<b>≜</b> ⁰
🖓 Dashboard	Compute > Virtual Machines					
📕 Compute >	Vms:	x ☆ ∨ Q New Edit	t Remove 🕨 Run 🗸 🕓 Suspend	d Shutdown - C Reboot -	Console v Migrate	Create Snapshot
The Network	Name Comment Host	IP Addresses FQDN CI	luster Data Center	Memory CPU Network	Graphics Status	Uptime Description
曼 Storage >		2	III		of the op	2 min SLEST J-SPT
🔅 Administration >						
🕨 Events						

SUSE.	SUSE Linux Enterprise 15 SP1
	Boot from Hard Disk
	Installation
	Upgrade
	More ►
Boot Optio	ns
F1 Help F2 Language F3 English (US)	Video Mode F4 Source F5 Kernel F6 Driver Default CD-ROM Default No

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

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



Workaround: Restart "libvirtd" service.



)

2). Installation steps – Language, Keyboard and Product Selection.

SUSE.		
Language, Keyboard and Product Selection	Language         English (US)         Product to Install         SUSE Linux Enterprise Server 15 SP1         SUSE Linux Enterprise High Performance Computing         SUSE Linux Enterprise Real Time 15 SP1         SUSE Linux Enterprise Real Time 15 SP1         SUSE Linux Enterprise Server for SAP Applications 15         SUSE Linux Enterprise Desktop 15 SP1         SUSE Linux Enterprise Pesktop 15 SP1         SUSE Manager Server 4.0         SUSE Manager Proxy 4.0         SUSE Manager Retail Branch Server 4.0	Keyboard Layout English (US) ~ Keyboard Test 15 SP1 3 SP1
Help		Abo <u>r</u> t <u>B</u> ack <u>N</u> ext

## 3) SUSE Linux Enterprise Server 15 SP1 License Agreement.

SUSE.	
SUSE Linux Enterprise Server 15 SP1 License Agreement	Language English (US) SUSE® Linux Enterprise End User License Agreement for the following SUSE products: SUSE Linux Enterprise Server 15 SP1 SUSE Linux Enterprise Server for SAP Applications 15 SP1 SUSE Linux Enterprise Server for SAP Applications 15 SP1 SUSE Linux Enterprise Desktop 15 SP1 SUSE Linux Enterprise Desktop 15 SP1 SUSE Linux Enterprise Live Patching 15 SP1 SUSE Manager Proxy 4 SUSE Manager Retail Branch Server 4 PLEASE READ THIS AGREEMENT CAREFULLY. BY PURCHASING, INSTALLING, DOWNLOADING OR OTHERWISE USING THE SOFTWARE (INCLUDING ITS COMPONENTS), YOU AGREE TO THE TERMS OF THIS AGREEMENT. IF YOU DO NOT AGREE WITH THESE TERMS, YOU ARE NOT PERMITTED TO DOWNLOAD, INSTALL OR USE THE SOFTWARE TO OBTAIN A REFUND. AN INDIVIDUAL ACTING ON BEHALF OF AN ENTITY REPRESENTS THAT HE OR SHE HAS THE AUTHORITY TO ENTER INTO THIS AGREEMENT ON BEHALF OF THAT ENTITY. This End User License Agreement ("Agreement") is a legal agreement between YOU (an entity or a person) and SUSE LLC ("Licensor"). The software products identified in the title of this Agreement for which You have acquired Licenses, any media or reproductions (physical or virtual) and accompanying documentation (collectively the "Software") is protected by the copyright laws and treaties of the United States ("U.S.") and other countries and is subject to the terms of this Agreement. If the lows of Your principal place of business require contracts to be in the local language to be enforceable, such local language version may be obtained from licensor upon written
Help	request and shall be deemed to govern Your purchase of licenses to the Sefturce Any add on extension undate mobile application module ✓ I Agree to the License Terms. Abort Back Next

### 4). Registration.

SUSE.		
		Network Configuration
Registration		
	SUSE Linux Enterprise Server 15 SP1	
	Please select your preferred method of registration.	
	Register System via scc.suse.com	
	E- <u>m</u> ail Address	
	<ul> <li>Register System via local SMT Server</li> </ul>	
	Local Registration Server URL           https://smt.example.com	
	Skip Registration	
Help	Abo <u>r</u> t	<u>B</u> ack <u>Next</u>

### 5). Add On Product.

SUSE.		
		Network Configuration
Add On Product		
	I would like to install an additional Add On Product	
	<ul> <li>Scan Using SLP</li> <li>Specify URL</li> <li>FTP</li> <li>HTTPS</li> <li>MHTPS</li> <li>SMB/CIFS</li> <li>NFS</li> <li>QDU</li> <li>DVD</li> <li>Hard Disk</li> <li>USB Mass Storage (USB Stick, Disk)</li> <li>Local Directory</li> <li>Local ISO Image</li> </ul>	
	☑ Download repository description files	1
Неір	Abo <u>r</u> t	Back Next

#### 6). Suggested Partitioning.



### 7). Clock and Time Zone.



### 8). Local User

SUSE	
Local User	
	User's Euli Name
	novell
	Username
	novell
	Password
	Confirm Password
	•••••
	Use this password for system administrator
	Automatic Login
	O Skip User Creation
Help Release Notes	Abo <u>r</u> t <u>B</u> ack <u>Next</u>

## 9). Installation Settings.

SUSE.				
	Click a headline to make changes.			
Installation Settings	Software   Product: SUSE Linux Enterprise Server 15 SP1 Patterns: Minimal Base System Size of Packages to Install: 1.1 GiB Booting  Boot Loader Type: GRUB2 Enable Trusted Boot: no Status Location: /dev/sdb1 (/boot) Change Location: Do not install bootcode into MBR (install) Install boot code into a partition with /boot (do not install) Install boot code into a partition with /boot (do not install)			
	Security         • CPU Mitigations: Auto         • Firewall will be disabled (enable)         • SSH service will be enabled (disable)         Network Configuration         • Configured with DHCP: eth0         • Hostname: Set by DHCP         Kdump         • Kdump status: enabled         • Value(s) of crashkernel option: 165M,high 72M,low         • Dump format: Izo         • Target of dumps: /var/crash         • Number of dumps: 5			
	Default systemd target			
Help Release Notes	• lext mode	Abort	<u>B</u> ack	Install

### 10). Confirm Installation.

SUSE			
	Click a headline to make changes.		
	<u>Software</u>		- U
	Product: SUSE Linux Enterprise Server 15 SP1		- U
Installation Se	Confirm Installation		- 1
	Information required for the base installation is now complete.		- U
	If you continue now, partitions on your hard disk will be modified according to the installation settings in the previous dialogs.		- U
	Go back and check the settings if you are unsure.		- U
			- 1
			- U
			- U
			- U
			- U
			- U
			- U
	<u>Install</u>		- U
	value(3) of dashkerner option, room, ngn 72m, ow     Dump format: Izo     Target of dumps: /var/crash     Number of dumps: 5		- U
	Default systemd target		
	• Text mode		
Help Release Notes		Abo <u>r</u> t	Install

### 11). Performing Installation.

SUSE.						
	<u>D</u> etails	SLES15-SP1 Release Notes				
Performing Installation	MediaRemainingPackagesTimeTotal1.110 GIB292SLES15-SP1-15.1-01.110 GIB292Medium 11.110 GIB292					
	Actions performed: Installing boost-license1_66_0-1.66.0-3.10.noarch.rpm (in Installing branding-SLE-15-12.48.noarch.rpm (installed siz Installing branding-SLE-15-12.48.noarch.rpm (installed siz Installing busybox-static-1.26.2-2.20.x86_64.rpm (installed Installing racklib-dict-full-2.8.12-1.22.x86_64.rpm (installed Installing file-magic-5.32-7.51.noarch.rpm (installed size Installing kbd-legacy-2.0.4-8.3.1.noarch.rpm (installed size Installing libnl-config-3.3.0-1.29.noarch.rpm (installed size Installing libnl-config-3.3.0-1.29.noarch.rpm (installed size Installing libnl-config-3.3.0-1.29.noarch.rpm (installed Installing publicsuffix-20180312-1.15.noarch.rpm (installed	nstalled size 1.3 KiB) ze 1.6 KiB) stalled size 387 B) d size 2.04 MiB) led size 10.46 MiB) 5.64 MiB) e 517 KiB) e 2.6 KiB) led size 2.2 KiB) ed size 2.59.5 KiB)				
	Installing publicsuffix-20180312-1.15.noarch.rpm (installe	ed size 259.5 KiB) 10%				
	Installing Packages (Remaining: 1.110 GiB, 292 package					
Help		Abo <u>r</u> t <u>B</u> ack <u>N</u> ext				

Wait for the installation to finish.

12). After finish installing the SUSE Linux Enterprise Server 15 SP1 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 CD-ROM to Hard Disk from the First Device drop-down list. The Attach CD check box is also selected, chosen SLE-15-SP1-Packages-x86\_64-GM-DVD1.iso from the drop-down list.

Edit Virtual Machine				×	
General	Cluster		SuSE_Test-Local	~	
System		Data Center: SuSE_Test-Local			
Initial Run	Template		Blank   (0)	~	
Console	Operating System		SUSE Linux Enterprise Server 11+	~	
	Instance Type	63	Custom	~	
Host	Optimized for		Server	~	
High Availability	Boot Sequence:				
Resource Allocation	First Device		Hard Disk	~	
Boot Options >	Second Device		CD-ROM	~	
Random Generator	<ul> <li>Reached</li> <li>Enable menu to select boot device</li> </ul>		SLE-15-5P1-Packages-x86_64-GM-DVI ×	2	
Custom Properties	Linux Boot Options:				
Icon	kernel path				
	initrd path				
Foreman/Satellite	kernel parameters				
Affinity Labels					

13). Run the virtual machine and start SLES15 SP1 guest OS.



14). After logging into the system, install the required packages.



Loading repository data... Reading installed packages.

S I <u>+</u>	Name	Summary	l Type +
1	32bit	32-Bit Runtime Environment	l pattern
1	Amazon_Web_Services	Amazon Web Services - All	l pattern
1	Amazon_Web_Services_Instance_Init	Amazon Web Services - Instance Initialization	l pattern
I	Amazon_Web_Services_Instance_Tools	Amazon Web Services - Instance Tools	l pattern
1	Amazon_Web_Services_Tools	Amazon Web Services - Tools	l pattern
- 1	Google_Cloud_Platform	Google Cloud Platform – All	l pattern
- 1	Google_Cloud_Platform_Instance_Init	Google Cloud Platform - Instance Initialization	l pattern
1	Google_Cloud_Platform_Instance_Tools	Google Cloud Platform - Instance Tools	l pattern
1	Google_Cloud_Platform_Tools	Google Cloud Platform – Tools	l pattern
1	Microsoft_Azure	Microsoft Azure – All	l pattern
I	Microsoft_Azure_Instance_Init	Microsoft Azure – Instance Initialization	l pattern
I	Microsoft_Azure_Instance_Tools	Microsoft Azure - Instance Tools	l pattern
I	Microsoft_Azure_Tools	Microsoft Azure – Tools	l pattern
I	OpenStack	OpenStack – All	l pattern
1	OpenStack_Instance_Init	OpenStack - Instance Initialization	l pattern
1	OpenStack_Instance_Tools	OpenStack – Instance Tools	l pattern
1	OpenStack_Tools	OpenStack - Tools	l pattern
i I	apparmor	AppArmor	l pattern
i+	base	Minimal Base System	l pattern
I	books	Documentation	l pattern
1	devel_basis	Base Development	l pattern
1	devel_kernel	Linux Kernel Development	l pattern
1	devel_yast	YaST Development	l pattern
1	dhcp_dns_server	DHCP and DNS Server	l pattern
I	directory_server	Directory Server (LDAP)	l pattern
I	documentation	Help and Support Documentation	l pattern
i I	enhanced_base	Enhanced Base System	l pattern
1	file_server	File Server	l pattern
1	fips	FIPS 140-2 specific packages	l pattern
i I	fonts	Fonts	l pattern
1	gateway_server	Internet Gateway	l pattern
1	gnome	GNOME Desktop Environment (Wayland)	l pattern
i+	gnome_basic	GNOME Desktop Environment (Basic)	l pattern
i+ I	gnome_×11	GNOME Desktop Environment (X11)	l pattern
1	ĥa_geo	GEO Clustering for High Availability	l pattern
1	ha_sles	High Availability	l pattern
1	hpc_compute_node	HPC Basic Compute Node	pattern
1	hpc_development_node	HPC Development Packages	l pattern
i	hpc libraries	HPC modularized Libraries	l pattern
i	hpc workload server	HPC Workload Manager	l pattern
i	imaging	Graphics	pattern
i	kum seruer	KUM Host Server	Inattern
			Parecern

15). Start the GUI, then check the OS release information and kernel version.



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

Acti File	vities 🔝	YaST2 - sw_single @ 192 <del>-</del>	Ya	root ST2	Fri 14 @192:~ — YaST2 -	:48 sw_single @ 192		×		ڻ ×
192 Run	<u>F</u> ile <u>P</u> ack	age Configuration <u>D</u> ependencies <u>C</u> Search Installation Summary P	options atterns	E <u>x</u>	tras <u>H</u> elp Package Gro	oups				
	View       Search       Installation Summary       Pattern         Pattern       Graphical Environments         GNOME Desktop Environment (Basic)       GNOME Desktop Environment (Wayland         GNOME Desktop Environment (X11)       Fonts         X Window System       Desktop Functions         Multimedia       Office Software         Graphics       Technical Writing         Base Technologies       Gasta		nd)	Package Groups         Package       S         reactificates-mozilla       S         ca-certificates-mozilla       S         chrony       S         cronie       S         cronie       S         grub2       B         y openssh       S         patterns-base-base       F         polkit       F         polkit       F         polkit-default-privs       S		SummaryInstalled (AvailaSLE Brand File15-12.48CA certificates for2.30-4.9.1System Clock Sync3.2-9.6.1Auxiliary package4.2-4.45Cron Daemon1.5.1-4.45Bootloader with su2.02-24.12Keyboard and Font2.0.4-8.3.1Secure Shell Client7.9p1-4.7Minimal Base System20171206-35.2PolicyKit Authorizat0.114-3.6.1SUSE PolicyKit defa13.2-16.10Utilities to Manage4.6-1.31		Size 1.6 KiB 282.1 KiB 442.4 KiB 181 B 248.6 KiB 21.5 MiB 4.2 MiB 5.5 MiB 5.5 MiB 5.8 B 335.5 KiB 95.9 KiB 3.1 MiB		
		Enhanced Base System XEN Virtualization Host and tools KVM Virtualization Host and tools AppArmor 32-Bit Runtime Environment Laptop YaST System Administration Software Management SAP BusinessOne Server Base SAP HANA Server Base SAP NetWeaver Server Base SAP NetWeaver Server Base Server Functions	Ţ	D br Th ins Su	shim escription anding-SLE is package o itallation of pportability	Technical Data - SLE Brand File contains the file /er correct vendor bra : unknown	UEFI shim loader Dependencies <u>V</u> tc/SUSE-brand, and it and packages.	15+git47-1.5 ersions File List ts name is used as <u>Cancel</u>	3.6 MiE	B v pr

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



Thank you ! SUSE ISV Engineering Team Feb 7th, 2020 https://www.suse.com