OASIS Committee Note

Key Management Interoperability Protocol Test Cases Version 2.1

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Related work:
This document replaces or supersedes:

This document is related to:

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 is a Non-Standards Track Work Product. The patent provisions of the OASIS IPR Policy do not apply.

This document was last revised or approved by the OASIS Key Management Interoperability Protocol (KMIP) TC on the above date. The level of approval is also listed above. Check the “Latest stage” location noted above for possible later revisions of this document. Any other numbered Versions and other technical work produced by the Technical Committee (TC) are listed at https://www.oasis-open.org/committees/tc_home.php?wg_abbrev=kmip#technical.

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1 Introduction

The purpose of this document is to describe test cases to demonstrate the Key Management Interoperability Protocol (KMIP) [KMIP-SPEC]. The test cases illustrate that the concepts within the protocol are sound and how the protocol may be used when implementing KMIP in applications. These test cases are not intended to fully test an implementation of KMIP.

1.1 References (non-normative)


2 KMIP Test Cases

The test cases define a number of request-response pairs for KMIP operations. Each test case is provided in the XML format specified in [KMIP-PROFILES] intended to be both human-readable and usable by automated tools.

Each test case has a unique label (the section name) with the protocol version as part of the identifier.

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

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

The test cases show one possible way to construct the messages, and the messages shown are not necessarily the only conformant constructions, as many items within KMIP are optional, and server behavior depends on the server's policy. Support for a test case is predicated on a server matching the test case assumptions and the behavior shown in the request-response pairs.

Symbolic identifiers are of the form $UPPERCASE_NAME followed by an optional unique index value. Wherever a symbolic identifier occurs in a test cases, the implementation must replace it with a reasonable appearing datum of the expected type. Time values can be specified in terms of an offset from the current time in seconds of the form $NOW or $NOW-n or $NOW+n.

2.1 TC-ASYNC-1-21
Asynchronous test.

See test-cases/kmip-v2.1/TC-ASYNC-1-21.xml

2.2 TC-ASYNC-2-21
Asynchronous test.

See test-cases/kmip-v2.1/TC-ASYNC-2-21.xml

2.3 TC-ASYNC-3-21
Asynchronous test.

See test-cases/kmip-v2.1/TC-ASYNC-3-21.xml

2.4 TC-ASYNC-4-21
Asynchronous test.

See test-cases/kmip-v2.1/TC-ASYNC-4-21.xml

2.5 TC-ASYNC-5-21
Asynchronous test.

See test-cases/kmip-v2.1/TC-ASYNC-5-21.xml
2.6 TC-ASYNC-6-21
Asynchronous test.
See test-cases/kmip-v2.1/TC-ASYNC-6-21.xml

2.7 TC-ASYNC-7-21
Asynchronous test.
See test-cases/kmip-v2.1/TC-ASYNC-7-21.xml

2.8 TC-ASYNC-8-21
Asynchronous test.
See test-cases/kmip-v2.1/TC-ASYNC-8-21.xml

2.9 TC-ASYNC-9-21
Asynchronous test.
See test-cases/kmip-v2.1/TC-ASYNC-9-21.xml

2.10 TC-ASYNC-10-21
Asynchronous test.
See test-cases/kmip-v2.1/TC-ASYNC-10-21.xml

2.11 TC-CERTATTR-1-21
A client registers a certificate and the server creates the certificate attributes based on the subject and issuer distinguished name values.
See test-cases/kmip-v2.1/TC-CERTATTR-1-21.xml

2.12 TC-CREATE-SD-1-21
A client requests a server to create a secret data managed object.
See test-cases/kmip-v2.1/TC-CREATE-SD-1-21.xml

2.13 TC-CS-CORVAL-1-21
A client sets a client correlation value and the server also responds with a server correlation value.
See test-cases/kmip-v2.1/TC-CS-CORVAL-1-21.xml
2.14 TC-DERIVEKEY-1-21
A client uses Derive Key with SHA_256.

See test-cases/kmip-v2.1/TC-DERIVEKEY-1-21.xml

2.15 TC-DERIVEKEY-2-21
A client uses Derive Key with HMAC-SHA_256.

See test-cases/kmip-v2.1/TC-DERIVEKEY-2-21.xml

2.16 TC-DERIVEKEY-3-21
A client uses Derive Key with PBKDF2.

See test-cases/kmip-v2.1/TC-DERIVEKEY-3-21.xml

2.17 TC-DERIVEKEY-4-21
A client uses Derive Key with PBKDF2.

See test-cases/kmip-v2.1/TC-DERIVEKEY-4-21.xml

2.18 TC-DERIVEKEY-5-21
A client uses Derive Key with PBKDF2 and SHA-256.

See test-cases/kmip-v2.1/TC-DERIVEKEY-5-21.xml

2.19 TC-DERIVEKEY-6-21
A client uses Derive Key with ASYMMETRIC_KEY and ECDH.

See test-cases/kmip-v2.1/TC-DERIVEKEY-6-21.xml

2.20 TC-DIGESTS-1-21
Multiple digests.

See test-cases/kmip-v2.1/TC-DIGESTS-1-21.xml

2.21 TC-DLOGIN-1-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-1-21.xml

2.22 TC-DLOGIN-2-21
Delegated Login.
See test-cases/kmip-v2.1/TC-DLOGIN-2-21.xml

2.23 TC-DLOGIN-3-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-3-21.xml

2.24 TC-DLOGIN-4-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-4-21.xml

2.25 TC-DLOGIN-5-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-5-21.xml

2.26 TC-DLOGIN-6-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-6-21.xml

2.27 TC-DLOGIN-7-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-7-21.xml

2.28 TC-DLOGIN-8-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-8-21.xml

2.29 TC-DLOGIN-9-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-9-21.xml

2.30 TC-DLOGIN-10-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-10-21.xml
2.31 TC-DLOGIN-11-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-11-21.xml

2.32 TC-DLOGIN-12-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-12-21.xml

2.33 TC-DLOGIN-13-21
Delegated Login.

See test-cases/kmip-v2.1/TC-DLOGIN-13-21.xml

2.34 TC-ECC-1-21
A client registers an EC private key in ECPrivateKey format and an EC public key in X.509 format using the EC cryptographic algorithm.

See test-cases/kmip-v2.1/TC-ECC-1-21.xml

2.35 TC-ECC-2-21
A client registers an EC private key in PKCS8 format and an EC public key in X.509 format using the EC cryptographic algorithm.

See test-cases/kmip-v2.1/TC-ECC-2-21.xml

2.36 TC-ECC-3-21
A client registers an EC private key in ECPrivateKey format and an EC public key in X.509 format using the EC cryptographic algorithm.

See test-cases/kmip-v2.1/TC-ECC-3-21.xml

2.37 TC-ECDSA-SIGN-1-21
A client registers an EC private key in ECPrivateKey format and an EC public key in X.509 format using the EC cryptographic algorithm and performs a Sign operation followed by a Signature Verify operation.

See test-cases/kmip-v2.1/TC-ECDSA-SIGN-1-21.xml

2.38 TC-ECDSA-SIGN-DIGESTEDDATA 1-21
ECDSA Signing with the digested data provided by the client.
See test-cases/kmip-v2.1/TC-ECDSA-SIGN-DIGESTEDDATA-1-21.xml

2.39 TC-EXTRACTABLE-1-21
Show usage of Extractable and Never Extractable.

See test-cases/kmip-v2.1/TC-EXTRACTABLE-1-21.xml

2.40 TC-I18N-1-21
Client provides a key name containing a Greek capital Alpha.
Note: the encoding in XML has to be correctly converted into the valid UTF-8 format.

See test-cases/kmip-v2.1/TC-I18N-1-21.xml

2.41 TC-I18N-2-21
Client provides a key alternative name containing a Greek capital Alpha.
Note: the encoding in XML has to be correctly converted into the valid UTF-8 format.

See test-cases/kmip-v2.1/TC-I18N-2-21.xml

2.42 TC-I18N-3-21
Client provides a customer attribute containing a Greek capital Alpha with the attribute value containing a Greek capital Omega.
Note: the encoding in XML has to be correctly converted into the valid UTF-8 format.

See test-cases/kmip-v2.1/TC-I18N-3-21.xml

2.43 TC-IMPEXP-1-21
Import/Export.

See test-cases/kmip-v2.1/TC-IMPEXP-1-21.xml

2.44 TC-IMPEXP-2-21
Import/Export.

See test-cases/kmip-v2.1/TC-IMPEXP-2-21.xml

2.45 TC-IMPEXP-3-21
Import/Export.

See test-cases/kmip-v2.1/TC-IMPEXP-3-21.xml

2.46 TC-IMPEXP-4-21
Import/Export.
2.47 TC-IMPEXP-5-21
Import/Export.
See test-cases/kmip-v2.1/TC-IMPEXP-5-21.xml

2.48 TC-LOGIN-1-21
Login.
See test-cases/kmip-v2.1/TC-LOGIN-1-21.xml

2.49 TC-LOGIN-2-21
Login.
See test-cases/kmip-v2.1/TC-LOGIN-2-21.xml

2.50 TC-LOGIN-3-21
Login.
See test-cases/kmip-v2.1/TC-LOGIN-3-21.xml

2.51 TC-MD-1-21
Message digest testing.
See test-cases/kmip-v2.1/TC-MD-1-21.xml

2.52 TC-MD-2-21
Message digest testing.
See test-cases/kmip-v2.1/TC-MD-2-21.xml

2.53 TC-MD-3-21
Message digest testing.
See test-cases/kmip-v2.1/TC-MD-3-21.xml

2.54 TC-MD-4-21
Message digest testing.
See test-cases/kmip-v2.1/TC-MD-4-21.xml
2.55 TC-MD-5-21
Message digest testing.
See test-cases/kmip-v2.1/TC-MD-5-21.xml

2.56 TC-MD-6-21
Message digest testing.
See test-cases/kmip-v2.1/TC-MD-6-21.xml

2.57 TC-MD-21-21
Message digest testing.
See test-cases/kmip-v2.1/TC-MD-21-21.xml

2.58 TC-MD-22-21
Message digest testing.
See test-cases/kmip-v2.1/TC-MD-22-21.xml

2.59 TC-MD-23-21
Message digest testing.
See test-cases/kmip-v2.1/TC-MD-23-21.xml

2.60 TC-MD-24-21
Message digest testing.
See test-cases/kmip-v2.1/TC-MD-24-21.xml

2.61 TC-MDO-1-21
A client requests a meta-data-only object (no key material).
See test-cases/kmip-v2.1/TC-MDO-1-21.xml

2.62 TC-MDO-2-21
A client requests a meta-data-only object (no key material) and an object with key material and performs a Locate operation that only returns the meta-data-only object.
See test-cases/kmip-v2.1/TC-MDO-2-21.xml
2.63 TC-MDO-3-21
A client requests a meta-data-only object (no key material) using the URL format of the Key Value Location and performs Locate.

See [test-cases/kmip-v2.1/TC-MDO-3-21.xml](test-cases/kmip-v2.1/TC-MDO-3-21.xml)

2.64 TC-OFFSET-1-21
A client requests that the server create a number of symmetric keys and then uses the Offset parameter in Locate to return various items.

See [test-cases/kmip-v2.1/TC-OFFSET-1-21.xml](test-cases/kmip-v2.1/TC-OFFSET-1-21.xml)

2.65 TC-OFFSET-2-21
A client requests that the server create a number of symmetric keys and then uses the Offset parameter in Locate to return various items.

See [test-cases/kmip-v2.1/TC-OFFSET-2-21.xml](test-cases/kmip-v2.1/TC-OFFSET-2-21.xml)

2.66 TC-PGP-1-21
Register a PGP public key block and private key block and add appropriate links between the managed objects.

See [test-cases/kmip-v2.1/TC-PGP-1-21.xml](test-cases/kmip-v2.1/TC-PGP-1-21.xml)

2.67 TC-PING-1-21
Ping operation.

See [test-cases/kmip-v2.1/TC-PING-1-21.xml](test-cases/kmip-v2.1/TC-PING-1-21.xml)

2.68 TC-PKCS12-1-21
Register objects and then perform a Get returning objects in PKCS#12 format.

See [test-cases/kmip-v2.1/TC-PKCS12-1-21.xml](test-cases/kmip-v2.1/TC-PKCS12-1-21.xml)

2.69 TC-PKCS12-2-21
Register objects in PKCS#12 format and then perform a Get returning the individual objects.

See [test-cases/kmip-v2.1/TC-PKCS12-2-21.xml](test-cases/kmip-v2.1/TC-PKCS12-2-21.xml)

2.70 TC-REENCRIPT-1-21
Re-encrypt.

See [test-cases/kmip-v2.1/TC-REENCRIPT-1-21.xml](test-cases/kmip-v2.1/TC-REENCRIPT-1-21.xml)
2.71 TC-REENCRIPT-2-21
Re-encrypt.

See test-cases/kmip-v2.1/TC-REENCRIPT-2-21.xml

2.72 TC-REENCRIPT-3-21
Re-encrypt.

See test-cases/kmip-v2.1/TC-REENCRIPT-3-21.xml

2.73 TC-REENCRIPT-4-21
Re-encrypt.

See test-cases/kmip-v2.1/TC-REENCRIPT-4-21.xml

2.74 TC-REENCRIPT-5-21
Re-encrypt.

See test-cases/kmip-v2.1/TC-REENCRIPT-5-21.xml

2.75 TC-REENCRIPT-6-21
Re-encrypt.

See test-cases/kmip-v2.1/TC-REENCRIPT-6-21.xml

2.76 TC-REKEY-1-21
Create a key and perform multiple rekey operations.

See test-cases/kmip-v2.1/TC-REKEY-1-21.xml

2.77 TC-REKEY-2-21
Create a key and perform multiple rekey operations.

See test-cases/kmip-v2.1/TC-REKEY-2-21.xml

2.78 TC-REKEY-3-21
Create a key and perform multiple rekey operations.

See test-cases/kmip-v2.1/TC-REKEY-3-21.xml

2.79 TC-REKEY-4-21
Create a key and perform multiple rekey operations.
2.80 TC-REKEY-5-21
Create a key and perform multiple rekey operations.

See test-cases/kmip-v2.1/TC-REKEY-5-21.xml

2.81 TC-REKEY-6-21
Create a key and perform multiple rekey operations.

See test-cases/kmip-v2.1/TC-REKEY-6-21.xml

2.82 TC-REKEY-7-21
Create a key and perform multiple rekey operations.

See test-cases/kmip-v2.1/TC-REKEY-7-21.xml

2.83 TC-REKEY-8-21
Create a key and perform multiple rekey operations.

See test-cases/kmip-v2.1/TC-REKEY-8-21.xml

2.84 TC-REKEY-9-21
Create a key and perform multiple rekey operations.

See test-cases/kmip-v2.1/TC-REKEY-9-21.xml

2.85 TC-REKEY-10-21
Create a key and perform multiple rekey operations.

See test-cases/kmip-v2.1/TC-REKEY-10-21.xml

2.86 TC-REKEY-11-21
Create a key and perform multiple rekey operations.

See test-cases/kmip-v2.1/TC-REKEY-11-21.xml

2.87 TC-REKEY-12-21
Create a key and perform multiple rekey operations.

See test-cases/kmip-v2.1/TC-REKEY-12-21.xml
2.88 TC-RNG-ATTR-1-21
A client registers a symmetric key including details of the RNG that the client is claiming was used to generate the symmetric key.

See [test-cases/kmip-v2.1/TC-RNG-ATTR-1-21.xml](test-cases/kmip-v2.1/TC-RNG-ATTR-1-21.xml)

2.89 TC-RNG-ATTR-2-21
A client requests that the server create a symmetric key. The server does and also includes the required details of the RNG that was used to generate the symmetric key.

See [test-cases/kmip-v2.1/TC-RNG-ATTR-2-21.xml](test-cases/kmip-v2.1/TC-RNG-ATTR-2-21.xml)

2.90 TC-RSA-SIGN-DIGESTEDDATA 1-21
RSA Signing with the digested data provided by the client.

See [test-cases/kmip-v2.1/TC-RSA-SIGN-DIGESTEDDATA-1-21.xml](test-cases/kmip-v2.1/TC-RSA-SIGN-DIGESTEDDATA-1-21.xml)

2.91 TC-SENSITIVE-1-21
Show the usage of Sensitive and Always Sensitive.

See [test-cases/kmip-v2.1/TC-SENSITIVE-1-21.xml](test-cases/kmip-v2.1/TC-SENSITIVE-1-21.xml)

2.92 TC-SETTATTR-1-21
Show the usage of Set Attribute.

See [test-cases/kmip-v2.1/TC-SETTATTR-1-21.xml](test-cases/kmip-v2.1/TC-SETTATTR-1-21.xml)

2.93 TC-SETTATTR-2-21
Show the usage of Set Attribute.

See [test-cases/kmip-v2.1/TC-SETTATTR-2-21.xml](test-cases/kmip-v2.1/TC-SETTATTR-2-21.xml)

2.94 TC-SETTATTR-3-21
Show the usage of Set Attribute.

See [test-cases/kmip-v2.1/TC-SETTATTR-3-21.xml](test-cases/kmip-v2.1/TC-SETTATTR-3-21.xml)

2.95 TC-SJ-1-21
Create a symmetric key, performing split and join operations in various combinations.

See [test-cases/kmip-v2.1/TC-SJ-1-21.xml](test-cases/kmip-v2.1/TC-SJ-1-21.xml)
2.96 TC-SJ-2-21
Register a symmetric key, performing split and join operations in various combinations.

See test-cases/kmip-v2.1/TC-SJ-2-21.xml

2.97 TC-SJ-3-21
Register split keys and perform join operations in various combinations.

See test-cases/kmip-v2.1/TC-SJ-2-21.xml

2.98 TC-SJ-4-21
Create a symmetric key and perform split and join operations in various combinations using the XOR method.

See test-cases/kmip-v2.1/TC-SJ-4-21.xml

2.99 TC-STREAM-ENC-1-21
Create a symmetric key and perform encrypt with streaming.

See test-cases/kmip-v2.1/TC-STREAM-ENC-1-21.xml

2.100 TC-STREAM-ENC-2-21
Register a symmetric key and perform encrypt and decrypt with streaming.

See test-cases/kmip-v2.1/TC-STREAM-ENC-2-21.xml

2.101 TC-STREAM-ENCDEC-1-21
Register a symmetric key and perform encrypt with streaming.

See test-cases/kmip-v2.1/TC-STREAM-ENCDEC-1-21.xml

2.102 TC-STREAM-HASH-1-21
Hash operation for data ‘abc’ in a single request followed immediately by a streaming equivalent for which the result must be identical.


See test-cases/kmip-v2.1/TC-STREAM-HASH-1-21.xml

2.103 TC-STREAM-HASH-2-21
Hash operation for data ‘abc’ in a single request followed immediately by a streaming equivalent for which the result must be identical.

See test-cases/kmip-v2.1/TC-STREAM-HASH-3-21.xml

2.104 TC-STREAM-HASH-3-21
Hash operation for data ‘abc’ in a single request followed immediately by a streaming equivalent for which the result must be identical.


See test-cases/kmip-v2.1/TC-STREAM-HASH-3-21.xml

2.105 TC-STREAM-MAC-1-21
MAC with streaming.

See test-cases/kmip-v2.1/TC-STREAM-MAC-1-21.xml

2.106 TC-STREAM-SIGN-1-21
Sign with a known asymmetric key with streaming.

See test-cases/kmip-v2.1/TC-STREAM-SIGN-1-21.xml

2.107 TC-STREAM-SIGNVFY-1-21
Sign and Signature Verify with a known asymmetric key with streaming.

See test-cases/kmip-v2.1/TC-STREAM-SIGNVFY-1-21.xml

2.108 TC-WRAP-1-21
Show usage of Key Wrap Type as Registered.

See test-cases/kmip-v2.1/TC-WRAP-1-21.xml

2.109 TC-WRAP-2-21
Show usage of Key Wrap Type as Not Wrapped.

See test-cases/kmip-v2.1/TC-WRAP-2-21.xml

2.110 TC-WRAP-3-21
Show usage of returning wrapped key wrapped with a different wrapping key.

See test-cases/kmip-v2.1/TC-WRAP-3-21.xml
Appendix A. Acknowledgments

The following individuals have participated in the creation of this specification and are gratefully acknowledged:

Participants:
[Participant Name, Affiliation | Individual Member]
[Participant Name, Affiliation | Individual Member]
Appendix B. Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Editor</th>
<th>Changes Made</th>
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<tr>
<td>wd02</td>
<td>30-Apr-2020</td>
<td>Tim Hudson</td>
<td>Updated test list from interop</td>
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<tr>
<td>wd01</td>
<td>28-Aug-2019</td>
<td>Tim Chevalier</td>
<td>Initial draft</td>
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