

**Oracle® Communications
Network Charging and Control**

Sample Message Flows Reference Guide

Release 12.0.0

December 2017

Copyright

Copyright © 2017, Oracle and/or its affiliates. All rights reserved.

This software and related documentation are provided under a license agreement containing restrictions on use and disclosure and are protected by intellectual property laws. Except as expressly permitted in your license agreement or allowed by law, you may not use, copy, reproduce, translate, broadcast, modify, license, transmit, distribute, exhibit, perform, publish, or display any part, in any form, or by any means. Reverse engineering, disassembly, or decompilation of this software, unless required by law for interoperability, is prohibited.

The information contained herein is subject to change without notice and is not warranted to be error-free. If you find any errors, please report them to us in writing.

If this is software or related documentation that is delivered to the U.S. Government or anyone licensing it on behalf of the U.S. Government, then the following notice is applicable:

U.S. GOVERNMENT END USERS: Oracle programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

This software or hardware is developed for general use in a variety of information management applications. It is not developed or intended for use in any inherently dangerous applications, including applications that may create a risk of personal injury. If you use this software or hardware in dangerous applications, then you shall be responsible to take all appropriate fail-safe, backup, redundancy, and other measures to ensure its safe use. Oracle Corporation and its affiliates disclaim any liability for any damages caused by use of this software or hardware in dangerous applications.

Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

Intel and Intel Xeon are trademarks or registered trademarks of Intel Corporation. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. AMD, Opteron, the AMD logo, and the AMD Opteron logo are trademarks or registered trademarks of Advanced Micro Devices. UNIX is a registered trademark of The Open Group.

This software or hardware and documentation may provide access to or information about content, products, and services from third parties. Oracle Corporation and its affiliates are not responsible for and expressly disclaim all warranties of any kind with respect to third-party content, products, and services unless otherwise set forth in an applicable agreement between you and Oracle. Oracle Corporation and its affiliates will not be responsible for any loss, costs, or damages incurred due to your access to or use of third-party content, products, or services, except as set forth in an applicable agreement between you and Oracle.

Contents

About This Document	v
Document Conventions	vi
Chapter 1	
CCS Message Flows	1
Overview	1
Data Session Charging Behavior	1
Glossary of Terms	9
Index	11

About This Document

Scope

The scope of this document is confined to samples of message flows to help explain the effects of configuration choices.

Audience

This guide is written primarily for system administrators of NCC products.

Prerequisites

Although there are no prerequisites for using this guide, familiarity with the target platform would be an advantage.

Related Documents

The following documents are related to this document:

- *Charging Control Services User's Guide*

Document Conventions

Typographical Conventions

The following terms and typographical conventions are used in the Oracle Communications Network Charging and Control (NCC) documentation.

Formatting Convention	Type of Information
Special Bold	Items you must select, such as names of tabs. Names of database tables and fields.
<i>Italics</i>	Name of a document, chapter, topic or other publication. Emphasis within text.
Button	The name of a button to click or a key to press. Example: To close the window, either click Close , or press Esc .
Key+Key	Key combinations for which the user must press and hold down one key and then press another. Example: Ctrl+P or Alt+F4 .
Monospace	Examples of code or standard output.
Monospace Bold	Text that you must enter.
<i>variable</i>	Used to indicate variables or text that should be replaced with an actual value.
menu option > menu option >	Used to indicate the cascading menu option to be selected. Example: Operator Functions > Report Functions
hypertext link	Used to indicate a hypertext link.

Specialized terms and acronyms are defined in the glossary at the end of this guide.

CCS Message Flows

Overview

Introduction

This chapter includes sample CCS message flows. Each topic pertains to a specific part of CCS.

In this Chapter

This chapter contains the following topics.

Data Session Charging Behavior 1

Data Session Charging Behavior

This section shows the following sample CCS message flows:

- *Timeout with Update Reservation Revoked "Timeout with Update Reservation Revoked"*
- *Timeout with Update Reservation Confirmed "Timeout with Update Reservation Confirmed"*
- *Requested Reservation Chunk Not Set "Requested Reservation Chunk Not Set"*
- *Requested Reservation Chunk Set "Requested Reservation Chunk Set"*
- *Commit Volume Threshold Set "Commit Volume Threshold Set"*
- *Request Time Threshold Not Set "Request Time Threshold Not Set"*
- *Request Time Threshold Set "Request Time Threshold Set"*

Timeout with Update Reservation Revoked

This example shows the flow when a timeout occurs mid-session and a reservation is revoked.

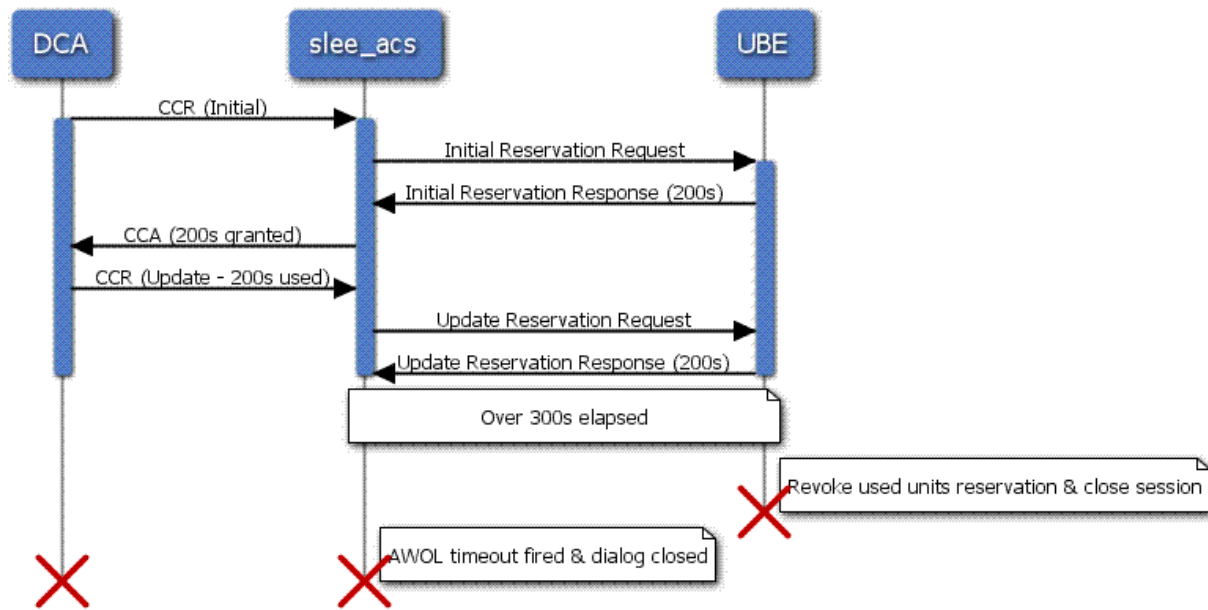
Parameters

This message flow assumes the following configuration:

Field	Screen/Panel	Value
Charge on Reservation Timeout	CLI-DN	(unchecked)
Hold Reservation Open	Reservation Config	300

Message Flow

When a timeout occurs mid-session, all outstanding reservations are revoked and the UBE session is closed.



Timeout with Update Reservation Confirmed

This example shows the flow when a timeout occurs mid-session and a reservation is confirmed.

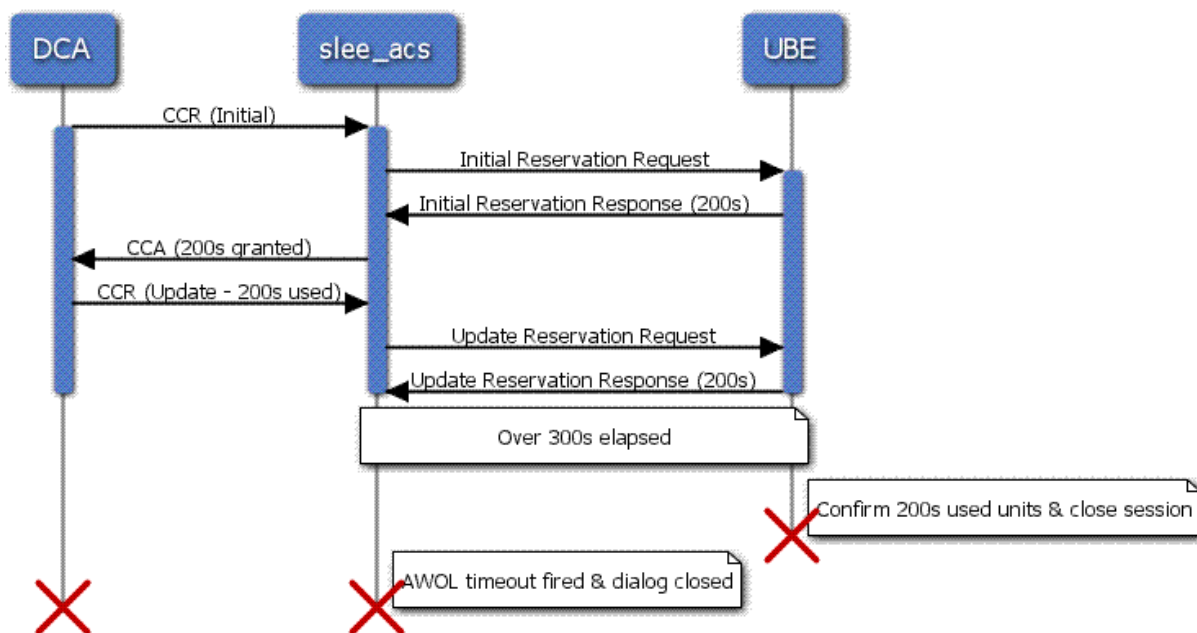
Parameters

This message flow assumes the following configuration:

Field	Screen/Panel	Value
Charge on Reservation Timeout	CLI-DN	(checked)
Hold Reservation Open	Reservation Config	300

Message Flow

When a timeout occurs mid-session, all used units are charged and the UBE session is closed.



Note: The UBE only confirms the used units value based on the received update reservation request. It does not commit the full 400s of granted time. This means that in the case of timeout on an initial reservation, the subscriber will not be charged regardless of the Charge on Reservation Timeout configuration.

Requested Reservation Chunk Not Set

This example shows the flow when the Requested Reservation Chunk is not set.

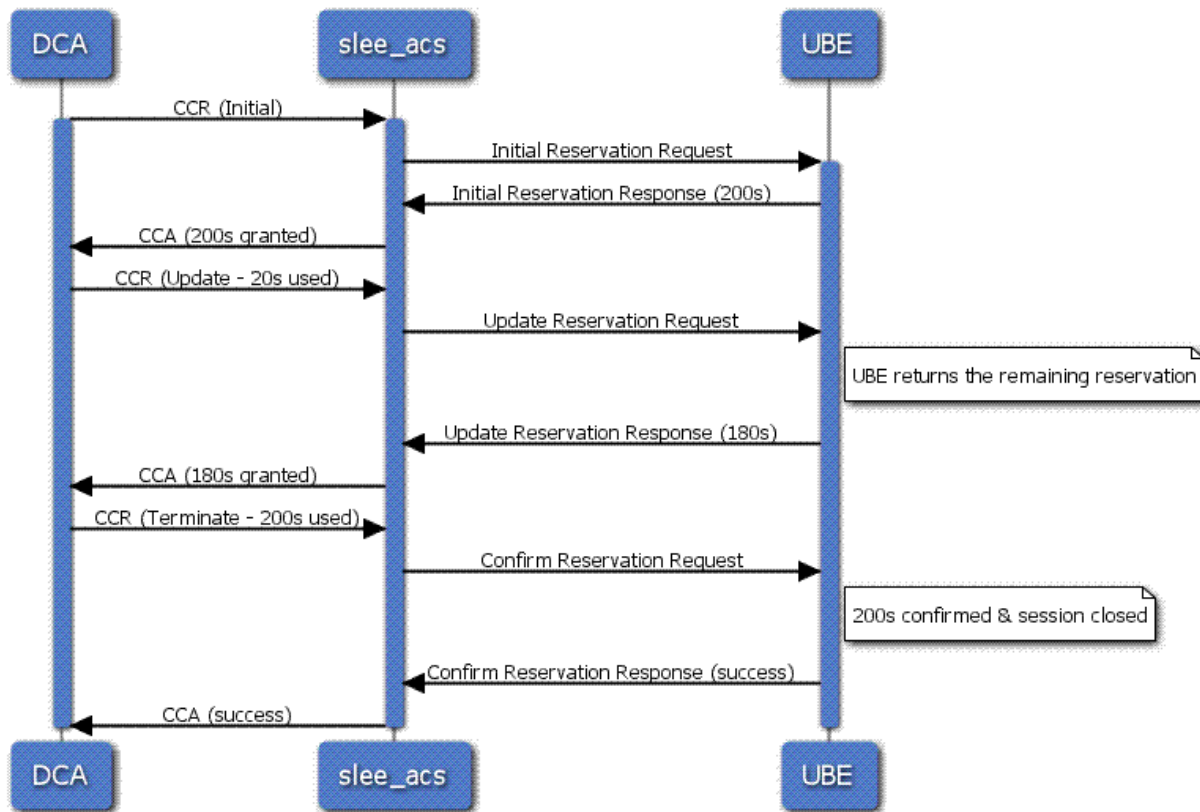
The requested reservation chunk ensures that the reservation returned from the UBE is always rounded to the full size. If it is not set and a subsequent reservation request is received that uses less than the granted reservation size, the UBE returns only the delta.

Parameters

This message flow assumes the following configuration:

Field	Screen/Panel	Value
Requested Reservation Chunk	Reservation Config	(empty)
Hold Reservation Open	Reservation Config	300
Commit Volume Threshold	Reservation Config	(disabled)

Message Flow



Requested Reservation Chunk Set

This example shows the flow when the Requested Reservation Chunk is set.

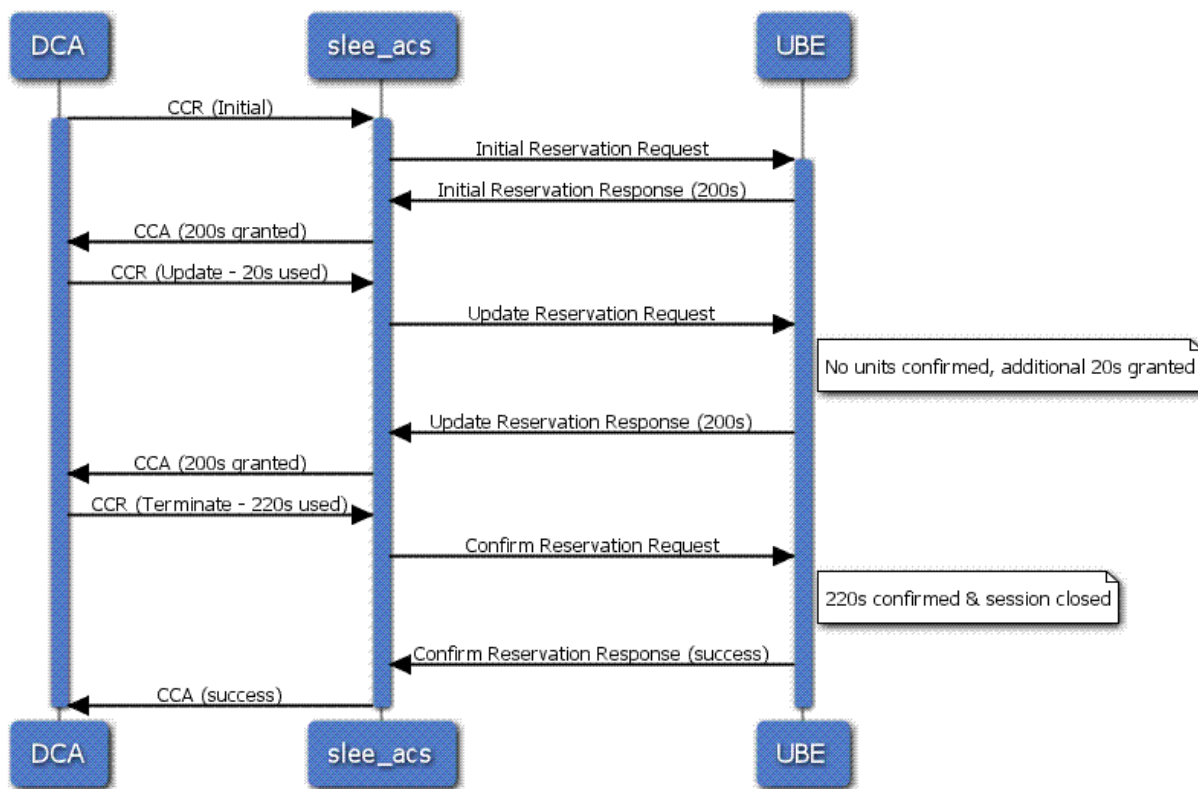
The requested reservation chunk ensures that the reservation returned from the UBE is always rounded to the full size. If it is set and a subsequent reservation request is received that uses less than the granted reservation size, the UBE reserves the amount used to grant a full-sized reservation in response.

Parameters

This message flow assumes the following configuration:

Field	Screen/Panel	Value
Requested Reservation Chunk	Reservation Config	200
Hold Reservation Open	Reservation Config	300
Commit Volume Threshold	Reservation Config	(disabled)

Message Flow



Commit Volume Threshold Set

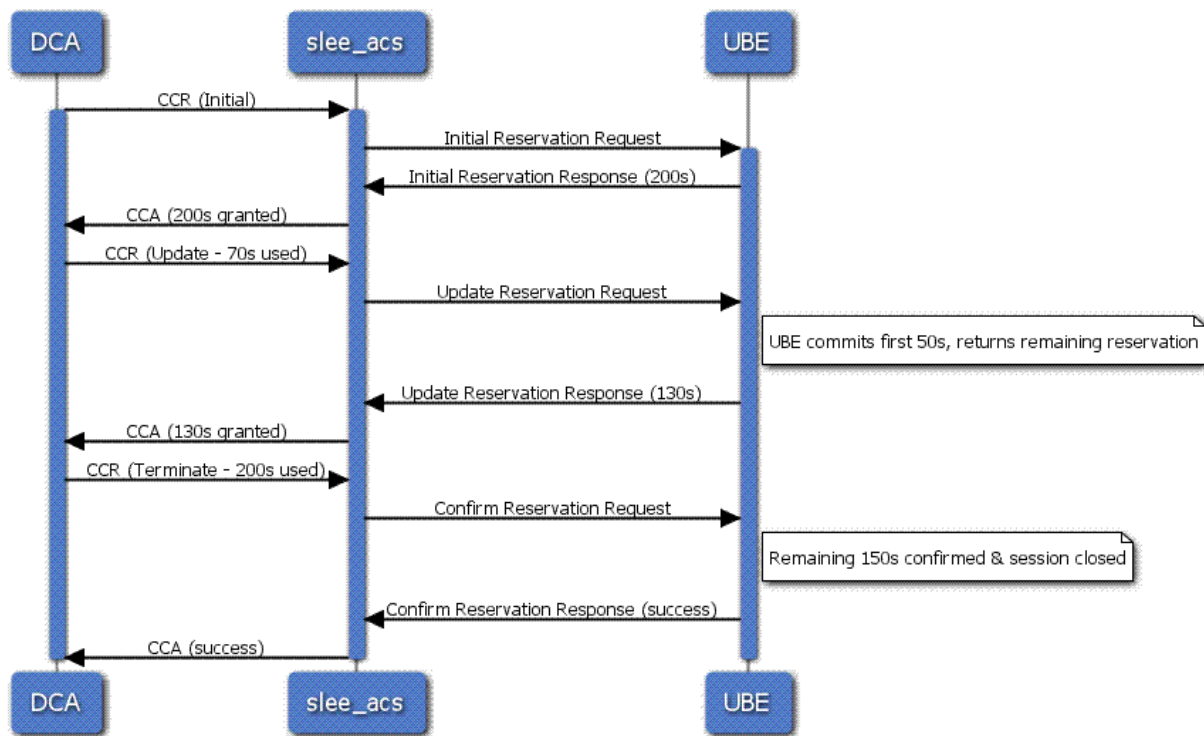
This example shows the flow when the Commit Volume Threshold is set.

Parameters

This message flow assumes the following configuration:

Field	Screen/Panel	Value
Requested Reservation Chunk	Reservation Config	(empty)
Hold Reservation Open	Reservation Config	300
Commit Volume Threshold	Reservation Config	50

Message Flow



Request Time Threshold Not Set

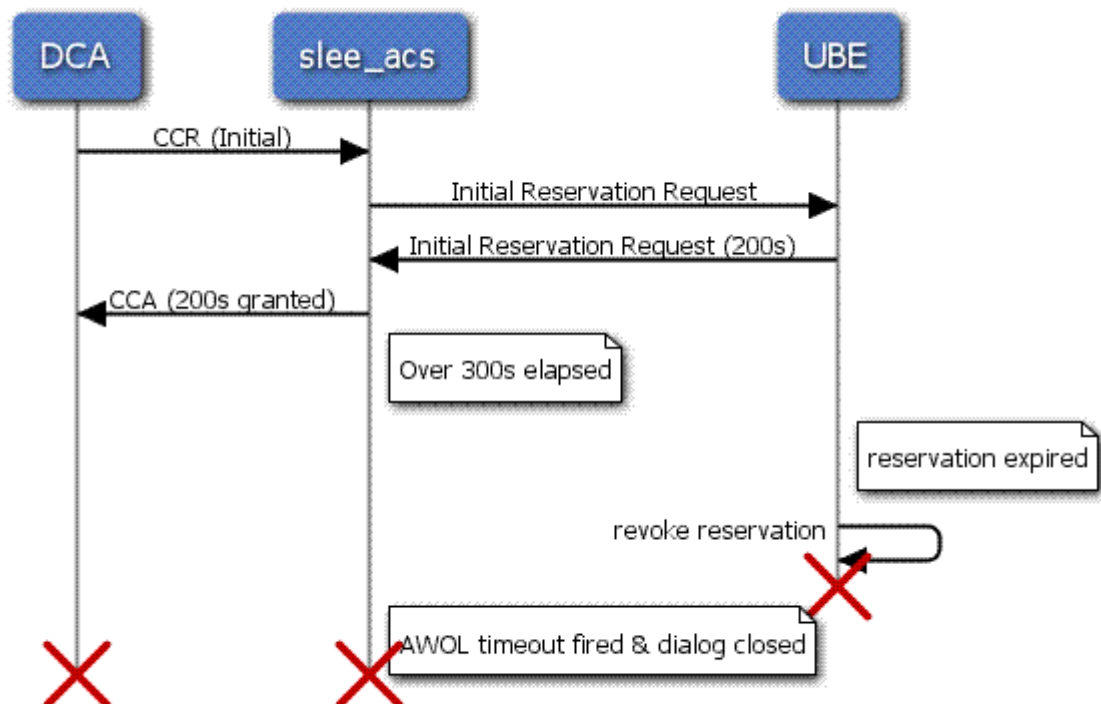
This example shows the flow when the request time threshold is not set.

Parameters

This message flow assumes the following configuration:

Field	Screen/Panel	Value
Request Time Threshold	Reservation Config	not set
Hold Reservation Open	Reservation Config	300
Charge on Timeout	Reservation Config	not set

Message Flow



Request Time Threshold Set

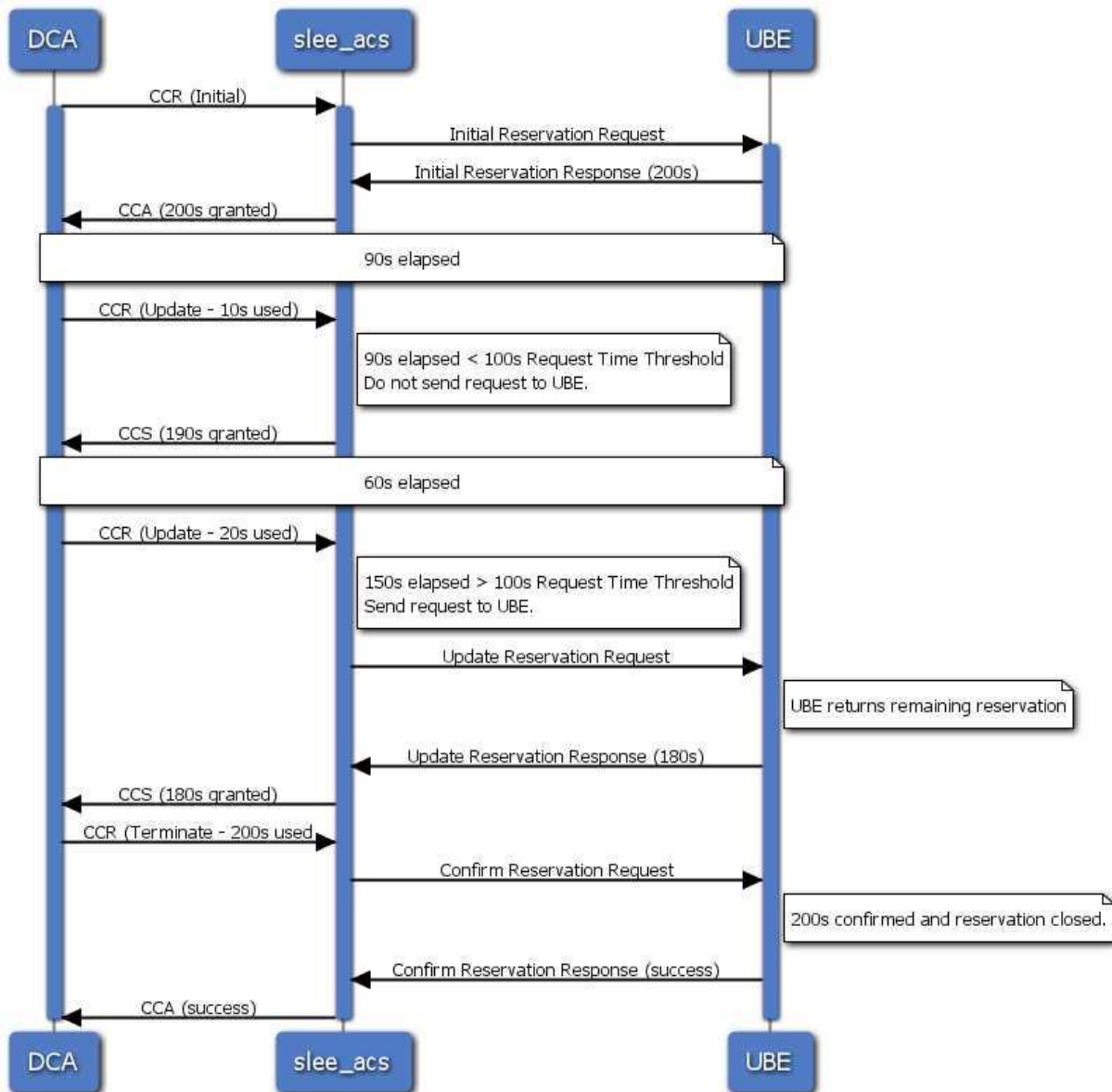
This example shows the flow when the request time threshold is set.

Parameters

This message flow assumes the following configuration:

Field	Screen/Panel	Value
Request Time Threshold	Reservation Config	1000 deci-seconds
Hold Reservation Open	Reservation Config	300
Charge on Timeout	Reservation Config	not set

Message Flow



Glossary of Terms

ANI

Automatic Number Identification - Term used in the USA by long-distance carriers for CLI.

CCS

- 1) Charging Control Services component.
- 2) Common Channel Signalling. A signalling system used in telephone networks that separates signalling information from user data.

CLI

Calling Line Identification - the telephone number of the caller. Also referred to as ANI.

Index

A

About This Document • v
ANI • 9
Audience • v

C

CCS • 9
CCS Message Flows • 1
CLI • 9
Commit Volume Threshold Set • 1, 6
Copyright • ii

D

Data Session Charging Behavior • 1
Document Conventions • vi

M

Message Flow • 2, 3, 4, 5, 6, 7, 8

O

Overview • 1

P

Parameters • 2, 3, 4, 5, 6, 7, 8
Prerequisites • v

R

Related Documents • v
Request Time Threshold Not Set • 1, 7
Request Time Threshold Set • 1, 8
Requested Reservation Chunk Not Set • 1, 4
Requested Reservation Chunk Set • 1, 5

S

Scope • v

T

Timeout with Update Reservation Confirmed •
1, 3
Timeout with Update Reservation Revoked • 1,
2
Typographical Conventions • vi