



Avaya Solution & Interoperability Test Lab

Application Notes for Syntec CardEasy CPE with Avaya Aura® Communication Manager using an ISDN Trunk - Issue 1.0

Abstract

These Application Notes describe the configuration required to allow Syntec CardEasy CPE to interoperate with Avaya Aura® Communication Manager using an ISDN Trunk. Syntec CardEasy CPE allows customers to securely enter credit card details during a transaction with an agent and have the payment authorized and confirmed.

Readers should pay attention to Section 2, in particular the scope of testing as outlined in Section 2.1 as well as any observations noted in Section 2.2, to ensure that their own use cases are adequately covered by this scope and results.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

The configuration used in these application notes was used to verify that Syntec CardEasy CPE interoperates with Avaya Aura® Communication Manager using an ISDN Trunk. The CardEasy CPE is placed in between a Service Provider and Avaya Aura® Communication Manager to allow Avaya Aura® Communication Manager agents to initiate credit card payments and for a Customer to enter credit card details securely during a transaction. The Syntec CardEasy CPE masks DTMF digits and Speech during the credit card capture process.

2. General Test Approach and Test Results

The general test approach was to configure the CardEasy CPE to communicate with Communication Manager (CM) via an ISDN trunk. Testing was performed by calling inbound to a VDN and using Vectors to allow the calling party to enter credit card details and have a payment authorized during a transaction. The DTMF digits or spoken credit card details are masked and hidden from the agent and confirmation is sent to the Agents payment page.

DevConnect Compliance Testing is conducted jointly by Avaya and DevConnect members. The jointly-defined test plan focuses on exercising APIs and/or standards-based interfaces pertinent to the interoperability of the tested products and their functionalities. DevConnect Compliance Testing is not intended to substitute full product performance or feature testing performed by DevConnect members, nor is it to be construed as an endorsement by Avaya of the suitability or completeness of a DevConnect member's solution.

2.1. Interoperability Compliance Testing

The interoperability compliance test included both feature functionality and serviceability testing. The feature functionality testing focused on receiving calls in different call scenarios and completing a credit card payment transaction. The tests included:

- Call Placed with Available Agents.
- Calls on Hold, Mute and Transferred.
- Credit Card Transaction with valid and invalid details.
- Failover/Service – Tests the behaviour of the CardEasy CPE during certain failed conditions.

2.2. Test Results

All Tests were executed successfully.

2.3. Support

Technical Support can be obtained for Syntec products from the following.

Web: <https://support.syntec.co.uk/portal/syntec>

Email: support@syntec.co.uk

Telephone: +44 (0) 207 741 8000

3. Reference Configuration

Figure 1 below shows the system configuration for the interoperability between Syntec Cardeasy CPE and Communication Manager using an ISDN trunk. Avaya 9611g H323 IP Deskphones were used with an Avaya Call Center Elite Agent logged in to receive incoming calls.

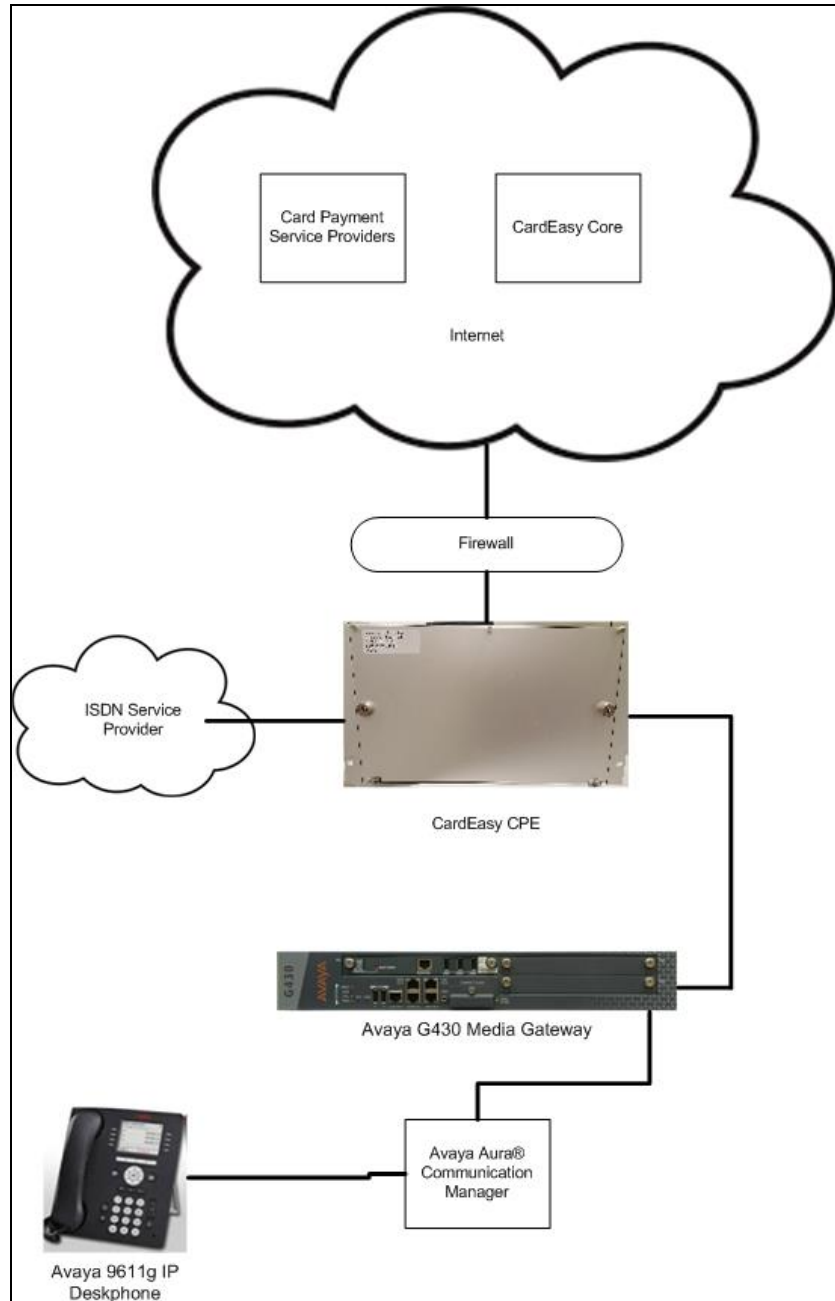


Figure 1: Syntec CardEasy CPE with Communication Manager using an ISDN Trunk

4. Equipment and Software Validated

The following equipment and software were used for the sample configuration provided:

Equipment/Software	Release/Version
Avaya Aura® Communication Manager running on a VMware Virtual Server	R7.0.1.2 R017x.00.0.441.0 Version 7.0.1.2.0.441.23523 Patch: <ul style="list-style-type: none">• Kernel-2.6.32.3.1.e16.AV4• PLAT-rhel6.5-0050
Avaya G430 Media Gateway	37.41.0/1
Avaya 9611g IP Deskphone (H323)	6.6229
Syntec Cardeasy CPE	V2.3.21

5. Configure Avaya Aura® Communication Manager

This section describes the steps required to connect the Cardeasy CPE using ISDN. It is assumed that Communication Manager is installed and is fully operational as this is out of the scope of this document. All configuration was administered using Communication Manager System Access Terminal (SAT). The steps documented are as follows.

- Check ISDN Trunk Ports
- Configure Dial Access Code (DAC) in Dial plan
- Add DS1 board
- Add Signaling group
- Add Trunk group

5.1. Check ISDN Trunk Ports

From the SAT use the command **display capacity**. On **Page 7** check that there are sufficient **DS1 Circuit Packs, Trunk Groups** and **Trunk Ports** available.

```
display capacity                                     Page 7 of 14
                                     SYSTEM CAPACITY
                                     Used Available System
                                     ----- Limit
TRUNKS
      DS1 Circuit Packs:           2      78      80
      DS1 With Echo Cancellation:  0      80      80
      ICHT For ISDN/SIP Trunks:    8     280     288
      ISDN CBC Service Selection Trunks: 0      10      10
      Trunk Groups:                11     88      99
      Trunk Ports:                 1352   2648   4000
      H.323 Trunks (included in 'Trunk ports'): 22   3978   4000
      Remote Office Trunks (included in 'Trunk ports'): 0   4000   4000
      SBS Trunks (included in 'Trunk ports'):  0   1000   1000
      SIP Trunks (included in 'Trunk ports'): 1290  2710   4000
      Ad-hoc Video Conferencing Ports:  0   4000   4000
```

5.2. Add Dial Access Code in Dialplan

Use the **change dialplan analysis** command and enter under **Dialed String** the leading number of the Dial Access Code (DAC) (**7** in the example), a **Total Length** of **3** and **Call Type** **dac**.

```
change dialplan analysis                                     Page 1 of 12
                                                           DIAL PLAN ANALYSIS TABLE
                                                           Location: all                                     Percent Full: 1
```

Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type	Dialed String	Total Length	Call Type
2	7	ext						
7	3	dac						
8	4	udp						
*	3	fac						
#	3	fac						

5.3. Add DS1 Board

Install a MM710 T1/E1 board on the G430 Mediate Gateway and note the slot number as this will be needed for the administration of the DS1 board. Use the **add DS1 <slot number>** command where the **slot number** is the location of the DS1 board (001v1 in the example below).

- Set the **Bit Rate:** as **2.048**
- Set the **Line Coding:** as **hdb3**
- Set the **Signaling Mode:** as **isdn-pri**
- Set the **Protocol Version:** as **c** (ETSI)
- Set the **Interface Companding:** as **alaw**
- Set the **CRC?** as **y**

```
add ds1 001v1                                             Page 1 of 1
                                                           DS1 CIRCUIT PACK
                                                           Location: 001V1                                     Name: E1Pri
                                                           Bit Rate: 2.048                                     Line Coding: hdb3
                                                           Signaling Mode: isdn-pri
                                                           Connect: network
TN-C7 Long Timers? n                                     Country Protocol: 1
Interworking Message: PROGRESS                           Protocol Version: c
Interface Companding: alaw                               CRC? y
Idle Code: 01010100                                     DCP/Analog Bearer Capability: 3.1kHz
                                                           T303 Timer(sec): 4
Slip Detection? n                                       Near-end CSU Type: other
Echo Cancellation? n
```

5.4. Add a Signaling Group

Use the **add signaling-group n** command where **n** is an unused signaling group number (11 in the example below).

- Set the **Group Type:** as **isdn-pri**
- Set the **Primary D-Channel:** the ds1 added above port 16 (Example is **001v116**)
- Set the **TSC Supplementary Service Protocol:** as **c(ETSI)**

```
add signaling-group 11                               Page 1 of 1
                                                    SIGNALING GROUP
Group Number: 11          Group Type: isdn-pri
Associated Signaling? y   Max number of NCA TSC: 1
Primary D-Channel: 001V116 Max number of CA TSC: 1
Trunk Group for NCA TSC:
Trunk Group for Channel Selection: X-Mobility/Wireless Type: NONE
TSC Supplementary Service Protocol: c   Network Call Transfer? n
ETSI CCBS Support: both-directions
```

Note: Trunk Group for Channel Selection: and Trunk Group for NCA TSC: entries can only be added after the Trunk Group has been added

5.5. Add a Trunk Group

Use the **add trunk group n** command where **n** is an unused trunk group number (**11** in the example below). On Page1 set the following

- Set **Group Type:** as **isdn**
- Set **TAC:** as the DAC added in **Section 5.2**
- Set **Service Type:** as **public-ntwrk**

```
add trunk-group 11                               Page 1 of 21
                                                    TRUNK GROUP
Group Number: 11          Group Type: isdn          CDR Reports: r
Group Name: PSTNtoCM30    COR: 1                  TN: 1          TAC: 711
Direction: two-way       Outgoing Display? n   Carrier Medium: PRI/BRI
Dial Access? y          Busy Threshold: 255   Night Service:
Queue Length: 0
Service Type: public-ntwrk Auth Code? n       TestCall ITC: rest
Far End Test Line No:
TestCall BCC: 4
```


On Page 2 set the Supplementary Services Protocol as c (ETSI)

```
add trunk-group 11 Page 2 of 21
  Group Type: isdn

TRUNK PARAMETERS
  Codeset to Send Display: 0      Codeset to Send National IEs: 6
  Max Message Size to Send: 260  Charge Advice: none
  Supplementary Service Protocol: c  Digit Handling (in/out): enbloc/enbloc

  Trunk Hunt: cyclical

                                     Digital Loss Group: 13
Incoming Calling Number - Delete:  Insert:                               Format:
  Bit Rate: 1200                   Synchronization: async      Duplex: full
Disconnect Supervision - In? y  Out? n
Answer Supervision Timeout: 0
  Administer Timers? n             CONNECT Reliable When Call Leaves ISDN? n
  XOIP Treatment: auto            Delay Call Setup When Accessed Via IGAR? n

Caller ID for Service Link Call to H.323 1xC: station-extension
```

On Page 3 set Format: as pub-unk

```
add trunk-group 11 Page 3 of 21
TRUNK FEATURES
  ACA Assignment? n                Measured: none                Wideband Support? n
                                     Maintenance Tests? y
                                     Data Restriction? n          NCA-TSC Trunk Member: 1
                                     Send Name: n                 Send Calling Number: y
  Used for DCS? n                  Hop Dgt? n                     Send EMU Visitor CPN? n
  Suppress # Outpulsing? n         Format: pub-unk
Outgoing Channel ID Encoding: preferred  UIE IE Treatment: service-provider

                                     Replace Restricted Numbers? n
                                     Replace Unavailable Numbers? n
                                     Send Connected Number: n
                                     Hold/Unhold Notifications? y
  Send UIE IE? y                   Modify Tandem Calling Number: no
  Send UCID? n
  Send Codeset 6/7 LAI IE? y       Dsl Echo Cancellation? n

  Apply Local Ringback? n
  Show ANSWERED BY on Display? y
                                     Network (Japan) Needs Connect Before Disconnect? n
```

On Page 5 enter the trunk member **Port** and **Sig Grp** number. This is continued on Page 6 if the group has more than 15 members.

add trunk-group 11					Page 5 of 21
TRUNK GROUP					
Administered Members (min/max): 1/30					
GROUP MEMBER ASSIGNMENTS					
Total Administered Members: 30					
Port	Code	Sfx	Name	Night	Sig Grp
1:	001V101	MM	710		11
2:	001V102	MM	710		11
3:	001V103	MM	710		11
4:	001V104	MM	710		11
5:	001V105	MM	710		11
6:	001V106	MM	710		11
7:	001V107	MM	710		11
8:	001V108	MM	710		11
9:	001V109	MM	710		11
10:	001V110	MM	710		11
11:	001V111	MM	710		11
12:	001V112	MM	710		11
13:	001V113	MM	710		11
14:	001V114	MM	710		11
15:	001V115	MM	710		11

6. Configure Cardeasy CPE

All configuration of the CardEasy appliance and service is undertaken by Syntec only as part of its managed service PCI offering.

7. Verification Steps

This section describes the steps to show that the ISDN Trunk is operational

7.1. Verify ISDN Trunk on Communication Manager

Use the **status trunk n** where **n** is the ISDN Trunk number. Make sure that all trunks are showing as **in-service/idle**. Make a call into Communication Manager and make sure that the call can be answered.

```
status trunk 11
```

TRUNK GROUP STATUS			
Member	Port	Service State	Mtce Connected Ports Busy
0011/001	001V101	in-service/idle	no
0011/002	001V102	in-service/idle	no
0011/003	001V103	in-service/idle	no
0011/004	001V104	in-service/idle	no
0011/005	001V105	in-service/idle	no
0011/006	001V106	in-service/idle	no
0011/007	001V107	in-service/idle	no
0011/008	001V108	in-service/idle	no
0011/009	001V109	in-service/idle	no
0011/010	001V110	in-service/idle	no

7.2. Verify Cardeasy CPE

During a call, process a credit card transaction and verify that an **Authorised** response is returned.

Payment Response										
BenignPAN:	426397*****1307									
response:	timestamp: 20170220110537									
	merchantid: syntec									
	account: internet									
	orderid: 4hvw25cxpk2k									
	authcode: 12345									
	result: 00									
	cvnresult: M									
	avspostcoderesponse: M									
	avsaddressresponse: M									
	batchid: 398203									
	message: [test system] Authorised									
	pasref: 1487588737517652									
	timetaken: 0									
	authtimetaken: 0									
	cardissuer:	<table border="1"><tr><td>bank:</td><td>AIB BANK</td></tr><tr><td>country:</td><td>IRELAND</td></tr><tr><td>countrycode:</td><td>IE</td></tr><tr><td>region:</td><td>EUR</td></tr></table>	bank:	AIB BANK	country:	IRELAND	countrycode:	IE	region:	EUR
	bank:	AIB BANK								
	country:	IRELAND								
countrycode:	IE									
region:	EUR									
sha1hash:	528cd7aaa58965efc2fe75673a176dbebde85b2									

8. Conclusion

These Application Notes describe the configuration required for Syntec CardEasy CPE to interoperate with Communication Manager using an ISDN Trunk. All tests passed successfully with any observations notes in **Section 2.2**

9. Additional References

This section references the Avaya documentation relevant to these Application Notes. The following Avaya product documentation is available at <http://support.avaya.com>.

[1] Administering Avaya Aura® Communication Manager, Release 7.0, August 2015, *Document Number 03-300509*, Issue 1.

[2] Avaya Aura® Communication Manager Feature Description and Implementation, Release 7.0, August 2015, *Document Number 555-245-205*, Issue 1.

Product Documentation for Syntec CardEasy can be requested from support@syntec.co.uk

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