



OMA CPM Charging Specification

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1. Scope

This document specifies the use of OMA Charging Enabler to realise the offline and online charging requirements of OMA CPM Enabler. The OMA Charging Enabler defines a set of interfaces that are utilised by the other Enablers to fulfil their charging requirements. The interfaces are specified in [CHRG_AD11] and the parameter definitions in [CHRG_DDS]. This document defines how, when and by which entities charging is triggered and which function invokes charging over the OMA Charging Enabler interfaces. This document also defines the data that will be exchanged during the process.

This document specifies in detail:

- The charging models for the OMA CPM enabler,
- The logical messages and message types used on CH-1 and CH-2 interfaces,
- The flow of messages between the Charging Enabler User and the Charging Enabler with regard to the CPM Service and applicable CPM scenarios,
- Mapping of the CPM parameters to the OMA Charging Data Elements

2. References

2.1 Normative References

- [CHRG_AD10] “Charging Architecture”, Open Mobile Alliance™. OMA-AD-Charging-V1_0,
[URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [CHRG_AD11] “Charging Architecture”, Open Mobile Alliance™. OMA-AD-Charging-V1_1,
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- [CHRG_DDS] “Charging Data”, Open Mobile Alliance™. OMA-DDS-Charging_Data-V1_0,
[URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [OMA ONLINE CHG] “OMA Online Charging Interface”, Open Mobile Alliance™. OMA-TS-Charging_Online-V1_1,
[URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [OMA OFFLINE CHG] “OMA Offline Charging Interface”, Open Mobile Alliance™. OMA-TS-Charging_Offline-V1_1,
[URL: http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [RFC2119] “Key words for use in RFCs to Indicate Requirement Levels”, S. Bradner, March 1997,
[URL:http://www.ietf.org/rfc/rfc2119.txt](http://www.ietf.org/rfc/rfc2119.txt)
- [SCRRULES] “SCR Rules and Procedures”, Open Mobile Alliance™, OMA-ORG-SCR_Rules_and_Procedures,
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)

2.2 Informative References

- [OMA-DICT] “Dictionary for OMA Specifications”, Version 2.9, Open Mobile Alliance™,
OMA-ORG-Dictionary-V2_9, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [RFC3455] “Private Header (P-Header) Extensions to the Session Initiation Protocol (SIP) for the 3rd-Generation
Partnership Project (3GPP)”, January 2003,
[URL: http://www.ietf.org/rfc/rfc3455.txt](http://www.ietf.org/rfc/rfc3455.txt)

3. Terminology and Conventions

3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

3.2 Definitions

CH-1 EventRequest	Refers to the EventRequest defined in [OMA OFFLINE CHG]
CH-1 Response	Refers to the Charging Response Message defined in [OMA OFFLINE CHG]
CH-2 Initial Request	Refers to the Initial Request defined in [OMA ONLINE CHG]
CH-2 Response	Refers to the Charging Response Message defined in [OMA ONLINE CHG]
CH-2 Termination Request	Refers to the Termination Request defined in [OMA ONLINE CHG]
CPM CPM Server	Refers to a CPM Participating Function, CPM Controlling Function, CPM Interworking Function or CPM Interworking Selection Function supporting a Charging Enabler User
CPM Entity	Refers to a CPM Client, CPM Participating Function, CPM Controlling Function, CPM Interworking Function or CPM Interworking Selection Function

3.3 Abbreviations

CPM	Converged IP Messaging
OMA	Open Mobile Alliance
SIP	Session Initiation Protocol

4. Introduction

This document describes the charging aspects of the CPM enabler.

5. CPM Charging Architecture

The OMA CPM service architecture is described in [CPM-AD]. Figure 1 depicts the high-level OMA CPM charging architecture.

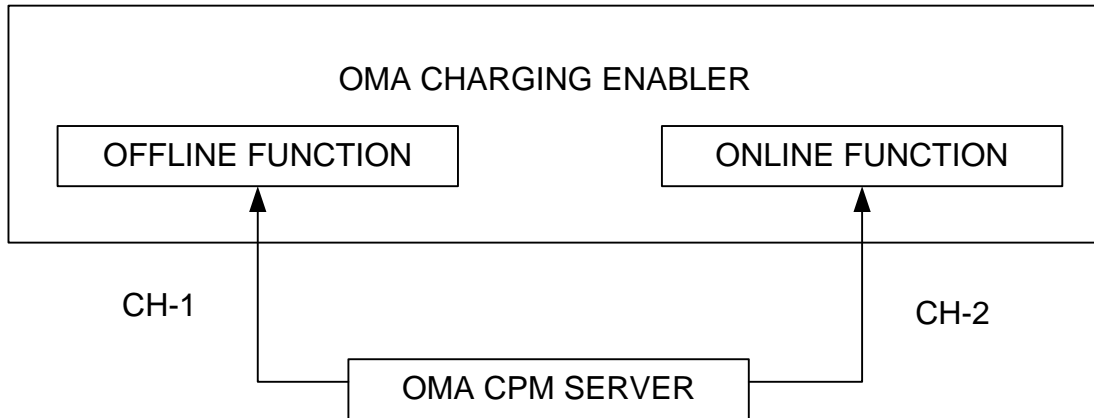


Figure 1: Charging architecture for CPM charging

In this figure:

- CH-1 is Offline charging reference point between CPM Server and the Offline Function of the Charging Enabler.
- CH-2 is Online charging reference point between CPM Server and the Online Function of the Charging Enabler.

The OMA CPM Server MAY comprise the Charging Enabler User, an integrated function that monitors and generates the charging events, sends the charging requests to the Charging Enabler and receives the responses from the Charging Enabler, over the CH-1 or the CH-2 interface, or both.

6. CPM charging principles and scenarios

OMA CPM charging is based on the concept of charging for the transmission of messages and files. OMA CPM charging SHALL support the Event-based charging model that charges for messages and transfer of files, applicable for both online and offline charging procedures.

The CPM Server may process a Large message or a message within an CPM session which MAY be broken down into smaller chunks for the purposes of transmission. In such cases, the CPM Server may receive multiple intermediate MSRP 200 OK messages; however, these MSRP 200 OK messages SHALL NOT trigger a charging request message. In this case, the CPM Server SHALL trigger a charging request message only after receiving the last MSRP 200 OK, i.e. on determining that the transmission of the chunked messages is completed.

6.1 CPM charging principles

6.1.1 Charging principles for CPM Events

The OMA Charging Enabler User SHALL use Event-based charging to enable charging for the following CPM Events

- Sending or receiving of a Pager Mode CPM Standalone Message to a single user or to/from a predefined/ad-hoc group or another CPM entity. Deferred messages shall be considered as successful. Unsuccessful Pager Mode CPM Standalone Messages sent to a single user or to a predefined/ad-hoc group SHALL or another CPM entity SHALL be reported.
- Sending or receiving of Large Message Mode CPM Standalone Message to a single user or to a predefined/ad-hoc group or another CPM entity. Unsuccessful Large Message Mode CPM Standalone Message to a single user or to a predefined/ad-hoc group or another CPM entity SHALL be reported.
- Sending or receiving of CPM File Transfer to a single user or another CPM entity. Unsuccessful CPM File Transfer to a single user or another CPM entity SHALL be reported.
- Sending or receiving of a CPM Chat Message to a single user or another CPM entity in a CPM 1-1 Session or in a CPM Group Session. Unsuccessful transfer CPM Chat Messages SHALL be reported.

6.2 CPM Offline Charging Scenarios

6.2.1 Basic principles

The CPM Events described in section 6.1.1. SHALL be charged using the Event-based messages (EventRequest).

The charging request messages sent from a OMA CPM Server are described in the following table. The table summarises the SIP methods and MSRP messages which may trigger the charging messages.

OMA Charging Message	Triggering SIP Method /MSRP Message
EventRequest	SIP 200 OK acknowledging a SIP MESSAGE is successfully accepted for a Pager Mode CPM Standalone Message
	The final MSRP 200 OK acknowledging a MSRP SEND of a Large Message Mode CPM Standalone Message.
	The final MSRP 200 OK acknowledging a MSRP SEND of a CPM File Transfer.
	The final MSRP 200 OK acknowledging a MSRP SEND of a CPM Chat Message.

Table 1: Charging Request Message Triggered by SIP Methods or MSRP Messages for a CPM Server

6.2.2 Offline Charging for CPM Events

6.2.2.1 Receiving a Pager Mode CPM Standalone Message

Figure 2 shows the charging request transactions between the Charging Enabler User in the CPM Server and the Charging Enabler for the reception of a Pager Mode CPM Standalone Message.

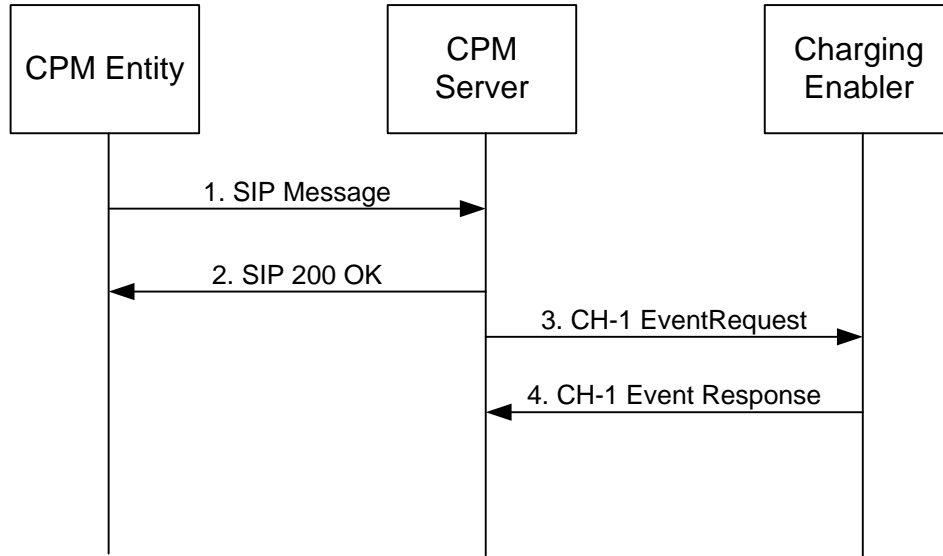


Figure 2: Offline Charging for receiving a Pager Mode Message

1. The CPM Server receives a SIP MESSAGE from the originating CPM Entiy.
2. The CPM Server returns a SIP 200 OK or any SIP error to the originating CPM Entity.
3. The Charging Enabler User SHALL trigger a CH-1 EventRequest message towards the Charging Enabler.
4. The Charging Enabler acknowledges with a CH-1 Response message.

6.2.2.2 Deliver a Pager Mode CPM Standalone Message

Figure 3 shows the charging request transaction between the Charging Enabler User in the CPM Server and the Charging Enabler for the delivery of a Pager Mode CPM Standalone Message.

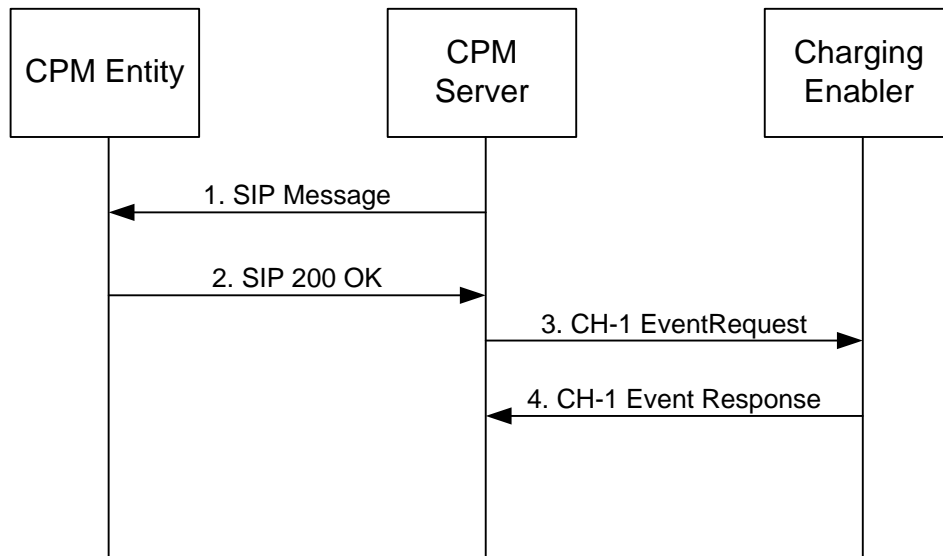


Figure 3: Offline Charging for sending a CPM Pager Mode Message

1. The CPM Server sends a SIP MESSAGE to the terminating CPM Entiy.
2. The CPM Server receives a SIP 200 OK or any SIP error from the terminating CPM Entity.
3. The Charging Enabler User SHALL trigger a CH-1 EventRequest message towards the Charging Enabler.
4. The Charging Enabler acknowledges with a CH-1 Response message.

6.2.2.3 Receiving a Large Message Mode CPM Standalone Message

Figure 4 shows the charging request transaction between the Charging Enabler User in the CPM Server and the Charging Enabler for the reception of a Large Message Mode CPM Standalone Message.

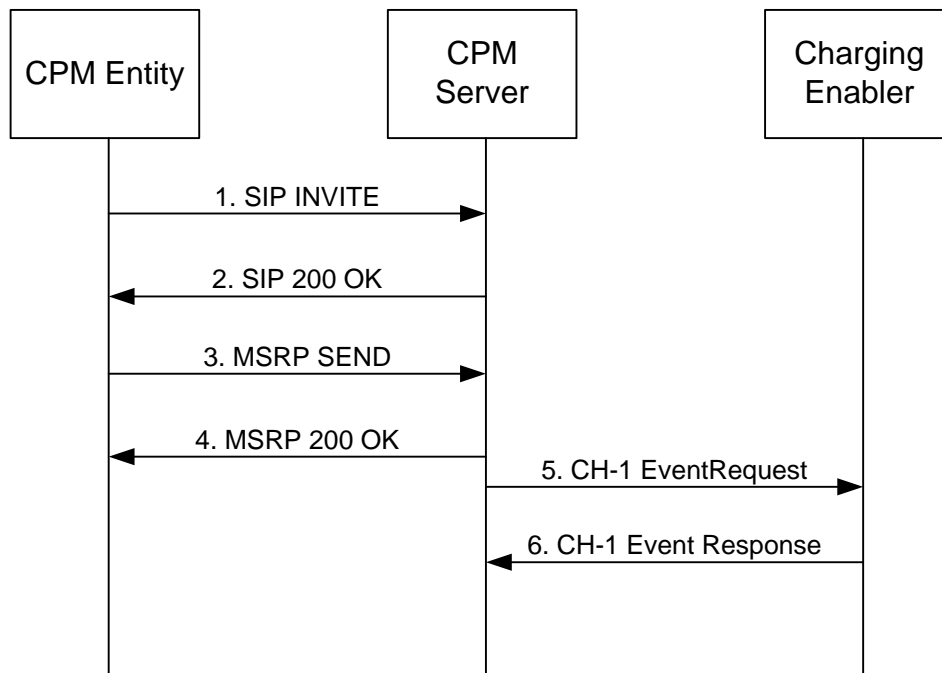


Figure 4: Offline Charging for receiving a Large Message Mode CPM Standalone Message

1. The CPM Server receives a SIP INVITE for a Large Message Mode CPM Session from the originating CPM Entity.
2. The CPM Server returns a SIP 200 OK to the originating CPM Entity.
3. The CPM Server receives a MSRP SEND request from the originating CPM Entity.
4. The CPM Server returns a MSRP 200 OK or any MSRP error to the originating CPM Entity
5. The Charging Enabler User SHALL trigger a CH-1 EventRequest message towards the Charging Enabler.
6. The Charging Enabler acknowledges with a CH-1 Response message.

6.2.2.4 Deliver a Large Message Mode CPM Standalone Message

Figure 5 shows the charging request transactions between the Charging Enabler User in the CPM Server and the Charging Enabler for the delivery of a Large Message Mode CPM Standalone Message.

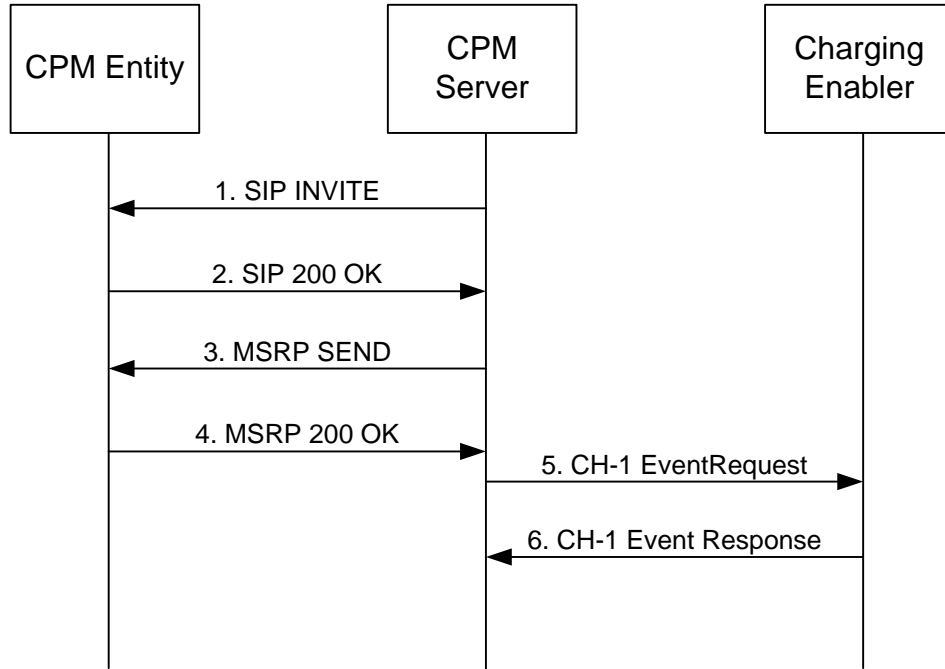


Figure 5: Offline Charging for sending Large Message Mode CPM Standalone Message

1. The CPM Server sends a SIP INVITE for a Large Message Mode CPM Session to the terminating CPM Entity.
2. The CPM Server receives a SIP 200 OK from the terminating CPM Entity.
3. The CPM Server sends a MSRP SEND request to the terminating CPM Entity.
4. The CPM Server returns a MSRP 200 OK or any MSRP error to the originating CPM Entity
5. The Charging Enabler User SHALL trigger a CH-1 EventRequest message towards the Charging Enabler.
6. The Charging Enabler acknowledges with a CH-1 Response message. CPM online charging scenarios

6.2.2.5 Receiving a CPM File Transfer

Figure 6 shows the charging request transaction between the Charging Enabler User in the CPM Server and the Charging Enabler for the reception of a CPM File Transfer.

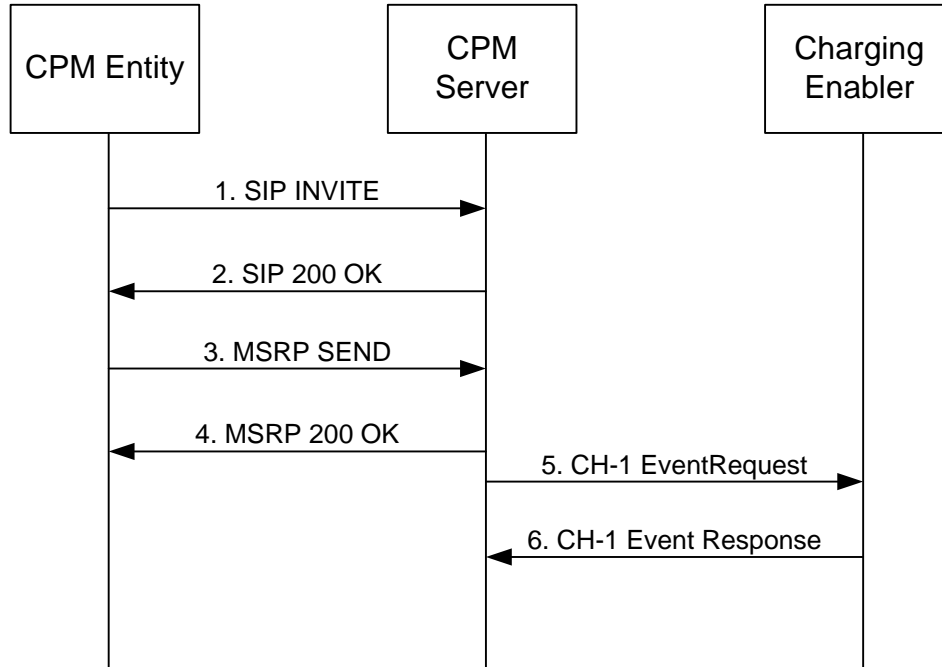


Figure 6: Offline Charging for receiving a CPM File Transfer

1. The CPM Server receives a SIP INVITE for a CPM File Transfer from the originating CPM Entity.
2. The CPM Server returns a SIP 200 OK to the originating CPM Entity.
3. The CPM Server receives a MSRP SEND request from the originating CPM Entity.
4. The CPM Server returns the final MSRP 200 OK or any MSRP error to the originating CPM Entity.
5. The Charging Enabler User SHALL trigger a CH-1 EventRequest message towards the Charging Enabler.
6. The Charging Enabler acknowledges with a CH-1 Response message.

6.2.2.6 Deliver a CPM File Transfer

Figure 7 shows the charging request transactions between the Charging Enabler User in the CPM Server and the Charging Enabler for the delivery of a CPM File Transfer.

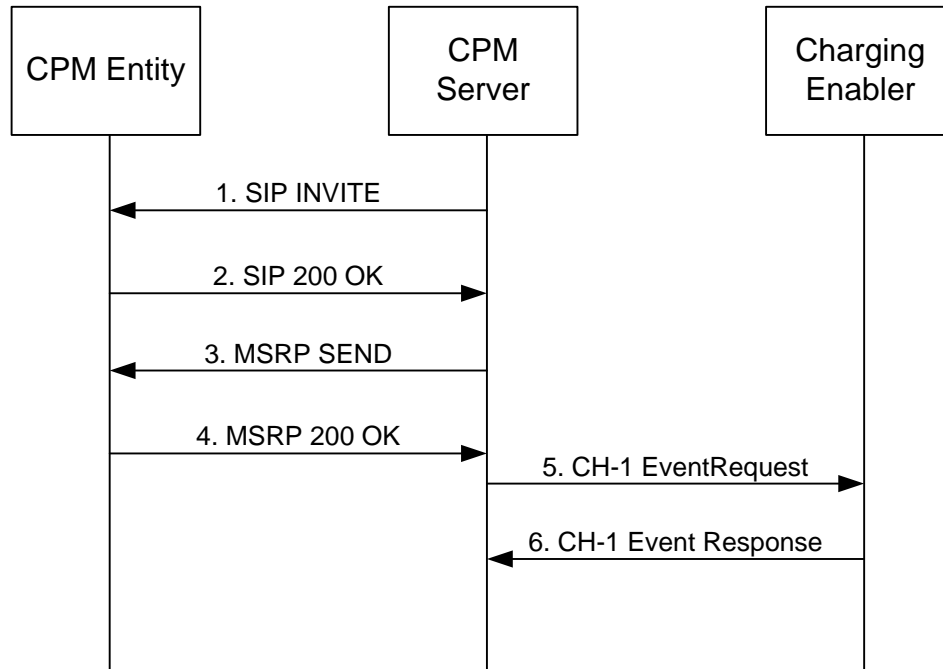


Figure 7: Offline Charging for sending CPM File Transfer

1. The CPM Server sends a SIP INVITE for a CPM File Transfer to the terminating CPM Entity.
2. The CPM Server receives a SIP 200 OK from the terminating CPM Entity.
3. The CPM Server sends a MSRP SEND request to the terminating CPM Entity.
4. The CPM Server returns the final MSRP 200 OK or any MSRP error to the originating CPM Entity
5. The Charging Enabler User SHALL trigger a CH-1 EventRequest message towards the Charging Enabler.
6. The Charging Enabler acknowledges with a CH-1 Response message.

6.2.2.7 Receiving a CPM Chat Message

Figure 8 shows the charging request transaction between the Charging Enabler User in the CPM Server and the Charging Enabler for the reception of a CPM Chat Message.

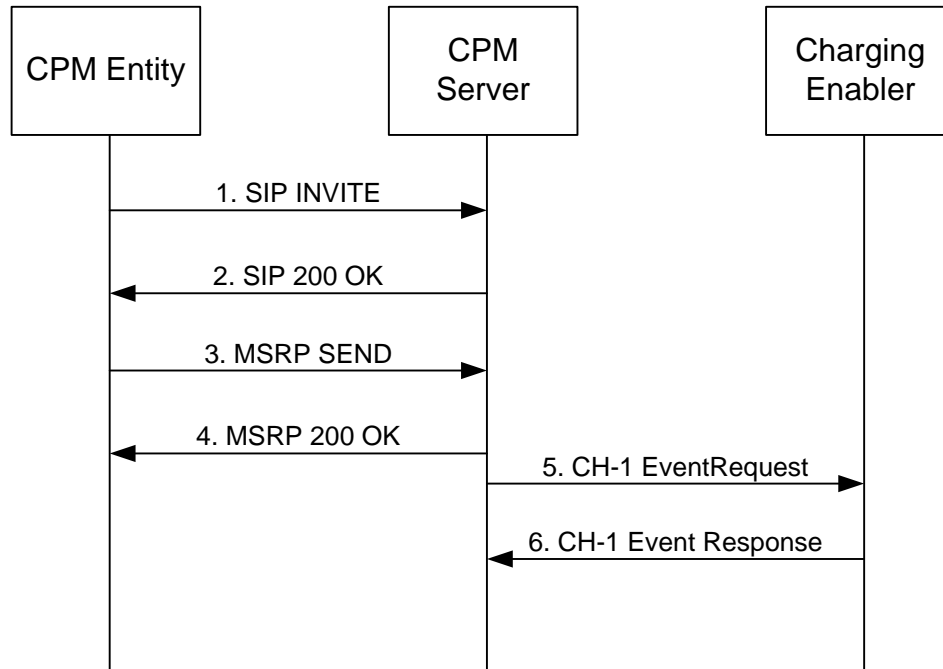


Figure 8: Offline Charging for receiving a CPM Chat Message

1. The CPM Server receives a SIP INVITE for a CPM 1-1 Session or a CPM Group Session from the originating CPM Entity.
2. The CPM Server returns a SIP 200 OK to the originating CPM Entity.
3. The CPM Server receives a MSRP SEND request from the originating CPM Entity.
4. The CPM Server returns a MSRP 200 OK or any MSRP error to the originating CPM Entity
5. The Charging Enabler User SHALL trigger a CH-1 EventRequest message towards the Charging Enabler.
6. The Charging Enabler acknowledges with a CH-1 Response message.

6.2.2.8 Deliver a CPM Chat Message

Figure 9 shows the charging request transactions between the Charging Enabler User in the CPM Server and the Charging Enabler for the delivery of a CPM Chat Message.

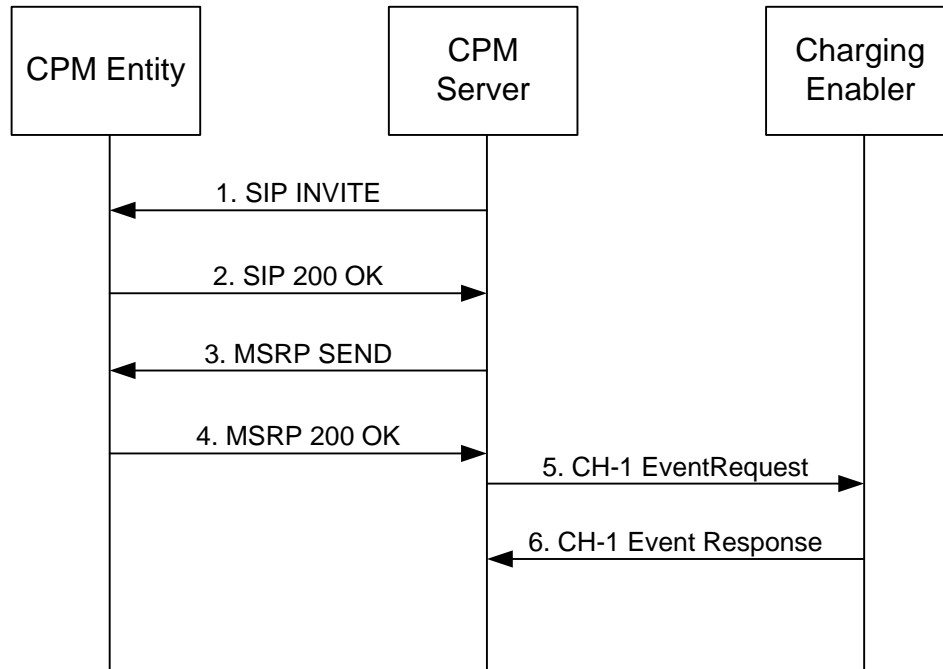


Figure 9: Offline Charging for sending CPM File Transfer

1. The CPM Server sends a SIP INVITE for a CPM 1-1 Session or a CPM Group Session to the terminating CPM Entity.
2. The CPM Server receives a SIP 200 OK from the terminating CPM Entity.
3. The CPM Server sends a MSRP SEND request to the terminating CPM Entity.
4. The CPM Server returns a MSRP 200 OK or any MSRP error to the originating CPM Entity
5. The Charging Enabler User SHALL trigger a CH-1 EventRequest message towards the Charging Enabler.
6. The Charging Enabler acknowledges with a CH-1 Response message.

6.3 CPM online charging scenarios

6.3.1 Basic principles

The CPM Events described in section 6.1.1. SHALL be charged using the Event-based charging (Event Charging with reservation).

The charging request messages sent from a OMA CPM Server are described in the following table. The table summarises the SIP Methods and MSRP messages which may trigger the charging messages.

OMA Charging Message	Triggering SIP Method/MSRP Message
CH-2 Initial Request	SIP MESSAGE for a Pager Mode CPM Standalone Message
	MSRP SEND for a Large Message Mode CPM Standalone Message
	SIP INVITE for a CPM File Transfer.
	MSRP SEND for a CPM Chat Message.
CH-2 Termination Request	SIP 200 OK acknowledging a SIP MESSAGE is successfully accepted for a Pager Mode CPM Standalone Message
	The final MSRP 200 OK acknowledging a MSRP SEND of a Large Message Mode CPM Standalone Message.
	The final MSRP 200 OK acknowledging a MSRP SEND of a CPM File Transfer.
	The final MSRP 200 OK acknowledging a MSRP SEND of a CPM Chat Message.

Table 2: The Charging Request Messages Triggered by SIP Methods or MSRP Messages for CPM Server

6.3.2 Online Charging for CPM Events

6.3.2.1 Receiving a Pager Mode CPM Standalone Message

Figure 10 shows the charging request transactions between the Charging Enabler User in the CPM Server and the Charging Enabler for the reception of a Pager Mode CPM Standalone Message.

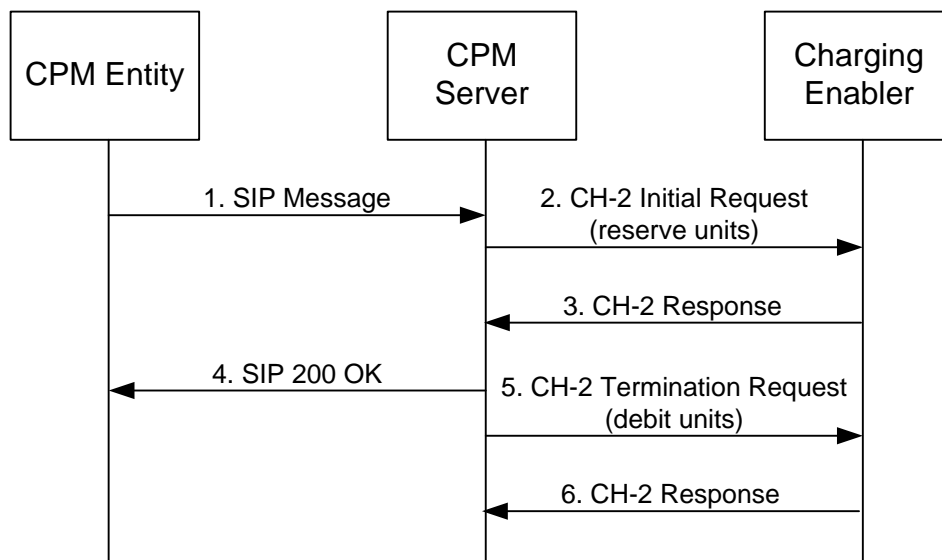


Figure 10: Online Charging for receiving a Pager Mode Message

1. The CPM Server receives a SIP MESSAGE from the originating CPM Entity.
2. The Charging Enabler User SHALL trigger a CH-2 InitialRequest message towards the Charging Enabler.
3. The Charging Enabler acknowledges with a CH-2 Response message.
4. The CPM Server processes the message request and returns a SIP 200 OK to the originating CPM Entity.
5. The Charging Enabler User SHALL trigger a CH-2 TerminationRequest message towards the Charging Enabler.
6. The Charging Enabler acknowledges with a CH-2 Response message.

6.3.2.2 Deliver a Pager Mode CPM Standalone Message

Figure 11 shows the charging request transaction between the Charging Enabler User in the CPM Server and the Charging Enabler for the delivery of a Pager Mode CPM Standalone Message.

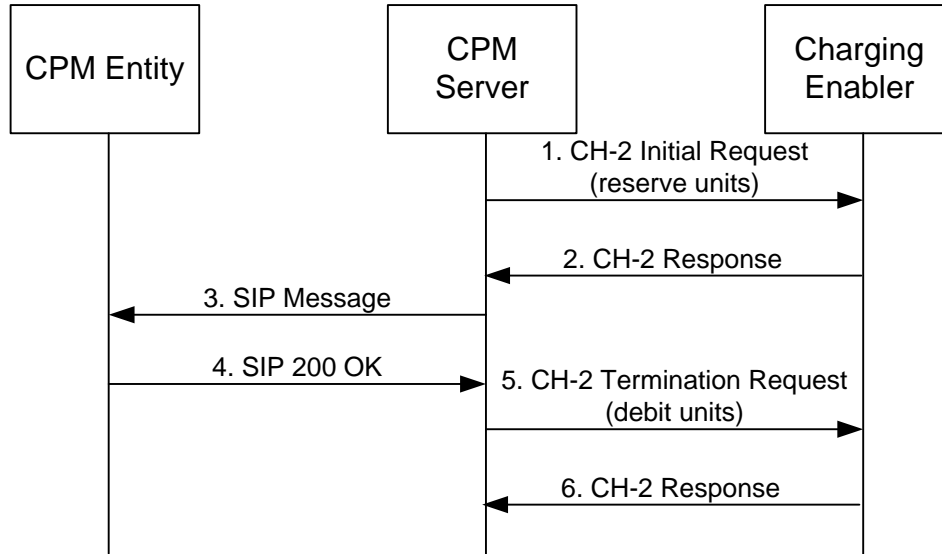


Figure 11: Online Charging for sending a CPM Pager Mode Message

1. The Charging Enabler User SHALL trigger a CH-2 InitialRequest message towards the Charging Enabler.
2. The Charging Enabler acknowledges with a CH-2 Response message.
3. The CPM Server sends a SIP MESSAGE to the terminating CPM Entity.
4. The CPM Server receives a SIP 200 OK from the terminating CPM Entity.
5. The Charging Enabler User SHALL trigger a CH-2 TerminationRequest message towards the Charging Enabler.
6. The Charging Enabler acknowledges with a CH-2 Response message.

6.3.2.3 Receiving a Large Message Mode CPM Standalone Message

Figure 12 shows the charging request transaction between the Charging Enabler User in the CPM Server and the Charging Enabler for the reception of a Large Message Mode CPM Standalone Message.

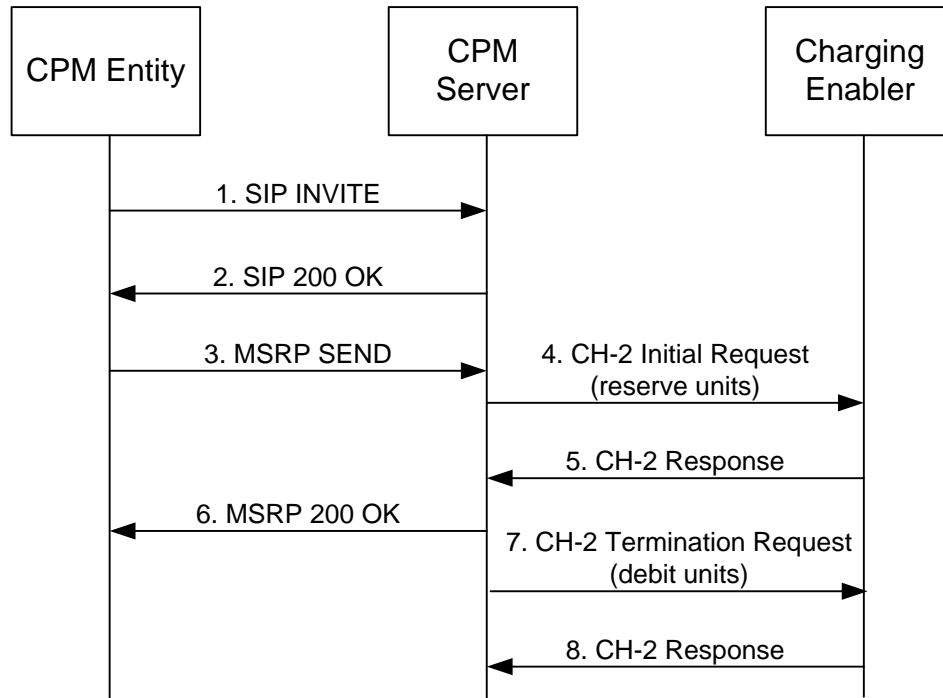


Figure 12: Online Charging for receiving a Large Message Mode CPM Standalone Message

1. The CPM Server receives a SIP INVITE for a Large Message Mode CPM Session from the originating CPM Entity.
2. The CPM Server returns a SIP 200 OK to the originating CPM Entity.
3. The CPM Server receives a MSRP SEND request from the originating CPM Entity.
4. The Charging Enabler User SHALL trigger a CH-2 InitialRequest message towards the Charging Enabler.
5. The Charging Enabler acknowledges with a CH-2 Response message.
6. The CPM Server returns a MSRP 200 OK to the originating CPM Entity
7. The Charging Enabler User SHALL trigger a CH-2 TerminationRequest message towards the Charging Enabler.
8. The Charging Enabler acknowledges with a CH-2 Response message.

6.3.2.4 Deliver a Large Message Mode CPM Standalone Message

Figure 13 shows the charging request transactions between the Charging Enabler User in the CPM Server and the Charging Enabler for the delivery of a Large Message Mode CPM Standalone Message.

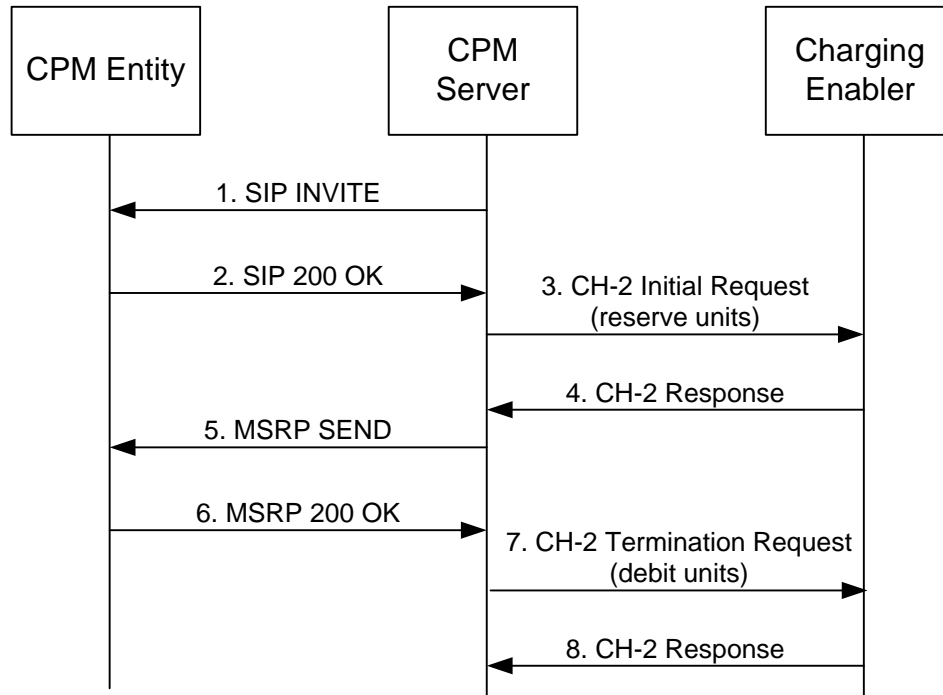


Figure 13: Online Charging for sending Large Message Mode CPM Standalone Message

1. The CPM Server sends a SIP INVITE for a Large Message Mode CPM Session to the terminating CPM Entity.
2. The CPM Server receives a SIP 200 OK from the terminating CPM Entity.
3. The Charging Enabler User SHALL trigger a CH-2 InitialRequest message towards the Charging Enabler.
4. The Charging Enabler acknowledges with a CH-2 Response message.
5. The CPM Server sends a MSRP SEND request to the terminating CPM Entity.
6. The CPM Server returns a MSRP 200 OK to the originating CPM Entity
7. The Charging Enabler User SHALL trigger a CH-2 TerminationRequest message towards the Charging Enabler.
8. The Charging Enabler acknowledges with a CH-2 Response message.

6.3.2.5 Receiving a CPM File Transfer

Figure 14 shows the charging request transaction between the Charging Enabler User in the CPM Server and the Charging Enabler for the reception of a CPM File Transfer.

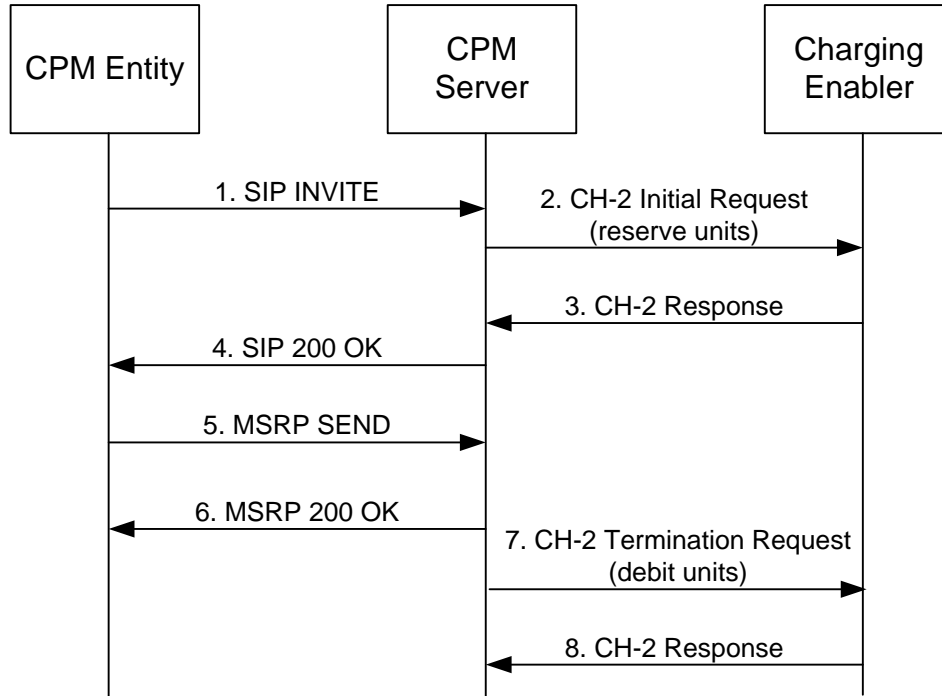


Figure 14: Online Charging for receiving a CPM File Transfer

1. The CPM Server receives a SIP INVITE for a CPM File Transfer from the originating CPM Entity.
2. The Charging Enabler User SHALL trigger a CH-2 InitialRequest message towards the Charging Enabler.
3. The Charging Enabler acknowledges with a CH-2 Response message.
4. The CPM Server returns a SIP 200 OK to the originating CPM Entity.
5. The CPM Server receives the MSRP SEND request from the originating CPM Entity.
6. The CPM Server returns the final MSRP 200 OK to the originating CPM Entity
7. The Charging Enabler User SHALL trigger a CH-2 TerminationRequest message towards the Charging Enabler.
8. The Charging Enabler acknowledges with a CH-2 Response message.

6.3.2.6 Deliver a CPM File Transfer

Figure 15 shows the charging request transactions between the Charging Enabler User in the CPM Server and the Charging Enabler for the delivery of a CPM File Transfer.

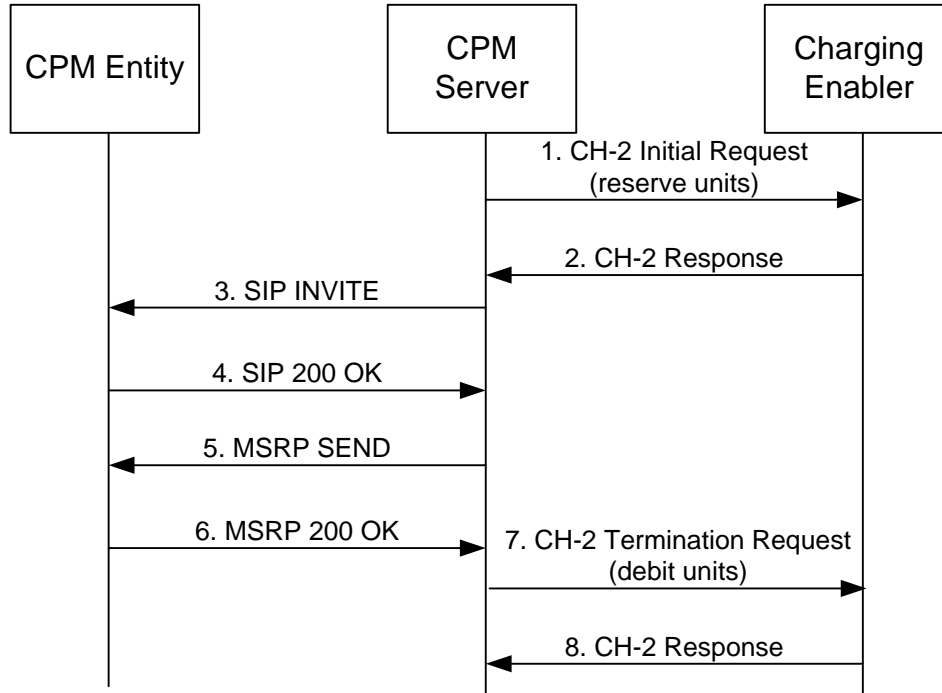


Figure 15: Online Charging for sending CPM File Transfer

1. The Charging Enabler User SHALL trigger a CH-2 InitialRequest message towards the Charging Enabler.
2. The Charging Enabler acknowledges with a CH-2 Response message.
3. The CPM Server sends a SIP INVITE for a CPM File Transfer to the terminating CPM Entity.
4. The CPM Server receives a SIP 200 OK from the terminating CPM Entity.
5. The CPM Server sends a MSRP SEND request to the terminating CPM Entity.
6. The CPM Entity returns the final MSRP 200 OK to the originating CPM Entity
7. The Charging Enabler User SHALL trigger a CH-2 TerminationRequest message towards the Charging Enabler.
8. The Charging Enabler acknowledges with a CH-2 Response message.

6.3.2.7 Receiving a CPM Chat Message

Figure 16 shows the charging request transaction between the Charging Enabler User in the CPM Server and the Charging Enabler for the reception of a CPM Chat Message.

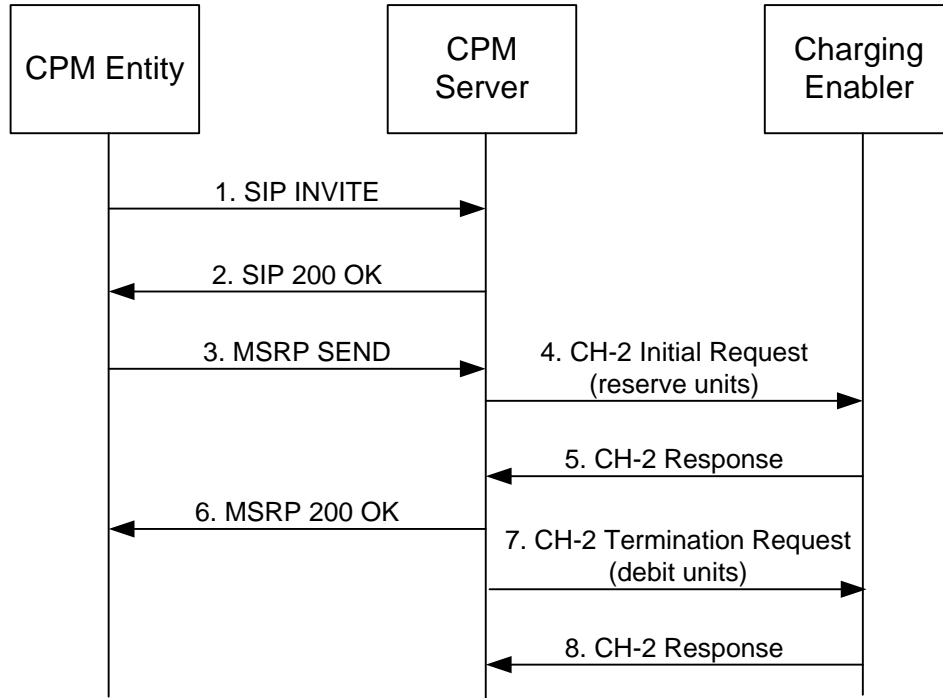


Figure 16: Online Charging for receiving a CPM Chat Message

1. The CPM Server receives a SIP INVITE for a CPM 1-1 Session or a CPM Group Session from the originating CPM Entity.
2. The CPM Server returns a SIP 200 OK to the originating CPM Entity.
3. The CPM Server receives a MSRP SEND request from the originating CPM Entity.
4. The Charging Enabler User SHALL trigger a CH-2 InitialRequest message towards the Charging Enabler.
5. The Charging Enabler acknowledges with a CH-2 Response message.
6. The CPM Server returns a MSRP 200 OK to the originating CPM Entity
7. The Charging Enabler User SHALL trigger a CH-2 TerminationRequest message towards the Charging Enabler.
8. The Charging Enabler acknowledges with a CH-2 Response message.

6.3.2.8 Deliver a CPM Chat Message

Figure 17 shows the charging request transactions between the Charging Enabler User in the CPM Server and the Charging Enabler for the delivery of a CPM Chat Message.

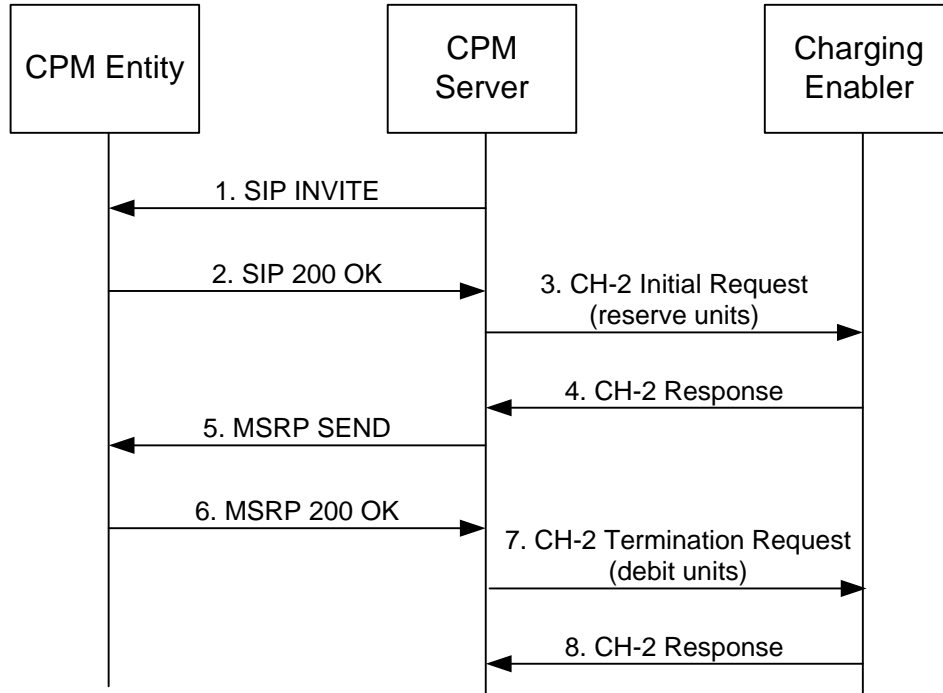


Figure 17: Online Charging for sending CPM File Transfer

1. The CPM Server sends a SIP INVITE for a CPM 1-1 Session or a CPM Group Session to the terminating CPM Entity.
2. The CPM Server receives a SIP 200 OK from the terminating CPM Entity.
3. The Charging Enabler User SHALL trigger a CH-2 InitialRequest message towards the Charging Enabler.
4. The Charging Enabler acknowledges with a CH-2 Response message.
5. The CPM Server sends a MSRP SEND request to the terminating CPM Entity.
6. The CPM Server returns a MSRP 200 OK to the originating CPM Entity
7. The Charging Enabler User SHALL trigger a CH-2 TerminationRequest message towards the Charging Enabler.
8. The Charging Enabler acknowledges with a CH-2 Response message.

7. Definition of charging information

7.1 Mapping of CPM parameters to OMA charging data elements

CPM specific charging information is provided within the Service Information. The detailed structure and mapping of the Service Information which includes the CPM Information can be found in [CHRG_DDS].

[Editor's note: it requires changes to CHRG_DDS to introduce the CPM service context and the CPM context specific parameter definitions.]

CPM Field Name	Category	Type	Description	OMA Charging Data Element
Value: CPM@openmobilealliance.org	O _M	String	Fixed value to identify the service specification in the context of which the charging events must be interpreted.	Service Context Id
CPM Server Role	O _M	Enumerated	Identifies the CPM Server function as participating function (0), controlling function (1), interworking function (2), interworking selection function (3).	Role of node
CPM User Role	O _C	Enumerated	Identifies if the CPM user role in the CPM request as sender (0) or the receiver (1)	Role of User
CPM Messaging Service	O _M	Enumerated	Identifies the type of the CPM service as: Pager mode (0), Large message mode (1), 1-1 Session (2). Group Session (3), File Transfer (4)	Service Identifier
CPM Message Service Type	O _C	Enumerated	Identifies the type of the service as Sending (0), Receiving (1)	Application Service Type
Number of Participants	O _C	Integer	Indicates the number of invited parties of the CPM session when included in the initial charging request message.	Number Of Participants
List Of Participants	O _C	String	Holds the information for participants, e.g., the addresses.	Participant Group
Called Party Address	O _C	String	The address of the receiver. It can be of the following type: - SIP URI - TEL URI	Called Party Address
Calling Party Address	O _C	String	The address of the sender. The address of the receiver. It can be of the following type: - SIP URI - TEL URI	Calling Party Address
CPM Server Identity	O _C	String	Identifies the CPM Server	Application Server Id
CPM Group Name	O _C	String	Identifies a pre-defined group	Group Name

CPM Field Name	Category	Type	Description	OMA Charging Data Element
CPM Session Id	O _C	Integer	Uniquely identifies an CPM session. All events using the same session SHALL have the same Session ID	Session Id
Served Party	O _M	String	Holds the identity of the party that the charging information relates to.	Subscription Id
Inter Operator Identifier	O _C	Group	The IOI identifies both originating and terminating networks involved in a session/transaction. The IOI may be generated from each side of session/transaction to identify the home networks associated with each side. The orig-ioi and term-ioi parameters of P-Charging-Vector represent the originating and terminating operator identifiers. For further information regarding the composition and usage of the orig-ioi and term-ioi parameters refer to RFC 3455 [RFC3455]	Inter-Operator Id
Orig IOI	O _C	String	This field holds the IOI for the originating network as generated by the IMS network element which takes responsibility for populating this parameter in a SIP request.	Originating IOI
Term IOI	O _C	String	This field holds the IOI for the terminating network as generated by the IMS network element which takes responsibility for populating this parameter in a SIP request.	Terminating IOI
Transit IOI	O _C	String	This parameter holds the identification of the involved transit networks as exchanged via SIP signalling if available.	TransitIOI List
Interface-ID	O _C	String	The parameter indicates the CPM Server interface on which the event occurred, values are UNI, NNI.	Interface-ID
Access Network Identifier	O _C	String	This identifies the access network and may be populated if available.	Access Network Charging Identifier Value
Content Type	O _C	String	Identifies the type of content carried in the CPIM or MSRP body. The value is taken from the MSRP or CPIM content-type header or CPIM Payload-Typeheader as applicable.	Content Type

CPM Field Name	Category	Type	Description	OMA Charging Data Element
Message Size	O _C	Integer	Identifies the content summary delivered in CPIM, except for system content such as Group State Object and Conference Information Objects. Applicable to CPM Standalone Messages and CPM Chat Messages.	Content Length
File-size	O _C	Integer	For CPM File Transfer it SHALL include the 'file-size' of the file transferred.	Content Length
Delivery status	O _C	String	Identifies if the message is successfully or unsuccessfully sent/delivered	Delivery Status
Message-ID	O _C	Integer	Identifies the message being charged	Message-ID
Charging Correlation Identifier	O _C	Integer	Identifies the correlation information to correlate with bearer network. It can be populated from 'icid-value', a mandatory part of the P-Charging-Vector and coded as a text-based UTF-8 charset (as are all SIP messages). For further information regarding the composition and usage of the P-Charging-Vector refer RFC 3455 [RFC3455]	Application Charging Identifier
Service Request Time Stamp	O _M		This field contains the time stamp which indicates the time at which the service was requested.	Event Timestamp
Service Reason Return Code	O _M		This parameter provides the returned status code for the service request for the successful and failure case,	Cause Code

Table 3: Structure of the CPM Charging Information

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No previous version within OMA

A.2 Draft/Candidate Version 2.2 History

Document Identifier	Date	Sections	Description
Draft Versions	09 May 2017	all	First draft
OMA-TS-CPM_Charging_Specification-V2_2	22 Jun 2017	7.1	Incorporated CR: OMA-COM-CPM-2017-0082- CR_Content_Type_in_CPM_Charging_Requests
Candidate Version	26 Sep 2017	n/a	Status changed to Candidate by TP TP Ref # OMA-TP-2017-0040-INP_CPM- V2_2_ERP_for_1st_Candidate_Approval