



Avaya Solution & Interoperability Test Lab

Application Notes for IQ Services Outbound Dialer StressTest Service with Avaya Proactive Contact – Issue 1.0

Abstract

These Application Notes describe the steps required for IQ Services Outbound Dialer StressTest Service to successfully interoperate with Avaya Proactive Contact. The IQ Services Outbound Dialer StressTest Service was used to assess the speed and accuracy in call classification of the outbound calls.

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

1. Introduction

Through innovation of existing testing technology, IQ Services developed the Outbound Dialer StressTest to verify system performance of outbound dialing systems. The Outbound Dialer StressTest provides companies with open telephone lines into which the systems dial. IQ Services works with the company to determine various call classifications in order to replicate a real-world calling experience. Answer conditions may include live answer or machine answer, busy tones, fax/modem tones, and a variety of other options.

During the test, companies will launch outbound calls from their predictive dialers and IQ Services will capture the data from each call. Three critical pieces of information—recordings, response times and results of every call—give the companies accurate and detailed information about the performance of their system. The Outbound Dialer StressTest lets companies verify that their predictive dialers work properly. Precise data and easily repeatable scenarios provide a clear picture of the system's performance.

IQ Services' patent-pending **On-line Reporting and Charting Application, ORCA**, gives access to real-time load test results and data via the Internet browser. It is available via a secure website and optimized for use with Internet Explorer. ORCA provides the following capabilities:

- View scatter diagrams that display target system performance and response times for selected key steps of the test scripts
- Listen to complete digital audio recordings of the test calls that are selected
- Get a “dashboard” view of overall system performance and individual test call data

1.1. Integration Overview

For the compliance testing, Avaya Proactive Contact 3.0 placed outbound calls over the PSTN to IQ Services. The outbound calling numbers mapped to specific answer conditions provided by IQ Services. For example when phone number “1-612-243-6781” was dialed, it would connect to a live voice while phone number “1-612-243-6783” would connect to a busy tone. The answer conditions that were tested include: live voice, answering machine, busy, fax/modem tones and ring/no answer. The compliance test verified that the answer conditions provided by IQ Services were classified correctly by Avaya Proactive Contact 3.0. The agent response time, the time from when IQ Services answered the outbound call to when the agent responds, was also verified during the compliance testing.

The focus of these Application Notes is on the customer deliverables that are required as input to the Outbound Dialer StressTest Service, and the navigation of the real-time performance data output provided by IQ Services. **Figure 1** shows the test configuration that was used for the compliance testing.

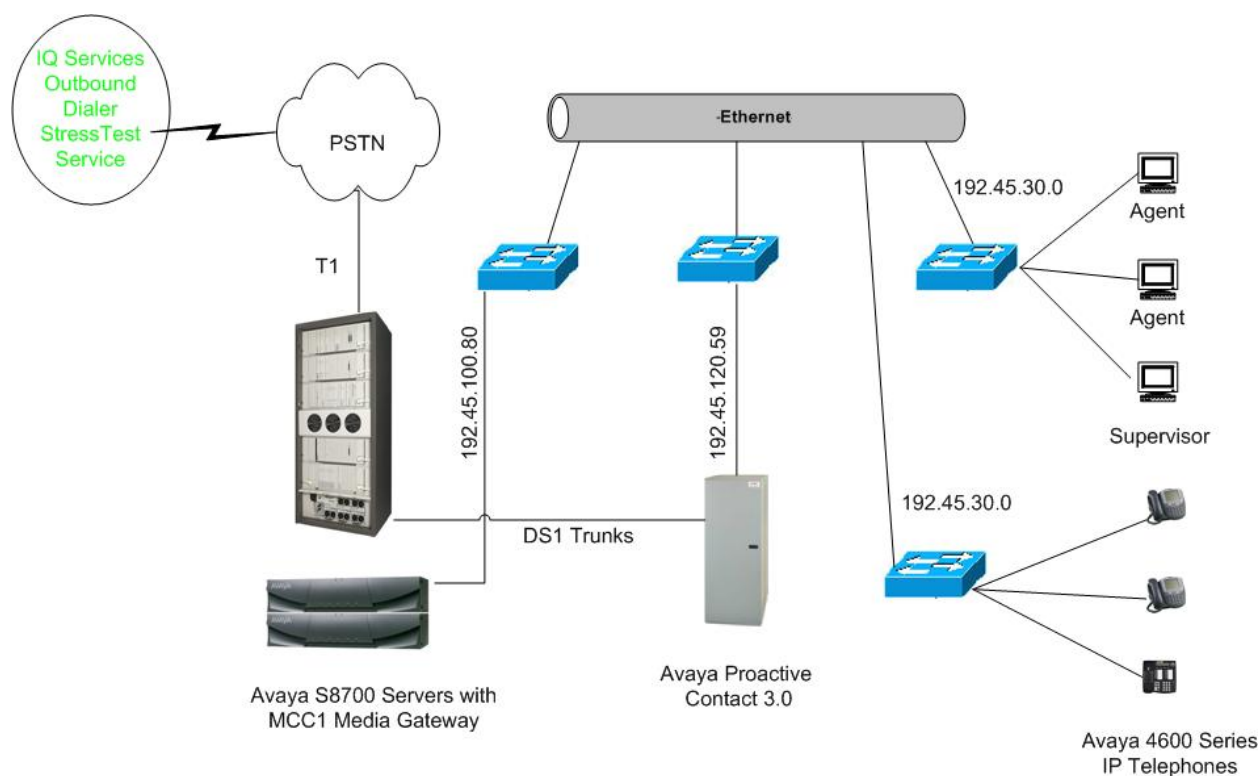


Figure 1: Avaya – IQ Services Test Configuration

2. Equipment and Software Validated

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

Equipment	Software
Avaya Proactive Contact Server	Avaya Proactive Contact 3.0 SP 1, Build 36
Avaya S8700 Server with Avaya MCC1 Media Gateway	Avaya Communication Manager 4.0 (R014x.00.0.730.5)
Avaya 4610 IP Telephones	2.1.3 (H.323)
Avaya Proactive Contact Agent Windows 2000 Professional Server	Avaya Proactive Contact 3.0 SP1 Agent
IQ Services Outbound Dialer StressTest	1.0

3. Configure Avaya Proactive Contact and Avaya Communication Manager

These Application Notes assume that the interface with Avaya Proactive Contact 3.0, Avaya S8700 Servers and Avaya Communication Manager has been configured and is operational. The compliance testing was executed with Avaya Proactive Contact with the System Cabinet (containing the PG230 digital switch) and Avaya Proactive Contact with CTI. In order for Avaya PC3 to classify the different answer conditions (busy tones, reorder tones, and fax/modem tones) played by IQ Services, answer supervision has to be turned off.

In the Avaya Proactive Contact with the System Cabinet, the PG230 digital switch's **Answer Supervision** template has to be changed. In **Template 4**, the **Answer** parameter should be blank.

ANSWER SUPERVISION TEMPLATES								
	1	2	3	4	5	6	7	8
Dial Tone	OKREP	REP	OKREP	_____	_____	_____	_____	_____
Ringback	REP	REP	OKREP	_____	_____	_____	_____	_____
Busy	OKREP	OKREP	OKREP	OKREP	_____	OKREP	_____	_____
Reorder	REP	OKREP	_____	OKREP	_____	OKREP	_____	_____
SIT Tones	REP	OKREP	_____	OKREP	_____	OKREP	_____	_____
Ring Cess.	REP	REP	_____	_____	_____	_____	_____	_____
Voice Det.	REP	REP	_____	REP	OKREP	REP	_____	_____
Voice Cess.	REP	OKREP	_____	OKREP	_____	OKREP	_____	_____
Wink	OKREP	REP	OKREP	_____	_____	_____	_____	_____
Answer	_____	_____	_____	_____	_____	OKREP	_____	_____
Time	OKREP	OKREP	OKREP	OKREP	OKREP	OKREP	_____	_____
Hook Flash	REP	REP	_____	_____	_____	_____	_____	_____
Tones	REP	OKREP	_____	OKREP	_____	OKREP	_____	_____

When Avaya Proactive Contact with CTI is used, the change has to be done on Avaya Communication Manager. The **Call Classification After Answer Supervision** field in the **System-Parameters Feature** form should be set to "y".

```

change system-parameters features                                     Page 13 of 17
FEATURE-RELATED SYSTEM PARAMETERS

CALL CENTER MISCELLANEOUS
  Clear Callr-info: next-call
  Allow Ringer-off with Auto-Answer? n
  Service Level Algorithm for SLM: actual
  Reporting for PC Non-Predictive Calls? n

ASAI
  Copy ASAI UUI During Conference Transfer? y
  Call Classification After Answer Supervision? y
  Send UCID to ASAI? y
  
```

4. Customer Deliverables

In preparation for the testing, IQ Services will provide the customer with a list of phone numbers that the dialer can use for the outbound dialing. The customer will provide IQ services the answer conditions required for each phone number. For the compliance testing, the following answer conditions were tested.

Outbound Phone Number dialed	Answer Response at IQ Services
1-612-243-6781	Live voice
1-612-243-6782	Answering Machine
1-612-243-6783	Busy Tone
1-612-243-6784	Fax/Modem Tone
1-612-243-6785	Ringing/No Answer
1-612-243-6786	Reorder – Fast Busy

5. IQ Services StressTest Results

Once the IQ Services StressTest testing has begun the **ORCA**, IQ Services' patent-pending **On-line Reporting and Charting Application**, tool can be used to access real-time load test results and data via the Internet browser. The following procedures are used to access these results and the following screens offer a sampling of the results that were generated as part of the compliance test.

5.1. Access the Web Interface

Access the ORCA interface by using the URL <http://LoadTestOnline.net> in an Internet browser window. Enter the **Company Code**, **User Name** and **Password** supplied by IQ Services. Click **Proceed**.

The screenshot shows a Microsoft Internet Explorer window titled "IQ Services' ORCA™ Login Page - Microsoft Internet Explorer". The address bar displays "https://stresstestonline.com/". The page features a header with the IQ Services logo and the tagline "Proactive Testing for Confident Customer Interactions™". The main content area contains a login form with the following fields and labels:

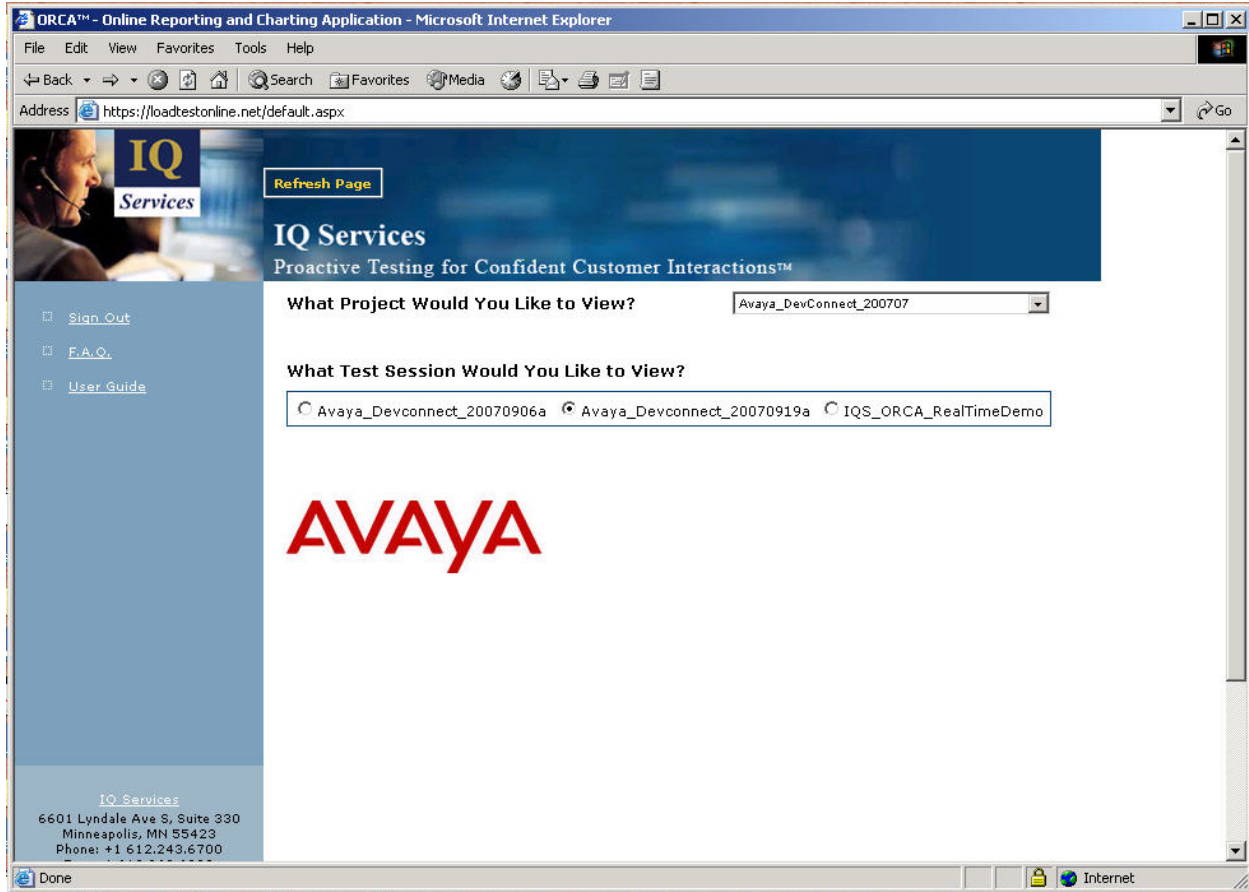
- Company Code:** A text box containing the value "Avaya".
- User Name:** A text box containing the value "JDoe".
- Password:** A text box with masked characters "****".
- Proceed:** A button with a mouse cursor hovering over it.

On the left side of the page, there is a sidebar with the following information:

- IQ Services**
- 6601 Lyndale Ave South, Suite 330
- Minneapolis, MN 55423
- Phone: +1 612.243.6700
- Fax: +1 612.869.6200
- NOTE:** This site is best viewed in Internet Explorer 5.0 or higher.
- Copyright © 2007 Interactive Quality Services, Inc. All Rights Reserved.

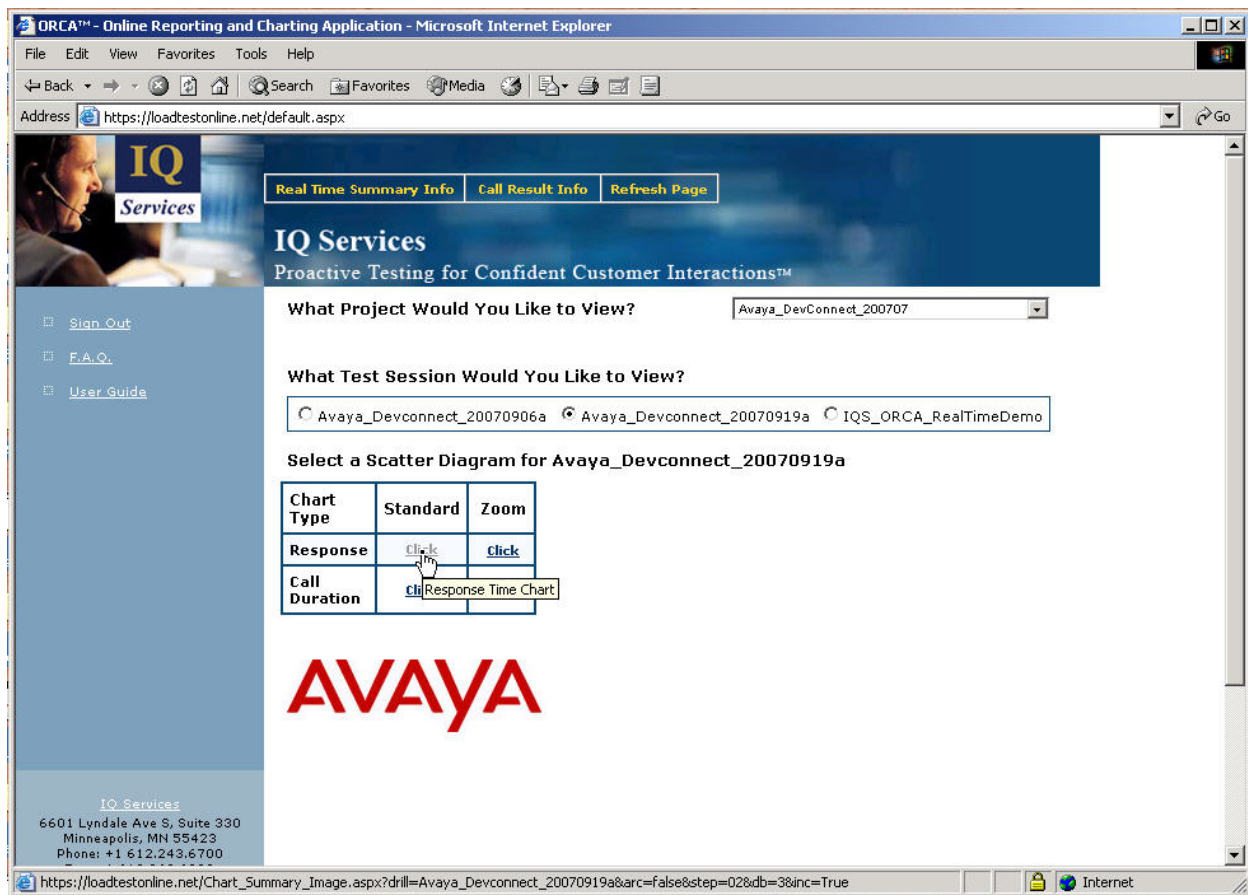
At the bottom right of the page, there is a VeriSign Secured logo with the text "VERIFY" below it.

Select the appropriate **Project** and **Test Session**.

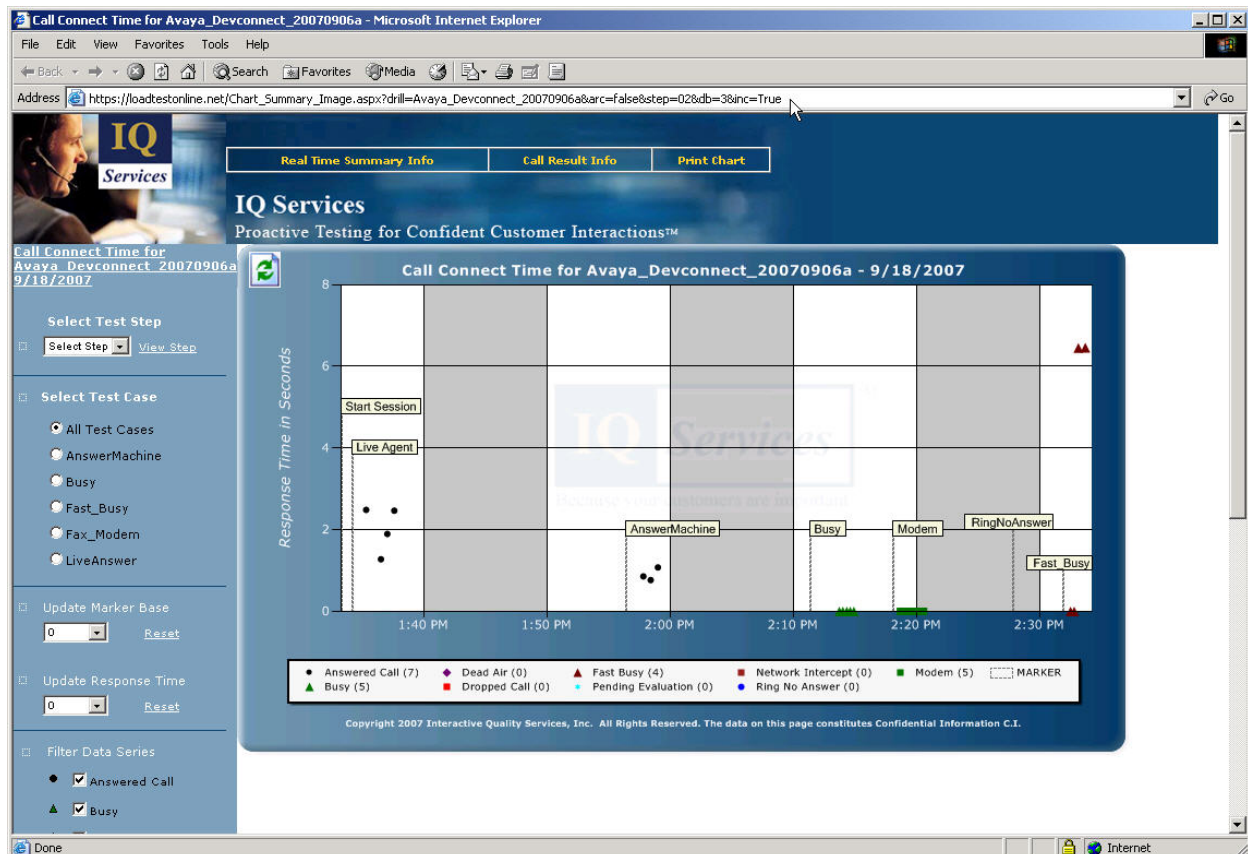


5.2. Call Connect Time Chart

Click the **Response Time Chart** button from the main page to view the **Call Connect Time** chart.



The **Call Connect Time** scatter diagram chart shows how the outbound phone call was answered by IQ Services. The response time in seconds is plotted on the vertical axis against [time of day] on the horizontal axis. The response time is measured in seconds from when IQ Services has completed responding to the outbound call until IQ Services hears voice from the agent. The legend on the bottom of the chart lists the expected and unexpected response types typical at this particular step in the test call sequence. By moving the cursor over each point on the webpage scatter diagram, details about that data point can be seen. Double clicking a data point will open a new window with complete call details and a recording of that call. The legend at the bottom of the chart shows all possible call result evaluations; in this example: **7 Answered Calls, 5 Busy, 0 Dead Air, 0 Dropped Call, 4 Fast Busy, 0 Pending Evaluation, 0 Network Intercept, 0 Ring No Answer, and 5 Modem/Fax.**



5.3. Test Summary Report

There is a series of command buttons located across the top of the chart page: **Real Time Summary Info**, **Call Result Info**, and **Print Chart**, as shown below. The **Real Time Summary Info** button is a link to the **Test Summary** report.

Click the **Real Time Summary Info** button.



The **Test Summary** page with the performance test's test summary information, as shown below will be displayed. The **Test Summary** table provides the call results based on test case, calls connected, and calls completed as well as other useful test summary information such as test time, calling lines, calling rate, etc. A full explanation of each table section is available by clicking on the “**Click here to explain**” row at the top of each section. This table is preset to refresh every 15 seconds.

Real Time Summary Information for Avaya_Devconnect_20070906a - Microsoft Internet Explorer

Address: https://loadtestonline.net/realtimesummary_Incoming.aspx?drill=Avaya_Devconnect_20070906a&arc=false&db=3&inc=True

IQ Services

Proactive Testing for Confident Customer Interactions™

Test Summary For Avaya_Devconnect_20070906a
9/18/2007

Session Start: 1:33:20 PM Session End: 2:33:42 PM

Real Time Summary Information - Click here to explain

Start Time	Stop Time	Duration (Minutes)	Current Calls Connected	Total Calls Received	Total Calls Completed
1:33:20 PM	2:33:42 PM	60	0	21	21

Call Connected Information - Click here to explain

Called Number	Total Calls	Answered Calls	Busy	Fast Busy	Network Intercept	Ring No Answer	Dead Air	Dropped Call	Modem	Pending Evaluation
6122436786	4	0	0	4	0	0	0	0	0	0
6122436784	5	0	0	0	0	0	0	0	5	0
6122436783	5	0	5	0	0	0	0	0	0	0
6122436782	3	3	0	0	0	0	0	0	0	0
6122436781	4	4	0	0	0	0	0	0	0	0
Total	21	7	5	4	0	0	0	0	5	0

Calls Per Hour Information - Click here to explain

Called Number	Average	Peak	Last 5 Minutes	Since Last Line Marker [Missing Last Line Marker]
6122436786	4	0	0	0
6122436784	5	0	0	5
6122436783	5	0	0	0
6122436782	3	0	0	3
6122436781	4	0	0	4
Overall	12	120	0	12

Called Number Information - Click here to explain

Called Number	Completed Calls	Shortest (sec)	Longest (sec)	Average
6122436786	4 (19.05%)	0	0	0
6122436784	5 (23.81%)	6	6	6
6122436783	5 (23.81%)	0	0	0
6122436782	3 (14.29%)	21	30	25
6122436781	4 (19.05%)	18	20	19
Overall	Total: 21 calls	Min: 6	Max: 30	Avg: 15

Real Time Summary Information for Avaya_Devconnect_20070906a - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address: https://loadtestonline.net/realtimesummary_Incoming.aspx?drill=Avaya_Devconnect_20070906a&arc=false&db=3&inc=True

Called Number	Total Calls	Answered Calls	Busy	Fast Busy	Network Intercept	Ring No Answer	Dead Air	Dropped Call	Modem	Pending Evaluation
6122436786	4	0	0	4	0	0	0	0	0	0
6122436784	5	0	0	0	0	0	0	0	5	0
6122436783	5	0	5	0	0	0	0	0	0	0
6122436782	3	3	0	0	0	0	0	0	0	0
6122436781	4	4	0	0	0	0	0	0	0	0
Total	21	7	5	4	0	0	0	0	5	0

Calls Per Hour Information - Click here to explain

Called Number	Average	Peak	Last 5 Minutes	Since Last Line Marker (Missing Last Line Marker)
6122436786	4	0	0	0
6122436784	5	0	0	5
6122436783	5	0	0	0
6122436782	3	0	0	3
6122436781	4	0	0	4
Overall	12	120	0	12

Called Number Information - Click here to explain

Called Number	Completed Calls	Shortest (sec)	Longest (sec)	Average
6122436786	4 (19.05%)	0	0	0
6122436784	5 (23.81%)	6	6	6
6122436783	5 (23.81%)	0	0	0
6122436782	3 (14.29%)	21	30	25
6122436781	4 (19.05%)	18	20	19
Overall	Total: 21 calls	Min: 6	Max: 30	Avg: 15

Test Case Information - Click here to explain

TestCase	Completed Calls	Shortest (sec)	Longest (sec)	Average
LiveAnswer	4 (19.05%)	18	20	19
Fax_Modem	5 (23.81%)	6	6	6
Fast_Busy	4 (19.05%)	0	0	0
Busy	5 (23.81%)	0	0	0
AnswerMachine	3 (14.29%)	21	30	25
Overall	Total: 21 calls	Min: 6	Max: 30	Avg: 15

5.4. Call Result Information Report

There is a series of command buttons located across the top of the chart page: **Real Time Summary Info**, **Call Result Info**, and **Print Chart**, as shown below. The **Call Result Info** button is a link to the **Call Result Information** report.

Click the **Call Result Info** button.



The **Call Result Information** page with the performance test's call result information, as shown below will be displayed. This table presents the performance test data in chronological order as calls were completed and posted to the scatter diagram. A full explanation of the Call Result Information table can be reviewed by clicking the “**Call Result Information – Click here to explain**” row at the top of the table. From this table the test call can be launched and played via the computer's media player by clicking on the **Play Call** hyperlink in the **Listen** column of the appropriate call record.

Call Result Information for Avaya_Devconnect_20070906a - Click here to explain
9/18/2007

Call Detail (Record ID)	Listen	Test Case	DNIS	ANI	Call Result	Call Pickup Time	Call Connect Time	Call Done Time	Call Duration (sec)	Dialer Response (sec)
28236860012	Play Call	AnswerMachine	6122436782	Incoming Call	Answered Call	1:58:50 PM	1:59:02 PM	1:59:20 PM	29.643	1.08
28236825012	Play Call	AnswerMachine	6122436782	Incoming Call	Answered Call	1:58:15 PM	1:58:26 PM	1:58:36 PM	21.320	0.77
28236749012	Play Call	AnswerMachine	6122436782	Incoming Call	Answered Call	1:57:39 PM	1:57:50 PM	1:58:02 PM	22.803	0.86
--	--	AnswerMachine	--	--	MARKER	1:56:26 PM	--	--	--	--

Select Page (Time Duration is 10 minutes)

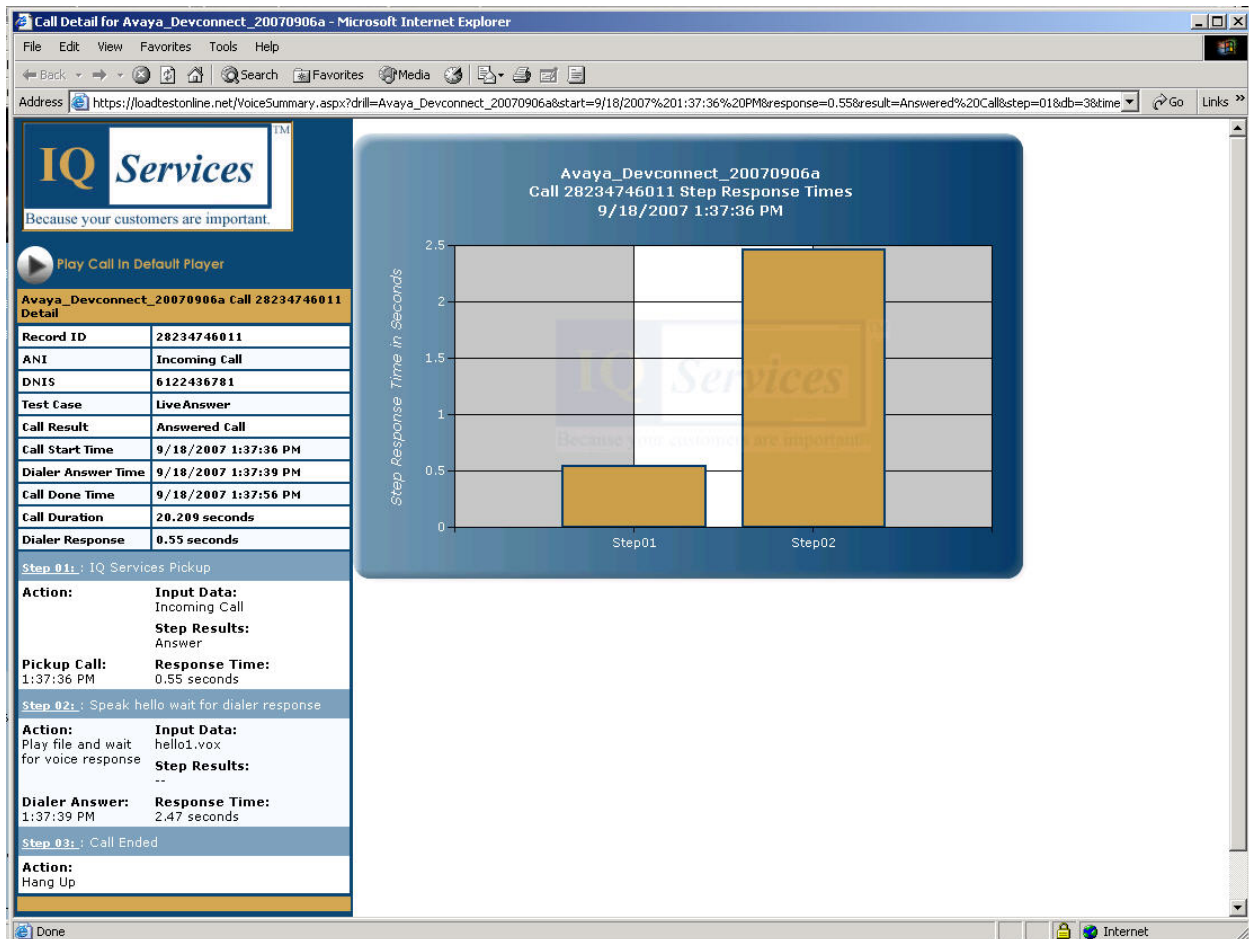
Page	Start Time (Starting Point)	Start Time (Ending Point)	Number of Calls
1	9/18/2007 1:43:21 PM	9/18/2007 1:58:50 PM	3
2	9/18/2007 1:33:20 PM	9/18/2007 1:43:20 PM	4
All Records	9/18/2007 1:33:20 PM	9/18/2007 1:58:50 PM	7

IQ Services
6601 Lyndale Ave S, Suite 330
Minneapolis, MN 55423
Phone: +1 612.243.6700
Fax: +1 612.869.6200

NOTE:
This site is best viewed in Internet

5.5. Call Step Response Times

To get details of each test call, double click a data point in the **Call Detail** column in the **Call Result Information** report. The **Call Step Response Times** report displays data related to a single call record. It shows the number dialed, the IQ Services number where the call terminates, the test case, call result, response times, and a call's evaluated result.



5.6. Call Duration Report

Click the **Call Duration Chart** button from the main page to view the **Call Duration Time** chart.

ORCA™ - Online Reporting and Charting Application - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites Media Print Mail

Address <https://loadtestonline.net/default.aspx> Go

IQ Services
Proactive Testing for Confident Customer Interactions™

[Real Time Summary Info](#) [Call Result Info](#) [Refresh Page](#)

[Sign Out](#)
[F.A.Q.](#)
[User Guide](#)

What Project Would You Like to View?

What Test Session Would You Like to View?
☒ Avaya_Devconnect_20070906a ☐ Avaya_Devconnect_20070919a ☐ IQS_ORCA_RealTimeDemo

Select a Scatter Diagram for Avaya_Devconnect_20070906a

Chart Type	Standard	Zoom
Response	click	click
Call Duration	click	click

Call Duration Chart

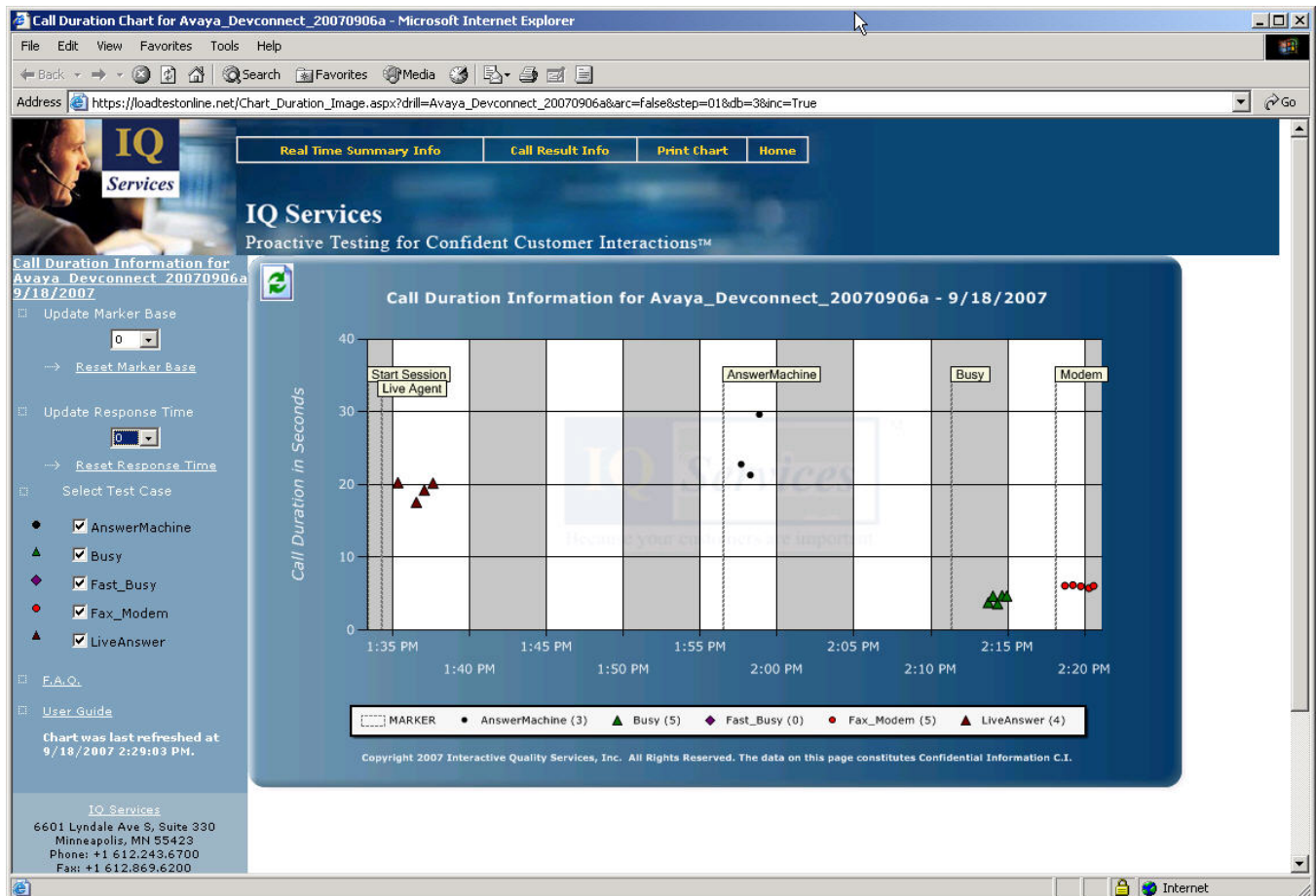
AVAYA

IQ Services
6601 Lyndale Ave S, Suite 330
Minneapolis, MN 55423
Phone: +1 612.243.6700
Fax: +1 612.969.6200

NOTE:
This site is best viewed in Internet Explorer 5.0 or higher.

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The data on this page constitutes

The **Call Duration Information** scatter diagram shows the length of each call placed during a performance test session. A placed call's duration is plotted against the time the call was placed. The legend at the bottom of the chart lists the number of calls handled by each test case during the performance test (3 **Answer Machine** test calls, 5 **Busy** test calls and 5 **Fax_Modem** test calls). Double clicking will spawn a new window with complete call details and a recording of that call.



6. Interoperability Compliance Testing

This interoperability compliance test included basic feature testing. The IQ Services' Outbound Dialer StressTest service was used to answer outbound calls from Avaya Proactive Contact 3.0 with different answer conditions (live voice, answering machine, busy tone, ring/no answer...).

6.1. General Test Approach

For the compliance testing, Avaya Proactive Contact 3.0 placed outbound calls over the PSTN to IQ Services. The outbound calling numbers mapped to specific answer conditions provided by IQ Services. The answer conditions that were tested include: live voice, answering machine, busy, fax/modem tones, reorder/fast busy and ringing/no answer. The compliance test verified that the answer conditions provided by IQ Services were classified correctly by Avaya Proactive Contact 3.0. The agent response time, the time from when IQ Services answered the outbound call to when the agent responds, was also verified during the compliance testing. Test results were compiled and presented via the internet reporting tool, ORCA.

6.2. Test Results

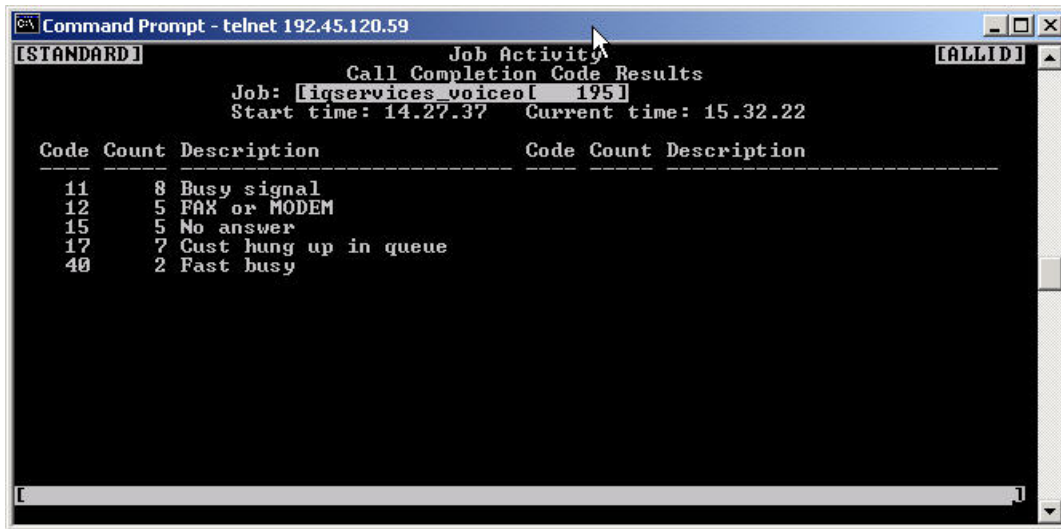
All test cases were executed and passed.

Note: The dialer response time when connected to an answering machine is smaller than when the agent is connected to a live person. IQ Services calculates the dialer response time based on when they finish playing their recording to the time they hear the agent talk. With the answering machine, the agent is connected to the answering machine and waits until the end of the message to say "hello". With the "live voice", the agent needs to answer the phone and say "hello". Therefore, with the configuration used for this compliance testing activity, the amount of time measured and reported by IQ Services will typically be longer when the live voice recording is played versus the answering machine recording.

7. Verification Steps

7.1. Avaya Verification

The "jobmon" command from the command prompt on the Avaya PC3 server can be used to verify the call classification that Avaya PC3 has reported. This can then be compared to the answer conditions provided by IQ Services.



The screenshot shows a telnet window titled "Command Prompt - telnet 192.45.120.59". The window contains the following text:

```
[STANDARD]                               Job Activity [ALLID]
                               Call Completion Code Results
Job: [iqservices_voiceo[ 195]
Start time: 14.27.37   Current time: 15.32.22
```

Code	Count	Description	Code	Count	Description
11	8	Busy signal			
12	5	FAX or MODEM			
15	5	No answer			
17	7	Cust hung up in queue			
40	2	Fast busy			

8. Support

Technical support on IQ Services' Outbound Dialer StressTest can be obtained through the following:

- **Phone:** 612.243.6700
- **Email:** info@iq-services.com
- **Web:** www.iq-services.com

9. Conclusion

These Application Notes describe the compliance test configuration, customer deliverables, results that were collected as part of a sample run of IQ Services' Outbound Dialer StressTest Service with Avaya Proactive Contact 3.0. All test cases executed as expected.

10. Additional References

The following documents may be found at <http://support.avaya.com>:

- *Administrator Guide for Avaya Communication Manager*, Document ID 03-300509, Issue 3.0, February 2007
- *Avaya Proactive Contact 3.0 Installation and Configuration*, November 2005; Doc ID: 07-300491
- *Avaya Proactive Contact 3.0 Administration (UNIX-based)*, October 2005; Doc ID: 07-300488

IQ Services product documentation is available as on-line help

- *ORCA User Guide*

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