HSS Web Operation Manual

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1 Web Introduction

This document is to provide the user with basic configuration of HSS / HLR system, connection with network elements such as MME S6a and IMS, user authentication data configuration, user EPS business signing, user IMS business signing, network element process, system CPU status, system license upgrade, software version monitoring upgrade and other operation guidance.

Relevant software version: Software version after SAE-HSS-R3C1V3.2.0.85 6-Ra.x86_64

2 Web Operation Instructions

2.1 Login Interface

★ 🗅 192.168.11.135



Modules Status		EPS Peer Status	
hssCxProcess	Active	162.mme.com	in-service
hssOamProcess	Active		
hssS6aProcess	Active	IMS Peer Status	
hssScProcess1	Active		
hssScProcess2	Active	icscf.ims.mnc000.mcc460.3gppnetwork.org	in-service
hssScProcess3	Active	groupas.ims.mnc000.mcc460.3gppnetwork.org	in-service
hssSigtranProcess	Inactive	xcap.ims.mnc000.mcc460.3gppnetwork.org	in-service
hes TraDro coss	Activo	scscf.ims.mnc000.mcc460.3gppnetwork.org	in-service
IISSITIFICESS	Acuve	bsf.ims.mnc000.mcc460.3gppnetwork.org	in-service
Modules Status			
hssSmProcess	Active	System Status	
redis-server	Active	30.00%	
		HDD Usage:	
		Memory Usage:	

2.2 S6a Interface configuration

2.2.1 S6a Interface Configuration

Path: Configuration \rightarrow Networking \rightarrow S6a \rightarrow S6a Interface

🌣 Configuration 💿 🖋 Maintenan	ce 🗮 System 🔳 Statistics	🔺 Alarm		
S6a Interface EPC Peer S6a R	ealm Route			
	S6a Interface	Configuration		
	HSS S6a Name	myS6aIf		
	HSS S6a IP	192.168.11.13	5	
	HSS S6a Port	3868	[3000,65534]	
	HSS S6a Realm Name	hss.com		
	HSS S6a Host ID	135.hss.com		
	Transmit Queue Congestion Start Limit	15000		
	Transmit Queue Congestion Drop Limit	2000		
	Transmit Queue Congestion Stop Limit	1000		
	Trillium Number Threads	0		
	Trillium Trace Option	1		
	Watch Dog Timer	5	[1,300](s)	
	Peer State Timer	30		
	Max Connection Retry	2	[0,3]	
	Out Streams Number	1	[0,10]	
	Max Retransmit For Assoc	5	[0,10]	
	Max Retransmit For Dest Address	5		
	Max Assoc Init Transmit	5	[0,10]	
	Default Heartbeat Interval	30	[0,120](s)	

Figure 2.2.1 S6a Interface Configuration

Reference

- HSS S6a Name: myS6aIf
- HSS S6a IP: 192.168.11.135
- HSS S6a Realm Name: hss.com
- HSS S6a Host ID: 135.hss.com
- Use defaults for the others!
- 2.2.2 MME S6a Configuration

Path: Configuration \rightarrow Networking \rightarrow S6a \rightarrow EPC Peer

🔅 Configuration	1 🖌 M	laintenance	🖬 System 🔳	Statistics 🖌	Alarm	
S6a Interface EP	PC Peer	S6a Realm	Route			
	E	EPC Peer				
		Name	IP Address	Port	Realm Name	Host ID
				3868		
		epcpeer	192.168.11.162	3868	mme.com	162.mme.com
				Add D	elete	

Figure 2.2.2 MME S6a Configuration

2.2.3 Query S6a Port Listening State

Configuration		laintenance	🖶 System	Statistics	🔺 Alarm		
S6a Interface EF	PC Peer	S6a Realm	Route				
		EPC Peer					
		Name	IP Address	Port	Real	m Name	Host ID
				3868			
		epcpeer	192.168.11.162	3868	m	nme.com	162.mme.com
				Add	Delete		
		EPC Peer Stat	us				
		IP Addre	ss Host ID	P	ort	Status	Query
		192.168.11	162 162.mme.c	om 3	368	in-service	
							1

2.2.4 Add S6a Realm Route

Path: Configuration \rightarrow Networking \rightarrow S6a \rightarrow S6a Realm Route

🗢 Configuration 🛛 🖌	Maintenance	System 🔳 Statistics	🛕 Alarm	
S6a Interface EPC Peer	S6a Realm Route			
	S6a Realm Route Ma	nagement		
	ID	Realm Name	Peer Name	Smode
			None •	active •
		add	delete	

2.3 Cx Interface Configuration

2.3.1 Cx Interface Configuration

	🖌 Maintenance 🛛 🗮 System	🗉 Statistics 🔺 Alarm	
Cx Interface IMS P	eer		
		Cx Interface Configuration	
	HSS Cx Name	myCxIf	
	HSS Cx IP	192.168.11.135	
	HSS Cx Port	3868 [3000,65534]	
	HSS Cx Realm Name	ims.mnc000.mcc460.3gppnetwork.org	
	HSS Cx Host ID	hss.ims.mnc000.mcc460.3gppnetwork.org	
	Transmit Queue Cong Start	15000 (ms)	
	Transmit Queue Cong Drop	2000 (ms)	
	Transmit Queue Cong Stop	1000 (ms)	
	Trillium Thread Num.	0	
	Trillium Trace Option	1	
	Watch Dog Timer	5 [1,300]	
	Peer State Timer	30 [5,60]	
	Max Connection Retry	2 [0,3]	
		modify	

Figure 2.3.1 Cx Interface Configuration

Reference HSS Cx Name: myCxIf HSS Cx IP: 192.168.11.135 HSS Cx Port: 3868

HSS Cx Realm Name: ims.mnc000.mcc460.3gppnetwork.org

HSS Cx Host ID: hss.ims.mnc000.mcc460.3gppnetwork.org

Use defaults for the others!

2.3.2 IMS Peer Configuration

🌣 Configura	ation 🖌	Maintenance	System	🔳 Statist	ics 🔺 Alarm	
Cx Interface	IMS Peer					
		IMS Boor				
		TIMP Leel				
		Name	IP Address	Port	Realm Name	Host ID
				3868		
		imspeer	192.168.11.134	3868	ims.mn.c000.mcc460.3appn	icsef.ims.mnc000.mcc460.3
		gppnetwork.org				
				A (dd Delete	
					Derete	

Reference

Name: imspeer

IP Address: 192.168.11.134

Port: 3868

Realm Name: ims.mnc000.mcc460.3gppnetwork.org

Host ID: icscf.ims.mnc000.mcc460.3gppnetwork.org

🌣 Configura	ation 🥕	Maintenance	System	🔳 Statisti	cs 🔺 Alarm					
Cx Interface	IMS Peer									
	IMS Peer									
		Name	IP Address	Port	Realm Na	ame	н	ost ID		
				3868						
		imspeer	192.168.11.134	3868	ims.mnc000.mcc- etwork.o	460.3gppn rg	icscf.ims.m gppn	nc000.mcc460.3 etwork.org		
		IMS Peer Status		Ad	3868 ims.mnc000.mcc460.3 gppn icscf.ims.mnc000 Add Delete Port Status 2 in-service					
		He	ost ID	Po	rt	Statu	5	Ouerv		
		icscf.ims.mnc00	10.mcc460.3gppnet	2	2	in-servi	ice			
		groupas.ims.m	rk.org nc000.mcc460.3gp work.org	2	2	in-servi	ice			
		xcap.ims.mnc00 two	00.mcc460.3gppne prk.org	2	2	in-servi	ice			
		scscf.ims.mnc00 two	00.mcc460.3gppne ork.org	2	2	in-service				
		bsf.ims.mnc000 wc	0.mcc460.3gppnet irk.org	2	2	in-servi	ice			
							1			

2.3.3 Query Cx Port Listening State

Figure 2.3.3 Cx Port Listening State

2.4 Add Authentication Parameters

2.4.1 OP

Authentication Data K4 AMF OP OP Management ID Name Value ID ID ID ID OP_C_Profile Iength:32(hex) ID OP_C_Profile Iength:32(hex) ID OP_C_Profile Iength:32(hex)	Configuration	≁ м	aintenar	nce	System	Statistics	🛕 Alarm	
OP Management ID Name Value ID Name Value Indextor Indextor Indextor Indextor OPC_Profile Indextor Indextor OP_Profile Indextor Indextor OP_Zero Indextor	Authentication Data	K4	AMF	OP				
ID Name Value Image: Description of the system Image: Description of the system 0 OPC_Profile Image: Description of the system 1 OP_Profile Image: Description of the system 2 OP_Zero Image: Description of the system				OP	Management			
0 OPC_Profile 1 OP_Profile 2 OP_Zero					ID	Name	Value	
0 OPC_Profile 1 OP_Profile 2 OP_Zero							length:32(hex)	
1 OP_Profile 2 OP_Zero					0	OPC_Profile		
2 OP_Zero					1	OP_Profile	•••••	
					2	OP_Zero	•••••	•••••
						Delete	Add	
Delete								

Reference:

Name: OP_Profile

Value: 12345678901234561234567890123456

2.4.2 AMF

Refere	ence:
EPC:	8000

IMS: 0000

Configuration	⊁ M	laintenan	ice 🔡 System	Statistics	🔺 Alarm	
Authentication Data	K4	AMF	OP			
					AMF	check
			AMF Manageme	ent		
			ID	Name	Value	
				500	0000	
			2	IMS	0000	
				Delete	Add	

2.4.3 K4

Configuration	🗲 Maintenance	II System	🗏 Statist	tics 🛕 Alarm	
Authentication Data	K4 AMF OP				
			К4		Show
	K4 Management				
	ID	Ν	ame	Value	
	0	k4_	invaild	••••••	
			Delete	Add	
			Delete	Auu	

ID: 0 [set to 0]

Name: k4_invaild

Configuration	≁ м	aintena	nce 🔡 System	Statistics	🛦 Alarm	
Authentication Data	K4	AMF	OP			
				Create Authentication	Config	
			IMSI	460000123456001		
			KI	1234567890abcdef11	1111111111111	VoIP
			К4	k4_invaik 🔻		
			OP	•		
			OPC			
			OPC K4	k4_invailc 🔻		
			AMF	•		
			Card Type	USIM V		
		_	Algorithm	milenage 🔻		
			IMSI Count	1	[1,10000]	
				Add Back		

2.4.4 Add Authentication Subscriber

The value in the red box can be modified, and the range is 1 to10000. Add authentication data in batches

2.5 Add EPC Subscriber

2.5.1 Add QoS Template

Path: Configuration → Eps Subscriber [EPC QoS Template]

Configuration	🗲 Mainten	ance 🏭 Syste	em l	Statistics	A /	Alarm	
Subscriber Template	Subscriber	APN Template	APN EPC	QoS Template	PLMN F	Restrict Template	Batch Subscriber
			Te	mplate ID: 1 Det	ail		
		Template ID		1			
		QCI		9		(1-9,128-254)	
		Priority Level		1	•		
		Pre-emption Ca	pability	Enable	¥		
		Pre-emption Vu	Inerability	Disable	•		
			Modi	fy Delete	Back		

General QCI of APN= 9



2.5.2 Add APN Template

🌣 Configuration 🛛 🗡 Maintena	nce 🔡 System 🔳 Statis	tics 🔺 Alarm	
Subscriber Template Subscriber	APN Template APN EPC C	QoS Template PImn Restrict Template	Batch Subscriber
	Templa	te Name: ims Detail	
	Template ID	2	
	Template Name	ims	
	APN	ims	
	Charging Characteristics	1024	
	AMBR Uplink (bps)	120000000	
	AMBR Downlink (bps)	120000000	
	PDN Type	IPv4 •	
	EPC QoS Template ID	2 *	
	PGW Host Name		
	PGW Domain Name		
	PGW IP Address		
	PDN GW Allocation Type	None selected 🔻	
	APN OI Replacement		
	VPLMN Dynamic Address Allow	None selected 🔻	
	modify	delete back	

Path: Configuration → Eps Subscriber [APN Template]

Notice the ID selection in the box.

2.5.3 Add Subscriber Template

Path: Configuration → Eps Subscriber [Subscriber Template]

Configuration	📕 Maintenan	ce 🔡 System 🔳 Stat	istics 🛕 Alarm
Subscriber Template	Subscriber	APN Template APN EPC	QoS Template Plmn Restrict Template Batch Subscriber
		Ter	mplate ID: 1 Detail
		Template ID	1
		Name	hss
		Network Access Mode	Packeted And C 💌
		Access Restriction Data	None selected -
		RAT Type	EUTRAN
		UE Uplink (bps)	120000000
		UE Downlink (bps)	120000000
		HPLMN ODB	None selected -
		Charging Characteristics	
		APN OI Replacement	
		Regional Subscription Zone Code List	
		RAT Frepuency Selection Prionity ID	[1,256]
		Pimn Restrict Template	None •
		modif	fy delete back

2.5.4 Add EPC Subscriber In Batches

onfigu	ration 🗡	Maintenance 📕 Sy	rstem 🔳 St	atistics 🛕 Alarm	
riber Te	mplate Sub	oscriber APN Template	APN EPC QoS	Template PLMN Restrict Ten	mplate Batch Subscriber
	Batch Subscri	ber Add			
	IMSI	46000012345600	l length: [6,15]	Prime APN Context ID	APN Template ID 1
	MSISDN	8618001234001	length: [1,15]	APN Template ID 1	None
	Subscriber Template			APN Template ID 2	None
	ODB	64	[0,511]	APN Template ID 3	None
	Support List	None select	ted 🗸	APN Template ID 4	None
	Count	1	[1,10000]	APN Template ID 5	None
				APN Template ID 6	None

The example means: IMSI of EPC subscriber is 460000123456001, MSISDN: 8618001234001

Count 1 means that add only one subscriber, may add in batches.

Prime APN Context ID: select the ID number means that the corresponding APN is the default APN.

If there are two APN selection in drop-down box, it indicates that this user has signed up two APN.

2.5.5 Delete EPC Subscriber In Batches

Path: Configuration → EPS Subscriber [Batch Subscriber]

riber Template Su	ibscriber APN Template	APN EPC QoS T	emplate PLMN Rest	rict Template Batch Subscribe	r
Batch Subsci	riber Add				
IMSI	460000123456001	length: [6,15]	Prime APN Context I	APN Template ID 1	¥
MSISDN	8618001234001	length: [1,15]	APN Template ID 1	None	•
Subscriber Template		v	APN Template ID 2	None	•
ODB	64	[0,511]	APN Template ID 3	None	
Support List	t None selected	•	APN Template ID 4	None	•
Count	1	[1,10000]	APN Template ID 5	None	•
			APN Template ID 6	None	¥
Batch Subscr	iber Delete		Add		
	IMSI	4600	00123456001 le	ngth: [6,15]	
	MSISDN		le	ngth: [1,15]	
	Count	10		[1,10000]	

2.6 Add IMS Subsctiber

2.6.1 Add Visited Network

Path: Configuration \rightarrow IMS Subscriber \rightarrow Network \rightarrow Visited Network

Configuration	🖌 🗡 Maintenan	ce 🔡 System	Statistics	🛕 Alarm	
Visited Network	Capability S-CS	CF Capability Set Pre	eferred S-CSCF Set		
		Visited Network Mana	agement		
		ID		Identity	
		4	ims mnc000	mcc/60.3appnatwork.org	
		4	Ins.micooo	Incc460.5gpphetwork.org	
			Submit Delete	8	

Identity :ims.mnc000.mcc460.3gppnetwork.org

2.6.2 Capability Management

Path: Configuration \rightarrow IMS Subscriber \rightarrow Network \rightarrow Capability

🌣 Configuratio	on 🥕 Maii	ntenance 📰	System	Statistics	🛕 Alarm		
Visited Network	Capability	S-CSCF Capabili	ty Set Prefe	erred S-CSCF Set			
		Capabili	ty Management	t			
			ID		Name		
			5		cap1		
			Submit Delete				

Name : cap1

2.6.3 S-CSCF Capability Management

Path: Configuration \rightarrow IMS Subscriber \rightarrow Network \rightarrow S-CSCF Capability Set

🌣 Configuration 🏾 🗡 🛚	Maintenance	System	Statistics	🛕 Alarm	
Visited Network Capabilit	y S-CSCF Ca	pability Set Pref	erred S-CSCF Set		
S	S-CSCF Capability	Set Management			
	ID	ID Set	Name	Capability	Manadatory
				cap1 v	
	4	1	cap_set1	5	0
			Submit Delet	e	

Name: cap_set1

Capability: cap1

2.6.4 Preferred S-CSCF

Path: Configuration → IMS Subscriber → Network → Preferred S-CSCF Set

🌣 Configuratio	on 🎤	Mainten	ance 🔛	System	Statistics	🛦 Alarm		
Visited Network	Capabi	ility S-C	SCF Capabili	ty Set Pre	ferred S-CSCF Set			
		Preferred	S-CSCF Set	Management				
		ID	ID Set		S-CSCF Name		Name	Priority
		4	1	: sip:scscf.ims	.mnc000.mcc460.3gppne	twork.org:6060	scscf1	1
					Submit Delete	2		

S-CSCF Name: sip:scscf.ims.mnc000.mcc460.3gppnetwork.org:6060

Name: scscf1

2.6.5 Add Application Server

Path: Configuration \rightarrow IMS Subscriber \rightarrow Service \rightarrow Application Server

Create applicationS	erver Data Config					Associated IFC	
		Permission for	UDR	PUR	SNR	IFC ID	IFC Nam
ID		Allowed Request	1	1	1		
Name*	groupas	Repository-Data	1	4	✓		Add Delete
Server Name*	sip:groupas.ims	IMPU					
Diameter FQDN*	groupas.ims.mr	IMS User State					
Default Handing	Session-Coi 🔻	S-CSCF Name					
Service Info	groupas.ims.mr	IFC					
Rep-Data Size Limit	0	Location					
Include Register Request		User-State					
Include Register Response		Charging-Info					
		MS-ISDN					
		PSI Activation					
		DSAI					
		Aliases Rep Data					

Name: groupas

Server Name: sip:groupas.ims.mnc000.mcc460.3gppnetwork.org:5069

Diameter FQDN: groupas.ims.mnc000.mcc460.3gppnetwork.org

Rep-Data Size Limit: 0

Check the six boxes as shown in the figure above.

Create applicationS	erver Data Config					Associated IFC	1
		Permission for	UDR	PUR	SNR	IFC ID	IFC Name
ID		Allowed Request	1	1	<		
Name*	xcap_as	Repository-Data	1	1	<		Add Delete
Server Name*	sip:xcap.ims.mr	IMPU					
Diameter FQDN*	xcap.ims.mnc0(IMS User State					
Default Handing	Session-Coi 🔻	S-CSCF Name					
Service Info	groupas.ims.mr	IFC					
Rep-Data Size Limit	0	Location					
Include Register Request		User-State					
Include Register Response		Charging-Info					
		MS-ISDN					
		PSI Activation					
		DSAI					
		Aliases Rep Data					

[2]

Name: xcap_as

Server Name: sip:xcap.ims.mnc000.mcc460.3gppnetwork.org:80

Diameter FQDN: xcap.ims.mnc000.mcc460.3gppnetwork.org

Rep-Data Size Limit: 4096

Check the six boxes as shown in the figure above.

reate applicationS	erver Data Config					Associated IFC	
		Permission for	UDR	PUR	SNR	IFC ID	IFC Name
ID		Allowed Request	4	1	•		
Name*	sms_as	Repository-Data				Ac	d Delete
Server Name*	sip:192.168.11.1	IMPU					
Diameter FQDN*	sms.ims.mnc00	IMS User State					
Default Handing	Session-Coi 🔻	S-CSCF Name					
Service Info	groupas.ims.mr	IFC					
Rep-Data Size Limit	0	Location					
Include Register Request		User-State					
Include Register Response		Charging-Info					
		MS-ISDN					
		PSI Activation					
		DSAI					
		Aliases Rep Data					

[3]

Name: sms_as

Server Name: <u>sip:192.168.11.134:5068</u> [IP 是所部属的 IMS 的 IP]

Diameter FQDN: sms.ims.mnc000.mcc460.3gppnetwork.org

Rep-Data Size Limit: 0

Check the three boxes as shown in the figure above.

Create applicationS	erver Data Config					Associated IFC	
		Permission for	UDR	PUR	SNR	IFC ID	IFC Name
ID		Allowed Request	4	4	<		
Name*	mmtel_as	Repository-Data	1	1	 Image: A start of the start of	Ad	d Delete
Server Name*	sip:mmtelas.im:	IMPU					
Diameter FQDN*	mmtelas.ims.mi	IMS User State					
Default Handing	Session-Col 🔻	S-CSCF Name					
Service Info	groupas.ims.mr	IFC					
Rep-Data Size Limit	0	Location					
Include Register Request		User-State					
Include Register Response		Charging-Info					
-		MS-ISDN					
		PSI Activation					
		DSAI					
		Aliases Rep Data					

(4)

Name: mmtel_as

Server Name: sip:mmtelas.ims.mnc000.mcc460.3gppnetwork.org:5065

Diameter FQDN: mmtelas.ims.mnc000.mcc460.3gppnetwork.org

Rep-Data Size Limit: 0

Check the six boxes as shown in the figure above.

2.6.6 Trigger Point

Path: Configuration → IMS Subscriber → Service → Trigger Point

Configuration	۶ Maintenance 📲 Systen	n 🗏 Statistics	🛦 Alarm
Service Profile Applica	tion Server Trigger Point	Initial Filter Criteria	
	Trigger Point Management		
	ID	Name	Condition Type Cnf
			Disjunctive Normal F 🔹
	5	group_tp	0
	6	sms_tp	0
	7	mmtel_tp	0
		Submit Delete	

Reference

group_tp 0

sms_tp 0

mmtel_tp 0

Trigger rule configuration



Profile	Application Se	rver Trigger	Point	Initial Filter C	riteria			
	Trigger Point Man	agement						
	Service Point Tri	igger detail with	Trigg	jer Point ID: 1			Associated IFC	
	ID	1					IFCID	IFC Name
	Trigger Point ID	1		header				
	Condition negated	False	•	Header Content			1	group_iFC
	Group	0 •		Session Case	Origin-Session	T	add	delete
	Туре	Method	•	SDP Line				
	Request URI			SDP Line Content				
	Method	REGISTER	•	Registration Type	All selected			
					☑ Reg ☑ ReReg	»		
		create	e i	modify delete	🗹 DeReg			

Configura	tion 🥜 🗡 Main	tenance	System	i 🔳 Statisti	cs 🛕 Alarm
Service Profile	Application Se	ver Trig	ger Point	Initial Filter Crite	ia
1	Frigger Point Mana	agement			
	Service Point Tri	gger detail w	vith Trigger F	oint ID: 1	
	ID	2			
	Trigger Point ID	1	h	eader	
	Condition negated	False	•	leader Content	
	Group	1	▼	ession Case	Origin-Session 🔹
	Туре	Method	• S	DP Line	
	Request URI		s	DP Line Content	
	Method	INVITE	v R T	legistration 'ype	
					« 1 2
		cr	eate mod	lify delete	
					back

Trigger Point Man	agement					
Service Point Tr	igger detail with Tri	igger F	Point ID: 1		Associated IF	c
ID	3				IFCID	IFC Name
Trigger Point ID	1	h	neader			
Condition negated	False	•	leader Content		1	group_iFC
Group	2 •	s	ession Case	Origin-Session 🔻	ac	id delete
Туре	Method	• S	DP Line			
Request URI		s	DP Line Content			
Method	CANCEL	T F	Registration Type			
				« 1 2 3		
	create	mod	lify delete			

sms_tp:

Configuration 🦯 🗡	Maintenance 📰 Syste	em 🔳 Statist	ics 🛕 Alarm		
ce Profile Applicati	on Server Trigger Point	Initial Filter Crite	eria		
Trigger Point	: Management				
Service Poi	int Trigger detail with Trigge	er Point ID: 2		Associated IFC	
ID	4			IFCID	IFC Name
Trigger Po ID	pint 2	header			
Condition negated	False	Header Content		2	sms_IFC
Group	0 •	Session Case	Origin-Session 🔻	add	delete
Туре	Method •	SDP Line			
Request U	JRI	SDP Line Content			
Method	REGISTER	Registration Type	2 selected 🗸]	
			 ✓ Reg ■ ReReg ✓ DeReg 		
	create	lodiry delete L		4	
			back		

Trigger Point Mar	agement				
Service Point Tr	igger detail with Trigg	er Point ID: 2		Associated IFC	
ID	5			IFCID	IFC Name
Trigger Point ID	2	header			
Condition negated	False	Header Content		2	sms_iFC
Group	1 •	Session Case	Origin-Session 🔻	add	delete
Туре	Method	SDP Line			
Request URI		SDP Line Content			
Wethod	MESSAGE	Type			
	(roto) (r	nodity	« 1 2 3 »		
	Geate	uelete			
juration 🎤 Mair	ntenance 🔡 Syst	tem 🔳 Statist	back tics 🛦 Alarm		
guration 🗡 Mair Affle Application Se Trigger Point Man	ntenance 🔡 Syst erver Trigger Point agement	tem 🔳 Statisi	back tics 🛦 Alarm		
guration 🗡 Mair Ifile Application Se Trigger Point Man Service Point Tr	ntenance 🔡 Syst erver Trigger Point agement igger detail with Trigg	em 🗈 Statist	tics 🛕 Alarm	Associated IFC	
Juration 🗡 Mair Ifile Application Sr Trigger Point Man Service Point Tr ID	ntenance III Syst erver Trigger Point agement igger detail with Trigge	er Point ID: 2	back tics 🛕 Alarm teria	Associated IFC IFC ID	IFC Name
guration file Application So Trigger Point Man Service Point Tr ID Trigger Point ID	ntenance III Syst erver Trigger Point agement igger detail with Trigge 6 2	er Point ID: 2	tics Alarm eeria	Associated IFC IFC ID	IFC Name
uration × Mair file Application So Trigger Point Mar Service Point Tr ID Trigger Point ID Condition negated	Itenance Syst erver Trigger Point agement igger detail with Trigge 6 2 False •	er Point ID: 2	hack tics ▲ Alarm terfa to to *13600138(Associated IFC IFC ID 2 add	IFC Name sms_IFC
guration × Mair file Application So Trigger Point Mar Service Point Tr ID Trigger Point ID Trigger Point ID Condition negated Group	itenance Systematic Sy	em E Statist Initial Filter Crit er Point ID: 2 header Header Content Session Case	back tics ▲ Alarm terfa to	Associated IFC IFC ID 2 add	IFC Name sms_IFC delete
guration × Mair file Application So Trigger Point Mar Service Point Tr ID Trigger Point ID Condition negated Group Type Request URI	tenance Syst erver Trigger Point agement igger detail with Trigger 6 2 False • 1 • SIP-Header •	em E Statist Initial Filter Crit er Point ID: 2 header Header Content Session Case SDP Line	hack tics ▲ Alarm terfa to	Associated IFC IFC ID 2 add	IFC Name sms_IFC delete
guration × Mair file Application So Trigger Point Mar Service Point Tr ID Trigger Point ID Condition negated Group Type Request URI Method	Atenance System System System Siger detail with Trigger SIP-Header * SIP-Header *	em E Statis Initial Filter Crit er Point ID: 2 header Header Content Session Case SDP Line SDP Line Content	back tics Alarm terfa to	Associated IFC IFC ID 2 add	IFC Name sms_IFC delete
guration × Main file Application Set Trigger Point Mar Service Point Tr ID Trigger Point ID Trigger Point ID Condition negated Group Type Request URI Method	Atenance System erver Trigger Point agement igger detail with Trigger 6 2 False • 1 • SIP-Header • None •	er Point ID: 2 header Header Content SDP Line SDP Line SDP Line Registration Type	back tics Alarm terfa to	Associated IFC IFC ID 2 add	IFC Name sms_IFC delete

mmtel_tp

Configuration	📕 Mainten	ance 📰 Syst	em 🔳 Statistic	s 🛕 Alarm		
rvice Profile A	pplication Server	Trigger Point	Initial Filter Criter	ia		
Trigge	er Point Manage	nent				
Crea	ate TpSpt Config				Associated IFC	
ID					IFCID	IEC Name
Tri ID	gger Point	}	header		in cib	
Co	ndition gated	False 🔻	Header Content		add	delete
Gr	oup	0 •	Session Case	Origin-Session •		
Ту	pe	Method 🔻	SDP Line			
Re	quest URI		SDP Line Content			
Me	ethod	REGISTER •	Registration Type	2 selected -		
		c	reate	Reg ReReg		
				Dekeg	-	
Configuration	P Mainten	ance 📰 Syst	em 🔳 Statistic	ia		
Trigge	er Point Manage	ment				
		Create Spt Confi	3			
		ID				
		Trigger Point ID	3	header		
		Condition negated	False	, Header Content		
		Group	1 •	Session Case	Origin-Session 🔻	
		Туре	Method	, SDP Line		
		Request URI		SDP Line Content		
		Method	INVITE	, Registration Type		
				add		
				back		

Trigger Point Ma	nagement			
Service Point T	rigger detail with Trigg	er Point ID: 3		Associated IFC
ID	9			IFC ID IFC Name
Trigger Point ID	3	header		
Condition negated	False	Header Content		add delete
Group	2 *	Session Case	Origin-Session 🔻	
Туре	Method	SDP Line		
Request URI		SDP Line Content		
Method	CANCEL	Registration Type		
			« 1 2 3	
	create	nodify delete		

2.6.7 Initial Filter Criteria

Path: Configuration \rightarrow IMS Subscriber \rightarrow Service \rightarrow IFC

🌣 Configuration 🥕	Maintenance	System	Statistics	🛕 Alarm	
Service Profile Applicati	on Server Tri	gger Point Initial	Filter Criteria		
	Initial Filter Crit	teria Management			
	ID	Name	AS	ТР	Profile Part Ind
			None •	None •	Any v
	5	sms_iFC	5	6	-1
	6	mmtel_iFC	5	7	-1
	7	group_iFC	5	5	-1

Reference configuration

group_iFC	group_as	group_tp	any
sms_iFC	sms_as	sms_tp	any
mmtel_iFC	mmtel_as	mmtel_tp	any

2.6.8 Service Profile Management

rath; Configuration 7 mas subscriber 7 Service 7 Service 110m	Path:	Configuration \rightarrow	IMS Subscriber	→Service	→Service	Profile
---	-------	-----------------------------	-----------------------	----------	----------	---------

Configuration	ion 🖌 Maintenai	nce 🔡 System	Statistics	🛦 Alarm
Service Profile	Application Server	Trigger Point Initial F	ilter Criteria	
		Service Profile Manager	nent	
		ID	Name	CN Server Auth
		4	default_sp	0
			Submit Delete	

Attach associated IFC

Attach the IFC of AS which in use.

🌣 Configurati	on 🖌 Maintenance	🖬 System 🔳	Statistics 🔒 Alarm	
Service Profile	Application Server Tr	igger Point Initial Filter Crit	teria	
	IFC in association	on with Service Profile ID: 4		
	SP ID	IFC ID	IFC Name	Priority
	4			
	4	7	group_iFC	1
	4	5	sms_iFC	2
		Attach	Detach Back	
		Attach	Jeach Back	

2.6.9 Add Business Template

Path: Configuration → IMS Subscriber → Xcap & Call Diversion → XCAP Call Diversion Template

Call Diversion Rep	oository Data X	CAP Call Diversion Template			
		Create Xcap Calldiver	sion Template Co	onfig	
ID					
Media	audio	Time		Target	
Oip Active	active	, Icb Rule Deactive	active	• Ocb Exhc Rule Deactive	active v
Oir Active	deactive	, Icb Allow	false	• Ocb Exhc Allow	false •
Oir Mode	false	, Icb Roam Rule Deact	active	• Cw Active	active •
Oir Behaviour	true	, Icb Roam Allow	false	🔻 Cd Type	CFU •
Tip Active	active	, Ocb Active	deactive	• Rule Deactive	active •
Tir Active	deactive	, Ocb Rule Deactive	active	• No Caller	true 🔻
Tir Mode	false	, Ocb Allow	false	• Re Id Caller	true 🔻
Tir Behaviour	true	, Ocb Roam Rule Deactive	active	• Re Ser Uid Caller	true 🔻
Cd Active	active	, Ocb Roam Allow	false	• No Ser User	false 🔻
No Reply Timer	20	Ocb International Rule Deactive	active	▼ No Ser User Out Call	false •
Icb Active	deactive	Ocb International Rule	false	• Re Id Target	true •

2.6.10 Add IMS Subscriber In Batchs

PU IMSU Batch S	Subscriber				
Batch Subscriber Add					
IMSI*	460000123456001	length:6-15	S-CSCF Capabilities	cap_set1	¥
PLMN*	46000	length:5-6	Preferred S-CSCF*	scscf1	v
Tel Phone Number	+8618001234001	length:1-15	Visited Network Template ID*	4	T
Auth Scheme*	4 selected •		IMPU Type*	Public-User-Ide	•
Default Auth Scheme*	Digest-AKAv1(3GPP) 🔻	Barring*	false	¥
AMF*		•	PSI Activation*	false	T
SQN*	1		Can Register*	YES	•
Wildcard Psi			Service Profile*	default_sp	•
Service Indication*	MMTEL-Services		Xcap Call Diversion Template ID*		•
Count*	10	[1 10000]			

Path: Configuration \rightarrow IMS Subscriber \rightarrow User \rightarrow Batch Subscriber

O IMSU Batc	h Subscriber						
Batch Subscriber Ac	ld						
IMSI*		length:6	5-15	S-CSCF Capabilit	ies	cap_set1	¥
PLMN*		length:5	-6	Preferred S-CSCF	*	None	Ŧ
Tel Phone Number		length:1	-15	Visited Network	Template ID*	4	T
Auth Scheme*	4 selected -			IMPU Type*		Public-User-Id	€ ▼
Default Auth Scheme*	Digest-AKAv1(3GPP)	•		Barring*		false	T
AMF*		•		PSI Activation*		false	T
SQN*	1			Can Register*		YES	T
Wildcard Psi				Service Profile*		default_sp	Ŧ
Service Indication*	MMTEL-Services			Xcap Call Diversi ID*	on Template		T
Count*	1	[1,1000	D]				
			A	dd			
Batch Subscriber De	lete						
	IMSI*		46000	00123456001	length:6-15		
	PLMN*		46000)	length:5-6		
			_				

2.6.11 Delete IMS Subscriber In Batchs

2.7 Add VoIP Subscriber

2.7.1~Add an OP with value of all 0

nance 🔡 S	ystem 🔳 Statistics	Alarm
F OP		
OP Manag	gement	
II	D Name	Value
2	OP_zero	000000000000000000000000000000000000000
1	OP_Profile	•••••
	Delet	e Add
	F OP	F OP OP Management DP Management OP_zero 1 OP_Profile Delet



2.7.2 Create Authentication Config

Configuration	📕 Maintenar	nce 🎛 System	Statistics	🛦 Alarm
Authentication Data	K4 AMF	OP		
			Create Authentication Co	onfig
		IMSI	1000	
		KI	123456	✓ VoIF
		K4	k4_invaik 🔻	
		OP	OP_zero 🔻	
		OPC		
		OPC K4	k4_invailc 🔻	
		AMF	IMS_AMF V	
		Card Type	USIM V	
		Algorithm	milenage 🔻	
		IMSI Count	1 [1,	,10000]
			Add Back	

IMSI: Fill in the IMSI of VoIP you set

KI: Similar to your VoIP user's password, Remember to check the VoIP on the right

OP: Select the name of op with all 0

AMF: Select the AMF with a value of 0000

2.7.3 Add VoIP Subscriber

Path: Configuration \rightarrow IMS Subscriber \rightarrow User \rightarrow Batch Subscriber

IMPU IMSU Batch	Subscriber				
Batch Subscriber Add					
IMSI*	1000	length:6-15	S-CSCF Capabilities	cap_set1	•
PLMN*	46000	length:5-6	Preferred S-CSCF*	scscf1	•
Tel Phone Number	+861000	length:1-15	Visited Network Template ID*	4	•
Auth Scheme*	4 selected	•	IMPU Type*	Public-User-Ide	
Default Auth Scheme*	Digest-AKAv1(3G	iPP) 🔻	Barring*	false	•
AMF*	IMS_AMF	Ŧ	PSI Activation*	false	
SQN*	1		Can Register*	YES	•
Wildcard Psi			Service Profile*	default_sp	
Service Indication*	MMTEL-Services		Xcap Call Diversion Template ID*		•
Count*	1	[1,10000]			

Tel Phone Number; Remember to add "+ 86" to the front

2.8 Maintenance

2.8.1 Basic Info

Path: Maintenance → Basic Info

	🗲 Maintenance	👪 System	Statistics	Alarm	
APP Mod	iules Status			EPS Peer Status	
	hssC x Process		Active	162.mme.com	in-service
	hssOamProcess		Active		
	hssS6aProcess		Active	IMS Peer Status	
	hssScProcess1		Active		1
	hssScProcess2		Active	reschams.mincouol.micc460.3gppnetwork.org	in-service
	hssScProcess3		Active	groupasimismincouomicc460.3 gppnetwork.org	In-service
	hssSigtranProcess		Inactive	scapims.mincoul.micc460.3 gppnetwork.org	in-service
	hssTmProcess		Active	hof imp mp c000 mod460.3 gppnetwork.org	In-service
				bsi.ims.mncouu.mcc46u.3gppnetwork.org	in-service
PLT Mod	ules Status				
	hssSmProcess		Active	System Status	
	redis-server		Active	CPU Usage:	
				30.00%	
				HDD Usage:	
				Memory Usage:	
				30.76%	
			Refresh		

2.8.2 Capture Package

Path: Maintenance →Capture

🌣 Configuration	🗲 Maintenance 📲 System 🔳 Statistics 🛕 Alarm
Capture	
	HSS Packet Capturing
	Interface Name Protocol Type IP Port Time Span
	any
	Start
	Packet Info
	Package Name Size
	admin_capture_20191016-182238.pcap 1.1M
	Download

2.8.3 Query Subscriber Info

Path: Maintenance →Subscriber Info

🌣 Configuratio	n 🎤	Mainte	nance	System	Statistics	🔺 Alarm	
Subscriber Info	CLR	IDR	Online	Subscriber Number			
			_				
				Subscriber Info stat	tus		
				IMSI		Action	Result
						show	Success
					HSS subs	criber Data	
			IN	/ISI		46000012345	56010
			M	ISISDN		18001234010)
			M	IME Realm Name		mme.com	
			M	IS Purged Eps Flag		False	
			M	IME Host Id		162.mme.com	n
			U	pdate Location Time	estamp	2019-10-25 1	13:35:05
			Pi	urged Timestamp			

2.8.4 Cancel Location Request

Configurati	on 🦯	[©] Maintena	nce 🔡 System	Statistics	🛦 Alar	m
Subscriber Info	CLR	IDR On	line Subscriber Number			
			Cancel Location Request			
			Name		Value	
			IMSI			length: [6,15]
			Domain	EPS	•	
			Cancel Type	mmeUpdatePro	cedure 🔻	
			Enforce	False	•	
				Culturit		
				Submit		

2.8.5 Insert Subscriber Data Request

Configuration 🖌 Maintenar	nce 🔛 System	Statistics	🛦 Alarm
Subscriber Info CLR IDR On	line Subscriber Number		
	Insert Subscriber Data R	lequest	
	Name		Value
	IMSI		length: [6,15]
	Domain	EPS	•
		Submit	

2.8.5 Query Online Subscriber Number

🗘 Configuratio	n 🎤	Maint	enance	System	🔳 Stati	stics	🛦 Alarm	
Subscriber Info	CLR	IDR	Online S	ubscriber Number				
			0	nline Subscriber Nu	mber			
				Туре			Action	
				ALL	•		Show	
					HSS/HLR Onli	ne Subscriber		
			EPS	S Number		0		
			GP	RS Number		0		
			No	n GPRS Number		0		

2.9 System

2.9.1 Software Management

2.9.1.1 Software Upgrade

Path: System -->Software Management [Software Mgmt]

Configuration	📕 Maintenance	🔛 System	Statistics	🛦 Alarm	
oftware Mgmt	Web Version Mgmt				
	Software Upgra	de			
	Package Name Progress	选择文件,为	长选择任何文件		
	Load Info				
	Active Zone		Inactiv	re Zone	
	Load	SAE-HSS-R3C1V3.2 Ra.x86_64.rpm	2.0.856- Lo	ad	
	Build Date	2019-07-13 14:52:	57 Ver	sion	
	Version	HSS_R3C1V3.2.0.8	56_HSS		
		p	Switch		Size
		P.	ackage Name		5120
			Upgrade Delete]	

- 2.9.1.2 Replace Web Logo
- Path: System -->Software Management -->Web Version Mgmt

🌣 Configuratio	n 🎤	Maintenance	🖬 System	Statistics	🛕 Alarm	
Coffeend Manual	Male M					
Software Night	vveb v	ersion wight				
		Version Informati	on			
			Web Version		10.570	
			Build Time		2020-04-07 12:52:46	
		OMC WEB Up and				
		ONIC-WEB Opgra	ide			
		Package	选择文件未送	择任何文件		
		Name				
		Progress				
			Pac	kage Name	Size	
		0	hssWe	eb_1018.tar.gz	18M	
		0	hssWeb_1	1018_temp2.tar.gz	18M	
		•	hssWeb_1	1018_temp3.tar.gz	18M	
		•	hssWe	eb_1020.tar.gz	18M	
		0	hssWe	eb_1048.tar.gz	18M	
		0	hssWe	eb_1050.tar.gz	18M	
		0	hssWe	eb_1054.tar.gz	18M	
		0	hssWe	eb_1055.tar.gz	18M	
		0	hssWe	eb_1056.tar.gz	18M	
		0	hssWe	eb_1057.tar.gz	18M	
				opgrade Delete		

Upgrade steps:

(1) Click "选择文件"the button selects the Package that needs to be updated for uploading.

(2) After uploading, list the Package Name and size under the Package Name. Then check the package that needs to be replaced , and click the Upgrade button to complete the replacement. This will take a few seconds

The Delete button can Delete the uploaded packages.

E Configuration	🗡 Maintenance	🔛 System	🗐 Statistics 🛛 🛕 Ala	rm	
ss Modules					
	APP Modules				
	Name	State	Description	Actio	on
	hssCxProcess	Inactive	Exited too quickly (process log may have details)	Star	rt
	hssOamProcess	Active	pid 2146, uptime 2 days, 7:37:39	Restart	Stop
	hssS6aProcess	Inactive	Exited too quickly (process log may have details)	Star	rt
	hssScProcess1	Active	pid 2148, uptime 2 days, 7:37:39	Restart	Stop
	hssScProcess2	Active	pid 2144, uptime 2 days, 7:37:39	Restart	Stop
	hssScProcess3	Active	pid 2150, uptime 2 days, 7:37:39	Restart	Stop
	hssSigtranProcess	Inactive	Exited too quickly (process log may have details)	Star	rt
	hssTmProcess	Active	pid 2149, uptime 2 days, 7:37:39	Restart	Stop
			Restart All Stop All		
	PLT Modules				
	Name	State	Description	Acti	on
	hssSmProcess	Active	pid 2142, uptime 2 days, 7:37:39	Restart	Stop
	redis-server	Active	pid 2141, uptime 2 days, 7:37:39	Restart	Stop
			Restart All Ston All		

2.9.2 Process Management

2.9.3 User Management

🗢 Configuration	🖌 Maintenance	👪 System	🗉 Statistics	🔺 Alarm	
User Mgmt					
	L	Jser Management	:		
		User Na	me	Account Type	
		admi	n	Administrator	
			4	Add	

2.10 Statistics

2.10.1 S6a KPI Statistics

2.10.1.1 Active S6a Passively Trigger KPI Statistics

Main messages:

AIR/AIA: **(**Authentication-Information-Request, Authentication-Information-Answer**)** Used to request storage authentication information in HSS;

ULR/ULA: 【Update-Location-Request、Update-Location-Answer】 Inform HSS the identification of MME or SGSN, and request to update location infor mation stored in HSS;

NOR/NOA: [Notify-Request, Notify-Answer] For MME or SGSN, there is no location update, but it is necessary to inform HSS the update of terminal information, and the changes of UE PDN-GW address;

PUR/PUA: [Purge-UE-Requesr, Purge-UE-Answer] The user information in HSS is requested to be cleared when User profile in MME or SGSN has been cleared



ECR/ECA:



2.10.1.2 History S6a Passively Trigger KPI Statistics

2.10.1.3 Active S6a Initiative Trigger KPI Statistics

Main messages:

CLR/CLA: 【Cancel-Location-Request、Cancel-Location-Answer】 It is used to inform MME or SGSN that the user signing cancellation or update operation is in progress, and request to delete the stored signing data;

ISR/ISA:

DSR/DSA: [Delete-Subscriber-Data-Request, Delete-Subscriber-Data-Answer]

It is used to request to delete part or all of the user data stored in MME or SGSN, including EPS signing data, regional signing data, billing specification parameter signing data, tracking data, etc.



2.10.1.4 History S6a Initiative Trigger KPI Statistics

2.10.2 Cx KPI Statistics

2.10.2.1 Active Cx KPI Statistics

Main messages:

UAR/UAA: 【User-Authorization-Request、User-Authorization-Answer】 Sent by I-CSCF to HSS, for user access authorization request;

MAR/MAA: Sent by S-CSCF to HSS, used to request authentication and authorization information;

PPR/PPA: Sent by HSS to S-CSCF, when the authentication data is modified, HSS sends PPR message and requests to update the user data in S-CSCF;

SAR/SAA: Sent by S-CSCF to HSS, it is used to request HSS to download user data and request HSS to store the name of the server that serving the user currently;

LIR/LIA: Sent by I-CSCF to HSS, it is used to request the name of the S-CSCF currently providing services to users;

RTR/RTA: Sent by HSS to S-CSCF, it is used to deregister a subscriber.



2.10.2.2 History Cx KPI Statistics



2.10.3 Sh KPI Statistics

2.10.3.1 Active Sh KPI Statistics

Main messages:

UDR/UDA: [User Data Request, User Data Answer] AS requests to read transparent data or untransparent data of designated users from HSS;

SNR/SNA: **[**Subscribe Notifications Request, Subscribe Notifications Answer **]** AS requests to subscribe or unsubscribe transparent data or untransparent data of designated users from HSS;

PUR/PUA: **[**Profile Update Request, Profile Update Answer **]** AS requests to update transparent data or alias transparent data data of designated users from HSS;

PNR/PNA: **[**Push Notification Request, Push Notifnication Answer **]** When the data that AS subscribes to HSS via SNR(subscribe notifications request) is updated, HSS sends the updated data to AS via PNR message.



2.10.3.2 History Sh KPI Statistics



2.11 Alarm

2.11.1 Active Alarm

Path: Alarm ->Active Alarm

Warning messages will be output in the list below. If there is no alarm, it goes blank.



2.11.2 History Alarm

Path: Alarm ->History Alarm

Select the alarm time period , the type of alarm, the alarm level, and the alarm recovery to view as needed.

н	
	istory Alarm Query Option
	Alarm Time
	🖉 Start Time: 📑 🖉 End Time: 📑
	Alarm Type
	Business A 8 9 10 11 12 13 14 Merchant A 14 ■ Hardware Alarm
	Alarm Level 22 23 24 25 26 27 28
	Recover Typ
	Ack NonAck Nal
	Record Num: 64
	Query

Repaire	Repaire Time	Content	Start Time	ID
Check whethe generates	2019-06-11 16:52:28	gunicom was been restarted 17 second ago, And process pid is: 13082	2019-06-11 16:39:00	1
Check whether th generates	2019-06-11 16:52:28	hssOamProcess was been restarted 11 second ago, And process pid is: 13824	2019-06-11 16:42:20	2
Check whether t generates	2019-06-11 16:52:28	hssScProcess1 was been restarted 9 second ago, And process pid is: 13883	2019-06-11 16:42:20	3
Check whether t generates	2019-06-11 16:52:28	hssScProcess2 was been restarted 12 second ago, And process pid is: 13819	2019-06-11 16:42:20	4
Check whether t generates	2019-06-11 16:52:28	hssScProcess3 was been restarted 7 second ago, And process pid is: 13907	2019-06-11 16:42:20	5
Check whether generates	2019-06-11 16:52:28	hssTmProcess was been restarted 8 second ago, And process pid is: 13894	2019-06-11 16:42:20	6
Check whether t generates	2019-06-11 16:52:28	hssSmProcess was been restarted 14 second ago, And process pid is: 13775	2019-06-11 16:42:20	7
Check whether generates	2019-06-11 16:52:28	redis-server was been restarted 15 second ago, And process pid is: 13772	2019-06-11 16:42:20	8
Check whether th core	2019-06-11 16:52:28	nginx was been restarted 17 second ago, And process pid is: 13751	2019-06-11 16:42:20	9
Check whether generates	2019-08-09 04:12:17	hssCxProcess was been restarted 17 second ago, And process pid is: 12661	2019-08-09 04:06:28	10
Check whether the	2019-08-09 04:12:17	hssOamProcess was been restarted 17	2019-08-09 04:06:28	11

Download back

3 Frequently Asked Questions

4 Peroration

This manual is suitable for users and field engineers.