SunVTS™ 7.0 Software Release Notes

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SunVTS 7.0 Software Release Notes

The SunVTS™ 7.0 software is designed for the Solaris™ 10 5/08 operating system (OS) and is compatible with the Solaris 10 or later OS.

Topics include:

Note – All tests released in SunVTS 7.0 are documented in the *SunVTS 7.0 User's Guide*. This document is included on the Solaris on Sun Hardware collection on the Solaris Documentation DVD, in the extra value (EV) directory. This document is also available at: `http://www.sun.com/documentation`

For the latest version of this document (820-1418), go to:
`http://docs.sun.com/app/docs/prod/test.validate`

SunVTS Support for the Solaris OS on x86-Based Systems

Note – In this document these x86 related terms mean the following:
"x86" refers to the larger family of 64-bit and 32-bit x86 compatible products.
"x64" points out specific 64-bit information about AMD64 or EM64T systems.

Starting with the Solaris 10 OS, the SunVTS infrastructure and core diagnostics are available for x86 platforms. Starting with Solaris 10 3/05 HW1, SunVTS diagnostics for x86 platforms are supported in the AMD 64-bit environment for the SunVTS kernel (`vtsk`). All diagnostics are ported to 64-bit.

SunVTS is supported and tested on the following Sun x86 platforms:

- Sun Fire V20z system
- Sun Fire V40z system
- Sun Fire B100 system
- Sun Fire B200 system
- Sun Fire x4100 system
- Sun Fire x4100 M2 system
- Sun Fire x4200 system
- Sun Fire x4200 M2 system
- Sun Fire x4500 system
- Sun Fire x4600 system
- Sun Fire x4600 M2 system
- Sun Blade x8400 system
- Netra CP3020 system
- Sun Blade x6220 (A92) system
- Sun Blade x6240 system
- Sun Blade x6420 system
- Sun Blade x6440 system
- Sun Fire x4540 system
- Sun Blade x8450 system

Note – If you perform SunVTS on an unsupported platform, a warning message appears and SunVTS stops.

You must install the x86 version of the SunVTS packages to perform SunVTS on x86 platforms. The software packages use the same names as in the SPARC® environment. The SunVTS packages delivered separately for both x86 and SPARC Solaris platforms are as follows:

- `SUNWvts` — Contains the SunVTS core framework that includes the kernel and user interface.
- `SUNWvtsmn` — Contains the SunVTS online manual pages
- `SUNWvtsr` — Contains the SunVTS framework configuration files in the root partition (superuser).
- `SUNWvtss` — Contains SunVTS server and browser user interface (BUI).
- `SUNWvtsts` — Contains the SunVTS test binaries.

The SunVTS components available for x86 Solaris platforms are as follows.

Infrastructure:

- `sunvts`
- `vtsk`
- `vts_cmd`
- `vtstty`
- `vtsui`
- `vtsprobe`

SunVTS tests:

- BMC Environment Test (`bmcenvironment`)
- CD DVD Test (`cddvdtest`)
- CPU Test (`cputest`)
- Cryptographics Test (`cryptotest`)
- Disk and Diskette Drives Test (`disktest`)
- Data Translation Look-aside Buffer (`dtlbtest`)
- Emulex HBA Test (`emlxtest`)
- Floating Point Unit Test (`fputest`)
- InfiniBand Host Channel Adapter (`ibhcatest`)
- Level 1 Data Cache Test (`l1dcachetest`)
- Level 2 SRAM Test (`l2sramtest`)
- Ethernet Loopback Test (`netlbtest`)
- Network Hardware Test (`nettest`)
- Physical Memory Test (`pmemtest`)
- Qlogic Host Bus Adapter Test (`qlctest`)
- RAM test (`ramtest`)
- Serial Port Test (`serialtest`)
- System Test (`systest`)
- Tape Drive Test (`tapetest`)
- Universal Serial Board Test (`usbtest`)
- Virtual Memory Test (`vmemtest`)

Displaying SunVTS Package and Version Information

Use the following command to display SunVTS package information:

```
# pkginfo -l SUNWvts SUNWvtsmn SUNWvtsr SUNWvtss SUNWvtsts
```

You can also use either of the following commands to display additional SunVTS package information:

```
# pkginfo | grep vts
```

Or,

```
# showrev -p | grep vts
```

Use either of the following two methods to display SunVTS version information:

```
# cat /usr/sunvts/bin/.version
7.0build83
```

Or,

```
# cd /usr/sunvts/bin
# ./vts_cmd get_version
7.0build83
```

SunVTS on LDoms Enabled Systems

SunVTS 7.0 functionality is available in the control domain and guest domains on LDoms 1.0.1-enabled Sun SPARC Enterprise T5120, Sun SPARC Enterprise T5220 and Sun SPARC Enterprise T5240 servers.

On the I/O tests side, `Disk` and `Network` will show up. I/O ports will show up if a virtual keyboard is present.

Performance Issues

Performance issues might be seen in a Logical domain (LDoms) environment if the strands from one core are split across multiple domains.

When high stress VTS tests are run concurrently on multiple domains, there is a high chance of moderate to serious performance degradation of the tests. The amount of performance hit will depend on the number of domains configured and also on the number of tests that are run concurrently from these domains. This is because the logic inside the tests to selectively run on only certain strands of CMT processors for testing shared hardware resources might not function properly in a virtualized environment. When the CPUs are virtualized, tests running in multiple domains could run on strands of the same core which may not be the case otherwise. As a result, contention for the same hardware resource could happen and this will result in reduced performance. This issue is addressed in the non-logical domains case but that solution may not work on a logical domain environment because the physical CPU ids are not available in a guest domain. The performance impact will be felt on tests which try to access hardware resources shared among multiple strands such as `fputest`, `dtlbtest` and `l2sramtest`. This issue may not happen if the domains are configured in such a way that the virtual cpus from one core belong to one particular logical domain only.

Another issue observed will be that the CPU ids reported by the test messages will be virtual `cpu-ids`. This means that physical `cpu-id` to virtual `cpu-id` mapping information from the LDom Manager needs to be referred in order to find out the actual strand which is faulty when the test reports a faulty CPU. The mapping in some cases can change also.

Open Issues

Possible Installation Issue: Install and Uninstall Using the Same Program

Use the same tool or utility for installation and removal of the SunVTS software. If you use `pkgadd` for installation, use `pkgrm` to uninstall; if you use Web Start for installation, use the Product Registry to uninstall.

Possible Runtime Issues for Both x86 and SPARC Platforms

CR 6664064: Memory test reports the system got one pass but the `ramtest` and many `vmemtest` instructions do not get one pass.

Feedback and Support

You can request Sun support and provide feedback to Sun at the following email address:

`ndps-feedback@sun.com`