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Committee Specification Draft 01

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Related work:

This specification is related to:

- *Key Management Interoperability Protocol Profiles Version 1.0*. 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*. Latest version. <http://docs.oasis-open.org/kmip/spec/v1.1/kmip-spec-v1.1.html>.
- *Key Management Interoperability Protocol Specification Version 1.2*. Latest version. <http://docs.oasis-open.org/kmip/spec/v1.2/kmip-spec-v1.2.html>.
- *Key Management Interoperability Protocol Use Cases Version 1.0*. Latest version. <http://docs.oasis-open.org/kmip/usecases/v1.0/kmip-usecases-1.0.html>.
- *Key Management Interoperability Protocol Usage Guide Version 1.1*. Latest version. <http://docs.oasis-open.org/kmip/ug/v1.1/kmip-ug-v1.1.html>.

Abstract:

Describes the use of KMIP operations to support cryptographic services being performed by a KMIP server on behalf of a KMIP client for key management operations.

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.

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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 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].

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>.
- [RFC2246] T. Dierks and C. Allen, *The TLS Protocol, Version 1.0*, IETF RFC 2246, Jan 1999, <http://www.ietf.org/rfc/rfc2246.txt>
- [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 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 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 Version 1.2.*
[URL](#)
Candidate OASIS Standard 01. DD MMM YYYY.

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.* <http://docs.oasis-open.org/kmip/ug/v1.1/kmip-ug-v1.1-cnd01.doc>
Committee Note Draft, 1 December 2011
- [KMIP-UG-1_1] *Key Management Interoperability Protocol Usage Guide Version 1.1.* <http://docs.oasis-open.org/kmip/ug/v1.1/cn01/kmip-ug-v1.1-cn01.doc>
Committee Note 01, 27 July 2012

45 **[KMIP-UG-1_2]** *Key Management Interoperability Protocol Usage Guide Version 1.2.*
46 [URL](#)
47 Committee Note Draft, **DD MMM YYYY**
48 **[KMIP-TC-1_1]** *Key Management Interoperability Protocol Test Cases Version 1.1.*
49 [http://docs.oasis-open.org/kmip/testcases/v1.1/cn01/kmip-testcases-v1.1-](http://docs.oasis-open.org/kmip/testcases/v1.1/cn01/kmip-testcases-v1.1-cn01.doc)
50 [cn01.doc](http://docs.oasis-open.org/kmip/testcases/v1.1/cn01/kmip-testcases-v1.1-cn01.doc), Committee Note 01, 27 July 2012.
51 **[KMIP-TC-1_2]** *Key Management Interoperability Protocol Test Cases Version 1.2.*
52 [URL](#), Committee Note Draft, **DD MMM YYYY**.
53 **[KMIP-UC]** *Key Management Interoperability Protocol Use Cases Version 1.0.*
54 [http://docs.oasis-open.org/kmip/usecases/v1.0/cs01/kmip-usecases-1.0-cs-](http://docs.oasis-open.org/kmip/usecases/v1.0/cs01/kmip-usecases-1.0-cs-01.doc)
55 [01.doc](http://docs.oasis-open.org/kmip/usecases/v1.0/cs01/kmip-usecases-1.0-cs-01.doc), Committee Specification, 15 June 2010.

56 2 Base Cryptographic Server Profile

57 The Base Cryptographic Server profile builds on the KMIP server conformance clauses in [KMIP-PROF]
58 to specify the use of KMIP to respond to encryption and decryption operation requests from a KMIP client.

59 2.1 Base Cryptographic Server

60 A KMIP server conforming to this profile:

- 61 1. SHALL conform to the KMIP Baseline Server profile in [KMIP-PROF] and [KMIP-SPEC]
- 62 2. SHALL support the *Client-to-Server Operation* [KMIP-SPEC]:
 - 63 a. *Encrypt* [KMIP-SPEC]
 - 64 b. *Decrypt* [KMIP-SPEC]
- 65 3. SHALL support all the mandatory Base Cryptographic Tests in section 4 , returning results in
66 accordance with the test cases.
- 67 4. MAY support any clause within [KMIP-SPEC] provided it does not conflict with any other clause
68 within this section 2.1
- 69 5. MAY support extensions outside the scope of this standard (e.g., vendor extensions,
70 conformance clauses) that do not contradict any KMIP requirements.

71 3 Base Cryptographic Client Profile

72 The Base Cryptographic Client profile builds on the KMIP client conformance clauses in [KMIP-PROF] to
73 specify the use of KMIP to request encryption and decryption operations from a KMIP server.

74 3.1 Base Cryptographic Client

75 A KMIP client conformant to this profile:

- 76 1. SHALL conform to the KMIP Baseline Client profile in [KMIP-PROF] and [KMIP-SPEC]
- 77 2. SHALL support the *Client-to-Server Operation* [KMIP-SPEC]:
 - 78 a. *Encrypt* [KMIP-SPEC]
 - 79 b. *Decrypt* [KMIP-SPEC]
- 80 3. SHALL support one or more of the mandatory Base Cryptographic Tests in section 4, returning
81 results in accordance with the test cases.
- 82 4. MAY support any clause within [KMIP-SPEC] provided it does not conflict with any other clause
83 within this section 3.1
- 84 5. MAY support extensions outside the scope of this standard (e.g., vendor extensions,
85 conformance clauses) that do not contradict any KMIP requirements.

86 4 Base Cryptographic Tests

87 Mandatory tests are indicated by test identifiers containing "-M-".

88 Optional tests are indicated by test identifiers containing "-O-".

89 4.1.1 CS-BC-M-1-12 - Encrypt with New Symmetric Key

90 Create a symmetric key and perform encrypt using the symmetric 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="Create"/>
0011     <RequestPayload>
0012       <ObjectType type="Enumeration" value="SymmetricKey"/>
0013       <TemplateAttribute>
0014         <Attribute>
0015           <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
0016           <AttributeValue type="Enumeration" value="AES"/>
0017         </Attribute>
0018         <Attribute>
0019           <AttributeName type="TextString" value="Cryptographic
Length"/>
0020           <AttributeValue type="Integer" value="128"/>
0021         </Attribute>
0022         <Attribute>
0023           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0024           <AttributeValue type="Integer" value="Decrypt Encrypt"/>
0025         </Attribute>
0026         <Attribute>
0027           <AttributeName type="TextString" value="Name"/>
0028           <AttributeValue>
0029             <NameValue type="TextString" value="CS-BC-M-1-12"/>
0030             <NameType type="Enumeration"
value="UninterpretedTextString"/>
0031           </AttributeValue>
0032         </Attribute>
0033         <Attribute>
0034           <AttributeName type="TextString" value="Cryptographic
Parameters"/>
0035           <AttributeValue>
0036             <BlockCipherMode type="Enumeration" value="ECB"/>
0037           </AttributeValue>
0038         </Attribute>
0039         <Attribute>
0040           <AttributeName type="TextString" value="Activation Date"/>
```

0041	<AttributeValue type="DateTime" value="\$NOW-3600"/>
0042	</Attribute>
0043	</TemplateAttribute>
0044	</RequestPayload>
0045	</BatchItem>
0046	</RequestMessage>
0047	<ResponseMessage>
0048	<ResponseHeader>
0049	<ProtocolVersion>
0050	<ProtocolVersionMajor type="Integer" value="1"/>
0051	<ProtocolVersionMinor type="Integer" value="2"/>
0052	</ProtocolVersion>
0053	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0054	<BatchCount type="Integer" value="1"/>
0055	</ResponseHeader>
0056	<BatchItem>
0057	<Operation type="Enumeration" value="Create"/>
0058	<ResultStatus type="Enumeration" value="Success"/>
0059	<ResponsePayload>
0060	<ObjectType type="Enumeration" value="SymmetricKey"/>
0061	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0062	</ResponsePayload>
0063	</BatchItem>
0064	</ResponseMessage>
0065	# TIME 1
0066	<RequestMessage>
0067	<RequestHeader>
0068	<ProtocolVersion>
0069	<ProtocolVersionMajor type="Integer" value="1"/>
0070	<ProtocolVersionMinor type="Integer" value="2"/>
0071	</ProtocolVersion>
0072	<BatchCount type="Integer" value="1"/>
0073	</RequestHeader>
0074	<BatchItem>
0075	<Operation type="Enumeration" value="Encrypt"/>
0076	<RequestPayload>
	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0077	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0078	</RequestPayload>
0079	</BatchItem>
0080	</RequestMessage>
0081	<ResponseMessage>
0082	<ResponseHeader>
0083	<ProtocolVersion>
0084	<ProtocolVersionMajor type="Integer" value="1"/>
0085	<ProtocolVersionMinor type="Integer" value="2"/>
0086	</ProtocolVersion>
0087	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0088	<BatchCount type="Integer" value="1"/>
0089	</ResponseHeader>
0090	<BatchItem>
0091	<Operation type="Enumeration" value="Encrypt"/>
0092	<ResultStatus type="Enumeration" value="Success"/>
0093	<ResponsePayload>
0094	<UniqueIdentifier type="TextString"

0095	value="\$UNIQUE_IDENTIFIER_0"/>
0096	<Data type="ByteString"
0097	value="fd912d102dbb482f6f6e91bd57119095"/>
0098	</ResponsePayload>
	</BatchItem>
	</ResponseMessage>
0099	# TIME 2
0100	<RequestMessage>
0101	<RequestHeader>
0102	<ProtocolVersion>
0103	<ProtocolVersionMajor type="Integer" value="1"/>
0104	<ProtocolVersionMinor type="Integer" value="2"/>
0105	</ProtocolVersion>
0106	<BatchCount type="Integer" value="1"/>
0107	</BatchHeader>
0108	<BatchItem>
0109	<Operation type="Enumeration" value="Revoke"/>
0110	<RequestPayload>
0111	<UniqueIdentifier type="TextString"
0112	value="\$UNIQUE_IDENTIFIER_0"/>
0113	<RevocationReason>
0114	<RevocationReasonCode type="Enumeration"
0115	value="Unspecified"/>
0116	</RevocationReason>
0117	</RequestPayload>
0118	</BatchItem>
0119	</RequestMessage>
0120	<ResponseMessage>
0121	<ResponseHeader>
0122	<ProtocolVersion>
0123	<ProtocolVersionMajor type="Integer" value="1"/>
0124	<ProtocolVersionMinor type="Integer" value="2"/>
0125	</ProtocolVersion>
0126	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0127	<BatchCount type="Integer" value="1"/>
0128	</ResponseHeader>
0129	<BatchItem>
0130	<Operation type="Enumeration" value="Revoke"/>
0131	<ResultStatus type="Enumeration" value="Success"/>
0132	<ResponsePayload>
0133	<UniqueIdentifier type="TextString"
0134	value="\$UNIQUE_IDENTIFIER_0"/>
0135	</ResponsePayload>
0136	</BatchItem>
0137	</ResponseMessage>
0138	# TIME 3
0139	<RequestMessage>
0140	<RequestHeader>
0141	<ProtocolVersion>
0142	<ProtocolVersionMajor type="Integer" value="1"/>
0143	<ProtocolVersionMinor type="Integer" value="2"/>
0144	</ProtocolVersion>
0145	<BatchCount type="Integer" value="1"/>
	</RequestHeader>
	<BatchItem>
	<Operation type="Enumeration" value="Destroy"/>
	<RequestPayload>
	<UniqueIdentifier type="TextString"

0146	value="\$UNIQUE_IDENTIFIER_0"/>
0147	</RequestPayload>
0148	</BatchItem>
0149	</RequestMessage>
0149	<ResponseMessage>
0150	<ResponseHeader>
0151	<ProtocolVersion>
0152	<ProtocolVersionMajor type="Integer" value="1"/>
0153	<ProtocolVersionMinor type="Integer" value="2"/>
0154	</ProtocolVersion>
0155	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0156	<BatchCount type="Integer" value="1"/>
0157	</ResponseHeader>
0158	<BatchItem>
0159	<Operation type="Enumeration" value="Destroy"/>
0160	<ResultStatus type="Enumeration" value="Success"/>
0161	<ResponsePayload>
0162	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0163	</ResponsePayload>
0164	</BatchItem>
0165	</ResponseMessage>

91

92 4.1.2 CS-BC-M-2-12 - Decrypt with New Symmetric Key

93 Create a symmetric key and perform decrypt using the symmetric key. Note: Create followed by Decrypt
 94 is unusual but some applications actually do this relying on Decrypt and Encrypt being able to be used
 95 around the 'wrong' way to get the same result.

96

	<i># TIME 0</i>
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="Create"/>
0011	<RequestPayload>
0012	<ObjectType type="Enumeration" value="SymmetricKey"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Cryptographic
	Algorithm"/>
0016	<AttributeValue type="Enumeration" value="AES"/>
0017	</Attribute>
0018	<Attribute>
0019	<AttributeName type="TextString" value="Cryptographic
	Length"/>
0020	<AttributeValue type="Integer" value="128"/>
0021	</Attribute>
0022	<Attribute>
0023	<AttributeName type="TextString" value="Cryptographic
	Usage Mask"/>

0024	<AttributeValue type="Integer" value="Decrypt Encrypt"/>
0025	</Attribute>
0026	<Attribute>
0027	<AttributeName type="TextString" value="Name"/>
0028	<AttributeValue>
0029	<NameValue type="TextString" value="CS-BC-M-2-12"/>
0030	<NameType type="Enumeration"
	value="UninterpretedTextString"/>
0031	</AttributeValue>
0032	</Attribute>
0033	<Attribute>
0034	<AttributeName type="TextString" value="Cryptographic
	Parameters"/>
0035	<Attribute>
0036	<BlockCipherMode type="Enumeration" value="ECB"/>
0037	</AttributeValue>
0038	</Attribute>
0039	<Attribute>
0040	<AttributeName type="TextString" value="Activation Date"/>
0041	<AttributeValue type="DateTime" value="\$NOW-3600"/>
0042	</Attribute>
0043	</TemplateAttribute>
0044	</RequestPayload>
0045	</BatchItem>
0046	</RequestMessage>
0047	<ResponseMessage>
0048	<ResponseHeader>
0049	<ProtocolVersion>
0050	<ProtocolVersionMajor type="Integer" value="1"/>
0051	<ProtocolVersionMinor type="Integer" value="2"/>
0052	</ProtocolVersion>
0053	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0054	<BatchCount type="Integer" value="1"/>
0055	</ResponseHeader>
0056	<BatchItem>
0057	<Operation type="Enumeration" value="Create"/>
0058	<ResultStatus type="Enumeration" value="Success"/>
0059	<ResponsePayload>
0060	<ObjectType type="Enumeration" value="SymmetricKey"/>
0061	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0062	</ResponsePayload>
0063	</BatchItem>
0064	</ResponseMessage>
0065	# TIME 1 <RequestMessage>
0066	<RequestHeader>
0067	<ProtocolVersion>
0068	<ProtocolVersionMajor type="Integer" value="1"/>
0069	<ProtocolVersionMinor type="Integer" value="2"/>
0070	</ProtocolVersion>
0071	<BatchCount type="Integer" value="1"/>
0072	</RequestHeader>
0073	<BatchItem>
0074	<Operation type="Enumeration" value="Decrypt"/>
0075	<RequestPayload>
0076	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>

0077	<Data type="ByteString" value="fd912d102dbb482f6f6e91bd57119095"/>
0078	</RequestPayload>
0079	</BatchItem>
0080	</RequestMessage>
0081	<ResponseMessage>
0082	<ResponseHeader>
0083	<ProtocolVersion>
0084	<ProtocolVersionMajor type="Integer" value="1"/>
0085	<ProtocolVersionMinor type="Integer" value="2"/>
0086	</ProtocolVersion>
0087	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0088	<BatchCount type="Integer" value="1"/>
0089	</ResponseHeader>
0090	<BatchItem>
0091	<Operation type="Enumeration" value="Decrypt"/>
0092	<ResultStatus type="Enumeration" value="Success"/>
0093	<ResponsePayload>
0094	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0095	<Data type="ByteString" value="01020304050607080910111213141516"/>
0096	</ResponsePayload>
0097	</BatchItem>
0098	</ResponseMessage>
0099	# TIME 2 <RequestMessage>
0100	<RequestHeader>
0101	<ProtocolVersion>
0102	<ProtocolVersionMajor type="Integer" value="1"/>
0103	<ProtocolVersionMinor type="Integer" value="2"/>
0104	</ProtocolVersion>
0105	<BatchCount type="Integer" value="1"/>
0106	</RequestHeader>
0107	<BatchItem>
0108	<Operation type="Enumeration" value="Revoke"/>
0109	<RequestPayload>
0110	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0111	<RevocationReason>
0112	<RevocationReasonCode type="Enumeration" value="Unspecified"/>
0113	</RevocationReason>
0114	</RequestPayload>
0115	</BatchItem>
0116	</RequestMessage>
0117	<ResponseMessage>
0118	<ResponseHeader>
0119	<ProtocolVersion>
0120	<ProtocolVersionMajor type="Integer" value="1"/>
0121	<ProtocolVersionMinor type="Integer" value="2"/>
0122	</ProtocolVersion>
0123	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0124	<BatchCount type="Integer" value="1"/>
0125	</ResponseHeader>
0126	<BatchItem>
0127	<Operation type="Enumeration" value="Revoke"/>
0128	<ResultStatus type="Enumeration" value="Success"/>

0129	<ResponsePayload>
0130	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0131	</ResponsePayload>
0132	</BatchItem>
0133	</ResponseMessage>
# TIME 3	
0134	<RequestMessage>
0135	<RequestHeader>
0136	<ProtocolVersion>
0137	<ProtocolVersionMajor type="Integer" value="1"/>
0138	<ProtocolVersionMinor type="Integer" value="2"/>
0139	</ProtocolVersion>
0140	<BatchCount type="Integer" value="1"/>
0141	</RequestHeader>
0142	<BatchItem>
0143	<Operation type="Enumeration" value="Destroy"/>
0144	<RequestPayload>
0145	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0146	</RequestPayload>
0147	</BatchItem>
0148	</RequestMessage>
0149	<ResponseMessage>
0150	<ResponseHeader>
0151	<ProtocolVersion>
0152	<ProtocolVersionMajor type="Integer" value="1"/>
0153	<ProtocolVersionMinor type="Integer" value="2"/>
0154	</ProtocolVersion>
0155	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0156	<BatchCount type="Integer" value="1"/>
0157	</ResponseHeader>
0158	<BatchItem>
0159	<Operation type="Enumeration" value="Destroy"/>
0160	<ResultStatus type="Enumeration" value="Success"/>
0161	<ResponsePayload>
0162	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0163	</ResponsePayload>
0164	</BatchItem>
0165	</ResponseMessage>

97

98 4.1.3 CS-BC-M-3-12 - Encrypt and Decrypt with New Symmetric Key

99 Create a symmetric key and perform both encrypt and decrypt operations using the symmetric 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="Create"/>


```

0011     <RequestPayload>
0012         <ObjectType type="Enumeration" value="SymmetricKey"/>
0013         <TemplateAttribute>
0014             <Attribute>
0015                 <AttributeName type="TextString" value="Cryptographic
Algorithm"/>
0016                 <AttributeValue type="Enumeration" value="AES"/>
0017             </Attribute>
0018             <Attribute>
0019                 <AttributeName type="TextString" value="Cryptographic
Length"/>
0020                 <AttributeValue type="Integer" value="128"/>
0021             </Attribute>
0022             <Attribute>
0023                 <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0024                 <AttributeValue type="Integer" value="Decrypt Encrypt"/>
0025             </Attribute>
0026             <Attribute>
0027                 <AttributeName type="TextString" value="Name"/>
0028                 <AttributeValue>
0029                     <NameValue type="TextString" value="CS-BC-M-3-12"/>
0030                     <NameType type="Enumeration"
value="UninterpretedTextString"/>
0031                 </AttributeValue>
0032             </Attribute>
0033             <Attribute>
0034                 <AttributeName type="TextString" value="Cryptographic
Parameters"/>
0035                 <AttributeValue>
0036                     <BlockCipherMode type="Enumeration" value="ECB"/>
0037                 </AttributeValue>
0038             </Attribute>
0039             <Attribute>
0040                 <AttributeName type="TextString" value="Activation Date"/>
0041                 <AttributeValue type="DateTime" value="$NOW-3600"/>
0042             </Attribute>
0043         </TemplateAttribute>
0044     </RequestPayload>
0045 </BatchItem>
0046 </RequestMessage>
0047 <ResponseMessage>
0048     <ResponseHeader>
0049         <ProtocolVersion>
0050             <ProtocolVersionMajor type="Integer" value="1"/>
0051             <ProtocolVersionMinor type="Integer" value="2"/>
0052         </ProtocolVersion>
0053         <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0054         <BatchCount type="Integer" value="1"/>
0055     </ResponseHeader>
0056     <BatchItem>
0057         <Operation type="Enumeration" value="Create"/>
0058         <ResultStatus type="Enumeration" value="Success"/>
0059         <ResponsePayload>
0060             <ObjectType type="Enumeration" value="SymmetricKey"/>
0061             <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
0062         </ResponsePayload>

```

0063	</BatchItem>
0064	</ResponseMessage>
0065	# TIME 1
0065	<RequestMessage>
0066	<RequestHeader>
0067	<ProtocolVersion>
0068	<ProtocolVersionMajor type="Integer" value="1"/>
0069	<ProtocolVersionMinor type="Integer" value="2"/>
0070	</ProtocolVersion>
0071	<BatchCount type="Integer" value="1"/>
0072	</RequestHeader>
0073	<BatchItem>
0074	<Operation type="Enumeration" value="Encrypt"/>
0075	<RequestPayload>
0076	<UniqueIdentifier type="TextString"
0077	value="\$UNIQUE_IDENTIFIER_0"/>
0077	<Data type="ByteString"
0078	value="01020304050607080910111213141516"/>
0078	</RequestPayload>
0079	</BatchItem>
0080	</RequestMessage>
0081	<ResponseMessage>
0082	<ResponseHeader>
0083	<ProtocolVersion>
0084	<ProtocolVersionMajor type="Integer" value="1"/>
0085	<ProtocolVersionMinor type="Integer" value="2"/>
0086	</ProtocolVersion>
0087	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0088	<BatchCount type="Integer" value="1"/>
0089	</ResponseHeader>
0090	<BatchItem>
0091	<Operation type="Enumeration" value="Encrypt"/>
0092	<ResultStatus type="Enumeration" value="Success"/>
0093	<ResponsePayload>
0094	<UniqueIdentifier type="TextString"
0095	value="\$UNIQUE_IDENTIFIER_0"/>
0095	<Data type="ByteString"
0096	value="fd912d102dbb482f6f6e91bd57119095"/>
0096	</ResponsePayload>
0097	</BatchItem>
0098	</ResponseMessage>
0099	# TIME 2
0099	<RequestMessage>
0100	<RequestHeader>
0101	<ProtocolVersion>
0102	<ProtocolVersionMajor type="Integer" value="1"/>
0103	<ProtocolVersionMinor type="Integer" value="2"/>
0104	</ProtocolVersion>
0105	<BatchCount type="Integer" value="1"/>
0106	</RequestHeader>
0107	<BatchItem>
0108	<Operation type="Enumeration" value="Decrypt"/>
0109	<RequestPayload>
0110	<UniqueIdentifier type="TextString"
0111	value="\$UNIQUE_IDENTIFIER_0"/>
0111	<Data type="ByteString"
0112	value="fd912d102dbb482f6f6e91bd57119095"/>
0112	</RequestPayload>

0113	</BatchItem>
0114	</RequestMessage>
0115	<ResponseMessage>
0116	<ResponseHeader>
0117	<ProtocolVersion>
0118	<ProtocolVersionMajor type="Integer" value="1"/>
0119	<ProtocolVersionMinor type="Integer" value="2"/>
0120	</ProtocolVersion>
0121	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0122	<BatchCount type="Integer" value="1"/>
0123	</ResponseHeader>
0124	<BatchItem>
0125	<Operation type="Enumeration" value="Decrypt"/>
0126	<ResultStatus type="Enumeration" value="Success"/>
0127	<ResponsePayload>
0128	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0129	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0130	</ResponsePayload>
0131	</BatchItem>
0132	</ResponseMessage>
	# TIME 3
0133	<RequestMessage>
0134	<RequestHeader>
0135	<ProtocolVersion>
0136	<ProtocolVersionMajor type="Integer" value="1"/>
0137	<ProtocolVersionMinor type="Integer" value="2"/>
0138	</ProtocolVersion>
0139	<BatchCount type="Integer" value="1"/>
0140	</RequestHeader>
0141	<BatchItem>
0142	<Operation type="Enumeration" value="Revoke"/>
0143	<RequestPayload>
0144	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0145	<RevocationReason>
0146	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
0147	</RevocationReason>
0148	</RequestPayload>
0149	</BatchItem>
0150	</RequestMessage>
0151	<ResponseMessage>
0152	<ResponseHeader>
0153	<ProtocolVersion>
0154	<ProtocolVersionMajor type="Integer" value="1"/>
0155	<ProtocolVersionMinor type="Integer" value="2"/>
0156	</ProtocolVersion>
0157	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0158	<BatchCount type="Integer" value="1"/>
0159	</ResponseHeader>
0160	<BatchItem>
0161	<Operation type="Enumeration" value="Revoke"/>
0162	<ResultStatus type="Enumeration" value="Success"/>
0163	<ResponsePayload>
0164	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>

0165	</ResponsePayload>
0166	</BatchItem>
0167	</ResponseMessage>
0168	<i># TIME 4</i>
0168	<RequestMessage>
0169	<RequestHeader>
0170	<ProtocolVersion>
0171	<ProtocolVersionMajor type="Integer" value="1"/>
0172	<ProtocolVersionMinor type="Integer" value="2"/>
0173	</ProtocolVersion>
0174	<BatchCount type="Integer" value="1"/>
0175	</RequestHeader>
0176	<BatchItem>
0177	<Operation type="Enumeration" value="Destroy"/>
0178	<RequestPayload>
0179	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0180	</RequestPayload>
0181	</BatchItem>
0182	</RequestMessage>
0183	<ResponseMessage>
0184	<ResponseHeader>
0185	<ProtocolVersion>
0186	<ProtocolVersionMajor type="Integer" value="1"/>
0187	<ProtocolVersionMinor type="Integer" value="2"/>
0188	</ProtocolVersion>
0189	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0190	<BatchCount type="Integer" value="1"/>
0191	</ResponseHeader>
0192	<BatchItem>
0193	<Operation type="Enumeration" value="Destroy"/>
0194	<ResultStatus type="Enumeration" value="Success"/>
0195	<ResponsePayload>
0196	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0197	</ResponsePayload>
0198	</BatchItem>
0199	</ResponseMessage>

100

101 4.1.4 CS-BC-M-4-12 - Encrypt with Known Symmetric Key

102 Register a symmetric key and perform encrypt using the symmetric key.

0001	<i># TIME 0</i>
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="SymmetricKey"/>
0013	<TemplateAttribute>

0014	<Attribute>
0015	<AttributeName type="TextString" value="Cryptographic Usage Mask"/>
0016	<AttributeValue type="Integer" value="Encrypt Decrypt"/>
0017	</Attribute>
0018	<Attribute>
0019	<AttributeName type="TextString" value="x-ID"/>
0020	<AttributeValue type="TextString" value="CS-BC-M-4-12"/>
0021	</Attribute>
0022	<Attribute>
0023	<AttributeName type="TextString" value="Activation Date"/>
0024	<AttributeValue type="DateTime" value="\$NOW-3600"/>
0025	</Attribute>
0026	</TemplateAttribute>
0027	<SymmetricKey>
0028	<KeyBlock>
0029	<KeyFormatType type="Enumeration" value="Raw"/>
0030	<KeyValue>
0031	<KeyMaterial type="ByteString" value="0123456789abcdef0123456789abcdef"/>
0032	</KeyValue>
0033	<CryptographicAlgorithm type="Enumeration" value="AES"/>
0034	<CryptographicLength type="Integer" value="128"/>
0035	</KeyBlock>
0036	</SymmetricKey>
0037	</RequestPayload>
0038	</BatchItem>
0039	</RequestMessage>
0040	<ResponseMessage>
0041	<ResponseHeader>
0042	<ProtocolVersion>
0043	<ProtocolVersionMajor type="Integer" value="1"/>
0044	<ProtocolVersionMinor type="Integer" value="2"/>
0045	</ProtocolVersion>
0046	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0047	<BatchCount type="Integer" value="1"/>
0048	</ResponseHeader>
0049	<BatchItem>
0050	<Operation type="Enumeration" value="Register"/>
0051	<ResultStatus type="Enumeration" value="Success"/>
0052	<ResponsePayload>
0053	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0054	</ResponsePayload>
0055	</BatchItem>
0056	</ResponseMessage>
0057	# TIME 1 <RequestMessage>
0058	<RequestHeader>
0059	<ProtocolVersion>
0060	<ProtocolVersionMajor type="Integer" value="1"/>
0061	<ProtocolVersionMinor type="Integer" value="2"/>
0062	</ProtocolVersion>
0063	<BatchCount type="Integer" value="1"/>
0064	</RequestHeader>
0065	<BatchItem>
0066	<Operation type="Enumeration" value="Encrypt"/>
0067	<RequestPayload>

0068	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0069	<CryptographicParameters>
0070	<BlockCipherMode type="Enumeration" value="ECB"/>
0071	</CryptographicParameters>
0072	<Data type="ByteString" value="01020304050607080910111213141516"/>
0073	</RequestPayload>
0074	</BatchItem>
0075	</RequestMessage>
0076	<ResponseMessage>
0077	<ResponseHeader>
0078	<ProtocolVersion>
0079	<ProtocolVersionMajor type="Integer" value="1"/>
0080	<ProtocolVersionMinor type="Integer" value="2"/>
0081	</ProtocolVersion>
0082	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0083	<BatchCount type="Integer" value="1"/>
0084	</ResponseHeader>
0085	<BatchItem>
0086	<Operation type="Enumeration" value="Encrypt"/>
0087	<ResultStatus type="Enumeration" value="Success"/>
0088	<ResponsePayload>
0089	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0090	<Data type="ByteString" value="d9bccel1b0b437b90239552df3a360c9"/>
0091	</ResponsePayload>
0092	</BatchItem>
0093	</ResponseMessage>
0094	# TIME 2 <RequestMessage>
0095	<RequestHeader>
0096	<ProtocolVersion>
0097	<ProtocolVersionMajor type="Integer" value="1"/>
0098	<ProtocolVersionMinor type="Integer" value="2"/>
0099	</ProtocolVersion>
0100	<BatchCount type="Integer" value="1"/>
0101	</RequestHeader>
0102	<BatchItem>
0103	<Operation type="Enumeration" value="Revoke"/>
0104	<RequestPayload>
0105	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0106	<RevocationReason>
0107	<RevocationReasonCode type="Enumeration" value="Unspecified"/>
0108	</RevocationReason>
0109	</RequestPayload>
0110	</BatchItem>
0111	</RequestMessage>
0112	<ResponseMessage>
0113	<ResponseHeader>
0114	<ProtocolVersion>
0115	<ProtocolVersionMajor type="Integer" value="1"/>
0116	<ProtocolVersionMinor type="Integer" value="2"/>
0117	</ProtocolVersion>
0118	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>

0119	<BatchCount type="Integer" value="1"/>
0120	</ResponseHeader>
0121	<BatchItem>
0122	<Operation type="Enumeration" value="Revoke"/>
0123	<ResultStatus type="Enumeration" value="Success"/>
0124	<ResponsePayload>
0125	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0126	</ResponsePayload>
0127	</BatchItem>
0128	</ResponseMessage>
# TIME 3	
0129	<RequestMessage>
0130	<RequestHeader>
0131	<ProtocolVersion>
0132	<ProtocolVersionMajor type="Integer" value="1"/>
0133	<ProtocolVersionMinor type="Integer" value="2"/>
0134	</ProtocolVersion>
0135	<BatchCount type="Integer" value="1"/>
0136	</RequestHeader>
0137	<BatchItem>
0138	<Operation type="Enumeration" value="Destroy"/>
0139	<RequestPayload>
0140	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0141	</RequestPayload>
0142	</BatchItem>
0143	</RequestMessage>
0144	<ResponseMessage>
0145	<ResponseHeader>
0146	<ProtocolVersion>
0147	<ProtocolVersionMajor type="Integer" value="1"/>
0148	<ProtocolVersionMinor type="Integer" value="2"/>
0149	</ProtocolVersion>
0150	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0151	<BatchCount type="Integer" value="1"/>
0152	</ResponseHeader>
0153	<BatchItem>
0154	<Operation type="Enumeration" value="Destroy"/>
0155	<ResultStatus type="Enumeration" value="Success"/>
0156	<ResponsePayload>
0157	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0158	</ResponsePayload>
0159	</BatchItem>
0160	</ResponseMessage>

103

104 4.1.5 CS-BC-M-5-12 - Decrypt with Known Symmetric Key

105 Register a symmetric key and perform decrypt using the symmetric key. Note: Register followed by
 106 Decrypt is unusual but some applications actually do this relying on Decrypt and Encrypt being able to be
 107 used around the 'wrong' way to get the same result.

108

# 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="SymmetricKey"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Cryptographic Usage Mask"/>
0016	<AttributeValue type="Integer" value="Encrypt Decrypt"/>
0017	</Attribute>
0018	<Attribute>
0019	<AttributeName type="TextString" value="x-ID"/>
0020	<AttributeValue type="TextString" value="CS-BC-M-5-12"/>
0021	</Attribute>
0022	<Attribute>
0023	<AttributeName type="TextString" value="Activation Date"/>
0024	<AttributeValue type="DateTime" value="\$NOW-3600"/>
0025	</Attribute>
0026	</TemplateAttribute>
0027	<SymmetricKey>
0028	<KeyBlock>
0029	<KeyFormatType type="Enumeration" value="Raw"/>
0030	<KeyValue>
0031	<KeyMaterial type="ByteString" value="0123456789abcdef0123456789abcdef"/>
0032	</KeyValue>
0033	<CryptographicAlgorithm type="Enumeration" value="AES"/>
0034	<CryptographicLength type="Integer" value="128"/>
0035	</KeyBlock>
0036	</SymmetricKey>
0037	</RequestPayload>
0038	</BatchItem>
0039	</RequestMessage>
0040	<ResponseMessage>
0041	<ResponseHeader>
0042	<ProtocolVersion>
0043	<ProtocolVersionMajor type="Integer" value="1"/>
0044	<ProtocolVersionMinor type="Integer" value="2"/>
0045	</ProtocolVersion>
0046	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0047	<BatchCount type="Integer" value="1"/>
0048	</ResponseHeader>
0049	<BatchItem>
0050	<Operation type="Enumeration" value="Register"/>
0051	<ResultStatus type="Enumeration" value="Success"/>
0052	<ResponsePayload>
0053	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0054	</ResponsePayload>
0055	</BatchItem>
0056	</ResponseMessage>
	# TIME 1

0057	<RequestMessage>
0058	<RequestHeader>
0059	<ProtocolVersion>
0060	<ProtocolVersionMajor type="Integer" value="1"/>
0061	<ProtocolVersionMinor type="Integer" value="2"/>
0062	</ProtocolVersion>
0063	<BatchCount type="Integer" value="1"/>
0064	</RequestHeader>
0065	<BatchItem>
0066	<Operation type="Enumeration" value="Decrypt"/>
0067	<RequestPayload>
0068	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0069	<CryptographicParameters>
0070	<BlockCipherMode type="Enumeration" value="ECB"/>
0071	</CryptographicParameters>
0072	<Data type="ByteString"
	value="d9bccell1b0b437b90239552df3a360c9"/>
0073	</RequestPayload>
0074	</BatchItem>
0075	</RequestMessage>
0076	<ResponseMessage>
0077	<ResponseHeader>
0078	<ProtocolVersion>
0079	<ProtocolVersionMajor type="Integer" value="1"/>
0080	<ProtocolVersionMinor type="Integer" value="2"/>
0081	</ProtocolVersion>
0082	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0083	<BatchCount type="Integer" value="1"/>
0084	</ResponseHeader>
0085	<BatchItem>
0086	<Operation type="Enumeration" value="Decrypt"/>
0087	<ResultStatus type="Enumeration" value="Success"/>
0088	<ResponsePayload>
0089	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0090	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0091	</ResponsePayload>
0092	</BatchItem>
0093	</ResponseMessage>
	# TIME 2
0094	<RequestMessage>
0095	<RequestHeader>
0096	<ProtocolVersion>
0097	<ProtocolVersionMajor type="Integer" value="1"/>
0098	<ProtocolVersionMinor type="Integer" value="2"/>
0099	</ProtocolVersion>
0100	<BatchCount type="Integer" value="1"/>
0101	</RequestHeader>
0102	<BatchItem>
0103	<Operation type="Enumeration" value="Revoke"/>
0104	<RequestPayload>
0105	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0106	<RevocationReason>
0107	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>

0108	</RevocationReason>
0109	</RequestPayload>
0110	</BatchItem>
0111	</RequestMessage>
0112	<ResponseMessage>
0113	<ResponseHeader>
0114	<ProtocolVersion>
0115	<ProtocolVersionMajor type="Integer" value="1"/>
0116	<ProtocolVersionMinor type="Integer" value="2"/>
0117	</ProtocolVersion>
0118	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0119	<BatchCount type="Integer" value="1"/>
0120	</ResponseHeader>
0121	<BatchItem>
0122	<Operation type="Enumeration" value="Revoke"/>
0123	<ResultStatus type="Enumeration" value="Success"/>
0124	<ResponsePayload>
0125	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0126	</ResponsePayload>
0127	</BatchItem>
0128	</ResponseMessage>
0129	# TIME 3 <RequestMessage>
0130	<RequestHeader>
0131	<ProtocolVersion>
0132	<ProtocolVersionMajor type="Integer" value="1"/>
0133	<ProtocolVersionMinor type="Integer" value="2"/>
0134	</ProtocolVersion>
0135	<BatchCount type="Integer" value="1"/>
0136	</RequestHeader>
0137	<BatchItem>
0138	<Operation type="Enumeration" value="Destroy"/>
0139	<RequestPayload>
0140	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0141	</RequestPayload>
0142	</BatchItem>
0143	</RequestMessage>
0144	<ResponseMessage>
0145	<ResponseHeader>
0146	<ProtocolVersion>
0147	<ProtocolVersionMajor type="Integer" value="1"/>
0148	<ProtocolVersionMinor type="Integer" value="2"/>
0149	</ProtocolVersion>
0150	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0151	<BatchCount type="Integer" value="1"/>
0152	</ResponseHeader>
0153	<BatchItem>
0154	<Operation type="Enumeration" value="Destroy"/>
0155	<ResultStatus type="Enumeration" value="Success"/>
0156	<ResponsePayload>
0157	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0158	</ResponsePayload>
0159	</BatchItem>
0160	</ResponseMessage>

109

110 4.1.6 CS-BC-M-6-12 - Encrypt and Decrypt with Known Symmetric Key

111 Register a symmetric key and perform both encrypt and decrypt operations using the symmetric key.

```

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="Register"/>
0012     <RequestPayload>
0013       <Object type="Enumeration" value="SymmetricKey"/>
0014       <TemplateAttribute>
0015         <Attribute>
0016           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0017           <AttributeValue type="Integer" value="Encrypt Decrypt"/>
0018         </Attribute>
0019         <Attribute>
0020           <AttributeName type="TextString" value="x-ID"/>
0021           <AttributeValue type="TextString" value="CS-BC-M-6-12"/>
0022         </Attribute>
0023         <Attribute>
0024           <AttributeName type="TextString" value="Activation Date"/>
0025           <AttributeValue type="DateTime" value="$NOW-3600"/>
0026         </Attribute>
0027       </TemplateAttribute>
0028       <SymmetricKey>
0029         <KeyBlock>
0030           <KeyFormatType type="Enumeration" value="Raw"/>
0031           <KeyValue>
0032             <KeyMaterial type="ByteString"
value="0123456789abcdef0123456789abcdef"/>
0033           </KeyValue>
0034           <CryptographicAlgorithm type="Enumeration" value="AES"/>
0035           <CryptographicLength type="Integer" value="128"/>
0036         </KeyBlock>
0037       </SymmetricKey>
0038     </RequestPayload>
0039   </BatchItem>
0040 </RequestMessage>
0041 <ResponseMessage>
0042   <ResponseHeader>
0043     <ProtocolVersion>
0044       <ProtocolVersionMajor type="Integer" value="1"/>
0045       <ProtocolVersionMinor type="Integer" value="2"/>
0046     </ProtocolVersion>
0047     <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0048     <BatchCount type="Integer" value="1"/>
0049   </ResponseHeader>
0050   <BatchItem>

```

0050	<Operation type="Enumeration" value="Register"/>
0051	<ResultStatus type="Enumeration" value="Success"/>
0052	<ResponsePayload>
0053	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0054	</ResponsePayload>
0055	</BatchItem>
0056	</ResponseMessage>
	# TIME 1
0057	<RequestMessage>
0058	<RequestHeader>
0059	<ProtocolVersion>
0060	<ProtocolVersionMajor type="Integer" value="1"/>
0061	<ProtocolVersionMinor type="Integer" value="2"/>
0062	</ProtocolVersion>
0063	<BatchCount type="Integer" value="1"/>
0064	</RequestHeader>
0065	<BatchItem>
0066	<Operation type="Enumeration" value="Encrypt"/>
0067	<RequestPayload>
0068	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0069	<CryptographicParameters>
0070	<BlockCipherMode type="Enumeration" value="ECB"/>
0071	</CryptographicParameters>
0072	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0073	</RequestPayload>
0074	</BatchItem>
0075	</RequestMessage>
0076	<ResponseMessage>
0077	<ResponseHeader>
0078	<ProtocolVersion>
0079	<ProtocolVersionMajor type="Integer" value="1"/>
0080	<ProtocolVersionMinor type="Integer" value="2"/>
0081	</ProtocolVersion>
0082	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0083	<BatchCount type="Integer" value="1"/>
0084	</ResponseHeader>
0085	<BatchItem>
0086	<Operation type="Enumeration" value="Encrypt"/>
0087	<ResultStatus type="Enumeration" value="Success"/>
0088	<ResponsePayload>
0089	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0090	<Data type="ByteString"
	value="fd912d102dbb482f6f6e91bd57119095"/>
0091	</ResponsePayload>
0092	</BatchItem>
0093	</ResponseMessage>
	# TIME 2
0094	<RequestMessage>
0095	<RequestHeader>
0096	<ProtocolVersion>
0097	<ProtocolVersionMajor type="Integer" value="1"/>
0098	<ProtocolVersionMinor type="Integer" value="2"/>
0099	</ProtocolVersion>
0100	<BatchCount type="Integer" value="1"/>

0101	</RequestHeader>
0102	<BatchItem>
0103	<Operation type="Enumeration" value="Decrypt"/>
0104	<RequestPayload>
0105	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0106	<CryptographicParameters>
0107	<BlockCipherMode type="Enumeration" value="ECB"/>
0108	</CryptographicParameters>
0109	<Data type="ByteString" value="fd912d102dbb482f6f6e91bd57119095"/>
0110	</RequestPayload>
0111	</BatchItem>
0112	</RequestMessage>
0113	<ResponseMessage>
0114	<ResponseHeader>
0115	<ProtocolVersion>
0116	<ProtocolVersionMajor type="Integer" value="1"/>
0117	<ProtocolVersionMinor type="Integer" value="2"/>
0118	</ProtocolVersion>
0119	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0120	<BatchCount type="Integer" value="1"/>
0121	</ResponseHeader>
0122	<BatchItem>
0123	<Operation type="Enumeration" value="Decrypt"/>
0124	<ResultStatus type="Enumeration" value="Success"/>
0125	<ResponsePayload>
0126	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0127	<Data type="ByteString" value="01020304050607080910111213141516"/>
0128	</ResponsePayload>
0129	</BatchItem>
0130	</ResponseMessage>
	# TIME 3
0131	<RequestMessage>
0132	<RequestHeader>
0133	<ProtocolVersion>
0134	<ProtocolVersionMajor type="Integer" value="1"/>
0135	<ProtocolVersionMinor type="Integer" value="2"/>
0136	</ProtocolVersion>
0137	<BatchCount type="Integer" value="1"/>
0138	</RequestHeader>
0139	<BatchItem>
0140	<Operation type="Enumeration" value="Revoke"/>
0141	<RequestPayload>
0142	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0143	<RevocationReason>
0144	<RevocationReasonCode type="Enumeration" value="Unspecified"/>
0145	</RevocationReason>
0146	</RequestPayload>
0147	</BatchItem>
0148	</RequestMessage>
0149	<ResponseMessage>
0150	<ResponseHeader>
0151	<ProtocolVersion>

0152	<ProtocolVersionMajor type="Integer" value="1"/>
0153	<ProtocolVersionMinor type="Integer" value="2"/>
0154	</ProtocolVersion>
0155	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0156	<BatchCount type="Integer" value="1"/>
0157	</ResponseHeader>
0158	<BatchItem>
0159	<Operation type="Enumeration" value="Revoke"/>
0160	<ResultStatus type="Enumeration" value="Success"/>
0161	<ResponsePayload>
0162	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0163	</ResponsePayload>
0164	</BatchItem>
0165	</ResponseMessage>
	# TIME 4
0166	<RequestMessage>
0167	<RequestHeader>
0168	<ProtocolVersion>
0169	<ProtocolVersionMajor type="Integer" value="1"/>
0170	<ProtocolVersionMinor type="Integer" value="2"/>
0171	</ProtocolVersion>
0172	<BatchCount type="Integer" value="1"/>
0173	</RequestHeader>
0174	<BatchItem>
0175	<Operation type="Enumeration" value="Destroy"/>
0176	<RequestPayload>
0177	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0178	</RequestPayload>
0179	</BatchItem>
0180	</RequestMessage>
0181	<ResponseMessage>
0182	<ResponseHeader>
0183	<ProtocolVersion>
0184	<ProtocolVersionMajor type="Integer" value="1"/>
0185	<ProtocolVersionMinor type="Integer" value="2"/>
0186	</ProtocolVersion>
0187	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0188	<BatchCount type="Integer" value="1"/>
0189	</ResponseHeader>
0190	<BatchItem>
0191	<Operation type="Enumeration" value="Destroy"/>
0192	<ResultStatus type="Enumeration" value="Success"/>
0193	<ResponsePayload>
0194	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0195	</ResponsePayload>
0196	</BatchItem>
0197	</ResponseMessage>

112

113 4.1.7 CS-BC-M-7-12 - Encrypt with Known Symmetric Key with Usage Limits

114 Register a symmetric key and perform encrypt using the symmetric key. Then attempt to perform an
 115 encrypt beyond the usage limits. It must fail. This is otherwise the same as CS-BC-M-4-12.

	# 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="SymmetricKey"/>
0013       <TemplateAttribute>
0014         <Attribute>
0015           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0016           <AttributeValue type="Integer" value="Encrypt Decrypt"/>
0017         </Attribute>
0018         <Attribute>
0019           <AttributeName type="TextString" value="x-ID"/>
0020           <AttributeValue type="TextString" value="CS-BC-M-7-12"/>
0021         </Attribute>
0022         <Attribute>
0023           <AttributeName type="TextString" value="Activation Date"/>
0024           <AttributeValue type="DateTime" value="$NOW-3600"/>
0025         </Attribute>
0026         <Attribute>
0027           <AttributeName type="TextString" value="Usage Limits"/>
0028           <AttributeValue>
0029             <UsageLimitsTotal type="LongInteger" value="16"/>
0030             <UsageLimitsUnit type="Enumeration" value="Byte"/>
0031           </AttributeValue>
0032         </Attribute>
0033       </TemplateAttribute>
0034       <SymmetricKey>
0035         <KeyBlock>
0036           <KeyFormatType type="Enumeration" value="Raw"/>
0037           <KeyValue>
0038             <KeyMaterial type="ByteString"
value="0123456789abcdef0123456789abcdef"/>
0039           </KeyValue>
0040           <CryptographicAlgorithm type="Enumeration" value="AES"/>
0041           <CryptographicLength type="Integer" value="128"/>
0042         </KeyBlock>
0043       </SymmetricKey>
0044     </RequestPayload>
0045   </BatchItem>
0046 </RequestMessage>
0047 <ResponseMessage>
0048   <ResponseHeader>
0049     <ProtocolVersion>
0050       <ProtocolVersionMajor type="Integer" value="1"/>
0051       <ProtocolVersionMinor type="Integer" value="2"/>
0052     </ProtocolVersion>
0053     <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0054     <BatchCount type="Integer" value="1"/>
0055   </ResponseHeader>
0056   <BatchItem>

```

0057	<Operation type="Enumeration" value="Register"/>
0058	<ResultStatus type="Enumeration" value="Success"/>
0059	<ResponsePayload>
0060	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0061	</ResponsePayload>
0062	</BatchItem>
0063	</ResponseMessage>
	# TIME 1
0064	<RequestMessage>
0065	<RequestHeader>
0066	<ProtocolVersion>
0067	<ProtocolVersionMajor type="Integer" value="1"/>
0068	<ProtocolVersionMinor type="Integer" value="2"/>
0069	</ProtocolVersion>
0070	<BatchCount type="Integer" value="1"/>
0071	</RequestHeader>
0072	<BatchItem>
0073	<Operation type="Enumeration" value="Encrypt"/>
0074	<RequestPayload>
0075	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0076	<CryptographicParameters>
0077	<BlockCipherMode type="Enumeration" value="ECB"/>
0078	</CryptographicParameters>
0079	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0080	</RequestPayload>
0081	</BatchItem>
0082	</RequestMessage>
0083	<ResponseMessage>
0084	<ResponseHeader>
0085	<ProtocolVersion>
0086	<ProtocolVersionMajor type="Integer" value="1"/>
0087	<ProtocolVersionMinor type="Integer" value="2"/>
0088	</ProtocolVersion>
0089	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0090	<BatchCount type="Integer" value="1"/>
0091	</ResponseHeader>
0092	<BatchItem>
0093	<Operation type="Enumeration" value="Encrypt"/>
0094	<ResultStatus type="Enumeration" value="Success"/>
0095	<ResponsePayload>
0096	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0097	<Data type="ByteString"
	value="d9bccel1b0b437b90239552df3a360c9"/>
0098	</ResponsePayload>
0099	</BatchItem>
0100	</ResponseMessage>
	# TIME 2
	# Attempt to protect beyond the usage limits. This must fail.
0101	<RequestMessage>
0102	<RequestHeader>
0103	<ProtocolVersion>
0104	<ProtocolVersionMajor type="Integer" value="1"/>
0105	<ProtocolVersionMinor type="Integer" value="2"/>
0106	</ProtocolVersion>

0107	<BatchCount type="Integer" value="1"/>
0108	</RequestHeader>
0109	<BatchItem>
0110	<Operation type="Enumeration" value="Encrypt"/>
0111	<RequestPayload>
0112	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0113	<CryptographicParameters>
0114	<BlockCipherMode type="Enumeration" value="ECB"/>
0115	</CryptographicParameters>
0116	<Data type="ByteString" value="01020304050607080910111213141516"/>
0117	</RequestPayload>
0118	</BatchItem>
0119	</RequestMessage>
0120	<ResponseMessage>
0121	<ResponseHeader>
0122	<ProtocolVersion>
0123	<ProtocolVersionMajor type="Integer" value="1"/>
0124	<ProtocolVersionMinor type="Integer" value="2"/>
0125	</ProtocolVersion>
0126	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0127	<BatchCount type="Integer" value="1"/>
0128	</ResponseHeader>
0129	<BatchItem>
0130	<Operation type="Enumeration" value="Encrypt"/>
0131	<ResultStatus type="Enumeration" value="OperationFailed"/>
0132	<ResultReason type="Enumeration" value="PermissionDenied"/>
0133	<ResultMessage type="TextString" value="DENIED"/>
0134	</BatchItem>
0135	</ResponseMessage>
0136	# TIME 3 <RequestMessage>
0137	<RequestHeader>
0138	<ProtocolVersion>
0139	<ProtocolVersionMajor type="Integer" value="1"/>
0140	<ProtocolVersionMinor type="Integer" value="2"/>
0141	</ProtocolVersion>
0142	<BatchCount type="Integer" value="1"/>
0143	</RequestHeader>
0144	<BatchItem>
0145	<Operation type="Enumeration" value="Revoke"/>
0146	<RequestPayload>
0147	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0148	<RevocationReason>
0149	<RevocationReasonCode type="Enumeration" value="Unspecified"/>
0150	</RevocationReason>
0151	</RequestPayload>
0152	</BatchItem>
0153	</RequestMessage>
0154	<ResponseMessage>
0155	<ResponseHeader>
0156	<ProtocolVersion>
0157	<ProtocolVersionMajor type="Integer" value="1"/>
0158	<ProtocolVersionMinor type="Integer" value="2"/>
0159	</ProtocolVersion>

0160	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0161	<BatchCount type="Integer" value="1"/>
0162	</ResponseHeader>
0163	<BatchItem>
0164	<Operation type="Enumeration" value="Revoke"/>
0165	<ResultStatus type="Enumeration" value="Success"/>
0166	<ResponsePayload>
0167	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0168	</ResponsePayload>
0169	</BatchItem>
0170	</ResponseMessage>
# TIME 4	
0171	<RequestMessage>
0172	<RequestHeader>
0173	<ProtocolVersion>
0174	<ProtocolVersionMajor type="Integer" value="1"/>
0175	<ProtocolVersionMinor type="Integer" value="2"/>
0176	</ProtocolVersion>
0177	<BatchCount type="Integer" value="1"/>
0178	</RequestHeader>
0179	<BatchItem>
0180	<Operation type="Enumeration" value="Destroy"/>
0181	<RequestPayload>
0182	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0183	</RequestPayload>
0184	</BatchItem>
0185	</RequestMessage>
0186	<ResponseMessage>
0187	<ResponseHeader>
0188	<ProtocolVersion>
0189	<ProtocolVersionMajor type="Integer" value="1"/>
0190	<ProtocolVersionMinor type="Integer" value="2"/>
0191	</ProtocolVersion>
0192	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0193	<BatchCount type="Integer" value="1"/>
0194	</ResponseHeader>
0195	<BatchItem>
0196	<Operation type="Enumeration" value="Destroy"/>
0197	<ResultStatus type="Enumeration" value="Success"/>
0198	<ResponsePayload>
0199	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0200	</ResponsePayload>
0201	</BatchItem>
0202	</ResponseMessage>

116

117 4.1.8 CS-BC-M-8-12 - Encrypt and Decrypt with Known Symmetric Key and 118 PKCS5 Padding

119 Register a symmetric key and perform encrypt using the symmetric key followed by decrypt. This is
120 otherwise the same as CS-BC-M-3-12.

	# 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="SymmetricKey"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Cryptographic Usage Mask"/>
0016	<AttributeValue type="Integer" value="Encrypt Decrypt"/>
0017	</Attribute>
0018	<Attribute>
0019	<AttributeName type="TextString" value="x-ID"/>
0020	<AttributeValue type="TextString" value="CS-BC-M-8-12"/>
0021	</Attribute>
0022	<Attribute>
0023	<AttributeName type="TextString" value="Activation Date"/>
0024	<AttributeValue type="DateTime" value="\$NOW-3600"/>
0025	</Attribute>
0026	</TemplateAttribute>
0027	<SymmetricKey>
0028	<KeyBlock>
0029	<KeyFormatType type="Enumeration" value="Raw"/>
0030	<KeyValue>
0031	<KeyMaterial type="ByteString" value="0123456789abcdef0123456789abcdef"/>
0032	</KeyValue>
0033	<CryptographicAlgorithm type="Enumeration" value="AES"/>
0034	<CryptographicLength type="Integer" value="128"/>
0035	</KeyBlock>
0036	</SymmetricKey>
0037	</RequestPayload>
0038	</BatchItem>
0039	</RequestMessage>
0040	<ResponseMessage>
0041	<ResponseHeader>
0042	<ProtocolVersion>
0043	<ProtocolVersionMajor type="Integer" value="1"/>
0044	<ProtocolVersionMinor type="Integer" value="2"/>
0045	</ProtocolVersion>
0046	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0047	<BatchCount type="Integer" value="1"/>
0048	</ResponseHeader>
0049	<BatchItem>
0050	<Operation type="Enumeration" value="Register"/>
0051	<ResultStatus type="Enumeration" value="Success"/>
0052	<ResponsePayload>
0053	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0054	</ResponsePayload>
0055	</BatchItem>
0056	</ResponseMessage>
	# TIME 1

0057	<RequestMessage>
0058	<RequestHeader>
0059	<ProtocolVersion>
0060	<ProtocolVersionMajor type="Integer" value="1"/>
0061	<ProtocolVersionMinor type="Integer" value="2"/>
0062	</ProtocolVersion>
0063	<BatchCount type="Integer" value="1"/>
0064	</RequestHeader>
0065	<BatchItem>
0066	<Operation type="Enumeration" value="Encrypt"/>
0067	<RequestPayload>
0068	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0069	<CryptographicParameters>
0070	<BlockCipherMode type="Enumeration" value="ECB"/>
0071	<PaddingMethod type="Enumeration" value="PKCS5"/>
0072	</CryptographicParameters>
0073	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0074	</RequestPayload>
0075	</BatchItem>
0076	</RequestMessage>
0077	<ResponseMessage>
0078	<ResponseHeader>
0079	<ProtocolVersion>
0080	<ProtocolVersionMajor type="Integer" value="1"/>
0081	<ProtocolVersionMinor type="Integer" value="2"/>
0082	</ProtocolVersion>
0083	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0084	<BatchCount type="Integer" value="1"/>
0085	</ResponseHeader>
0086	<BatchItem>
0087	<Operation type="Enumeration" value="Encrypt"/>
0088	<ResultStatus type="Enumeration" value="Success"/>
0089	<ResponsePayload>
0090	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0091	<Data type="ByteString"
	value="d9bccell1b0b437b90239552df3a360c90efb6bfed93b4d1ea2123ba4db075ff6"/>
0092	</ResponsePayload>
0093	</BatchItem>
0094	</ResponseMessage>
0095	# TIME 2
0095	<RequestMessage>
0096	<RequestHeader>
0097	<ProtocolVersion>
0098	<ProtocolVersionMajor type="Integer" value="1"/>
0099	<ProtocolVersionMinor type="Integer" value="2"/>
0100	</ProtocolVersion>
0101	<BatchCount type="Integer" value="1"/>
0102	</RequestHeader>
0103	<BatchItem>
0104	<Operation type="Enumeration" value="Decrypt"/>
0105	<RequestPayload>
0106	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0107	<CryptographicParameters>

0108	<BlockCipherMode type="Enumeration" value="ECB"/>
0109	<PaddingMethod type="Enumeration" value="PKCS5"/>
0110	</CryptographicParameters>
0111	<Data type="ByteString"
	value="d9bcce11b0b437b90239552df3a360c90efb6bfed93b4d1ea2123ba4db075ff6"/>
0112	</RequestPayload>
0113	</BatchItem>
0114	</RequestMessage>
0115	<ResponseMessage>
0116	<ResponseHeader>
0117	<ProtocolVersion>
0118	<ProtocolVersionMajor type="Integer" value="1"/>
0119	<ProtocolVersionMinor type="Integer" value="2"/>
0120	</ProtocolVersion>
0121	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0122	<BatchCount type="Integer" value="1"/>
0123	</ResponseHeader>
0124	<BatchItem>
0125	<Operation type="Enumeration" value="Decrypt"/>
0126	<ResultStatus type="Enumeration" value="Success"/>
0127	<ResponsePayload>
0128	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0129	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0130	</ResponsePayload>
0131	</BatchItem>
0132	</ResponseMessage>
0133	# TIME 3
0133	<RequestMessage>
0134	<RequestHeader>
0135	<ProtocolVersion>
0136	<ProtocolVersionMajor type="Integer" value="1"/>
0137	<ProtocolVersionMinor type="Integer" value="2"/>
0138	</ProtocolVersion>
0139	<BatchCount type="Integer" value="1"/>
0140	</RequestHeader>
0141	<BatchItem>
0142	<Operation type="Enumeration" value="Revoke"/>
0143	<RequestPayload>
0144	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0145	<RevocationReason>
0146	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
0147	</RevocationReason>
0148	</RequestPayload>
0149	</BatchItem>
0150	</RequestMessage>
0151	<ResponseMessage>
0152	<ResponseHeader>
0153	<ProtocolVersion>
0154	<ProtocolVersionMajor type="Integer" value="1"/>
0155	<ProtocolVersionMinor type="Integer" value="2"/>
0156	</ProtocolVersion>
0157	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0158	<BatchCount type="Integer" value="1"/>

0159	</ResponseHeader>
0160	<BatchItem>
0161	<Operation type="Enumeration" value="Revoke"/>
0162	<ResultStatus type="Enumeration" value="Success"/>
0163	<ResponsePayload>
0164	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0165	</ResponsePayload>
0166	</BatchItem>
0167	</ResponseMessage>
# TIME 4	
0168	<RequestMessage>
0169	<RequestHeader>
0170	<ProtocolVersion>
0171	<ProtocolVersionMajor type="Integer" value="1"/>
0172	<ProtocolVersionMinor type="Integer" value="2"/>
0173	</ProtocolVersion>
0174	<BatchCount type="Integer" value="1"/>
0175	</RequestHeader>
0176	<BatchItem>
0177	<Operation type="Enumeration" value="Destroy"/>
0178	<RequestPayload>
0179	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0180	</RequestPayload>
0181	</BatchItem>
0182	</RequestMessage>
0183	<ResponseMessage>
0184	<ResponseHeader>
0185	<ProtocolVersion>
0186	<ProtocolVersionMajor type="Integer" value="1"/>
0187	<ProtocolVersionMinor type="Integer" value="2"/>
0188	</ProtocolVersion>
0189	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0190	<BatchCount type="Integer" value="1"/>
0191	</ResponseHeader>
0192	<BatchItem>
0193	<Operation type="Enumeration" value="Destroy"/>
0194	<ResultStatus type="Enumeration" value="Success"/>
0195	<ResponsePayload>
0196	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0197	</ResponsePayload>
0198	</BatchItem>
0199	</ResponseMessage>

121

122 4.1.9 CS-BC-M-9-12 - Encrypt and Decrypt with Known Symmetric Key and 123 PKCS5 Padding

124 Register a symmetric key and perform encrypt using the symmetric key followed by decrypt. The input
125 data is non-block size. This is otherwise the same as CS-BC-M-8-12.

# 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="SymmetricKey"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Cryptographic Usage Mask"/>
0016	<AttributeValue type="Integer" value="Encrypt Decrypt"/>
0017	</Attribute>
0018	<Attribute>
0019	<AttributeName type="TextString" value="x-ID"/>
0020	<AttributeValue type="TextString" value="CS-BC-M-9-12"/>
0021	</Attribute>
0022	<Attribute>
0023	<AttributeName type="TextString" value="Activation Date"/>
0024	<AttributeValue type="DateTime" value="\$NOW-3600"/>
0025	</Attribute>
0026	</TemplateAttribute>
0027	<SymmetricKey>
0028	<KeyBlock>
0029	<KeyFormatType type="Enumeration" value="Raw"/>
0030	<KeyValue>
0031	<KeyMaterial type="ByteString" value="0123456789abcdef0123456789abcdef"/>
0032	</KeyValue>
0033	<CryptographicAlgorithm type="Enumeration" value="AES"/>
0034	<CryptographicLength type="Integer" value="128"/>
0035	</KeyBlock>
0036	</SymmetricKey>
0037	</RequestPayload>
0038	</BatchItem>
0039	</RequestMessage>
0040	<ResponseMessage>
0041	<ResponseHeader>
0042	<ProtocolVersion>
0043	<ProtocolVersionMajor type="Integer" value="1"/>
0044	<ProtocolVersionMinor type="Integer" value="2"/>
0045	</ProtocolVersion>
0046	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0047	<BatchCount type="Integer" value="1"/>
0048	</ResponseHeader>
0049	<BatchItem>
0050	<Operation type="Enumeration" value="Register"/>
0051	<ResultStatus type="Enumeration" value="Success"/>
0052	<ResponsePayload>
0053	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0054	</ResponsePayload>
0055	</BatchItem>
0056	</ResponseMessage>
	# TIME 1
0057	<RequestMessage>
0058	<RequestHeader>

0059	<ProtocolVersion>
0060	<ProtocolVersionMajor type="Integer" value="1"/>
0061	<ProtocolVersionMinor type="Integer" value="2"/>
0062	</ProtocolVersion>
0063	<BatchCount type="Integer" value="1"/>
0064	</RequestHeader>
0065	<BatchItem>
0066	<Operation type="Enumeration" value="Encrypt"/>
0067	<RequestPayload>
0068	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0069	<CryptographicParameters>
0070	<BlockCipherMode type="Enumeration" value="ECB"/>
0071	<PaddingMethod type="Enumeration" value="PKCS5"/>
0072	</CryptographicParameters>
0073	<Data type="ByteString"
	value="010203040506070809101112131415160102030405060708091011121314151601"/>
0074	</RequestPayload>
0075	</BatchItem>
0076	</RequestMessage>
0077	<ResponseMessage>
0078	<ResponseHeader>
0079	<ProtocolVersion>
0080	<ProtocolVersionMajor type="Integer" value="1"/>
0081	<ProtocolVersionMinor type="Integer" value="2"/>
0082	</ProtocolVersion>
0083	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0084	<BatchCount type="Integer" value="1"/>
0085	</ResponseHeader>
0086	<BatchItem>
0087	<Operation type="Enumeration" value="Encrypt"/>
0088	<ResultStatus type="Enumeration" value="Success"/>
0089	<ResponsePayload>
0090	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0091	<Data type="ByteString"
	value="d9bccell1b0b437b90239552df3a360c9d9bccell1b0b437b90239552df3a360c9be261a7bd1371bb738fe004d500381d0"/>
0092	</ResponsePayload>
0093	</BatchItem>
0094	</ResponseMessage>
0095	# TIME 2
0096	<RequestMessage>
0097	<RequestHeader>
0098	<ProtocolVersion>
0099	<ProtocolVersionMajor type="Integer" value="1"/>
0100	<ProtocolVersionMinor type="Integer" value="2"/>
0101	</ProtocolVersion>
0102	<BatchCount type="Integer" value="1"/>
0103	</RequestHeader>
0104	<BatchItem>
0105	<Operation type="Enumeration" value="Decrypt"/>
0106	<RequestPayload>
0107	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0108	<CryptographicParameters>
	<BlockCipherMode type="Enumeration" value="ECB"/>

01109	<PaddingMethod type="Enumeration" value="PKCS5"/>
01110	</CryptographicParameters>
01111	<Data type="ByteString"
	value="d9bccell1b0b437b90239552df3a360c9d9bccell1b0b437b90239552df3a360c9be261a7bd1371bb738fe004d500381d0"/>
01112	</RequestPayload>
01113	</BatchItem>
01114	</RequestMessage>
01115	<ResponseMessage>
01116	<ResponseHeader>
01117	<ProtocolVersion>
01118	<ProtocolVersionMajor type="Integer" value="1"/>
01119	<ProtocolVersionMinor type="Integer" value="2"/>
01120	</ProtocolVersion>
01121	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
01122	<BatchCount type="Integer" value="1"/>
01123	</ResponseHeader>
01124	<BatchItem>
01125	<Operation type="Enumeration" value="Decrypt"/>
01126	<ResultStatus type="Enumeration" value="Success"/>
01127	<ResponsePayload>
01128	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
01129	<Data type="ByteString"
	value="010203040506070809101112131415160102030405060708091011121314151601"/>
01130	</ResponsePayload>
01131	</BatchItem>
01132	</ResponseMessage>
01133	# TIME 3
01133	<RequestMessage>
01134	<RequestHeader>
01135	<ProtocolVersion>
01136	<ProtocolVersionMajor type="Integer" value="1"/>
01137	<ProtocolVersionMinor type="Integer" value="2"/>
01138	</ProtocolVersion>
01139	<BatchCount type="Integer" value="1"/>
01140	</RequestHeader>
01141	<BatchItem>
01142	<Operation type="Enumeration" value="Revoke"/>
01143	<RequestPayload>
01144	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
01145	<RevocationReason>
01146	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
01147	</RevocationReason>
01148	</RequestPayload>
01149	</BatchItem>
01150	</RequestMessage>
01151	<ResponseMessage>
01152	<ResponseHeader>
01153	<ProtocolVersion>
01154	<ProtocolVersionMajor type="Integer" value="1"/>
01155	<ProtocolVersionMinor type="Integer" value="2"/>
01156	</ProtocolVersion>
01157	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
01158	<BatchCount type="Integer" value="1"/>

0159	</ResponseHeader>
0160	<BatchItem>
0161	<Operation type="Enumeration" value="Revoke"/>
0162	<ResultStatus type="Enumeration" value="Success"/>
0163	<ResponsePayload>
0164	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0165	</ResponsePayload>
0166	</BatchItem>
0167	</ResponseMessage>
	# TIME 4
0168	<RequestMessage>
0169	<RequestHeader>
0170	<ProtocolVersion>
0171	<ProtocolVersionMajor type="Integer" value="1"/>
0172	<ProtocolVersionMinor type="Integer" value="2"/>
0173	</ProtocolVersion>
0174	<BatchCount type="Integer" value="1"/>
0175	</RequestHeader>
0176	<BatchItem>
0177	<Operation type="Enumeration" value="Destroy"/>
0178	<RequestPayload>
0179	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0180	</RequestPayload>
0181	</BatchItem>
0182	</RequestMessage>
0183	<ResponseMessage>
0184	<ResponseHeader>
0185	<ProtocolVersion>
0186	<ProtocolVersionMajor type="Integer" value="1"/>
0187	<ProtocolVersionMinor type="Integer" value="2"/>
0188	</ProtocolVersion>
0189	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0190	<BatchCount type="Integer" value="1"/>
0191	</ResponseHeader>
0192	<BatchItem>
0193	<Operation type="Enumeration" value="Destroy"/>
0194	<ResultStatus type="Enumeration" value="Success"/>
0195	<ResponsePayload>
0196	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0197	</ResponsePayload>
0198	</BatchItem>
0199	</ResponseMessage>

126

127 4.1.10 CS-BC-M-10-12 - Encrypt and Decrypt with Known Symmetric Key 128 and PKCS5 Padding and CBC

129 Register a symmetric key and perform encrypt using the symmetric key followed by decrypt. The input
130 data is non-block size. This is otherwise the same as CS-BC-M-9-12.

	# 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="SymmetricKey"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Cryptographic Usage Mask"/>
0016	<AttributeValue type="Integer" value="Encrypt Decrypt"/>
0017	</Attribute>
0018	<Attribute>
0019	<AttributeName type="TextString" value="x-ID"/>
0020	<AttributeValue type="TextString" value="CS-BC-M-10-12"/>
0021	</Attribute>
0022	<Attribute>
0023	<AttributeName type="TextString" value="Activation Date"/>
0024	<AttributeValue type="DateTime" value="\$NOW-3600"/>
0025	</Attribute>
0026	</TemplateAttribute>
0027	<SymmetricKey>
0028	<KeyBlock>
0029	<KeyFormatType type="Enumeration" value="Raw"/>
0030	<KeyValue>
0031	<KeyMaterial type="ByteString" value="0123456789abcdef0123456789abcdef"/>
0032	</KeyValue>
0033	<CryptographicAlgorithm type="Enumeration" value="AES"/>
0034	<CryptographicLength type="Integer" value="128"/>
0035	</KeyBlock>
0036	</SymmetricKey>
0037	</RequestPayload>
0038	</BatchItem>
0039	</RequestMessage>
0040	<ResponseMessage>
0041	<ResponseHeader>
0042	<ProtocolVersion>
0043	<ProtocolVersionMajor type="Integer" value="1"/>
0044	<ProtocolVersionMinor type="Integer" value="2"/>
0045	</ProtocolVersion>
0046	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0047	<BatchCount type="Integer" value="1"/>
0048	</ResponseHeader>
0049	<BatchItem>
0050	<Operation type="Enumeration" value="Register"/>
0051	<ResultStatus type="Enumeration" value="Success"/>
0052	<ResponsePayload>
0053	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0054	</ResponsePayload>
0055	</BatchItem>
0056	</ResponseMessage>
	# TIME 1
0057	<RequestMessage>
0058	<RequestHeader>

0059	<ProtocolVersion>
0060	<ProtocolVersionMajor type="Integer" value="1"/>
0061	<ProtocolVersionMinor type="Integer" value="2"/>
0062	</ProtocolVersion>
0063	<BatchCount type="Integer" value="1"/>
0064	</RequestHeader>
0065	<BatchItem>
0066	<Operation type="Enumeration" value="Encrypt"/>
0067	<RequestPayload>
0068	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0069	<CryptographicParameters>
0070	<BlockCipherMode type="Enumeration" value="CBC"/>
0071	<PaddingMethod type="Enumeration" value="PKCS5"/>
0072	</CryptographicParameters>
0073	<Data type="ByteString"
	value="010203040506070809101112131415160102030405060708091011121314151601"/>
0074	<IVCounterNonce type="ByteString"
	value="01020304050607080910111213141516"/>
0075	</RequestPayload>
0076	</BatchItem>
0077	</RequestMessage>
0078	<ResponseMessage>
0079	<ResponseHeader>
0080	<ProtocolVersion>
0081	<ProtocolVersionMajor type="Integer" value="1"/>
0082	<ProtocolVersionMinor type="Integer" value="2"/>
0083	</ProtocolVersion>
0084	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0085	<BatchCount type="Integer" value="1"/>
0086	</ResponseHeader>
0087	<BatchItem>
0088	<Operation type="Enumeration" value="Encrypt"/>
0089	<ResultStatus type="Enumeration" value="Success"/>
0090	<ResponsePayload>
0091	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0092	<Data type="ByteString"
	value="79abc5c23868ad84d388ce61110a62742bda19d694bbcb757dd06617c0d80fb1df2e71864ad9633d7d797e30860df00d"/>
0093	</ResponsePayload>
0094	</BatchItem>
0095	</ResponseMessage>
0096	# TIME 2 <RequestMessage>
0097	<RequestHeader>
0098	<ProtocolVersion>
0099	<ProtocolVersionMajor type="Integer" value="1"/>
0100	<ProtocolVersionMinor type="Integer" value="2"/>
0101	</ProtocolVersion>
0102	<BatchCount type="Integer" value="1"/>
0103	</RequestHeader>
0104	<BatchItem>
0105	<Operation type="Enumeration" value="Decrypt"/>
0106	<RequestPayload>
0107	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>

01108	<CryptographicParameters>
01109	<BlockCipherMode type="Enumeration" value="CBC"/>
01110	<PaddingMethod type="Enumeration" value="PKCS5"/>
01111	</CryptographicParameters>
01112	<Data type="ByteString"
	value="79abc5c23868ad84d388ce61110a62742bda19d694bbcb757dd06617c0d80
	fb1df2e71864ad9633d7d797e30860df00d"/>
01113	<IVCounterNonce type="ByteString"
	value="01020304050607080910111213141516"/>
01114	</RequestPayload>
01115	</BatchItem>
01116	</RequestMessage>
01117	<ResponseMessage>
01118	<ResponseHeader>
01119	<ProtocolVersion>
01120	<ProtocolVersionMajor type="Integer" value="1"/>
01121	<ProtocolVersionMinor type="Integer" value="2"/>
01122	</ProtocolVersion>
01123	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
01124	<BatchCount type="Integer" value="1"/>
01125	</ResponseHeader>
01126	<BatchItem>
01127	<Operation type="Enumeration" value="Decrypt"/>
01128	<ResultStatus type="Enumeration" value="Success"/>
01129	<ResponsePayload>
01130	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
01131	<Data type="ByteString"
	value="0102030405060708091011121314151601020304050607080910111213141
	51601"/>
01132	</ResponsePayload>
01133	</BatchItem>
01134	</ResponseMessage>
01135	# TIME 3
01136	<RequestMessage>
01137	<RequestHeader>
01138	<ProtocolVersion>
01139	<ProtocolVersionMajor type="Integer" value="1"/>
01140	<ProtocolVersionMinor type="Integer" value="2"/>
01141	</ProtocolVersion>
01142	<BatchCount type="Integer" value="1"/>
01143	</RequestHeader>
01144	<BatchItem>
01145	<Operation type="Enumeration" value="Revoke"/>
01146	<RequestPayload>
01147	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
01148	<RevocationReason>
	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
01149	</RevocationReason>
01150	</RequestPayload>
01151	</BatchItem>
01152	</RequestMessage>
01153	<ResponseMessage>
01154	<ResponseHeader>
01155	<ProtocolVersion>
01156	<ProtocolVersionMajor type="Integer" value="1"/>

0157	<ProtocolVersionMinor type="Integer" value="2"/>
0158	</ProtocolVersion>
0159	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0160	<BatchCount type="Integer" value="1"/>
0161	</ResponseHeader>
0162	<BatchItem>
0163	<Operation type="Enumeration" value="Revoke"/>
0164	<ResultStatus type="Enumeration" value="Success"/>
0165	<ResponsePayload>
0166	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0167	</ResponsePayload>
0168	</BatchItem>
0169	</ResponseMessage>
	# TIME 4
0170	<RequestMessage>
0171	<RequestHeader>
0172	<ProtocolVersion>
0173	<ProtocolVersionMajor type="Integer" value="1"/>
0174	<ProtocolVersionMinor type="Integer" value="2"/>
0175	</ProtocolVersion>
0176	<BatchCount type="Integer" value="1"/>
0177	</RequestHeader>
0178	<BatchItem>
0179	<Operation type="Enumeration" value="Destroy"/>
0180	<RequestPayload>
0181	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0182	</RequestPayload>
0183	</BatchItem>
0184	</RequestMessage>
0185	<ResponseMessage>
0186	<ResponseHeader>
0187	<ProtocolVersion>
0188	<ProtocolVersionMajor type="Integer" value="1"/>
0189	<ProtocolVersionMinor type="Integer" value="2"/>
0190	</ProtocolVersion>
0191	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0192	<BatchCount type="Integer" value="1"/>
0193	</ResponseHeader>
0194	<BatchItem>
0195	<Operation type="Enumeration" value="Destroy"/>
0196	<ResultStatus type="Enumeration" value="Success"/>
0197	<ResponsePayload>
0198	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0199	</ResponsePayload>
0200	</BatchItem>
0201	</ResponseMessage>

131

132 **4.1.11 CS-BC-M-11-12 - Encrypt and Decrypt with Known Symmetric Key**
133 **and PKCS5 Padding and CBC and IV**

134 Register a symmetric key and perform encrypt using the symmetric key followed by decrypt. The input
135 data is non-block size. This is otherwise the same as CS-BC-M-10-12.

	# 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="SymmetricKey"/>
0013       <TemplateAttribute>
0014         <Attribute>
0015           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0016           <AttributeValue type="Integer" value="Encrypt Decrypt"/>
0017         </Attribute>
0018         <Attribute>
0019           <AttributeName type="TextString" value="x-ID"/>
0020           <AttributeValue type="TextString" value="CS-BC-M-11-12"/>
0021         </Attribute>
0022         <Attribute>
0023           <AttributeName type="TextString" value="Activation Date"/>
0024           <AttributeValue type="DateTime" value="$NOW-3600"/>
0025         </Attribute>
0026       </TemplateAttribute>
0027       <SymmetricKey>
0028         <KeyBlock>
0029           <KeyFormatType type="Enumeration" value="Raw"/>
0030           <KeyValue>
0031             <KeyMaterial type="ByteString"
value="0123456789abcdef0123456789abcdef"/>
0032           </KeyValue>
0033           <CryptographicAlgorithm type="Enumeration" value="AES"/>
0034           <CryptographicLength type="Integer" value="128"/>
0035         </KeyBlock>
0036       </SymmetricKey>
0037     </RequestPayload>
0038   </BatchItem>
0039 </RequestMessage>
0040 <ResponseMessage>
0041   <ResponseHeader>
0042     <ProtocolVersion>
0043       <ProtocolVersionMajor type="Integer" value="1"/>
0044       <ProtocolVersionMinor type="Integer" value="2"/>
0045     </ProtocolVersion>
0046     <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0047     <BatchCount type="Integer" value="1"/>
0048   </ResponseHeader>
0049   <BatchItem>
0050     <Operation type="Enumeration" value="Register"/>
0051     <ResultStatus type="Enumeration" value="Success"/>
0052     <ResponsePayload>
0053       <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
0054     </ResponsePayload>
0055   </BatchItem>

```

0056	</ResponseMessage>
	# TIME 1
0057	<RequestMessage>
0058	<RequestHeader>
0059	<ProtocolVersion>
0060	<ProtocolVersionMajor type="Integer" value="1"/>
0061	<ProtocolVersionMinor type="Integer" value="2"/>
0062	</ProtocolVersion>
0063	<BatchCount type="Integer" value="1"/>
0064	</RequestHeader>
0065	<BatchItem>
0066	<Operation type="Enumeration" value="Encrypt"/>
0067	<RequestPayload>
0068	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0069	<CryptographicParameters>
0070	<BlockCipherMode type="Enumeration" value="CBC"/>
0071	<PaddingMethod type="Enumeration" value="PKCS5"/>
0072	</CryptographicParameters>
0073	<Data type="ByteString"
	value="010203040506070809101112131415160102030405060708091011121314151601"/>
0074	<IVCounterNonce type="ByteString"
	value="FF020304050607080910111213141516"/>
0075	</RequestPayload>
0076	</BatchItem>
0077	</RequestMessage>
0078	<ResponseMessage>
0079	<ResponseHeader>
0080	<ProtocolVersion>
0081	<ProtocolVersionMajor type="Integer" value="1"/>
0082	<ProtocolVersionMinor type="Integer" value="2"/>
0083	</ProtocolVersion>
0084	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0085	<BatchCount type="Integer" value="1"/>
0086	</ResponseHeader>
0087	<BatchItem>
0088	<Operation type="Enumeration" value="Encrypt"/>
0089	<ResultStatus type="Enumeration" value="Success"/>
0090	<ResponsePayload>
0091	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0092	<Data type="ByteString"
	value="e768203ba72b6e157daaad34b1e791d8e88457dc147942f01bfaff7b28a3c dde2203d4d5a4c7928ba9e9cc78b66a6546"/>
0093	</ResponsePayload>
0094	</BatchItem>
0095	</ResponseMessage>
	# TIME 2
	# Decrypt with the IV being specified as all zeros (which does
	# not match the Encrypt) will result in the first block being
	# incorrect.
0096	<RequestMessage>
0097	<RequestHeader>
0098	<ProtocolVersion>
0099	<ProtocolVersionMajor type="Integer" value="1"/>
0100	<ProtocolVersionMinor type="Integer" value="2"/>
0101	</ProtocolVersion>

0150	</CryptographicParameters>
0151	<Data type="ByteString" value="e768203ba72b6e157daaad34b1e791d8e88457dc147942f01bfaff7b28a3c dde2203d4d5a4c7928ba9e9cc78b66a6546"/>
0152	</RequestPayload>
0153	</BatchItem>
0154	</RequestMessage>
0155	<ResponseMessage>
0156	<ResponseHeader>
0157	<ProtocolVersion>
0158	<ProtocolVersionMajor type="Integer" value="1"/>
0159	<ProtocolVersionMinor type="Integer" value="2"/>
0160	</ProtocolVersion>
0161	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0162	<BatchCount type="Integer" value="1"/>
0163	</ResponseHeader>
0164	<BatchItem>
0165	<Operation type="Enumeration" value="Decrypt"/>
0166	<ResultStatus type="Enumeration" value="OperationFailed"/>
0167	<ResultReason type="Enumeration" value="InvalidMessage"/>
0168	<ResultMessage type="TextString" value="missing-iv"/>
0169	</BatchItem>
0170	</ResponseMessage>
	<i># TIME 4</i>
	<i># Decrypt with the IV being specified</i>
0171	<RequestMessage>
0172	<RequestHeader>
0173	<ProtocolVersion>
0174	<ProtocolVersionMajor type="Integer" value="1"/>
0175	<ProtocolVersionMinor type="Integer" value="2"/>
0176	</ProtocolVersion>
0177	<BatchCount type="Integer" value="1"/>
0178	</RequestHeader>
0179	<BatchItem>
0180	<Operation type="Enumeration" value="Decrypt"/>
0181	<RequestPayload>
0182	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0183	<CryptographicParameters>
0184	<BlockCipherMode type="Enumeration" value="CBC"/>
0185	<PaddingMethod type="Enumeration" value="PKCS5"/>
0186	</CryptographicParameters>
0187	<Data type="ByteString" value="e768203ba72b6e157daaad34b1e791d8e88457dc147942f01bfaff7b28a3c dde2203d4d5a4c7928ba9e9cc78b66a6546"/>
0188	<IVCounterNonce type="ByteString" value="FF020304050607080910111213141516"/>
0189	</RequestPayload>
0190	</BatchItem>
0191	</RequestMessage>
0192	<ResponseMessage>
0193	<ResponseHeader>
0194	<ProtocolVersion>
0195	<ProtocolVersionMajor type="Integer" value="1"/>
0196	<ProtocolVersionMinor type="Integer" value="2"/>
0197	</ProtocolVersion>
0198	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0199	<BatchCount type="Integer" value="1"/>

0200	</ResponseHeader>
0201	<BatchItem>
0202	<Operation type="Enumeration" value="Decrypt"/>
0203	<ResultStatus type="Enumeration" value="Success"/>
0204	<ResponsePayload>
0205	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0206	<Data type="ByteString"
	value="010203040506070809101112131415160102030405060708091011121314151601"/>
0207	</ResponsePayload>
0208	</BatchItem>
0209	</ResponseMessage>
	# TIME 5
0210	<RequestMessage>
0211	<RequestHeader>
0212	<ProtocolVersion>
0213	<ProtocolVersionMajor type="Integer" value="1"/>
0214	<ProtocolVersionMinor type="Integer" value="2"/>
0215	</ProtocolVersion>
0216	<BatchCount type="Integer" value="1"/>
0217	</RequestHeader>
0218	<BatchItem>
0219	<Operation type="Enumeration" value="Revoke"/>
0220	<RequestPayload>
0221	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0222	<RevocationReason>
0223	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
0224	</RevocationReason>
0225	</RequestPayload>
0226	</BatchItem>
0227	</RequestMessage>
0228	<ResponseMessage>
0229	<ResponseHeader>
0230	<ProtocolVersion>
0231	<ProtocolVersionMajor type="Integer" value="1"/>
0232	<ProtocolVersionMinor type="Integer" value="2"/>
0233	</ProtocolVersion>
0234	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0235	<BatchCount type="Integer" value="1"/>
0236	</ResponseHeader>
0237	<BatchItem>
0238	<Operation type="Enumeration" value="Revoke"/>
0239	<ResultStatus type="Enumeration" value="Success"/>
0240	<ResponsePayload>
0241	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0242	</ResponsePayload>
0243	</BatchItem>
0244	</ResponseMessage>
	# TIME 6
0245	<RequestMessage>
0246	<RequestHeader>
0247	<ProtocolVersion>
0248	<ProtocolVersionMajor type="Integer" value="1"/>
0249	<ProtocolVersionMinor type="Integer" value="2"/>

0250	</ProtocolVersion>
0251	<BatchCount type="Integer" value="1"/>
0252	</RequestHeader>
0253	<BatchItem>
0254	<Operation type="Enumeration" value="Destroy"/>
0255	<RequestPayload>
0256	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0257	</RequestPayload>
0258	</BatchItem>
0259	</RequestMessage>
0260	<ResponseMessage>
0261	<ResponseHeader>
0262	<ProtocolVersion>
0263	<ProtocolVersionMajor type="Integer" value="1"/>
0264	<ProtocolVersionMinor type="Integer" value="2"/>
0265	</ProtocolVersion>
0266	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0267	<BatchCount type="Integer" value="1"/>
0268	</ResponseHeader>
0269	<BatchItem>
0270	<Operation type="Enumeration" value="Destroy"/>
0271	<ResultStatus type="Enumeration" value="Success"/>
0272	<ResponsePayload>
0273	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0274	</ResponsePayload>
0275	</BatchItem>
0276	</ResponseMessage>

136

137 **4.1.12 CS-BC-M-12-12 - Encrypt and Decrypt with Known Symmetric Key**
138 **and PKCS5 Padding and CBC and IV**

139 Register a symmetric key and perform encrypt using the symmetric key followed by decrypt. The input
140 data is non-block size. The Cryptographic Parameters are associated attributes of the key rather than
141 parameters to the operation. This is otherwise the same as CS-BC-M-11-12.

	<i># TIME 0</i>
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="SymmetricKey"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Cryptographic Usage Mask"/>
0016	<AttributeValue type="Integer" value="Encrypt Decrypt"/>
0017	</Attribute>
0018	<Attribute>

0019	<AttributeName type="TextString" value="x-ID"/>
0020	<AttributeValue type="TextString" value="CS-BC-M-12-12"/>
0021	</Attribute>
0022	<Attribute>
0023	<AttributeName type="TextString" value="Activation Date"/>
0024	<AttributeValue type="DateTime" value="\$NOW-3600"/>
0025	</Attribute>
0026	<Attribute>
0027	<AttributeName type="TextString" value="Cryptographic Parameters"/>
0028	<AttributeValue>
0029	<BlockCipherMode type="Enumeration" value="CBC"/>
0030	<PaddingMethod type="Enumeration" value="PKCS5"/>
0031	</AttributeValue>
0032	</Attribute>
0033	</TemplateAttribute>
0034	<SymmetricKey>
0035	<KeyBlock>
0036	<KeyFormatType type="Enumeration" value="Raw"/>
0037	<KeyValue>
0038	<KeyMaterial type="ByteString" value="0123456789abcdef0123456789abcdef"/>
0039	</KeyValue>
0040	<CryptographicAlgorithm type="Enumeration" value="AES"/>
0041	<CryptographicLength type="Integer" value="128"/>
0042	</KeyBlock>
0043	</SymmetricKey>
0044	</RequestPayload>
0045	</BatchItem>
0046	</RequestMessage>
0047	<ResponseMessage>
0048	<ResponseHeader>
0049	<ProtocolVersion>
0050	<ProtocolVersionMajor type="Integer" value="1"/>
0051	<ProtocolVersionMinor type="Integer" value="2"/>
0052	</ProtocolVersion>
0053	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0054	<BatchCount type="Integer" value="1"/>
0055	</ResponseHeader>
0056	<BatchItem>
0057	<Operation type="Enumeration" value="Register"/>
0058	<ResultStatus type="Enumeration" value="Success"/>
0059	<ResponsePayload>
0060	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0061	</ResponsePayload>
0062	</BatchItem>
0063	</ResponseMessage>
0064	# TIME 1 <RequestMessage>
0065	<RequestHeader>
0066	<ProtocolVersion>
0067	<ProtocolVersionMajor type="Integer" value="1"/>
0068	<ProtocolVersionMinor type="Integer" value="2"/>
0069	</ProtocolVersion>
0070	<BatchCount type="Integer" value="1"/>
0071	</RequestHeader>
0072	<BatchItem>

0073	<Operation type="Enumeration" value="Encrypt"/>
0074	<RequestPayload>
0075	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0076	<Data type="ByteString"
	value="010203040506070809101112131415160102030405060708091011121314151601"/>
0077	<IVCounterNonce type="ByteString"
	value="FF020304050607080910111213141516"/>
0078	</RequestPayload>
0079	</BatchItem>
0080	</RequestMessage>
0081	<ResponseMessage>
0082	<ResponseHeader>
0083	<ProtocolVersion>
0084	<ProtocolVersionMajor type="Integer" value="1"/>
0085	<ProtocolVersionMinor type="Integer" value="2"/>
0086	</ProtocolVersion>
0087	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0088	<BatchCount type="Integer" value="1"/>
0089	</ResponseHeader>
0090	<BatchItem>
0091	<Operation type="Enumeration" value="Encrypt"/>
0092	<ResultStatus type="Enumeration" value="Success"/>
0093	<ResponsePayload>
0094	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0095	<Data type="ByteString"
	value="e768203ba72b6e157daaad34b1e791d8e88457dc147942f01bfaff7b28a3c dde2203d4d5a4c7928ba9e9cc78b66a6546"/>
0096	</ResponsePayload>
0097	</BatchItem>
0098	</ResponseMessage>
0099	<i># TIME 2</i>
	<i># Decrypt without the IV being specified will result in an error.</i>
0100	<RequestMessage>
0101	<RequestHeader>
0102	<ProtocolVersion>
0103	<ProtocolVersionMajor type="Integer" value="1"/>
0104	<ProtocolVersionMinor type="Integer" value="2"/>
0105	</ProtocolVersion>
0106	<BatchCount type="Integer" value="1"/>
0107	</RequestHeader>
0108	<BatchItem>
0109	<Operation type="Enumeration" value="Decrypt"/>
0110	<RequestPayload>
0111	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0112	<Data type="ByteString"
	value="e768203ba72b6e157daaad34b1e791d8e88457dc147942f01bfaff7b28a3c dde2203d4d5a4c7928ba9e9cc78b66a6546"/>
0113	</RequestPayload>
0114	</BatchItem>
0115	</RequestMessage>
0116	<ResponseMessage>
0117	<ResponseHeader>
0118	<ProtocolVersion>
	<ProtocolVersionMajor type="Integer" value="1"/>

0119	<ProtocolVersionMinor type="Integer" value="2"/>
0120	</ProtocolVersion>
0121	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0122	<BatchCount type="Integer" value="1"/>
0123	</ResponseHeader>
0124	<BatchItem>
0125	<Operation type="Enumeration" value="Decrypt"/>
0126	<ResultStatus type="Enumeration" value="OperationFailed"/>
0127	<ResultReason type="Enumeration" value="InvalidMessage"/>
0128	<ResultMessage type="TextString" value="missing-iv"/>
0129	</BatchItem>
0130	</ResponseMessage>
	<i># TIME 3</i>
	<i># Decrypt with the IV being specified</i>
0131	<RequestMessage>
0132	<RequestHeader>
0133	<ProtocolVersion>
0134	<ProtocolVersionMajor type="Integer" value="1"/>
0135	<ProtocolVersionMinor type="Integer" value="2"/>
0136	</ProtocolVersion>
0137	<BatchCount type="Integer" value="1"/>
0138	</RequestHeader>
0139	<BatchItem>
0140	<Operation type="Enumeration" value="Decrypt"/>
0141	<RequestPayload>
0142	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0143	<Data type="ByteString"
	value="e768203ba72b6e157daaad34b1e791d8e88457dc147942f01bfaff7b28a3c
	dde2203d4d5a4c7928ba9e9cc78b66a6546"/>
0144	<IVCounterNonce type="ByteString"
	value="FF020304050607080910111213141516"/>
0145	</RequestPayload>
0146	</BatchItem>
0147	</RequestMessage>
0148	<ResponseMessage>
0149	<ResponseHeader>
0150	<ProtocolVersion>
0151	<ProtocolVersionMajor type="Integer" value="1"/>
0152	<ProtocolVersionMinor type="Integer" value="2"/>
0153	</ProtocolVersion>
0154	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0155	<BatchCount type="Integer" value="1"/>
0156	</ResponseHeader>
0157	<BatchItem>
0158	<Operation type="Enumeration" value="Decrypt"/>
0159	<ResultStatus type="Enumeration" value="Success"/>
0160	<ResponsePayload>
0161	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0162	<Data type="ByteString"
	value="0102030405060708091011121314151601020304050607080910111213141
	51601"/>
0163	</ResponsePayload>
0164	</BatchItem>
0165	</ResponseMessage>
	<i># TIME 4</i>
0166	<RequestMessage>

0167	<RequestHeader>
0168	<ProtocolVersion>
0169	<ProtocolVersionMajor type="Integer" value="1"/>
0170	<ProtocolVersionMinor type="Integer" value="2"/>
0171	</ProtocolVersion>
0172	<BatchCount type="Integer" value="1"/>
0173	</RequestHeader>
0174	<BatchItem>
0175	<Operation type="Enumeration" value="Revoke"/>
0176	<RequestPayload>
0177	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0178	<RevocationReason>
0179	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
0180	</RevocationReason>
0181	</RequestPayload>
0182	</BatchItem>
0183	</RequestMessage>
0184	<ResponseMessage>
0185	<ResponseHeader>
0186	<ProtocolVersion>
0187	<ProtocolVersionMajor type="Integer" value="1"/>
0188	<ProtocolVersionMinor type="Integer" value="2"/>
0189	</ProtocolVersion>
0190	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0191	<BatchCount type="Integer" value="1"/>
0192	</ResponseHeader>
0193	<BatchItem>
0194	<Operation type="Enumeration" value="Revoke"/>
0195	<ResultStatus type="Enumeration" value="Success"/>
0196	<ResponsePayload>
0197	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0198	</ResponsePayload>
0199	</BatchItem>
0200	</ResponseMessage>
	# TIME 5
0201	<RequestMessage>
0202	<RequestHeader>
0203	<ProtocolVersion>
0204	<ProtocolVersionMajor type="Integer" value="1"/>
0205	<ProtocolVersionMinor type="Integer" value="2"/>
0206	</ProtocolVersion>
0207	<BatchCount type="Integer" value="1"/>
0208	</RequestHeader>
0209	<BatchItem>
0210	<Operation type="Enumeration" value="Destroy"/>
0211	<RequestPayload>
0212	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0213	</RequestPayload>
0214	</BatchItem>
0215	</RequestMessage>
0216	<ResponseMessage>
0217	<ResponseHeader>
0218	<ProtocolVersion>
0219	<ProtocolVersionMajor type="Integer" value="1"/>


```

0220     <ProtocolVersionMinor type="Integer" value="2"/>
0221     </ProtocolVersion>
0222     <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0223     <BatchCount type="Integer" value="1"/>
0224     </ResponseHeader>
0225     <BatchItem>
0226         <Operation type="Enumeration" value="Destroy"/>
0227         <ResultStatus type="Enumeration" value="Success"/>
0228         <ResponsePayload>
0229             <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
0230         </ResponsePayload>
0231     </BatchItem>
0232 </ResponseMessage>

```

142

143 4.1.13 CS-BC-M-13-12 - Encrypt and Decrypt with Known Symmetric Key 144 and PKCS5 Padding and CBC and Random IV

145 Register a symmetric key and perform encrypt using the symmetric key followed by decrypt. The input
146 data is non-block size. The Cryptographic Parameters are associated attributes of the key rather than
147 parameters to the operation. This is otherwise the same as CS-BC-M-12-12.

```

# 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="SymmetricKey"/>
0013       <TemplateAttribute>
0014         <Attribute>
0015           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0016           <AttributeValue type="Integer" value="Encrypt Decrypt"/>
0017         </Attribute>
0018         <Attribute>
0019           <AttributeName type="TextString" value="x-ID"/>
0020           <AttributeValue type="TextString" value="CS-BC-M-13-12"/>
0021         </Attribute>
0022         <Attribute>
0023           <AttributeName type="TextString" value="Activation Date"/>
0024           <AttributeValue type="DateTime" value="$NOW-3600"/>
0025         </Attribute>
0026         <Attribute>
0027           <AttributeName type="TextString" value="Cryptographic
Parameters"/>
0028           <AttributeValue>
0029             <BlockCipherMode type="Enumeration" value="CBC"/>
0030             <PaddingMethod type="Enumeration" value="PKCS5"/>
0031             <RandomIV type="Boolean" value="true"/>
0032           </AttributeValue>

```

0033	</Attribute>
0034	</TemplateAttribute>
0035	<SymmetricKey>
0036	<KeyBlock>
0037	<KeyFormatType type="Enumeration" value="Raw"/>
0038	<KeyValue>
0039	<KeyMaterial type="ByteString" value="0123456789abcdef0123456789abcdef"/>
0040	</KeyValue>
0041	<CryptographicAlgorithm type="Enumeration" value="AES"/>
0042	<CryptographicLength type="Integer" value="128"/>
0043	</KeyBlock>
0044	</SymmetricKey>
0045	</RequestPayload>
0046	</BatchItem>
0047	</RequestMessage>
0048	<ResponseMessage>
0049	<ResponseHeader>
0050	<ProtocolVersion>
0051	<ProtocolVersionMajor type="Integer" value="1"/>
0052	<ProtocolVersionMinor type="Integer" value="2"/>
0053	</ProtocolVersion>
0054	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0055	<BatchCount type="Integer" value="1"/>
0056	</ResponseHeader>
0057	<BatchItem>
0058	<Operation type="Enumeration" value="Register"/>
0059	<ResultStatus type="Enumeration" value="Success"/>
0060	<ResponsePayload>
0061	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0062	</ResponsePayload>
0063	</BatchItem>
0064	</ResponseMessage>
0065	# TIME 1 <RequestMessage>
0066	<RequestHeader>
0067	<ProtocolVersion>
0068	<ProtocolVersionMajor type="Integer" value="1"/>
0069	<ProtocolVersionMinor type="Integer" value="2"/>
0070	</ProtocolVersion>
0071	<BatchCount type="Integer" value="1"/>
0072	</RequestHeader>
0073	<BatchItem>
0074	<Operation type="Enumeration" value="Encrypt"/>
0075	<RequestPayload>
0076	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0077	<Data type="ByteString" value="010203040506070809101112131415160102030405060708091011121314151601"/>
0078	</RequestPayload>
0079	</BatchItem>
0080	</RequestMessage>
0081	<ResponseMessage>
0082	<ResponseHeader>
0083	<ProtocolVersion>
0084	<ProtocolVersionMajor type="Integer" value="1"/>

0085	<ProtocolVersionMinor type="Integer" value="2"/>
0086	</ProtocolVersion>
0087	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0088	<BatchCount type="Integer" value="1"/>
0089	</ResponseHeader>
0090	<BatchItem>
0091	<Operation type="Enumeration" value="Encrypt"/>
0092	<ResultStatus type="Enumeration" value="Success"/>
0093	<ResponsePayload>
0094	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0095	<Data type="ByteString"
	value="e768203ba72b6e157daaad34b1e791d8e88457dc147942f01bfaff7b28a3c
	dde2203d4d5a4c7928ba9e9cc78b66a6546"/>
0096	<IVCounterNonce type="ByteString"
	value="FF020304050607080910111213141516"/>
0097	</ResponsePayload>
0098	</BatchItem>
0099	</ResponseMessage>
	# TIME 2
	# Decrypt without the IV being specified will result in an error.
0100	<RequestMessage>
0101	<RequestHeader>
0102	<ProtocolVersion>
0103	<ProtocolVersionMajor type="Integer" value="1"/>
0104	<ProtocolVersionMinor type="Integer" value="2"/>
0105	</ProtocolVersion>
0106	<BatchCount type="Integer" value="1"/>
0107	</RequestHeader>
0108	<BatchItem>
0109	<Operation type="Enumeration" value="Decrypt"/>
0110	<RequestPayload>
0111	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0112	<Data type="ByteString" value="\$DATA_0"/>
0113	</RequestPayload>
0114	</BatchItem>
0115	</RequestMessage>
0116	<ResponseMessage>
0117	<ResponseHeader>
0118	<ProtocolVersion>
0119	<ProtocolVersionMajor type="Integer" value="1"/>
0120	<ProtocolVersionMinor type="Integer" value="2"/>
0121	</ProtocolVersion>
0122	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0123	<BatchCount type="Integer" value="1"/>
0124	</ResponseHeader>
0125	<BatchItem>
0126	<Operation type="Enumeration" value="Decrypt"/>
0127	<ResultStatus type="Enumeration" value="OperationFailed"/>
0128	<ResultReason type="Enumeration" value="InvalidMessage"/>
0129	<ResultMessage type="TextString" value="missing-iv"/>
0130	</BatchItem>
0131	</ResponseMessage>
	# TIME 3
	# Decrypt with the IV being specified
0132	<RequestMessage>
0133	<RequestHeader>

0134	<ProtocolVersion>
0135	<ProtocolVersionMajor type="Integer" value="1"/>
0136	<ProtocolVersionMinor type="Integer" value="2"/>
0137	</ProtocolVersion>
0138	<BatchCount type="Integer" value="1"/>
0139	</RequestHeader>
0140	<BatchItem>
0141	<Operation type="Enumeration" value="Decrypt"/>
0142	<RequestPayload>
0143	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0144	<Data type="ByteString" value="\$DATA_0"/>
0145	<IVCounterNonce type="ByteString" value="\$IV_COUNTER_NONCE"/>
0146	</RequestPayload>
0147	</BatchItem>
0148	</RequestMessage>
0149	<ResponseMessage>
0150	<ResponseHeader>
0151	<ProtocolVersion>
0152	<ProtocolVersionMajor type="Integer" value="1"/>
0153	<ProtocolVersionMinor type="Integer" value="2"/>
0154	</ProtocolVersion>
0155	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0156	<BatchCount type="Integer" value="1"/>
0157	</ResponseHeader>
0158	<BatchItem>
0159	<Operation type="Enumeration" value="Decrypt"/>
0160	<ResultStatus type="Enumeration" value="Success"/>
0161	<ResponsePayload>
0162	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0163	<Data type="ByteString"
	value="010203040506070809101112131415160102030405060708091011121314151601"/>
0164	</ResponsePayload>
0165	</BatchItem>
0166	</ResponseMessage>
	# TIME 4
0167	<RequestMessage>
0168	<RequestHeader>
0169	<ProtocolVersion>
0170	<ProtocolVersionMajor type="Integer" value="1"/>
0171	<ProtocolVersionMinor type="Integer" value="2"/>
0172	</ProtocolVersion>
0173	<BatchCount type="Integer" value="1"/>
0174	</RequestHeader>
0175	<BatchItem>
0176	<Operation type="Enumeration" value="Revoke"/>
0177	<RequestPayload>
0178	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0179	<RevocationReason>
0180	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
0181	</RevocationReason>
0182	</RequestPayload>
0183	</BatchItem>
0184	</RequestMessage>

0185	<ResponseMessage>
0186	<ResponseHeader>
0187	<ProtocolVersion>
0188	<ProtocolVersionMajor type="Integer" value="1"/>
0189	<ProtocolVersionMinor type="Integer" value="2"/>
0190	</ProtocolVersion>
0191	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0192	<BatchCount type="Integer" value="1"/>
0193	</ResponseHeader>
0194	<BatchItem>
0195	<Operation type="Enumeration" value="Revoke"/>
0196	<ResultStatus type="Enumeration" value="Success"/>
0197	<ResponsePayload>
0198	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0199	</ResponsePayload>
0200	</BatchItem>
0201	</ResponseMessage>
	# TIME 5
0202	<RequestMessage>
0203	<RequestHeader>
0204	<ProtocolVersion>
0205	<ProtocolVersionMajor type="Integer" value="1"/>
0206	<ProtocolVersionMinor type="Integer" value="2"/>
0207	</ProtocolVersion>
0208	<BatchCount type="Integer" value="1"/>
0209	</RequestHeader>
0210	<BatchItem>
0211	<Operation type="Enumeration" value="Destroy"/>
0212	<RequestPayload>
0213	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0214	</RequestPayload>
0215	</BatchItem>
0216	</RequestMessage>
0217	<ResponseMessage>
0218	<ResponseHeader>
0219	<ProtocolVersion>
0220	<ProtocolVersionMajor type="Integer" value="1"/>
0221	<ProtocolVersionMinor type="Integer" value="2"/>
0222	</ProtocolVersion>
0223	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0224	<BatchCount type="Integer" value="1"/>
0225	</ResponseHeader>
0226	<BatchItem>
0227	<Operation type="Enumeration" value="Destroy"/>
0228	<ResultStatus type="Enumeration" value="Success"/>
0229	<ResponsePayload>
0230	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0231	</ResponsePayload>
0232	</BatchItem>
0233	</ResponseMessage>

149 **4.1.14 CS-BC-M-14-12 - Encrypt and Decrypt with Known Symmetric Key**
150 **Date Checks**

151 Register a symmetric key and perform both encrypt and decrypt operations using the symmetric key
152 outside of the valid Process Start Date and Protect Stop Date to confirm the operations fail.

153 The Process Start Date is set to a future date. The Protect Stop Date is set to a past date.

154 This is a modified version of CS-BC-M-6-12.

```
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="Register"/>
0012     <RequestPayload>
0013       <ObjectType type="Enumeration" value="SymmetricKey"/>
0014       <TemplateAttribute>
0015         <Attribute>
0016           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0017           <AttributeValue type="Integer" value="Encrypt Decrypt"/>
0018         </Attribute>
0019         <Attribute>
0020           <AttributeName type="TextString" value="x-ID"/>
0021           <AttributeValue type="TextString" value="CS-BC-M-14-12"/>
0022         </Attribute>
0023         <Attribute>
0024           <AttributeName type="TextString" value="Activation Date"/>
0025           <AttributeValue type="DateTime" value="$NOW-3600"/>
0026         </Attribute>
0027         <Attribute>
0028           <AttributeName type="TextString" value="Process Start
Date"/>
0029           <AttributeValue type="DateTime" value="$NOW+3600"/>
0030         </Attribute>
0031         <Attribute>
0032           <AttributeName type="TextString" value="Protect Stop
Date"/>
0033           <AttributeValue type="DateTime" value="$NOW-3600"/>
0034         </Attribute>
0035       </TemplateAttribute>
0036       <SymmetricKey>
0037         <KeyBlock>
0038           <KeyFormatType type="Enumeration" value="Raw"/>
0039           <KeyValue>
0040             <KeyMaterial type="ByteString"
value="0123456789abcdef0123456789abcdef"/>
0041           </KeyValue>
0042           <CryptographicAlgorithm type="Enumeration" value="AES"/>
0043           <CryptographicLength type="Integer" value="128"/>
0044         </KeyBlock>
0045       </SymmetricKey>
0046     </RequestPayload>
0047   </BatchItem>
0048 </BatchItem>
0049 </RequestMessage>
```

0046	</BatchItem>
0047	</RequestMessage>
0048	<ResponseMessage>
0049	<ResponseHeader>
0050	<ProtocolVersion>
0051	<ProtocolVersionMajor type="Integer" value="1"/>
0052	<ProtocolVersionMinor type="Integer" value="2"/>
0053	</ProtocolVersion>
0054	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0055	<BatchCount type="Integer" value="1"/>
0056	</ResponseHeader>
0057	<BatchItem>
0058	<Operation type="Enumeration" value="Register"/>
0059	<ResultStatus type="Enumeration" value="Success"/>
0060	<ResponsePayload>
0061	<UniqueIdentifier type="TextString"
0062	value="\$UNIQUE_IDENTIFIER_0"/>
0063	</ResponsePayload>
0064	</BatchItem>
0065	</ResponseMessage>
0065	# TIME 1
0066	<RequestMessage>
0067	<RequestHeader>
0068	<ProtocolVersion>
0069	<ProtocolVersionMajor type="Integer" value="1"/>
0070	<ProtocolVersionMinor type="Integer" value="2"/>
0071	</ProtocolVersion>
0072	<BatchCount type="Integer" value="1"/>
0073	</RequestHeader>
0074	<BatchItem>
0075	<Operation type="Enumeration" value="Encrypt"/>
0076	<RequestPayload>
0077	<UniqueIdentifier type="TextString"
0078	value="\$UNIQUE_IDENTIFIER_0"/>
0079	<CryptographicParameters>
0080	<BlockCipherMode type="Enumeration" value="ECB"/>
0081	</CryptographicParameters>
0082	<Data type="ByteString"
0083	value="01020304050607080910111213141516"/>
0084	</RequestPayload>
0085	</BatchItem>
0086	</RequestMessage>
0087	<ResponseMessage>
0088	<ResponseHeader>
0089	<ProtocolVersion>
0090	<ProtocolVersionMajor type="Integer" value="1"/>
0091	<ProtocolVersionMinor type="Integer" value="2"/>
0092	</ProtocolVersion>
0093	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0094	<BatchCount type="Integer" value="1"/>
0095	</ResponseHeader>
0096	<BatchItem>
0097	<Operation type="Enumeration" value="Encrypt"/>
0098	<ResultStatus type="Enumeration" value="OperationFailed"/>
0099	<ResultReason type="Enumeration" value="PermissionDenied"/>
	<ResultMessage type="TextString" value="DENIED"/>
	</BatchItem>
	</ResponseMessage>

0100	# TIME 2
0100	<RequestMessage>
0101	<RequestHeader>
0102	<ProtocolVersion>
0103	<ProtocolVersionMajor type="Integer" value="1"/>
0104	<ProtocolVersionMinor type="Integer" value="2"/>
0105	</ProtocolVersion>
0106	<BatchCount type="Integer" value="1"/>
0107	</RequestHeader>
0108	<BatchItem>
0109	<Operation type="Enumeration" value="Decrypt"/>
0110	<RequestPayload>
0111	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0112	<CryptographicParameters>
0113	<BlockCipherMode type="Enumeration" value="ECB"/>
0114	</CryptographicParameters>
0115	<Data type="ByteString"
	value="fd912d102dbb482f6f6e91bd57119095"/>
0116	</RequestPayload>
0117	</BatchItem>
0118	</RequestMessage>
0119	<ResponseMessage>
0120	<ResponseHeader>
0121	<ProtocolVersion>
0122	<ProtocolVersionMajor type="Integer" value="1"/>
0123	<ProtocolVersionMinor type="Integer" value="2"/>
0124	</ProtocolVersion>
0125	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0126	<BatchCount type="Integer" value="1"/>
0127	</ResponseHeader>
0128	<BatchItem>
0129	<Operation type="Enumeration" value="Decrypt"/>
0130	<ResultStatus type="Enumeration" value="OperationFailed"/>
0131	<ResultReason type="Enumeration" value="PermissionDenied"/>
0132	<ResultMessage type="TextString" value="DENIED"/>
0133	</BatchItem>
0134	</ResponseMessage>
0135	# TIME 3
0135	<RequestMessage>
0136	<RequestHeader>
0137	<ProtocolVersion>
0138	<ProtocolVersionMajor type="Integer" value="1"/>
0139	<ProtocolVersionMinor type="Integer" value="2"/>
0140	</ProtocolVersion>
0141	<BatchCount type="Integer" value="1"/>
0142	</RequestHeader>
0143	<BatchItem>
0144	<Operation type="Enumeration" value="Revoke"/>
0145	<RequestPayload>
0146	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0147	<RevocationReason>
0148	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
0149	</RevocationReason>
0150	</RequestPayload>
0151	</BatchItem>

0152	</RequestMessage>
0153	<ResponseMessage>
0154	<ResponseHeader>
0155	<ProtocolVersion>
0156	<ProtocolVersionMajor type="Integer" value="1"/>
0157	<ProtocolVersionMinor type="Integer" value="2"/>
0158	</ProtocolVersion>
0159	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0160	<BatchCount type="Integer" value="1"/>
0161	</ResponseHeader>
0162	<BatchItem>
0163	<Operation type="Enumeration" value="Revoke"/>
0164	<ResultStatus type="Enumeration" value="Success"/>
0165	<ResponsePayload>
0166	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0167	</ResponsePayload>
0168	</BatchItem>
0169	</ResponseMessage>
	<i># TIME 4</i>
0170	<RequestMessage>
0171	<RequestHeader>
0172	<ProtocolVersion>
0173	<ProtocolVersionMajor type="Integer" value="1"/>
0174	<ProtocolVersionMinor type="Integer" value="2"/>
0175	</ProtocolVersion>
0176	<BatchCount type="Integer" value="1"/>
0177	</RequestHeader>
0178	<BatchItem>
0179	<Operation type="Enumeration" value="Destroy"/>
0180	<RequestPayload>
0181	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0182	</RequestPayload>
0183	</BatchItem>
0184	</RequestMessage>
0185	<ResponseMessage>
0186	<ResponseHeader>
0187	<ProtocolVersion>
0188	<ProtocolVersionMajor type="Integer" value="1"/>
0189	<ProtocolVersionMinor type="Integer" value="2"/>
0190	</ProtocolVersion>
0191	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0192	<BatchCount type="Integer" value="1"/>
0193	</ResponseHeader>
0194	<BatchItem>
0195	<Operation type="Enumeration" value="Destroy"/>
0196	<ResultStatus type="Enumeration" value="Success"/>
0197	<ResponsePayload>
0198	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0199	</ResponsePayload>
0200	</BatchItem>
0201	</ResponseMessage>

156 5 RNG Cryptographic Server Profile

157 The RNG Cryptographic Server profile builds on the KMIP server conformance clauses in [KMIP-PROF]
158 to specify the use of KMIP to respond to RNG operation requests from a KMIP client.

159 5.1 RNG Cryptographic Server

160 A KMIP server conforming to this profile:

- 161 1. SHALL conform to the KMIP Baseline Server profile in [KMIP-PROF] and [KMIP-SPEC]
- 162 2. SHALL support the *Client-to-Server Operation* [KMIP-SPEC]:
 - 163 a. *RNG Retrieve* [KMIP-SPEC]
 - 164 b. *RNG Seed* [KMIP-SPEC]
- 165 3. SHALL support all the mandatory RNG Cryptographic Tests in section 7, returning results in
166 accordance with the test cases.
- 167 4. MAY support any clause within [KMIP-SPEC] provided it does not conflict with any other clause
168 within this section 5.1
- 169 5. MAY support extensions outside the scope of this standard (e.g., vendor extensions,
170 conformance clauses) that do not contradict any KMIP requirements.

171 6 RNG Cryptographic Client Profile

172 The RNG Cryptographic Client profile builds on the KMIP client conformance clauses in [KMIP-PROF] to
173 specify the use of KMIP to request RNG output from a KMIP server.

174 6.1 RNG Cryptographic Client

175 A KMIP client conformant to this profile:

- 176 1. SHALL conform to the KMIP Baseline Client profile in [KMIP-PROF] and [KMIP-SPEC]
- 177 2. SHALL support the *Client-to-Server Operation* [KMIP-SPEC]:
 - 178 a. *RNG Retrieve* [KMIP-SPEC]
 - 179 b. *RNG Seed* [KMIP-SPEC]
- 180 3. SHALL support one or more of the mandatory RNG Cryptographic Tests in section 7, returning
181 results in accordance with the test cases.
- 182 4. MAY support any clause within [KMIP-SPEC] provided it does not conflict with any other clause
183 within this section 6.1
- 184 5. MAY support extensions outside the scope of this standard (e.g., vendor extensions,
185 conformance clauses) that do not contradict any KMIP requirements.

186 7 RNG Cryptographic Tests

187 Mandatory tests are indicated by test identifiers containing "-M-".

188 Optional tests are indicated by test identifiers containing "-O-".

189

190 7.1.1 CS-RNG-M-1-12 - RNG Retrieve

191 Retrieve output from an RNG.

0001	# 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="RNGRetrieve"/>
0011	<RequestPayload>
0012	<DataLength type="Integer" value="32"/>
0013	</RequestPayload>
0014	</BatchItem>
0015	</RequestMessage>
0016	<ResponseMessage>
0017	<ResponseHeader>
0018	<ProtocolVersion>
0019	<ProtocolVersionMajor type="Integer" value="1"/>
0020	<ProtocolVersionMinor type="Integer" value="2"/>
0021	</ProtocolVersion>
0022	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0023	<BatchCount type="Integer" value="1"/>
0024	</ResponseHeader>
0025	<BatchItem>
0026	<Operation type="Enumeration" value="RNGRetrieve"/>
0027	<ResultStatus type="Enumeration" value="Success"/>
0028	<ResponsePayload>
0029	<Data type="ByteString"
	value="9c0bcd79d775998ddc52457bbbcfce2d4a194b039e20a3adacb63fb6561ba
	545"/>
0030	</ResponsePayload>
0031	</BatchItem>
0032	</ResponseMessage>

192

193 7.1.2 CS-RNG-O-1-12 - Seed RNG with Server Accept

194 RNG Seed with server accepting all the provided seeding material

0001	# 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="RNGSeed"/>
0011	<RequestPayload>
0012	<Data type="ByteString"
	value="333c06587706225099a67438f263f8f932f64b860c3a7dbb21bc2bd56685d
	8bc"/>
0013	</RequestPayload>
0014	</BatchItem>
0015	</RequestMessage>
0016	<ResponseMessage>
0017	<ResponseHeader>
0018	<ProtocolVersion>
0019	<ProtocolVersionMajor type="Integer" value="1"/>
0020	<ProtocolVersionMinor type="Integer" value="2"/>
0021	</ProtocolVersion>
0022	<TimeStamp type="DateTime" value="2013-06-21T22:58:37+00:00"/>
0023	<BatchCount type="Integer" value="1"/>
0024	</ResponseHeader>
0025	<BatchItem>
0026	<Operation type="Enumeration" value="RNGSeed"/>
0027	<ResultStatus type="Enumeration" value="Success"/>
0028	<ResponsePayload>
0029	<DataLength type="Integer" value="32"/>
0030	</ResponsePayload>
0031	</BatchItem>
0032	</ResponseMessage>

195

196 7.1.3 CS-RNG-O-2-12 - Seed RNG with Server partial Accept

197 RNG Seed with server accepting the first sixteen bytes of the provided seeding material

	# 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="RNGSeed"/>
0011	<RequestPayload>
0012	<Data type="ByteString"
	value="333c06587706225099a67438f263f8f932f64b860c3a7dbb21bc2bd56685d
	8bc"/>
0013	</RequestPayload>
0014	</BatchItem>
0015	</RequestMessage>
0016	<ResponseMessage>
0017	<ResponseHeader>
0018	<ProtocolVersion>

```

0019     <ProtocolVersionMajor type="Integer" value="1"/>
0020     <ProtocolVersionMinor type="Integer" value="2"/>
0021     </ProtocolVersion>
0022     <TimeStamp type="DateTime" value="2013-06-21T22:59:30+00:00"/>
0023     <BatchCount type="Integer" value="1"/>
0024 </ResponseHeader>
0025 <BatchItem>
0026     <Operation type="Enumeration" value="RNGSeed"/>
0027     <ResultStatus type="Enumeration" value="Success"/>
0028     <ResponsePayload>
0029         <DataLength type="Integer" value="16"/>
0030     </ResponsePayload>
0031 </BatchItem>
0032 </ResponseMessage>

```

198

199 7.1.4 CS-RNG-O-3-12 - Seed RNG with Server Ignore

200 RNG Seed with server ignoring the provided seeding material

```

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="RNGSeed"/>
0012         <RequestPayload>
0013             <Data type="ByteString"
0014 value="333c06587706225099a67438f263f8f932f64b860c3a7dbb21bc2bd56685d
0015 8bc"/>
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="2013-06-21T22:57:22+00:00"/>
0026         <BatchCount type="Integer" value="1"/>
0027     </ResponseHeader>
0028     <BatchItem>
0029         <Operation type="Enumeration" value="RNGSeed"/>
0030         <ResultStatus type="Enumeration" value="Success"/>
0031         <ResponsePayload>
0032             <DataLength type="Integer" value="0"/>
0033         </ResponsePayload>
0034     </BatchItem>
0035 </ResponseMessage>

```

201

202 **7.1.5 CS-RNG-O-4-12 - Seed RNG with Server Deny**

203 RNG Seed with server denying the operation

```
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="RNGSeed"/>
0012     <RequestPayload>
0013       <Data type="ByteString"
0014         value="333c06587706225099a67438f263f8f932f64b860c3a7dbb21bc2bd56685d
0015         8bc"/>
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="2013-06-21T23:01:47+00:00"/>
0026     <BatchCount type="Integer" value="1"/>
0027   </ResponseHeader>
0028   <BatchItem>
0029     <Operation type="Enumeration" value="RNGSeed"/>
0030     <ResultStatus type="Enumeration" value="OperationFailed"/>
0031     <ResultReason type="Enumeration" value="PermissionDenied"/>
0032     <ResultMessage type="TextString" value="DENIED"/>
0033   </BatchItem>
0034 </ResponseMessage>
```

204

205 8 Advanced Cryptographic Server Profile

206 The Advanced Cryptographic Server profile builds on the KMIP server conformance clauses in [KMIP-
207 PROF] to specify the use of KMIP to respond to encryption, decryption, signature, and verification
208 operation requests from a KMIP client.

209 8.1 Advanced Cryptographic Server

210 A KMIP server conforming to this profile:

- 211 1. SHALL conform to the KMIP Baseline Server profile in [KMIP-PROF] and [KMIP-SPEC]
- 212 2. SHALL support the *Client-to-Server Operation* [KMIP-SPEC]:
 - 213 a. *Encrypt* [KMIP-SPEC]
 - 214 b. *Decrypt* [KMIP-SPEC]
 - 215 c. *Sign* [KMIP-SPEC]
 - 216 d. *Signature Verify* [KMIP-SPEC]
 - 217 e. *MAC* [KMIP-SPEC]
 - 218 f. *MAC Verify* [KMIP-SPEC]
 - 219 g. *RNG Retrieve* [KMIP-SPEC]
 - 220 h. *RNG Seed* [KMIP-SPEC]
- 221 3. SHALL support all the mandatory Base Cryptographic Tests in section 4 , returning results in
222 accordance with the test cases.
- 223 4. SHALL support all the mandatory RNG Cryptographic Tests in section 7, returning results in
224 accordance with the test cases.
- 225 5. SHALL support all the mandatory Advanced Cryptographic Tests in section 10, returning results
226 in accordance with the test cases.
- 227 6. MAY support any clause within [KMIP-SPEC] provided it does not conflict with any other clause
228 within this section 8.1
- 229 7. MAY support extensions outside the scope of this standard (e.g., vendor extensions,
230 conformance clauses) that do not contradict any KMIP requirements.

231

232 9 Advanced Cryptographic Client Profile

233 The Advanced Cryptographic Client profile builds on the KMIP client conformance clauses in [KMIP-
234 PROF] to specify the use of KMIP to request encryption, decryption, signature, and verification operations
235 from a KMIP server.

236

237 9.1 Advanced Cryptographic Client

238 A KMIP client conforming to this profile:

239 1. SHALL conform to the KMIP Baseline Client profile in [KMIP-PROF] and [KMIP-SPEC]

240 2. SHALL support the *Client-to-Server Operation* [KMIP-SPEC]:

241 a. *Encrypt* [KMIP-SPEC]

242 b. *Decrypt* [KMIP-SPEC]

243 c. *Sign* [KMIP-SPEC]

244 d. *Signature Verify* [KMIP-SPEC]

245 e. *MAC* [KMIP-SPEC]

246 f. *MAC Verify* [KMIP-SPEC]

247 g. *RNG Retrieve* [KMIP-SPEC]

248 h. *RNG Seed* [KMIP-SPEC]

249 3. SHALL support one or more of the mandatory Base Cryptographic Tests in section 4 , returning
250 results in accordance with the test cases.

251 4. SHALL support one or more of the mandatory RNG Cryptographic Tests in section 7, returning
252 results in accordance with the test cases.

253 5. SHALL support one or more of the mandatory Advanced Cryptographic Tests in section 10 ,
254 returning results in accordance with the test cases.

255 6. MAY support any clause within [KMIP-SPEC] provided it does not conflict with any other clause
256 within this section 9.1

257 7. MAY support extensions outside the scope of this standard (e.g., vendor extensions,
258 conformance clauses) that do not contradict any KMIP requirements.

259

260 10 Advanced Cryptographic Tests

261 Mandatory tests are indicated by test identifiers containing "-M-".

262 Optional tests are indicated by test identifiers containing "-O-".

263

264 10.1.1 CS-AC-M-1-12 - Sign with Known Asymmetric Key

265 Register an asymmetric key and perform sign using the asymmetric 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="Register"/>
0011     <RequestPayload>
0012       <ObjectType type="Enumeration" value="PrivateKey"/>
0013       <TemplateAttribute>
0014         <Attribute>
0015           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0016           <AttributeValue type="Integer" value="Sign"/>
0017         </Attribute>
0018         <Attribute>
0019           <AttributeName type="TextString" value="Cryptographic
Parameters"/>
0020           <AttributeValue>
0021             <PaddingMethod type="Enumeration" value="PSS"/>
0022             <HashingAlgorithm type="Enumeration" value="SHA_256"/>
0023             <CryptographicAlgorithm type="Enumeration" value="RSA"/>
0024           </AttributeValue>
0025         </Attribute>
0026         <Attribute>
0027           <AttributeName type="TextString" value="x-ID"/>
0028           <AttributeValue type="TextString" value="CS-AC-M-1-12-
prikey1"/>
0029         </Attribute>
0030         <Attribute>
0031           <AttributeName type="TextString" value="Activation Date"/>
0032           <AttributeValue type="DateTime" value="$NOW-3600"/>
0033         </Attribute>
0034       </TemplateAttribute>
0035     <PrivateKey>
0036       <KeyBlock>
0037         <KeyFormatType type="Enumeration" value="PKCS_1"/>
0038         <KeyValue>
0039           <KeyMaterial type="ByteString"
value="308204a50201000282010100ab7f161c0042496ccd6c6d4dad9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
```

<pre> 0040 0041 0042 0043 0044 0045 0046 0047 </pre>	<pre> 46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa 2a6f89b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650 89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c 795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f 91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281 5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050 203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a 7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b 2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0 e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e 3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78 965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8 c3cdc2464744a793713dafb9f1dbc799ff96423fec3cba794286bce920f4b5c183f 99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967 4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064 b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acae438459cda74e 59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4 990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766 b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab 7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0 e94ad1ee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa elebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2 7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaeafa922fd75d5b16b1a5 61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bffa85a72 6ald90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171 666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520 a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a 1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941 7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768ff9df8ac15416f489f812 9c32341a8b44f"/> </KeyValue> <CryptographicAlgorithm type="Enumeration" value="RSA"/> <CryptographicLength type="Integer" value="2048"/> </KeyBlock> </PrivateKey> </RequestPayload> </BatchItem> </RequestMessage> </pre>
<pre> 0048 0049 0050 0051 0052 0053 0054 0055 0056 0057 0058 0059 0060 0061 0062 </pre>	<pre> <ResponseMessage> <ResponseHeader> <ProtocolVersion> <ProtocolVersionMajor type="Integer" value="1"/> <ProtocolVersionMinor type="Integer" value="2"/> </ProtocolVersion> <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/> <BatchCount type="Integer" value="1"/> </ResponseHeader> <BatchItem> <Operation type="Enumeration" value="Register"/> <ResultStatus type="Enumeration" value="Success"/> <ResponsePayload> <UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/> </ResponsePayload> </pre>

0063	</BatchItem>
0064	</ResponseMessage>
0065	# TIME 1
0065	<RequestMessage>
0066	<RequestHeader>
0067	<ProtocolVersion>
0068	<ProtocolVersionMajor type="Integer" value="1"/>
0069	<ProtocolVersionMinor type="Integer" value="2"/>
0070	</ProtocolVersion>
0071	<BatchCount type="Integer" value="1"/>
0072	</RequestHeader>
0073	<BatchItem>
0074	<Operation type="Enumeration" value="Sign"/>
0075	<RequestPayload>
0076	<UniqueIdentifier type="TextString"
0077	value="\$UNIQUE_IDENTIFIER_0"/>
0077	<Data type="ByteString"
0078	value="01020304050607080910111213141516"/>
0078	</RequestPayload>
0079	</BatchItem>
0080	</RequestMessage>
0081	<ResponseMessage>
0082	<ResponseHeader>
0083	<ProtocolVersion>
0084	<ProtocolVersionMajor type="Integer" value="1"/>
0085	<ProtocolVersionMinor type="Integer" value="2"/>
0086	</ProtocolVersion>
0087	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0088	<BatchCount type="Integer" value="1"/>
0089	</ResponseHeader>
0090	<BatchItem>
0091	<Operation type="Enumeration" value="Sign"/>
0092	<ResultStatus type="Enumeration" value="Success"/>
0093	<ResponsePayload>
0094	<UniqueIdentifier type="TextString"
0095	value="\$UNIQUE_IDENTIFIER_0"/>
0095	<SignatureData type="ByteString"
0096	value="9d888ed8c169ebc052e21f7392427b0efa78321f64558ac4dba2277f0b22c3a94eb098a608ef2a70931eece25482e5c962a560fe73f83471779a69d85099ff44fe5da16977fe9f92bdd26a153612d57f325c619570577f81eff22ca511c684bc037a579981c899c91da6dlac34c230fa68db59c3f31bc5add7c75328f9974f342f1bb5e928b89619894fb301002ef60a1d093dfc22f87c442c13cb8a6cd83be0ecc5b18647c51fb92238a90fbd3e4aaf37612ab4b76243bda44db4a48a88b0899fa672d06f7b4c1094858e7257c4851447ca29dbbc11a664c0cd8be7ce7b27173fa8042d54d240ade8ee6069459ec08bf510eaf68e2fc1e50561dc686525ba0f"/>
0096	</ResponsePayload>
0097	</BatchItem>
0098	</ResponseMessage>
0099	# TIME 2
0099	<RequestMessage>
0100	<RequestHeader>
0101	<ProtocolVersion>
0102	<ProtocolVersionMajor type="Integer" value="1"/>
0103	<ProtocolVersionMinor type="Integer" value="2"/>
0104	</ProtocolVersion>
0105	<BatchCount type="Integer" value="1"/>
0106	</RequestHeader>
0107	<BatchItem>

0108	<Operation type="Enumeration" value="Revoke"/>
0109	<RequestPayload>
0110	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0111	<RevocationReason>
0112	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
0113	</RevocationReason>
0114	</RequestPayload>
0115	</BatchItem>
0116	</RequestMessage>
0117	<ResponseMessage>
0118	<ResponseHeader>
0119	<ProtocolVersion>
0120	<ProtocolVersionMajor type="Integer" value="1"/>
0121	<ProtocolVersionMinor type="Integer" value="2"/>
0122	</ProtocolVersion>
0123	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0124	<BatchCount type="Integer" value="1"/>
0125	</ResponseHeader>
0126	<BatchItem>
0127	<Operation type="Enumeration" value="Revoke"/>
0128	<ResultStatus type="Enumeration" value="Success"/>
0129	<ResponsePayload>
0130	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0131	</ResponsePayload>
0132	</BatchItem>
0133	</ResponseMessage>
0134	# TIME 3 <RequestMessage>
0135	<RequestHeader>
0136	<ProtocolVersion>
0137	<ProtocolVersionMajor type="Integer" value="1"/>
0138	<ProtocolVersionMinor type="Integer" value="2"/>
0139	</ProtocolVersion>
0140	<BatchCount type="Integer" value="1"/>
0141	</RequestHeader>
0142	<BatchItem>
0143	<Operation type="Enumeration" value="Destroy"/>
0144	<RequestPayload>
0145	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0146	</RequestPayload>
0147	</BatchItem>
0148	</RequestMessage>
0149	<ResponseMessage>
0150	<ResponseHeader>
0151	<ProtocolVersion>
0152	<ProtocolVersionMajor type="Integer" value="1"/>
0153	<ProtocolVersionMinor type="Integer" value="2"/>
0154	</ProtocolVersion>
0155	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0156	<BatchCount type="Integer" value="1"/>
0157	</ResponseHeader>
0158	<BatchItem>
0159	<Operation type="Enumeration" value="Destroy"/>
0160	<ResultStatus type="Enumeration" value="Success"/>

0161	<ResponsePayload>
0162	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0163	</ResponsePayload>
0164	</BatchItem>
0165	</ResponseMessage>

266

267 10.1.2 CS-AC-M-2-12 - Signature Verify with Known Asymmetric Key

268 Register an asymmetric key and perform signature verify using the asymmetric 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="Register"/>
0011     <RequestPayload>
0012       <ObjectType type="Enumeration" value="PublicKey"/>
0013       <TemplateAttribute>
0014         <Attribute>
0015           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0016           <AttributeValue type="Integer" value="Verify"/>
0017         </Attribute>
0018         <Attribute>
0019           <AttributeName type="TextString" value="x-ID"/>
0020           <AttributeValue type="TextString" value="CS-AC-M-2-12-
pubkey1"/>
0021         </Attribute>
0022         <Attribute>
0023           <AttributeName type="TextString" value="Activation Date"/>
0024           <AttributeValue type="DateTime" value="$NOW-3600"/>
0025         </Attribute>
0026         <Attribute>
0027           <AttributeName type="TextString" value="Cryptographic
Parameters"/>
0028           <AttributeValue>
0029             <PaddingMethod type="Enumeration" value="PSS"/>
0030             <HashingAlgorithm type="Enumeration" value="SHA_256"/>
0031             <CryptographicAlgorithm type="Enumeration" value="RSA"/>
0032           </AttributeValue>
0033         </Attribute>
0034       </TemplateAttribute>
0035       <PublicKey>
0036         <KeyBlock>
0037           <KeyFormatType type="Enumeration" value="PKCS_1"/>
0038           <KeyValue>
0039             <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dad9199734353577760
03acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b
8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89

```

0040	b9bee9e60a1d7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612a29a82d73a1ff99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010001"/>
0041	</KeyValue>
0042	<CryptographicAlgorithm type="Enumeration" value="RSA"/>
0043	<CryptographicLength type="Integer" value="2048"/>
0044	</KeyBlock>
0045	</PublicKey>
0046	</RequestPayload>
0047	</BatchItem>
0048	</RequestMessage>
0048	<ResponseMessage>
0049	<ResponseHeader>
0050	<ProtocolVersion>
0051	<ProtocolVersionMajor type="Integer" value="1"/>
0052	<ProtocolVersionMinor type="Integer" value="2"/>
0053	</ProtocolVersion>
0054	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0055	<BatchCount type="Integer" value="1"/>
0056	</ResponseHeader>
0057	<BatchItem>
0058	<Operation type="Enumeration" value="Register"/>
0059	<ResultStatus type="Enumeration" value="Success"/>
0060	<ResponsePayload>
0061	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0062	</ResponsePayload>
0063	</BatchItem>
0064	</ResponseMessage>
0065	# TIME 1
0065	<RequestMessage>
0066	<RequestHeader>
0067	<ProtocolVersion>
0068	<ProtocolVersionMajor type="Integer" value="1"/>
0069	<ProtocolVersionMinor type="Integer" value="2"/>
0070	</ProtocolVersion>
0071	<BatchCount type="Integer" value="1"/>
0072	</RequestHeader>
0073	<BatchItem>
0074	<Operation type="Enumeration" value="SignatureVerify"/>
0075	<RequestPayload>
0076	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0077	<Data type="ByteString" value="01020304050607080910111213141516"/>
0078	<SignatureData type="ByteString" value="2925ebf8c6c9d0585c36a44491dd28f8ffd1098d2275a505a0eba7af452e9496472fd5c4a515d1c0db16c7c59ef76863b571cbf498fb8178ffeb75667e6e51b9b9bbf09d55bba54b42acb947aa5a81dc62751727d7cad4616c0c0bf1dd666f8266f24262c5fa9cbbdc424ef5f5e345e633d111e66eb4afc4001bb02e158b2d5d4573c614655f21a688bee0e9dbde6a58324c08f42ae69697e0c51803f9de6b3df242d2915d9b1a8110ad28143ab7855ef92ede48971b484172de3b0b8957f493a74b3372ee2200f2233607735f90d0b180968ab20d74841fd3dba4fb1f225ea5c6c87f99c2a238db72a536e68be202a092cd032337d451477e568f9a48b638cb"/>
0079	</RequestPayload>

0080	</BatchItem>
0081	</RequestMessage>
0082	<ResponseMessage>
0083	<ResponseHeader>
0084	<ProtocolVersion>
0085	<ProtocolVersionMajor type="Integer" value="1"/>
0086	<ProtocolVersionMinor type="Integer" value="2"/>
0087	</ProtocolVersion>
0088	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0089	<BatchCount type="Integer" value="1"/>
0090	</ResponseHeader>
0091	<BatchItem>
0092	<Operation type="Enumeration" value="SignatureVerify"/>
0093	<ResultStatus type="Enumeration" value="Success"/>
0094	<ResponsePayload>
0095	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0096	<ValidityIndicator type="Enumeration" value="Valid"/>
0097	</ResponsePayload>
0098	</BatchItem>
0099	</ResponseMessage>
	<i># TIME 2</i>
	<i># Check that an invalid data input fails to match the signature</i>
0100	<RequestMessage>
0101	<RequestHeader>
0102	<ProtocolVersion>
0103	<ProtocolVersionMajor type="Integer" value="1"/>
0104	<ProtocolVersionMinor type="Integer" value="2"/>
0105	</ProtocolVersion>
0106	<BatchCount type="Integer" value="1"/>
0107	</RequestHeader>
0108	<BatchItem>
0109	<Operation type="Enumeration" value="SignatureVerify"/>
0110	<RequestPayload>
0111	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0112	<Data type="ByteString"
	value="FF020304050607080910111213141516"/>
0113	<SignatureData type="ByteString"
	value="2925ebf8c6c9d0585c36a44491dd28f8ffd1098d2275a505a0eba7af452e9496472fd5c4a515d1c0db16c7c59ef76863b571cbf498fb8178ffeb75667e6e51b9b9bbf09d55bba54b42acb947aa5a81dc62751727d7cad4616c0c0b1dd666f82266f24262c5fa9cbbdc424ef5f5e345e633d111e66eb4afc4001bb02e158b2d5d4573c614655f21a688bee0e9dbde6a58324c08f42ae69697e0c51803f9de6b3df242d2915d9b1a8110ad28143ab7855ef92ede48971b484172de3b0b8957f493a74b3372ee2200f2233607735f90d0b180968ab20d74841fd3dba4fb1f225ea5c6c87f99c2a238db72a536e68be202a092cd032337d451477e568f9a48b638cb"/>
0114	</RequestPayload>
0115	</BatchItem>
0116	</RequestMessage>
0117	<ResponseMessage>
0118	<ResponseHeader>
0119	<ProtocolVersion>
0120	<ProtocolVersionMajor type="Integer" value="1"/>
0121	<ProtocolVersionMinor type="Integer" value="2"/>
0122	</ProtocolVersion>
0123	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0124	<BatchCount type="Integer" value="1"/>

0125	</ResponseHeader>
0126	<BatchItem>
0127	<Operation type="Enumeration" value="SignatureVerify"/>
0128	<ResultStatus type="Enumeration" value="Success"/>
0129	<ResponsePayload>
0130	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0131	<ValidityIndicator type="Enumeration" value="Invalid"/>
0132	</ResponsePayload>
0133	</BatchItem>
0134	</ResponseMessage>
	<i># TIME 3</i>
	<i># Check that an invalid signature input fails to match the signature</i>
0135	<RequestMessage>
0136	<RequestHeader>
0137	<ProtocolVersion>
0138	<ProtocolVersionMajor type="Integer" value="1"/>
0139	<ProtocolVersionMinor type="Integer" value="2"/>
0140	</ProtocolVersion>
0141	<BatchCount type="Integer" value="1"/>
0142	</RequestHeader>
0143	<BatchItem>
0144	<Operation type="Enumeration" value="SignatureVerify"/>
0145	<RequestPayload>
0146	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0147	<Data type="ByteString" value="01020304050607080910111213141516"/>
0148	<SignatureData type="ByteString" value="FF25ebf8c6c9d0585c36a44491dd28f8ffd1098d2275a505a0eba7af452e9 496472fd5c4a515d1c0db16c7c59ef76863b571cbf498fb8178ffeb75667e6e51b9b 9bbf09d55bba54b42acb947aa5a81dc62751727d7cad4616c0c0bfldd666f8266f24 262c5fa9cbbdc424ef5f5e345e633d111e66eb4afc4001bb02e158b2d5d4573c6146 55f21a688bee0e9dbde6a58324c08f42ae69697e0c51803f9de6b3df242d2915d9b1 a8110ad28143ab7855ef92ede48971b484172de3b0b8957f493a74b3372ee2200f22 33607735f90d0b180968ab20d74841fd3dba4fb1f225ea5c6c87f99c2a238db72a53 6e68be202a092cd032337d451477e568f9a48b638cb"/>
0149	</RequestPayload>
0150	</BatchItem>
0151	</RequestMessage>
0152	<ResponseMessage>
0153	<ResponseHeader>
0154	<ProtocolVersion>
0155	<ProtocolVersionMajor type="Integer" value="1"/>
0156	<ProtocolVersionMinor type="Integer" value="2"/>
0157	</ProtocolVersion>
0158	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0159	<BatchCount type="Integer" value="1"/>
0160	</ResponseHeader>
0161	<BatchItem>
0162	<Operation type="Enumeration" value="SignatureVerify"/>
0163	<ResultStatus type="Enumeration" value="Success"/>
0164	<ResponsePayload>
0165	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0166	<ValidityIndicator type="Enumeration" value="Invalid"/>
0167	</ResponsePayload>
0168	</BatchItem>

0169	</ResponseMessage>
	# TIME 4
0170	<RequestMessage>
0171	<RequestHeader>
0172	<ProtocolVersion>
0173	<ProtocolVersionMajor type="Integer" value="1"/>
0174	<ProtocolVersionMinor type="Integer" value="2"/>
0175	</ProtocolVersion>
0176	<BatchCount type="Integer" value="1"/>
0177	</RequestHeader>
0178	<BatchItem>
0179	<Operation type="Enumeration" value="Revoke"/>
0180	<RequestPayload>
0181	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0182	<RevocationReason>
0183	<RevocationReasonCode type="Enumeration" value="Unspecified"/>
0184	</RevocationReason>
0185	</RequestPayload>
0186	</BatchItem>
0187	</RequestMessage>
0188	<ResponseMessage>
0189	<ResponseHeader>
0190	<ProtocolVersion>
0191	<ProtocolVersionMajor type="Integer" value="1"/>
0192	<ProtocolVersionMinor type="Integer" value="2"/>
0193	</ProtocolVersion>
0194	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0195	<BatchCount type="Integer" value="1"/>
0196	</ResponseHeader>
0197	<BatchItem>
0198	<Operation type="Enumeration" value="Revoke"/>
0199	<ResultStatus type="Enumeration" value="Success"/>
0200	<ResponsePayload>
0201	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0202	</ResponsePayload>
0203	</BatchItem>
0204	</ResponseMessage>
	# TIME 5
0205	<RequestMessage>
0206	<RequestHeader>
0207	<ProtocolVersion>
0208	<ProtocolVersionMajor type="Integer" value="1"/>
0209	<ProtocolVersionMinor type="Integer" value="2"/>
0210	</ProtocolVersion>
0211	<BatchCount type="Integer" value="1"/>
0212	</RequestHeader>
0213	<BatchItem>
0214	<Operation type="Enumeration" value="Destroy"/>
0215	<RequestPayload>
0216	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0217	</RequestPayload>
0218	</BatchItem>
0219	</RequestMessage>
0220	<ResponseMessage>

```

0221 <ResponseHeader>
0222   <ProtocolVersion>
0223     <ProtocolVersionMajor type="Integer" value="1"/>
0224     <ProtocolVersionMinor type="Integer" value="2"/>
0225   </ProtocolVersion>
0226   <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0227   <BatchCount type="Integer" value="1"/>
0228 </ResponseHeader>
0229 <BatchItem>
0230   <Operation type="Enumeration" value="Destroy"/>
0231   <ResultStatus type="Enumeration" value="Success"/>
0232   <ResponsePayload>
0233     <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
0234   </ResponsePayload>
0235 </BatchItem>
0236 </ResponseMessage>

```

269

270 10.1.3 CS-AC-M-3-12 - Sign and Signature Verify with Known Asymmetric 271 Key

272 Register an asymmetric key and perform sign and signature verify using the asymmetric 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="Register"/>
0011     <RequestPayload>
0012       <ObjectType type="Enumeration" value="PrivateKey"/>
0013       <TemplateAttribute>
0014         <Attribute>
0015           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0016           <AttributeValue type="Integer" value="Sign"/>
0017         </Attribute>
0018         <Attribute>
0019           <AttributeName type="TextString" value="x-ID"/>
0020           <AttributeValue type="TextString" value="CS-AC-M-3-12-
prikey1"/>
0021         </Attribute>
0022         <Attribute>
0023           <AttributeName type="TextString" value="Activation Date"/>
0024           <AttributeValue type="DateTime" value="$NOW-3600"/>
0025         </Attribute>
0026         <Attribute>
0027           <AttributeName type="TextString" value="Cryptographic
Parameters"/>
0028           <AttributeValue>
0029             <PaddingMethod type="Enumeration" value="PSS"/>
0030             <HashingAlgorithm type="Enumeration" value="SHA_256"/>

```

0031	<CryptographicAlgorithm type="Enumeration" value="RSA"/>
0032	</AttributeValue>
0033	</Attribute>
0034	</TemplateAttribute>
0035	<PrivateKey>
0036	<KeyBlock>
0037	<KeyFormatType type="Enumeration" value="PKCS_1"/>
0038	<KeyValue>
0039	<KeyMaterial type="ByteString" value="308204a50201000282010100ab7f161c0042496ccd6c6d4dadb9199734353 57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483 46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa 2a6f89b9bee9e60ald7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650 89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c 795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f 91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281 5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050 203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a 7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b 2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0 e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e 3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78 965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8 c3cdc2464744a793713dafb9f1dbc799ff96423fecdc3cba794286bce920f4b5c183f 99ee9028db6212c6277c4c8297fcfbce7f7c24ca4c51fc7182fb8f4019fb1d565967 4c5cbe6d5fa992051341760cd00735729a070a9e54d342beba8ef47ee82d3a01b04c ec4a00d4ddb41e35116fc221e854b43a696c0e6419b1b02818100cd5ea7702789064 b673540cbff09356ad80bc3d592812eba47610b9fac6aecefe22acaef438459cda74e 59653d88c04189d34399bf5b14b920e34ef38a7d09fe69593396e8fe735e6f0a6ae4 990401041d8a406b6fd86a1161e45f95a3eaa5c1012e6662e44f15f335ac971e1766 b2bb9c985109974141b44d37e1e319820a55f02818100b2871237bf9fad38c3316ab 7877a6a868063e542a7186d431e8d27c19ac0414584033942e9ff6e2973bb7b2d8b0 e94adlee82158108fbc8664517a5a467fb963014bd5dcc2b4fb087c23039d11920db e22fd9f16b4d89e23225cd455adbaf32ef43f185864a36d630309d6853f7714b39aa e1ebee3938f87c2707e178c739f9f028181009690bed14b2afaa26d986d592231ee2 7d71d49065bd2ba1f78157e20229881fd9d23227d0f8479eaeafa922fd75d5b16b1a5 61fa6680b040ca0bdce650b23b917a4b1bb7983a74fad70e1c305cbec2bfff1a85a72 6ald90260e4f1084f518234dcd3fe770b9520215bd543bb6a4117718754676a34171 666a79f26e79c149c5aa102818100a0c985a0a0a791a659f99731134c44f37b2e520 a2cea35800ad27241ed360dfde6e8ca614f12047fd08b76ac4d13c056a0699e2f98a 1cac91011294d71208f4abab33ba87aa0517f415baca88d6bac006088fa601d34941 7e1f0c9b23affa4d496618dbc024986ed690bbb7b025768fff9df8ac15416f489f812 9c32341a8b44f"/>
0040	</KeyValue>
0041	<CryptographicAlgorithm type="Enumeration" value="RSA"/>
0042	<CryptographicLength type="Integer" value="2048"/>
0043	</KeyBlock>
0044	</PrivateKey>
0045	</RequestPayload>
0046	</BatchItem>
0047	</RequestMessage>
0048	<ResponseMessage>
0049	<ResponseHeader>
0050	<ProtocolVersion>
0051	<ProtocolVersionMajor type="Integer" value="1"/>
0052	<ProtocolVersionMinor type="Integer" value="2"/>

```

0053     </ProtocolVersion>
0054     <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0055     <BatchCount type="Integer" value="1"/>
0056 </ResponseHeader>
0057 <BatchItem>
0058     <Operation type="Enumeration" value="Register"/>
0059     <ResultStatus type="Enumeration" value="Success"/>
0060     <ResponsePayload>
0061         <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_0"/>
0062     </ResponsePayload>
0063 </BatchItem>
0064 </ResponseMessage>
# TIME 1
0065 <RequestMessage>
0066 <RequestHeader>
0067     <ProtocolVersion>
0068         <ProtocolVersionMajor type="Integer" value="1"/>
0069         <ProtocolVersionMinor type="Integer" value="2"/>
0070     </ProtocolVersion>
0071     <BatchCount type="Integer" value="1"/>
0072 </RequestHeader>
0073 <BatchItem>
0074     <Operation type="Enumeration" value="Register"/>
0075     <RequestPayload>
0076         <ObjectType type="Enumeration" value="PublicKey"/>
0077         <TemplateAttribute>
0078             <Attribute>
0079                 <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0080                 <AttributeValue type="Integer" value="Verify"/>
0081             </Attribute>
0082             <Attribute>
0083                 <AttributeName type="TextString" value="x-ID"/>
0084                 <AttributeValue type="TextString" value="CS-AC-M-3-12-
pubkey1"/>
0085             </Attribute>
0086             <Attribute>
0087                 <AttributeName type="TextString" value="Activation Date"/>
0088                 <AttributeValue type="DateTime" value="$NOW-3600"/>
0089             </Attribute>
0090             <Attribute>
0091                 <AttributeValue>
0092                     <PaddingMethod type="Enumeration" value="PSS"/>
0093                     <HashingAlgorithm type="Enumeration" value="SHA_256"/>
0094                     <CryptographicAlgorithm type="Enumeration" value="RSA"/>
0095                 </AttributeValue>
0096             </Attribute>
0097         </TemplateAttribute>
0098         <PublicKey>
0099             <KeyBlock>
0100                 <KeyFormatType type="Enumeration" value="PKCS_1"/>
0101                 <KeyValue>
0102                 <KeyMaterial type="ByteString"
value="3082010a0282010100ab7f161c0042496ccd6c6d4dadb9199734353577760
03acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d74648346d75b
8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa2a6f89
b9bee9e60ald7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b65089f981

```

0103	35b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c795328 abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f91f013 da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c2815c3612 a29a82d73alf99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050203010 001"/>
0104	</KeyValue>
0105	<CryptographicAlgorithm type="Enumeration" value="RSA"/>
0106	<CryptographicLength type="Integer" value="2048"/>
0107	</KeyBlock>
0108	</PublicKey>
0109	</RequestPayload>
0110	</BatchItem>
0111	</RequestMessage>
0112	<ResponseMessage>
0113	<ResponseHeader>
0114	<ProtocolVersion>
0115	<ProtocolVersionMajor type="Integer" value="1"/>
0116	<ProtocolVersionMinor type="Integer" value="2"/>
0117	</ProtocolVersion>
0118	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0119	<BatchCount type="Integer" value="1"/>
0120	</ResponseHeader>
0121	<BatchItem>
0122	<Operation type="Enumeration" value="Register"/>
0123	<ResultStatus type="Enumeration" value="Success"/>
0124	<ResponsePayload>
0125	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_1"/>
0126	</ResponsePayload>
0127	</BatchItem>
0128	</ResponseMessage>
0129	# TIME 2
0130	<RequestMessage>
0131	<RequestHeader>
0132	<ProtocolVersion>
0133	<ProtocolVersionMajor type="Integer" value="1"/>
0134	<ProtocolVersionMinor type="Integer" value="2"/>
0135	</ProtocolVersion>
0136	<BatchCount type="Integer" value="1"/>
0137	</RequestHeader>
0138	<BatchItem>
0139	<Operation type="Enumeration" value="Sign"/>
0140	<RequestPayload>
0141	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0142	<Data type="ByteString" value="01020304050607080910111213141516"/>
0143	</RequestPayload>
0144	</BatchItem>
0145	</RequestMessage>
0146	<ResponseMessage>
0147	<ResponseHeader>
0148	<ProtocolVersion>
0149	<ProtocolVersionMajor type="Integer" value="1"/>
0150	<ProtocolVersionMinor type="Integer" value="2"/>
0151	</ProtocolVersion>
	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
	<BatchCount type="Integer" value="1"/>

0152	</ResponseHeader>
0153	<BatchItem>
0154	<Operation type="Enumeration" value="Sign"/>
0155	<ResultStatus type="Enumeration" value="Success"/>
0156	<ResponsePayload>
0157	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0158	<SignatureData type="ByteString" value="\$SIGNATURE_DATA"/>
0159	</ResponsePayload>
0160	</BatchItem>
0161	</ResponseMessage>
	# TIME 3
0162	<RequestMessage>
0163	<RequestHeader>
0164	<ProtocolVersion>
0165	<ProtocolVersionMajor type="Integer" value="1"/>
0166	<ProtocolVersionMinor type="Integer" value="2"/>
0167	</ProtocolVersion>
0168	<BatchCount type="Integer" value="1"/>
0169	</RequestHeader>
0170	<BatchItem>
0171	<Operation type="Enumeration" value="SignatureVerify"/>
0172	<RequestPayload>
0173	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_1"/>
0174	<CryptographicParameters>
0175	<PaddingMethod type="Enumeration" value="PSS"/>
0176	<HashingAlgorithm type="Enumeration" value="SHA_256"/>
0177	<CryptographicAlgorithm type="Enumeration" value="RSA"/>
0178	</CryptographicParameters>
0179	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0180	<SignatureData type="ByteString" value="\$SIGNATURE_DATA"/>
0181	</RequestPayload>
0182	</BatchItem>
0183	</RequestMessage>
0184	<ResponseMessage>
0185	<ResponseHeader>
0186	<ProtocolVersion>
0187	<ProtocolVersionMajor type="Integer" value="1"/>
0188	<ProtocolVersionMinor type="Integer" value="2"/>
0189	</ProtocolVersion>
0190	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0191	<BatchCount type="Integer" value="1"/>
0192	</ResponseHeader>
0193	<BatchItem>
0194	<Operation type="Enumeration" value="SignatureVerify"/>
0195	<ResultStatus type="Enumeration" value="Success"/>
0196	<ResponsePayload>
0197	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_1"/>
0198	<ValidityIndicator type="Enumeration" value="Valid"/>
0199	</ResponsePayload>
0200	</BatchItem>
0201	</ResponseMessage>
	# TIME 4
	# Check that changing the hashing algorithm causes the signature
	verify

0202	# to fail
0202	<RequestMessage>
0203	<RequestHeader>
0204	<ProtocolVersion>
0205	<ProtocolVersionMajor type="Integer" value="1"/>
0206	<ProtocolVersionMinor type="Integer" value="2"/>
0207	</ProtocolVersion>
0208	<BatchCount type="Integer" value="1"/>
0209	</RequestHeader>
0210	<BatchItem>
0211	<Operation type="Enumeration" value="SignatureVerify"/>
0212	<RequestPayload>
0213	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_1"/>
0214	<CryptographicParameters>
0215	<PaddingMethod type="Enumeration" value="PSS"/>
0216	<HashingAlgorithm type="Enumeration" value="SHA_1"/>
0217	<CryptographicAlgorithm type="Enumeration" value="RSA"/>
0218	</CryptographicParameters>
0219	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0220	<SignatureData type="ByteString" value="\$SIGNATURE_DATA"/>
0221	</RequestPayload>
0222	</BatchItem>
0223	</RequestMessage>
0224	<ResponseMessage>
0225	<ResponseHeader>
0226	<ProtocolVersion>
0227	<ProtocolVersionMajor type="Integer" value="1"/>
0228	<ProtocolVersionMinor type="Integer" value="2"/>
0229	</ProtocolVersion>
0230	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0231	<BatchCount type="Integer" value="1"/>
0232	</ResponseHeader>
0233	<BatchItem>
0234	<Operation type="Enumeration" value="SignatureVerify"/>
0235	<ResultStatus type="Enumeration" value="Success"/>
0236	<ResponsePayload>
0237	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_1"/>
0238	<ValidityIndicator type="Enumeration" value="Invalid"/>
0239	</ResponsePayload>
0240	</BatchItem>
0241	</ResponseMessage>
0242	# TIME 5
0242	<RequestMessage>
0243	<RequestHeader>
0244	<ProtocolVersion>
0245	<ProtocolVersionMajor type="Integer" value="1"/>
0246	<ProtocolVersionMinor type="Integer" value="2"/>
0247	</ProtocolVersion>
0248	<BatchCount type="Integer" value="1"/>
0249	</RequestHeader>
0250	<BatchItem>
0251	<Operation type="Enumeration" value="Revoke"/>
0252	<RequestPayload>
0253	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>

0254	<RevocationReason>
0255	<RevocationReasonCode type="Enumeration" value="Unspecified"/>
0256	</RevocationReason>
0257	</RequestPayload>
0258	</BatchItem>
0259	</RequestMessage>
0260	<ResponseMessage>
0261	<ResponseHeader>
0262	<ProtocolVersion>
0263	<ProtocolVersionMajor type="Integer" value="1"/>
0264	<ProtocolVersionMinor type="Integer" value="2"/>
0265	</ProtocolVersion>
0266	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0267	<BatchCount type="Integer" value="1"/>
0268	</ResponseHeader>
0269	<BatchItem>
0270	<Operation type="Enumeration" value="Revoke"/>
0271	<ResultStatus type="Enumeration" value="Success"/>
0272	<ResponsePayload>
0273	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0274	</ResponsePayload>
0275	</BatchItem>
0276	</ResponseMessage>
0277	# TIME 6 <RequestMessage>
0278	<RequestHeader>
0279	<ProtocolVersion>
0280	<ProtocolVersionMajor type="Integer" value="1"/>
0281	<ProtocolVersionMinor type="Integer" value="2"/>
0282	</ProtocolVersion>
0283	<BatchCount type="Integer" value="1"/>
0284	</RequestHeader>
0285	<BatchItem>
0286	<Operation type="Enumeration" value="Destroy"/>
0287	<RequestPayload>
0288	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0289	</RequestPayload>
0290	</BatchItem>
0291	</RequestMessage>
0292	<ResponseMessage>
0293	<ResponseHeader>
0294	<ProtocolVersion>
0295	<ProtocolVersionMajor type="Integer" value="1"/>
0296	<ProtocolVersionMinor type="Integer" value="2"/>
0297	</ProtocolVersion>
0298	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0299	<BatchCount type="Integer" value="1"/>
0300	</ResponseHeader>
0301	<BatchItem>
0302	<Operation type="Enumeration" value="Destroy"/>
0303	<ResultStatus type="Enumeration" value="Success"/>
0304	<ResponsePayload>
0305	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0306	</ResponsePayload>

0307	</BatchItem>
0308	</ResponseMessage>
0309	# TIME 7
0310	<RequestMessage>
0311	<RequestHeader>
0312	<ProtocolVersion>
0313	<ProtocolVersionMajor type="Integer" value="1"/>
0314	<ProtocolVersionMinor type="Integer" value="2"/>
0315	</ProtocolVersion>
0316	<BatchCount type="Integer" value="1"/>
0317	</RequestHeader>
0318	<BatchItem>
0319	<Operation type="Enumeration" value="Revoke"/>
0320	<RequestPayload>
0321	<UniqueIdentifier type="TextString"
0322	value="\$UNIQUE_IDENTIFIER_1"/>
0323	<RevocationReason>
0324	<RevocationReasonCode type="Enumeration"
0325	value="Unspecified"/>
0326	</RevocationReason>
0327	</RequestPayload>
0328	</BatchItem>
0329	</RequestMessage>
0330	<ResponseMessage>
0331	<ResponseHeader>
0332	<ProtocolVersion>
0333	<ProtocolVersionMajor type="Integer" value="1"/>
0334	<ProtocolVersionMinor type="Integer" value="2"/>
0335	</ProtocolVersion>
0336	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0337	<BatchCount type="Integer" value="1"/>
0338	</ResponseHeader>
0339	<BatchItem>
0340	<Operation type="Enumeration" value="Revoke"/>
0341	<ResultStatus type="Enumeration" value="Success"/>
0342	<ResponsePayload>
0343	<UniqueIdentifier type="TextString"
0344	value="\$UNIQUE_IDENTIFIER_1"/>
0345	</ResponsePayload>
0346	</BatchItem>
0347	</ResponseMessage>
0348	# TIME 8
0349	<RequestMessage>
0350	<RequestHeader>
0351	<ProtocolVersion>
0352	<ProtocolVersionMajor type="Integer" value="1"/>
0353	<ProtocolVersionMinor type="Integer" value="2"/>
0354	</ProtocolVersion>
0355	<BatchCount type="Integer" value="1"/>
0356	</RequestHeader>
0357	<BatchItem>
0358	<Operation type="Enumeration" value="Destroy"/>
0359	<RequestPayload>
0360	<UniqueIdentifier type="TextString"
0361	value="\$UNIQUE_IDENTIFIER_1"/>
0362	</RequestPayload>
0363	</BatchItem>
0364	</RequestMessage>

```

0359 <ResponseMessage>
0360   <ResponseHeader>
0361     <ProtocolVersion>
0362       <ProtocolVersionMajor type="Integer" value="1"/>
0363       <ProtocolVersionMinor type="Integer" value="2"/>
0364     </ProtocolVersion>
0365     <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0366     <BatchCount type="Integer" value="1"/>
0367   </ResponseHeader>
0368   <BatchItem>
0369     <Operation type="Enumeration" value="Destroy"/>
0370     <ResultStatus type="Enumeration" value="Success"/>
0371     <ResponsePayload>
0372       <UniqueIdentifier type="TextString"
value="$UNIQUE_IDENTIFIER_1"/>
0373     </ResponsePayload>
0374   </BatchItem>
0375 </ResponseMessage>

```

273

274 10.1.4 CS-AC-M-4-12 - MAC with Known Key

275 Register a key and perform MAC operations using the 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="Register"/>
0011     <RequestPayload>
0012       <ObjectType type="Enumeration" value="SymmetricKey"/>
0013       <TemplateAttribute>
0014         <Attribute>
0015           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0016           <AttributeValue type="Integer" value="Encrypt Decrypt
MACGenerate MACVerify"/>
0017         </Attribute>
0018         <Attribute>
0019           <AttributeName type="TextString" value="x-ID"/>
0020           <AttributeValue type="TextString" value="CS-AC-M-4-12"/>
0021         </Attribute>
0022         <Attribute>
0023           <AttributeName type="TextString" value="Activation Date"/>
0024           <AttributeValue type="DateTime" value="$NOW-3600"/>
0025         </Attribute>
0026         <Attribute>
0027           <AttributeName type="TextString" value="Cryptographic
Parameters"/>
0028           <AttributeValue>
0029             <CryptographicAlgorithm type="Enumeration"
value="HMAC_SHA256"/>

```

0030	</AttributeValue>
0031	</Attribute>
0032	</TemplateAttribute>
0033	<SymmetricKey>
0034	<KeyBlock>
0035	<KeyFormatType type="Enumeration" value="Raw"/>
0036	<KeyValue>
0037	<KeyMaterial type="ByteString"
	value="0123456789abcdef0123456789abcdef"/>
0038	</KeyValue>
0039	<CryptographicAlgorithm type="Enumeration" value="AES"/>
0040	<CryptographicLength type="Integer" value="128"/>
0041	</KeyBlock>
0042	</SymmetricKey>
0043	</RequestPayload>
0044	</BatchItem>
0045	</RequestMessage>
0046	<ResponseMessage>
0047	<ResponseHeader>
0048	<ProtocolVersion>
0049	<ProtocolVersionMajor type="Integer" value="1"/>
0050	<ProtocolVersionMinor type="Integer" value="2"/>
0051	</ProtocolVersion>
0052	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0053	<BatchCount type="Integer" value="1"/>
0054	</ResponseHeader>
0055	<BatchItem>
0056	<Operation type="Enumeration" value="Register"/>
0057	<ResultStatus type="Enumeration" value="Success"/>
0058	<ResponsePayload>
0059	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0060	</ResponsePayload>
0061	</BatchItem>
0062	</ResponseMessage>
0063	# TIME 1
0064	<RequestMessage>
0065	<RequestHeader>
0066	<ProtocolVersion>
0067	<ProtocolVersionMajor type="Integer" value="1"/>
0068	<ProtocolVersionMinor type="Integer" value="2"/>
0069	</ProtocolVersion>
0070	<BatchCount type="Integer" value="1"/>
0071	</RequestHeader>
0072	<BatchItem>
0073	<Operation type="Enumeration" value="MAC"/>
0074	<RequestPayload>
0075	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0076	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0077	</RequestPayload>
0078	</BatchItem>
0079	</RequestMessage>
0080	<ResponseMessage>
0081	<ResponseHeader>
0082	<ProtocolVersion>
	<ProtocolVersionMajor type="Integer" value="1"/>

0083	<ProtocolVersionMinor type="Integer" value="2"/>
0084	</ProtocolVersion>
0085	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0086	<BatchCount type="Integer" value="1"/>
0087	</ResponseHeader>
0088	<BatchItem>
0089	<Operation type="Enumeration" value="MAC"/>
0090	<ResultStatus type="Enumeration" value="Success"/>
0091	<ResponsePayload>
0092	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0093	<MACData type="ByteString"
	value="c911e78196d64c30f631bb079ea37b97a95936d4da764d6a171df030c895e
	cf9"/>
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="Revoke"/>
0107	<RequestPayload>
0108	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0109	<RevocationReason>
0110	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
0111	</RevocationReason>
0112	</RequestPayload>
0113	</BatchItem>
0114	</RequestMessage>
0115	<ResponseMessage>
0116	<ResponseHeader>
0117	<ProtocolVersion>
0118	<ProtocolVersionMajor type="Integer" value="1"/>
0119	<ProtocolVersionMinor type="Integer" value="2"/>
0120	</ProtocolVersion>
0121	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0122	<BatchCount type="Integer" value="1"/>
0123	</ResponseHeader>
0124	<BatchItem>
0125	<Operation type="Enumeration" value="Revoke"/>
0126	<ResultStatus type="Enumeration" value="Success"/>
0127	<ResponsePayload>
0128	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0129	</ResponsePayload>
0130	</BatchItem>
0131	</ResponseMessage>
	# TIME 3
0132	<RequestMessage>

0133	<RequestHeader>
0134	<ProtocolVersion>
0135	<ProtocolVersionMajor type="Integer" value="1"/>
0136	<ProtocolVersionMinor type="Integer" value="2"/>
0137	</ProtocolVersion>
0138	<BatchCount type="Integer" value="1"/>
0139	</RequestHeader>
0140	<BatchItem>
0141	<Operation type="Enumeration" value="Destroy"/>
0142	<RequestPayload>
0143	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0144	</RequestPayload>
0145	</BatchItem>
0146	</RequestMessage>
0147	<ResponseMessage>
0148	<ResponseHeader>
0149	<ProtocolVersion>
0150	<ProtocolVersionMajor type="Integer" value="1"/>
0151	<ProtocolVersionMinor type="Integer" value="2"/>
0152	</ProtocolVersion>
0153	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0154	<BatchCount type="Integer" value="1"/>
0155	</ResponseHeader>
0156	<BatchItem>
0157	<Operation type="Enumeration" value="Destroy"/>
0158	<ResultStatus type="Enumeration" value="Success"/>
0159	<ResponsePayload>
0160	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0161	</ResponsePayload>
0162	</BatchItem>
0163	</ResponseMessage>

276

277 10.1.5 CS-AC-M-5-12 - MAC Verify with Known Key

278 Register a key and perform MAC verification operations using the key.

279

	# 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="SymmetricKey"/>
0013	<TemplateAttribute>
0014	<Attribute>
0015	<AttributeName type="TextString" value="Cryptographic
	Usage Mask"/>
0016	<AttributeValue type="Integer" value="Encrypt Decrypt

0017	MACGenerate MACVerify"/>
0018	</Attribute>
0019	<Attribute>
0020	<AttributeName type="TextString" value="x-ID"/>
0021	<AttributeValue type="TextString" value="CS-AC-M-5-12"/>
0022	</Attribute>
0023	<Attribute>
0024	<AttributeName type="TextString" value="Activation Date"/>
0025	<AttributeValue type="DateTime" value="\$NOW-3600"/>
0026	</Attribute>
0027	<Attribute>
0028	<AttributeName type="TextString" value="Cryptographic Parameters"/>
0029	<AttributeValue>
0030	<CryptographicAlgorithm type="Enumeration" value="HMAC_SHA256"/>
0031	</AttributeValue>
0032	</Attribute>
0033	</TemplateAttribute>
0034	<SymmetricKey>
0035	<KeyBlock>
0036	<KeyFormatType type="Enumeration" value="Raw"/>
0037	<KeyValue>
0038	<KeyMaterial type="ByteString" value="0123456789abcdef0123456789abcdef"/>
0039	</KeyValue>
0040	<CryptographicAlgorithm type="Enumeration" value="AES"/>
0041	<CryptographicLength type="Integer" value="128"/>
0042	</KeyBlock>
0043	</SymmetricKey>
0044	</RequestPayload>
0045	</BatchItem>
0046	</RequestMessage>
0046	<ResponseMessage>
0047	<ResponseHeader>
0048	<ProtocolVersion>
0049	<ProtocolVersionMajor type="Integer" value="1"/>
0050	<ProtocolVersionMinor type="Integer" value="2"/>
0051	</ProtocolVersion>
0052	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0053	<BatchCount type="Integer" value="1"/>
0054	</ResponseHeader>
0055	<BatchItem>
0056	<Operation type="Enumeration" value="Register"/>
0057	<ResultStatus type="Enumeration" value="Success"/>
0058	<ResponsePayload>
0059	<UniqueIdentifier type="TextString" value="\$UNIQUE_IDENTIFIER_0"/>
0060	</ResponsePayload>
0061	</BatchItem>
0062	</ResponseMessage>
0063	# TIME 1 <RequestMessage>
0064	<RequestHeader>
0065	<ProtocolVersion>
0066	<ProtocolVersionMajor type="Integer" value="1"/>
0067	<ProtocolVersionMinor type="Integer" value="2"/>
0068	</ProtocolVersion>

0069	<BatchCount type="Integer" value="1"/>
0070	</RequestHeader>
0071	<BatchItem>
0072	<Operation type="Enumeration" value="MACVerify"/>
0073	<RequestPayload>
0074	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0075	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0076	<MACData type="ByteString"
	value="c911e78196d64c30f631bb079ea37b97a95936d4da764d6a171df030c895e
	cf9"/>
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="2013-06-21T22:18:59+00:00"/>
0087	<BatchCount type="Integer" value="1"/>
0088	</ResponseHeader>
0089	<BatchItem>
0090	<Operation type="Enumeration" value="MACVerify"/>
0091	<ResultStatus type="Enumeration" value="Success"/>
0092	<ResponsePayload>
0093	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0094	<ValidityIndicator type="Enumeration" value="Valid"/>
0095	</ResponsePayload>
0096	</BatchItem>
0097	</ResponseMessage>
	# TIME 2
0098	<RequestMessage>
0099	<RequestHeader>
0100	<ProtocolVersion>
0101	<ProtocolVersionMajor type="Integer" value="1"/>
0102	<ProtocolVersionMinor type="Integer" value="2"/>
0103	</ProtocolVersion>
0104	<BatchCount type="Integer" value="1"/>
0105	</RequestHeader>
0106	<BatchItem>
0107	<Operation type="Enumeration" value="Revoke"/>
0108	<RequestPayload>
0109	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0110	<RevocationReason>
0111	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
0112	</RevocationReason>
0113	</RequestPayload>
0114	</BatchItem>
0115	</RequestMessage>
0116	<ResponseMessage>
0117	<ResponseHeader>
0118	<ProtocolVersion>

0119	<ProtocolVersionMajor type="Integer" value="1"/>
0120	<ProtocolVersionMinor type="Integer" value="2"/>
0121	</ProtocolVersion>
0122	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0123	<BatchCount type="Integer" value="1"/>
0124	</ResponseHeader>
0125	<BatchItem>
0126	<Operation type="Enumeration" value="Revoke"/>
0127	<ResultStatus type="Enumeration" value="Success"/>
0128	<ResponsePayload>
0129	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0130	</ResponsePayload>
0131	</BatchItem>
0132	</ResponseMessage>
	# TIME 3
0133	<RequestMessage>
0134	<RequestHeader>
0135	<ProtocolVersion>
0136	<ProtocolVersionMajor type="Integer" value="1"/>
0137	<ProtocolVersionMinor type="Integer" value="2"/>
0138	</ProtocolVersion>
0139	<BatchCount type="Integer" value="1"/>
0140	</RequestHeader>
0141	<BatchItem>
0142	<Operation type="Enumeration" value="Destroy"/>
0143	<RequestPayload>
0144	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0145	</RequestPayload>
0146	</BatchItem>
0147	</RequestMessage>
0148	<ResponseMessage>
0149	<ResponseHeader>
0150	<ProtocolVersion>
0151	<ProtocolVersionMajor type="Integer" value="1"/>
0152	<ProtocolVersionMinor type="Integer" value="2"/>
0153	</ProtocolVersion>
0154	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0155	<BatchCount type="Integer" value="1"/>
0156	</ResponseHeader>
0157	<BatchItem>
0158	<Operation type="Enumeration" value="Destroy"/>
0159	<ResultStatus type="Enumeration" value="Success"/>
0160	<ResponsePayload>
0161	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0162	</ResponsePayload>
0163	</BatchItem>
0164	</ResponseMessage>

280

281 10.1.6 CS-AC-M-6-12 - MAC and MAC Verify with Known Key

282 MAC and MAC Verify with Known Key.

283

	# 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="SymmetricKey"/>
0013       <TemplateAttribute>
0014         <Attribute>
0015           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0016           <AttributeValue type="Integer" value="Encrypt Decrypt
MACGenerate MACVerify"/>
0017         </Attribute>
0018         <Attribute>
0019           <AttributeName type="TextString" value="x-ID"/>
0020           <AttributeValue type="TextString" value="CS-AC-M-6-12"/>
0021         </Attribute>
0022         <Attribute>
0023           <AttributeName type="TextString" value="Activation Date"/>
0024           <AttributeValue type="DateTime" value="$NOW-3600"/>
0025         </Attribute>
0026         <Attribute>
0027           <AttributeName type="TextString" value="Cryptographic
Parameters"/>
0028           <AttributeValue>
0029             <CryptographicAlgorithm type="Enumeration"
value="HMAC_SHA256"/>
0030           </AttributeValue>
0031         </Attribute>
0032       </TemplateAttribute>
0033       <SymmetricKey>
0034         <KeyBlock>
0035           <KeyFormatType type="Enumeration" value="Raw"/>
0036           <KeyValue>
0037             <KeyMaterial type="ByteString"
value="0123456789abcdef0123456789abcdef"/>
0038           </KeyValue>
0039           <CryptographicAlgorithm type="Enumeration" value="AES"/>
0040           <CryptographicLength type="Integer" value="128"/>
0041         </KeyBlock>
0042       </SymmetricKey>
0043     </RequestPayload>
0044   </BatchItem>
0045 </RequestMessage>
0046 <ResponseMessage>
0047   <ResponseHeader>
0048     <ProtocolVersion>
0049       <ProtocolVersionMajor type="Integer" value="1"/>
0050       <ProtocolVersionMinor type="Integer" value="2"/>
0051     </ProtocolVersion>
0052     <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0053     <BatchCount type="Integer" value="1"/>

```

0054	</ResponseHeader>
0055	<BatchItem>
0056	<Operation type="Enumeration" value="Register"/>
0057	<ResultStatus type="Enumeration" value="Success"/>
0058	<ResponsePayload>
0059	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0060	</ResponsePayload>
0061	</BatchItem>
0062	</ResponseMessage>
	# TIME 1
0063	<RequestMessage>
0064	<RequestHeader>
0065	<ProtocolVersion>
0066	<ProtocolVersionMajor type="Integer" value="1"/>
0067	<ProtocolVersionMinor type="Integer" value="2"/>
0068	</ProtocolVersion>
0069	<BatchCount type="Integer" value="1"/>
0070	</RequestHeader>
0071	<BatchItem>
0072	<Operation type="Enumeration" value="MAC"/>
0073	<RequestPayload>
0074	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0075	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0076	</RequestPayload>
0077	</BatchItem>
0078	</RequestMessage>
0079	<ResponseMessage>
0080	<ResponseHeader>
0081	<ProtocolVersion>
0082	<ProtocolVersionMajor type="Integer" value="1"/>
0083	<ProtocolVersionMinor type="Integer" value="2"/>
0084	</ProtocolVersion>
0085	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0086	<BatchCount type="Integer" value="1"/>
0087	</ResponseHeader>
0088	<BatchItem>
0089	<Operation type="Enumeration" value="MAC"/>
0090	<ResultStatus type="Enumeration" value="Success"/>
0091	<ResponsePayload>
0092	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0093	<MACData type="ByteString"
	value="c911e78196d64c30f631bb079ea37b97a95936d4da764d6a171df030c895e cf9"/>
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="MACVerify"/>
0107	<RequestPayload>
0108	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0109	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0110	<MACData type="ByteString" value="\$MAC_DATA"/>
0111	</RequestPayload>
0112	</BatchItem>
0113	</RequestMessage>
0114	<ResponseMessage>
0115	<ResponseHeader>
0116	<ProtocolVersion>
0117	<ProtocolVersionMajor type="Integer" value="1"/>
0118	<ProtocolVersionMinor type="Integer" value="2"/>
0119	</ProtocolVersion>
0120	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0121	<BatchCount type="Integer" value="1"/>
0122	</ResponseHeader>
0123	<BatchItem>
0124	<Operation type="Enumeration" value="MACVerify"/>
0125	<ResultStatus type="Enumeration" value="Success"/>
0126	<ResponsePayload>
0127	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0128	<ValidityIndicator type="Enumeration" value="Valid"/>
0129	</ResponsePayload>
0130	</BatchItem>
0131	</ResponseMessage>
0132	# TIME 3 <RequestMessage>
0133	<RequestHeader>
0134	<ProtocolVersion>
0135	<ProtocolVersionMajor type="Integer" value="1"/>
0136	<ProtocolVersionMinor type="Integer" value="2"/>
0137	</ProtocolVersion>
0138	<BatchCount type="Integer" value="1"/>
0139	</RequestHeader>
0140	<BatchItem>
0141	<Operation type="Enumeration" value="Revoke"/>
0142	<RequestPayload>
0143	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0144	<RevocationReason>
0145	<RevocationReasonCode type="Enumeration"
	value="Unspecified"/>
0146	</RevocationReason>
0147	</RequestPayload>
0148	</BatchItem>
0149	</RequestMessage>
0150	<ResponseMessage>
0151	<ResponseHeader>
0152	<ProtocolVersion>
0153	<ProtocolVersionMajor type="Integer" value="1"/>
0154	<ProtocolVersionMinor type="Integer" value="2"/>
0155	</ProtocolVersion>

0156	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0157	<BatchCount type="Integer" value="1"/>
0158	</ResponseHeader>
0159	<BatchItem>
0160	<Operation type="Enumeration" value="Revoke"/>
0161	<ResultStatus type="Enumeration" value="Success"/>
0162	<ResponsePayload>
0163	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0164	</ResponsePayload>
0165	</BatchItem>
0166	</ResponseMessage>
# TIME 4	
0167	<RequestMessage>
0168	<RequestHeader>
0169	<ProtocolVersion>
0170	<ProtocolVersionMajor type="Integer" value="1"/>
0171	<ProtocolVersionMinor type="Integer" value="2"/>
0172	</ProtocolVersion>
0173	<BatchCount type="Integer" value="1"/>
0174	</RequestHeader>
0175	<BatchItem>
0176	<Operation type="Enumeration" value="Destroy"/>
0177	<RequestPayload>
0178	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0179	</RequestPayload>
0180	</BatchItem>
0181	</RequestMessage>
0182	<ResponseMessage>
0183	<ResponseHeader>
0184	<ProtocolVersion>
0185	<ProtocolVersionMajor type="Integer" value="1"/>
0186	<ProtocolVersionMinor type="Integer" value="2"/>
0187	</ProtocolVersion>
0188	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0189	<BatchCount type="Integer" value="1"/>
0190	</ResponseHeader>
0191	<BatchItem>
0192	<Operation type="Enumeration" value="Destroy"/>
0193	<ResultStatus type="Enumeration" value="Success"/>
0194	<ResponsePayload>
0195	<UniqueIdentifier type="TextString"
	value="\$UNIQUE_IDENTIFIER_0"/>
0196	</ResponsePayload>
0197	</BatchItem>
0198	</ResponseMessage>

284

285 10.1.7 CS-AC-M-7-12 - HASH

286 Hash Data

# 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="Hash"/>
0011	<RequestPayload>
0012	<CryptographicParameters>
0013	<HashingAlgorithm type="Enumeration" value="SHA_256"/>
0014	</CryptographicParameters>
0015	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
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="2013-06-21T22:18:59+00:00"/>
0026	<BatchCount type="Integer" value="1"/>
0027	</ResponseHeader>
0028	<BatchItem>
0029	<Operation type="Enumeration" value="Hash"/>
0030	<ResultStatus type="Enumeration" value="Success"/>
0031	<ResponsePayload>
0032	<Data type="ByteString"
	value="ad41233d22cf9322e3a7ff49a13da434797abed3bab80950a1a0d4e582b7e
	a72"/>
0033	</ResponsePayload>
0034	</BatchItem>
0035	</ResponseMessage>
0036	# TIME 1
0037	<RequestMessage>
0038	<RequestHeader>
0039	<ProtocolVersion>
0040	<ProtocolVersionMajor type="Integer" value="1"/>
0041	<ProtocolVersionMinor type="Integer" value="2"/>
0042	</ProtocolVersion>
0043	<BatchCount type="Integer" value="1"/>
0044	</RequestHeader>
0045	<BatchItem>
0046	<Operation type="Enumeration" value="Hash"/>
0047	<RequestPayload>
0048	<CryptographicParameters>
0049	<HashingAlgorithm type="Enumeration" value="SHA_512"/>
0050	</CryptographicParameters>
0051	<Data type="ByteString"
	value="01020304050607080910111213141516"/>
0052	</RequestPayload>
0053	</BatchItem>
0054	</RequestMessage>
0055	<ResponseMessage>
0056	<ResponseHeader>
0057	<ProtocolVersion>
	<ProtocolVersionMajor type="Integer" value="1"/>

```

0058     <ProtocolVersionMinor type="Integer" value="2"/>
0059     </ProtocolVersion>
0060     <TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0061     <BatchCount type="Integer" value="1"/>
0062     </ResponseHeader>
0063     <BatchItem>
0064         <Operation type="Enumeration" value="Hash"/>
0065         <ResultStatus type="Enumeration" value="Success"/>
0066         <ResponsePayload>
0067             <Data type="ByteString"
value="406a806f76c06b90c8aca278995d4271037f91124ebfaba5475f1f59ee21e
be3a0cc7f5ca6f2183d360bcc762cef68713de7c6498eb08dc591075ca62f7a0717"
/>
0068         </ResponsePayload>
0069     </BatchItem>
0070 </ResponseMessage>

```

287

288 10.1.8 CS-AC-M-8-12 - Sign and Signature Verify with Known Asymmetric 289 Key Date Checks

290 Register an asymmetric key and perform sign and signature verify using the asymmetric key outside of
291 the valid Process Start Date and Protect Stop Date to confirm the operations fail.

292 The Process Start Date is set to a future date. The Protect Stop Date is set to a past date.

293 This is a modified version of CS-AC-M-3-12.

```

# 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="PrivateKey"/>
0013       <TemplateAttribute>
0014         <Attribute>
0015           <AttributeName type="TextString" value="Cryptographic
Usage Mask"/>
0016           <AttributeValue type="Integer" value="Sign"/>
0017         </Attribute>
0018         <Attribute>
0019           <AttributeName type="TextString" value="x-ID"/>
0020           <AttributeValue type="TextString" value="CS-AC-M-8-12-
prikey1"/>
0021         </Attribute>
0022         <Attribute>
0023           <AttributeName type="TextString" value="Activation Date"/>
0024           <AttributeValue type="DateTime" value="$NOW-3600"/>
0025         </Attribute>
0026         <Attribute>
0027           <AttributeName type="TextString" value="Process Start
Date"/>

```

```
0028     <AttributeValue type="DateTime" value="$NOW+3600"/>
0029     </Attribute>
0030     <Attribute>
0031     <AttributeName type="TextString" value="Protect Stop
Date"/>
0032     <AttributeValue type="DateTime" value="$NOW-3600"/>
0033     </Attribute>
0034     <Attribute>
0035     <AttributeName type="TextString" value="Cryptographic
Parameters"/>
0036     <AttributeValue>
0037     <PaddingMethod type="Enumeration" value="PSS"/>
0038     <HashingAlgorithm type="Enumeration" value="SHA_256"/>
0039     <CryptographicAlgorithm type="Enumeration" value="RSA"/>
0040     </AttributeValue>
0041     </Attribute>
0042     </TemplateAttribute>
0043     <PrivateKey>
0044     <KeyBlock>
0045     <KeyFormatType type="Enumeration" value="PKCS_1"/>
0046     <KeyValue>
0047     <KeyMaterial type="ByteString"
value="308204a50201000282010100ab7f161c0042496ccd6c6d4dad9199734353
57776003acf54b7af1e440afb80b64a8755f8002cfeba6b184540a2d66086d746483
46d75b8d71812b205387c0f6583bc4d7dc7ec114f3b176b7957c422e7d03fc6267fa
2a6f89b9bee9e60ald7c2d833e5a5f4bb0b1434f4e795a41100f8aa214900df8b650
89f98135b1c67b701675abdbc7d5721aac9d14a7f081fcec80b64e8a0ecc8295353c
795328abf70e1b42e7bb8b7f4e8ac8c810cdb66e3d21126eba8da7d0ca34142cb76f
91f013da809e9c1b7ae64c54130fbc21d80e9c2cb06c5c8d7cce8946a9ac99b1c281
5c3612a29a82d73a1f99374fe30e54951662a6eda29c6fc411335d5dc7426b0f6050
203010001028201003b12455d53c1816516c518493f6398aafa72b17dfa894db888a
7d48c0a47f62579a4e644f86da711fec850cdd9dbbd17f69a443d2ec1dd60d3c618f
a74cde5fdafabd6baa26eb0a3adb4def6480fb1218cd3b083e252e885b6f0729f98b
2144d2b72293e1b11d73393bc41f75b15ee3d7569b4995ed1a14425da4319b7b26b0
e8fef17c37542ae5c6d5849f87209567f3925a47b016d564859717bc57fcb4522d0a
a49ce816e5be7b3088193236ec9efff140858045b73c5d79baf38f7c67f04c5dcf0e
3806ad982d1259058c3473e847179a878f2c6b3bd968fb99ea46e9185892f3676e78
965c2aed4877ba3917df07c5e927474f19e764ba61dc38d63bf2902818100d5c69c8
c3cdc2464744a793713dafb9f1dbc799ff96423fecdc3ba794286bce920f4b5c183f
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```


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0059	<ProtocolVersionMajor type="Integer" value="1"/>
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0072	</ResponseMessage>
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0074	<RequestHeader>
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0091	<AttributeName type="TextString" value="x-ID"/>
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0093	</Attribute>
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0097	</Attribute>
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0111	</AttributeValue>
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	# TIME 2
0144	<RequestMessage>
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0150	<BatchCount type="Integer" value="1"/>
0151	</RequestHeader>
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0154	<RequestPayload>
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0158	</BatchItem>
0159	</RequestMessage>
0160	<ResponseMessage>
0161	<ResponseHeader>
0162	<ProtocolVersion>
0163	<ProtocolVersionMajor type="Integer" value="1"/>
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0166	<TimeStamp type="DateTime" value="2013-06-21T22:18:59+00:00"/>
0167	<BatchCount type="Integer" value="1"/>
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0170	<Operation type="Enumeration" value="Sign"/>
0171	<ResultStatus type="Enumeration" value="OperationFailed"/>
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0175	</ResponseMessage>
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0176	<RequestMessage>
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0178	<ProtocolVersion>
0179	<ProtocolVersionMajor type="Integer" value="1"/>
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0182	<BatchCount type="Integer" value="1"/>
0183	</RequestHeader>
0184	<BatchItem>
0185	<Operation type="Enumeration" value="SignatureVerify"/>
0186	<RequestPayload>
0187	<UniqueIdentifier type="TextString"
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0188	<CryptographicParameters>
0189	<PaddingMethod type="Enumeration" value="PSS"/>
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0211	<ResultMessage type="TextString" value="DENIED"/>
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0214	# TIME 4
0214	<RequestMessage>
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0228	</RevocationReason>
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0243	<ResultStatus type="Enumeration" value="Success"/>
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0249	# TIME 5 <RequestMessage>
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0252	<ProtocolVersionMajor type="Integer" value="1"/>
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0281	# TIME 6 <RequestMessage>
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	# TIME 7
0316	<RequestMessage>
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0328	</RequestPayload>
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0345	</ResponsePayload>
0346	</BatchItem>
0347	</ResponseMessage>

294

295

296

297 11 Conformance

298 11.1 Base Cryptographic Server Conformance

299 KMIP server implementations conformant to this profile:

- 300 1. SHALL support the Base Cryptographic Server conditions (2.1) and;
- 301 2. SHALL support all Mandatory Test Cases (4), for each supported protocol version (major and
- 302 minor), returning results in accordance with the test cases.

303 11.2 Base Cryptographic Client Conformance

304 KMIP client implementations conformant to this profile:

- 305 1. SHALL support the Base Cryptographic Client conditions (3.1) and;
- 306 2. SHALL support all Mandatory Test Cases (4), for each supported protocol version (major and
- 307 minor), returning results in accordance with the test cases.

308 11.3 RNG Cryptographic Server Conformance

309 KMIP server implementations conformant to this profile:

- 310 1. SHALL support the RNG Cryptographic Server conditions (5.1) and;
- 311 2. SHALL support all Mandatory Test Cases (7), for each supported protocol version (major and
- 312 minor), returning results in accordance with the test cases.

313 11.4 RNG Cryptographic Client Conformance

314 KMIP client implementations conformant to this profile:

- 315 1. SHALL support the RNG Cryptographic Client conditions (6.1) and;
- 316 2. SHALL support all Mandatory Test Cases (7), for each supported protocol version (major and
- 317 minor), returning results in accordance with the test cases.

318 11.5 Advanced Cryptographic Server Conformance

319 KMIP server implementations conformant to this profile:

- 320 1. SHALL support the Advanced Cryptographic Server conditions (8.1) and;
- 321 2. SHALL support all Mandatory Test Cases (10), for each supported protocol version (major and
- 322 minor), returning results in accordance with the test cases.

323 11.6 Advanced Cryptographic Client Conformance

324 KMIP client implementations conformant to this profile:

- 325 1. SHALL support the Advanced Cryptographic Client conditions (9.1) and;
- 326 2. SHALL support all Mandatory Test Cases (10), for each supported protocol version (major and
- 327 minor), returning results in accordance with the test cases.

328

329 11.7 Permitted Test Case Variations

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

332 Each test case MAY include allowed variations in the description of the test case in addition to the
333 variations noted in this section.
334 Other variations not explicitly noted in this Profile SHALL be deemed non-conformant.

335 **11.7.1 Variable Items**

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

- 337 1. UniqueIdentifier
- 338 2. PrivateKeyUniqueIdentifier
- 339 3. PublicKeyUniqueIdentifier
- 340 4. UniqueBatchItemIdentifier
- 341 5. AsynchronousCorrelationValue
- 342 6. TimeStamp
- 343 7. KeyValue / KeyMaterial including:
 - 344 a. key material content returned for managed cryptographic objects which are generated by
 - 345 the server
 - 346 b. wrapped versions of keys where the wrapping key is dynamic or the wrapping contains
 - 347 variable output for each wrap operation
- 348 8. For response containing the output of cryptographic operation in Data / SignatureData/ MACData
349 / IVCounterNonce where:
 - 350 a. the managed object is generated by the server; or
 - 351 b. the operation inherently contains variable output
- 352 9. For the following DateTime attributes where the value is not specified in the request as a fixed
353 DateTime value:
 - 354 a. ActivationDate
 - 355 b. ArchiveDate
 - 356 c. CompromiseDate
 - 357 d. CompromiseOccurrenceDate
 - 358 e. DeactivationDate
 - 359 f. DestroyDate
 - 360 g. InitialDate
 - 361 h. LastChangeDate
 - 362 i. ProtectStartDate
 - 363 j. ProcessStopDate
 - 364 k. ValidityDate
 - 365 l. OriginalCreationDate
- 366 10. LinkedObjectIdentifier
- 367 11. DigestValue
 - 368 a. For those managed cryptographic objects which are dynamically generated
- 369 12. KeyFormatType
 - 370 a. The key format type selected by the server when it creates managed objects
- 371 13. Digest
 - 372 a. The HashingAlgorithm selected by the server when it calculates the digest for a managed
 - 373 object for which it has access to the key material
 - 374 b. The Digest Value

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

383

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

- 385 1. Object Group values – May or may not return one or more Object Group values not included in
- 386 the requests
- 387 2. y-CustomAttributes – May or may not include additional server-specific associated attributes not
- 388 included in requests
- 389 3. Message Extensions – May or may not include additional (non-critical) vendor extensions
- 390 4. TemplateAttribute – May or may not be included in responses where the Template Attribute
- 391 response is noted as optional in [KMIP-SPEC]
- 392 5. AttributeIndex – May or may not include Attribute Index value where the Attribute Index value is 0
- 393 for Protocol Versions 1.1 and above.
- 394 6. ResultMessage – May or may not be included in responses and the value (if included) may vary
- 395 from the text contained within the test case.
- 396 7. The list of Protocol Versions returned in a DiscoverVersion response may include additional
- 397 protocol versions if the request has not specified a list of client supported Protocol Versions.
- 398 8. VendorIdentification - The value (if included) may vary from the text contained within the test
- 399 case.

400 11.7.2 Variable behavior

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

- 402 1. A test may omit the clean-up requests and responses (containing Revoke and/or Destroy) at the
- 403 end of the test provided there is a separate mechanism to remove the created objects during
- 404 testing.
- 405 2. A test may omit the test identifiers if the client is unable to include them in requests. This includes
- 406 the following attributes:
- 407 a. Name; and
- 408 b. x-ID

409

410

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Participants:

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472 Robert Lockhart, Thales e-Security
473 Anne Luk, Cryptsoft
474 Sairam Manidi, Freescale
475 Luther Martin, Voltage Security
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518 Michael Yoder, Vormetric. Inc.
519 Magda Zdunkiewicz, Cryptsoft
520 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

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Revision	Date	Editor	Changes Made
wd01	27-June-2013	Tim Hudson	Updated conformance wording style. Updated test case style. Included test cases for 1.2. Applied new OASIS template.
wd02	5-July-2013	Tim Hudson	Updated based on review feedback from John Leiseboer. Expanded test cases to include additional modes. Corrected typographical errors.
wd03	10-July-2013	Tim Hudson	Additional test cases added also based on further review feedback from John Leiseboer. Corrected missed section reference in advanced cryptographic conformance clauses. Corrected error handling for CBC examples with missing IV/Counter/Nonce values.
wd04	6-August-2013	Tim Hudson	Updated to include Permitted Test Case Variations and updated Test Cases based on July 2013 Interop
wd05	10-August-2013	Tim Hudson	Updated Permitted Test Case Variations
wd05a	24-October-2013	Tim Hudson	Editorial update to include VendorIdentification in the list of allowed variations as per TC motion.

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