



SCO OpenServer® 5 Definitive 2018

## RELEASE NOTES

### About this Release

**SCO OpenServer® 5 Definitive 2018** is a new release of the OpenServer 5 operating system from XinuOS, which includes OpenServer 5.0.7; its maintenance packs; all OpenServer 5.0.7V features; and additional functionality and maintenance.

SCO OpenServer 5 Definitive 2018, denoted as Definitive 2 Maintenance 1 (**D2M1**), is a successor release to OpenServer 5 as well as a successor release to OpenServer 5.0.7V. These *Release Notes* accompany the

[SCO OpenServer 5 Definitive 2018 GETTING STARTED GUIDE \(Sept. 2018\)](#) which is also available for free download at the XinuOS web site portal.

### Revisions

Revision	Date	Description
00	09/2018	Initial document release - OpenServer5 Definitive 2018 (D2M1).

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### Media

SCO OpenServer 5 Definitive 2018 consists of one DVD image, which can be used to:

- ▶ install a new OpenServer 5 Definitive 2018 system on a physical system or in a virtual machine.
- ▶ upgrade an existing installation of OpenServer 5.0.7 MP5 or later system to SCO OpenServer 5 Definitive 2018.

### Supported Platforms

SCO OpenServer 5 Definitive 2018 supports these platforms:

- ▶ Bare Metal installs.
- ▶ VMware™ Version 5.5, 6.0, 6.5, and 6.7.
- ▶ VirtualBox™ running under OpenServer 10.3. Please use the latest XinuOS tested version of VirtualBox which is provided in the OpenServer 10.3 repository.

To install a new virtual machine running SCO OpenServer 5 Definitive 2018 on VMware or VirtualBox, you can create a virtual machine and install from the Install DVD in much the same way as you would on a physical system.

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**NOTE:** *SCO OpenServer 5 Definitive 2018 does not provide a VMware or Hyper-V appliance as was provided with OpenServer 5.0.7V.*

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Upgrading existing OpenServer 5.0.7 MP5, OpenServer 5.07V, or OpenServer 5 Definitive D1M0 system or virtual machine is described in the [Upgrade Prerequisites](#) section below.

## What's New in this Release

### Highlights

SCO OpenServer 5 Definitive 2018 introduces the ability to run on VirtualBox, a type-2 hypervisor for OpenServer 10.

SCO OpenServer 5 Definitive 2018 provides additional new features, including:

- ▶ Added support to install on all supported platforms including Virtual Machines.
- ▶ El Torito no-emulation CD boot mode added to support larger boot images for CD/DVD. Floppy emulation boot is no longer supported. This allows including additional drivers to the boot kernel.
- ▶ A simplified installation process integrating maintenance and updates into ISL.
- ▶ Integration of new device drivers. These drivers include:
  - a new ahci driver to add support for latest ahci controllers as found with Intel 100/200 series chipsets (ie. C236, Z170, Z270)
  - new virtio network driver
  - a new virtio block driver
- ▶ The OpenServer 5.0.7 development system, as well as Symmetric Multiprocessor Support (SMP), are installed and licensed by default (free of charge).
- ▶ License changes:
  - Licensed for 500 users.
  - Licensed for 128 CPUs (OpenServer 5 does not scale very well beyond 4 processors/cores).
- ▶ Additional maintenance (see the list under New Fixes and Enhancements for OpenServer 5 Definitive 2018 on page 6).
- ▶ Revised openssh (see OpenSSH Improvements on page 21).

### Licensing and Registering SCO OpenServer 5 Definitive 2018

SCO OpenServer 5 Definitive 2018 requires a new specific subscription license, as described in the *Getting Started Guide*:

- ▶ For upgrades to OpenServer 5 Definitive 2018 from a prior release, you must have an OpenServer 5 Definitive 2018 license.
- ▶ For ISL you can use a thirty-day evaluation license or the new subscription license.

### Upgrade Prerequisites

SCO OpenServer 5 Definitive 2018 upgrades these installations:

- ▶ OpenServer 5.0.7 Maintenance Pack 5.
- ▶ OpenServer 5.0.7V Version 3.0.0.
- ▶ OpenServer 5 Definitive D1M0 release.

If a user has previously deployed the OpenServer 5.0.7V appliance, the user can upgrade the resulting VM from OpenServer 5.0.7V to SCO OpenServer 5 Definitive 2018 through use of the SCO OpenServer 5 Definitive 2018 **upgrade.sh** shell script. For details see the accompanying *Getting Started Guide*.

Before upgrading your OpenServer 5.0.7 MP5, OpenServer 5.0.7V, or OpenServer 5 Definitive D1M0 system:

- Be sure to have a new OpenServer 5 Definitive 2018 subscription license.
- Make sure you have good backups. The upgrade process is **not** reversible. For more information on the installation media images and the installation process, please check the **“Getting Started Guide for SCO OpenServer 5 Definitive 2018”**.

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**WARNING:** Users are encouraged to check the free space before an upgrade, especially if the ISO file copied to the root filesystem. A minimum of three GB should be available for the upgrade.

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## Fixes and Enhancements

### Previous Released Fixes and Enhancements Included in OpenServer 5 Definitive 2018

SCO OpenServer 5 Definitive 2018 includes fixes and enhancements first provided in earlier releases:

- For fixes and enhancements first provided in OpenServer 5.0.7 Supplement 5, including fixes in OpenServer 5.0.7 Maintenance Pack 5, see: <http://ftp.sco.com/pub/openserver5/507/iso/osr507suppcd5/osr507suppcd5.html> and <http://ftp.sco.com/pub/openserver5/507/mp/osr507mp5/osr507mp5.htm>.
- For fixes and enhancements first provided in OpenServer 5.0.7V, see: [http://ftp.sco.com/pub/openserver507v/507v/other/openserver507v\\_v300sup/osr507v\\_upgrade\\_3.0.0\\_GSG.html](http://ftp.sco.com/pub/openserver507v/507v/other/openserver507v_v300sup/osr507v_upgrade_3.0.0_GSG.html)
- These enhancements were first provided in OpenServer 5 Definitive D1M0:
  - SATA Host Bus Adapter support (ahci driver)
  - rsync - File transfer program (ver 3.1.1)
  - VIRTIO Gigabit Ethernet Adapter (ver 1.0.0)

### New Fixes and Enhancements for OpenServer 5 Definitive 2018

OpenServer 5 Definitive 2018 provides these bug fixes:

ID	Description
fz300262:1	<b>finger only displays 3 characters in the tty column</b> OpenServer 5 Definitive now gives as much room as possible for tty names.
fz300465:1	<b>finger(C) reads non-regular .plan and .project files</b> Warn the user if the <b>.plan/.project</b> file is not readable by others (overridable with new <b>-t</b> "I'm testing what this is going to look like when I make it readable" flag).
fz339107:1	<b>finger prints remote host name before connection complete</b> Fix potential buffer overflows, optimize <b>wtmpx</b> search strategy; and wait for <i>connect()</i> to succeed before printing hostname.

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ID	Description
fz345424:1	<b>Should warn users if their finger file is not readable</b> Do not try to open users' files as root, they might be linked to dangerous device nodes. Do not try to display contents of non-regular files.
fz529158:1/ erg712584	<b>NFS mounts causes panics in badsleep ( )</b> Fixed variable definition type to avoid NFS panic.
fz533559:1	<b>Partial fix: Cups breaks scoadmin printer-Add Remote Unix printer /usr/lib/mkdev/lp</b> is recreated if its backup exists. This file is removed if Cups is installed after an OpenServer maintenance patch such as MP5 or rsd2m1 is installed. If you want to use OpenServer 5 RLP then see <a href="#">TA # 125723</a> for details.
fz533667:2	<b>custom "insufficient disk space message" display problem</b> Fixed custom formatting specification to display properly the number of inodes.
fz533818:2	<b>Update eeG driver to version 5.1.12</b> The previously web-posted eeG release version 5.1.12 device driver is now installed as part of the OpenServer 5 Definitive 2018 (D2M1) upgrade.
fz533850:1	<b>New acctcom options</b> <b>acctcom</b> has several new options. For a summary run <b>acctcom -X</b> .
fz533850:7	<b>Additional acctcom enhancements</b> <b>acctcom</b> now has these enhancements from OpenServer 6:  <ol style="list-style-type: none"> <li>1. Backport to OSR5; deal with absence of AEXPND and <i>o_acct</i> on OSR5.</li> <li>2. Use <i>#defines</i> for <i>ver+backward+tail+peek</i>.</li> <li>3. Corrected scanf of UID &amp; GID to use whichever of "%hu" or "%lu" is appropriate.</li> <li>4. Revert to using KCORE for mean size calculations, but with the greater accuracy.</li> <li>5. Every call to the <i>-lprot pw_idtoname()</i> costs a <i>stat()</i>. So, combined the two implementations of <i>uidtonam()</i> so that even if we use the SecureWare implementation, we also have a local cache.</li> </ol>
fz533862:2	<b>Receipt of improperly formed LLC XID packets and TEST frames may cause memory leaks.</b> Fixed a bug in the <b>dlpi</b> device driver to prevent streams memory leaks that could occur when improperly formed LLC XID packets were received from some routers, and a similar bug caused by receipt of improperly formed LLC test frames.

ID	Description
fz533923:2	<b>Support for native PCI IDE controllers: Add -v option</b> Add support for native PCI IDE controllers.
fz533927:2	<b>Using rz (zmodem) from a windows terminal the transfer hang or sees lot of retries</b> A new option, <b>-T</b> , has been added to <b>/etc/telnetd</b> . If invoked with <b>-T</b> , then <b>/etc/telnetd</b> will not use the in-kernel telnet module <b>iknt</b> .
fz533943:1	<b>finger reports the wrong idle times</b> If <b>tty modtime</b> is earlier than the login time, use the login time in calculation of idle time.
fz534028:1	<b>Backporting ct from OSR6 to OSR5</b> Backport fix so that <b>getty</b> and the serial driver allows <b>ct</b> to do a callback.
fz534063:2	<b>Modify "wd" driver to set "Write Cache Enable"</b> Some device drives are supplied with the write cache disabled. This results in extremely long install times, and less obvious performance problems post-install. Solution: enable write cache at install time. Allow write cache to be enabled post-install.
fz534064:2	<b>Partial system lockup occurs while copying large file from CD to hard drive</b> Provide a new PIC driver to enable shared interrupts on systems whose BIOS incorrectly configures them, such as the HP ProLiant ML150 G2.
fz534088:2	<b>Cannot mount USB floppy drive after installing 5.0.7 Maintenance Pack 5 (MP5)</b> Fixed a problem which did not allow the USB floppy drive to be accessed by the regular <b>/dev/fd[01]</b> nodes after the deployment of Maintenance Pack 5.
fz534153:2	<b>OSR507:umount hangs and subsequent access gives Resource Temporarily Unavailable (error 11)</b> A rare race condition, which may sometimes cause <b>umount</b> of an HTFS file system to hang, has been fixed.
fz534154:2	<b>Revise tcp var.h to prevent OpenServer 5.0.7 MP5 panic</b> Provided an updated <b>tcp_var.h</b> file. This fixes a problem on OpenServer 5.0.7 MP5 systems where the system could panic after a <b>"telnet -d"</b> from the MP5 box to itself.
fz534177:1	<b>Process Intel eeG 3.1.7 handoff</b> This networking device driver is included in OpenServer 5 Definitive 2018.
fz534201:1	<b>eeG driver 3.1.7 has packaging problem and won't install over eeG 1.2.10</b> This was caused by incorrect internal version numbers used when the device driver was compiled for an individual release. Later updates fix this issue.



ID	Description
fz534223:2	<p><b>SATA devices not being detected correctly using IDE emulation</b>                      Allow flexible mapping of host adapter number to controller number. At ISL time (or if the <b>wd.atapishift</b> bootstring is given), if there are no ATAPI devices on controller 0 or 1, map the first controller that an ATAPI device is found on to be host adapter 0 so that the ATAPI device can be accessed from ISL as a device on the "primary" or "secondary" controller.</p>
fz534257:1	<p><b>% complete calculation/printing breaks for block &gt;20M on SCSI drives</b>                      The fix is to display percentages correctly for blocks &gt; 20M and to print no more than 20 updates/second.</p>
fz534342:1	<p><b>The portcheck utility used by mkdev apc produces an incorrect result if DCD is asserted.</b>                      Check whether DCD is asserted when interpreting the result of a test that depends on it not being asserted.</p>
fz534355:1	<p><b>sar -d only reported on drives on the first two controllers</b></p> <p>Changes were made to:</p> <ul style="list-style-type: none"> <li>○ Gather data on up to 8 wd drives.</li> <li>○ Miscellaneous cleanup and improvement of error messages.</li> <li>○ No longer output to standard output if it is a terminal.</li> </ul>
fz534361:3	<p><b>hang on hd_config on S7230NH or S3000AH/AHLX motherboards</b>                      Added various enhancements and new routines for debugging APIC interrupt assignment issues.</p>
fz534366:2	<p><b>HP MP150 G3 does not detect SATA devices using 'wd' driver</b>                      Do some sanity checking of ROM table contents; also, ignore if the drive is not on primary controller.</p>
fz534400:2	<p><b>System hangs when SATA and other storage controller share IRQ and SMP installed</b>  <b>wd</b> needs to know interrupt mapping as soon as any interrupts are generated, but depending on the MPS table mode, this information may not be available until <i>scsi_config()</i> calls <i>idistributed()</i> for the <b>wd</b> host adapter. Later actions by <i>scsi_config()</i> itself may generate <b>wd</b> interrupts. So, have <i>wdintr()</i> itself gather this information the first time it is called.</p>

ID	Description
fz534454:1	<p><b>Use of copy buffers by the scatter-gather implementation used by <code>physio()</code> breaks <code>wd</code> --</b>  <b><code>wd</code></b> bases its determination of the offset at which raw IO for a sector should be split between pages on the offset within a page of the first target address it is given. But, <code>scatterprep()</code> was handing off a page-aligned address in all cases in which a copy buffer was used, which broke <code>wd</code>'s split method when a copy buffer was used for the first page of a scatter/gather request.</p> <p>Fix: Duplicate any user buffer offset in the copy buffers.</p>
fz534455:1	<p><b>kernel link failure if <code>/bin/sh</code> is <code>ksh93</code></b>  Modified use of <b><code>echo</code></b> by <b><code>idbuild</code></b> to be compatible with <b><code>ksh93</code></b>.</p>
fz534456:1	<p><b>If no DATA text received before net connection dropped, message should not be submitted.</b>  Various clean-up:</p> <ul style="list-style-type: none"> <li>o <b><code>libmmdf</code></b>: Tell how protocol-mode submission is ended</li> <li>o <b><code>smtpd</code></b>: Pass local address to <b><code>smtpsrvr</code></b>.</li> <li>o <b><code>smtpsrvr</code></b>: <ul style="list-style-type: none"> <li>a. If no DATA text was received from remote system before an error occurred, abort message submission.</li> <li>b. Added <b><code>net_timeout confstr</code></b></li> <li>c. Replaced <code>ll_log()</code> with <code>ll_err()</code> where appropriate</li> </ul> </li> <li>o Other logging enhancements <ul style="list-style-type: none"> <li>a. Replaced <code>netprintf()</code> with <code>netprintln()</code> for better logging.</li> <li>b. Record SMTP responses at same level as SMTP commands are: PTR</li> <li>c. Only use <code>mm_protocol_addr_abort()</code> while actually in address phase</li> <li>d. Made <b><code>getline</code></b> return an <b><code>int</code></b>, and multiple error values</li> <li>e. Allow for a sixth argument, specifying local address; currently unused by <code>smtpsrvr</code> (passed by <b><code>smtpd</code></b> and used by a shell shim sometimes used between <b><code>smtpd</code></b> and this program)</li> <li>f. The new <b><code>net_timeout confstr</code></b> for smtp channel is provided.</li> </ul> </li> </ul>
fz534477:1	<p><b><code>scoadmin</code> exits with vtcl error when using a usb modem- telnet works</b>  Fixed incorrect return value from TIOCFLSH ioctl. In <code>ttymap_ioctl()</code>, make sure that return value indicates success if no failure occurs.</p>
fz534585:1	<p><b>local mail delivery logs write failures without naming the pipe/file that couldn't be written to.</b>  The MMDF mailer diagnostics now make it clear the filename which cannot be written.</p>

ID	Description
fz534645:2	<p><b>VDM does not recognize second SATA disk</b>                      Replaced all instances of %8d in scans with %10d, to allow configuration of disk pieces with block addresses &gt; 99999999. This enables detecting the second disk.</p>
fz534792:3	<p><b>Double quotes in the banner may result in print job loss</b>                      The <b>lp</b> utility has been modified so that special characters (like double-quotes) in title strings no longer can cause ill effects such as the loss of the print job.</p>
fz534808:1	<p><b>Add the backslash syntax for recursive alias lookup suppression in .forward files --</b>                      The MMDF syntax (in .forward files) has been enhanced to accept <b>\alias</b> to suppress recursion for that alias, to match that used by other mailers.</p>
fz534809:1	<p><b>The -v (no-verbose) flag should suppress time-of-day restriction messages</b>                      The <b>acctcom</b> utility's <b>-v</b> option was modified so that it also suppresses time-restriction diagnostic messages.</p>
fz534810:1	<p><b>acctcom can miss records when end-time restrictions are given</b>                      The <b>acctcom</b> utility was repaired so that use of end-time restrictions will no longer potentially cause record entries to be skipped.</p>
fz534811:1	<p><b>who utility headers displayed by -H are not aligned properly if -ux is given</b>                      The <b>who</b> utility was repaired so that the option combination <b>-H -u -x</b> will now correctly align the column headings.</p>
fz534813:1	<p><b>dparam has some incorrect/mis-formatted error messages</b>                      Add a new <b>-t</b> (test) option for debugging; the <b>-v</b> (verbose) option is also available.</p>
fz534825:1	<p><b>If setreuid() or setregid() fails, the logged error message contains garbage</b>                      MMDF used to display junk values in situations in which the <i>setreuid()</i> or <i>setregid()</i> system calls failed.</p>
fz534869:1	<p><b>printf has many formatting problems --</b>                      Rewrote the core kernel <b>printf</b> code to make zero padding, width, precision, and left justification work consistently for all supported types. Updated a couple of cases of driver code that used incorrect formatters that would now be handled differently.</p>

ID	Description
fz535012:1	<p><b>Various libc changes to enable OSR5 gwxlibs &amp; friends builds</b>  Updated <b>libc</b> to:</p> <ul style="list-style-type: none"> <li>• Updated 507 RTLD to match top of tree UnixWare (GWXLIBS build requirement)</li> <li>• Added missing symbols to list of symbolic symbols for RTLD and ensure that the variables are initialized to 0.</li> <li>• Updated ld to match the latest UnixWare 7 sources for improved LD_ROOT support and other semantic changes required to build GWXLIBS.</li> <li>• Dont initialize <code>__multithreaded</code>. Let it stay in the <code>.bss</code> section.</li> </ul>
fz535180:1	<p><b>OSR5 disk drivers fail with drives of 1 TiB or larger --</b>  Updated <b>dk</b> (generic disk driver), <b>divvy</b>, and <b>fdisk</b> to deal with sector counts/offsets using unsigned ints wherever necessary, allowing sector counts up to <math>2^{32}-1 \sim 2\text{TiB}</math>. Updated various sector count printing to use unsigned format, and fixed cases where the change to unsigned had other implications. These changes, along with previous work on <b>wd</b>, allow IDE/SATA drives of up to 2 TB to work. Other disk drivers (e.g. SCSI HBAs) will require per-driver work.</p>
fz535211:1	<p><b>Drive bug: Last sector of 28-bit LBA space can't be accessed using 28-bit LBA</b>  Use 48-bit LBA mode for the sector number equal to <code>ATA_MAX28_LBA</code>.</p>
fz535273:1	<p><b>Use of signed int for sector number breaks operation at &gt;1TiB</b>  Use unsigned for sector numbers.</p> <p>Fixed debug case statement for various write cache states. Store <b>wd</b> controller output debugging in <b>putbuf</b> as well as printing it.</p> <p>Translate the bitflags returned when <b>wd</b> controller indicates error into verbose form.</p> <p>Use 48-bit LBA mode for the sector number equal to <code>ATA_MAX28_LBA</code> (ID: 535273:1)</p>
fz535420:1	<p><b>undelete's +-m options have no effect on directory selection</b>  Fix bug so that directory age restrictions specified on the command-line are recognized.</p>
fz535421:1	<p><b>undelete needs an option to list versioned files with paths</b>  Added a new <code>-L</code> option to the list with path to include the option.</p>

ID	Description
fz535454:1	<p><b>undelete breaks if more than one directory name with more than one component is given</b> Fixed erroneous interpretation of directory arguments.</p> <p>Problem: undelete, version, purge, and list functions all can operate recursively, and pass a null file when doing this. They then use a null file as an indication that they were called recursively, and if so, change back to where they started with chdir(..) instead of chdir to the initial directory. But if a path is given on the command line that is a directory, and -d is not given, file will also be null. In this case, if such a path has more than one component, chdir(..) will not get back to the initial directory, causing any later paths to incorrectly be interpreted.</p> <p>Solution: Pass an explicit recursive-call flag.</p>
fz535593:1	<p><b>Address of remote SMTP source is not recorded in Received: header</b> Record remote smtp source address literal in the <b>Received:</b> header.</p>
fz535611:3	<p><b>Enhance hw to display arbitrary model-specific registers (MSRs)</b></p> <p>Hyper-V makes certain resources available as synthetic model-specific registers (MSRs). To facilitate support of Hyper-V, the msr report of the hw command has been enhanced to accept queries on individual MSRs, specified by an option argument of the form msr=number following the -r option. For example, the command</p> <pre>hw -r msr=16</pre> <p>reports on MSR number 16. The MSR number may be specified in decimal, hex (with a leading 0x) or octal (with a leading 0).</p>
fz535631:1	<p><b>rmail's options (-d and -f) are not removed from the argument list after processing</b> Remove option arguments from list of arguments treated as addresses.</p>
fz535664:1	<p><b>SECURITY: Program channel has severe remotely-exploitable security holes</b> Check for variable expansion buffer overflow. Escape potential shell metachars.</p>
fz535670:1	<p><b>The quot command produces incorrect results if the filesystem contains maximum-size files</b> Properly account for files that are within one block of 2<sup>31</sup> bytes.</p>

ID	Description
fz535680:1	<p><b>pax fails if target for -rw is a symlink pointing to a directory</b>                      Allow target directory to be a symlink pointing to a directory.</p>
fz535694:1	<p><b>Report discrepancy between protected password database and subsystem database without giving details</b>                      If a discrepancy is found between the protected password database record of subsystem privileges and the subsystem database itself, produce an explicit description of those differences.</p>
fz535696:1	<p><b>ps command is truncated to nine characters if it is not the last column</b>                      Three ps fields are automatically truncated if they are not the final field. This means that full data for only one of these can be extracted. Two of these might be very long, but the other, COMM, can be no more than fourteen characters, so there is no need to truncate it (to nine characters). Since one of the other two fields is a superset of the other, allowing all of the COMM to be displayed when it is not the final field allows ps to display full information.</p>
fz535701:1	<p><b>Custom verify errors on OSR507 + MP5 are also on 507V2.0.0</b>                      OpenServer 5.0.7 MP5, OpenServer 5.0.7V, and OpenServer 5 Definitive D1M0 had various verify errors with various */tcb/* files. These verify errors have been fixed.</p>
fz535703:3	<p><b>507V VidconfigG.hk verify errors</b>                      Fixed custom verify error with the  <b>/opt/K/SCO/vidconf/5.5.1a/share/doc/OpenServer/en/VidConfigG/VidconfigG.hk</b> file.</p>
fz535703:4	<p><b>507V X/Desktop verify errors</b>                      Previous releases often displayed UID and GUID verify errors for  <b>/var/opt/K/SCO/XServer/5.2.4a/usr/lib/X11/sys.startxrc</b> and  <b>/var/opt/K/SCO/Desktop/3.6.5a/rules/SCO.user/rootMain.dt</b>. These are fixed by <b>upgrade.sh</b>.</p>
fz535703:5	<p><b>Inconsistent verify errors regardless of chosen documentation component</b>                      Various English, French, and German documentation files want to claim documentation symlinks. In prior release these links were almost randomly distributed among the three languages. In D2M1 they now all point to the English files. By running custom verify on the various French or German language components, you can redirect these links (re-exposing the English verify errors while preventing the chosen language verify errors).</p>

ID	Description
fz535703:8	<p><b>507V has scoadmin internet services custom verify error</b>                      On some systems <code>/.odtpref/InitAdmin</code> points to <code>/opt/K/SCO/Atlasadm/1.5a/admin/desktop/InitAdmin</code> even though that binary does not exist. In such cases, <code>upgrade.sh</code> removes the symbolic link. If a D2M1 ISL displays this verify error, you can either remove the symbolic link or run <code>upgrade.sh</code> to do so.</p>
fz535765:1	<p><b>signal.h - updated when raise() function added to libc.s0.1 - never re-released</b>                      Corrected entries in various <code>signal.h</code> header files.</p> <p>The "extern int raise(int);" line is correct. There should not be a line near the bottom that says "#define raise(sig) kill(getpid(), sig)"</p>
fz535904:2	<p><b>Kernel panic when trying to acquire a lock from STREAMS function putnextqrun --</b>                      A race condition between the close of a STREAMS pipe and scheduling of STREAMS service procedures could sometimes result in a kernel panic. The race has been resolved by protecting the relevant STREAMS data with a lock.</p>
fz535924:2	<p><b>Panics and timeouts seen while running sshd with SMP enabled</b>                      The problem was caused by a race condition in the kernel socket code. That race condition has been fixed.</p>
fz535929:1	<p><b>Kernel panics in nmmapout2 and related functions</b>                      Occasional kernel panics have been seen in <code>nmmapout2</code> and related kernel code responsible for character translations of console output and keyboard input. The problem has been fixed.</p>

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ID	Description
fz535939:1	<p><b>OSR507v libdnet - failing to provide MAC address</b> libdnet release 1.11Ta was initially released as a post OpenServer 5.0.7V Version 3.0.1 web posting and is now included in OpenServer 5 Definitive. It fixes the following earlier problem:</p> <p>The open source component <b>libdnet</b> was released on OpenServer 5.0.7V to support the VMware open-vm-tools (<b>vmtools</b>) on virtual machines running on VMware hypervisors. As released, <b>libdnet</b> was unable to provide the MAC address of virtual NICs and the <b>vmtoolsd</b> daemon provided incomplete network information to the VMware host. In most cases this simply resulted in incomplete network data registered with the host. For ESX 3.5 updates before update 3, the lack of a valid MAC address would result in the ESX host losing connectivity with all vSphere clients.</p> <p>This release of <b>libdnet</b> was built using <b>/usr/include/sys/scodlpi.h</b> (extensions to the AT&amp;T DLPI 2.0) which allowed correct MAC address information to be obtained.</p>
fz535983:2	<p><b>Race condition between exit and wait system call causes occasional ksh script hangs</b> A race condition between the <i>exit</i> and <i>wait</i> system calls resulted in a <b>ksh</b> script deadlock in which a <b>ksh</b> process is waiting on one or more children to exit, and all the children are blocked trying to write to pipes that are full. The race condition has been fixed.</p>
fz536024:2	<p><b>Panic in sysi86 system call invoked from ps command</b> A race condition in the proc subsystem caused a kernel panic in the RDUBLK command of the sysi86 system call. The race condition has been resolved.</p>
fz536049:2	<p><b>NULL pointer panic in function tcp_abortincon in networking subsystem -</b> -</p> <p>A macro used by the networking subsystem had a race condition that sometimes caused it to update a structure that had already been freed, resulting in a NULL pointer panic. The problem has been fixed.</p>
fz536113:2	<p><b>Update Copyrights for Xinuos &amp; year product is released</b> This problem has been resolved.</p>



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ID	Description
OSR5-10/ fz535177	<b>openssh client invokes incorrectly compiled xauth</b> <code>/usr/bin/X11/xauth</code> is now generated correctly.
OSR5-12/ fz534046	<b>Fix system verify warnings</b> Many verify warnings have been fixed. The specific scenario with an old Perl version in this bug report will not be addressed. For more information see the Known Issues in this Release section starting on page 22.
OSR5-13/ fz535765:1	<b>signal.h files missing raise signal call</b> Added the signal call where missing.
OSR5-14/ fz535416:2	<b>Difficult to reconfigure fixed IP to DNS under VMware</b> Can now reconfigure networking from static to dynamic.
OSR5-16	<b>2nd CPU doesn't come up on VB, VMware and bare metal</b> This has been fixed.
OSR5-43	<b>Missing mscsi entry disables primary/secondary IDE controllers</b> An ISL bug was fixed so that missing mscsi entry is provided by the OpenServer Definitive upgrade. This enables access to a primary or secondary IDE (wd) CD/DVD drive.
OSR5-57 OSR5-108	<b>Fix OpenServer 5 Definitive (D1M0) broken links</b> Previously, <code>find / -follow &gt;/dev/null</code> on OpenServer 5 Definitive showed some broken links with SCO provided software. This has been fixed.
OSR5-58	<b>ISL reinstalls mistakenly added IPX settings</b> IPX support is deprecated and is no longer offered as an installation option.
OSR5-67	<b>Integrate virtio PCI driver</b> OpenServer 5 Definitive now includes the virtual input/output PCI device driver <b>virtio</b> ; for more information see <a href="https://wiki.osdev.org/Virtio">https://wiki.osdev.org/Virtio</a> .
OSR5-69	<b>csch command-line limit</b> Changed the csh command-line character limit from $5 * 1024$ to $1024 * 1024$ .
OSR5-70	<b>Enhance fsck debugging capabilities</b> Added x option (debugging with verbosity levels), and assorted debugging.
OSR5-71	<b>ISL did not always re-calculate the broadcast address</b> The ISL networking interview now recalculates the broadcast address when the user changes the netmask.
OSR5-75	<b>openssl files in gwlibs package</b> Previously <b>gwlibs</b> installed old <b>openssl</b> files that conflicted with files from newer <b>openssl</b> would cause <b>custom</b> verify errors. This fix updates the <b>custom</b> database to avoid this error.

ID	Description
OSR5-77	<p><b>Missing OSRcompat, libC, libc, libm &amp; libthread</b> Files missing from <b>/udk</b> have been restored.</p>
OSR5-81	<p><b>Restart guest on VMware does no graceful shutdown on 5D releases</b></p> <ol style="list-style-type: none"> <li>Previous versions of the open-vm-tools (<b>vmtools</b>) on OpenServer 5.0.7V would execute a <b>/etc/reboot</b> command when "Restart Guest" was selected from the "Power" menu. Essentially the equivalent of a hardware reset and avoiding normal shutdown processing, this could potentially corrupt user data. <b>vmtoolsd</b> version 2010.03.20Cb, now issues a <b>shutdown -i6 -g0</b> command when the "Restart Guest" is selected; normal shutdown processing is done before the reboot.</li> <li>Messages from any additional processing a user may have added to the <b>/etc/shutdown</b> command would normally be displayed on the console. If the shutdown command is issued by the <b>vmtoolsd</b> daemon, that output would be redirected to <b>vmtoolsd</b>'s stdout or standard error which defaults to <b>/dev/null</b>.</li> </ol> <p>The <b>vmtoolsd</b> in release 2010.03.20Cb has been modified to redirect any shutdown command processing back to the console and correctly handle CR/LF in the display.</p>
OSR5-83	<p><b>Integrate bnxii device driver into 5D2M1</b> The <b>bnxii</b> device driver, previously web posted, is now integrated into OpenServer 5 Definitive D2M1. For more information see <a href="http://www.sco.com/support/update/download/release.php?rid=388">http://www.sco.com/support/update/download/release.php?rid=388</a></p>
OSR5-86	<p><b>Provide curl with OpenServer 5 Definitive 2018</b> An updated <b>curl</b>, Curl 7.58.0, is included in OpenServer 5 Definitive 2018. This version is provided via the <b>Xinuoscurl</b> package and is automatically installed during ISL/upgrades via <b>pkgadd</b>. A <b>Xinuoscurl-dev</b> package is also provided on the DVD ISO image in the ISO's <b>/extra</b> directory. Curl is linked against Openssl 1.0.2.</p>
OSR5-90	<p><b>Improve sys/socket.h</b> Added <b>socklen_t</b> that modern software uses for the length option on various socket functions.</p> <p>Added SHUT_RD, SHUT_WR, and SHUT_RDWR symbolic names for the how argument of <b>shutdown</b>(SSC) to ease porting of opensource software.</p>
OSR5-91	<p><b>env should be available from both /bin and /usr/bin</b></p>

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ID	Description
	Both <code>/bin/env</code> and <code>/usr/bin/env</code> , for example <code>/usr/bin/env perl</code> , can be used to locate open source binaries.
OSR5-93	<p><b>OpenServer 5 Definitive needs 32-character package names</b></p> <p>Just like in OpenServer 6 Definitive 2018 and UnixWare 7 Definitive 2018, <b>pkgadd</b> now supports package “short” names of up to 32 characters; previously package short names were limited to nine characters.</p>
OSR5-94	<p><b>Provide updated cdrtools</b></p> <p>A new version of <b>cdrtools</b>, Version 3.02a09, is provided in OpenServer 5 Definitive 2018 Core parcel. For more information about this release of cdrtools, please see <a href="http://freshmeat.sourceforge.net/projects/cdrecord">http://freshmeat.sourceforge.net/projects/cdrecord</a>.</p>
OSR5-95	<p><b>Hang in /etc/rc2.d prevents shutdown</b></p> <p>A timing problem was fixed.</p>
OSR5-111	<p><b>Updated terminfo entries added to terminfo.src</b></p> <p>For D2M1, additional <b>terminfo</b> entries have been checked in to have proper functioning when connecting to 5D from UnixWare, Linux, OSX, <b>cygwin</b>, or even an Altos terminal. These get all bundled together into the <code>/usr/lib/terminfo/terminfo.src</code> file.</p>
OSR5-114	<p><b>IDE badtrack scan is no longer run by default</b></p> <p>Previously, <b>wd</b> controllers are flagged as ST506 so badtrack was selected by default. This could needlessly slow installs, in some cases by twenty minutes. Now badtack is not run by default.</p>
OSR5-117	<p><b>Reorder ISL mouse pulldown menu options</b></p> <p>Currently the default "no mouse" is at the bottom of the list and the three most used options are at the top. Moved the "no mouse" to the top of the list to enhance the user experience.</p>
OSR5-122	<p><b>upgrade.sh should save the starting unix kernel before beginning the upgrade.</b></p> <p>If <code>/stand</code> has at least 10 MB of space, then a backup copy of the <b>unix</b> kernel is created in <code>/stand</code>. This is for the unlikely event that the upgrade fails, and you need to boot the pre-upgrade kernel. The back-up is not created if <code>/stand</code> is low on space (less than 10 MB).</p>

ID	Description
OSR5-124	<p><b>SMP processing in ISL and upgrade.sh</b>                      To work on modern hardware, some obsolete SMP device drivers are disabled by ISL:</p> <p>For ISL: We always install SMP. Since SMP comes with several obsolete drivers (for example, EISA bus era) enabled by default, we disable them. On the small chance that someone is installing on a museum piece, we save a copy of the kernel with the old device drivers in it as</p> <p><b>/stand/unix-with-obsolete-smp-drivers</b></p> <pre># obsolete smp drivers # a15k      Acer/Altos 15000 # cbp      C-bus II multiprocessor routines # ncrmp    NCR drivers # olimpx   olivetti SNX160 as an LSX5040 # olimpxp5 olivetti MPX version for MB3995 PENTIUM - APIC machines # snipce   SNI PCE # syspro   Compaq Systempro and clones such as the ALR PowerPro. # sysproxl COMPAQ SYSTEMPRO/XL # tpf      Tricord PowerFrame # wyse     WYSE SCO-MP</pre> <p>For <b>upgrade.sh</b>: If we install the SMP package (because the pre-upgrade system had not installed it), we disable the above obsolete drivers. In all cases we make sure the following SMP drivers are enabled:</p> <p><b>apic atpr attack cidriver crllry mpsw mpx</b></p>
OSR5-132	<p><b>DNS client manager cannot modify 'domain search' info</b>                      A bug was fixed where the DNS search field would not accept input if the <b>Default Route</b> field was not blank.</p>
OSR5-134	<p><b>OpenServer 5 Definitive D1M0 DNS client manager is missing options for DNS Client</b>                      This problem has been fixed.</p>
OSR5-145	<p><b>Virtual Box D1M0-&gt;D2M1 upgrade should add missing X components</b>                      OpenServer 5 Definitive D1M0 was the first OpenServer release supported on Virtual Box running on OpenServer 10. However, the X Server desktop was not supported and so D1M0 ISL did not install some X components for the Virtual Box platform. OpenServer 5 Definitive 2018 (D2M1) introduces support for the X Server desktop running on Virtual Box. The upgrade (D1M0-&gt;D2M1) will now automatically install those components.</p>

ID	Description
OSR5-149	<b>Verify error on Virtual Disk Manager (VDM) stubs.c file</b> This OpenServer 5.0.7 verify error is now fixed by the upgrade to OpenServer 5 Definitive.

The enhancements for OpenServer 5 Definitive 2018 was provided earlier in the [Highlights](#) section on page 4. Additional **openssh** bug fixes and enhancements are described next.

### OpenSSH Improvements

SCO OpenServer 5 Definitive 2018 upgrades **openssh** to version 7.3p1Be. It provides the following enhancements:

- ▶ OpenSSH 6.9 and later changed its default key fingerprint from md5 to sha256. Since most of the machines connecting will be older systems with only md5 fingerprint hash, XinuOS now defaults back to md5 to enhance the security of a first-time connection.
- ▶ **sshd\_config** is changed to:
  - set PermitRootLogin to yes (always questionable but it follows the principle of least surprise)
  - Set PrintMotd and PrintLastLog to no for proper functioning on SCO OpenServer.
  - Add an example in sshd\_config to work around firewalls dropping connections.
- ▶ Add support for TCP wrappers.

For this release:

- ▶ The ssh server has been compiled with only SSH2 support. The ssh client supports SSH1 and SSH2.
- ▶ **/usr/bin/slogin** was removed. Future upstream versions will remove insecure ciphers.

## Known Issues in this Release

### Solving problems during ISL installation

This section covers solutions for some common problems that might occur while installing the software.

- ▶ **Installation DVD fails to boot from bootable DVD drive**

If you have a system that supports bootable DVD but the SCO OpenServer 5 Definitive 2018 DVD fails to boot, it is possible that your system BIOS is out-of-date. Check with your hardware vendor to see if there are any BIOS updates available.

- ▶ **On booting the installation media, there may be an approximately thirty second delay before input from a USB keyboard is accepted.**

- ▶ **USB devices can interfere with installation**

Other than a USB keyboard, USB mouse and, if desired, a USB DVD drive for running the installation, we recommend that you remove other USB devices (especially USB storage devices) before starting the installation to minimize the chance of problems.

- ▶ **Installation unresponsive when system attached to KVM switch**

If your system is attached to a KVM or multiscreen switch and you experience problems with system unresponsiveness after switching screens, we recommend that you stay on the SCO OpenServer 5 screen for the duration of the installation.

- ▶ **On Virtual Box on OpenServer 10, AHCI is the **only** supported configuration.**

If you prefer to use IDE and are upgrading from MP5, then you must configure two virtual CPUs. (OSR5-125)

### Solving problems after installation

- ▶ **Upgrades may fail on systems with only 4 GB of total space.**

Depending on your system configuration and which components need updating to OpenServer 5 Definitive D2M1, upgrades may fail if you only have 4 GB hard disks. All OpenServer 5 Definitive 2018 software consumes over 3 GB of space.

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### ► Install stop when upgrading to OpenServer 5 Definitive 2018 on Virtual Box

OpenServer 5 Definitive D1M0 was the first OpenServer release supported on Virtual Box running on OpenServer 10. However, the X Server desktop was not supported and so D1M0 ISL did not install some X components for the Virtual Box platform.

OpenServer 5 Definitive 2018 (D2M1) introduces support for the X Server desktop running on Virtual Box. The upgrade (D1M0->D2M1) will now automatically install those components. However, when doing so an install stop will be encountered. This error is corrected later in the installation. So when encountering the installation stop, press **Enter** to continue.

### ► System is not licensed, or unregistered software is detected

If you get the error System not licensed when logging in, or see messages about unregistered SCO OpenServer 5 software:

1. On bare metal switch to tty01 by pressing <Ctrl><Alt><F1>.
2. Log in as *root*.
3. Use the command **scoadmin license manager** (or **scoadmin license**) to run the **License Manager**, as described in the web page [Starting the License Manager](#). Confirm that you have a valid license for each installed product by looking for the word Yes in the *Licensed* column.
4. To stop the periodic messages about unregistered software, register your products as described in the web page [Registering products](#). Confirm that a product is registered by looking for the word Yes in the *Registered* column.
5. Check that your system date accurately reflects today's date by running the [date\(C\)](#) command with no arguments. If the date displayed is not today's date, reset the date with the **asktime** command, and reboot the system. For more information see: <http://www.sco.com/ta/127434>.

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**WARNING:** *If the system clock was incorrect when you installed SCO OpenServer 5 Definitive 2018, you will need to correct the system date and time and reinstall SCO OpenServer 5 Definitive 2018.*

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### ► (ID: OSR5-65) OpenServer 5 Definitive network stops if you remove license during SSH session

Do not remove your system license over an SSH connection. Doing so will disable TCP/IP and you will lose connectivity to your system.

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- ▶ [Apache does not start.](#)

If you deferred or misconfigured networking or your DNS set-up, Apache will not start up. To fix, correct your system networking configuration, relink the kernel, and reboot. Your network and Apache should then work.

- ▶ [On VirtualBox, OpenServer 5 Definitive shut down will not power off the virtual machine.](#)

- ▶ [\(ID: OSR5-121\) Older \(for example, hardware circa 1998\) upgraded to 5D2M1 boots with APM warning.](#)

OpenServer 5 Definitive 5D2M1 deploys a newer Advanced Power Management driver which supports APM v1.2. Some older hardware may not support this version of the APM and might boot with the message:

```
WARNING: uapm: can't enable APM v1.2 (error 0x00000E0A)
```

Systems which do not support APM v1.2 should not attempt to set the PM to power down upon shutdown, as this will not work without this support.

- ▶ [\(ID: OSR5-133, fz534075\) Many USB Devices Require Configuration and are not Auto-Detected](#)

The OSR5 kernel is a static kernel that in general does not support auto-detection. For USB devices, one typically has to manually configure them by running the appropriate `mkdev` command and, for some devices, per-device configuration. This is particularly true for peripheral devices like tape changers. An exception is USB keyboards and mice which are generally pre-configured.



► (ID: OSR5-131) [Error when installer selects and configures the NIC](#)

During ISL with newer versions of the Intel Pro 100 network cards or the Broadcom NetXtreme Gigabit Ethernet cards, you may see an error like this:

```
Fatal error: couldn't stat "/var/opt/K/SCO/lli/5.0.7a/ID/bcme/AOF/bcm5722": No such file or directory. Information logged to: /tmp/tclerror.8263.log
```

```
Error: net0 is not installed on this
Error: system.
Please install the driver
Error: and re-run /usr/lib/netconfig/init/sco_tcp
```

```
Error:
  Netconfig add_deferred failed
Error Stack:
  Netconfig add_deferred failed

Please enter one of the following:
  'r' to retry the operation
  'i' to ignore the error, and continue
  'ca' to cancel
```

Enter choice:

Pressing i will allow the installation to complete without the network configured. After installation, run netconfig to configure the network card. Then run scoadmin -> Networks -> Client Manager to configure the DNS client and default route.

► (ID: OSR5-144) [AHCI driver can show high CPU load](#)

Under certain load conditions it is seen that the AHCI driver causes high CPU load, which is currently under investigation.

## **SCO OpenServer 5 Definitive 2018 - Release Notes - September 2018**

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