

SBC Basic Configuration Practice Guide

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Foreword

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- This document is used to introduce the basic functions of SBC, application scenarios, basic configuration, basic maintenance.

Course Objective

Through this course
you will be able to



Understanding SBC models
and interfaces



Understand the principle
and scenarios of SBC



Understanding the basic
configuration of SBC

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01

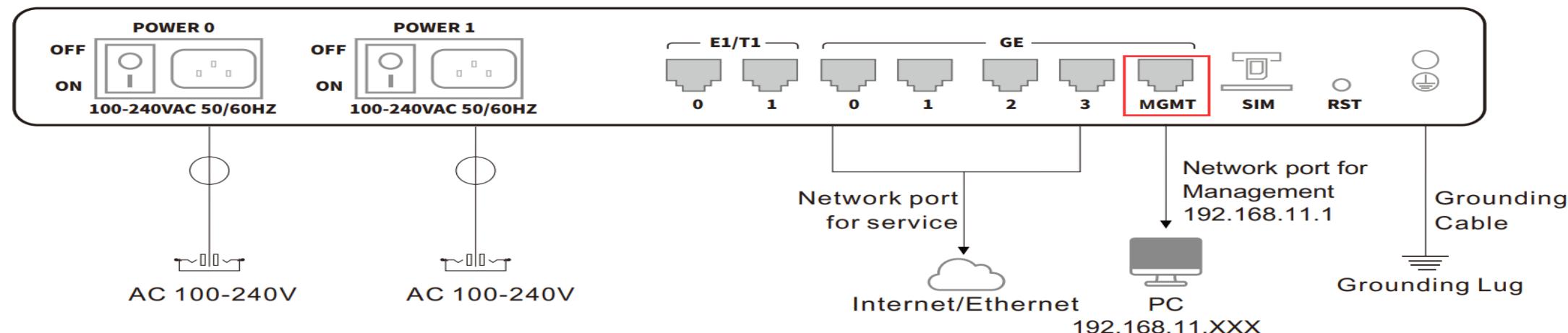
Web Access to SBC

Web Access to SBC

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Here we use the SBC1000 connection as a case study

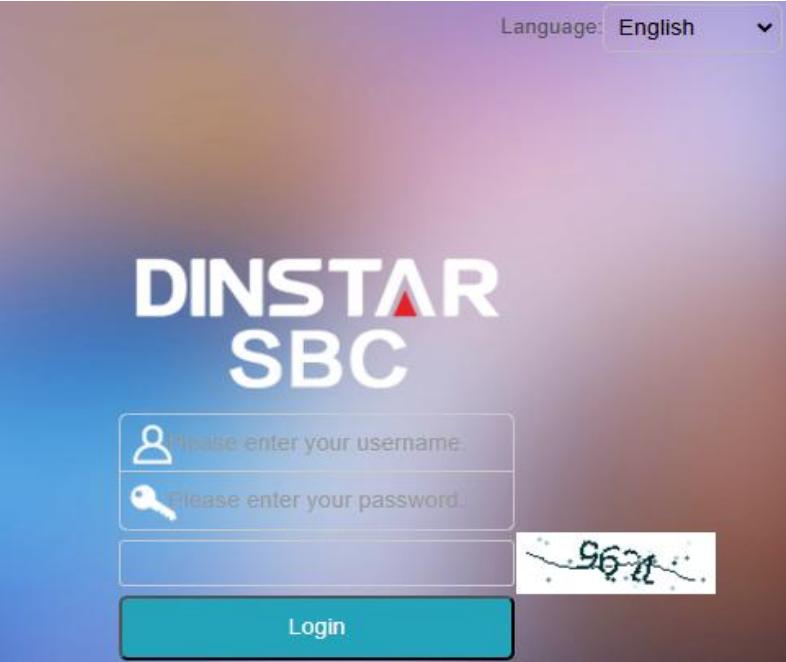
1. Connect the computer's Ethernet cable to the network management port of SBC
2. Set the PC's IP to 192.168.11.x, e.g. 192.168.11.3



Web Access to SBC

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3. Web access to the management port IP of the SBC using HTTPS.
4. Default username: admin password: admin@123#



The login screen for the DINSTAR SBC. It features a large background image with the DINSTAR SBC logo. In the center, there are two input fields: one for 'Please enter your username' and another for 'Please enter your password'. Below these is a teal-colored 'Login' button.

DINSTAR SBC

Language: English

Overview Service Security System Maintenance

Administrator : admin Logout Language: English

Calls Statistics

CPS	0	20	RPS	0	20
Peak CPS	0		Peak RPS	0	
Current Calls	0	300	Registered Users	3	3000
Max Calls	2		Max Registered Users	7	
ASR	80	100%	Total Calls Forwarded	15	
Average Successful Call Duration(s)	5				

MCU Status

CPU	5	100%	Memory	10	100%
Flash/App	75	100%	Temperature	56	100°C
Flash/Data	6	100%			

Device Info

MFU	MCU
CPU %	
Memory %	
Call: 0	
Slot0	GE0 100M Full Duplex
Temperature: °C	GE1 GE2 1000M Full Duplex
	GE3 Admin 100M Full Duplex

General

Device Model	SBC300
Device Name	SBC300-55
Software Version	2.92.4.4psp4
Version Time	2025-05-29 15:52:11 CST
Device SN	dc28-0509-4004-0004
Hardware SN	2481-1716-1630
License Status	Valid
License Expires	14days 16:59:60
Current Time	2025-06-17 03:06:52
Running Time	6days 18:51:35
Active-Standby Status	Main Board

Calls Statistics



A line graph showing the number of calls over time. The x-axis represents hours from 4 to 23, and the y-axis represents the count of calls from 0 to 5. A single sharp peak is visible at approximately 9:00, reaching a value of about 3.5.

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SBC Basic Configuration

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Setting Up Network Information

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1. Click on System – Network
2. Select the network port to be used, configure IP address and other information

Note:

If the SBC Ethernet port does not enough, you can use the VLAN and additional switch to extend it

The screenshot shows the DINSTAR SBC web interface. The top navigation bar includes links for Overview, Service, Security, System, Maintenance, and a status section with icons for CPU, RAM, and disk usage, along with Sync File, Administrator: admin, and Logout options.

The left sidebar contains a navigation menu with the following items:

- System Management
- Web Configuration
- Network** (highlighted with a red box and circled with a red number 1)
- Port Mapping
- Static Route
- User
- Date&Time
- Upgrade
- Backup & Restore
- License
- Certificate
- UserBoard

The main content area is titled "Network" and displays a table of network interfaces. The table columns are:

Name	Service or Management Port	MTU	Mac	IPV4 Address	Subnet Mask	IPV4 Gateway	IPV4 DNS	IPV6 Address	IPV6 Gateway	IPV6 DNS	Priority
GE0	Service Port	1500	F8:A0:3D:40:75:90	172.28.3.11	255.255.0.0	172.28.1.1	172.28.1.1/				20
GE1	Service Port	1500	F8:A0:3D:40:75:91	192.168.13.1	255.255.255.0		/				30
GE2	Service Port	1500	F8:A0:3D:40:75:92	192.168.5.10	255.255.255.0		/				40
GE3	Service Port	1500	F8:A0:3D:40:75:93	192.168.15.1	255.255.255.0		/				50
Admin	Management Port	1500	F8:A0:3D:40:75:94	172.28.3.10	255.255.0.0	172.28.1.1	/				100
GE3.102	Service Port	1500		172.28.3.3	255.255.0.0		/				512

Two specific rows are highlighted with red boxes and circled with red numbers 1 and 2, corresponding to the steps in the instructions above.

Setting Up Access Control

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1. By default, enable web access permissions for the management port
2. Click on Security - Access Control, set web access permissions for other network ports

The screenshot shows the DINSTAR SBC web interface. The top navigation bar includes links for Overview, Service, Security, System, and Maintenance. On the right side of the header, there are several status icons (fire, power, signal, etc.) and a Sync File button. The main content area has a sidebar on the left with sections for System Security, Access Control (which is highlighted with a red box), Security Policy, and Web authentication configuration.

The main panel is titled "Access Control" and contains a sub-section titled "Web Server". It shows the "HTTPS Port" set to 443. Below this, there is a list of network interfaces with checkboxes next to them:

- Allowed to access GE0
- Allowed to access GE1
- Allowed to access GE2
- Allowed to access GE3.102
- Allowed to access GE3

At the bottom of the panel, there is a "Web ACL IP whitelist" input field with a range selector (~) and a "Delete" button. A note below the input field reads: "Please configure carefully to prevent configuration errors from making it inaccessible".

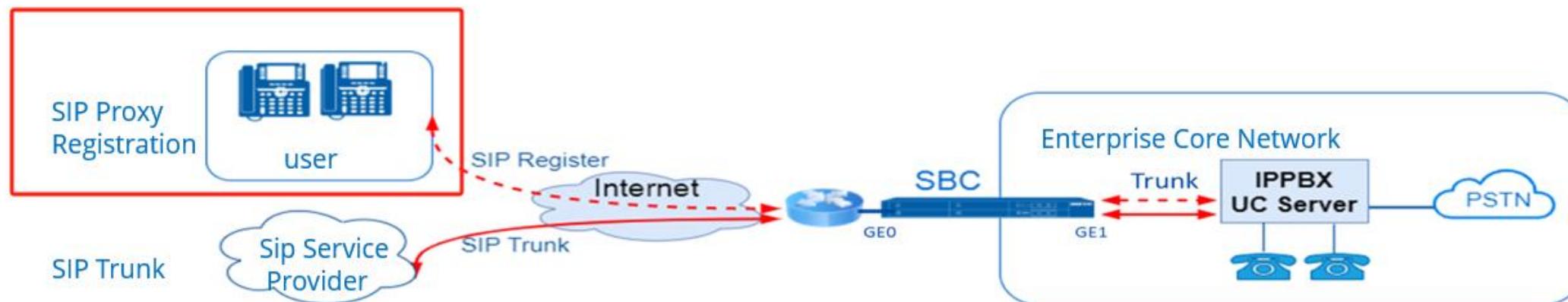
SIP Proxy Register Configuration

DINSTAR

- Usage Scenarios

The IPPBX is on the corporate intranet and is required to accept registrations from other extensions coming from the public network. For security reasons, extensions are not allowed to connect directly to the IPPBX and the SBC acts as a proxy server. The logical structure is as follows:

Extension - (access network) SBC (Core SIP Trunk) - IPPBX



SIP Proxy Register Configuration

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TransPort Endpoint → Access Network → Core SIP Trunk → Call Routing

1. Click on Service - Transport Endpoint
2. Custom name
3. Select Dedicated To Access Network
4. Select interface、transport and port
5. Using the same method, uncheck the Dedicated To Access Network and create a Transport Endpoint for core SIP Trunk

The screenshot shows the DINSTAR SBC web interface. The top navigation bar includes links for Overview, Service, Security, System, Maintenance, and Urgent Note! !!. The main menu on the left lists Transport Endpoint, Access Network, Access SIP Trunk, Core SIP Trunk, Routing Profile, Media Detection, CDR, Codec Profile, TLS Configuration, Recording configuration, and Advanced. The right panel displays a form for creating a Transport Endpoint. The form fields are: ID (1), Name (Public), Description (empty), Valid (checked), Dedicated To Access Network (checked), Interface (GE0), Transport (UDP), SRTP (unchecked), Port (5060), IPv4/IPv6 (IPv4), and Signaling DSPP (BE). Buttons for Save and Cancel are at the bottom. A red circle labeled ① points to the Transport Endpoint link in the sidebar. A red circle labeled ② points to the Name field. A red circle labeled ③ points to the Dedicated To Access Network checkbox. A red circle labeled ④ points to the highlighted group of fields (Interface, Transport, Port) which are all enclosed in a red box.

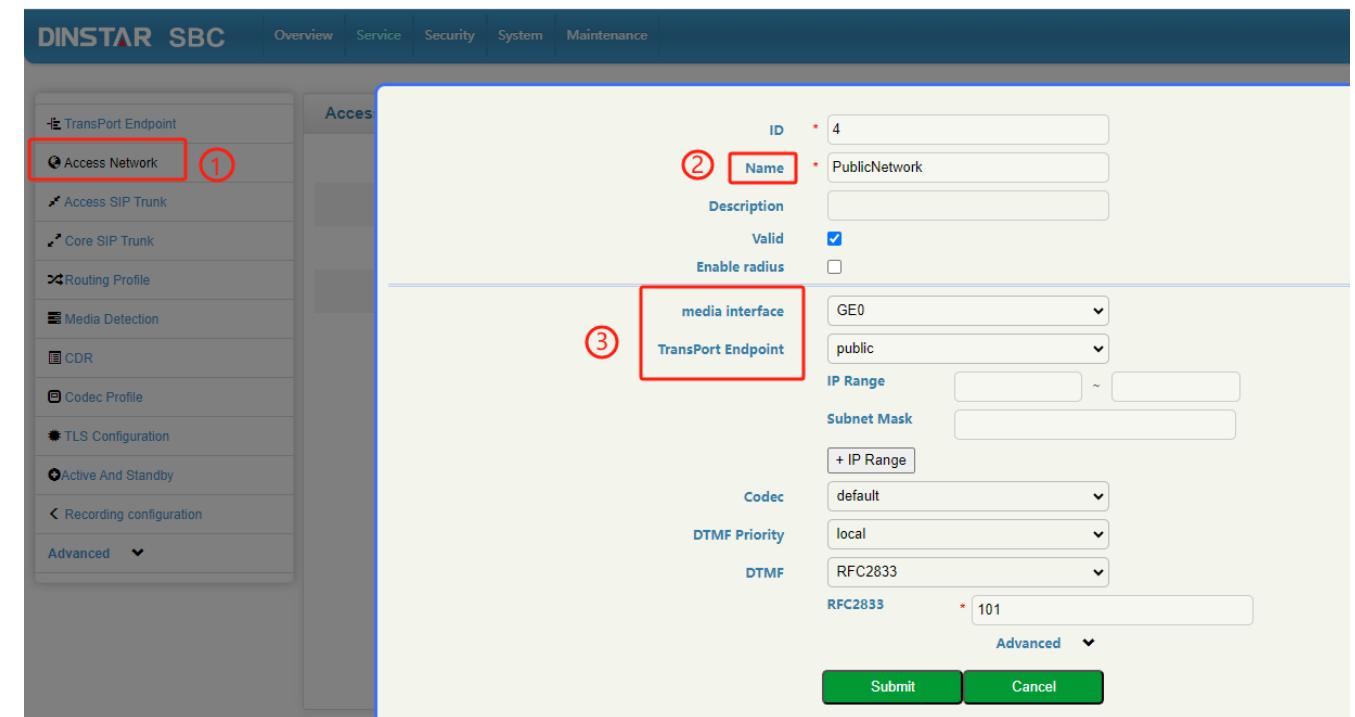
ID	Name	Description	Interface	Port	IPv4/IPv6	Transport	Dedicated To Access Network
1	Public		GE0	5060	ip4	udp	true
2	Local		GE1	5060	ip4	udp	false

SIP Proxy Register Configuration

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1. Click on Service - Access Network
2. Custom name
3. Select media interface and Transport Endpoint

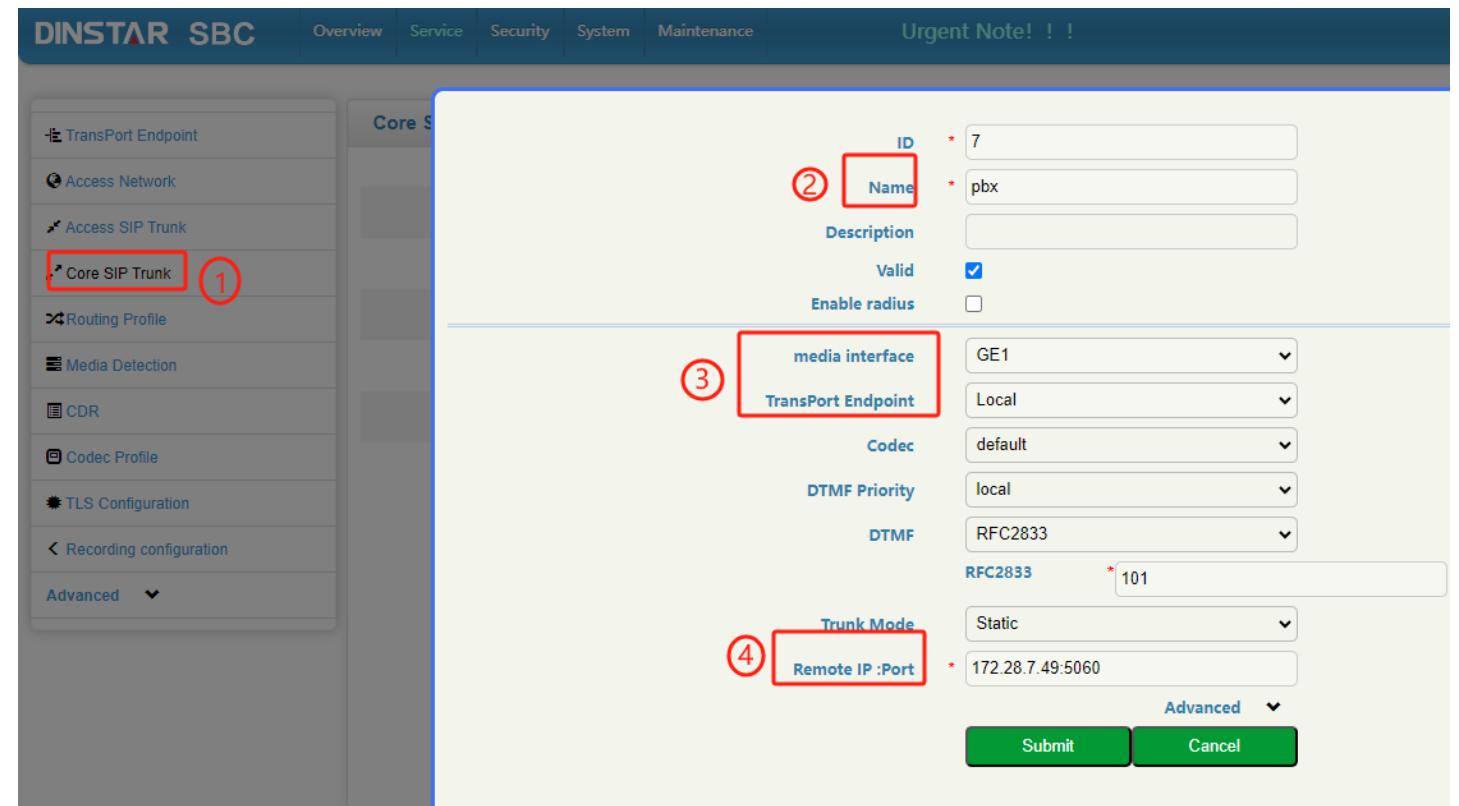


SIP Proxy Register Configuration

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TransPort Endpoint → Access Network → Core SIP Trunk → Call Routing

1. Click on Service – Core SIP Trunk
2. Custom name
3. Select media interface and Transport Endpoint
4. Configure the IP and port of PBX



SIP Proxy Register Configuration

DINSTAR

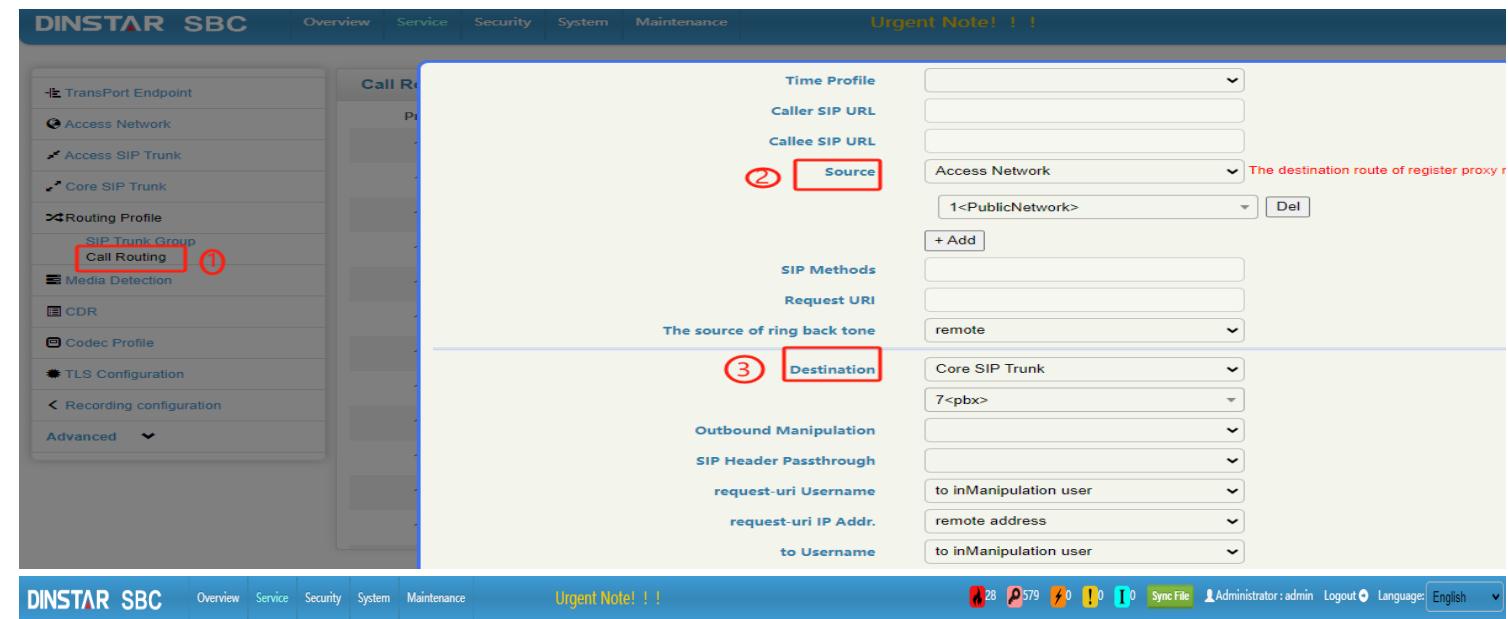
TransPort Endpoint

Access Network

Core SIP Trunk

Call Routing

1. Click on Service – Call Routing
2. Select routing source and destination
3. Create another outbound route using the same method



Call Routing			
Priority	Description	Condition	Destination/Manipulation Rule
1008		7<pbx>	1<PublicNetwork> / -
1009		1<PublicNetwork>	7<pbx> / -
1010		5<11fuuwqj>	4<Skou> / -

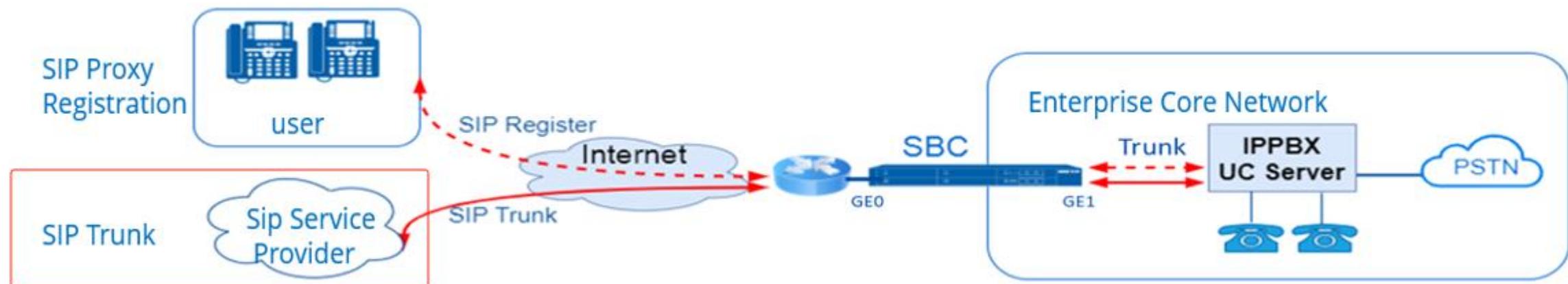
SIP Trunk Configuration

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- Usage Scenarios

The SBC connects a SIP trunk to an external SIP service provider through an access trunk.

The SBC connects to the Intranet server through SIP trunk on the LAN and core trunk is configured on the SBC



SIP Trunk Configuration

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TransPort Endpoint

Access SIP Trunk

Core SIP Trunk

Call Routing

1. Click on Service - Transport Endpoint
2. Custom name
3. Select interface、transport and port
4. Using the same method, create a Transport Endpoint for GE1

The screenshot shows the DINSTAR SBC management interface. The top navigation bar includes links for Overview, Service, Security, System, Maintenance, and Urgent Note!!!. The main menu on the left lists several service types: TransPort Endpoint (highlighted with a red box and circled 1), Access Network, Access SIP Trunk, Core SIP Trunk, Routing Profile, Media Detection, CDR, Codec Profile, TLS Configuration, Recording configuration, and Advanced.

A modal window is open for creating a new Transport Endpoint. It contains fields for ID (3), Name (GE0_5070), Description, Valid (checked), Dedicated To Access Network (unchecked), Interface (GE0), Transport (UDP), SRTP (unchecked), Port (5070), IPv4/IPv6 (IPv4), Signaling DSCP (BE), and two buttons: Save and Cancel. The 'Name' field is circled 2, and the 'Interface', 'Transport', and 'Port' fields are grouped together and circled 3.

Below the modal, a table titled 'TransPort Endpoint' displays three entries:

ID	Name	Description	Interface	Port	IPv4/IPv6	Transport	Dedicated To Access Network
1	Public		GE0	5060	ip4	udp	true
2	Local		GE1	5060	ip4	udp	false
3	GE0_5070		GE0	5070	ip4	udp	false

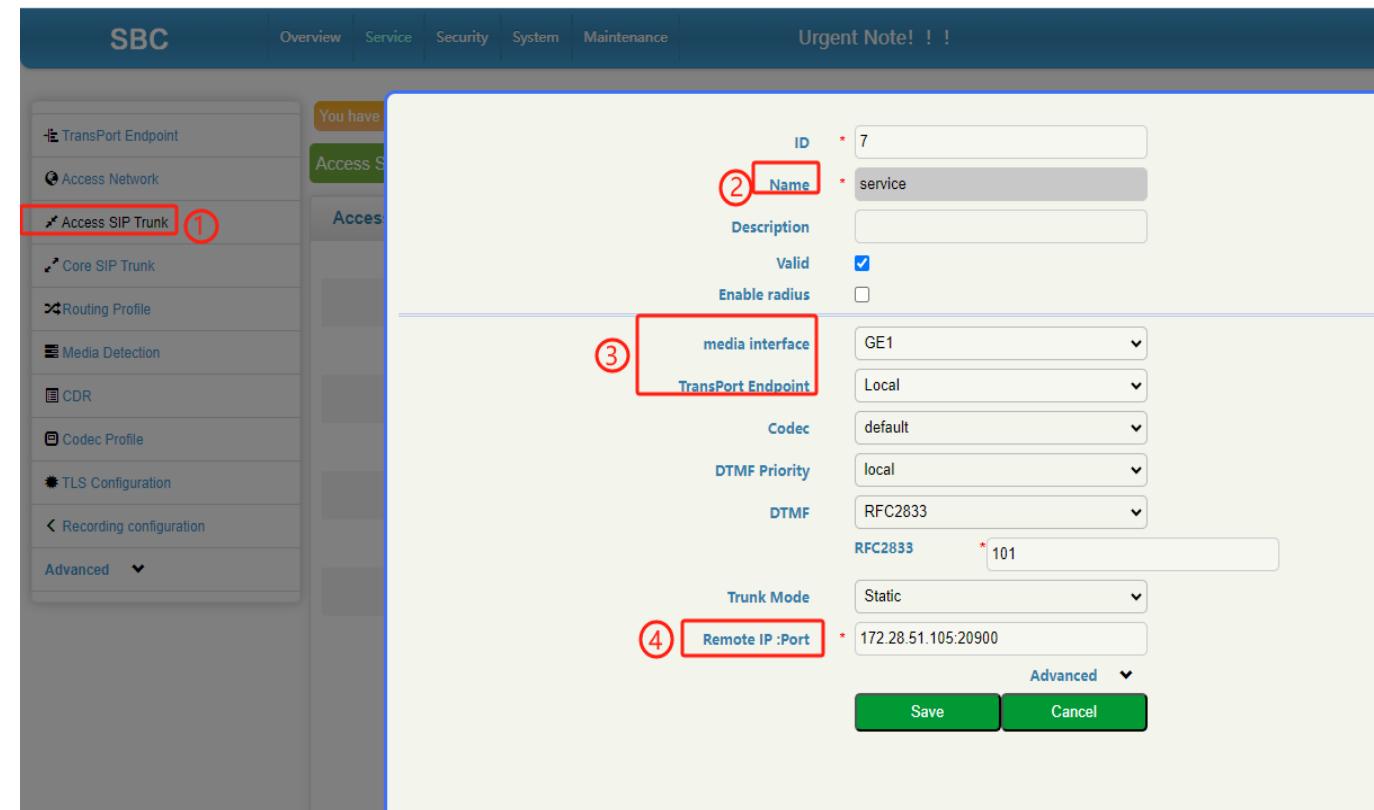
Each row in the table has edit and delete icons at the end.

SIP Trunk Configuration

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1. Click on Service – Access SIP Trunk
2. Custom name
3. Select media interface and Transport Endpoint
4. Configure the IP and port of SIP Service provider



SIP Trunk Configuration

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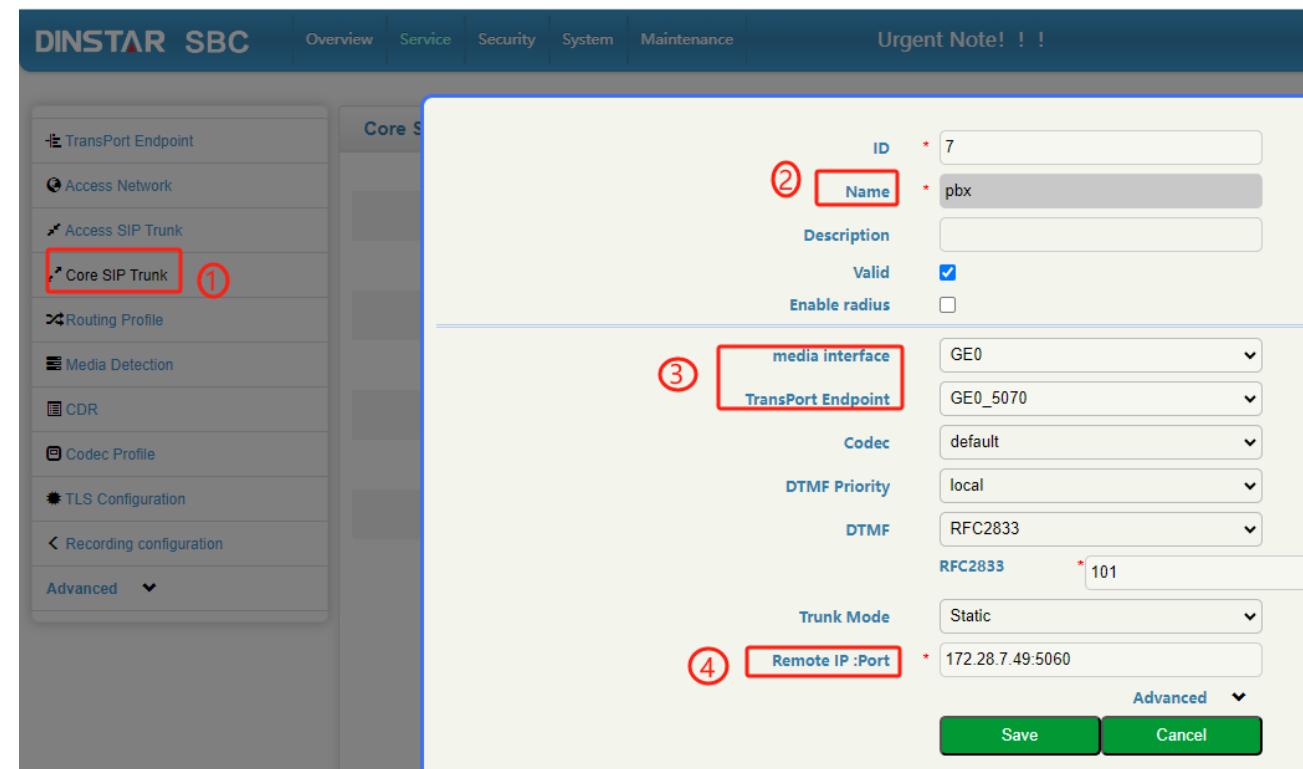
TransPort Endpoint

Access SIP Trunk

Core SIP Trunk

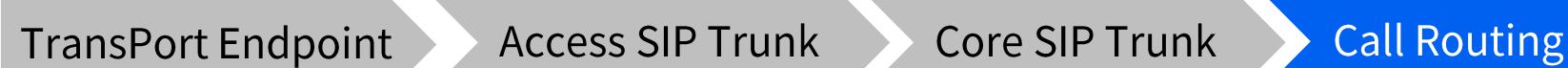
Call Routing

1. Click on Service – Core SIP Trunk
2. Custom name
3. Select media interface and Transport Endpoint
4. Configure the IP and port of PBX



SIP Trunk Configuration

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1. Click on Service – Call Routing
2. outbound Routing: source -- Core SIP Trunk/ pbx, destination-- Access SIP Trunk/service
3. outbound Routing: source -- Access SIP Trunk/service, destination-- Core SIP Trunk/ pbx

Priority	Description	Condition	Destination/Manipulation Rule
1008	-	7<pbx>	7<service> /
1009	-	7<service>	7<pbx> /
1010	-	5<11fwuuj>	4<Skou> / -
1011	-	4<Skou>	5<11fwuuj> / -

IMS Configuration

- Usage Scenarios

SBC supports adding SIP accounts to register with the IMS core network as outgoing landing lines (by adding access trunk and binding IMS account registration).

Call center system such as the IPPBX create SIP trunk to SBC

Call center sends an outbound call to the SBC and SBC selects IMS account to make an outbound call.



IMS Configuration

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1. Click on Service - Transport Endpoint
2. Custom name
3. Select interface、transport and port
4. Using the same method, create a Transport Endpoint for GE1

The screenshot displays the DINSTAR SBC configuration interface. On the left, a sidebar menu lists various service components, with 'Transport Endpoint' selected and highlighted with a red circle. The main configuration page shows the creation of a new transport endpoint. The configuration fields include:

- ID: 3
- Name: GE0_5070
- Description: (empty)
- Valid: checked
- Dedicated To Access Network: unchecked
- Interface: GE0
- Transport: UDP
- Port: 5070
- SRTP: unchecked
- IPv4/IPv6: IPv4
- Signaling DSCP: BE

At the bottom, a table lists the three configured Transport Endpoints:

ID	Name	Description	Interface	Port	IPv4/IPv6	Transport	Dedicated To Access Network
1	Public		GE0	5060	ip4	udp	true
2	Local		GE1	5060	ip4	udp	false
3	GE0_5070		GE0	5070	ip4	udp	false

IMS Configuration

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1. Click on Service – Sip Account
2. Custom name, Fill in registration flow control
3. Click 'add' to add IMS accounts, and fill in the username, authentication ID, and password according to the data provided by the operator

Username: +865987506740
Authentication ID: +865987506740@ims.fi.chinamobile.com
Password:
Registered Interval: 1800
Max Media Sessions: 1
Start Number: 1
Increment: 1
Number of SIP Accounts: 1
Submit Cancel

Note: If you want to add SIP accounts by batch, you can use the variable symbol \$1 to fill in the fields of 'Username' 'Authentication ID' 'Password'
Rule: Except \$1, all other characters filled in the fields of 'Username' 'Authentication ID' 'Password' will remain unchanged. \$1 will vary based on the configured start number, step and number of SIP accounts
Example: if you want to batch add SIP accounts from 10001000 to 10003000, you can enter 1000\$1 in the fields of 'Username' 'Authentication ID' 'Password' 1000 in the 'Start Number' filed, 1 in the 'Step' field and 3000 in the Number of SIP Accounts

Account	Username	Authentication ID	Registered Interval	Max Media Sessions
ims	+865987506740	+865987506740@ims.fi.chinamobile.com	1800	1

Name: ims
Description:
Flow Count: 60
Unit Time for Flow Control: 60

Note: (Total number of accounts/flow control number) * flow control unit time < 50%~90% of the registration cycle. Otherwise, some users aren't registered, and the flow control only applies to register message.

Account Delete All Modify All
Username Authentication ID Registered Interval Max Media Sessions
+865987506740 +865987506740@ims.fi.chinamobile.com 1800 1
Submit Cancel

IMS Configuration

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1. Click on Service – Access SIP Trunk
2. Custom name
3. Select TransPort Endpoint and media interface
4. Fill in the proxy registration IP address and port provided by the operator
5. Select SIP account and matching mode
6. Fill in the remote server domain provided by the operator

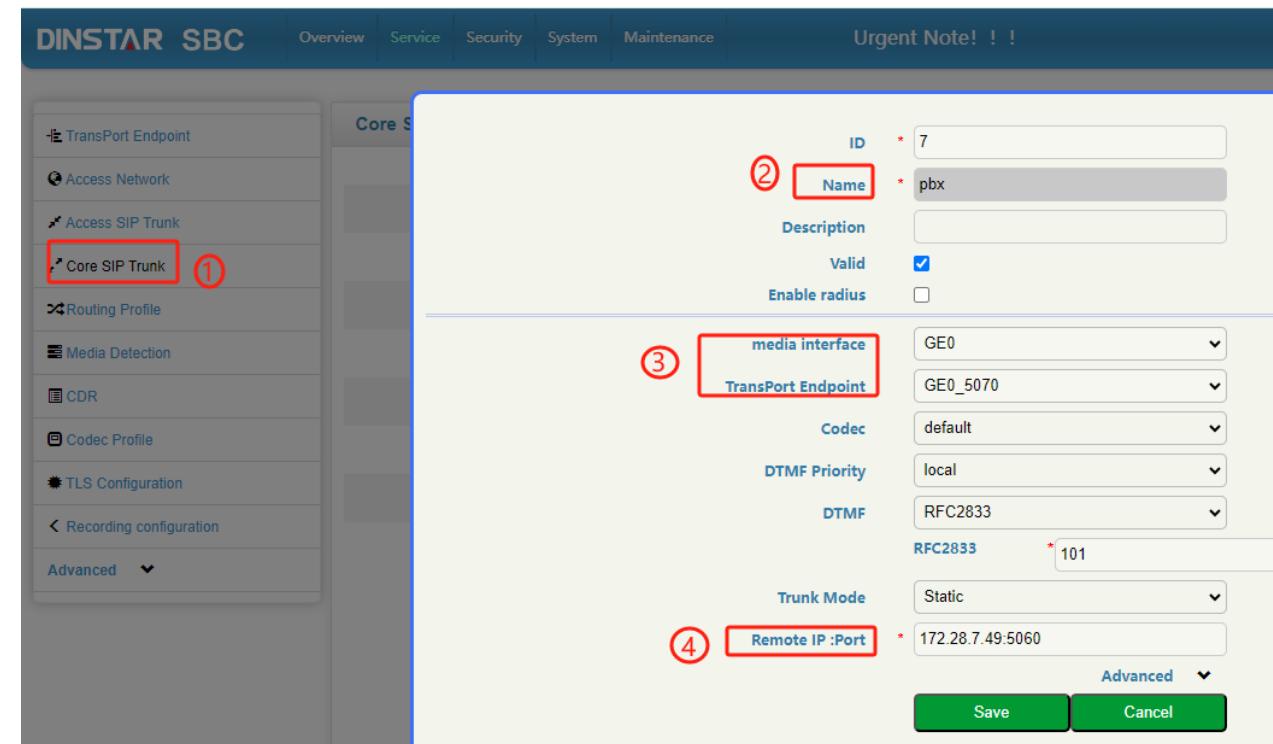
The screenshot shows the DINSTAR SBC web interface for configuring an Access SIP Trunk. The left sidebar lists various service options: TransPort Endpoint, Access Network, Access SIP Trunk (highlighted with a red box and circled '1'), Core SIP Trunk, Routing Profile, Media Detection, CDR, Codec Profile, TLS Configuration, Recording configuration, Advanced, Number Profile, and Black&White List. The right panel displays the configuration details for the selected Access SIP Trunk. It includes fields for ID (set to 6), Name (set to ims), Description, Valid (checked), Enable radius (unchecked), media interface (set to GE1), TransPort Endpoint (set to Local), Codec (set to default), DTMF Priority (set to local), DTMF (set to RFC2833), RFC2833 (set to 101), Trunk Mode (set to Static), and Remote IP : Port (set to 172.27.10.10:5060). Below these, there are sections for local unregister, Passthrough RFC2833, ssrc change sync, Rate Limit (set to default), Caller Blacklist, Caller Whitelist, Callee Blacklist, Callee Whitelist, Inbound Manipulation, Inbound SIP Header Manipulation, Outbound SIP Header Manipulation, Sip Account (set to ims), Matching Mode (set to Polling), and Remote Server Domain (set to ims.fj.chinamobile.com). A 'Urgent Note! !!' button is also visible at the top right.

IMS Configuration

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1. Click on Service – Core SIP Trunk
2. Custom name
3. Select media interface and Transport Endpoint
4. Configure the IP and port of PBX



IMS Configuration

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1. Click on Service – Call Routing
2. Select routing source is Core SIP Trunk/pbx
3. Select destination is Access SIP Trunk/ims
4. Select remote domain
5. Select remote domain
6. Select remote domain

The screenshot shows the DINSTAR SBC web interface with the following configuration details:

- Source:** Callee SIP URL: Core SIP Trunk, 7<pbx>, + Add, Del.
- SIP Methods:** (empty)
- Request URI:** (empty)
- The source of ring back tone:** remote
- Destination:** Access SIP Trunk, 6<ims>, + Add, Del.
- Outbound Manipulation:** (empty)
- SIP Header Passthrough:** (empty)
- request-uri Username:** to inManipulation user, remote domain, to inManipulation user, remote domain, to display, from inManipulation user, remote domain, from display.
- request-uri IP Addr.:** (highlighted with red box 4)
- to Username:** (highlighted with red box 5)
- to IP Addr.:** (highlighted with red box 6)
- to Username Displayed:** (empty)
- from Username:** (empty)
- from IP Addr.:** (highlighted with red box 6)
- from Username Displayed:** (empty)

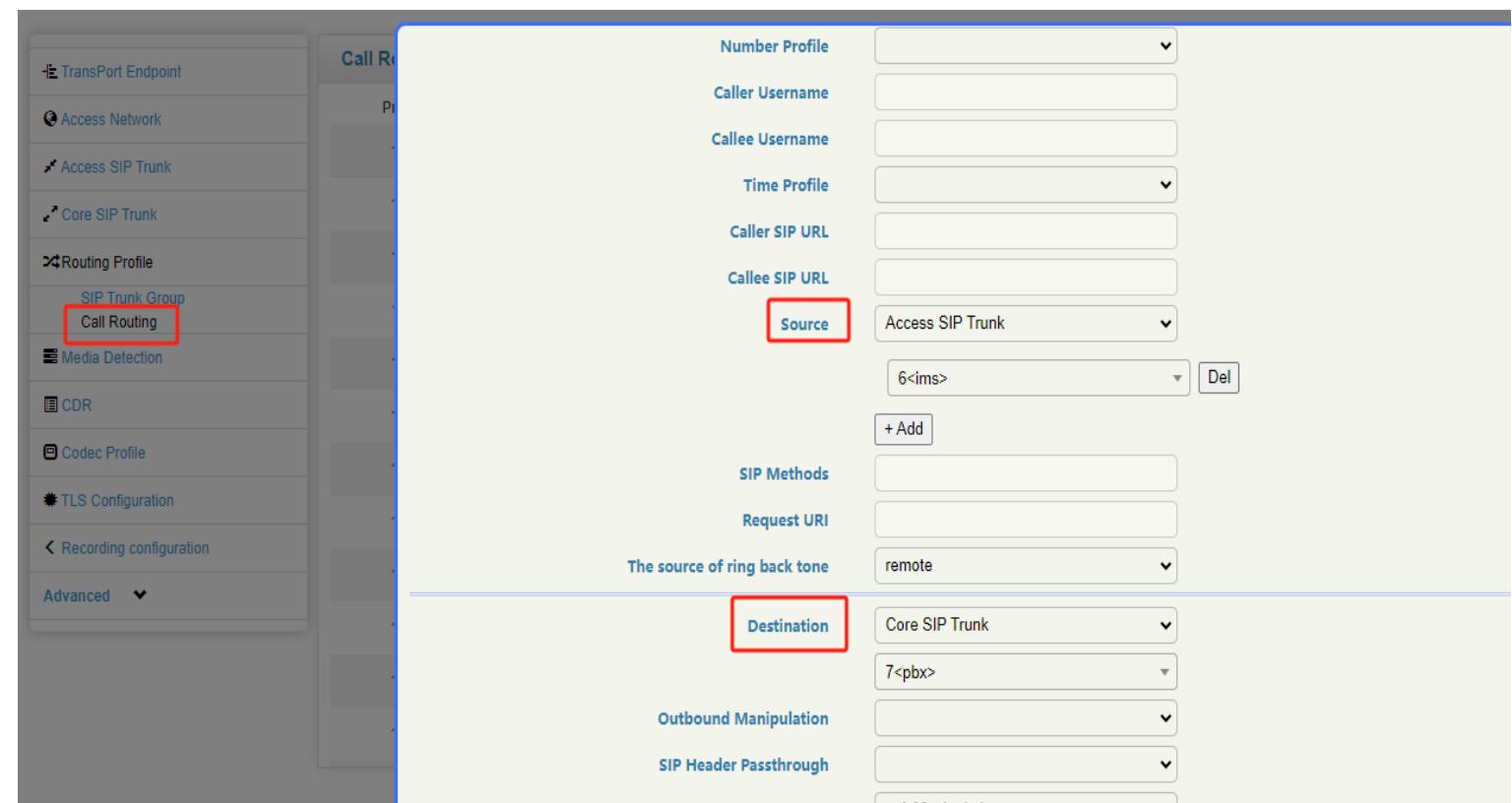
At the bottom right are the **Save** and **Cancel** buttons.

IMS Configuration

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1. Click on Service – Call Routing
2. Select routing source is Access SIP Trunk/ims
3. Select destination is Core SIP Trunk/pbx



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03

SBC Basic Maintenance



Get Network Capture



Getting The Log

SBC Basic Maintenance



- Get Network Capture

1. Click on Maintenance – Capture
2. Click Start
3. Reproduce the problem, click Stop& Download after reproducing

The screenshot shows the DINSTAR SBC web interface. The top navigation bar includes links for Overview, Service, Security, System, and Maintenance. The Maintenance tab is currently selected. On the left, a sidebar menu lists various maintenance tools: Log, Reset, Ping, Tracer, Capture (which is highlighted in red), Regular Expression, Warning, SNMP configuration, DRP configuration, NMS service configuration, Signal Track configuration, Hardware Examination, and WebRTC. The main content area is titled 'Capture' and contains configuration fields for network traffic capture. These fields include:

- Server Type: Local Server
- Filter Group:
 - Type: Customization value
 - Port Range: 1 ~ 65535
 - IPv4/IPv6: IPV4
 - Source IP: (empty field)
 - Destination IP/Domain: (empty field)
- Transport: TCP, UDP, ICMP, ARP (all checked)
- + Add button
- Time: 5 min
- File Max Size: 20 MB
- Start and Stop & Download buttons

A note at the bottom right provides instructions:

Note: 1.Click the Add button to add filtering group. You can set filtering rule for each group.
2.After selecting MFU, the corresponding port range will be configured by default.
3.When the set time expires, packet capturing will automatically stop.

SBC Basic Maintenance

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- Getting The Log

1. Click on Maintenance – Log – Log Management
2. Level selection debug and click Start
3. Reproduce the problem, click Export after reproducing

The screenshot shows the 'Log Management' page of the DINSTAR SBC web interface. The top navigation bar includes links for Overview, Service, Security, System, Maintenance, and a status summary with icons for fire (red), person (pink), lightning (orange), exclamation (yellow), and info (blue). The maintenance menu is selected. On the left, a sidebar menu lists Log, Login Log, Operational Log, Security Log, Log Management (which is selected and highlighted in blue), and Log Server. Below these are buttons for Reset, Ping, Tracert, Capture, and Regular Expression. The main content area is titled 'Log Record' and contains fields for 'Level' (set to 'Debug') and 'Time' (set to '5 min'). A large green 'Start' button is positioned below these fields. Further down, there is a 'Log Export' section with a green 'Export' button.

Summary

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- This course we already learn:
 - Understanding the SBC interface
 - Understand the basic connection of SBC
 - Understand the application scenarios of SBC
 - Understand the basic configuration of SBC



THANKS



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