



SyncML V1.0.1 Release Notes

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- 1 Introduction 6**
- 2 Changes to Representation Specification 7**
 - 2.1 SCR of SftDel element..... 7
 - 2.2 Status codes for authentication errors 7
 - 2.3 SCR for RespURI..... 7
 - 2.4 XML namespace declaration missing 7
 - 2.5 UserID in Authentication 8
 - 2.6 vCard 2.1 and vCalendar 1.0 URLs missing 8
 - 2.7 CmdID contradictory in text and DTD 9
 - 2.8 Status for multiple items in a command 9
 - 2.9 Content format for data types..... 9
 - 2.10 Nesting of Atomic and Sequence..... 10
 - 2.11 Status on SyncHdr 10
- 3 Changes to Synchronization Protocol Specification..... 11**
 - 3.1 Clarification on Slow Sync..... 11
 - 3.2 Requirement for CmdID element within Status 11
 - 3.3 Content of Item in Result Alert 11
 - 3.4 Changing authentication type during a session..... 12
 - 3.5 Slow sync when no separate initialization 12
 - 3.6 Support of RespURI element 12
 - 3.7 Multiple messages per package functionality..... 12
 - 3.8 MD5 digest access authentication example..... 13
 - 3.9 Authentication failure 14
- 4 Changes to Meta Information DTD Specification 15**
 - 4.1 Content model of SharedMem in DTD incorrect 15
 - 4.2 Parent element of MaxMsgSize element incorrect..... 15
 - 4.3 FreeID element mistyped in example..... 15
 - 4.4 SCR of NextNonce element..... 15
- 5 Changes to Device Information DTD Specification..... 16**
 - 5.1 SCR of DSMem element not appropriate..... 16
 - 5.2 Content model of SharedMem in DTD incorrect 16
 - 5.3 DevID element mistyped in some examples 16
 - 5.4 SCR of ParamName element not appropriate..... 16
 - 5.5 CTCap ambiguity 16
 - 5.6 Wrong MIME type for iCalendar 2.0..... 17
- 6 Changes to OBEX Binding Specification..... 18**
 - 6.1 OBEX Client/Server Clarifications 18
 - 6.2 SCR for OBEX Binding Correction..... 18
 - 6.3 Diagram clarification 18
 - 6.4 Mime type Corrections 18



7 Changes to WSP Binding Specification.....	20
7.1 WAP version clarification	20
7.2 Removal of confusing information.....	20
7.3 Solution.....	20
7.4 Wrong SyncML MIME type	20
7.5 Removal of confusing information.....	20
7.6 Solution.....	20
7.7 Better explanation regarding the usage of PUSH	20
7.8 Update reference section	21
7.9 Add SCR chapter	21
8 Changes to HTTP Binding Specification	22
8.1 Mime type Corrections	22
8.2 Abstract Correction	22



1 Introduction

SyncML was released as Version 1.0 on December 7th, 2000. As with any 1.0 release, there were small problems that needed to be dealt with. Version 1.0.1 is our attempt to fix these errors and corrections.



2 Changes to Representation Specification

2.1 SCR of SftDel element

Chapter 9.1: change the SCR of SftDel element to look like:

Command	Support of Synchronization Server		Support of Synchronization Client	
	Sending	Receiving	Sending	Receiving
SftDel	MAY	MAY	MAY	MAY

2.2 Status codes for authentication errors

Chapter 12: clarify the description of Status codes 401 and 407, and remove the Status code 509. The description of the Status codes is changed to:

401	Invalid credentials. The requested command failed because proper authentication MUST be provided by the requestor. If the property type of authentication was presented in the original request, then the response code indicates that the requested command has been refused for those credentials.
407	Missing credentials. This response code is similar to 401 except that the response code indicates that the originator MUST first authenticate with the recipient. The recipient SHOULD also return the suitable challenge in the Chal element type in the Status.
509	Reserved for future use.

2.3 SCR for RespURI

Chapter 5.1.15: the usage of the RespURI needs to be clarified to indicate that the server and database are the same logical entities as earlier. The receiver of the RespURI must not repeat the commands by default.

Chapter 9.1: change the SCR for RespURI to look like this:

Command	Support of Synchronization Server		Support of Synchronization Client	
	Sending	Receiving	Sending	Receiving
RespURI	MAY	MUST	MAY	MUST

2.4 XML namespace declaration missing

Chapters 5.1.7, 5.1.16: change the <SyncML> tag to <SyncML xmlns='SYNML:SYNML 1.0'>



2.5 UserID in Authentication

Chapter 4.13: add the following text to the chapter:

To specify the userID for the credentials, when the credentials do not include it in the resolvable form, the userID must be transferred in the LocName element of Source in SyncHdr. If the userID can be resolved from the credentials, e.g., in the case of the Basic authentication, it can be omitted from the LocName element to reduce the number of bytes to be transferred.

Below, there is an example in which the MD5 digest access authentication is used and a userID is carried in the LocName element.

```

<SyncML>
  <SyncHdr>
    <VerDTD>1.0</VerDTD>
    <VerProto>SyncML/1.0</VerProto>
    <SessionID>1</SessionID>
    <MsgID>1</MsgID>
    <Target>
      <LocURI>http://www.syncml.org/sync-server</LocURI>
    </Target>
    <Source>
      <LocURI>IMEI:493005100592800</LocURI>
      <LocName>Bruce2</LocName> <!-- userID -->
    </Source>
    <Cred>
      <Meta><Type xmlns='syncml:metinf'>syncml:auth-md5</Type></Meta>
      <Data>NTI2OTJhMDAwNjYxODkwYmQ3NWUxN2RhN2ZmYmJlMzk=</Data>
      <!-- Base64 coded MD5 digest of "Bruce2:OhBehave:Nonce" -->
    </Cred>
  </SyncHdr>
  <SyncBody>...</SyncBody>
</SyncML>

```

2.6 vCard 2.1 and vCalendar 1.0 URLs missing

Chapter 11: the table defining the base media types needs to be updated to look like this:

Media Type	Name	URI
Application/vnd.syncml-devinf+xml	SyncML Device Info v1.0 (clear text xml)	http://www.syncml.org/supporters/docs/syncml_devinf_v10_20001207.doc
Application/vnd.syncml-devinf+wbxml	SyncML Device Info v1.0 (wbxml)	http://www.syncml.org/supporters/docs/syncml_devinf_v10_20001207.doc
Text/plain	Plain Text	http://www.ietf.org/rfc/rfc2046.txt
Text/x-vcard	vCard v2.1	http://www.imc.org/pdi/vcard-21.doc
Text/vcard	vCard v3.0	http://www.ietf.org/rfc/rfc2426.txt
Application/vnd.syncml-xcard	XML vCard v3.0	TBD
Text/x-vcalendar	VCalendar	http://www.imc.org/pdi/vcal-10.doc
Text/calendar	ICalendar	http://www.ietf.org/rfc/rfc2445.txt



Application/vnd.syncml-xcal	XML iCalendar	TDB
Text/message	MIME Message	http://www.ietf.org/rfc/rfc2045.txt
Application/vnd.syncml-xmsg	XML Email	TBD
Application/vnd.syncml-xbookmark	XML Bookmark	TBD
Application/vnd.syncml-relml	SyncML Relational Object	TBD

2.7 CmdID contradictory in text and DTD

Chapters 5.5.1, 5.5.2, 5.5.3, 5.5.4, 5.5.5, 5.5.6, 5.5.7, 5.5.8, 5.5.10, 5.5.11, 5.5.12, 5.5.13, 5.5.14, 5.5.15: Change the text to indicate that the CmdID element is mandatory.

2.8 Status for multiple items in a command

Change the "Restrictions" paragraph of chapter 5.4.1 to have the following text:

"If there were multiple Item elements specified in the command, and if the items' status code were not the same, then a Status MUST be returned for each of the items. If all of the items had the same status code, a Status for all of the items MAY be returned. In these cases the SourceRef and TargetRef elements are used to identify the Item, which the status code applies to. If all of the items in the command had the same status code, then it is also allowed to return a single Status for the entire command. When returning a single Status for a command with multiple items, the SourceRef and TargetRef elements MUST NOT be specified in the Status command."

2.9 Content format for data types

Append new section 9.4 that provides a list of content formats that servers MUST support if they are supported that particular content. The section would look like this:

9.4 Required Content Formats

NOTE: If a server supports a data type listed below, it must also support the associated content format.

Data Type	Content Format	Status
Contact	vCard 2.1	MUST
	vCard 3.0	SHOULD
Calendar	vCalendar 1.0	MUST
	iCalendar 2.0	SHOULD
Memos	text/plain	MUST
Tasks	vTodo 1.0	MUST



Email	message/rfc822	MUST
	message/rfc2822	MUST
	message/rfc2045	MUST

2.10 Nesting of Atomic and Sequence

Change the definition of both Atomic and Sequence to not allow nesting.

In the Atomic command (section 5.5.3), add a paragraph just before the content model with the following text:

"Nested Atomic commands are not legal. A nested Atomic command will generate an error 500 - command failed."

In the Sequence command (section 5.5.x), add a paragraph just before the content model with the following text:

"Nested Sequence commands are not legal. A nested Sequence command will generate an error 500 - command failed."

2.11 Status on SyncHdr

Chapter 5.4.1: add the following sentence as a new paragraph in the "Restrictions" section:

" A Status MUST also be returned for the SyncHdr. However, if a client creates a message containing only a successful Status on a SyncHdr, the entire message MUST NOT be sent. A server MUST send this message."



3 Changes to Synchronization Protocol Specification

3.1 Clarification on Slow Sync

Insert a new paragraph #4 to the protocol document in section 5.5 with the following text:

"After the server has sent the Sync Alert, and if the client does not agree with the sync anchor in that Alert, then the Client MUST start a slow sync. This is done by sending back a Status on that Alert with Refresh Required. In this same message, the client should start the slow sync. In this case, the client MUST NOT send another Alert to start the slow sync. Note that it is not necessary for the client to compare the sync anchor from the server."

3.2 Requirement for CmdID element within Status

Chapter 4.2: Remove the last bullet saying "The CmdID element inside the Status MUST NOT be used. This rule applies for all status elements used by this protocol" of the requirement regarding the Status element (requirement #2).

Add the CmdID element into the Status element in all the examples in the specification.

3.3 Content of Item in Result Alert

Chapter 2.11.2: Change the Target and Source elements inside the Item element within the Alert command in the example to point to the client and server devices, as defined below.

```
<SyncML>
  <SyncHdr>
    <VerDTD>1.0</VerDTD>
    <VerProto>SyncML/1.0</VerProto>
    <SessionID>1</SessionID>
    <MsgID>3</MsgID>
    <Target><LocURI>http://www.syncml.org/sync-server</LocURI></Target>
    <Source><LocURI>IMEI:493005100592800</LocURI></Source>
  </SyncHdr>
  <SyncBody>
    <Alert>
      <CmdID>1</CmdID>
      <Data>221</Data>
      <Item>
        <Target><LocURI>http://www.syncml.org/sync-server</LocURI></Target>
        <Source><LocURI>IMEI:493005100592800</LocURI></Source>
      </Item>
    </Alert>
  </SyncBody>
</SyncML>
```



3.4 Changing authentication type during a session

Chapter 3.1: Add the following paragraph to the end of the section: The authentication type for a security layer **MUST** be kept same for the whole session."

3.5 Slow sync when no separate initialization

Chapter 5.5: Modify the fourth paragraph of the section to "If the client or the server needs to initiate the slow sync after receiving the alert for the normal synchronization, they need to send back an error status for that Alert in addition the slow sync alert. The error code, which is used in this case, **MUST** be 508 (Refresh required). If the client has not used a separate synchronization initialization, as specified in Chapter 2.10, it **MUST** send all updates in the next message to the server after receiving the error status and the Alert for a slow sync. "

3.6 Support of RespURI element

Chapter 2.6.1.1: Change the text "This protocol does not require the support of the RespURI element. Either the support of the re-direction status codes (3XX) is not required." to "This protocol requires that the devices support receiving the RespURI element as specified in the SyncML Representation Protocol specification, but the support of the re-direction status codes (3XX) is not required."

3.7 Multiple messages per package functionality

Change the text in Chapter 2.9 to:

This protocol provides the functionality to transfer one SyncML package in multiple SyncML messages. This may be necessary if one SyncML package is too large to be transferred in one SyncML message. This limitation may be caused e.g., by the transport protocol or by the limitations of a small footprint device.

If a SyncML package is transferred in multiple SyncML messages, the last message in the package **MUST** include the Final element (See SyncML Representation protocol.). Other messages belonging to the package **MUST NOT** include the Final element. The Final element must only be included when all necessary commands belonging to a specific package have been sent. The final element must not be included if the other end has not closed the preceding package. E.g., if the server is still sending the package #4 to the client, the client must not close the package #5 prior to receiving the last message belonging to the package #4. The exclusion of the Final element must not be used to indicate that a logical phase is not completed if an error occurs.

If a device receives a message in which the Final flag is missing and a Sync element for a database is included, the device **MUST** be able to handle the case that in the next message, there is another Sync element for the same database.

The device, which receives the SyncML package containing multiple messages, **MUST** be able to ask for more messages. This happens by sending an Alert command with a specific



alert code, 222 back to the originator of the package, or if there are other SyncML commands to be sent as a response, the Alert command with the 222 alert code can be omitted. After receiving the message containing the Final element, the Alert command MUST NOT be used anymore.

More messages may not be desired if errors, which prevent the continuation of synchronization, have occurred.

The receiver of a package may start to send its next package at the same time when asking more messages from the originator if this makes sense. Thus, in Chapters 3-7, it is specified which commands or elements are allowed to be sent before receiving the final message belonging to a package.

Below, there is depicted an example that the sync client is sending Package #3 in multiple messages (2 messages) and the server also sends Package #4 in multiple messages (2 messages).

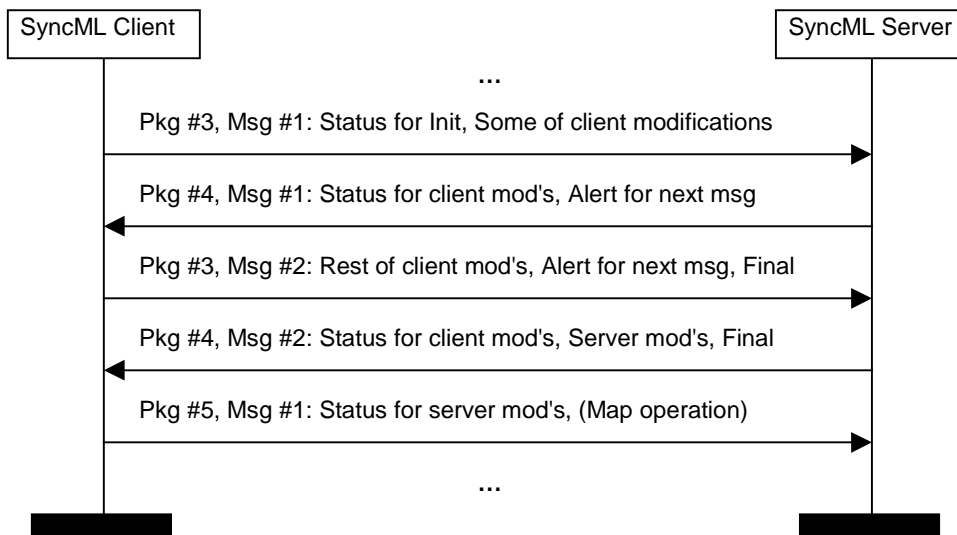


Figure 1 Example of Sending Multiple Messages in a Package

3.8 MD5 digest access authentication example

Chapter 3.5.2: Add the LocName element into the Pkg#1 (with credentials) in the example:

```
<SyncML>
  <SyncHdr>
    <VerDTD>1.0</VerDTD>
    <VerProto>SyncML/1.0</VerProto>
    <SessionID>1</SessionID>
    <MsgID>2</MsgID>
    <Target><LocURI>http://www.syncml.org/sync-server</LocURI></Target>
    <Source>
      <LocURI>IMEI:493005100592800</LocURI>
      <LocName>Bruce2</LocName> <!-- userId -->
    </Source>
  </SyncHdr>
  <SyncBody>
    <Pkg>
      <Mod>
        <Map>
          <LocURI>http://www.syncml.org/sync-server</LocURI>
          <LocName>Bruce2</LocName> <!-- userId -->
        </Map>
      </Mod>
    </Pkg>
  </SyncBody>
</SyncML>
```



```
<Cred>
  <Meta><Type xmlns='syncml:metinf'>syncml:auth-md5</Type></Meta>
  <Data>NTI2OTJhMDAwNjYxODkwYmQ3NWUxN2RhN2ZmYmJlMzk=</Data>
  <!-- Base64 coded MD5 digest of "Bruce2:OhBehave:Nonce" -->
</Cred>
</SyncHdr>
<SyncBody>
  ...
</SyncBody>
</SyncML>
```

3.9 Authentication failure

It needs to be clarified in chapter 3.1 that in case of authentication failure (either the userid and/or password was wrong or authentication was required) requirements are:

- The response message indicating the authentication failure on server layer (see chapter 3.3) must contain only Status commands (i.e. Put, Get etc. commands MUST NOT be specified in the response)
- In case the session is continued, the next message containing the proper credentials MUST contain a Status for the SyncHdr, MUST have the same SessionID than the previous messages and the message MUST be sent to the RespURI, if it was specified in the response indicating the authentication failure.



4 Changes to Meta Information DTD Specification

4.1 Content model of SharedMem in DTD incorrect

Chapter 6: change the DTD definition in the chapter to define that the content type of the SharedMem is EMPTY:

```
<!ELEMENT SharedMem EMPTY>
```

4.2 Parent element of MaxMsgSize element incorrect

Chapter 5.8: change the following text in the chapter from "**Parent Elements:** Root element type." to **Parent Elements:** MetInf

4.3 FreeID element mistyped in example

Chapter 5.9: change the element in the example from <FreeId ...> to <FreeID ...>

4.4 SCR of NextNonce element

Chapter 8: change the SCR of NextNonce element to look like:

Command	Support of Synchronization Server		Support of Synchronization Client	
	Sending	Receiving	Sending	Receiving
NextNonce	MUST	MUST	MAY	MUST



5 Changes to Device Information DTD Specification

5.1 SCR of DSMem element not appropriate

Chapter 8: the SCR of the DSMem element should look like:

Element Type	Support of Synchronization Server		Support of Synchronization Client	
	Sending	Receiving	Sending	Receiving
DSMem	MAY	SHOULD	SHOULD	MAY

5.2 Content model of SharedMem in DTD incorrect

Chapter 6: change the DTD definition in the chapter to define that the content type of the SharedMem is EMPTY:

```
<!ELEMENT SharedMem EMPTY>
```

5.3 DevID element mistyped in some examples

The correct format of the DevID element is 'DevID'. This needs to be corrected in all the examples, the DevID element is mistyped.

5.4 SCR of ParamName element not appropriate

Chapter 5.19: clarify that for a client it sending the ParamName element is optional if the client supports all the parameters of all the supported properties (e.g. for property TEL, parameters WORK, VOICE, HOME etc. are all supported).

Chapter 8: the SCR of the ParamName element should look like:

Element Type	Support of Synchronization Server		Support of Synchronization Client	
	Sending	Receiving	Sending	Receiving
ParamName	SHOULD	MUST	SHOULD	SHOULD

5.5 CTCap ambiguity

Changing the <CTCap> to look like this:

```
<!ELEMENT CTCap ((CTType, (PropName, (ValEnum+ | (DataType, Size?))?, DisplayName?, (ParamName, (ValEnum+ | (DataType, Size?))?, DisplayName?)*))+)>
```




5.6 Wrong MIME type for iCalendar 2.0.

Section 5.2, 5.21, 5.22, 5.33: text/vcalendar should be text/calendar (implying iCalendar 2.0). (text/x-vcalendar implies vCalendar 1.0).



6 Changes to OBEX Binding Specification

6.1 OBEX Client/Server Clarifications

Change the third paragraph of section 3 to say:

In this specification, the SyncML client can work either as an OBEX client or as an OBEX server at the OBEX protocol layer. In consequence, the SyncML server can work either as an OBEX client or as an OBEX server. The OBEX role depends on the fact which one, the SyncML client or the SyncML server, initiates sync. Thus the SyncML Client is not necessarily the OBEX Client.

6.2 SCR for OBEX Binding Correction

Replace the SCR table in section 4.1 to show the table below:

OBEX Operation	SyncML Server		SyncML Client	
	OBEX Client	OBEX Server	OBEX Client	OBEX Server
Connect	MAY	MUST	MUST	MAY
Disconnect	MAY	MUST	MUST	MAY
Put	MAY	MUST	MUST	MAY
Get	MAY	MUST	MUST	MAY
Abort	MAY	MUST	MAY	MAY

6.3 Diagram clarification

Clarify the text with the following replacements for paragraph 2 and 3 in this section:

The following example shows the creation of an OBEX connection, the mapping of PUT and GET requests to the SyncML message transfers, and the OBEX disconnection.

This example is not intended to show a complete a SyncML Session but merely illustrates the use of PUT and GET within a SyncML OBEX binding implementation.

6.4 Mime type Corrections

Section 4.2.2 changed to:

Client implementations conforming to this specification **MUST** support the header with either the "application/vnd.syncml+xml" or "application/vnd.syncml+wbxml" media type values. Server implementations conforming to this specification **MUST** support



both "application/vnd.syncml+xml" and "application/vnd.syncml+wbxml"
media type values, as requested by the SyncML Client.



7 Changes to WSP Binding Specification

7.1 WAP version clarification

Change from WAP version 1.2 to WAP Release 2000 on page 1, 5 and 9.

7.2 Removal of confusing information

The last sentence in chapter 5.1 does not clarify anything, instead it's only confusing.

7.3 Solution

In chapter 5.1, remove the sentence ' This version of the specification does NOT support transferring SyncML messages across WSP using a "multipart" MIME media type.'

7.4 Wrong SyncML MIME type

Change the '-' in the MIME types in chapter 5.2 to a '+'. This will have MIME types of "application/vnd.syncml+xml" or "application/vnd.syncml+wbxml".

7.5 Removal of confusing information

The fifth row in chapter 5.3.2.2 goes 'The implementations complying with this specification MUST support the POST method.' Actually a WAP device MUST support both the GET and the POST method and that makes this sentence a bit confusing.

7.6 Solution

In chapter 5.3.2.2, change the sentence from 'The implementations complying with this specification MUST support the POST method.' to 'Of all the HTTP methods supported by WSP, the SyncML functionality only requires the POST method'.

7.7 Better explanation regarding the usage of PUSH

Add the following sentence to chapter 5.5:

' When pushing SyncML data from the server to the client, the PUSH id 0x05 MUST be used and either of the content types defined in chapter 5.2 MUST be used.'



7.8 Update reference section

Update the current references to the proper ones (June Release 2000) and add the PUSH OTA and the PUSH Message specifications as references

7.9 Add SCR chapter

Add the following to chapter 6, Static Conformance Requirements:

The following specifies the static conformance requirements for SyncML over WSP devices conforming to this specification.

Element Type	Support of Synchronization Server		Support of Synchronization Client	
	Sending	Receiving	Sending	Receiving
POST	MUST	MUST	MUST	MUST
PUSH	MAY	MAY	---	MAY



8 Changes to HTTP Binding Specification

8.1 Mime type Corrections

Corrected MIME types to be either "application/vnd.syncml+xml" or "application/vnd.syncml+wbxml".

8.2 Abstract Correction

Removed paragraphs 1 and 3 from abstract, as this is no longer a draft document.