



KMIP Opaque Managed Object Store Profile Version 1.0

Committee Specification Draft 02

19 June 2014

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Related work:

This specification is related to:

- *Key Management Interoperability Protocol Profiles Version 1.0*. Edited by Robert Griffin and Subhash Sankuratripati. 01 October 2010. OASIS Standard. <http://docs.oasis-open.org/kmip/profiles/v1.0/os/kmip-profiles-1.0-os.html>.
- *Key Management Interoperability Protocol Specification Version 1.1*. Edited by Robert Haas and Indra Fitzgerald. 24 January 2013. OASIS Standard. <http://docs.oasis-open.org/kmip/spec/v1.1/os/kmip-spec-v1.1-os.html>.

- *Key Management Interoperability Protocol Specification Version 1.2*. Edited by Kiran Thota and Kelley Burgin. Latest version: <http://docs.oasis-open.org/kmip/spec/v1.2/kmip-spec-v1.2.html>.

Abstract:

Describes a profile for a KMIP server performing opaque managed object storage operations based on requests received from a KMIP client.

Status:

This document was last revised or approved by the OASIS Key Management Interoperability Protocol (KMIP) TC on the above date. The level of approval is also listed above. Check the "Latest version" location noted above for possible later revisions of this document.

Technical Committee members should send comments on this specification to the Technical Committee's email list. Others should send comments to the Technical Committee by using the "Send A Comment" button on the Technical Committee's web page at <https://www.oasis-open.org/committees/kmip/>.

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1 Introduction

For normative definition of the elements of KMIP see the [KMIP Specification](#) [KMIP-SPEC] and the [KMIP Profiles](#) [KMIP-PROF].

This profile defines the necessary KMIP functionality that a KMIP implementation conforming to this profile SHALL support in order to interoperate in conformance with this profile.

1.1 Terminology

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

1.2 Normative References

- [RFC2119] Bradner, S., “Key words for use in RFCs to Indicate Requirement Levels”, BCP 14, RFC 2119, March 1997. <http://www.ietf.org/rfc/rfc2119.txt>.
- [KMIP-ENCODE] [URL](#) *KMIP Additional Message Encodings Version 1.0*.
Candidate OASIS Standard 01. DD MMM YYYY.
- [KMIP-SPEC] One or more of [KMIP-SPEC-1_0], [KMIP-SPEC-1_1], [KMIP-SPEC-1_2]
- [KMIP-SPEC-1_0] *Key Management Interoperability Protocol Specification Version 1.0*
<http://docs.oasis-open.org/kmip/spec/v1.0/os/kmip-spec-1.0-os.doc>
OASIS Standard, October 2010.
- [KMIP-SPEC-1_1] *Key Management Interoperability Protocol Specification Version 1.1*.
<http://docs.oasis-open.org/kmip/spec/v1.1/os/kmip-spec-v1.1-os.doc>
OASIS Standard. 24 January 2013.
- [KMIP-SPEC-1_2] *Key Management Interoperability Protocol Specification Version 1.2*.
[URL](#)
Candidate OASIS Standard 01. DD MMM YYYY.
- [KMIP-PROF] One or more of [KMIP-PROF-1_0], [KMIP-PROF-1_1], [KMIP-PROF-1_2]
- [KMIP-PROF-1_0] *Key Management Interoperability Protocol Profiles Version 1.0*. <http://docs.oasis-open.org/kmip/profiles/v1.0/os/kmip-profiles-1.0-os.doc>
OASIS Standard. 1 October 2010.
- [KMIP-PROF-1_1] *Key Management Interoperability Protocol Profiles Version 1.1*.
<http://docs.oasis-open.org/kmip/profiles/v1.1/os/kmip-profiles-v1.1-os.doc>
OASIS Standard 01. 24 January 2013.
- [KMIP-PROF-1_2] *Key Management Interoperability Protocol Profiles Version 1.2*.
[URL](#)
Candidate OASIS Standard 01. DD MMM YYYY.

2 Opaque Managed Object Store Profile

The Opaque Managed Object Store Profile is a KMIP server performing storage related operations on opaque objects based on requests received from a KMIP client.

2.1 Authentication Suite

Implementations conformant to this profile SHALL support at least one of the Authentication Suites defined within section 3 of [KMIP-PROF]. The establishment of the trust relationship between the KMIP client and the KMIP server is the same as the defined base profiles.

2.2 Opaque Managed Object Store – Client

KMIP clients conformant to this profile under [KMIP-SPEC-1_0]:

1. SHALL conform to the [KMIP-SPEC-1_0]

KMIP clients conformant to this profile under [KMIP-SPEC-1_1]:

2. SHALL conform to the *Baseline Client Clause* (section 5.12) of [KMIP-PROF-1_1]

KMIP clients conformant to this profile under [KMIP-SPEC-1_2]:

3. SHALL conform to the *Baseline Client* (section 5.2) of [KMIP-PROF-1_2]

KMIP clients conformant to this profile:

4. MAY support any clause within [KMIP-SPEC] provided it does not conflict with any other clause within this section 2.2
5. MAY support extensions outside the scope of this standard (e.g., vendor extensions, conformance clauses) that do not contradict any KMIP requirements.

2.3 Opaque Managed Object Store – Server

KMIP servers conformant to this profile under [KMIP-SPEC-1_0]:

1. SHALL conform to the [KMIP-SPEC-1_0]

KMIP servers conformant to this profile under [KMIP-SPEC-1_1]:

2. SHALL conform to the *Baseline Server* of [KMIP-PROF-1_1]

KMIP servers conformant to this profile under [KMIP-SPEC-1_2]:

3. SHALL conform to the *Baseline Server* of [KMIP-PROF-1_2]

KMIP servers conformant to this profile:

4. SHALL support the following *Objects* [KMIP-SPEC]
 - a. *Opaque Object* [KMIP-SPEC]
5. SHALL support the following *Attributes* [KMIP-SPEC]
 - a. *Object Type* [KMIP-SPEC]
6. SHALL support the following *Client-to-Server* [KMIP-SPEC] operations:
 - a. *Register* [KMIP-SPEC]
7. SHALL support the following *Message Encoding* [KMIP-SPEC]:
 - a. *Opaque Data Type* [KMIP-SPEC]
 - b. *Object Type* [KMIP-SPEC] with value:
 - i. Opaque Object
8. MAY support any clause within [KMIP-SPEC] provided it does not conflict with any other clause within this section 2.3

- 75 9. MAY support extensions outside the scope of this standard (e.g., vendor extensions,
76 conformance clauses) that do not contradict any KMIP requirements.

3 Opaque Managed Object Store Profile - Test Cases

The test cases define a number of request-response pairs for KMIP operations. Each test case is provided in the XML format specified in [KMIP-ENCODE] intended to be both human-readable and usable by automated tools. The time sequence (starting from 0) for each request-response pair is noted and line numbers are provided for ease of cross-reference for a given test sequence.

Each test case has a unique label (the section name) which includes indication of mandatory (-M-) or optional (-O-) status and the protocol version major and minor numbers as part of the identifier.

The test cases may depend on a specific configuration of a KMIP client and server being configured in a manner consistent with the test case assumptions.

Where possible the flow of unique identifiers between tests, the date-time values, and other dynamic items are indicated using symbolic identifiers – in actual request and response messages these dynamic values will be filled in with valid values.

Note: the values for the returned items and the custom attributes are illustrative. Actual values from a real client system may vary as specified in section 4.7.

3.1 Mandatory Test Cases KMIP 1.0

3.1.1 OMOS-M-1-10

Register small opaque object

```
# TIME 0
0001 <RequestMessage>
0002   <RequestHeader>
0003     <ProtocolVersion>
0004       <ProtocolVersionMajor type="Integer" value="1"/>
0005       <ProtocolVersionMinor type="Integer" value="0"/>
0006     </ProtocolVersion>
0007     <BatchCount type="Integer" value="1"/>
0008   </RequestHeader>
0009   <BatchItem>
0010     <Operation type="Enumeration" value="Register"/>
0011     <RequestPayload>
0012       <ObjectType type="Enumeration" value="OpaqueObject"/>
0013       <TemplateAttribute>
0014         <Attribute>
0015           <AttributeName type="TextString" value="Name"/>
0016           <AttributeValue>
0017             <NameValue type="TextString" value="OMOS-M-1-10"/>
0018             <NameType type="Enumeration"
0019               value="UninterpretedTextString"/>
0019           </AttributeValue>
0020         </Attribute>
0021       </TemplateAttribute>
0022       <OpaqueObject>
0023         <OpaqueDataType type="Enumeration" value="0x80000001"/>
0024         <OpaqueDataValue type="ByteString"
0025           value="5365637265745061737377667264"/>
0026       </OpaqueObject>
0027     </RequestPayload>
0028   </BatchItem>
0029 </RequestMessage>
0030 <ResponseMessage>
```


0030	<ResponseHeader>
0031	<ProtocolVersion>
0032	<ProtocolVersionMajor type="Integer" value="1"/>
0033	<ProtocolVersionMinor type="Integer" value="0"/>
0034	</ProtocolVersion>
0035	<TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
0036	<BatchCount type="Integer" value="1"/>
0037	</ResponseHeader>
0038	<BatchItem>
0039	<Operation type="Enumeration" value="Register"/>
0040	<ResultStatus type="Enumeration" value="Success"/>
0041	<ResponsePayload>
0042	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0043	</ResponsePayload>
0044	</BatchItem>
0045	</ResponseMessage>
# TIME 1	
0046	<RequestMessage>
0047	<RequestHeader>
0048	<ProtocolVersion>
0049	<ProtocolVersionMajor type="Integer" value="1"/>
0050	<ProtocolVersionMinor type="Integer" value="0"/>
0051	</ProtocolVersion>
0052	<BatchCount type="Integer" value="1"/>
0053	</RequestHeader>
0054	<BatchItem>
0055	<Operation type="Enumeration" value="Destroy"/>
0056	<RequestPayload>
0057	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0058	</RequestPayload>
0059	</BatchItem>
0060	</RequestMessage>
0061	<ResponseMessage>
0062	<ResponseHeader>
0063	<ProtocolVersion>
0064	<ProtocolVersionMajor type="Integer" value="1"/>
0065	<ProtocolVersionMinor type="Integer" value="0"/>
0066	</ProtocolVersion>
0067	<TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
0068	<BatchCount type="Integer" value="1"/>
0069	</ResponseHeader>
0070	<BatchItem>
0071	<Operation type="Enumeration" value="Destroy"/>
0072	<ResultStatus type="Enumeration" value="Success"/>
0073	<ResponsePayload>
0074	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0075	</ResponsePayload>
0076	</BatchItem>
0077	</ResponseMessage>

96 3.2 Mandatory Test Cases KMIP 1.1

97 3.2.1 OMOS-M-1-11

98 Register small opaque object

	# TIME 0
0001	<RequestMessage>
0002	<RequestHeader>
0003	<ProtocolVersion>
0004	<ProtocolVersionMajor type="Integer" value="1"/>
0005	<ProtocolVersionMinor type="Integer" value="1"/>
0006	</ProtocolVersion>
0007	<BatchCount type="Integer" value="1"/>
0008	</RequestHeader>
0009	<BatchItem>
0010	<Operation type="Enumeration" value="Register"/>
0011	<RequestPayload>
0012	<ObjectType type="Enumeration" value="OpaqueObject"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Name"/>
0016	<AttributeValue>
0017	<NameValue type="TextString" value="OMOS-M-1-11"/>
0018	<NameType type="Enumeration"
	value="UninterpretedTextString"/>
0019	</AttributeValue>
0020	</Attribute>
0021	</TemplateAttribute>
0022	<OpaqueObject>
0023	<OpaqueDataType type="Enumeration" value="0x80000001"/>
0024	<OpaqueDataValue type="ByteString"
	value="53656372657450617373776f7264"/>
0025	</OpaqueObject>
0026	</RequestPayload>
0027	</BatchItem>
0028	</RequestMessage>
0029	<ResponseMessage>
0030	<ResponseHeader>
0031	<ProtocolVersion>
0032	<ProtocolVersionMajor type="Integer" value="1"/>
0033	<ProtocolVersionMinor type="Integer" value="1"/>
0034	</ProtocolVersion>
0035	<TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
0036	<BatchCount type="Integer" value="1"/>
0037	</ResponseHeader>
0038	<BatchItem>
0039	<Operation type="Enumeration" value="Register"/>
0040	<ResultStatus type="Enumeration" value="Success"/>
0041	<ResponsePayload>
0042	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0043	</ResponsePayload>
0044	</BatchItem>
0045	</ResponseMessage>
	# TIME 1
0046	<RequestMessage>
0047	<RequestHeader>

0048	<ProtocolVersion>
0049	<ProtocolVersionMajor type="Integer" value="1"/>
0050	<ProtocolVersionMinor type="Integer" value="1"/>
0051	</ProtocolVersion>
0052	<BatchCount type="Integer" value="1"/>
0053	</RequestHeader>
0054	<BatchItem>
0055	<Operation type="Enumeration" value="Destroy"/>
0056	<RequestPayload>
0057	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0058	</RequestPayload>
0059	</BatchItem>
0060	</RequestMessage>
0061	<ResponseMessage>
0062	<ResponseHeader>
0063	<ProtocolVersion>
0064	<ProtocolVersionMajor type="Integer" value="1"/>
0065	<ProtocolVersionMinor type="Integer" value="1"/>
0066	</ProtocolVersion>
0067	<TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
0068	<BatchCount type="Integer" value="1"/>
0069	</ResponseHeader>
0070	<BatchItem>
0071	<Operation type="Enumeration" value="Destroy"/>
0072	<ResultStatus type="Enumeration" value="Success"/>
0073	<ResponsePayload>
0074	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0075	</ResponsePayload>
0076	</BatchItem>
0077	</ResponseMessage>

99

100

101 3.3 Mandatory Test Cases KMIP 1.2

102 3.3.1 OMOS-M-1-12

103 Register small opaque object

	# TIME 0
0001	<RequestMessage>
0002	<RequestHeader>
0003	<ProtocolVersion>
0004	<ProtocolVersionMajor type="Integer" value="1"/>
0005	<ProtocolVersionMinor type="Integer" value="2"/>
0006	</ProtocolVersion>
0007	<BatchCount type="Integer" value="1"/>
0008	</RequestHeader>
0009	<BatchItem>
0010	<Operation type="Enumeration" value="Register"/>
0011	<RequestPayload>
0012	<ObjectType type="Enumeration" value="OpaqueObject"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Name"/>

0016	<AttributeValue>
0017	<NameValue type="TextString" value="OMOS-M-1-12"/>
0018	<NameType type="Enumeration"
	value="UninterpretedTextString"/>
0019	</AttributeValue>
0020	</Attribute>
0021	</TemplateAttribute>
0022	<OpaqueObject>
0023	<OpaqueDataType type="Enumeration" value="0x80000001"/>
0024	<OpaqueDataValue type="ByteString"
	value="53656372657450617373776f7264"/>
0025	</OpaqueObject>
0026	</RequestPayload>
0027	</BatchItem>
0028	</RequestMessage>
0029	<ResponseMessage>
0030	<ResponseHeader>
0031	<ProtocolVersion>
0032	<ProtocolVersionMajor type="Integer" value="1"/>
0033	<ProtocolVersionMinor type="Integer" value="2"/>
0034	</ProtocolVersion>
0035	<TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
0036	<BatchCount type="Integer" value="1"/>
0037	</ResponseHeader>
0038	<BatchItem>
0039	<Operation type="Enumeration" value="Register"/>
0040	<ResultStatus type="Enumeration" value="Success"/>
0041	<ResponsePayload>
0042	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0043	</ResponsePayload>
0044	</BatchItem>
0045	</ResponseMessage>
	# TIME 1
0046	<RequestMessage>
0047	<RequestHeader>
0048	<ProtocolVersion>
0049	<ProtocolVersionMajor type="Integer" value="1"/>
0050	<ProtocolVersionMinor type="Integer" value="2"/>
0051	</ProtocolVersion>
0052	<BatchCount type="Integer" value="1"/>
0053	</RequestHeader>
0054	<BatchItem>
0055	<Operation type="Enumeration" value="Destroy"/>
0056	<RequestPayload>
0057	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0058	</RequestPayload>
0059	</BatchItem>
0060	</RequestMessage>
0061	<ResponseMessage>
0062	<ResponseHeader>
0063	<ProtocolVersion>
0064	<ProtocolVersionMajor type="Integer" value="1"/>
0065	<ProtocolVersionMinor type="Integer" value="2"/>
0066	</ProtocolVersion>
0067	<TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
0068	<BatchCount type="Integer" value="1"/>

0069	</ResponseHeader>
0070	<BatchItem>
0071	<Operation type="Enumeration" value="Destroy"/>
0072	<ResultStatus type="Enumeration" value="Success"/>
0073	<ResponsePayload>
0074	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0075	</ResponsePayload>
0076	</BatchItem>
0077	</ResponseMessage>

104

105

106 3.4 Optional Test Cases KMIP 1.0

107 3.4.1 OMOS-O-1-10

108 Register larger (>10k) opaque object

	# TIME 0
0001	<RequestMessage>
0002	<RequestHeader>
0003	<ProtocolVersion>
0004	<ProtocolVersionMajor type="Integer" value="1"/>
0005	<ProtocolVersionMinor type="Integer" value="0"/>
0006	</ProtocolVersion>
0007	<BatchCount type="Integer" value="1"/>
0008	</RequestHeader>
0009	<BatchItem>
0010	<Operation type="Enumeration" value="Register"/>
0011	<RequestPayload>
0012	<ObjectType type="Enumeration" value="OpaqueObject"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Name"/>
0016	<AttributeValue>
0017	<NameValue type="TextString" value="OMOS-O-1-10"/>
0018	<NameType type="Enumeration"
	value="UninterpretedTextString"/>
0019	</AttributeValue>
0020	</Attribute>
0021	</TemplateAttribute>
0022	<OpaqueObject>
0023	<OpaqueDataType type="Enumeration" value="0x80000001"/>
0024	<OpaqueDataValue type="ByteString"
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	<pre> fcc0072eeb31019ba0cac461a55c46f7a30dd1554e2861ceb98ca52d0106c09bbfd6 e2d9c2061d797199846119294f293679740bfb06626974f93382e9e854df29bc8aef 4dc3bc1122dbabd3cc1ae646bafa5d5b5824fffc22860e737419800f8037f3d0ac05 bd041345e94e597817ff15a5f2332b697a97507954a664eed19e925daba33c575773 ebdbaf42babf42d17073e1d595fb612519ccc560451c66c82cf2f2b220d58fd6d666 a089b843f993c784e4b07027ccbb72437a69ce1b8e34050b254d3f9d195750edfaf9 2f5cff1140ea202cbc489b32ab4d78f6cbc7205cdd9ec64db4dba9477e141f1bb54a af929e9fb766711eaa7b802818e03c2576bc5fbd54a8daf64fa8907a50b81db4b53f 87ad894342ba54304ff013586aadba30f40f8c62c127287f2ef26303fbb0be86f581 f51881686d3ee672a567c887c88122eddf9ea2e75ce4788b8b07b7bf30bd68ab766d 336d3de479d3b7b738873b53fb367af51e26e098d9f60b2ff9eb364db4847adb19f4 5a6644298dda56b1fa62857a55aedd02fd4b7ad11dabf45cc94b92e797c4d8e53646 da4847e0f84372466d6503cea856f000274afd00fd97b69d185fc14ab25a5cb9d897 b85f5e22f8f881b113b60e89b05f2717fe29a8c3eccba97755e827ef02cd95ad52a1 de25ae6deefa3f150c61f39256f3dc2959c4f0ad94ccab130c9f69642534484ba827 33bfc102aaffbd86103975cfb8146df3ffe895e462fabac9ab8e49ba900e7ddb63fd 32e2b6487fe52d1e2c42ec16da300214992fc45dbeb39474e2edce031c153c0ff88d 970c71707bde5eeb5a8cec19b79558d8cf6ba7d1fd6c6e6361fc4f4245850166cb3e d529ba0f75c9eab38298cbbcl1d365644633ad610c8bb4c82bf5d6f9eed300df18d84 f0244965c8df4df535f6e0e63dea6fe49e439f97aad7c74acc77887a35aeb46e4f7c b648dd53b96350913d14c97106a528df78de8166c37dfc175eb8cd290b4eeafe4c03 47c2f691e41d30e0aceb7eb25d58aa81b05fe8f5300ale38dee028cdfe196210fbe6 aa2cdcd1b426aa fcf3bf086e1d34f930a1bb9ee32b575f4ae3b82ef52f44d8654353 9c358a7079b18c7178635fc1fb54f7ed6b51ad603293d21523f62b4d1978ac4014d5 07268c830c621995daf0a8937a7a820ef6ddba82a53503bd8c2e48d0863ecdffc28c4 fe15029337e1c7caf29e5dc05d447"/> </pre>
0025	</OpaqueObject>
0026	</RequestPayload>
0027	</BatchItem>
0028	</RequestMessage>
0029	<ResponseMessage>
0030	<ResponseHeader>
0031	<ProtocolVersion>
0032	<ProtocolVersionMajor type="Integer" value="1"/>
0033	<ProtocolVersionMinor type="Integer" value="0"/>
0034	</ProtocolVersion>
0035	<TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
0036	<BatchCount type="Integer" value="1"/>
0037	</ResponseHeader>
0038	<BatchItem>
0039	<Operation type="Enumeration" value="Register"/>
0040	<ResultStatus type="Enumeration" value="Success"/>
0041	<ResponsePayload>
0042	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0043	</ResponsePayload>
0044	</BatchItem>
0045	</ResponseMessage>
0046	# TIME 1
0047	<RequestMessage>
0048	<RequestHeader>
0049	<ProtocolVersion>
0050	<ProtocolVersionMajor type="Integer" value="1"/>
0051	<ProtocolVersionMinor type="Integer" value="0"/>
0052	</ProtocolVersion>
0053	<BatchCount type="Integer" value="1"/>
0054	</RequestHeader>
0055	<BatchItem>

0055	<Operation type="Enumeration" value="Destroy"/>
0056	<RequestPayload>
0057	<UniqueIdentifier type="TextString"
0058	value="\$UNIQUE_IDENTIFIER_0"/>
0059	</RequestPayload>
0060	</BatchItem>
0061	</RequestMessage>
0062	<ResponseMessage>
0063	<ResponseHeader>
0064	<ProtocolVersion>
0065	<ProtocolVersionMajor type="Integer" value="1"/>
0066	<ProtocolVersionMinor type="Integer" value="0"/>
0067	</ProtocolVersion>
0068	<TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
0069	<BatchCount type="Integer" value="1"/>
0070	</ResponseHeader>
0071	<BatchItem>
0072	<Operation type="Enumeration" value="Destroy"/>
0073	<ResultStatus type="Enumeration" value="Success"/>
0074	<ResponsePayload>
0075	<UniqueIdentifier type="TextString"
0076	value="\$UNIQUE_IDENTIFIER_0"/>
0077	</ResponsePayload>
	</BatchItem>
	</ResponseMessage>

109

110

111 3.5 Optional Test Cases KMIP 1.1

112 This section documents the test cases that a client or server conformant to the Opaque Managed Object
113 Store Profile SHALL support under KMIP Specification 1.1.

114 3.5.1 OMOS-O-1-11

115 Register larger (>10k) opaque object

	# TIME 0
0001	<RequestMessage>
0002	<RequestHeader>
0003	<ProtocolVersion>
0004	<ProtocolVersionMajor type="Integer" value="1"/>
0005	<ProtocolVersionMinor type="Integer" value="1"/>
0006	</ProtocolVersion>
0007	<BatchCount type="Integer" value="1"/>
0008	</RequestHeader>
0009	<BatchItem>
0010	<Operation type="Enumeration" value="Register"/>
0011	<RequestPayload>
0012	<ObjectType type="Enumeration" value="OpaqueObject"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Name"/>
0016	<AttributeValue>
0017	<NameValue type="TextString" value="OMOS-O-1-11"/>
0018	<NameType type="Enumeration"
0019	value="UninterpretedTextString"/>
	</AttributeValue>

0020	</Attribute>
0021	</TemplateAttribute>
0022	<OpaqueObject>
0023	<OpaqueDataType type="Enumeration" value="0x80000001"/>
0024	<OpaqueDataValue type="ByteString" value="168392816fd71b3d1c5d9cecfacf61f4e396374ede655d9d15305d6a0a04e5f0beab1de8be60fb716de00456c0b4adaadd5e1f4e72879251dbf7d25ca9f81076d aa0b6464ae989a76a6f6710ea9560a60b99cb4f697cd075cd799cb7dbcfbbfab4c2ab a5a19529f14307f6d217b1c84114eab50855b623d2e2a7602cdd230778939cce2a03 550b0e0c9a4ff7e0ad2af805a92bbe4a41ba3405565ca050c38c6d5b92d902c30544 b1460e2360459ee2ef3376b66caf91e0e0980d12ea6c19b5623cf03ad065652cf247 ee2be155deacfda3d96b35f21d2f97fe4fd28244dec67f61c32250f5fc93dc515c1b 5c7004f212b7c1d60972f3aa0372789364a3a762f80fda1d58389ea3cb3d204db887 b0db62623350d4ea7d1b9d91e6d522fab6942abe5ab9f76278e4cb280fed409268c2 731552c8292829a47355852d5780388a4e13691f8ec654226ce52e213fff30b0b3de 7ffb7444c7748f7e90dd893276d526a657bdf42ea588721788feb605e5d3443ebe06 91be98af902a3d6a459f1e160df7dc3a7507b05a238d49c6d5ef6803ffb964cd813d b90f549c2393fae94fcfc8c05ddb62a71bfc031074f4d32ada48491c970dedf57c13 9cb04c94112fcef3eec9fdd7487eecd1470741f780e0d9e99ba68e97945b7ab7970f 8003f80ca9622c94192281c13380894dc1f6c6d88848ffe81fd994862d2c60db1b65 1dbf12a245d34fc0e2a1b7cf36428c1e481890607a4df45ea20619ea02946af0c7c4 1fc16bc620159871659c8105506fb0d4017921ea79ac082afad5cb9bf703a49ac79f d1f428fdca5a8f693990bfbca9640a44bf43e5786111f624369d1d33a08cd7247be0 7f9bad26e531a2f3f9aea66536682296348cf86291af9c2521bc6196747986d02b3a 465dfbbe9468c3b364a8048441e32dc8ff190f0ad62b2c0f6a6d4aa715580b1fb2ca b038560259981eee6f59f850c076c29507e9efd9cca183f5bd8a0a876820ed173f88 4f6a9773c8102859b59b286002147b86428c18537590ff9b3cbe3dd2f7607f2b7d84 227c5d9ca6e6f272631672960f0da9c69d6b31eb499d50d724e3e3d4f0c982424389 15de54f1a600acd13f9ce483c01dcd8c5d36a7cc57ead5f4066b849b8a5e00cc5601 9bebb2e8129a6481e9f4b234154808236538c500ccd597a273068dc442f3c1205005 0209538cb1ea3194a18278b55d589d34e7680f565ed411359eaddf12c0bdfce907b16 377827d6ca46460d19f703c7b17fd3b7be9f45c162a34502f507673d304487e11c27 c9827cbc9cc5e3992514aa6e62d3163e338af19e99fcddec6ee17f70af7c9644a297 af3ec237619b8580bd20ae8ada4ce7dfe834711560b598f5aab65eac8fd2a8d66f57 4c79e4f19faa08dda5823ddc4f532f3053841dc52213dc147b325599a4b5969fa264 2fb50c01030b14253d0f23fd34f663581e95da9bfb0e3f52a010b2f5911ff063ac2a 826c94a8789445bc229a1ef1fe74fd8b5f672e8ffa671a5c69d19a4d7611c149cd52 68d590788aa3e44e949beb46f38a8fa51a301824e88c220ae41ba4b036c672342c04 3ebc6db91035b70ae68d58f558a3a5d1a788a6694c4f74278a204743fae6d947b502 e29552ba65507e91b684a3955aafb43530f02ccccaeded9a6dlf877da2470f36c260 14653493c970613f25de9c21f0682062881de0fc6ce2712e6f924408e7d29d368c43 ed198f14f5e947bb2f721084e6c22f750a6cd2400c49b9689e4e0f5d3d52005c5e42 a6aa0ecdc237f7b1868b7e77bce2c0d8f160a061f0de6529967e82586fe854bc89ed 68dc7d9ac521aa2f40e1c4c3835ad8c2881ec579975d4cf9d9beb69d0f2c4b4f1e69 ace6da5b9f6e49801ac9e1c5922176e3c72b8f0b73629d457a10456d9c8f0ae56e40 cb01f64ba0b49ea69f23728cffa532fd01b966ff31c30fedc9a52b7b0a5fe6a2e3bd 53c87560cf74b12143696e52343317c408d8e13bdb1fbd2758aaa3cf8aa3fd229bb6 5a9e41228372889147470cee02ae4acb89d52e31f8da66543fc8a6c02a6b33cbce10d 0f41f464a44509c245476be1e5b11df8dbb867664cec0882beee6e21a022abcb89de d8a17cf6f17da33c094e42be30a3c070950ff300993abb40fac22f0ecf7d155c9261 516796cb1de4c0d6bfc21e716b04d23dbb8b465708204a3b96af8e46042e8205e7df 92b9e01c7794c94a5036b7f85fe0967515cc05ea460c7810c0c551d8fd94f7ad7d1a 641e73a1471e9364bf4e2b4687c7700381d46d39a3159f486d0323de59c5f555d323 e5c072fbfc0758e22aa6a1df04d13bf4bfe6632853424984d56d16ed61402a640c7e 1b07d9439d1fdcd2df147df02639575b50da6cd769cb367dbfe3316e03939e85880f8 b19f2689d5504f25200560dd815fd4535a1b5f70c8332c95c9d292c75e971df28ec6 ff6d70a52ad78d236a51ec4a12243a650285fbd6aa4632fab8fa56eb26f638855147 d72efcdd8a0b4367122f8e2210d39fffc87ac29ab5c5f1226bea04693e0b5c671269d

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--	--

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0025	</OpaqueObject>
0026	</RequestPayload>
0027	</BatchItem>
0028	</RequestMessage>
0029	<ResponseMessage>
0030	<ResponseHeader>
0031	<ProtocolVersion>
0032	<ProtocolVersionMajor type="Integer" value="1"/>
0033	<ProtocolVersionMinor type="Integer" value="1"/>
0034	</ProtocolVersion>
0035	<TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
0036	<BatchCount type="Integer" value="1"/>
0037	</ResponseHeader>
0038	<BatchItem>
0039	<Operation type="Enumeration" value="Register"/>

0040	<ResultStatus type="Enumeration" value="Success"/>
0041	<ResponsePayload>
0042	<UniqueIdentifier type="TextString"
0043	value="\$UNIQUE_IDENTIFIER_0"/>
0044	</ResponsePayload>
0045	</BatchItem>
0046	</ResponseMessage>
# TIME 1	
0046	<RequestMessage>
0047	<RequestHeader>
0048	<ProtocolVersion>
0049	<ProtocolVersionMajor type="Integer" value="1"/>
0050	<ProtocolVersionMinor type="Integer" value="1"/>
0051	</ProtocolVersion>
0052	<BatchCount type="Integer" value="1"/>
0053	</RequestHeader>
0054	<BatchItem>
0055	<Operation type="Enumeration" value="Destroy"/>
0056	<RequestPayload>
0057	<UniqueIdentifier type="TextString"
0058	value="\$UNIQUE_IDENTIFIER_0"/>
0059	</RequestPayload>
0060	</BatchItem>
0061	</RequestMessage>
0062	<ResponseMessage>
0063	<ResponseHeader>
0064	<ProtocolVersion>
0065	<ProtocolVersionMajor type="Integer" value="1"/>
0066	<ProtocolVersionMinor type="Integer" value="1"/>
0067	</ProtocolVersion>
0068	<TimeStamp type="DateTime" value="2012-04-27T08:12:24+00:00"/>
0069	<BatchCount type="Integer" value="1"/>
0070	</ResponseHeader>
0071	<BatchItem>
0072	<Operation type="Enumeration" value="Destroy"/>
0073	<ResultStatus type="Enumeration" value="Success"/>
0074	<ResponsePayload>
0075	<UniqueIdentifier type="TextString"
0076	value="\$UNIQUE_IDENTIFIER_0"/>
0077	</ResponsePayload>
0078	</BatchItem>
0079	</ResponseMessage>

116

117

118 3.6 Optional Test Cases KMIP 1.2

119 3.6.1 OMOS-O-1-12

120 Register larger (>10k) opaque object

# TIME 0	
0001	<RequestMessage>
0002	<RequestHeader>
0003	<ProtocolVersion>
0004	<ProtocolVersionMajor type="Integer" value="1"/>
0005	<ProtocolVersionMinor type="Integer" value="2"/>

0006	</ProtocolVersion>
0007	<BatchCount type="Integer" value="1"/>
0008	</RequestHeader>
0009	<BatchItem>
0010	<Operation type="Enumeration" value="Register"/>
0011	<RequestPayload>
0012	<ObjectType type="Enumeration" value="OpaqueObject"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Name"/>
0016	<AttributeValue>
0017	<NameValue type="TextString" value="OMOS-O-1-12"/>
0018	<NameType type="Enumeration"
0019	value="UninterpretedTextString"/>
0020	</AttributeValue>
0021	</Attribute>
0022	</TemplateAttribute>
0023	<OpaqueObject>
0024	<OpaqueDataType type="Enumeration" value="0x80000001"/>
	<OpaqueDataValue type="ByteString"
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0072	<ResultStatus type="Enumeration" value="Success"/>
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0075	</ResponsePayload>
0076	</BatchItem>
0077	</ResponseMessage>

4 Conformance

4.1 Opaque Managed Object Store Client KMIP v1.0 Profile

KMIP client implementations conformant to this profile:

1. SHALL support the Authentication Suite conditions (2.1) and;
2. SHALL support the Opaque Managed Object Store – Client conditions (2.2) and;
3. SHALL support all Mandatory Test Cases (3.1).

4.2 Opaque Managed Object Store Client KMIP v1.1 Profile

KMIP client implementations conformant to this profile:

1. SHALL support the Authentication Suite conditions (2.1) and;
2. SHALL support the Opaque Managed Object Store – Client conditions (2.2) and;
3. SHALL support all Mandatory Test Cases (3.2).

4.3 Opaque Managed Object Store Client KMIP v1.2 Profile

KMIP client implementations conformant to this profile:

1. SHALL support the Authentication Suite conditions (2.1) and;
2. SHALL support the Opaque Managed Object Store – Client conditions (2.2) and;
3. SHALL support all Mandatory Test Cases (3.3).

4.4 Opaque Managed Object Store Server KMIP v1.0 Profile

KMIP server implementations conformant to this profile:

1. SHALL support the Authentication Suite conditions (2.1) and;
2. SHALL support the Opaque Managed Object Store – Server conditions (2.3) and;
3. SHALL support all Mandatory Test Cases (3.1).

4.5 Opaque Managed Object Store Server KMIP v1.1 Profile

KMIP server implementations conformant to this profile:

1. SHALL support the Authentication Suite conditions (2.1) and;
2. SHALL support the Opaque Managed Object Store – Server conditions (2.3) and;
3. SHALL support all Mandatory Test Cases (3.2).

4.6 Opaque Managed Object Store Server KMIP v1.2 Profile

KMIP server implementations conformant to this profile:

1. SHALL support the Authentication Suite conditions (2.1) and;
2. SHALL support the Opaque Managed Object Store – Server conditions (2.3) and;
3. SHALL support all Mandatory Test Cases (3.3).

4.7 Permitted Test Case Variations

Whilst the test cases provided in this Profile define the allowed request and response content, some inherent variations MAY occur and are permitted within a successfully completed test case.

Each test case MAY include allowed variations in the description of the test case in addition to the variations noted in this section.

Other variations not explicitly noted in this Profile SHALL be deemed non-conformant.

4.7.1 Variable Items

An implementation conformant to this Profile MAY vary the following values:

1. UniqueIdentifier
2. PrivateKeyUniqueIdentifier
3. PublicKeyUniqueIdentifier
4. UniqueBatchItemIdentifier
5. AsynchronousCorrelationValue
6. TimeStamp
7. KeyValue / KeyMaterial including:
 - a. key material content returned for managed cryptographic objects which are generated by the server
 - b. wrapped versions of keys where the wrapping key is dynamic or the wrapping contains variable output for each wrap operation
8. For response containing the output of cryptographic operation in Data / SignatureData/ MACData / IVCounterNonce where:
 - a. the managed object is generated by the server; or
 - b. the operation inherently contains variable output
9. For the following DateTime attributes where the value is not specified in the request as a fixed DateTime value:
 - a. ActivationDate
 - b. ArchiveDate
 - c. CompromiseDate
 - d. CompromiseOccurrenceDate
 - e. DeactivationDate
 - f. DestroyDate
 - g. InitialDate
 - h. LastChangeDate
 - i. ProtectStartDate
 - j. ProcessStopDate
 - k. ValidityDate
 - l. OriginalCreationDate
10. LinkedObjectIdentifier
11. DigestValue
 - a. For those managed cryptographic objects which are dynamically generated
12. KeyFormatType
 - a. The key format type selected by the server when it creates managed objects
13. Digest
 - a. The HashingAlgorithm selected by the server when it calculates the digest for a managed object for which it has access to the key material
 - b. The Digest Value

14. Extensions reported in Query for ExtensionList and ExtensionMap
15. Application Namespaces reported in Query
16. Object Types reported in Query other than those noted as required in this profile
17. Operation Types reported in Query other than those noted as required in this profile (or any referenced profile documents)
18. For TextString attribute values containing test identifiers:
 - a. Additional vendor or application prefixes
19. Additional attributes beyond those noted in the response

An implementation conformant to this Profile MAY allow the following response variations:

20. Object Group values – May or may not return one or more Object Group values not included in the requests
21. y-CustomAttributes – May or may not include additional server-specific associated attributes not included in requests
22. Message Extensions – May or may not include additional (non-critical) vendor extensions
23. TemplateAttribute – May or may not be included in responses where the Template Attribute response is noted as optional in [KMIP-SPEC]
24. AttributeIndex – May or may not include Attribute Index value where the Attribute Index value is 0 for Protocol Versions 1.1 and above.
25. ResultMessage – May or may not be included in responses and the value (if included) may vary from the text contained within the test case.
26. The list of Protocol Versions returned in a DiscoverVersion response may include additional protocol versions if the request has not specified a list of client supported Protocol Versions.
27. VendorIdentification - The value (if included) may vary from the text contained within the test case.

4.7.2 Variable behavior

An implementation conformant to this Profile SHALL allow variation of the following behavior:

1. A test may omit the clean-up requests and responses (containing Revoke and/or Destroy) at the end of the test provided there is a separate mechanism to remove the created objects during testing.
2. A test may omit the test identifiers if the client is unable to include them in requests. This includes the following attributes:
 - a. Name; and
 - b. x-ID
3. A test MAY perform requests with multiple batch items or as multiple requests with a single batch item provided the sequence of operations are equivalent
4. A request MAY contain an optional *Authentication* [KMIP_SPEC] structure within each request

Appendix A. Acknowledgments

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344 Michael Yoder, Vormetric. Inc.
345 Magda Zdunkiewicz, Cryptsoft
346 Peter Zelechowski, Election Systems & Software

Appendix B. KMIP Specification Cross Reference

Reference Term	KMIP 1.0	KMIP 1.1	KMIP 1.2
1 Introduction			
<i>Non-Normative References</i>	1.3.	1.3.	1.3.
<i>Normative References</i>	1.2.	1.2.	1.2.
<i>Terminology</i>	1.1.	1.1.	1.1.
2 Objects			
<i>Attribute</i>	2.1.1.	2.1.1.	2.1.1.
<i>Base Objects</i>	2.1.	2.1.	2.1.
<i>Certificate</i>	2.2.1.	2.2.1.	2.2.1.
<i>Credential</i>	2.1.2.	2.1.2.	2.1.2.
<i>Data</i>	-	-	2.1.10.
<i>Data Length</i>	-	-	2.1.11.
<i>Extension Information</i>	-	2.1.9.	2.1.9.
<i>Key Block</i>	2.1.3.	2.1.3.	2.1.3.
<i>Key Value</i>	2.1.4.	2.1.4.	2.1.4.
<i>Key Wrapping Data</i>	2.1.5.	2.1.5.	2.1.5.
<i>Key Wrapping Specification</i>	2.1.6.	2.1.6.	2.1.6.
<i>MAC Data</i>	-	-	2.1.13.
<i>Managed Objects</i>	2.2.	2.2.	2.2.
<i>Nonce</i>	-	-	2.1.14.
<i>Opaque Object</i>	2.2.8.	2.2.8.	2.2.8.
<i>PGP Key</i>	-	-	2.2.9.
<i>Private Key</i>	2.2.4.	2.2.4.	2.2.4.
<i>Public Key</i>	2.2.3.	2.2.3.	2.2.3.
<i>Secret Data</i>	2.2.7.	2.2.7.	2.2.7.
<i>Signature Data</i>	-	-	2.1.12.
<i>Split Key</i>	2.2.5.	2.2.5.	2.2.5.
<i>Symmetric Key</i>	2.2.2.	2.2.2.	2.2.2.
<i>Template</i>	2.2.6.	2.2.6.	2.2.6.
<i>Template-Attribute Structures</i>	2.1.8.	2.1.8.	2.1.8.
<i>Transparent DH Private Key</i>	2.1.7.6.	2.1.7.6.	2.1.7.6.
<i>Transparent DH Public Key</i>	2.1.7.7.	2.1.7.7.	2.1.7.7.
<i>Transparent DSA Private Key</i>	2.1.7.2.	2.1.7.2.	2.1.7.2.
<i>Transparent DSA Public Key</i>	2.1.7.3.	2.1.7.3.	2.1.7.3.
<i>Transparent ECDH Private Key</i>	2.1.7.10.	2.1.7.10.	2.1.7.10.
<i>Transparent ECDH Public Key</i>	2.1.7.11.	2.1.7.11.	2.1.7.11.
<i>Transparent ECDSA Private Key</i>	2.1.7.8.	2.1.7.8.	2.1.7.8.
<i>Transparent ECDSA Public Key</i>	2.1.7.9.	2.1.7.9.	2.1.7.9.
<i>Transparent ECMQV Private Key</i>	2.1.7.12.	2.1.7.12.	2.1.7.12.
<i>Transparent ECMQV Public Key</i>	2.1.7.13.	2.1.7.13.	2.1.7.13.
<i>Transparent Key Structures</i>	2.1.7.	2.1.7.	2.1.7.
<i>Transparent RSA Private Key</i>	2.1.7.4.	2.1.7.4.	2.1.7.4.
<i>Transparent RSA Public Key</i>	2.1.7.5.	2.1.7.5.	2.1.7.5.
<i>Transparent Symmetric Key</i>	2.1.7.1.	2.1.7.1.	2.1.7.1.
3 Attributes			
<i>Activation Date</i>	3.19.	3.24.	3.24.
<i>Alternative Name</i>	-	-	3.40.
<i>Application Specific Information</i>	3.30.	3.36.	3.36.
<i>Archive Date</i>	3.27.	3.32.	3.32.

Reference Term	KMIP 1.0	KMIP 1.1	KMIP 1.2
<i>Attributes</i>	3	3	3
<i>Certificate Identifier</i>	3.9.	3.13.	3.13.
<i>Certificate Issuer</i>	3.11.	3.15.	3.15.
<i>Certificate Length</i>	-	3.9.	3.9.
<i>Certificate Subject</i>	3.10.	3.14.	3.14.
<i>Certificate Type</i>	3.8.	3.8.	3.8.
<i>Compromise Date</i>	3.25.	3.30.	3.30.
<i>Compromise Occurrence Date</i>	3.24.	3.29.	3.29.
<i>Contact Information</i>	3.31.	3.37.	3.37.
<i>Cryptographic Algorithm</i>	3.4.	3.4.	3.4.
<i>Cryptographic Domain Parameters</i>	3.7.	3.7.	3.7.
<i>Cryptographic Length</i>	3.5.	3.5.	3.5.
<i>Cryptographic Parameters</i>	3.6.	3.6.	3.6.
<i>Custom Attribute</i>	3.33.	3.39.	3.39.
<i>Deactivation Date</i>	3.22.	3.27.	3.27.
<i>Default Operation Policy</i>	3.13.2.	3.18.2.	3.18.2.
<i>Default Operation Policy for Certificates and Public Key Objects</i>	3.13.2.2.	3.18.2.2.	3.18.2.2.
<i>Default Operation Policy for Secret Objects</i>	3.13.2.1.	3.18.2.1.	3.18.2.1.
<i>Default Operation Policy for Template Objects</i>	3.13.2.3.	3.18.2.3.	3.18.2.3.
<i>Destroy Date</i>	3.23.	3.28.	3.28.
<i>Digest</i>	3.12.	3.17.	3.17.
<i>Digital Signature Algorithm</i>	-	3.16.	3.16.
<i>Fresh</i>	-	3.34.	3.34.
<i>Initial Date</i>	3.18.	3.23.	3.23.
<i>Key Value Location</i>	-	-	3.42.
<i>Key Value Present</i>	-	-	3.41.
<i>Last Change Date</i>	3.32.	3.38.	3.38.
<i>Lease Time</i>	3.15.	3.20.	3.20.
<i>Link</i>	3.29.	3.35.	3.35.
<i>Name</i>	3.2.	3.2.	3.2.
<i>Object Group</i>	3.28.	3.33.	3.33.
<i>Object Type</i>	3.3.	3.3.	3.3.
<i>Operation Policy Name</i>	3.13.	3.18.	3.18.
<i>Operations outside of operation policy control</i>	3.13.1.	3.18.1.	3.18.1.
<i>Original Creation Date</i>	-	-	3.43.
<i>Process Start Date</i>	3.20.	3.25.	3.25.
<i>Protect Stop Date</i>	3.21.	3.26.	3.26.
<i>Revocation Reason</i>	3.26.	3.31.	3.31.
<i>State</i>	3.17.	3.22.	3.22.
<i>Unique Identifier</i>	3.1.	3.1.	3.1.
<i>Usage Limits</i>	3.16.	3.21.	3.21.
<i>X.509 Certificate Identifier</i>	-	3.10.	3.10.
<i>X.509 Certificate Issuer</i>	-	3.12.	3.12.
<i>X.509 Certificate Subject</i>	-	3.11.	3.11.
4 Client-to-Server Operations			
<i>Activate</i>	4.18.	4.19.	4.19.
<i>Add Attribute</i>	4.13.	4.14.	4.14.
<i>Archive</i>	4.21.	4.22.	4.22.
<i>Cancel</i>	4.25.	4.27.	4.27.
<i>Certify</i>	4.6.	4.7.	4.7.
<i>Check</i>	4.9.	4.10.	4.10.
<i>Create</i>	4.1.	4.1.	4.1.
<i>Create Key Pair</i>	4.2.	4.2.	4.2.

Reference Term	KMIP 1.0	KMIP 1.1	KMIP 1.2
<i>Create Split Key</i>	-	-	4.38.
<i>Decrypt</i>	-	-	4.30.
<i>Delete Attribute</i>	4.15.	4.16.	4.16.
<i>Derive Key</i>	4.5.	4.6.	4.6.
<i>Destroy</i>	4.20.	4.21.	4.21.
<i>Discover Versions</i>	-	4.26.	4.26.
<i>Encrypt</i>	-	-	4.29.
<i>Get</i>	4.10.	4.11.	4.11.
<i>Get Attribute List</i>	4.12.	4.13.	4.13.
<i>Get Attributes</i>	4.11.	4.12.	4.12.
<i>Get Usage Allocation</i>	4.17.	4.18.	4.18.
<i>Hash</i>	-	-	4.37.
<i>Join Split Key</i>	-	-	4.39.
<i>Locate</i>	4.8.	4.9.	4.9.
<i>MAC</i>	-	-	4.33.
<i>MAC Verify</i>	-	-	4.34.
<i>Modify Attribute</i>	4.14.	4.15.	4.15.
<i>Obtain Lease</i>	4.16.	4.17.	4.17.
<i>Poll</i>	4.26.	4.28.	4.28.
<i>Query</i>	4.24.	4.25.	4.25.
<i>Re-certify</i>	4.7.	4.8.	4.8.
<i>Recover</i>	4.22.	4.23.	4.23.
<i>Register</i>	4.3.	4.3.	4.3.
<i>Re-key</i>	4.4.	4.4.	4.4.
<i>Re-key Key Pair</i>	-	4.5.	4.5.
<i>Revoke</i>	4.19.	4.20.	4.20.
<i>RNG Retrieve</i>	-	-	4.35.
<i>RNG Seed</i>	-	-	4.36.
<i>Sign</i>	-	-	4.31.
<i>Signature Verify</i>	-	-	4.32.
<i>Validate</i>	4.23.	4.24.	4.24.
5 Server-to-Client Operations			
<i>Notify</i>	5.1.	5.1.	5.1.
<i>Put</i>	5.2.	5.2.	5.2.
6 Message Contents			
<i>Asynchronous Correlation Value</i>	6.8.	6.8.	6.8.
<i>Asynchronous Indicator</i>	6.7.	6.7.	6.7.
<i>Attestation Capable Indicator</i>	-	-	6.17.
<i>Batch Count</i>	6.14.	6.14.	6.14.
<i>Batch Error Continuation Option</i>	6.13.	6.13.	6.13.
<i>Batch Item</i>	6.15.	6.15.	6.15.
<i>Batch Order Option</i>	6.12.	6.12.	6.12.
<i>Maximum Response Size</i>	6.3.	6.3.	6.3.
<i>Message Extension</i>	6.16.	6.16.	6.16.
<i>Operation</i>	6.2.	6.2.	6.2.
<i>Protocol Version</i>	6.1.	6.1.	6.1.
<i>Result Message</i>	6.11.	6.11.	6.11.
<i>Result Reason</i>	6.10.	6.10.	6.10.
<i>Result Status</i>	6.9.	6.9.	6.9.
<i>Time Stamp</i>	6.5.	6.5.	6.5.
<i>Unique Batch Item ID</i>	6.4.	6.4.	6.4.
7 Message Format			

Reference Term	KMIP 1.0	KMIP 1.1	KMIP 1.2
<i>Message Structure</i>	7.1.	7.1.	7.1.
<i>Operations</i>	7.2.	7.2.	7.2.
8 Authentication			
<i>Authentication</i>	8	8	8
9 Message Encoding			
<i>Alternative Name Type Enumeration</i>	-	-	9.1.3.2.34.
<i>Attestation Type Enumeration</i>	-	-	9.1.3.2.36.
<i>Batch Error Continuation Option Enumeration</i>	9.1.3.2.29.	9.1.3.2.30.	9.1.3.2.30.
<i>Bit Masks</i>	9.1.3.3.	9.1.3.3.	9.1.3.3.
<i>Block Cipher Mode Enumeration</i>	9.1.3.2.13.	9.1.3.2.14.	9.1.3.2.14.
<i>Cancellation Result Enumeration</i>	9.1.3.2.24.	9.1.3.2.25.	9.1.3.2.25.
<i>Certificate Request Type Enumeration</i>	9.1.3.2.21.	9.1.3.2.22.	9.1.3.2.22.
<i>Certificate Type Enumeration</i>	9.1.3.2.6.	9.1.3.2.6.	9.1.3.2.6.
<i>Credential Type Enumeration</i>	9.1.3.2.1.	9.1.3.2.1.	9.1.3.2.1.
<i>Cryptographic Algorithm Enumeration</i>	9.1.3.2.12.	9.1.3.2.13.	9.1.3.2.13.
<i>Cryptographic Usage Mask</i>	9.1.3.3.1.	9.1.3.3.1.	9.1.3.3.1.
<i>Defined Values</i>	9.1.3.	9.1.3.	9.1.3.
<i>Derivation Method Enumeration</i>	9.1.3.2.20.	9.1.3.2.21.	9.1.3.2.21.
<i>Digital Signature Algorithm Enumeration</i>	-	9.1.3.2.7.	9.1.3.2.7.
<i>Encoding Option Enumeration</i>	-	9.1.3.2.32.	9.1.3.2.32.
<i>Enumerations</i>	9.1.3.2.	9.1.3.2.	9.1.3.2.
<i>Examples</i>	9.1.2.	9.1.2.	9.1.2.
<i>Hashing Algorithm Enumeration</i>	9.1.3.2.15.	9.1.3.2.16.	9.1.3.2.16.
<i>Item Length</i>	9.1.1.3.	9.1.1.3.	9.1.1.3.
<i>Item Tag</i>	9.1.1.1.	9.1.1.1.	9.1.1.1.
<i>Item Type</i>	9.1.1.2.	9.1.1.2.	9.1.1.2.
<i>Item Value</i>	9.1.1.4.	9.1.1.4.	9.1.1.4.
<i>Key Compression Type Enumeration</i>	9.1.3.2.2.	9.1.3.2.2.	9.1.3.2.2.
<i>Key Format Type Enumeration</i>	9.1.3.2.3.	9.1.3.2.3.	9.1.3.2.3.
<i>Key Role Type Enumeration</i>	9.1.3.2.16.	9.1.3.2.17.	9.1.3.2.17.
<i>Key Value Location Type Enumeration</i>	-	-	9.1.3.2.35.
<i>Link Type Enumeration</i>	9.1.3.2.19.	9.1.3.2.20.	9.1.3.2.20.
<i>Name Type Enumeration</i>	9.1.3.2.10.	9.1.3.2.11.	9.1.3.2.11.
<i>Object Group Member Enumeration</i>	-	9.1.3.2.33.	9.1.3.2.33.
<i>Object Type Enumeration</i>	9.1.3.2.11.	9.1.3.2.12.	9.1.3.2.12.
<i>Opaque Data Type Enumeration</i>	9.1.3.2.9.	9.1.3.2.10.	9.1.3.2.10.
<i>Operation Enumeration</i>	9.1.3.2.26.	9.1.3.2.27.	9.1.3.2.27.
<i>Padding Method Enumeration</i>	9.1.3.2.14.	9.1.3.2.15.	9.1.3.2.15.
<i>Put Function Enumeration</i>	9.1.3.2.25.	9.1.3.2.26.	9.1.3.2.26.
<i>Query Function Enumeration</i>	9.1.3.2.23.	9.1.3.2.24.	9.1.3.2.24.
<i>Recommended Curve Enumeration for ECDSA, ECDH, and ECMQV</i>	9.1.3.2.5.	9.1.3.2.5.	9.1.3.2.5.
<i>Result Reason Enumeration</i>	9.1.3.2.28.	9.1.3.2.29.	9.1.3.2.29.
<i>Result Status Enumeration</i>	9.1.3.2.27.	9.1.3.2.28.	9.1.3.2.28.
<i>Revocation Reason Code Enumeration</i>	9.1.3.2.18.	9.1.3.2.19.	9.1.3.2.19.
<i>Secret Data Type Enumeration</i>	9.1.3.2.8.	9.1.3.2.9.	9.1.3.2.9.
<i>Split Key Method Enumeration</i>	9.1.3.2.7.	9.1.3.2.8.	9.1.3.2.8.
<i>State Enumeration</i>	9.1.3.2.17.	9.1.3.2.18.	9.1.3.2.18.
<i>Storage Status Mask</i>	9.1.3.3.2.	9.1.3.3.2.	9.1.3.3.2.
<i>Tags</i>	9.1.3.1.	9.1.3.1.	9.1.3.1.
<i>TTLV Encoding</i>	9.1.	9.1.	9.1.
<i>TTLV Encoding Fields</i>	9.1.1.	9.1.1.	9.1.1.
<i>Usage Limits Unit Enumeration</i>	9.1.3.2.30.	9.1.3.2.31.	9.1.3.2.31.

Reference Term	KMIP 1.0	KMIP 1.1	KMIP 1.2
<i>Validity Indicator Enumeration</i>	9.1.3.2.22.	9.1.3.2.23.	9.1.3.2.23.
<i>Wrapping Method Enumeration</i>	9.1.3.2.4.	9.1.3.2.4.	9.1.3.2.4.
<i>XML Encoding</i>	9.2.	-	-
10 Transport			
<i>Transport</i>	10	10	10
12 KMIP Server and Client Implementation Conformance			
<i>Conformance clauses for a KMIP Server</i>	12.1.	-	-
<i>KMIP Client Implementation Conformance</i>	-	12.2.	12.2.
<i>KMIP Server Implementation Conformance</i>	-	12.1.	12.1.

Appendix C. Revision History

Revision	Date	Editor	Changes Made
wd01	26-June-2013	Tim Hudson / Bob Lockhart	Updated conformance wording style. Updated test case style. Included test cases for 1.0, 1.1 and 1.2. Applied new OASIS template.
wd02	6-August-2013	Tim Hudson / Bob Lockhart	Updated to include Permitted Test Case Variations and updated Test Cases based on July 2013 Interop
wd03	10-August-2013	Tim Hudson	Updated Permitted Test Case Variations
wd03a	24-October-2013	Tim Hudson	Editorial update to include VendorIdentification in the list of allowed variations as per TC motion.
pr01update	11-June-2014	Tim Hudson	Updated following Public Review