SUSE
YES Certified

System Test Kit

Policies

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Hardware Component Exchange Guide

Low level components are an integral part of any system and/or motherboard. These components include BIOS, CPUs, memory, adapters, etc. When a component is changed in a system configuration, the resulting configuration may still be YES CERTIFIED based on the criteria listed below and the issuance of a new bulletin. For some changes, re-certification is required. In cases where no additional testing is required for a changed configuration, a new bulletin will be issued reflecting the change.

The following table defines configurations, which, while different from the exact configuration indicated on the bulletin are certified or will require re-certification. This information applies to YES CERTIFIED with SUSE LINUX.

Component	Change	Required Action	Eligible for reduced YES CERTIFIED Testing
Mainboard			
	Revision (BIOS/system firmware compatible)	~Contact SUSE	~Contact SUSE
	Major BIOS / Firmware Changes	Re-certify	Yes
	Minor BIOS / Firmware Changes	~Contact SUSE	~Contact SUSE
	Any change which requires soldering	Re-certify	No
CPU			
	Speed Increase	*Certified	N/A
	Speed Decrease	*Certified	N/A
	Family / Model	Re-certify	Yes
	Change the number of CPUs (original and new number of CPUs must be more than one)	*Certified	N/A
	Change the number of cores (original and new number of cores must be more than one)	*Certified	N/A
	One CPU to multiple CPUs or multiple CPUs to one CPU	Re-certify	Yes
	Multiple CPUs to one CPU	*Certified	N/A
Memory			
Memory SLE 11 (i386)	Any change between 512MB and 16GB	*Certified	N/A
	Any change crossing 16GB boundary	Re-certify	No
	Any change between 16GB and 64GB	Re-certify	No
Memory SLE (x86_64)	Any change between 512MB and 512GB	*Certified	N/A
	Any change crossing above 512GB boundary	Re-certify	No
	Any increase between 512GB and 64TB	Re-certify	No

Component	Change	Required Action	Eligible for reduced YES CERTIFIED Testing
	Any decrease from highest tested configuration	*Certified	N/A
Memory Other Architecture		~Contact SUSE	~Contact SUSE
Network Card			
	Adapter / Driver	Re-certify	Yes
	Increase number of NICs	Re-certify	Yes
	Decrease number of NICs	*Certified	N/A
	Speed increase (Adapter/Driver remain same)	Re-certify	Yes
Storage (HBA)			
	Adapter / Driver	Re-certify	Yes
	Increase the number of HBAs	Re-certify	Yes
	Decrease the number of HBAs	*Certified	N/A
Hard Drives			
	RAID Level / Manufacturer / Model	*Certified	N/A
	Quantity (if RAID Controller present or no RAID)	*Certified	N/A
	Driver change (example: SATA hard disk w/ ahci driver → PCIe SSD w/ nvme driver)	Re-certify	Yes
Graphics / Video Card			
	Qty. - exact same Adapter and exact same Driver	*Certified	N/A
	Qty. - Adapter and Driver changed	Re-certify	Yes
	Manufacturer or Model using same exact Driver	Re-certify	Yes
	Manufacturer/Model and Driver changed (non embedded)	Re-certify	Yes
Chassis	Type (e.g. Tower, Rack Mount vs other) – Subject to motherboard policy	*Certified	N/A

Component: The part of a system, when changed may require re-certification.

Change: This column indicates which part in a system is being changed from the original Yes Certification bulletin tested configuration.

Required Action: This column indicates what action is required to attain YES CERTIFIED status.

Eligible for Reduced YES CERTIFIED Testing: Whether a change is covered by reduced testing.

Re-certify: Indicates certification tests need to be successfully completed again due to the configuration change.

*Certified: The new system configuration created by the change is still certified but a new 3C bulletin must be issued that reflects the change.

~Contact SUSE: The partner needs to be at a DS250 level contract or higher.

3C Policy for SUSE YES CERTIFICATIONS

3C Policy Introduction:

The SUSE YES CERTIFIED mark is widely respected in the industry and represents compatibility of SUSE's products with third party products. A comprehensive list of products with the YES CERTIFIED mark is of great value for SUSE, our partners, our customers, and our end users. The objective of 3C is to increase the quantity of YES CERTIFIED products while maintaining the quality of the mark.

3C is a program whereby additional systems may become YES CERTIFIED with no additional testing. This process is carefully managed by this policy, which dictates the rules for creating additional YES CERTIFIED products according to the 3C policy.

3C is defined as creating another bulletin from an already Yes Certified system that has an existing Yes Certification bulletin. Yes Certified refers to a computer system that has successfully passed all Yes Certification testing on a particular SUSE OS kernel using the appropriate system Yes Certification test suite.

3C is the ability to create new YES CERTIFIED bulletins that adhere to hardware component exchange guide. As is the case with all YES certifications, SUSE approval for these new 3C bulletins is required.

The 3C can also be used to create new YES CERTIFIED bulletins for changes in the product name, the company name (for OEMed systems), or the product description.

3C Policy Details:
I. GENERAL RULES

1. No new items may be added to the list of "Operating Systems" and "Other Products" on a 3C child bulletin that was not listed on the parent bulletin.

2. In order for any system to be Yes Certified, it must be supported by the vendor who distributes it.

3. Hardware components may be removed from the configuration. For example, if the parent bulletin included three LAN adapters, a child bulletin can be created which only includes two of the three LAN adapters.

4. If a component is exchanged, it must be a one for one exchange of a like component. For example, if a host bus adapter is removed from the Tested Configuration section of a parent bulletin, another comparable host bus adapter must take its place on the child bulletin. Replacement adapters must have the same type of interface (e.g. exchange an IDE HBA for an IDE HBA, exchange a SCSI HBA for a SCSI HBA, exchange a RAID HBA for a RAID HBA, exchange a SATA HBA for a SATA HBA, exchange a gigabit NIC for a gigabit NIC, etc.). Note that the bus interface of removed and replaced adapters does not need to be the same. If the exchanged component uses a different driver than the driver (name or date or version) listed on the parent bulletin, retesting is required but the change may be eligible for reduced testing (see hardware component exchange guide for more details).

II. EXCHANGING COMPONENTS

The following are based on the hardware component exchange guide. To obtain a new bulletin once a system has been certified with a specified operating system, kernel, service pack, and architecture, a LAN or storage component in the system may be exchanged for another component based on the hardware component exchange guide and under the following conditions:

1. No additional components may be introduced into the configuration on the bulletin. For example, if a certified configuration exists with only one host bus adapter, you may not simply add another host bus adapter to the configuration. Instead, you must remove the original host bus adapter and replace it with a new host bus adapter.   This applies to add on cards. Embedded devices cannot be exchanged, changing embedded devices constitutes a motherboard/mainboard change.

2. Exchanged components must be already tested with the same operating system, service pack, kernel, and architecture as the original hardware.

3. CPU, as long as the exchanged CPU is in the same family and has the same number of cores as the original CPU in the parent bulletin.

4. Any number of CPUs more than one (that the system supports) may be listed, if the configuration of the parent bulletin has more than one CPU.

5. Hard disk drive – see hardware component exchange guide.

6. CD-ROM / DVD-ROM – see hardware component exchange guide.

7. Changing the amount of physical RAM memory in a system – see hardware component exchange guide.

8. Audio adapter – see hardware component exchange guide.

9. Video adapter – see hardware component exchange guide.

III. OTHER CHANGES THAT CAN BE MADE

To obtain a new bulletin once a system has been certified with a specific operating system, service pack, and architecture, the following bulletin fields may also be changed, either with or without other hardware configuration changes:

1. Company name, if a system is being OEM'ed. Note that the original equipment manufacturer must initiate the 3C process in SBS rather than the company that is reselling the OEM'ed system.

2. Product name. Note that this does not indicate a hardware configuration change, but rather a renaming of the system.

3. Product description.

Note that if other changes are made to a system configuration beyond what is specified in the 3C Policy Details above, then a 3C bulletin cannot be done. In order for the system to be YES CERTIFIED the system will need to be certification tested. In many cases a reduced test suite may be used rather than the full test suite. See the "Component Exchange Guide" for details.

IV. 3C Policy for SES YES Certified Cluster

1. A new 3C SES Cluster bulletin can be created after one or more of the nodes listed in the bulletin have been 3Ced in accordance with the rules listed in this YES 3C policy. The child 3C SES cluster bulletin may be composed completely of 3C children bulletins, or a combination of parent and children bulletins as needed (and approved) by the hardware partner.

2. Changes in Hard Drive RAID Level / Manufacturer / Model / Firmware version require re-certification of the SES cluster.   Since this type of change does not require base re-certification per the YES 3C policy, only the SES cluster re-certification is needed.

3. An SES cluster re-certification is required if any nodes listed in an existing SES cluster bulletin require re-certification per YES 3C policy.

4. An SES cluster re-certification is required when a new version of SES is released. For example, you cannot 3C a SES 5 bulletin to a SES 6 bulletin.

Procedure for requesting a 3C bulletin

Once the policy conditions have been met, the SUSE partner that originally certified the system may open a new bulletin submission in the SBS database. The 3C creation instructions are available in detail in the SBS documentation.

1. Go to https://www.suse.com/nbswebapp/yesCert.jsp and click on "Create 3C Bulletin."

2. Enter the bulletin number of the parent bulletin. Note that only originally tested bulletins may be used as parents for 3C child bulletins. You may not create a 3C bulletin that is a "child of a child."

3. Enter the changes that are requested for the child bulletin, and click submit.

4. SUSE will review the 3C bulletin submission. If all requirements have been met, SUSE will place the submission in the SBS Final Customer Review state, from which the partner or SUSE may issue the bulletin. If the requirements have not been met, SUSE may reject the bulletin request. If issues are not resolved in a timely manner, the submission will be deleted from the database.

3C FAQ:

What is the advantage of 3C to SUSE's partners?

Additional supported system configurations can receive YES CERTIFIED bulletins with less effort.

What is the advantage of 3C to SUSE's customers and end users?

An increased availability of compatible products that are YES CERTIFIED for customers and end users.

As it relates to 3C, what are parent and child bulletins?

A parent bulletin is a bulletin for which full certification testing was completed. A child bulletin is a bulletin that is created from making changes to a parent bulletin as allowed by the 3C policy.

Does a bulletin created through the 3C process look any different than any other bulletin?

The only difference is that on a child bulletin created through the 3C process the parent bulletin number is listed.

Can a child bulletin be created using a component and driver that were certified with a different OS than the parent?

No.

Can a child bulletin be created using a component and driver that were certified with a different version of the OS than the parent?

No.

Can a child bulletin be created using a component and driver that were certified with a different support pack of an OS than the parent?

No.

Can a child bulletin be created using a component and driver that were certified with a different kernel architecture than the parent?

No.

Can a child bulletin be created using a component and driver that were certified with a different kernel version than the parent?

No.

What if a kernel update or security update is needed in a particular certification?

The certification can be done with a kernel or security update applied, but a configuration note will be required on the bulletin to state this. Note that the resulting parent certification could only be used in a 3C child bulletin that lists this exact updated kernel and drivers.

System re-certification requirements with New Support Packs

When is system re-certification required?

We require re-certification with a new support pack in order to receive a bulletin listing the new support pack and drivers in the new support pack. We issue a bulletin for the support pack that has been Yes Certification tested.   When a new support pack is released we allow Yes Certification testing on the previous support pack for 6 months from the release date of the new support pack. This 6 month period is valid as long as SUSE continues to have a 6 month support period for the previous support pack.

FAQ:
Can reduced testing be used for re-certifying a system on a new support pack.

No. We require full Yes Certification testing for re-certification of a system on a new support pack.

Power Management

The SLED test projects allow for power management support to be displayed on the Yes Certification Bulletin. The partner can select the Yes radio button located in the certified configuration to indicate that power management is supported.   The following tests are required to pass for "Power Management: Yes" to be listed on the bulletin.

The SLED Workstation project requires the following tests to pass:
- Hibernate Test
- Sleep Test
- CPU Frequency Test

The SLED Laptop project requires the following tests to pass:
- Hibernate Test
- Sleep Test
- CPU Frequency test
- Brightness Test
- Brightness Keys Test
- Lid Close Test
- Battery Test

If any of the above tests fail then the bulletin must display Power Management: No.
If the hardware does not have the built-in functionality to support power management then the test will return a Not Applicable test result. The Not Applicable test result will not prevent the power management from being displayed as Yes on the bulletin, but will require a configuration note for the specific function which is not supported.

Requirements for configuration notes in relation to power management are as follows. If power management is checked as yes then, any non-passing test result (other than fail) with the above named power management tests (Hibernate Test, Sleep Test, CPU Frequency Test, Brightness Test, Brightness Keys Test, Lid Close Test, Battery Test) must be listed on the bulletin as a configuration note.

A configuration note is required for any non-passing test result.

If because of test failures, power management is listed as no, then the passing supported power management features may be listed in configuration notes on the bulletin, along with a config note for what failed or had non-passing test results. Some of the power management configuration notes are as follows:

Power management: Hibernation / Suspend to Disk / ACPI S4 is supported on this system.
Power management: Sleep / Suspend to RAM / ACPI S3 is supported on this system.
Power management: System does not support battery monitoring.
Power management: System/Processor does not support fan thermal scaling.
Power management: System/Processor does not support throttling.
Power management: System/Processor does not support dynamic CPU frequency scaling.

Reduced Testing Policies

Using the Reduced Test projects has the following requirements:

The reduced test projects apply where the configurations have changed. See the Section, "Hardware Component Exchange Guide" for a complete list of components that when changed are eligible for reduced testing.

To qualify for reduced testing, first successfully complete a full system test project on the most capable model in the range of systems at the time of testing.

Changing the CPU speeds:

CPU speed changes within the same family are eligible for separate bulletins using the 3C Bulletin process without any additional testing.

Changing the number of CPUs:

- If the system configuration changes from a Dual-Core to a Quad-Core CPU, complete the reduced test project to obtain a bulletin.

- If the system configuration changes from a Quad-Core to a Dual-Core CPU, complete the reduced test project to obtain a new bulletin.

- If the system configuration changes from one CPU to 2 or more CPUs, complete the reduced test project to obtain a new bulletin.

- If the system configuration changes from 2 or more CPUs to one CPU, complete the reduced test project to obtain a new bulletin.

- If the system configuration changes from a Dual-Core to a single core CPU, complete the reduced test project to obtain a bulletin.

- If the system configuration changes from a single core to a Dual-Core CPU, complete the reduced test project to obtain a new bulletin.

SCSI vs. RAID:

If the host bus adapter supports SCSI and RAID, the system must first be certified with a full test project using either a SCSI or RAID configuration. If the host bus adapter supports RAID, but was only tested in a SCSI configuration, the bulletin will have a configuration note indicating the system was only certified in a SCSI configuration. To remove the configuration note, complete a reduced test project with the system configured in RAID. The opposite also applies if the system was only tested in RAID.

SLED to SLES Certification Policy

The SUSE Linux Enterprise Desktop (SLED) to SUSE Linux Enterprise Server (SLES) Certification policy applies only to the configurations covered by the Hardware Component Exchange Guide. By adding an additional network interface card (NIC) during testing, a SLED tested system can be used to gain a SLES bulletin by meeting the following requirements:

1) Two network interface cards must be in the SLED system during testing.
2) All SLED testing must pass.
3) A SLED bulletin must exist to be used to create the 3C SLES bulletin.

Bulletin Release

Once you have completed a certification, the test results must be uploaded to the SUSE Bulletin System (SBS).

1. The vendor must upload the completed and passing test results to SBS.

2. The vendor will review and submit the submission to a REVIEW state.

3. SUSE will generally validate the submission and submit the submission to a FINAL CUSTOMER REVIEW or a NEEDS RESPONSE state within 6 working days.

4. If the submission is moved to a NEEDS RESPONSE state, the vendor must add additional information to the submission and re-submit the submission back to SUSE. Once we have all the need information and valid test results, the submission is pushed to a FINAL CUSTOMER REVIEW state. At this point the vendor will review the submission and can submit it for RELEASE or send it back to a REVIEW state for corrections.

5. Once the submission is in a FINAL CUSTOMER REVIEW state and ready for release, the vendor may release the submission at anytime.

6. Once released the Bulletin will be posted to the SUSE web site within 2 hours.

Product Description Policy

The product description field on a YES CERTIFIED bulletin is a way to include additional information about your product that is important. It may contain a marketing statement from the company as to what features are included in the product. The statement must apply to the product documented in the bulletin. Product description must be in English and may not exceed 1,000 characters. Do not make claims that are difficult or impossible to substantiate, especially over time.

Example:

1. Do not use phrases like "this is the best...", "fastest...", etc.)

2. Do not make statements about "product lines or product series".   It must be specific to the product tested and the configuration listed in the specific bulletin.

3. Do not compare your product to a competitor's product or with other products on the market.

4. If a component category is not listed on the bulletin in the tested configuration area, but was part of the tested configuration, it may be included in the product description (sound adapters, firewire/1394 adapters, etc.).

5. Do not indicate optional adapter/driver configurations. A separate bulletin is required for the specific tested configuration.

6.   Do not list alternate processor family, unless test results are submitted for these alternate processors.

7. If alternate configurations of components are available and desired on a bulletin (video, drives, keyboards, etc.), then a separate bulletin must be created. If it is desired to list a "variety of options" (hard drives, optical drives, etc. are available), then each must have a separate bulletin.

Products.txt

SUSE requires the most current products.txt file be used in Yes Certification testing. Partners should download the latest products.zip, which contains the most current products.txt file. The products.txt file can be downloaded from the following URL: https://www.suse.com/partners/ihv/yes/system-test-tools-for-suse-linux.html

Follow the instructions on the URL page on how to install the products.txt file.

Submission File Security

The submission file generated by TestConsole (TC) contains compression/security features that prevent and detect tampering with the file. The technology used is able to detect if the file was opened in an attempt to edit the file's contents. Should the file be modified, it will fail the file security test at SUSE during file read-in to the SUSE database. In the event SUSE receives a file that fails the security test, we will work with the submitting entity to rectify the issue. The submitting party will be placed on administrative probation. During the probation period receipt of any additional files that fail the security test at SUSE may result in immediate cancellation of their authorization to perform SUSE testing, cancellation of the contract between SUSE and the submitting party or both.

TestConsole OS

The version of the SLES OS used on TC typically changes upon a new release of the SLES OS or a new release of the Yes Certification Testkit. The pattern used to define the SLES OS used on TC is n-1 version, where n= the current SLES OS support pack version released to the public.

For example if the current SLES OS used on TC is SLES 11 SP1 and SLES 11 SP3 is about to be released, then the OS used on TC would become SLES 11 SP2 at the release of SLES 11 SP3. This pattern may not apply to SLES GA releases such as SLES 12 GA when SLES 12 SP1 is released.

Revision History

Date	Description
February 2015	Small clarity changes to the hardware exchange guide tables.
December 2014	Many changes to the hardware exchange guide tables.
November 2013	Added revision history section. Added auto-page numbering. Added auto-sensing page index table. Changed recertify to re-certify. Removed outdated sections as instructed by management. Made update changes to hardware exchange guide tables as instructed by management. Changed Document title from Novell to SUSE. Added SUSE logo to first page. Added power management section. Added TestConsole OS section.
January 2019	Added: IV. 3C Policy for SES YES Certified Cluster section.