Oracle® Communications Offline Mediation Controller

SGSN06 Cartridge Pack User Guide

Release 6.0

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Oracle Communications Offline Mediation Controller SGSN06 Cartridge Pack User Guide, Release 6.0

E39481-01

Contents

Preface

This document contains guidelines for installing and setting up Oracle Communications Offline Mediation Controller SGSN06 cartridge pack.

Audience

This document is intended for solution designers who configure Offline Mediation Controller cartridges.

Accessing Oracle Communications Documentation

Offline Mediation Controller documentation is available from Oracle Help Center:

http://docs.oracle.com

Additional Oracle Communications documentation is available from the Oracle software delivery Web site:

https://edelivery.oracle.com

Related Documents

For more information, see the following documents:

- *Offline Mediation Controller Cartridge Development Kit Developer's Guide*: For information about how to develop a cartridge.
- *Offline Mediation Controller Cartridge Development Kit NPL Reference Guide*: For information about how to use the Node Programming Language for developing or extending a cartridge.
- *Offline Mediation Controller System Administrator's Guide*: For administrating Oracle Communications Offline Mediation Controller.

Documentation Accessibility

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About this Guide

This chapter contains an overview about Oracle Communications Offline Mediation Controller cartridges.

The scope of this guide includes Offline Mediation Controller as it pertains to the use of this cartridge pack. It is not intended to be a complete Offline Mediation Controller reference guide.

About the Cartridges

Offline Mediation Controller cartridge packs are discrete software components that are developed for the Offline Mediation Controller product. An Offline Mediation Controller cartridge pack offers specific domain behavior on top of the core Offline Mediation Controller software.

An Offline Mediation Controller cartridge pack is not a standalone component; it operates in conjunction with the Offline Mediation Controller core product. Offline Mediation Controller cartridge packs offer the following benefits:

- **Reduced time to market**: Time to market of new services is reduced through simplified development, implementation, and extension of cartridges on customer sites.
- **Extendable**: Cartridges can be extended to include additional services and components that deliver business value, without requiring changes to the original cartridge.
- **Simplified effort**: The effort and technical knowledge that is required to perform customizations is reduced.
- **Ease of installation**: Cartridges can be installed into an Offline Mediation Controller environment without interfering with the existing install base.

> **Note:** Cartridges are designed for a specific technology, software load, and service.

For more information on creating and extending a cartridge, refer to the following documents:

- *Offline Mediation Controller Cartridge Development Kit Developer's Guide*: For information on how to develop a cartridge.
- *Offline Mediation Controller Cartridge Development Kit NPL Reference Guide*: For information on how to use the Node Programming Language for developing or extending a cartridge.

Cartridge Pack Content

An Offline Mediation Controller cartridge contains the following:

- **JAR file**: Contains the cartridge software.
- **Cartridge Pack User Guide**: Contains a description of cartridge pack functionality and installation and configuration instructions.

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Cartridge Pack Overview

This chapter contains an overview of Oracle Communications Offline Mediation Controller SGSN06 cartridge pack.

The SGSN06 cartridge pack supports 3GPP TS 32.298 V6.4.1, 3GPP TS 32.298 7.3.0, and 3GPP TS 32.298 V10.5.0 for SGSN call data records (CDR).

This cartridge pack comprises the following cartridges:

- GTP Prime Collection Cartridge (CC)
- 3GPP Parsing Enhancement Processor (EP)
- Session Aggregation Processor (AP)
- 3GPP ASN.1 Distribution Cartridge (DC).

New Features

This section lists the new features.

SGSN06 6.0.0

This cartridge pack now works with Oracle Communications Offline Mediation Controller 6.0.

The following features were added:

- New SGSN CDR fields based on 3GPP TS 32.251.
- Support for 3GPP TS 32.298 V10.5.0 for ASN.1 definition.
- Version hiding support for V10.5.0 to 7.3.0 and V10.5.0 to V6.4.1.

SGSN06 1.0.4

The following features were added in the 1.0.4 version of the cartridge pack:

- Support for 3GPP TS 32.298 V7.3.0 for SGSN call data records.
- Version hiding support for V7.3.0 to V6.4.1, and V7.3.0 to V3.6.0.

SGSN06 1.0.3

The following feature was added in the 1.0.3 version of the cartridge pack:

- Previously, when the EP Parsing node encountered a bad record, it displayed an error message and failed to process the subsequent good records. The good records were processed only after the node was restarted. The EP Parsing node

now continues to process the subsequent good records when the node encounters a bad record.

SGSN06 1.0.2

The following feature was added in the 1.0.2 version of the cartridge pack:

- Version hiding support for V6.4.1 to V3.6.0, V6.4.1 to V3.2.0, and V3.6.0 to V3.2.0.

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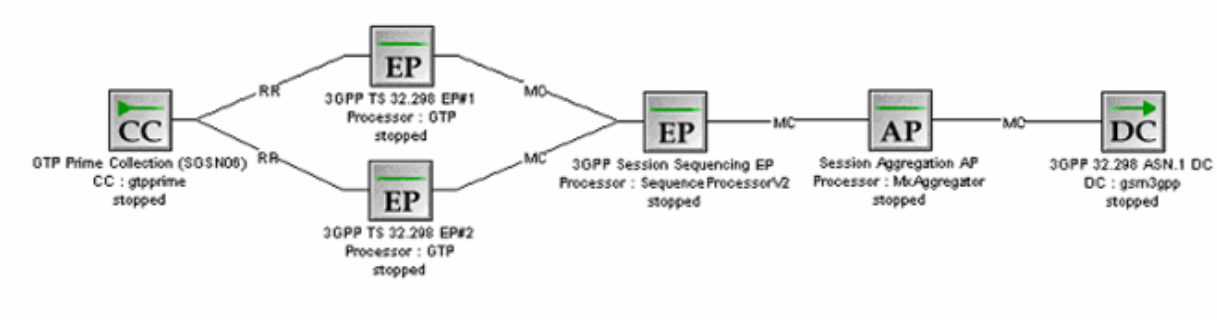
Architecture

This chapter contains an overview of Oracle Communications Offline Mediation Controller SGSN06 architecture.

Figure 3–1 displays the architecture of the solution.

Figure 3–1 Architecture



Note: The capability to create the 3GPP Session Sequencing EP is available in the core Offline Mediation Controller product.

Alarms

All Offline Mediation Controller alarms are listed in the **alarms.txt** file located in the *OMC_Home* directory (*OMC_Home* is the directory in which you installed Offline Mediation Controller). No new alarms are introduced in this cartridge pack.

Version Hiding

Version hiding is supported for:

- V10.5.0 to V7.3.0
- V10.5.0 to V6.4.1
- V7.3.0 to V6.4.1
- V7.3.0 to V3.6.0
- V6.4.1 to V3.6.0
- V6.4.1 to V3.2.0
- V3.6.0 to V3.2.0

S-GW Record

Table 3–1 lists the S-GW record versions and the compatibility.

Table 3–1 S-GW Record Versions and Compatibility

Version	Changes
v10.5.0	Supported.
v7.3.0	Not supported. Record will be ignored and message logged in log.
v6.4.1	Not supported. Record will be ignored and message logged in log.

P-GW Record

Table 3–2 lists the P-GW record versions and the compatibility.

Table 3–2 P-GW Record Version and Compatibility

Version	Changes
v10.5.0	Supported.
v7.3.0	Not supported. Record will be ignored and message logged in log.
v6.4.1	Not supported. Record will be ignored and message logged in log.

AFChargingIdentifier Field

Definition

Table 3–3 lists the definitions for the AFCharginIdentifier field versions.

Table 3–3 AFChargingIdentifier Field Versions

Version	Definition
v10.5	`OCTECT STRING` `{`
v7.3.0	`OCTECT STRING`
v6.4.1	`Not Present`

Version Hiding

Table 3–4 lists the versions that support version hiding.

Table 3–4 AFChargingIdentifier Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	The field is not present in 7.3.0 definition supported Out of Box.	The field will be omitted from the output record.
10.5 to 6.4.1	The field is not present in the specification.	The field will be omitted from the output record.

AFRecordInformation Field

Definition

Table 3–5 lists the definitions for the AFRecordInformation field versions.

Table 3–5 AFRecordInformation Field Versions

Version	Definition
v10.5	SEQUENCE aFChargingIdentifier [1] AFChargingIdentifier, flows [2] Flows OPTIONAL }

Version Hiding

Table 3–6 lists the versions that support version hiding.

Table 3–6 AFRecordInformation Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	The field is not present in 7.3.0 definition supported Out of Box.	The field will be omitted from the output record.
10.5 to 6.4.1	The field is not present in the specification.	The field will be omitted from the output record.

MSNetworkCapability Field

Definition

Table 3–7 lists the definitions for MSNetworkCapability field versions.

Table 3–7 MSNetworkCapability Field Versions

Version	Definition
V7.3.0	MSNetworkCapability ::= OCTET STRING (SIZE(1..8))-- See 3G TS 24.008
V6.4.1	MSNetworkCapability ::= OCTET STRING (SIZE(1..8))-- See 3G TS 24.008
V3.6.0	MSNetworkCapability ::= OCTET STRING (SIZE(1))
V3.2.0	MSNetworkCapability ::= OCTET STRING (SIZE(1))

Version Hiding

Table 3–8 lists the versions that support version hiding.

Table 3–8 MSNetworkCapability Field Version Hiding

Version hiding	Changed fields	Changes
7.3.0 to 6.4.1	None.	No changes.
7.3.0 to 3.6.0	The size of field is 8 octets in 7.3.0.	Only Octet 1 will be kept.
6.4.1 to 3.6.0	The size of field is 8 octets in 6.4.1.	Only Octet 1 will be kept.
6.4.1 to 3.2.0	The size of field is 8 octets in 6.4.1.	Only Octet 1 will be kept.

CauseForRecClosing Field

Definition

Table 3–9 lists the definitions for CauseForRecClosing field versions.

Table 3–9 CauseForRecClosing Field Versions

Version	Definition
v10.5	CauseForRecClosing ::= INTEGER normalRelease (0), abnormalRelease (4), cAMELInitCallRelease (5), volumeLimit (16), timeLimit (17), servingNodeChange (18), maxChangeCond (19), managementIntervention (20), intraSGSNIntersystemChange (21), rATChange (22), mSTimeZoneChange (23), sGSNPLMNIDChange (24), unauthorizedRequestingNetwork (52), unauthorizedLCSClient (53), positionMethodFailure (54), unknownOrUnreachableLCSClient (58), listofDownstreamNodeChange (59) }

Table 3–9 (Cont.) CauseForRecClosing Field Versions

Version	Definition

V7.3.0	CauseForRecClosing ::= INTEGER
	{
	normalRelease (0),
	abnormalRelease (4),
	cAMELInitCallRelease (5),
	volumeLimit (16),
	timeLimit (17),
	sGSNChange (18),
	maxChangeCond (19),
	managementIntervention (20),
	intraSGSNIntersystemChange (21),
	rATChange (22),
	mSTimeZoneChange (23),
	unauthorizedRequestingNetwork (52),
	unauthorizedLCSClient (53),
	positionMethodFailure (54),
	unknownOrUnreachableLCSClient (58),
	listofDownstreamNodeChange (59)
	}

V6.4.1	CauseForRecClosing ::= INTEGER
	{
	normalRelease (0),
	abnormalRelease (4),
	cAMELInitCallRelease (5),
	volumeLimit (16),
	timeLimit (17),
	sGSNChange (18),
	maxChangeCond (19),
	managementIntervention (20),
	intraSGSNIntersystemChange (21),
	rATChange (22),
	mSTimeZoneChange (23),
	unauthorizedRequestingNetwork (52),
	unauthorizedLCSClient (53),
	positionMethodFailure (54),
	unknownOrUnreachableLCSClient (58),
	listofDownstreamNodeChange (59)
	}

Table 3–9 (Cont.) CauseForRecClosing Field Versions

Version	Definition

V3.6.0	CauseForRecClosing ::= INTEGER
	{
	normalRelease (0),
	abnormalRelease (4),
	cAMELInitCallRelease (5),
	volumeLimit (16),
	timeLimit (17),
	sGSNChange (18),
	maxChangeCond (19),
	managementIntervention (20)
	}

V3.2.0	CauseForRecClosing ::= INTEGER
	{
	normalRelease (0),
	abnormalRelease (4),
	cAMELInitCallRelease (5),
	volumeLimit (16),
	timeLimit (17),
	sGSNChange (18),
	maxChangeCond (19),
	managementIntervention (20)
	}

Version Hiding

Table 3–10 lists the versions that support version hiding.

Table 3–10 CauseForRecClosing Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	New Values added in 10.5.	Do nothing. The new value defined in V10.5 will be output in V7.3.0.
10.5 to 6.4.1	New Values added in 10.5.	Do nothing. The new value defined in V10.5 will be output in V6.4.1.
7.3.0 to 6.4.1	None.	No changes.
7.3.0 to 3.6.0	None.	Do nothing. The new value defined in V7.3.0 will be output in V3.6.0.

Table 3–10 (Cont.) CauseForRecClosing Field Version Hiding

Version hiding	Changed fields	Changes
6.4.1 to 3.6.0	Do nothing. The new value defined in V6.4.1 will be output in V3.6.0.	N/A
6.4.1 to 3.2.0	Do nothing. The new value defined in V6.4.1 will be output in V3.2.0.	N/A

ChangeCondition Field

Definition

Table 3–11 lists the definitions for ChangeCondition field versions.

Table 3–11 ChangeCondition Field Versions

Version	Definition

v10.5	ChangeCondition ::= ENUMERATED
	{
	qoSChange
	(0),
	tariffTime
	(1),
	recordClosure
	(2),
	cGI-SAICHange
	(6), -- bearer modification. "CGI-SAI Change"
	rAIChange
	(7), -- bearer modification. "RAI Change"
	dT-Establishment
	(8),
	dT-Removal
	(9),
	eCGIChange
	(10), -- bearer modification. "ECGI Change"
	tAIChange
	(11), -- bearer modification. "TAI Change"
	userLocationChange
	(12), -- bearer modification. "User Location Change"
	}

Table 3–11 (Cont.) ChangeCondition Field Versions

Version	Definition

V7.3.0	ChangeCondition ::= ENUMERATED
	{
	--
	-- Failure Handling values used in eGCDR only
	--
	qoSChange (0),
	tariffTime (1),
	recordClosure (2),
	failureHandlingContinueOngoing (3),
	failureHandlingRetryandTerminateOngoing (4),
	failureHandlingTerminateOngoing (5),
	cGI-SAICHange (6),
	rAIChange (7),
	dT-Establishment (8),
	dT-Removal (9)
	}

v6.4.1	ChangeCondition ::= ENUMERATED
	{
	--
	-- Failure Handling values used in eGCDR only
	--
	qoSChange (0),
	tariffTime (1),
	recordClosure (2),
	failureHandlingContinueOngoing (3),
	failureHandlingRetryandTerminateOngoing (4),
	failureHandlingTerminateOngoing (5)
	}

Version Hiding

Table 3–12 lists the versions that support version hiding.

Table 3–12 ChangeCondition Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	New Values added in 10.5.	Do nothing. The new value defined in V10.5 will be output in V7.3.0.
10.5 to 6.4.1	New Values added in 10.5.	Do nothing. The new value defined in V10.5 will be output in V6.4.1.

ChangeOfCharCondition Field

Definition

Table 3–13 lists the definitions for ChangeOfCharCondition field versions.

Table 3–13 ChangeOfCharCondition Field Versions

Version	Definition

v10.5	ChangeOfCharCondition ::= SEQUENCE
	{
	qosRequested
	[1] QoSInformation OPTIONAL,
	qosNegotiated
	[2] QoSInformation OPTIONAL,
	dataVolumeGPRSUplink
	[3] DataVolumeGPRS OPTIONAL,
	dataVolumeGPRSDownlink
	[4] DataVolumeGPRS OPTIONAL,
	changeCondition
	[5] ChangeCondition,
	changeTime
	[6] TimeStamp,
	userLocationInformation
	[8] OCTET STRING OPTIONAL,
	ePCQoSInformation
	[9] EPCQoSInformation OPTIONAL
	}

V7.3.0	ChangeOfCharCondition ::= SEQUENCE
	{
	qosRequested
	[1] QoSInformation OPTIONAL,
	qosNegotiated
	[2] QoSInformation OPTIONAL,
	dataVolumeGPRSUplink
	[3] DataVolumeGPRS OPTIONAL,
	dataVolumeGPRSDownlink
	[4] DataVolumeGPRS OPTIONAL,
	changeCondition
	[5] ChangeCondition,
	changeTime
	[6] TimeStamp,
	failureHandlingContinue
	[7] FailureHandlingContinue OPTIONAL,
	userLocationInformation
	[8] OCTET STRING OPTIONAL
	}

Table 3–13 (Cont.) ChangeOfCharCondition Field Versions

Version	Definition

v6.4.1	ChangeOfCharCondition ::= SEQUENCE
	{
	qosRequested
	[1] QoSInformation OPTIONAL,
	qosNegotiated
	[2] QoSInformation OPTIONAL,
	dataVolumeGPRSUplink
	[3] DataVolumeGPRS,
	dataVolumeGPRSDownlink
	[4] DataVolumeGPRS,
	changeCondition
	[5] ChangeCondition,
	changeTime
	[6] TimeStamp
	}

Version Hiding

Table 3–14 lists the versions that support version hiding.

Table 3–14 ChangeOfCharCondition Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	New Values added in 10.5.	Do nothing. The new value defined in V10.5 will be output in V7.3.0.
10.5 to 6.4.1	New Values added in 10.5.	Do nothing. The new value defined in V10.5 will be output in V6.4.1.

ChangeOfServiceCondition Field

Definition

Table 3–15 lists the definitions for ChangeOfServiceCondition field versions.

Table 3–15 ChangeOfServiceCondition Field Versions

Version	Definition

v10.5	ChangeOfServiceCondition ::= SEQUENCE
	{
	ratingGroup
	[1] RatingGroupId,
	chargingRuleBaseName
	[2] ChargingRuleBaseName OPTIONAL,
	resultCode
	[3] ResultCode OPTIONAL,
	localSequenceNumber
	[4] LocalSequenceNumber OPTIONAL,
	timeOfFirstUsage
	[5] TimeStamp OPTIONAL,
	timeOfLastUsage
	[6] TimeStamp OPTIONAL,
	timeUsage
	[7] CallDuration OPTIONAL,
	serviceConditionChange
	[8] ServiceConditionChange,
	qoSInformationNeg
	[9] EPCQoSInformation OPTIONAL,
	servingNodeAddress
	[10] GSNAddress OPTIONAL,
	datavolumeFBCUplink
	[12] DataVolumeGPRS OPTIONAL,
	datavolumeFBCDownlink
	[13] DataVolumeGPRS OPTIONAL,
	timeOfReport
	[14] TimeStamp,
	failureHandlingContinue
	[16] FailureHandlingContinue OPTIONAL,
	serviceIdentifier
	[17] ServiceIdentifier OPTIONAL,
	pSFurnishChargingInformation
	[18] PSFurnishChargingInformation OPTIONAL,
	aFRecordInformation
	[19] SEQUENCE OF AFRecordInformation OPTIONAL,
	userLocationInformation
	[20] OCTER STRING OPTIONAL,
	eventBasedChargingInformation
	[21] EventBasedChargingInformation OPTIONAL,
	timeQuotaMechanism
	[22] TimeQuotaMechanism OPTIONAL,
	serviceSpecificInfo
	[23] SEQUENCE OF ServiceSpecificInfo OPTIONAL,
	threeGPP2UserLocationInformation
	[24] OCTET STRING OPTIONAL
	}

Table 3–15 (Cont.) ChangeOfServiceCondition Field Versions

Version	Definition

V7.3.0	ChangeOfServiceCondition ::= SEQUENCE
	{
	ratingGroup
	[1] RatingGroupId,
	chargingRuleBaseName
	[2] ChargingRuleBaseName OPTIONAL,
	resultCode
	[3] ResultCode OPTIONAL,
	localSequenceNumber
	[4] LocalSequenceNumber OPTIONAL,
	timeOfFirstUsage
	[5] TimeStamp OPTIONAL,
	timeOfLastUsage
	[6] TimeStamp OPTIONAL,
	timeUsage
	[7] CallDuration OPTIONAL,
	serviceConditionChange
	[8] ServiceConditionChange,
	qoSInformationNeg
	[9] QoSInformation OPTIONAL,
	sgsn-Address
	[10] GSNAddress OPTIONAL,
	sGSNPLMNIdentifier
	[11] SGSNPLMNIdentifier OPTIONAL,
	datavolumeFBCUplink
	[12] DataVolumeGPRS OPTIONAL,
	datavolumeFBCDownlink
	[13] DataVolumeGPRS OPTIONAL,
	timeOfReport
	[14] TimeStamp,
	rATType
	[15] RATType OPTIONAL,
	failureHandlingContinue
	[16] FailureHandlingContinue OPTIONAL,
	serviceIdentifier
	[17] ServiceIdentifier OPTIONAL,
	pSFurnishChargingInformation
	[18] PSFurnishChargingInformation OPTIONAL,
	aFRecordInformation
	[19] SEQUENCE OF AFRecordInformation OPTIONAL,
	userLocationInformation
	[20] OCTER STRING OPTIONAL,
	eventBasedChargingInformation
	[21] EventBasedChargingInformation OPTIONAL,
	timeQuotaMechanism
	[22] TimeQuotaMechanism OPTIONAL
	}

Table 3–15 (Cont.) ChangeOfServiceCondition Field Versions

Version	Definition

v6.4.1	ChangeOfServiceCondition ::= SEQUENCE
	{
	ratingGroup [1]
	RatingGroupId,
	chargingRuleBaseName
	[2] ChargingRuleBaseName OPTIONAL,
	resultCode
	[3] ResultCode OPTIONAL,
	localSequenceNumber
	[4] LocalSequenceNumber OPTIONAL,
	timeOfFirstUsage
	[5] TimeStamp OPTIONAL,
	timeOfLastUsage
	[6] TimeStamp OPTIONAL,
	timeUsage
	[7] CallDuration OPTIONAL,
	serviceConditionChange
	[8] ServiceConditionChange,
	qoSInformationNeg
	[9] QoSInformation OPTIONAL,
	sgsn-Address
	[10] GSNAddress OPTIONAL,
	sGSNPLMNIdentifier
	[11] SGSNPLMNIdentifier OPTIONAL,
	datavolumeFBCUplink
	[12] DataVolumeGPRS OPTIONAL,
	datavolumeFBCDownlink
	[13] DataVolumeGPRS OPTIONAL,
	timeOfReport
	[14] TimeStamp,
	rATType
	[15] RATType OPTIONAL,
	failureHandlingContinue
	[16] FailureHandlingContinue OPTIONAL,
	serviceIdentifier
	[17] ServiceIdentifier OPTIONAL,
	pSFurnishChargingInformation
	[18] PSFurnishChargingInformation OPTIONAL
	}

Version Hiding

Table 3–16 lists the versions that support version hiding.

Table 3–16 ChangeOfServiceCondition Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	New Values added in 10.5.	Do nothing. The new value defined in V10.5 will be output in V7.3.0.
10.5 to 6.4.1	New Values added in 10.5.	Do nothing. The new value defined in V10.5 will be output in V6.4.1.

CSGAccessMode Field

Definition

Table 3–17 lists the definitions for CSGAccessMode field versions.

Table 3–17 CSGAccessMode Field Versions

Version	Definition

v10.5	CSGAccessMode ::= ENUMERATED
	{
	ClosedMode (0),
	HybridMode (1)
	}

V7.3.0	Not Present Bit 0-3: Profile Index
v6.4.1	Not Present

Version Hiding

Table 3–18 lists the versions that support version hiding.

Table 3–18 CSGAccessMode Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	The field is not present in 7.3.0 definition.	The field will be omitted from the output record.
10.5 to 6.4.1	The field is not present in the 6.4.1 definition.	The field will be omitted from the output record.

CSGId Field

Definition

Table 3–19 lists the definitions for CSGId field versions.

Table 3–19 CSGId Field Versions

Version	Definition
v10.5	CSGId ::= OCTET STRING (SIZE(4))
V7.3.0	OCTECT STRING
v6.4.1	Not Present

Version Hiding

Table 3–20 lists the versions that support version hiding.

Table 3–20 CSGId Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	The field is not present in 7.3.0 definition.	The field will be omitted from the output record.
10.5 to 6.4.1	The field is not present in 6.4.1 definition.	The field will be omitted from the output record.

ChargingCharacteristics Field

Definition

Table 3–21 lists the definitions for ChargingCharacteristics field versions.

Table 3–21 ChargingCharacteristics Field Versions

Version	Definition
V7.3.0	`ChargingCharacteristics ::= OCTET STRING (SIZE(2))` `Bit 4-15: For Behavior`

V6.4.1	`ChargingCharacteristics ::= OCTET STRING (SIZE(2))`
	`Bit 0-3: Profile Index`
	`Bit 4-15: For Behavior`

V3.6.0	`ChargingCharacteristics ::= OCTET STRING (SIZE(2))`
	`Descriptions for the bits of the flag set:`
	`Bit 1: H (Hot billing) := '00000001'B`
	`Bit 2: F (Flat rate) := '00000010'B`
	`Bit 3: P (Prepaid service) := '00000100'B`
	`Bit 4: N (Normal billing) := '00001000'B`
	`Bit 5: - (Reserved, set to 0) := '00010000'B`
	`Bit 6: - (Reserved, set to 0) := '00100000'B`
	`Bit 7: - (Reserved, set to 0) := '01000000'B`
	`Bit 8: - (Reserved, set to 0) := '10000000'B`

V3.2.0	`ChargingCharacteristics ::= OCTET STRING (SIZE(1))`
	`Descriptions for the bits of the flag set:`
	`Bit 1: H (Hot billing) := '00000001'B`
	`Bit 2: F (Flat rate) := '00000010'B`
	`Bit 3: P (Prepaid service) := '00000100'B`
	`Bit 4: N (Normal billing) := '00001000'B`
	`Bit 5: - (Reserved, set to 0) := '00010000'B`
	`Bit 6: - (Reserved, set to 0) := '00100000'B`
	`Bit 7: - (Reserved, set to 0) := '01000000'B`
	`Bit 8: - (Reserved, set to 0) := '10000000'B`

Version Hiding

Table 3–22 lists the versions that support version hiding.

Table 3–22 ChargingCharacteristics Field Version Hiding

Version hiding	Changed fields	Changes
7.3.0 to 6.4.1	None.	No changes.
7.3.0 to 6.4.1	None.	No changes.

Table 3–22 (Cont.) ChargingCharacteristics Field Version Hiding

Version hiding	Changed fields	Changes
6.4.1 to 3.6.0	No change. The new values set for bits 4-15 for V6.4.1 will be output in V3.6.0. These will be ignored in V3.6.0.	
6.4.1 to 3.2.0	Only Octet 1 will be kept and output in V3.2.0.	

EventBasedChargingInformation Field

Definition

Table 3–23 lists the definitions for EventBasedChargingInformation field versions.

Table 3–23 EventBasedChargingInformation Field Versions

Version	Definition

v10.5	`EventBasedChargingInformation ::= SEQUENCE`
	`{`
	`numberOfEvents [1] INTEGER,`
	`eventTimeStamps [2] SEQUENCE OF TimeStamp OPTIONAL`
	`}`

V7.3.0	`EventBasedChargingInformation ::= SEQUENCE`
	`{`
	`numberOfEvents [1] INTEGER,`
	`eventTimeStamps [2] SEQUENCE OF TimeStamp OPTIONAL`
	`}`

v6.4.1	`Not Present` `--`

Version Hiding

Table 3–24 lists the versions that support version hiding.

Table 3–24 EventBasedChargingInformation Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	No Change	Do nothing. The new value defined in V10.5 will be output in V7.3.0.
10.5 to 6.4.1	The field is not present in the definition.	The field will be omitted from the output record.

EPCQoSInformation Field

Definition

Table 3–25 lists the definitions for EPCQoSInformation field versions.

Table 3–25 EPCQoSInformation Field Versions

Version	Definition

v10.5	EPCQoSInformation ::= SEQUENCE
	-- See TS 29.212 [220] for more information
	--
	{
	qCI
	[1] INTEGER,
	maxRequestedBandwithUL
	[2] INTEGER OPTIONAL,
	maxRequestedBandwithDL
	[3] INTEGER OPTIONAL,
	guaranteedBitrateUL
	[4] INTEGER OPTIONAL,
	guaranteedBitrateDL
	[5] INTEGER OPTIONAL,
	aRP
	[6] INTEGER OPTIONAL,
	aPNAggregateMaxBitrateUL [7]
	INTEGER OPTIONAL,
	aPNAggregateMaxBitrateDL [8]
	INTEGER OPTIONAL
	}

V7.3.0	Not Present {
v6.4.1	Not Present

Version Hiding

Table 3–26 lists the versions that support version hiding.

Table 3–26 EPCQoSInformation Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	The field is not present in 7.3.0 definition.	The field will be omitted from the output record.
10.5 to 6.4.1	The field is not present in 6.4.1 definition.	The field will be omitted from the output record.

QoSInformation Field

Definition

Table 3–27 lists the definitions for QoSInformation field versions.

Table 3–27 QoSInformation Field Versions

Version	Definition
V10.5	QoSInformation ::= OCTET STRING (SIZE (4..255))
V7.3.0	QoSInformation ::= OCTET STRING (SIZE (4..15))

Table 3–27 (Cont.) QoSInformation Field Versions

Version	Definition
V6.4.1	`QoSInformation ::= OCTET STRING (SIZE (4..15))`

Version Hiding

Table 3–28 lists the versions that support version hiding.

Table 3–28 QoSInformation Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	The max size of field is 255 in 10.5 and 15 in 7.3.0.	Only upto 15 octets will be kept.
10.5 to 6.4.1	The max size of field is 255 in 10.5 and 15 in 6.4.1.	Only upto 15 octets will be kept.

ListOfTrafficVolumes Field

Definition

Table 3–29 lists the definitions for ListOfTrafficVolumes field versions.

Table 3–29 ListOfTrafficVolumes Field Versions

Version	Definition

V7.3.0	`ChangeOfCharCondition ::= SEQUENCE`
	`Used in PDP context record only`
	`qosRequested [1] QoSInformation OPTIONAL,`
	`qosNegotiated [2] QoSInformation OPTIONAL,`
	`dataVolumeGPRSUplink [3] DataVolumeGPRSOPTIONAL,`
	`dataVolumeGPRSDownlink [4] DataVolumeGPRS OPTIONAL,`
	`changeCondition [5] ChangeCondition,`
	`changeTime [6] TimeStamp,`
	`failureHandlingContinue [7] FailureHandlingContinue OPTIONAL,`
	`userLocationInformation [8] OCTET STRING OPTIONAL`
	`}`
	`ChangeCondition ::= ENUMERATED`
	
	`{`
	`Failure Handling values used in eGCDR only`
	`qoSChange (0),`
	`tariffTime (1),`
	`recordClosure (2),`
	`failureHandlingContinueOngoing (3),`
	`failureHandlingRetryandTerminateOngoing(4),`
	`failureHandlingTerminateOngoing (5),`
	`cGI-SAICHange (6),`
	`rAIChange (7),`
	`dT-Establishment (8),`
	`dT-Removal (9)`
	`}`

Table 3–29 (Cont.) ListOfTrafficVolumes Field Versions

Version	Definition

V6.4.1	ChangeOfCharCondition ::= SEQUENCE
	{
	Used in PDP context record only
	qosRequested [1] QoSInformation OPTIONAL,
	qosNegotiated [2] QoSInformation OPTIONAL,
	dataVolumeGPRSUplink [3] DataVolumeGPRS,
	dataVolumeGPRSDownlink [4] DataVolumeGPRS,
	changeCondition [5] ChangeCondition,
	changeTime [6] TimeStamp
	}
	ChangeCondition ::= ENUMERATED
	
	{
	Failure Handling values used in eGCDR only
	qoSChange (0),
	tariffTime (1),
	recordClosure (2),
	failureHandlingContinueOngoing (3),
	failureHandlingRetryandTerminateOngoing (4),
	failureHandlingTerminateOngoing (5)
	}
	QoSInformation ::= OCTET STRING (SIZE (4..15))

Table 3–29 (Cont.) ListOfTrafficVolumes Field Versions

Version	Definition

V3.6.0	ChangeOfCharCondition ::= SEQUENCE
	Used in PDP context record only
	{
	qosRequested [1]
	QoSInformation OPTIONAL,
	qosNegotiated [2]
	QoSInformation OPTIONAL,
	dataVolumeGPRSUplink
	[3] DataVolumeGPRS,
	dataVolumeGPRSDownlink [4]
	DataVolumeGPRS,
	changeCondition
	[5] ChangeCondition,
	changeTime
	[6] TimeStamp
	}
	ChangeCondition ::= ENUMERATED
	
	{
	qoSChange (0),
	tariffTime
	(1),
	recordClosure (2)
	}
	QoSInformation ::= CHOICE
	
	{
	gsmQosInformation [0] GSMQoSInformation,
	umtsQosInformation [1]
	OCTET STRING (SIZE (12))
	}
	GSMQoSInformation ::=SEQUENCE
	
	{
	reliability [0] QoSReliability,
	delay
	[1] QoSDelay,
	precedence
	[2] QoSPrecedence,
	peakThroughput
	[3] QoSPeakThroughput,
	meanThroughput
	[4] QoSMeanThroughput
	}

Table 3–29 (Cont.) ListOfTrafficVolumes Field Versions

Version	Definition

V3.2.0	ChangeOfCharCondition ::= SEQUENCE
	Used in PDP context record only
	{
	qosRequested [1] QoSInformation OPTIONAL,
	qosNegotiated [2] QoSInformation OPTIONAL,
	dataVolumeGPRSUplink [3] DataVolumeGPRS,
	dataVolumeGPRSDownlink [4] DataVolumeGPRS,
	changeCondition [5] ChangeCondition,
	changeTime [6] TimeStamp
	}
	ChangeCondition ::= ENUMERATED
	
	{
	qoSChange (0),
	tariffTime (1),
	recordClosure (2)
	}
	QoSInformation ::= CHOICE
	
	{
	gsmQosInformation [0] GSMQoSInformation,
	umtsQosInformation [1] UMTSQoSInformation
	}
	GSMQoSInformation ::=SEQUENCE
	
	{
	reliability [0] QoSReliability,
	delay [1] QoSDelay,
	precedence [2] QoSPrecedence,
	peakThroughput [3] QoSPeakThroughput,
	meanThroughput [4] QoSMeanThroughput
	}
	UMTSQoSInformation ::=SEQUENCE
	
	{
	trafficClass [0] QoSTrafficClass,
	maxBitRateUplink [1] QoSMaxBitRate,
	maxBitRateDownlink [2] QoSMaxBitRate,
	deliveryOrder [3] QoSDeliveryOrder,
	maxSDUsize [4] QoSMaxSDUsize,
	sduErrorRatio [6] QoSSDUErrorRatio,
	residualBER [7] QoSResidualBER,
	erroneousSDUs [8] QoSErroneousSDUs,
	transferDelay [9]

Version Hiding

Table 3–30 lists the versions that support version hiding.

Table 3–30 ListOfTrafficVolumes Field Version Hiding

Version hiding	Changed fields	Changes
7.3.0 to 6.4.1	Two new values for ChangeCondition. DataVolumeGPRSUplink and dataVolumeGPRSDownlink are made optional.	For ChangeOfCharCondition: If the dataVolumeGPRSUplink or dataVolumeGPRSDownlink or both were empty, a value of '0 '(zero) would be populated. If the dataVolumeGPRSUplink or dataVolumeGPRSDownlink have any value, they will be sent as is. For ChangeCondition: Do nothing. The new value defined in V7.3.0 will be output in V6.4.1.
7.3.0 to 3.6.0	For ChangeOfCharCondition: If the dataVolumeGPRSUplink or dataVolumeGPRSDownlink or both were empty, a value of '0 '(zero) would be populated. If the dataVolumeGPRSUplink or dataVolumeGPRSDownlink have any value, they will be sent as is. For ChangeCondition: Do nothing. The new value defined in V7.3.0 will be output in V3.6.0. This is done over what has been already done from V6.4.1 to V3.6.0.	N/A

Table 3–30 (Cont.) ListOfTrafficVolumes Field Version Hiding

Version hiding	Changed fields	Changes
6.4.1 to 3.6.0	For ChangeCondition - The new values are supposed for eGCDR only. Those new values should not be presented in SCDR, MCDR, SMT, and SMO CDR. For QoSInformation: If the field value length is 4, octet 1 is Allocation/Retention Priority, octets 2 - 4 are coded according to 3GPP TS 24.008 [5] Quality of Service IE, octets 3 - 5 (i.e. according to the pre-Release '99 format). This will be converted into choice, GSMQoSInformation. If the field value length is 12, it will be converted into choice, umtsQosInformation. It will be 1:1 octet copy (input 12 octets, output is also 12 octets). If the field value length is more than 12 (less or equal to 15), it will be converted into choice, umtsQosInformation. Output value for choice umtsQosInformation will be the first 12 octets from the input.	N/A

Table 3–30 (Cont.) ListOfTrafficVolumes Field Version Hiding

Version hiding	Changed fields	Changes
6.4.1 to 3.2.0	For ChangeCondition - The new values are supposed for eGCDR only. Those new values should not be presented in SCDR, MCDR, SMT, and SMO CDR. For QoSInformation: If the field value length is 4, octet 1 is Allocation/Retention Priority, octets 2 - 4 are coded according to 3GPP TS 24.008 [5] Quality of Service IE, octets 3 - 5 (i.e. according to the pre-Release '99 format). This will be converted into choice, GSMQoSInformation. If the field value length is 12, it will be converted into choice, umtsQosInformation. It will be 1:1 octet copy (input 12 octets, output is also 12 octets). If the field value length is more than 12 (less or equal to 15), it will be converted into choice, umtsQosInformation. Output value for choice umtsQosInformation will be the first 12 octets from the input.	N/A

RATType Field

Description

Table 3–31 lists the definitions for RATType field versions.

Table 3–31 RATType Field Versions

Version	Definition
V7.3.0	`RATType ::= INTEGER (0..255)` `{`
V6.4.1	`RATType ::= INTEGER (0..255)`

Table 3–31 (Cont.) RATType Field Versions

Version	Definition

V3.6.0	This field is not defined in V3.6.0. Instead, a similar field is defined as the following:
	`SystemType ::= ENUMERATED`
	`unknown (0),`
	`iuUTRAN (1)`
	`}`

V3.2.0	This field is not defined in V3.2.0. Instead, a similar field is defined as the following:
	`SystemType ::= ENUMERATED`
	`{`
	`umtsRel99 (1)`
	`}`

Version Hiding

Table 3–32 lists the versions that support version hiding.

Table 3–32 RATType Field Version Hiding

Version hiding	Changed fields	Changes
7.3.0 to 6.4.1	None.	No changes.
7.3.0 to 3.6.0	None.	No changes.
6.4.1 to 3.6.0	If the input V6.4.1 value is not 1, it will be output as SystemType with the value 0. Otherwise, it will be output as SystemType with the value 1.	N/A
6.4.1 to 3.2.0	It will be dropped.	N/A

ChChSelectionMode Field

Definition

Table 3–33 lists the definitions for ChChSelectionMode field versions.

Table 3–33 ChChSelectionMode Field Versions

Version	Definition

V7.3.0	`ChChSelectionMode ::= ENUMERATED`
	`{`
	`sGSNSupplied (0), -- For GGSN only`
	`subscriptionSpecific (1), -- For SGSN only`
	`aPNSpecific (2), -- For SGSN only`
	`homeDefault (3), -- For SGSN and GGSN`
	`roamingDefault (4), -- For SGSN and GGSN`
	`visitingDefault (5) -- For SGSN and GGSN`
	`}`

Table 3–33 (Cont.) ChChSelectionMode Field Versions

Version	Definition

V6.4.1	`ChChSelectionMode ::= ENUMERATED`
	`{`
	`sGSNSupplied (0), -- For GGSN only`
	`subscriptionSpecific (1), -- For SGSN only`
	`aPNSpecific (2), -- For SGSN only`
	`homeDefault (3), -- For SGSN and GGSN`
	`roamingDefault (4), -- For SGSN and GGSN`
	`visitingDefault (5) -- For SGSN and GGSN`
	`}`

V3.6.0	No such field defined for SGSNPDPRecord, SGSNMMRecord, SGSNSMORecord, and SGSNSMTRecord.
V3.2.0	No such field defined for SGSNPDPRecord, SGSNMMRecord, SGSNSMORecord, and SGSNSMTRecord.

Version Hiding

Table 3–34 lists the versions that support version hiding.

Table 3–34 ChChSelectionMode Field Version Hiding

Version hiding	Changed fields	Changes
7.3.0 to 6.4.1	None.	No changes.
7.3.0 to 3.6.0	None.	No changes.
6.4.1 to 3.6.0	Field will be dropped for SGSNPDPRecord, SGSNMMRecord, SGSNSMORecord, and SGSNSMTRecord.	N/A
6.4.1 to 3.2.0	Field will be dropped for SGSNPDPRecord, SGSNMMRecord, SGSNSMORecord, and SGSNSMTRecord.	N/A

DynamicAddressFlag Field

Definition

Table 3–35 lists the definitions for DynamicAddressFlag field versions.

Table 3–35 DynamicAddressFlag Field Versions

Version	Definition
V7.3.0	`DynamicAddressFlag ::= BOOLEAN` `{`
V6.4.1	`DynamicAddressFlag ::= BOOLEAN`
V3.6.0	No such field is defined for SGSNPDPRecord, SGSNSMORecord, and SGSNSMTRecord.

Table 3–35 (Cont.) DynamicAddressFlag Field Versions

Version	Definition
V3.2.0	No such field is defined for SGSNPDPRecord, SGSNSMORecord, and SGSNSMTRecord.

Version Hiding

Table 3–36 lists the versions that support version hiding.

Table 3–36 DynamicAddressFlag Field Version Hiding

Version hiding	Changed fields	Changes
7.3.0 to 6.4.1	None.	No changes.
7.3.0 to 3.6.0	None.	No changes.
6.4.1 to 3.6.0	Field will be dropped for SGSNPDPRecord, SGSNMMRecord, SGSNSMORecord, and SGSNSMTRecord.	N/A
6.4.1 to 3.2.0	Field will be dropped for SGSNPDPRecord, SGSNMMRecord, SGSNSMORecord, and SGSNSMTRecord.	N/A

EventTimeStamp Field

Definition

Table 3–37 lists the definitions for EventTimeStamp field versions.

Table 3–37 EventTimeStamp Field Versions

Version	Definition
V7.3.0	Defined in SGSNSMORecord and SGSNSMTRecord as TimeStamp, replacing originationTime in V3.6.0 and V3.2.0.
V6.4.1	Defined in SGSNSMORecord and SGSNSMTRecord as TimeStamp, replacing originationTime in V3.6.0 and V3.2.0.
V3.6.0	No such field; instead, it has originationTime.
V3.2.0	No such field; instead, it has originationTime.

Version Hiding

Table 3–38 lists the versions that support version hiding.

Table 3–38 EventTimeStamp Field Version Hiding

Version hiding	Changed fields	Changes
7.3.0 to 6.4.1	None.	No changes.
7.3.0 to 3.6.0	None.	No changes.
6.4.1 to 3.6.0	Output it as originationTime.	N/A
6.4.1 to 3.2.0	Output it as originationTime.	N/A

CAMELInformationSMS Field

Definition

Table 3–39 lists the definitions for CAMELInformationSMS field versions.

Table 3–39 CAMELInformationSMS Field Versions

Version	Definition
V7.3.0	CAMELInformationSMS ::= SET sCFAddress [1] SCFAddress OPTIONAL, serviceKey [2] ServiceKey OPTIONAL, defaultSMSHandling [3] DefaultSMS-Handling OPTIONAL, cAMELCallingPartyNumber [4] CallingNumber OPTIONAL, cAMELDestinationSubscriberNumber [5] SmsTpDestinationNumber OPTIONAL, cAMELSMSCAddress [6] AddressString OPTIONAL, freeFormatData [7] FreeFormatData OPTIONAL, smsReferenceNumber [8] CallReferenceNumber OPTIONAL }

V6.4.1	CAMELInformationSMS ::= SET
	{
	sCFAddress [1]
	SCFAddress OPTIONAL,
	serviceKey [2]
	ServiceKey OPTIONAL,
	defaultSMSHandling [3]
	DefaultSMS-Handling OPTIONAL,
	cAMELCallingPartyNumber [4] CallingNumber
	OPTIONAL,
	cAMELDestinationSubscriberNumber [5]
	SmsTpDestinationNumber OPTIONAL,
	cAMELSMSCAddress [6]
	AddressString OPTIONAL,
	freeFormatData [7]
	FreeFormatData OPTIONAL,
	smsReferenceNumber [8]
	CallReferenceNumber OPTIONAL
	}

Table 3–39 (Cont.) CAMELInformationSMS Field Versions

Version	Definition

V3.6.0	CAMELInformationSMS ::= SET
	{
	sCFAddress [1]
	SCFAddress OPTIONAL,
	serviceKey [2]
	ServiceKey OPTIONAL,
	defaultSMSHandling [3]
	DefaultSMS-Handling OPTIONAL,
	cAMELCallingPartyNumber [4]
	CallingNumber OPTIONAL,
	cAMELDestinationSubscriberNumber [5] CalledNumber
	OPTIONAL,
	cAMELSMSCAddress [6]
	AddressString OPTIONAL,
	freeFormatData [7]
	FreeFormatData OPTIONAL
	}

V3.2.0	CAMELInformationSMS ::= SET
	{
	sCFAddress [1]
	SCFAddress OPTIONAL,
	serviceKey [2]
	ServiceKey OPTIONAL,
	defaultSMSHandling [3]
	DefaultSMS-Handling OPTIONAL,
	cAMELCallingPartyNumber [4]
	CallingNumber OPTIONAL,
	cAMELDestinationSubscriberNumber [5] CalledNumber
	OPTIONAL,
	cAMELSMSCAddress [6]
	AddressString OPTIONAL,
	freeFormatData [7]
	FreeFormatData OPTIONAL
	}

Version Hiding

Table 3–40 lists the versions that support version hiding.

Table 3–40 CAMELInformationSMS Field Version Hiding

Version hiding	Changed fields	Changes
7.3.0 to 6.4.1	None.	No changes.
7.3.0 to 3.6.0	None.	No changes.
6.4.1 to 3.6.0	Drop smsReferenceNumber.	N/A
6.4.1 to 3.2.0	Drop smsReferenceNumber.	N/A

SMSResult/Diagnostics Field

Definition

Table 3–41 lists the definitions for SMSResult/Diagnostics field versions.

Table 3–41 SMSResult/Diagnostics Field Versions

Version	Definition

V7.3.0	SMSResult ::= Diagnostics
	insufficientResources (1),
	Diagnostics ::= CHOICE
	{
	gsm0408Cause [0] INTEGER,
	-- See TS 24.008
	gsm0902MapErrorValue [1] INTEGER,
	itu-tQ767Cause [2] INTEGER,
	-- See ITU-T Q.767
	networkSpecificCause [3] ManagementExtension,
	-- To be defined by network operator
	manufacturerSpecificCause [4] ManagementExtension,
	-- To be defined by manufacturer
	positionMethodFailureCause [5]
	PositionMethodFailure-Diagnostic,
	-- See TS 29.002
	unauthorizedLCSClientCause [6]
	UnauthorizedLCSClient-Diagnostic
	-- See TS 29.002
	}
	PositionMethodFailure-Diagnostic ::= ENUMERATED {
	
	congestion (0),
	insufficientMeasurementData (2),
	inconsistentMeasurementData (3),
	locationProcedureNotCompleted (4),
	locationProcedureNotSupportedByTargetMS (5),
	qoSNotAttainable (6),
	positionMethodNotAvailableInNetwork (7),
	positionMethodNotAvailableInLocationArea (8),
	... }
	UnauthorizedLCSClient-Diagnostic ::= ENUMERATED {
	
	noAdditionalInformation (0),
	clientNotInMSPrivacyExceptionList (1),
	callToClientNotSetup (2),
	privacyOverrideNotApplicable (3),
	disallowedByLocalRegulatoryRequirements (4),
	... }

Table 3–41 (Cont.) SMSResult/Diagnostics Field Versions

Version	Definition

V6.4.1	SMSResult ::= Diagnostics
	itu-tQ767Cause [2] INTEGER,
	Diagnostics ::= CHOICE
	{
	gsm0408Cause [0] INTEGER,
	
	-- See TS 24.008
	gsm0902MapErrorValue [1] INTEGER,
	
	-- See ITU-T Q.767
	networkSpecificCause [3] ManagementExtension,
	clientNotInMSPrivacyExceptionList (1),
	manufacturerSpecificCause [4] ManagementExtension,
	
	-- To be defined by network operator
	-- To be defined by manufacturer
	positionMethodFailureCause [5]
	PositionMethodFailure-Diagnostic,
	unauthorizedLCSClientCause [6]
	UnauthorizedLCSClient-Diagnostic
	
	-- See TS 29.002
	-- See TS 29.002
	}
	PositionMethodFailure-Diagnostic ::= ENUMERATED {
	congestion (0),
	insufficientResources (1),
	insufficientMeasurementData (2),
	inconsistentMeasurementData (3),
	locationProcedureNotCompleted (4),
	locationProcedureNotSupportedByTargetMS (5),
	qoSNotAttainable (6),
	positionMethodNotAvailableInNetwork (7),
	positionMethodNotAvailableInLocationArea (8),
	... }
	UnauthorizedLCSClient-Diagnostic ::= ENUMERATED {
	
	noAdditionalInformation (0),
	callToClientNotSetup (2),
	privacyOverrideNotApplicable (3),
	disallowedByLocalRegulatoryRequirements (4),
	... }

Table 3–41 (Cont.) SMSResult/Diagnostics Field Versions

Version	Definition

V3.6.0	SMSResult ::= Diagnostics
	ccittQ767Cause [2] INTEGER,
	Diagnostics
	::= CHOICE
	{
	gsm0408Cause
	[0] INTEGER,
	
	-- See TS 24.008
	gsm0902MapErrorValue [1] INTEGER,
	
	-- See ITU-T Q.767
	networkSpecificCause [3]
	ManagementExtension,
	ccittQ767Cause [2] INTEGER,
	manufacturerSpecificCause [4]
	ManagementExtension
	
	-- To be defined by network operator
	-- To be defined by manufacturer
	}

V3.2.0	SMSResult ::= Diagnostics
	Diagnostics
	::= CHOICE
	{
	gsm0408Cause
	[0] INTEGER,
	
	-- See TS 24.008
	gsm0902MapErrorValue [1] INTEGER,
	
	-- See ITU-T Q.767
	networkSpecificCause [3]
	ManagementExtension,
	{
	manufacturerSpecificCause [4]
	ManagementExtension
	
	-- To be defined by network operator
	-- To be defined by manufacturer
	}

Version Hiding

Table 3–42 lists the versions that support version hiding.

Table 3–42 SMSResult/Diagnostics Field Version Hiding

Version hiding	Changed fields	Changes
7.3.0 to 6.4.1	None.	No changes.
7.3.0 to 3.6.0	None.	No changes.
6.4.1 to 3.6.0	If the choice is itu-tQ767Cause, translate it into ccittQ767Cause. If the choice is either positionMethodFailureCause or unauthorizedLCSClientCause, drop the field (not supported in V3.6.0). Any other choices, output it as is.	N/A

RatingGroupId Field

Definition

Table 3–43 lists the definitions for RatingGroupId field versions.

Table 3–43 RatingGroupId Field Versions

Version	Definition
V10.5	`RatingGroupId ::= INTEGER`
V7.3.0	`RatingGroup ::= INTEGER`
V6.4.1	`RatingGroup ::= INTEGER`

Version Hiding

Table 3–44 lists the versions that support version hiding.

Table 3–44 RatingGroupId Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	The field name is RatingGroup in 7.3.0.	Should be put out as RatingGroup in the record.
10.5 to 6.4.1	The field name is RatingGroup in 6.4.1.	Should be put out as RatingGroup in the record.

ServiceConditionChange Field

Definition

Table 3–45 lists the definitions for ServiceConditionChange field versions.

Table 3–45 ServiceConditionChange Field Versions

Version	Definition
V10.5	ServiceConditionChange ::= BIT STRING qoSChange (0), -- bearer modification sGSNChange (1), -- bearer modification sGSNPLMNIDChange (2), -- bearer modification tariffTimeSwitch (3), -- tariff time change pDPContextRelease (4), -- bearer release rATChange (5), -- bearer modification serviceIdledOut (6), -- IP flow idle out, DCCA QHT expiry reserved (7), -- old: QCTexpiry is no report event configurationChange (8), -- configuration change serviceStop (9), -- IP flow termination.From "Service Stop" in -- Change-Condition" AVP dCCATimeThresholdReached (10), -- DCCA quota reauthorization dCCAVolumeThresholdReached (11), -- DCCA quota reauthorization dCCAServiceSpecificUnitThresholdReached (12), -- DCCA quota reauthorization dCCATimeExhausted (13), -- DCCA quota reauthorization dCCAVolumeExhausted (14), -- DCCA quota reauthorization dCCAValidityTimeout (15), -- DCCA quota validity time (QVT expiry) reserved1 (16), -- reserved due to no use case, -- old: return Requested is covered by (17),(18) dCCAReauthorisationRequest (17), -- DCCA quota reauthorization request by OCS dCCAContinueOngoingSession (18), -- DCCA failure handling (CCFH), -- continue IP flow dCCARetryAndTerminateOngoingSession (19), -- DCCA failure handling (CCFH), -- terminate IP flow after DCCA retry dCCATerminateOngoingSession (20), -- DCCA failure handling, -- terminate IP flow cGI-SAIChange (21), -- bearer modification. "CGI-SAI Change" rAIChange (22), -- bearer modification. "RAI Change" dCCAServiceSpecificUnitExhausted (23), -- DCCA quota reauthorization recordClosure (24), -- PGW-CDR closure timeLimit

Table 3–45 (Cont.) ServiceConditionChange Field Versions

Version	Definition
V7.3.0	ServiceConditionChange ::= BIT STRING { qoSChange (0), -- PDP context modification sGSNChange (1), -- PDP context modification sGSNPLMNIDChange (2), -- PDP context modification tariffTimeSwitch (3), -- tariff time change pDPContextRelease (4), -- PDP context release rATChange (5), -- PDP context modification serviceIdledOut (6), -- IP flow idle out, DCCA QHT expiry reserved (7), -- old: QCTexpiry is no report event configurationChange (8), -- configuration change serviceStop (9), -- IP flow termination dCCATimeThresholdReached (10), -- DCCA quota reauthorization dCCAVolumeThresholdReached (11), -- DCCA quota reauthorization dCCAServiceSpecificUnitThresholdReached (12), -- DCCA quota reauthorization dCCATimeExhausted (13), -- DCCA quota reauthorization dCCAVolumeExhausted (14), -- DCCA quota reauthorization dCCAValidityTimeout (15), -- DCCA quota validity time (QVT expiry) reserved (16), -- reserved due to no use case, -- old: return Requested is covered by (17),(18) dCCAReauthorisationRequest (17), -- DCCA quota reauthorization request by OCS dCCAContinueOngoingSession (18), -- DCCA failure handling (CCFH), -- continue IP flow dCCARetryAndTerminateOngoingSession (19), -- DCCA failure handling (CCFH), -- terminate IP flow after DCCA retry dCCATerminateOngoingSession (20), -- DCCA failure handling, -- terminate IP flow cGI-SAIChange (21), -- PDP context modification rAIChange (22), -- PDP context modification dCCAServiceSpecificUnitExhausted (23), -- DCCA quota reauthorization recordClosure (24), -- eG-CDR closure timeLimit (25), -- intermediate recording volumeLimit

Table 3–45 (Cont.) ServiceConditionChange Field Versions

Version	Definition
V6.4.1	ServiceConditionChange ::= BIT STRING qoSChange (0), sGSNChange (1), sGSNPLMNIDChange (2), tariffTimeSwitch (3), pDPContextRelease (4), rATChange (5), serviceIdledOut (6), qCTExpiry (7), configurationChange (8), serviceStop (9), timeThresholdReached (10), volumeThresholdReached (11), timeExhausted (13), volumeExhausted (14), timeout (15), returnRequested (16), reauthorisationRequest (17), continueOngoingSession (18), retryAndTerminateOngoingSession (19), terminateOngoingSession (20) }

Version Hiding

Table 3–46 lists the versions that support version hiding.

Table 3–46 ServiceConditionChange Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	New bit values added in 10.5.	Bits after 28 are set to zero.
10.5 to 6.4.1	New bit values added in 10.5.	Bits after 20 are set to zero.

ServingNodeType Field

Definition

Table 3–47 lists the definitions for ServingNodeType field versions.

Table 3–47 ServingNodeType Versions

Version	Definition

V10.5	ServingNodeType ::= ENUMERATED
	{
	sGSN (0),
	pMIPSGW (1),
	gTPSGW (2),
	ePDG (3),
	hSGW (4),
	mME (5)
	}

V7.3.0	Not Present

Table 3–47 (Cont.) ServingNodeType Versions

Version	Definition
V6.4.1	`Not Present`

Version Hiding

Table 3–48 lists the versions that support version hiding.

Table 3–48 ServingNodeType Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	The field is not present in 7.3.0 definition supported Out of Box.	The field will be omitted from the output record.
10.5 to 6.4.1	The field is not present in 6.4.1 specification.	The field will be omitted from the output record.

SGWChange Field

Definition

Table 3–49 lists the definitions for SGWChange field versions.

Table 3–49 SGWChange Field Versions

Version	Definition
V10.5	`SGWChange ::= BOOLEAN`
V7.3.0	`Not Present`
V6.4.1	`Not Present`

Version Hiding

Table 3–50 lists the versions that support version hiding.

Table 3–50 SGWChange Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	The field is not present in 7.3.0 definition supported Out of Box.	The field will be omitted from the output record.
10.5 to 6.4.1	The field is not present in 6.4.1 specification.	The field will be omitted from the output record.

TimeQuotaMechanism Field

Definition

Table 3–51 lists the definitions for TimeQuotaMechanism field versions.

Table 3–51 TimeQuotaMechanism Field Versions

Version	Definition

V10.5	TimeQuotaMechanism ::= SEQUENCE
	{
	timeQuotaType
	[1] TimeQuotaType,
	baseTimeInterval
	[2] Integer
	}

V7.3.0	TimeQuotaMechanism ::= SEQUENCE
	{
	timeQuotaType
	[1] TimeQuotaType,
	baseTimeInterval
	[2] Integer
	}

V6.4.1	Not Present {

Version Hiding

Table 3–52 lists the versions that support version hiding.

Table 3–52 TimeQuotaMechanism Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	No Change	Do nothing. The new value defined in V10.5 will be output in V7.3.0.
10.5 to 6.4.1	The field is not present in 6.4.1 specification.	The field will be omitted from the output record.

TimeQuotaType Field

Definition

Table 3–53 lists the definitions for TimeQuotaType field versions.

Table 3–53 TimeQuotaType Field Versions

Version	Definition

V10.5	TimeQuotaType ::= ENUMERATED
	{
	dISCRETETIMEPERIOD
	(0),
	cONTINUOUSTIMEPERIOD
	(1)
	}

Table 3–53 (Cont.) TimeQuotaType Field Versions

Version	Definition

V7.3.0	TimeQuotaType ::= ENUMERATED
	{
	dISCRETETIMEPERIOD
	(0),
	cONTINUOUSTIMEPERIOD
	(1)
	}

V6.4.1	Not Present {

Version Hiding

Table 3–54 lists the versions that support version hiding.

Table 3–54 TimeQuotaType Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	No Change	Do nothing. The new value defined in V10.5 will be output in V7.3.0.
10.5 to 6.4.1	The field is not present in 6.4.1 specification.	The field will be omitted from the output record.

UserCSGInformation Field

Definition

Table 3–55 lists the definitions for UserCSGInformation field versions.

Table 3–55 UserCSGInformation Field Versions

Version	Definition

V10.5	UserCSGInformation ::= SEQUENCE
	{
	cSGId
	[0] CSGId,
	cSGAccessMode [1]
	CSGAccessMode,
	cSGMembershipIndication [2] NULL
	OPTIONAL
	}

V7.3.0	Not Present --
V6.4.1	Not Present

Version Hiding

Table 3–56 lists the versions that support version hiding.

Table 3–56 UserCSGInformation Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	The field is not present in 7.3.0 definition supported Out of Box.	The field will be omitted from the output record.
10.5 to 6.4.1	The field is not present in 6.4.1 specification.	The field will be omitted from the output record.

ChangeLocation Field

Definition

Table 3–57 lists the definitions for ChangeLocation field versions.

Table 3–57 ChangeLocation Field Versions

Version	Definition

V10.5	ChangeLocation ::= SEQUENCE
	-- used in SGSNMMRecord only
	--
	{
	locationAreaCode [0] LocationAreaCode,
	routingAreaCode [1] RoutingAreaCode,
	cellId [2] CellId OPTIONAL,
	changeTime [3] TimeStamp,
	mCC-MNC [4] PLMN-Id OPTIONAL
	}

V7.3.0	ChangeLocation ::= SEQUENCE
	{
	--
	-- used in SGSNMMRecord only
	--
	locationAreaCode [0] LocationAreaCode,
	routingAreaCode [1] RoutingAreaCode,
	cellId [2] CellId OPTIONAL,
	changeTime [3] TimeStamp,
	mCC-MNC [4] PLMN-Id OPTIONAL
	}

Table 3–57 (Cont.) ChangeLocation Field Versions

Version	Definition

V6.4.1	ChangeLocation ::= SEQUENCE
	{
	--
	-- used in SGSNMMRecord only
	--
	locationAreaCode [0] LocationAreaCode,
	routingAreaCode [1] RoutingAreaCode,
	cellId [2] CellId OPTIONAL,
	changeTime [3] TimeStamp
	}

Version Hiding

Table 3–58 lists the versions that support version hiding.

Table 3–58 ChangeLocation Field Version Hiding

Version hiding	Changed fields	Changes
10.5 to 7.3.0	No Changes.	Do nothing. The new value defined in V10.5 will be output in V7.3.0.
10.5 to 6.4.1	New Values added in 10.5.	Do nothing. The new value defined in V10.5 will be output in V6.4.1.

All Other Fields

There are no other changes between V10.5.0 and V7.3.0, V10.5.0 and V6.4.1, and V7.3.0 and V6.4.1.

V7.3.0 and V6.4.1 still need to apply the entire existing version hiding functions (between V6.4.1 and V3.6.0) for V3.6.0.

For the different versions of the Nortel CBB (recordExtensions), nothing will be done in terms of version hiding between V7.3.0, V6.4.1, V3.6.0, and V3.2.0. The field recordExtensions will be passed through and output as is.

4

Installing the Cartridge Pack

This chapter contains information on the requirements for installing and setting up Oracle Communications Offline Mediation Controller SGSN06 cartridge pack.

Pre-Installation Tasks

Complete the following pre-installation tasks before installing the cartridge pack:

1. Ensure Offline Mediation Controller 6.0 is installed.
2. Stop Node Manager, Administration Server, and Administration Client.
3. Delete any existing SGSN06 cartridge JAR file from the *OMC_Home*/**cartridges** directory, where *OMC_Home* is the directory in which Offline Mediation Controller is installed.

Installation Instructions

In a Solaris or Linux environment, you must install the cartridge pack on every UNIX server running Node Manager or Administration Server.

Installing on a Solaris or Linux Workstation

To install the cartridge pack on a Solaris or Linux workstation:

1. Download the **sgsn06_r6_0_0.jar** file to the *OMC_Home*/**cartridges** directory.
2. Restart Node Manager, Administration Server, and Administration Client.

Post Installation Instructions

After the Cartridge Pack has been installed, restart Node Manager, Administration Server, and Administration Client.

Testing the Cartridge Pack Installation

Verify that the Cartridge Pack has been properly installed by viewing **Version Info** from the **Help** menu in Administration Client. The Cartridge Pack name and version information should appear, along with the information about Node Manager, Administration Server, and Administration Client.

5

Creating and Configuring the Cartridges

This chapter contains information on the requirements for creating and configuring the Oracle Communications Offline Mediation Controller SGSN06 nodes.

Creating and Configuring the SGSN06 Nodes

See the online Help for guidance on the possible field definitions in node configuration window.

To create and configure the GTP Prime CC:

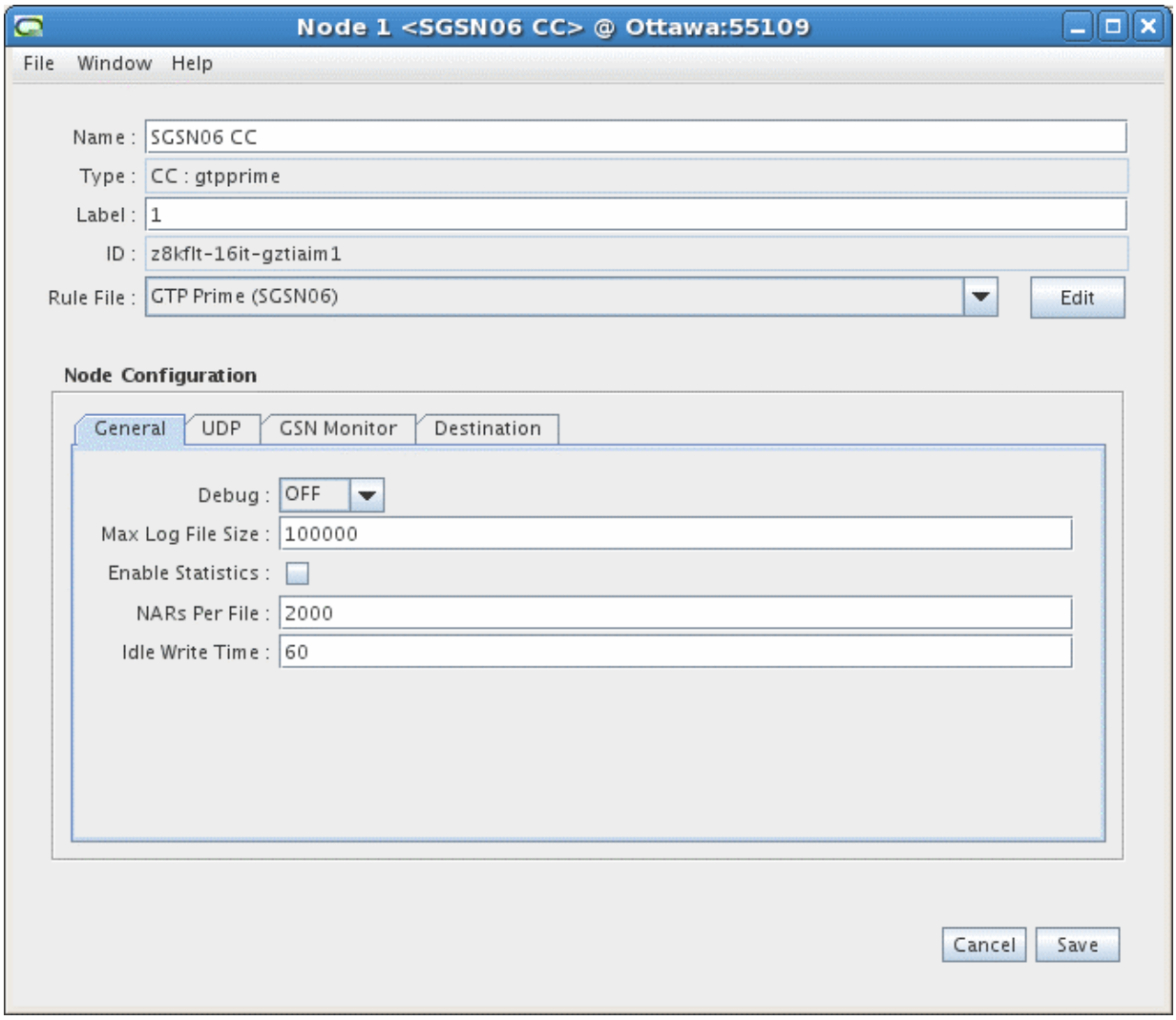
1. Log on to Offline Mediation Controller Administration Client.

   The Node Hosts & Nodes (logical view) screen appears.

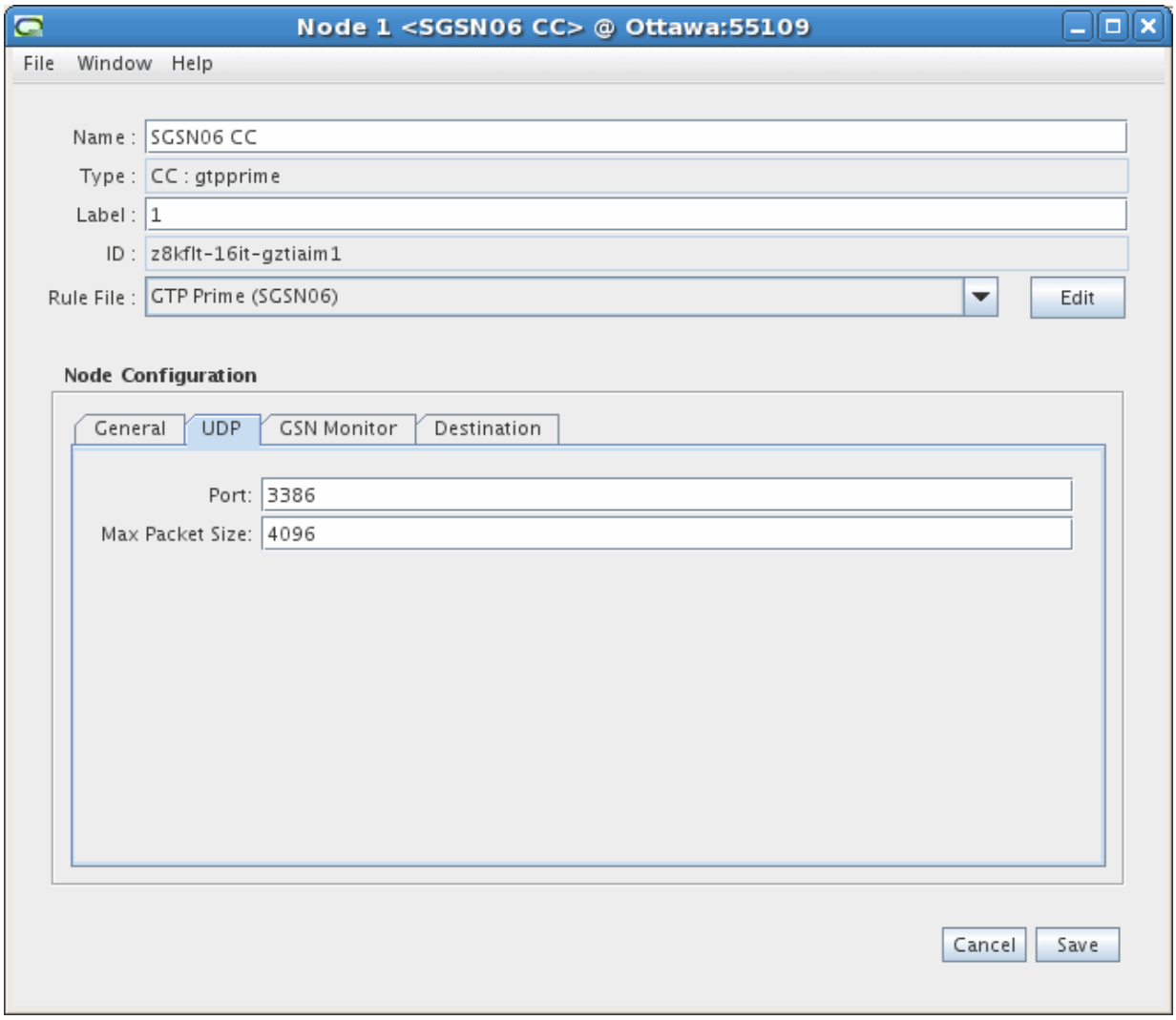
2. In the **Mediation Hosts** table, select a host.
3. In the **Nodes on Mediation Host** section, click **New**.

   The Create a Node dialog box appears.

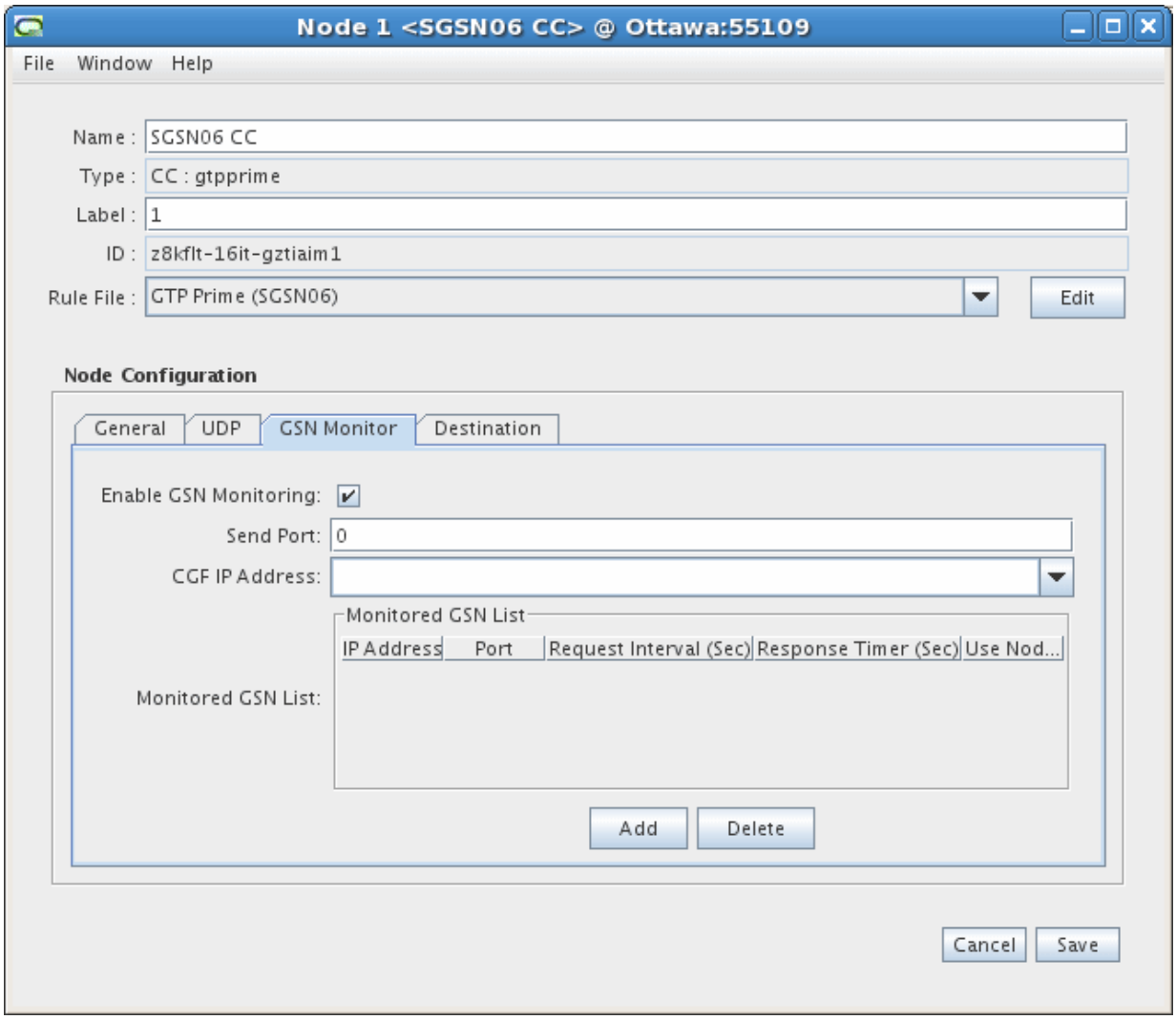
4. Click **Wireless** and click **Next**.
5. Click **Collection Cartridge (CC)** and click **Next**.
6. Click **GTP Prime Collection (SGSN06)** and click **Finish**.
7. In the node configuration window, type a name for the cartridge in the **Name** field.
8. Select **GTP Prime (SGSN06)** from the **Rule File** list.
9. On the **General** tab, configure the desired settings.



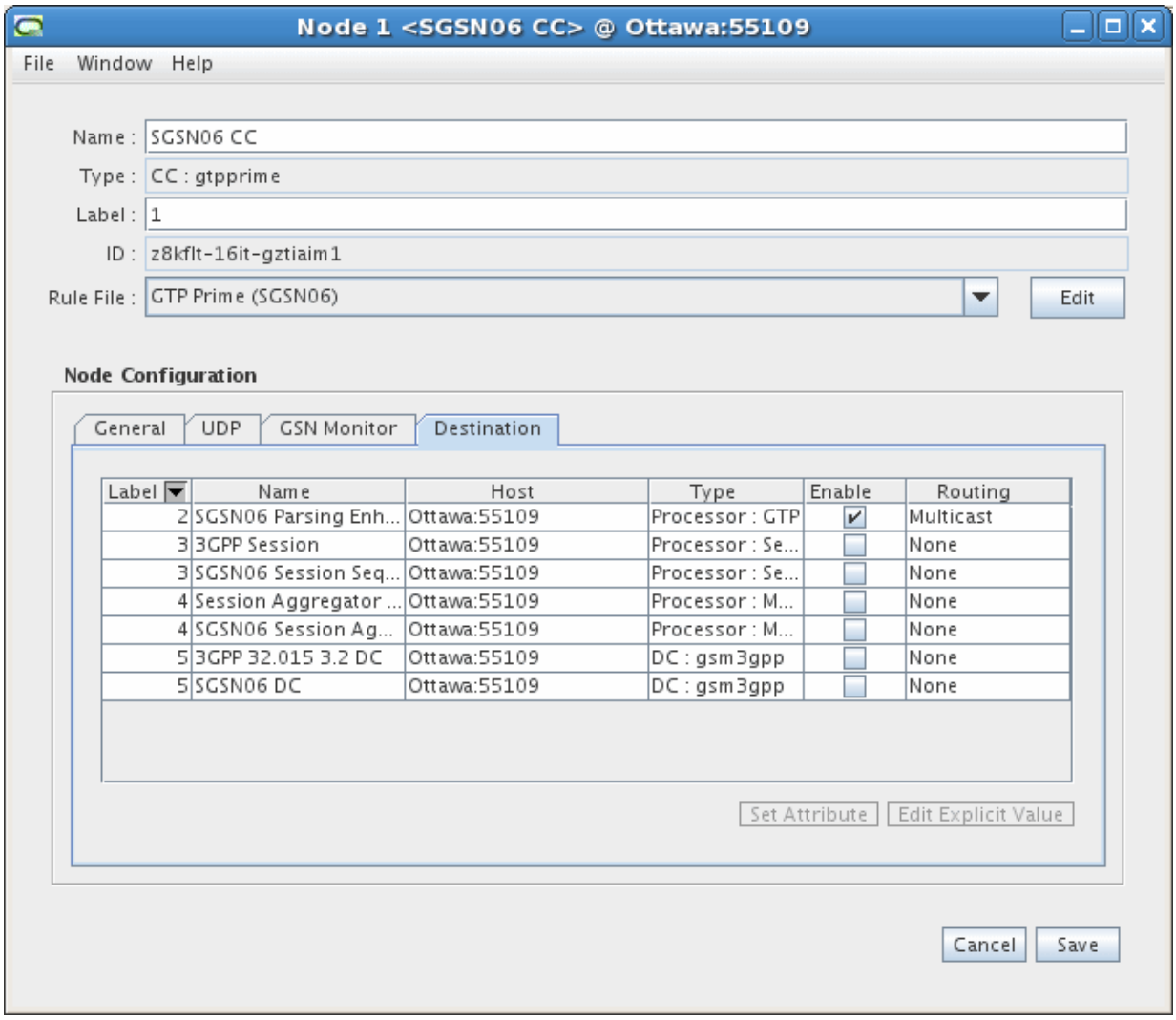
10. On the **UDP** tab, configure the desired settings.



11. On the **GSN Monitor** tab, configure the desired settings.



12. The **Destinations** tab displays the other cartridges in the system and shows which cartridge the current cartridge is connected to, and the type of routing used. You do not need to configure any settings on this tab.



13. Click **Save**.

To create and configure the 3GPP Parsing EP:

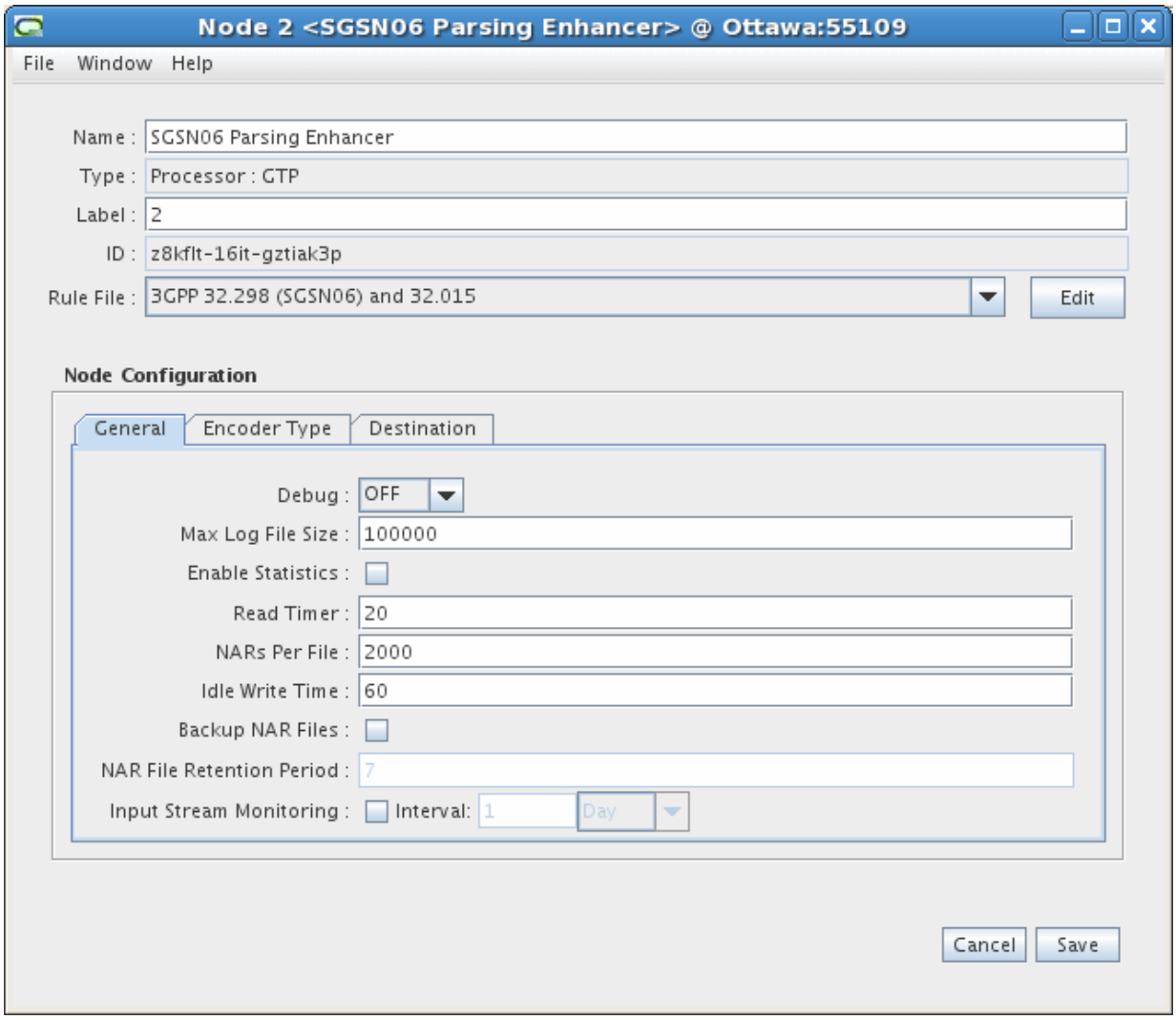
1. Log on to Offline Mediation Controller Administration Client.

   The Node Hosts & Nodes (logical view) screen appears.

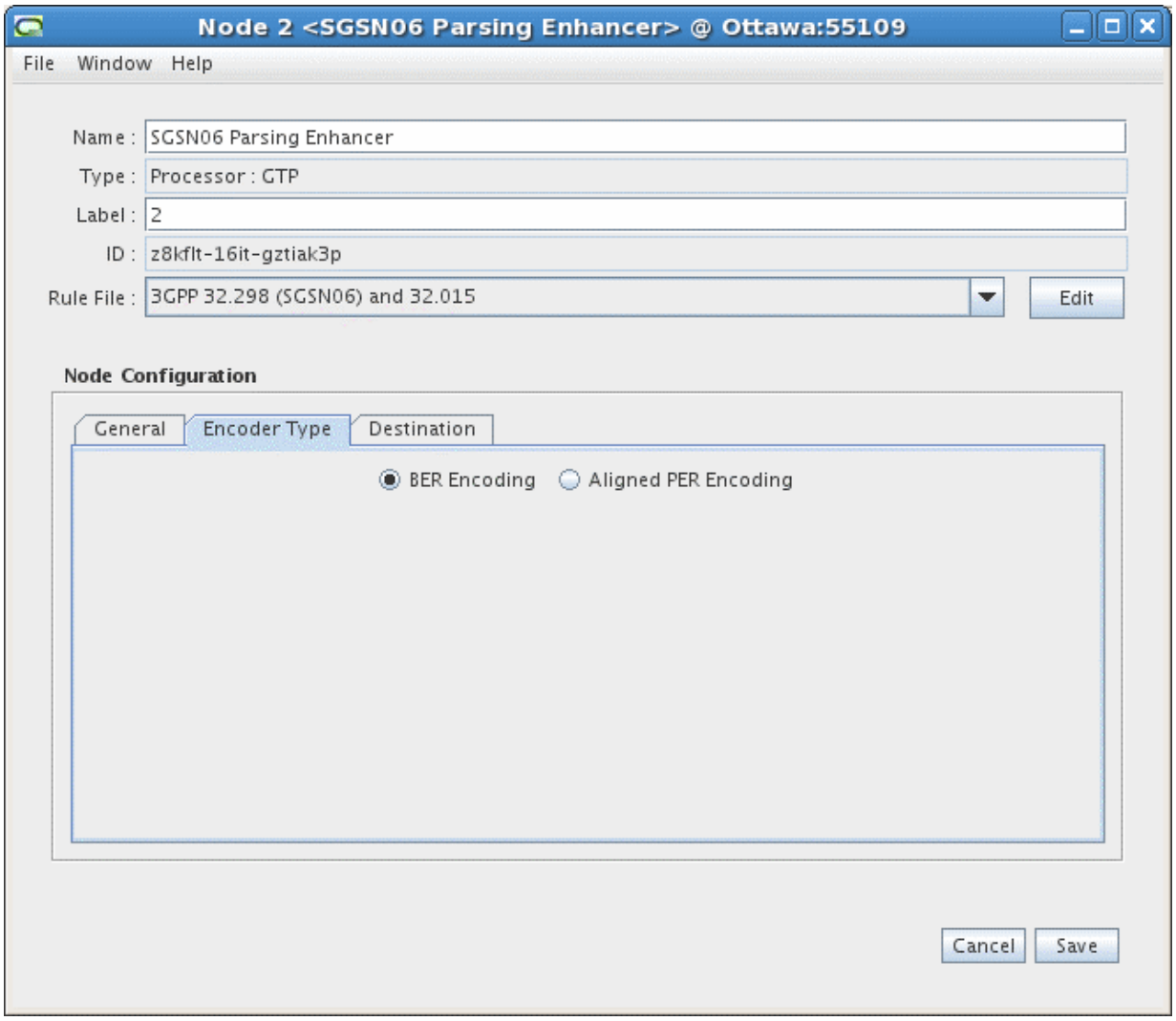
2. In the **Mediation Hosts** table, select a host.
3. In the **Nodes on Mediation Host** section, click **New**.

   The Create a Node dialog box appears.

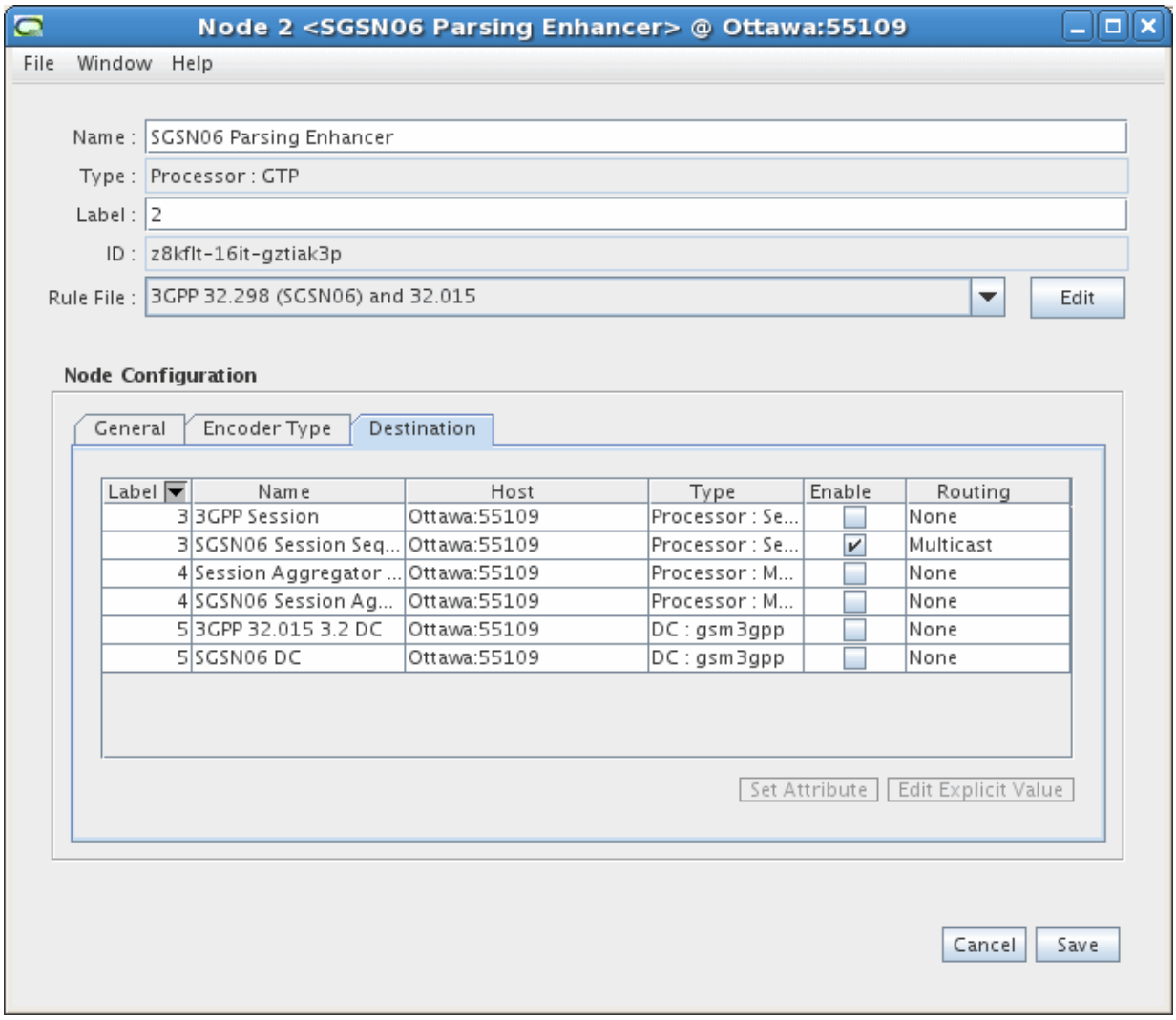
4. Click **Wireless** and click **Next**.
5. Click **Enhanced Processor (EP)** and click **Next**.
6. Click **3GPP 32.298 Parsing Enhancer (SGSN06)** and click **Finish**.
7. In the node configuration window, type a name for the cartridge in the **Name** field.
8. Select the **3GPP 32.298 (SGSN06) and 32.015** rule file from the **Rule File** list.
9. On the **General** tab, configure the desired settings.



10. On the **Encoder Type** tab, configure the desired settings.



11. The **Destinations** tab displays the other cartridges in the system and shows which cartridge the current cartridge is connected to, and the type of routing used. You do not need to configure any settings on this tab.



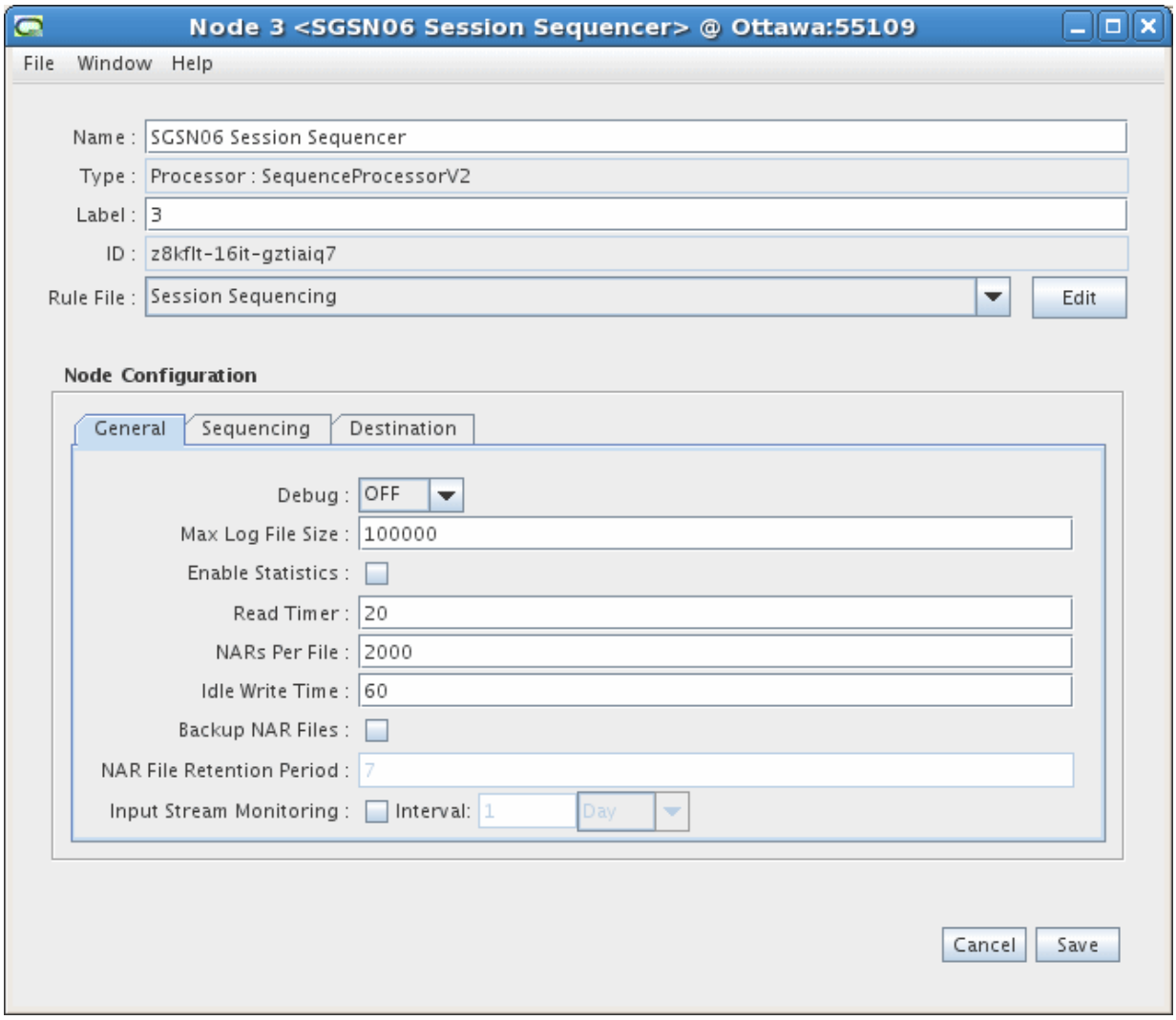
12. Click **Save**.

To create and configure the 3GPP Session Sequencing AP:

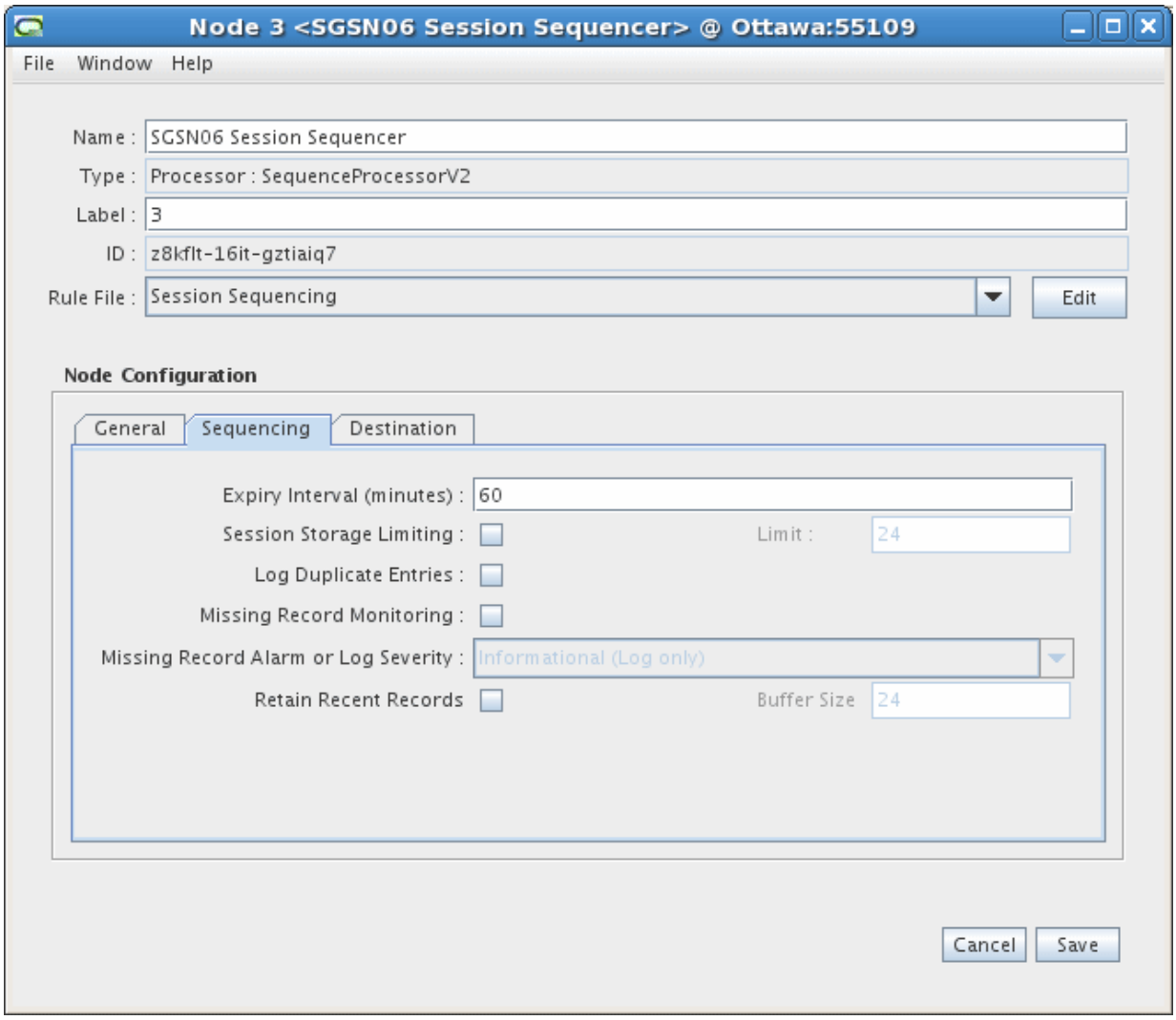
1. Log on to Offline Mediation Controller Administration Client.

   The Node Hosts & Nodes (logical view) screen appears.
2. In the **Mediation Hosts** table, select a host.
3. In the **Nodes on Mediation Host** section, click **New**.

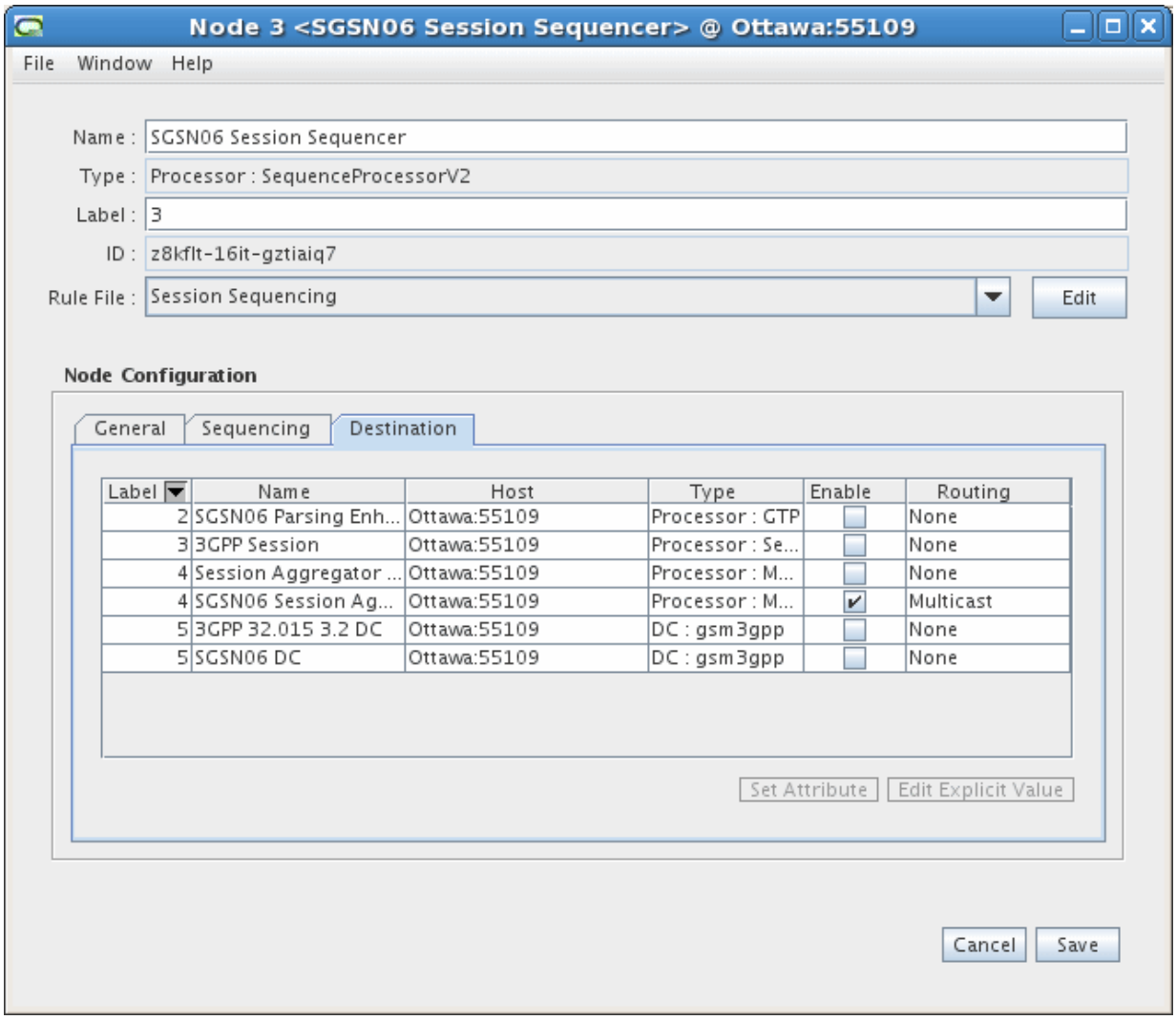
   The Create a Node dialog box appears.
4. Select **Wireless** and click **Next**.
5. Select **Aggregation Processor (AP)** and click **Next**.
6. Select **3GPP Session Sequencing** and click **Finish**.
7. In the node configuration window, type a name for the cartridge in the **Name** field.
8. Select **Session Sequencing** from the **Rule File** list.
9. On the **General** tab, configure the desired settings.



10. On the **Sequencing** tab, configure the desired settings.



11. The **Destinations** tab displays the other cartridges in the system and shows which cartridge the current cartridge is connected to, and the type of routing used. You do not need to configure any settings on this tab.



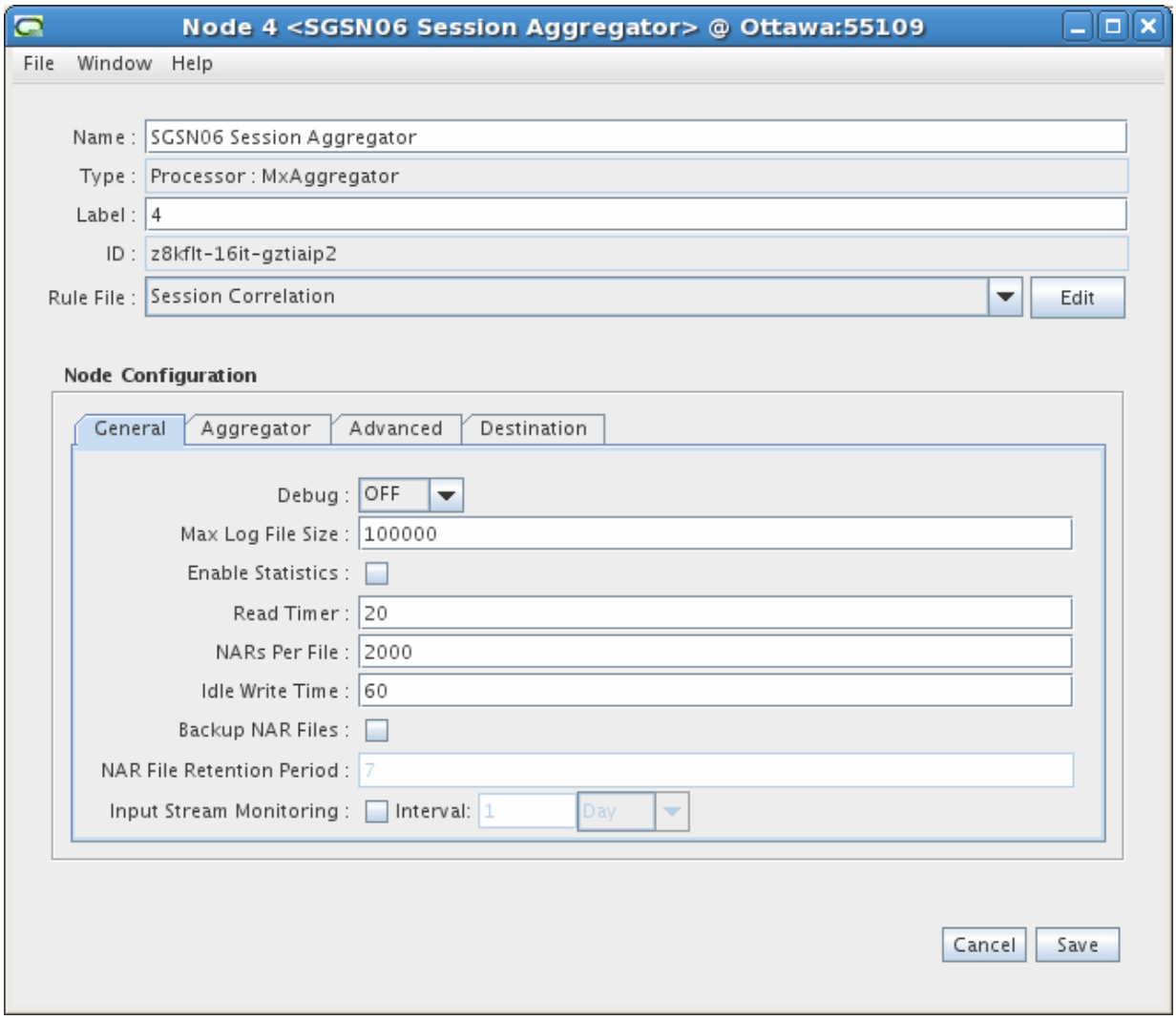
12. Click **Save**.

To create and configure the Session AP:

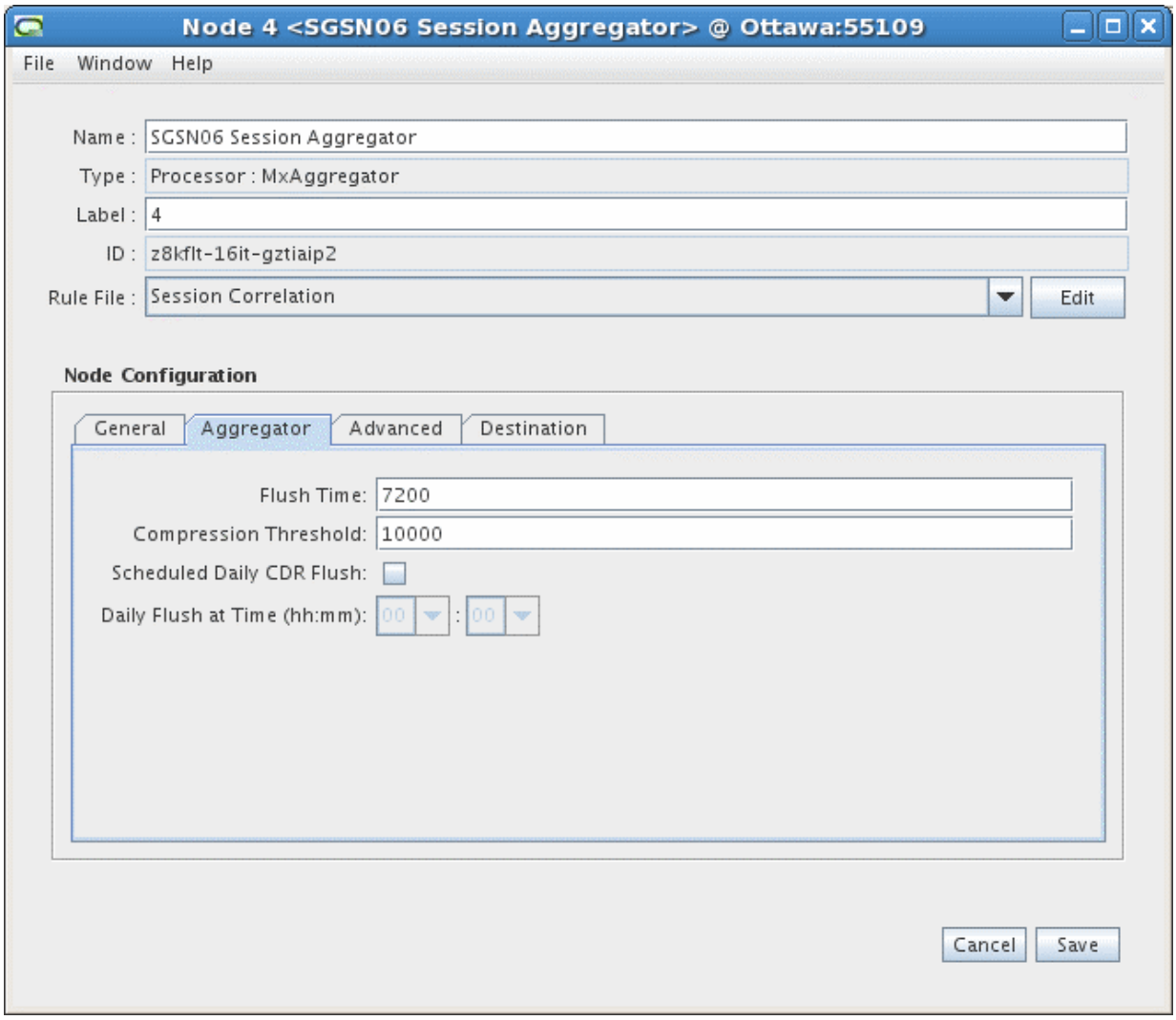
1. Log on to Offline Mediation Controller Administration Client.

   The Node Hosts & Nodes (logical view) screen appears.
2. In the **Mediation Hosts** table, select a host.
3. In the **Nodes on Mediation Host** section, click **New**.

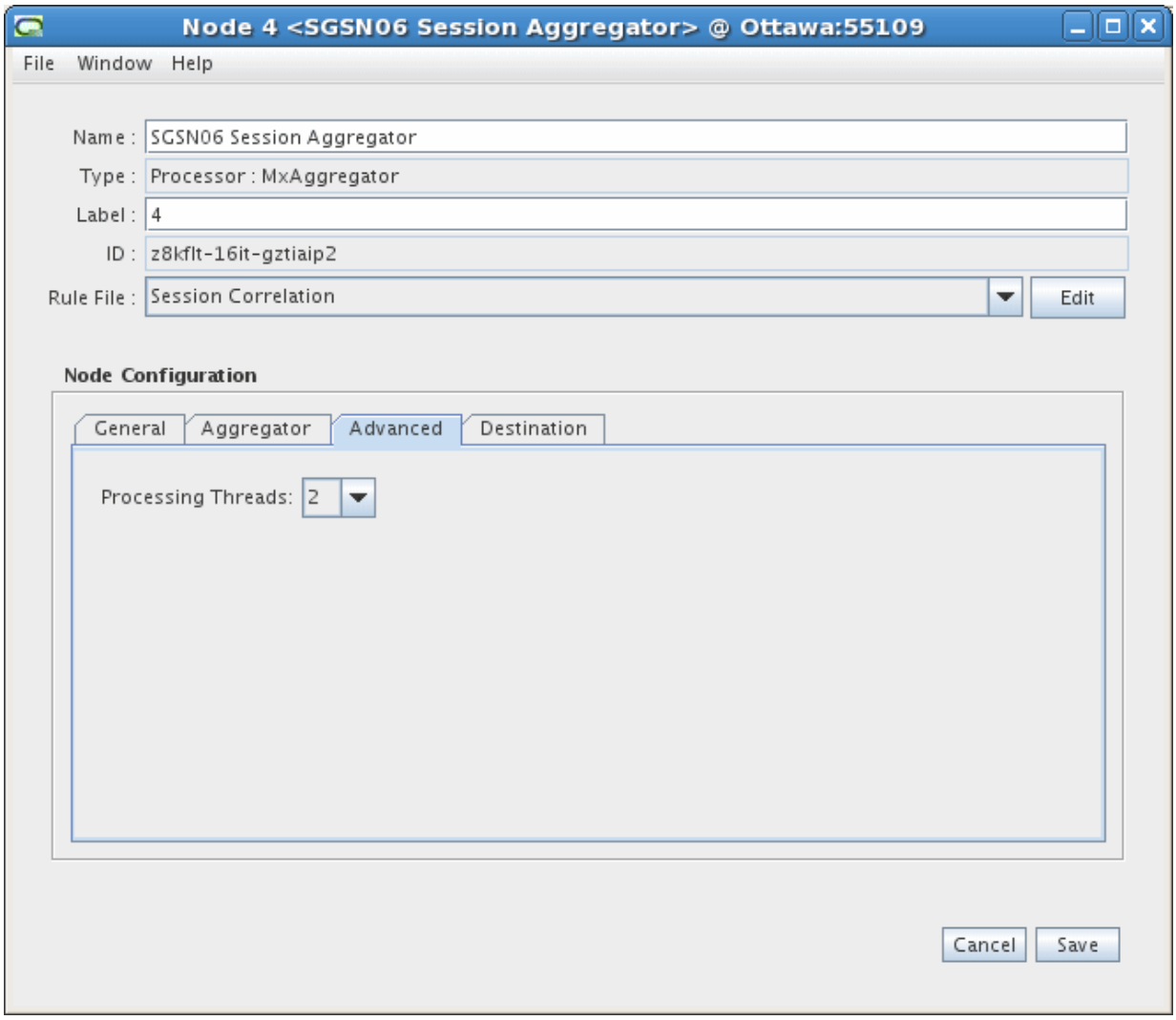
   The Create a Node dialog box appears.
4. Select **Wireless** and click **Next**.
5. Select **Aggregation Processor (AP)** and click **Next**.
6. Select **SessionAggregation** and click **Finish**.
7. In the node configuration window, type a name for the cartridge in the **Name** field.
8. Select **Session Aggregation (SGSN06)** from the **Rule File** list.
9. On the **General** tab, configure the desired settings.



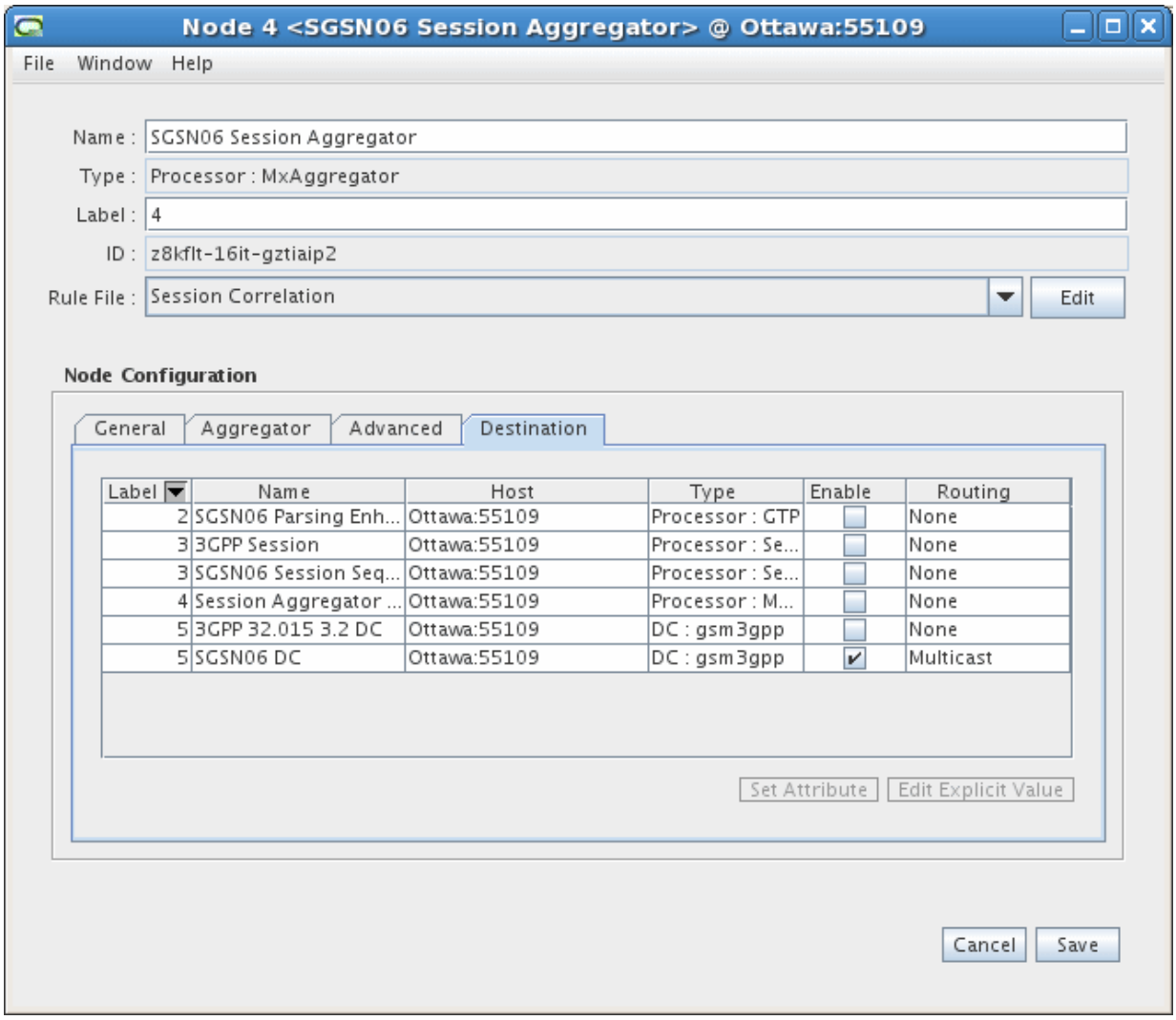
10. On the **Aggregator** tab, configure the desired settings.



11. On the **Advanced** tab, configure the desired settings.



12. The **Destinations** tab displays the other cartridges in the system and shows which cartridge the current cartridge is connected to, and the type of routing used. You do not need to configure any settings on this tab.



13. Click **Save**.

To create and configure the 3GPP ASN.1 DC:

1. Log on to Offline Mediation Controller Administration Client.

   The Node Hosts & Nodes (logical view) screen appears.

2. In the **Mediation Hosts** table, select a host.
3. In the **Nodes on Mediation Host** section, click **New**.

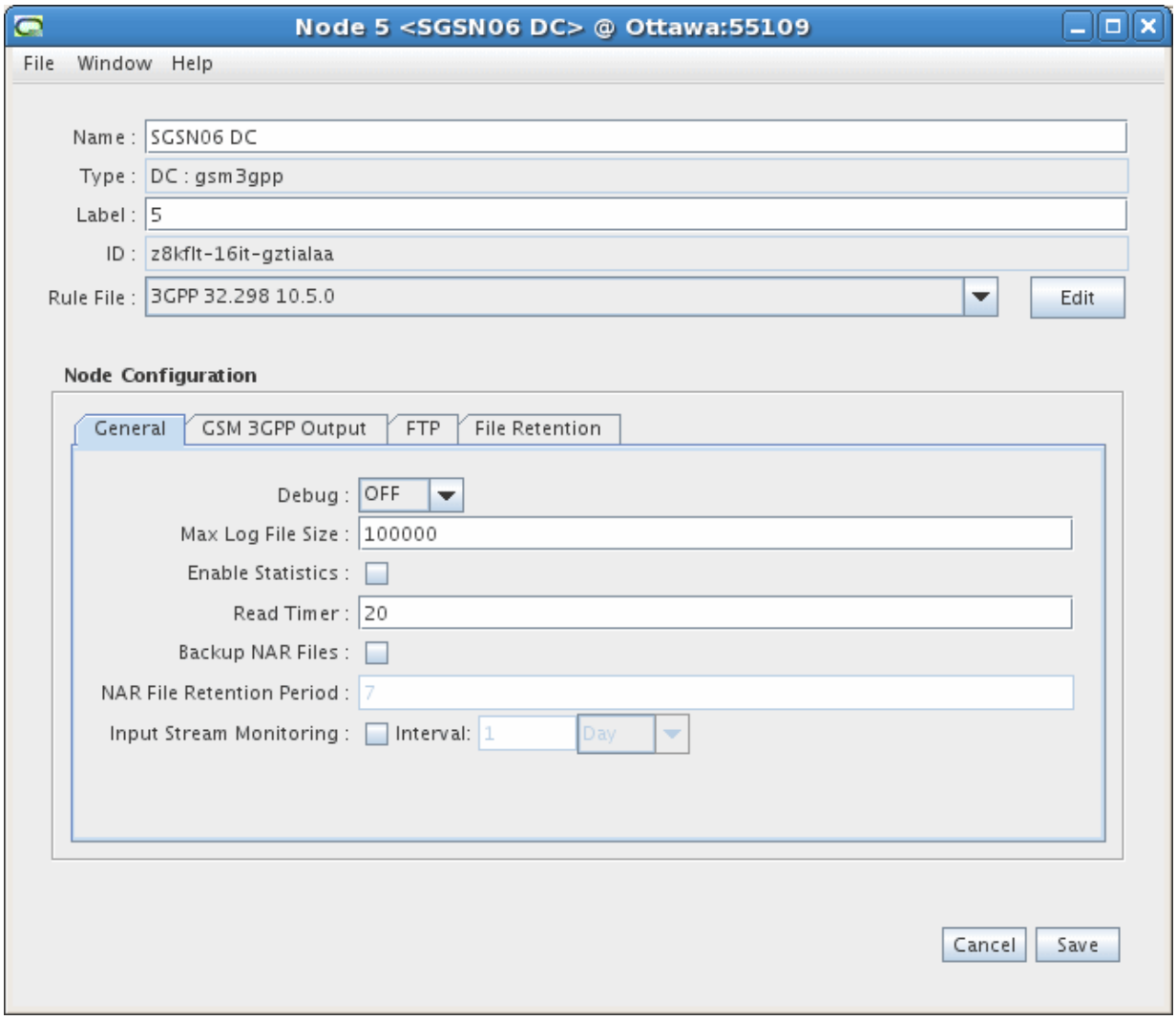
   The Create a Node dialog box appears.

4. Select **Wireless** and click **Next**.
5. Select **Distribution Cartridge (DC)** and click **Next**.
6. Select **3GPP 32.298 ASN.1** and click **Finish**.
7. In the node configuration window, type a name for the cartridge in the **Name** field.
8. In the **Rule File** list, select the default rule file, **3GPP 32.298 10.5.0**.

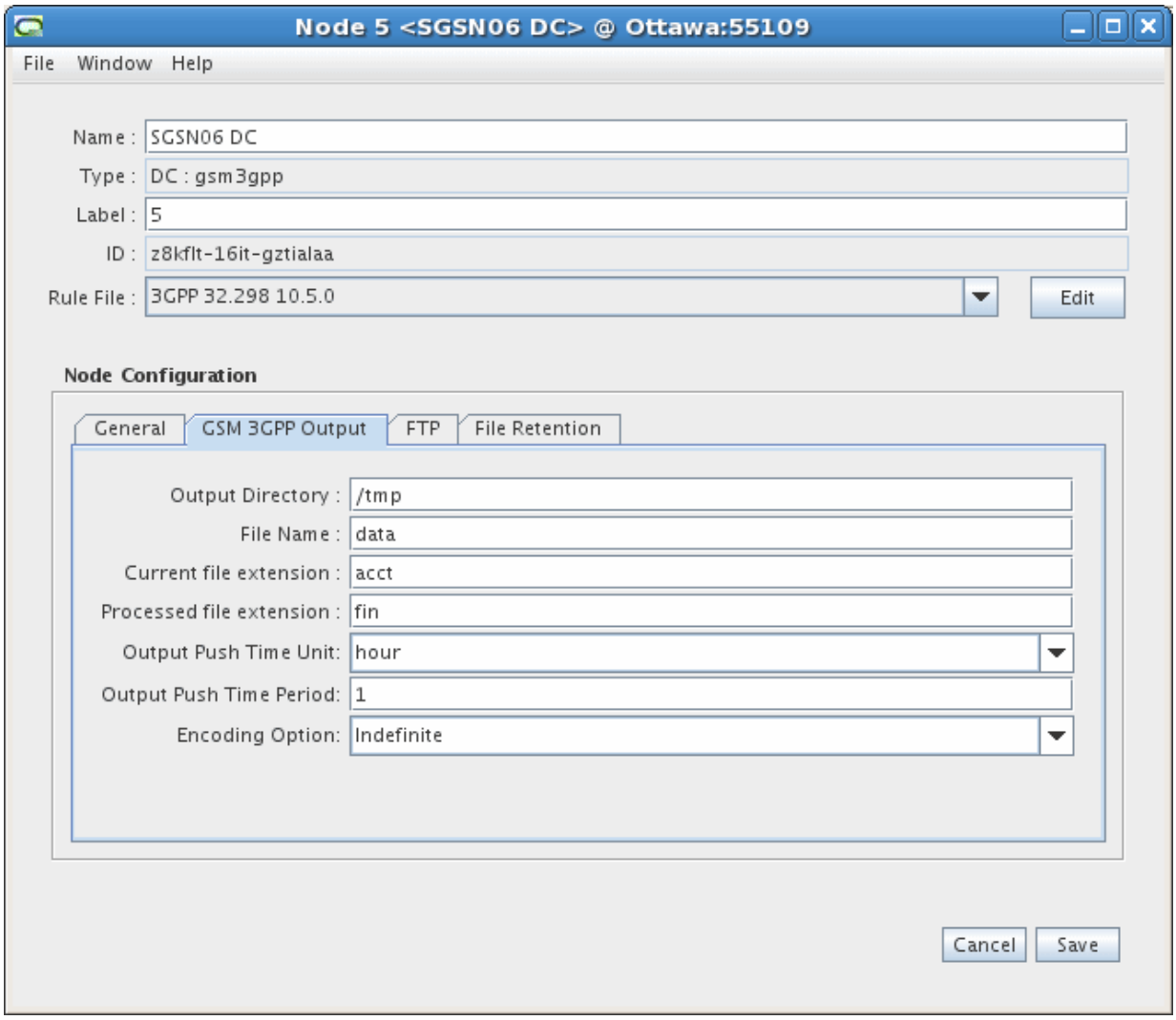
Note: If you want to output CDR in V7.3.0, select the 3GPP 32.298 7.3.0 rule file. If you want to output CDR in V6.4.1, select the 3GPP 32.298 6.4.1 rule file. If you want to output CDR in V3.6.0, select the 3GPP 32.015 3.6.0 rule file. If you want to output CDR in V3.2.0, select the 3GPP 32.015 3.2.0 rule file.

If the input CDR version is V10.5.0, the valid choices of the rule file for the DC node are V10.5.0, V7.3.0, and V6.4.1. If the input CDR version is V7.3.0, the valid choices of the rule file for the DC node are V7.3.0, V6.4.1, and V3.6.0. If the input is V6.4.1, only V6.4.1, V3.6.0, and V3.2.0 rule files are valid. If the input is V3.6.0, only V3.6.0 and V3.2.0 rule files are valid. If the input is V3.2.0, only V3.2.0 input is valid.

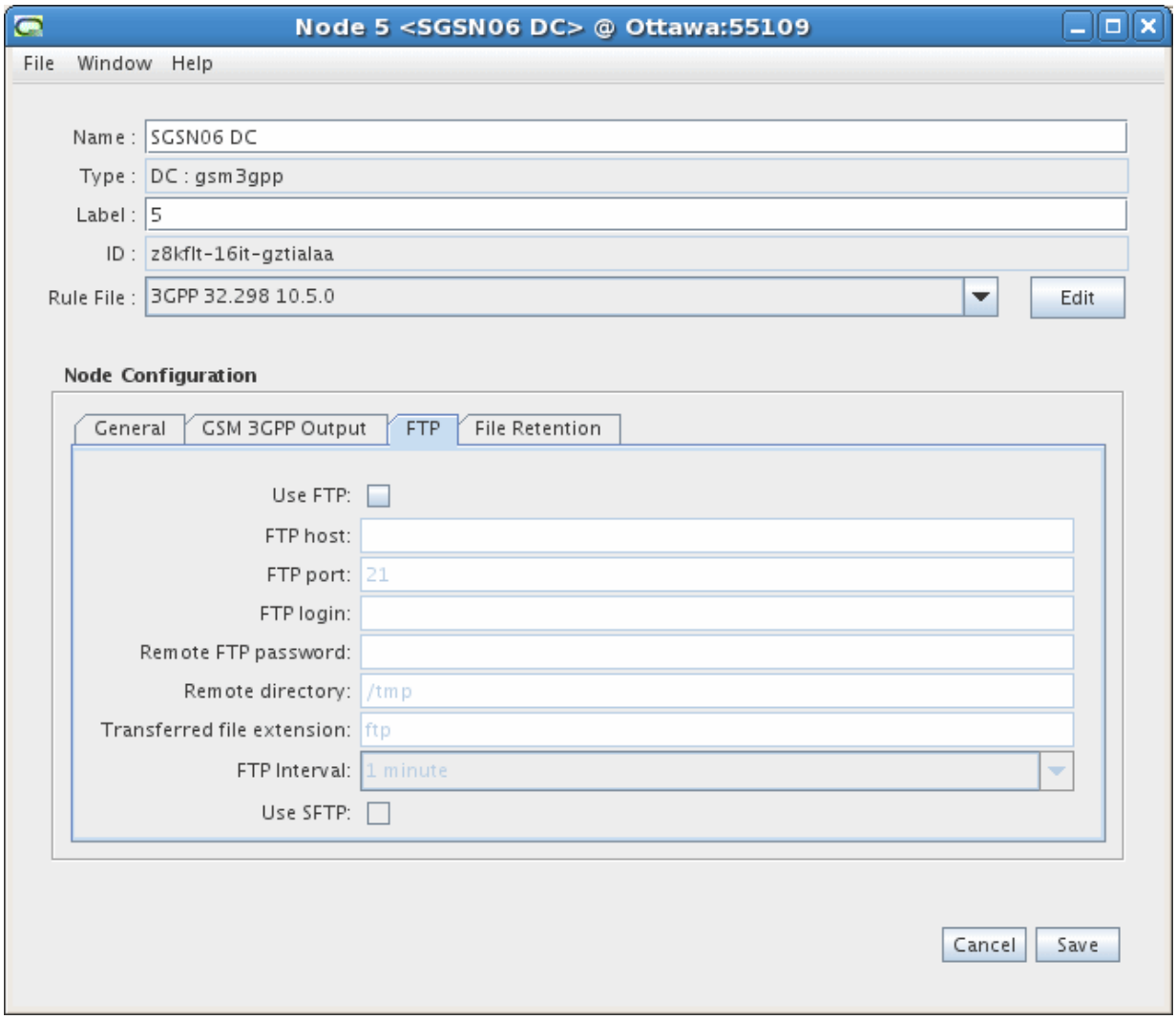
9. On the **General** tab, configure the desired settings.



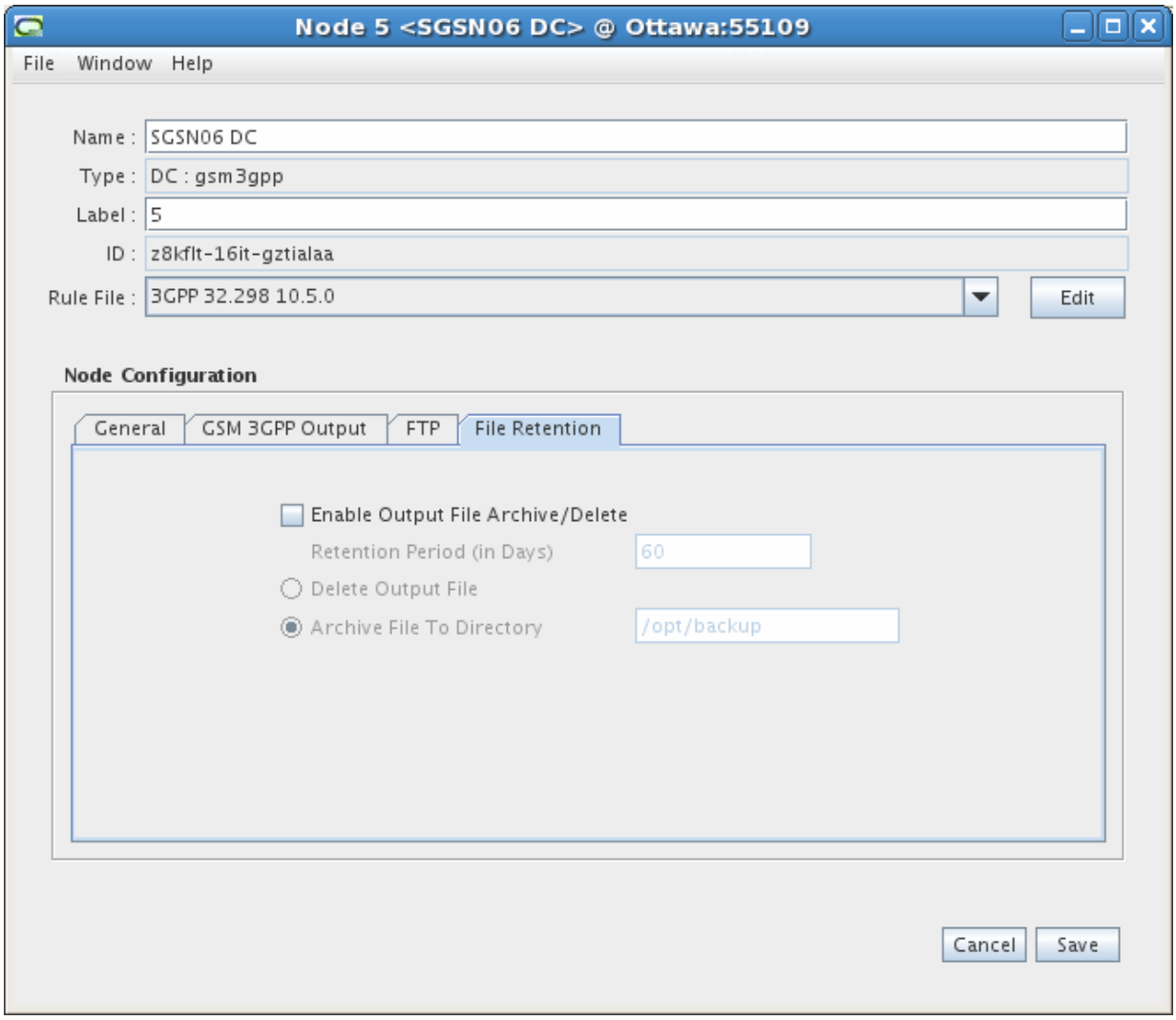
10. On the **GSM 3GPP Output** tab, configure the desired settings.



11. On the **FTP** tab, configure the desired settings.



12. The **Destinations** tab displays the other cartridges in the system and shows which cartridge the current cartridge is connected to, and the type of routing used. You do not need to configure any settings on this tab.



13. Click **Save**.

6

Uninstalling the Cartridge Pack

This chapter contains information on the requirements for uninstalling Oracle Communications Offline Mediation Controller SGSN06 cartridge pack.

Uninstalling the Cartridge Pack from a Solaris or Linux Workstation

To uninstall the Real-Time ASCII File Collection CDK cartridge pack from a Solaris or Linux Workstation:

1. Go to the *OMC_Home*/**cartridges** directory, where *OMC_Home* is the directory in which Offline Mediation Controller is installed.
2. Run the following command, which removes the cartridge pack:

   ```
   rm sgsn06_r6.0.0.jar
   ```