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NVM Express™ Technical Errata

Errata ID	106
Revision Date	02/03/2022
Affected Spec Ver.	NVM Express® Base Specification Revision 2.0a NVM Express® NVM Command Set Specification Revision 1.0a NVM Express® Zoned Namespace Command Set Specification Revision 1.1a NVM Express® Key Value Command Set Specification Revision 1.0a
Corrected Spec Ver.	

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Errata Overview

This ECN updates and clarifies various text within the NVM Express Base Specification Revision 2.0a, NVM Express NVM Command Set Specification Revision 1.0a, NVM Express Zoned Namespace Command Set Specification Revision 1.1a, and NVM Express™ Key Value Command Set Specification Revision 1.0a.

Revision History

Revision Date	Change Description
10/19/2021	Initial creation
10/21/2021	<ul style="list-style-type: none">Added section 3.2.5 in Key Value Command Set Specification to fix the “tFigure 16he” text.Updated the KV Format Capabilities field to reflect it is the Formatted LBA Size (FLBAS) field in the Changed Namespace Event data structure of the Changed Namespace Event in the Persistent Event .Added section 5.17.2.8 in the NVMe Base Specification to update the Format Progress Indicator field in the I/O Command Set Independent Identify Namespace data structure to references fields for namespace formatting.
10/28/2021	<ul style="list-style-type: none">The Key Value Command Set Specification of the Format Index not being specified in the Namespace Management command and reported in the I/O Command Set specific Identify Namespace data structure has been moved to a TP.Updates the NVMe Base Specification Host Software Specified Fields text to be more specific.
11/3/2021	<ul style="list-style-type: none">In section 3.2.1.1:<ul style="list-style-type: none">Added periods at the end of sentences that were missing.Deleted one of two periods at the end of a sentence.Replaced “KV Command Set” with “Key Value Command Set”.
11/4/2021	<ul style="list-style-type: none">Editorial changes from Technical WG Review.
12/22/2021	<ul style="list-style-type: none">Updated the section number of the Namespace Management command in the ZNS Command Specification section. Dates changes for integration.

01/17/2022	<ul style="list-style-type: none"> • Integrated
1/28/2022	<ul style="list-style-type: none"> • Updated NVMe registered trademarks. Updated the navigation pane.
1/31/2022	<ul style="list-style-type: none"> • Updated copyright dates.
2/3/2022	<ul style="list-style-type: none"> • Chnaged “TM” to “®” in footer. Corrected the corporation name in the footer.

Description of Changes

NVM Express Base Specification 2.0a:

Editorial Changes:

- Updates references to specific specifications to use “Specification” in the name.
- Modified the Namespace Management command data structure for the create operation to indicate byte 511:00 are I/O Command Set specific.

NVM Express NVM Command Set Specification 1.0a:

Editorial Changes:

- Updated the definition of Format Index to refer to the LBA Formats list and the Extended LBA Formats list.
- Updated the FLBAS and DPS fields in the Changed Namespace Event data structure to refer to the host software specified fields.
- Updated the definition of the FLBAS field in the Identify Namespace data structure to repeated words that are defined by the Format Index definition.
- Updated the LBA Formats in the Identify Namespace data structure to indicate it is a list.
- Updated the Extended LBA Formats in the I/O Command Set specific Identify Namespace data structure for the NVM Command Set to indicate it is a list.
- Removed the reference in section 5.3 to refer to the Namespace Management command section within this specification as opposed to the NVMe Base Specification.

NVM Express Zoned Namespace Command Set Specification 1.1a:

Editorial Changes:

- Updated the definition of Format Index to refer to the LBA Formats list, the Extended LBA Formats list, and the LBA Format Extensions list.
- Updated the LBA Format Extensions in the I/O Command Set specific Identify Namespace data structure for the Zoned Management Command Set to indicate it is a list.
- Updated the Namespace Management command that the behavior is different than what is defined by the NVM Command Set Specification in that the Zoned Namespace Command Set specifies a LBA Format Extensions list is utilized to define the attributes of the zones with the namespace being created.

NVM Express Key Value Command Set 1.0a:

Editorial Changes:

- Updates references to specific specifications to use “Specification” in the name.
- Updated the definition of Format Index to refer to the KV Formats list.
- Removed references to the Key Value Command Set Specification as this is not needed since this is the Key Value Command Set Specification.

- Updated the KV Formats in the I/O Command Set specific Identify Namespace data structure for the Key Value Command Set to indicate it is a list.
- Updated the Namespace Management command that the behavior is different than what is defined by the NVM Command Set Specification in that the Zoned Namespace Command Set specifies a LBA Format Extensions list is utilized to define the attributes of the zones with the namespace being created.
- Clarified the KV key Field in CDW2 and CDW3 for the Store command.

Editor's Note:

BLACK text indicates unchanged text; **BLUE** text indicates newly inserted text, **RED** text indicates deleted text; **GREEN** text indicates editor notes.

Description of NVM Express Base Specification 2.0a changes

Modify a portion of section 1.7 as shown below:

1 Introduction

...

1.7 NVM Command Set specific definitions used in this specification

The following terms used in this specification are defined in the NVM Command Set Specification. These terms are used throughout the document as examples for a specific I/O Command Set.

Modify a portion of section 3.3.3.2.1.3 as shown below:

3 NVM Express Architecture

...

3.3 NVM Queue Models

...

3.3.3 Queueing Data Structures

...

3.3.3.2 Common Completion Queue Entry

...

3.3.3.2.1 Status Field Definition

...

3.3.3.2.1.3 Media and Data Integrity Errors Definition

...

Figure 98: Status Code – Media and Data Integrity Error Values

Value	Description	Command Set Specific	Command Set(s)
...			
85h	Compare Failure: See the NVM Command Set Specification for the description.	Yes	NVM
86h	Access Denied: Access to the namespace and/or user data is denied due to lack of access rights. Refer to the appropriate security specification (e.g., TCG Storage Interface Interactions Specification).	No	
87h	Deallocated or Unwritten Logical Block: See the NVM Command Set Specification for the description.	Yes	NVM
...			

Modify a portion of section 5.2.1 as shown below:

5 Admin Command Set

...

5.2 Asynchronous Event Request command

...

5.2.1 Command Completion

...

Figure 146: Asynchronous Event Information – Notice

Value	Description
...	
F1h to FFh	Reserved for future NVMe over Fabrics Asynchronous Event Notifications
NOTE:	
1. Refer to the NVM Command Set Specification .	
2. Refer to the Zoned Namespace Command Set Specification .	

Modify a portion of section 5.16.1.3 as shown below:

5.16 Get Log Page command

...

5.16.1.3 SMART / Health Information (Log Identifier 02h)

...

Figure 207: Get Log Page – SMART / Health Information Log

Bytes	Description
...	
175:160	Media and Data Integrity Errors: Contains the number of occurrences where the controller detected an unrecovered data integrity error. Errors such as uncorrectable ECC, CRC checksum failure, or LBA tag mismatch are included in this field. Errors introduced as a result of a Write Uncorrectable command (refer to the NVM Command Set Specification) may or may not be included in this field.
...	

Modify a portion of section 5.17.2.1 as shown below:

5.17 Identify command

...

5.17.2 Identify Data Structures

...

5.17.2.1 Identify Controller data structure (CNS 01h)

...

Figure 275: Identify – Identify Controller Data Structure, I/O Command Set Independent

Bytes	I/O ¹	Admin ¹	Disc ¹	Description
...				
95:92	M	M	M	<p>Optional Asynchronous Events Supported (OAES): This field indicates the optional asynchronous events supported by the controller. A controller shall not send optional asynchronous events before they are enabled by host software.</p> <p>....</p> <p>Bit 27 is set to '1' if the controller supports the Zone Descriptor Changed Notices event and the associated Changed Zone List log page (refer to the Zoned Namespace Command Set Specification). If cleared to '0', then the controller does not support the Zone Descriptor Changed Notices event nor the associated Changed Zone List log page.</p> <p>...</p> <p>Bit 13 is set to '1' if the controller supports the LBA Status Information Notices event (refer to the NVM Command Set Specification). If cleared to '0', then the controller does not support the LBA Status Information Notices event.</p> <p>....</p>
...				

Modify a portion of section 5.17.2.8 as shown below:

5.17.2.8 I/O Command Set Independent Identify Namespace data structure (CNS 08h)

....

Figure 280: Identify – I/O Command Set Independent Identify Namespace Data Structure

Bytes	O/M ¹	Description
...		
03	O	<p>Format Progress Indicator (FPI): If a format operation is in progress, this field indicates the percentage of the namespace that remains to be formatted.</p> <p>Bit 7 if set to '1' indicates that the namespace supports the Format Progress Indicator defined by bits 6:0 in this field. If this bit is cleared to '0', then the namespace does not support the Format Progress Indicator and bits 6:0 in this field shall be cleared to 0h.</p> <p>Bits 6:0 indicate the percentage of the Format NVM command that remains to be completed (e.g., a value of 25 indicates that 75% of the Format NVM command has been completed and 25% remains to be completed). If bit 7 is set to '1', then a value of 0h indicates that the namespace is formatted with the format specified by Identify Namespace data structures (refer to section 1.5.29) the FLBAS and fields in this data structure and there is no Format NVM command in progress.</p>
...		

Modify a portion of section 5.17.2.10 as shown below:

5.17.2.10 Identify Namespace data structure for an Allocated Namespace ID (CNS 11h)

The Identify Namespace data structure (refer to the NVM Command Set [Specification](#)) is returned to the host for the namespace specified in the Namespace Identifier (NSID) field if it is an allocated NSID. If the specified namespace is an unallocated NSID, then the controller returns a zero filled data structure. If the specified namespace is not associated with an I/O Command Set that specifies logical blocks (e.g., the NVM Command Set), then the controller shall abort the command with a status code of Invalid I/O Command Set.

Modify a portion of section 5.23 as shown below:

5.23 Namespace Management command

...

The data structure used for the create operation is defined in [Figure 300](#) and by the ~~I/O Command Set specified in the~~ CSI field ~~specifies~~ (refer to the applicable I/O Command Set specification). There is no data structure transferred for the delete operation.

...

Figure 300: Namespace Management – Data Structure for Create

Bytes	Description
383:00	Identify Namespace: The fields set by host software are specified in section 5.23.1. Host software shall set reserved fields to 0h.
511: 384 00	Specific to the I/O Command Set specific (refer to the Namespace Management command section of the applicable I/O Command Set specification)
1023:512	Reserved
4095:1024	Vendor specific

~~5.23.1 Host Software Specified Namespace Management Fields~~

~~The host specified namespace management fields are specific to the I/O Command Set and are defined in the Namespace Management command section of the applicable I/O Command Set specification.~~

Modify a portion of section 5.27.1.8 as shown below:

5.27 Set Features command

...

5.27.1 Feature Specific Information

...

5.27.1.8 Asynchronous Event Configuration (Feature Identifier 0Bh)

...

Figure 326: Asynchronous Event Configuration – Command Dword 11

Bits	Description
...	

Figure 326: Asynchronous Event Configuration – Command Dword 11

Bits	Description
07:00	SMART / Health Critical Warnings: This field determines whether an asynchronous event notification is sent to the host for the corresponding Critical Warning specified in the SMART / Health Information log (refer to Figure 207). If a bit is set to '1', then an asynchronous event notification is sent when the corresponding critical warning bit is set to '1' in the SMART / Health Information log. If a bit is cleared to '0', then an asynchronous event notification is not sent when the corresponding critical warning bit is set to '1' in the SMART / Health Information log.
NOTE: <ol style="list-style-type: none">1. Refer to the NVM Command Set Specification.2. Refer to the Zoned Namespace Command Set Specification.	

Description of NVM Express NVM Command Set specification 1.0a changes

Modify a portion of section 1.4.2.2 as shown below:

1 Introduction

...

1.4.2.2 Format Index

A value used to index into the LBA Formats ~~list data-structure~~ (refer to Figure 97) and the Extended LBA Formats ~~list data-structure~~ (refer to Figure 100).

Modify a portion of section 4.1.4.4 as shown below:

4 Admin Commands for the NVM Command Set

...

4.1 Admin Command behavior for the NVM Command Set

...

4.1.4 Get Log Page command

...

4.1.4.4 Persistent Event (Log Identifier 0Dh)

The Persistent Event Log Page is as defined in the NVMe Base Specification. Figure 92 describes the NVM Command Set specific definition of the I/O Command Set specific fields within the Change Namespace Event Data Format (Event Type 06h) (refer to the NVMe Base Specification).

Figure 92: Change Namespace Event Data Format (Event Type 06h)

Bytes	Description
32	Formatted LBA Size (FLBAS): For a create operation, contains the FLBAS value from the Host Software Specified Fields Identify-Namespace-data-structure in the Namespace Management command (refer to Figure 10597 and the NVMe Base Specification). For a delete operation that specifies a single namespace this field contains the value from the FLBAS field of the Identify Namespace data structure (refer to Figure 97) for the namespace being deleted. For a delete operation that specifies all namespaces this field is reserved.
33	End-to-end Data Protection Type Settings (DPS): For a create operation, contains the DPS value from the Host Software Specified Fields Identify-Namespace-data-structure in the Namespace Management command (refer to Figure 10597 and the NVMe Base Specification). For a delete operation that specifies a single namespace this field contains the value from the DPS field of the Identify Namespace data structure (refer to Figure 97) for the namespace being deleted. For a delete operation that specifies all namespaces this field is reserved.

Modify a portion of section 4.1.5.1 as shown below:

4.1.5 Identify Command

...

4.1.5.1 NVM Command Set Identify Namespace data structure (CNS 00h)

...

Figure 97: Identify – Identify Namespace Data Structure, NVM Command Set

Bytes	O/M ¹	Description
...		
26	M	<p>Formatted LBA Size (FLBAS): This field indicates the LBA data size & metadata size combination that the namespace has been formatted with (refer to section 4.1.2).</p> <p>Bits 7 is reserved.</p> <p>Bits 6:5 indicate the most significant 2 bits of the Format Index of the supported LBA Format indicated in this data structure that was used to format the namespace. If the NLBAF field is less than or equal to 16, then the host should ignore these bits.</p> <p>Bit 4 if set to '1' indicates that the metadata is transferred at the end of the logical block data LBA, creating an extended logical block data LBA. Bit 4 if cleared to '0' indicates that all of the metadata for a command is transferred as a separate contiguous buffer of data. Bit 4 is not applicable when there is no metadata.</p> <p>Bits 3:0 indicate the least significant 4 bits of the Format Index of the supported LBA Format indicated in this data structure that was used to format the namespace.</p>
27	M	<p>Metadata Capabilities (MC): This field indicates the capabilities for metadata.</p> <p>Bits 7:2 are reserved.</p> <p>Bit 1 if set to '1' indicates the namespace supports the metadata being transferred as part of a separate buffer that is specified in the Metadata Pointer. Bit 1 if cleared to '0' indicates that the namespace does not support the metadata being transferred as part of a separate buffer.</p> <p>Bit 0 if set to '1' indicates that the namespace supports the metadata being transferred as part of an extended data LBA. Bit 0 if cleared to '0' indicates that the namespace does not support the metadata being transferred as part of an extended data LBA.</p>
...		
LBA Formats List		
131:128	M	<p>LBA Format 0 Support (LBAF0): This field indicates the LBA format 0 that is supported by the controller. The LBA format field is defined in Figure 98.</p> <p>Additional information may be provided in the ELBAF0 field (refer to Figure 100).</p>
...		

Modify a portion of section 4.1.5.3 as shown below:

4.1.5.3 I/O Command Set Specific Identify Namespace Data Structure (CNS 05h)

...

Figure 100: NVM Command Set I/O Command Set Specific Identify Namespace Data Structure (CSI 00h)

Bytes	O/M ¹	Description
...		

Figure 100: NVM Command Set I/O Command Set Specific Identify Namespace Data Structure (CSI 00h)

Bytes	O/M ¹	Description
Extended LBA Formats List		
15:12	O	Extended LBA Format 0 Support (ELBAF0): This field indicates additional LBA Format 0 information related to the LBA Format 0 Support (LBAF0) field in the Identify Namespace data structure. The Extended LBA format field is defined in Figure 101.
19:16	O	Extended LBA Format 1 Support (ELBAF1): This field indicates additional LBA Format 1 information related to the LBA Format 1 Support (LBAF1) field in the Identify Namespace data structure. The Extended LBA format field is defined in Figure 101.
...
267:264	O	Extended LBA Format 63 Support (ELBAF63): This field indicates additional LBA Format 63 information related to the LBA Format 63 Support (LBAF63) field in the Identify Namespace data structure. The Extended LBA format field is defined in Figure 101.
4095:268	O	Reserved
NOTES:		
1. O/M definition: O = Optional, M = Mandatory.		

Modify a portion of section 5.3 as shown below:

5 Extended Capabilities

...

5.3 Namespace Management

...

The size granularity and the capacity granularity are hints which may be used by the host to minimize the capacity that is allocated for a namespace and that is not able to be addressed by logical block addresses. The granularities are used in specifying values for the Namespace Size (NSZE) and Namespace Capacity (NCAP) fields of the data structure used for the create operation of the Namespace Management command (refer to [section 4.1.6](#) ~~the Namespace Management command section in the NVMe Base Specification~~).

Description of NVM Express Zoned Namespace Command Set specification 1.1a changes

Modify a portion of section 1.4.2.2 as shown below:

1 Introduction

...

1.4 Definitions

...

1.4.2 Terms in the NVMe Base Specification specified in the Zoned Namespace Command Set

...

1.4.2.2 Format Index

A value used to index into the LBA Formats ~~list data-structure~~ (refer to the NVMe Command Set Specification), the Extended LBA Formats ~~list data-structure~~ (refer to the NVMe Command Set Specification), and the LBA Format Extensions ~~list data-structure~~ (refer to **Figure 48**).

Modify a portion of section 4.1.5.1 as shown below:

4 Admin Commands for the Zoned Namespace Command Set

...

4.1 Admin Command behavior for the Zoned Namespace Command Set

4.1.5 Identify Command

...

4.1.5.1 I/O Command Set Specific Identify Namespace Data Structure for the Zoned Namespace Command Set (CNS 05h, CSI 02h)

Figure 48 defines the I/O Command Set specific Identify Namespace data structure for the Zoned Namespace Command Set.

Figure 48: I/O Command Set Specific Identify Namespace Data Structure for the Zoned Namespace Command Set

Bytes	O/M ¹	Description
...		
LBA Format Extensions List		
2831:2816	M	LBA Format 0 Extension (LBAFE0): This field indicates the LBA format Extension 0 that is supported by the controller. The Zone format field is defined in Figure 49.

Figure 48: I/O Command Set Specific Identify Namespace Data Structure for the Zoned Namespace Command Set

Bytes	O/M ¹	Description
2847:2832	O	LBA Format 1 Extension (LBAFE1): This field indicates the LBA format Extension 1 that is supported by the controller. The LBA Format Extension field is defined in Figure 49.
...		
3839:3824	O	LBA Format 63 Extension (LBAFE63): This field indicates the LBA format Extension 63 that is supported by the controller. The LBA Format Extension field is defined in Figure 49.
4095:3840	O	Vendor Specific
NOTES: 1. O/M definition: O = Optional, M = Mandatory.		

Modify a portion of section 5.3 as shown below:

5 Extended Capabilities

...

5.3 Namespace Management command

The Namespace Management command operates as defined in the NVM Command Set Specification with the addition that the Format Index (refer to section 4.1.2.2) also specifies the entry in the LBA Format Extensions list (refer to Figure 48) for zone attributes used to format a created namespace.

Description of NVM Express Key Value Command Set specification 1.0a changes

<Editor Note: The following is before section 1>

Change the Top Margin Text to:

NVM Express® Key Value Command Set Specification revision 1.0a

...

NVM Express® Key Value Command Set Specification revision 1.0a is available for download at <http://nvmexpress.org>. The NVM Express® Key Value Command Set Specification revision 1.0a incorporates NVM Express® Key Value Command Set Specification, revision 1.0 (refer to the Key Value Command Set Specification change list <https://nvmexpress.org/changes-in-nvm-express-revision-2-0> for details), ECN 001.

Modify a portion of section 1.4.2.2 as shown below:

1 Introduction

...

1.4 Definitions

...

1.4.2 Definitions in the NVMe Base Specification specified in the Key Value Command Set

...

1.4.2.2 Format Index

A value used to index into the KV Formats ~~list data-structure~~ (refer to [Figure 36](#)).

Modify a portion of section 3.1.2 as shown below:

3 I/O Commands for the Key Value Command Set

...

3.1 Submission Queue Entry and Completion Queue Entry

...

3.1.2 Key Value Command Set Specific Status Values

This specification supports the Command Specific status values defined in the NVMe Base Specification. Command Specific status values that are specific to the Key Value Command Set ~~specification~~ are defined in ~~this section~~. Figure 4 ~~defines the status values specific to the Key-Value Command Set~~.

Modify a portion of section 3.2.1.1 as shown below:

3.2 Key Value Command Set Commands

...

3.2.1 Delete command

...

3.2.1.1 Command Completion

Upon completion of the Delete command, the controller posts a completion queue entry (CQE) to the associated I/O Completion Queue. If the status code returned is 00h, then the KV key and its associated KV value have been deleted.

Delete command specific status values are defined in Figure 91. <<Added period>>

Figure 91: Delete – Command Specific Status Values

Value	Description
87h	KV Key Does Not Exist: The KV key does not exist. <<Added period>>
0Bh	Invalid Namespace or Format: The namespace or the format of that namespace is invalid or the namespace is not associated with the Key Value Command Set.-

...

Modify a portion of section 3.2.5 as shown below:

3.2.5 Store command

...

Figure 30: Store – Command Dword 2 and Command Dword 3

Bit	Description
63:0	KV key[63:00]: This field specifies the least-significant 64-bits of the KV key to be used for the command. Command Dword 2 contains bits 31:00; Command Dword 3 contains bits 63:32.

Modify a portion of section 4.1.5.1 as shown below:

4 Admin Commands for the Key Value Command Set

...

4.1 Admin Command behavior for the Key Value Command Set

...

4.1.5 Identify Command

...

4.1.5.1 I/O Command Set specific Identify Namespace data structure (CNS 05h, CSI 01h)

The I/O Command Set specific Identify Namespace data structure (i.e., CNS 05h) for the Key Value Command Set is defined in Figure 36.

<Editor's Note: The Format Index of the namespace is not present in I/O Command Set specific Identify Namespace data structure for the KV Command Set so a host cannot determine the format of the user data. This field is required to be reported>

Figure 36: Identify – I/O Command Set specific Identify Namespace Data Structure, Key Value Type Specific

Bytes	O/M ¹	Description
...		
71:64	O	IEEE Extended Unique Identifier (EUI64): Refer to the NVMe Base Specification.
KV Formats List		
87:72	M	KV Format 0 Support (KVF0): This field indicates the KV format 0 that is supported by the controller. The KV format field is defined in Figure 37.
103:88	O	KV Format 1 Support (KVF1): This field indicates the KV format 1 that is supported by the controller. The KV format field is defined in Figure 37.
...
119:104	O	KV Format 2 Support (KVF2): This field indicates the KV format 2 that is supported by the controller. The KV format field is defined in Figure 37.
135:120	O	KV Format 3 Support (KVF3): This field indicates the KV format 3 that is supported by the controller. The KV format field is defined in Figure 37.
151:136	O	KV Format 4 Support (KVF4): This field indicates the KV format 4 that is supported by the controller. The KV format field is defined in Figure 37.
167:152	O	KV Format 5 Support (KVF5): This field indicates the KV format 5 that is supported by the controller. The KV format field is defined in Figure 37.
183:168	O	KV Format 6 Support (KVF6): This field indicates the KV format 6 that is supported by the controller. The KV format field is defined in Figure 37.
199:184	O	KV Format 7 Support (KVF7): This field indicates the KV format 7 that is supported by the controller. The KV format field is defined in Figure 37.
215:200	O	KV Format 8 Support (KVF8): This field indicates the KV format 8 that is supported by the controller. The KV format field is defined in Figure 37.
231:216	O	KV Format 9 Support (KVF9): This field indicates the KV format 9 that is supported by the controller. The KV format field is defined in Figure 37.
247:232	O	KV Format 10 Support (KVF10): This field indicates the KV format 10 that is supported by the controller. The KV format field is defined in Figure 37.
263:248	O	KV Format 11 Support (KVF11): This field indicates the KV format 11 that is supported by the controller. The KV format field is defined in Figure 37.
279:264	O	KV Format 12 Support (KVF12): This field indicates the KV format 12 that is supported by the controller. The KV format field is defined in Figure 37.
295:280	O	KV Format 13 Support (KVF13): This field indicates the KV format 13 that is supported by the controller. The KV format field is defined in Figure 37.
311:296	O	KV Format 14 Support (KVF14): This field indicates the KV format 14 that is supported by the controller. The KV format field is defined in Figure 37.
327:312	O	KV Format 15 Support (KVF15): This field indicates the KV format 15 that is supported by the controller. The KV format field is defined in Figure 37.
3839:328		Reserved
4095:3840	O	Vendor Specific
NOTES:		
1. O/M definition: O = Optional, M = Mandatory.		

...

Figure 37: KV Format Data Structure

Bytes	Description
01:00	KV Key Max Length: Maximum length of a KV key in a key value pair in bytes. The maximum value of this field shall be less than or equal to that is supported by the commands in this version of the Key Value Command Set specification is 16.
02	Reserved

Modify a portion of section 4.1.6 as shown below:

4.1.6 Namespace Management command

...

Figure 38: Namespace Management – Host Software Specified Fields

Bytes	Description	Host Specified
Fields that are a subset of the I/O Command Set specific Identify Namespace data structure (refer to Figure 36) These fields are the same fields as defined in the I/O Command Set specific Identify Namespace data structure (refer to Figure 36).		
07:00	Namespace Size (NSZE)	Yes
29:08	Reserved	
30	Namespace Multi-path I/O and Namespace Sharing Capabilities (NMIC)	Yes
91:31	Reserved	
95:92	ANA Group Identifier (ANAGRPID) ¹	Yes
99:96	Reserved	
101:100	NVM Set Identifier (NVMSETID) ¹	Yes
103:102	Endurance Group Identifier (ENDGID)	Yes
511:104	Reserved	
Notes:		
1. A value of 0h specifies that the controller determines the value to use (refer to the Namespace Management section in the NVMe Base Specification). If the associated feature is not supported, then this field is ignored by the controller.		