Key Management Interoperability Protocol

Use Cases

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1. Key Management Interoperability Protocol Use-Cases

1. Introduction

The purpose of this document is to describe use-cases to demonstrate the Key Management Interoperability Protocol (KMIP). The use-cases shall indicate if all concepts within the protocol are sound and can be used to implement typical scenarios in real life. These use-cases are not intended to fully test an implementation of KMIP. Thus, the use-cases do not contain typical QA scenarios which would stress an implementation. The use-cases are based on v0.98 of the protocol.

2. Message exchange

The message exchange between clients and the server to test the following use-case scenarios shall happen with TLV encoding over the http transport.

3. Centralized Management

1. Basic functionality

This use-case tests the basic features of KMIP including key and template creation, attribute functionality, access methods, and batch operation.

1. Use-case: Create / Destroy

Time	Request/Response messages

0	Create (symmetric key)
	In: objectType=’00000002’ (Symmetric Key), CryptographicAlgorithm=’00000003’ (AES), CryptographicLength=’128’, CryptographicUsageMask=‘00000012’
	
	Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
	  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
	  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
	  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
	  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
	  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
	  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
	  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create)
	  Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
	  Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
	  Tag: Template-Attribute (0x4200008D), Type: Structure (0x80), Data:
	  Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
	  Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Algorithm
	  Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000003 (AES)
	  Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
	  Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Length
	  Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000080 (128)
	  Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
	  Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Usage Mask

```
          Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x0000000C (Encrypt,
Decrypt)
```

```
42000073800000010E4200007280000000304200006580000000 1A42000066010000000400000000420000670100000004000000062420000 0D010000000400000001420000F80000000CC42000057040000000400000001420000748000000 0B64200005204000000040000000242000 08D80000000A042000008800000002D4200000A06000000174372797074 6F672617068696320416C676F726974686D4200000B0400000004000000034200000880000000 2A4200000A060000001443727970746F6772617068696320455736167652 04D61736B4200000B01000000040000000C
```

Out: objectType=’00000002’, uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496DFEDC (Wed Jan 14
16:03:56 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
96789141-62bf-4352-b1c4-9d48dac4b77d
```

```
42000076800000 00B042000075800000004142000065800000001A42000066010000000400000000420000670100000004000000062420000 8E0800000008000000000496DFEDC4200000D010000000400000001420000F800000005D42000057040000000400000001420000 7A040000000400000000420000778000000003A42000052040000000400000002420000 8F060000002439363738393134312D363262662D343335322D623163342D396434386461633462373764
```

1	Destroy (symmetric key) In: uuidKey

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
96789141-62bf-4352-b1c4-9d48dac4b77d
```

```
42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004000000062420000 0D010000000400000001420000F80000000434200005704000000040000000144200007480000000 2D4200008F060000002439363738393134312D363262662D343335322D623163342D396434386461633462373764
```

Out: uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496DFEDD (Wed Jan 14
16:03:57 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
96789141-62bf-4352-b1c4-9d48dac4b77d
```

```
42000076800000 00A342000075800000004142000065800000001A42000066010000000400000000420000670100000004
```

```
04000000624200008E080000000800000000496DFEDD4200000D010000000400000001420000F800000005042000057
040000000400000014420000 7A040000000400000000420000778000000002D4200008F060000002439363738393134312D363262662D343335322D623163342D396434386461633462373764
```

2. Use-case: Register / Create / Get attributes / Destroy

Time	Request/Response messages
0	Register (template) In: objectType=’00000007’, templateName = ‘Template1’, attributes={ ObjectGroup=’Group1’, ApplicationSpecificID=’ssl, www.example.com’, ContactInformation=’Joe’, x-Purpose=’demonstration’ }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000003 (Register)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000006 (Template)
      Tag: Template Name (0x4200008C), Type: Text String (0x06), Data: Template1
      Tag: Template-Attribute (0x4200008D), Type: Structure (0x80), Data:
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Group
          Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Group1
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Application Specific
Identification
          Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
            Tag: Application Name Space (0x42000003), Type: Text String (0x06), Data: ssl
            Tag: Application Identifier (0x42000002), Type: Text String (0x06), Data:
www.example.com
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Contact Information
          Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Joe
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-Purpose
          Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: demonstration

42000073800000017142000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D010000000400000001420000F800000012F42000057040000000400000003420000748000000119420000520400000004000000064200008C060000000954656D706C617465314200008D80000000F142000008800000002442000000A060000000C4F626A6563742047726F75704200000B060000000647726F757031420000088000000059420000 0A060000002341707 06C69636174696F6E20537065636966696320496456E74696669636174696F6E4200000B8000000 0244200000306000000037373 6C4200000206000000 0F7777772E6578616D706C652E636F6D4200000880000000284200 000A0600000013436F6E7461637420496E666F726D6174696F6E4200000B06000000034A6F6542000008800000002842 0000A0600000009782D507572706F73654200000B060000000D64656D6F6E7374726174696F6E
```

Out: objectType=’00000007’, uuidTemplate

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496DFEDE (Wed Jan 14
16:03:58 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000003 (Register)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000006 (Template)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
```

	14856cce-fc2a-499b-9f2d-5c6924838b1f 42000076800000000B042000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E0800000008000000000496DFEDE4200000D0100000004000000014200000F800000005D4200005704000000040000000342000007A040000000400000000420000778000000003A42000052040000000400000006420000 8F06000002431343835366363652D666332612D343939622D396632642D356336393234383338623166
1	Create (symmetric key using template) In: objectType='00000002', templateName='Template1', CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='00000012' Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key) Tag: Template-Attribute (0x4200008D), Type: Structure (0x80), Data: Tag: Template Name (0x4200008C), Type: Text String (0x06), Data: Template1 Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Algorithm Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000003 (AES) Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Length Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000080 (128) Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Usage Mask Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x0000000C (Encrypt, Decrypt) 42000073800000012042000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F80000000DE42000057040000000400000001420000748000000C842000052040000000400000002420000 8D80000000B24200008C06000000009546 56D706C617465314200000880000000 2D4200000A06000000174372797074 6F6772617068696320416C676F726974686D4200000B040000000400000003420000 0880000002A4200000A060000001443727970746F6772617068696320 4C656E677468420000B0100000004000000804200000880000000 2E4200000A060000001843727970746F6772617068696320557361676520 4D61736B4200000B01000000040000000C Out: objectType='00000002', uuidKey Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496DFEDF (Wed Jan 14 16:03:59 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success) Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key) Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 6f2bb284-0488-4d4f-b0a2-e1a9cb33b33f 42000076800000000B042000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E0800000008000000000496DFEDF4200000D0100000004000000014200000F800000005D4200005704000000040000000142000007A040000000400000000420000778000000003A42000052040000000400000002420000 8F06000002436663262623238342D303438382D346434662D623061322D653161396362333362333366
2	Get attributes In: uuidKey, attributeNames={'ObjectGroup', 'ApplicationSpecificID', 'ContactInformation', 'x-Purpose'} Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data:

```
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6f2bb284-0488-4d4f-b0a2-e1a9cb33b33f
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Group
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Application Specific
Identification
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Contact Information
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-Purpose

420000738000000F442000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D010000000400000001420000F80000000B2420000570400000004000000B4200007480000000
9C4200008F06000000243666326262323834 2D303438382D346434662D623061322D653161396362333362333664200000A060000000C4F626A6563742047726F75704200000A0600000023417070 6C69636174696F6E20537065636965666963204964656E746966696361746965 6F6E4200000A0600000013436F6E746163742049 6E666F726D6174696F6E4200000A0600000009782D507572706F7365
```

Out: uuidKey, attributes={ ObjectGroup='Group1', ApplicationSpecificID='ssl, www.example.com', ContactInformation='Joe Miller', x-Purpose='demonstration' }

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496DFEDF (Wed Jan 14
16:03:59 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6f2bb284-0488-4d4f-b0a2-e1a9cb33b33f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Group
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Group1
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Application Specific
Identification
        Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
          Tag: Application Name Space (0x42000003), Type: Text String (0x06), Data: ssl
          Tag: Application Identifier (0x42000002), Type: Text String (0x06), Data:
www.example.com
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Contact Information
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Joe
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-Purpose
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: demonstration

420000768000000194420000758000000041420000658000000 01A42000066010000000400000000420000670100000004000000624200008E080000000800000000496DFEDF4200000D010000000400000001420000F80000001414200005704000000040000000B4200007A040000000400000000420000778000000011E4200008F06000000243666326262323834 2D303438382D346434662D623061322D653161396362333362333664200000880000000244200000A060000000C4F626A6563742047726F75704200000B060000000647726F757031420000088000000059420000 0A06000000234170706C6963617 4696F6E20537065636965666963204964656E746966696361746965 6F6E4200000B8000000024420000030600000000373736C4200000206000000 0F7777772E6578616D706C652E636F6D42000008800000002842000 00A0600000013436F6E7461637 420496E666F726D6174696F6E4200000B06000000034A6F6542000008800000002842000 00A0600000009782D507572706F 73654200000B060000000D64656D6F6E7374726174696F6E
```

3	Destroy (symmetric key)
	In: uuidKey
	
	`Tag: Request Message (0x42000073), Type: Structure (0x80), Data:`
	`  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:`
	`    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:`
	`      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)`

```
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6f2bb284-0488-4d4f-b0a2-e1a9cb33b33f
```

```
42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004000000062420000D0100000004000000014200000F80000000434200005704000000040000001442000074800000002D4200008F06000000243666326262323834 2D303438382D346434662D623061322D653161396362333362333366
```

Out: uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496DFEDF (Wed Jan 14
16:03:59 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6f2bb284-0488-4d4f-b0a2-e1a9cb33b33f
```

```
4200007680000000A34200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000062420000 8E080000000800000000496DFEDF4200000D0100000004000000014200000F80000000504200005704000000040000001442000007A040000000400000000420000778000000002D4200008F06000000243666326262323834 2D303438382D346434662D623061322D653161396362333362333366
```

4	Destroy (template) In: uuidTemplate

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
14856cce-fc2a-499b-9f2d-5c6924838b1f
```

```
42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004000000062420000D0100000004000000014200000F80000000434200005704000000040000001442000074800000002D4200008F06000000243134383536636365 2D666332612D343939622D396632642D356336393234383338623166
```

Out: uuidTemplate

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496DFEE0 (Wed Jan 14
16:04:00 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
14856cce-fc2a-499b-9f2d-5c6924838b1f
```

```
4200007680000000A34200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000062420000 8E080000000800000000496DFEE04200000D0100000004000000014200000F80000000504200005704
```

	00000004000000144200007A0400000004000000004200007780000002D4200008F06000000243134383536636365 2D666332612D343939622D396632642D356336393234383338623166

3. Use-case: Create / Locate / Get / Destroy

Time	Request/Response messages
0	Create (symmetric key) In: objectType = '00000002', attributes={ Name={ Name='Key1', NameType='00000001' }, CryptographicAlgorithm='DES', CryptographicLength='56', CryptographicUsageMask='00000012', ContactInformation='Joe' } Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key) Tag: Template-Attribute (0x4200008D), Type: Structure (0x80), Data: Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data: Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1 Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001 (Uninterpreted text string) Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Algorithm Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000001 (DES) Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Length Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000038 (56) Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Usage Mask Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x0000000C (Encrypt, Decrypt) Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Contact Information Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Joe 42000073800000017842000072800000003042000065800000001A42000066010000000400000000420006701000000040000006242000000D010000000400000001420000F8000000136420000570400000004000000014200007480000001204200005204000000040000000242000008D800000010A4200000880000000304200000A06000000044E616D654200000B800000001A42000050060000000044B6579314200004F040000000400000001420000088000000002D4200000A0600000017437279707465772617068696320416C676F726974686D4200000B040000000400000001420000088000000002A4200000A060000001443727970746F6772617068696320 4C656E6774684200000B010000000400000038420000088000000002E4200000A060000001843727970746F6772617068696320557361676520 4D61736B4200000B010000000400000000C4200000880000000284200000A0600000013436F6E7461637420496E666F726D6174696F6E4200000B06000000034A6F65 Out: objectType = '00000002', uuidKey Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E00BB (Wed Jan 14 16:11:55 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create)

```
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
579639a1-798e-4b0a-ba4f-e16c5cb2c18c
```

```
42000078000000000B042000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E00BB4200000D0100000004000000014200000F800000005D4200005704000000040000000142000007A040000000400000000420000778000000003A42000052040000000400000002420000 8F06000000243537393633961312D373938652D346230612D626134662D653136633536236232633138 63
```

1	Locate (symmetric key) In: objectType = '00000002', attributes={ Name={ Name='Key1', NameType='00000002'} }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Type
        Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric
Key)
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name
        Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
          Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1
          Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001 (Uninterpreted
text string)
```

```
42000073800000000BB420000728000000030420000658000000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F8000000079420000570400000004000000084200007480000000634200000880000000214200000A060000000B4F626A65637420547970654200000B040000000400000002420000088000000030420000A06000000044E616D654200000B800000001A42000050060000000044B6579314200004F040000000400000001
```

Out: uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E00BB (Wed Jan 14
16:11:55 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
579639a1-798e-4b0a-ba4f-e16c5cb2c18c
```

```
42000078000000000A342000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E00BB4200000D0100000004000000014200000F8000000050420000570400000004000000084200007A040000000400000000420000778000000002D4200008F06000000243537393633961312D373938652D346230612D626134662D653136633536236232633138 63
```

2	Get (symmetric key) In: uuidKey

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
```

```
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
579639a1-798e-4b0a-ba4f-e16c5cb2c18c
```

```
42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D010000000400000001420000F8000000043420000570400000004000000A42000074800000002D4200008F06000000243537393633961312D373938652D346230612D626134662D653136633563623263313863
```

Out: objectType = '00000002', uuidKey, symmetricKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E00BC (Wed Jan 14
16:11:56 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
579639a1-798e-4b0a-ba4f-e16c5cb2c18c
      Tag: Symmetric Key (0x4200008A), Type: Structure (0x80), Data:
        Tag: Key Block (0x4200003C), Type: Structure (0x80), Data:
          Tag: Key Value Type (0x42000040), Type: Enumeration (0x04), Data: 0x00000001
          Tag: Key Value (0x4200003F), Type: Structure (0x80), Data:
            Tag: Key Material (0x4200003D), Type: Octet String (0x07), Data: FDE6BF0BE59D9D4F
          Tag: Cryptographic Algorithm (0x42000025), Type: Enumeration (0x04), Data: 0x00000001
(DES)
          Tag: Cryptographic Length (0x42000026), Type: Integer (0x01), Data: 0x00000038 (56)
```

```
42000076800000010342000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E08000000080000000496E00BC4200000D010000000400000001420000F80000000B04200005704000000040000000A4200007A040000000400000000420000778000000008D4200005204000000040000000242000008F06000000243537393633961312D373938652D346230612D626134662D653136633563623263313863420000 8A800000004A4200003C800000004142000040040000000400000001420000 3F8000000011420000 3D0700000008FDE6BF0BE59D9D4F4200002504000000040000000142000026010000000400000038
```

3	Destroy (symmetric key) In: uuidKey

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
579639a1-798e-4b0a-ba4f-e16c5cb2c18c
```

```
42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D010000000400000001420000F8000000043420000570400000004000000142000074800000002D4200008F06000000243537393633961312D373938652D346230612D626134662D653136633563623263313863
```

Out: uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E00BC (Wed Jan 14
16:11:56 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
```

	Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success) Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 579639a1-798e-4b0a-ba4f-e16c5cb2c18c 4200007680000000A34200007580000000414200006580000001A4200006601000000040000000042000067010000000 400000062420008E0800000008000000000496E00BC4200000D0100000004000000014200000F80000000504200005704 000000040000001442000007A040000000400000000420000778000000002D4200008F06000000243537393633333961312D3 73938652D346230612D626134662D653136633563623263313863
4	Locate In: uuidKey Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Unique Identifier Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: 579639a1-798e-4b0a-ba4f-e16c5cb2c18c 4200007380000000A84200007280000000304200006580000001A4200006601000000040000000042000067010000000 400000062420000D0100000004000000014200000F80000000664200005704000000004000000084200007480000000050 4200000880000000474200000A0600000011556E6971756520496465E74696669657242000000B06000000024353739363 33961312D373938652D346230612D626134662D653136633563623263313863 Out: <empty response payload> Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E00BC (Wed Jan 14 16:11:56 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success) Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: null 4200007680000000764200007580000000414200006580000001A4200006601000000040000000042000067010000000 400000062420008E0800000008000000000496E00BC4200000D0100000004000000014200000F80000000234200005704 00000004000000084200007A04000000040000000042000077800000000

4. Use-case: Dual client use-case, ID Placeholder linked Locate & Get batch

Time	Request/Response messages
0	Client A: Register (template) In: objectType='00000007', templateName = 'Template1', attributes={ CryptographicAlgorithm='AES', CryptographicLength='128' } Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data:

```
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000003 (Register)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000006 (Template)
      Tag: Template Name (0x4200008C), Type: Text String (0x06), Data: Template1
      Tag: Template-Attribute (0x4200008D), Type: Structure (0x80), Data:
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic
Algorithm
          Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000003 (AES)
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Length
          Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000080 (128)

420000738000000E9420000728000000030420000658000000001A42000066010000000400000000420000670100000000
4000000624200000D0100000004000000014200000F80000000A7420000570400000004000000034200007480000000091
42000052040000000400000006420000 8C060000000954656D706C617465314200008D8000000069420000088000000002
D4200000A0600000001743727970746F6772617068696320416C676F726974686D4200000B0400000004000000034200000
08800000002A4200000A0600000014437279707 46F6772617068696320 4C656E677468420000 0B0100000040000008 0

Out: objectType=’00000007’, uuidTemplate

Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E01CF (Wed Jan 14
16:16:31 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000003 (Register)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000006 (Template)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
7936e2b9-0185-43ab-81b1-2e644ae48996

420000768000000 0B042000075800000004142000065800000001A42000066010000000400000000420000670100000000
4000000624200008E0800000008000000000496E01CF4200000D0100000004000000014200000F800000005D4200005704
0000000400000003420000 7A040000000400000000420000778000000003A42000052040000000400000006420000 8F060
000002437393336653262392D303138352D343361622D383162312D326536343461653438393936
```

1

Client A:

Create (symmetric key using template)

In: objectType=’00000002’, templateName = ‘Template1’, attributes={ Name={ Name=‘Key1’, NameType=’00000001’ }, CryptographicUsageMask=‘00000004’, ContactInformation=‘Foo’ }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Template-Attribute (0x4200008D), Type: Structure (0x80), Data:
        Tag: Template Name (0x4200008C), Type: Text String (0x06), Data: Template1
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name
          Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
            Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1
            Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001
(Uninterpreted text string)
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Usage
Mask
```

```
          Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000004 (Encrypt)
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Contact Information
          Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Foo

420000738000000121420000728000000030420000658000000001A42000066010000000400000000420000670100000004000000624200000D010000000400000001420000F80000000DF42000057040000000400000001420000748000000C9420000520400000004000000024200008D80000000B34200008C06000000954656D706C6174653142000008800000003042000000A06000000044E616D654200000B800000001A42000050060000000044B6579314200004F040000000400000001420000088000000002E4200000A0600000018437279707461726F6772617068696320557361676520 4D61736B4200000B0100000004000000044200000880000000284200000A0600000013436F6E7461637420496E666F726D6174696F6E4200000B0600000003466F6F
```

Out: objectType=’00000002’, uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E01D0 (Wed Jan 14
16:16:32 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1

420000768000000B042000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E0800000008000000496E01D04200000D010000000400000001420000F800000005D42000057040000000400000001420000 7A040000000400000000420000778000000003A42000052040000000400000002420000 8F06000000246164626465663864 2D643662632D343838612D396164382D306366663062636265396331
```

2	Client B:
	Locate and Get (symmetric key by name)
	In (header): batchOrderOption=’TRUE’
	In: attributes={ objectType = ‘00000002’, Name={ Name=‘Key1’, NameType=’00000001’} }
	In: <empty Get payload>
	
	`Tag: Request Message (0x42000073), Type: Structure (0x80), Data:`
	`  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:`
	`    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:`
	`      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)`
	`      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)`
	`    Tag: Batch Order Option (0x42000010), Type: Boolean (0x05), Data: TRUE`
	`    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)`
	`  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:`
	`    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)`
	`    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 1FADF4F046275B0E`
	`    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:`
	`      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:`
	`        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Type`
	`        Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)`
	`      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:`
	`        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name`
	`        Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:`
	`          Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1`
	`          Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001 (Uninterpreted text string)`
	`  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:`
	`    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)`
	`    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: FDBE797C64556C51`
	`    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: null`
	
	`420000738000000106420000728000000003A4200006580000000 1A42000066010000000400000000420000670100000004000000624200001005000000010142000 00D010000000400000002420000 0F800000008A42000057040000000400000008420000900700000081FADF4F046275B0E42000074800000006342000008800000002142000 0A060000000B4F626A6563742054797065420000 0B040000000400000002420000088000000030420000 0A06000000044E616D654200000B800000001A42000050060000000044B6579314200004F040000000400000001420000 0F8000000027420000570400000004000`

	0000A42000090070000008FDBE797C64556C51420000748000000000 Out: uuidKey Out: objectType='00000002', uuidKey, symmetricKey Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E01D1 (Wed Jan 14 16:16:33 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate) Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 1FADF4F046275B0E Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success) Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1 Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get) Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: FDBE797C64556C51 Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success) Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key) Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1 Tag: Symmetric Key (0x4200008A), Type: Structure (0x80), Data: Tag: Key Block (0x4200003C), Type: Structure (0x80), Data: Tag: Key Value Type (0x42000040), Type: Enumeration (0x04), Data: 0x00000001 Tag: Key Value (0x4200003F), Type: Structure (0x80), Data: Tag: Key Material (0x4200003D), Type: Octet String (0x07), Data: 5C6BB5838B5E8DF9AC4B6D9F3913175E Tag: Cryptographic Algorithm (0x42000025), Type: Enumeration (0x04), Data: 0x00000003 (AES) Tag: Cryptographic Length (0x42000026), Type: Integer (0x01), Data: 0x00000080 (128) 42000076800000018642000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E01D14200000D0100000004000000024200000F80000000614200005704000000040000000842000090070000000081FADF4F046275B0E4200007A040000000400000000420000778000000020008F060000002461646264656638642D643662632D343838612D396164382D3063666630626362653963314200000F8000000C9420000570400000000400000000A42000090070000000 8FDBE797C64556C514200007A040000000400000000420000778000000095420000520400000004000000024200008F060000002461646264656638642D643662632D343838612D396164382D3063666630626362653963314200008A8000000052420000 3C8000000049420000400400000000400000001420000 3F8000000019420000 3D07000000105C6BB5838B5E8DF9AC4B6D9F3913175E42000025040000000400000003420000260100000004000000 80
3	Client B: Get attribute list In: uuidKey Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000C (Get Attribute List) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1 42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F80000000434200005704000000040000000C42000074800000002D4200008F060000002461646264656638642D643662632D343838612D396164382D3063666630626362653963 31 Out: uuidKey, attributes={ * } Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data:

```
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x000000000496E01D1 (Wed Jan 14
16:16:33 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000C (Get Attribute List)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Length
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Algorithm
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: State
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Initial Date
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Unique Identifier
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Usage Mask
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Type
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Contact Information
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Last Changed Date

42000076800000019542000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E01D14200000D010000000400000001420000F80000001424200005704000000040000000C4200007A040000000400000000420000778000000011F4200008F060000002461646264656638642D643662632D343838612D396164382D306366663062636265396331420000A0600000001443727970746F67726170686963204C656E6774684200000A060000001743727970746F6772617068696320416C676F726974686D4200000A0600000005537461746542000000A060000000C496E697469616C20446174654200000A0600000011556E6971756520496465E7469666965724200000A06000000044E616D654200000A060000001843727970746F6772617068696320557361676520D61736B4200000A060000000B4F626A65637420547970654200000A0600000013436F6E7461637420496E666F726D6174696F6E4200000A06000000114C617374204368616E6765642044617465
```

4 Client B:

Get attributes

In: uuidKey, attributeNames={‘Name’, ‘ContactInformation’}

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Contact Information

42000073800000000AE42000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D010000000400000001420000F800000006C42000057040000000400000000B42000074800000005642000008F060000002461646264656638642D643662632D343838612D396164382D306366663062636265396331420000A06000000044E616D654200000A0600000013436F6E7461637420496E666F726D6174696F6E
```

Out: uuidKey, attributes={ Name={ Name=‘Key1’, NameType=’00000001’ }, ContactInformation=‘Foo’ }

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x000000000496E01D2 (Wed Jan 14
16:16:34 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
```

```
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name
        Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
          Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1
          Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001 (Uninterpreted
text string)
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Contact Information
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Foo
```

```
42000076800000010D42000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E01D24200000D0100000004000000014200000F80000000BA4200005704000000040000000B4200007A040000000400000000420000778000000097420000 8F06000000246164626465663864 2D643662632D343838612D396164382D306366663062636265396331420000088000000030420000 0A06000000044E616D654200000B800000001A42000050060000000044B6579314200004F040000000400000001420000088000000028420000 0A0600000013436F6E7461637420496E666F726D6174696F6E4200000B0600000003466F6F
```

5

Client B:

Add attribute [batch]

In: uuidKey, attribute={ x-attribute1='Value1'}

In: uuidKey, attribute={ x-attribute2='Value2' }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 208BA9C5EFCAA530
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Value1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: A3E3990370185C0A
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Value2
```

```
42000073800000014D42000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000024200000F80000000814200005704000000040000000D42000090070000000820 8BA9C5EFCAA5304200007480000000 5A4200008F06000000246164626465663864 2D643662632D343838612D396164382D306366663062636265396331420000088000000024420000 0A060000000C782D617474726962757465314200000B060000000656616C7565314200000F80000000814200005704000000040000000D42000090070000000820 8A3E3990370185C0A42000074800000005A4200008F06000000246164626465663864 2D643662632D343838612D396164382D306366663062636265396331420000088000000024420000 0A060000000C782D617474726962757465324200000B060000000656616C756532
```

Out: uuidKey, attribute={ x-attribute1='Value1'}

Out: uuidKey, attribute={ x-attribute2='Value2' }

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E01D2 (Wed Jan 14
16:16:34 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 208BA9C5EFCAA530
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
```

```
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Value1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: A3E3990370185C0A
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Value2

42000076800000017842000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E01D24200000D0100000004000000024200000F800000008E4200005704000000040000000D4200009007000000008208BA9C5EFCAA5304200007A040000000400000000420000778000000005A4200008F06000000246164626465663864 2D643662632D343838612D396164382D3063666630626362653963314200000880000000244200000A060000000C782D617474726962757465314200000B060000000656616C7565314200000F800000008E42000057040000000400000000D4200009007000000008A3E3990370185C0A4200007A040000000400000000420000778000000005A4200008F06000000246164626465663864 2D643662632D343838612D396164382D3063666630626362653963314200000880000000244200000A060000000C782D617474726962757465324200000B060000000656616C756532
```

6 Client B:

Modify attribute [batch]

In: uuidKey, attribute={ x-attribute1='ModifiedValue1' }

In: uuidKey, attribute={ x-attribute2='ModifiedValue2' }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000E (Modify Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: DCECF6C9D300B1EB
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000E (Modify Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 2270444ABF5E239F
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue2

42000073800000015D42000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D010000000400000002420000F8000000089420000570400000004000000E420000900700000008DCECF6C9D300B1EB42000074800000006242000008F06000000246164626465663864 2D643662632D343838612D396164382D3063666630626362653963314200000880000000244200000A060000000C782D617474726962757465314200000B060000000E4D6F6469666965645616C756531420000F8000000089420000570400000004000000E420000900700000008270444ABF5E239F42000074800000006242000008F06000000246164626465663864 2D643662632D343838612D396164382D3063666630626362653963314200000880000000244200000A060000000C782D617474726962757465324200000B060000000E4D6F6469666965645616C756532
```

Out: uuidKey, attribute={ x-ttribute1='ModifiedValue1' }

Out: uuidKey, attribute={ x-attribute2='ModifiedValue2' }

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E01D3 (Wed Jan 14
16:16:35 CET 2009)
```

```
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000E (Modify Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: DCECF6C9D300B1EB
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000E (Modify Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 2270444ABF5E239F
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue2

42000076800000018842000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E01D34200000D0100000004000000024200000F8000000096420000570400000000400000000F42000090070000000800000000E42000090070000000 8DCECF6C9D300B1EB4200007A040000000400000000420000778000000006242000 0008F0600000024616462646564638642D643662632D343838612D396164382D3063666630626362653963314200000880 0000002C4200000A060000000C782D617474726962757465314200000B060000000E4D6F6469666965645661 6C7565314200000F8000000096420000570400000004000000E42000090070000000082270444ABF5E239F4200007A040000000400 0000004200007780000000624200008F0600000024616462646564638642D643662632D343838612D396164382D3063666630626362653963314200000880000002C4200000A060000000C782D617474726962757465324200000B060000000E4D6F6469666965645661 6C756532
```

7

Client B:

Delete attribute [batch]

In: uuidKey, attributeNames={‘x-attribute1’}

In: uuidKey, attributeNames={‘x-attribute2’}

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000F (Delete Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: A1484069949CB587
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000F (Delete Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 737E3D7E11C47049
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2

42000073800000011D42000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000024200000F8000000069420000570400000000400000000F42000090070000000800000000A1484069949CB587420000748000000042420000 8F0600000024616462646564638642D643662632D343838612D396164382D3961643 82D3063666630626362653963314200000A060000000C782D617474726962757465314200000F8000000069420000570400000004000000E42000090070000000082737E3D7E11C4704942000074800000004242000 08F0600000024616462646564638642D643662632D343838612D396164382D3063666630626362653963314200000A060000000C782D61747472696275746532
```

Out: uuidKey, attributeNames={‘x-attribute1’}

Out: uuidKey, attributeNames={‘x-attribute2’}

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
```

```
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E01D3 (Wed Jan 14
16:16:35 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000F (Delete Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: A1484069949CB587
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000F (Delete Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 737E3D7E11C47049
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue2

42000076800000018842000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E01D34200000D010000000400000002420000F8000000096420005704000000040000000F42000090070000008A1484069949CB5874200007A040000000400000000420000778000000062420008F060000002461646264656638642D643662632D343838612D396164382D306366663062636265396331420000088000000002C4200000A060000000C782D6174747269627574653142000000B060000000E4D6F64696669656456616C7565314200000F8000000096420000570400000004000000F42000090070000000873 7E3D7E11C470494200007A040000000400000004200007780000000624200008F060000002461646264656638642D643662632D343838612D396164382D3063666630626362626539633142000008800000002C4200000A060000000C782D6174747269627574653242000000B060000000E4D6F64696669656456616C756532
```

8

Client A:

Destroy (symmetric key)

In: uuidKey

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1

42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D010000000400000001420000F8000000043420000570400000004000000144200007480000000 2D4200008F060000002461646264656638642D643662632D343838612D396164382D306366663062636265396331
```

Out: uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E01D3 (Wed Jan 14
16:16:35 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1

42000076800000003420000758000000041420000658000000001A42000066010000000400000000420000670100000004
```

	4000000624200008E080000000800000000496E01D34200000D0100000004000000014200000F80000000504200005704 0000000400000014420000 7A040000000400000000420000778000000002D4200008F06000000246164626465663864 2D643662632D343838612D396164382D306366663062636265396331
9	Client A: Get (symmetric key) In: uuidKey Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: adbdef8d-d6bc-488a-9ad8-0cff0bcbe9c1 420000738000000085420000728000000030420000658000000 1A420000660100000004000000004200006701000000040000006242000000D010000000400000001420000F8000000043420000570400000000400000 0A4200007480000000 2D4200008F06000000246164626465663864 2D643662632D343838612D396164382D306366663062636265396331 Out: Operation Failed, Item Not Found Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E01D3 (Wed Jan 14 16:16:35 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000001 (Failed) Tag: Result Reason (0x42000079), Type: Enumeration (0x04), Data: 0x00000001 (Item Not Found) Tag: Result Message (0x42000078), Type: Text String (0x06), Data: No Cryptographic Object found with given Unique Identifier 42000076800000 00BD420000758000000041420000658000000 1A420000660100000004000000004200006701000000040000006242000008E080000000800000000496E01D34200000D0100000004000000014200000F800000006A4200005704000000040000000A4200007A040000000400000001420000790400000004000000014200007806000000 3A4E6F2043727970746F6772617068696320 4F626A65637420666F756E642077697468206 76976656E20556E6971756520496564656E746966696572
10	Client A: Destroy (template) In: uuidTemplate Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 7936e2b9-0185-43ab-81b1-2e644ae48996 420000738000000085420000728000000030420000658000000 1A420000660100000004000000004200006701000000040000006242000000D010000000400000001420000F8000000043420000570400000000400000 01442000074800000002D4200008F06000000243739333665326239 2D303138352D343361622D383162312D326536343461653438393936 Out: uuidTemplate Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data:

	Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E01D5 (Wed Jan 14 16:16:37 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success) Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 7936e2b9-0185-43ab-81b1-2e644ae48996 42000076800000000A34200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000062420000 8E080000000800000000496E01D54200000D010000000400000001420000 0F8000000504200005704000000040000001442000 07A040000000400000000420000778000000002D4200008F06000000243739333665326239 2D3033138352D343361622D383162312D326536343461653438393936
11	Client A: Get (template) In: uuidTemplate Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 7936e2b9-0185-43ab-81b1-2e644ae48996 42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004000000062420000 0D010000000400000001420000 0F8000000043420000570400000004000000 0A42000074800000002D4200008F06000000243739333665326239 2D303138352D343361622D383162312D326536343461653438393936 Out: Operation Failed, Item Not Found Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E01D6 (Wed Jan 14 16:16:38 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000001 (Failed) Tag: Result Reason (0x42000079), Type: Enumeration (0x04), Data: 0x00000001 (Item Not Found) Tag: Result Message (0x42000078), Type: Text String (0x06), Data: No Cryptographic Object found with given Unique Identifier 42000076800000000BD42000075800000004142000065800000001A42000066010000000400000000420000670100000004000000062420000 8E080000000800000000496E01D64200000D010000000400000001420000 0F800000006A4200005704000000040000000A4200007A040000000400000001420000790400000004000000014200007806000000 3A4E6F2043727970746F67726170686963204F626A65637420666F756E642077697468206769766 56E20556E697175652049646 56E746966696572

2. Use-case: asynchronous locate

This use-case tests the asynchronous capabilities of KMIP using locate.

Time	Client A
1	Client A:

Create (symmetric key)
In: objectType = '00000002', attributes={ Name={ Name='Key1', NameType='00000001' },
ObjectGroup='Group1',
CryptographicAlgorithm='AES',
CryptographicLength='128', CryptographicUsageMask='00000004' }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Template-Attribute (0x4200008D), Type: Structure (0x80), Data:
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name
          Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
            Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1
            Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001
(Uninterpreted text string)
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Group
          Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Group1
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic
Algorithm
          Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000003 (AES)
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Length
          Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000080 (128)
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Usage
Mask
          Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000004 (Encrypt)

420000738000000174420000728000000030420000658000000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F8000000132420000570400000004000000014200007480000001 1C420000520400000004000000024200008D8000000106420000088000000030420000A06000000044E616D654200000B800000001A42000050060000000044B6579314200004F040000000400000001420000088000000024420000A060000000C4F626A6563742047726F75704200000B060000000647726F7570314200000880000002D4200000A06000000174372797074 6F77261706869632041 6C676F726974686D4200000B040000000400000003420000088000000002A4200000A06000000144372797074 6F77261706869632041 6C656E6774684200000B010000000400000080420000088000000002E4200000A06000000184372797074 6F77261706869632055 73616765204D61736B4200000B010000000400000004

Out: objectType = '00000002', uuidKey

Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0406 (Wed Jan 14
16:25:58 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
a8397a68-722b-4908-8f79-a1b9be0fccaf

420000768000000 0B042000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E04064200000D0100000004000000014200000F800000005D4200005704000000040000000142000007A040000000400000000420000778000000003A42000052040000000400000024200008F060000002461383339376136382D373232622D343930382D386637392D613162396265306663636166
```

2	Client B: Locate (symmetric key by name)

In: asynchronousIndicator='TRUE', attributes={ objectType = '00000002', Name={ Name='Key1', NameType='00000001'} }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Asynchronous Indicator (0x42000007), Type: Boolean (0x05), Data: TRUE
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Type
        Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric
Key)
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name
        Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
          Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1
          Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001 (Uninterpreted
text string)
```

```
42000073800000000C5420000728000000003A4200006580000000 1A42000066010000000400000000420000670100000000
400000062420000070500000001014200000D0100000004000000014200000F8000000079420000570400000000400000000
0842000074800000006342000008800000002142000000A060000000B4F626A65637420547970654200000B04000000040
000000242000008800000003042000000A06000000044E616D654200000B800000001A42000050060000000044B65793142
00004F040000000400000001
```

Out: asyncCorrValue1

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0407 (Wed Jan 14
16:25:59 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000002 (Pending)
    Tag: Asynchronous Correlation Value (0x42000006), Type: Octet String (0x07), Data:
6B41EF71666A081E
```

```
42000076800000007E4200007580000000414200006580000000 1A42000066010000000400000000420000670100000000
400000062420000 8E080000000800000000496E0407420000 0D0100000004000000014200000F800000002B4200005704
0000000400000008420000 7A040000000400000002420000060700000086B41EF71666A081E
```

3 Client B:

Poll*

In: asyncCorrValue1

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000001A (Poll)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Asynchronous Correlation Value (0x42000006), Type: Octet String (0x07), Data:
6B41EF71666A081E
```

```
42000073800000006942000072800000003042000065800000001A42000066010000000400000000420000670100000000
400000062420000 0D0100000004000000014200000F8000000027420000570400000004000000 1A42000074800000001 1
42000006070000000 86B41EF71666A081E
```

Out: uuidKey1

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0407 (Wed Jan 14
16:25:59 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
a8397a68-722b-4908-8f79-a1b9be0fccaf

420000768000000A342000075800000004142000065800000001A42000066010000000400000000420006701000000040000006242000 08E080000000800000000496E0407420000 0D0100000004000000014200000F80000000504200005704000000040000000842000 07A040000000400000000420000778000000 02D4200008F060000002461383339376136382D373232622D343930382D386637392D613162396265306663636166
```

4 Client B:

Get (symmetric key)

In: uuidKey1

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
a8397a68-722b-4908-8f79-a1b9be0fccaf

420000738000000085420000728000000030420000658000000 01A42000066010000000400000000420006701000000040000006242000 0D0100000004000000014200000F80000000434200005704000000040000000A420000748000000 02D4200008F060000002461383339376136382D373232622D343930382D386637392D613162396265306663636166
```

Out: objectType = ‘00000002’, uuidKey1, symmetricKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0407 (Wed Jan 14
16:25:59 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
a8397a68-722b-4908-8f79-a1b9be0fccaf
      Tag: Symmetric Key (0x4200008A), Type: Structure (0x80), Data:
        Tag: Key Block (0x4200003C), Type: Structure (0x80), Data:
          Tag: Key Value Type (0x42000040), Type: Enumeration (0x04), Data: 0x00000001
          Tag: Key Value (0x4200003F), Type: Structure (0x80), Data:
            Tag: Key Material (0x4200003D), Type: Octet String (0x07), Data:
0D3AA84EAD3FD5B82E776697CEFD3102
          Tag: Cryptographic Algorithm (0x42000025), Type: Enumeration (0x04), Data: 0x00000003
(AES)
          Tag: Cryptographic Length (0x42000026), Type: Integer (0x01), Data: 0x00000080 (128)

420000768000000 10B420000758000000041420000658000000 01A42000066010000000400000000420006701000000040000006242000 08E080000000800000000496E0407420000 0D0100000004000000014200000F80000000B84200005704000000040000000A4200007A040000000400000000420000778000000 09542000052040000000400000002420000 8F060000002461383339376136382D373232622D343930382D386637392D613162396265306663636166420000 8A8000000052 4200003C800000004942000040040000000400000001420000 3F800000001942000 03D07000000100D3AA84EAD3FD5B82
```

	E776697CEFD3102420000250400000004000000034200002601000000400000080
5	Client B: Locate (symmetric key by group) In: asynchronousIndicator='TRUE', attributes={ objectType = '00000002', ObjectGroup='Group1' } Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Asynchronous Indicator (0x42000007), Type: Boolean (0x05), Data: TRUE Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Type Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key) Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Group Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Group1 4200007380000000B94200007280000003A4200006580000001A42000066010000000400000000420006701000000040000006242000007050000000101420000D0100000004000000014200000F800000006D4200005704000000040000008420000748000000057420000088000000021420000A060000000B4F626A6563742047726F75704200000B060000000647726F757031000000242000008800000002442000 0A060000000C4F626A6563742047726F75704200000B060000000647726F757031 Out: asyncCorrValue2 Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0407 (Wed Jan 14 16:25:59 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000002 (Pending) Tag: Asynchronous Correlation Value (0x42000006), Type: Octet String (0x07), Data: ECA9B3F4F4D5E15F 4200007680000000 7E4200007580000000414200006580000000 1A42000066010000000400000000420006701000000040000006242000008E080000000800000000496E0407420000 0D0100000004000000014200000F800000002B4200005704000000040000000842000007A040000000400000002420000060700000008ECA9B3F4F4D5E15F
6	Client B: Poll* In: asyncCorrValue2 Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000001A (Poll) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Asynchronous Correlation Value (0x42000006), Type: Octet String (0x07), Data: ECA9B3F4F4D5E15F 4200007380000000694200007280000000304200006580000000 1A42000066010000000400000000420006701000000040000006242000000D0100000004000000014200000F8000000027420000570400000004000000 1A420000748000000011420000060700000008ECA9B3F4F4D5E15F Out: uuidKey2

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0408 (Wed Jan 14
16:26:00 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
a8397a68-722b-4908-8f79-a1b9be0fccaf

420000768000000A34200007580000000414200006580000000 1A420000660100000040000000042000067010000000
4000000624200008E0800000008000000000496E04084200000D0100000004000000014200000F80000000504200005704
000000040000000842000 07A040000000400000000420000778000000002D4200008F060000002461383339376136382D3
73232622D343930382D386637392D6131623962653066636361 66
```

7

Client B:

Get (symmetric key)

In: uuidKey2

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
a8397a68-722b-4908-8f79-a1b9be0fccaf

420000738000000085420000728000000030420000658000000 1A420000660100000040000000042000067010000000
4000000624200000D0100000004000000014200000F80000000434200005704000000040000000A420000748000000002D
4200008F060000002461383339376136382D373232622D343930382D386637392D6131623962653066636361 66
```

Out: objectType = ‘00000002’, uuidKey2, symmetricKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0408 (Wed Jan 14
16:26:00 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
a8397a68-722b-4908-8f79-a1b9be0fccaf
      Tag: Symmetric Key (0x4200008A), Type: Structure (0x80), Data:
        Tag: Key Block (0x4200003C), Type: Structure (0x80), Data:
          Tag: Key Value Type (0x42000040), Type: Enumeration (0x04), Data: 0x00000001
          Tag: Key Value (0x4200003F), Type: Structure (0x80), Data:
            Tag: Key Material (0x4200003D), Type: Octet String (0x07), Data:
0D3AA84EAD3FD5B82E776697CEFD3102
          Tag: Cryptographic Algorithm (0x42000025), Type: Enumeration (0x04), Data: 0x00000003
(AES)
          Tag: Cryptographic Length (0x42000026), Type: Integer (0x01), Data: 0x00000080 (128)

420000768000000 10B420000758000000041420000658000000 1A420000660100000040000000042000067010000000
4000000624200008E0800000008000000000496E04084200000D0100000004000000014200000F80000000B84200005704
000000040000000A4200007A040000000400000000420000778000000095420000520400000004000000024200008F060
000000246138333937613638 2D373232622D343930382D386637392D6131623962653066636361664200008A8000000052
4200003C800000004942000040040000000400000001420000 3F8000000019420000 3D07000000100D3AA84EAD3FD5B82
E776697CEFD3102420000025040000000400000003420000260100000004000000 80
```

8	Client B:
	Locate (symmetric key by name)
	In: asynchronousIndicator='TRUE', attributes={ objectType = '00000002', Name= { Name='Key1', NameType='00000001' } }
	
	Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
	  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
	  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
	  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
	  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
	  Tag: Asynchronous Indicator (0x42000007), Type: Boolean (0x05), Data: TRUE
	  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
	  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
	  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
	  Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
	  Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
	  Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Type
	  Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
	  Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
	  Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name
	  Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
	  Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1
	  Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001 (Uninterpreted text string)
	
	42000073800000000C54200007280000000 3A4200006580000000 1A42000066010000000400000000420000670100000004000000624200000705000000010142000000D0100000004000000014200000F8000000079420000570400000000400000008420000748000000063420000088000000021420000 0A060000000B4F626A656374205479706542000000B040000000400000002420000088000000030420000 0A06000000044E616D654200000B800000001A42000050060000000044B6579314200004F040000000400000001
	
	Out: asyncCorrValue5
	
	Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
	  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
	  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
	  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
	  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
	  Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0408 (Wed Jan 14 16:26:00 CET 2009)
	  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
	  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
	  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
	  Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000002 (Pending)
	  Tag: Asynchronous Correlation Value (0x42000006), Type: Octet String (0x07), Data: 33E3FAF14A6358E7
	
	42000076800000007E4200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E04084200000D0100000004000000014200000F800000002B4200005704000000040000000842000 07A040000000400000002420000060700000000833E3FAF14A6358E7

9	Client B:
	Cancel
	In: asyncCorrValue5
	
	Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
	  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
	  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
	  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
	  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
	  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
	  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
	  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000019 (Cancel)
	  Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
	  Tag: Asynchronous Correlation Value (0x42000006), Type: Octet String (0x07), Data: 33E3FAF14A6358E7
	
	42000073800000006942000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F8000000027420000570400000004000000194200007480000000114200000607000000 0833E3FAF14A6358E7

Out: asyncCorrValue5, CancelResult='00000001'

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x000000000496E0408 (Wed Jan 14
16:26:00 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000019 (Cancel)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Asynchronous Correlation Value (0x42000006), Type: Octet String (0x07), Data:
33E3FAF14A6358E7
      Tag: Cancellation Result (0x42000012), Type: Enumeration (0x04), Data: 0x00000001
(Cancelled)
```

```
420000768000000094420000758000000041420000658000000001A42000066010000000400000000420000670100000004000000624200008E0800000008000000000496E04084200000D0100000004000000014200000F80000000414200005704000000040000001942000007A040000000400000000420000778000000001E42000006070000000833E3FAF14A6358E74200012040000000400000001
```

10

Client A:

Destroy (symmetric key)

In: uuidKey

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
a8397a68-722b-4908-8f79-a1b9be0fccaf
```

```
420000738000000085420000728000000030420000658000000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F8000000043420000570400000004000000144200007480000000 2D4200008F06000000246138333937613638 2D373232622D343930382D386637392D6131623962653066636361 66
```

Out: uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x000000000496E0408 (Wed Jan 14
16:26:00 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
a8397a68-722b-4908-8f79-a1b9be0fccaf
```

```
4200007680000000A34200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000624200008E0800000008000000000496E04084200000D0100000004000000014200000F80000000504200005704000000040000001442000007A040000000400000000420000778000000002D4200008F06000000246138333937613638 2D373232622D343930382D386637392D6131623962653066636361 66
```

* = executed until response is ready

4. Key life cycle support

1. Use-case: revoke scenario

This use-case tests the revocation aspect of the key life cycle support in KMIP.

Time	Client A
0	Client A: Create (symmetric key) In: objectType = '00000002', attributes={ Name={ Name='Key1', NameType='00000001' }, CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='00000004' } Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key) Tag: Template-Attribute (0x4200008D), Type: Structure (0x80), Data: Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data: Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1 Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001 (Uninterpreted text string) Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Algorithm Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000003 (AES) Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Length Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000080 (128) Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Usage Mask Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000004 (Encrypt) 42000073800000014742000072800000003042000065800000001A42000066010000004000000042000067010000000400000062420000D0100000004000000014200000F8000000105420000570400000004000000014200007480000000EF42000052040000000400000002420008D80000000D9420000088000000030420000A06000000044E616D654200000B800000001A42000050060000000044B6579314200004F040000000400000001420000088000000002D4200000A0600000017437279707465772617068696320416C676F726974686D4200000B040000000400000003420000088000000002A4200000A060000001443727970746F6772617068696320 4C656E6774684200000B0100000004000000804200000880000000 2E4200000A060000001843727970746F6772617068696320557361676 5204D61736B4200000B010000004000000 4 Out: objectType = '00000002', uuidKey Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B5C (Wed Jan 14 16:57:16 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)

	Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key) Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 6a67f6d9-73cc-4882-b5a6-7728bba4166f 42000076800000000B042000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E0B5C4200000D0100000004000000014200000F800000005D4200005704000000040000000142000007A040000000400000000420000778000000003A42000052040000000400000002420000 8F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666
1	Client A: Get attribute In: uuidKey, attributeName={'State'} Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 6a67f6d9-73cc-4882-b5a6-7728bba4166f Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: State 42000073800000009342000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D010000000400000001420000F8000000051420000570400000004000000B42000074800000003B4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000 0A06000000055374617465 Out: uuidKey, attribute={ State='00000001' } Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x000000000496E0B5D (Wed Jan 14 16:57:17 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success) Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 6a67f6d9-73cc-4882-b5a6-7728bba4166f Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: State Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000001 (Pre-Active) 42000076800000000C74200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E0B5D4200000D0100000004000000014200000F800000007442000057040000000400000000B4200007A040000000400000000420000778000000005142000 08F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000 08800000001B4200000A060000000553746174654200000B040000000400000001
2	Client A: Add attribute In: uuidKey, attribute={ ActivationDate='2' } Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:

```
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Activation Date
        Tag: Attribute Value (0x4200000B), Type: Date-Time (0x08), Data: 0x0000000000000002 (Thu
Jan 01 01:00:02 CET 1970)

420000738000000B74200007280000000304200006580000000 1A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F80000000754200005704000000040000000D42000074800000005F4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000088000000029420000 0A060000000F41637469766174696F6E20446174654200000B0800000008000000000000000 2

Out: uuidKey, attribute={ ActivationDate='2' }

Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B5D (Wed Jan 14
16:57:17 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Activation Date
        Tag: Attribute Value (0x4200000B), Type: Date-Time (0x08), Data: 0x0000000000000002 (Thu
Jan 01 01:00:02 CET 1970)

420000768000000D54200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000624200008E0800000008000000000496E0B5D4200000D0100000004000000014200000F80000000824200005704000000040000000D4200007A040000000400000000420000778000000005F4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000088000000029420000 0A060000000F41637469766174696F6E20446174654200000B0800000008000000000000000 2
```

3 Client A:

Get attribute

In: uuidKey, attributeName={ 'State' }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: State

420000738000000093420000728000000030420000658000000 1A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F80000000514200005704000000040000000B4200007480000000 3B4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000 0A06000000055374617465

Out: uuidKey, attribute={ State='00000002' }

Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B5D (Wed Jan 14
16:57:17 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
```

```
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: State
        Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000002 (Active)
```

```
42000076800000000C74200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000624200008E0800000008000000000496E0B5D4200000D0100000004000000014200000F8000000074420000570400000004000000084200000B4200007A0400000004000000004200007780000000514200008F06000000243661363766366 4392D373363632D343838322D623561362D373732386262613431363666420000088000000001B4200000A060000000553746174654200000B04000000040000000 2
```

4 Client B:

Locate (symmetric key by name)

In: objectType = ‘00000002’, attributes={ Name={ Name=‘Key1’, NameType=’00000001’ } }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Type
        Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric
Key)
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name
        Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
          Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1
          Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001 (Uninterpreted
text string)
```

```
42000073800000000BB4200007280000000304200006580000000 1A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F8000000079420000570400000004000000084200007480000000634200000880000000214200000A060000000B4F626A65637420547970654200000B0400000004000000024200000880000000304200000A06000000044E616D654200000B800000001A42000050060000000044B6579314200004F0400000004000000 1
```

Out: uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B5E (Wed Jan 14
16:57:18 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
```

```
42000076800000000A34200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000624200008E0800000008000000000496E0B5E4200000D0100000004000000014200000F8000000050420000570400000004000000084200007A0400000004000000004200007780000000 2D4200008F06000000243661363766366 4392D373363632D343838322D623561362D373732386262613431363666
```

5 Client B:

Get (symmetric key)

In: uuidKey

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
```

```
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f

420000738000000085420000728000000030420000658000000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F800000004342000057040000000400000000A42000074800000002D4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666
```

Out: objectType = '00000002', uuidKey, symmetricKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B5E (Wed Jan 14
16:57:18 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Symmetric Key (0x4200008A), Type: Structure (0x80), Data:
        Tag: Key Block (0x4200003C), Type: Structure (0x80), Data:
          Tag: Key Value Type (0x42000040), Type: Enumeration (0x04), Data: 0x00000001
          Tag: Key Value (0x4200003F), Type: Structure (0x80), Data:
            Tag: Key Material (0x4200003D), Type: Octet String (0x07), Data:
59E8D268CB2FD53E50C79BE91137406E
          Tag: Cryptographic Algorithm (0x42000025), Type: Enumeration (0x04), Data: 0x00000003
(AES)
          Tag: Cryptographic Length (0x42000026), Type: Integer (0x01), Data: 0x00000080 (128)

420000768000000010B42000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E0B5E4200000D0100000004000000014200000F80000000B842000057040000000400000000A4200007A040000000400000000420000778000000095420000520400000004000000024200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000 8A8000000052 4200003C8000000049420000400400000004000000014200003F8000000019420000 3D070000001059E8D268CB2FD53E50C79BE91137406E42000025040000000400000003420000260100000004000000 80
```

6 Client B:

Revoke (symmetric key as compromised)

In: uuidKey, RevocationReason='00000002', CompromiseOccurrenceTime='6'

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000013 (Revoke)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Revocation Reason (0x4200007C), Type: Structure (0x80), Data:
        Tag: Revocation Reason Code (0x4200007D), Type: Enumeration (0x04), Data: 0x00000001 (Key
Compromise)
      Tag: Compromise Occurrence Date (0x4200001E), Type: Date-Time (0x08), Data:
0x0000000000000006 (Thu Jan 01 01:00:06 CET 1970)

4200007380000000AC42000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F800000006A42000057040000000400000013420000748000000054 4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000 7
```

	C800000000D4200007D040000000400000001420000 1E080000008000000000000006
	
	Out: uuidKey
	
	Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
	  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
	  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
	  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
	  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
	  Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B5E (Wed Jan 14 16:57:18 CET 2009)
	  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
	  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
	  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000013 (Revoke)
	  Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
	  Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
	  Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 6a67f6d9-73cc-4882-b5a6-7728bba4166f
	
	420000768000000A34200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E0B5E4200000D0100000004000000014200000F8000000050420000570400000004000000134200007A040000000400000000420000778000000002D4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666

7	Client B:
	Get attribute
	In: uuidKey, attributeName={ ‘State’ }
	
	Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
	  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
	  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
	  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
	  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
	  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
	  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
	  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes)
	  Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
	  Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 6a67f6d9-73cc-4882-b5a6-7728bba4166f
	  Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: State
	
	420000738000000093420000728000000030420000658000000 1A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F8000000051420000570400000004000000B42000074800000003B4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000 A06000000055374617465
	
	Out: uuidKey, attribute={ State=‘00000004’ }
	
	Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
	  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
	  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
	  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
	  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
	  Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B5F (Wed Jan 14 16:57:19 CET 2009)
	  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
	  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
	  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes)
	  Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
	  Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
	  Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 6a67f6d9-73cc-4882-b5a6-7728bba4166f
	  Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
	  Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: State
	  Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000004 (Compromised)
	
	420000768000000C74200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E0B5F4200000D0100000004000000014200000F8000000074420000570400000004000000B4200007A040000000400000000420000778000000051420000 8F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000088000000001B4200000A06000000055374617465420000 0B04000000400000004

8	Client A:
	Get attribute list
	In: uuidKey
	
	Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
	  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
	  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
	  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
	  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
	  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
	  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
	  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000C (Get Attribute List)
	  Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
	  Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
	6a67f6d9-73cc-4882-b5a6-7728bba4166f
	
	42000073800000085420000728000000030420000658000000 1A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F8000000043420000570400000000400000000C42000074800000002D4200008F060000002436613637663664392D373363632D343838322D623561362D373732386262613431363666420000A060000001443727970746F67726170686963204C656E6774684200000A060000001743727970746F6772617068696320416C676F726974686D4200000A0600000005537461746542000000A060000001A436F6D70726F6D697365204F6363757272656E6365204461746542000000A060000000F436F6D70726F6D6973652044617465420000A060000000C496E697469616C20446174654200000A060000000F41637469766174696F6E20446174654200000A0600000011526576F636174696F6E20526561736F6E4200000A0600000011556E697175652049646564E74696669657242000000A06000000044E616D654200000A0600000018437279707467726170686963205573616765204D61736B4200000A060000000B4F626A656374205479706542000000A06000000114C617374204368616E6765642044617465

9	Client A:
	Get attributes
	In: uuidKey, attributeName = { ‘State’ }
	
	Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
	  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
	  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
	  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)

```
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: State
```

```
420000738000000093420000728000000030420000658000000001A42000066010000000400000000420000670100000004000000062420000D0100000004000000014200000F8000000051420000570400000004000000B4200007480000000 3B4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000 A06000000055374617465
```

Out: uuidKey, attribute={ State='00000004' }

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x000000000496E0B5F (Wed Jan 14
16:57:19 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000B (Get Attributes)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: State
        Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000004
(Compromised)
```

```
420000768000000C74200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000062420000 8E08000000080000000496E0B5F4200000D0100000004000000014200000F8000000074420000570400000000B4000000B04200007A04000000040000000042000077800000005142000 08F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000088000000001B4200000A060000000553746174654200000B04000000040000000 4
```

10 Client A:

Add attribute [batch]

In: uuidKey, attribute={ x-attribute1='Value1' }

In: uuidKey, attribute={ x-attribute2='Value2' }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 989D9CCCF325C9CB
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Value1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: F291145F8553CD75
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Value2
```

```
420000738000000 14D42000072800000003042000065800000001A42000066010000000400000000420000670100000004000000062420000D0100000004000000024200000F8000000081420000570400000004000000D420000900700000008
```

989D9CCCF325C9CB42000074800000005A4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000088000000024420000 0A060000000C782D6174747269627574653142000 00B060000000656616C756532

Out: uuidKey, attribute={ x-attribute1='Value1' }
Out: uuidKey, attribute={ x-attribute2='Value2' }

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B5F (Wed Jan 14
16:57:19 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 989D9CCCF325C9CB
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Value1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: F291145F8553CD75
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: Value2
```

42000076800000017842000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E08000000080000000496E0B5F4200000D010000000400000002420000F800000008E4200005704000000040000000D42000090070000000898 9D9CCCF325C9CB4200007A040000000400000000420000778000000005A4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000088000000024420000 0A060000000C782D6174747269627574653142000 00B060000000656616C756532

11	Client A: Modify attribute [batch] In: uuidKey, attribute={ x-attribute1='ModifiedValue1' } In: uuidKey, attribute={ x-attribute2='ModifiedValue2' }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000E (Modify Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 3AF6DF291C0B4C39
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000E (Modify Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: EC9FFF5CFA921715
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
```

```
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue2

42000073800000015D42000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000024200000F8000000089420000570400000004000000E42000090070000000083AF6DF291C0B4C394200007480000000624200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000088000000002C4200000A060000000C782D617474726962757465314200000B060000000E4D6F6469666965645661 6C7565314200000F8000000089420000570400000004000000E42000090070000000083EC9FFF5CFA92171542000074800000006242000 08F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000088000000002C4200000A060000000C782D617474726962757465324200000B060000000E4D6F6469666965645661 6C756532
```

Out: uuidKey, attribute={ x-attribute1='ModifiedValue1' }
Out: uuidKey, attribute={ x-attribute2='ModifiedValue2' }

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B60 (Wed Jan 14
16:57:20 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000E (Modify Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 3AF6DF291C0B4C39
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000E (Modify Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: EC9FFF5CFA921715
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue2

42000076800000018842000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E08000000080000000496E0B604200000D0100000004000000024200000F8000000096420005704000000040000000E42000090070000000083AF6DF291C0B4C394200007A040000000400000000420000778000000062420008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000088000000002C4200000A060000000C782D617474726962757465314200000B060000000E4D6F6469666965645661 6C7565314200000F8000000096420000570400000004000000E42000090070000000083EC9FFF5CFA9217154200007A040000000400000004200007780000000624200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000088000000002C4200000A060000000C782D617474726962757465324200000B060000000E4D6F6469666965645661 6C756532
```

12 Client A:

Delete attribute [batch]

In: uuidKey, attributeNames={ 'x-attribute1' }
In: uuidKey, attributeNames={ 'x-attribute2' }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000F (Delete Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: BAA7130E892835BB
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
```

```
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000F (Delete Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 7D4CBEEC3CAAD205
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2

420000738000000011D42000072800000000304200006580000000 1A42000066010000000400000000420000670100000004000000624200000D0100000004000000024200000F8000000069420000570400000000400000000F420000900700000008BAA7130E892835BB4200007480000000424200008F0600000024366136376636643920D373363632D343838322D623561362D373732386262613431363666420000A060000000C782D617474726962757465314200000F8000000069420000570400000000400000000F420000900700000008BAA7130E892835BB4200007A040000000400000000420000778000000062420008F060000002436613637663664392D373363632D343838322D623561362D373732386262613431363666420000088000000C4200000A060000000C782D617474726962757465314200000B060000000E4D6F6469666965645661 6C7565314200000F8000000096420000570400000004000000F420000900700000008 7D4CBEEC3CAAD2054200007A040000000400000004200007780000000624200008F060000002436613637663664392D373363632D343838322D623561362D373732386262613431363666420000088000000C4200000A060000000C782D617474726962757465324200000B060000000E4D6F6469666965645661 6C756532
```

Out: uuidKey, attributeNames={ ‘x-attribute1’ }
Out: uuidKey, attributeNames={ ‘x-attribute2’ }

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B61 (Wed Jan 14
16:57:21 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000F (Delete Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: BAA7130E892835BB
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute1
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue1
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000F (Delete Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 7D4CBEEC3CAAD205
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-attribute2
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: ModifiedValue2

420000768000000188420000758000000041420000658000000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E0B614200000D0100000004000000024200000F8000000096420000570400000004000000F420000900700000008BAA7130E892835BB4200007A040000000400000000420000778000000062420008F060000002436613637663664392D373363632D343838322D623561362D373732386262613431363666420000088000000C4200000A060000000C782D617474726962757465314200000B060000000E4D6F6469666965645661 6C7565314200000F8000000096420000570400000004000000F420000900700000008 7D4CBEEC3CAAD2054200007A040000000400000004200007780000000624200008F060000002436613637663664392D373363632D343838322D623561362D373732386262613431363666420000088000000C4200000A060000000C782D617474726962757465324200000B060000000E4D6F6469666965645661 6C756532
```

13	Client A:
	Get (symmetric key)
	In: uuidKey
	
	`Tag: Request Message (0x42000073), Type: Structure (0x80), Data:`
	`  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:`
	`  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:`
	`  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)`
	`  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)`
	`  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)`
	`  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:`
	`  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)`
	`  Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:`

```
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
```

```
42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D010000000400000001420000F8000000043420000570400000004000000A42000074800000002D4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666
```

Out: objectType = '00000002', uuidKey, symmetricKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B61 (Wed Jan 14
16:57:21 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
      Tag: Symmetric Key (0x4200008A), Type: Structure (0x80), Data:
        Tag: Key Block (0x4200003C), Type: Structure (0x80), Data:
          Tag: Key Value Type (0x42000040), Type: Enumeration (0x04), Data: 0x00000001
          Tag: Key Value (0x4200003F), Type: Structure (0x80), Data:
            Tag: Key Material (0x4200003D), Type: Octet String (0x07), Data:
59E8D268CB2FD53E50C79BE91137406E
          Tag: Cryptographic Algorithm (0x42000025), Type: Enumeration (0x04), Data: 0x00000003
(AES)
          Tag: Cryptographic Length (0x42000026), Type: Integer (0x01), Data: 0x00000080 (128)
```

```
42000076800000010B42000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E0B614200000D010000000400000001420000F80000000B84200005704000000040000000A4200007A040000000400000000420000778000000095420000520400000004000000024200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666420000 8A8000000052 4200003C8000000049420000400400000004000000014200003F8000000019420000 3D070000001059E8D268CB2FD53E50C79BE91137406E42000025040000000400000003420000260100000004000000 80
```

14	Client A: Destroy (symmetric key) In: uuidKey

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f
```

```
42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D010000000400000001420000F8000000043420000570400000004000000144200007480000000 2D4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666
```

Out: uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0B61 (Wed Jan 14
16:57:21 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
```

```
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
6a67f6d9-73cc-4882-b5a6-7728bba4166f

42000076800000000A34200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E0B614200000D0100000004000000014200000F80000000504200005704000000040000001442000007A040000000400000000420000778000000002D4200008F06000000243661363766366439 2D373363632D343838322D623561362D373732386262613431363666
```

5. Auditing and reporting

1. Use-case: get usage allocation scenario

This use-case tests the usage management functionality of KMIP.

Time	Client A
0	Client A: Create (symmetric key) In: objectType = '00000002', attributes={ Name={ Name='Key1', NameType='00000001' }, ObjectGroup='Group1', CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='00000004' }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Template-Attribute (0x4200008D), Type: Structure (0x80), Data:
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name
          Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
            Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1
            Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001 (Uninterpreted
text string)
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic
Algorithm
          Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000003 (AES)
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Length
          Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000080 (128)
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Usage
Mask
          Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000004 (Encrypt)

42000073800000014742000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F8000000105420000570400000004000000014200007480000000EF42000052040000000400000024200008D80000000D9420000088000000030420000 0A06000000044E616D654200000B800000001A4200005006000000044B6579314200004F040000000400000001420000088000000002D4200000A06000000174372 7970746F6772617068696320416C676F726974686D4200000B040000000400000003420000088000000002A4200000A0600 0000144372797074 6F6772617068696320 4C656E6774684200000B0100000004000000804200000880000000 2E4200000A 060000001843727970746F6772617068696320557361676520 4D61736B4200000B010000004000000004
```

Out: objectType = ‘00000002’, uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0EFB (Wed Jan 14
17:12:43 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000001 (Create)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9

420000768000000B042000075800000004142000065800000001A4200006601000000040000000042000067010000000400000006242000008E080000000800000000496E0EFB4200000D0100000004000000014200000F800000005D42000057040000000400000001420000070400000004000000014200007A040000000400000000420000778000000003A42000052040000000400000002420000 8F06000000243166313635643 52D636262642D346264362D393836372D383065306233393061636639
```

1 Client A:

Add attribute [batch]

In: uuidKey, attribute={ ActivationDate=‘2’ }

In: uuidKey, attribute={ ProtectStopDate=’<*NOW+10min*>’ }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 26B1810D37F208ED
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Activation Date
        Tag: Attribute Value (0x4200000B), Type: Date-Time (0x08), Data: 0x0000000000000002 (Thu
Jan 01 01:00:02 CET 1970)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: A87E7D9F6EC63107
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Protect Stop Date
        Tag: Attribute Value (0x4200000B), Type: Date-Time (0x08), Data: 0x00000000496E1153 (Wed
Jan 14 17:22:43 CET 2009)

420000738000000159420000728000000030420000658000000001A4200006601000000040000000042000067010000000400000006242000000D0100000004000000024200000F8000000086420000570400000000400000000D4200009007000000082 6B1810D37F208ED4200007480000000 5F4200008F0600000024316631363564363 52D636262642D346264362D393836372D383065306233393061636639420000088000000029420000 0A060000000F41637469766174696F6E20446174654200000B0800000008000000000000000024200000F8000000088420000570400000004000000D4200009007000000008A87E7D9F6EC631074200007480000000614200008F0600000024316631363564363 52D636262642D346264362D393836372D383065306233393061636639420000088000000002B4200000A060000001150726F746563742053746F7020446174654200000B0800000008000000000496E1153

Out: uuidKey, attribute={ ActivationDate=’2’ }
Out: uuidKey, attribute={ ProtectStopDate=’<*NOW+10min*>’ }

Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
```

```
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0EFC (Wed Jan 14
17:12:44 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000002 (2)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: 26B1810D37F208ED
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Activation Date
        Tag: Attribute Value (0x4200000B), Type: Date-Time (0x08), Data: 0x0000000000000002 (Thu
Jan 01 01:00:02 CET 1970)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Unique Message ID (0x42000090), Type: Octet String (0x07), Data: A87E7D9F6EC63107
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Protect Stop Date
        Tag: Attribute Value (0x4200000B), Type: Date-Time (0x08), Data: 0x00000000496E1153 (Wed
Jan 14 17:22:43 CET 2009)

420000768000000184420000758000000041420000658000000001A4200006601000000040000000042000067010000000400
0000006242000008E0800000008000000000496E0EFC4200000D0100000004000000024200000F8000000093420000570400
000004000000D4200009007000000826B1810D37F208ED4200007A0400000004000000004200007780000000 5F420000
8F06000000243166313635643635 2D636262642D346264362D393836372D383065306233393061636639420000088000000
00294200000A060000000F41637469766174696F6E20446174654200000B0800000008000000000000000024200000F8000
0000954200005704000000040000000D4200009007000000008A87E7D9F6EC631074200007A0400000004000000004200000
778000000061420000 8F06000000243166313635643635 2D636262642D346264362D393836372D383065306233393061636
3663942000008800000002B4200000A060000001150726F746563742053746F7020446174654200000B0800000008000000
00496E1153
```

2 Client A:

Add Attribute

In: uuidKey, attribute={ UsageLimits={ UsageLimitsTotalBytes='1000'} }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Usage Limits
        Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
          Tag: Usage Limits Total Bytes (0x42000094), Type: Big Integer (0x03), Data: 03E8 (1000)

420000738000000 0B74200007280000000304200006580000000 1A4200006601000000040000000042000067010000000400
0000006242000000D0100000004000000014200000F8000000075420000570400000004000000D4200007480000000 5F42
00008F06000000243166313635643635 2D636262642D346264362D393836372D383065306233393061636639420000088 0
000000294200000A060000000C5573616765204C696D6974734200000B800000000B4200009403000000 0203E8
```

Out: uuidKey, attribute={ UsageLimits={ UsageLimitsTotalBytes= '1000', UsageLimitsByteCount='1000'} }

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0EFC (Wed Jan 14
17:12:44 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
```

	Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success) Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 1f165d65-cbbd-4bd6-9867-80e0b390acf9 Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Usage Limits Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data: Tag: Usage Limits Total Bytes (0x42000094), Type: Big Integer (0x03), Data: 03E8 (1000) Tag: Usage Limits Byte Count (0x42000092), Type: Big Integer (0x03), Data: 03E8 (1000) 42000076800000000E042000075800000004142000065800000001A42000066010000000400000000420000670100000004 0000000624200008E080000000800000000496E0EFC4200000D0100000004000000014200000F800000008D420000570400 0000040000000D4200007A040000000400000000420000778000000006A4200008F060000002431663136356436352D6362 62642D346264362D393836372D383065306233393061636639420000088000000034420000A060000000C557361676520 4C696D6974734200000B800000001642000094030000000203E842000092030000000203E8
3	Client B: Locate (symmetric key by name) In: objectType = '00000002', attributes={ Name={ Name='Key1', NameType= '00000001'} } Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Type Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key) Tag: Attribute (0x42000008), Type: Structure (0x80), Data: Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data: Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1 Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001 (Uninterpreted text string) 42000073800000000BB42000072800000003042000065800000001A42000066010000000400000000420000670100000004 0000000624200000D0100000004000000014200000F8000000079420000570400000004000000084200007480000000634 2 0000088000000021420000A060000000B4F626A656374205479706542000000B040000000400000002420000088000000 0 304200000A06000000044E616D654200000B800000001A42000050060000000044B6579314200004F040000000400000001 Out: uuidKey Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0EFD (Wed Jan 14 17:12:45 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success) Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 1f165d65-cbbd-4bd6-9867-80e0b390acf9 42000076800000000A342000075800000004142000065800000001A42000066010000000400000000420000670100000004 0000000624200008E080000000800000000496E0EFD4200000D0100000004000000014200000F8000000050420000570400 0000040000000842000007A040000000400000000420000778000000002D4200008F060000002431663136356436352D6362 62642D346264362D393836372D383065306233393061636639
4	Client B: Get (symmetric key) In: uuidKey

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9
```

```
420000738000000085420000728000000030420000658000000001A4200006601000000040000000042000067010000000400000062420000D010000000400000001420000F8000000043420000570400000000400000000A4200007480000000 2D4200008F06000000243166313635643635 2D636262642D346264362D393836372D383065306233393061636639
```

Out: objectType = ‘00000002’, uuidKey, symmetricKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0EFD (Wed Jan 14
17:12:45 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9
      Tag: Symmetric Key (0x4200008A), Type: Structure (0x80), Data:
        Tag: Key Block (0x4200003C), Type: Structure (0x80), Data:
          Tag: Key Value Type (0x42000040), Type: Enumeration (0x04), Data: 0x00000001
          Tag: Key Value (0x4200003F), Type: Structure (0x80), Data:
            Tag: Key Material (0x4200003D), Type: Octet String (0x07), Data:
17565C68ADC26DB563319588CAEB473A
          Tag: Cryptographic Algorithm (0x42000025), Type: Enumeration (0x04), Data: 0x00000003
(AES)
          Tag: Cryptographic Length (0x42000026), Type: Integer (0x01), Data: 0x00000080 (128)
```

```
420000768000000 10B4200007580000000414200006580000000 1A4200006601000000040000000042000067010000000400000062420000 8E080000000800000000496E0EFD4200000D010000000400000001420000F80000000B8420000570400000004000000 0A4200007A040000000400000000420000778000000095420000520400000004000000024200008F06000002431663136356436352D636262642D346264362D393836372D383065306233393061636639420000 8A80000000524200003C8000000049420000400400000004000000014200003F8000000019420000 3D070000001017565C68ADC26DB563319588CAEB473A42000025040000000400000003420000260100000040000008 0
```

5 Client B:

Get usage allocation

In: uuidKey, UsageLimitsByteCount=’500’

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000011 (Get Usage Allocation)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9
      Tag: Usage Limits Byte Count (0x42000092), Type: Big Integer (0x03), Data: 01F4 (500)
```

```
420000738000000090420000728000000030420000658000000001A4200006601000000040000000042000067010000000400000062420000D010000000400000001420000F800000004E4200005704000000040000001142000074800000000384200008F06000000243166313635643635 2D636262642D346264362D393836372D383065306233393061636639420000920300000000201F4
```

Out: uuidKey, UsageLimitsByteCount=’500’

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0EFD (Wed Jan 14
17:12:45 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000011 (Get Usage Allocation)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9
      Tag: Usage Limits Byte Count (0x42000092), Type: Big Integer (0x03), Data: 01F4 (500)

420000768000000AE42000075800000004142000065800000001A42000066010000000400000000420000670100000004
0000006242000008E0800000008000000000496E0EFD4200000D0100000004000000014200000F800000005B420000570400
00000400000011420000 7A040000000400000000420000778000000038420000 8F06000000243166313635643 52D6362
62642D346264362D393836372D383065306233393061636639420000920300000000201F4
```

6 Client A:

Get usage allocation

In: uuidKey, UsageLimitsByteCount=’500’

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000011 (Get Usage Allocation)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9
      Tag: Usage Limits Byte Count (0x42000092), Type: Big Integer (0x03), Data: 01F4 (500)

420000738000000090420000728000000030420000658000000001A42000066010000000400000000420000670100000004
0000006242000000D0100000004000000014200000F800000004E42000057040000000400000011420000748000000038422
00008F06000000243166313635643 52D636262642D346264362D393836372D383065306233393061636639420000920 3
0000000201F4
```

Out: uuidKey, UsageLimitsByteCount=’500’

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0EFD (Wed Jan 14
17:12:45 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000011 (Get Usage Allocation)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9
      Tag: Usage Limits Byte Count (0x42000092), Type: Big Integer (0x03), Data: 01F4 (500)

420000768000000AE42000075800000004142000065800000001A42000066010000000400000000420000670100000004
0000006242000008E0800000008000000000496E0EFD4200000D0100000004000000014200000F800000005B420000570400
00000400000011420000 7A040000000400000000420000778000000038420000 8F06000000243166313635643 52D6362
62642D346264362D393836372D383065306233393061636639420000920300000000201F4
```

7 Client C:

Locate (symmetric key by name)

In: objectType = ‘00000002’, attributes={ Name={ Name=‘Key1’, NameType=‘00000001’} }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
```

```
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Object Type
        Tag: Attribute Value (0x4200000B), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric
Key)
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Name
        Tag: Attribute Value (0x4200000B), Type: Structure (0x80), Data:
          Tag: Name Value (0x42000050), Type: Text String (0x06), Data: Key1
          Tag: Name Type (0x4200004F), Type: Enumeration (0x04), Data: 0x00000001 (Uninterpreted
text string)

420000738000000BB42000072800000003042000065800000001A42000066010000000400000000420000670100000004
0000006242000 00D010000000400000001420000 0F8000000079420000570400000004000000084200007480000000634 2
000008800000002142000 00A060000000B4F626A6563742054797065420000 0B040000000400000002420000088000000 0
304200000A06000000044E616D654200000B800000001A42000050060000000 44B6579314200004F040000000400000001

Out: uuidKey

Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0EFE (Wed Jan 14
17:12:46 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000008 (Locate)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
1f165d65-cbbd-4bd6-9867-80e0b390acf9

420000768000000 0A342000075800000004142000065800000001A42000066010000000400000000420000670100000004
0000006242000 08E080000000800000000496E0EFE4200000D010000000400000001420000 0F8000000050420000570400
0000040000000842000 07A040000000400000000420000778000000002D4200008F060000002431663136356436352D6362
62642D346264362D393836372D383065306233393061636639
```

8	Client C:
	Get (symmetric key)
	In: uuidKey
	
	Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
	  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
	  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
	  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
	  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
	  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
	  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
	  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get)
	  Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
	  Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
	1f165d65-cbbd-4bd6-9867-80e0b390acf9
	
	420000738000000085420000728000000030420000658000000 01A42000066010000000400000000420000670100000004
	0000006242000 00D010000000400000001420000 0F8000000043420000570400000000400000000A4200007480000000 2D42
	00008F060000002431663136356436352D636262642D346264362D393836372D383065306233393061636639
	
	Out: objectType = ‘00000002’, uuidKey, symmetricKey
	
	Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
	  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
	  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
	  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)

	Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0EFE (Wed Jan 14 17:12:46 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000A (Get) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success) Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key) Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 1f165d65-cbbd-4bd6-9867-80e0b390acf9 Tag: Symmetric Key (0x4200008A), Type: Structure (0x80), Data: Tag: Key Block (0x4200003C), Type: Structure (0x80), Data: Tag: Key Value Type (0x42000040), Type: Enumeration (0x04), Data: 0x00000001 Tag: Key Value (0x4200003F), Type: Structure (0x80), Data: Tag: Key Material (0x4200003D), Type: Octet String (0x07), Data: 17565C68ADC26DB563319588CAEB473A Tag: Cryptographic Algorithm (0x42000025), Type: Enumeration (0x04), Data: 0x00000003 (AES) Tag: Cryptographic Length (0x42000026), Type: Integer (0x01), Data: 0x00000080 (128) 420000768000000 10B420000758000000041420000658000000001A4200006601000000040000000042000067010000000400000006242000 08E080000000800000000496E0EFE4200000D0100000004000000014200000F80000000B8420000570400000000400000000A4200007A040000000400000000420000778000000095420000520400000004000000024200008F06000000243166313635643635 2D636262642D346264362D393836372D383065306233393061636639420000 8A80000000524200003C8000000049420000400400000000400000001420000 3F8000000019420000 3D070000001017565C68ADC26DB563319588CAEB473A4200002504000000040000000342000026010000000400000080
9	Client C: Get usage allocation In: uuidKey, UsageLimitsByteCount=’500’ Tag: Request Message (0x42000073), Type: Structure (0x80), Data: Tag: Request Header (0x42000072), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000011 (Get Usage Allocation) Tag: Request Payload (0x42000074), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 1f165d65-cbbd-4bd6-9867-80e0b390acf9 Tag: Usage Limits Byte Count (0x42000092), Type: Big Integer (0x03), Data: 01F4 (500) 420000738000000090420000728000000030420000658000000001A4200006601000000040000000042000067010000000400000006242000 00D0100000040000000142000 0F800000004E4200005704000000040000001142000074800000003842000008F06000000243166313635643635 2D636262642D346264362D393836372D383065306233393061636639420000920300000000201F4 Out: uuidKey, UsageLimitsByteCount=’0’ Tag: Response Message (0x42000076), Type: Structure (0x80), Data: Tag: Response Header (0x42000075), Type: Structure (0x80), Data: Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data: Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0) Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98) Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0EFE (Wed Jan 14 17:12:46 CET 2009) Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1) Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data: Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000011 (Get Usage Allocation) Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success) Tag: Response Payload (0x42000077), Type: Structure (0x80), Data: Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data: 1f165d65-cbbd-4bd6-9867-80e0b390acf9 Tag: Usage Limits Byte Count (0x42000092), Type: Big Integer (0x03), Data: 00 (0) 420000768000000 0AD420000758000000041420000658000000001A4200006601000000040000000042000067010000000400000006242000 08E080000000800000000496E0EFE4200000D0100000004000000014200000F800000005A420000570400000000400000011420000 7A040000000400000000420000778000000003742000 08F06000000243166313635643635 2D636262642D346264362D393836372D383065306233393061636639420000920300000000100
10	Client A:

	Destroy (symmetric key)
	In: uuidKey
	
	`Tag: Request Message (0x42000073), Type: Structure (0x80), Data:`
	`  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:`
	`  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:`
	`  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)`
	`  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)`
	`  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)`
	`  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:`
	`  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)`
	`  Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:`
	`  Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:`
	`1f165d65-cbbd-4bd6-9867-80e0b390acf9`
	
	`42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004`
	`0000006242000000D0100000004000000014200000F8000000043420000570400000004000000144200007480000000 2D42`
	`00008F06000000243166313635643 52D636262642D346264362D393836372D383065306233393061636639`
	
	Out: uuidKey
	
	`Tag: Response Message (0x42000076), Type: Structure (0x80), Data:`
	`  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:`
	`  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:`
	`  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)`
	`  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)`
	`  Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E0EFE (Wed Jan 14`
	`17:12:46 CET 2009)`
	`  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)`
	`  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:`
	`  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)`
	`  Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)`
	`  Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:`
	`  Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:`
	`1f165d65-cbbd-4bd6-9867-80e0b390acf9`
	
	`42000076800000000A34200007580000000414200006580000000 1A42000066010000000400000000420000670100000004`
	`0000006242000008E0800000008000000000496E0EFE4200000D0100000004000000014200000F8000000050420000570400`
	`0000040000001442000 07A0400000004000000004200007780000000 2D4200008F06000000243166313635643 52D6362`
	`62642D346264362D393836372D383065306233393061636639`

6. Key Interchange, Key Exchange

1. Use-case: Import of a Third-party Key

This use-case tests the import of a foreign key.

Time	Request/Response messages

0	Register (symmetric key)
	In: objectType = ‘00000002’, CryptographicUsageMask=‘00000004’, foreignSymmetricKey
	
	`Tag: Request Message (0x42000073), Type: Structure (0x80), Data:`
	`  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:`
	`  Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:`
	`  Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)`
	`  Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)`
	`  Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)`
	`  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:`
	`  Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000003 (Register)`
	`  Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:`
	`  Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)`

```
      Tag: Template-Attribute (0x4200008D), Type: Structure (0x80), Data:
        Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
          Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: Cryptographic Usage
Mask
          Tag: Attribute Value (0x4200000B), Type: Integer (0x01), Data: 0x00000004 (Encrypt)
      Tag: Symmetric Key (0x4200008A), Type: Structure (0x80), Data:
        Tag: Key Block (0x4200003C), Type: Structure (0x80), Data:
          Tag: Key Value Type (0x42000040), Type: Enumeration (0x04), Data: 0x00000001
          Tag: Key Value (0x4200003F), Type: Structure (0x80), Data:
            Tag: Key Material (0x4200003D), Type: Octet String (0x07), Data:
0123456789ABCDEF0123456789ABCDEF
          Tag: Cryptographic Algorithm (0x42000025), Type: Enumeration (0x04), Data: 0x00000003
(AES)
          Tag: Cryptographic Length (0x42000026), Type: Integer (0x01), Data: 0x00000080 (128)
```

```
42000073800000010042000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F80000000BE42000057040000000400000003420000748000000A842000052040000000400000002420000 8D8000000037420000088000000002E4200000A0600000018437279707 46F6772617068696320557361676520 4D61736B4200000B0100000004000000044200008A8000000052420000 3C8000000049420000400400040000000400000001420000 3F8000000019420000 3D07000000100123456789ABCDEF0123456789ABCDEF42000025040000000400000003420000260100000040000008 0
```

Out: objectType = ‘00000002’, uuidKey

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x000000000496E1037 (Wed Jan 14
17:17:59 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000003 (Register)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Object Type (0x42000052), Type: Enumeration (0x04), Data: 0x00000002 (Symmetric Key)
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
945a00b0-b211-49e8-acfe-adc31c873695
```

```
42000076800000000B042000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200000 8E08000000080000000496E1037420000 0D010000000400000001420000 0F800000005D4200005704000000400000003420000 7A040000000400000004200007780000000 3A42000052040000000400000002420000 8F06000000243934356130306230 2D623231312D343965382D616366652D6164633331633837333639354200000
```

1 Add attribute

In: uuidKey, attribute={ x-provider=‘unknown’ }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
945a00b0-b211-49e8-acfe-adc31c873695
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-provider
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: unknown
```

```
42000073800000000B142000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F800000006F42000057040000000400000003D42000074800000005942000008F06000000243934356130306230 2D623231312D343965382D616366652D6164633331633837333639354200000880000000234200000A060000000A782D70726F7669646572420000 0B0600000007756E6B6E6F776E
```

Out: uuidKey, attribute={ x-provider=‘unknown’ }

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
```

```
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E1038 (Wed Jan 14
17:18:00 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000D (Add Attribute)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
945a00b0-b211-49e8-acfe-adc31c873695
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-provider
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: unknown

420000768000000CF42000075800000004142000065800000001A42000066010000000400000000420000670100000004000000624200008E08000000080000000496E10384200000D010000000400000001420000F800000007C4200005704000000040000000D4200007A040000000400000000420000778000000059420000 8F06000000243934356130306230 2D623231312D343965382D616366652D6164633331633837333639354200000880000000234200000A060000000A782D70726F76696465724200000B0600000007756E6B6E6F776E
```

2 Modify attribute

In: uuidKey, attribute={ x-provider='third party' }

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000E (Modify Attribute)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
945a00b0-b211-49e8-acfe-adc31c873695
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-provider
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: third party

420000738000000B54200007280000000304200006580000000 1A42000066010000000400000000420000670100000004000000624200000D010000000400000001420000F800000007342000057040000000400000 0E42000074800000005D4200008F06000000243934356130306230 2D623231312D343965382D616366652D6164633331633837333639354200000880000000274200000A060000000A782D70726F76696465724200000B060000000B7468697264207061727479
```

Out: uuidKey, attribute={ x-provider='third party' }

```
Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E1038 (Wed Jan 14
17:18:00 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x0000000E (Modify Attribute)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
945a00b0-b211-49e8-acfe-adc31c873695
      Tag: Attribute (0x42000008), Type: Structure (0x80), Data:
        Tag: Attribute Name (0x4200000A), Type: Text String (0x06), Data: x-provider
        Tag: Attribute Value (0x4200000B), Type: Text String (0x06), Data: third party

420000768000000D34200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000624200008E08000000080000000496E10384200000D010000000400000001420000F800000000804200005704000000040000000E4200007A040000000400000000420000778000000005D4200008F06000000243934356130306230 2D623231312D343965382D616366652D6164633331633837333639354200000880000000274200000A060000000A782D70726F76696465724200000B060000000B7468697264207061727479
```

3 Destroy (symmetric key)

In: uuidKey

```
Tag: Request Message (0x42000073), Type: Structure (0x80), Data:
```

```
  Tag: Request Header (0x42000072), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Request Payload (0x42000074), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
945a00b0-b211-49e8-acfe-adc31c873695

42000073800000008542000072800000003042000065800000001A42000066010000000400000000420000670100000004000000624200000D0100000004000000014200000F8000000043420000570400000004000000144200007480000000 2D4200008F060000002439343561303062302D623231312D343965382D616366652D6164633331633837333639 35

Out: uuidKey

Tag: Response Message (0x42000076), Type: Structure (0x80), Data:
  Tag: Response Header (0x42000075), Type: Structure (0x80), Data:
    Tag: Protocol Version (0x42000065), Type: Structure (0x80), Data:
      Tag: Protocol Version Major (0x42000066), Type: Integer (0x01), Data: 0x00000000 (0)
      Tag: Protocol Version Minor (0x42000067), Type: Integer (0x01), Data: 0x00000062 (98)
    Tag: Time Stamp (0x4200008E), Type: Date-Time (0x08), Data: 0x00000000496E1039 (Wed Jan 14
17:18:01 CET 2009)
    Tag: Batch Count (0x4200000D), Type: Integer (0x01), Data: 0x00000001 (1)
  Tag: Batch Item (0x4200000F), Type: Structure (0x80), Data:
    Tag: Operation (0x42000057), Type: Enumeration (0x04), Data: 0x00000014 (Destroy)
    Tag: Result Status (0x4200007A), Type: Enumeration (0x04), Data: 0x00000000 (Success)
    Tag: Response Payload (0x42000077), Type: Structure (0x80), Data:
      Tag: Unique Identifier (0x4200008F), Type: Text String (0x06), Data:
945a00b0-b211-49e8-acfe-adc31c873695

42000076800000000A34200007580000000414200006580000000 1A42000066010000000400000000420000670100000004000000624200008E080000000800000000496E10394200000D0100000004000000014200000F8000000050420000570400000004000000144200007A040000000400000000420000778000000002D4200008F060000002439343561303062302D623231312D343965382D616366652D6164633331633837333639 35
```

7. Vendor Extensions

These use-cases test the handling of unknown message extensions with vendor-specific content.

1. Use-case: Unrecognized Message Extension with Criticality Indicator false

A create request is issued and the request contains a Message Extension with the Criticality Indicator set to false. The server does not understand the extension, but since it is non-critical, the create request is processed normally. Subsequently, the created key is deleted.

Time	Client A
0	Create (symmetric key) In: objectType=’00000002’, CryptographicAlgorithm=’AES’, CryptographicLength=’128’, CryptographicUsageMask=‘00000012’, MessageExtension={ VendorIdentification=’Acme’, CriticalityIndicator=’false’, VendorExtension={ tag=’0x42014242’, type=’text string’, value=’na’ } } Out: objectType=’00000002’, uuidKey

1	Destroy (symmetric key) In: uuidKey Out: uuidKey

2. Use-case: Unrecognized Message Extension with Criticality Indicator true

A create request is issued and the request contains a Message Extension with the Criticality Indicator set to true. The server does not understand the extension, and since it is critical, the create request fails and an error is returned.

Time	Client A
0	Create (symmetric key) In: objectType='00000002', CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='00000012', MessageExtension={ VendorIdentification='Acme', CriticalityIndicator='true', VendorExtension={ tag='0x42014242', type='text string', value='na' } } Out: Operation Failed, Feature Not Supported

8. Asymmetric keys

Creation of keys using "Create Key Pair" operation, locating pair using Link attribute.

1. Use-case: Create a Key Pair

Create a new private/public key pair. Make sure they are linked correctly by issuing Locate commands with the assigned Unique Identifiers. Finally delete both key halves.

Time	Client A
0	Create Key Pair In: commonAttributes={ CryptographicAlgorithm='RSA', CryptographicLength='1024', CryptographicUsageMask='00000012' }, privateKeyAttributes={ Name={ NameValue='PrivateKey1', NameType='00000001' } }, publicKeyAttributes={ NameValue='PublicKey1', NameType='00000001' } } Out: uuidPrivateKey, uuidPublicKey
1	Locate (Public Key) In: attributes={ objectType='PublicKey', Link={ LinkType='PrivateKeyLink', LinkedObjectIdentifier=uuidPrivateKey } } Out: uuidPublicKey
2	Locate (Private Key) In: attributes={ objectType='PrivateKey', Link={ LinkType='PublicKeyLink', LinkedObjectIdentifier=uuidPublicKey } } Out: uuidPrivateKey

3	Destroy In: uuidPrivateKey Out: uuidPrivateKey
4	Destroy In: uuidPublicKey Out: uuidPublicKey

2. Use-case: Register Both Halves of a Key Pair

Register a private key and a public key and set the Link attribute to point to each other. Verify the links were set correctly by locating the keys based on the link attributes, and then delete both objects.

Time	Client A
0	Register (Private Key) In: objectType='00000004', CryptographicUsageMask='00000012', foreignPrivateKey Out: uuidPrivateKey
1	Register (Public Key) In: objectType='00000004', CryptographicUsageMask='00000012', Link={ LinkType='PrivateKeyLink', LinkedObjectIdentifier=uuidPrivateKey }, foreignPublicKey Out: uuidPublicKey
2	Add attribute In: uuidPrivateKey, attribute={ Link={ LinkType='PublicKeyLink', LinkedObjectIdentifier=uuidPublicKey } } Out: uuidPrivateKey, attribute={ Link={ LinkType='PublicKeyLink', LinkedObjectIdentifier=uuidPublicKey } }
3	Locate (Public Key) In: attributes={ objectType='PublicKey', Link={ LinkType='PrivateKeyLink', LinkedObjectIdentifier=uuidPrivateKey } } Out: uuidPublicKey
4	Locate (Private Key) In: attributes={ objectType='PrivateKey', Link={ LinkType='PublicKeyLink', LinkedObjectIdentifier=uuidPublicKey } } Out: uuidPrivateKey
5	Destroy In: uuidPrivateKey Out: uuidPrivateKey
6	Destroy In: uuidPublicKey Out: uuidPublicKey

9. Key Roll-over

These use-cases test manual key roll-over using the "Re-key" operation. In particular, they test the formatting of the Re-key command, the handling and server-side processing

of the various Time attributes and the setting of some other attributes that are not automatically copied from the existing key to the new key.

1. Use-case: Create a Key, Re-key

Create a symmetric key with a specific name, and then use Locate to find the key. After using Re-key to create a new key, verify that the name was removed from the existing key and copied to the new key. Also verify that the key material for the old key can still be retrieved. To clean up, both keys are deleted.

Time	Client A
0	Create (symmetric key) In: objectType='00000002', CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='00000012', Name={ NameValue='rekeyKey', NameType='00000001' } Out: objectType='00000002', uuidKey
1	Locate In: attributes={ Name={ NameValue='rekeyKey', NameType='00000001' } } Out: uuidKey
2	Rekey In: uuidKey Out: uuidNewKey
3	Locate In: attributes={ Name={ NameValue='rekeyKey', NameType='00000001' } } Out: uuidNewKey
4	Get Attribute In: uuidKey, attributeName={'Name'} Out: Operation Failed, Item Not Found
5	Get (symmetric key) In: uuidKey Out: objectType = '00000002', uuidKey, symmetricKey
6	Destroy In: uuidKey Out: uuidKey
7	Destroy In: uuidNewKey Out: uuidNewKey

2. Use-case: Existing Key Expired, Re-key with Same lifecycle

Create a new symmetric key with a name. Then add the *Activation Date* and *Deactivation Date* attributes based on the timestamp in the response to the Create request. The *Activation Date* should be set in the past and the *Deactivation Date* in the near future. Repeated Get Attribute calls are performed to verify that the state is first "Active", then subsequently "Deactive". Then issue a Re-key request, including an *Activation Date* attribute with the value set to the previously specified *Deactivation Date* of the existing

key. Verify from the response that the *Activation Date* and *Deactivation Date* attributes were set correctly (if they are not returned, issue a Get Attribute request). Do a Get Attribute operation to verify that the state of the new key is "Active". To clean up, both keys are deleted.

Time	Client A
0	Create (symmetric key) In: objectType='00000002', CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='00000012' Out: objectType='00000002', uuidKey
1	Add Activation Date, Deactivation Date attributes based on Timestamp in previous response (batch) In: uuidKey, attribute={ ActivationDate=' <*Timestamp in previous response – 365 days*>' } In: uuidKey, attribute={ DeactivationDate='<*Timestamp in previous response + 2 minutes*>' } Out: uuidKey, attribute={ ActivationDate=' <*Timestamp in previous response - 1 year*>' } Out: uuidKey, attribute={ DeactivationDate=' <*Timestamp in previous response + 2 minutes*>' }
2	Get Attribute * *Repeated until state changes to Deactivated* In: uuidKey, attributeName={'State'} Out: uuidKey, attribute={ State='*Active*' }
3	Get Attribute In: uuidKey, attributeName={'State'} Out: uuidKey, attribute={ State='*Deactive*' }
4	Rekey In: uuidKey, attribute={ offset='018B8200' *(300 days)*} Out: uuidNewKey
5	Get Attribute In: uuidNewKey, attributeName={' ActivationDate', 'DectivationDate' } Out: uuidNewKey, attribute={ ActivationDate=' <*Value of ActivationTime in existing key + 300 days*>', DectivationDate='<*Value of DeactivationDate of existing key + 300 days*>' }
6	Get Attribute In: uuidNewKey, attributeName={'State'} Out: uuidNewKey, attribute={ State='*Active*' }
7	Destroy In: uuidKey Out: uuidKey
8	Destroy In: uuidNewKey Out: uuidNewKey

3. Use-case: Existing Key Compromised, Re-key with same lifecycle

Create a new symmetric key with the *Activation Date* in the past. Do a Get Attribute operation on the State attribute to verify the key is "Active". Then revoke the key as compromised, verify that the state has changed to "Compromised". Create a replacement key using Re-key with the offset set to '0' to indicate that the times will be copied from

the existing key. Do a Get Attribute operation to verify that the state of the new key is "Active". To clean up, both keys are deleted.

Time	Client A
0	Create (symmetric key) In: objectType='00000002', CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='00000012', Name={ NameValue='rekeyKey', NameType='00000001' }, ActivationDate='2' Out: objectType='00000002', uuidKey
1	Get Attribute In: uuidKey, attributeName={'State'} Out: uuidKey, attribute={ State='*Active*' }
2	Revoke (symmetric key as compromised) In: uuidKey, RevocationReason='00000002', CompromiseOccurrenceDate='6' Out: uuidKey
3	Get Attribute In: uuidKey, attributeName={'State'} Out: uuidKey, attribute={ State='*Compromised*' }
4	Rekey In: uuidKey, offset='0' Out: uuidNewKey
5	Get Attribute In: uuidNewKey, attributeName={'State'} Out: uuidNewKey, attribute={ State='*Active*' }
6	Destroy In: uuidKey Out: uuidKey
7	Destroy In: uuidNewKey Out: uuidNewKey

4. Use-case: Create key, Re-key with new lifecycle

Create a symmetric key with a specific name, then use Locate to find the key. After using Re-key to create a new key, verify that the name was removed from the existing key and copied to the new key. To clean up, both keys are deleted.

Time	Client A
0	Create (symmetric key) In: objectType='00000002', CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='00000012', Name={ NameValue='rekeyKey', NameType='00000001' } Out: objectType='00000002', uuidKey
1	Locate In: attributes={ Name={ NameValue='rekeyKey', NameType='00000001' } } Out: uuidKey

2	Rekey In: uuidKey, attributes={ ActivationDate='0000000043B7B630', ProcessStartDate='0000000043B7B630', ProtectStopDate='000000005E0C7BB0', DeactivationDate='000000005E0C7BB0' } Out: uuidNewKey
3	Get Attribute In: uuidKey, attributeName={'Name'} Out: Operation Failed, Item Not Found
4	Get Attribute In: uuidKey, attributeName={ 'ActivationDate', 'ProcessStartDate', 'ProtectStopDate', 'DeactivationDate' } Out: uuidKey, attribute={ ActivationDate='0000000043B7B630', ProcessStartDate='0000000043B7B630', ProtectStopDate='000000005E0C7BB0', DeactivationDate='000000005E0C7BB0' }
5	Locate In: attributes={ Name={ NameValue='rekeyKey', NameType='00000001' } } Out: uuidNewKey
6	Destroy In: uuidKey Out: uuidKey
7	Destroy In: uuidNewKey Out: uuidNewKey

5. Use-case: Obtain Lease for Expired Key

Create a symmetric key with a specific name and obtain a lease. Revoke the key with state "Compromised" and re-key the key. Try to obtain a lease on the old key which fails. Locate the new key with the original name. Get the new key and obtain a lease.

Time	Client A	Client B
0	Create (symmetric key) In: objectType='00000002', CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='00000012', Name={ NameValue=' rekeyKey', NameType='00000001' }, ActivationDate='2' Out: objectType='00000002', uuidKey	
1	Get (symmetric key) In: uuidKey Out: objectType = '00000002', uuidKey, symmetricKey	
2	Obtain Lease In: uuidKey Out: uuidKey, leaseTime, lastChangeDate	
3		Revoke (symmetric key as compromised) In: uuidKey, RevocationReason='00000002', CompromiseOccurrenceDate='6' Out: uuidKey
4		Rekey

		In: uuidKey, offset='0' Out: uuidNewKey
5	Obtain Lease In: uuidKey Out: Operation Failed, Permission Denied	
6	Locate (symmetric key) In: attributes={ Name={ NameValue='rekeyKey', NameType='00000001' } } Out: uuidNewKey	
7	Get (symmetric key) In: uuidNewKey Out: objectType = '00000002', uuidNewKey, newSymmetricKey	
8	Obtain Lease In: uuidNewKey Out: uuidNewKey, leaseTime, lastChangeDate	
9	Destroy In: uuidKey Out: uuidKey	
10	Destroy In: uuidNewKey Out: uuidNewKey	

10. Archival

These use-cases test archiving and locating keys using the off-line indicator. The Archive and Recover operations may be performed asynchronously, in which case the client must Poll the server until the operations complete. The client must also indicate in the request that it supports asynchronous responses.

1. Use-case: Create a Key, Archive and Recover it

Create a symmetric key with a specified name, then use Locate to find the key and get the key. Archive the key (asynchronous operation, use Poll until it completes) and use Get and Locate on it, but both should fail. Add the Storage Status Mask to the Locate-command, indicating that the server should search in both online and archived storage. The Locate finds the key. Recover the key from the archive (also asynchronous), both Locate and Get succeed.

Time	Client A
0	Create (symmetric key) In: objectType='00000002', CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='00000012', Name={ NameValue='archiveKey', NameType='00000001' } Out: objectType='00000002', uuidKey
1	Locate In: attributes={ Name={ NameValue='archiveKey', NameType='00000001' } }

	Out: uuidKey
2	Get (symmetric key) In: uuidKey Out: objectType = '00000002', uuidKey, symmetricKey
3	Archive In: uuidKey, asynchronousIndicator='true' Out: asynchronousCorrelationValue
4	Poll* In: asynchronousCorrelationValue Out: uuidKey
5	Get (symmetric key) In: uuidKey Out: Operation Failed, Item Not Found
6	Locate In: attributes={ Name={ NameValue='archiveKey', NameType='00000001' } } Out: Operation Failed, Item Not Found
7	Locate In: storageStatusMask='00000003', attributes={ Name={ NameValue='archiveKey', NameType='00000001' } } Out: uuidKey
8	Recover In: uuidKey, asynchronousIndicator='true' Out: asynchronousCorrelationValue
9	Poll* In: asynchronousCorrelationValue Out: uuidKey
10	Get (symmetric key) In: uuidKey Out: objectType = '00000002', uuidKey, symmetricKey
11	Destroy In: uuidKey Out: uuidKey

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