

SUSE YES System Certification Kit 9.0

SUSE Linux Enterprise – KVM Test Suite



Legal Notices

SUSE LLC., makes no representations or warranties with respect to the contents or use of this documentation, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, SUSE LLC., reserves the right to revise this publication and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes.

Further, SUSE LLC., makes no representations or warranties with respect to any software, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, SUSE LLC., reserves the right to make changes to any and all parts of SUSE software, at any time, without any obligation to notify any person or entity of such changes.

Any products or technical information provided under this Agreement may be subject to U.S. export controls and the trade laws of other countries. You agree to comply with all export control regulations and to obtain any required licenses or classification to export, re-export, or import deliverables. You agree not to export or re-export to entities on the current U.S. export exclusion lists or to any embargoed or terrorist countries as specified in the U.S. Export laws. You agree to not use deliverables for prohibited nuclear, missile, or chemical biological weaponry end uses. Please refer to <https://www.suse.com/company/legal/> for more information on exporting SUSE software. SUSE assumes no responsibility for your failure to obtain any necessary export approvals.

All files provided in this release are subject to the License Agreement, which can be found in the license.txt file provided in the System Certification Test Kit download.

SUSE LLC., has intellectual property rights relating to technology embodied in the product that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at <https://www.suse.com/company/legal/> and one or more additional patents or pending patent applications in the U.S. and in other countries.

Copyright © 2018 – 2024 SUSE LLC and contributors. All rights reserved SUSE LLC.

Publication Date: March 4, 2024

1221 South Valley Grove Way, Valley Grove II | Suite 500, Pleasant Grove, UT, 84062 USA

www.SUSE.com

Online Documentation: To access the online documentation for this and other SUSE products, and to get updates, see <https://www.suse.com/documentation/>

Online SUSE Developer Services Program Guide Documentation: To access the online SUSE Developer Services Program Guide, see https://www.suse.com/docrep/documents/h4mylk7uec/suse_developer_services_pg.pdf

Trademarks

For a list of SUSE trademarks, see (<https://www.suse.com/company/legal/>).

All third-party trademarks are the property of their respective owners.



About This Guide

The KVM Virtualization Yes Certification Test Kit for SUSE® Linux contains a procedure manual and all test tools necessary to test the SUSE® products used in the SUSE Yes Certified™ system certification process. The manual explains how to install the software and set up hardware and software configurations.

Audience

This manual is intended for users who have experience with computers, networking, Linux, and Microsoft Windows.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please contact your SUSE partner contact for feedback.

Documentation Updates

For the most recent version of the System Test Tools and documentation, visit System Test Tools for SUSE LINUX <https://www.suse.com/partners/ihv/yes/system-test-tools-for-suse-linux.html>

Additional Information

For more Information on YES Certification, see:

SUSE YES Certified Program <https://www.suse.com/partners/ihv/yes/>

Partner Resources <https://www.suse.com/partners/become-partner/>

Documentation Conventions

A trademark symbol (®, ™, etc.) denotes a SUSE trademark. An asterisk (*) denotes a third-party trademark.



LEGAL NOTICES	2
TRADEMARKS	2
ABOUT THIS GUIDE	3
1 CONFIGURING SUT HOST FOR KVM GUESTS	5
1.1 KVM TEST PROJECT SETUP	5
1.2 INSTALL HYPERVISOR AND TOOLS.....	6
1.3 ENABLE IOMMU ON VM HOST SERVER (SUT)	6
1.4 MVM GUEST INSTALLS.....	6
1.5 MANUAL VM INSTALL.....	7
2 SETUP WINDOWS VM.....	9
2.1 PREPARING FOR WINDOWS GUEST VM	9
2.2 INSTALLING WINDOWS GUEST VM	9
2.3 CONFIGURE WINDOWS GUEST VM	10
3 PRE-TESTING AND PREPARATION	12
3.1 CONFIGURE GUEST VM FOR SR-IOV	13
3.2 CONFIGURE GUEST VM FOR PCI-PASSTHROUGH	14
3.3 OPTICAL DRIVE CONFIGURATION.....	14
4 SET UP TEST SUITE	16
4.1 INSTALL TEST KIT ON SLES GUESTS.....	16
4.2 VERIFY VM GUEST SETUPS	16
5 MULTIPLE VM (MVM) STRESS TESTS	18
5.1 SELECTING AND CONFIGURING OPTIONAL TESTS.....	18
5.2 RUNNING MVM STRESS TESTS	18
6 VM MAX CONFIG (VMM) TEST SUITE.....	20
6.1 SET UP VM MAX CONFIG (VMM) ENVIRONMENT.....	20
6.2 VM MAX (VMM) STRESS TESTS	20
7 GENERATING AND UPLOADING TEST RESULTS	22
7.1 CREATING THE BULLETIN SUBMISSION FILE	22
7.2 SUBMITTING THE BULLETIN SUBMISSION FILE INTO SBS	23
7.3 MOVE SUBMISSION FROM OPEN TO REVIEW STATE	23
8 REVISION HISTORY	24

1 Configuring SUT Host for KVM Guests

Use this test suite to certify systems with SLES running the KVM hypervisor, acting as a virtualization host. This release of the documentation has been tested and reviewed using latest SLES 15 release, Service Pack 6 (SP6).

Note: If the base OS is not installed, refer to the **Server Extended SCK** documentation for installation instructions. Remote access to the TC and SUT systems is not supported.

1.1 KVM Test Project Setup

1. On the TC, start TestConsole and click **New** to create a new project.
2. Choose either the **Virtualization-Full** or **Virtualization-Reduced** test project.

Note: Choose **Virtualization-Reduced** if the SUT has a base certification with the same OS. Choose **Virtualization-Full** if no matching base certification has been performed.

3. Click **Select**.
4. Edit the default project file name to give it a unique name and click **Save**.

Note: Do not use spaces, control characters or html specific characters in the project name. The filename character size limit is 58 characters.

5. Change IP Addresses of the SUT and TC if needed.
6. If planning to test with a Windows guest VM, then
 - a. Click **Enable Windows Testing**.
 - b. Change the Windows IP Address if needed.
7. Expand the **SUT Install Tests** folder.
8. Double-click **Install Kit on SUT**.
 - a. On the TC, in the xterm window, follow the prompts from the install script.
 - b. When prompted type in the password for the SUT, **suse**, then press <Enter>.
 - c. If needed, acknowledge any warnings.
 - d. Review network configuration, make any necessary changes and then type **C** and press <Enter> to continue.
 - e. When completed, press <Enter> to exit.
9. Double-click **SUT SCK Version Check** and let it run to completion before continuing.



10. Click **Enable VM Tests**.
11. Under the **Multiple VM (MVM) Configuration Tests** folder, select the number of guests to be installed. **Enable 3 SLE VMs** is the default. If installing a Windows guest, it is in addition to the number SLE VMs selected. A minimum of 3 VMs total (SLE + Windows) is required.

1.2 Install Hypervisor and Tools

Note: Verify, and if needed enable, processor virtualization support in the system BIOS or Firmware.

1. On the SUT, open a Terminal and type **yast2 virtualization** <Enter>
2. Check **KVM Server** and **KVM Tools** and click **Accept**.
3. Choose **Yes** to the question "Configure a default network bridge?"
4. Click **OK** to close the dialog window stating that KVM components are installed.

1.3 Enable IOMMU on VM Host Server (SUT)

Note: Verify that support for IOMMU and SR-IOV, if supported, is enabled in the system BIOS or Firmware.

1. (Intel Only) Add **intel_iommu=on** to the optional kernel command line parameters.
 - a. On the SUT, open a Terminal and type **yast2 bootloader** <Enter>.
 - b. Select the **Kernel Parameters** tab and append to the optional kernel command line parameters **intel_iommu=on** and then click **OK**.
 - c. Reboot the system for changes to take effect.

1.4 MVM Guest Installs

1. If manually installing VM guests, skip to section **1.5 Manual VM Install**
2. In TestConsole, expand **MVM Guest Install**.
3. Double-click **Install x SLES VMs**.
4. On the SUT, type **C** and press <Enter> to continue VM installation.
5. On the TC, press <Enter> as prompted.



Note: The **Install x SLES VMs** test will fail if the KVM hypervisor and tools were not previously installed (section 1.2). If VM install fails, re-run the script, or perform a manual installation on the failed VM.

6. If you're going to be testing with a Windows guest, then proceed to section **2 Setup Windows VM**, else proceed to section **3 Pre-Testing and Preparation**.

1.5 Manual VM Install

Optionally you can manually install the SLES VMs instead of using the automated install (see section **1.4 MVM Guest Installs**) method. This method should only be done if you are very familiar with the installation and configuration of the SLES VMs as used in the certification process.

1. On the SUT, open a Terminal and type **virt-manager** <Enter>
2. Double-click **QEMU/KVM - Not Connected on Virtual Machine Manager**.
3. Click the Monitor icon to create a new virtual machine, or from the **File** menu choose **New Virtual Machine**.

Note: All KVM VM guests are fully virtualized

4. Select the install method for your VM guest. This documentation is going to use the network install method and use an installation source from our TestConsole.
5. Select **Network Install (HTTP, HTTPS, or FTP)**, then click **Forward**.
6. Provide the install URL, in our setup that is going to be: ftp://10.1.1.2/SLE-15-SP6-Full-x86_64-GM-Media1, now click **Forward**.
7. Change the Memory (RAM) and CPUs to the desired values, then click **Forward**.

Note: Combined Guest VMs memory should equal ~80 percent of total host memory. Over commit CPUs by assigning more total vCPUs than SUT physical CPUs.

8. Increase the disk image size for VM to 40 GB or more, then click **Forward**.
9. If desired, change the VM name, e.g., vm2-sles15sp6 or vm4-sles12sp5.
10. Click on **Network selection** and select **Bridge device...**, then enter the bridge **Device name:**, for example **br0** or **br1**. In our setup that would be the bridge device associated with the 10.1.1.0/24 network.
11. Start the installation by clicking **Finish**.



For instructions walking you through the installation of SLES, please refer to the **Server_Extended_SCK** document, specifically chapter **4 Manually Installing SLES**. There are sections specifically for installing SLES 12 and 15.

Repeat this process for additional VM guests.



2 Setup Windows VM

If planning to test with a Windows Server guest VM, then continue with section 2. If you do not intend to test with a Windows Server guest VM then ignore this section and proceed to section **3 Pre-Testing and Preparation**.

2.1 Preparing for Windows Guest VM

To install and configure a Windows guest VM for testing, you will need to download the following:

1. Windows Installation Media (.ISO file)
2. SUSE Linux Enterprise Virtual Machine Driver Pack (.EXE file)

The Windows installation media needs to be copied to the SUT. The SUSE Linux Enterprise Virtual Machine Driver Pack (VMDP) can be downloaded from here:

<https://www.suse.com/download/suse-vmvp/>

Download the self-extracting executable (.EXE file) version of the Virtual Machine Driver Pack. Copy the file to the TC system and move it to the **/opt/suse** directory.

Note: The current release of the Virtual Machine Driver Pack is version 2.5.. The filename to download is **VMDP-WIN-2.5.4.2.exe**.

Note: Please also refer to the TestConsole SCK document for additional details about setting up the TestConsole system for Windows VM Testing.

2.2 Installing Windows Guest VM

1. Open **Virtual Machine Manager**.
2. Click on the **Create a New Virtual Machine** computer icon.
3. Choose **Local Install Media (ISO Image or CDROM)** and click **Forward**.
4. Click **Browse**.
5. Click **Browse Local** (bottom of window).
6. Browse to the Windows ISO file and double-click to open.
7. If needed, uncheck "Automatically detect..." then select OS type windows, then select windows version or similar windows version and click **Forward**.
8. Set the RAM and CPU settings to match the SLES VMs and click **Forward**.
9. Set the Disk Image size to at least 40 GB (Microsoft recommends 55GB) & click **Forward**.



10. Select "Network Selection" for the windows VM. Use an available adapter/bridge device. Make sure this network adapter is connected to the same network segment as the Windows IP address configured in TestConsole.
11. Click **Finish**. When VM opens, click **View** → **Resize to VM**.
12. When you install Windows Server using the setup wizard, you will be asked to **Select the operating system you want to install**, and get to choose between Server Core or Server with Desktop Experience. For our testing we require that you select a **Desktop Experience** option.
13. When installation is complete, click **Send Key** → **Ctrl + Alt + Delete** and log in.
14. Click the Light Bulb icon → NIC... and verify that desired bridge device is selected.

2.3 Configure Windows Guest VM

1. Once logged into the Windows guest, wait for the Server Manager Dashboard to load.
2. Click **Local Server** from the dashboard.
3. Disable all firewalls.
 - a. In Server Manager → Local Server
 - b. Click **Microsoft Defender Firewall: Public On**.
 - c. Disable all firewalls (Domain, Private and Public) by selecting each one and changing the radio button to **Off**.
4. Refresh and verify that all Firewall rules are disabled.
5. Open File Explorer
6. In File Explorer, right-click **Network**, then choose **Map Network Drive**
7. Select Drive **T:** from the dropdown window.

Note: By default, the Windows guest should have booted up with the network interface configured for DHCP and should have a 10.1.1.X address. A static IP address will be configured later for the Windows guest.

8. Type `\\10.1.1.2\windir\` then select **Connect using different credentials** and click **Finish**.
9. Enter the TC username **root** and password **suse** and click **OK**.
10. Double-click the **VMDP-WIN-2.5.4.2.exe** to self-extract.
11. Open the **VMDP-WIN-2.5.4.2** folder.
12. Double-click **setup.exe** then click **Run**.
13. Accept the agreement, click **Next**.
14. Answer **No** at the **Restart Now** prompt.
15. Shutdown the system, not restart, by clicking on the **Start** button, select **Power** and then select **Shut down**. Choose the reason for shut down and click **Continue**.
16. Once the Windows guest is stopped, click the light bulb icon (show virtual hardware details) or from the **View** menu select **Details**.



17. Select the **NIC :XX:XX:XX** device and change the **Device name:** to match the correct bridge device and also change the **Device model:** to **virtio**. If necessary, also change the **Device name:** to match the physical network bridge device that will be used.
18. Click Apply to save the change.
19. Power on the Windows guest.
20. Press **Ctrl-Alt-Delete** or select **Send Key** → **Ctrl + Alt + Delete** and log in.
21. In Server Manager → Local Server, click on the **Ethernet Instance X**, this will bring up a Network Connections windows showing the virtual ethernet device.
22. Verify that the ethernet device/instance lists **"SUSE Network Driver for Windows"**.
This validates that the VMDP drivers were installed and are being used.
23. Right click on the Ethernet Instance and select **Properties**
24. Click on **Internet Protocol Version 4 (TCP/IPv4)** → **Properties**.
25. Click on **Use the following IP address**.
26. Enter the IP address for the Windows VM (e.g. 10.1.1.15).

Note: If the windows IP address is not 10.1.1.15, the VM5 IP address may need to be changed in the test project. After changing the windows IP address, save the test project.

27. Enter "255.255.255.0" for the Subnet mask.
28. Enter <IP Address of Host Bridge Device> for the default gateway (ex. 10.1.1.1 or 10.1.4.1).
29. Click **OK**.
30. If prompted with a dialog stating that the IP address entered is assigned another adapter that is no longer present and asks if you want to remove the static IP configuration for the absent adapter? Click **Yes**.
31. Close the **Ethernet Properties** window.
32. If prompted to search for network devices, click **No**.
33. Shutdown the Windows guest.

3 Pre-Testing and Preparation

One VM guest needs to be configured to use SR-IOV or PCI Passthrough for the guest networking. SR-IOV is preferred but if not supported then configure PCI Passthrough.

Note: Depending on the number of network interfaces on the SUT, it's expected that each VM is running on a separate network interface/segment (e.g. 10.1.1.0/24 for VM1, 10.1.2.0/24 for VM2, 10.1.3.0/24 for VM3, 10.1.4.0/24 for VM4, ...) unless there are more guest VMs than network interfaces on the SUT. In that case, split the guest VMs as evenly as possible across the network interfaces, except for the network interface that is dedicated for SR-IOV or PCI Passthrough.

Note: For this documentation and all example, VM2 and the 10.1.2.0/24 network segment is going to be used for SR-IOV or PCI passthrough setup.

1. Configure all guest VMs with a static IP address, except for VM2. VM2 is the guest that will be setup and configured with an SR-IOV or PCI passthrough device.
 - a. On the SUT, go to the **Virtual Machine Manager**. If not open, type **virt-manager** <Enter> at a terminal prompt.
 - b. For each VM, except VM2, make sure the virtual network hardware is configured to use the correct physical network bridge device (e.g. br0, br1, ...) to match the network segment the VM guest will be configured to use.
 - i. Double click the VM and then select the light bulb icon (show virtual hardware details)
 - ii. Select the **NIC :XX:XX:XX** device and change, if necessary, the **Device name:** value to match the physical network bridge device that will be used.
 - iii. Click **Apply** to save the change.
 - iv. In the guest VM, open a terminal and type **yast2 lan** <ENTER> and configure the virtual network device with a static IP address.
 - v. Test network connectivity from the guest VM to the TC using ping. (e.g. **ping -c3 10.1.1.2** or **ping -c3 10.1.3.2** or **ping -c3 10.1.4.2**)
 - vi. Repeat steps for each VM, except VM2.
2. Shutdown all guest VMs before proceeding.
3. If the SUT doesn't support SR-IOV, then proceed to section **3.2 Configure Guest VM for PCI-Passthrough**.



3.1 Configure Guest VM for SR-IOV

1. On the SUT, execute the script for configuring SR-IOV. Open a terminal and type **/opt/suse/testKits/system/bin/sriov_setup** <Enter>.
 - a. Type **Y** <Enter> when prompted to **Load VFIO drivers?**.
 - b. Type the number of the physical network interface that has been selected to use for SR-IOV, for example **2** <ENTER>.
 - c. When prompted, confirm the interface selection or change if needed.
 - d. After the network driver has been reloaded, with support for virtual functions, you will see a listing of all network interfaces (physical and virtual). Type the number of the virtual function interface that will be assigned to VM2. For example **6** <ENTER>.
 - e. When prompted, confirm the interface selection or change if needed.
 - f. A listing of all VM guest on the host is now listed, type the number of the VM guest where the SR-IOV virtual function (VF) device will be attached. This should normally be the 2nd SLES VM guest (VM2).
 - g. When prompted, confirm the VM guest or change if needed.
 - h. When prompted to pass another VF to a guest type **N** <ENTER>.
2. On the SUT, go to the **Virtual Machine Manager**. If not open, type **virt-manager** <Enter> at a terminal prompt.
3. If no VMs are show in the **Virtual Machine Manager** window, double click on **QEMU/KVM – Not Connected**.
4. Double click on “VM2”, the guest VM where the SR-IOV virtual function interface was connected. Click on the light bulb button (Show virtual hardware details) in the top left of the window.
5. Remove the **NIC :XX:XX:XX** device. If there are two **NIC :XX:XX:XX** device already present, choose the device that has **Network source: Bridge device...** and remove. There should then be only one **NIC :XX:XX:XX** device left and it should be a **Network source: Hostdev** device.
6. Click the play button to start VM2 then click the monitor button to display the console and then login once the guest VM is up.
7. In the guest VM, open a terminal and type **yast2 lan** <ENTER> and configure the **virtual function** interface with a static IP address on the 10.1.2.0/24 network segment. If there is a second network interface, delete this orphaned device. Click **OK** to save the configuration and restart the guests networking.
8. Test network connectivity from the guest VM2 to the TC using ping. (e.g. **ping -c3 10.1.2.2**).
9. Start all guest VMs.
10. If using a Windows VM, follow the following steps:
 - a. Open **File Explorer**, click on **This PC** and double-click and open **Drive T:**, logging in as **root** with password **suse**. If prompted.
 - b. Double click the following file: **T:\testKits\system\bin\XpClient.bat**.



- c. Click **Run** and verify that TCLink launches with the IP address of the VM Adapter (10.1.1.15) displayed. This should match the **Windows IP Address** in TestConsole.
11. If the SUT has an optical drive, proceed to section **3.3 Optical Drive Configuration**, otherwise skip to section **4 Set Up Test Suite**.

Note: Type **sriov_setup -help** for more information about additional utility functionality offered by the script.

3.2 Configure Guest VM for PCI-Passthrough

1. If Certifying a SLES 12 or a SLES 15 host:
 - a. On the SUT, open a terminal and type **/opt/suse/testKits/system/bin/sriov_setup -p** <Enter>.
 - b. Setup SR-IOV on the adapter using the 10.1.2.x adapter & network segment.
 - c. When prompted for the VM, enter the entire name (ex. 3-SLE-12-SP5-Server-x86_64-GM-Media1)
2. When PCI-Passthrough setup is completed, go to the Virtual Machine Manager (if not open, type "virt-manager" at a terminal command line)
3. Double-click the VM and then select the light bulb icon.
 - a. Select NIC :xx:xx:xx adapter and click Remove and click Yes.
 - i. Start VM2 and log in
 - ii. Open a terminal and type "yast2 lan" <Enter>
 - iii. Configure the PCI-Passthrough adapter with 10.1.2.x address and exit yast.
 - b. Start all other VM guests.
4. If the NIC is passed-through manually (without using sriov_setup script) then the tester will need to manually create file /tmp/pci_pass_nic.log with the mac address of the NIC passed-through on the hypervisor host.
5. Start all guests VMs.
6. If using a Windows VM, follow the following steps:
 - a. Open **File Explorer**, click on **This PC** and double-click and open **Drive T:**, logging in as **root** with password **suse**. If prompted.
 - b. Double click the following file: **T:\testKits\system\bin\XpClient.bat**.
 - c. Click **Run** and verify that TCLink launches with the IP address of the VM Adapter (10.1.1.15) displayed. This should match the **Windows IP Address** in TestConsole.
7. If the SUT has an optical drive, proceed to section **3.3 Optical Drive Configuration**, otherwise skip to section **4 Set Up Test Suite**.

3.3 Optical Drive Configuration

1. Insert readable optical media into the SUT optical drive.
2. Using **Virtual Machine Manager**, shut down guest VM2.



3. Click on **View** → **Details** on VM2.
4. Click on the **Add Hardware** button.
5. Ensure that **Storage** is selected in the left hardware screen listing.
6. Click on the radio button next to **Select or create custom storage**.
7. In the text field next to the **Manage...** button type **/dev/sr0**.
8. Click the drop down next to the device type, select **CDROM device** and click **Finish**.
9. The cdrom device will be displayed in the left window. Click **View** → **Console**.
10. Click the play button to start guest VM2.



4 Set Up Test Suite

4.1 Install Test Kit on SLES Guests

1. Verify that all VMs have been started on the SUT host.
2. Verify that the TC can ping all VM guests. If there is a failure to ping a VM guest, this needs to be corrected before continuing to test. Failure to verify this can be the cause of further test failures.
3. In TestConsole, double-click **MVM System Cert Kit (SCK) Installs** then click **Continue**.

Note: Install Kit will be run on all guests simultaneously.

4. If prompted, on the TC, enter the root password for each VM guest, **suse**.
5. On the TC, an xterm window will be started that shows the install progress. If it seems to be stopped, review the messages, and interact with the install as needed. Sometimes the install gets stuck trying to remove repos and it prompts for interaction.

Note: Warning: a pop-up may occur on VM guest instead of the TestConsole; if the install is not proceeding, open the VM guest and check for pop-ups, if the pop-up is on the VM guest, follow steps on VM.

6. Follow prompts, verify VM IP addresses, press **C** to continue.
7. Press <Enter> in each terminal window when prompted to complete each test.

Note: If the Install Kit to VMs test fails, because it's not correctly identifying the IP addresses for each VM guest. Make sure to verify the TC can ping each VM guest. It might also be necessary to delete the following file on the TC.

```
TC:/opt/suse/testKits/system/configs # rm ip-vms-10.1.1.1
```

4.2 Verify VM Guest Setups

8. In TestConsole, double-click **Verify MVM Setups** to verify Time Synchronization, SR-IOV or PCI Passthrough and CPU Over-Commit and click **Continue**.
9. Double-click **SUT Component Check Test (5min)**.
10. Click **Yes** on the **Open Edit Product/Report** popup window.



11. Important: Click the **Edit Product/Report** button to open the Product & Report Information window.
12. Fill in all hardware Device/Driver and BIOS/Firmware information under each tab that matches the SUT.

Note: Any changes made to SUT (hardware, drivers, BIOS/firmware updates) after this test is run will remove any tests previously run. Make sure this information is complete and accurate prior to running any tests past the Component Check!

13. When all information has been entered, click **OK** then **Save** to save the test project.



5 Multiple VM (MVM) Stress Tests

5.1 Selecting and Configuring Optional Tests

There are two optional tests that can be selected if desired for the MVM stress testing. By default, they are not selected, but you can choose to select them individually if desired.

First, the **Hard Disk/RAID Test MVM (optional)**. By selecting this test, all SLES VM guest disks will be tested which adds additional load to the SUT and VM guests during the MVM stress tests.

Second, the **USB Test VM2 (optional)**. This test requires additional setup and configuration of the SLES VM2 guest. A USB storage device, preferably an SSD or HDD, will need to be passed through from the SUT to the VM2 guest and then the device must be mounted in the VM2 guest. Follow these steps for proper configuration of VM2.

1. Using **Virtual Machine Manager**
2. Double click VM2 and then select the light bulb icon (show virtual hardware details)
3. Click on the **Add Hardware** button.
4. Ensure that **USB Host Device** is selected in the left hardware screen listing.
5. Select the USB storage device that you have chosen to pass through to the VM guest. Once selected click the **Finish** button.
6. Verify that the USB storage device is present in the VM guest and that it's mounted.

5.2 Running MVM Stress Tests

After you have set up the test configuration, and selected any optional tests you are ready to begin the MVM stress tests.

1. Under the MVM Stress Test group, verify that all appropriate tests are enabled.
2. Double-click **MVM Stress Tests**.
3. Click **Continue** and run test suite to completion before proceeding.
4. After stress testing has completed, verify that no tests received a **FAIL** test result before continuing.

Note: A **FAIL** test result indicates that the tested configuration has failed the testing requirements. There are many possible reasons. This may be due to improper configuration or steps missed during installation, setup, or testing. Please refer to the **Server_Extended_SCK** documentation, section **3 SLES Tests**, for troubleshooting tips.



5. In TestConsole, when stress tests have finished, double-click **Get MVM Test Logs** and run to completion. This gathers the logs for each of the MVM guests.
6. In **Virtual Machine Manager**, shutdown all MVM guests.
 - a. Right click on each VM and select **Shut Down -> Shut Down**
7. **Save** the Test Project, to save testing progress.



6 VM Max Config (VMM) Test Suite

The VMM test suite should be run after the MVM Test suite.

6.1 Set Up VM Max Config (VMM) Environment

1. In TestConsole, expand **VMM SLES Guest Install**.
2. Double-click **Install 1 SLES VMM**.
3. On the SUT, type **C** and press <Enter> to continue VM installation.
4. When the VMM creation is complete, press <Enter> in the **install_vm** pop-up terminal window.

Note: The pop-up window may be behind the VM on the desktop.

5. On the TC, press <Enter> in the **installVm** pop-up window to exit.

Note: Host and Guest OS Maximums apply.

6. In TestConsole, double-click **VMM SCK Install** then click **Continue**.
7. If prompted, on the TC, enter the root password for the VM guest, **suse**.
8. On the TC, an **InstallSle.sh** terminal window will be started that shows the install progress. If it seems to be stopped, review the messages, and interact with the install as needed. Sometimes the install gets stuck trying to remove repos and it prompts for interaction.
9. On the TC, an **sck_install.sh** terminal window will show progress.
10. Follow prompts, verify VM IP address, press **C** to continue.
11. Press <Enter> to exit the installation script when prompted.
12. In TestConsole, double-click **Verify Time Sync Setup VMM**.

Note: When running the Reduced Test project, MVM and VMM test times are reduced to one hour however, large configs may take longer to complete.

6.2 VM Max (VMM) Stress Tests

1. Double-Click **VMM Stress Tests** then click **Continue**.
2. After stress testing has completed, verify that no tests received a FAIL test result before continuing.



3. In TestConsole, when stress tests have finished, double-click **Get VMM Config Test Logs** then **Continue**. This gathers the logs from the VMM guest.
4. Double-click **Get SUT Test Logs** to gather all logs for a submission.



7 Generating and Uploading Test Results

We refer to the test results .zip file as the bulletin submission file. The bulletin submission file is used to create the YES Certification Bulletin in the SUSE Bulletin System (SBS). The steps in this section will create the bulletin submission (.zip) file which you will read into SBS to create the YES Certification Bulletin.

7.1 Creating the Bulletin Submission File

1. Open the project file. If the project file is already opened, skip to step 2.

Note: If the project file is already open and you have just completed the tests, save the project before creating the bulletin submission (.zip) file.

- a. Click the **TestConsole** icon on the desktop
 - b. Click **Project > Open Test Project > Existing**.
 - c. Select the appropriate project
 - d. Click **Select** to open the project.
2. Create the bulletin submission (.zip) file.
 - a. Click **Edit Product/Report**.
 - b. Click **Report**.

Important: If the Report Error window appears, continue to step 3. If not, proceed to step 4.

3. Report errors.
 - a. Click on the **x** in the upper right corner of the Report Error window to close the window.
 - b. Click **Verify**.
 - c. Click an exception in the scroll window.
 - d. Click **Edit Explanation**.
 - e. Enter the explanation.
 - f. Click **OK** in the explain exception window.
 - g. Repeat steps c through f until all unresolved exceptions are explained.
 - h. Click **OK** in the Exception Information window.
 - i. Click **Report**. If the screen appears stuck, then click on the terminal screen at the bottom then click back inside the screen.
4. Complete the creation of bulletin submission (.zip) file.
 - a. We recommend keeping the existing project filename; however another filename can be used.



Note: Do not put spaces in the file name.

- b. Click **Save** to generate the bulletin submission (.zip) file.
- c. Click **Finish** or **View Report Summary** to view the reported information in a browser.
- d. If a browser window is opened to view the **Report Summary**, then close it.
- e. Click **OK** to exit the Product and Report Information window.
5. Copy the bulletin submission (.zip) file from the /opt/suse/testKits/system/results directory to a USB Flash drive or CD or Network. For example: if copying the bulletin submission (.zip) file to a USB thumb drive, at a terminal prompt on TC type:
cp <bulletin submission (.zip) file> /media/usb<Tab> <Enter>.

7.2 Submitting the Bulletin Submission File into SBS

We use a database called the SUSE Bulletin System (SBS) to generate and manage the SUSE Yes Certification Bulletins. The steps below will help you to read the bulletin submission .zip file into SBS and begin the bulletin creation process.

1. Open the SUSE Bulletin System (SBS) by pointing a web browser to:
<https://www.suse.com/nbswebapp/yesCert.jsp>
2. Login into SBS.
3. Read the bulletin submission file (.zip) into SBS.
 - a. Click on **New Submission**, then browse to your bulletin submission file (.zip).
 - b. Click **Upload**. The bulletin is now in the SBS system. There is still work to do on the bulletin submission while in SBS.

7.3 Move Submission from Open to Review State

1. Verify the product name is correct at the top of the summary.
2. Verify that the Product Description is correct.
3. Verify the Tested Configuration.
4. Add Configuration Notes as needed from our existing configuration notes.
5. Verify the Adapters and Drivers section is accurate.
6. Move the submission to Review state.

Note: For additional information, please refer to the **SBS Users Guide** and review section **2 Bulletin State and Instructions**.



8 Revision History

Date	Description
March 2024	Updated for SLE 15 SP6 and SCK 9.0 release.
June 2023	Updated for SLE 15 SP5 and SCK 8.8 release.
June 2022	Updated for SLE 15 SP4 and SCK 8.7 release. Major review and cleanup of doc. Migrated to new template.
September 2021	Added workaround for Windows VM on SLE 15 SP3
June 2021	Updated for SLE 15 SP3 and SCK 8.6 release.
May 2020	Updated for SLE 15 SP2 release. Migrated to new template.
January 2020	Updated copyright
October 2019	Updated NIC Verify. Added NIC Setup and WE Install.
February 2019	Updated in preparation for 8.3 SCK
November 2018	Additional updates during beta and RC test cycles.
September 2018	Updated in preparation for SLES 12 SP4 and the 8.2 SCK.
July 2018	First release of this document.