

KMIP Storage Array with Self-Encrypting Drives Profile Version 1.0

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- *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 Storage Arrays with Self-Encrypting Drives as KMIP clients interacting with KMIP servers:-

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].

~~Illustrative guidance for the implementation of KMIP clients and servers is provided in the [KMIP Usage Guide](#) [KMIP-UG].~~

This profile defines the necessary KMIP functionality that a Storage Array with Self-Encrypting Drives operating as a KMIP client SHALL use and a KMIP server 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].

Authentication Key	A secret used by self-encrypting drives to verify authenticity of the client before allowing the drive to perform sensitive operations.
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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] [KMIP Additional Message Encodings Version 1.0](#).
URL [RFC2246] T. Dierks and C. Allen, *The TLS Protocol, Version 1.0*, IETF RFC 2246, Jan 1999,
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 Usage Guide 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 Usage Guide 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 Usage Guide Profiles Version 1.2*.
URL
Candidate OASIS Standard 01. DD MMM YYYY.

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1.3 Non-Normative References

- ~~[KMIP-UG] — One or more of [KMIP-UG-1_0], [KMIP-UG-1_1], [KMIP-UG-1_2]~~
- ~~[KMIP-UG-1_0] — Key Management Interoperability Protocol Usage Guide Version 1.0. Committee Note Draft, 1 December 2011.~~
- ~~[KMIP-UG-1_1] — Key Management Interoperability Protocol Usage Guide Version 1.1. Committee Note 01, 27 July 2012.~~
- ~~[KMIP-UG-1_2] — Key Management Interoperability Protocol Usage Guide Version 1.2. Committee Note Draft, DD MMM YYYY.~~
- ~~[KMIP-TC-1_1] — Key Management Interoperability Protocol Test Cases Version 1.1., Committee Note 01, 27 July 2012.~~
- ~~[KMIP-TC-1_2] — Key Management Interoperability Protocol Test Cases Version 1.2., Committee Note Draft, DD MMM YYYY.~~
- ~~[KMIP-UC] — Key Management Interoperability Protocol Use Cases Version 1.0., Committee Specification, 15 June 2010.~~

2 Storage Array with Self-Encrypting Drives Profile

The Storage Array with Self-Encrypting Drives Profile is a storage array containing self-encrypting drives operating as a KMIP client interacting with a KMIP server.

2.1 Authentication Suite

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

2.2 Storage Array with Self-Encrypting Drives - 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]:

4.2. SHALL conform to the *Baseline Client* profile in *Clause* (section 5.12) of [KMIP-PROF] and [KMIP-SPEC-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:

2.4. SHOULD NOT use a *Custom Attribute* [KMIP-SPEC] that duplicates information that is already in standard *Attributes* [KMIP-SPEC]

2.3 Storage Array with Self-Encrypting Drives - Server

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

1. SHALL conform to the ~~KMIP Conformance clauses for a KMIP Server~~ (section 12.1) of [KMIP-SPEC-1_0]

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

4.2. SHALL conform to the *Baseline Server* profile in *Clause* (section 5.2) of [KMIP-PROF] and [KMIP-SPEC] and 1_1]

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

3. SHALL conform to the *Baseline Server* (section 5.1) of [KMIP-PROF-1_2]

KMIP servers conformant to this profile SHALL:

2.4. SHALL support the following *Objects* [KMIP-SPEC]

- a. *Template* [KMIP-SPEC]
- b. *Secret Data* [KMIP-SPEC]

3.5. SHALL support the following *Attributes* [KMIP-SPEC]

- c. *Custom Attribute* [KMIP-SPEC]

4.6. SHALL support the following client-to-server operations:

- d. *Register* [KMIP-SPEC]

5.7. SHALL support the following *Message Encoding* [KMIP-SPEC]::

- e. *Secret Data Type Enumeration* [KMIP-SPEC] value:
 - i. Password
- f. *Object Type Enumeration* [KMIP-SPEC] values:

- 101 i. Secret Data
102 ii. Template
103 g. *Name Type Enumeration* [KMIP-SPEC] value:
104 i. Uninterpreted Text String
105 | ~~6.8.~~ SHALL support *Custom Attribute* [KMIP-SPEC] with the following data types and properties:
106 h. TextString
107 | ~~7.9.~~ SHALL support a minimum length of 64 characters for *Custom Attribute* [KMIP-SPEC] and *Name*
108 [KMIP-SPEC] values where the attribute type is of variable length.
109 | ~~8.10.~~ SHALL support a minimum of 10 *Custom Attribute* [KMIP-SPEC] per managed object
110 | ~~9.11.~~ SHALL support a minimum of 64 characters in *Custom Attribute* [KMIP-SPEC] names
111 | ~~3. SHALL support the returning results in accordance with the test cases.~~
112 | ~~10.12.~~ MAY support any clause within [KMIP-SPEC] provided it does not conflict with any other
113 clause within this section 2.2
114 | ~~11.13.~~ MAY support extensions outside the scope of this standard (e.g., vendor extensions,
115 conformance clauses) that do not contradict any KMIP requirements.

116 3 Storage Array with Self-Encrypting Drives Test 117 Cases

118 ~~This section documents the test cases that a client or server conformant to the Storage Array with Self-~~
119 ~~Encrypting Drives Profile SHALL support.~~

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

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

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

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

131 Note: the values for the returned items and the custom attributes are illustrative. Actual values from a real
132 client system may vary as specified in section 4.7 will vary. These test cases demonstrate usage of all of
133 the mandatory types that are required to be supported in a server implementation.

134 3.1 Mandatory Test Cases

135 ~~3.23.1 This section documents the test cases that a client or server~~
136 ~~conformant to the Storage Array with Self-Encrypting Drives~~
137 ~~Profile SHALL support for each version of the KMIP protocol~~
138 ~~(major and minor).v1.0~~

139 3.2.13.1.1 SASSED-M-1-10 - Configuration

140 Determine server configuration details including operations supported (only the mandatory operations are
141 listed in the response example), objects supported (only the mandatory objects types are listed in the
142 response example), and optional server information.

```
0001 # TIME 0  
0002 <RequestMessage>  
0003   <RequestHeader>  
0004     <ProtocolVersion>  
0005       <ProtocolVersionMajor type="Integer" value="1"/>  
0006       <ProtocolVersionMinor type="Integer" value="0"/>  
0007     </ProtocolVersion>  
0008     <BatchCount type="Integer" value="1"/>  
0009   </RequestHeader>  
0010   <BatchItem>  
0011     <Operation type="Enumeration" value="Query"/>  
0012     <RequestPayload>  
0013       <QueryFunction type="Enumeration" value="QueryOperations"/>  
0014       <QueryFunction type="Enumeration" value="QueryObjects"/>  
0015       <QueryFunction type="Enumeration" value="QueryServerInformation"/>  
0016     </RequestPayload>  
0017   </BatchItem>
```

```

0017 </RequestMessage>
0018 <ResponseMessage>
0019   <ResponseHeader>
0020     <ProtocolVersion>
0021       <ProtocolVersionMajor type="Integer" value="1"/>
0022       <ProtocolVersionMinor type="Integer" value="0"/>
0023     </ProtocolVersion>
0024     <TimeStamp type="DateTime" value="2013-04-25T16:53:03+00:00"/>
0025     <BatchCount type="Integer" value="1"/>
0026   </ResponseHeader>
0027   <BatchItem>
0028     <Operation type="Enumeration" value="Query"/>
0029     <ResultStatus type="Enumeration" value="Success"/>
0030     <ResponsePayload>
0031       <Operation type="Enumeration" value="Query"/>
0032       <Operation type="Enumeration" value="Locate"/>
0033       <Operation type="Enumeration" value="Destroy"/>
0034       <Operation type="Enumeration" value="Get"/>
0035       <Operation type="Enumeration" value="Register"/>
0036       <Operation type="Enumeration" value="GetAttributes"/>
0037       <Operation type="Enumeration" value="GetAttributeList"/>
0038       <Operation type="Enumeration" value="AddAttribute"/>
0039       <ObjectType type="Enumeration" value="SecretData"/>
0040       <ObjectType type="Enumeration" value="Template"/>
0041       <VendorIdentification type="TextString" value="server-
0042       vendor.com"/>
0043     </ResponsePayload>
0044   </BatchItem>
0045 </ResponseMessage>

```

143

144 **3.2.23.1.2 SASSED-M-2-10 - Register the authentication key**

145 A template is created and the secret data for the authentication key is then registered. The server must
146 allow the registration of managed objects for Object Groups either by allowed arbitrary values for Object
147 Groups or by pre-configuration of specific Object Groups prior to the storage array registering the
148 authentication key. The authentication key may be a new authentication key or a replacement
149 authentication key.

150

```

# 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="Locate"/>
0011     <RequestPayload>
0012       <Attribute>
0013         <AttributeName type="TextString" value="Name"/>
0014         <AttributeValue>
0015           <NameValue type="TextString" value="SASSED-M-2-10-

```

0016	templatel"/>
0017	<NameType type="Enumeration"
0018	value="UninterpretedTextString"/>
0019	</AttributeValue>
0020	</Attribute>
0021	<Attribute>
0022	<AttributeName type="TextString" value="Object Type"/>
0023	<AttributeValue type="Enumeration" value="Template"/>
0024	</Attribute>
0025	</RequestPayload>
0026	</BatchItem>
0027	</RequestMessage>
0028	</ResponseMessage>
0029	<ResponseHeader>
0030	<ProtocolVersion>
0031	<ProtocolVersionMajor type="Integer" value="1"/>
0032	<ProtocolVersionMinor type="Integer" value="0"/>
0033	</ProtocolVersion>
0034	<TimeStamp type="DateTime" value="2013-04-25T16:53:08+00:00"/>
0035	<BatchCount type="Integer" value="1"/>
0036	</ResponseHeader>
0037	<BatchItem>
0038	<Operation type="Enumeration" value="Locate"/>
0039	<ResultStatus type="Enumeration" value="Success"/>
0040	<ResponsePayload>
0041	</ResponsePayload>
0042	</BatchItem>
0043	</ResponseMessage>
0044	# TIME 1
0045	<RequestMessage>
0046	<RequestHeader>
0047	<ProtocolVersion>
0048	<ProtocolVersionMajor type="Integer" value="1"/>
0049	<ProtocolVersionMinor type="Integer" value="0"/>
0050	</ProtocolVersion>
0051	<BatchCount type="Integer" value="1"/>
0052	</RequestHeader>
0053	<BatchItem>
0054	<Operation type="Enumeration" value="Register"/>
0055	<RequestPayload>
0056	<ObjectType type="Enumeration" value="Template"/>
0057	<TemplateAttribute>
0058	</TemplateAttribute>
0059	<Template>
0060	<Attribute>
0061	<AttributeName type="TextString" value="Object Group"/>
0062	<AttributeValue type="TextString" value="SASED-M-2-10-
0063	group"/>
0064	</Attribute>
0065	<Attribute>
0066	<AttributeName type="TextString" value="x-
0067	CustomAttribute1"/>
	<AttributeValue type="TextString" value="CustomValue1"/>
	</Attribute>
	<Attribute>
	<AttributeName type="TextString" value="x-
	CustomAttribute2"/>
	<AttributeValue type="TextString" value="CustomValue2"/>

0068	</Attribute>
0069	<Attribute>
0070	<AttributeName type="TextString" value="Name"/>
0071	<AttributeValue>
0072	<NameValue type="TextString" value="SASED-M-2-10- template1"/>
0073	<NameType type="Enumeration" value="UninterpretedTextString"/>
0074	</AttributeValue>
0075	</Attribute>
0076	</Template>
0077	</RequestPayload>
0078	</BatchItem>
0079	</RequestMessage>
0080	<ResponseMessage>
0081	<ResponseHeader>
0082	<ProtocolVersion>
0083	<ProtocolVersionMajor type="Integer" value="1"/>
0084	<ProtocolVersionMinor type="Integer" value="0"/>
0085	</ProtocolVersion>
0086	<TimeStamp type="DateTime" value="2013-04-25T16:53:08+00:00"/>
0087	<BatchCount type="Integer" value="1"/>
0088	</ResponseHeader>
0089	<BatchItem>
0090	<Operation type="Enumeration" value="Register"/>
0091	<ResultStatus type="Enumeration" value="Success"/>
0092	<ResponsePayload>
0093	<UniqueIdentifier type="TextString" value="\$UNIQUE IDENTIFIER 0"/>
0094	</ResponsePayload>
0095	</BatchItem>
0096	</ResponseMessage>
	<i># TIME 2</i>
0097	<RequestMessage>
0098	<RequestHeader>
0099	<ProtocolVersion>
0100	<ProtocolVersionMajor type="Integer" value="1"/>
0101	<ProtocolVersionMinor type="Integer" value="0"/>
0102	</ProtocolVersion>
0103	<BatchCount type="Integer" value="1"/>
0104	</RequestHeader>
0105	<BatchItem>
0106	<Operation type="Enumeration" value="Register"/>
0107	<RequestPayload>
0108	<ObjectType type="Enumeration" value="SecretData"/>
0109	<TemplateAttribute>
0110	<Name>
0111	<NameValue type="TextString" value="SASED-M-2-10- template1"/>
0112	<NameType type="Enumeration" value="UninterpretedTextString"/>
0113	</Name>
0114	<Attribute>
0115	<AttributeName type="TextString" value="x- CustomAttribute3"/>
0116	<AttributeValue type="TextString" value="CustomValue3"/>
0117	</Attribute>
0118	<Attribute>

0006	</ProtocolVersion>
0007	<BatchCount type="Integer" value="1"/>
0008	</RequestHeader>
0009	<BatchItem>
0010	<Operation type="Enumeration" value="Locate"/>
0011	<RequestPayload>
0012	<Attribute>
0013	<AttributeName type="TextString" value="Object Group"/>
0014	<AttributeValue type="TextString" value="SASED-M-2-10-
	group"/>
0015	</Attribute>
0016	<Attribute>
0017	<AttributeName type="TextString" value="Object Type"/>
0018	<AttributeValue type="Enumeration" value="SecretData"/>
0019	</Attribute>
0020	</RequestPayload>
0021	</BatchItem>
0022	</RequestMessage>
0023	<ResponseMessage>
0024	<ResponseHeader>
0025	<ProtocolVersion>
0026	<ProtocolVersionMajor type="Integer" value="1"/>
0027	<ProtocolVersionMinor type="Integer" value="0"/>
0028	</ProtocolVersion>
0029	<TimeStamp type="DateTime" value="2013-04-25T16:53:13+00:00"/>
0030	<BatchCount type="Integer" value="1"/>
0031	</ResponseHeader>
0032	<BatchItem>
0033	<Operation type="Enumeration" value="Locate"/>
0034	<ResultStatus type="Enumeration" value="Success"/>
0035	<ResponsePayload>
0036	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0037	</ResponsePayload>
0038	</BatchItem>
0039	</ResponseMessage>
	# TIME 1
0040	<RequestMessage>
0041	<RequestHeader>
0042	<ProtocolVersion>
0043	<ProtocolVersionMajor type="Integer" value="1"/>
0044	<ProtocolVersionMinor type="Integer" value="0"/>
0045	</ProtocolVersion>
0046	<BatchCount type="Integer" value="1"/>
0047	</RequestHeader>
0048	<BatchItem>
0049	<Operation type="Enumeration" value="GetAttributes"/>
0050	<RequestPayload>
0051	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0052	<AttributeName type="TextString" value="x-CustomAttribute4"/>
0053	</RequestPayload>
0054	</BatchItem>
0055	</RequestMessage>
0056	<ResponseMessage>
0057	<ResponseHeader>
0058	<ProtocolVersion>
0059	<ProtocolVersionMajor type="Integer" value="1"/>

0060	<ProtocolVersionMinor type="Integer" value="0"/>
0061	</ProtocolVersion>
0062	<TimeStamp type="DateTime" value="2013-04-25T16:53:14+00:00"/>
0063	<BatchCount type="Integer" value="1"/>
0064	</ResponseHeader>
0065	<BatchItem>
0066	<Operation type="Enumeration" value="GetAttributes"/>
0067	<ResultStatus type="Enumeration" value="Success"/>
0068	<ResponsePayload>
0069	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0070	<Attribute>
0071	<AttributeName type="TextString" value="x-
	CustomAttribute4"/>
0072	<AttributeValue type="TextString" value="CustomValue4"/>
0073	</Attribute>
0074	</ResponsePayload>
0075	</BatchItem>
0076	</ResponseMessage>
	# TIME 2
0077	<RequestMessage>
0078	<RequestHeader>
0079	<ProtocolVersion>
0080	<ProtocolVersionMajor type="Integer" value="1"/>
0081	<ProtocolVersionMinor type="Integer" value="0"/>
0082	</ProtocolVersion>
0083	<BatchCount type="Integer" value="1"/>
0084	</RequestHeader>
0085	<BatchItem>
0086	<Operation type="Enumeration" value="GetAttributes"/>
0087	<RequestPayload>
0088	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0089	<AttributeName type="TextString" value="x-CustomAttribute3"/>
0090	</RequestPayload>
0091	</BatchItem>
0092	</RequestMessage>
0093	<ResponseMessage>
0094	<ResponseHeader>
0095	<ProtocolVersion>
0096	<ProtocolVersionMajor type="Integer" value="1"/>
0097	<ProtocolVersionMinor type="Integer" value="0"/>
0098	</ProtocolVersion>
0099	<TimeStamp type="DateTime" value="2013-04-25T16:53:14+00:00"/>
0100	<BatchCount type="Integer" value="1"/>
0101	</ResponseHeader>
0102	<BatchItem>
0103	<Operation type="Enumeration" value="GetAttributes"/>
0104	<ResultStatus type="Enumeration" value="Success"/>
0105	<ResponsePayload>
0106	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0107	<Attribute>
0108	<AttributeName type="TextString" value="x-
	CustomAttribute3"/>
0109	<AttributeValue type="TextString" value="CustomValue3"/>
0110	</Attribute>
0111	</ResponsePayload>

0164	<BatchItem>
0165	<Operation type="Enumeration" value="Destroy"/>
0166	<RequestPayload>
0167	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0168	</RequestPayload>
0169	</BatchItem>
0170	</RequestMessage>
0171	<ResponseMessage>
0172	<ResponseHeader>
0173	<ProtocolVersion>
0174	<ProtocolVersionMajor type="Integer" value="1"/>
0175	<ProtocolVersionMinor type="Integer" value="0"/>
0176	</ProtocolVersion>
0177	<TimeStamp type="DateTime" value="2013-04-25T17:01:41+00:00"/>
0178	<BatchCount type="Integer" value="1"/>
0179	</ResponseHeader>
0180	<BatchItem>
0181	<Operation type="Enumeration" value="Destroy"/>
0182	<ResultStatus type="Enumeration" value="Success"/>
0183	<ResponsePayload>
0184	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0185	</ResponsePayload>
0186	</BatchItem>
0187	</ResponseMessage>
0188	# TIME 5
0188	<RequestMessage>
0189	<RequestHeader>
0190	<ProtocolVersion>
0191	<ProtocolVersionMajor type="Integer" value="1"/>
0192	<ProtocolVersionMinor type="Integer" value="0"/>
0193	</ProtocolVersion>
0194	<BatchCount type="Integer" value="1"/>
0195	</RequestHeader>
0196	<BatchItem>
0197	<Operation type="Enumeration" value="Locate"/>
0198	<RequestPayload>
0199	<Attribute>
0200	<AttributeName type="TextString" value="Name"/>
0201	<AttributeValue>
0202	<NameValue type="TextString" value="SASED-M-2-10-
	template1"/>
0203	<NameType type="Enumeration"
	value="UninterpretedTextString"/>
0204	</AttributeValue>
0205	</Attribute>
0206	<Attribute>
0207	<AttributeName type="TextString" value="Object Type"/>
0208	<AttributeValue type="Enumeration" value="Template"/>
0209	</Attribute>
0210	</RequestPayload>
0211	</BatchItem>
0212	</RequestMessage>
0213	<ResponseMessage>
0214	<ResponseHeader>
0215	<ProtocolVersion>
0216	<ProtocolVersionMajor type="Integer" value="1"/>

0217	<ProtocolVersionMinor type="Integer" value="0"/>
0218	</ProtocolVersion>
0219	<TimeStamp type="DateTime" value="2013-04-25T16:53:08+00:00"/>
0220	<BatchCount type="Integer" value="1"/>
0221	</ResponseHeader>
0222	<BatchItem>
0223	<Operation type="Enumeration" value="Locate"/>
0224	<ResultStatus type="Enumeration" value="Success"/>
0225	<ResponsePayload>
0226	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_1"/>
0227	</ResponsePayload>
0228	</BatchItem>
0229	</ResponseMessage>
	# TIME 6
0230	<RequestMessage>
0231	<RequestHeader>
0232	<ProtocolVersion>
0233	<ProtocolVersionMajor type="Integer" value="1"/>
0234	<ProtocolVersionMinor type="Integer" value="0"/>
0235	</ProtocolVersion>
0236	<BatchCount type="Integer" value="1"/>
0237	</RequestHeader>
0238	<BatchItem>
0239	<Operation type="Enumeration" value="Destroy"/>
0240	<RequestPayload>
0241	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_1"/>
0242	</RequestPayload>
0243	</BatchItem>
0244	</RequestMessage>
0245	<ResponseMessage>
0246	<ResponseHeader>
0247	<ProtocolVersion>
0248	<ProtocolVersionMajor type="Integer" value="1"/>
0249	<ProtocolVersionMinor type="Integer" value="0"/>
0250	</ProtocolVersion>
0251	<TimeStamp type="DateTime" value="2013-04-25T17:01:41+00:00"/>
0252	<BatchCount type="Integer" value="1"/>
0253	</ResponseHeader>
0254	<BatchItem>
0255	<Operation type="Enumeration" value="Destroy"/>
0256	<ResultStatus type="Enumeration" value="Success"/>
0257	<ResponsePayload>
0258	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_1"/>
0259	</ResponsePayload>
0260	</BatchItem>
0261	</ResponseMessage>

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3.2 Mandatory Test Cases KMIP v1.1

3.2.43.2.1 SASED-M-1-11 - Configuration

Determine server configuration details including operations supported (only the mandatory operations are listed in the response example), objects supported (only the mandatory objects types are listed in the response example), and optional server information.

```
0001 # TIME 0
0002 <RequestMessage>
0003   <RequestHeader>
0004     <ProtocolVersion>
0005       <ProtocolVersionMajor type="Integer" value="1"/>
0006       <ProtocolVersionMinor type="Integer" value="1"/>
0007     </ProtocolVersion>
0008     <BatchCount type="Integer" value="1"/>
0009   </RequestHeader>
0010   <BatchItem>
0011     <Operation type="Enumeration" value="Query"/>
0012     <RequestPayload>
0013       <QueryFunction type="Enumeration" value="QueryOperations"/>
0014       <QueryFunction type="Enumeration" value="QueryObjects"/>
0015       <QueryFunction type="Enumeration" value="QueryServerInformation"/>
0016     </RequestPayload>
0017   </BatchItem>
0018 </RequestMessage>
0019 <ResponseMessage>
0020   <ResponseHeader>
0021     <ProtocolVersion>
0022       <ProtocolVersionMajor type="Integer" value="1"/>
0023       <ProtocolVersionMinor type="Integer" value="1"/>
0024     </ProtocolVersion>
0025     <TimeStamp type="DateTime" value="2013-04-25T16:53:03+00:00"/>
0026     <BatchCount type="Integer" value="1"/>
0027   </ResponseHeader>
0028   <BatchItem>
0029     <Operation type="Enumeration" value="Query"/>
0030     <ResultStatus type="Enumeration" value="Success"/>
0031     <ResponsePayload>
0032       <Operation type="Enumeration" value="Query"/>
0033       <Operation type="Enumeration" value="Locate"/>
0034       <Operation type="Enumeration" value="Destroy"/>
0035       <Operation type="Enumeration" value="Get"/>
0036       <Operation type="Enumeration" value="Register"/>
0037       <Operation type="Enumeration" value="GetAttributes"/>
0038       <Operation type="Enumeration" value="GetAttributeList"/>
0039       <Operation type="Enumeration" value="AddAttribute"/>
0040       <ObjectType type="Enumeration" value="SecretData"/>
0041       <ObjectType type="Enumeration" value="Template"/>
0042       <VendorIdentification type="TextString" value="server-
0043       vendor.com"/>
0044     </ResponsePayload>
0045   </BatchItem>
0046 </ResponseMessage>
```

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3.2.53.2.2 SASSED-M-2-11 - Register the authentication key

A template is created and the secret data for the authentication key is then registered. The server must allow the registration of managed objects for Object Groups either by allowed arbitrary values for Object Groups or by pre-configuration of specific Object Groups prior to the storage array registering the authentication key. The authentication key may be a new authentication key or a replacement authentication key.

0001	# TIME 0
0002	<RequestMessage>
0003	<RequestHeader>
0004	<ProtocolVersion>
0005	<ProtocolVersionMajor type="Integer" value="1"/>
0006	<ProtocolVersionMinor type="Integer" value="1"/>
0007	</ProtocolVersion>
0008	<BatchCount type="Integer" value="1"/>
0009	</RequestHeader>
0010	<BatchItem>
0011	<Operation type="Enumeration" value="Locate"/>
0012	<RequestPayload>
0013	<Attribute>
0014	<AttributeName type="TextString" value="Name"/>
0015	<AttributeValue>
0016	<NameValue type="TextString" value="SASED-M-2-11-
0017	template1"/>
0018	<NameType type="Enumeration"
0019	value="UninterpretedTextString"/>
0020	</AttributeValue>
0021	</Attribute>
0022	<Attribute>
0023	<AttributeName type="TextString" value="Object Type"/>
0024	<AttributeValue type="Enumeration" value="Template"/>
0025	</Attribute>
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="2013-04-25T16:53:08+00:00"/>
0036	<BatchCount type="Integer" value="1"/>
0037	</ResponseHeader>
0038	<BatchItem>
0039	<Operation type="Enumeration" value="Locate"/>
0040	<ResultStatus type="Enumeration" value="Success"/>
0041	<ResponsePayload>
0042	</ResponsePayload>
0043	</BatchItem>
0044	</ResponseMessage>
0045	# TIME 1
0046	<RequestMessage>
0047	<RequestHeader>
0048	<ProtocolVersion>
0049	<ProtocolVersionMajor type="Integer" value="1"/>

0046	<ProtocolVersionMinor type="Integer" value="1"/>
0047	</ProtocolVersion>
0048	<BatchCount type="Integer" value="1"/>
0049	</RequestHeader>
0050	<BatchItem>
0051	<Operation type="Enumeration" value="Register"/>
0052	<RequestPayload>
0053	<ObjectType type="Enumeration" value="Template"/>
0054	<TemplateAttribute>
0055	</TemplateAttribute>
0056	<Template>
0057	<Attribute>
0058	<AttributeName type="TextString" value="Object Group"/>
0059	<AttributeValue type="TextString" value="SASED-M-2-11-
0060	group"/>
0061	</Attribute>
0062	<Attribute>
0063	<AttributeName type="TextString" value="x-
0064	CustomAttribute1"/>
0065	<AttributeValue type="TextString" value="CustomValue1"/>
0066	</Attribute>
0067	<Attribute>
0068	<AttributeName type="TextString" value="x-
0069	CustomAttribute2"/>
0070	<AttributeValue type="TextString" value="CustomValue2"/>
0071	</Attribute>
0072	<Attribute>
0073	<AttributeName type="TextString" value="Name"/>
0074	<AttributeValue type="TextString" value="SASED-M-2-11-
0075	templatel"/>
0076	<NameType type="Enumeration"
0077	value="UninterpretedTextString"/>
0078	</AttributeValue>
0079	</Attribute>
0080	</Template>
0081	</RequestPayload>
0082	</BatchItem>
0083	</RequestMessage>
0084	<ResponseMessage>
0085	<ResponseHeader>
0086	<ProtocolVersion>
0087	<ProtocolVersionMajor type="Integer" value="1"/>
0088	<ProtocolVersionMinor type="Integer" value="1"/>
0089	</ProtocolVersion>
0090	<TimeStamp type="DateTime" value="2013-04-25T16:53:08+00:00"/>
0091	<BatchCount type="Integer" value="1"/>
0092	</ResponseHeader>
0093	<BatchItem>
0094	<Operation type="Enumeration" value="Register"/>
0095	<ResultStatus type="Enumeration" value="Success"/>
0096	<ResponsePayload>
	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
	</ResponsePayload>
	</BatchItem>
	</ResponseMessage>
	# TIME 2


```

0148     <TimeStamp type="DateTime" value="2013-04-25T16:53:08+00:00"/>
0149     <BatchCount type="Integer" value="1"/>
0150   </ResponseHeader>
0151   <BatchItem>
0152     <Operation type="Enumeration" value="Register"/>
0153     <ResultStatus type="Enumeration" value="Success"/>
0154     <ResponsePayload>
0155       <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
0156     </ResponsePayload>
0157   </BatchItem>
0158 </ResponseMessage>

```

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170 **3.2.63.2.3 SASSED-M-3-11 - Retrieve Authentication Key**

171 Locate and retrieve the previously registered authentication key and finally destroy both the
172 authentication key and the template.

```

# 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="Locate"/>
0011     <RequestPayload>
0012       <Attribute>
0013         <AttributeName type="TextString" value="Object Group"/>
0014         <AttributeValue type="TextString" value="SASED-M-2-11-
group"/>
0015       </Attribute>
0016       <Attribute>
0017         <AttributeName type="TextString" value="Object Type"/>
0018         <AttributeValue type="Enumeration" value="SecretData"/>
0019       </Attribute>
0020     </RequestPayload>
0021   </BatchItem>
0022 </RequestMessage>
0023 <ResponseMessage>
0024   <ResponseHeader>
0025     <ProtocolVersion>
0026       <ProtocolVersionMajor type="Integer" value="1"/>
0027       <ProtocolVersionMinor type="Integer" value="1"/>
0028     </ProtocolVersion>
0029     <TimeStamp type="DateTime" value="2013-04-25T16:53:13+00:00"/>
0030     <BatchCount type="Integer" value="1"/>
0031   </ResponseHeader>
0032   <BatchItem>
0033     <Operation type="Enumeration" value="Locate"/>
0034     <ResultStatus type="Enumeration" value="Success"/>
0035     <ResponsePayload>
0036       <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>

```

0037	</ResponsePayload>
0038	</BatchItem>
0039	</ResponseMessage>
0040	# TIME 1 <RequestMessage>
0041	<RequestHeader>
0042	<ProtocolVersion>
0043	<ProtocolVersionMajor type="Integer" value="1"/>
0044	<ProtocolVersionMinor type="Integer" value="1"/>
0045	</ProtocolVersion>
0046	<BatchCount type="Integer" value="1"/>
0047	</RequestHeader>
0048	<BatchItem>
0049	<Operation type="Enumeration" value="GetAttributes"/>
0050	<RequestPayload>
0051	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0052	<AttributeName type="TextString" value="x-CustomAttribute4"/>
0053	</RequestPayload>
0054	</BatchItem>
0055	</RequestMessage>
0056	<ResponseMessage>
0057	<ResponseHeader>
0058	<ProtocolVersion>
0059	<ProtocolVersionMajor type="Integer" value="1"/>
0060	<ProtocolVersionMinor type="Integer" value="1"/>
0061	</ProtocolVersion>
0062	<TimeStamp type="DateTime" value="2013-04-25T16:53:14+00:00"/>
0063	<BatchCount type="Integer" value="1"/>
0064	</ResponseHeader>
0065	<BatchItem>
0066	<Operation type="Enumeration" value="GetAttributes"/>
0067	<ResultStatus type="Enumeration" value="Success"/>
0068	<ResponsePayload>
0069	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0070	<Attribute>
0071	<AttributeName type="TextString" value="x- CustomAttribute4"/>
0072	<AttributeValue type="TextString" value="CustomValue4"/>
0073	</Attribute>
0074	</ResponsePayload>
0075	</BatchItem>
0076	</ResponseMessage>
0077	# TIME 2 <RequestMessage>
0078	<RequestHeader>
0079	<ProtocolVersion>
0080	<ProtocolVersionMajor type="Integer" value="1"/>
0081	<ProtocolVersionMinor type="Integer" value="1"/>
0082	</ProtocolVersion>
0083	<BatchCount type="Integer" value="1"/>
0084	</RequestHeader>
0085	<BatchItem>
0086	<Operation type="Enumeration" value="GetAttributes"/>
0087	<RequestPayload>
0088	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>

0089	<AttributeName type="TextString" value="x-CustomAttribute3"/>
0090	</RequestPayload>
0091	</BatchItem>
0092	</RequestMessage>
0093	<ResponseMessage>
0094	<ResponseHeader>
0095	<ProtocolVersion>
0096	<ProtocolVersionMajor type="Integer" value="1"/>
0097	<ProtocolVersionMinor type="Integer" value="1"/>
0098	</ProtocolVersion>
0099	<TimeStamp type="DateTime" value="2013-04-25T16:53:14+00:00"/>
0100	<BatchCount type="Integer" value="1"/>
0101	</ResponseHeader>
0102	<BatchItem>
0103	<Operation type="Enumeration" value="GetAttributes"/>
0104	<ResultStatus type="Enumeration" value="Success"/>
0105	<ResponsePayload>
0106	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0107	<Attribute>
0108	<AttributeName type="TextString" value="x-CustomAttribute3"/>
0109	<AttributeValue type="TextString" value="CustomValue3"/>
0110	</Attribute>
0111	</ResponsePayload>
0112	</BatchItem>
0113	</ResponseMessage>
0114	# TIME 3 <RequestMessage>
0115	<RequestHeader>
0116	<ProtocolVersion>
0117	<ProtocolVersionMajor type="Integer" value="1"/>
0118	<ProtocolVersionMinor type="Integer" value="1"/>
0119	</ProtocolVersion>
0120	<BatchCount type="Integer" value="1"/>
0121	</RequestHeader>
0122	<BatchItem>
0123	<Operation type="Enumeration" value="Get"/>
0124	<RequestPayload>
0125	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0126	</RequestPayload>
0127	</BatchItem>
0128	</RequestMessage>
0129	<ResponseMessage>
0130	<ResponseHeader>
0131	<ProtocolVersion>
0132	<ProtocolVersionMajor type="Integer" value="1"/>
0133	<ProtocolVersionMinor type="Integer" value="1"/>
0134	</ProtocolVersion>
0135	<TimeStamp type="DateTime" value="2013-04-25T17:01:41+00:00"/>
0136	<BatchCount type="Integer" value="1"/>
0137	</ResponseHeader>
0138	<BatchItem>
0139	<Operation type="Enumeration" value="Get"/>
0140	<ResultStatus type="Enumeration" value="Success"/>
0141	<ResponsePayload>
0142	<ObjectType type="Enumeration" value="SecretData"/>

0194	<BatchCount type="Integer" value="1"/>
0195	</RequestHeader>
0196	<BatchItem>
0197	<Operation type="Enumeration" value="Locate"/>
0198	<RequestPayload>
0199	<Attribute>
0200	<AttributeName type="TextString" value="Name"/>
0201	<AttributeValue>
0202	<NameValue type="TextString" value="SASED-M-2-11-templatel"/>
0203	<NameType type="Enumeration" value="UninterpretedTextString"/>
0204	</AttributeValue>
0205	</Attribute>
0206	<Attribute>
0207	<AttributeName type="TextString" value="Object Type"/>
0208	<AttributeValue type="Enumeration" value="Template"/>
0209	</Attribute>
0210	</RequestPayload>
0211	</BatchItem>
0212	</RequestMessage>
0213	<ResponseMessage>
0214	<ResponseHeader>
0215	<ProtocolVersion>
0216	<ProtocolVersionMajor type="Integer" value="1"/>
0217	<ProtocolVersionMinor type="Integer" value="1"/>
0218	</ProtocolVersion>
0219	<TimeStamp type="DateTime" value="2013-04-25T16:53:08+00:00"/>
0220	<BatchCount type="Integer" value="1"/>
0221	</ResponseHeader>
0222	<BatchItem>
0223	<Operation type="Enumeration" value="Locate"/>
0224	<ResultStatus type="Enumeration" value="Success"/>
0225	<ResponsePayload>
0226	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_1"/>
0227	</ResponsePayload>
0228	</BatchItem>
0229	</ResponseMessage>
0230	# TIME 6 <RequestMessage>
0231	<RequestHeader>
0232	<ProtocolVersion>
0233	<ProtocolVersionMajor type="Integer" value="1"/>
0234	<ProtocolVersionMinor type="Integer" value="1"/>
0235	</ProtocolVersion>
0236	<BatchCount type="Integer" value="1"/>
0237	</RequestHeader>
0238	<BatchItem>
0239	<Operation type="Enumeration" value="Destroy"/>
0240	<RequestPayload>
0241	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_1"/>
0242	</RequestPayload>
0243	</BatchItem>
0244	</RequestMessage>
0245	<ResponseMessage>
0246	<ResponseHeader>

```

0247     <ProtocolVersion>
0248         <ProtocolVersionMajor type="Integer" value="1"/>
0249         <ProtocolVersionMinor type="Integer" value="1"/>
0250     </ProtocolVersion>
0251     <TimeStamp type="DateTime" value="2013-04-25T17:01:41+00:00"/>
0252     <BatchCount type="Integer" value="1"/>
0253 </ResponseHeader>
0254 <BatchItem>
0255     <Operation type="Enumeration" value="Destroy"/>
0256     <ResultStatus type="Enumeration" value="Success"/>
0257     <ResponsePayload>
0258         <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
0259     </ResponsePayload>
0260 </BatchItem>
0261 </ResponseMessage>

```

173

174 **3.3 Mandatory Test Cases KMIP v1.2**

175 **3.2.73.3.1 SASSED-M-1-12 - Configuration**

176 Determine server configuration details including operations supported (only the mandatory operations are
177 listed in the response example), objects supported (only the mandatory objects types are listed in the
178 response example), and optional server information.

```

0001 # TIME 0
0002 <RequestMessage>
0003     <RequestHeader>
0004         <ProtocolVersion>
0005             <ProtocolVersionMajor type="Integer" value="1"/>
0006             <ProtocolVersionMinor type="Integer" value="2"/>
0007         </ProtocolVersion>
0008         <BatchCount type="Integer" value="1"/>
0009     </RequestHeader>
0010     <BatchItem>
0011         <Operation type="Enumeration" value="Query"/>
0012         <RequestPayload>
0013             <QueryFunction type="Enumeration" value="QueryOperations"/>
0014             <QueryFunction type="Enumeration" value="QueryObjects"/>
0015             <QueryFunction type="Enumeration"
value="QueryServerInformation"/>
0016         </RequestPayload>
0017     </BatchItem>
0018 </RequestMessage>
0019 <ResponseMessage>
0020     <ResponseHeader>
0021         <ProtocolVersion>
0022             <ProtocolVersionMajor type="Integer" value="1"/>
0023             <ProtocolVersionMinor type="Integer" value="2"/>
0024         </ProtocolVersion>
0025         <TimeStamp type="DateTime" value="2013-04-25T16:53:03+00:00"/>
0026         <BatchCount type="Integer" value="1"/>
0027     </ResponseHeader>
0028     <BatchItem>
0029         <Operation type="Enumeration" value="Query"/>
0030         <ResultStatus type="Enumeration" value="Success"/>
0031     </BatchItem>
0032 </ResponseMessage>

```

```

0031     <Operation type="Enumeration" value="Query"/>
0032     <Operation type="Enumeration" value="Locate"/>
0033     <Operation type="Enumeration" value="Destroy"/>
0034     <Operation type="Enumeration" value="Get"/>
0035     <Operation type="Enumeration" value="Register"/>
0036     <Operation type="Enumeration" value="GetAttributes"/>
0037     <Operation type="Enumeration" value="GetAttributeList"/>
0038     <Operation type="Enumeration" value="AddAttribute"/>
0039     <ObjectType type="Enumeration" value="SecretData"/>
0040     <ObjectType type="Enumeration" value="Template"/>
0041     <VendorIdentification type="TextString" value="server-
vendor.com"/>
0042     <ServerInformation>
0043     </ServerInformation>
0044     </ResponsePayload>
0045     </BatchItem>
0046 </ResponseMessage>

```

179

180 **3.2.83.3.2 SASED-M-2-12 - Register the authentication key**

181 A template is created and the secret data for the authentication key is then registered. The server must
182 allow the registration of managed objects for Object Groups either by allowed arbitrary values for Object
183 Groups or by pre-configuration of specific Object Groups prior to the storage array registering the
184 authentication key. The authentication key may be a new authentication key or a replacement
185 authentication key.

```

# 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="Locate"/>
0011     <RequestPayload>
0012       <Attribute>
0013         <AttributeName type="TextString" value="Name"/>
0014         <AttributeValue>
0015           <NameValue type="TextString" value="SASED-M-2-12-
templatel"/>
0016           <NameType type="Enumeration"
value="UninterpretedTextString"/>
0017         </AttributeValue>
0018       </Attribute>
0019       <Attribute>
0020         <AttributeName type="TextString" value="Object Type"/>
0021         <AttributeValue type="Enumeration" value="Template"/>
0022       </Attribute>
0023     </RequestPayload>
0024   </BatchItem>
0025 </RequestMessage>
0026 <ResponseMessage>
0027   <ResponseHeader>
0028     <ProtocolVersion>

```

0029	<ProtocolVersionMajor type="Integer" value="1"/>
0030	<ProtocolVersionMinor type="Integer" value="2"/>
0031	</ProtocolVersion>
0032	<TimeStamp type="DateTime" value="2013-04-25T16:53:08+00:00"/>
0033	<BatchCount type="Integer" value="1"/>
0034	</ResponseHeader>
0035	<BatchItem>
0036	<Operation type="Enumeration" value="Locate"/>
0037	<ResultStatus type="Enumeration" value="Success"/>
0038	<ResponsePayload>
0039	</ResponsePayload>
0040	</BatchItem>
0041	</ResponseMessage>
0042	<i># TIME 1</i> <RequestMessage>
0043	<RequestHeader>
0044	<ProtocolVersion>
0045	<ProtocolVersionMajor type="Integer" value="1"/>
0046	<ProtocolVersionMinor type="Integer" value="2"/>
0047	</ProtocolVersion>
0048	<BatchCount type="Integer" value="1"/>
0049	</RequestHeader>
0050	<BatchItem>
0051	<Operation type="Enumeration" value="Register"/>
0052	<RequestPayload>
0053	<ObjectType type="Enumeration" value="Template"/>
0054	<TemplateAttribute>
0055	<Attribute>
0056	<AttributeName type="TextString" value="Name"/>
0057	<AttributeValue>
0058	<NameValue type="TextString" value="SASED-M-2-12- templatel"/>
0059	<NameType type="Enumeration" value="UninterpretedTextString"/>
0060	</AttributeValue>
0061	</Attribute>
0062	</TemplateAttribute>
0063	<Template>
0064	<Attribute>
0065	<AttributeName type="TextString" value="Object Group"/>
0066	<AttributeValue type="TextString" value="SASED-M-2-12- group"/>
0067	</Attribute>
0068	<Attribute>
0069	<AttributeName type="TextString" value="x- CustomAttribute1"/>
0070	<AttributeValue type="TextString" value="CustomValue1"/>
0071	</Attribute>
0072	<Attribute>
0073	<AttributeName type="TextString" value="x- CustomAttribute2"/>
0074	<AttributeValue type="TextString" value="CustomValue2"/>
0075	</Attribute>
0076	</Template>
0077	</RequestPayload>
0078	</BatchItem>
0079	</RequestMessage>
0080	<ResponseMessage>

```

0081 <ResponseHeader>
0082   <ProtocolVersion>
0083     <ProtocolVersionMajor type="Integer" value="1"/>
0084     <ProtocolVersionMinor type="Integer" value="2"/>
0085   </ProtocolVersion>
0086   <TimeStamp type="DateTime" value="2013-04-25T16:53:08+00:00"/>
0087   <BatchCount type="Integer" value="1"/>
0088 </ResponseHeader>
0089 <BatchItem>
0090   <Operation type="Enumeration" value="Register"/>
0091   <ResultStatus type="Enumeration" value="Success"/>
0092   <ResponsePayload>
0093     <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
0094   </ResponsePayload>
0095 </BatchItem>
0096 </ResponseMessage>

# TIME 2
0097 <RequestMessage>
0098   <RequestHeader>
0099     <ProtocolVersion>
0100       <ProtocolVersionMajor type="Integer" value="1"/>
0101       <ProtocolVersionMinor type="Integer" value="2"/>
0102     </ProtocolVersion>
0103     <BatchCount type="Integer" value="1"/>
0104   </RequestHeader>
0105   <BatchItem>
0106     <Operation type="Enumeration" value="Register"/>
0107     <RequestPayload>
0108       <ObjectType type="Enumeration" value="SecretData"/>
0109       <TemplateAttribute>
0110         <Name>
0111           <NameValue type="TextString" value="SASED-M-2-12-
template1"/>
0112           <NameType type="Enumeration"
value="UninterpretedTextString"/>
0113         </Name>
0114         <Attribute>
0115           <AttributeName type="TextString" value="x-
CustomAttribute3"/>
0116           <AttributeValue type="TextString" value="CustomValue3"/>
0117         </Attribute>
0118         <Attribute>
0119           <AttributeName type="TextString" value="x-
CustomAttribute4"/>
0120           <AttributeValue type="TextString" value="CustomValue4"/>
0121         </Attribute>
0122         <Attribute>
0123           <AttributeName type="TextString" value="Name"/>
0124           <AttributeValue>
0125             <NameValue type="TextString" value="SASED-M-2-12-name"/>
0126             <NameType type="Enumeration"
value="UninterpretedTextString"/>
0127           </AttributeValue>
0128         </Attribute>
0129       </TemplateAttribute>
0130       <SecretData>
0131         <SecretDataType type="Enumeration" value="Password"/>

```


0020	</RequestPayload>
0021	</BatchItem>
0022	</RequestMessage>
0023	<ResponseMessage>
0024	<ResponseHeader>
0025	<ProtocolVersion>
0026	<ProtocolVersionMajor type="Integer" value="1"/>
0027	<ProtocolVersionMinor type="Integer" value="2"/>
0028	</ProtocolVersion>
0029	<TimeStamp type="DateTime" value="2013-04-25T16:53:13+00:00"/>
0030	<BatchCount type="Integer" value="1"/>
0031	</ResponseHeader>
0032	<BatchItem>
0033	<Operation type="Enumeration" value="Locate"/>
0034	<ResultStatus type="Enumeration" value="Success"/>
0035	<ResponsePayload>
0036	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0037	</ResponsePayload>
0038	</BatchItem>
0039	</ResponseMessage>
0040	# TIME 1 <RequestMessage>
0041	<RequestHeader>
0042	<ProtocolVersion>
0043	<ProtocolVersionMajor type="Integer" value="1"/>
0044	<ProtocolVersionMinor type="Integer" value="2"/>
0045	</ProtocolVersion>
0046	<BatchCount type="Integer" value="1"/>
0047	</RequestHeader>
0048	<BatchItem>
0049	<Operation type="Enumeration" value="GetAttributes"/>
0050	<RequestPayload>
0051	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0052	<AttributeName type="TextString" value="x-CustomAttribute4"/>
0053	</RequestPayload>
0054	</BatchItem>
0055	</RequestMessage>
0056	<ResponseMessage>
0057	<ResponseHeader>
0058	<ProtocolVersion>
0059	<ProtocolVersionMajor type="Integer" value="1"/>
0060	<ProtocolVersionMinor type="Integer" value="2"/>
0061	</ProtocolVersion>
0062	<TimeStamp type="DateTime" value="2013-04-25T16:53:14+00:00"/>
0063	<BatchCount type="Integer" value="1"/>
0064	</ResponseHeader>
0065	<BatchItem>
0066	<Operation type="Enumeration" value="GetAttributes"/>
0067	<ResultStatus type="Enumeration" value="Success"/>
0068	<ResponsePayload>
0069	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0070	<Attribute>
0071	<AttributeName type="TextString" value="x- CustomAttribute4"/>
0072	<AttributeValue type="TextString" value="CustomValue4"/>

0073	</Attribute>
0074	</ResponsePayload>
0075	</BatchItem>
0076	</ResponseMessage>
0077	# TIME 2 <RequestMessage>
0078	<RequestHeader>
0079	<ProtocolVersion>
0080	<ProtocolVersionMajor type="Integer" value="1"/>
0081	<ProtocolVersionMinor type="Integer" value="2"/>
0082	</ProtocolVersion>
0083	<BatchCount type="Integer" value="1"/>
0084	</RequestHeader>
0085	<BatchItem>
0086	<Operation type="Enumeration" value="GetAttributes"/>
0087	<RequestPayload>
0088	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0089	<AttributeName type="TextString" value="x-CustomAttribute3"/>
0090	</RequestPayload>
0091	</BatchItem>
0092	</RequestMessage>
0093	<ResponseMessage>
0094	<ResponseHeader>
0095	<ProtocolVersion>
0096	<ProtocolVersionMajor type="Integer" value="1"/>
0097	<ProtocolVersionMinor type="Integer" value="2"/>
0098	</ProtocolVersion>
0099	<TimeStamp type="DateTime" value="2013-04-25T16:53:14+00:00"/>
0100	<BatchCount type="Integer" value="1"/>
0101	</ResponseHeader>
0102	<BatchItem>
0103	<Operation type="Enumeration" value="GetAttributes"/>
0104	<ResultStatus type="Enumeration" value="Success"/>
0105	<ResponsePayload>
0106	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0107	<Attribute>
0108	<AttributeName type="TextString" value="x- CustomAttribute3"/>
0109	<AttributeValue type="TextString" value="CustomValue3"/>
0110	</Attribute>
0111	</ResponsePayload>
0112	</BatchItem>
0113	</ResponseMessage>
0114	# TIME 3 <RequestMessage>
0115	<RequestHeader>
0116	<ProtocolVersion>
0117	<ProtocolVersionMajor type="Integer" value="1"/>
0118	<ProtocolVersionMinor type="Integer" value="2"/>
0119	</ProtocolVersion>
0120	<BatchCount type="Integer" value="1"/>
0121	</RequestHeader>
0122	<BatchItem>
0123	<Operation type="Enumeration" value="Get"/>
0124	<RequestPayload>
0125	<UniqueIdentifier type="TextString"

0178	<BatchCount type="Integer" value="1"/>
0179	</ResponseHeader>
0180	<BatchItem>
0181	<Operation type="Enumeration" value="Destroy"/>
0182	<ResultStatus type="Enumeration" value="Success"/>
0183	<ResponsePayload>
0184	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0185	</ResponsePayload>
0186	</BatchItem>
0187	</ResponseMessage>
	# TIME 5
0188	<RequestMessage>
0189	<RequestHeader>
0190	<ProtocolVersion>
0191	<ProtocolVersionMajor type="Integer" value="1"/>
0192	<ProtocolVersionMinor type="Integer" value="2"/>
0193	</ProtocolVersion>
0194	<BatchCount type="Integer" value="1"/>
0195	</RequestHeader>
0196	<BatchItem>
0197	<Operation type="Enumeration" value="Locate"/>
0198	<RequestPayload>
0199	<Attribute>
0200	<AttributeName type="TextString" value="Name"/>
0201	<AttributeValue>
0202	<NameValue type="TextString" value="SASED-M-2-12-
	templatel"/>
0203	<NameType type="Enumeration"
	value="UninterpretedTextString"/>
0204	</AttributeValue>
0205	</Attribute>
0206	<Attribute>
0207	<AttributeName type="TextString" value="Object Type"/>
0208	<AttributeValue type="Enumeration" value="Template"/>
0209	</Attribute>
0210	</RequestPayload>
0211	</BatchItem>
0212	</RequestMessage>
0213	<ResponseMessage>
0214	<ResponseHeader>
0215	<ProtocolVersion>
0216	<ProtocolVersionMajor type="Integer" value="1"/>
0217	<ProtocolVersionMinor type="Integer" value="2"/>
0218	</ProtocolVersion>
0219	<TimeStamp type="DateTime" value="2013-04-25T16:53:08+00:00"/>
0220	<BatchCount type="Integer" value="1"/>
0221	</ResponseHeader>
0222	<BatchItem>
0223	<Operation type="Enumeration" value="Locate"/>
0224	<ResultStatus type="Enumeration" value="Success"/>
0225	<ResponsePayload>
0226	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_1"/>
0227	</ResponsePayload>
0228	</BatchItem>
0229	</ResponseMessage>
	# TIME 6

0230	<RequestMessage>
0231	<RequestHeader>
0232	<ProtocolVersion>
0233	<ProtocolVersionMajor type="Integer" value="1"/>
0234	<ProtocolVersionMinor type="Integer" value="2"/>
0235	</ProtocolVersion>
0236	<BatchCount type="Integer" value="1"/>
0237	</RequestHeader>
0238	<BatchItem>
0239	<Operation type="Enumeration" value="Destroy"/>
0240	<RequestPayload>
0241	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_1"/>
0242	</RequestPayload>
0243	</BatchItem>
0244	</RequestMessage>
0245	<ResponseMessage>
0246	<ResponseHeader>
0247	<ProtocolVersion>
0248	<ProtocolVersionMajor type="Integer" value="1"/>
0249	<ProtocolVersionMinor type="Integer" value="2"/>
0250	</ProtocolVersion>
0251	<TimeStamp type="DateTime" value="2013-04-25T17:01:41+00:00"/>
0252	<BatchCount type="Integer" value="1"/>
0253	</ResponseHeader>
0254	<BatchItem>
0255	<Operation type="Enumeration" value="Destroy"/>
0256	<ResultStatus type="Enumeration" value="Success"/>
0257	<ResponsePayload>
0258	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_1"/>
0259	</ResponsePayload>
0260	</BatchItem>
0261	</ResponseMessage>

190

191

4 Conformance

4.1 Storage Array with Self Encrypting Drive Client KMIP v1.0 Profile Conformance Statement

KMIP client ~~and server~~ implementations conformant to this profile:

1. SHALL support the Authentication Suite conditions (2.1)
2. ~~SHALL support the~~ Storage Array with Self-Encrypting Drives - ~~Client conditions~~ (2.2)
3. ~~SHALL support all the~~ Mandatory Test Cases KMIP v1.0 (1.1)

4.2 Storage Array with Self Encrypting Drive Client KMIP v1.1 Profile Conformance

~~KMIP client implementations conformant to this profile:~~

1. ~~SHALL support the~~ Authentication Suite ~~conditions~~ (2.1)
- 4-2. SHALL support the Storage Array with Self-Encrypting Drives - ~~Client~~ conditions (2.2)
3. ~~SHALL support all the~~ ~~Mandatory Test Cases KMIP v1.1~~ (3.2)

4.3 Storage Array with Self Encrypting Drive Client KMIP v1.2 Profile Conformance

~~KMIP client implementations conformant to this profile:~~

1. ~~SHALL support the~~ Authentication Suite ~~conditions~~ (2.1)
2. ~~SHALL support the~~ Storage Array with Self-Encrypting Drives - ~~Client conditions~~ (2.2)
3. ~~SHALL support all the~~ ~~Mandatory Test Cases KMIP v1.2~~ (3.3)

4.4 Storage Array with Self Encrypting Drive Server KMIP v1.0 Profile Conformance

~~KMIP server implementations conformant to this profile:~~

1. ~~SHALL support the~~ Authentication Suite ~~conditions~~ (2.1)
2. ~~SHALL support the~~ Storage Array with Self-Encrypting Drives - ~~Server conditions~~ (2.3)
- 4-3. ~~SHALL support all the~~ Mandatory Test Cases KMIP v1.0 (1.1) ~~for each supported protocol version (major and minor)~~

4.5 Storage Array with Self Encrypting Drive Server KMIP v1.1 Profile Conformance

~~KMIP server implementations conformant to this profile:~~

1. ~~SHALL support the~~ Authentication Suite ~~conditions~~ (2.1)
2. ~~SHALL support the~~ Storage Array with Self-Encrypting Drives - ~~Server conditions~~ (2.3)
3. ~~SHALL support all the~~ Mandatory Test Cases KMIP v1.1 (3.2)

4.6 Storage Array with Self Encrypting Drive Server KMIP v1.2 Profile Conformance

~~KMIP server implementations conformant to this profile:~~

- 227 | 1. SHALL support the Authentication Suite conditions (2.1)
- 228 | 2. SHALL support the Storage Array with Self-Encrypting Drives - Server conditions (2.3)
- 229 | 3. SHALL support all the Mandatory Test Cases KMIP v1.2 (3.3)

230 | **4.24.7 Permitted Test Case Variations**

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

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

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

236 | **4.2.14.7.1 Variable Items**

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

- 238 | 1. UniqueIdentifier
- 239 | 2. PrivateKeyUniqueIdentifier
- 240 | 3. PublicKeyUniqueIdentifier
- 241 | 4. UniqueBatchItemIdentifier
- 242 | 5. AsynchronousCorrelationValue
- 243 | 6. TimeStamp
- 244 | 7. KeyValue / KeyMaterial including:
 - 245 | a. key material content returned for managed cryptographic objects which are generated by
 - 246 | the server
 - 247 | b. wrapped versions of keys where the wrapping key is dynamic or the wrapping contains
 - 248 | variable output for each wrap operation
- 249 | 8. For response containing the output of cryptographic operation in Data / SignatureData/ MACData
250 | / IVCounterNonce where:
 - 251 | a. the managed object is generated by the server; or
 - 252 | b. the operation inherently contains variable output
- 253 | 9. For the following DateTime attributes where the value is not specified in the request as a fixed
254 | DateTime value:
 - 255 | a. ActivationDate
 - 256 | b. ArchiveDate
 - 257 | c. CompromiseDate
 - 258 | d. CompromiseOccurrenceDate
 - 259 | e. DeactivationDate
 - 260 | f. DestroyDate
 - 261 | g. InitialDate
 - 262 | h. LastChangeDate
 - 263 | i. ProtectStartDate
 - 264 | j. ProcessStopDate
 - 265 | k. ValidityDate
 - 266 | l. OriginalCreationDate
- 267 | 10. LinkedObjectIdentifier
- 268 | 11. DigestValue

- 269 a. For those managed cryptographic objects which are dynamically generated
- 270 12. KeyFormatType
- 271 a. The key format type selected by the server when it creates managed objects
- 272 13. Digest
- 273 a. The HashingAlgorithm selected by the server when it calculates the digest for a managed
- 274 object for which it has access to the key material
- 275 b. The Digest Value
- 276 14. Extensions reported in Query for ExtensionList and ExtensionMap
- 277 15. Application Namespaces reported in Query
- 278 16. Object Types reported in Query other than those noted as required in this profile
- 279 17. Operation Types reported in Query other than those noted as required in this profile (or any
- 280 referenced profile documents)
- 281 18. For TextString attribute values containing test identifiers:
- 282 a. Additional vendor or application prefixes
- 283 19. Additional attributes beyond those noted in the response
- 284

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

- 286 1. Object Group values – May or may not return one or more Object Group values not included in
- 287 the requests
- 288 2. y-CustomAttributes – May or may not include additional server-specific associated attributes not
- 289 included in requests
- 290 3. Message Extensions – May or may not include additional (non-critical) vendor extensions
- 291 4. TemplateAttribute – May or may not be included in responses where the Template Attribute
- 292 response is noted as optional in [KMIP-SPEC]
- 293 5. AttributeIndex – May or may not include Attribute Index value where the Attribute Index value is 0
- 294 for Protocol Versions 1.1 and above.
- 295 6. ResultMessage – May or may not be included in responses and the value (if included) may vary
- 296 from the text contained within the test case.
- 297 7. The list of Protocol Versions returned in a DiscoverVersion response may include additional
- 298 protocol versions if the request has not specified a list of client supported Protocol Versions.
- 299 8. VendorIdentification - The value (if included) may vary from the text contained within the test
- 300 case.

301 **4.2.24.7.2 Variable behavior**

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

- 303 1. A test ~~may~~**MAY** omit the clean-up requests and responses (containing Revoke and/or Destroy) at
- 304 the end of the test provided there is a separate mechanism to remove the created objects during
- 305 testing.
- 306 2. A test ~~may~~**MAY** omit the test identifiers if the client is unable to include them in requests. This
- 307 includes the following attributes:
 - 308 a. Name; and
 - 309 b. x-ID
- 310 3. A test MAY perform requests with multiple batch items or as multiple requests with a single batch
- 311 item provided the sequence of operations are equivalent
- 312 4. A request MAY contain an optional *Authentication* [KMIP SPEC] structure within each request
- 313

Appendix A. Acknowledgments

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Participants:

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315	Mike Allen, Symantec
316	Gordon Arnold, IBM
317	Todd Arnold, IBM
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321	Peter Bartok, Venafi, Inc.
322	Tom Benjamin, IBM
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325	Kevin Bocket, Venafi
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328	Tim Bruce, CA Technologies
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330	Kelley Burgin, National Security Agency
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347	James Fitzgerald, SafeNet, Inc.
348	Indra Fitzgerald, Hewlett-Packard
349	Judith Furlong, EMC Corporation
350	Susan Gleeson, Oracle
351	Robert Griffin, EMC Corporation
352	Paul Grojean, Individual
353	Robert Haas, IBM
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355	ChengDong He, Huawei Technologies Co., Ltd.
356	Steve He, Vormetric
357	Kurt Heberlein, Hewlett-Packard
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360	Walt Hubis, NetApp
361	Tim Hudson, Cryptsoft
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368 Marc Kenig, SafeNet, Inc.
369 Mark Knight, Thales e-Security
370 Kathy Kriese, Symantec Corporation
371 Mark Lambiase, SecureAuth
372 John Leiseboer, Quintessence Labs
373 Hal Lockhart, Oracle Corporation
374 Robert Lockhart, Thales e-Security
375 Anne Luk, Cryptsoft
376 Sairam Manidi, Freescale
377 Luther Martin, Voltage Security
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380 Dale Moberg, Axway Software
381 Jishnu Mukeri, Hewlett-Packard
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383 John Peck, IBM
384 Rob Philpott, EMC Corporation
385 Denis Pochuev, SafeNet, Inc.
386 Reid Poole, Venafi, Inc.
387 Ajai Puri, SafeNet, Inc.
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390 Bruce Rich, IBM
391 Christina Richards, American Express CCoE
392 Warren Robbins, Dell
393 Peter Robinson, EMC Corporation
394 Scott Rotondo, Oracle
395 Saikat Saha, SafeNet, Inc.
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402 Terence Spies, Voltage Security
403 Deborah Steckroth, RouteOne LLC
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410 Sean Turner, IECA, Inc.
411 Paul Turner, Venafi, Inc.
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415 Sameer Yami, Thales e-Security
416 Peter Yee, EMC Corporation
417 Krishna Yellepeddy, IBM
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422 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.

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Appendix C. Revision History

Revision	Date	Editor	Changes Made
wd01	21-May-2013	Tim Hudson / Mahadev Karadigudda	Converted from draft proposal to OASIS template with minor rewording and inclusion of references to KMIP 1.2 documents
wd02	25-June-2013	Tim Hudson	Updated test cases and changed how multiple versions of the specification are referenced and added test cases for all versions.
wd03	6-August-2013	Tim Hudson	Updated to include Permitted Test Case Variations and updated Test Cases based on July 2013 Interop
wd04	10-August-2013	Tim Hudson	Updated Permitted Test Case Variations
wd04a	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

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