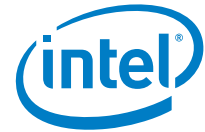


Intel[®] Rack Scale Design (Intel[®] RSD) POD Manager (PODM)

Release Notes
Software v2.3.2

September 2018

Revision 003US



You may not use or facilitate the use of this document in connection with any infringement or other legal analysis concerning Intel products described herein. You agree to grant Intel a non-exclusive, royalty-free license to any patent claim thereafter drafted which includes subject matter disclosed herein.

No license (express, implied, by estoppel, or otherwise) to any intellectual property rights is granted by this document.

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and noninfringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade.

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software, or service activation. Performance varies depending on system configuration. No computer system can be secure. Check with your system manufacturer or retailer or learn more at www.intel.com.

This document contains information on products, services, and/or processes in development. All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest forecast, schedule, specifications, and roadmaps.

The products described may contain design defects or errors known as errata which may cause the product to deviate from published specifications.

Copies of documents that have an order number and are referenced in this document may be obtained by calling 1 800 548 4725 or by visiting www.intel.com/design/literature.htm.

Intel and the Intel logo are trademarks of Intel Corporation in the United States and other countries.

*Other names and brands may be claimed as the property of others.

Copyright © 2018 Intel Corporation. All rights reserved.



Contents

| | | |
|------------|--|-----------|
| 1.0 | Introduction | 5 |
| 1.1 | Intended Audience | 5 |
| 1.2 | Conventions | 5 |
| 1.3 | Software Package Contents | 5 |
| 1.4 | Revision Numbers of Package Components | 6 |
| 1.5 | Terminology | 6 |
| 1.6 | Related Documents | 7 |
| 2.0 | New Features and Security Recommendations | 8 |
| 2.1 | New Features for Intel® RSD v2.3.x | 8 |
| 2.2 | Security Recommendations | 8 |
| 3.0 | Known Issues | 10 |

Tables

| | | |
|-----------------|---|----------|
| Table 1. | Software package for Intel® RSD v2.3.2 | 5 |
| Table 2. | Revision Numbers and Beta release Components | 6 |
| Table 3. | Terminology | 6 |
| Table 4. | Related Documents | 7 |
| Table 5. | Status and Descriptions | 10 |
| Table 6. | Known Issues | 10 |



Revision History

| Revision | Description | Date |
|----------|--|----------------|
| 003US | Intel® RSD Software minor release v2.3.2 <ul style="list-style-type: none">• Updated Section 2.0, New Features | September 2018 |
| 002US | Minor updates to the Intel® RSD PODM Release Notes software v2.3.1 | July 2018 |
| 001US | Initial release for Intel® RSD software release v2.3 | May 2018 |

§



1.0 Introduction

This document contains information about the installation and configuration of Intel® Rack Scale Design (Intel® RSD) POD Manager (PODM) software build PODM_2.3.0.223.0. This document will be referred to as the PODM throughout this document.

1.1 Intended Audience

The intended audiences for this document include:

- Independent Software Vendors (ISVs) of POD management software, who make use of PODM to discover, compose, and manage drawers, regardless of the hardware vendor, and/or manage drawers in a multivendor environment.
- Original Equipment Manufacturers (OEMs) of Pooled System Management Engine (PSME) firmware who would like to provide Intel® RSD PODM API on top of their hardware platform.

1.2 Conventions

The key words/phrases "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [Table 4, Key words for use in RFCs to Indicate Requirement Levels, March 1997, RFC 2119](#).

1.3 Software Package Contents

[Table 1](#) lists the contents of the release package.

Table 1. Software package for Intel® RSD v2.3.2

| Title | Description |
|---|---|
| <i>Intel® Rack Scale Design (Intel® RSD) POD Manager (PODM) Release Notes Software v2.3.2</i> | This document |
| <i>Intel® Rack Scale Design (Intel® RSD) POD Manager (PODM) Representational State Transfer (RESTful) User Guide Software v2.3.2</i> | User Guide |
| <i>Intel® Rack Scale Design (Intel® RSD) Generic Assets Management Interface (GAMI) API Software v2.3.2</i> | JSON-RPC* API specifications to communicate with GAMI Modules |
| <i>Intel® Rack Scale Design (Intel® RSD) POD Manager (PODM) Representational State Transfer (RESTful) API Specification Software v2.3.2</i> | PSME RESTful API Specifications |
| <i>Intel® Rack Scale Design (Intel® RSD) Rack Management Module (RMM) Representational State Transfer (RESTful) API Specification Software v2.3.2</i> | RMM API Specification |
| <i>Intel® Rack Scale Design (Intel® RSD) Storage Services API Specification Software v2.3.2</i> | Storage Service REST API Specifications |
| License.txt | Apache*License, Version 2.0 |



Customers should check <http://www.intel.com/intelRSD> to download the latest available onboard device drivers, system firmware, and system software. For further assistance, contact your Intel Field Representative.

1.4 Revision Numbers of Package Components

Table 2. Revision Numbers and Beta release Components

| Subproject (component) | Revision |
|-------------------------------|----------------|
| Intel® Rack Scale Design PODM | RSD_PODM_2.3.2 |

1.5 Terminology

Table 3. Terminology

| Term | Definition |
|------------|---|
| BIOS | Basic Input/output System |
| BMC | Baseboard Management Controller |
| CM | Control Module |
| DCBX | Data Center Bridging eXchange |
| DMTF | Distributed Management Task Force |
| ETS | Enhanced Transmission Selection |
| IPMB | Intelligent Chassis Management Bus Bridge |
| IPMI | Intelligent Platform Management Interface |
| IPsec | Internet Protocol Security |
| ISV | Independent Software Vendor |
| NVMe-oF* | NVMe over Fabrics* |
| PFC | Priority Flow Control |
| PSME | Pooled System Management Engine |
| OEM | Manufacturers |
| QoS | Quality of Service |
| RMM | Rack Management Module |
| Intel® RSD | Intel® Rack Scale Design |
| SMBIOS | System Management BIOS |
| TPM | Trusted Platform Module |
| TLS | Transport Layer Security |



1.6 Related Documents

Table 4. Related Documents

| Doc ID | Title | Location |
|----------|--|---|
| 337201 | Intel® Rack Scale Design (Intel® RSD) Firmware Extension Specification Software v2.3.2 | http://www.intel.com/intelRSD |
| 337202 | Intel® Rack Scale Design (Intel® RSD) Storage Services API Specification Software v2.3.2 | |
| 337203 | Intel® Rack Scale Design (Intel® RSD) Architecture Specification Software v2.3.2 | |
| 337204 | Intel® Rack Scale Design (Intel® RSD) POD Manager (PODM) Representational State Transfer (RESTful) API Specification Software v2.3.2 | |
| 337205 | Intel® Rack Scale Design (Intel® RSD) Rack Management Module (RMM) Representational State Transfer (RESTful) API Specification Software v2.3.2 | |
| 337206 | Intel® Rack Scale Design (Intel® RSD) Generic Assets Management Interface (GAMI) API Software v2.3.2 | |
| 337207 | Intel® Rack Scale Design (Intel® RSD) Pooled System Management Engine (PSME) Representational State Transfer (RESTful) API Specification Software v2.3.2 | |
| 337196 | Intel® Rack Scale Design (Intel® RSD) Pooled System Management Engine (PSME) User Guide Software v2.3.2 | |
| 337197 | Intel® Rack Scale Design (Intel® RSD) Conformance and Software Reference Kit Getting Started Guide Software v2.3.2 | |
| 337199 | Intel® Rack Scale Design (Intel® RSD) POD Manager (PODM) Representational State Transfer (RESTful) User Guide Software v2.3.2 | |
| 337200 | Intel® Rack Scale Design (Intel® RSD) Pooled System Management Engine (PSME) Release Notes Software v2.3.2 | |
| DSP0266 | Scalable Platforms Management API Specification v1.1.0 | https://www.dmtf.org/sites/default/files/standards/documents/DSP0266_1.1.0.pdf |
| DSP8010 | Redfish Schema v2017.3 (Compute) | https://www.dmtf.org/sites/default/files/DSP8010_2017.3.zip |
| N/A | Storage Networking Industry Association (SNIA) Swordfish* Version 1.0.4 | https://www.snia.org/sites/default/files/SMI/swordfish/v104/Swordfish_v1.0.4_Specification.pdf |
| N/A | NVM Express over Fabrics revision 1.0 | https://nvmexpress.org/wp-content/uploads/NVMe_over_Fabrics_1_0_Gold_20160605.pdf |
| RFC 2016 | Hypertext Transfer Protocol - HTTP/1.1 | https://tools.ietf.org/html/rfc2616 |
| RFC2119 | Key Words for Use in RFCs to Indicate Requirement Levels, March 1997 | https://ietf.org/rfc/rfc2119.txt |



2.0 New Features and Security Recommendations

This section provides an overview of the new features and Security Recommendations for the Intel® RSD v2.3.x release.

2.1 New Features for Intel® RSD v2.3.x

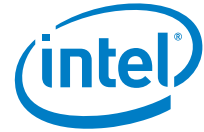
Intel® RSD PODM Release Note's v2.3.x introduces the following features:

1. Refer to [Table 4](#) for the DMTF Redfish*/SNIA Swordfish*:
 - Compute API is based on Redfish Schema v2016.3
 - Storage Service API is based on Swordfish 1.0.4
 - Fabric API is based on to Redfish Schema v2017.3
2. NVMe* over Fabrics (NVMe-oF*) support – support for PSME NVMe-oF Storage Service and Discovery Service.
3. Two Way Authentication – PODM can authenticate PSME signed with certificate.
4. Quality of Service (QoS) – support for configuration of QoS features: Priority Flow Control (PFC), Enhanced Transmission Selection (ETS), Data Center Bridging Capability Exchange (DCBX).

2.2 Security Recommendations

It is recommended to implement the following isolation, administration, and security procedures to use the Intel® RSD v2.3.2 reference code in a production environment.

| Issue | Recommendation |
|---|---|
| Unauthorized log on to Discovery Service or Storage Server | The Intel® RSD v2.3.2 provisioning of the Discovery Service Host and Storage Server requires admin/root access to the host for placing manager credentials. Confirm the admin account is secured. |
| Network adversary provisions bogus credentials to PSME | To withstand network attacks, the communication between PODM and the Storage PSME must be secured. To provide this security, the communication channel between the PODM and PSME uses Transport Layer Security (TLS). |
| Compromise discovery/storage service authentication credential provisioning process | Internet Protocol Security (IPsec) is not used in Intel® RSD v2.3.2 and this credential will not be provisioned to the storage client. This credential will also not be used between the storage client and the Discovery Service or Storage server. |
| Authorized admin is fooled into installing/updating a compromised image | There must be mechanisms in place to verify that every firmware and software element within the Intel® RSD trust boundary has not changed from the original version delivered by the author. Typically, the firmware and software should be delivered using a cryptographically signed file to ensure code has not been altered. Refer to Table 4 , <i>Intel® Rack Scale Design (Intel® RSD) Architecture Specification Software v2.3.2</i> , Platform Security section for more details. |
| Attacker impersonates a PODM | Access to NVMe-oF target management APIs is only allowed when the PODM and NVMe-oF targets establish a TLS connection before they can communicate. Refer to Table 4 , <i>Intel® Rack Scale Design (Intel® RSD) Architecture Specification Software v2.3.2</i> , Ethernet Pooled Storage - Security section for more details. |
| Attacker eavesdrops on communication between client and Storage Server | Protection is for the datacenter only to allow trusted entities to access the storage access network. |
| Attacker modifies data flowing between client and storage server | Protection is for the datacenter only to allow trusted entities to access the storage access network. |



| Issue | Recommendation |
|---|---|
| Attacker obtains a drive that has been discarded and accesses data in that drive by mounting it on its own system | The default policy in the PODM shall be to erase the drive during decomposition where the PSME must secure erase the drive. As always, ensure security measures are enacted to safeguard the security of your physical drives during and after use. |
| Attacker gains access to a drive previously assigned to a different user with the old user's data still in it. | The default policy in the PODM shall be to erase the drive during decomposition when the PSME must securely erase the drive. |

§



3.0 Known Issues

This section presents known issues found during the testing of Intel® RSD software v2.3.1.

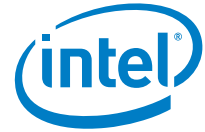
Table 5. Status and Descriptions

| Status | Descriptions |
|-----------------------|--|
| Under Investigation | The sighting is being investigated. |
| Root Cause Identified | The root cause of the defect is identified. |
| Workaround Available | A temporary solution to the defect is provided until the bug is fixed. |
| As Designed | The issue reported is not a defect and the behavior will not be modified. |
| Closed no repro | The situation is no longer observed and no further investigation is scheduled. |
| Fixed | The defect has been fixed. |

[Table 6](#) is a detailed description of all known issues. Each issue provides a problem statement, implication, workaround, note, and status.

Table 6. Known Issues

| Issue | Description |
|------------------|--|
| HSDES 1805769376 | Untagged VLAN is not patched after deleting node |
| Problem | During decomposition, the PODM tries to remove all VLANs configured on the port that the Compose Node is connected too. If the Ethernet switch does not allow removal or untagged VLAN. The PODM will leave this VLAN configured instead of restoring default untagged VLAN. |
| Implication | If untagged VLAN has been changed for Composed Node during composition, it will not be restored to default. |
| Workaround | Change Untagged VLAN to default one after decomposition. |
| Status | Open |
| HSDES 1806059232 | Node is in assembling state for a long time |
| Problem | Enabled <code>DeepDiscovery</code> might sporadically cause problems with the assembly process of the Node. |
| Implication | The Node will not be assembled. |
| Workaround | Remove the faulty Node and recreate it. |
| Status | Open |
| HSDES 1806087427 | Composed Node State will not change if NVMe-oF Volume is in Absent State |
| Problem | The Composed Node State will not change if the NVMe-oF Volume is in an Absent State. |
| Implication | Issues related to NVMe-oF Storage Service may not be reflected in the Composed Node. |
| Workaround | N/A |
| Status | Open |



| Issue | Description |
|-------------------|--|
| HSDDES 1806087677 | Node is in critical state after delete action (but disappear a few moments later) |
| Problem | Node can be in various states during the disassemble action. |
| Implication | External monitoring systems might invoke actions depending on wrong Node state during disassembly. |
| Workaround | N/A |
| Status | Open |

§