

Novell System Certification Kit Training

Module 4

Test Coverage

Slide 1:

Introduction:

Welcome to Module 4, Test Coverage. This module will cover the test grouping and the individual tests in the chosen project. It will cover how to enable a test if the system has a component in it that needs to be tested. How to start, run or queue up the tests to be run. It will also cover entering LAN, Disk Controller (HBA), Storage Devices and Support Drivers (if any) information in the Product & Report information window (LAN, HBA and Support Driver tabs) as part of running the Component Check test. This module will walk you through the steps for running the tests.

To move through these modules remember to use the forward and back arrow buttons located in the bottom right hand side of the slides. “Do not” use the forward and back arrows of your browser, that will take you out of the presentation module back to the Main System Certification Kit page.

Click the forward arrow now to continue to the next slide.

Slide 2:

This slide lists the tests that are not part of the Overnight Stress Test group. Some of these tests are called Manual Tests on their specific slides. Two other tests not listed on this slide that are not part of the Overnight Stress Test group are the Serial Port test and the Get Test Logs test, they will be covered with their own slide towards the end of this module. The tests are: the Install Test, the Component Check test, the Sound Test (if the system has a sound card), the Parallel Port test (if the system has a parallel port), the Video Test and the Verify Setup test.

Some of the tests on this slide require manual intervention or keyboard response.

We will talk more about each of these tests when we get to their slides later in the presentation module.

Click the forward arrow now to continue to the next slide.

Slide 3:

This slide is the opening screen of your selected project, in this case a SLES10/SLES9/OES Server Full project. The IP addresses are already filled in by default for your SUT, TC and FS4. If you used the IP addressing examples listed in the documentation then these should be correct, but if you used your own IP addressing scheme (assigned different IP addresses than what are listed) you will need to change the ones listed to what you actually used (assigned) in your test setup.

In the project Contents window some of the tests are gray, if you have these components in your system you need to double click them to enable them. If your system has these

components in it you must test them. Then you must double click all the tests to actually run them. For the NIC and Hard Disk tests, when you double click these to enable them it will add another entry line for another test up to 8 devices. As in for the NIC tests, 1 and 2 are automatically selected, you will see Enable NIC 3 Test is gray. If you double click on Enable NIC 3 Test another line will be added saying Enable NIC 4 Test. If you double click Enable NIC 4 Test (if your system has 4 NIC cards in it) another line Enable NIC 5 Test would be added and so on up to 8 NICs. The same applies to the Hard Disk Test, as you enable Hard Disk 1 Test, another entry line would be added Enable Hard Disk 2 Test and so on for how ever many Hard Drives are in your system to be tested up to 8 Hard Disks. The Hard Disk tests are in and part of the Overnight Stress Tests group.

Click the forward arrow now to continue to the next slide.

Slide 4:

This slide covers running the Install test. This slide and slides going forward deal with actually running the individual tests themselves.

The Install test checks that all the needed RPM's (packages) are on the SUT (SUT stands for System Under Test). Preparation for this test is the installation of the OS and System Test kit on the SUT, as well as making sure your SUT is configured per the test kit documentation.

The test validates that the required RPM's are installed on the system.

Click the forward arrow now to continue to the next slide.

Slide 5:

This slide is a continuation of running the Install test.

This slide deals specifically with the Install test, but for all tests when they are started a log file is created. While they are running and upon completion, this log file is being updated. All log files except for two are located on the SUT in the `/var/opt/novell/NovellTestKits/` directory with their specific test name and time stamp.log. The two exceptions are the `Configure_SUT` and `Configure_FS4` log files that are stored on their own systems but are not used in the generation of the result files. You will notice on the rest of the slides going forward that the log files are listed with `**` in front of them. The `**` designates the path of `/var/opt/novell/NovellTestKits/` where all the individual test logs exist.

So for this test and slide the Install test log file would be on the SUT, located at `/var/opt/novell/NovellTestKits/install_check/install_check-timestamp` (which is designated on these slides and in our documentation as `$ts`).log.

Pitfalls or something that could cause a failure for this test would be that not all needed RPM's are installed on the system.

Click the forward arrow now to continue to the next slide.

Slide 6:

This slide covers running the Component Check test. This test auto detects the drivers.

The auto detected drivers are put into the driver sections in the Infotick tabs in Test

Console for the detected drivers, as in LAN drivers in the LAN tab, Storage drivers in the HBA tab and Support drivers in the Support drivers tab. This test runs Hwinfo and detects some hardware as well but does not populate the Infotick tabs with the hardware. Preparation for running this test is having the SUT configured per the test kit documentation. The completion of this test is matching the LAN adapter to the LAN driver auto detected (the LAN adapter/driver pair) in the LAN tab, the Storage adapter to the storage driver auto detected (the HBA adapter/driver pair) in the HBA tab, entering the Storage devices attached to the HBA in the HBA tab and clicking Add Detected in the Support Drivers tab in Infotick in the Product & Report Information window in Test Console.

Click the forward arrow now to continue to the next slide.

Slide 7:

This slide shows the LAN tab window in Infotick in the Product & Report Information window which is part of running the Component Check test. After the Component Check test has been run you open the Product & Report Information window and click on the LAN tab which is what you are seeing in this slide. As you can see this tab is populated with the drivers that were detected. At this point you will click on a driver (which will highlight it), then click on the add button which will open the LAN Adapters window (shown in the next slide) and match the adapter used that the driver was controlling (the adapter/driver pair).

Click the forward arrow now to continue to the next slide.

Slide 8:

This slide shows the LAN Adapters window where the matching is done for the LAN adapter/driver pairs talked about in the previous slide and is what gets listed in the submission and on the bulletin. You click on (or highlight) the driver, click on the adapter used (in the lower section of the window) and then click the add button to select the adapter/driver pair. The search button and the text field next to it in the top portion of the adapters section which says (<The adapters previously selected> on this slide) will list the adapters that you have used or selected before, what we call the short list. You can type text in this field and click search to search for individual adapters or choose one of the other choices from the drop down list to find the adapter you need. The choices are, <The adapters previously selected>, <All adapters in the products.txt> or <Other adapter not in products.txt>. The <The adapters previously selected> we talked about already, the short list. The <All adapters in the products.txt> choice will list all the adapters in our database which are contained in the products.txt file. We recommend updating this file before you start your testing, how to do this is in the test kit documentation. The <Other adapter not in products.txt> choice allows you to type in the adapter used in your testing if it is not in our database and available for you to choose. If this choice is used you will also need to add it as add proposed in NBS (Novell Bulletin System) when you submit your submission. This will be covered in Module 6, NBS in detail, later in this training.

Multiples of the same driver may be listed in the driver section, like is on this slide. If you have two of the same adapters or an adapter with multiple ports or multiple adapters that use the same driver you will see this. You must match all drivers listed with adapters even if they are the same ones or you will have to explain them as errors when generating your results file.

Click the forward arrow now to continue to the next slide.

Slide 9:

This slide shows the HBA tab window in Infotick in the Product & Report Information window which is again part of running the Component Check test. Everything is the same for this slide as it is for slide #7 (LAN tab) for the adapter/driver pairs.

There is an additional section on this tab for the Storage Devices. After matching the adapter/driver pairs in the upper section, you need to enter the storage devices that are in your system. To do this you click on the add button next to the lower section, we will go over this in more detail on slide 11 of this module.

Click the forward arrow now to continue to the next slide.

Slide 10:

This slide shows the HBA Adapters window where the matching is done for the Storage adapter/driver pairs talked about in the previous slides and is what gets listed in the submission and on the bulletin. Everything for matching the adapter/driver pairs is the same for this slide as it is for slide #8, the LAN adapters window slide.

Click the forward arrow now to continue to the next slide.

Slide 11:

This slide shows the Storage Device Product Search window. This is the window where the storage devices that are in your system get selected and added into the submission file and show up on your bulletin. This is the window that comes up when you click the add button next to the lower section (Storage Devices) in the HBA tab window, (slide #9 of this module). The two buttons in the upper portion of this window, Short List and Search all Storage Devices, are the two categories to select your storage devices from. The Short List button displays devices you have previously chosen. The Search all Storage Devices button lists all storage devices in the products.txt file for you to search and choose from. If you click the all storage devices button you will select the Device Manufacturer from the drop down list, then find the device in the Storage Devices section using the scroll bar in that section, click on it (highlight it) and click Ok. You need to do this for each storage device in your system, hard disk drives, CD/DVD's, SAN's, tape drives etc.

You cannot "add" devices not listed here like you can in other search windows, using the other category and typing in the device name. To add a storage device not listed here needs to be done in NBS once you have readin the submission using the Add Proposed button. This will be covered in Module 6, NBS in detail later in this training.

Click the forward arrow now to continue to the next slide.

Slide 12:

This slide shows the Support Drivers tab in the Product & Report Information window. For this tab just click the Add Detected button which will add the drivers listed into the submission file. For a Linux submission these drivers will be removed from the bulletin. For a NetWare submission, any PSM and/or SBD drivers will be listed on the bulletin.

Click the forward arrow now to continue to the next slide.

Slide 13:

This slide covers Running the Sound Test. If you have a sound card in your system you must test it. Even though we do not list sound cards on the bulletin you need to test it if your system has one. It needs to be tested for functionality and compatibility to be supported.

This test applies to all sound cards.

To test it, attach speakers to the sound card, test it per the kit documentation by playing a wav file or selecting an action that has an assigned sound and report the results to Test Console. This is a manual test.

Click the forward arrow now to continue to the next slide.

Slide 14:

This slide covers Running the Parallel Port test. It supports all parallel ports. To prepare to run this test attach a printer (parallel printer) to the port, configure it per the test kit documentation and run the test printing a 1 page document.

This is also a manual test.

Click the forward arrow now to continue to the next slide.

Slide 15:

This slide covers Running the Video Test. The video tests are different for stand alone systems versus laptop computers. The stand alone systems are more does it work, can it go into sleep mode (hibernate). Laptop tests are a little more comprehensive, they test dual simultaneous monitor features, switching back and forth between the two monitors and hibernate mode in conjunction with mouse and keyboard functionality. There will be power management features coming in the next release of the test kit.

This test supports all video cards. Attach a monitor to the video port and follow the steps in the test kit documentation.

This is also a manual test.

Click the forward arrow now to continue to the next slide.

Slide 16:

This slide covers Running the Verify Setup Test. This test validates the NIC's are configured correctly for the NIC and Router tests. Preparation for running this test is to

make sure the NIC's are setup and configured correctly, they are properly connected through the network (cables etc.) and the speed of the adapters and hubs and/or switches match as in 100MB or gigabit. You could possibly get a pass with/warning on this test which does not mean you fail, it just means that speeds for throughput may have been a little slow or you may have a mismatch of adapters and hubs or switches as is gigabit adapters but 100MB hubs etc. It's just a warning that you may want to check your configuration because depending on the reason for this result the bulletin may need a config note to explain it. This test actually verifies the NIC's can pass data to a client.

Click the forward arrow now to continue to the next slide.

Slide 17:

This slide covers a description of multiple tests run together as one test for what we call the Overnight Stress Tests. After enabling the individual tests in the folder that apply to your system you run them all together by double clicking the main folder called Overnight Stress Tests. You enable the individual tests inside the folder by double clicking them. If your system has the device or component that there is a test for in the folder you must run the test. If your system does not have the device or component for a test in the folder do not enable that test. If you enable a test by mistake you can disable the test by clicking the checked box (which will uncheck it) between the test itself and untested test result. If you enable a test by mistake and do not disable it you will get an error when generating your result file and will have to enter an explanation for the error. The tests inside the folder can be run individually by double clicking it to enable it and then double clicking it again which will start it. This is mainly to check and test if the device or component itself is configured and/or working correctly before starting the whole Overnight Stress Test which will run for 12 hrs. Starting a test individually will still run that individual test for 12 hrs., so once you have confirmed that it is configured and working properly (it is being tested) you will want to stop the individual test and run the test folder as a whole. You stop the individual test by clicking on it (highlighting it) in the Run Queue pane and then clicking the Cancel Test button. This should abort the test. You “may” also have to click the Remove Test button to actually remove the test out of the Run Queue. If you just Cancel the test and it stays in the Run Queue, then when you start the Overnight Stress Tests as a whole it may try to test the device or component twice at the same time.

The tests that are run together as the Overnight Stress Tests are, the Floppy Disk Drive Test, the CD/DVD Drive Test, the USB Test, the Hard Disk Drive or Raid Test, the NIC Tests, the Router Test and the CPU/Memory Test. These tests are run together to provide high stress on the system to prove compatibility under high stress conditions.

The following slides 18-31 will cover the individual tests that make up the Overnight Stress Tests.

Click the forward arrow now to continue to the next slide.

Slide 18:

This slide covers Running the Floppy Disk Drive Test. If your system has a Floppy drive in it you need to enable and run this test. If your system sells with an external USB

Floppy drive you need to have it attached and run this test as well. Supported devices for this test are internal and USB Floppy Disk Drives. To test the drives you need to have an empty floppy disk (media) in the drive. The test tests for bad blocks, low level format and reading and writing from the disk.

Click the forward arrow now to continue to the next slide.

Slide 19:

This slide is a continuation of the Floppy Disk Drive Test. It lists what the log file name is and where it is located as talked about previously in this module. Some of the pitfalls that may cause failures for this test may be corrupt media or not enough space in the /abuild directory. If you do have failures for this test check the log files. If the Floppy test fails because of not enough space in /abuild, most likely many other tests will fail as well. If the Floppy test fails, try different media first. Even though the Floppy test is part of the Overnight Stress Test group it is the one test that only runs for about 20 minutes, so if it is a media issue re-running it on its own will not take an additional 12 hrs.

Click the forward arrow now to continue to the next slide.

Slide 20:

This slide covers Running the CD/DVD Drive Test. Again, if your system has one you need to test it. The supported devices for this test are, CD-ROMs, read only or read/writable and DVD-ROMs, read only or read/writable. To prepare for this test for read only devices, insert a filled CD/DVD media. There is a minimum data requirement on the media and is defined in the test kit documentation. For the read/writable devices insert a blank writable media. The media must match the highest read/write speed of the device. It also must match the + or – R format that the device supports. This test tests read and write capabilities and compares, for read/write devices. It tests reads and compares for read only devices.

Click the forward arrow now to continue to the next slide.

Slide 21:

This slide is a continuation of the CD/DVD Drive Test. It lists where the log files are located and their names along with some pitfalls that could cause failures. Some of the pitfalls are, again not enough space in /abuild or defective media. If a failure is because of defective media try different media. This test even run individually will run for a full 12 hrs.

Click the forward arrow now to continue to the next slide.

Slide 22:

This slide covers Running the USB Test. Only two USB ports are required to be tested even if the system has more than two. If the system has ports on the front and back, plug one of the devices in each (one in one of the front ports and one in one of the ports in back). By doing this, if the system has multiple controllers the plan is that both

controllers will be exercised. If the system only has two or three USB ports and you sell the system with USB components such as USB keyboard and mouse but also has PS2 ports, use a PS2 keyboard and mouse so that two USB ports are available to test. If the system only has one USB port available only one is required to be tested.

This test supports all USB ports. To run this test install two USB hard drives per the test kit documentation. The test tests, file system benchmark (using Bonnie tests), sequential reads (per char & block), sequential writes (per char & block) and random seeks.

Click the forward arrow now to continue to the next slide.

Slide 23:

This slide is a continuation of the USB Test. It lists the name and location of the log files and some pitfalls that could cause a test failure. Some of the reasons the test could fail are, incorrect drive mounted on /media/tc/usbX (where X would be a number Drive1 or 2 of the USB hard drive), a limitation of RAM in the system that could cause the system to crash or /media/tc/usbX might have run out of space.

Click the forward arrow now to continue to the next slide.

Slide 24:

This slide covers Running the Hard Disk Drive Test. This test is for the individual hard drives in the system up to 8. If your system has a Raid configuration then you must do the Raid test. If your system has individual drives and a Raid configuration both tests, Hard Disk Drive and the Raid tests must be run. This test supports up to 8 individual hard drives in a system. As talked about in slide 3 of this module when you enable Hard Disk 1 Test, another line will appear but will be grayed out saying Hard Disk 2 Test. If you enable Hard Disk 2 Test another line will appear for Hard Disk 3 and so on up to 8. To run this test you manually mount each drive per the test kit documentation. The tests are Disk[1-8]_bonnie - a file system benchmark test, sequential read (per char & block), sequential write (per char & block) and random seeks. Everything for the Hard Disk Test also applies to and for the Raid test.

Click the forward arrow now to continue to the next slide.

Slide 25:

This slide is a continuation of the Hard Disk Drive Test. As with the other continuation slides this slide lists the name and location of the log files and some of the pitfalls that could cause a test failure. If this were a Raid test instead of an individual hard disk test, for the log file where it says disk[1-8] it would say raid. If only one Raid test were run it may not say raid[1-8], it might just say raid_bonnie-\$ts.log (where \$ts would be the time stamp). Some of the pitfalls are, incorrect drive mounted on /media/tc/hdX, limitation of RAM or /media/tc/hdX might have run out of space.

Click the forward arrow now to continue to the next slide.

Slide 26:

This slide covers Running the NIC Test. This test supports all NICs, add on cards and embedded. For this test you want to make sure you have matching speeds of all your devices and components. Same speed NICs in all your systems, SUT, TC and FS4 and hubs or switches that support the speed of your NICs. It is best to have a gigabit configuration all the way through your network, that way it would then also support any lower speeds for any NICs in your SUT and eliminate the need for separate equipment for each speed. Before running this test make sure your IP addresses, masks, gateways etc. are setup and configured correctly. Ensure your network and connections are setup per the test kit documentation. Have a dedicated hub or switch per NIC segment or PtP (point to point) capable of maximum NIC throughput. Up to 8 NICs can be tested. You enable each one starting with NIC 3 because NICs 1 & 2 are enabled by default connecting to TC and FS4. You enable the NIC tests the same way as the Hard Disk Drive tests, except you enable them in the upper portion of the project after the FS4 IP Address line and above the Install Test line. If you enable the NIC 3 Test in the upper portion of the project it will add another line for NIC 4 and so on up to 8. As you enable the NIC tests in the upper portion of the project it will add NIC tests to the Overnight Stress Test folder. This test tests downloads with integrity checks.

Click the forward arrow now to continue to the next slide.

Slide 27:

This slide is a continuation of the NIC Test. As with the other continuation slides it lists the log file name and location, along with some pitfalls to possibly help with troubleshooting. Some pitfalls are, not enough space in /abuild, incorrect speed of hub, switch or NICs in the configuration, incorrect IP addressing scheme etc.

Click the forward arrow now to continue to the next slide.

Slide 28:

This slide covers Running the Router Test. This test like the NIC test supports all NICs, add on or embedded. The Router Test is only run between NIC 1 & 2, even if there are four or eight NICs in the system. The Router Test setup is already done if you have setup the NICs correctly for the NIC tests. The test tests both NICs and routing through the system. The same conditions apply for the Router Test as for the NIC tests, speed of cards, hubs and switch's, IP addressing, configuration etc.

Click the forward arrow now to continue to the next slide.

Slide 29:

This slide is a continuation of the Router Test. As with the other continuation slides it lists the log file name and location along with some of the pitfalls that could cause a test failure. The pitfalls may help with troubleshooting should a test failure occur. Other than the log file name, everything for the Router Test is the same as the NIC tests we just covered in the previous slides for NICs.

Click the forward arrow now to continue to the next slide.

Slide 30:

This slide covers Running the Memory/CPU Test. This test supports all CPUs and memory. Preparation to run this test is having all of the other tests setup as part of the Overnight Stress Tests so they are all run together. This test ensures that there is at least a 70% CPU load during testing. This test also runs eatmem (eat memory threads) to create low memory conditions and runs test patterns in memory that it has locked.

Click the forward arrow now to continue to the next slide.

Slide 31:

This slide is a continuation of the Memory/CPU Test. Again this lists the log file name and location as well as some pitfalls. Some of the pitfalls for this test are, Disk or Raid test failures, USB test failure etc. If any of the individual tests that access memory in the Overnight Stress Tests folder fail, that could affect the Memory/CPU test.

Click the forward arrow now to continue to the next slide.

Slide 32:

This slide covers two Additional Tests that are not run as part of the Overnight Stress Tests. They are, the Serial Port Test and the Get Test Logs Test. This slide says that “These tests are run after you have completed the Overnight Stress Test.”, which is accurate according to the order that they are listed in the project. But the Serial Port Test can be queued up to run at any time during your testing, it is not required to be run after the Overnight Stress Tests. The Gather Test Logs Test however “must be run” after “all” your testing is completed, not just after the Overnight Stress Tests are run. We will go into more detail on this on slide 36 of this module.

Click the forward arrow now to continue to the next slide.

Slide 33:

This slide covers Running the Serial Port Test. The supported Serial Ports for this test are true Serial Ports, not Remote Management Ports, not Serial Ports set up for re-direction just normal real Serial Ports. This test only supports COM1 configured as ttyS0. Preparation to run this test is a nullmodem connection (nullmodem cable) between the SUTs and FS4s COM1 ports both configured as ttyS0. This test tests the ppp (point to point protocol) network connection along with downloads with integrity checks.

Click the forward arrow now to continue to the next slide.

Slide 34:

This slide is a continuation of the Serial Port Test. Again, as with the other continuation slides it lists the log filename and location and some pitfalls for help with troubleshooting should there be a test failure. Some of the pitfalls are, a defective connection between the SUT & FS4 as in a bad cable, non matching Serial Port speeds between the SUT and FS4

or the Serial Ports speed set slower than test speed. The test runs at a baud rate speed of 11500, so if your Serial Ports are set at a baud rate speed of 9600 it could cause a failure. There are some troubleshooting tips for this test as well as others in the test kit documentation.

Click the forward arrow now to continue to the next slide.

Slide 35:

This slide covers some Post-testing Cleanup. It deals with the USB Hard Drives for the USB Port test. Do not reboot your SUT (System Under Test) until you have properly unmounted the USB Hard Drive partitions from the system. You also want to remove the CD/DVD media and the floppy diskette. The instructions to do this are found in the test kit documentation.

Click the forward arrow now to continue to the next slide.

Slide 36:

This slide covers the Get Test Logs Test. This test “must” be run last after completing all of the testing of the system. This test gathers all the log files from the System Under Test (your SUT) and the results are used in generating your submission file to be readin to NBS and obtain a bulletin. Preperation to run this test is to complete all the required testing before running this test. Run this test per the test kit documentation.

If you had any failures during the required testing, you may want to troubleshoot and fix them and re-run those tests to obtain a passing result before running this test. If you run this test first and then fix any problems and re-run any of the required tests, you will need to re-run this test again so it will gather all the latest and final log files. The more times you run this test the larger your submission file will be, this is because it will gather the log files every time it is run and will add them to your submission file when it is generated.

Click the forward arrow now to continue.

Closing:

You have now completed Module 4, Test Coverage. You can click the back (previous) arrow button on this slide to go back and review any slides in this module or click the Replay Module arrow button to start this module again.

If you are finished with this module, click the back arrow button of your Internet Browser window which will take you back to the Main System Certification Kit page where you can start Module 5, Troubleshooting Tips to continue your training. Thank you.