



Client-Server Protocol

Binary XML definition and Examples

Version 1.1

WV Internal Tracking Number: WV-027

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Table of contents

1.	Revision History	1
2.	References.....	2
3.	Token definitions	3
3.1	Public document identifier	3
3.2	Tag code pages	3
3.2.1	Common code page (0x00)	4
3.2.2	Access code page (0x01)	6
3.2.3	Service code page (0x02).....	8
3.2.4	Client capability code page (0x03).....	9
3.2.5	Presence primitive code page (0x04)	10
3.2.6	Presence attribute code page (0x05).....	11
3.2.7	Messaging code page (0x06)	13
3.2.8	Group code page (0x07).....	14
3.3	Attribute start tokens	14
3.4	Element value tokens	15
3.4.1	Common value tokens.....	15
3.4.2	Access value tokens.....	16
3.4.3	Presence value tokens	16
3.5	Extended presence	17
4.	Data types.....	18
4.1	Character	18
4.2	Integer.....	18
4.3	Boolean.....	19
4.4	String.....	19
4.5	Binary data.....	19
4.6	Date and time.....	20
4.7	Structures.....	21
5.	Examples	22
5.1	Status primitive with details	22
5.2	Polling-Request primitive.....	24
5.3	2-way login transaction	24
5.3.1	Login-Request primitive.....	24
5.3.2	Login-Response primitive	26
5.4	4-way login transaction	28
5.4.1	Login-Request primitive.....	28
5.4.2	Login-Response primitive	29
5.4.3	Login-Request primitive.....	31
5.4.4	Login-Response primitive	32
5.5	Service negotiation transaction.....	34
5.5.1	Service-Request primitive.....	34
5.5.2	Service-Response primitive	35
5.6	Send message transaction	37
5.6.1	SendMessage-Request primitive.....	37
5.6.2	SendMessage-Response primitive	39

1. REVISION HISTORY

Date	Issue	Description	Author
February 13 th	TBD	Initial release	WV TechComm
July 31, 2002	V1.1		WV TechComm

2. REFERENCES

- | | |
|----------------|---|
| [ISO8601] | ISO 8601 International Standard, Second Edition. Data elements an interchange formats – Information interchange – Representation of dates and times |
| [WBXML] | WAP Binary XML Content Format (document ID: WAP-192-WBXML-20000515) |
| [WV-CSP-DTD] | Wireless Village – Client-Server protocol, DTD and Examples |
| [WV-CSP-TRANS] | Wireless Village – Client-Server protocol, Transport Binding |

3. TOKEN DEFINITIONS

3.1. PUBLIC DOCUMENT IDENTIFIER

A public document identifier has been reserved on the W@P forum so that the parsers will know that the Wireless Village code space has to be used.

The Wireless Village public document identifier is to be registered in WAP Forum. For experimental purposes, the value 0x01 is used.

3.2. TAG CODE PAGES

The global code page is too small to put all of the tokens into the same tag code page. The tags are divided into smaller code pages:

- Code page 0x00 contains the common tags, which are used in several transactions.
- Code page 0x01 contains the access and fundamental primitives related tags.
- Code page 0x02 contains the service negotiation related tags.
- Code page 0x03 contains the client capability negotiation related tags.
- Code page 0x04 contains the presence primitive related tags.
- Code page 0x05 contains the presence attribute related tags.
- Code page 0x06 contains the messaging service related tags.
- Code page 0x07 contains the group service related tags.

3.2.1 Common code page (0x00)

The following tokens are defined in the common tag code page (0x00):

Tag name	Token
Acceptance	05
AddList	06
AddNickList	07
ClientID	0A
Code	0B
ContactList	0C
ContentData	0D
ContentEncoding	0E
ContentSize	0F
ContentType	10
DateTime	11
Description	12
DetailedResult	13
EntityList	14
Group	15
GroupID	16
GroupList	17
InUse	18
Logo	19
MessageCount	1A
MessageID	1B
MessageURI	1C
MSISDN	1D
Name	1E
NickList	1F
NickName	20
Poll	21
Presence	22
PresenceSubList	23
PresenceValue	24
Property	25
Qualifier	26
Recipient	27
RemoveList	28
RemoveNickList	29
Result	2A
ScreenName	2B
Sender	2C
Session	2D
SessionDescriptor	2E
SessionID	2F
SessionType	30
SName	08
Status	31
Transaction	32
TransactionContent	33
TransactionDescriptor	34

TransactionID	35
TransactionMode	36
URL	37
URLList	38
User	39
UserID	3A
UserList	3B
Validity	3C
Value	3D
WV-CSP-Message	09

3.2.2 Access code page (0x01)

The following tokens are defined in the service access tag code page (0x01):

Tag name	Token
AllFunctions	05
AllFunctionsRequest	06
CancelInvite-Request	07
CancelInviteUser-Request	08
Capability	09
CapabilityList	0A
CapabilityRequest	0B
ClientCapability-Request	0C
ClientCapability-Response	0D
CompletionFlag	34
DigestBytes	0E
DigestSchema	0F
Disconnect	10
Functions	11
GetSPInfo-Request	12
GetSPInfo-Response	13
InviteID	14
InviteNote	15
Invite-Request	16
Invite-Response	17
InviteType	18
InviteUser-Request	19
InviteUser-Response	1A
KeepAlive-Request	1B
KeepAlive-Response	29
KeepAliveTime	1C
Login-Request	1D
Login-Response	1E
Logout-Request	1F
Nonce	20
Password	21
Polling-Request	22
ResponseNote	23
SearchElement	24
SearchFindings	25
SearchID	26
SearchIndex	27
SearchLimit	28
SearchPairList	2A
Search-Request	2B
Search-Response	2C
SearchResult	2D
SearchString	33
Service-Request	2E
Service-Response	2F
SessionCookie	30

StopSearch-Request	31
TimeToLive	32

3.2.3 Service code page (0x02)

The following tokens are defined in the service negotiation tag code page (0x02):

Tag name	Token
ADDGM	05
AttListFunc	06
BLENT	07
CAAUT	08
CAINV	09
CALI	0A
CCLI	0B
ContListFunc	0C
CREAG	0D
DALI	0E
DCLI	0F
DELGR	10
FundamentalFeat	11
FWMSG	12
GALS	13
GCLI	14
GETGM	15
GETGP	16
GETLM	17
GETM	18
GETPR	19
GETSPI	1A
GETWL	1B
GLBLU	1C
GRCHN	1D
GroupAuthFunc	1E
GroupFeat	1F
GroupMgmtFunc	20
GroupUseFunc	21
IMAuthFunc	22
IMFeat	23
IMReceiveFunc	24
IMSendFunc	25
INVIT	26
InviteFunc	27
MBRAC	28
MCLS	29
MDELIV	2A
NEWM	2B
NOTIF	2C
PresenceAuthFunc	2D
PresenceDeliverFunc	2E
PresenceFeat	2F
REACT	30
REJCM	31
REJEC	32
RMVGM	33

SearchFunc	34
ServiceFunc	35
SETD	36
SETGP	37
SRCH	38
STSRC	39
SUBGCN	3A
UPDPR	3B
WVCSPFeat	3C

3.2.4 Client capability code page (0x03)

The following tokens are defined in the client capability tag code page (0x03):

Tag name	Token
AcceptedCharset	05
AcceptedContentLength	06
AcceptedContentType	07
AcceptedTransferEncoding	08
AnyContent	09
DefaultLanguage	0A
InitialDeliveryMethod	0B
MultiTrans	0C
ParserSize	0D
ServerPollMin	0E
SupportedBearer	0F
SupportedCIRMMethod	10
TCPAddress	11
TCPPort	12
UDPPort	13

3.2.5 Presence primitive code page (0x04)

The following tokens are defined in the presence primitive tag code page (0x04):

Tag name	Token
CancelAuth-Request	05
ContactListProperties	06
CreateAttributeList-Request	07
CreateList-Request	08
DefaultAttributeList	09
DefaultContactList	0A
DefaultList	0B
DeleteAttributeList-Request	0C
DeleteList-Request	0D
GetAttributeList-Request	0E
GetAttributeList-Response	0F
GetList-Request	10
GetList-Response	11
GetPresence-Request	12
GetPresence-Response	13
GetWatcherList-Request	14
GetWatcherList-Response	15
ListManage-Request	16
ListManage-Response	17
PresenceAuth-Request	19
PresenceAuth-User	1A
PresenceNotification-Request	1B
SubscribePresence-Request	1D
UnsubscribePresence-Request	18
UpdatePresence-Request	1C

3.2.6 Presence attribute code page (0x05)

The following tokens are defined in the presence attribute tag code page (0x05):

Tag name	Token
Accuracy	05
Address	06
AddrPref	07
Alias	08
Altitude	09
Building	0A
Caddr	0B
Cap	2F
City	0C
ClientInfo	0D
ClientProducer	0E
ClientType	0F
ClientVersion	10
Cname	30
CommC	11
CommCap	12
Contact	31
ContactInfo	13
ContainedvCard	14
Country	15
Cpriority	32
Crossing1	16
Crossing2	17
Cstatus	33
DevManufacturer	18
DirectContent	19
FreeTextLocation	1A
GeoLocation	1B
Language	1C
Latitude	1D
Longitude	1E
Model	1F
NamedArea	20
Note	34
OnlineStatus	21
PLMN	22
PrefC	23
PreferredContacts	24
PreferredLanguage	25
ReferredContent	26
ReferredvCard	27
Registration	28
StatusContent	29
StatusMood	2A
StatusText	2B
Street	2C
TimeZone	2D

UserAvailability	2E
Zone	35

3.2.7 Messaging code page (0x06)

The following tokens are defined in the messaging service tag code page (0x06):

Tag name	Token
BlockList	05
BlockUser-Request	06
DeliveryMethod	07
DeliveryReport	08
DeliveryReport-Request	09
DeliveryTime	1A
ForwardMessage-Request	0A
GetBlockedList-Request	0B
GetBlockedList-Response	0C
GetMessageList-Request	0D
GetMessageList-Response	0E
GetMessage-Request	0F
GetMessage-Response	10
GrantList	11
MessageDelivered	12
MessageInfo	13
MessageNotification	14
NewMessage	15
RejectMessage-Request	16
SendMessage-Request	17
SendMessage-Response	18
SetDeliveryMethod-Request	19

3.2.8 Group code page (0x07)

The following tokens are defined in the group service tag code page (0x07):

Tag name	Token
AddGroupMembers-Request	05
Admin	06
CreateGroup-Request	07
DeleteGroup-Request	08
GetGroupMembers-Request	09
GetGroupMembers-Response	0A
GetGroupProps-Request	0B
GetGroupProps-Response	0C
GroupChangeNotice	0D
GroupProperties	0E
Joined	0F
JoinGroup	21
JoinedRequest	10
JoinGroup-Request	11
JoinGroup-Response	12
LeaveGroup-Request	13
LeaveGroup-Response	14
Left	15
MemberAccess-Request	16
Mod	17
OwnProperties	18
RejectList-Request	19
RejectList-Response	1A
RemoveGroupMembers-Request	1B
SetGroupProps-Request	1C
SubscribeGroupNotice-Request	1D
SubscribeGroupNotice-Response	1E
SubscribeNotification	22
SubscribeType	23
Users	1F
WelcomeNote	20

3.3. ATTRIBUTE START TOKENS

The following attribute start tokens are defined in the common code page (0x00):

Attribute name	Attribute Value Prefix	Token
xmlns	http://www.wireless-village.org/CSP	05
xmlns	http://www.wireless-village.org/PA	06
xmlns	http://www.wireless-village.org/TRC	07

3.4. ELEMENT VALUE TOKENS

Element value tokens are encoded by the combination of EXT_T_0 token with the following number, and STR_T and STR_I tokens. STR_T and STR_I tokens are used to encode strings that are not listed in one of the following tables.

3.4.1 Common value tokens

Please note that:

Values 'T' and 'F' are Boolean values representing "True" and "False" (or "Yes" and "No" in some circumstances) respectively.

Values 'GR', 'IM', 'PR', 'SC' and 'US' are enumerated values representing "Group", "Instant Messaging", "Presence", "Shared Content" and "User" respectively.

Values 'G', 'S' and 'U' are enumerated values representing "Get", "Set" and "Unset" respectively

Values 'N' and 'P' are enumerated values representing "Notify/Get" and "Push" respectively

Element value	Number
AccessType	00
ActiveUsers	01
Admin	02
application/	03
application/vnd.wap.mms-message	04
application/x-sms	05
AutoJoin	06
BASE64	07
Closed	08
Default	09
DisplayName	0A
F	0B
G	0C
GR	0D
http://	0E
https://	0F
image/	10
Inband	11
IM	12
MaxActiveUsers	13
Mod	14
Name	15
None	16
N	17
Open	18
Outband	19
PR	1A
Private	1B
PrivateMessaging	1C
PrivilegeLevel	1D
Public	1E

P	1F
Request	20
Response	21
Restricted	22
ScreenName	23
Searchable	24
S	25
SC	26
text/	27
text/plain	28
text/x-vCalendar	29
text/x-vCard	2A
Topic	2B
T	2C
Type	2D
U	2E
US	2F
www.wireless-village.org	30

3.4.2 Access value tokens

Attribute value	Token
GROUP_ID	3D
GROUP_NAME	3E
GROUP_TOPIC	3F
GROUP_USER_ID_JOINED	40
GROUP_USER_ID_OWNER	41
HTTP	42
SMS	43
STCP	44
SUDP	45
USER_ALIAS	46
USER_EMAIL_ADDRESS	47
USER_FIRST_NAME	48
USER_ID	49
USER_LAST_NAME	4A
USER_MOBILE_NUMBER	4B
USER_ONLINE_STATUS	4C
WAPSMS	4D
WAPUDP	4E
WSP	4F

3.4.3 Presence value tokens

Attribute value	Token
ANGRY	5B
ANXIOUS	5C
ASHAMED	5D
AUDIO_CALL	5E
AVAILABLE	5F
BORED	60

CALL	61
CLI	62
COMPUTER	63
DISCREET	64
EMAIL	65
EXCITED	66
HAPPY	67
IM	68
IM_OFFLINE	69
IM_ONLINE	6A
IN_LOVE	6B
INVINCIBLE	6C
JEALOUS	6D
MMS	6E
MOBILE_PHONE	6F
NOT_AVAILABLE	70
OTHER	71
PDA	72
SAD	73
SLEEPY	74
SMS	75
VIDEO_CALL	76
VIDEO_STREAM	77

3.5. EXTENDED PRESENCE

Extension presence attributes and extension presence fields should be encoded using the WBXML LITERAL construct, since token values cannot be pre-assigned for this purpose.

4. DATA TYPES

4.1. CHARACTER

A single character can be encoded as ENTITY (0x02) followed by a `mb_u_int32` containing the entity number.

0	<i>mb_u_int32</i>
x	
0	
2	

Example: The 'á' character (code is 160) would be encoded as:

0	0x81	0x20
x		
0		
2		

4.2. INTEGER

An integer number can be encoded as OPAQUE (0xC3) followed by an `mb_u_int32` that contains the length of the integer, then the actual bytes of the integer in big-endian order (most significant bytes first).

0	<i>mb_u_int32</i>	... bytes ...
x		
C		
3		

Which means that a 1-byte integer would look like this:

0	0x01	byte
x		
C		
3		

A 2-byte integer would look like this:

0	0x02	byte	byte
x			
C			
3			

A 4-byte integer would look like this:

0	0x04	byte	byte	byte	byte
x					
C					
3					

Example: The 2001 (0x07D1) number would be encoded as:

0	0x02	0x07	0xD1
x			
C			
3			

4.3. BOOLEAN

The “T” and “F” values are encoded.

See table Common value tokens on page 15.

4.4. STRING

WBXML already includes the definition:

Inline string: STR_I (0x03) followed by the string and the terminating character (0x00), or

String table: STR_T (0x83) followed by a *mb_u_int32* which is the string table offset from the first character of the first string in the table (not a character offset!).

Inline string:

0	...character data ...	0
x		x
0		0
3		0

String table reference:

0	<i>mb_u_int32</i>
x	
8	
3	

Example: The “This is a string!” string would be encoded as (inline string):

0	'T'	'h'	'i'	's'	' '	'i'	's'	' '	'a'	' '	's'	't'	'r'	'i'	'n'	'g'	'!'	0
x																		x
0																		0
3																		0

4.5. BINARY DATA

Binary data can be encoded as OPAQUE (0xC3) followed by an *mb_u_int32* that contains the length of the binary stream, then the actual bytes of the binary stream.

0	<i>mb_u_int32</i>	... bytes ...
x		
C		
3		

Example: A GIF file that is 22368 bytes long would be encoded as:

0 x C 3	0x81	0xAE	0x60	0x47	0x49	0x46	0x38	0x39	0x61	...(truncated)
----------------------------	------	------	------	------	------	------	------	------	------	----------------

4.6. DATE AND TIME

Date and time can be encoded as OPAQUE data or as a string as specified in [ISO8601]. For string encoding, refer to section 4.4 String on page 19.

OPAQUE encoding: the OPAQUE global token (0xC3) is followed by an `mb_u_int32` that contains the length of the date bytes, then the actual bytes of the encoded date. The time is always in 24-hour format; there is no need to indicate a.m. or p.m.

0 x C 3	<code>mb_u_int32</code>	... bytes ...
----------------------------	-------------------------	---------------

The encoding of the date bytes is as follows:

- The first 2 bits are reserved, and both **must** be 0.
- Year is encoded by 12 bits (0 to 4095)
- Month is encoded by 4 bits (1 to 12)
- Day is encoded by 5 bits (1 to 31)
- Hour is encoded by 5 bits (0 to 23)
- Minute is encoded by 6 bits (0 to 59)
- Second is encoded by 6 bits (0 to 59)
- Time zone is encoded in 1 byte [ISO8601].

Bits 47, 46 reserved	Bits 45- 34 year	Bits 33- 30 month	Bits 29- 25 day	Bits 24- 20 hour	Bits 19- 14 minute	Bits 13-8 second	Bits 7-0 TimeZone
----------------------------	------------------------	-------------------------	-----------------------	------------------------	--------------------------	------------------------	----------------------

This takes exactly 6 bytes (48 bits).

The length is always 6 bytes. it is encoded as:

0 x C 3	0 x 0 6	byte	byte	byte	byte	byte	byte
----------------------------	------------------	------	------	------	------	------	------

Example: The date and time at 16:58:59 on the 25th of September in 2001 in time zone 'Z' would be encoded as:

0	0x06	0x1F	0x46	0x73	0x0E	0xBB	0x5A
x							
C							
3							

4.7. STRUCTURES

The syntax itself is specified in [WBXML].

The structure of the tags is as specified in [XML&DTD].

5. EXAMPLES

5.1. STATUS PRIMITIVE WITH DETAILS

Token stream	Description
03	Version number – WBXML version 1.3
01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
11	Inband
01	END SessionType
6F	START SessionID
03	Inline string follows
69 6D 2E 75 73 65 72 2E 63 6F 6D 23 34 38 38 31 35 40 73 65 72 76 65 72 2E 63 6F 6D	"im.user.com#48815@server.com"
00	String terminator
01	END SessionID
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
21	Response
01	END TransactionMode
75	START TransactionID
03	Inline string follows
49 4D 41 70 70 30 31 23 31 32 33 34 35 40 4E 4F 4B 35 31 31 30	"IMApp01#12345@NOK5110"
00	String terminator
01	END TransactionID
61	START Poll
80	EXT_T_0
0B	F - No (False)
01	END Poll
01	END TransactionDescriptor
F3	START TransactionContent
07	xmlns="http://www.wireless-village.org/TRC"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
71	START Status
6A	START Result
4B	START Code
C3	Opaque data starts
01	Length of data is 1 byte
C9	Big endian 201
01	END Code
52	START Description
03	Inline string follows

50 61 72 74 69 61 6C 6C 79 20 73 75 63 63 65 73 73 66 75 6C 2E	"Partially successful."
00	String terminator
01	END Description
53	START DetailedResult
4B	START Code
C3	Opaque data starts
02	Length of data is 2 bytes
02 13	Big endian 531
01	END Code
52	START Description
03	Inline string follows
55 6E 6B 6E 6F 77 6E 20 75 73 65 72 2E	"Unknown user."
00	String terminator
01	END Description
7A	START UserID
03	Inline string follows
77 76 3A 62 61 64 5F 75 73 65 72 31 40 69 6D 2E 63 6F 6D	"wv:bad_user1@im.com"
00	String terminator
01	END UserID
7A	START UserID
03	Inline string follows
77 76 3A 62 61 64 5F 75 73 65 72 32 40 69 6D 2E 63 6F 6D	"wv:bad_user2@im.com"
00	String terminator
01	END UserID
01	END DetailedResult
53	START DetailedResult
4B	START Code
C3	Opaque data starts
02	Length of data is 2 bytes
02 14	Big endian 532
01	END Code
52	START Description
03	Inline string follows
42 6C 6F 63 6B 65 64 2E	"Blocked."
00	String terminator
01	END Description
7A	START UserID
03	Inline string follows
77 76 3A 62 61 64 5F 75 73 65 72 33 40 69 6D 2E 63 6F 6D	"wv:bad_user3@im.com"
00	String terminator
01	END UserID
7A	START UserID
03	Inline string follows
77 76 3A 62 61 64 5F 75 73 65 72 34 40 69 6D 2E 63 6F 6D	"wv:bad_user4@im.com"
00	String terminator
01	END UserID
01	END DetailedResult
01	END Result
01	END Status
01	END TransactionContent
01	END Transaction
01	END Session
01	END WV-CSP-Message

5.2. POLLING-REQUEST PRIMITIVE

Token stream	Description
03	Version number – WBXML version 1.3
01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
11	Inband
01	END SessionType
6F	START SessionID
03	Inline string follows
69 6D 2E 75 73 65 72 2E 63 6F 6D 23 34 38 38 31 35 40 73 65 72 76 65 72 2E 63 6F 6D	"im.user.com#48815@server.com"
00	String terminator
01	END SessionID
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
20	Request
01	END TransactionMode
35	EMPTY TransactionID
01	END TransactionDescriptor
F3	START TransactionContent
07	xmlns="http://www.wireless-village.org/TRC"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
00	Switch code page to
01	Access code page
22	EMPTY Polling-Request
01	END TransactionContent
01	END Transaction
01	END Session
01	END WV-CSP-Message

5.3. 2-WAY LOGIN TRANSACTION

5.3.1 Login-Request primitive

Token stream	Description
03	Version number – WBXML version 1.3

01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
19	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
20	Request
01	END TransactionMode
75	START TransactionID
03	Inline string follows
49 4D 41 70 70 30 31 23 31 32 33 34 35 40 4E 4F 4B 35 31 31 30	"IMApp01#12345@NOK5110"
00	String terminator
01	END TransactionID
01	END TransactionDescriptor
F3	START TransactionContent
07	xmlns="http://www.wireless-village.org/TRC"
03	Inline string follows
31 2E 31 22	"1.1"
00	String terminator
01	END xmlns attribute
00	Switch code page to
01	Access code page
5D	START Login-Request
00	Switch code page to
00	Common code page
7A	START UserID
03	Inline string follows
77 76 3A 75 73 65 72 40 69 6D 2E 63 6F 6D	"wv:user@im.com"
00	String terminator
01	END UserID
4A	START ClientID
77	START URL
80	EXT_T_0
0E	http://
03	Inline string follows
32 30 36 2E 32 32 36 2E 32 30 2E 32 35 3A 3B 30 2F 49 4D 50 53 41 50 50	"206.226.20.25:80/IMPSAPP"
00	String terminator
01	END URL
01	END ClientID
00	Switch code page to
01	Access code page
61	START Password
03	Inline string follows
31 6D 79 32 70 61 73 73 33 77 6F 72 64	"1my2pass3word"

00	String terminator
01	END Password
72	START TimeToLive
C3	Opaque data starts
01	Length of data is 1 byte
78	Big endian 120
01	END TimeToLive
70	START SessionCookie
03	Inline string follows
69 6D 2E 75 73 65 72 2E 63 6F 6D 23 32 30 30 3E 30 31 32 38 23 33 32 38 37 34 36 32 39 33	"im.user.com#20020128#328746293"
00	String terminator
01	END SessionCookie
01	END Login-Request
01	END TransactionContent
01	END Transaction
01	END Session
01	END WV-CSP-Message

5.3.2 Login-Response primitive

Token stream	Description
03	Version number – WBXML version 1.3
01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
19	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
21	Response
01	END TransactionMode
75	START TransactionID
03	Inline string follows
49 4D 41 70 70 30 31 23 31 32 33 34 35 40 4E 4F 4B 35 31 31 30	"IMApp01#12345@NOK5110"
00	String terminator
01	END TransactionID
61	START Poll
80	EXT_T_0
0B	F - No (False)
01	END Poll
01	END TransactionDescriptor
F3	START TransactionContent

07	xmlns="http://www.wireless-village.org/TRC
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
00	Switch code page to
01	Access code page
5E	START Login-Response
00	Switch code page to
00	Common code page
4A	START ClientID
77	START URL
80	EXT_T_0
0E	http://
03	Inline string follows
32 30 36 2E 32 32 36 2E 32 30 2E 32 35 3A 38 30 2E 49 4D 50 53 41 50 50	"206.226.20.25:80/IMPSAPP"
00	String terminator
01	END URL
01	END ClientID
6A	START Result
4B	START Code
C3	Opaque data starts
01	Length of data is 1 byte
C8	Big endian 200
01	END Code
52	START Description
53 75 63 63 65 73 73 66 75 6C 6C 79 20 6C 6F 67 67 65 64 20 69 6E 2E	"Successfully logged in."
00	String terminator
01	END Description
01	END Result
6F	START SessionID
03	Inline string follows
69 6D 2E 75 73 65 72 2E 63 6F 6D 23 34 38 38 31 35 40 73 65 72 76 65 72 2E 63 6F 6D	"im.user.com#48815@server.com"
00	String terminator
01	END SessionID
00	Switch code page to
01	Access code page
5C	START KeepAliveTime
C3	Opaque data starts
01	Length of data is 1 byte
78	Big endian 120
01	END KeepAliveTime
4B	START CapabilityRequest
80	EXT_T_0
2C	T - Yes (True)
01	END CapabilityRequest
01	END Login-Response
01	END TransactionContent
01	END Transaction
01	END Session
01	END WV-CSP-Message

5.4. 4-WAY LOGIN TRANSACTION

5.4.1 Login-Request primitive

Token stream	Description
03	Version number – WBXML version 1.3
01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
19	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
20	Request
01	END TransactionMode
75	START TransactionID
03	Inline string follows
49 4D 41 70 70 30 31 23 31 32 33 34 35 40 4E 4F 4B 35 31 31 30	"IMApp01#12345@NOK5110"
00	String terminator
01	END TransactionID
01	END TransactionDescriptor
F3	START TransactionContent
07	xmlns="http://www.wireless-village.org/TRC"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
00	Switch code page to
01	Access code page
5D	START Login-Request
00	Switch code page to
00	Common code page
7A	START UserID
03	Inline string follows
77 76 3A 75 73 65 72 40 69 6D 2E 63 6F 6D	"wv:user@im.com"
00	String terminator
01	END UserID
4A	START ClientID
77	START URL
80	EXT_T_0
0E	http://
03	Inline string follows
32 30 36 2E 32 32 36 2E 32 30 2E 32 35 3A 38 30 2F 49 4D 50 53 41 50 50	"206.226.20.25:80/IMPSAPP"
00	String terminator

01	END URL
01	END ClientID
00	Switch code page to
01	Access code page
4F	START DigestSchema
03	Inline string follows
50 57 44 2C 53 48 41 2C 4D 44 34 2C 4D 44 35 2C 4D 44 36	"PWD,SHA,MD4,MD5,MD6"
00	String terminator
01	END DigestSchema
70	START SessionCookie
03	Inline string follows
69 6D 2E 75 73 65 72 2E 63 6F 6D 23 32 30 30 32 30 31 32 38 23 33 32 38 37 34 36 32 39 33	"im.user.com#20020128#328746293"
00	String terminator
01	END SessionCookie
01	END Login-Request
01	END TransactionContent
01	END Transaction
01	END Session
01	END WV-CSP-Message

5.4.2 Login-Response primitive

Token stream	Description
03	Version number – WBXML version 1.3
01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
19	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
21	Response
01	END TransactionMode
75	START TransactionID
03	Inline string follows
49 4D 41 70 70 30 31 23 31 32 33 34 35 40 4E 4F 4B 35 31 31 30	"IMApp01#12345@NOK5110"
00	String terminator
01	END TransactionID
61	START Poll
80	EXT_T_0
0B	F - No (False)
01	END Poll
01	END TransactionDescriptor
75	START TransactionContent

07	xmlns="http://www.wireless-village.org/TRC
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
00	Switch code page to
01	Access code page
5E	START Login-Response
00	Switch code page to
00	Common code page
4A	START ClientID
77	START URL
80	EXT_T_0
0E	http://
03	Inline string follows
32 30 36 2E 32 32 36 2E 32 30 2E 32 35 3A 38 30 2F 49 4D 50 53 41 50 50	"206.226.20.25:80/IMPSAPP"
00	String terminator
01	END URL
01	END ClientID
6A	START Result
4B	START Code
C3	Opaque data starts
01	Length of data is 1 byte
C8	Big endian 200
01	END Code
52	START Description
03	Inline string follows
53 75 63 63 65 73 7366 75 6C 6C 79 20 6C 6F 67 67 65 64 20 69 6E 2E	"Successfully logged in."
00	String terminator
01	END Description
01	END Result
00	Switch code page to
01	Access code page
60	START Nonce
03	Inline string follows
6B 73 6A 66 79 68 61 6F 69 79 73 72 34 6F 68 74 39 73 61 64 6F 67 66 73 61 64 66 67 79 39	"ksjfyhaoiysr4oht9sadowfsadfg9"
00	String terminator
01	END Nonce
4F	START DigestSchema
03	Inline string follows
4D 44 36	"MD6"
00	String terminator
01	END DigestSchema
01	END Login-Response
01	END TransactionContent
01	END Transaction
01	END Session
01	END WV-CSP-Message

5.4.3 Login-Request primitive

Token stream	Description
03	Version number – WBXML version 1.3
01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
19	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
20	Request
01	END TransactionMode
75	START TransactionID
03	Inline string follows
49 4D 41 70 70 30 31 23 31 32 33 34 35 40 4E 4F 4B 35 31 31 30	"IMApp01#12345@NOK5110"
00	String terminator
01	END TransactionID
01	END TransactionDescriptor
F3	START TransactionContent
07	xmlns="http://www.wireless-village.org/TRC"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
00	Switch code page to
01	Access code page
5D	START Login-Request
00	Switch code page to
00	Common code page
7A	START UserID
03	Inline string follows
77 76 3A 75 73 65 72 40 69 6D 2E 63 6F 6D	"wv:user@im.com"
00	String terminator
01	END UserID
4A	START ClientID
77	START URL
80	EXT_T_0
0E	http://
03	Inline string follows
32 30 36 2E 32 32 36 2E 32 30 2E 32 35 3A 38 30 2F 49 4D 50 53 41 50 50	"206.226.20.25:80/IMPSAPP"
00	String terminator
01	END URL
01	END ClientID
00	Switch code page to

01	Access code page
4E	START DigestBytes
03	Inline string follows
6D 73 61 64 66 62 6B 77 69 6E 6C 77 70 6F 6D 76 6D 73 70 6F 65 70 77 65	"msadfbkwinlwpomvmspoepwe"
00	String terminator
01	END DigestBytes
72	START TimeToLive
C3	Opaque data starts
01	Length of data is 1 byte
78	Big endian 120
01	END TimeToLive
70	START SessionCookie
03	Inline string follows
69 6D 2E 75 73 65 72 2E 63 6F 6D 23 32 30 30 32 30 31 32 38 23 33 32 38 37 34 36 32 39 33	"im.user.com#20020128#328746293"
00	String terminator
01	END SessionCookie
01	END Login-Request
01	END TransactionContent
01	END Transaction
01	END Session
01	END WV-CSP-Message

5.4.4 Login-Response primitive

Token stream	Description
03	Version number – WBXML version 1.3
01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
19	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
21	Response
01	END TransactionMode
75	START TransactionID
03	Inline string follows
49 4D 41 70 70 30 31 23 31 32 33 34 35 40 4E 4F 4B 35 31 31 30	"IMApp01#12345@NOK5110"
00	String terminator
01	END TransactionID
61	START Poll
80	EXT_T_0

0B	F - No (False)
01	END Poll
01	END TransactionDescriptor
F3	START TransactionContent
07	xmlns="http://www.wireless-village.org/TRC"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
00	Switch code page to
01	Access code page
5E	START Login-Response
00	Switch code page to
00	Common code page
4A	START ClientID
77	START URL
80	EXT_T_0
0E	http://
03	Inline string follows
32 30 36 2E 32 32 36 2E 32 30 2E 32 35 3A 38 30 2F 49 4D 50 53 41 50 50	"206.226.20.25:80/IMPSAPP"
00	String terminator
01	END URL
01	END ClientID
6A	START Result
4B	START Code
C3	Opaque data starts
01	Length of data is 1 byte
C8	Big endian 200
01	END Code
52	START Description
03	Inline string follows
53 75 63 63 65 73 73 66 75 6C 6C 79 20 6C 6F 67 67 65 64 20 69 6E 2E	"Successfully logged in."
00	String terminator
01	END Description
01	END Result
6F	START SessionID
03	Inline string follows
69 6D 2E 75 73 65 72 2E 63 6F 6D 23 34 38 38 31 35 40 73 65 72 76 65 72 2E 63 6F 6D	"im.user.com#48815@server.com"
00	String terminator
01	END SessionID
00	Switch code page to
01	Access code page
5C	START KeepAliveTime
C3	Opaque data starts
01	Length of data is 1 byte
78	Big endian 120
01	END KeepAliveTime
4B	START CapabilityRequest
80	EXT_T_0
2C	T - Yes (True)
01	END CapabilityRequest
01	END Login-Response
01	END TransactionContent
01	END Transaction
01	END Session
01	END WV-CSP-Message

5.5. SERVICE NEGOTIATION TRANSACTION

5.5.1 Service-Request primitive

Token stream	Description
03	Version number – WBXML version 1.3
01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
11	Inband
01	END SessionType
7F	START SessionID
03	Inline string follows
69 6D 2E 75 73 65 72 2E 63 6F 6D 23 34 38 38 31 35 40 73 65 72 76 65 72 2E 63 6F 6D	"im.user.com#48815@server.com"
00	String terminator
01	END SessionID
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
20	Request
01	END TransactionMode
75	START TransactionID
03	Inline string follows
49 4D 41 70 70 30 31 23 31 32 33 34 35 40 4E 4F 4B 35 31 31 30	"IMApp01#12345@NOK5110"
00	String terminator
01	END TransactionID
01	END TransactionDescriptor
F3	START TransactionContent
07	xmlns="http://www.wireless-village.org/TRC"
03	Inline string follows
31 2E 31 22	"1.1"
00	String terminator
01	END xmlns attribute
00	Switch code page to
01	Access code page
6E	START Service-Request
00	Switch code page to
00	Common code page
4A	START ClientID
77	START URL
80	EXT_T_0
0E	http://
03	Inline string follows
32 30 36 2E 32 32 36 2E 32 30 2E 32 35 3A 38 30 2F 49 4D	"206.226.20.25:80/IMPSAPP"

50 53 41 50 50	
00	String terminator
01	END URL
01	END ClientID
00	Switch code page to
01	Access code page
51	START Functions
00	Switch code page to
02	Service code page
7C	START WVCSPFeat
11	EMPTY FundamentalFeat
2F	EMPTY PresenceFeat
23	EMPTY IMFeat
01	END WVCSPFeat
01	END Functions
00	Switch code page to
01	Access code page
46	START AllFunctionsRequest
80	EXT_T_0
2C	T Yes
01	END AllFunctionsRequest
01	END Service-Request
01	END TransactionContent
01	END Transaction
01	END Session
01	END WV-CSP-Message

5.5.2 Service-Response primitive

Token stream	Description
03	Version number – WBXML version 1.3
01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
11	Inband
01	END SessionType
7F	START SessionID
03	Inline string follows
69 6D 2E 75 73 65 72 2E 63 6F 6D 23 34 38 38 31 35 40 73 65 72 76 65 72 2E 63 6F 6D	"im.user.com#48815@server.com"
00	String terminator
01	END SessionID
01	END SessionDescriptor

72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
21	Response
01	END TransactionMode
75	START TransactionID
03	Inline string follows
49 4D 41 70 70 30 31 23 31 32 33 34 35 40 4E 4F 4B 35 31 31 30	"IMApp01#12345@NOK5110"
00	String terminator
01	END TransactionID
61	START Poll
80	EXT_T_0
0B	F - No (False)
01	END Poll
01	END TransactionDescriptor
F3	START TransactionContent
07	xmlns="http://www.wireless-village.org/TRC"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
00	Switch code page to
01	Access code page
6C	START Service-Response
00	Switch code page to
00	Common code page
4A	START ClientID
77	START URL
80	EXT_T_0
0E	http://
03	Inline string follows
32 30 36 2E 32 32 36 2E 32 30 2E 32 35 3A 38 30 2F 49 4D 50 53 41 50 50	"206.226.20.25:80/IMPSAPP"
00	String terminator
01	END URL
01	END ClientID
00	Switch code page to
01	Access code page
51	START Functions
00	Switch code page to
02	Service code page
7C	START WVCSPFeat
51	START FundamentalFeat
34	EMPTY SearchFunc
01	END FundamentalFeat
01	END WVCSPFeat
01	END Functions
00	Switch code page to
01	Access code page
41	START AllFunctions
00	Switch code page to
02	Service code page
3C	EMPTY WVCSPFeat
01	END AllFunctions
01	END Service-Response
01	END TransactionContent

01	END Transaction
01	END Session
01	END WV-CSP-Message

5.6. SEND MESSAGE TRANSACTION

5.6.1 SendMessage-Request primitive

Token stream	Description
03	Version number – WBXML version 1.3
01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
11	Inband
01	END SessionType
6F	START SessionID
03	Inline string follows
69 6D 2E 75 73 65 72 2E 63 6F 6D 23 34 38 38 31 35 40 73 65 72 76 65 72 2E 63 6F 6D	"im.user.com#48815@server.com"
00	String terminator
01	END SessionID
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
20	Request
01	END TransactionMode
75	START TransactionID
03	Inline string follows
49 4D 41 70 70 30 31 23 31 32 33 34 35 40 4E 4F 4B35 31 31 30	"IMApp01#12345@NOK5110"
00	String terminator
01	END TransactionID
01	END TransactionDescriptor
F3	START TransactionContent
07	xmlns="http://www.wireless-village.org/TRC"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
00	Switch code page to
06	Messaging code page
57	START SendMessage-Request
48	START DeliveryReport
80	EXT_T_0
2C	T Yes
01	END DeliveryReport

53	START MessageInfo
00	Switch code page to
00	Common code page
50	START ContentType
80	EXT_T_0
	text/plain
01	END ContentType
4E	START ContentEncoding
80	EXT_T_0
16	None
01	END ContentEncoding
4F	START ContentSize
C3	Opaque data starts
01	Length of data is 1 byte
3A	Big endian 58
01	END ContentSize
67	START Recipient
79	START User
7A	START UserID
03	Inline string follows
77 76 3A 68 65 40 74 68 65 72 65 2E 63 6F 6D	"wv:he@there.com"
00	String terminator
01	END UserID
01	END User
55	START Group
6B	START ScreenName
48	START SName
03	Inline string follows
'W' 'i' 'c' 'k' 'e' 'd' ' ' 'V' 'i' 'c' 'k' 'y'	"Wicked Vicky"
00	String terminator
01	END Name
56	START GroupID
03	Inline string follows
77 76 3A 6A 6F 68 6E 2A 63 68 61 74 67 72 6F 75 70 40 73 6D 69 74 68 2E 63 6F 6D	"wv:john*chatgroup@smith.com"
00	String terminator
01	END GroupID
01	END ScreenName
01	END Group
4C	START ContactList
03	Inline string follows
77 76 3A 6A 6F 68 6E 2A 4D 79 5F 66 72 69 65 6E 64 73 40 73 6D 69 74 68 2E 63 6F 6D	"wv:john*My_friends@smith.com"
00	String terminator
01	END ContactList
01	END Recipient
6C	START Sender
79	START User
7A	START UserID
03	Inline string follows
77 76 3A 6A 6F 68 6E 40 73 6D 69 74 68 2E 63 6F 6D	"wv:john@smith.com"
00	String terminator
01	END UserID
01	END User
01	END Sender
51	START DateTime
03	Inline string follows
32 30 30 31 30 39 32 35 54 31 33 34 30 5A	"20010925T1340Z"
00	String terminator
01	END DateTime
7C	START Validity
C3	Opaque data starts

02	Length of data is 2 bytes
02 58	Big endian 600
01	END Validity
01	END MessageInfo
4D	START ContentData
03	Inline string follows
48 75 72 72 79 20 75 70 3B 20 74 68 65 79 20 61 72 65 20 72 69 6E 67 69 6E 67 20 74 68 65 20 62 65 6C 6C 73 20 69 6E 20 74 68 65 20 57 56 20 61 6C 72 65 61 64 79 2E 2E 2E	"Hurry up; they are ringing the bells in the WV already..."
00	String terminator
01	END ContentData
01	END SendMessage-Request
01	END TransactionContent
01	END Transaction
01	END Session
01	END WV-CSP-Message

5.6.2 SendMessage-Response primitive

Token stream	Description
03	Version number – WBXML version 1.3
01	Wireless Village public document identifier
6A	Charset=UTF-8 (MIBEnum is 106)
00	String table length
C9	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
6D	START Session
6E	START SessionDescriptor
70	START SessionType
80	EXT_T_0
11	Inband
01	END SessionType
7F	START SessionID
03	Inline string follows
69 6D 2E 75 73 65 72 2E 63 6F 6D 23 34 38 38 31 35 40 73 65 72 76 65 72 2E 63 6F 6D	"im.user.com#48815@server.com"
00	String terminator
01	END SessionID
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
80	EXT_T_0
21	Response
01	END TransactionMode
75	START TransactionID
03	Inline string follows
49 4D 41 70 70 30 31 23 31 32 33 34 35 40 4E 4F 4B 35 31 31 30	"IMApp01#12345@NOK5110"
00	String terminator
01	END TransactionID
61	START Poll
80	EXT_T_0
0B	F - No (False)
01	END Poll
01	END TransactionDescriptor
F3	START TransactionContent

07	xmlns="http://www.wireless-village.org/TRC
03	Inline string follows
31 2E 31	"1.1"
00	String terminator
01	END xmlns attribute
00	Switch code page to
06	Messaging code page
58	START SendMessage-Response
00	Switch code page to
00	Common code page
6A	START Result
4B	START Code
C3	Opaque data starts
01	Length of data is 1 byte
C8	Big endian 200
01	END Code
52	START Description
53 75 63 63 65 73 73 66 75 6C 6C 79 20 63 6F 6D 70 6C 65 74 65 64 2E	"Successfully completed."
00	String terminator
01	END Description
01	END Result
5B	START MessageID
03	Inline string follows
30 78 30 30 30 30 66 31 33 32	"0x0000f132"
00	String terminator
01	END MessageID
01	END SendMessage-Response
01	END TransactionContent
01	END Transaction
01	END Session
01	END WV-CSP-Message