



Lenovo Dynamic System Analysis Readme



Version 10.5

Note

Before using this information and the product it supports, read the information in “Notices” on page xv.

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About Dynamic System Analysis

Lenovo Dynamic System Analysis (DSA) is a system information collection and analysis tool that is used by System x Service and Support personnel to aid in the diagnosis of system problems. This software can be used while the operating system is running.

Two editions of Dynamic Systems Analysis are available:

Preboot Edition

The Preboot edition of Dynamic System Analysis runs as an embedded Preboot image or from the boot menu.

You can create bootable media such as CD, DVD, ISO, USB or PXE using Lenovo ToolsCenter Bootable Media Creator (BoMC) or download the Windows/Linux update package for Preboot DSA to flash an embedded Preboot image. Reboot the system from the image you created or enter the boot menu to enter Preboot DSA.

For more information, see [Lenovo Bootable Media Creator \(BoMC\) Users Guide](#).

Portable Edition

This edition of Dynamic System Analysis runs from a command-line interface as a self-extracting executable file.

DSA creates a temporary directory called /tmp on Linux or %TEMP% on Windows, and extracts all of the Dynamic System Analysis files to that directory. DSA then runs the command. When the command has finished executing all actions, the temporary directory and all of the Dynamic System Analysis files are deleted from the local system.

You can download the Portable Edition from the Web site and install it on removable media, such as CD, DVD, or a USB flash drive.

Dynamic System Analysis collects information about the following aspects of a system, if applicable:

- Drive Health Information
- Event logs for the operating system, ServeRAID controllers, and service processors
- Event logs for the system including Chassis Event log and IPMI Event log
- FoD Activation key information
- Hardware inventory, including PCI and USB information
- IBM LightPath status
- Installed packages
- Kernel Modules
- LSI RAID and controller configuration
- Network interfaces and settings
- Option cards for firmware and driver information:
 - Broadcom
 - Brocade Adapter
 - Diablo FlashDimm
 - Emulex
 - LSI Controller
 - Mellanox Adapter
 - Qlogic
- Performance data and details for running processes

- ServeRAID configuration
- Service Processor status and configuration
- System configuration
- System environmental information
- Vital product data, firmware, and basic input/output system (BIOS) information

System information is collected into a compressed XML file that can be sent to Lenovo Service and Support. You can view the system information using an optionally generated HTML Web pages or text files.

You can use Dynamic System Analysis to create a merged log that includes events from all collected logs and to compare the firmware configurations on a server to those from UpdateXpress.

Information resources

You can find additional information about Dynamic System Analysis in the product documentation and on the World Wide Web.

Documentation

The following documentation resource provides additional information about Dynamic System Analysis.

Information centers and topic collections

- ToolsCenter InfoCenter

<http://toolscenter.lenovofiles.com/help/index.jsp>

This information center provides integrated information for multiple System x and BladeCenter tools, including Dynamic System Analysis.

- [DSA InfoCenter](#)

http://toolscenter.lenovofiles.com/help/topic/dsa_lenovo/dsa_main.html

The Dynamic System Analysis topic collection provides information about how to download and use Dynamic System Analysis to collect, analyze, and diagnose system health, inventory and other information. This information is updated periodically and contains the most up-to-date documentation available for Dynamic System Analysis.

Publication

- [Lenovo Dynamic System and Analysis \(DSA\) Installation and User's Guide](#)

This publication provides information about how to download and use Dynamic System Analysis to collect, analyze, and diagnose system health, inventory and other information.

Web resources

These websites provide additional resources for the System x and IBM BladeCenter products.

Web sites

- [Lenovo ToolsCenter website](#)

<https://support.lenovo.com/us/en/documents/LNVO-CENTER>

Use this Web site to download tools that support System x and BladeCenter products.

- [Lenovo ToolsCenter DSA website](#)

<http://support.lenovo.com/us/en/documents/LNVO-DSA>

Use this Web site to download the Dynamic System Analysis tool and documentation.

- [Lenovo Support website](#)

<http://datacentersupport.lenovo.com>

Use this Web site to find information about online technical support, downloads and drivers, and RETAIN tips, and to provide feedback about your server products.

- [ServerProven website](#)

<http://www.lenovo.com/us/en/serverproven/>

Use this Web site to learn about hardware compatibility of System x and BladeCenter systems with applications and middleware.

Installation and upgrade information

Complete installation instructions, including hardware and software requirements, are provided in the ToolsCenter for Lenovo x86 Servers Information Center information center on the Web at http://toolsctr.labs.lenovo.com:42016/help/topic/dsa_lenovo/dsa_main.html?cp=0_4_0.

Known limitations, problems, and workarounds

This section describes limitations, problems, and workarounds that are applicable to Dynamic System Analysis.

Known limitations for the 10.4 release

The following list contains new limitations for the current release.

- Broadcom NX1 card cannot be updated with UpdateXpress System Pack Installer 9.X when both Broadcom NX1 card adapters and Broadcom NX2 card adapters are installed on your system.
- When the Intel Network Adapter is installed on your system, in the html report of the Preboot DSA, the firmware information of the Intel Adapter is not shown in the Firmware/VPD section.
- According to the design of Preboot DSA, in the html report of the Preboot DSA, the firmware information of the Intel Adapter is not shown in the Firmware/VPD section. For the new version of the Intel Adapters (for example, X710 family adapters), the VPD information might be shown in Other VPD table.
- When running the portable DSA on Red Hat Enterprise Linux 7, IMM related information will not be captured if the system has a bridge virtual network or if the USB LAN device name is not usb0.

User can remove the bridge virtual network, and modify the USB LAN device name to usb0. For example, if the USB LAN device is named as enpsxxxxx on Red Hat Enterprise Linux 7, users can modify the name property of `/etc/sysconfig/network-scripts/ifcfg-enpsxxxxx` to usb0. Then, rename the file name to `ifcfg-usb0` and add a new file `70-persistent-net.rules` to `/etc/udev/rules.d` with the content: `SUBSYSTEM=="net", ACTION=="add", DRIVERS=="*", ATTR{address}=="MAC address", ATTR { type } == "1", KERNEL=="eth*", NAME="usb0"`. Restart the system.

- The Preboot DSA diagnostic test does not include LAN card test item for Broadcom NX2 card. Use Preboot DSA 10.2 A81 to do the diagnostic test for the Broadcom NX2 card.
- For Preboot DSA, if Intel I340-T2 card and X540-T2 card are installed at the same time, "FIFO" item for Intel I340-T2 will be shown on the diagnostic test list. Ignore the "FIFO" item result.
- Most PCI device IRQs are 0 on the DSA inventory html page after running the DSA inventory command. In the Windows operating systems, use the Windows system tool named `msinfo32` to show the IRQs. In the Linux operating systems, use system command `lspci -b -vv` to show the IRQs.
- If a customer has an application using the "169.254.95.xx" network, the customer should use the `--no-imm-lan` parameter to avoid changes to the network configuration (such as, to the routing table). Running portable DSA without this option will cause cluster applications, such as Oracle RAC, to crash unexpectedly.
- If you select nVidia diagnostic items and another diagnostic item with loop times greater than 1 in CMD mode, there is only one loop diagsnotic log in DSA log.

- In the DSA report on the LSI Controller page, only the basic RAID level is shown. For example, RAID 00 is a subclass of RAID0, while RAID R1-EC is subclass of RAID 1, DSA only shows them as RAID 0 and RAID 1. This is because the LSI CIM provider cannot detect the exact configuration of the RAID class level of the subclass RAID level.
- DSA v10.1 has limited support for SLES12. The DSA report, lists only some of the links on the software panel, such as: system overview, network settings, resource utilization, processes, and os configuration. The following information is missing: installed package, kernel modules, operating systems, timezone, linux config file, and current user.
- The DSA provider **networkinfo** does not implement the standard simple **get_instance** function, but instead implements the **enum_instance** function. Therefore, when you use the client with gi, the get instance operation to get IBMSG_BcmDeviceFirmwareElement, it returns the CIM_ERR_NOT_FOUND error.
- The CD-based preboot DSA no longer supports the nVidia GPU diagnostic, because the new nVidia driver does not support the diagnostic any longer. If you want to run a diagnostic on nVidia Tesla serials GPU, refer to the following link for a detailed user guide and diags tools that can be downloaded from: <https://www-947.ibm.com/support/entry/portal/docdisplay?Indocid=MIGR-5096046&brandind=5431802&myms=purflex&mync=R>
- In Preboot DSA GUI, after you select the **diags** item, you can input the loop count with 1-25, after you finish running all of the diagnostics in 25 loop with Emulex 10G options included, DSA only records the Diagnostics log once in the DSA Diagnostics Completion Log. The earlier diagnostics record will be erased.
- When using the GUI, if there are two ports of a machine trying to connect to the Extranet at the same time, the machine cannot send the DSA log to the IBM server. Click **Test Internet Connection** to resolve this problem.
- The Red Hat Enterprise Linux operating system does not support the "Merged Device" page inventory because there is no system command for querying this.
- The CPU and Memory stress test only supports 1 loop.
- Diablo Flash DIMM does not support win32, sles10, and sles10_64 because the vendor does not support these operating systems.
- In standalone mode, if a Single Bit Error (SBE) occurs, the system does not show an event log item in the chassis event log and ipmi event log page.
- On a multi-node server, if you customized the USB LAN ip settings, you need to ensure that the USB LAN IMM (was configured with the ASU tool or on the IMM remote page) and the Host ip (configured by the OS) has been configured properly. This allows the USB LAN host to ping to the IMM side ip successfully. If not, some IMM information (IMM Configuration, Enviromentals, Chassis Event Log) might be missed if it failed to configure the USB LAN.

The following list contains limitations that existed prior to the 10.4 release.

-

OpenSSL limitation on ESXi

OpenSSL on ESXi4.1, ESXi5.0, and ESXi5.1 supports only Transport Layer Security (TLS) level 1.0. If you set IMM TLS to a minimum level of 1.1 or 1.2, DSA fails to get the following information through the ESXi system:

- IMM Configuration
- Environmentals
- Chassis Event Log
- Light Path
- IMM, uEFI, and DSA firmware version

- Immv1 embedded Preboot DSA does not support any new drivers due to the limited image size.

- The DSA TXT report has some format issues for the long text description. There may be some instances of ... in the TXT report. For more information refer to the HTML report.
- The System Card Information table on the hardware inventory page for ESXi OS is missing the **Name** information due to an ESXi limitation.
- DSA version 3.4 does not support the VMware ESXi page report for the ESXi 5.x key due to a *vmvisor-offline-query* limitation.
- Due to a Brocade device driver limitation, SLES 11.2 and RHEL 5.8 do not support all of the Brocade functions.
- After running the LSI HDD diagnostic test when the Software RAID is configured, DSA displays No result or Aborted. DSA does not currently support this configuration.
- Due to a Mellanox provider limitation, Mellanox functions on a 32-bit operating system are not supported.
- On VMware ESXi, the following issue may be found: The memory type would be reported as Unknown in the Memory section of the Hardware Information report.
- Due to a Nvidia utility support limitation on a Windows 32-bit operating system in IBM Service, the Nvidia GPU Info link is not available (multi-tool only).
- Due to a QLogic device driver limitation for QLogic 10 Gb CNA, Option 42C1800, the QLogic information on the Hardware Inventory page is not collected on Windows 2008 Enterprise 64-bit operating system.
- Due to a QLogic utility limitation for QLogic 8 Gb FC Dual-port HBA, Option 42D0510, the QLogic information on the Hardware Inventory page is not collected on Red Hat Enterprise Linux 6 Update 2 (RHEL 6.2).
- Due to an LSI CIM provider issue, running DSA for data collection in a 2-node System x3850 takes many hours to complete on Microsoft Windows Small Business Server 2011.
- Due to an Emulex issue for a BladeCenter HS23, on the DSA data collection result page for PCI Information on the Hardware Inventory page, the Emulex 1 GB port is shown as a 10 GB port.
- Due to Windows API limitation, when configuring SATA HDDs without a RAID controller to a system with Windows 2008 R2, Web Edition 64-bit operating system, information for the Drive Health on the Hardware Inventory page is missing.
- Due to Windows API limitation, when configuring tape (with a USB connector) to a system with Windows 2008 R2, 64-bit operating system, information for the Drive Health on the Hardware Inventory page is missing.
- To ensure quality and stability of the DSA code, some display functionality of RAID information has been reverted to what was used in previous versions of DSA. This affects RAID display on the following adapters:
 - Megaraid 8480
 - Serveraid MR10i
 - Serveraid MR10is
 - Serveraid MR10m
 - Serveraid MR10k
 - Serveraid M1015
 - Serveraid M5014
 - Serveraid M5015

On these adapters, the RAID information is generated from the output of separate command-line tools and the format might not match other output in DSA.
- When an adapter is removed from the system that was previously configured in a network virtual team using the Intel PROSet software package, DSA may report that the adapter is still present with a corrupt MAC address. You can safely disregard the information returned for this adapter.

- On systems where the service processor clock does not have the same timezone settings as the local system, the merged log may appear to be out of order. The entries are sorted correctly but look incorrect because the timezone setting is not displayed.
- When DSA collects dates and times that are before January 1, 1970, 00:00:00, or after January 19, 2038, 03:14:07, DSA reports these dates and times as January 1, 1970, 00:00:00. These dates fall outside the valid range for a date in DSA.
- DSA may report the memory speed as **Unknown** in the Memory section of the Hardware Information report. This is due to issues with SMBIOS support on some systems.
- DSA collects Complex Programmable Logic Device (CPLD) firmware levels (Super I/O card firmware, PCI-X card firmware, CPU card firmware) on systems that have CPLD. The information about the individual CPLD firmware levels versus the CPLD package version on the web (for example, version 1.06) can be obtained in `ver_chk.txt`, which is located on each CPLD disk. The first column in this file is the SIO card CPLD version, the second column is the PCI-X card CPLD version, the third column is the CPU card CPLD version and the last column is the overall disk version number.
- The Intelligent Platform Management Interface (IPMI) device driver must be installed to collect IPMI BIST information.
- GoVault (part number 25R0006) is not recognized as a tape drive in DSA Diagnostics (version 2.02 and prior) and does not appear in the tape drive section of the HTML viewer. GoVault appears as a hard disk due to the hardware implementation and device driver. DSA can still recognize the device, but it is listed in the disk drive section.
- When you execute DSA with `-ux`, the ATI video driver comparison result in UpdateXpress may be downlevel. For example, Driver ATI2MTAG.SYS shows 6.14.10.6744 for the latest version. It should be 8.24.50. Refer to www.ibm.com for latest firmware and driver updates.
- Windows components cannot be collected in Windows 2008.
- Broadcom firmware information cannot be collected on System x3200M2 (4367/4368) on Windows 2008.
- Some SMART Attributes in Drive Health may be missing in iDataplex (7321/7322).
- DSA is unable to retrieve QLogic FC Controller from the HS22 blade. The QLogic `scli` utility cannot detect the card on HS22.
- QLogic iSCSI Controller info cannot be collected in Sles10 Realtime and Red Hat5 Realtime.
- For BladeCenter HS22 (7870/1936), iDataplex (7321/7322), System x3650 M2 (7947), and System x3550 M2 (7946), if the RNDIS driver is not installed in your system, environmental data and chassis event logs will not be collected. The RNDIS driver can be installed automatically when IMM firmware is updated in the OS. If you update IMM firmware from the IMM Web site, the RNDIS driver will not be installed on the OS. In this case, you must install the RNDIS driver manually, or the SP Configuration Chassis event log and environment data cannot be collected.
- The slot information for PCI-E/PCI adapters is blank in PCI information Section for Systems x3400/x3500 (7973/7974/7975/7976/7977), x3200M2 (4367/4368), x3250 M2 (4190/4191/4194), x3350 (4192/4193), and x3550M2 (7946/4198) on Windows 2008.
- LSI RAID configured as level "1E" will be recognized as level "1" in the DSA data collection.
- Due to Emulex issue for Blade System HS23, on the DSA data collection result page for PCI Information on the Hardware Inventory page, the Emulex 1 GB port is shown as a 10 GB port.
- The raw data of MegaRaid information can only be reviewed in HTML/XML output.
- In Windows, when a Broadcom Ethernet device is disabled in **Network Connections**, no relevant information regarding this device is collected.
- In Windows, ServeRaid 8e card information cannot be collected.
- On Systems x3550 or x3550 M2 when a dual port PCI NIC is plugged in, DSA shows one port as in use and the other port as on board in PCI device information. DSA sometimes does not show the IPv4 address & duplex status.

- When you use DSA Portable Edition (Windows) on Windows PreInstallation Environment (WinPE), the following information might be inaccurate, invalid or blank:
 - Current User
 - Installed Date (for application)
 - USB Hub Description
 - Onboard RAID controller
 - Information related to Lan Over USB, such as IMM configuration, chassis events, and environmental information.
- On BladeCenter server, please ignore any information shown by DSA regarding Remote Supervisor Adapter (RSA).
- If IMM information is not collected, please check the RNDIS device network configuration. The IP address and subnet mask should be compliant with the IMM user guide description. Otherwise, no IMM configuration or environmental information is viewable and might be displayed as **SP Configuration**.
- When a server is configured with multiple RAID controllers (both IR & MR), the physical drive information associated with the IR might be invisible in **LSI Information**. This problem does not impact the functionality of the RAID or disk.
- This version of DSA does not support the ServeRAID B5015 SSD controller.
- When LSI IR ServeRAID is configured to RAID 1E, DSA might show the configuration as "10".
- When a disk is configured as RAID, DSA does not report a disk error upon spin speed reduction.
- When **--chkupd** or **--update** is used to acquire update packs for Dynamic System Analysis (DSA) and DSA is executed with the update pack, pay attention to the following usage:
 - When the message Unable to connect to internet is shown **--chkupd** or **--update**, sometimes it is due to the remote server being down and may not be an Internet connection problem.
 - Sometimes the NIC eth0 device is missing in the report generated for Brocade CNA.
 - Sometimes the description of port 1 of a Brocade FC HBA is missing.
 - When Brocade CNA is present, sometimes the firmware vital product data (VPD) and device ID information is not correctly shown.
 - DSA runs slowly when Brocade FC HBA or CNA is present on SLES10 or under Preboot DSA.
- On System x3850 X5 dual node configuration, DSA shows incorrect core numbers (always show one core) for processors on the 2nd node (CPU5-8).
- On System x3850 X5 Standard (7145, 7146) and BladeCenter HS22V (7871) with Windows 2008, the IMM Configuration, Environmentals, and Chassis Event Logs are missing in some cases. This information would be ready if the customer runs DSA again.
- The association between PCI Slot and Device might be inaccurate on the following systems:
 - System x3655 (7985, 7943)
 - System x3850 M2 (7141, 7144, 7233, 7234)
 - System x3850 X5 (7145, 7146)
 - System x3950 M2 (7141, 7233)
 - System x3950 X5 (7145, 7146)
 - System x3650 (7979, 1914)
 - BladeCenter HS12 (8014, 8028, 1916)
 - BladeCenter HS21 (8853, 1885)
 - BladeCenter HS22V (7871)
 - BladeCenter LS21/LS41 (7971, 7972)
 - BladeCenter LS22/LS42 (7901, 7902)
 - BladeCenter HX5 (7872, 1909)
- DSA can only detect the duplex speed information of one network adapter on RHEL5 U3 with Xen if multiple network adapters exist.

- After installing the chipset driver on Windows 2008 R2 SP1, you might receive a dialog box indicating IBMSPREM.EXE has stopped working.
- Broadcom Network cards firmware information cannot be determined in the WinPE environment.
- Some error logs intended for use by Support might display in DSA Error Log. These can be safely ignored.
- On the Windows 2008 SP2 64-bit operating system, when the device driver of a Broadcom HT1000 SATA controller is updated to the latest version (1.1.8049.1) on System x3455, it might cause unrecoverable errors during a DSA run. You must exclude DSA providers (smart, tapehdd) with the command **set DSA_EXCLUDE=smart,tapehdd** before running DSA.
- When LSI RAID controller connects with SATA hard disk, DSA displays the manufacturer of hard disk as ATA in the Physical Drive Information table.
- The information about Level 1, 2, 3 Cache Enable might be inaccurate.
- If there is no data for a particular field, the field is blank. This is most often encountered in common tables containing instances from multiple data sources.
- On a Windows operating system when trying to run DSA with the option -upload through a proxy environment, you might need to turn off check for server certificate revocation (requires restart) from the **Tools → Internet Options → Advanced → Security** menu .
- When using DSA to collect the Brocade inventory, you might receive a warning message that the BCU and driver versions do not match and no Brocade information is collected. You can avoid this by updating the driver version 2.2.0.
- On a BladeCenter HX5 (7872,1909) multiple node system, only Diagnostic vital product data (VPD) for the primary node is shown in Diagnostic VPD table.
- The User Name is not available in the Current User table when running DSA with the parameter **--ipmi-lan**.
- Limited inventory is collected by DSA on the standard VMware ESXi image and the basic IBM customized VMware ESXi image.
- When an adapter is removed from the system that was previously configured in a network virtual team using the Intel PROSet software package, DSA might report that the adapter is still present with a corrupt MAC address. Disregard the information returned for this adapter.
- Window Components cannot be collected in Windows 2008.
- Broadcom Firmware information cannot be collected on a System x3200 M2 (4367/4368) running Windows 2008.
- For BladeCenter HS22 (7870/1936), iDataplex (7321/7322), System x3650 M2 (7947), and System x3550 M2 (7946), if the RNDIS driver is not installed in your system, environmental data and chassis event logs are not collected. The RNDIS driver can be installed automatically when IMM firmware is updated in the OS. However, if you update the IMM firmware using the IMM Web site, the RNDIS driver is not installed on the OS. In this case, you must install RNDIS manually to collect the System Package (SP) configuration, Chassis Event log, and Environment data.
- On a Windows 2008 operating system, the slot for PCI-E/PCI adapters is blank in the PCI information Section for the following System x machines: x3400/x3500 (7973/7974/7975/7976/7977), x3200 M2 (4367/4368), x3250 M2 (4190/4191/4194), x3350 (4192/4193), and x3550 M2 (7946/4198).
- In Windows, when Broadcom Ethernet Device is disabled in Network Connections, no relevant information regarding this device is collected.
- In Windows, ServeRaid 8e card information cannot be collected.
- For System x3250 M2, no Broadcom NIC firmware information is collected.
- For System x3550 or x3550 M2, when a dual port PCI NIC is plugged in, DSA shows one port is in use by another port, as on board in PCI device information. DSA sometimes does not show the IPv4 address & duplex.

- When you use DSA Portable Edition (Windows) on Windows Pre-Installation Environment (WinPE), the following information might be inaccurate, invalid or blank:
 - Current User
 - Installed Date (for application)
 - USB Hub Description
 - Onboard RAID controller
 - Information related to the IMM LAN Over USB, such as IMM configuration
 - Chassis events
 - Environmentals
- If IMM information is not collected, check the RNDIS device network configuration. The IP address & subnet mask should be compliant with the IMM user guide description. Otherwise, no IMM configuration and environmental information is viewable and might be displayed as SP Configuration.
- When disk is configured as RAID, DSA does not report disk error upon spin speed reduction.
- On System x3850 X5 Standard (7145, 7146) and BladeCenter HS22V (7871) with Windows 2008, the IMM Configuration, Environmentals, and Chassis Event Log might be missing in some cases. You might be able to gather this information by running DSA again.
- After installing the chipset driver on Windows 2008 R2 SP1, a dialog box is opened to indicate IBMSPREM.EXE has stopped working.
- In Windows 2008, if the adapter event log of a MegaRAID controller is full, a dialog box appears and displays the message Megacli.exe has stopped. This error can be avoided by clearing the adapter event logs using the following command:
MegaCli -AdpEventLog -Clear -ALL
- Broadcom Network cards firmware information cannot be determined in a WinPE environment.
- In Windows, when trying to run DSA with the **-upload** option through a proxy environment. you might need to turn off **check for server certificate revocation (require restart)** from **Tools → Internet Options → Advanced → Security**.
- If you uninstall the USB Over LAN driver manually, it will cause the Preboot firmware update to fail.
- If the USB Memory Key you are using does not appear in the list of media available for copying to, you can upload the DSA output directly if the machine is connected to a network, or you can copy it to a floppy for upload later.
- While flashing Wflash on a newly installed Windows 2003 R2 system, a Windows dialog box stating: Do you want to restart your computer now? is displayed for each node being flashed. This occurs only for new installations.
- When DSA boots from a USB key, the disk partition size might be incorrect.
- The UpdateXpress section is not available with DSA Preboot.
- On iDataPlex dx360 M2, there is no ethernet NIC test available in the diagnostics list in Preboot DSA.
- When booting from the image created by BoMC, you can select **Diagnostics** and click **Gui option** to enter GUI mode. Select **Diagnostic test** to add NIC items to test. When the NIC is triggered with an error (such as removing the NIC), the TestLoopBackMAC test keeps checking status and displays Running. The diagnostics only applies to a NIC with a stable state (either normal or defective during test).
- When an error occurs to the hard disk drive during the HDD test, the test might complete and indicate: No Result. Diagnostics only apply to an HDD with a stable state (either normal or defective during test).
- When flashing DSA Preboot using Wflash or Lflash, if you notice a build mismatch error, make sure the IMM firmware level is a minimum of 29B. After you upgrade the IMM firmware to 29B or higher, DSA Preboot will continue to flash without error.
- DSA implemented signature in product build. This requires you to update IMM to 1A0034V or later before updating Preboot DSA, or a flash failure will occur.
- Under **Hardware Inventory → Video Controller information** there is no video controller information collected by the Preboot Edition.

- If you update Preboot DSA to DSA Preboot 3.0 with the file starting with `oem_fw_dsyt`, there is no way to roll back to the version of Preboot DSA before the update.
- When running DSA preboot, network interfaces load in the order they are detected by the operating system device driver. This can result in physical port 1 being labeled `eth0` in some cases, but it could also be labeled `eth1` or `eth2`, depending on the number of network adapters in the system. This is valid for onboard network controllers and network controllers.
- When a system is booted to DSA Preboot Edition with ServeRaid (M1015) SAS/SATA controller loaded, there might be no ServeRaid information collected.
- When Preboot DSA is booted from a CD/DVD, sometimes the CD/DVD is not automatically ejected (as expected) after you exit the DSA main menu. If this occurs, reboot the server and manually eject the CD/DVD ROM by pressing the button on the front panel for the optical drive.
- When running the Intel NIC test, there might be some redundant messages shown that are not relevant to the test result.
- On System x3400 M2 (7836, 7837) and x3500 M2 (7839), the SMART Error Logs table might be missing from the Drive Health page.
- ServeRAID (M1015) SAS/SATA Controller, 46M0831 require one of the following:
 - uEFI GYE133A or greater for Systems x3200 M3 and x3250 M3
 - uEFI Y4E145B or greater for Systems x3400 M2, x3400 M3, x3500 M2, and x3500 M3
 - uEFI D6E145C or greater for Systems x3550 M2, x3550 M3, x3650 M2, and x3650 M3
- On System x3250 M3 (4251, 4252, 4261), the firmware and BIOS version of the Emulex 10 GbE Virtual Fabric Adapter is missing on the Firmware VPD page.
- On BladeCenter HX5 (7872,1909) multi-node, only Diagnostic VPD for the primary node is shown in Diagnostic VPD table.
- An unexpected menu may pop up if you click the right mouse button during the initialization of the GUI. Wait for the GUI startup to complete before attempting to use the tool.
- You must disable the `x2apic` parameter in the uEFI settings before launching Embedded Preboot DSA on the System x3850 X5 dual node.
- Video controller information is missing from the Hardware Inventory page under Windows when running DSA from a remote desktop. To get this information, you must run DSA locally on the target system.
- If you encounter extended collection times, it might be helpful to disconnect external devices temporarily. This can include unplugging fibre cables or additional USB devices where information on these devices is not essential to the data collection.
- Having an excessive number of HDDs creates a situation where DSA is not actually hanging but rather takes days to complete.
- The FIFO test of NIC diagnostics is not supported on the Intel I350 and I340 Quad Port GbE.
- On VMware ESX 4.0u2, DSA displays the tape **IBM DDS GEN5** as **Virtual disk** in the **Hardware Inventory → System Devices** field due to an operating system limitation.
- On VMware ESX 4.1u2, due to operating system limitations, you must perform the following steps to complete tape diagnostics:
 1. Run this command to stop the usbarbitrator service: `/etc/init.d/usbarbitrator stop`.
 2. Disconnect and reconnect the USB key or disk device media.
 3. Run DSA tool to process tape diagnostic tests.
 4. After using the device, run this command to start the usbarbitrator service: `/etc/init.d/usbarbitrator start`.
- VMware 4.0u3 standard has the following issues:
 - Memory type returned as *Unknown* in the Memory section of the Hardware Information Report.
 - Redundant cache information is displayed in the Memory section of the Hardware Information Report.

- On Systems x3100 M4 and x3250 M4, you might encounter these issues:
 - The IMM configuration, Environmentals, and Chassis Event logs are reported as SP Configurations, BIST results , and SP Logs respectively.
 - Information on the IMM LAN Over USB, such as IMM configuration, chassis events, and environmental data, is missing.
- Powerville has shared FIFO and shared FIFO registers, making a test impossible if four ports are running at once.
- Online DSA displays *Unknown NIC* for **NIC Type** for the Intel NIC on the Network Settings page collected in Windows. Refer to Retain Tip: H203676.
- The description about the Intel Ethernet controller is displayed as Not Available on the Network Settings page under RHEL6.
- On VMware ESXi 4.0u3, you might encounter the following issues:
 - The memory type is reported as Unknown in the Memory section of the Hardware Information report.
 - Duplicate cache information is displayed in the Memory section of the Hardware Information report.
- On Systems x3100 M4, x3250 M4, and x3755 M3, you might encounter the following issues due to limitations of the IMM:
 - The IMM configuration, Environmentals, and Chassis Event logs are reported as SP Configurations, BIST results , and SP Logs respectively.
 - The IMM configuration and environmental information, such as IMM configuration , Environmentals, and Chassis Event Log, are not collected and displayed.
- On legacy BIOS and uEFI IMMv1 systems, PCI devices might miss the corresponding mappings of PCI slots due to limitations in SMBIOS 2.5.
- Portable DSA is displayed as *Unknown* in the item **PartitionSubType** in the Disk Information table on the Hardware Inventory page when the HDD is in the GUID Partition Table (GPT) format on uEFI systems.
- For Emulex options, the Emulex Bios version information on the Firmware"/VPD-BIOS/uEFI page and the Emulex EMXCNA BIOS page is not collected and shown due to the limitation of Emulex Utility.
- For reliable detection of IBM Linear Tape Open (LTO) tape devices on Windows operating systems, ensure that the tape device driver is installed in non-exclusive mode. For further details on this requirement, refer to the tape device driver documentation. Additionally, it may be necessary to stop backup related services to allow DSA to query the device.
- Preboot DSA embedded uses Customized Linux Kernel 5.2 for legacy systems. Preboot DSA standalone (CD boot or USB-key boot) uses Customized Linux Kernel 6.1 for all systems.
 - Preboot DSA (embedded or standalone) uses Customized Linux Kernel 6.1 and does not support the data collection on the QLogic adapter since the QLogic driver 1.01.02.d4 packaged in Customized Linux Kernel 5.2 cannot be used in Customized Linux Kernel 6.1.
 - The Software License Agreement (SLA) has traditional Chinese wording issue in Customized Linux Kernel 5.2. This issue is fixed in Customized Linux Kernel 6.1 in Preboot DSA 4.00 in 2011. However, those systems with Preboot DSA embedded based on Customized Linux Kernel 5.2 still have this issue.
- On VMware ESXi 5.0, the following issues may be found because the Emulex BE3 onboard card and the Robalo option card are not supported by VMware ESXi 5.0: The Name is reported as blank in the ELXUCNA Product section of the Emulex report.
- When installing the FoD key file(s) on CMM, Switch, or Remote IMM, you must ensure that the network connection is not affected by the following:
 - Http service
 - Firewall
 - Authorization

- When running FoD key management on the Compass Switch, the upgrade sequence (Key installation) must start from the first 32-port to the second 32-port, and use an inverse sequence for the downgrade (Key uninstallation), or the error message Firmware Version/Update Issue may be displayed.
- On RHEL6.x, the following issue may be found because the LSI CIM provider has limited support: The reported LSI Configuration in log file is different from other Operation Systems.
- When using DSA to collect the QLogic inventory, some redundant debug information may be included in the RAW data due to the limitation of the QLogic utility.
- On WinPE, when you run DSA with the **-upload** option through the proxy environment, the DSA output log file may not be uploaded due to a security reason. You may need to copy the DSA output log file to a removable media (such as a USB key) for further usage.
- On System x3500 M4, the following issues may be found under Windows 2008 due to the problem of uEFI SMBIOS Type 9: The **Slot** information in the Devices table on the CI Information page P shows *Onboard* or blank if the corresponding PCI device is an option card and not an onboard card.
- Flashing Preboot DSA between the Preboot DSA levels such as those listed in the following examples) with the different naming conventions on windows or Linux might fail:
 - The Preboot DSA level starting with DSYT (for example, DSYT890)
 - The Preboot DSA level starting with D6YT (for example, D6YT29A)
 - The Preboot DSA level starting with TMYT (for example, TMYT19A)
 - The Preboot DSA level starting with yuoo (for example, yuoo890)
 - The Preboot DSA level starting with y4yt (for example, y4yt21a)

You can use the **iflash** command to flash Preboot DSA levels between the Preboot DSA levels with the different naming conventions successfully: **iflash64 --package [upd file name] --openoptions 16 --force**

- RHEL6 and RHEL6.1 support limitations:
 - The LSI CIM provider does not support RHEL6.x. The reported LSI Configuration in the log file on RHEL6.x is different from other operating systems.
 - The PMC CIM provider does not support RHEL6.x.
 - The QLogic scli utility needs requires installing the GLIBC library first.
- On Windows Small Business Server 2011, DSA might run slowly on systems with the LSI option. This is caused by a provider limitation.
- On System x3755 M3, the **Slot** information in the Devices table on the PCI Information page displays *Onboard* if the corresponding PCI device is an option card.
- When transferring files by FTP in an IPv6 network, you must add the port number to upload successfully. The default port number is 21. The command format is:
[Portable DSA binary] -v -t user:password@[IPv6 IP]:21
- On System x3755 M3, the iBMC configuration and environmental information, such as the SP Configurations, Environmentals, and SP Logs may not be collected and displayed.
- On System x3755 M3, for the Name item in the Processor/Core table on the Hardware Inventory page, the Node number is displayed and is the same as the CPU number. (For example, Node 1 CPU 1, Node 2 CPU 2, or Node 3 CPU 3.)
- In the HTML output collected by Preboot DSA with VMware ESXi key, no page is displayed for VMware ESXi due to the limitation of Customized Linux Kernel 6.1 on the following systems:
 - System x3755 M3
 - System x3100 M4
 - System x3250 M4
- Embedded Preboot DSA cannot be flashed on System x3755 M3 with VMware ESX 4.1.
- When performing memory tests, DSA supports up to 4 CPUs. If any CPU is not installed or has no memory installed, that CPU cannot be selected for the memory test.

- On BladeCenter HX5 (types 7872 and 1909 multiple node configurations), some event logs are duplicated on node 1 and node 2 on the **SoftwareSystem Overview** Report Highlights page. Only one node has these events, but DSA cannot determine which one.
- On Systems x3200 M3 and x3250 M3, when the AC power cord is pulled out and plugged back in, Embedded Preboot DSA might display an error message and fail to boot. Cycling the AC power without unplugging the cord might correct the problem.
- On Systems x3850 and x3950 X5 multiple node, Portable DSA might have an exception when running with the `-ipmilan -v` option in Windows 2008 R2. In this case, the DSA log is created without any lost function.

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