Avaya Solution & Interoperability Test Lab

Application Notes for Austin Logistics OnQ with Avaya Proactive Contact 3.0 - Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Austin Logistics OnQ to successfully interoperate with Avaya Proactive Contact.

OnQ 3.0 is a software solution that automates and centralizes campaign as well as list management. OnQ 3.0 uses the Event Service of Avaya Proactive Contact 3.0 to extract job statistic event information. OnQ 3.0 can retrieve the call results data for a job either in a batch mode or using Event Services. The test configuration consisted of Avaya Communication Manager 4.0 (running on Avaya S8700 Server with a MCC1 Media Gateway) and Avaya Proactive Contact 3.0.

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

These Application Notes describe the compliance-tested configuration utilizing Avaya Proactive Contact 3.0 (Avaya PC3) and Austin Logistics OnQ 3.0 (OnQ). OnQ is a software solution that automates and centralizes campaign as well as list management. OnQ utilizes customer data such as number and type of enterprise relationships to determine calling schedules. Unlike traditional call strategies that are limited to customer phone number and call history, these strategies use a new level of intelligence to regulate recall of high valued customers.

At the start of a day, OnQ receives a file of accounts to be called from a host system. This list is loaded into OnQ's database and accounts are sent to Avaya PC3 throughout the day on an as-needed basis. After each send, OnQ polls the Avaya PC3 for status that helps OnQ determine how many records to send next and when to send them. At the end of the day, OnQ gathers campaign statistics from the Avaya PC3.

The OnQ integration with Avaya PC3 requires custom development scripts on Avaya PC3 from Avaya Professional Services. These scripts are loaded to Avaya PC3 and are used to append call records to the OnQ infinite calling lists on Avaya PC3 and to create call results and statistics files. OnQ uses two ways to retrieve this data from Avaya PC3 and these are mutually exclusive methods.

1. Batch Mode - OnQ retrieves the files generated by Avaya PC3 scripts from the public FTP site on Avaya PC3.
2. Real Time - OnQ receives the real time data from the Event service using the Call Data and Agent Data events.

With this data, OnQ is able to reprioritize and rework the call records and distribution based on the workload and the on-going call results.

OnQ also retrieves Job Statistics data using the Event Service.

1.1. Integration Overview

Figure 1 depicts an overview of the Austin Logistics OnQ 3.0 integration to Avaya Proactive Contact 3.0. The configuration consists of a pair of redundant Avaya S8700 Servers, an Avaya MCC1 Media Gateway, Avaya IP Telephones, an Avaya Proactive Contact System Cabinet, agent workstations, and the OnQ server.

OnQ uses the Event Service of Avaya PC3 to receive job statistics events. OnQ sends call records to Avaya PC3 via File Transfer Protocol (FTP). For the Batch Mode data retrieval, OnQ uses FTP to retrieve data from a public FTP site on Avaya PC3. For the Real Time retrieval, OnQ registers with Event Service on Avaya PC3 to get the data. It is worth noting that real time data retrieval will not produce accurate results if OnQ loses connection with the Avaya PC3 Event Service.

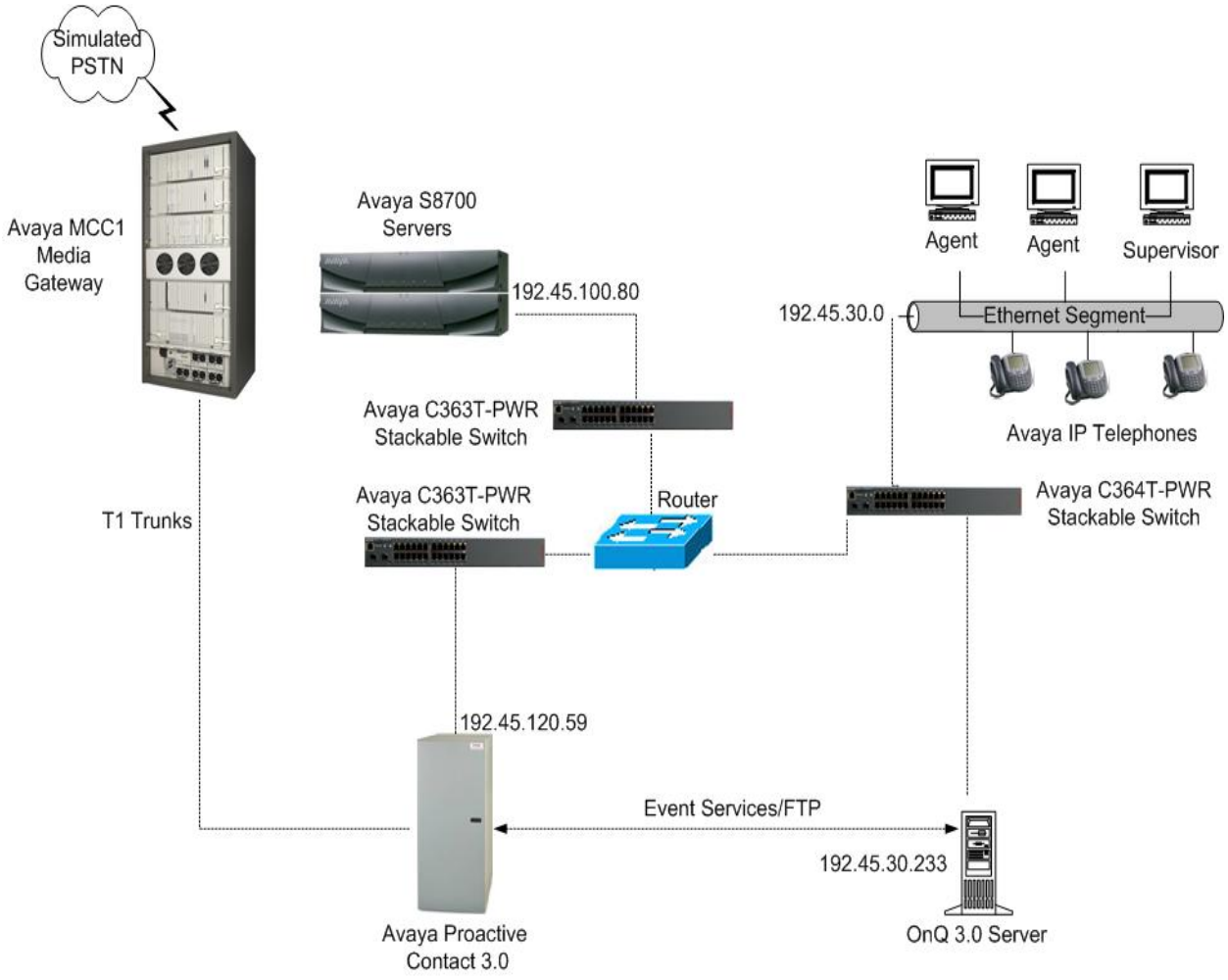


Figure 1: Avaya Proactive Contact 3.0 and Austin Logistics OnQ 3.0 Integration

2. Equipment and Software Validated

The following equipment and software were used for the tested configuration:

Equipment	Software
Avaya Proactive Contact System Cabinet with B2600 HP Server and Digital PG230 Switch	Avaya Proactive Contact 3.0 SP 1, Build 36
Avaya MCC1 Media Gateway with Avaya S8700 Servers	Avaya Communication Manager 4.0 (R014x.00.0.730.5)
TN464F DS1	Version 16
Avaya 4610SW IP Telephones (H.323)	2.8
Avaya C364T-PWR Converged Stackable Switch	4.5.14
Austin Logistics Linux Server	OnQ 3.0, Patch 3.1.0.16

3. Configure Avaya Communication Manager

The Avaya Communication Manager to Avaya Proactive Contact configuration is outside the scope of these Application Notes. Refer to [1] and [2] for additional information.

4. Configure Avaya Proactive Contact 3.0

These Application Notes assume that the interface with Avaya Proactive Contact 3.0, Avaya S8700 Server and Avaya Communication Manager has been configured and is operational. The following features are already configured on Avaya PC3.

- Outbound Calling
- Infinite Job Feature

Avaya Professional Services will install custom scripts and modify configuration files on Avaya PC3 for the OnQ integration. Austin Logistics will create a call records raw file which will be transferred to Avaya PC3 using FTP from time to time. The transfer frequency depends on the number of calls remaining in the queue to be dialed. OnQ receives this information by registering with Avaya PC3Event Services.

4.1. Avaya Professional Services Custom Scripts

Avaya Professional Services custom development on Avaya PC3 is required for this integration. The custom development includes the creation of new scripts and modification of some existing files on Avaya PC3. The following scripts were created:

- **onq_readtape -** Resets the OnQ infinite calling lists each evening.
- **onq_checkfile –** Looks for call records from the OnQ server to append to the OnQ infinite lists.
- **onq_append –** Appends the new call records to the call list.
- **onq_list#.job** – Runs the infinite job call selection process. For this testing **onq_list10.job** was created.
- **onq_extract –** Creates the results.dat files every 10 minutes by running a PC Analysis extract on each OnQ calling list.
- **onq_stat_files –** Creates the statistics.dat file each evening with the transaction statistics.

4.2. OnQ Call Records Raw File

OnQ needs to create call records raw files to send to the public/onq folder on Avaya PC3. The following files from Avaya PC3 are needed to help Austin Logistics create the call records raw file.

- /opt/avaya/pds/tape/hg_in10.conf – This file contains the raw file configuration. This configuration indicates where the raw file from OnQ is expected to be located and what list name will be generated.

RECSIZE:160:
BLKSIZE:1600:
BLKSREAD:10:
CHECKFILE:list10:
MAPNAME:list10:
DATABASE:list10:
TAPENAME:list10: (Call list record file generated from the raw file)
STRTSCRN::
ENDSCRN::
TERMINATOR::
CHARSET:ASCII:
CASE:UPPER:
#OnQ is expected to place file in the directory listed below (rcvfile10.raw was used for this compliance testing)
TAPEDEV:$VOICEDIR/xfer/public/public/rcvfile10.raw:
LABEL:NONE:

Figure 2: Raw File Configuration

- /opt/avaya/pds/tape/lt_in10.dict - This is the dictionary file which includes the fields and their position in the raw file generated by OnQ. **Figure 3** shows the sample dictionary file for the raw file configuration in **Figure 2**.

```
DEFL:SYSNUM:4:C:1:SYSNUM::
DEFL:PRIN:4:C:5:PRIN::
DEFL:CCODE:3:C:9:CCODE::
DEFL:ACCTNUM:16:C:12:ACCTNUM::
DEFL:NAME1:26:C:28:NAME1::
DEFL:NAME2:26:C:54:NAME2::
DEFL:CBFLAG:1:C:80:CBFLAG::
DEFL:PHONE2:10:C:81:PHONE2::
DEFL:AREA2:3:C:81:AREA2::
DEFL:PHONE1:10:C:91:PHONE1::
DEFL:AREA:3:C:91:AREA::
DEFL:EXTERNAL:1:C:101:EXTERNAL::
DEFL:INTERNAL:1:C:102:INTERNAL::
DEFL:BALANCE:9:$:103:BALANCE::
TFORM:####### ##
DFORM:$$$$$$#.##
DEFL:CREDLINE:7:$:112:CREDLINE::
TFORM:#######
DFORM:$$$$$##
DEFL:DELQUENT:9:$:119:DELQUENT::
TFORM:####### ##
DFORM:$$$$$$#.##
DEFL:DAYS:3:N:128:DAYS::
DEFL:PAYDAY:10:D:131:PAYDAY::
TFORM:CCYY MM DD
DFORM:CCYY/MM/DD
DEFL:PAYAMT:7:$:141:PAYAMT::
TFORM:##### ##
DFORM:$$$$#.##
DEFL:ZIPCODE:5:C:148:ZIPCODE::
DEFL:BEHSCORE:3:C:153:BEHSCORE::
```

Figure 3: Raw File Layout

An example of the call records raw files is shown in **Figure 4**. It contains three customer records that can be appended to an existing calling list.

```
1072920040143022098601015 46JOHN DOEJOHN DOE000000000002033234562FD00000000000000
0000000000008790010800000000690286011107292004014302209860095714JOHN DOEJOHN DOE
020335984772033483589FD000000000000000000000000005789031000000000690286011107292
004014302209860093776JOHN DOEJOHN DOE100000000002032459424FD00000000000000000000
0000004889120800000000644386011
```

Figure 4: Sample Raw File

4.3. Avaya PC3 FTP

The existing Anonymous FTP on Avaya PC3 is used by OnQ to send the call record raw files and retrieve the results.dat and statistics.dat files.

Note: The FTP configuration in HP-UX 11i does not display the file size and date/time. Since OnQ requires this information, the following commands must be executed on Avaya PC3 to fix this problem:

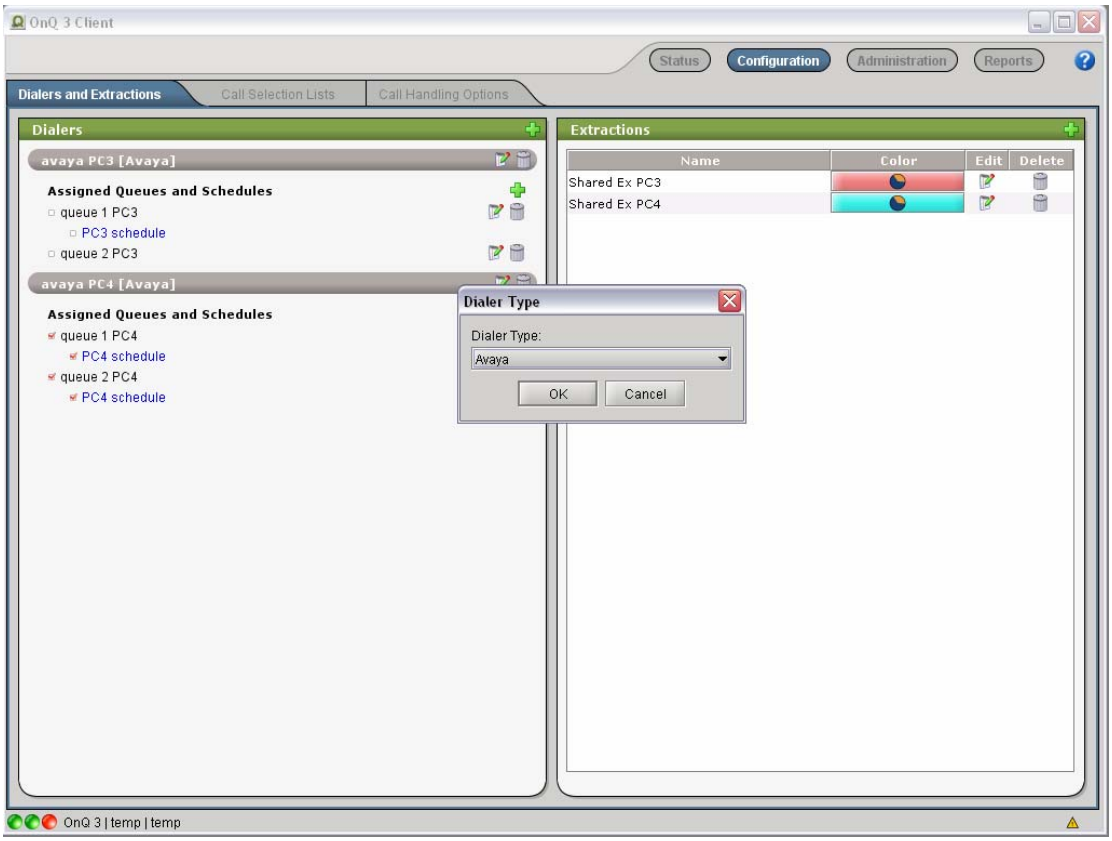
- "cp -R /home/ftp/usr /opt/avaya/pds/xfer/public"
- "cp -R /home/ftp/etc /opt/avaya/pds/xfer/public"

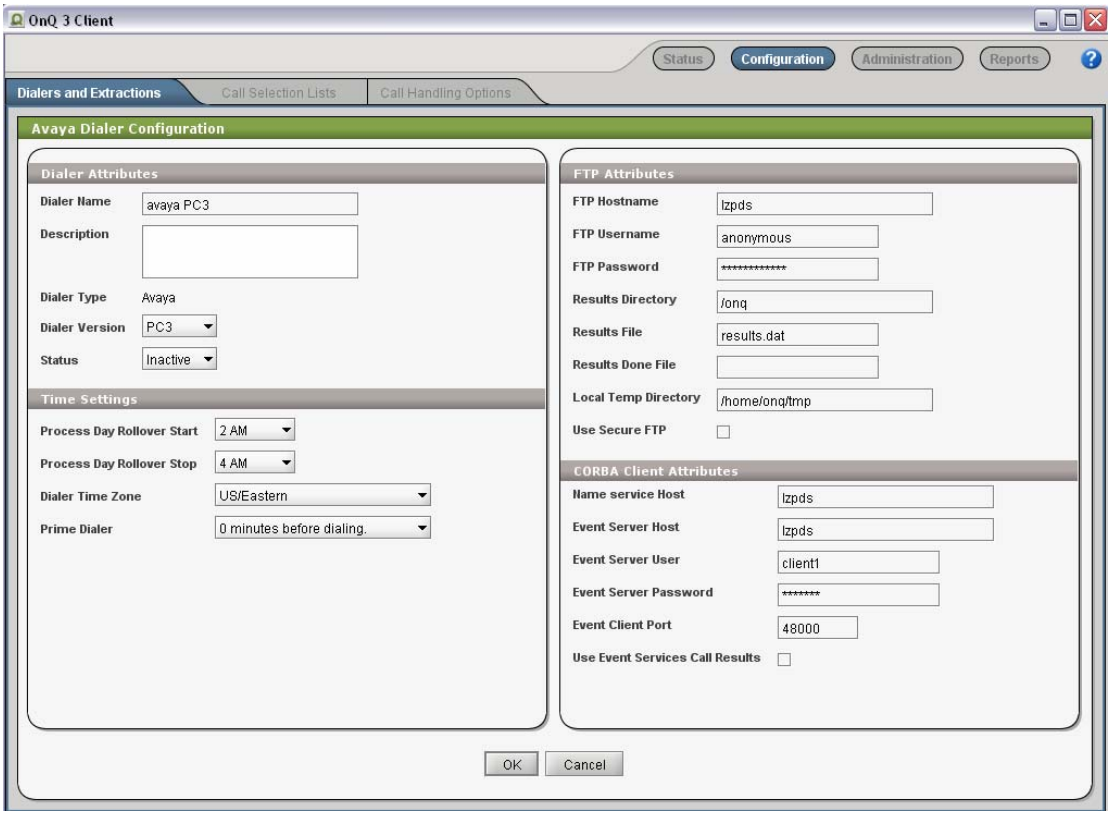
5. Configure Austin Logistics OnQ

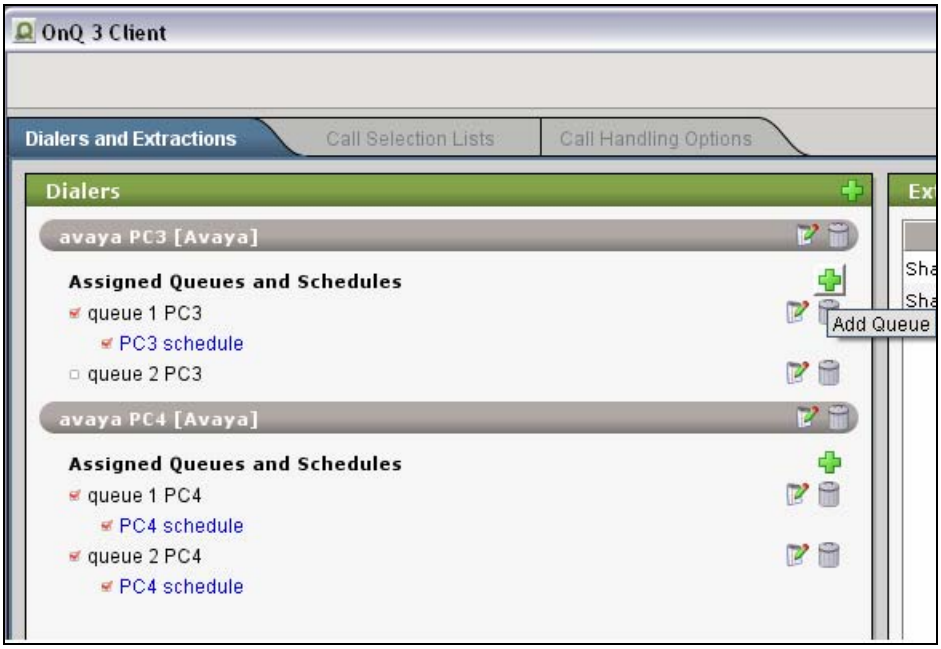
These Application Notes assume the OnQ software has been installed successfully.

5.1. Configure OnQ 3.0

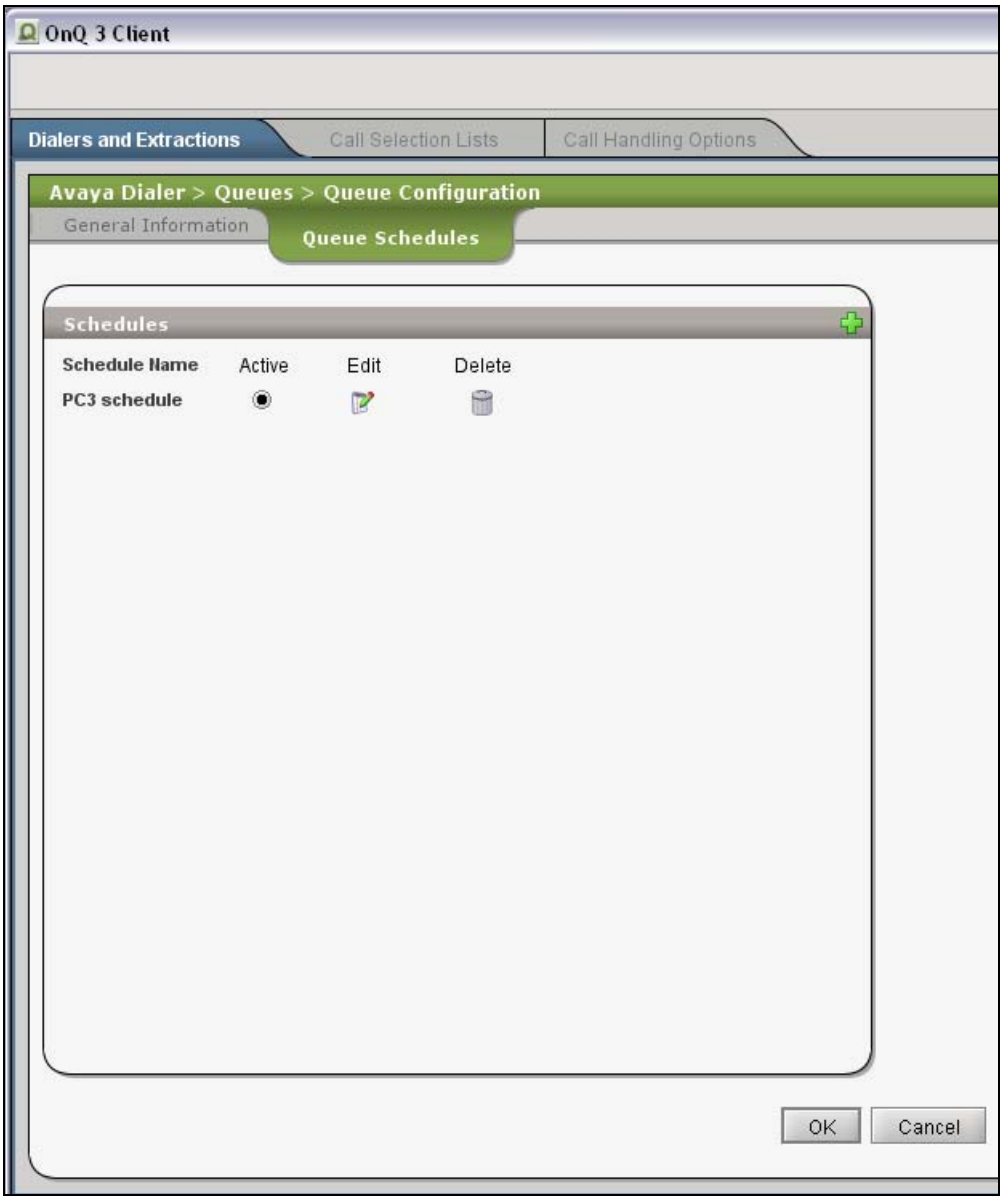
Step	Description
1.	Access the OnQ administration interface by clicking the **OnQ** icon created on the server during the installation procedure. On the **Login** window, enter the **User Name** and **Password** and click **OK**. 

Step	Description
2.	On the **OnQ3 Client** window select **Configuration.** Then select **Dialers and Extractions** tab and then click on + in the **Dialers** row. In the **Dialer Type** pop-up window, select **Avaya** and click **OK**. 

Step	Description
3.	On the **Avaya Dialer Configuration** window, configure as follows: • **Dialer Name** – Enter any descriptive name. • **Dialer Version** – Set to **PC3** for the testing with Proactive Dialer 3.0. • **FTP Username** – Set to **anonymous**. • **FTP Password** – Enter a valid password. • **Results Directory** – This is where the **results.dat** file is picked from after **onq_extract** script retrieves the records from the call record list. Set to **/onq** in this compliance test. • **Results File** – Set to **results.dat**. • **Name service Host** – Enter the Avaya PC3 host name. • **Event Server Host** – Enter the Avaya PC3 host name. • **Event Server User** – Enter the user name created on the Avaya PC3 dialer for getting the corba events. • **Event Server Password** – Enter a valid password • **Use Event Service Call Results** – This is checked only if the Event Service is used to collect the call data as opposed to using the batch mode. Using Event Service provides the call data in real time. • Click **OK**. 

Step	Description
4.	Click + in the **Assigned Queues and Schedules** row for **avayaPC3 [Avaya]** 

Step	Description
5.	On the **Avaya Dialer > Queues > Queue Configuration** window, configure as follows. • **Queue Name** – Enter any descriptive name. • **Job Name** – Enter the jobname configured on Avaya PC3 using **onq_list**<*calling list #*> format. Set to **onq_list10** for this compliance test. • **Send Directory** – This is where the call records file is picked from after OnQ transfers the file to the dialer. **onq_checkfile** script picks up this file and appends the call records to the list. Set to **/onq** for this compliance test. • **Send File** – Enter the name of the raw file containing the call records using the **rcvfile**<*calling list #*>**.raw** format. Set to **rcvfile10.raw** for this compliance test. 

Step	Description
6.	Select **Queue Schedules** tab and configure as follows: • **PC3 schedule/Active** – Check this field. • Click **OK**. 
7.	From the Linux server start the OnQ configuration server, status server, and onqnx core by executing onq_start.sh at $ONQ_HOME/bin.

6. Interoperability Compliance Testing

This interoperability compliance testing covered feature functionality and serviceability. Feature functionality focused on verifying that Austin Logistics OnQ 3.0 could successfully send call records to Avaya Proactive Contact 3.0 based on the workload and on-going call results. Serviceability testing verified that the OnQ server recovered from adverse conditions, such as rebooting, power failure and network disconnect.

6.1. General Test Approach

All feature functionality test cases were performed manually to verify proper operation. The general test approach entailed:

- Establishing connectivity between Austin Logistics OnQ and Avaya Proactive Contact 3.0.
- Verifying job statistics events are received by OnQ from the Event Service on Avaya Proactive Contact 3.0
- Verifying files can be sent and retrieved using FTP on Avaya Proactive Contact 3.0.
- Verifying call records can be added to the infinite job's calling list running on Avaya Proactive Contact 3.0 using the list management feature of OnQ.
- Verifying Call Data and Agent Data events are received by OnQ and OnQ is able to report the Completion Codes accurately.

6.2. Test Results

All feature and serviceability tests passed. Austin Logistics OnQ 3.0 successfully sent the call records to Avaya PC3 throughout the day while the infinite job was running. For the Batch Mode operation, OnQ polled Avaya PC3 for the results.dat file and the job statistics in order to determine how many records to send next and when to send them. For the Real Time operation, OnQ retrieved the Call Data and Event Data and was able to correlate it accurately.

For serviceability testing, OnQ was able to resume sending the call records after restoration of connectivity to the Avaya PC3 server, from network disconnect/re-connect, and OnQ server resets.

The following observations were obtained from testing:

1. The OnQ Queue Status screen does not show the updated status of the Event Service connection to Avaya PC3 when the connection is down. Currently the administrator will see a static screen with no indication that the connection to Avaya PC3 is down on the Queue Status screen. The job state field will continue to display "active". The connection failure is only recorded in the log files.

2. The Avaya PC3 FTP configuration in HP-UX 11i does not display the file size and date/time. Since OnQ requires this information, the following commands must be executed on Avaya PC3 to fix this problem. The commands will create the required sub-directories under the /opt/avaya/pds/xfer/public directory.
   - "cp -R /home/ftp/usr /opt/avaya/pds/xfer/public"
   - "cp -R /home/ftp/etc /opt/avaya/pds/xfer/public"

7. Verification Steps

7.1. Avaya Verification

Execute the **netstat –a** command from the command prompt on the Avaya PC3 server to verify the communication between Avaya PC3 and the OnQ. The result below shows that OnQ at 192.45.30.233 is connected to the Avaya PC3 (lzpds).

```
$ netstat -a
Active Internet connections (including servers)
Proto   Recv-Q Send-Q  Local Address        Foreign Address          (state)
tcp     0      0       lzpds.57209          192.45.30.233.49370      ESTABLISHED
tcp     0      65      lzpds.agent          192.45.30.242.1309       ESTABLISHED
```

Execute the "**enclient $NS -J"** command from Avaya PC3. The job statistics results will be shown. The highlighted fields are the statistics used by Austin Logistics OnQ. Verify the data in these fields match the data on the OnQ Queue Status screen (See **Section 7.2 Step 2**).

```
Static Job Data:
 jobName         ="onq_list10"
 callingList      ="lzpds-list10"
 recordSelectionFil="onq_list10"
 phoneStrategyFile ="infinite_strategy"
 jobStartTimeStamp =2008/7/18-10:58:16 jobEndTimeStamp=Null
 jobNumber        =   213 jobSlot        =     1 jobType       ='O'
 linesAssigned    =     4 totRecsToCall  =    20

Dynamic Job Data:
 cruiseControl = 0
 desiredServiceLevel = 0.990000, connectTolerance = 1
 servicedCalls = 18, offeredCalls = 19
 runningHitRate   =    50 currentHitRate  =    65
 inbTotalQueCalls  =     0 inbOutQueCalls  =     0
 inbAverageQueTime =     0 inbTotalQueTime =     0
 outbTotalQueCalls =     1 outbOutQueCalls =     0
 outbAverageQueTime=    16 outbTotalQueTime=    16
 recordsCalled    =    22 recordsAvailable=     2 recordsRecalled=     1
 activeStatus=1 setupFinished=1 inShutdown=0 noMoreCalls=0
 Inb Stats:
  inbCallsAnswered =     0 inbCallsInWait  =     0 inbCallsWorked =     0
  inbIdleCount     =     0 inbWaitQueueTime=     0 inbWorkTime    =     0
  inbIdleTime      =     0 inbTalkTime     =     0 inbUpdateTime  =     0
```

```
Outb Stats:
 outCallsPlaced    =     22 outRecallsPlaced=      1
 outCallsAnswered  =      2 outCallsInWait  =      1 outCallsWorked =     22
 outIdleCount      =     22 outWaitQueueTime=     16 outWorkTime    =    382
 outIdleTime       =    401 outTalkTime     =    287 outUpdateTime  =     95
Job Stats:
 jobCallsAnswered  =     19 jobCallsInWait  =      1 jobCallsWorked =     22
 jobIdleCount      =     22 jobWaitQueueTime=     16 jobWorkTime    =    382
 jobIdleTime       =    401 jobTalkTime     =    287 jobUpdateTime  =     95
Agent Counts:
 I=0  O=2  B=0  M=0  P=0  A=0
Comp Codes:
 code= 45 callType=I racCode=0x2 count=0
 code= 46 callType=I racCode=0x2 count=0
 code= 47 callType=I racCode=0x2 count=0
 code= 48 callType=I racCode=0x2 count=0
 code= 15 callType=O racCode=0x0 count=3
 code= 45 callType=O racCode=0x2 count=0
 code= 46 callType=O racCode=0x2 count=0
 code= 47 callType=O racCode=0x2 count=0
 code= 48 callType=O racCode=0x2 count=0
 code= 89 callType=O racCode=0x0 count=19
```

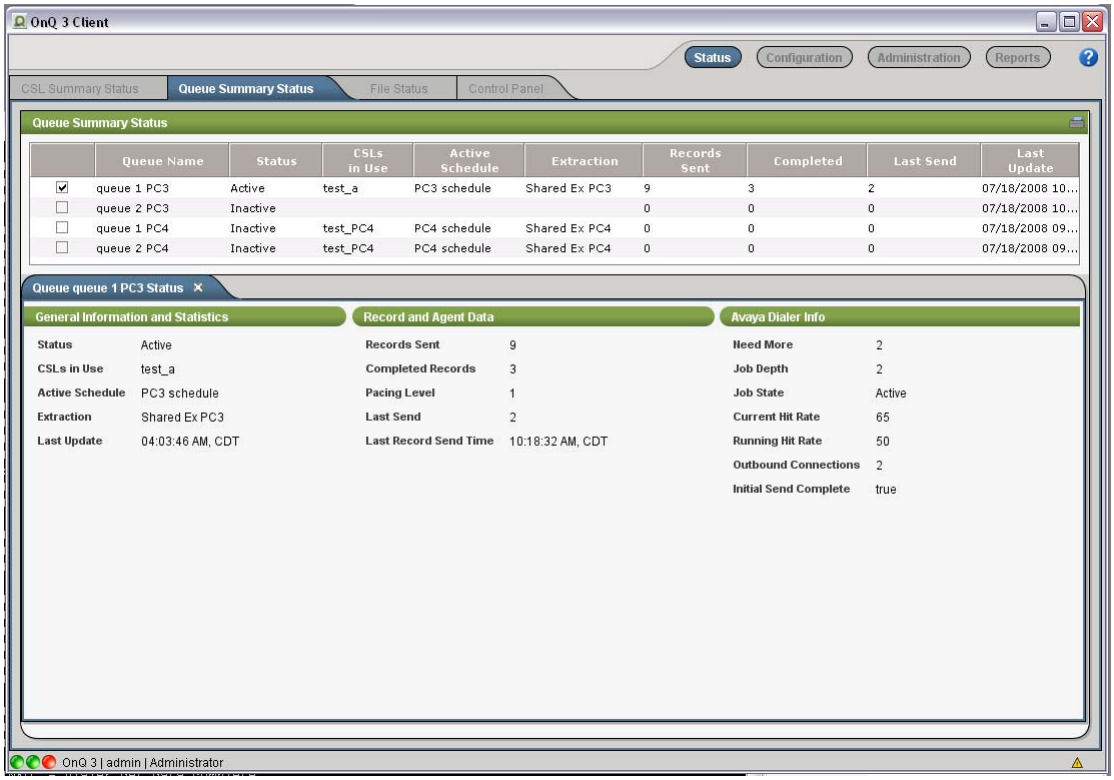
7.2. OnQ Verification

The following steps can ensure that the communication between OnQ and Avaya Proactive Contact 3.0 is working.

Step	Description
1.	On the OnQ server, open the **AvayaDialerDriverEventServices.avaya_PC3.log** file and verify that **Avaya PDS Corba ready and waiting** is displayed in the log files.
	2008-07-14 14:52:56,533 INFO - start(): initialize ORB on local port 48000 2008-07-14 14:52:56,567 INFO - Waiting 60000 millis to ensure events are firing. 2008-07-14 14:52:56,664 INFO - start(): narrowing to POA 2008-07-14 14:52:56,846 INFO - start(): getting DialerEventServer 2008-07-14 14:52:56,846 INFO - using name service name corbaloc:iiop:1.1@lzpds:23200/NameService 2008-07-14 14:52:56,846 INFO - resolving CORBA Object from string corbaloc:iiop:1.1@lzpds:23200/NameService 2008-07-14 14:52:56,879 INFO - got corba object IOR:000000000000001D49444C3A6F6D672E6F72672F434F5242412F4F626A6563743A312E3000000000000000010000000000000003C000101000000000E3139322E34352E3132302E3539005AA00000000B4E616D655365727669636500000000010000000000000008000000004A414300 2008-07-14 14:52:56,879 INFO - narrowing object to NamingContext 2008-07-14 14:52:56,959 INFO - narrowing NamingContext path 2008-07-14 14:52:56,978 INFO - start(): logging into dialer as client1 **2008-07-14 14:52:57,521 INFO - Avaya PDS Corba ready and waiting.** 2008-07-14 14:52:58,860 INFO - System Stats notification 2008-07-14 14:52:58,862 INFO - Job Stats notification

Step	Description
2.	Click the **Status** button on **QnQ 3 Client** window and select the **Queue Summary Status** tab. Check the **Queue 1 PC3** check box. The queue status will appear in the bottom of the window. Verify the **Status** and **Job State** fields are **Active**. Also, while the Avaya PC3 infinite job is running. The status window will display the statistics information received from the Event Service on Avaya PC3 under Avaya Dialer Info. The following fields from the Event Service correspond to the Status Queue window:

Avaya PC3 Event Service	OnQ Status Queue
runningHitRate	Running Hit Rate
currentHitRate	Current Hit Rate
recordsAvailable	Job Depth
outCallsAnswered	Outbound Connections



8. Support

If technical support is required for the Austin Logistics OnQ solution, then contact Austin Logistics Technical Support. Full details are available at https://www.AustinLogistics.com.

9. Conclusion

These Application Notes describe the required configuration steps for Austin Logistics OnQ 3.0 to successfully interoperate with the Event Service and FTP of Avaya Proactive Contact 3.0 list management. Custom development work is needed on Avaya PC3 from Avaya Professional Services to integrate this solution. Functionality and serviceability were successfully validated. The configuration described in these Application Notes has been successfully compliance tested.

10. Additional References

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

[1] *Administrator Guide for Avaya Communication Manager*, Document ID 03-300509, Issue 3.0, February 2007

[2] *Avaya Proactive Contact 3.0 Installation and Configuration*, November 2005; Doc ID: 07-300491

[3] *Avaya Proactive Contact 3.0 Administration (UNIX-based)*, October 2005; Doc ID: 07-300488

Austin Logistics product documentation is available on request from https://www.AustinLogistics.com.

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at http://www.avaya.com/devconnect.