



**Client-Server Protocol**  
**Binary XML definition and Examples**  
**V1.0**

**WV Internal Tracking Number: WV-008**

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## 1. REVISION HISTORY

Date	Issue	Description	Author
February 13 <sup>th</sup>	TBD	Initial release	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 we have 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
Attribute	08
AttributeList	09
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
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	3E



## 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
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
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
SearchOnlineStatus	29
SearchPairList	2A
Search-Request	2B
Search-Response	2C
SearchResult	2D
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):

<b>Tag name</b>	<b>Token</b>
AcceptedCharset	05
AcceptedContentLength	06
AcceptedContentType	07
AcceptedTransferEncoding	08
AnyContent	09
ClientType	0A
InitialDeliveryMethod	0B
MultiTrans	0C
ParserSize	0D
ServerPollMin	0E
SupportedBearer	0F
SupportedCIRMethod	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
Presence	18
PresenceAuth-Request	19
PresenceAuth-Response	1A
PresenceNotification-Request	1B
PresenceValueList	1C
SubscribePresence-Request	1D
UnsubscribePresence-Request	1E
UpdatePresence-Request	1F

## 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
City	0C
ClientInfo	0D
ClientProducer	0E
ClientType	0F
ClientVersion	10
CommC	11
CommCap	12
ContactInfo	13
ContainedvCard	14
Country	15
Crossing1	16
Crossing2	17
DevManufacturer	18
DirectContent	19
FreeTextLocation	1A
GeoLocation	1B
Language	1C
Latitude	1D
Longitude	1E
Model	1F
NamedArea	20
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

## 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
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
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
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 Attribute value tokens

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

- Code page 0x00 contains the common values, which are used in several transactions.
- Code page 0x01 contains the access information related values.
- Code page 0x02 contains the presence information related values.

#### 3.4.1 Common value tokens (0x00)

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

Attribute value	Token
AccessType	85
ActiveUsers	86
Admin	87
application/	88
application/vnd.wap.mms-message	89
application/x-sms	8A
BASE64	8B
Closed	8C
Default	8D
DisplayName	8E
False (No)	8F
<b>G</b> et	90
Group (GR)	91
http://	92
https://	93
image/	94
Inband	95
Instant Messaging (IM)	96
MaxActiveUsers	97
Mod	98
Name	99
None	9A
<b>N</b> otify/ <b>G</b> et	9B
Open	9C
Outband	9D
Presence (PR)	9E
Private	9F
PrivateMessaging	A0
PrivilegeLevel	A1
Public	A2
<b>P</b> ush	A3
Request	A4
Response	A5
ScreenName	A6
Searchable	A7
<b>S</b> et	A8
Shared Content (SC)	A9
text/	AA
text/plain	AB
text/x-vCalendar	AC



text/x-vCard	AD
Topic	AE
True (Yes)	AF
Type	B0
Unset	B1
User (US)	B2
www.wireless-village.org	B3

### 3.4.2 Access value tokens (0x01)

The following attribute value tokens are defined in the access code page (0x01):

Attribute value	Token
GROUP_ID	85
GROUP_NAME	86
GROUP_TOPIC	87
GROUP_USER_ID_JOINED	88
HTTP	89
SMS	8A
STCP	8B
SUDP	8C
USER_ALIAS	8D
USER_EMAIL_ADDRESS	8E
USER_FIRST_NAME	8F
USER_ID	90
USER_LAST_NAME	91
USER_MOBILE_NUMBER	92
WAPSMS	93
WAPUDP	94
WSP	95

### 3.4.3 Presence value tokens (0x05)

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

Attribute value	Token
ANGRY	85
ANXIOUS	86
ASHAMED	87
AUDIO_CALL	88
AVAILABLE	89
BORED	8A
CALL	8B
CLI	8C
COMPUTER	8D
DISCREET	8E
EMAIL	8F
EXCITED	90
HAPPY	91
IM	92
IM_OFFLINE	93
IM_ONLINE	94
IN_LOVE	95
INVINCIBLE	96

JEALOUS	97
MMS	98
MOBILE_PHONE	99
NOT_AVAILABLE	9A
OTHER	9B
PDA	9C
SAD	9D
SLEEPY	9E
SMS	9F
VIDEO_CALL	A0
VIDEO_STREAM	A1

## 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.

0x02	<code>mb_u_int32</code>
------	-------------------------

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

0x02	0x81	0x20
------	------	------

### 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).

0xC3	<code>mb_u_int32</code>	... bytes ...
------	-------------------------	---------------

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

0xC3	0x01	byte
------	------	------

A 2-byte integer would look like this:

0xC3	0x02	byte	byte
------	------	------	------

A 4-byte integer would look like this:

0xC3	0x04	byte	byte	byte	byte
------	------	------	------	------	------

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

0xC3	0x02	0x07	0xD1
------	------	------	------

### 4.3 Boolean

The "True" and "False" values are encoded.

See 3.4.1 Common value tokens (0x00) on page 16.

### 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:

0x03	...character data ...	0x00
------	-----------------------	------

String table reference:

**0x83** | *mb\_u\_int32*

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

**0x03** | 'T' | 'h' | 'i' | 's' | ' ' | 'i' | 's' | ' ' | 'a' | ' ' | 's' | 't' | 'r' | 'i' | 'n' | 'g' | '!' | **0x00**

#### 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.

**0xC3** | *mb\_u\_int32* | ... bytes ...

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

**0xC3** | 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, so there is no need to indicate a.m. or p.m.

**0xC3** | *mb\_u\_int32* | ... bytes ...

The encoding of the date bytes is as follows:

- The first 2 bits are reserved, and both must be 0.
- Year is encoded on 12 bits (up to 4095)
- Month is encoded on 4 bits (up to 15)
- Day is encoded on 5 bits (up to 31)
- Hour is encoded on 5 bits (up to 31)
- Minute is encoded on 6 bits (up to 63)
- Second is encoded on 6 bits (up to 63)
- 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).

Since the length is always 6 bytes, it is encoded as:

**0xC3** | 0x06 | byte | byte | byte | byte | byte | byte

Example: The date and time at 16:58:59 on the 25<sup>th</sup> of September in 2001 in time zone ‘Z’ would be encoded as:

**0xC3** | 0x05 | 0x1F | 0x46 | 0x73 | 0x0E | 0xBB | 0x5A

## 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
FE	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 30 22	"1.0"
00	String terminator
6D	START Session
6E	START SessionDescriptor
70	START SessionType
95	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
A5	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
8F	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 30 22	"1.0"
00	String terminator
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
01	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
01	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
FE	START WV-CSP-Message

05	xmlns="http://www.wireless-village.org/CSP
03	Inline string follows
31 2E 30 22	"1.0"
00	String terminator
6D	START Session
6E	START SessionDescriptor
70	START SessionType
95	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
A4	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 30 22	"1.0"
00	String terminator
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
FE	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 30 22	"1.0"
00	String terminator
6D	START Session
6E	START SessionDescriptor
70	START SessionType
9D	Outband
01	END SessionType
01	END SessionDescriptor

72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
A4	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 30 22	"1.0"
00	String terminator
00	Switch code page to
01	Access code page
5D	START Login-Request
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
90	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
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
00	Switch code page to
01	Access code page
72	START TimeToLive
C3	Opaque data starts
01	Length of data is 1 byte
78	Big endian 120
01	END TimeToLive
00	Switch code page to
01	Access code page
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



5.3.2 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
FE	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 30 22	"1.0"
00	String terminator
6D	START Session
6E	START SessionDescriptor
70	START SessionType
9D	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
A5	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
8F	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 30 22	"1.0"
00	String terminator
00	Switch code page to
01	Access code page
5E	START Login-Response
4A	START ClientID
77	START URL
90	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
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	"im.user.com#48815@server.com"

40 73 65 72 76 65 72 2E 63 6F 6D	
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
00	Switch code page to
01	Access code page
4B	START CapabilityRequest
AF	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
FE	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 30 22	"1.0"
00	String terminator
6D	START Session
6E	START SessionDescriptor
70	START SessionType
9D	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
A4	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 30 22	"1.0"
00	String terminator
00	Switch code page to
01	Access code page
5D	START Login-Request
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
90	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
00	Switch code page to
01	Access code page
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
FE	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 30 22	"1.0"
00	String terminator
6D	START Session
6E	START SessionDescriptor
70	START SessionType
9D	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
A5	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

8F	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 30 22	"1.0"
00	String terminator
00	Switch code page to
01	Access code page
5E	START Login-Response
4A	START ClientID
77	START URL
90	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
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	"ksjfyhaiysr4oht9sadogfsadfg9"
00	String terminator
01	END Nonce
00	Switch code page to
01	Access code page
4F	START DigestSchema
03	Inline string follows
4D 44 36	"MD6"
00	String terminator
01	END DigestSchema
00	Switch code page to
01	Access code page
4B	START CapabilityRequest
8F	No (False)
01	END CapabilityRequest
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
FE	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 30 22	"1.0"
00	String terminator
6D	START Session
6E	START SessionDescriptor
70	START SessionType
9D	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
A4	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 30 22	"1.0"
00	String terminator
00	Switch code page to
01	Access code page
5D	START Login-Request
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
90	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	"msadfbkwinlwpmvmvmspoepwe"
00	String terminator
01	END DigestBytes
00	Switch code page to
01	Access code page
72	START TimeToLive
C3	Opaque data starts
01	Length of data is 1 byte
78	Big endian 120
01	END TimeToLive
00	Switch code page to

01	Access code page
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
FE	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 30 22	"1.0"
00	String terminator
6D	START Session
6E	START SessionDescriptor
70	START SessionType
9D	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
A5	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
8F	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 30 22	"1.0"
00	String terminator
00	Switch code page to
01	Access code page
5E	START Login-Response
4A	START ClientID
77	START URL
90	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
00	Switch code page to
01	Access code page
4B	START CapabilityRequest
AF	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
FE	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 30 22	"1.0"
00	String terminator
6D	START Session
6E	START SessionDescriptor
70	START SessionType
9D	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
A4	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	"IMApp01#12345@NOK5110"

31 30	
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 30 22	"1.0"
00	String terminator
00	Switch code page to
01	Access code page
6E	START Service-Request
4A	START ClientID
77	START URL
90	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
00	Switch code page to
02	Service code page
11	EMPTY FundamentalFeat
00	Switch code page to
02	Service code page
2F	EMPTY PresenceFeat
00	Switch code page to
02	Service code page
23	EMPTY IMFeat
01	END WVCSPFeat
01	END Functions
00	Switch code page to
01	Access code page
46	START AllFunctionsRequest
AF	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
FE	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 30 22	"1.0"
00	String terminator
6D	START Session



6E	START SessionDescriptor
70	START SessionType
9D	Outband
01	END SessionType
01	END SessionDescriptor
72	START Transaction
74	START TransactionDescriptor
76	START TransactionMode
A5	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
8F	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 30 22	"1.0"
00	String terminator
00	Switch code page to
01	Access code page
6C	START Service-Response
4A	START ClientID
77	START URL
90	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
11	EMPTY Functions
00	Switch code page to
01	Access code page
41	START AllFunctions
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
FE	START WV-CSP-Message
05	xmlns="http://www.wireless- village.org/CSP"
03	Inline string follows

31 2E 30 22	"1.0"
00	String terminator
6D	START Session
6E	START SessionDescriptor
70	START SessionType
95	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
A4	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 30 22	"1.0"
00	String terminator
00	Switch code page to
06	Messaging code page
57	START SendMessage-Request
00	Switch code page to
06	Messaging code page
48	START DeliveryReport
AF	Yes
01	END DeliveryReport
00	Switch code page to
06	Messaging code page
53	START MessageInfo
50	START ContentType
A9	text/plain
01	END ContentType
4E	START ContentEncoding
97	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
5E	START Name

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
FE	START WV-CSP-Message
05	xmlns="http://www.wireless-village.org/CSP"
03	Inline string follows
31 2E 30 22	"1.0"
00	String terminator

6D	START Session
6E	START SessionDescriptor
70	START SessionType
95	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
A5	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
8F	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 30 22	"1.0"
00	String terminator
00	Switch code page to
06	Messaging code page
58	START SendMessage-Response
6A	START Result
4B	START Code
C3	Opaque data starts
02	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