

HOW TO USE THE DEVELOPER RELEASE OF THE REMOTE SYNC (SyncML) APPLICATION FOR THE NOKIA 9210 COMMUNICATOR

Version 1.0
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1. PURPOSE

The purpose of this document is to provide a guide for using the developer release of the remote sync (SyncML client) application for Nokia 9210 Communicators. The developer release of the remote sync application is intended for all SyncML server developers who are willing to carry out interoperability testing with the 9210 SyncML client. It provides good tools to track SyncML messages and error situations while debugging synchronization sessions.

2. INTRODUCTION OF FEATURES

The developer release of the Remote Sync application for the Nokia 9210 has some additional features which are not included on the general version of the application. Its purpose is to aid developers to resolve problems and error situations that arise while synchronising with the Nokia 9210. Specific features of the developer release are listed below:

Logging sent and received WBXML messages: SyncML messages which have been sent and received are logged in SmlDebugDump.txt file. Messages are in WBXML format. The file is set to empty when the Remote Sync application is opened. The file can be found at root directory of the Communicator's memory card.

Displaying error codes in the UI: In addition to showing error descriptions in the sync log, the developer release also shows detailed error codes. Error codes are described in chapter 4.

3. WB2XML TOOL

Because Remote Sync only supports wbxml formatted SyncML messages, a wb2xml (MS Windows executable) tool is delivered with the 9210 developer release in order to convert wbxml messages to clear-text xml messages.

Use of wb2xml in the command prompt:> **wb2xml <input> [<output>]**

Example: wb2xml SmlDebugDump.txt MyOutputFile.txt. If the output file is not specified then xml messages are written into an xml.txt file.

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4. DESCRIPTION OF ERROR CODES

This chapter explains all the error codes that the remote sync application might show on the UI if an error occurs.

4.1 Symbian OS errors

Symbian OS errors are detected in Symbian OS library routines. These errors are typically fatal errors. These errors cause a User::Leave function call in Symbian OS programs

Error Code	Description
-1	Item not found.
-2	An error which has not been categorized.
-3	Produced when an operation is cancelled.
-4	A memory allocation failed.
-5	A function is not supported in a given context: for instance, because the device involved does not by its nature support this function or, in rare cases, because an API has been designed but not yet written.
-6	An argument is out of range.
-7	Arises when converting from an internal 96-bit real representation to a TReal32: the exponent of the internal representation is so small that the 32-bit real cannot contain it.
-8	A function involving a resource owned by a server or the kernel has specified a bad handle.
-9	In the context of mathematical or time/date functions, this error indicates that a calculation has produced an arithmetic overflow which is greater than the bounds allowed by the representation. In the context of data transfers, it indicates that a buffer has over-filled without being emptied soon enough.
-10	In the context of mathematical or time/date functions, this error indicates that a calculation has produced a result which is smaller than the smallest magnitude of a finite number allowed by the representation. In the context of data transfers, it indicates that a buffer was under-filled when data was required.
-11	An object of some type was to be created, but an object of that name already exists.
-12	In the context of file operations, the path was not found.
-13	A handle refers to a thread, which has died.
-14	A requested resource is already in use by another thread (which is using it exclusively).

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-15	A client/server send-receive operation cannot execute because the server has terminated.
-16	A client/server send-receive operation cannot execute because the server is busy handling another request.
-18	A device required by an I/O operation is not ready to proceed, usually because it has not initialized, or has no power.
-19	A device is of an unknown type.
-20	The medium is not formatted properly, or links between sections of it have been corrupted.
-21	Access to a file was denied because the permissions on the file do not allow the requested operation to be performed.
-22	The operation cannot be performed because the part of the file to be read from or written to is locked.
-23	During a file write operation, not all the data could be written.
-24	A volume, which was to be used for a file system operation has been dismounted.
-25	End of file has been reached
-26	A write operation could not be completed because the disk was full.
-27	A driver DLL was of the wrong type.
-28	A file name or other object name did not conform to the required syntax.
-29	The communication line failed.
-30	A frame error occurred in a communications operation
-31	A communications driver detected an overrun.
-32	A parity error occurred in a communications operation.
-33	An operation timed out.
-34	A session could not connect.
-35	A session could not disconnect.
-36	A function could not be executed because the required session was disconnected.
-37	A library entry point was not of the required type.
-38	A non-descriptor parameter was passed to by a client interface, where the server expected one.
-39	An operation was aborted.

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-40	A number was too big.
-41	A divide-by-zero operation was attempted.
-42	Insufficient power was available to complete an operation.
-43	A directory operation failed.
-44	An operation cannot be performed because the necessary hardware is not available.

4.2 Client agent errors

Client agent errors are typically logical errors. Most of them indicate that there is something wrong in the SyncML package which a server has sent to the client.

Error Code	Description
1000	Invalid SyncML command
1001	SyncHdr is missing
1002	SyncML element VerDTD is missing
1003	Unsupported SyncML representation protocol version
1004	SyncML element VerProto is missing
1005	Unsupported SyncML protocol
1006	SyncML element MsgID is missing
1007	Invalid value in the SyncML MsgID element
1008	SyncML element Target/LocURI is missing
1009	Invalid value in the SyncML Target/LocURI element
1010	SyncML element Source/LocURI is missing
1011	Invalid value in the SyncML Source/LocURI element
1012	Unexpected SyncML command (Warning)
1013	Unsupported SyncML command (Warning)
1101	Status command is missing

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1102	No matching status command (Warning)
1103	The MsgRef element is missing
1104	Invalid value in the MsgRef element
1105	The CmdRef element is missing
1106	Invalid value in the CmdRef element
1107	The Cmd element is missing
1108	Invalid value in the Cmd element
1109	Invalid value in the SourceRef element
1110	Status/Data element is missing
1111	Invalid value in the Status/Data element
1112	The CmdID element is missing
1113	Invalid value in the CmdID element
1114	The Sync/Target/LocURI (local database) element is missing
1115	Invalid value in the Sync/Target/LocURI element (local database)
1116	The Sync/Source/LocURI (remote database) element is missing
1117	Invalid value in the Sync/Source/LocURI element (remote database)
1118	Unsupported format in the Format element
1119	Invalid value in the Format element
1120	Unsupported format in the Type element
1121	Invalid value in the Type element
1122	The Item/Source/LocURI (GUID) element is missing
1123	The Item/Data element is missing
1124	Delete/Archive not supported (Warning)
1125	Delete/SftDel not supported (Warning)
1126	The Item/Target/LocURI (LUID) element is missing
1127	The Item/Target/LocURI (LUID) element appears in the Add command

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1400	The Results element is missing
1401	Invalid Results element
1402	The Results/Item/Source element is missing
1403	Invalid value in Results/Item/Source
1404	The Alert command is missing during initialisation
1405	The Alert command is missing during next msg notifications
1406	Invalid Alert command
1407	The Alert code is missing
1408	The Alert code is invalid
1409	Unsupported Synchronisation type
1410	The Alert/Target/LocURI element is missing
1411	Invalid value in the Alert/Target/LocURI element
1412	The Alert/Source/LocURI element is missing
1413	Invalid value in the Alert/Source/LocURI element
1414	The Put element is Invalid
1415	The Put/Item/Source element is missing
1416	Invalid value in the Put/Item/Source
1417	The Get element is Invalid
1418	The Get/Item/Target element is missing
1419	Invalid value in the Get/Item/Target
1420	The Chal element is missing
1421	Invalid Chal element
1422	The MaxMsgSize value is invalid
1500	Device Info is missing
1501	Invalid Device Info
1502	The DataStore/SourceRef element is missing

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1503	Invalid DataStore/SourceRef element
1504	The DataStore/RxPref/CTType is missing
1505	Unsupported Rx/CTType
1506	The DataStore/TxPref/CTType is missing
1507	Unsupported Tx/CTType
1600	The Server is busy
1700	Invalid SyncML settings
1701	The local database is missing
1702	The Server's message exceeds MaxMsgSize
1703	Low memory when updating (Warning)
1704	Incomplete SyncML message from the server

4.3 SyncML Core errors

SyncML Core errors are typically errors in XML documents. The SyncML Core verifies that the XML document is well formed. It may also confirm that the XML document obeys the rules of SyncML DTD. The Remote Sync application uses the same hexadecimal error codes as are used by the SyncML RTK Core module.

Error Code	Description
16 (0x10)	Unspecified error
17 (0x11)	Memory is full
19 (0x13)	Function was called in the wrong context
32 (0x20)	Invalid parameter
33 (0x21)	Invalid parameter size
34 (0x22)	Invalid handle in a parameter

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35 (0x23)	Unknown or disallowed option in a parameter
4097 (0x1001)	Unspecified error
4098 (0x1002)	Invalid Instance Info structure
4099 (0x1003)	No callback function is available
4100 (0x1004)	Already initialised
8193 (0x2001)	Required field content is missing
8194 (0x2002)	Buffer too small
8195 (0x2003)	Invalid (WBXML) Element Type
8196 (0x2004)	Invalid List Type
8197 (0x2005)	Invalid Tag Type
8199 (0x2007)	Unknown Encoding
8200 (0x2008)	Invalid Protocol Element Type
8201 (0x2009)	Content of the List Elements is missing
8202 (0x200A)	Incompatible Version of WBXML Content Format
8203 (0x200B)	The document does not conform to SyncML DTD
8204 (0x200C)	Invalid PCDATA element

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8205 (0x200D)	Unspecified tokeniser error
8206 (0x200E)	The document does not conform to WBXML specifications
8207 (0x200F)	The document contains an unknown WBXML token
8208 (0x2010)	Non-empty start tag without a matching end tag
8209 (0x2011)	The WBXML document uses an unspecified codepage
8210 (0x2012)	End of buffer has been reached
8211 (0x2013)	The document does not conform to XML 1.0
8212 (0x2014)	The document contains an unknown XML tag
8213 (0x2015)	Invalid Public Identifier
8214 (0x2016)	Invalid Codepage Extension
8215 (0x2017)	No matching Codepage could be found
8216 (0x2018)	Data missing in the input structure
12289 (0x3001)	No more empty entries in the buffer table
28673 (0x7001)	SyncML utility error

4.4 Transport-related errors

Transport errors are typically communication errors in HTTP or WAP transport.

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4.4.1 HTTP transport errors

Error Code	Description
20481 (0x5001)	Error in the Transport module
20483 (0x5003)	Authentication failed
20484 (0x5004)	Access denied
20485 (0x5005)	HTTP error
20497 (0x5011)	Communication error
20498 (0x5012)	Invalid transport protocol
20499 (0x5013)	Parameter error
20500 (0x5014)	Invalid communication/service ID
20501 (0x5015)	Memory allocation error
20502 (0x5016)	Too many open communication instances
20503 (0x5017)	Invalid communication state
20504 (0x5018)	No transports are available

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20505 (0x5019)	Not found
20506 (0x5020)	Redirect
20507 (0x5021)	Server not responding
20508 (0x5022)	Invalid hostname
20509 (0x5023)	Authentication not supported
20510 (0x5024)	Security handshake failed
20511 (0x5025)	Bad Gateway

4.4.2 WAP transport errors

Error Code	Description
	(HTTP/1.1 Status/Error codes from 40x and 50x series. See RFC2068)
-20505	HTTP version is not supported.
-20504	Gateway timeout.
-20503	Service is unavailable.
-20502	Bad gateway.
-20501	Not implemented.
-20500	Internal server error.
-20415	Unsupported media type.
-20414	Request URI is too long.
-20413	Request entity is too large.
-20412	Precondition required.
-20411	Length required.

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-20410	Gone. Similar to 404 but more definite.
-20409	Conflict.
-20408	Request timeout.
-20407	Proxy authentication required.
-20406	Not acceptable. The resource requested is not acceptable to the client according to its own accept strings in the HTTP request header.
-20405	The method is not allowed. e.g. attempt to POST to a URL that is not appropriate for POSTing.
-20404	Not found. A document is missing on the original server.
-20403	Forbidden. The server refuses to return the requested document.
-20402	Payment required.
-20400	Bad request. The client sent a request with a badly formed syntax (in HTTP request headers).

4.5 SyncML Status Errors

SyncML status errors are errors in the SyncML protocol. Status codes are transmitted in the Status element in SyncML documents. The SyncML status code is a response to a previously transmitted SyncML command. The status codes are documented in the SyncML Representation Protocol.

Error Code	Description
	(See the SyncML Representation Protocol for full status code descriptions)
401	Unauthorized.
402	Payment required.
403	Forbidden.
404	Not found.
405	Command not allowed.
406	Optional feature is not supported.
407	Authentication required.
408	Request timeout.
409	Conflict.

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410	Gone.
411	Size required.
412	Incomplete command.
413	Request entity is too large.
414	URI is too long.
415	Unsupported media type or format. The unsupported content type or format SHOULD also be identified in the Item element type in the Status element.
416	Requested size is too big
417	Retry later
418	Already exists.
419	Conflict Resolved With the Recipient Data.
420	Device is full.
421	Unknown Search Grammar
422	Bad CGI Script
423	Soft-Delete Conflict
500	Command failed
501	Command not implemented.
502	Bad Gateway
503	Service unavailable
504	Gateway timeout
505	Version not supported.
506	Processing Error
507	Atomic operation failed
508	Refresh required.
510	Data store failure.
511	Server failure.

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512	Synchronisation failed.
513	Protocol Version Not Supported.