IBM System Storage TS7600 with ProtecTIER

Release Notes

Version 3.2.2

References in this documentation to IBM® products, programs, or services do not imply that IBM intends to make these available in all countries in which IBM operates. Any reference to an IBM product, program or service is not intended to state or imply that only IBM's product, program or service may be used. Any functionally equivalent product, program or service that does not infringe any of IBM's intellectual property rights may be used instead of the IBM product, program or service. Evaluation and verification of operation in conjunction with other products, except those expressly designated by IBM, are the user's responsibility.

Table of Contents

Release notes

These release notes are for IBM System Storage TS7600 with ProtecTIER Software, version 3.2.2.

Release date **15 November** 2012.

Introduction

This document is a reference for installation and upgrades and contains other useful information about the IBM System Storage TS7600 with ProtecTIER v3.2.2.

Prerequisites

Prerequisites include the following:

- ProtecTIER Manager V3.2.X must be installed.

- RedHat code level 5.6 must be installed on the system first. The upgrade to V3.2.2 will fail if RedHat version 5.6 is not installed first. If the system is already running RedHat 5.6, then 3.2.2 can be downloaded from the Fix Central Website.

   http://www-933.ibm.com/support/fixcentral/

- The full package code must have already been installed on the system. Installation of this patch on a Linux OS system will fail without the full package code already being installed.

Code levels

Code level requirements include the following:

Software	Version
ProtecTIER software level	3.2.2
Dtcemulex	5232.005-0
Ptlinux	7132.087-0
Ptrepmgr	6132.085-0

New features and resolved problems

The ProtecTIER Introduction and Planning Guides describe the new features in the release:

IBM System Storage TS7650 ProtecTIER 3.2 Deduplication Appliance and TS7650G Deduplication Gateway Introduction and Planning Guide (3958-AP1 and 3958-DD5) (GA32-0918)

Or

IBM System Storage® TS7610 and TS7620 ProtecTIER® 3.2 Deduplication Appliance Express Introduction and Planning Guide (GA32-0913)

See the **Additional documentation** section of this document for information about how to find these publications.

ProtecTIER Server issues:

Issue ID	Fix ID	Description
14424	81019712	The replication failure issues were solved by adding timeout to the page waiting flow.
14494	81021137	The offline recovery failure issues for non-replication repositories were solved.
14777	81021385	The cluster management quorum inconsistency was solved.
15601	81021761	More resources for replication verification were added to solve the replication failures issue.
15615	81021040	A lost comment line in the "multipath.conf" file was added.
15796	81021463	The problem experienced when using the "menu" option to update the firmware for the Broadcom Ethernet ports was solved.
15825	81020264	The requested repository size was updated to be at least the already configured size.
16400	81021457	Timeout was added to fix the failures experienced during the service report create process.
16481	81021387	The wrong messages about replication retry were cleared from the log files.
16792	81021634	Space verification was added in the remote repository before starting the clone process.
16896	81021078	A segmentation fault in VTFD process was fixed.
17105	81021794	The wrong level of log traces was changed from error to warning.
17115	81021445	The configuration file "nsswitch.conf" file was added in the service report.

17168	81021784	The last modified date and sync point at the remote repository were changed for better clarity.
17179	81021509	The increase capacity failures to create the volume group for the new file systems when adding more luns for a second Fibre Channel interface were fixed.
17199	81021318	The problem experienced when rebooting ASM during RAS startup and causing a token loss and a rejoin kill sequence was solved.
17202	81021230	The failures experienced when copying files between exports on the same file system from a single host was fixed.
17258	81021206	The issue experienced when autorun doesn't upgrade old Emulex HBA firmware when it detects an HBA is already at the latest level was solved.
17282	81021759	The reason for errors being experienced when stopping the VTFD process while running replication was solved.
17353	81021931	Support for multiple write handles on the same file on the file system level was added.
17362	81021259	The status and messages generated about the Ethernet ports configuration in the RAS log file were updated.
17405	81021275	The system crash experienced as a result of the diligent page file issue occurring when one storage unit is in read only mode was solved.
17415	81021266	The race condition issue in the compressor was fixed.
17429	81021670	The failures experienced when replacing the DD4 network interface card were fixed.
17444	81021811	The error message for the situation experienced when the file system of replication got full was fixed.
17448	81021634	The slow clone performance issue while running manual replication was solved.
17452	81021426	The ProtecTIER Manager error experienced when viewing activities after a policy deletion was fixed.
17477	81021313	The misspelling located under the "Configure ProtecTIER's IP" selection in the RAS menu was fixed.
17532	81021332	The Tape in Error mode issue experienced after a Sequential Positioning error was solved.
17533	81021339	The issue experienced when the front end adapter error is wrongly sent was solved.
17534	81021331	The core dump issue that caused the VTL to fail was fixed.
17536	81021824	The clone retry failure issues experienced after a reboot were

		solved.
17571	81021434	The backup failures experienced in the FSI environment were fixed.
17628	81021666	The creation of a share on the root of the file system in the case of when the path passed by the user is "." was blocked.
17672	81021568	The issue experienced when the system server goes down before the VTFD service was solved.
17674	81021441	The issue of ProtecTIER Manager definitions returning to default definitions after a reboot was solved.
17683	81021590	The trace level for samba logs to print only relevant messages was changed.
17688	81021680	The file size statistics when there are concurrent writes to the same file was fixed.
17717	81021428	The backup failure issues experienced when reaching the maximum version number of a file was fixed.
17735	81021439	A misspelling in the logs was fixed.
17776	81021528	The file systems content is synced prior to performing an unmount during increase capacity.
17789	81021799	The issue experienced when the SMB small root file system is full was solved.
17796	81021565	A "clean_replication_actvities" script was added to the ProtecTIER package.
17801	81021544, 81021569	"enable privileges" was added to the smb.conf file.
17807	81021573	The issue experienced when the health check did not report bad dimms was solved.
17825	81021535	Traces for monitoring FSI failure issues were added.
17851	81021562	Replication failure issues in FSI environment were fixed.
17857	81021508	The replication statistics issue was solved.
17864	81021586	The replication compatibility issue between 3.2 and 3.3 majors in the FSI environment was solved.
17870	81021625	Several issues experienced during delete replication directory were fixed.
17928	81021682	The issue experienced when replication fails while replicating files back to the ProtecTIER server from which they originated was solved.
17950	81021751	The failures experienced when trying to configure the fsi1 ip thru the menu were fixed.

18339	81022141	The manual replication failures experienced between v3.3 and v3.2 were fixed.
18356	81021957	The FSI utility used to provide a method to find all DHF files that are associated with a given DRF file is working now.
18381	81021709	The issue experienced when, in the case of manual replication, the file was replicated partially and the retry didn't work was solved.
18491	81021895	The failure to read (restore or duplicate) files was fixed.
18512	81021963	The issue experienced when nested DB transactions cause backup failure was solved.
18527	81021757	Updated DD3 and DD4 firmware levels: Lib_Utils-1.00-09 MegaCli-8.04.07-1 ibm_utl_dsa_dsyta0r-9.20_portable_rhel5_x86-64 ibm_fw_sraidmr_10k-11.0.1-0042_linux_32-64 brcm_fw_nic_2.1.7e_linux_32-64 ibm_fw_rsa2_a3ep46a_linux_i386 ibm_fw_dsa_dsyt92o-4.01_linux_32-64 asu64.ibm_utl_asu_asut78c-9.21_linux_x86-64 cdc_interface.ibm_utl_asu_asut78c-9.21_linux_x86-64 ibm_fw_hdd_sas-1.11_linux_32-64 ibm_fw_imm_yuooc7e-1.30_linux_32-64 ibm_fw_uefi_g0e171a-1.71_linux_32-64 ibm_fw_fpga_g0ud72b-2.01_linux_32-64
18705	81022189	The issue experienced when multiple writes caused a synch error was solved.
18710	81022076	The failure experienced when upgrading from v2.5 to v3.2 due to the Qlogic driver being offline was fixed.
18739	81022166	The issue experienced when ras-ip is missing in the pt_configuration file was solved.
18761	81022145	The wrong calculation of factoring ratio was fixed.
18762	81022188	The issue of replication failing as a result of wrong decreasing of the reference count for the old file was solved.
18769	81022027	The job duplication issue for manual replication was solved.
18769	81022253	The RPC timeout was increased to 1 hour to solve take ownership

		fails issue.
18883	81022247 81022260	The file id procedure used when writing into a file that was replicated into the repository was changed.
18995	81022305	The replication retry failures for aborted manual replication jobs was fixed.
19148	81022382	The RAS configuration issue for DD5 machines was solved.
19237	81022445	The issue experienced when starting manual replication during backups and one of the replication activities failed was solved.
14897, 15663	81021003	The following packages were replaced: • openais-0.80.6-28.el5_6.6.x86_64.rpm • cman-2.0.115-68.el5_6.7.x86_64.rpm
17898, 17723	81021395	The issue experienced when a clone hangs after a CRC error on replication was fixed
17270, 17314, 17860, 17853	81021460	Traces for better analysis of CM fence events and a work around for clock-jump effects was added.
N/A	81021440	The makefile was changed to point to the updated samba source file needed for the FSI IPC module.
N/A	81021607	The headers and binary files for SNMP module were updated.
N/A	81021581	The SNMP RPM version was updated to: ptsnmp-ptsnmp00-2.0.7.x86_64.rpm
N/A	81021571	Messages were added to the log file to provide notification on every case of FenceOtherNode issues.
N/A	81021639	The PSU FRU ID was changed on SM1 and SM2 to 98y3253.
N/A	81021482	The "systemserver_watchdog" will write only error messages to the system server log file.
N/A	81021253	The Drf statistics format was updated.
N/A	81021614	Traces were added to all of the locations where deleting a tuple version of a file will help to analyze problems.
N/A	81021523	An option was added to dump the open files list in the case of max streams error
N/A	81021739	The maximum number of shared memory buffers per stream was increased.
N/A	81021722	The Fibre Channel load driver with dev_loss_tmo value was set to 4 seconds.

N/A	81021369	The calculation of allocable space was improved.
N/A	81022363	Raid V7000 SAS-10K configuration option was added.
19952	81022638	Updated the status to be right if STM inc ref count fails
19444	810228798	Updated UEFI settings

ProtecTIER driver issues:

Issue ID	Fix ID	Description
17382	52000301	Updated Emulex driver version to 9.5.3.3.1.
N/A	52000304	Loaded updated driver version to start VTFD.

ProtecTIER Manager issues:

Issue ID	Fix ID	Description
15820	51004844	User-friendly messages are displayed when unable to retrieve remote file systems during policy creation.
16025	51004743; 51004809; 51004624	Messages to the user were updated to be more understandable when trying to run replication for a disabled policy.
16610	51004781	Error messages were updated to be clearer when creating a service report fails.
17465	51004810	The option for auto complete of share name with path was created.
18932	51004962	The manual replication issue was solved.
17689	51004861	The issue experienced when the ProtecTIER Manager doesn't prevent creating a share to a directory was solved.
17794	51004841	The issue of when the ProtecTIER Manager shows replication properties in the wrong way was solved.
17842	51004840	The issue experienced when the takeover procedure doesn't a create group link between repositories was solved.
18014	51004858	The change principality fails issue experienced when the media type is empty was solved.
18247	51004914	The issue when GUI shows negative values in "backlog" field of origin properties view was solved.
18507	51004924	The wrong state of a repository during Disaster Recovery mode was fixed.

Installation Instructions

The installation roadmaps contain complete installation instructions for VTL, OpenStorage, or FSI systems:

- *IBM System Storage TS7620 ProtecTIER® v3.2 Deduplication Appliance Express Installation and Setup Guide for VTL, OpenStorage, and FSI Systems* (GA32-0914)

- *IBM System Storage TS7650 ProtecTIER® v3.2 Deduplication Appliance Installation Roadmap Guide, 3958 AP1* (GA32-0920)

- *IBM System Storage TS7650G ProtecTIER® v3.2 Deduplication Gateway Installation Roadmap Guide, 3958 DD5* (GA32-0921)

See the **Additional documentation** section of this document for information about how to find these publications.

Upgrading the ProtecTIER software

Concurrent upgrades for this version are not supported.

Important: For **all** upgrades or updates, follow the instructions exactly as written, including when to stop and start vtfd and ptcluster services for each node.

For TS7610 or TS7620 Appliance Express systems, use the *IBM System Storage® TS7610 and TS7620 ProtecTIER® v.3.2 Deduplication Appliance Express Software Upgrade Guide* (SC27-3641) and choose one of the following options:

- Upgrading a TS7610 or TS7620 system from v3.1.8 or higher (Option A)

  To upgrade to v3.2.2 from v3.1.8 or above, follow the procedure described in Chapter 3, "Upgrading the ProtecTIER software to version 3.2 from version 3.1.8 or higher" in the *IBM System Storage TS7610 and TS7620 Appliance Express ProtecTIER v. 3.2 Software Upgrade Guide* (SC27-3641-03).

- Upgrading a TS7610 or TS7620 system from v3.1.X (any 3.1 version **below** 3.1.8) or v2.5.X (Option B)

  To upgrade to v3.2.2 from v3.1.x (any 3.1 version **below** 3.1.8) or v2.5, follow the procedure described in Chapter 4, "Upgrading Red Hat Linux and ProtecTIER" in the *IBM System Storage TS7610 and TS7620 Appliance Express ProtecTIER v. 3.2 Software Upgrade Guide* (SC27-3641-03).

- Updating a TS7610 or TS7620 system already at v3.2.2 with a fix update or patch (Option C)

  Update a system already at v3.2 with a later fix update or patch by using the procedure described in Chapter 6, "Applying fixes to update the ProtecTIER software for version 3.2 and higher" in the *IBM System Storage TS7610 and TS7620 Appliance Express ProtecTIER v. 3.2 Software Upgrade Guide* (SC27-3641-03).

For TS7650 Appliance or TS7650G (Gateway) systems, use the *IBM System Storage TS7650 ProtecTIER v. 3.2 Software Upgrade Guide* (SC27-3643) and choose one of the following options:

- Upgrading a TS7650 or TS7650G system from v3.1.8 or higher (Option A)

   To upgrade to v3.2.2 from v3.1.8 or above, follow the procedure described in Chapter 3, "Upgrading the ProtecTIER software to version 3.2 from version 3.1.8 or higher" in the *IBM System Storage TS7650 ProtecTIER v. 3.2 Software Upgrade Guide* (SC27-3643-03).

- Upgrading a TS7650 or TS7650G system from v3.1.X (any 3.1 version **below** 3.1.8), v2.5.X or v2.4.X (Option B)

   To upgrade to v3.2.2 from v3.1.x (any 3.1 version **below** 3.1.8), v2.5, or v2.4, follow the procedure described in Chapter 4, "Upgrading Red Hat Linux and ProtecTIER for servers before version 3.1.8" in the *IBM System Storage TS7650 ProtecTIER v. 3.2 Software Upgrade Guide* (SC27-3643-03).

- Upgrading a TS7650 or TS7650G system from v2.3.x or v2.2.x (Option C)

   First upgrade to v2.4, then to v3.2.

   Upgrade to v2.4 by using the procedure described in Chapter 6, "Upgrading and Configuring Red Hat Linux and ProtecTIER" of the IBM System Storage TS7600 with ProtecTIER Software Upgrade and Replication Enablement Guide (GC53-1196-02).

   Upgrade to v3.2.2 as described in Option B.

- Updating a TS7650 or TS7650G system already at v3.2 with a fix update or patch (Option D)

   Update a system already at v3.2 with a later fix update or patch by using the procedure described in Chapter 6, "Applying fixes to update the ProtecTIER software for version 3.2 and higher" in the *IBM System Storage TS7650 ProtecTIER v. 3.2 Software Upgrade Guide* (SC27-3643-03).

Additional documentation

All ProtecTIER publications can be found in the IBM Publications Center. To access all publications, go to:

http://www-05.ibm.com/e-business/linkweb/publications/servlet/pbi.wss

1. Select your **country/region/language**.

2. Select **Search for publications** in the left menu.

3. Search for the publications by **publication title, keyword (for example, ProtecTIER), or form number**.

ProtecTIER Information Centers are available at the following at the following locations:

Information Center	URL
TS7610 and TS7620 Combined Customer Information Center	http://pic.dhe.ibm.com/infocenter/ts7610/cust/index.jsp
TS7650 Combined Customer Information Center	http://pic.dhe.ibm.com/infocenter/ts7650/cust/index.jsp
TS7610, TS7620, and TS7650 Combined Service Information Center	http://pic.dhe.ibm.com/infocenter/ts7600/serv/index.jsp

Restrictions and known issues

Restrictions and known issues include the following:

- Before performing any configuration operation, upgrade both nodes to the same patch level.

- Do not move a cartridge from the shelf of the remote repository while it is the target of a replication operation.

Issue ID	Description	Workaround
15607	Increase capacity failures are experienced.	Contact IBM support.
16269, 17670, 17524, 17353	The Temporary Restore/Replication fails (rare)	Retry the operation.
16556	A failover to a secondary active directory may fail to work automatically.	Manually configure the primary active directory.
16895	The system may hang after the SAN is disconnected from Back End Storage (rare).	Reboot the ProtecTIER system.
17168	The last modified date and sync time might not be accurate on FSI files in replication destination.	N/A
17252	A Check & Recover failure is experienced when all of the storage units on a specific Back End Storage file system are detached.	Contact IBM support.
17303	When changing the IP address of an FSI interface, shares become unavailable on that port.	Restart the ProtecTIER system.
17308	A delayed RCSN may cause VTL to disconnect from the initiator in an IBM i NPIV environment.	Restart the ProtecTIER system.
17360	The log floods with errors when repository is full.	Contact IBM support.
17421	FSI traffic might flow through the customer external network.	Separate the FSI network from the external network by using different subnets and VLANs.

17429	A DD4 NIC replacement may fail.	Contact IBM support.
17531	VTL is slow to respond to backup commands and eventually backup failure (rare).	Retry the backup jobs and if they still fail, contact IBM support.
17534	The VTL emulation process crashes (very rare).	Automatic reboot.
17688	The Tivoli Storage Manager (TSM) backup fails (very rare)	Retry the backup.
17859	The suspend was increased by 1 hour.	It should be fixed in the 3.2.4 PGA version.

Compatibility

Compatibility requirements include the following:

- ProtecTIER v3.2.2 works with TSSC code level 5.12.8 or later.

- ProtecTIER v3.2.2 requires the use of ProtecTIER Manager V3.2.X

- ProtecTIER Manager versions earlier than v3.2.2 are not compatible with ProtecTIER v3.2.2. Communication between the two will fail.

- Replication is supported from ProtecTIER v2.4 and later. TS7610 Appliance Express v2.1 systems are also supported.

- Replication between ProtecTIER v2.3 and ProtecTIER v3.1.8 and above is NOT supported.

- Replication configuration operations require the use of Replication Manager V3.2 or later ProtecTIER software.

OpenStorage compatibility:

ProtecTIER v3.2.2 is compatible with OpenStorage plug-in 2.5.0.0 and later. OpenStorage plug-in v3.2 is compatible with ProtecTIER v2.5 and later.

Compatibility matrix:

The compatibility matrix can be found at:

http://www-03.ibm.com/systems/storage/tape/library.html#interoperability

under the "TS7650/TS7650G ISV and interoperability matrix" heading.

Documentation format and accessibility

The publications for this product are in Adobe Portable Document Format (PDF) and should be compliant with accessibility standards.

If you experience difficulties when you use the PDF files and want to request a web-based format or accessible PDF document for a publication, send a request by email to starpubs@us.ibm.com. In the request, be sure to include the IBM publication number and title.

When you sent information to IBM, you grant IBM a nonexclusive right to use to distribute the information in any way it believes appropriate without incurring any obligation to you.

Notices and trademarks

Notices

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you. This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Trademarks

Linux is a trademark of Linus Torvalds in the United States, other countries, or both. Microsoft, Windows, and Windows Server are trademarks of Microsoft Corporation in the United States, other countries, or both. Intel, Intel logo, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Celeron, Intel Xeon, Intel SpeedStep, Itanium, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product, or service names may be trademarks or service marks of others.

THIRD-PARTY LICENSE TERMS AND CONDITIONS, NOTICES AND INFORMATION

The license agreement for this product refers you to this file for details concerning terms and conditions applicable to third party software code included in this product, and for certain notices and other information IBM must provide to you under its license to certain software code. The relevant terms and conditions, notices and other information are provided or referenced below. Please note that any non-English version of the licenses below is unofficial and is provided to you for your convenience only. The English version of the licenses below, provided as part of the English version of this file, is the official version. Notwithstanding the terms and conditions of any other agreement you may have with IBM or any of its related or affiliated entities (collectively "IBM"), the third party software code identified below are "Excluded Components" and are subject to the following terms and conditions:

- The Excluded Components are provided on an "AS IS" basis
- IBM DISCLAIMS ANY AND ALL EXPRESS AND IMPLIED WARRANTIES AND CONDITIONS WITH RESPECT TO THE EXCLUDED COMPONENTS, INCLUDING, BUT NOT LIMITED TO, THE WARRANTY OF NON-INFRINGEMENT OR INTERFERENCE AND THE IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
- IBM will not be liable to you or indemnify you for any claims related to the Excluded Components
- IBM will not be liable for any direct, indirect, incidental, special, exemplary, punitive or consequential damages with respect to the Excluded Components.