

**IAD  
V300R001**

# **Troubleshooting Guide**

**Issue**        **01**  
**Date**        **2011-10-22**

**Copyright © Huawei Technologies Co., Ltd. 2011. All rights reserved.**

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

## **Trademarks and Permissions**



HUAWEI and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

## **Notice**

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

# **Huawei Technologies Co., Ltd.**

Address: Huawei Industrial Base  
Bantian, Longgang  
Shenzhen 518129  
People's Republic of China

Website: <http://www.huawei.com>

Email: [support@huawei.com](mailto:support@huawei.com)

---

# Contents

---

<b>1 Overview.....</b>	<b>1</b>
1.1 Fault Level .....	1
1.2 Troubleshooting Precautions .....	1
1.3 Fault Sources.....	2
1.4 Troubleshooting Process .....	3
1.4.1 Collecting Fault Scenario Information.....	3
1.4.2 Determining the Fault Level .....	4
1.4.3 Determining the Fault Type .....	4
1.4.4 Locating and Rectifying a Fault.....	4
1.4.5 Verifying Fault Rectification.....	4
1.4.6 Obtaining Huawei Technical Support .....	4
1.4.7 Creating a Troubleshooting Report .....	4
1.5 Contacting Huawei.....	4
<b>2 Analyzing and Rectifying Faults .....</b>	<b>6</b>
2.1.1 Bad AT0 Grounding .....	6
2.1.2 Faxes Can Be Received but Cannot Be Sent.....	6
2.1.3 IAD Fails to Send Faxes to ZTE Softswitch.....	7
2.1.4 Fax Machine Connected to the Counter Cannot Work Properly .....	8
2.1.5 IAD Phone One-Way Audio Caused by the Defense Against UDP Flood Attacks .....	9
2.1.6 Voice Tremble During IAD Calls.....	10
2.1.7 Beeps Occur on Phones Connected to the IAD.....	11
2.1.8 Phones Connected to the IAD Can Ring but Nothing Is Heard After Pickup.....	11
2.1.9 PC Connected to the LAN Port of the IAD Cannot Access the Network .....	12
2.1.10 Phones Connected to IAD132E(T) Cannot Make Calls to Fixed-Line Phones in a Specified Province .....	12
2.1.11 IAD Cannot Register With the UCEMS After Startup.....	14
2.1.12 A User Cannot Hear Other's Voice on the Phone Connected to IAD132E(T) After 5 to 10 Minutes..	14
2.1.13 IAD208 Restarts Continuously .....	15
2.1.14 Frequent MG Disconnection Alarm.....	15
2.1.15 POTS Phone Users Cannot Hear the Two-stage Dialing Tone.....	16
2.1.16 When the IAD Is Connected to the Local PSTN Network Through the FXO Port, Incorrect ID that is bound to the FXO Port Causes Incoming Call Exceptions .....	17

2.1.17 When the IAD Is Connected to the IMS, the Calling Number Cannot Be Correctly Displayed on Phones that are Connected to the IAD .....	17
2.1.18 000 Is Displayed to UAP3300 Agents for Incoming Calls.....	18
2.1.19 How to Configure the VLAN Data on the IAD208 of the V300R001C03SPC800 Version .....	19
2.1.20 Incorrect SessionTimer Setting Causes the Five-Minute Disconnection .....	20
2.1.21 When a CHINO-E Phone Is Connected to the IAD132E(T), Sometimes the Phone Does Not Ring Even When the Calling Number Is Displayed .....	20
2.1.22 Connecting Incoming Calls Through the FXO Port on the IAD Takes as Long as 15 Seconds.....	21
2.1.23 No Calling Number is Displayed on Phones Connected to the IAD132E(T) .....	21
2.1.24 IAD132 Cannot Register with ZTE IMS Using SIP .....	22
2.1.25 IAD132 Cannot Register with the Softswitch Using MGCP .....	22
2.1.26 Crosstalk Occurs on Phones Connected to the IAD132E(T) .....	23
2.1.27 When Picking Up the Phone Connected to the IAD132E(T), the User Hears the Busy Tone .....	24
2.1.28 A Phone Connected to the IAD132 Does Not Ring for Incoming Calls .....	24
2.1.29 When IAD1280 Users Make Outgoing Calls Using the IMS, the Connection Rate Is Only 10% .....	25
2.1.30 When the IAD Is Connected to the IMS, Users Cannot Make Calls to Each Other.....	26
2.1.31 Card Swiping Process Takes Long Time on the POS Device Connected to the IAD208 .....	26
2.1.32 When the IAD Is Directly Connected to the IMS, Blind Transfer or Transfer upon Inquiry Failed ...	27
2.1.33 Calls Between IAD132E(T) Users Are Disconnected Sometimes.....	27
2.1.34 Silence Call Fault Occurs for IAD132 Users.....	28
2.1.35 Phones Connected to the IAD132E(T) Cannot Make Calls to Numbers Starting with 800.....	29
2.1.36 IAD132E(T) Cannot Send or Receive Faxes .....	29
2.1.37 No Prompt Tone Can Be Heard When the Phone Connected to the IAD Is Picked Up; When dialing the Phone, an Announcement Is Played, Indicating that the Phone IS on a Call .....	30
2.1.38 IAD Registration Is Successful, but Intra-Office Calls Failed .....	30
<b>3 Common IAD Tools .....</b>	<b>32</b>
3.1 Wireshark .....	32

# 1 Overview

## 1.1 Fault Level

Depending on the impact and scope of the fault, faults are classified as either emergency faults or ordinary faults.

Emergent faults refer to those that occur suddenly and affect a wide range of services or devices. Emergency faults, such as host breakdown and service congestion, seriously affect network operations and the quality of service (QoS).

The following faults are emergency faults:

- IAD voice and fax services are unavailable.
- The IAD restarts continuously.

Ordinary faults refer to those that are not emergency faults. The methods for locating and rectifying faults and the applicable reference documents are different for emergency and ordinary faults.

**Table 1-1** Methods for locating and rectifying faults

Fault Level	Processing Method	Reference Document
Ordinary	Locate and rectify the fault.	See the description for troubleshooting
Emergency	Restore the service that has been affected as soon as possible, and then find the root cause of the fault.	Contact Huawei technical support for help

## 1.2 Troubleshooting Precautions

This section describes the precautions for troubleshooting.

- Before performing troubleshooting, maintenance personnel should attend emergency maintenance training to ensure they master the skills required to locate and rectify faults.
- Comply with the operation regulations and industry security regulations to ensure your safety and equipment security.

- When replacing or maintaining a component, take ESD measures and wear an ESD wrist strap.
- Record detailed information about problems that occur during maintenance.
- Record all the important operations, for example, restarting a process and loading software. An important operation must be performed by qualified operators after the related data is backed up and proper measures are provided against security and emergency events.
- Only authorized personnel can modify data. Before modifying data, back up data. Modification operations must be recorded.
- Maintenance personnel can use only the software formally released by Huawei to modify data.

## 1.3 Fault Sources

IAD faults are found in customer complaints, routine maintenance, and alarms.

### Customer Complaint

When receiving a complaint from a customer, ask the customer to:

- Describe the symptom.
- Check the parameter settings.
- Use the DBWIN to capture log information and send it to Huawei technical support.

### Routine Maintenance

Routine maintenance is a type of preventive maintenance. During routine maintenance, maintenance personnel periodically check and maintain devices to detect and eliminate potential problems on devices in time.

During routine maintenance, check for the following:

- Whether an alarm is reported.
- Whether the board is running properly.
- Whether all users are in normal state.

### Alarms

Device alarms reflect the device running status. When a major or critical alarm is reported, the device is faulty or potentially faulty and the alarm must be cleared immediately.

The alarm information includes the following:

- Board fault
- Network exception
- User port fault
- Temperature exception



#### **NOTE**

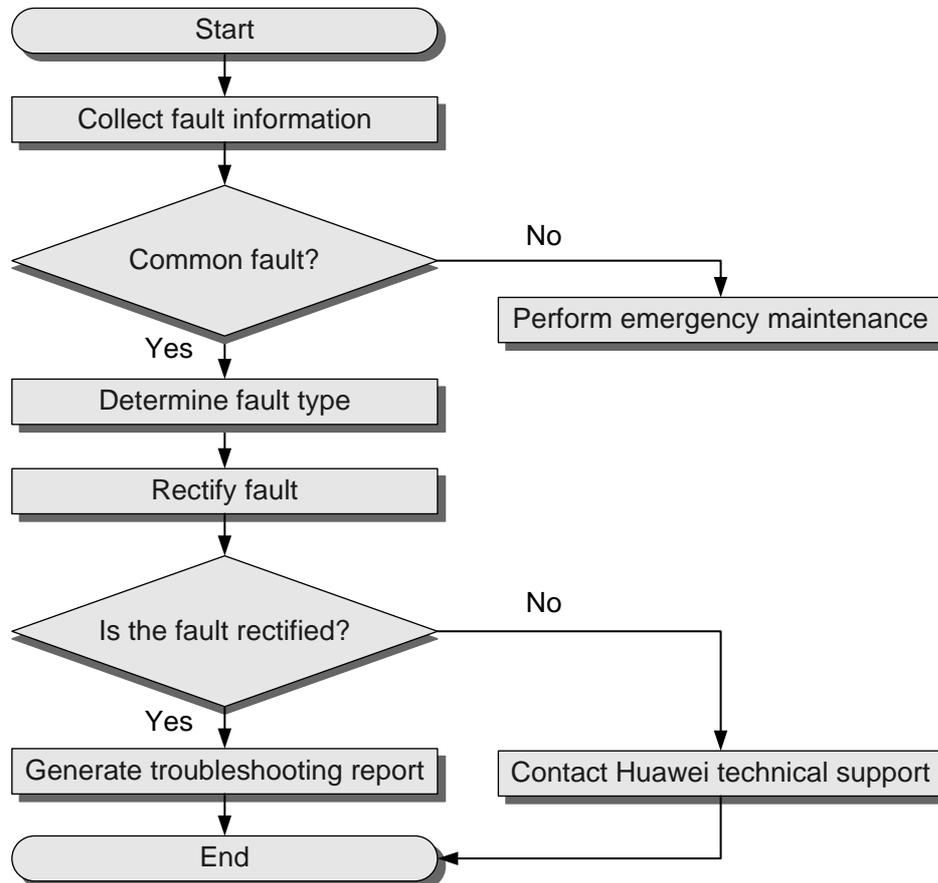
You can view the meaning, cause, and solution for each alarm in the IAD Product Documentation.

## 1.4 Troubleshooting Process

Before troubleshooting, learn about the troubleshooting process.

Figure 1-1 shows the troubleshooting process.

Figure 1-1 Troubleshooting process



### 1.4.1 Collecting Fault Scenario Information

Comprehensive fault scenario information helps fault locating. When a fault occurs, collect the following information:

- Fault occurrence time and place
- Fault symptom
- Operations that a user or a maintenance engineer performed before the fault occurred
- Measures that are taken after the fault occurs and the results of the measures
- Services that are affected by the fault and the scope of the fault

## 1.4.2 Determining the Fault Level

Upon receiving the fault information, determine whether the fault is an ordinary fault.

- If the fault is ordinary, locate and rectify the fault according to the troubleshooting methods provided in this document.
- If the fault is emergent, contact Huawei technical support for help.

## 1.4.3 Determining the Fault Type

Determine the type of a fault according to the symptom.

## 1.4.4 Locating and Rectifying a Fault

Locate a fault to find the cause and rectify the fault to restore the IAD.

## 1.4.5 Verifying Fault Rectification

After taking measures to rectify a fault, verify that the fault is rectified.

## 1.4.6 Obtaining Huawei Technical Support

If a fault cannot be rectified using the methods described in this document, contact Huawei technical support for help. For details on how to obtain Huawei technical support, see [1.5 Contacting Huawei](#).

Before contacting Huawei technical support for help, make the following preparations:

- Provide the full name of the office where the fault occurs.
- Provide contact information, including a contact name and a fixed-line phone number or a mobile number.
- Provide fault scenario and detailed fault information.
- Provide remote maintenance environment and remote access parameters.

## 1.4.7 Creating a Troubleshooting Report

After the fault symptom disappears, record the troubleshooting process, and generate a report.



### NOTE

It is recommended that the troubleshooting report consist of four topics: symptom, fault locating, troubleshooting, and preventive suggestions.

## 1.5 Contacting Huawei

Huawei Technologies Co., Ltd. provides customers with comprehensive technical support and service. Please feel free to contact our local office or Huawei headquarters.

The contact information is as follows:

Address: Huawei Industrial Base, Bantian, Longgang District, Shenzhen 518129, People's Republic of China

Website: <http://support.huawei.com>

Customer service telephone: +86-755-28560000 4008-302-118

Fax: 0755-28560111

Email: support@huawei.com

# 2 Analyzing and Rectifying Faults

---

## 2.1.1 Bad AT0 Grounding

### Symptom

The FXO port of the IAD and the AT0 trunk of the SoftCo have noises or exceptions occur in call connections.

### Cause

The IAD is not grounded properly.

### Solution

**Step 1** Check the AT0 grounding by referring to the following document:



AT0 Ground  
Check.doc

**Step 2** Test the grounding resistance by referring to the following document:



Ground Impedance  
Test Method.doc

**Step 3** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.2 Faxes Can Be Received but Cannot Be Sent

### Symptom

The fax machine connected to the IAD can receive but cannot send faxes.

## Cause

- Poor bearer network performance
- Inconsistent faxing modes
- Incorrect softswitch type

## Solution

**Step 1** Ping the IP address of the softswitch to check the delay time and packet loss.

If the delay time is too long, and packet loss occurs, the bearer network performance is poor.

**Step 2** Check the consistency between the faxing modes of the softswitch and IAD.

Consult related personnel about the method for viewing the faxing mode of the softswitch.

a. Run the **display protocol-mode** command to view the protocol used by the IAD.

- If the protocol is MGCP, run the **display mgcp soft-parameter** command to view the faxing mode.

If the faxing mode is different from that of the softswitch, run the **mgcp soft-parameter fax-mode** to change the faxing mode.

- If the protocol is SIP, run the **display sip send-capability** command to view the faxing mode.

If the faxing mode is different from that of the softswitch, run the **sip send-capability fax pri** to change the faxing mode.

**Step 3** Check the manufacture of the softswitch, and check the softswitch type of the IAD.

The softswitch type configured on the IAD must be the same as the actual softswitch type.

a. Run the **display protocol-mode** command to view the protocol used by the IAD.

- If the protocol is MGCP, run the **display mgcp soft-parameter** command to view the softswitch type of the IAD.

If the softswitch type of the IAD is different from the actual softswitch type, run the **mgcp soft-parameter mgc-type** command to change it.

- If the protocol is SIP, run the **display sip soft-parameter** command to view the softswitch type of the IAD.

If the softswitch type of the IAD is different, run the **sip soft-parameter soft-switch-type** command to change it.

**Step 4** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.3 IAD Fails to Send Faxes to ZTE Softswitch

### Symptom

In the MGCP mode, the IAD fails to send faxes to the ZTE ZS SS10.

## Cause

The T30 mode is the default mode configured on ZTE softswitches for ZTE IADs that use the H248 protocol. When Huawei IADs send or receive faxes through MGCP, softswitch cannot recognize all information and the faxing fails.

Proprietary protocols are used to send heartbeat messages for devices of all manufactures, **522** message is displayed. This error does not affect communications.

## Solution

**Step 1** Configure static attribute template, default attribute template, and packet template when adding an IAD.

**Step 2** Modify the static attribute template.

After the faxing function is enabled, MGCP fax modes T30, T38, and T30 or T38 are displayed on the static attribute template.

Select T30.

**Step 3** Modify the default attribute template.

In the SDP description, select **Fax**, and change the codec mode and packaging duration to **PCMA** and **20** respectively. If the default value is used, **510** error occurs in the faxing process.

**Step 4** Modify the package template.

Select a package from the **IPFAX** drop-down list box, and add the package.

**Step 5** Run the **#mgcp soft-parameter fax-mode 711v2 mgc-type zte** command to configure fax mode on the IAD.

**Step 6** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.4 Fax Machine Connected to the Counter Cannot Work Properly

### Symptom

The fax machine connected to the IAD through the counter cannot receive and send faxes properly.

### Cause

- Poor bearer network performance
- Inconsistent faxing modes
- Incorrect softswitch type
- Cable loss

## Solution

**Step 1** Ping the IP address of the softswitch to check the delay time and packet loss.

If the delay time is less than 40 ms, and no packet loss occurs, the bearer network performance is good.

**Step 2** Check the consistency between the faxing modes of the softswitch and IAD.

Consult related personnel about the method for viewing the faxing mode of the softswitch.

a. Run the display **protocol-mode** command to view the faxing mode of the IAD.

- If the protocol is MGCP, run the **display mgcp soft-parameter** command to view the faxing mode.

If the faxing mode is different from that of the softswitch, run the **mgcp soft-parameter fax-mode** to change the faxing mode.

- If the protocol is SIP, run the **display sip send-capability** command to view the faxing mode.

If the faxing mode is different from that of the softswitch, run the **sip send-capability fax pri** to change the faxing mode.

**Step 3** Check the manufacture of the softswitch, and check the softswitch type of the IAD.

a. Run the **display protocol-mode** command to view the protocol used by the IAD.

- If the protocol is MGCP, run the **display mgcp soft-parameter** command to view the softswitch type of the IAD.

If the softswitch type of the IAD is different, run the **mgcp soft-parameter mgc-type** command to change it.

- If the protocol is SIP, run the **display sip soft-parameter** command to view the softswitch type of the IAD.

If the softswitch type of the IAD is different, run the **sip soft-parameter soft-switch-type** command to change it.

**Step 4** Connect the fax machine to the IAD without the counter, and verify that faxes can be sent and received properly.

If faxes can be received and sent properly, exceptions occur on the line between the counter and the fax machine. You can connect the cable again.

**Step 5** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.5 IAD Phone One-Way Audio Caused by the Defense Against UDP Flood Attacks

### Symptom

When a user under the IAD makes a call to an onsite mobile phone user, the mobile phone user cannot hear the calling party's voice for several seconds. This fault occurs when the traffic is high.

Network:

IAD user—IAD—SBC—UMG

## Cause

The defense against UDP Flood attacks is enabled for the SBC.

## Solution

**Step 1** Capture packets on the IAD, between the IAD and the SBC, and between the SBC and the UMG.

**Step 2** Analyze the captured packets.

The packets from the IAD are normal; however, packet loss occurs during the transmission between the SBC and the UMG. The defense against UDP Flood attacks is enabled for the SBC. UDP packets bear the voice packets. When the traffic is high, the SBC discards the UDP packets that bear voice packets. Then one-way audio occurs.

**Step 3** Disable the defense against UDP Flood attacks for the SBC.

**Step 4** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.6 Voice Tremble During IAD Calls

### Symptom

Voice tremble occurs during IAD calls.

### Cause

- Poor bearer network performance that causes the packet loss between the IAD and the peer gateway device
- Incorrect configuration for the Ethernet port on the IAD upper-level switch

### Solution

**Step 1** Ping the peer gateway device on the IAD to verify the network performance.

If the delay time is less than 40 ms, and no packet loss occurs, the bearer network performance is good.

**Step 2** Verify that each device that the media stream passes is configured to the full-duplex mode.

If a device is configured to the full-duplex mode, and the other device is configured to the automatic adaptive mode, the working mode may become half-duplex after negotiation, which affects the voice quality. You can configure the working mode to the full-duplex at a speed of 100 Mbit/s.

**Step 3** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.7 Beeps Occur on Phones Connected to the IAD

### Symptom

Beeps occur on phones connected to the IAD. A user cannot dial numbers.

Networking:

POTS—IAD132E(T)—Softx3000

### Cause

The user is not registered with the softswitch.

### Solution

**Step 1** Run the **display protocol-mode** command to view the protocol used by the IAD.

If the protocol is MGCP, run the **display mgcp attribute** command to view the registration status of the user.

If the protocol is SIP, run the **display sip attribute all** command to view the registration status of the user.

If the user is not registered with the softswitch, verify that the account of the user is enabled on the softswitch and is configured correctly on the IAD.

**Step 2** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.8 Phones Connected to the IAD Can Ring but Nothing Is Heard After Pickup

### Symptom

When outer-office user A dials IAD user B, user B's phone rings, and user A can hear the RBT. However, user A cannot hear user B's voice after user B picks up the phone.

### Cause

The signaling carries events that the IAD does not support.

### Solution

**Step 1** Capture packets on the faulty IAD.

**Step 2** Analyze the packets captured in the faulty IAD.

If **518** error code is sent to the softswitch by the IAD, change the T38 mode to transparent transmission mode for the softswitch.

**Step 3** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.9 PC Connected to the LAN Port of the IAD Cannot Access the Network

### Symptom

The IAD uses the WAN port to connect to the switch and the LAN port to connect to a PC.

IAD users can use the voice service. The PC connected to the LAN port cannot access the network.

### Cause

- Network exceptions
- Conflict between the NAT function and the static IP address

When the NAT function is enabled for the IAD, the IP address of the PC is automatically obtained and cannot be set to a static IP address.

### Solution

**Step 1** Connect the PC to the switch without changing the IP address, and check the network.

**Step 2** Run the **display nat** command to verify that the NAT function is enabled for the IAD.

**Step 3** If the NAT function is enabled for the IAD, the IP address of the PC is automatically assigned.

**Step 4** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.10 Phones Connected to IAD132E(T) Cannot Make Calls to Fixed-Line Phones in a Specified Province

### Symptom

Phones connected to IAD132E(T) cannot make calls to fixed-line phones in a specified province but can make calls to fixed-line phones in other provinces. Fixed-line phones in the province can make calls to phones connected to IAD132E(T) properly.

Networking:

POTS-A—IAD132E(T)—ZTE NGN

### Cause

- Network exceptions
- Incorrect digitmap configuration for the softswitch

## Solution

- Step 1** Verify that the IAD132E(T) is registered with the softswitch, and check the network connection.
- Step 2** Run the **display sip attribute** command to view the attribute of **digit-map position** in the SIP mode.

If the digitmap of the softswitch is used, the softswitch sends the digitmap to the IAD in the 200 OK message. Then verify that the digitmap is correct, as shown in [Figure 2-1](#). If the digitmap of the IAD is used, run the **display sip digitmap** command to verify that the digitmap is correct. If the number length in the digitmap is configured to 11 digits, but the called number consists of 12 digits, only 11 digits of the called number are reported.

**Figure 2-1** Digitmap delivered by the softswitch through SIP

```
Message Header
  Via: SIP/2.0/UDP 192.169.8.117:5060;branch=z9hG4bK71bba7a15
  Call-ID: 2472849350300079364afc6@192.169.8.117
  From: <sip:30007@192.169.8.199;user=phone>;tag=04b68b7c
  To: <sip:30007@192.169.8.199;user=phone>;tag=491zk589
  CSeq: 852 REGISTER
  Contact: <sip:30007@192.169.8.117:5060>;expires=120
  Expires: 120
  Server: SoftCo 9500/V100R002C03
  Content-Length: 38
  Content-Type: application/sscc
Message Body
  digitmap="7xxxx.T|x.T|30000|3xxxxx|\r\n"
```

- Step 3** Capture packets to view the digitmap of the softswitch in the MGCP mode.

The softswitch sends the digitmap to the IAD in the RQNT message, as shown in [Figure 2-2](#). If the number length in the digitmap is configured to 11 digits, but the called number consists of 12 digits, only 11 digits of the called number are reported.

**Figure 2-2** Digitmap delivered by the softswitch through MGCP

```
Media Gateway Control Protocol
  RQNT (NotificationRequest)
  Transaction ID: 350674742
  Endpoint: aaln/1@iad138
  Version: MGCP 1.0
  [The response to this request is in frame 8]
Parameters
  RequestIdentifier (X): 1060567
  RequestedEvents (R): L/hu(N),L/hf(N),D/[0-9*#](N)
  QuarantineHandling (Q): process,loop
  SignalRequests (S): L/d1
```

**Step 4** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.11 IAD Cannot Register With the UCEMS After Startup

### Symptom

Networking:

UCEMS Client—UCEMS Server—IAD

The IAD online indicator on the UCEMS is gray. The IAD cannot be registered with the UCEMS.

### Cause

- Network exceptions
- Configuration faults

### Solution

**Step 1** Check the network connection.

**Step 2** Run the **display physical-serial-num** command to verify that the physical serial number is the same as that set on the UCEMS.

**Step 3** Run the **display nms** command to verify that the communication parameters set on the IAD are the same as that set on the UCEMS.

**Step 4** Run the **nms access on** command to connect the IAD to the UCEMS, and run the **nms handshake switch on** command to enable the handshake function if **IAD nms access value** is set to **Enable**.

**Step 5** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.12 A User Cannot Hear Other's Voice on the Phone Connected to IAD132E(T) After 5 to 10 Minutes

### Symptom

When a user uses the phone connected to IAD132E(T) to talk with others, the user cannot hear others' voice after 5 to 10 minutes. Other users can hear the voice on phone.

### Cause

- Phone fault
- Peer device fault

## Solution

- Step 1** Change a phone.
- Step 2** Check the peer device.
- Step 3** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.
- End

## 2.1.13 IAD208 Restarts Continuously

### Symptom

IAD208 restarts continuously.

### Cause

- No splitter
- Network loop
- Unstable remote power supply
- IAD fault

### Solution

- Step 1** Verify that a network loop occurs.
- Step 2** Verify that the power supply is remote.  
If the power supply is remote, check the voltage.
- Step 3** Verify that a splitter is used.  
If no splitter is used, connect the splitter.
- Step 4** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.
- End

## 2.1.14 Frequent MG Disconnection Alarm

### Symptom

The MG disconnection alarm is generated frequently. IAD users hear the busy tone after picking up the phones.

### Cause

- Failed to be registered with the softswitch
- IP address conflict
- Domain name conflict

- No response to the heartbeat message
- MAC address conflict

## Solution

**Step 1** Verify that the IAD is registered with the softswitch.

**Step 2** Verify that IP addresses conflict.

**Step 3** Verify that domain names conflict.

**Step 4** Use the Wireshark to analyze packets to verify that the softswitch responds to the heartbeat message sent by the IAD.

If there is no response, the softswitch is faulty.

**Step 5** Verify that MAC addresses conflict.

**Step 6** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.15 POTS Phone Users Cannot Hear the Two-stage Dialing Tone

### Symptom

Users that use POTS phones connected to the IAD cannot hear the two-stage dialing tone.

### Cause

- No two-stage dialing function for the office route corresponding to the SoftCo
- Inconsistency between the prefix in the number reported by the IAD and the prefix on the SoftCo
- Early IAD version

### Solution

**Step 1** Run the **show office selectcode no x** command to verify that the two-stage dialing function is enabled for office route *x*.

**Step 2** Verify that the prefix on the SoftCo maps the digitmap configured on the IAD.

Assume that the prefix is 99 on the SoftCo. Configure the digitmap to **99** on the IAD. The outgoing prefix can be left blank on the SoftCo.

**Step 3** Verify that the IAD version is V300R001C03SPC800 or later.

**Step 4** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.16 When the IAD Is Connected to the Local PSTN Network Through the FXO Port, Incorrect ID that is bound to the FXO Port Causes Incoming Call Exceptions

### Symptom

Network: SoftCo—IAD—PSTN

A SoftCo user makes an outgoing call to a PSTN user through the FXO port on the IAD. An outer-office user dials the PSTN number to make an incoming call to the PSTN user through the FXO port. This implements the number retention service. When the outer-office user makes an incoming call to the PSTN user through the FXO port, the outer-office user hears the ring back tone twice before the announcement indicating that the number dialed does not exist.

### Cause

The possible cause is incorrect data configuration.

### Solution

- Step 1** Verify that the correct ID is bound to the FXO port. The ID bound to the FXO port must be the DN, that is, SoftCo number, not the EID.



#### NOTE

The ID configured on the FXS port is corresponding to the SoftCo EID. The ID bound to the FXO port, however, is corresponding to the DN, not the EID. Generally, the EID is the same as the DN. But there are some exceptions, especially when the virtual PBX exists. For example, the intra-office number is 1000, and its EID is 2000. If you do not differentiate them, configuration errors may occur. To bind FXS port 0 to FXO port 0, run the following commands:

```
sip user 0 id 2000
```

```
sip user 8 id 1000
```

The ID configured on the FXS port is only used to register the user number with the SoftCo. The FXO port does not require registration whereas the call from the PSTN network must be forwarded to the SoftCo. Therefore, the real called number instead of the EID must be bound to the FXO port.

- Step 2** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.17 When the IAD Is Connected to the IMS, the Calling Number Cannot Be Correctly Displayed on Phones that are Connected to the IAD

### Symptom

The customer requires that the short number is displayed when on-net users make calls on the IMS. But the country code and the actual number are displayed no matter the call is made between on-net users or from an off-net user to an on-net user.

## Cause

The possible cause is incorrect IAD soft parameter settings.

## Solution

**Step 1** Run the **display sip soft-parameter** command and check whether **clip-mode** is **PAI**. If yes, run the **sip soft-parameter clip-mode From** command.

**Step 2** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.18 000 Is Displayed to UAP3300 Agents for Incoming Calls

### Symptom

The PSTN analog trunk is connected to the FXO port on the OSU board of the IAD132E(T). The original number of the analog trunk is 58836176. The access code of the UAP/CTI is 4006113006. A user can dial the original number or the access code. After dialing the access code, the user is connected to the IVR where the user can select the agent service. If the user dials the access code, 000 is displayed to the agent.

Network: PSTN analog trunk—IAD132E(T)—UAP3300

### Cause

The possible causes are as follows:

- The calling number has enabled calling line identification restriction (CLIR) service.
- The receiving gain is not properly configured on the IAD132E(T).

### Solution

**Step 1** Contact the carrier to verify that the CLIR service is not enabled for the calling number.

**Step 2** Run the **dsp fsk gain** command to lower the FSK gain gradually.

Do not reduce the FSK gain to a large scale, which may make the IVR two-stage dialing function unavailable.

For example, when the gain is reduced to -5, the calling number is displayed to the UAP3300 agent when a phone or mobile phone user dials the access code. But when the gain is reduced to -7, the IVR two-stage dialing function is unavailable.

**Step 3** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.19 How to Configure the VLAN Data on the IAD208 of the V300R001C03SPC800 Version

### Symptom

This section describes how to configure the VLAN data on the IAD208 of the V300R001C03SPC800 version to separate voice from data.

### Solution

- Step 1** Configure the VLAN data on the broadband (assume that the voice VLAN ID is 10 and data VLAN ID is 129). If the VLAN is not configured on the upstream switch, this data does not need to be configured.

Configuration example:

```
IAD2000 (config)#lanswitch

//Configure the voice VLAN tag.

IAD2000 (lanswitch)#vlan vlanid 10 interface 9 untagged 10 tagged
IAD2000 (lanswitch)#tag interface 9 pvid 10 priority 7

//Configure the data VLAN tag.

IAD2000 (lanswitch)#vlan vlanid 129 interface 1 untagged 10 tagged
IAD2000 (lanswitch)#vlan vlanid 129 interface 2 untagged 10 tagged
IAD2000 (lanswitch)#vlan vlanid 129 interface 3 untagged 10 tagged
IAD2000 (lanswitch)#vlan vlanid 129 interface 4 untagged 10 tagged
IAD2000 (lanswitch)#vlan vlanid 129 interface 5 untagged 10 tagged
IAD2000 (lanswitch)#vlan vlanid 129 interface 6 untagged 10 tagged
IAD2000 (lanswitch)#vlan vlanid 129 interface 7 untagged 10 tagged
IAD2000 (lanswitch)#vlan vlanid 129 interface 8 untagged 10 tagged
IAD2000 (lanswitch)#tag interface 1 pvid 129 priority 0
IAD2000 (lanswitch)#tag interface 2 pvid 129 priority 0
IAD2000 (lanswitch)#tag interface 3 pvid 129 priority 0
IAD2000 (lanswitch)#tag interface 4 pvid 129 priority 0
IAD2000 (lanswitch)#tag interface 5 pvid 129 priority 0
IAD2000 (lanswitch)#tag interface 6 pvid 129 priority 0
IAD2000 (lanswitch)#tag interface 7 pvid 129 priority 0
IAD2000 (lanswitch)#tag interface 8 pvid 129 priority 0
write
```

- Step 2** IAD208 of the V300R001C03SPC800 version or earlier versions uses the same VLAN configuration command. If the VLAN is not configured on the upstream switch, you do not need to configure the VLAN data on the IAD.

- Step 3** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.20 Incorrect SessionTimer Setting Causes the Five-Minute Disconnection

### Symptom

When the IAD132E(T) is connected to the softX3000 through SIP, every call is disconnected after five minutes.

### Cause

The possible cause is that SessionTimer is not enabled.

### Solution

**Step 1** Run the **display sip soft-parameter** command to check whether **SessionTimer** is **on**.

If not, run the **sip soft-parameter SessionTimer on** command.

**Step 2** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.21 When a CHINO-E Phone Is Connected to the IAD132E(T), Sometimes the Phone Does Not Ring Even When the Calling Number Is Displayed

### Symptom

An enterprise purchases some CHINO-E phones and connects these phones to the IAD132E(T). Sometimes when there is an incoming call, the phone does not ring even when the calling number is displayed. After the phone line is disconnected and reconnected, the phone can ring, but users cannot hear the calling party's voice in the phone.

### Cause

The possible cause is that the CHINO-E phone is not good in quality.

### Solution

**Step 1** Use a phone from another manufacture to replace the CHINO-E phone, and verify that the fault is rectified.

**Step 2** Verify that only one phone is connected to the line.

**Step 3** Verify that the problem does not occur on all phones connected to the IAD132.

**Step 4** Verify that the IAD132 uses the ASID board.

**Step 5** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.22 Connecting Incoming Calls Through the FXO Port on the IAD Takes as Long as 15 Seconds

### Symptom

If the carrier has not enabled the Calling Line Identification Presentation (CLIP) service for a PSTN number, an outer-office user has to spend as long as 15 seconds to connect a call to a PSTN user through the FXO port.

### Cause

The possible cause is that the CLIP service has not been enabled for the PSTN number.

### Solution

- Step 1** On the PSTN network, check whether the CLIP service has been enabled for the PSTN number. If the service has not been enabled, contact the carrier to enable it.
- Step 2** If the CLIP service cannot be enabled, run the **sip user 0 fxo-clip no** command to ensure quick call connection.



#### NOTE

This command is available only for IADV300R001C03SPC900, IADV300R001C04SPC300, and later versions. You are advised to upgrade older versions to one of the preceding versions.

- Step 3** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.23 No Calling Number is Displayed on Phones Connected to the IAD132E(T)

### Symptom

When a PSTN user makes a call to an intra-office user through the FXO port on the IAD132E(T), the calling number is not displayed to the intra-office user.

### Cause

The possible causes are as follows:

- The FSK signal is too weak to be detected by the FXO port.
- The calling side does not send the calling number.
- The phone is faulty.

### Solution

- Step 1** Contact the carrier to verify that the CLIP service has been enabled for the PSTN user connected to the IAD.

- Step 2** Use another phone that can display calling number. If the calling number can be displayed, the original phone is faulty.
- Step 3** Adjust the DSP gain. Run the **dsp fsk gain 6/7/8** command to gradually reduce the gain. Generally, problems of this type can be solved by adjusting the DSP gain.
- Step 4** Verify that the CLIP function is enabled for the FXO port on the IAD132E(T). To enable the CLIP function, run the **sip user 24 fxo-clip yes** command.



**NOTE**

This command is available only for IADV300R001C03SPC900, IADV300R001C04SPC300, and later versions.

- Step 5** Capture logs about the FXO port, and check for records about the FSK signal or FSK detection timeout. If no FSK signal is detected, check whether the calling side sends the calling number. No calling number is displayed on phones connected to the FXS port if the number is not sent.

----End

## 2.1.24 IAD132 Cannot Register with ZTE IMS Using SIP

### Symptom

Network: IAD132E(T)—ONU—ZTE IMS

ZTE IMS does not respond to the registration message sent by the IAD while the soft client can register with ZTE IMS.

### Cause

The possible cause is that ZTE IMS cannot recognize the SIP registration message that contains **user=phone** sent from the IAD.

### Solution

- Step 1** Run the **sip soft-parameter sip-user-phone off** command to disable the **user=phone** information in the SIP message. The **sip-user-phone** attribute is enabled by default. You can run the **display sip soft-parameter** command to view the value of **sip-user-phone**.
- Step 2** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.25 IAD132 Cannot Register with the Softswitch Using MGCP

### Symptom

The IAD132E(T) cannot register with the softswitch using MGCP.

## Cause

The possible causes are as follows:

- The network is disconnected.
- The configuration is incorrect.
- The authentication is configured on the IAD, but not on the softswitch.
- The soft parameter settings are inconsistent.

## Solution

- Step 1** Ping the softswitch on the IAD. If the softswitch cannot be pinged, the IAD cannot register with the softswitch.
- Step 2** Verify that the authentication settings on the IAD and softswitch are the same. If the authentication is configured on the IAD, but not on the softswitch, the IAD cannot register with the softswitch.
- Step 3** Run the **display mgcp soft-parameter** command to check the settings of the MG soft parameter. For Nortel devices, set **MGC-TYPE** to **nortel**, and registration mode to **individual**.
- End

## 2.1.26 Crosstalk Occurs on Phones Connected to the IAD132E(T)

### Symptom

The calls made from outer-office numbers to intra-office numbers can be connected normally. When you dial a number on an intra-office phone, crosstalk may occur on phones connected to the IAD132E(T).

### Cause

The possible causes are as follows:

- The number matches another digitmap.
- For outgoing calls made through the FXO port, the peer device failed to collect the complete called number.

### Solution

- Step 1** Run the **display sip digitmap** command to view the digitmap. Verify that the number dialed does not match another digitmap. For example, if the digital map is 45xxx|456 and the dialed number is 4567, the number sent is 456.
- Step 2** For outgoing calls made through the FXO port, check whether the number dialed matches the number collected by the peer device. If not, record on the trunk connected to the FXO port and compare the number sent from the FXO port with the number collected by the peer device. The FXO port sends the number too fast for the peer device to collect the number. To gradually prolong the sending time, run the **sip soft-parameter send-dtmf-delay-time 350** command.

**Step 3** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.27 When Picking Up the Phone Connected to the IAD132E(T), the User Hears the Busy Tone

### Symptom

The IAD132E(T) is connected to the Softx3000. When picking up the phone connected to the IAD132E(T), the user hears the busy tone.

### Cause

The possible causes are as follows:

- Phones connected to the IAD132E(T) are not registered with the softswitch.
- The short-circuit occurs.
- The IAD is faulty.

### Solution

**Step 1** Run the **display sip attribute all** command to check the registration status of the faulty phone. If there is no registration information about the phone, run the **sip user Port number ID EID on the softswitch** command to register the phone with the softswitch.

**Step 2** Run the **display pstnport state Port number** command to check the status of the faulty port. If the state is not **idle**, short-circuit occurs on the user line. Therefore you need to check the user line.

**Step 3** Replace the original IAD with an IAD that is running properly. If the fault is rectified, the original IAD is faulty.

**Step 4** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.28 A Phone Connected to the IAD132 Does Not Ring for Incoming Calls

### Symptom

Sometimes, the phone connected to the IAD132 does not ring for incoming calls. Users using the phone can make outgoing calls normally.

## Cause

The possible causes are as follows:

- The phone model is not supported.
- PCs connected to the IAD affect the voice service.

## Solution

- Step 1** Replace the phone with a phone of another model to verify that the fault is rectified.
- Step 2** Compare signaling streams. Check the differences between the normal signaling stream and the signaling stream when the fault occurs.
- Step 3** Check whether a PC or cascaded switch is connected to the IAD. If yes, connect the PC or cascaded switch to the upstream switch, because PCs or data communication devices cannot be directly connected to the IAD132E(T).
- Step 4** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.29 When IAD1280 Users Make Outgoing Calls Using the IMS, the Connection Rate Is Only 10%

### Symptom

When IAD1280 users under the SoftCo make outgoing calls using the IMS, the connection rate is only 10%. Incoming calls are normal.

### Cause

The possible cause is that multiple IADs use one EID on the softswitch.

### Solution

- Step 1** Use the Wireshark to capture IAD1280 signaling messages, and analyze these messages. If the softswitch returns a 403 error response message to the IAD INVITE message, the server recognizes but refuses to execute the request message.
- Step 2** Check the data configuration, and clear conflict configuration to ensure that only one IAD uses one EID on the softswitch. Verify that the fault is rectified.
- Step 3** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.30 When the IAD Is Connected to the IMS, Users Cannot Make Calls to Each Other

### Symptom

When the IAD is connected to the IMS, users cannot make calls to each other.

### Cause

The possible cause is that signaling interaction is abnormal.

### Solution

**Step 1** Capture IAD packets to analyze the signaling stream. If the IMS returns an error response message to the IAD INVITE message, the IMS does not support the URI TEL format that is used by the INVITE message.

**Step 2** Run the **sip soft-parameter support-telurl off** command to change the TEL format to SIP format.

----End

## 2.1.31 Card Swiping Process Takes Long Time on the POS Device Connected to the IAD208

### Symptom

Network: POS—IAD208—SoftCo9500—SBC—IMS

The point of sale (POS) device connected to the IAD takes 30–40 minutes to complete the card swiping process.

### Cause

The possible causes are as follows:

- No digitmap is available for the card swiping number. The number is not reported until timeout.
- The network quality is poor.
- The card swiping server is faulty.

### Solution

**Step 1** Run the **display sip digitmap** command to check whether the digitmap is configured for card swiping numbers. If not, configure the digitmap, and verify that the fault is rectified.

**Step 2** Capture network packets to analyze slow and fast card swiping processes. Verify that the IAD processing mechanism is the same, and no packet loss, delay, and jitter occur.

**Step 3** Check that the card swiping server runs properly on the core network. If the server always responds the connecting request after several swiping attempts, the card swiping process becomes slow.

**Step 4** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.32 When the IAD Is Directly Connected to the IMS, Blind Transfer or Transfer upon Inquiry Failed

### Symptom

When the IAD is directly connected to the IMS, blind transfer or transfer upon inquiry failed. User A makes a call to user B (IMS user). The call is transferred to user C through the blind transfer or transfer upon inquiry service. When user B hangs up, users A and C are disconnected.

### Cause

The possible cause is that signaling interaction is abnormal.

### Solution

**Step 1** Capture IAD packets to analyze the signaling stream. Normal signaling messages and signaling messages generated when the fault occurs have different TEL URI in the **from** and **to** fields. IMS messages do not support TEL URI.

**Step 2** Run the **sip soft-parameter support-telurl off** command to disable **support-telurl**, and verify that the fault is rectified.

**Step 3** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.33 Calls Between IAD132E(T) Users Are Disconnected Sometimes

### Symptom

A SoftCo9500 and 23 IADs are connected to the external network through the PRA trunk. Calls between IAD132E(T) users or outer-office users are sometimes disconnected. The line disconnected is random. When a call is disconnected, a registration failure occurs on the IAD, but is automatically rectified in 10 seconds.

### Cause

The possible cause is that the softswitch restricts the registration message traffic and therefore results in registration of multiple times.

## Solution

- Step 1** Capture and analyze IAD logs. If the softswitch does not respond to the registration message sent by the IAD, the IAD sends a BYE message to terminate the session and re-sends registration messages until the registration is successful.
- Step 2** Check whether the traffic is restricted on the softswitch. Run the **fpga set limitflux enable protocol sipreg flux 50** command on the softswitch to disable the traffic restriction.
- Step 3** Configure a different registration duration on the IAD. For example, run the **sip server 0 address 192.166.1.16 expire-time 200** command to configure the registration duration to 200s.
- End

## 2.1.34 Silence Call Fault Occurs for IAD132 Users

### Symptom

Network: IAD132—ONU—SoftCo5816—PRA

Dozens of IADs are connected to the SoftCo5816. There are more than 300 numbers. The silence call fault occurs for all the numbers. When a user makes an outgoing call, the user hears the ring back tone and the phone rings. But after the called party picks up the phone, the user cannot hear any voice.

### Cause

The possible causes are as follows:

- The local device cannot receive the RTP stream from the peer device due to network problems.
- The SIP signaling media negotiation is abnormal.

### Solution

- Step 1** Connect an IAD132E(T) directly to the SoftCo5816, and verify that the fault is rectified.
- Step 2** Capture and analyze IAD SIP signaling packets. Verify that **session attribute** in the INVITE message sent by the IAD is set to **sendrecv**. If this attribute is set to **sendonly**, the IAD sends RTP packets but cannot receive them, and therefore results in the silence call fault.
- Step 3** Verify that the IP address in the **connection information** attribute in the INVITE message sent by the IAD is the IP address of the local device. The peer device sends the RTP stream to the IP address in this attribute. If it is not the IP address of the local device, the silence call fault occurs.
- Step 4** Capture IAD packets to verify the peer device has sent RTP packets to the local device. If no data is sent from the peer device, the silence call fault occurs.
- Step 5** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.
- End

## 2.1.35 Phones Connected to the IAD132E(T) Cannot Make Calls to Numbers Starting with 800

### Symptom

Network: IAD132ET—ZTE softswitch

The MGCP is used. The calling number is 5026075. The called number is 08008302118. Phones connected to the IAD132E(T) can make calls to other phone numbers except numbers starting with 800.

### Cause

The possible cause is that the digitmap does not match.

### Solution

**Step 1** Capture IAD network packets and obtain MGCP packets. Check the digitmap information contained in RQNT messages. The digitmap delivered from the softswitch is 0[2-9]xxxxxx. After the called number 08008302118 is matched to the digitmap, the number 08008302 is reported, which results in the call failure.

**Step 2** Modify the digitmap delivered by ZTE softswitch to 0[2-9]xxxxxxXXX.

**Step 3** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

----End

## 2.1.36 IAD132E(T) Cannot Send or Receive Faxes

### Symptom

Network: IAD132E(T)—ONU—OLT—ground—MAN—Convergence switch—SoftCo9500—PRA—SIP gateway—IMS

IAD132E(T) cannot send or receive faxes.

### Cause

The possible causes are as follows:

- The network quality is poor.
- The media negotiation is abnormal.
- The fax machine is not good in quality.

### Solution

**Step 1** Verify that the SoftCo is grounded properly. Use a fax machine from other manufactures to verify that the fault is rectified.

**Step 2** Connect the IAD132E(T) to the convergence switch directly to verify that the network is normal.

- Step 3** Capture IAD network packets to verify that the two ends of media negotiation use the same codec. Verify that the rate-reduction training is successful. If the rate-reduction training failed, the network quality is not good.
- Step 4** Check whether echo exists in the voice sent from the core network. If yes, find out the time when the echo is introduced.
- Step 5** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.
- End

## 2.1.37 No Prompt Tone Can Be Heard When the Phone Connected to the IAD Is Picked Up; When dialing the Phone, an Announcement Is Played, Indicating that the Phone IS on a Call

### Symptom

No prompt tone can be heard when the phone connected to the IAD is picked up; when dialing the phone, an announcement is played indicating that the phone is on a call.

### Cause

The possible cause is that the port is faulty.

### Solution

- Step 1** Run the **display sip attribute Port number** command to view the registration status of the port. Run the **display pstnport state all** command to view the port status.
- Step 2** If the port registration status is normal but the port status is **locked**, use another IAD. If the fault is rectified, a board failure occurs on the original IAD.
- End

## 2.1.38 IAD Registration Is Successful, but Intra-Office Calls Failed

### Symptom

IAD registration is successful, but intra-office calls failed.

### Cause

The possible cause is that **support-teluri** is set to **on** on the IAD.

### Solution

- Step 1** Run the **display sip support-teluri** command on the IAD to view the value of **support-teluri**. By default, the **support-teluri** is **off**. If it is **on** and the domain name of the SIP server is blank, the IAD cannot generate SIP message. Run the **sip support-teluri off** command.

**Step 2** If the fault persists after you perform the preceding operations, contact Huawei technical support engineers.

**---End**

# 3 Common IAD Tools

---

## 3.1 Wireshark

### When to Capture Packets

Network packets must be captured to locate faults about broadband voice quality, media, and signaling interaction.

### Common Packet Capturing Tools

Common packet capturing tools include the Wireshark and Ethereal. The Wireshark is recommended.

### Restriction

Packet capturing tools can only capture IP packets that pass through network adapters on the PC where these tools are installed. To capture IP packets sent from or to SoftCo, IP phones, and IADs, configure port mirroring on the switch.

### Configuring Port Mirroring

Different switches involve different configuration procedures. The following describe how to configure port mirroring on Huawei Quidway S3000.

- Step 1** Log in to the switch through the serial cable.
- Step 2** Run the **system-view** command to enter the system view.
- Step 3** Run the **monitor-port ethernet 0/24** command to set port 24 to monitoring port, and connect the PC used to capture packets to this port.
- Step 4** Run the **mirroring-port ethernet 0/1 to ethernet 0/23 both** command to set mirroring ports, in which ports 1 to 23 are monitored.
- Step 5** Run the **display mirror** command to view the configuration result.
- Step 6** Run the **undo mirroring-port Ethernet 0/21 to Ethernet 0/23 both** command to cancel port monitoring.

----End



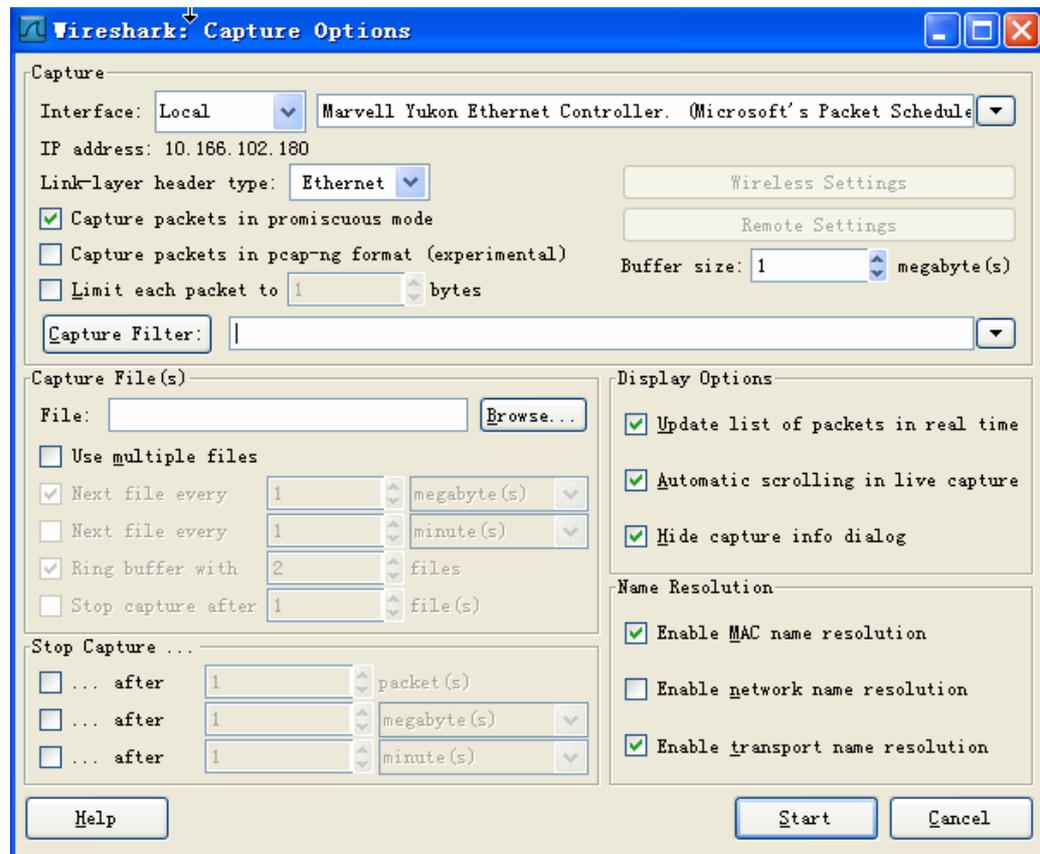
## WARNING

Only one port can be set to the monitoring port on a switch. This port cannot monitor itself.

## Using the Wireshark to Capture Packets

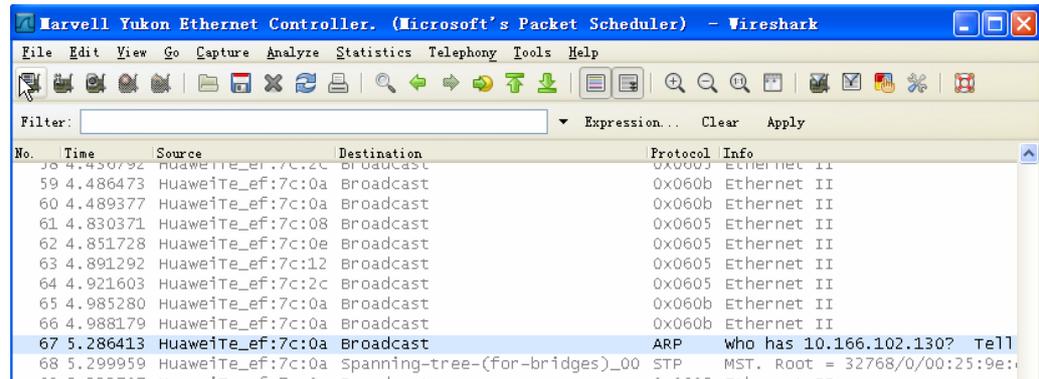
**Step 1** Open the Wireshark, and click **Capture Options**. Click **Start** to start capturing packets, as shown in [Figure 3-1](#).

**Figure 3-1** Setting packet capturing options



**Step 2** Set filter conditions to obtain required packets after packets are captured, as shown in [Figure 3-2](#).

**Figure 3-2** Setting filter conditions



**Step 3** Choose **File > Save as** to save the packet file in a specified folder.

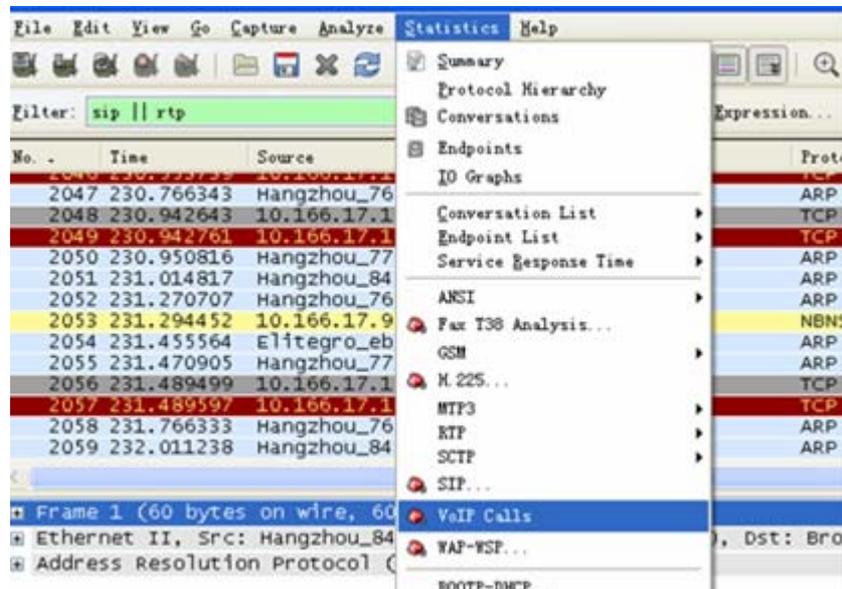
----End

## Analyzing Packets

Analyze the IP packets captured, and determine whether these packets are correct.

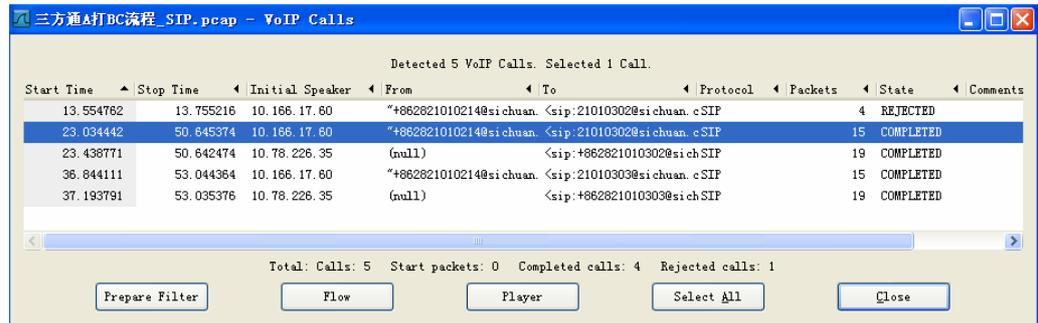
**Step 4** Choose **Statistics > VoIP Calls**, as shown in [Figure 3-3](#).

**Figure 3-3** Analyzing packets



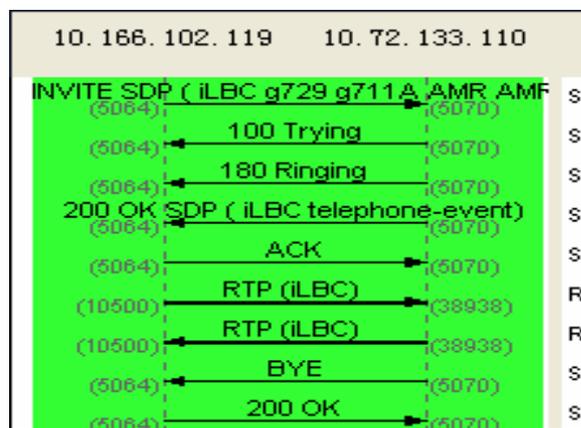
**Step 5** Select a call based on the calling number and called number, as shown in [Figure 3-4](#).

**Figure 3-4** Selecting a call



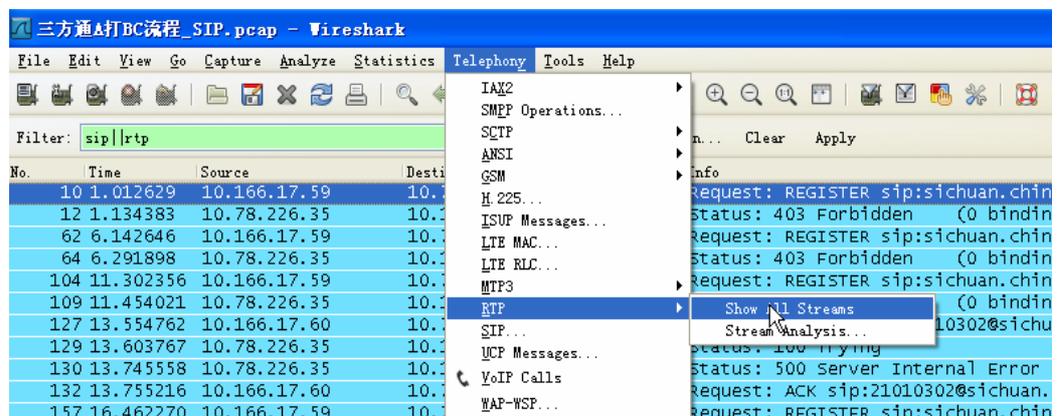
**Step 6** Click Flow. The SIP signaling flow for the call is displayed, as shown in Figure 3-5.

**Figure 3-5** SIP signaling flow



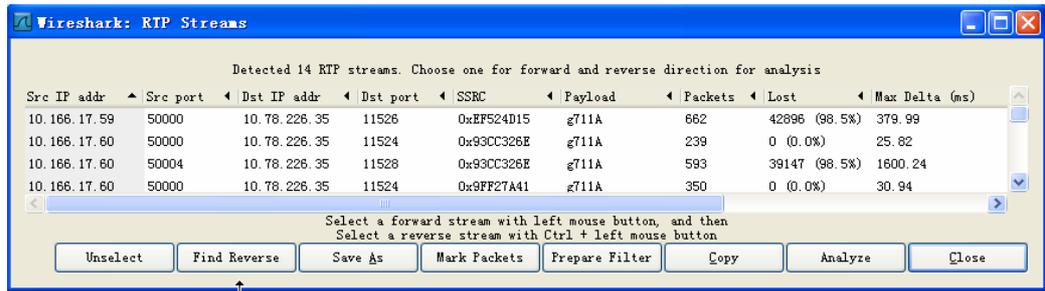
**Step 7** Choose **Telephony > RTP > Show All Streams** to analyze RTP streams, as shown in Figure 3-6.

**Figure 3-6** Analyzing RTP streams

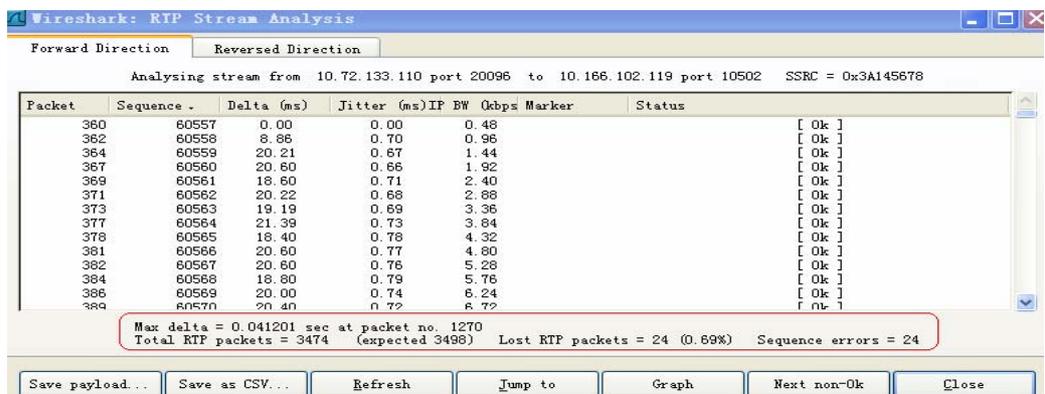


**Step 8** Select the data to analyze and click **Analyze**.

**Figure 3-7** Selecting an RTP stream



**Figure 3-8** Analyzing the result



----End

By performing the preceding steps, you can analyze the RTP stream and evaluate the quality of the bearer network based on the packet loss, jitter, and disorder data.