

Key Management Interoperability Protocol Use Cases 1.0

Committee Draft 02

15 October 2009

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Technical Committee:

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- None

This specification is related to:

- TBD

Abstract:

This document is intended for developers and architects who wish to design systems and applications that interoperate using the Key Management Interoperability Protocol specification.

Status:

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

Technical Committee members should send comments on this specification to the Technical Committee's email list. Others should send comments to the Technical Committee by using the

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1 Introduction

The purpose of this document is to describe use-cases to demonstrate the Key Management Interoperability Protocol (KMIP) [KMIP-Spec]. The use-cases indicate if all concepts within the protocol are sound and if the protocol is usable when implementing 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 v1.0 of the protocol.

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The use-cases define a number of client-to-server request-response pairs for a number of operations. For each request-response message pair the operation is stated, along with the relevant parameters needed for the request or response message. This is followed by two different illustrations of the messages: first, a human-readable construction which shows the fields tags, types and values, followed by the TTLV-encoding of the message. These are included to facilitate the implementation of the message creation and parsing functionality. The use-cases show one possible way to construct the messages, and the messages shown are not necessarily the only correct constructions (e.g. it is possible to omit the attribute index if it is zero). Also note that many values change dynamically when running the use-cases (the server-generated timestamps, Unique Identifiers and key material in responses, as well as Batch Item ID values in client-generated requests).

1.1 Normative References

[KMIP-Spec] draft, *KMIP Specification*, Approval Date, URI (TBD)

2 Message exchange

The message exchange between clients and the server to test the following use-case scenarios is performed with TTLV encoding over the http transport. This is to facilitate debugging and to focus on KMIP-specific issues instead of potential secure transport setup problems.

3 Centralized Management

3.1 Basic functionality

These use-cases test the basic features of KMIP including key creation and template registration, attribute functionality, access methods, and batch operation.

3.1.1 Use-case: Create / Destroy

In this use-case the client issues a Create request, whereby the server creates a new symmetric key and returns the Unique Identifier. To clean up, the client then performs a Destroy operation to destroy the key.

Time	Request/Response messages
0	Create (symmetric key) In: objectType='00000002' (Symmetric Key), attributes={ CryptographicAlgorithm='00000003' (AES), CryptographicLength='128', CryptographicUsageMask='0000000C' }

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Tag: Request Message (0x420075), Type: Structure (0x01), Data:
Tag: Request Header (0x420074), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)
Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
Tag: Template-Attribute (0x42008E), Type: Structure (0x01), Data:
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic
Algorithm
Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000003 (AES)
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Length
Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x00000080 (128)
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Usage
Mask
Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x0000000C (Encrypt,
Decrypt)

42007501000001204200740100000038420067010000002042006802000000400000001000000004200690200000004
00000000000000042000D0200000004000000010000000042000F01000000D842005A05000000040000000100000000
42007601000000C04200550500000004000000020000000042008E01000000A8420008010000003042000A0700000017
43727970746F6772617068696320416C676F726974686D0042000B050000000400000003000000004200080100000030
42000A070000001443727970746F67726170686963204C656E6774680000000042000B02000000040000000800000000
420008010000003042000A070000001843727970746F67726170686963205573616765204D61736E42000B0200000004
0000000C00000000

Out: objectType='00000002', uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
Tag: Response Header (0x420077), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0731C (Mon Sep 28
10:26:04 CEST 2009)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)
Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 46eca90a-4b20-423c-
b968-750f299f0ca7

42007801000000C04200770100000048420067010000002042006802000000400000001000000004200690200000004
00000000000000042008F090000000800000004AC0731C42000D0200000004000000010000000042000F0100000068

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Version Major (0x420068),
Type: Integer (0x02), Data:
0x00000000 (0)

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Version Minor (0x420069),
Type: Integer (0x02), Data:
0x00000062 (98)

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00000000000420069020000004
0000006200000000

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Version Major (0x420068),
Type: Integer (0x02), Data:
0x00000000 (0)

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Version Minor (0x420069),
Type: Integer (0x02), Data:
0x00000062 (98)

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00000000000420069020000004
0000006200000000

	<p>42005A0500000004000000010000000042007C050000000400000000000000420079010000004042005505000000040000000200000000420091070000002434366563613930612D346232302D343233632D623936382D37353066323939663063613700000000</p>
1	<p>Destroy (symmetric key) In: uuidKey</p> <p>Tag: Request Message (0x420075), Type: Structure (0x01), Data: Tag: Request Header (0x420074), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy) Tag: Request Payload (0x420076), Type: Structure (0x01), Data: Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 46eca90a-4b20-423c-b968-750f299f0ca7</p> <p>4200750100000090420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000004842005A050000000400000014000000004200760100000030420091070000002434366563613930612D346232302D343233632D623936382D37353066323939663063613700000000</p> <p>Out: uuidKey</p> <p>Tag: Response Message (0x420078), Type: Structure (0x01), Data: Tag: Response Header (0x420077), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC0731D (Mon Sep 28 10:26:05 CEST 2009) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy) Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success) Tag: Response Payload (0x420079), Type: Structure (0x01), Data: Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 46eca90a-4b20-423c-b968-750f299f0ca7</p> <p>42007801000000B0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0731D42000D0200000004000000010000000042000F010000005842005A0500000004000000140000000042007C0500000004000000000000004200790100000030420091070000002434366563613930612D346232302D343233632D623936382D37353066323939663063613700000000</p>

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

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Deleted: 42006802000000040000000000000042006902000000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

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3.1.2 Use-case: Register / Create / Get attributes / Destroy

Here the client first registers a template object and then creates a symmetric key using the registered template. To verify that the attributes of the key were set correctly from the template, the client then issues a Get Attributes command, after which it destroys first the key and then the template.

Time	Request/Response messages
0	<p>Register (template)</p> <p>In: objectType='00000007', attributes={ ObjectGroup='Group1', ApplicationSpecificInformation='ssl, www.example.com', ContactInformation='Joe', x-Purpose='demonstration', Name={ NameValue='Template1', NameType='00000001' } }</p> <p>Tag: Request Message (0x420075), Type: Structure (0x01), Data:</p> <p>Tag: Request Header (0x420074), Type: Structure (0x01), Data:</p> <p>Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:</p> <p>Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)</p> <p>Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)</p> <p>Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)</p> <p>Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:</p> <p>Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000003 (Register)</p> <p>Tag: Request Payload (0x420076), Type: Structure (0x01), Data:</p> <p>Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000006 (Template)</p> <p>Tag: Template-Attribute (0x42008E), Type: Structure (0x01), Data:</p> <p>Tag: Attribute (0x420008), Type: Structure (0x01), Data:</p> <p>Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Group</p> <p>Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Group1</p> <p>Tag: Attribute (0x420008), Type: Structure (0x01), Data:</p> <p>Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Application Specific Information</p> <p>Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:</p> <p>Tag: Application Namespace (0x420003), Type: Text String (0x07), Data: ssl</p> <p>Tag: Application Data (0x420002), Type: Text String (0x07), Data: www.example.com</p> <p>Tag: Attribute (0x420008), Type: Structure (0x01), Data:</p> <p>Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Contact Information</p> <p>Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Joe</p> <p>Tag: Attribute (0x420008), Type: Structure (0x01), Data:</p> <p>Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-Purpose</p> <p>Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: demonstration</p> <p>Tag: Attribute (0x420008), Type: Structure (0x01), Data:</p> <p>Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name</p> <p>Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:</p> <p>Tag: Name Value (0x420053), Type: Text String (0x07), Data: Template1</p> <p>Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)</p> <p>42007501000001C042007401000000384200670100000020420068020000000400000001000000004200690200000004000000000000042000D0200000004000000010000000042000F010000017842005A0500000004000000030000000042007601000001604200550500000004000000060000000042008E0100000148420008010000002842000A070000000C4F626A6563742047726F7570000000042000B070000000647726F7570310000420008010000005842000A07000000204170706C69636174696F6E20537065636966696320496E666F726D6174696F6E42000B0100000028420003078000000373736C000000000420002070000000F7777772E6578616D706C652E636F6D00420008010000003042000A0700000013436F6E</p>

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7461637420496E666F726D6174696F6E0000000004200B07000000034A6F65000000000420008010000003042000A070000009782D507572706F736500000000000004200B070000000D64656D6F6E7374726174696F6E000000420008010000004042000A07000000044E616D6500000004200B0100000028420053070000000954656D706C61746531000000000000042005205000000040000000100000000

Out: uuidTemplate

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC0731E (Mon Sep 28 10:26:06 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000003 (Register)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fc3f473-4de4-4248-990e-21e00f7fc006

42007801000000B0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0731E42000D0200000004000000010000000042000F0100000005842005A0500000004000000030000000042007C0500000004000000000000000420079010000003042009107000000243466333663437332D346465342D343234382D393930652D32316530306637666330303600000000

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1

Create (symmetric key using template)
 In: objectType='00000002', template={ NameValue='Template1', NameType='00000001' }, attributes={ CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='0000000C' }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Template-Attribute (0x42008E), Type: Structure (0x01), Data:
 Tag: Name (0x420051), Type: Structure (0x01), Data:
 Tag: Name Value (0x420053), Type: Text String (0x07), Data: Template1
 Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Algorithm
 Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000003 (AES)
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Length
 Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x00000080 (128)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Mask
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Usage
 Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x0000000C (Encrypt, Decrypt)

4200750100000150420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000010842005A0500000004000000010000000042007601000000F04200550500000004000000020000000042008E01000000D84200510100000028420053070000000954656D706C61746531000000000000004200520500000004000000010000000042008010000003042000A070000001743727970746F6772617068696320416C676F726974686D0042000B0500000004000000030000000042008010000003042000A070000001443727970746F67726170686963204C656E6774680000000042000B02000000040000008000000000420008010000003042000A070000001843727970746F67726170686963205573616765204D61736B42000B02000000040000000C00000000

Out: objectType='00000002', uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC0731F (Mon Sep 28 10:26:07 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 300881c8-596a-48ad-814f-7ce119896608

42007801000000C0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0731F42000D0200000004000000010000000042000F0100000006842005A0500000004000000010000000042007C0500000000400000000000000000420079010000004042005505000000040000000200000000420091070000002433303038383163382D353936612D343861642D383134662D37636531313938393636303800000000

Deleted: 42006802000000040000000000000042006902000000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: 42006802000000040000000000000042006902000000040000006200000000

2 Get attributes
 In: uuidKey, attributeNames={'ObjectGroup', 'ApplicationSpecificInformation', 'ContactInformation', 'x-Purpose'}

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000B (Get Attributes)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 300881c8-596a-48ad-814f-7ce119896608

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

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Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Group
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Application Specific Information
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Contact Information
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-Purpose

42007501000001084200740100000038420067010000002042006802000000400000001000000042006902000000040000000000000042000D02000000400000001000000042000F01000000C042005A0500000040000000B000000004200760100000A8420091070000002433303038383163382D353936612D343861642D383134662D376365313139383936363038000000042000A070000000C4F626A6563742047726F7570000000042000A07000000204170706C69636174696F6E20537065636966696320496E666F726D6174696F6E42000A0700000013436F6E7461637420496E666F726D6174696F6E000000000042000A0700000009782D507572706F73650000000000000000

Deleted: 4200680200000040000000000000420069020000004000006200000000

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

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
Tag: Response Header (0x420077), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0731F (Mon Sep 28 10:26:07 CEST 2009)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000B (Get Attributes)
Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 300881c8-596a-48ad-814f-7cell19896608
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Group
Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Group1
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Application Specific Information
Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:
Tag: Application Namespace (0x420003), Type: Text String (0x07), Data: ssl
Tag: Application Data (0x420002), Type: Text String (0x07), Data: www.example.com
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Contact Information
Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Joe
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-Purpose
Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: demonstration

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

42007801000001B04200770100000048420067010000002042006802000000400000001000000042006902000000040000000000000042000F0900000008000000004AC0731F42000D020000000400000001000000042000F010000015842005A05000000040000000B0000000042007C0500000004000000000000004200790100000130420091070000002433303038383163382D353936612D343861642D383134662D3763653131393839363630380000000420008010000002842000A070000000C4F626A6563742047726F7570000000042000B070000000647726F7570310000420008010000005842000A07000000204170706C69636174696F6E20537065636966696320496E666F726D6174696F6E42000B010000002842000307000000373736C00000000420002070000000E777772E6578616D706C652E636E6D00420008010000003042000A0700000013436F6E7461637420496E666F726D6174696F6E00000000042000B07000000034A6F6500000000042000801

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	0000003042000A0700000009782D507572706F7365000000000000042000B070000000D64656D6F6E7374726174696F6E000000
3	Destroy (symmetric key) In: uuidKey Tag: Request Message (0x420075), Type: Structure (0x01), Data: Tag: Request Header (0x420074), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy) Tag: Request Payload (0x420076), Type: Structure (0x01), Data: Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 300881c8-596a-48ad-814f-7cell19896608 4200750100000090420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D020000000400000001000000042000F010000004842005A050000000400000014000000004200760100000030420091070000002433303038383163382D353936612D343861642D383134662D37636531313938393636303800000000 Out: uuidKey Tag: Response Message (0x420078), Type: Structure (0x01), Data: Tag: Response Header (0x420077), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07320 (Mon Sep 28 10:26:08 CEST 2009) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy) Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success) Tag: Response Payload (0x420079), Type: Structure (0x01), Data: Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 300881c8-596a-48ad-814f-7cell19896608 42007801000000B0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F090000000800000004AC0732042000D0200000004000000010000000042000F010000005842005A0500000004000000140000000042007C0500000004000000000000004200790100000030420091070000002433303038383163382D353936612D343861642D383134662D37636531313938393636303800000000
4	Destroy (template) In: uuidTemplate Tag: Request Message (0x420075), Type: Structure (0x01), Data: Tag: Request Header (0x420074), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000040000000000000042006902000000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000040000000000000042006902000000040000006200000000

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Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fc3f473-4de4-4248-990e-21e00f7fc006

4200750100000090420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000004842005A050000000400000014000000004200760100000030420091070000002434666333663437332D346465342D343234382D393930652D32316530306637666330303600000000

Out: uuidTemplate

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Tag: Response Header (0x420077), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07320 (Mon Sep 28 10:26:08 CEST 2009)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)

Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)

Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fc3f473-4de4-4248-990e-21e00f7fc006

42007801000000B04200770100000048420067010000002042006802000000040000000100000000420069020000000400000000000000420008F0900000008000000004AC0732042000D0200000004000000010000000042000F010000005842005A0500000004000000140000000042007C050000000400000000000000000000420079010000003042009107000000243466333663437332D346465342D343234382D393930652D32316530306637666330303600000000

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000040000000000000042006902000000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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3.1.3 Use-case: Create / Locate / Get / Destroy

This use-case tests the Locate and Get operations, in addition to the previously used operations Create and Destroy. A symmetric key is first created, and then a lookup is performed on the Name attribute using the Locate operation. Subsequently, a Get request is issued to retrieve the located key, after which the key on the server is destroyed.

Time	Request/Response messages
0	<p>Create (symmetric key)</p> <p>In: objectType = '00000002', attributes={ Name={ NameValue='Key1', NameType='00000001' }, CryptographicAlgorithm='DES', CryptographicLength='56', CryptographicUsageMask='0000000C', ContactInformation='Joe' }</p>

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Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~

~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)

Tag: Template-Attribute (0x42008E), Type: Structure (0x01), Data:

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name

Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:

Tag: Name Value (0x420053), Type: Text String (0x07), Data: Key1

Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Algorithm

Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000001 (DES)

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Length

Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x00000038 (56)

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Usage

Mask

Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x0000000C (Encrypt, Decrypt)

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Contact Information

Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Joe

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

420075010000019842007401000000384200670100000020420068020000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000015042005A0500000004000000010000000042007601000001384200550500000004000000020000000042008E0100000120420008010000003842000A070000000044E616D650000000042000B010000002042005307000000044B6579310000000042005205000000040000000100000000420008010000003042000A070000001743727970746F6772617068696320416C676F726974686D0042000B05000000004000000100000000420008010000003042000A070000001443727970746F67726170686963204C656E677468000000042000B0200000004000000380000000420008010000003042000A070000001843727970746F67726170686963205573616765204D61736B42000B02000000040000000C0000000420008010000003042000A0700000013436F6E7461637420496E666F726D6174696F6E00000000042000B07000000034A6F650000000000

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Out: objectType = '00000002', uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Tag: Response Header (0x420077), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~

~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07321 (Mon Sep 28 10:26:09 CEST 2009)

~~Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)~~

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

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Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 75da9bc9-7867-49c5-886d-757f3d523d3f

42007801000000C0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0732142000D020000000400000001000000004200F010000006842005A0500000004000000010000000042007C0500000004000000000000000042007901000000404200550500000004000000200000000420091070000002437356461396263392D373836372D343963352D383836642D37353766336435323364336600000000

Deleted: 42006802000000040000000000000042006902000000040000006200000000

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Locate (symmetric key)
In: attributes={ objectType = '00000002', Name={ Name='Key1', NameType='00000001' } }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Type
 Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name
 Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:
 Tag: Name Value (0x420053), Type: Text String (0x07), Data: Key1
 Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)

42007501000000D0420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D020000000400000001000000004200F010000008842005A0500000004000000080000000004200760100000070420008010000002842000A070000000B4F626A656374205479706500000000042000B05000000040000000000000420008010000003842000A07000000044E616D65000000042000B010000002042005307000000044B65793100000004200520500000004000000100000000

Out: uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07321 (Mon Sep 28 10:46:09 CEST 2009)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000040000000000000042006902000000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 75da9bc9-7867-49c5-886d-757f3d523d3f

42007801000000B0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0732142000D0200000004000000010000000042000F010000005842005A0500000004000000080000000042007C050000000400000000000000004200790100000030420091070000002437356461396263392D373836372D343963352D383836642D37353766336435323364336600000000

Deleted: 42006802000000040000000000000042006902000000040000006200000000

2
 Get (symmetric key)
 In: uuidKey

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 75da9bc9-7867-49c5-886d-757f3d523d3f

4200750100000090420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000004842005A05000000040000000A000000004200760100000030420091070000002437356461396263392D373836372D343963352D383836642D37353766336435323364336600000000

Out: objectType = '00000002', uuidKey, symmetricKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07322 (Mon Sep 28 10:26:10 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 75da9bc9-7867-49c5-886d-757f3d523d3f
 Tag: Symmetric Key (0x42008C), Type: Structure (0x01), Data:
 Tag: Key Block (0x42003E), Type: Structure (0x01), Data:

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: 42006802000000040000000000000042006902000000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

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Tag: Key Format Type (0x420040), Type: Enumeration (0x05), Data: 0x00000001
 Tag: Key Value (0x420043), Type: Structure (0x01), Data:
 Tag: Key Material (0x420041), Type: Octet String (0x08), Data: EAD09734B085DFFE
 Tag: Cryptographic Algorithm (0x420026), Type: Enumeration (0x05), Data: 0x00000001 (DES)
 Tag: Cryptographic Length (0x420028), Type: Integer (0x02), Data: 0x00000038 (56)

42007801000001184200770100000048420067010000002042006802000000400000001000000004200690200000040000000000000042008F0900000008000000004AC0732242000D0200000004000000010000000042000F01000000C042005A05000000040000000A0000000042007C05000000040000000000000000420079010000009842005505000000040000000200000000420091070000002437356461396263392D373836372D343963352D383836642D373537663364353233643366000000042008C010000005042003E01000000484200400500000004000000010000000042004301000000104200410800000008EAD09734B085DFFE42002605000000040000000100000000420028020000000400000003800000000

Deleted: 42006802000000400000000000004200690200000040000006200000000

3 Destroy (symmetric key)
In: uuidKey

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 75da9bc9-7867-49c5-886d-757f3d523d3f

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (98)

42007501000000904200740100000038420067010000002042006802000000400000001000000004200690200000040000000000000042000D0200000004000000010000000042000F010000004842005A0500000004000000014000000004200760100000030420091070000002437356461396263392D373836372D343963352D383836642D37353766336435323364336600000000

Deleted: 42006802000000400000000000004200690200000040000006200000000

Out: uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07322 (Mon Sep 28 10:26:10 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 75da9bc9-7867-49c5-886d-757f3d523d3f

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (98)

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42007801000000B04200770100000048420067010000002042006802000000400000001000000004200690200000040000000000000042008F0900000008000000004AC0732242000D0200000004000000010000000042000F0100000005842005A05000000040000000A0000000042007C05000000040000000000000000420079010000009842005505000000040000000200000000420091070000002437356461396263392D373836372D343963352D383836642D373537663364353233643366000000042008C010000005042003E01000000484200400500000004000000010000000042004301000000104200410800000008EAD09734B085DFFE42002605000000040000000100000000420028020000000400000003800000000

Deleted: 420068020000004000000000000042006902000000400000062000000000

	005A0500000004000000140000000042007C05000000040000000000000004200790100000030420091070000002437356461396263392D373836372D343963352D383836642D37353766336435323364336600000000
4	<p>Locate In: uuidKey</p> <p>Tag: Request Message (0x420075), Type: Structure (0x01), Data: Tag: Request Header (0x420074), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: <u>Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)</u> <u>Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)</u> Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate) Tag: Request Payload (0x420076), Type: Structure (0x01), Data: Tag: Attribute (0x420008), Type: Structure (0x01), Data: Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Unique Identifier Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: 75da9bc9-7867-49c5-886d-757f3d523d3f</p> <p>42007501000000B8420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000007042005A0500000004000000080000000004200760100000058420008010000005042000A0700000011556E69717565204964656E746966696572000000000000004200B070000002437356461396263392D373836372D343963352D383836642D37353766336435323364336600000000</p> <p>Out: <empty response payload></p> <p>Tag: Response Message (0x420078), Type: Structure (0x01), Data: Tag: Response Header (0x420077), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: <u>Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)</u> <u>Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)</u> Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07323 (Mon Sep 28 10:26:11 CEST 2009) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate) Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success) Tag: Response Payload (0x420079), Type: Structure (0x01), Data: null</p> <p>4200780100000080420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F090000000800000004AC0732342000D0200000004000000010000000042000F010000002842005A0500000004000000080000000042007C05000000040000000000000004200790100000000</p>

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000040000000000000042006902000000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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

This use-case has two clients performing operations on the same key. The first client initially registers a template and creates a symmetric key using that template. The second client then does a batched Locate and Get using the ID Placeholder to retrieve the key. The second client thereafter performs a number of operations on the key (Get Attribute List, Get Attribute, Add Attribute, Modify Attribute and Delete

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Attribute), before the first client finally destroys the key and the template. The first client also tries to Get the key and the template after they have been destroyed, but the Get operation fails in both cases.

This use-case demonstrates the fact that it is possible for two clients to cooperate and use the same managed object while only having knowledge of a single pre-agreed Name attribute value and without having to share any other information. Here, the identities of the two clients are not considered and since we do not include an Authentication field in the header, they could also be considered to be the same client. If the clients authenticate themselves to the server using different credentials, the server needs to employ another policy than the Default policy defined in the KMIP specification on the key object to allow both clients to access it.

Time	Request/Response messages
0	<p>Client A: Register (template) In: objectType='00000007', attributes={ CryptographicAlgorithm='AES', CryptographicLength='128', Name={ NameValue='Template1', NameType='00000001' },}</p> <p>Tag: Request Message (0x420075), Type: Structure (0x01), Data: Tag: Request Header (0x420074), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000003 (Register) Tag: Request Payload (0x420076), Type: Structure (0x01), Data: Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000006 (Template) Tag: Template-Attribute (0x42008E), Type: Structure (0x01), Data: Tag: Attribute (0x420008), Type: Structure (0x01), Data: Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Algorithm Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000003 (AES) Tag: Attribute (0x420008), Type: Structure (0x01), Data: Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Length Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x00000080 (128) Tag: Attribute (0x420008), Type: Structure (0x01), Data: Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data: Tag: Name Value (0x420053), Type: Text String (0x07), Data: Template1 Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)</p> <p>420075010000013042007401000000384200670100000020420068020000000400000001000000004200690200000004000000000000000042000D0200000004000000010000000042000F01000000E842005A0500000004000000030000000042007601000000D04200550500000004000000060000000042008E01000000B8420008010000003042000A070000001743727970746F6772617068696320416C676F726974686D042000B05000000040000000300000000420008010000003042000A070000001443727970746F67726170686963204C656E677468000000042000B02000000040000000800000000420008010000004042000A07000000044E616D65000000042000B0100000028420053070000000954656D706C617465310000000000042005205000000040000000100000000</p> <p>Out: uuidTemplate</p>

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: 420068020000000400000000000000004200690200000004000000000000000042000D0200000004000000010000000042000F01000000E842005A0500000004000000030000000042007601000000D04200550500000004000000060000000042008E01000000B8420008010000003042000A070000001743727970746F6772617068696320416C676F726974686D042000B05000000040000000300000000420008010000003042000A070000001443727970746F67726170686963204C656E677468000000042000B02000000040000000800000000420008010000004042000A07000000044E616D65000000042000B0100000028420053070000000954656D706C617465310000000000042005205000000040000000100000000

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Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07323 (Mon Sep 28 10:26:11 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000003 (Register)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8383198b-4600-4388-955f-2802cc699e9c

42007801000000B0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0732342000D0200000004000000010000000042000F010000005842005A05000000040000000300000000042007C0500000004000000000000000000042007901000000030420091070000000243833833313938622D343630302D343338382D393535662D323830326363363965396300000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

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1 Client A:
 Create (symmetric key using template)
 In: objectType='00000002', template={ NameValue= 'Template1', NameType='00000001' }, attributes={ Name={ Name='Key1', NameType='00000001' }, CryptographicUsageMask='00000004', ContactInformation='Foo' }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Template-Attribute (0x42008E), Type: Structure (0x01), Data:
 Tag: Name (0x420051), Type: Structure (0x01), Data:
 Tag: Name Value (0x420053), Type: Text String (0x07), Data: Template1
 Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name
 Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:
 Tag: Name Value (0x420053), Type: Text String (0x07), Data: Key1
 Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Usage Mask
 Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x00000004 (Encrypt)

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Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Contact Information
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Foo

420075010000015842007401000000384200670100000020420068020000004000000010000000042006902000000040000000000000042000D020000004000000010000000042000F010000011042005A0500000004000000010000000042007601000000F8420055050000004000000020000000042008E01000000E042005101000000284200530700000000954656D706C61746531000000000000004200520500000040000000100000000420008010000003842000A07000000044E616D650000000042000B010000002042005307000000044B657931000000004200520500000040000000100000000420008010000003042000A070000001843727970746F67726170686963205573616765204D61736B42000B02000000400000000400000000420008010000003042000A0700000013436F6E7461637420496E666F726D6174696F6E000000000042000B070000003466F6F0000000000

Out: objectType='0000002', uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07324 (Mon Sep 28 10:26:12 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d

42007801000000C0420077010000004842006701000000204200680200000040000000100000000420069020000000400000000000000420008F0900000008000000004AC0732442000D0200000004000000010000000042000F0100000006842005A0500000004000000010000000042007C0500000004000000000000000042007901000000404200550500000004000000002000000000420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534376400000000

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2 Client B:
 Locate and Get (symmetric key by name)
 In (header): batchOrderOption='TRUE'
 In: attributes={ objectType = '0000002', Name={ Name='Key1', NameType='0000001' } }
 In: <empty Get payload>

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Order Option (0x420010), Type: Boolean (0x06), Data: TRUE
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Key Block (0x42003E), Type: Structure (0x01), Data:
 Tag: Key Format Type (0x420040), Type: Enumeration (0x05), Data: 0x00000001
 Tag: Key Value (0x420043), Type: Structure (0x01), Data:
 Tag: Key Material (0x420041), Type: Octet String (0x08), Data:
 5C7B76DC93EF45FD9231522EB2CE7B0A
 Tag: Cryptographic Algorithm (0x420026), Type: Enumeration (0x05), Data: 0x00000003
 (AES)
 Tag: Cryptographic Length (0x420028), Type: Integer (0x02), Data: 0x00000080 (128)

42007801000001A042007701000000484200670100000020420068020000004000000010000000420069020000004000000000000042008F0900000008000000004AC0732442000D020000000400000002000000042000F010000006842005A0500000004000000080000000420090080000000801F76942FF5A7A8A42007C050000000400000000000000000004200790100000030420091070000002437666261303834392D613363322D346438632D383164642D396131393939343765343764000000042000F01000000D842005A05000000040000000A0000000042009008000000083192EDD439D59CC442007C050000000400000000000000042007901000000A04200550500000004000000020000000420091070000002437666261303834392D613363322D346438632D383164642D396131393939343765343764000000042008C010000005842003E01000000504200400500000004000000010000000420043010000001842004108000000105C7B76DC93EF45FD9231522EB2CE7B0A42002605000000040000000300000004200280200000040000008000000000

Deleted: 42006802000000400000000000004200690200000040000006200000000

3 Client B:
 Get attribute list
 In: uuidKey

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000C (Get Attribute List)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d

420075010000009042007401000000384200670100000020420068020000004000000010000000420069020000004000000000000042008D020000000400000001000000042000F010000004842005A05000000040000000C00000004200760100000030420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534376400000000

Out: uuidKey, attributes={ * }

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07325 (Mon Sep 28 10:26:13 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000C (Get Attribute List)
 Tag: Result-Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

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Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Length

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Algorithm

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: State

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Digest

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Initial Date

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Unique Identifier

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Usage Mask

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Type

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Contact Information

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Last Changed Date

42007801000001D04200770100000048420067010000002042006802000000400000001000000042006902000000040000000000000042008F0900000008000000004AC0732542000D020000000400000001000000042000F010000017842005A05000000040000000C000000042007C05000000040000000000000004200790100000150420091070000002437666261303834392D613363322D346438632D383164642D396131393939343765343764000000042000A070000001443727970746F67726170686963204C656E6774680000000042000A070000001743727970746F6772617068696320416C676F726974686D0042000A0700000005537461746500000042000A0700000006446967657374000042000A070000000C496E697469616C2044617465000000042000A0700000011556E69717565204964656E746966696572000000000000042000A0700000044E616D65000000042000A070000001843727970746F67726170686963205573616765204D61736B42000A07000000B4F626A656374205479706500000000042000A0700000013436F6E7461637420496E666F726D6174696F6E0000000042000A07000000114C617374204368616E676564204461746500000000000000

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4 Client B:
Get attributes
In: uuidKey, attributeNames={'Name', 'ContactInformation'}

Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000B (Get Attributes)

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Contact Information

42007501000000C04200740100000038420067010000002042006802000000400000001000000042006902000000040000000000000042000D0200000004000000010000000042000F010000007842005A0500000040000000B000000004200760100000060420091070000002437666261303834392D613363322D346438632D383164642D396131393939343765343764000000042000A07000000044E616D650000000042000A0700000013436F6E7461637420496E666F726D6174696F6E0000000000

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

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (98)

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Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)
Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: BF48C307C95CC22E
Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute2
Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Value2

42007501000001604200740100000038420067010000002042006802000000400000001000000042006902000000400000000000042000D020000000400000002000000042000F010000008842005A0500000040000000D0000000042009080000008290C75CAE59F39084200760100000060420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534376400000000420008010000002842000A070000000C782D617474726962757465310000000042000B070000000656616C756531000042000F010000008842005A0500000040000000D0000000042009080000008BF48C307C95CC22E4200760100000060420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534376400000000420008010000002842000A070000000C782D61747472696275746532000000042000B070000000656616C7565320000

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

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
Tag: Response Header (0x420077), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07326 (Mon Sep 28 10:26:14 CEST 2009)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)
Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: 290C75CAE59F3908
Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute1
Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Value1
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)
Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: BF48C307C95CC22E
Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute2
Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Value2

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (98)

42007801000001904200770100000048420067010000002042006802000000400000001000000042006902000000400000000000042000F010000008842005A0500000040000000D0000000042009080000008290C75CAE59F39084200760100000060420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534376400000000420008010000002842000A070000000C782D61747472696275746532000000042000B070000000656616C7565320000

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	<pre> 0790100000060420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534 376400000000420008010000002842000A070000000C782D617474726962757465310000000042000B070000000656616 C756531000042000F01000009842005A0500000004000000D0000000420090080000008BF48C307C95CC22E42007C 050000004000000000000004200790100000060420091070000002437666261303834392D613363322D346438632D3 83164642D3961313939393437653437640000000420008010000002842000A070000000C782D61747472696275746532 000000042000B070000000656616C7565320000 </pre>
<p>6</p>	<pre> Client B: Modify attribute [batch] In: uuidKey, attribute={ x-attribute1='ModifiedValue1' } In: uuidKey, attribute={ x-attribute2='ModifiedValue2' } Tag: Request Message (0x420075), Type: Structure (0x01), Data: Tag: Request Header (0x420074), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000E (Modify Attribute) Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: 42C6D3ED5BFE4F34 Tag: Request Payload (0x420076), Type: Structure (0x01), Data: Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d Tag: Attribute (0x420008), Type: Structure (0x01), Data: Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute1 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: ModifiedValue1 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000E (Modify Attribute) Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: A391110F7716FCFD Tag: Request Payload (0x420076), Type: Structure (0x01), Data: Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d Tag: Attribute (0x420008), Type: Structure (0x01), Data: Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute2 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: ModifiedValue2 4200750100000170420074010000003842006701000000204200680200000004000000010000000042006902000000040 000000000000042000D0200000004000000020000000042000F010000009042005A0500000040000000E0000000042 009008000000842C6D3ED5BFE4F344200760100000068420091070000002437666261303834392D613363322D3464386 32D383164642D39613139393934376534376400000000420008010000003042000A070000000C782D6174747269627574 65310000000042000B070000000E4D6F64696669656456616C756531000042000F010000009042005A050000000400000 00E00000000420090080000008A391110F7716FCFD4200760100000068420091070000002437666261303834392D6133 63322D346438632D383164642D39613139393934376534376400000000420008010000003042000A070000000C782D617 474726962757465320000000042000B070000000E4D6F64696669656456616C7565320000 Out: uuidKey, attribute={ x-tribute1='ModifiedValue1' } Out: uuidKey, attribute={ x-attribute2='ModifiedValue2' } Tag: Response Message (0x420078), Type: Structure (0x01), Data: Tag: Response Header (0x420077), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: </pre>

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 4200680200000040000000000400000000000000000420069020000000400000000000042000D02000000040000000020000000042000F010000009042005A0500000040000000E0000000042009008000000842C6D3ED5BFE4F344200760100000068420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534376400000000420008010000003042000A070000000C782D617474726962757465310000000042000B070000000E4D6F64696669656456616C756531000042000F010000009042005A050000000400000000E000000004200900800000008A391110F7716FCFD4200760100000068420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534376400000000420008010000003042000A070000000C782D6174747269627574653200000000042000B070000000E4D6F64696669656456616C7565320000

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~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07326 (Mon Sep 28 10:26:14 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000E (Modify Attribute)
 Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: 42C6D3ED5BFE4F34
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute1
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: ModifiedValue1
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000E (Modify Attribute)
 Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: A391110F7716FCFD
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute2
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: ModifiedValue2

~~42007801000001A0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0732642000D0200000004000000020000000042000F01000000A042005A05000000040000000E00000000420090080000000842C6D3ED5BFE4F3442007C05000000040000000000000000004200790100000068420091070000002437666261303834392D613363322D346438632D383164642D3961313939393437653437640000000420008010000003042000A070000000C782D61747472696275746531000000042000B070000000E4D6F64696669656456616C7565310000042000F01000000A042005A05000000040000000E00000004200900800000008A391110F7716FCFD42007C05000000040000000000000004200790100000068420091070000002437666261303834392D613363322D346438632D383164642D3961313939393437653437640000000420008010000003042000A070000000C782D6174726962757465320000000042000B070000000E4D6F64696669656456616C7565320000~~

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 420068020000000400000000000000004200690200000004000000000000000042008F0900000008000000004AC0732642000D0200000004000000020000000042000F01000000A042005A05000000040000000E00000000420090080000000842C6D3ED5BFE4F3442007C05000000040000000000000000004200790100000068420091070000002437666261303834392D613363322D346438632D383164642D3961313939393437653437640000000420008010000003042000A070000000C782D61747472696275746531000000042000B070000000E4D6F64696669656456616C7565320000

7

Client B:
 Delete attribute [batch]
 In: uuidKey, attributeNames={'x-attribute1'}
 In: uuidKey, attributeNames={'x-attribute2'}

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 ~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
 ~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000F (Delete Attribute)
 Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: FB10B7D6A5F8F02F
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 ~~Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d~~

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute1
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000F (Delete Attribute)
Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: 3B5C2DE22A01A87
Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute2

420075010000013042007401000000384200670100000020420068020000004000000010000000420069020000004000000000000042000D020000000400000002000000042000F010000007042005A0500000040000000F0000000042009080000008FB10B7D6A5F8F02F4200760100000048420091070000002437666261303834392D613363322D346438632D383164642D3961313939393437653437640000000042000A070000000C782D617474726962757465310000000042000F010000007042005A0500000040000000F000000004200908000000083B5C2DE22A01A874200760100000048420091070000002437666261303834392D613363322D346438632D383164642D3961313939393437653437640000000042000A070000000C782D6174747269627574653200000000

Deleted: 42006802000000400000000000004200690200000040000006200000000

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

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
Tag: Response Header (0x420077), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07327 (Mon Sep 28 10:26:15 CEST 2009)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000F (Delete Attribute)
Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: FB10B7D6A5F8F02F
Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute1
Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: ModifiedValue1
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000F (Delete Attribute)
Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: 3B5C2DE22A01A87
Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute2
Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: ModifiedValue2

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42007801000001A042007701000000484200670100000020420068020000004000000010000000420069020000004000000000000042000F010000007042005A0500000040000000F0000000042009080000008FB10B7D6A5F8F02F4200760100000048420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534

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	37640000000420008010000003042000A070000000C782D61747472696275746531000000042000B070000000E4D6F64696669656456616C756531000042000F01000000A042005A05000000040000000F0000000042009008000000083B5C2DE222A01A8742007C050000004000000000000004200790100000068420091070000002437666261303834392D613363322D346438632D383164642D3961313939393437653437640000000420008010000003042000A070000000C782D61747472696275746532000000042000B070000000E4D6F64696669656456616C7565320000
8	<p>Client A: Destroy (symmetric key) In: uuidKey</p> <p>Tag: Request Message (0x420075), Type: Structure (0x01), Data: Tag: Request Header (0x420074), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy) Tag: Request Payload (0x420076), Type: Structure (0x01), Data: Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d</p> <p>420075010000009042007401000000384200670100000020420068020000000400000001000000004200690200000004000000000000042000D020000000400000001000000042000F010000004842005A050000000400000014000000004200760100000030420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534376400000000</p> <p>Out: uuidKey</p> <p>Tag: Response Message (0x420078), Type: Structure (0x01), Data: Tag: Response Header (0x420077), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07327 (Mon Sep 28 10:26:15 CEST 2009) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy) Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success) Tag: Response Payload (0x420079), Type: Structure (0x01), Data: Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d</p> <p>42007801000000B042007701000000484200670100000020420068020000000400000001000000004200690200000004000000000000042008F0900000008000000004AC0732742000D0200000004000000010000000042000F010000005842005A0500000004000000140000000042007C05000000040000000000000004200790100000030420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534376400000000</p>
9	<p>Client A: Get (symmetric key) In: uuidKey</p>

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 420068020000000400000000000000420069020000000400000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 7fba0849-a3c2-4d8c-81dd-9a199947e47d

42007501000000904200740100000038420067010000002042006802000000400000001000000004200690200000040000000000000042000D0200000004000000010000000042000F010000004842005A05000000040000000A000000004200760100000030420091070000002437666261303834392D613363322D346438632D383164642D39613139393934376534376400000000

Out: Operation Failed, Item Not Found

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07327 (Mon Sep 28 10:26:15 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000001 (Failed)
 Tag: Result Reason (0x42007B), Type: Enumeration (0x05), Data: 0x00000001 (Item Not Found)
 Tag: Result Message (0x42007A), Type: Text String (0x07), Data: No Cryptographic Object found with given Unique Identifier

42007801000000D04200770100000048420067010000002042006802000000400000001000000004200690200000040000000000000042008F0900000008000000004AC0732742000D0200000004000000010000000042000F010000007842005A05000000040000000A0000000042007C0500000004000000010000000042007B0500000004000000010000000042007A070000003A4E6F2043727970746F67726170686963204F626A65637420666F756E64207769746820676976656E20556E69717565204964656E74696669657200000000000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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10 Client A:
 Destroy (template)
 In: uuidTemplate

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8383198b-4600-4388-955f-2802cc699e9c

420075010000009042007401000000384200670100000020420068020000004000000010000000042006902000000040000000000000042000D020000004000000010000000042000F010000004842005A05000000400000014000000004200760100000030420091070000002438333833313938622D343630302D343338382D393535662D32383032636336393965396300000000

Out: uuidTemplate

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07327 (Mon Sep 28 10:26:15 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8383198b-4600-4388-955f-2802cc699e9c

42007801000000B042007701000000484200670100000020420068020000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0732742000D020000004000000010000000042000F010000005842005A05000000400000014000000042007C0500000040000000000000004200790100000030420091070000002438333833313938622D343630302D343338382D393535662D32383032636336393965396300000000

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 4200680200000040000000000000420069020000004000006200000000

11 Client A:
 Get (template)
 In: uuidTemplate

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8383198b-4600-4388-955f-2802cc699e9c

420075010000009042007401000000384200670100000020420068020000004000000010000000042006902000000040000000000000042000D020000004000000010000000042000F010000004842005A0500000040000000A000000004200760100000030420091070000002438333833313938622D343630302D343338382D393535662D32383032636336393965396300000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Out: Operation Failed, Item Not Found

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
  Tag: Response Header (0x420077), Type: Structure (0x01), Data:
    Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
      Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
      Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
    Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07327 (Mon Sep 28 10:26:15 CEST 2009)
    Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
    Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
      Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
      Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000001 (Failed)
      Tag: Result Reason (0x42007B), Type: Enumeration (0x05), Data: 0x00000001 (Item Not Found)
      Tag: Result Message (0x42007A), Type: Text String (0x07), Data: No Cryptographic Object found with given Unique Identifier

4200780100000000420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0732742000D0200000004000000010000000042000F010000007842005A05000000040000000A0000000042007C0500000004000000010000000042007B0500000004000000010000000042007A070000003A4E6F2043727970746F67726170686963204F626A65637420666F756E64207769746820676976656E20556E69717565204964656E746966696572000000000000

```

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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3.2 Use-case: Asynchronous Locate

This use-case tests the asynchronous capabilities of KMIP using the Locate operation. A key is created and then a Locate request is sent containing the Name of the created key and with the message header Asynchronous Indicator-field set to True. If the server returns an asynchronous response to the Locate, the client then polls the server until the operation is ready. If the server responded asynchronously, a subsequent Locate operation that is also handled asynchronously is then Cancelled, before the key is finally destroyed.

This use-case shows the use of two clients with the same assumptions as in the use-case described in Section 3.1.4. Since the client is unable force the server to respond asynchronously, it is possible for a server to respond synchronously to the requests issued at times 1 and 4, in which case the expected response are the ones shown at times 2 and 5, respectively. In the case of the server not responding asynchronously to the Locate requests, the client is permitted to skip the requests illustrated at time 7 and 8.

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

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Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~

~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)

Tag: Template-Attribute (0x42008E), Type: Structure (0x01), Data:

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Algorithm

Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000003 (AES)

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Length

Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x00000080 (128)

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name

Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:

Tag: Name Value (0x420053), Type: Text String (0x07), Data: Key1

Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Usage

Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x00000004 (Encrypt)

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Group

Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Group1

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

420075010000019042007401000000384200670100000020420068020000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000014842005A050000000400000001000000000420008E0100000118420008010000003042000A070000001743727970746F6772617068696320416C676F726974686D0042000B05000000040000000300000000420008010000003042000A070000001443727970746F67726170686963204C656E6774680000000042000B0200000004000000080000000000420008010000003842000A07000000044E616D650000000042000B010000002042005307000000044B657931000000004200520500000040000000100000000420008010000003042000A070000001843727970746F67726170686963205573616765204D61736B42000B02000000040000000400000000420008010000002842000A070000000C4F626A6563742047726F757000000042000B070000000647726F7570310000

Deleted: 4200680200000040000000000000004200690200000040000006200000000

Out: objectType = '00000002', uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Tag: Response Header (0x420077), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~

~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0781B (Mon Sep 28 10:47:23 CEST 2009)

~~Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)~~

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

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Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8b961211-97c7-40a6-8664-ed33491dab5c

42007801000000C0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0781B42000D020000000400000001000000004200F010000006842005A0500000004000000010000000042007C0500000004000000000000000420079010000004042005505000000040000000200000000420091070000002438623936313231312D393763372D343061362D383636342D65643333343931646162356300000000

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1 Client B:
 Locate (symmetric key by name)
 In: asynchronousIndicator='TRUE', attributes={ objectType = '00000002', Name={ Name='Key1', NameType='00000001' } }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Asynchronous Indicator (0x420007), Type: Boolean (0x06), Data: TRUE
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Type
 Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name
 Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:
 Tag: Name Value (0x420053), Type: Text String (0x07), Data: Key1
 Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)

42007501000000E042007401000000484200670100000020420068020000000400000001000000004200690200000004000000000000004200750100000008000000000000000142000D020000000400000001000000004200F010000008842005A05000000040000000800000000420076010000007042000801000000284200A07000000B4F626A656374205479706500000000042000B0500000004000000020000000042000801000000384200A07000000044E616D650000000042000B010000002042005307000000044B6579310000000042005205000000040000000100000000

Out: asyncCorrValue1

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (98)

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Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0781C (Mon Sep 28 10:47:24 CEST 2009)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)

Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000002 (Pending)

Tag: Asynchronous Correlation Value (0x420006), Type: Octet String (0x08), Data: D1DE142AC6367B4B

4200780100000088420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0781C42000D0200000004000000010000000042000F010000003042005A0500000004000000080000000042007C050000000400000002000000004200680800000008D1DE142AC6367B4B

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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2

Client B:
Poll*
In: asyncCorrValue1

Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000001A (Poll)

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Asynchronous Correlation Value (0x420006), Type: Octet String (0x08), Data: D1DE142AC6367B4B

4200750100000070420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000002842005A05000000040000001A0000000042007601000000104200060800000008D1DE142AC6367B4B

Out: uuidKey1

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Tag: Response Header (0x420077), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0781C (Mon Sep 28 10:47:24 CEST 2009)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)

Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)

Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8b961211-97c7-40a6-8664-ed33491dab5c

42007801000000B04200770100000048420067010000002042006802000000040000000100000000420069020000000400000000000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 420068020000000400000000000042006902000000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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0000000000000042008F0900000008000000004AC0781C42000D0200000004000000010000000042000F010000005842
005A0500000004000000080000000042007C05000000040000000000000042007901000000304200910700000024386
23936313231312D393763372D343061362D383636342D65643333343931646162356300000000

3 Client B:
Get (symmetric key)
In: uuidKey1

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
Tag: Request Header (0x420074), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8b961211-97c7-40a6-8664-ed33491dab5c

420075010000009042007401000000384200670100000020420068020000004000000010000000042006902000000040
0000000000000042000D0200000004000000010000000042000F010000004842005A05000000040000000A0000000042
00760100000030420091070000002438623936313231312D393763372D343061362D383636342D6564333334393164616
2356300000000

Out: objectType = '00000002', uuidKey1, symmetricKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
Tag: Response Header (0x420077), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC0781D (Mon Sep 28 10:47:25 CEST 2009)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8b961211-97c7-40a6-8664-ed33491dab5c
Tag: Symmetric Key (0x42008C), Type: Structure (0x01), Data:
Tag: Key Block (0x42003E), Type: Structure (0x01), Data:
Tag: Key Format Type (0x420040), Type: Enumeration (0x05), Data: 0x00000001
Tag: Key Value (0x420043), Type: Structure (0x01), Data:
Tag: Key Material (0x420041), Type: Octet String (0x08), Data: A1DF7B733D8DF7056623FE2D880EF62C
Tag: Cryptographic Algorithm (0x420026), Type: Enumeration (0x05), Data: 0x00000003 (AES)
Tag: Cryptographic Length (0x420028), Type: Integer (0x02), Data: 0x00000080 (128)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (98)

Deleted: 4200680200000040000000000000420069020000000400000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (98)

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420078010000012042007701000000484200670100000020420068020000004000000010000000042006902000000040000000000000042008F090000008000000004AC0781D42000D020000000400000001000000004200F01000000C842005A05000000040000000A0000000042007C0500000004000000000000000042007901000000A0420055050000000400000000000000420091070000002438623936313231312D393763372D343061362D383636342D6564333334393164616235630000000042008C010000005842003E01000000504200400500000004000000010000000042004301000000184200410800000010A1DF7B733D8DF7056623FE2D880EF62C4200260500000004000000030000000042002802000000040000000800000000

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4 Client B:
Locate (symmetric key by group)
In: asynchronousIndicator='TRUE', attributes={ objectType = '00000002', ObjectGroup='Group1' }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
Tag: Request Header (0x420074), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Asynchronous Indicator (0x420007), Type: Boolean (0x06), Data: TRUE
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)
Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Type
Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Group
Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Group1

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

42007501000000D042007401000000484200670100000020420068020000004000000010000000042006902000000040000000000000000420007060000000800000000000000000000142000D020000000400000001000000004200F010000007842005A05000000040000000800000000004200760100000060420008010000002842000A070000000B4F626A6563742054797065000000000042000B05000000040000000200000000420008010000002842000A070000000C4F626A6563742047726F75700000000042000B070000000647726F7570310000

Deleted: 42006802000000400000000000004200690200000040000006200000000

Out: asyncCorrValue2

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
Tag: Response Header (0x420077), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0781D (Mon Sep 28 10:47:25 CEST 2009)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)
Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000002 (Pending)
Tag: Asynchronous Correlation Value (0x420006), Type: Octet String (0x08), Data: 2DCF4F694617FC30

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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420078010000008842007701000000484200670100000020420068020000004000000010000000042006902000000040000000000000000

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	<pre>000000000000000042008F0900000008000000004AC0781D42000D0200000004000000010000000042000F010000003042005A0500000004000000080000000042007C0500000004000000020000000042000608000000082DCF4F694617FC30</pre>
5	<p>Client B: Poll* In: asyncCorrValue2</p> <p>Tag: Request Message (0x420075), Type: Structure (0x01), Data: Tag: Request Header (0x420074), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000001A (Poll) Tag: Request Payload (0x420076), Type: Structure (0x01), Data: Tag: Asynchronous Correlation Value (0x420006), Type: Octet String (0x08), Data: 2DCF4F694617FC30</p> <pre>4200750100000070420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000002842005A05000000040000001A00000000420076010000001042000608000000082DCF4F694617FC30</pre> <p>Out: uuidKey2</p> <p>Tag: Response Message (0x420078), Type: Structure (0x01), Data: Tag: Response Header (0x420077), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC0781D (Mon Sep 28 10:47:25 CEST 2009) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate) Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success) Tag: Response Payload (0x420079), Type: Structure (0x01), Data: Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8b961211-97c7-40a6-8664-ed33491dab5c</p> <pre>42007801000000B0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000005842005A0500000004000000080000000042007C050000000400000000000000004200790100000030420091070000002438623936313231312D393763372D343061362D383636342D65643333343931646162356300000000</pre>
6	<p>Client B: Get (symmetric key) In: uuidKey2</p> <p>Tag: Request Message (0x420075), Type: Structure (0x01), Data: Tag: Request Header (0x420074), Type: Structure (0x01), Data:</p>

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8b961211-97c7-40a6-8664-ed33491dab5c

420075010000009042007401000000384200670100000020420068020000004000000010000000420069020000004000000000000042000D02000000400000001000000042000F010000004842005A0500000040000000A00000004200760100000030420091070000002438623936313231312D393763372D343061362D383636342D65643333343931646162356300000000

Out: objectType = '0000002', uuidKey2, symmetricKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0781D (Mon Sep 28 10:47:25 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8b961211-97c7-40a6-8664-ed33491dab5c
 Tag: Symmetric Key (0x42008C), Type: Structure (0x01), Data:
 Tag: Key Block (0x42003E), Type: Structure (0x01), Data:
 Tag: Key Format Type (0x420040), Type: Enumeration (0x05), Data: 0x00000001
 Tag: Key Value (0x420043), Type: Structure (0x01), Data:
 Tag: Key Material (0x420041), Type: Octet String (0x08), Data: A1DF7B733D8DF7056623FE2D880EF62C
 Tag: Cryptographic Algorithm (0x420026), Type: Enumeration (0x05), Data: 0x00000003 (AES)
 Tag: Cryptographic Length (0x420028), Type: Integer (0x02), Data: 0x00000080 (128)

420078010000012042007701000000484200670100000020420068020000004000000010000000420069020000004000000000000042008F0900000008000000004AC0781D42000D02000000400000001000000042000F01000000C842005A0500000040000000A000000042007C05000000040000000000000042007901000000A04200550500000040000000000000420091070000002438623936313231312D393763372D343061362D383636342D656433333439316461623563000000042008C010000005842003E010000005042004005000000400000001000000042004301000000184200410800000010A1DF7B733D8DF7056623FE2D880EF62C42002605000000400000003000000042002802000000400000008000000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: 42006802000000400000000000000042006902000000400000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

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7 Client B:
 Locate (symmetric key by name)
 In: asynchronousIndicator='TRUE', attributes={ objectType = '0000002', Name= { Name='Key1',

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In: asyncCorrValue5

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000019 (Cancel)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Asynchronous Correlation Value (0x420006), Type: Octet String (0x08), Data:
 D48BDD01A8FFEC80

4200750100000070420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000002842005A050000004000000190000000042007601000000104200060800000008D48BDD01A8FFEC80

Out: asyncCorrValue5, CancelResult='00000001'

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC0781F (Mon Sep 28 10:47:27 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000019 (Cancel)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Asynchronous Correlation Value (0x420006), Type: Octet String (0x08), Data:
 D48BDD01A8FFEC80
 Tag: Cancellation Result (0x420012), Type: Enumeration (0x05), Data: 0x00000001 (Cancelled)

42007801000000A0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0781F42000D0200000004000000010000000042000F010000004842005A050000004000000190000000042007C05000000400000000000000042007901000000204200060800000008D48BDD01A8FFEC8042001205000000040000000100000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000040000000000000042006902000000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000040000000000000042006902000000040000006200000000

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

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
  Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)
  Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
    Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8b961211-97c7-40a6-8664-ed33491dab5c

420075010000009042007401000000384200670100000020420068020000004000000010000000042006902000000040
0000000000000042000D0200000004000000010000000042000F010000004842005A0500000004000000140000000042
007601000000304200910700000002438623936313231312D393763372D343061362D383636342D6564333334393164616
2356300000000

Out: uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
  Tag: Response Header (0x420077), Type: Structure (0x01), Data:
    Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
      Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
      Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
    Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC0781F (Mon Sep 28
10:47:27 CEST 2009)
    Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
    Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
      Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)
      Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
      Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
        Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 8b961211-97c7-40a6-8664-ed33491dab5c

42007801000000B042007701000000484200670100000020420068020000004000000010000000042006902000000040
0000000000000042008F0900000008000000004AC0781F42000D0200000004000000010000000042000F0100000005842
005A0500000004000000140000000042007C050000000400000000000000420079010000003042009107000000024386
23936313231312D393763372D343061362D383636342D656433333439316461623563000000000

```

Deleted: 420068020000004000000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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* = executed until response is ready

4 Key life cycle support

4.1 Use-case: Revoke scenario

This use-case tests the revocation aspect of the key life cycle support in KMIP. A key is created and a Get Attribute for the State-attribute reveals that the key is in Pre-active state. The Activation Date is then set, which changes the state to Active. The key is then revoked with a revocation reason of Compromised and the state subsequently changed to Compromised, but this does not stop a client from being able to add, modify and delete attributes or even get the key (since we assume here that the out-of-band registration has been used to make the server aware of the fact that the client is capable of interpreting the attributes of the key and determining what it is allowed to do with the key). To clean up, the created key is finally destroyed.

Time	Client A
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Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262

42007801000000C0420077010000004842006701000000204200680200000040000000100000000420069020000004000000000000042008F0900000008000000004AC0781F42000D0200000004000000010000000042000F010000006842005A0500000004000000010000000042007C05000000040000000000000042007901000000404200550500000004000000000000420091070000002433333364633962392D386537332D346666362D613337622D34323336396635613432363200000000

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1 Client A:
 Get attribute
 In: uuidKey, attributeName={'State'}

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000B (Get Attributes)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: State

42007501000000A0420074010000003842006701000000204200680200000040000000100000000420069020000004000000000000042000D0200000004000000010000000042000F010000005842005A050000000400000000B000000004200760100000040420091070000002433333364633962392D386537332D346666362D613337622D3432333639663561343236320000000042000A07000000055374617465000000

Out: uuidKey, attribute={ State='00000001' }

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07820 (Mon Sep 28 10:47:28 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000B (Get Attributes)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: State

Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000001 (Pre-Active)

42007801000000D8420077010000004842006701000000204200680200000040000000100000000420069020000004000000000000042008F0900000008000000004AC0782042000D0200000004000000010000000042000F010000008042005A05000000040000000B0000000042007C0500000004000000000000004200790100000058420091070000002433333364633962392D386537332D346666362D613337622D34323336396635613432363200000000420008010000002042000A0700000005537461746500000042000B05000000040000000100000000

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2

Client A:

Add attribute

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

Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Activation Date

Tag: Attribute Value (0x42000B), Type: Date-Time (0x09), Data: 0x0000000000000002 (Thu Jan 01 01:00:02 CET 1970)

42007501000000C04200740100000038420067010000002042006802000000400000001000000004200690200000040000000000000042008F010000007842005A05000000040000000D000000004200760100000060420091070000002433333364633962392D386537332D346666362D613337622D34323336396635613432363200000000420008010000002842000A070000000F41637469766174696F6E20446174650042000B090000000800000000000000002

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

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Tag: Response Header (0x420077), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07820 (Mon Sep 28 10:47:28 CEST 2009)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)

Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)

Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Activation Date

Tag: Attribute Value (0x42000B), Type: Date-Time (0x09), Data: 0x0000000000000002 (Thu Jan 01 01:00:02 CET 1970)

42007801000000E042007701000000484200670100000020420068020000004000000010000000420069020000004000000000000042008F09000000800000004AC0782042000D020000004000000100000004200F010000008842005A050000004000000D000000042007C0500000040000000000004200790100000060420091070000002433333364633962392D386537332D346666362D613337622D343233363966356134323632000000042008010000002842000A070000000F41637469766174696F6E2044617465004200B090000008000000000000002

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3

Client A:
Get attribute
In: uuidKey, attributeName={ 'State' }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000B (Get Attributes)

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: State

42007501000000A042007401000000384200670100000020420068020000004000000010000000420069020000004000000000000042008F010000005842005A0500000040000000B000000004200760100000040420091070000002433333364633962392D386537332D346666362D613337622D343233363966356134323632000000042000A07000000055374617465000000

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

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Tag: Response Header (0x420077), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07820 (Mon Sep 28 10:47:28 CEST 2009)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000B (Get Attributes)

Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)

Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: State

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000002 (Active)

42007801000000D842007701000000484200670100000020420068020000000400000001000000004200690200000004000000000000042008F0900000008000000004AC0782042000D0200000004000000010000000042000F010000008042005A05000000040000000B0000000042007C0500000004000000000000004200790100000058420091070000002433333364633962392D386537332D346666362D613337622D34323336396635613432363200000000420008010000002042000A0700000005537461746500000042000B05000000040000000200000000

Deleted: 42006802000000040000000000000042006902000000040000006200000000

4 Client B:
 Locate (symmetric key by name)
 In: objectType = '00000002', attributes={ Name={ Name='Key1', NameType='0000001' } }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Type
 Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name
 Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:
 Tag: Name Value (0x420053), Type: Text String (0x07), Data: Key1
 Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)

42007501000000D0420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D02000000004000000010000000042000F010000008842005A050000000400000008000000004200760100000070420008010000002842000A0700000000B4F626A6563742054797065000000000042000B0500000004000000000000420008010000003842000A07000000044E616D65000000042000B010000002042005307000000044B6579310000000042005205000000040000000100000000

Out: uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07821 (Mon Sep 28 10:47:29 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000040000000000000042006902000000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262

42007801000000B0420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F0900000008000000004AC0782142000D0200000004000000010000000042000F010000005842005A0500000004000000080000000042007C050000000400000000000000004200790100000030420091070000002433333364633962392D386537332D346666362D613337622D34323336396635613432363200000000

Deleted: 4200680200000004000000000000042006902000000040000006200000000

5 Client B:
Get (symmetric key)
In: uuidKey

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
Tag: Request Header (0x420074), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262

4200750100000090420074010000003842006701000000204200680200000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000004842005A05000000040000000A0000000042007C050000003042009107000000243333364633962392D386537332D346666362D613337622D34323336396635613432363200000000

Out: objectType = '00000002', uuidKey, symmetricKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
Tag: Response Header (0x420077), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07821 (Mon Sep 28 10:47:29 CEST 2009)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
Tag: Symmetric Key (0x42008C), Type: Structure (0x01), Data:
Tag: Key Block (0x42003E), Type: Structure (0x01), Data:
Tag: Key Format Type (0x420040), Type: Enumeration (0x05), Data: 0x00000001
Tag: Key Value (0x420043), Type: Structure (0x01), Data:
Tag: Key Material (0x420041), Type: Octet String (0x08), Data:
E6C15B28BB6C7A268E9ADEA47IA36F23

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: 4200680200000004000000000000042006902000000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

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42369f5a4262
42007801000000B04200770100000048420067010000002042006802000000400000001000000042006902000000400000000000042008F0900000008000000004AC0782242000D02000000400000001000000042000F010000005842005A0500000004000000130000000042007C050000000400000000000000420079010000003042009107000000243333364633962392D386537332D346666362D613337622D34323336396635613432363200000000

Deleted: 4200680200000040000000000000420069020000004000006200000000

7
Client B:
Get attribute
In: uuidKey, attributeName={ 'State' }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
Tag: Request Header (0x420074), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000B (Get Attributes)
Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: State

42007501000000A042007401000000384200670100000020420068020000004000000010000000420069020000004000000000000042000D02000000400000001000000042000F010000005842005A0500000040000000B00000000420076010000004042009107000000243333364633962392D386537332D346666362D613337622D3432333639663561343236320000000042000A07000000055374617465000000

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

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
Tag: Response Header (0x420077), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07822 (Mon Sep 28 10:47:30 CEST 2009)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000B (Get Attributes)
Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: State
Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000004 (Compromised)

42007801000000D84200770100000048420067010000002042006802000000400000001000000042006902000000400000000000042008F0900000008000000004AC0782242000D02000000400000001000000042000F010000005842005A0500000040000000B00000000420076010000004042009107000000243333364633962392D386537332D346666362D613337622D3432333639663561343236320000000042000A07000000055374617465000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 4200680200000040000000000000420069020000004000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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	<p>33364633962392D386537332D346666362D613337622D34323336396635613432363200000000420008010000002042000A0700000005537461746500000042000B05000000040000000400000000</p>
<p>8</p>	<p>Client A: Get attribute list In: uuidKey</p> <p>Tag: Request Message (0x420075), Type: Structure (0x01), Data: Tag: Request Header (0x420074), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000C (Get Attribute List) Tag: Request Payload (0x420076), Type: Structure (0x01), Data: Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262</p> <p>4200750100000090420074010000003842006701000000204200680200000040000000100000000420069020000004000000000000042000D02000000040000000010000000042000F010000004842005A050000000400000000C000000004200760100000030420091070000002433333364633962392D386537332D346666362D613337622D34323336396635613432363200000000</p> <p>Out: uuidKey, attributes = { * }</p> <p>Tag: Response Message (0x420078), Type: Structure (0x01), Data: Tag: Response Header (0x420077), Type: Structure (0x01), Data: Tag: Protocol Version (0x420067), Type: Structure (0x01), Data: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0) Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07822 (Mon Sep 28 10:47:30 CEST 2009) Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1) Tag: Batch Item (0x42000F), Type: Structure (0x01), Data: Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000C (Get Attribute List) Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success) Tag: Response Payload (0x420079), Type: Structure (0x01), Data: Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Length Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Algorithm Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: State Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Compromise Occurrence Date Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Compromise Date Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Digest Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Initial Date Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Activation Date Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Revocation Reason Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Unique Identifier Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name</p>

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000001000000004200690200000040000000000000042000D02000000040000000010000000042000F010000004842005A050000000400000000C000000004200760100000030420091070000002433333364633962392D386537332D346666362D613337622D34323336396635613432363200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Usage Mask
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Type
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Last Changed Date

42007801000002284200770100000048420067010000002042006802000000400000001000000042006902000000400000000000042008F09000000800000004AC0782242000D020000000400000001000000042000F01000001D042005A05000000040000000C000000042007C05000000040000000000000042007901000001A842009107000000243333364633962392D386537332D346666362D613337622D343233363966356134323632000000042000A070000001443727970746F67726170686963204C656E677468000000042000A070000001743727970746F6772617068696320416C676F726974686D0042000A07000000553746174650000042000A070000001A436F6D70726F6D697365204F6363757272656E636520446174650000000000042000A07000000F436F6D70726F6D69736520446174650042000A070000006446967657374000042000A070000000C496E697469616C2044617465000000042000A07000000F41637469766174696F6E20446174650042000A07000000115265766F636174696F6E20526561736F6E000000000000042000A0700000011556E69717565204964656E746966696572000000000000042000A0700000044E616D65000000042000A070000001843727970746F67726170686963205573616765204D61736B42000A07000000B4F626A656374205479706500000000042000A07000000114C617374204368616E676564204461746500000000000000

Deleted: 42006802000000400000000000004200690200000040000006200000000

9
 Client A:
 Get attributes
 In: uuidKey, attributeName = { 'State' }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000B (Get Attributes)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: State

42007501000000A04200740100000038420067010000002042006802000000400000001000000042006902000000400000000000042008F09000000800000004AC0782242000D020000000400000001000000042000F01000001D042005A05000000040000000C000000042007C05000000040000000000000042007901000001A842009107000000243333364633962392D386537332D346666362D613337622D343233363966356134323632000000042000A07000000055374617465000000

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

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC07822 (Mon Sep 28 10:47:30 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000B (Get Attributes)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

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Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: State

Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000004 (Compromised)

42007801000000D8420077010000004842006701000000204200680200000040000000100000000420069020000004000000000000042008F0900000008000000004AC0782242000D0200000004000000010000000042000F010000008042005A05000000040000000B0000000042007C05000000004000000000000000420079010000005842009107000000243333364633962392D386537332D346666362D613337622D34323336396635613432363200000000420008010000002042000A0700000005537461746500000042000B05000000040000000400000000

Deleted: 4200680200000040000000000000420069020000004000006200000000

10 Client A:
Add attribute [batch]
In: uuidKey, attribute={ x-attribute1='Value1' }
In: uuidKey, attribute={ x-attribute2='Value2' }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)

Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: 5CD7C98FC5B52FF7

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute1

Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Value1

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)

Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: F0CB35D89BB9D251

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute2

Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Value2

42007501000001604200740100000038420067010000002042006802000000400000001000000004200690200000040000000000000042008F010000008842005A05000000040000000D000000004200908000000085CD7C98FC5B52FF7420076010000006042009107000000243333364633962392D386537332D346666362D613337622D34323336396635613432363200000000420008010000002842000A070000000C782D617474726962757465310000000042000B070000000656616C756531000042000F010000008842005A05000000040000000D0000000042009080000008F0CB35D89BB9D251420076010000006042009107000000243333364633962392D386537332D346666362D613337622D34323336396635613432363200000000420008010000002842000A070000000C782D61747472696275746532000000042000B070000000656616C7565320000

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

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07823 (Mon Sep 28 10:47:31 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)
 Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: 5CD7C98FC5B52FF7
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute1
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Value1
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)
 Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: F0CB35D89BB9D251
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute2
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: Value2

4200780100000190420077010000004842006701000000204200680200000004000000010000000042006902000000040000000000000042008F09000000080000000004AC0782342000D0200000004000000020000000042000F010000009842005A05000000040000000D0000000042009008000000085CD7C98FC5B52FF742007C05000000040000000000000000420079010000006042009107000000243333364633962392D386537332D346666362D613337622D343233363966356134323632000000042000A070000000C782D61747472696275746531000000042000B070000000656616C756531000042000F010000009842005A05000000040000000D000000004200900800000008F0CB35D89BB9D25142007C050000000400000000000000420079010000006042009107000000243333364633962392D386537332D346666362D613337622D343233363966356134323632000000042000A070000000C782D61747472696275746532000000042000B070000000656616C7565320000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute2
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: ModifiedValue2

42007801000001A04200770100000048420067010000002042006802000000400000001000000004200690200000040000000000000042008F0900000008000000004AC0782342000D0200000004000000020000000042000F01000000A042005A05000000040000000E0000000042009008000000008C06597C23C95214442007C05000000040000000000000000420079010000006842009107000000243333364633962392D386537332D346666362D613337622D343233363966356134323632000000042008010000003042000A07000000C782D61747472696275746531000000042000B07000000E4D6F64696669656456616C756532000000042005A05000000040000000E0000000042009008000000083D9CF6E0445252B842007C050000000400000000000000420079010000006842009107000000243333364633962392D386537332D346666362D613337622D343233363966356134323632000000042008010000003042000A07000000C782D61747472696275746532000000042000B07000000E4D6F64696669656456616C7565320000

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12 Client A:
 Delete attribute [batch]
 In: uuidKey, attributeNames={ 'x-attribute1' }
 In: uuidKey, attributeNames={ 'x-attribute2' }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000F (Delete Attribute)
 Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: 1A1B48172DF57ABC
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute1
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000F (Delete Attribute)
 Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: B77FD0753B7C95ED
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute2

42007501000001304200740100000038420067010000002042006802000000400000001000000004200690200000040000000000000042000D0200000004000000020000000042000F010000007042005A0500000040000000F0000000042009008000000081A1B48172DF57ABC420076010000004842009107000000243333364633962392D386537332D346666362D613337622D343233363966356134323632000000042000A07000000C782D61747472696275746531000000042000B07000000E42005A0500000040000000F00000004200900800000008B77FD0753B7C95ED420076010000004842009107000000243333364633962392D386537332D346666362D613337622D343233363966356134323632000000042000A07000000C782D6174747269627574653200000000

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

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

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Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07826 (Mon Sep 28 10:47:34 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000F (Delete Attribute)
 Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: 1A1B48172DF57ABC
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute1
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: ModifiedValue1
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000F (Delete Attribute)
 Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: B77FD0753B7C95ED
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-attribute2
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: ModifiedValue2

42007801000001A04200770100000048420067010000002042006802000000040000000100000000420069020000000400000000000042008F09000000080000000004AC0782642000D0200000004000000020000000042000F01000000A042005A05000000040000000F00000000420090080000000081A1B48172DF57ABC42007C050000000400000000000000004200790100000068420091070000000243333364633962392D386537332D346666362D613337622D3432333639663561343236320000000420008010000003042000A070000000C782D61747472696275746531000000042000B070000000E4D6F64696669656456616C7565310000042000F01000000A042005A05000000040000000F000000004200900800000008B77FD0753B7C95ED42007C050000000400000000000000420079010000006842009107000000243333364633962392D386537332D346666362D613337622D3432333639663561343236320000000420008010000003042000A070000000C782D61747472696275746531000000042000B070000000E4D6F64696669656456616C7565320000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000040000000100000000420069020000000400000000000042008F09000000080000000004AC0782642000D0200000004000000020000000042000F01000000A042005A05000000040000000F00000000420090080000000081A1B48172DF57ABC42007C050000000400000000000000004200790100000068420091070000000243333364633962392D386537332D346666362D613337622D3432333639663561343236320000000420008010000003042000A070000000C782D61747472696275746531000000042000B070000000E4D6F64696669656456616C7565320000

13 Client A:
 Get (symmetric key)
 In: uuidKey

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262

42007501000000904200740100000038420067010000002042006802000000400000001000000004200690200000004000000000000042000D02000000400000001000000042000F010000004842005A0500000040000000A000000004200760100000030420091070000002433333364633962392D386537332D346666362D613337622D34323336396635613432363200000000

Out: objectType = '00000002', uuidKey, symmetricKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07827 (Mon Sep 28 10:47:35 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262
 Tag: Symmetric Key (0x42008C), Type: Structure (0x01), Data:
 Tag: Key Block (0x42003E), Type: Structure (0x01), Data:
 Tag: Key Format Type (0x420040), Type: Enumeration (0x05), Data: 0x00000001
 Tag: Key Value (0x420043), Type: Structure (0x01), Data:
 Tag: Key Material (0x420041), Type: Octet String (0x08), Data: E6C15B28BB6C7A268E9ADEA471A36F23
 Tag: Cryptographic Algorithm (0x420026), Type: Enumeration (0x05), Data: 0x00000003 (AES)
 Tag: Cryptographic Length (0x420028), Type: Integer (0x02), Data: 0x00000080 (128)

42007801000001204200770100000048420067010000002042006802000000400000001000000004200690200000004000000000000042008F0900000008000000004AC078274200D02000000400000001000000042000F01000000C842005A0500000040000000A0000000042007C050000000400000000000000042007901000000A042005505000000040000000000000420091070000002433333364633962392D386537332D346666362D613337622D343233363966356134323632000000042008C010000005842003E010000005042004005000000400000001000000042004301000000184200410800000010E6C15B28BB6C7A268E9ADEA471A36F2342002605000000400000003000000004200280200000040000008000000000

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

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

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

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Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)
Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262

4200750100000090420074010000003842006701000000204200680200000004000000010000000042006902000000040
000000000000000042000D0200000004000000010000000042000F010000004842005A0500000004000000140000000042
00760100000030420091070000002433333364633962392D386537332D346666362D613337622D3432333639663561343
2363200000000

Out: uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
Tag: Response Header (0x420077), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07827 (Mon Sep 28
10:47:35 CEST 2009)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)
Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 333dc9b9-8e73-4ff6-a37b-42369f5a4262

42007801000000B0420077010000004842006701000000204200680200000004000000010000000042006902000000040
000000000000000042008F0900000008000000004AC0782742000D0200000004000000010000000042000F010000005842
005A0500000004000000140000000042007C0500000000400000000000000042007901000000304200910700000024333
33364633962392D386537332D346666362D613337622D34323336396635613432363200000000

```

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0000000000004200690200000004
0000006200000000

Deleted: Tag: Protocol
Version Major (0x420068),
Type: Integer (0x02), Data:
0x00000001 (1)

Deleted: Tag: Protocol
Version Minor (0x420069),
Type: Integer (0x02), Data:
0x00000000 (0)

Deleted: 42006802000000040000
0000000000004200690200000004
0000006200000000

5 Auditing and reporting

5.1 Use-case: Get usage allocation scenario

This use-case tests the usage management functionality of KMIP. A key is created and the Activation Date and Protect Stop Date attributes are set in such a way as to allow the Get Usage Allocation operation to be performed. The value of the Usage Limits attribute is set to 1000 bytes, and two subsequent requests for 500 bytes succeed, while a third fails since the usage allocation has been used up. The key is finally destroyed. This use-case shows the use of multiple clients with the assumptions regarding the clients being the same as in the use-case described in Section 3.1.4

Time	Client A
0	Client A: -----

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Create (symmetric key)

In: objectType = '00000002', attributes={ CryptographicAlgorithm='AES', CryptographicLength='128', NameValue={ Name='Key1', NameType='00000001' }, CryptographicUsageMask='00000004' }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
Tag: Request Header (0x420074), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)
Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
Tag: Template-Attribute (0x42008E), Type: Structure (0x01), Data:
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Algorithm
Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000003 (AES)
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Length
Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x00000080 (128)
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name
Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:
Tag: Name Value (0x420053), Type: Text String (0x07), Data: Key1
Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)
Tag: Attribute (0x420008), Type: Structure (0x01), Data:
Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Usage Mask
Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x00000004 (Encrypt)

4200750100000160420074010000003842006701000000204200680200000040000000100000000420069020000004000000000000042000D0200000004000000010000000042000F010000011842005A0500000004000000010000000042007601000001004200550500000004000000020000000042008E01000000E8420008010000003042000A0700000001743727970746F6772617068696320416C676F726974686D0042000B0500000004000000300000000420008010000003042000A070000001443727970746F67726170686963204C656E677468000000042000B0200000004000000080000000004200080100003842000A07000000044E616D650000000042000B010000002042005307000000044B657931000000004200520500000040000000100000000420008010000003042000A070000001843727970746F67726170686963205573616765204D61736B42000B02000000040000000400000000

Out: objectType = '00000002', uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
Tag: Response Header (0x420077), Type: Structure (0x01), Data:
Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07828 (Mon Sep 28 10:47:36 CEST 2009)
Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000042006902000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000001 (Create)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615

42007801000000042007701000000484200670100000020420068020000004000000010000000042006902000000400000000000042008F0900000008000000004AC0782842000D020000000400000001000000004200F010000006842005A050000004000000010000000042007C05000000040000000000000000420079010000004042005505000000040000000200000000420091070000002434666563336135392D623231372D346162662D383461642D61666313534373032343631350000000

Deleted: 42006802000000400000000000004200690200000040000006200000000

1 Client A:
 Add attribute [batch]
 In: uuidKey, attribute={ ActivationDate='2' }
 In: uuidKey, attribute={ ProtectStopDate='<NOW+10min>' }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)
 Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: E1AE8A5206CC749A
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Activation Date
 Tag: Attribute Value (0x42000B), Type: Date-Time (0x09), Data: 0x0000000000000002 (Thu Jan 01 01:00:02 CET 1970)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)
 Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: C6CAA6E0C409336F
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Protect Stop Date
 Tag: Attribute Value (0x42000B), Type: Date-Time (0x09), Data: 0x000000004AC07A80 (Mon Sep 28 10:57:36 CEST 2009)

420075010000016842007401000000384200670100000020420068020000004000000010000000042006902000000400000000000042008F0900000008000000004AC0782842000D020000000400000001000000004200F010000006842005A0500000040000000D00000000420090080000008E1AE8A5206CC749A4200760100000060420091070000002434666563336135392D623231372D346162662D383461642D6166631353437303234363135000000042008010000002842000A070000000F41637469766174696F6E2044617465004200B09000000080000000000000024200F010000009042005A0500000040000000D00000000420090080000008C6CAA6E0C409336F4200760100000068420091070000002434666563336135392D623231372D346162662D383461642D6166631353437303234363135000000042008010000003042000A070000001150726F746563742053746F7020446174650000000000004200B0900000008000000004AC07A80

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (98)

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

Out: uuidKey, attribute={ ProtectStopDate='<NOW+10min>' }

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Tag: Response Header (0x420077), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC07828 (Mon Sep 28 10:47:36 CEST 2009)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000002 (2)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)

Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: E1AE8A5206CC749A

Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)

Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Activation Date

Tag: Attribute Value (0x42000B), Type: Date-Time (0x09), Data: 0x0000000000000002 (Thu Jan 01 01:00:02 CET 1970)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)

Tag: Unique Batch Item ID (0x420090), Type: Octet String (0x08), Data: C6CAA6E0C409336F

Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)

Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Protect Stop Date

Tag: Attribute Value (0x42000B), Type: Date-Time (0x09), Data: 0x000000004AC07A80 (Mon Sep 28 10:57:36 CEST 2009)

42007801000001984200770100000048420067010000002042006802000000400000010000000420069020000004000000000000000042008F0900000008000000004AC0782842000D02000000040000000200000004200F01000009842005A0500000040000000D00000000420090080000008E1AE8A5206CC749A42007C0500000004000000000000004200790100000060420091070000002434666563336135392D623231372D346162662D383461642D616631353437303234363135000000042008010000002842000A07000000F41637469766174696F6E2044617465004200B090000008000000000000004200F01000000A042005A0500000040000000D0000000420090080000008C6CAA6E0C409336F42007C0500000040000000000000004200790100000068420091070000002434666563336135392D623231372D346162662D383461642D616631353437303234363135000000042008010000003042000A070000001150726F746563742053746F702044617465000000000004200B09000000800000004AC07A80

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 4200680200000040000000000000420069020000004000000620000000

2 Client A:
Add Attribute
In: uuidKey, attribute={ UsageLimits={ UsageLimitsTotalBytes='1000' } }

Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

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Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Usage Limits
 Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:
 Tag: Usage Limits Total Bytes (0x420095), Type: Big Integer (0x04), Data: 03E8 (1000)

420075010000000C8420074010000003842006701000000204200680200000040000000100000000420069020000004000000000000042000D020000000400000001000000042000F01000008042005A0500000040000000D000000004200760100000068420091070000002434666563336135392D623231372D346162662D383461642D6166313534373032343631350000000420008010000003042000A070000000C5573616765204C696D6974730000000042000B010000001042009504000000800000000000003E8

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

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0782A (Mon Sep 28 10:47:38 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Usage Limits
 Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:
 Tag: Usage Limits Total Bytes (0x420095), Type: Big Integer (0x04), Data: 00000000000003E8 (1000)
 Tag: Usage Limits Byte Count (0x420093), Type: Big Integer (0x04), Data: 00000000000003E8 (1000)

42007801000000F8420077010000004842006701000000204200680200000040000000100000000420069020000004000000000000042008F090000000800000004AC0782A42000D0200000004000000010000000042000F01000000A042005A0500000040000000D0000000042007C05000000040000000000000004200790100000078420091070000002434666563336135392D623231372D346162662D383461642D61663135343730323436313500000000420008010000004042000A07000000C5573616765204C696D6974730000000042000B0100000020420095040000008000000000000003E8420093040000008000000000000003E8

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

3 Client B:
 Locate (symmetric key by name)
 In: objectType = '00000002', attributes={ Name={ Name='Key1', NameType= '00000001' } }

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Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~

~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Type

Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name

Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:

Tag: Name Value (0x420053), Type: Text String (0x07), Data: Key

Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)

42007501000000D0420074010000003842006701000000204200680200000040000000100000000420069020000004000000000000042000D0200000004000000010000000042000F01000008842005A0500000040000008000000004200760100000070420008010000002842000A070000000B4F626A6563742054797065000000000042000B05000000040000000200000000420008010000003842000A07000000044E616D650000000042000B010000002042005307000000044B6579310000000042005205000000040000000100000000

Out: uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Tag: Response Header (0x420077), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~

~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC0782A (Mon Sep 28 10:47:38 CEST 2009)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)

Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)

Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615

42007801000000B0420077010000004842006701000000204200680200000040000000100000000420069020000004000000000000042008F0900000008000000004AC0782A42000D0200000004000000010000000042000F01000005842005A0500000004000000080000000042007C0500000004000000000000004200790100000030420091070000002434666563336135392D623231372D346162662D383461642D61663135343730323436313500000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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4 Client B:
Get (symmetric key)
In: uuidKey

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Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~

~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615

4200750100000090420074010000003842006701000000204200680200000040000000100000000420069020000004000000000000042000D020000000400000001000000042000F010000004842005A05000000040000000A0000000042007601000000304200910700000002434666563336135392D623231372D346162662D383461642D61663135343730323436313500000000

Out: objectType = '00000002', uuidKey, symmetricKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Tag: Response Header (0x420077), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~

~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC0782A (Mon Sep 28 10:47:38 CEST 2009)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)

Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)

Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615

Tag: Symmetric Key (0x42008C), Type: Structure (0x01), Data:

Tag: Key Block (0x42003E), Type: Structure (0x01), Data:

Tag: Key Format Type (0x420040), Type: Enumeration (0x05), Data: 0x00000001

Tag: Key Value (0x420043), Type: Structure (0x01), Data:

Tag: Key Material (0x420041), Type: Octet String (0x08), Data: 3D41DF1C5C20E272212D86D762A8C7D4

Tag: Cryptographic Algorithm (0x420026), Type: Enumeration (0x05), Data: 0x00000003 (AES)

Tag: Cryptographic Length (0x420028), Type: Integer (0x02), Data: 0x00000080 (128)

4200780100000120420077010000004842006701000000204200680200000040000000100000000420069020000004000000000000042008F0900000008000000004AC0782A42000D0200000004000000010000000042000F01000000C842005A05000000040000000A0000000042007C0500000004000000000000000042007901000000A0420055050000000400000002000000004200910700000002434666563336135392D623231372D346162662D383461642D616631353437303234363135000000042008C010000005842003E01000000504200400500000004000000010000000042004301000000184200410800000103D41DF1C5C20E272212D86D762A8C7D44200260500000004000000030000000042002802000000040000008000000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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5 Client B: _____

~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000011 (Get Usage Allocation)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615
 Tag: Usage Limits Byte Count (0x420093), Type: Big Integer (0x04), Data: 01F4 (500)

42007501000000A042007401000000384200670100000020420068020000004000000010000000042006902000000400000000000042000D020000000400000001000000042000F010000005842005A050000000400000011000000004200760100000040420091070000002434666563336135392D623231372D346162662D383461642D61663135343730323436313500000004200930400000008000000000000001F4

Out: uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0782B (Mon Sep 28 10:47:39 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000011 (Get Usage Allocation)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615

42007801000000B042007701000000484200670100000020420068020000004000000010000000042006902000000400000000000042008F0900000008000000004AC0782B42000D020000000400000001000000042000F010000005842005A0500000004000000110000000042007C0500000004000000000000004200790100000030420091070000002434666563336135392D623231372D346162662D383461642D61663135343730323436313500000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Client C:
Locate (symmetric key by name)
In: objectType = '00000002', attributes={ Name={ Name='Key1', NameType='00000001'}}

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
~~Tag: Attribute (0x420008), Type: Structure (0x01), Data:~~

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Object Type
 Tag: Attribute Value (0x42000B), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Name
 Tag: Attribute Value (0x42000B), Type: Structure (0x01), Data:
 Tag: Name Value (0x420053), Type: Text String (0x07), Data: Key1
 Tag: Name Type (0x420052), Type: Enumeration (0x05), Data: 0x00000001 (Uninterpreted text string)

42007501000000D0420074010000003842006701000000204200680200000040000000100000000420069020000004000000000000042000D02000000400000001000000042000F01000008842005A05000000400000008000000004200760100000070420008010000002842000A070000000B4F626A6563742054797065000000000042000B05000000040000000200000000420008010000003842000A07000000044E616D650000000042000B010000002042005307000000044B6579310000000042005205000000040000000100000000

Deleted: 42006802000000400000000000004200690200000040000006200000000

Out: uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC0782B (Mon Sep 28 10:47:39 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000008 (Locate)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

42007801000000B0420077010000004842006701000000204200680200000040000000100000000420069020000004000000000000042008F090000000800000004AC0782B42000D020000004000000010000000042000F010000005842005A0500000004000000080000000042007C050000000400000000000000420079010000003042009107000000243466563336135392D623231372D346162662D383461642D61663135343730323436313500000000

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8 Client C:
 Get (symmetric key)
 In: uuidKey

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

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42007501000000904200740100000038420067010000002042006802000000400000001000000042006902000000400000000000042000D020000000400000001000000042000F01000004842005A0500000040000000A00000004200760100000030420091070000002434666563336135392D623231372D346162662D383461642D61663135343730323436313500000000

Out: objectType = '00000002', uuidKey, symmetricKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Tag: Response Header (0x420077), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0782B (Mon Sep 28 10:47:39 CEST 2009)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000A (Get)

Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)

Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615

Tag: Symmetric Key (0x42008C), Type: Structure (0x01), Data:

Tag: Key Block (0x42003E), Type: Structure (0x01), Data:

Tag: Key Format Type (0x420040), Type: Enumeration (0x05), Data: 0x00000001

Tag: Key Value (0x420043), Type: Structure (0x01), Data:

Tag: Key Material (0x420041), Type: Octet String (0x08), Data: 3D41DF1C5C20E272212D86D762A8C7D4

Tag: Cryptographic Algorithm (0x420026), Type: Enumeration (0x05), Data: 0x00000003 (AES)

Tag: Cryptographic Length (0x420028), Type: Integer (0x02), Data: 0x00000080 (128)

42007801000001204200770100000048420067010000002042006802000000400000001000000042006902000000400000000000042008F0900000008000000004AC0782B42000D02000000400000001000000042000F01000000C842005A0500000040000000A000000042007C0500000004000000000000000000042007901000000A04200550500000040000000020000000420091070000002434666563336135392D623231372D346162662D383461642D616631353437303234363135000000042008C010000005842003E010000005042004005000000400000001000000042004301000000184200410800000103D41DF1C5C20E272212D86D762A8C7D442002605000000400000003000000042002802000000400000080000000

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: 42006802000000400000000000004200690200000040000006200000000

9 Client C:
Get usage allocation
In: uuidKey, UsageLimitsByteCount='500'

Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)

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Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000011 (Get Usage Allocation)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615
 Tag: Usage Limits Byte Count (0x420093), Type: Big Integer (0x04), Data: 01F4 (500)

42007501000000A0420074010000003842006701000000204200680200000040000000100000000420069020000004000000000000042000D0200000004000000010000000042000F010000005842005A050000000400000011000000004200760100000040420091070000002434666563336135392D623231372D346162662D3833461642D6166313534373032343631350000000420093040000008000000000000001F4

Out: uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0782B (Mon Sep 28 10:47:39 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000011 (Get Usage Allocation)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000001 (Failed)
 Tag: Result Reason (0x42007B), Type: Enumeration (0x05), Data: 0x0000000C (Permission Denied)
 Tag: Result Message (0x42007A), Type: Text String (0x07), Data: Unable to allocate requested byte amount

42007801000000B8420077010000004842006701000000204200680200000040000000100000000420069020000004000000000000042008F090000000800000004AC0782B42000D0200000004000000010000000042000F010000006042005A0500000004000000110000000042007C05000000040000001000000042007B05000000040000000C000000042007A070000002855E6E1626C6520746F20616C66F6361746520726571756573746564206279746520616D6F756E74

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

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

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: 4fec3a59-b217-4abf-84ad-af1547024615

4200750100000090420074010000003842006701000000204200680200000040000000100000000420069020000004000000000000042000D0200000004000000010000000042000F010000004842005A050000000400000011000000004200760100000040420091070000002434666563336135392D623231372D346162662D3833461642D6166313534373032343631350000000420093040000008000000000000001F4

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000003 (Register)

Tag: Request Payload (0x420076), Type: Structure (0x01), Data:

Tag: Object Type (0x420055), Type: Enumeration (0x05), Data: 0x00000002 (Symmetric Key)

Tag: Template-Attribute (0x42008E), Type: Structure (0x01), Data:

Tag: Attribute (0x420008), Type: Structure (0x01), Data:

Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: Cryptographic Usage Mask

Tag: Attribute Value (0x42000B), Type: Integer (0x02), Data: 0x00000004 (Encrypt)

Tag: Symmetric Key (0x42008C), Type: Structure (0x01), Data:

Tag: Key Block (0x42003E), Type: Structure (0x01), Data:

Tag: Key Format Type (0x420040), Type: Enumeration (0x05), Data: 0x00000001

Tag: Key Value (0x420043), Type: Structure (0x01), Data:

Tag: Key Material (0x420041), Type: Octet String (0x08), Data: 0123456789ABCDEF0123456789ABCDEF

Tag: Cryptographic Algorithm (0x420026), Type: Enumeration (0x05), Data: 0x00000003 (AES)

Tag: Cryptographic Length (0x420028), Type: Integer (0x02), Data: 0x00000080 (128)

420075010000011042007401000000384200670100000020420068020000004000000010000000420069020000004000000000000042000D02000000400000001000000042000F01000000C842005A050000004000000030000000042007601000000B042005505000000400000002000000042008E010000003842008010000003042000A070000001843727970746F67726170686963205573616765204D61736B42000B020000000400000004000000042008C010000005842003E0100000050420040050000004000000010000000420043010000001842004108000000100123456789ABCDEF0123456789ABCDEF4200260500000040000000300000004200280200000040000008000000000

Out: uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:

Tag: Response Header (0x420077), Type: Structure (0x01), Data:

Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:

~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~

~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~

Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0782C (Mon Sep 28 10:47:40 CEST 2009)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)

Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000003 (Register)

Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)

Tag: Response Payload (0x420079), Type: Structure (0x01), Data:

Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: bb806453-5c75-42c2-80bd-4e52f1ceb57b

42007801000000B042007701000000484200670100000020420068020000004000000010000000420069020000004000000000000042008F090000000800000004AC0782C42000D02000000400000001000000042000F010000005842005A05000000400000003000000042007C05000000400000000000004200790100000030420091070000002462623830363435332D356337352D343263322D383062642D34653532663163656235376200000000

Deleted: 420068020000004000000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Add attribute

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

Tag: Request Message (0x420075), Type: Structure (0x01), Data:

Tag: Request Header (0x420074), Type: Structure (0x01), Data:

~~Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:~~

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~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: bb806453-5c75-42c2-80bd-4e52f1ceb57b
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-provider
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: unknown

 42007501000000C042007401000000384200670100000020420068020000004000000010000000042006902000000040000000000000042000D02000000400000001000000042000F010000007842005A0500000040000000D000000004200760100000060420091070000002462623830363435332D356337352D343263322D383062642D346535326631636562353762000000042008010000002842000A07000000A782D70726F76696465720000000000042000B0700000007756E6B6E6F776E00

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

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 ~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
 ~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0782E (Mon Sep 28 10:47:42 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000D (Add Attribute)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: bb806453-5c75-42c2-80bd-4e52f1ceb57b
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-provider
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: unknown

 42007801000000E042007701000000484200670100000020420068020000004000000010000000042006902000000040000000000000042000F010000008842005A0500000040000000D0000000042007C050000000400000000000000004200790100000060420091070000002462623830363435332D356337352D343263322D383062642D346535326631636562353762000000042008010000002842000A07000000A782D70726F76696465720000000000042000B0700000007756E6B6E6F776E00

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 ~~Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)~~
 ~~Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)~~

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

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Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000E (Modify Attribute)
 Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: bb806453-5c75-42c2-80bd-4e52f1ceb57b
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-provider
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: third party

42007501000000C842007401000000384200670100000020420068020000004000000010000000042006902000000040000000000000042000D0200000004000000010000000042000F010000008042005A05000000040000000E000000004200760100000068420091070000002462623830363435332D356337352D343263322D383062642D346535326631636562353762000000042008010000003042000A07000000A782D70726F7669646572000000000000042000B070000000B74686972642070617274790000000000

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

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
 Tag: Response Header (0x420077), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x00000004AC0782E (Mon Sep 28 10:47:42 CEST 2009)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
 Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x0000000E (Modify Attribute)
 Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
 Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
 Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: bb806453-5c75-42c2-80bd-4e52f1ceb57b
 Tag: Attribute (0x420008), Type: Structure (0x01), Data:
 Tag: Attribute Name (0x42000A), Type: Text String (0x07), Data: x-provider
 Tag: Attribute Value (0x42000B), Type: Text String (0x07), Data: third party

42007801000000E842007701000000484200670100000020420068020000004000000010000000042006902000000040000000000000042000F0900000008000000004AC0782E42000D0200000004000000010000000042000F010000009042005A05000000040000000E0000000042007C050000000400000000000000004200790100000068420091070000002462623830363435332D356337352D343263322D383062642D346535326631636562353762000000042008010000003042000A07000000A782D70726F766964657200000000000042000B070000000B74686972642070617274790000000000

Deleted: 42006802000000400000000000004200690200000040000006200000000

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

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3 Destroy (symmetric key)
 In: uuidKey

Tag: Request Message (0x420075), Type: Structure (0x01), Data:
 Tag: Request Header (0x420074), Type: Structure (0x01), Data:
 Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
 Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
 Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
 Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:

Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)
Tag: Request Payload (0x420076), Type: Structure (0x01), Data:
  Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: bb806453-5c75-42c2-80bd-4e52f1ceb57b

4200750100000090420074010000003842006701000000204200680200000040000000100000004200690200000040
0000000000000042000D0200000004000000010000000042000F010000004842005A0500000004000000140000000042
00760100000030420091070000002462623830363435332D356337352D343263322D383062642D3465353266316365623
5376200000000

Out: uuidKey

Tag: Response Message (0x420078), Type: Structure (0x01), Data:
  Tag: Response Header (0x420077), Type: Structure (0x01), Data:
    Tag: Protocol Version (0x420067), Type: Structure (0x01), Data:
      Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000001 (1)
      Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000000 (0)
    Tag: Time Stamp (0x42008F), Type: Date-Time (0x09), Data: 0x000000004AC0782E (Mon Sep 28
10:47:42 CEST 2009)
    Tag: Batch Count (0x42000D), Type: Integer (0x02), Data: 0x00000001 (1)
    Tag: Batch Item (0x42000F), Type: Structure (0x01), Data:
      Tag: Operation (0x42005A), Type: Enumeration (0x05), Data: 0x00000014 (Destroy)
      Tag: Result Status (0x42007C), Type: Enumeration (0x05), Data: 0x00000000 (Success)
      Tag: Response Payload (0x420079), Type: Structure (0x01), Data:
        Tag: Unique Identifier (0x420091), Type: Text String (0x07), Data: bb806453-5c75-42c2-80bd-4e52f1ceb57b

42007801000000B0420077010000004842006701000000204200680200000040000000100000004200690200000040
0000000000000042008F0900000008000000004AC0782E42000D0200000004000000010000000042000F010000005842
005A0500000004000000140000000042007C0500000004000000000000000042007901000000304200910700000024626
23830363435332D356337352D343263322D383062642D34653532663163656235376200000000

```

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Deleted: Tag: Protocol Version Major (0x420068), Type: Integer (0x02), Data: 0x00000000 (0)

Deleted: Tag: Protocol Version Minor (0x420069), Type: Integer (0x02), Data: 0x00000062 (98)

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7 Vendor Extensions

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

7.1 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', attributes={ CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='0000000C' }, MessageExtension={ VendorIdentification='Acme',

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	<p>CriticalityIndicator='false', VendorExtension={ tag='0x540001', type='text string', value='na' } }</p> <p>Out: objectType='00000002', uuidKey</p>
1	<p>Destroy (symmetric key)</p> <p>In: uuidKey</p> <p>Out: uuidKey</p>

7.2 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	<p>Create (symmetric key)</p> <p>In: objectType='00000002', attributes={ CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='0000000C' }, MessageExtension={ VendorIdentification='Acme', CriticalityIndicator='true', VendorExtension={ tag='0x540001', type='text string', value='na' } }</p> <p>Out: Operation Failed, Feature Not Supported</p>

8 Asymmetric keys

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

8.1 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	<p>Create Key Pair</p> <p>In: commonAttributes={ CryptographicAlgorithm='RSA', CryptographicLength='1024', CryptographicUsageMask='0000000C' }, privateKeyAttributes={ Name={ NameValue='PrivateKey1', NameType='00000001' } }, publicKeyAttributes={ NameValue='PublicKey1', NameType='00000001' } }</p>

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	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

8.2 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', attributes={ CryptographicUsageMask='0000000C' }, foreignPrivateKey Out: uuidPrivateKey
1	Register (Public Key) In: objectType='00000004', attributes={ CryptographicUsageMask='0000000C', 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 } }

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	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.

9.1 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 is still retrievable. To clean up, both keys are deleted.

Time	Client A
0	Create (symmetric key) In: objectType='00000002', attributes={ CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='0000000C', 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)

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	In: uuidKey Out: objectType = '00000002', uuidKey, symmetricKey
6	Destroy In: uuidKey Out: uuidKey
7	Destroy In: uuidNewKey Out: uuidNewKey

9.2 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* is set to a time in the past and the *Deactivation Date* to a time 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', attributes={ CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='0000000C' } 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 * <i>Repeated until state changes to Deactivated</i> 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

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5	Get Attribute In: uuidNewKey, attributeName={ 'ActivationDate', 'DeactivationDate' } Out: uuidNewKey, attribute={ ActivationDate=' <Value of ActivationTime in existing key + 300 days>', DeactivationDate='<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

9.3 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 are to 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', attributes={ CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='0000000C', 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 

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5	Get Attribute In: uuidNewKey, attributeName={'State'} Out: uuidNewKey, attribute={ State='Active' }
6	Destroy In: uuidKey Out: uuidKey
7	Destroy In: uuidNewKey Out: uuidNewKey

9.4 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', attributes={ CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='0000000C', 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='000000043B7B630', ProcessStartDate='000000043B7B630', ProtectStopDate='00000005E0C7BB0', DeactivationDate='00000005E0C7BB0' } 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='000000043B7B630', ProcessStartDate='000000043B7B630', ProtectStopDate='00000005E0C7BB0', DeactivationDate='00000005E0C7BB0' }
5	Locate In: attributes={ Name={ NameValue='rekeyKey', NameType='00000001' } } Out: uuidNewKey

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6	Destroy In: uuidKey Out: uuidKey
7	Destroy In: uuidNewKey Out: uuidNewKey

9.5 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', attributes={ CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='0000000C', 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	

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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. If the server performs the Archive and Recover operations asynchronously, the client Polls the server until the operations complete. The client indicates in the request that it supports asynchronous responses.

10.1 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 fail. Add the Storage Status Mask to the Locate-command, indicating to the server to 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', attributes={ CryptographicAlgorithm='AES', CryptographicLength='128', CryptographicUsageMask='0000000C', Name={ NameValue='archiveKey', NameType='00000001' } } Out: objectType='00000002', uuidKey
1	Locate In: attributes={ Name={ NameValue='archiveKey', NameType='00000001' } } Out: uuidKey
2	Get (symmetric key) 

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	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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B. Revision History

Revision	Date	Editor	Changes Made
ed-0.98	2009-04-28	Mathias Björkqvist	Initial conversion of input document to OASIS format.
ed-0.98	2009-08-06	Mathias Björkqvist	Changes to layout and message content to reflect the recent changes to the KMIP specification, added descriptions to the use-cases for which they were missing.
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draft-01	2009-10-08	Mathias Björkqvist	Removed normative words "must", "shall", "required", "will" and "can"; updated messages and TTLV encodings to conform to KMIP specification ed-0.98 rev 19; added normative references; added minor edits
draft-02	2009-10-15	Mathias Björkqvist	Replaced the TBDs, changed status to Committee Draft, changed use-cases to use protocol major version 1 and minor version 0

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