Avaya Communication Manager Basic Diagnostics Quick Reference

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Contents

1: Keeping system information

This section explains what kind of system records to keep and how to collect the data. It also tells you how to make sure your backups are successful.

Keeping baseline information

Baseline information consists of:

- the original system configuration
- any upgrades and changes
- switch capabilities (for example, if your company uses a call center or telecommuting)

The very best set of records starts with information on the original set up of your system. Most companies keep at least one paper copy of baseline information, with duplicate paper or electronic copies kept off site. Update this information any time you make changes to your system.

Use baseline information to help you diagnose problems with your telephone system. Also, this information is crucial in the event you need to reconstruct the information on your system, such as in a disaster recovery.

Note:

Avaya Warranty and Service Agreement customers are automatically enrolled in the Emergency Service Plan. The plan provides coverage for disasters such as fire, flood, and storms. Under this plan, Avaya restores basic telephone service on a priority basis. We can also lease a system running Communication Manager to Warranty and Service Agreement customers or can ship a replacement system, if necessary.

Retrieving baseline information

You can retrieve much of the hardware and configuration information you need right from your System Administration Terminal (SAT).

- Use **`display`** commands to see individual records.
- Use **`list`** commands to view a group of records.

If you are using a SAT with a local printer attached, you can also:

- Add **`print`** to display or list commands to create paper copies of the records from your system.
- Add **`schedule`** to a **`display`** or **`list`** command to create paper copies of the records at the system printer (if administered).

Note:

Be sure your printer is set up to print from the SAT. For more information, see the *Avaya Communication Manager Basic Administration Quick Reference*.

Keep track of the equipment and settings listed in the following table. Use the commands in the table to access the appropriate screens.

switch component	information	group records	individual records
switch configuration	the features your company purchased	display system parameters customer-options	
switch capacity	capacities enabled on your system	display capacity	
cabinets and carriers	number of cabinets and carriers	list cabinet	
circuit packs	board type and vintage	list configuration all	display circuit-packs
trunks	type of service	list trunk-group	display trunk-group *n*
phones	model number, extension number, name, location, cable, and jack	list station list extension-type	display station *n* display extension *n*
class of restriction (COR)	calling privileges	list cor	display cor *n*
class of service (COS)		display cos	
feature access codes		display feature-access-codes	

switch component	information	group records	individual records
feature parameters		display system-parameters features	
dial plan		display dialplan	
coverage paths		list coverage path	display coverage path *n*
announcements	extension, type, name, port	display announcements	
vectors	Vector Directory Number (VDN), vector number	list vector list VDN	display vector *n* display VDN *n*
hunt groups		list hunt-group	display hunt-group *n*

Securing backups

Backup your system regularly to keep your records up to date.

- Use **`save translations`** to backup changes to your system.
- Use **`save announcements`** to backup changes to announcements.

To verify that a backup was successful, review the **Command Completion Status** field.

- If the status field says **Success**, then the backup of the translations or the announcements was successful.
- If the status field does not say **Success**, record the Error Code and use the following list to determine what happened:
  - 1 = unable to save to active-spe device
  - 2 = unable to save to standby-spe device

Note:

For more information on performing backups, see the *Avaya Communication Manager Basic Administration Quick Reference*.

Keeping system information

2: Checking system status

This section explains how to use system information to keep track of the general health and status of your system. It tells you how to access system-wide and individual information, and describes how to check when changes are made to your system.

Problem solving strategies

As an administrator, one of your responsibilities is to check the status of your system to determine whether it is performing properly. This is a proactive approach to system diagnostics.

- Use the **`status`** command to check on the operation of your system. See Viewing the system status on page 14 for more information.
- Use **`display alarms`** and **`display errors`** to closely monitor your system. See Alarms and errors on page 31 for more information.

Another of your responsibilities is to respond to reports of telephone problems from your users. You generally have to use a reactive approach to system diagnostics to perform this important function. See Solving common problems on page 19 for more information.

Viewing the system status

Use system status screens to monitor various parts of your system. To be prepared for problems, you'll want to become familiar with what these reports look like when your system is operating well.

To view a list of the types of status reports you can run:

1. Type **`status`**. Press **Help**.

   The system displays the **Help** screen (Figure 1: Help screen for status command on page 14).

   This screen lists all the possible items for which you can request status.

Figure 1: Help screen for status command

```
Please enter one of the following object command words:
access-endpoint           hardware-group           psa
administered-connection   health                   processor-channels
attendant                 interface                remote-access
bri-port                  journal-link             signaling-group
card-mem                  link                     sp-link
cdr-link                  logins                   station
clan-ip                   mst                      synchronization
clan-port                 packet-interface         sys-link
cleared-alarm-notif       periodic-scheduled       system
conference                pms-link                 trunk
data-module               pri-endpoint             tti
esm
```

Let us look at a few sample status screens.

Viewing general system operations

Use the **Status Health** screen to determine whether everything is operating smoothly and to see a summary of your system status. You can use this report to look at alarms, see if anything is busied out, or check for any major problems.

To view the **Status Health** screen:

1. Type **`status health`**. Press **Enter**.

   The system displays the **Status Health** screen (Figure 2: Status health screen on page 15).

Figure 2: Status health screen

```
_______: status health (page 1) 2/26/2002 2:27:15 PM

SPE: B/auto     A/functional        OCC:St:  2%  Sm: 23%  Cp:  1% Idl: 74%
PNC: B-PNC/auto A-PNC/functional ALARMS:Maj: 16 Min:   3 Wrn: 505
Pwr: comm Sync:primary  Logins:5 BUSYOUT:Trk:  0 Stn:   0 Oth:   0

Cab EmTr  Maj Min Wrn PNC              Cab EmTr  Maj Min Wrn PNC
 1  auto-   0   1  57 up                __ _____ ___ ___ ___ ___
 2  auto-   0   0  51 up                __ _____ ___ ___ ___ ___
 3  auto-  16   1  54 up                __ _____ ___ ___ ___ ___
 4  auto-   0   1 103 up                __ _____ ___ ___ ___ ___
 5  auto-   0   0 240 up                __ _____ ___ ___ ___ ___
```

Viewing the status of a station

Use **`status station`** to view the setup of each individual station. This command is often the first place to gather information when a user reports a problem with a telephone.

For example, if a user tells you that the telephone rings a short ring and the call goes directly to coverage, use **`status station`** to see if send all calls (SAC) is activated on the user's extension.

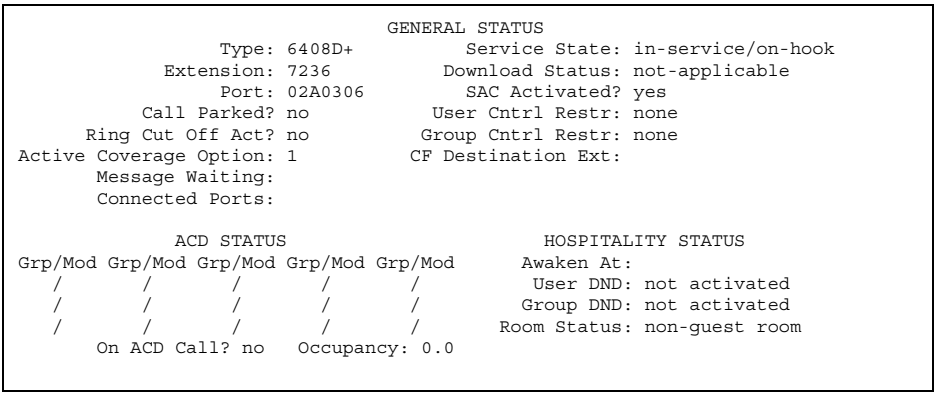
To view the status of extension 7236:

1. Type **`status station 7236`**. Press **Enter**.

   The system displays the **General Status** screen (Figure 3: General Status screen on page 16).

   In our example, you can see that this 6408D+ telephone is working properly (in-service/on-hook), but send all calls (SAC) is active. This would explain why they cannot answer their calls before they go to coverage.

Figure 3: General Status screen



```
                                GENERAL STATUS
                Type: 6408D+          Service State: in-service/on-hook
           Extension: 7236          Download Status: not-applicable
                Port: 02A0306         SAC Activated? yes
         Call Parked? no            User Cntrl Restr: none
     Ring Cut Off Act? no           Group Cntrl Restr: none
Active Coverage Option: 1          CF Destination Ext:
      Message Waiting:
      Connected Ports:

             ACD STATUS                          HOSPITALITY STATUS
Grp/Mod Grp/Mod Grp/Mod Grp/Mod Grp/Mod      Awaken At:
   /       /       /       /       /         User DND: not activated
   /       /       /       /       /         Group DND: not activated
   /       /       /       /       /       Room Status: non-guest room
      On ACD Call? no   Occupancy: 0.0
```

Viewing the status of your cabinets

Use the **System Status Cabinet** screen to become familiar with the service state of your individual cabinets. This screen also reports any alarms against your cabinets.

To view the status of your system cabinets:

1. Type **`status system all-cabinets`**. Press **Enter**.

   The system displays the **System Status Cabinet** screen (Figure 4: System Status Cabinet screen on page 17).

Figure 4: System Status Cabinet screen

```
                        SYSTEM STATUS CABINET 1
                      SELECT SPE ALARMS  TONE/ SERVICE SYSTEM SYSTEM
SPE  MODE             SWITCH MAJOR MINOR CLOCK STATE  CLOCK   TONE
1A   standby           auto    0     0    1A    in   standby standby
1B   active            spe b   0     0    1B    in   active  active
    SERVICE CONTROL  DEDICATED     SERVICE  BUS  ALARMS  BUS    OPEN BUS
TDM  STATE  CHANNEL    TONES  PKT  STATE   MAJOR MINOR   FAULTS LEADS
1A   in       n         n
1B   in       y         y        1    in      n     n      0       0

EMERGENCY     SELECT                    SERVICE              CABINET
TRANSFER      SWITCH      EXP-LINK      STATE     MODE       TYPE
1A            on          01A01-02A01    in       active     MCC
1B            auto-off    01B01-02B02    in       standby
```

Using a number of the status commands can go a long way in helping you know if your system is running OK.

How can Avaya help?

With an Avaya Service Agreement or warranty coverage, your system running Communication Manager is linked to Avaya Expert Systems for constant remote monitoring, proactive diagnosis and trouble resolution. This electronic monitoring is so effective that 70% of all troubles are remotely identified, diagnosed, and resolved. This round-the-clock coverage is the best in the industry, helping to provide maximum up-time for your voice communication system.

Also, Avaya is the first in the industry to provide Power Surge Protection, completely covering the costs of product damage due to power surges. You are automatically covered if your system is under Warranty or Service Agreement, and power protection has been installed, all local and national electrical codes have been followed, and Avaya site requirements have been met. Service Agreement and warranty customers will receive first priority toward resolution of these problems.

Checking system status

3: Solving common problems

This section tells you the questions to ask and the information to gather to solve some of the most basic telephone problems. It also describes how to solve common call-center problems.

Diagnosing a problem

As a system administrator, an important part of your job is to respond to trouble calls from users. You can identify some of the most common of these problems by following a few simple steps, asking the right questions, and trying to recreate the problem.

Use a set of questions to determine if:

- the equipment or process has worked before and is now broken, or if this is a new set-up that you need to correct
- the problem comes from your company's own equipment, or if the problem comes from your vendor
- the problem originates within your system, or if the source of the problem is outside of your own facility

Ask the following basic questions of yourself, your users, and other system administrators who work with you:

- Is this a new feature or piece of equipment, or did it work before but does not work now?
- Does the trouble arise when dialing outside the system, dialing into the system, or dialing inside the system?
- Can we duplicate the problem?

Solving common telephone problems

This section describes the approach that many administrators take to diagnose and correct common problems with telephones. Following is a list of suggested actions you can take if you have a problem.

- ask for the exact symptoms
- try to duplicate the problem or have the user show you the problem
- look at the telephone
- find out if the telephone was swapped out
- check the physical connections (for example, see if the telephone is plugged in)
- check that the telephone is where it is supposed to be
- try the telephone at another location
- ask if the cord or handset was changed
- check **`status station`**
- use **`display station`** to look at the station screens page-by-page
- check the station screens for SAC, coverage paths
- look at printed system records for discrepancies

- check the alarms and errors logs
- clear any alarms and errors
- test the circuit packs

Let's take a look at the types of problems users report to their system administrators, and see how to diagnose and correct the problem.

The user cannot dial out

A user calls to report that the telephone "does not work." Ask questions to find out what is really wrong so you can know how to fix the problem.

To find out why a telephone does not work, ask these questions:

- Does the problem occur when:
  - they try to answer a ringing incoming call
  - they try to make a call
- If the problem occurs when they try to make a call, is the call
  - internal, station to station
  - external, to an outside telephone
- Is the problem with just one number, or are they unable to place any outgoing calls?
- Is this a new telephone, or is this a new problem with an existing telephone (were they able to call out before)
- Do they hear dial tone before they try to call?
- What do they hear after they dial?
  - a tone of some kind
  - a message
  - static
  - nothing

- If they hear a message after they dial, what is the exact message?

  If the message says that the call cannot be completed as dialed, the problem is likely your ARS programming. For more information on changing your outbound routing, see the *Avaya Communication Manager Basic Administration Quick Reference*.

Incoming calls ring but do not reach the user

Another user calls to report that his telephone “does not work.” Ask questions similar to the ones listed above. You determine that the user can call out, and that the telephone rings but there is no call on the line when the user picks up.

Type **`status station`** to see if Send All Calls (SAC) is activated.

The message lamp does not go out

This problem often occurs even when the messages associated with the telephone have been cleared.

To clear a message waiting light:

1. Type **`clear amw all`** ***`n`***, where ***`n`*** is the extension. Press **Enter**.

Diagnosing general trunk problems

The following questions help you determine a problem with a trunk.

- Is the trouble on every call or is the trouble intermittent?
- Are you getting any sort of recordings when you try to dial out on this trunk?
- Can you identify the trunk in question?

  Use a trunk access code (tac) to identify the trunk, especially if the console has a trunk ID button.
- Is there static on the call?

  This is likely a problem with the trunk external to the system.
- Have you notified your vendor of this problem?

Diagnosing tie trunk problems

The following questions help you determine a problem with a tie trunk.

- Is the problem on incoming calls only?
- Is the problem on outgoing calls only?
- What happens when you try to use this trunk?
- Have you notified the T1 vendor?
- Does this trunk connect to another location?

  If so, try to determine the IL number of that location.
- Do you know the circuit ID of this trunk?

Diagnosing modem problems

The following questions help you determine a problem with a modem.

- What is the extension of the modem?
- Is the modem connected through the system?
- What is the modem connected to?

  For example, computer, fax, or CMS?
- Have the setup options been changed or checked recently?
- What company manufactures the modem?
- What is the model number?

Diagnosing printer troubles

The following questions help you determine a problem with a printer.

- What is the problem with the printer?
- What is the printer used for?

  For example, is it connected to the system, CMS, CAS, or maybe AUDIX?
- Who manufactures the printer?
- What is the model number?

Diagnosing password, login, and terminal access problems

If the problem is with remote dial-in access, ask:

- How do you dial in?
- What type of software or dialing program do you use?
- What error messages do you see when you try to dial in?

If your password expired, is not working, or is incorrect, call Avaya for assistance in getting the issue resolved.

Diagnosing SAT problems

If the problem is with the System Access Terminal (SAT), ask:

- What type of terminal is it?
- What type of trouble are you having?

Solving call center problems

This section helps you identify and solve common problems affecting hunt groups, splits, announcements, and caller access.

The tables below describe symptoms and solutions for common problems in call centers not using ACD or call vectoring.

Cannot record an announcement on Integrated Announcement Boards

Possible Causes	Solutions
You do not get port 0 when you start to record an announcement.	If port 0 is in use when you start to record an announcement, you hear a reorder (or fast-busy) tone followed by silence. Redial the announcement access code and extension every 45 seconds until your recording session is successful.
The telephone you are using to record the announcement does not have a COS with console permission.	Use the **Station** screen to change the COS for that telephone to a different COS that has console permissions.
The **Pr** (protected) field on the **Announcements/ Audio Sources** screen is **y**.	Set this field to **n** to allow changes from a telephone with console permissions.
The proper procedure was not used.	Try again. Verify the Feature Access Code (FAC) you're using.
The extension you want to use is not assigned to an announcement.	Check the number you're dialing, or assign the extension to an announcement on the **Announcements/audio Sources** screen.

Possible Causes	Solutions
There is insufficient time left on the announcement board.	Use **`list integrated-annc-boards`** to display the **Integrated Announcement Board** screen to show the time remaining on each board. ● Create a shorter announcement. ● Shorten existing announcements. ● Rerecord existing announcements at a lower compression rate. Be sure the audio quality at the lower compression rate is acceptable. ● Delete some announcements. ● Add an additional announcement board.

Callers don’t hear announcement

Possible Causes	Solutions
All announcement ports are frequently busy and no queue is administered for the announcement.	Set the **Q** field on the **Announcements/ Audio Sources** screen to **y**. (Set this field to **y** for every extension assigned to an integrated announcement board.) If the problem continues, add another announcement board.
No announcement is recorded.	Dial the announcement extension. If you hear a fast busy signal, there is no announcement. Record one.
The announcement board malfunctioned.	Re-record the announcement.

A device in an Auto Answer hunt group does not respond

Possible Causes	Solutions
The device is off or malfunctioning.	With UCD-MIA, since a malfunctioning unit will be the most idle port all calls to the hunt group may begin to go to the malfunctioning device. 1. Dial each modem's extension until you find the one that isn't answering. 2. Busy out that device, or remove its extension number from the **Hunt Group** screen until the device can be fixed.

Too many abandoned calls

Possible Causes	Solutions
There is no coverage path.	Assign a coverage point in the **Coverage Path** field on the **Hunt Group** screen.
Announcements are not being used or need to be changed.	Create announcements that encourage callers to wait. Tell callers their call is very important and ask them to stay on the line.
Customers aren't willing to wait until the call is answered.	Add agents to reduce average speed of answer.

Customers complain they get a busy signal

Possible Causes	Solutions
Trunk capacity is insufficient.	Check the system Trunk Summary report, including yesterday-peak, today-peak and last hour. Print last-hour once an hour during business hours. Check the **% ATB** (All Trunks Busy) field for both incoming and two-way trunks. If this figure is consistently high for ONE-WAY incoming trunks, calls are probably being blocked. Add trunks. If ARS is being used on a two-way trunk, it may need further investigation. Communication Manager can't tell you if calls are being blocked in the central office. Ask your network provider to do a traffic study on incoming calls.
The administered queue length is too short.	Set the **Queue Length** field on the **Hunt Group** screen to a value equal to or greater than the number of hunt group agents. Add more agents.
There's no coverage path.	Assign a coverage point in the **Coverage Path** field on the **Hunt Group** screen.

4: Alarms and errors

This section is for adventurous administrators who are curious about how to diagnose and fix common problems. The information here will help you understand how to read and interpret:

- error logs
- alarm logs

Maintenance reports

Avaya Communication Manager monitors many system components. When a component fails or performs unacceptably, the subsystem generates two kinds of reports:

- **detailed** reports in the error log
- **general** reports in the alarm log

The system detects error conditions in its components through Maintenance Objects (MO). MOs are the software modules that monitor, test, and report possible fault conditions.

Viewing error logs

It is a good idea to run and inspect error logs on a regular basis. You can view all active system errors on the error log. You can also specify a particular component of your system or a certain time period to be reported on the error log.

To view the error log:

1. Type **`display errors`**. Press **Enter**.

   The system displays the **Error Report** screen (Figure 5: Error Report screen on page 32).

Figure 5: Error Report screen

```
                                ERROR REPORT
The following options control which errors will be displayed.
  ERROR TYPES
   Error Type:                Error List: active-alarms
  REPORT PERIOD
   Interval: a      From:   /  /  :   To:   /  /  :
   EQUIPMENT TYPE ( Choose only one, if any, of the following )
                             Cabinet:
                        Port Network:
                        Board Number:
                                Port:
                            Category:
                           Extension:
               Trunk ( group/member ):   /
```

2. Perform one of the following options:
   - To see all current errors, press **Enter**.
   - To see particular errors, indicate the errors that you want to see by entering the information requested in each field. (See the field descriptions listed in the following section.) Press **Enter**.

     The system displays the **Hardware Error Report** screen (Figure 6: Hardware Error Report on page 34).

Error report field descriptions

Field	What to enter
Error Type	error type
Error List	active-alarms, errors, or cleared-errors
Interval	h(our), d(ay), w(eek), m(onth), a(ll)
From/To	time interval by date and time
Cabinet	cabinet number (1 - 44)
Port Network	port network number (1 - 44)
Board Number	5-character board number in **UUCSS** format: UU = cabinet (1-44), C = carrier (A-E), SS = slot (0-20)
Port	7-character port address in **UUCSSss** format: UU = cabinet (1-44), C = carrier (A-E), SS = slot (0-20), ss = circuit
Category	category name (choose from the list below):

adm-conn	announce	bri/asai	cdr	data-mod
detector	dup-spe	environ	exp-intf	ext-dev
generatr	inads-link	infc	maint	mass-st
mbus	memory	misc	mmi	mnt-test
modem	mssnet	pkt	pms/jrnl	pnc
pncmaint	pnc-peer	procr	quick-st	s-syn
spe	stabd	stacrk	stations	sys-link

sys-prnt	tape	tdm	tone	trkbd
trkcrk	trunks	vc	vsp	wideband
wireless				

`Extension`	assigned extension, or blank
`Trunk Group`	group number between 1-666
`Trunk Member`	group member between 1-255, or blank

Figure 6: Hardware Error Report

```
                    HARDWARE ERROR REPORT - ACTIVE ALARMS

Port    Mtce     Alt    Err   Aux     First       Last      Err Err Rt/ Al Ac
        Name     Name   Type  Data    Occur       Occur     Cnt Rt  Hr  St
01AXX1  PI-LINK         257   25    05/02/08:07 05/04/08:38 255 5 13  a  n
01AXX1  PI-LINK         2049  1     05/02/12:03 05/02/12:03 1   0 0   a  n
01AXX1  PI-LINK         1     25    05/02/18:48 05/03/13:57 2   0 0   a  n
01A0101 DIG-LINE Attd1 1537  40968 05/02/12:29 05/02/12:29 1   0 0   a  n
01A0101 DIG-LINE Attd1 513   0     05/02/12:29 05/02/12:29 3   0 0   a  n
```

Make special note of the information in these fields:

- The **Port** field contains information in several formats:
  - circuit pack address (**UUCSS**)
  - port address (**UUCSSss**)
  - 2-digit signaling number
  - administered port network number
- **Mtce Name** (the name of the Maintenance Object)
- **Alt Name** (the extension with the error)
  In this example, **Attd1** is the digital port with the errors.
- **Err Type** (represents the error condition category)

- **Aux Data** (represents a detail of the Error Type)
- **First Occur** (indicates the date/time of the first occurrence)
- **Last Occur** (indicates the date/time of the last occurrence)
- **Err Cnt** (lists how many occurrences since the first one)

Interpreting the error log

The **Hardware Error Report** in our example shows five error entries. The system detected an unplugged digital telephone. Here is how to interpret the report:

- **PI-LINK** is the MO monitoring the processor interface links to digital equipment, including adjuncts. You can see that over 2 days (May 2 to May 4) it incurred 255 type-257 errors, 1 type-2049 error, and 2 type-1 errors.
- The **DIG-LINE** errors indicate that the system can't find the telephone administered to port 01A0101. According to the system, that is supposed to be attendant 1 (**Alt Name**).

Notice that the **Err Type** and **Aux Data** fields for both MOs contain many different numbers. The numbers are software codes that represent a specific error condition.

Clearing the error

If an important component in your system fails, the software records that "event" with code numbers in the error or alarm log.

To interpret the error codes and clear the error:

1. Look up the MO (for example, **DIG-LINE** or **PI-LINK**) in the Communication Manager maintenance books for your system.
2. Find the error type in the Hardware Error Type table for that MO.
3. Find the note associated with that error type for an explanation of the conditions that generated the error.

4. Perform the recommended procedure to clear the error.

   The recommended procedure may require you to test alarmed components. Be sure to have test permissions enabled.

   If any tests fail or abort, you will get an error code for the test.
5. Look up the test error code by MO in your Communication Manager maintenance books.
6. Find the numbered test listed in the test results.
7. Look for the correct combination of error code and test result in the numbered-test tables.

Alarm logs

Alarms are classified as major, minor, or warning, depending the degree of severity and the effect on the system.

warning level and description	reported to INADS?	reported to console?	take this action
major Critical service degradation	Y	Y (occurs after 4 attempts to call INADS)	Immediate attention
minor Some service degradation, but system is operable, usually limited to a few trunks or stations or a single feature.	Y	Y (occurs after 4 attempts to call INADS)	Check to see what service is affected

warning level and description	reported to INADS?	reported to console?	take this action
warning Failure that causes no significant service degradation Note: DS1 off board faults (error type 138) generate warning alarms only, indicating a customer network problem. In this case, warning alarms can cause critical service degradation.	N (INADS can receive some downgraded warning alarms)	N	Monitor the situation; check for service or equipment interruption or failure outside the system.

Alarms are further classified as:

- on-board problems originate within the circuitry of the alarmed circuit pack
- off-board problems originate in a process or component that is external to the circuit pack

Reading the alarm log

Let's look at an alarm log that results from an unplugged digital telephone.

To the view the alarm log:

1. Type **`display alarms`**. Press **Enter**.

   The system displays the **Alarm Report** screen (Figure 7: Alarm Report screen on page 38).

Figure 7: Alarm Report screen

```
ALARM REPORT
     The following options control which alarms will be displayed.
       ALARM TYPES
              Active? y    Resolved? n
               Major? y       Minor? y      Warning? y
       REPORT PERIOD
            Interval: m      From:   /  /  :      To:   /  /  :
       EQUIPMENT TYPE ( Choose only one, if any, of the following )
                            Cabinet:
                       Port Network:
                       Board Number:
                               Port:
                           Category:
                          Extension:
             Trunk ( group/member ):   /
```

2. Indicate which alarms you want to view by entering **y** and **Enter** after each alarm type.

Note:

Unless you can restrict the trouble to a particular time period, press **Enter** to see all active alarms.

If you choose **n** for major alarms and **y** for minor and warning alarms, you will not see the high-level information that you may need to determine what is wrong with your system.

3. Press **Enter** to view the alarm report.
4. The system displays the **Alarm Report** detail screen (Figure 8: Alarm Report screen on page 39).

Figure 8: Alarm Report screen

```
                          ALARM REPORT

Port    Maintenance On  Alt   Alarm   Svc  Ack? Date        Date
        Name        Brd? Name  Type    State 1 2  Alarmed     Resolved
01AXX1  PI-LINK      n         WARNING           05/02/09:48 00/00/00:00
01AXX1  PI-LINK      n         WARNING           05/02/09:48 00/00/00:00
01A0101 DIG-LINE     n   Attd1 WARNING RDY       05/02/12:29 00/00/00:00
01A0101 DIG-LINE     n   Attd1 WARNING RDY       05/02/12:29 00/00/00:00
01AXX1  PI-LINK      n         WARNING           05/02/18:49 00/00/00:00
```

Interpreting alarm logs

The **Alarm Report** lists the major alarms first, followed by the minor and warning alarms.

The alarm log in the example above shows:

- a processor interface link (**PI-LINK**) at address **01AXX1** has alarmed three times on May 2 with *off-board* (**On Brd?** = **n**) warnings.
- the same port (**01A0101**) on a digital line (**DIG-LINE**) circuit pack has alarmed twice on May 2 in response to two different error counters (refer to the error log example).

Clearing alarm logs

To clear an alarm log:

1. Investigate or fix the first major alarm in the log.
2. See if other alarms are retired by fixing the most severe problem first.

Assigning alarm buttons

You can administer feature button lamps on any telephone to act as alarm indicators, similar to the alarm lamp on the attendant console. The following table describes the meaning of the green light associated with an alarm button.

status of light	meaning
flashing green	an alarm occurs
steady green	INADS notified and acknowledges alarm
light goes off	an alarm is resolved

Press the alarm button to turn off the light. The light flashes again if the alarm is still active when the next maintenance routine runs.

Understanding common error types

This section discusses frequently-encountered error types, and explains why they occur.

Error type 18, busied out

Error type 18 is a reminder from the system that a component has been busied out. The busyout command is used to temporarily disable a component and is usually used before you test or replace a component.

Use the **`release`** command (permissions enabled) to restore a component to its normal operating mode.

For example, you receive a complaint that a telephone does not work. As part of your diagnosis, you:

- use **`status station`**

  OR

- view the hardware error report for error 18

To view a hardware error report for error 18:

1. Type **`display errors`**. Press **Enter**.

   The system displays the **Hardware Error Report** screen.

2. Fill in the **Err Type** field. Press **Enter**.

   In our example, type **18**.

   The system displays the **Hardware Error Report** for error 18 (Figure 9: Hardware Error Report on page 41).

Figure 9: Hardware Error Report

```
 HARDWARE ERROR REPORT - ACTIVE ALARMS
Port   Mtce    Alt    Err   Aux  First       Last        Err Err Rt/ Al Ac
       Name    Name   Type  Data Occur       Occur       Cnt Rt  Hr  St

01A0901 DIG-LINE 1234   18    03/09/00:30 03/09/00:30 1  0   0   a  n
```

The log entry indicates that extension 1234, a digital line, is busied out (**ERR TYPE 18**).

Use the **`release`** command (permissions enabled) to remove the busyout status from the station. In our example:

1. Type **`release`** ***`port 01A0901`*** (permissions enabled). Press **Enter**.

   The station is no longer busied-out.

Error type 513, equipment missing

Error type 513 notifies you that equipment, such as telephones, data modules, or circuit packs, are administered but not physically connected to the system.

For example, view a hardware error report for error 513:

1. Type **`display errors`**. *Press* **Enter**.

   The system displays the **Hardware Error Report** screen.

2. Fill in the **Err Type** field. Press **Enter**.

   In our example, type **513**.

   The system displays the **Hardware Error Report** for error 513 (Figure 10: Hardware Error Report on page 42).

Figure 10: Hardware Error Report

```
 HARDWARE ERROR REPORT - ACTIVE ALARMS
Port  Mtce   Alt   Err   Aux  First      Last        Err Err Rt/ Al Ac
      Name   Name  Type  Data Occur      Occur       Cnt Rt  Hr  St

01C0507 DIG-LINE 7157  513  0  03/09/00:30 03/09/00:30 1  0   0   a  n
```

In this example, a digital telephone is missing. A port on the digital line circuit pack (**DIG-LINE**) at cabinet 1, carrier C, slot 05, port 07 does not have its administered equipment physically present (**Err Type 513**).

To fix error 513 in our example:

1. Plug the telephone into the jack assigned to port 01C0507.
2. Type **`test station`** ***`7157`*** (permissions enabled). Press **Enter** to test the telephone.

   The system will clear the error only after the system runs its administered checks and diagnostics.

Error type 1, circuit pack removed

Error type 1 often indicates that an administered circuit pack has been removed.

To correct the problem and clear Error type 1:

1. Replace and latch the circuit pack in its administered slot.

   The next time the system runs its routine maintenance program, it should be able to “see” the circuit pack and the error will not appear.

Preventing alarms and errors

This section lists a few common causes of unnecessary alarms.

Turn off maintenance

The Remote Loop-Around Test sends a burst of current to activate a telephone’s ringer. If the ringer responds, the test detects the return. Data modules, fax machines and modems do not have ringers and do not respond to this test. This generates an error on that port.

You should turn off this test for data modules, fax machines and modems. Turning off the test does *not* affect the performance of any of these devices.

To turn off the maintenance test:

1. Type **`change data-module n`**, where ***n*** is the extension number. Press **Enter**.

   The system displays the **Data Module** screen (Figure 11: Data Module screen on page 44).

Figure 11: Data Module screen

```
 DATA MODULE
Data Extension: 3151      Name: joes r2cms pdm          BCC: 2
          Type: pdm        COS: 1   Remote Loop-Around Test? n
          Port: 01C0501    COR: 1     Secondary data module? n
           ITC: restricted  TN: 1              Connected to: dte
ABBREVIATED DIALING
  List1:
SPECIAL DIALING OPTION:
ASSIGNED MEMBER
(Station with a data extension button for this data module )
         Ext     Name
      1:
```

2. Change the **Remote Loop-Around Test** field to **n**.
3. Press **Enter** to save your changes.

Remove unused circuit packs

Occasionally, a company upgrades telephones from analog models to digital telephones. The upgrade process is to:

1. Remove the analog line and trunk administration
2. Remove the old analog equipment
3. Rewire the workplace for the new digital telephones and jacks
4. Administer the new digital telephones and circuit packs

If the analog circuit packs remain physically plugged into the system and are *still administered as circuit packs (*even though the administration is removed in Step 1 above), the system generates errors. This stops when you remove the administration (**`change circuit-pack`** ***`UUCSS`***) for this unused circuit pack.

DS1 administration

Depending on whether a DS1 circuit pack is present and whether its ports are assigned or not, the system reports faults according to the following table:

circuit pack present?	circuit pack admin'd?	ports admin'd?	alarm level	action
N	Y	N	warning	1. Replace and latch the board in its assigned slot. 2. Remove the trunk and DS1 administration (**`change circuit-pack`** ***`uucss`***), *leaving the circuit pack in its assigned slot*.
N	Y	Y	minor	1. Replace and latch the board in its assigned slot. 2. Administer one or more ports (**`change circuit-pack`** ***`uucss`***), *leaving the circuit pack in its assigned slot*.
Y	N	N	varies	1. Remove the circuit pack from the carrier.

5: Using features to troubleshoot

Troubleshooting

You can use some Avaya Communication Manager features to help you identify if your system is having problems or to help you diagnose problems you know are occurring. The table below shows you which features to use for various kinds of system problems.

feature	problem area			
	trunks	phones	hunt groups	paging groups
Automatic Circuit Assurance	X			
Busy Verify	X	X	X	
Facility Busy Indication	X	X		X
Facility Test Calls	X	X		
Trunk Identification	X			

Automatic Circuit Assurance

You can use Automatic Circuit Assurance (ACA) to help identify faulty trunks. If activated, your system notifies you with a referral call when it detects unusual trunk usage like very short or very long calls. It needs to be turned on for each individual trunk group.

The referral call arrives on an idle call appearance. If you answer the call, your display shows:

- that the call is an ACA call
- the trunk-group access code
- the trunk-group member number
- the reason for the call (short or long holding time)

To use ACA on a G3V2 or older system

1. Assign an ACA button to your telephone.
2. Press the ACA button to activate your telephone for referrals.
3. When you receive an ACA referral call, answer the call.
4. Record the information listed on your display to use for further troubleshooting.

To use ACA on a G3V3 or newer system

1. Assign an ACA-Halt button to your telephone.
2. Leave the ACA-Halt button OFF to keep your telephone active for referrals.
3. When you receive an ACA referral call, answer the call.
4. Record the information listed on your display to use for further troubleshooting.

Busy Verify

You can use Busy Verify to place test calls to check the busy condition of trunks, telephones, or hunt groups. This test helps you determine if the trunk, telephone, or hunt group is busy because of heavy use or appears busy because of a problem.

To use Busy Verify, you should administer a **Busy Verify** button on your telephone.

To busy-verify a telephone

1. Press the **Busy Verify** button on your telephone.

   The busy verify light turns green.

2. Dial the extension of the telephone you want to test.

   You hear a tone and see a display. The following table describes what the tone and display indicate and how to respond.

display	tone	frequency	pattern (seconds)	status of extension	next step
Invalid	intercept	440 Hz alternating 620 Hz	.25 on .25 on repeated	invalid number	cancel and try again
Terminated	ringback	combined 440 Hz + 480 Hz	1 on 3 off repeated	idle and ringing (working properly)	release the call

display	tone	frequency	pattern (seconds)	status of extension	next step
Bridged	none			bridged onto active call (working properly)	release the call
Out of service	reorder	combined 480 Hz + 620 Hz	.25 on .25 off repeated	trouble condition or station administered without hardware and no coverage path	cancel; use **status station extension** command for more information

To busy-verify a hunt group

1. Press the **Busy Verify** button on your telephone.

   The busy verify light turns green.

2. Dial the extension for the hunt group you want to test.

You hear a tone and see a display. The following table describes what the tone and display indicate and how to respond.

display	tone	frequency	pattern (seconds)	status of extension	next step
Invalid	intercept	440 Hz alternating 620 Hz	.25 on .25 on repeated	invalid number	cancel and try again
Terminated	ringback	combined 440 Hz + 480 Hz	1 on 3 off repeated	idle and ringing	release the call
All made busy	reorder	combined 480 Hz + 620 Hz	.25 on .25 off repeated	made busy is active	release the call and try again later

display	tone	frequency	pattern (seconds)	status of extension	next step
Denied	reorder	same as above	same as above	active on a call	release the call and try again later
Out of service	reorder	same as above	same as above	trouble condition or station administered without hardware	cancel; report an out-of-servi ce condition

To busy-verify a trunk

1. Press the **Busy Verify** button on your telephone.

   The busy verify light turns green.

2. Dial the trunk access code for the trunk you want to test.

   Your display should be blank and you should hear dial tone. If your display shows “DENIED” and you hear intercept tone, repeat steps 1 and 2.

   If you have trunk group select buttons on your telephone, you can also press the **Busy Verify** button and then press the **Trunk Group Select** button for the appropriate trunk.

3. Dial the trunk-group member number you want to verify.

   You hear a tone and see a display. The following table describes what the tone and display indicate and how to respond.

display	tone	frequency	pattern (seconds)	status of extension	next step
Invalid	intercept	440 Hz alternating 620 Hz	.25 on .25 on repeated	invalid	cancel and try again
Verified	confir-mation			idle and ringing (working properly)	release the call

display	tone	frequency	pattern (seconds)	status of extension	next step
none	ringback	combined 440 Hz + 480 Hz	1 s on 3 s off repeated	idle automatic or release link (working properly)	release the call
none	dial tone	combined 350 Hz + 440 Hz	continuous	idle (working properly)	release the call
Bridged	none			bridged onto active call (working properly)	release the call
Out of Service	reorder	combined 480 Hz + 620 Hz	.25 on .25 off repeated	trouble condition	cancel; report an out-of-service condition

Facility Busy Indication

You can use Facility Busy Indication to display the idle or busy condition of telephones, trunks, or paging zones.

To use this feature you need to add facility busy indication buttons to your telephone. Label the facility busy buttons as “Busy” followed by the number or name of the facility being monitored.

If the green light associated with the Facility Busy Indication button stays lit for a long time, the facility may have a problem.

Facility Test Calls

You can use Facility Test Calls to place test calls to specific trunks or telephones. Because this feature bypasses the regular system traffic, it is very helpful in finding noisy lines and other problems. However, this feature can be easily misused by outside parties. Disable this feature when you are not using it.

SECURITY ALERT:

Whenever you use this feature, enable the feature access code only for the tests you want to make. Be sure to immediately remove the access code when you are through testing because leaving this feature enabled can leave you open to security breaches.

To place a test call to a trunk or touch-tone telephone

1. At the system terminal, enable a feature access code for Facility Test Call.
2. At your telephone, dial the feature access code for Facility Test Call. Listen for dial tone.
3. Dial the 6- or 7-digit port address in **UUCSSss** format, where:

   UU = cabinet number (01, 02, etc.)
   C = carrier number (A=1, B=2, C=3, D=4, E=5)
   SS = slot number (depends on system)
   ss = port number (depends on circuit pack)

Note:

If you have problems with this step, try dialing the port address without the first zero in the cabinet number.

You hear a tone and see a display. The following table describes what the tone and display indicate and how to respond.

tone	frequency	pattern (seconds)	status	next step
dial	combined 350 Hz + 440 Hz	continuous	connected	go to step 4
reorder	combined 480 Hz + 620 Hz	.25 on .25 off repeated	busy	release the call
intercept	440 Hz alternating 620 Hz	.25 on .25 on repeated	no access	release the call

4. If you are testing a trunk, place the call.
   or
   If you are testing a touch-tone receiver, dial the number.
5. If you receive a dial tone, the test passed.
   or
   If you receive an intercept tone, the test failed.

SECURITY ALERT:
At the system terminal, BE SURE to disable the Facility Test Call feature access code.

Trunk Identification

You can identify a faulty or noisy trunk with Trunk Identification. You can use Trunk Identification:

- on an active call
- while accessing a trunk

To identify the specific trunk used on a call:

1. Press the **Trunk ID** button.

   Trunk access code and trunk group member number appears on the display.

   If 2 trunks are used on the call, the identification of the last trunk added to the call displays. If more than 2 trunks are on a call, Trunk Identification is denied.

2. See if there are any *on-board* alarms against a trunk circuit pack.

   If no, report the trunk problem to the appropriate vendor.

   If yes, report the trunk problem and the identification information to Avaya.

6: Solving IP and H.323 problems

This section describes some basic troubleshooting tips and tools that may help you solve problems with IP (internet protocol) telephones, Softphones, and IP and H.323 trunk issues.

In addition to using this section, you may want to refer to *Administration for Network Connectivity for Avaya Communication Manager* for basic IP administration.

Solving Softphone problems

This section discusses some common problems you or your users may encounter while using IP Softphones (telecommuter or RoadWarrior types).

Note:

R1 and R2 IP Softphone and IP Agent, which use a dual connect (two extensions) architecture, are no longer supported. R3 and R4 IP Softphone and IP Agent, which use a single connect (one extension) architecture, continue to be supported. This applies to the RoadWarrior configuration and the Native H.323 configuration for the IP Softphone.

Users cannot login (register) with IP Softphone

The user's password needs to be the same as the administered station security code. So, the first thing to verify is whether or not the user is using the correct password. If they are using the correct password, then you should determine if the problem is with their PC.

To determine if the problem is related to the user's PC, try to register (login) this extension from another PC. If you can successfully register, then the problem is within the user's PC. If you cannot register, then the extension may not be administered correctly or you may have a network problem.

User is logged in, but cannot use Softphone for calls

If you see the message "Telephony is not available" in the call status area, then you may have COR to COR restrictions between the IP Softphone and the actual hard telephone used to make calls.

If you do not have restrictions, then try logging off and back in again. If that fails, reboot the PC that the Softphone is running on.

WARNING:

Some system platforms also run on a PC. If you reboot a system PC that is running a D1, all calls will be lost. In that case, you might want to wait until after normal business hours to reboot the PC.

Cannot listen to messages with INTUITY Message Manager

When a user is logged in to IP Softphone in the Roadwarrior application, the Softphone has control of the PC sound card. Since only one application can control the PC sound card at a time, the sound card will not be available to Message Manager.

Users get message “Action cannot be completed”

The user may have a button on the IP Softphone that is not actually administered on the **Station** screen for the extension. Or the user is trying to dial a feature access code that is not administered in the system.

User cannot conference or transfer

Both the conference and the transfer operations require at least two lines. Make sure the user has more than one line available to place calls. To determine if the user has more than one line appearance, complete the following steps:

1. At the IP Softphone, select Number of Calls from the Options menu.
2. Verify that the Minimum or Default number of lines to be displayed is more than one.

Users cannot use Directory

In order to use the directory, users must have a Directory, Normal, and Next button available.

Other tips

If your users get the message “Communication to the server has been lost. You will be logged off by the server,” the only option is to click **OK**. However, if the user is active on a call, they can finish the call before they click **OK**.

Sound quality problems

Because of the myriad of networks and equipment involved in an IP call, there are a lot of factors that may contribute to sound quality problems. This section contains tips for how to determine the source of the problem, and some things you can do that may help.

Isolating problems in the LAN or the Communication Manager setup

There are a few easy things you can do to determine if a voice quality problem is in the Communication Manager setup or in your LAN or PC.

To check the PC sound quality, create and play back a sound file using the PC sound recorder. If the sound quality is unacceptable, the problem is somewhere in your headset or sound card.

To check sound quality over the LAN, shut down IP Softphone. Now start up Net Meeting and initiate a call. This completely bypasses the Communication Manager. Therefore, if you are still experiencing sound quality problems, the source must be somewhere within the LAN. If this resolves the sound quality problem, the issue is with the Communication Manager setup.

Note:
For more information on NetMeeting, see Microsoft's Web site at www.microsoft.com.

Running a mute test

The mute test can also help determine the source of a sound quality problem. To run this test, set up an IP softphone test call between two users who are experiencing voice quality problems. Have one user mute their telephone and have the other user count aloud to 10. If the sound quality improves, then the problem is in the sound card, microphone, or headset of the muted telephone. If the sound quality does not improve, try the test again, but this time mute the other telephone.

Checking the PC volume control

Softphone has its own volume controls, but sometimes the volume controls on the PC need to be adjusted. If the PC volume controls are set too loud, it can cause sound quality to be distorted. If the PC volume controls are set too low, it may be difficult to hear clearly. Try adjusting the volume control on the PC to resolve the problem.

Checking for packet loss and jitter

Packet loss and jitter can cause a noisy connection that eventually breaks up, creating gaps in the conversation and making speech unintelligible. Use **status station** to check for station-side IP problems, including problems with an IP telephone, and use **status trunk** to check for trunk-side IP problems.

Each command generates snapshot jitter buffer size (ms) and packet loss report for a particular station or trunk group member that shows:

- the number of packets that are lost or corrupted
- amount of jitter on the connection

In this instance, jitter is the variability in the amount of time (in milliseconds) that packets are received over the network. When jitter increases, the user experiences a noisy connection, delays, and a general loss of quality, making speech unintelligible.

Note:

If you issue a **status station** or **status trunk** command for a non-IP station, or the connection is hairpinned or shuffled, then the packet loss and jitter size information does not appear. For more information, see the *Administration for Network Connectivity for Avaya Communication Manager*.

Other possible causes

If a user is browsing the web while using softphone and they are accessing web sites with large graphics, they may experience an interruption in voice transmission.

Basic troubleshooting tools

This section describes some basic tools that you can use to understand better what is going on in your network and with the IP hardware and software.

Using ping

The **ping** command helps you to determine if endpoints on the network are available to place or receive calls, and if nodes in the network are active. You can specify which circuit pack you want to ping.

For example, to ping from a C-LAN circuit pack at 01A011 to an endpoint at 111.122.133.144, complete the following steps:

1. Type **ping ip-address** ***111.122.133.144 board 01A011***.

   Use the IP address of the endpoint that you want to ping, and the board location for the specific pack that you want to test.

   You can also use the **ping node-name** to ping a node defined on the **Node Names** screen.

2. Press **Enter**.

   The system displays the **Ping Results** screen (Figure 12: Ping Results screen on page 63).

Figure 12: Ping Results screen

```
PING RESULTS

End-pt  Node-name  Port     Port Type  Result  Time (ms)  Error code
111.122.133.144    01A011   ETH-PT     PASS    60
```

3. Review the report to see if pinging the endpoints failed or if the round-trip time was too long.

Using trace-route

The **trace-route** command helps you test the path that a call takes from the PC endpoint, through the various nodes in a network. Trace-route can help you see where in the network a problem may be occurring.

For example, to determine the path from a C-LAN circuit pack at 01A011 to an endpoint at 111.122.133.144, complete the following steps:

1. Type **trace-route ip-address *111.122.133.144 board 01A011***.

   Use the IP address of the endpoint you want to reach and the board location for the specific pack you want to test.

   You can also use the **trace-route node-name** to test the path to a node defined on the Node Names screen.

2. Press **Enter**.

   The system displays the **Trace Route Results** screen (Figure 13: Trace Route Results screen on page 64).

Figure 13: Trace Route Results screen

```
TRACE ROUTE RESULTS

  Hop                 Time (ms)              IP Address
  0                   Start Addr:            111.44.33.122
  1                     5,  6,  6            111.44.33.144
  2                    35, 36, 37            111.44.33.111
  3                    49, 51, 51            111.122.133.111
  4                    58, 58, 59            111.122.133.144
```

3. Verify that the last IP address on the report is the same as the IP endpoint you specified in Step 1.

If the system was unable to follow the full path, it lists the last address that it could successfully reach. This information may help you narrow which part of the network is experiencing problems.

Finding the IP address

In some cases, you will want to know the IP address of a PC so that you can ping it or trace the route of a call to it. To determine the IP address, complete the following steps:

1. At the PC, open a Command Prompt (DOS) window.

   Typically you can access the command prompt by selecting Start > Programs > Command Prompt.

2. At the Command prompt, type **winnt\system32\ipconfig** (Windows NT/2000) or **winipcfg** (Windows 95/98).

3. Record the IP address for the PC.

Verifying the IP Softphone registration

Sometimes you will need to know whether or not an IP Softphone is registered. For example, to determine whether the Softphone at extension 4455 is registered, complete the following steps:

1. Type **`status station`** ***`4455`***. Press **Enter**.

   The system displays the **General Status** screen.

2. Look at the **Registration Status** field on the second page. If the word “authenticated” appears, the Softphone is registered.

Verifying the trunk type

Sometimes you will need to know whether or not a trunk group is an IP type endpoint. For example, to determine whether the trunk member 01 of trunk group 40 is an IP endpoint, complete the following steps:

1. Type **`status trunk`** ***`40/01`***. Press **Enter**.

   The system displays the **Trunk Status** screen.

2. Verify that the **Port** field is **T000nn**.

   If this field displays a standard port address (for example, 01A0210), then the trunk is not an IP endpoint.

When all else fails

Reboot the PC. When you are experiencing unexpected behavior that you cannot easily fix, you may want to close all your applications and reboot the machine.

WARNING:

Some system platforms also run on a PC. If you reboot a system PC that is running a D1, all calls will be lost. In that case, you might want to wait until after normal business hours to reboot the PC.

7: Contacting Avaya

This section describes what information you should have handy when you need to contact the Avaya Technical Service Center (TSC). This section also provides a list of telephone numbers you can call when you have a problem with your system.

Preparing to contact Avaya

Do you need to call Avaya for additional information or help in solving a problem? If you do, please have the following information handy. This helps the person taking your call.

- your name and number (in case we need to call you back)
- your installation location number (also called your IL)

  _____
  (Write your IL number here for easy reference)
- your company's main telephone number
- the type of your system
- the number of trunks on your system
- the number of stations on your system

Also, use the information in this book to determine the possible source of your problem. It always helps to keep a log of the steps you took and the information you gathered while performing your diagnosis. This information is extremely helpful when you partner with an Avaya representative in solving your system problems.

Remember, if the problem is with equipment or service outside of your own equipment, you need to call your vendor or service provider. If you determine that the problem is with your own equipment, such as on your own stations, system, or trunks, give Avaya a call.

If you are not sure where the problem is located, double-check your system information. Refer to Problem solving strategies on page 13 for more information.

Be ready to talk about:

- the problem you want to solve
- if the problem is with a new component or feature
- if something that used to work now does not work
- any numbers involved with the problem (for example, extensions or telephone numbers, trunk group numbers, telephone types, or report types)
- the contents of any recorded messages received
- error messages from the system
- type of ringback tones received on telephones
- the names and numbers of your vendors
- any other pertinent information

Contacting Avaya

The following table lists additional services available to you. If you are outside of the 1 800 calling area, contact your local Avaya representative.

Technical Service Center for Large-Systems Customers and Toll Fraud Crisis Intervention (for help with repairs)	1 800 242 2121
Communication Manager Helpline (for administration and software problems, including vectors, how features work, administration, and interactions)	1 800 225 7585

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