IBM System Storage with ProtecTIER Software

Release Notes

Version 3.3.8

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.

© 2015 IBM Corporation Table of Contents

Release notes

These release notes are for IBM System Storage with ProtecTIER Software.

Release date: December 21, 2015.

Introduction

This document is a reference for installation and contains other useful information about the IBM System Storage TS7650G, TS7610 and TS7620 with ProtecTIER V3.3.8.

Prerequisites

Prerequisites include the following:

• ProtecTIER Manager V3.3.8 must be installed.

• ProtecTIER cross platforms recommended level : 3.3.7.2 (*)

(*) Notice: If you are running on older hardware, specifically the 3958-AP1 appliance or the 3958-DD3 gateway server, a memory upgrade (64GB RAM) is required to upgrade to ProtecTIER V3.3.7.2 when your system exceeds any of these configuration values:
1. More than 64 virtual drives
2. Installed physical storage greater than 300TB
3. There are 8 paths or more per mpath LUN

Please contact IBM support for memory upgrade plan.

Code levels

Code level requirements include the following:

Software	Version
TS7650G Software level	3.3.8.0
Dtcemulex	5233.008
Ptlinux	7133.158
Ptrepmgr	6133_88

New features and resolved problems

The ProtecTIER introduction and planning guides describe the new features in the release:

IBM System Storage TS7650 ProtecTIER 3.3 Deduplication Appliance and TS7650G
Deduplication Gateway Introduction and Planning Guide (3958-AP1 and 3958-DD5)
(GA32-0918-08)
Or

IBM System Storage® TS7620 ProtecTIER® 3.3 Deduplication Appliance Express
Introduction and Planning Guide (GA32-0913-07)

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

ProtecTIER Server issues:

Issue ID	Fix ID	Description
	81025116.2 81026583	Change deletes algorithm to round-robin + Improve delete backlog statistics.
PTT-1576	81026578	Improved functionality - fix TxLog errors during Check and recovery
PTT-570	81024072.2	Emulex driver response for abort task set (0x2) flag when Out-Of-Order frames sent to avoid TARGET RESETS sent from the OS and eventually fail with IO errors.
PTT-1549	81026398	Check and recovery integrity risk + poor performance due to failure in the validation stage

PTT-1779	81026467.4	Check and recovery ended unexpectedly due to fencing issues
PTT-1500	81026487.10	Adding functionality to Stm_Diag to fix TxLog errors.
PTT-1655	81026072.2 81026073.4	The file system properties field usage is different from the NFS directory properties size.
PTT-1999	81026515.3	Avoid Security Scanners (ip360 , N-IPscanner , etc..) from crashing PT rpc server (ext Util)
PTT-2025	81026568.2	Change the default MRC settings
PTT-1404	81026353.8	when OoO identified, need to close exchange with the correct scsi sense
PTT-1576	81026400	Check and recovery scan unnecessary Dfs Name Spaces
PTT-1500	81026379.2	Fixing Stm_Diag "delete invalid ranges" flag
PTT-1182	81026287.5	update customer when "end of support date" is coming
PTT-1068	81026272	segmentation fault while writing image - OST
	81026314	In cases when total size of file is smaller than backlog size of replication, user cannot see directory content -FSI
PTT-1886	81026500	Visibility change failed while cartridge is in the last phase of replication before turning IN_SYNC
PTT-10231	81026274	Adding logs when DR site executing visibility change
PTT-1367	81026354.4	Add STM allocation statistics for large scale repositories
PTT-1026	81026340.2	False CRC errors messages when read ahead mechanism reach out of buffers to allocate.
	81026516	PT planner Improve
PTT-1282	81026303	dfs_util functionality fix
PTT-2003 PTT-1069	81026521	SNMP mib file fix.
PTT-2040	81026562	Fix chopped info lines in the internal log.
	81025812	Change log messages on CRC errors
PTT-331	81026099.2	Collect additional logs for service reports
	81026169	Add VTL-like time measures to print basic FSI statistics to log
PTT-897	81026261.2	Implement RAS Alert based on BBU Capacity
PTT-847	81026283	CARTLIST_CART_COUNT_MISMATCH on the shelf
PTT-2092	81026549 81026553	fix syntax error - fsi_script_utils.py

ProtecTIER Manager Issues:

Issue ID	Fix ID	Description
PTT-761	81025116.2 81026583	GUI refresh display issue - When navigating between 2 smb2 machines (online) the base unit menu displayed wrong info. (wrong FRU display)
PTT-1766	5100578	GUI gives "application error occurred" while trying to show polices and take ownership of the RDD
PTT-1055	51005788	create repository update necessary - adding disk size 1200GB
PTT-2101	51005809	Disable destination in a replication policy handled not properly in GUI

ProtecTIER driver issues:

Issue ID	Fix ID	Description
PTT-2087	52000353	PLOGI ACC are not being sent–Emulex driver update

Upgrading the ProtecTIER software

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® v3.3 Deduplication Appliance Express Software Upgrade Guide (SC273641-07) and choose one of the following options:

- Upgrading a TS7610 or TS7620 system from v3.2 (Option A)

  To upgrade to v3.3.8 from v3.2, follow the procedure described in Chapter 4, "Upgrading the ProtecTIER software to version 3.3 from version 3.2.x" in the IBM System Storage TS7610 and TS7620 Appliance Express ProtecTIER v3.3 Software Upgrade Guide (SC27-3641-08).

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

  To upgrade to v3.3.8 from v3.1.8 or above, follow the procedure described in Chapter 5, "Upgrading the ProtecTIER software to version 3.3 from version 3.1.8 or higher" in the IBM System Storage TS7610 and TS7620 Appliance Express ProtecTIER v.3.3 Software Upgrade Guide (SC27-3641-08).

- Upgrading a TS7610 or TS7620 system from v2.4.x, v2.5.x or v3.1.X (any 3.1 version below 3.1.8) (Option C)

  To upgrade to v3.3.8 from v2.4.x, v2.5.x or v3.1.x (any 3.1 version below 3.1.8), follow the procedure described in Chapter 6, "Upgrading ProtecTIER version 2.4 or 2.5 to RedHat 5.6 and version 3.3" in the IBM System Storage TS7610 and TS7620 Appliance Express ProtecTIER v3.3 Software Upgrade Guide (SC27-3641-08).

- Updating a TS7610 or TS7620 system already at v3.3 with a fix update or patch (Option D)
  Update a system already at v3.3 with a later fix update or patch by using the procedure described in Chapter 7, "Applying fixes to update the ProtecTIER software for version 3.3 and higher" in the IBM System Storage TS7610 and TS7620 Appliance Express ProtecTIER v. 3.3 Software Upgrade Guide (SC27-3641-08).

For TS7650 Appliance or TS7650G (Gateway) systems, use the IBM System Storage TS7650 ProtecTIER v3.3 Software Upgrade Guide (SC27-3643-08) and choose one of the following options:

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

  To upgrade to v3.3.8 from v3.1.8 or above, follow the procedure described in Chapter 4 (using ProtecTIER Manager) or Chapter 5 (using ProtecTIER Service Menu),

"Upgrading the ProtecTIER software to version 3.3 from version 3.1.8 or higher" in the IBM System Storage TS7650 ProtecTIER v. 3.3 Software Upgrade Guide (SC27-364307).

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

  To upgrade to v3.3.8 from v2.4.x, v2.5.x or v3.1.x (any 3.1 version below 3.1.8), follow the procedure described in Chapter 6, "Upgrading Red Hat Linux and ProtecTIER for servers before version 3.1.8" in the IBM System Storage TS7650 ProtecTIER v. 3.3 Software Upgrade Guide (SC27-3643-07).

- Updating a TS7650 or TS7650G system already at v3.3 with a fix update or patch (Option C)

Update a system already at v3.3 with a later fix update or patch by using the procedure described in Chapter 7, "Applying fixes to update the ProtecTIER software for version 3.3 and higher" in the IBM System Storage TS7650 ProtecTIER v. 3.3 Software Upgrade Guide (SC27-3643-07).

Additional documentation

The support homepage contains all relevant documentation.

To access the additional documentation:

- In a web browser, navigate to http://www-947.ibm.com/support/entry/portal/overview
- Search for the keyword 'ProtecTIER'

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.

- FSI Replication between 3.2.x and 3.3.x repository is supported only from 3.2.2.0 and above.

- The table below represents the maximal number of recommended concurrent streams with FSI Backup and Restore functions. Exceeding these limits may result in performance degradation which under extreme conditions could lead to timeouts in your backup jobs.

  The maximum number of recommended concurrent streams is specified as a byproduct function of the repository configured Meta Data and User Data configuration throughput.

  Therefore, this requires careful planning and consideration.

  It is recommended that you not exceed this number.

Repository throughput [1]	Number of streams
TS7620 3959-SM2 base [2]	20 streams
TS7650(G) - 100-200MB/sec & TS7620 with 1 EXP	40 streams
TS7650(G) - 200-300MB/sec & TS7620 with 2 EXP	64 streams
TS7650(G) - 300-450MB/sec	96 streams
TS7650(G) > 450MB/sec	192 streams (max # supported) [3]

NOTES:
1. Repository supported throughput means that both the required Meta Data and User Data RAIDs are configured to support the desired throughput.
2. No systems (Gateway) should be configured for less than 100MB/sec
3. For NBU the max # of jobs supported is 128.

- From v3.3.8 release all upgrades on any ProtecTIER system having less than 64GB RAM will require double reboot. This behavior is required as part of the solution for the memory fragmentation issue. As a result, the max drives limitations were modified as shown in the following table:

ProtecTIER System RAM	Number of max drives
24 GB (TS7610-SMB, TS7650-AP1)	64 drives
32 GB (TS7650G-DD3)	128 drives
48 GB (TS7620-SMB2)	128 drives
64 GB (TS7650G-DD4 & DD5)	256 drives

NOTES:

The max number of drives is modified only in cases where the current system defined number of drives is less than or equal to the new desired max value. In cases where the system already has more drives defined than the desired new max, a new max value will be set to align with the existing settings (on boundary of 32). For example: if the ProtecTIER system has 32GB RAM and has 140 drives defined then the new max value will be set to 160.

Issue ID	Description	Workaround
20431	Following Active Directory Server reboot, ProtecTIER server cannot query users from it	On the ProtecTIER Sever run: "service winbind restart"
20678	Memory failures in SM2 might not trigger an alert	Not available, no impact
PTT-41	Nonvalid error message is issued when doing scratch install of SMB2 using VTL application: "[ERROR] - (6069) main::setMemoryReq [97] Fail to get nodeid"	Not available, no impact

Compatibility

Compatibility requirements include the following:

- ProtecTIER v3.3.8 works with TSSC code level 5.12.8 or later.

- ProtecTIER v3.3.8 requires the use of ProtecTIER Manager v3.3.8.

- ProtecTIER Manager earlier than v3.3.8 is not compatible with ProtecTIER Server v3.3.8. Communication between the two will fail.

- Replication is supported from ProtecTIER v2.4 or later. SMB 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 v3.3.8 or later ProtecTIER software.

OpenStorage compatibility:

ProtecTIER Server V3.3.8 is compatible with plug-in 2.5.0.0 and later. OpenStorage plug-in V3.3 is compatible with ProtecTIER Server V2.5.X and later.

Compatibility matrix:

To find the matrix these steps should be taken:
1. Go to http://www-03.ibm.com/systems/storage/tape/index.html
2. Scroll down to the heading "Virtual tape systems"
3. Find either TS7650G, or TS7620 and click the relevant link
    - TS7650G = http://www-03.ibm.com/systems/storage/tape/ts7650g/index.html
    - TS7620 = http://www-03.ibm.com/systems/storage/tape/ts7620/index.html
4. Look for the "Learn more" heading (middle of the page) and click the pdf link for "Independent Software Vendor (ISV) matrix" document.

Documentation format

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 send information to IBM, you grant IBM a nonexclusive right to use or 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.