Avaya Solution & Interoperability Test Lab

Application Notes for Ulane Tech PCS DataManager with Avaya Proactive Contact with PG230 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Ulane Tech PCS DataManager to interoperate with Avaya Proactive Contact with PG230. Ulane Tech PCS DataManager is a solution for automating call center campaign management.

In the compliance testing, Ulane Tech PCS DataManager used the Event Services interface from Avaya Proactive Contact to monitor activities associated with an infinite job, to determine when to send the next batch of call records. The batch of call records were sent to Avaya Proactive Contact via the SFTP interface, followed by SSH access to the linux shell of Avaya Proactive Contact to append the call records to the infinite job's calling list.

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.

©2012 Avaya Inc. All Rights Reserved.

1. Introduction

These Application Notes describe the configuration steps required for Ulane Tech PCS DataManager to interoperate with Avaya Proactive Contact with PG230. Ulane Tech PCS DataManager is a solution for automating call center campaign management.

In the compliance testing, Ulane Tech PCS DataManager used the Event Services interface from Avaya Proactive Contact to monitor job events and job statistics associated with an infinite job, to determine when to send the next batch of call records. The batch of call records were sent to Avaya Proactive Contact via the SFTP interface, followed by SSH access to the linux shell of Avaya Proactive Contact to run the "hosttopds" command to append the call records to the infinite job's calling list.

The integration required the PCSCallResult component, containing two custom Java scripts developed by Ulane Tech to be installed on Avaya Proactive Contact. The functions of the custom scripts included use of JDBC to query the Ulane database to obtain relevant job ID for the infinite job, and monitoring and sending call result transaction files associated with the infinite job to Ulane Tech PCS DataManager. Data from the call result transaction files were used to determine when to send the next batch of call records.

This compliance test covered the Avaya Proactive Contact with PG230 deployment option.

2. General Test Approach and Test Results

The feature test cases were performed both automatically and manually. Upon start of the PCS DataManager application, the application automatically used Event Services to check job events and statistics associated with the infinite job, and send call records on an as-needed basis to append to the calling list.

For the manual part of the testing, each call was handled manually using the Avaya Proactive Contact Agent application to pace the outbound calls.

The serviceability test cases were performed manually by disconnecting/reconnecting the Ethernet connection to PCS DataManager.

The verification of tests included viewing the stored call results and job related data in the database, and comparing the monitoring data reported by PCS DataManager against the job monitoring tool on Avaya Proactive Contact.

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.

©2012 Avaya Inc. All Rights Reserved.

2.1. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing.

The feature testing focused on verifying the following on PCS DataManager:

- Handling of Event Services job events and job statistics.
- Proper display of monitoring statistics for the infinite job.
- Retrieving and sending call transaction results using Java scripts.
- Sending batches of call records using SFTP, with timing based on configured threshold and call transaction results.
- Appending batch of call records using SSH and the "hosttopds" command.
- Selection of call records using single and multiple criteria.

The serviceability testing focused on verifying the ability of PCS DataManager to recover from adverse conditions, such as disconnecting/reconnecting the Ethernet cable to PCS DataManager.

2.2. Test Results

All test cases were executed. The following were the observations on PCS DataManager from the compliance testing.

- The initial batch of call records can take a couple of minutes to arrive on Proactive Contact.
- PCS DataManager requires specific naming for the infinite job and associated calling list.
- The desired service level from job statistics is in decimal format but saved as an integer in the database, therefore a value of ".990000" is saved as "1". The workaround is to manually change the format of the database field.
- A job end time of "null" is saved as "01:00:00" in the database.
- In the event that the active infinite job is stopped before other non-infinite jobs, PCS DataManager will continue to show the monitoring entry for the infinite job until all jobs have been stopped on Proactive Contact.

2.3. Support

Technical support on PCS DataManager can be obtained through the following:

- **Phone:** +086 4001-086-166
- **Email:** service@ulane.cn

©2012 Avaya Inc. All Rights Reserved.

3. Reference Configuration

PCS DataManager can be configured on a single server or with components distributed across multiple servers. The compliance test configuration used a two-server configuration.

The detailed administration of basic connectivity between Communication Manager and Proactive Contact, of contact center devices, and of creation of the infinite job are not the focus of these Application Notes and will not be described.

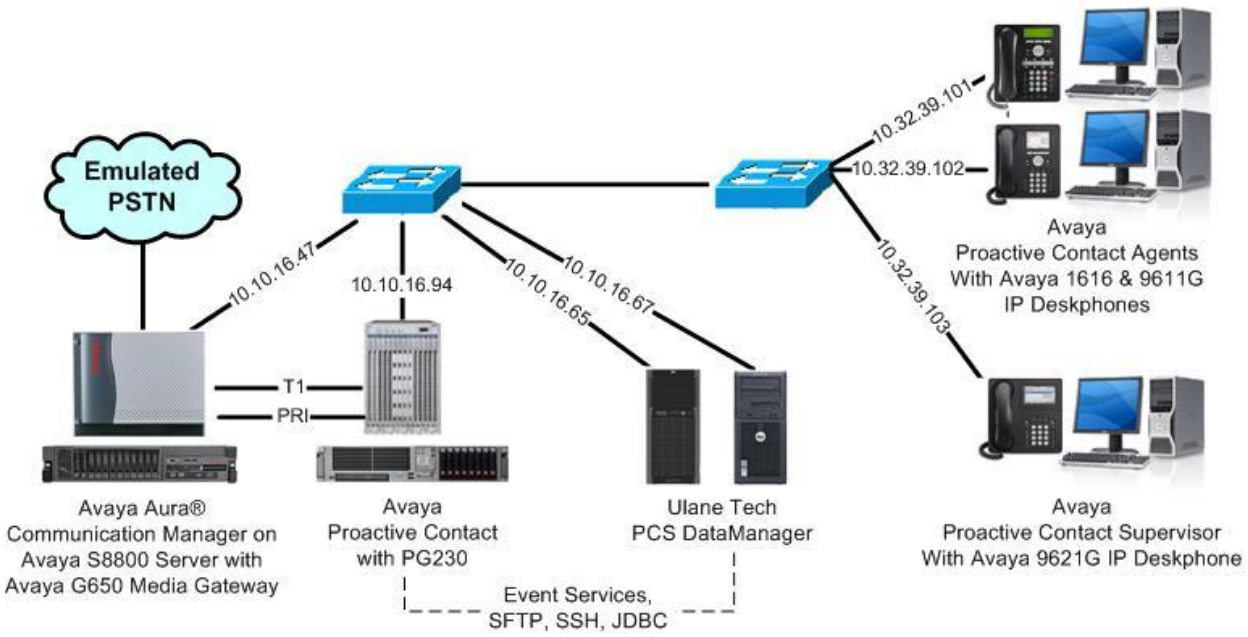


Figure 1: Compliance Testing Configuration

©2012 Avaya Inc. All Rights Reserved.

4. Equipment and Software Validated

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

Equipment/Software	Version
Avaya Aura® Communication Manager on Avaya S8800 Server	6.0.1 SP7 (R016x.00.1.510.1-19528)
Avaya G650 Media Gateway • TN799DP C-LAN Circuit Pack • TN2602AP IP Media Processor	 HW01 FW040 HW08 FW062
Avaya Aura® Application Enablement Services	6.2.0.18.0
Avaya Proactive Contact with PG230 • Ulane Tech PCSCallResult	4.2.2.310.01 1.5.1
Avaya Proactive Contact Agent	4.2.2
Avaya Proactive Contact Supervisor	4.2.2
Avaya 1616 IP Deskphones (H.323)	1.302S
Avaya 9611G IP Deskphone (H.323)	6.020S
Ulane Tech PCS DataManager on Red Hat • PCSDataManager • PCSMonitor • MySQL	 4.1.2-46 1.6.2 1.5.4 5.5.23
Ulane Tech PCS Manager on Windows Vista Business • PCSEventService • Avaya Event Services SDK	 SP 1 1.5.2 4.2.1

©2012 Avaya Inc. All Rights Reserved.

5. Configure Avaya Proactive Contact

Prior to integration with PCS DataManager, the customer needs to provide administrator credentials of the Proactive Contact system to Ulane Tech, and to sign a joint access agreement with Avaya and Ulane Tech. The administrator credentials are used by PCS DataManager to access Proactive Contact via the SFTP interface to send batches of call records, and via the SSH interface to run the "hosttopds" command to append call records to the infinite job.

In addition, the PCS DataManager PCSCallResult component, containing two Java scripts, needs to be manually installed on Proactive Contact. The installation and configuration of PCSCallResult is performed by Ulane Tech technicians. The procedural steps for the configuration are presented in these Application Notes for informational purposes.

Note that Avaya does not provide support on the PCS DataManager PCSCallResult component, and reserve the right to remove the component on as-needed basis for troubleshooting and resolving any issues.

This section provides the procedures for configuring Proactive Contact. The procedures include the following areas:

- Obtain calling list details
- Administer job
- Obtain host name
- Administer PCSCallResult
- Copy jacorb
- Administer pdscontrol

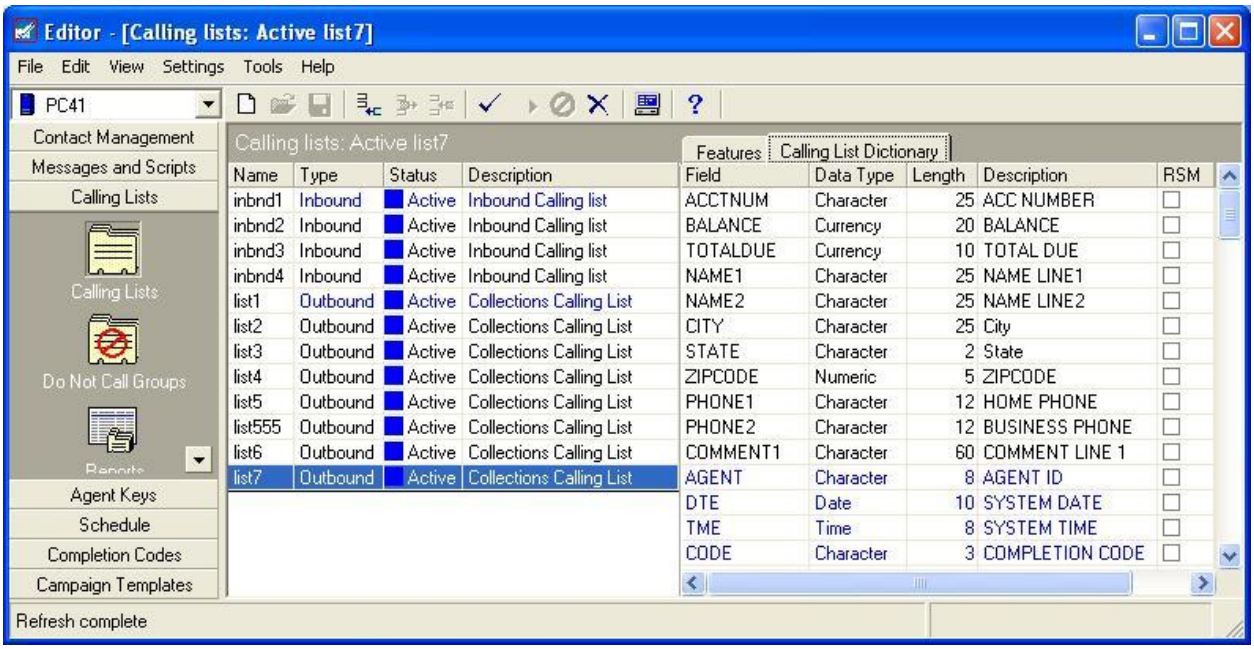
©2012 Avaya Inc. All Rights Reserved.

5.1. Obtain Calling List Details

From a PC running the Proactive Contact Supervisor application, select **All Programs → Avaya → Proactive Contact 4.2 → Supervisor → Editor** to display the **Editor** screen below.

Follow [2] to create a calling list and an infinite job that will be used to integrate with PCS DataManager. Note that PCS DataManager requires the calling list to be named "listx", where "x" is an available list number between 1 and 10 inclusively.

Select **Calling Lists → Calling Lists** in the left pane, to display the calling lists in the right pane. Select the calling list corresponding to the infinite job, in this case "list7", as shown below. Prior to integration, the details of the calling list shown in the **Calling List Dictionary** tab needs to be sent to Ulane Tech, which will be used to dictate the format of the call records.

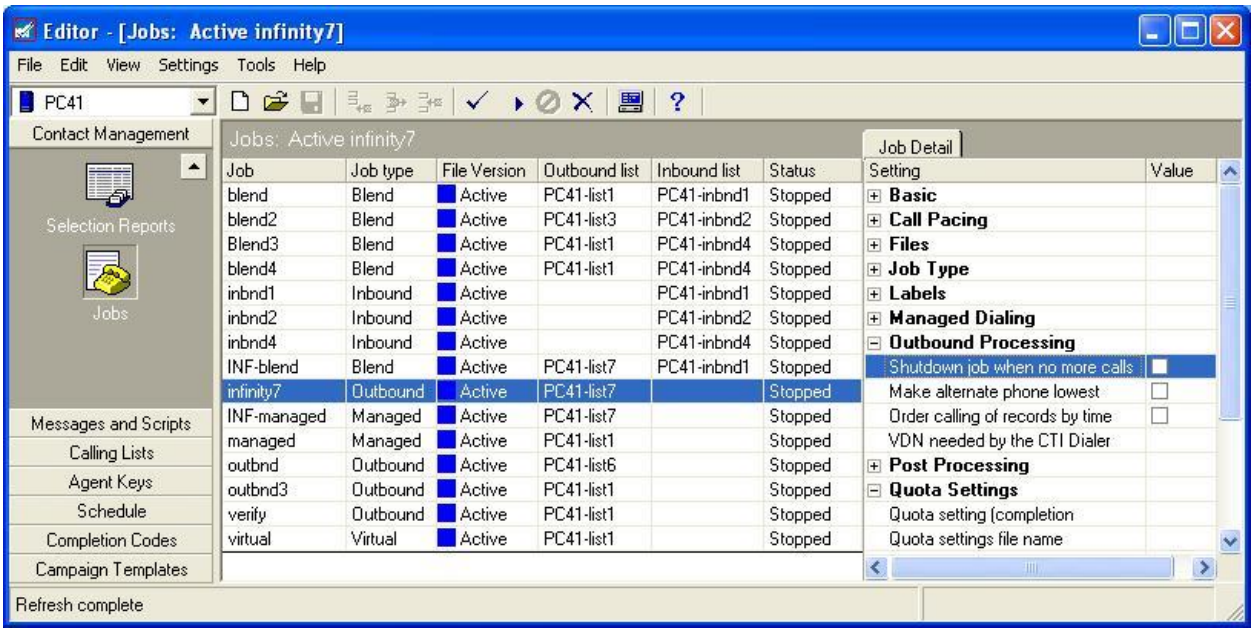


©2012 Avaya Inc. All Rights Reserved.

5.2. Administer Job

Select **Contact Management → Jobs** in the left pane, to display the jobs in the right pane. Select the job corresponding to the infinite job, in this case "infinity7", as shown below. Note that PCS DataManager requires the infinite job to be named "infinityx", where "x" is the associated calling list number from **Section 5.1**.

In the **Job Detail** tab, make certain **Outbound Processing → Shutdown job when no more calls** is disabled. This setting is necessary to prevent Proactive Contact from shutting down the infinite job before the initial batch of call records is received from PCS DataManager.



5.3. Obtain Host Name

Log in to the Linux shell of the Proactive Contact server. Use the "uname -a" command to obtain the host name, which will be used later to configure PCS DataManager.

In the compliance testing, the host name of the Proactive Contact server is "PC41", as shown below.

```
$ uname -a
Linux PC41 2.6.9-100.ELsmp #1 SMP Tue Feb 1 12:17:32 EST 2011 i686 athlon i386
GNU/Linux
PC41(admin)@/opt/avaya/pds [1001]
$
```


©2012 Avaya Inc. All Rights Reserved.

5.4. Administer PCSCallResult

Install the PCSCallResult component under the **/opt/avaya/pds/customs** directory, as shown below.

```
$ ls /opt/avaya/pds/customs
pcm_callresult
```

Navigate to **/opt/avaya/pds/customs/pcm_callresult**, and edit the **config.properties** file.

For **pcsName**, enter the host name of Proactive Contact from **Section 5.3**.

For **DBUrl**, enter the URL shown below, where "mysql" is the database type and "10.10.16.65" is the IP address of the PCS DataManager server containing the database component. For **DBUser** and **DBPwd**, enter the appropriate credentials for the database.

Retain the default values in the remaining fields.

```
pcsName=PC41

DBType=MySql
DBUrl=jdbc:mysql://10.10.16.65/pcsdata?useUnicode=true&characterEncoding=UTF-8
DBUser=root
DBPwd=admin

period=60
refresh=20
```

5.5. Copy jacorb

Enter the command below, to copy the **jacorb** file from the **/opt/avaya/pds/openssl/keystore** to the **/opt/avaya/pds/customs/pcm_callresult/lib** directory.

```
$ cp /opt/avaya/pds/openssl/keystore/jacorb /opt/avaya/pds/customs/pcm_callresult/lib
```


©2012 Avaya Inc. All Rights Reserved.

5.6. Administer pdscontrol

Navigate to the **/opt/avaya/pds/shell** directory, and edit the **pdscontrol** file.

Locate the end of the **start_pds()** function, and add statements shown below to start the PCS DataManager PCSCallResult scripts. Repeat and insert the same statements toward the end of the **start_secured_pds()** function.

```
start_pds()
{
  .
  .
  .

  # ------------------------------------------------------------------
  # Start Ulane Tech PCS DataManager PCSCallResult
  #
  . /opt/avaya/pds/customs/pcm_callresult/start.sh &

  # ------------------------------------------------------------------
  print "\n*************** STARTUP COMPLETE ************* \n\n"
  # ------------------------------------------------------------------

}

start_secured_pds()
{
  .
  .
  .

  # ------------------------------------------------------------------
  # Start Ulane Tech PCS DataManager PCSCallResult
  #
  . /opt/avaya/pds/customs/pcm_callresult/start.sh &

  # ------------------------------------------------------------------
  print "\n*************** STARTUP COMPLETE ************* \n\n"
  # ------------------------------------------------------------------

}
```


©2012 Avaya Inc. All Rights Reserved.

6. Configure Ulane Tech PCS DataManager

This section provides the procedures for configuring PCS DataManager. The procedures include the following areas:

- Administer PCSEventService
- Launch web interface
- Administer dialer
- Administer data source
- Administer job data
- Administer data selection
- Administer job data selection

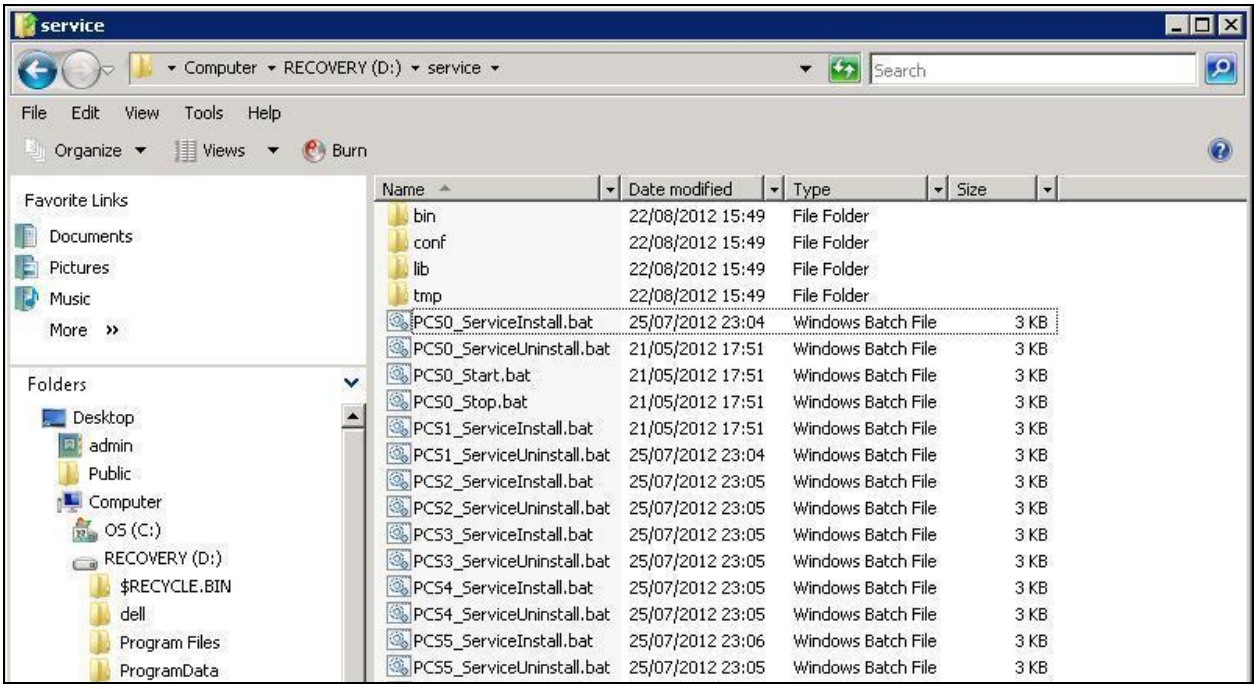
The configuration of PCS DataManager is performed by Ulane Tech technicians. The procedural steps are presented in these Application Notes for informational purposes.

6.1. Administer PCSEventService

6.1.1. Administer service Directory

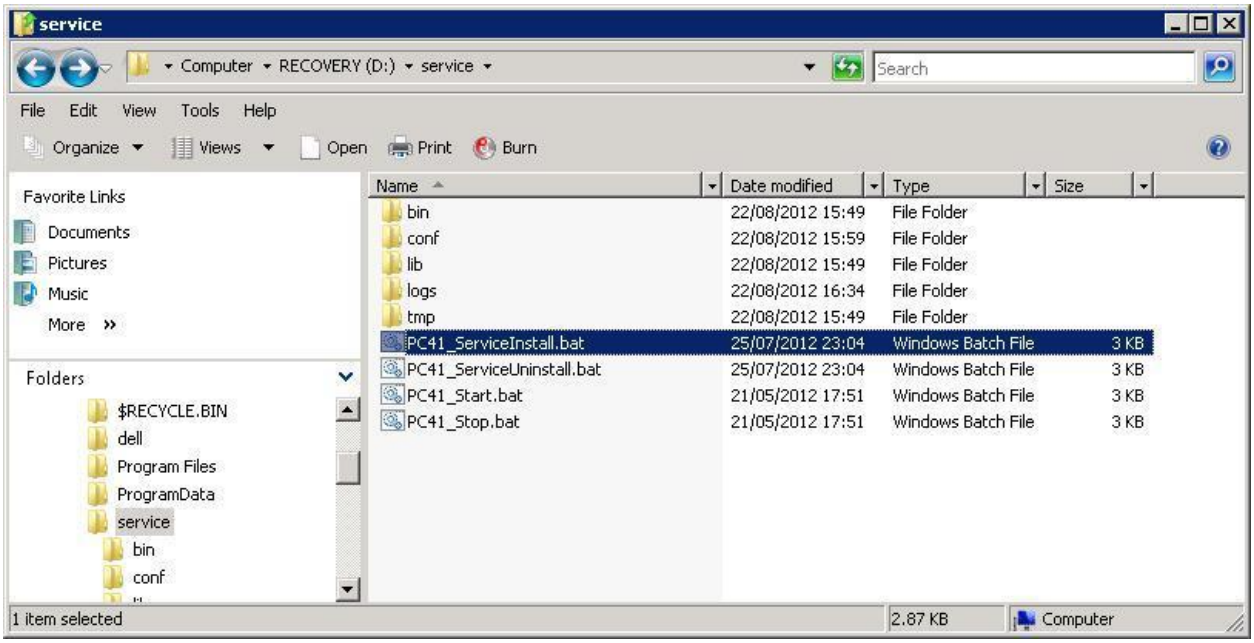
From the server with the PCSEventService component, navigate to **D:\service** as shown below. Note that the default settings assume the component is installed in the D: drive. The screen below is displayed.

Rename the four **PCS0*** files to reflect the Proactive Contact system as desired, and delete the remaining files. Create a **logs** directory.

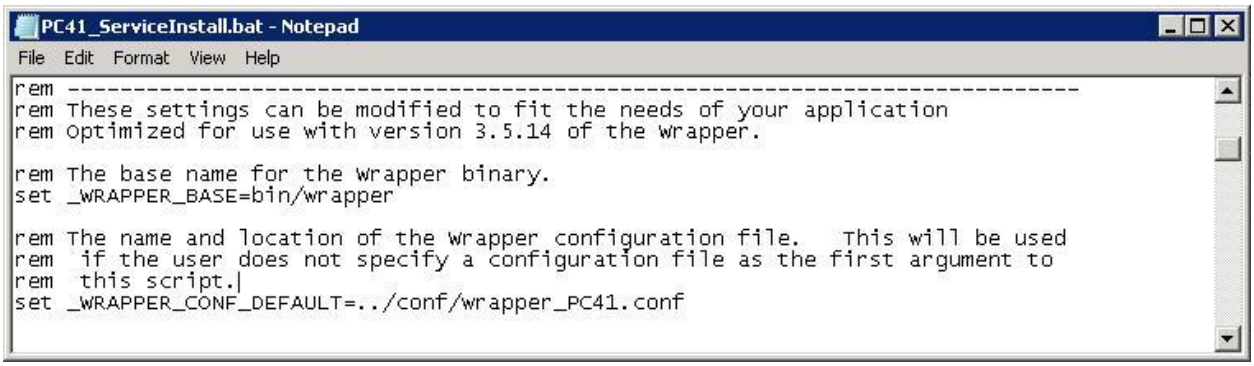


©2012 Avaya Inc. All Rights Reserved.

The screenshot below shows the result of the above changes. Open the resultant ServiceInstall file with the NotePad application, in this case **PC41_ServiceInstall.bat**.



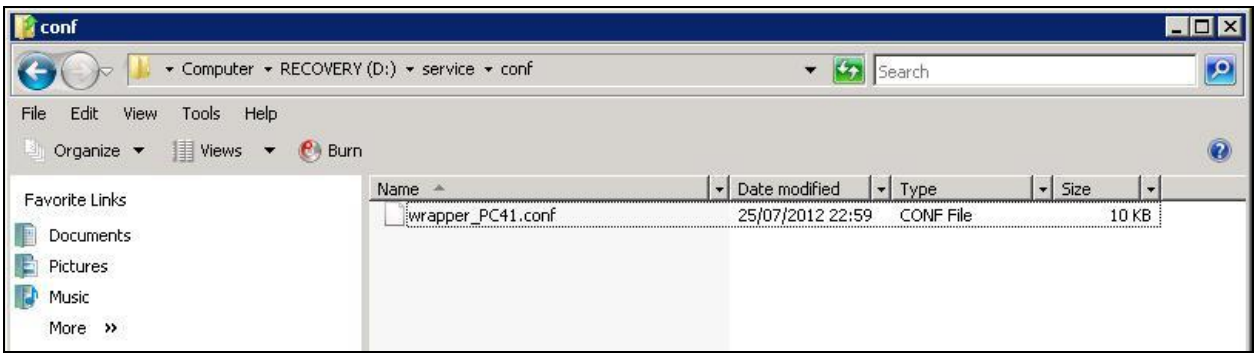
For **_WRAPPER_CONF_DEFAULT**, update the wrapper file name to reflect the Proactive Contact system as desired. In the compliance testing, the file name was changed to **wrapper_PC41.conf**, as shown below.



©2012 Avaya Inc. All Rights Reserved.

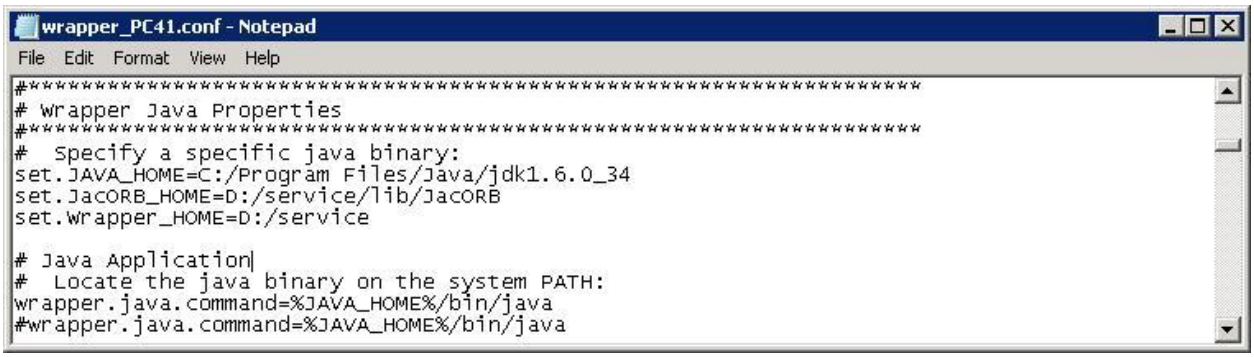
6.1.2. Administer conf Directory

Navigate to the **D:\service\conf** directory. Rename the first wrapper file to the wrapper file name from **Section 6.1.1**, and remove the remaining files. The screenshot below shows the result of the changes.



Open the wrapper file with the Notepad application. Search and enter the following values for the specified fields, and retain the default values for the remaining fields. The screen below shows the setting of **set.JAVA_HOME**, with the remaining changed parameters not shown.

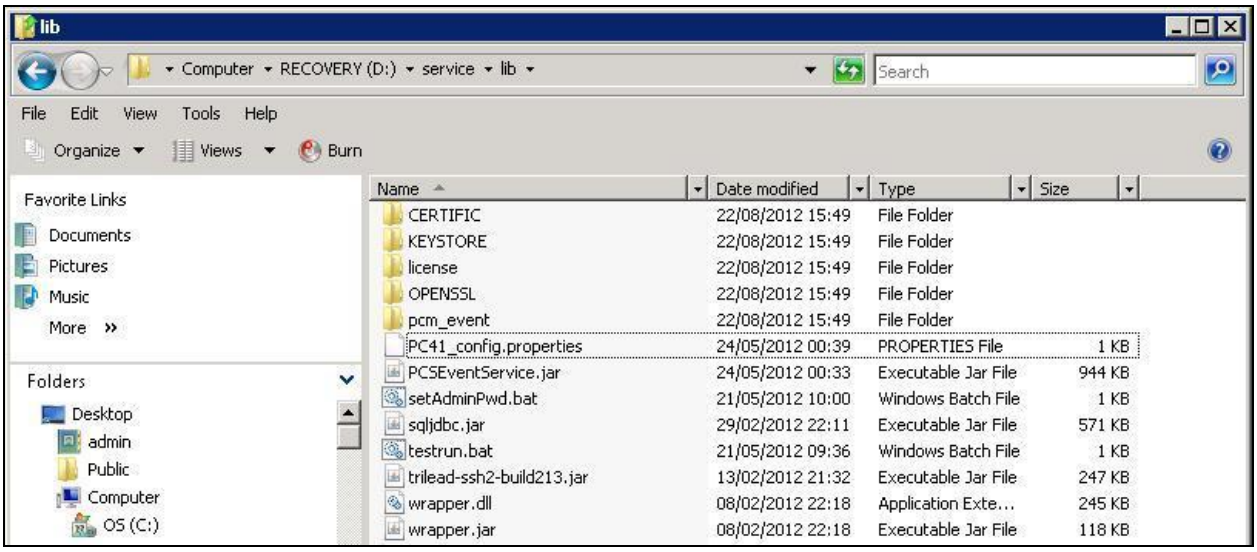
- **set.JAVA_HOME:** Set to the location of the Java JDK on the local server.
- **Wrapper.app.parameter.1:** Set to the Proactive Contact host name from **Section 5.3**.
- **Wrapper.logfile:** Update to reflect updated wrapper file name from above.
- **Wrapper.name:** Update to reflect Proactive Contact host name.
- **Wrapper.description:** Update to reflect Proactive Contact host name.



©2012 Avaya Inc. All Rights Reserved.

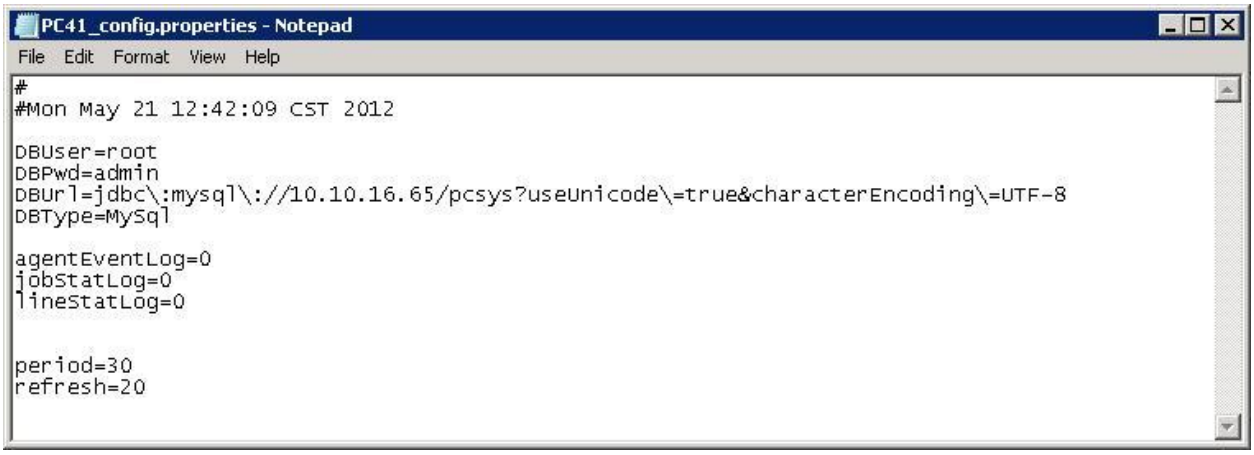
6.1.3. Administer lib Directory

Navigate to the **D:\service\lib** directory. Rename the first **config.properties** file to reflect the Proactive Contact system as desired, and remove the remaining **config.properties** files. The screenshot below shows the result of the changes.



Open the properties file with the Notepad application. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **DBUser:** The administrator credentials for the database.
- **DBPwd:** The administrator credentials for the database.
- **DBUrl:** Update the URL with the database IP address.



©2012 Avaya Inc. All Rights Reserved.

6.2. Launch Web Interface

Access the PCS DataManager web-based interface by using the URL “http://ip-address:8080/PCSManager” in an Internet browser window, where “ip-address” is the IP address of the PCS DataManager server containing the PCSDataManager component. Log in using the administrator credentials.

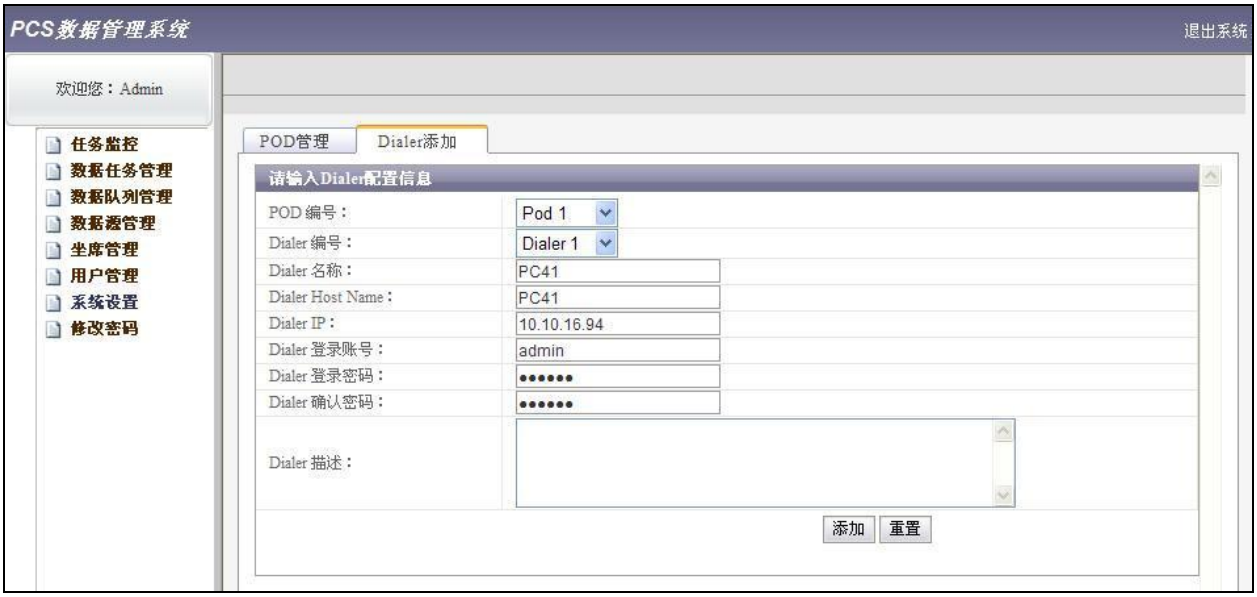
The **PCS 数据管理系统** screen is displayed.

©2012 Avaya Inc. All Rights Reserved.

6.3. Administer Dialer

Select **系统设置** from the left pane, and click on the **Dialer 添加** tab to add an entry for the Proactive Contact system. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **POD 编号:** Select an available name, in this case "Pod 1".
- **Dialer 编号:** Select an available name, in this case "Dialer 1".
- **Dialer 名称:** A desired name.
- **Dialer Host Name:** The host name of Proactive Contact from **Section 5.3**.
- **Dialer IP:** The IP address of Proactive Contact.
- **Dialer 登录账号:** The administrator credentials for Proactive Contact.
- **Dialer 登录密码:** The administrator credentials for Proactive Contact.
- **Dialer 确认密码:** The administrator credentials for Proactive Contact.



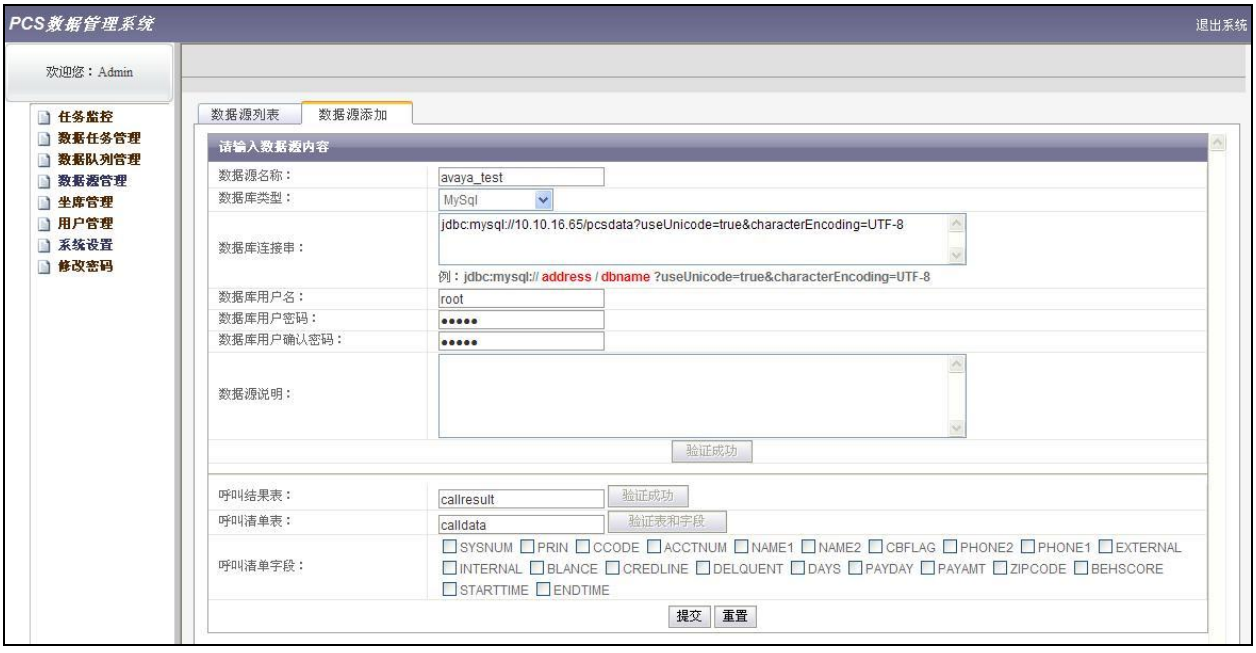
©2012 Avaya Inc. All Rights Reserved.

6.4. Administer Data Source

Select **数据源管理** from the left pane, and click on the **数据源添加** tab to add a data source entry. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **数据源名称:** A desired name, in this case "avaya_test".
- **数据库类型:** Select the applicable database type, in this case "MySql".
- **数据库连接串:** Enter the URL containing the database IP address and name.
- **数据库用户名:** The administrator credentials for the database.
- **数据库用户密码:** The administrator credentials for the database.
- **数据库用户确认密码:** The administrator credentials for the database.
- **呼叫结果表:** Name of database call results table, in this case "callresult".
- **呼叫清单表:** Name of database call records table, in this case "calldata".

The **测试连接, 验证, 验证表和字段** buttons (not shown) can be pressed to test the connectivity to the database, call result table, and call records table and fields respectively. The screen below shows the successful results after verifying the connections, along with the display of the call record table fields.



©2012 Avaya Inc. All Rights Reserved.

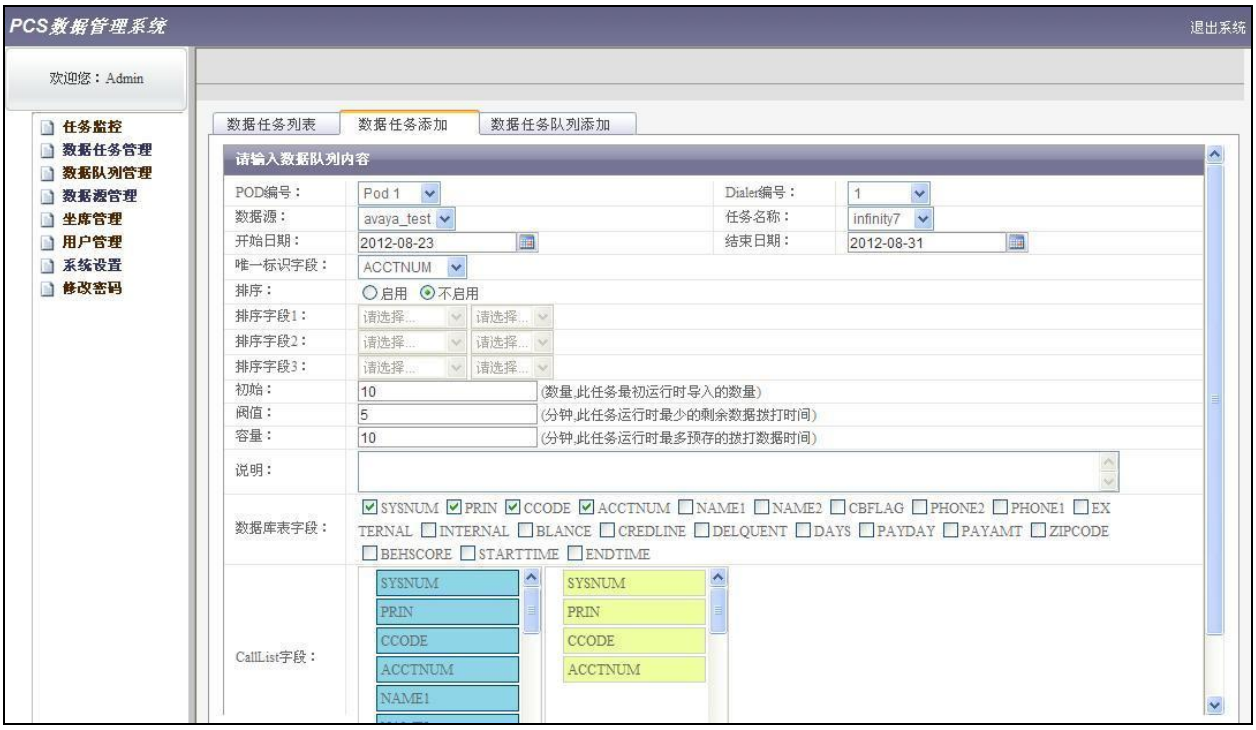
6.5. Administer Job Data

Select **数据任务管理** from the left pane, and click on the **数据任务添加** tab to add an entry for the infinite job. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **POD 编号:** The POD 编号 from **Section 6.3**.
- **Dialer 编号:** The Dialer 编号 number from **Section 6.3**.
- **数据源:** The 数据源名称 from **Section 6.3**.
- **任务名称:** The infinite job name from **Section 5.2**.
- **开始日期:** Select the desired start date.
- **结束日期:** Select the desired end date.
- **唯一标识字段:** Select the desired field with unique values.
- **排序:** Select and set the record ordering method as desired.
- **初始:** The number of records to send in the initial batch.
- **阀值:** The minimum threshold for call records in number of minutes.
- **容量:** The maximum capacity for call records in number of minutes.

In the **数据库表字段** section, check the fields in the exact order listed in the **CallList 字段** section. A second listing will appear as the fields are checked. The screen below shows the field selections in progress.

©2012 Avaya Inc. All Rights Reserved.



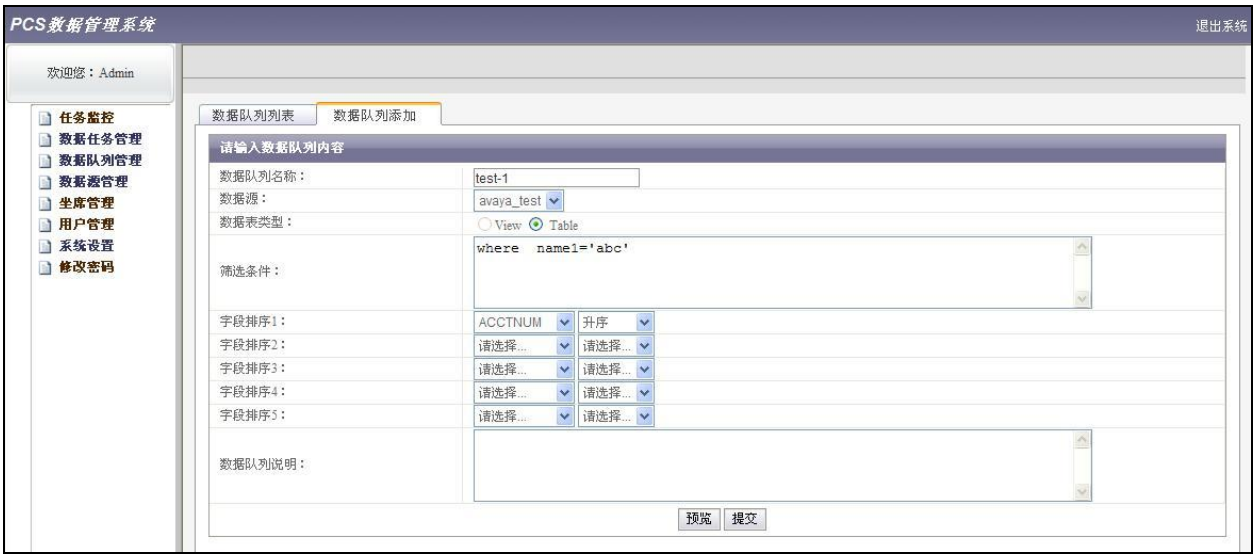
©2012 Avaya Inc. All Rights Reserved.

6.6. Administer Data Selection

Select **数据队列管理** from the left pane, and click on the **数据队列添加** tab to add a data selection entry. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **数据队列名称:** Enter a desired data selection name, in this case "test-1".
- **数据源:** Select the 数据源名称 from **Section 6.4**.
- **数据表类型:** "Table"
- **筛选条件:** Enter the desired selection criteria.
- **字段排序 1:** Select the desired field and method for record sequence.

The **预览** button may be used to preview the selected records.

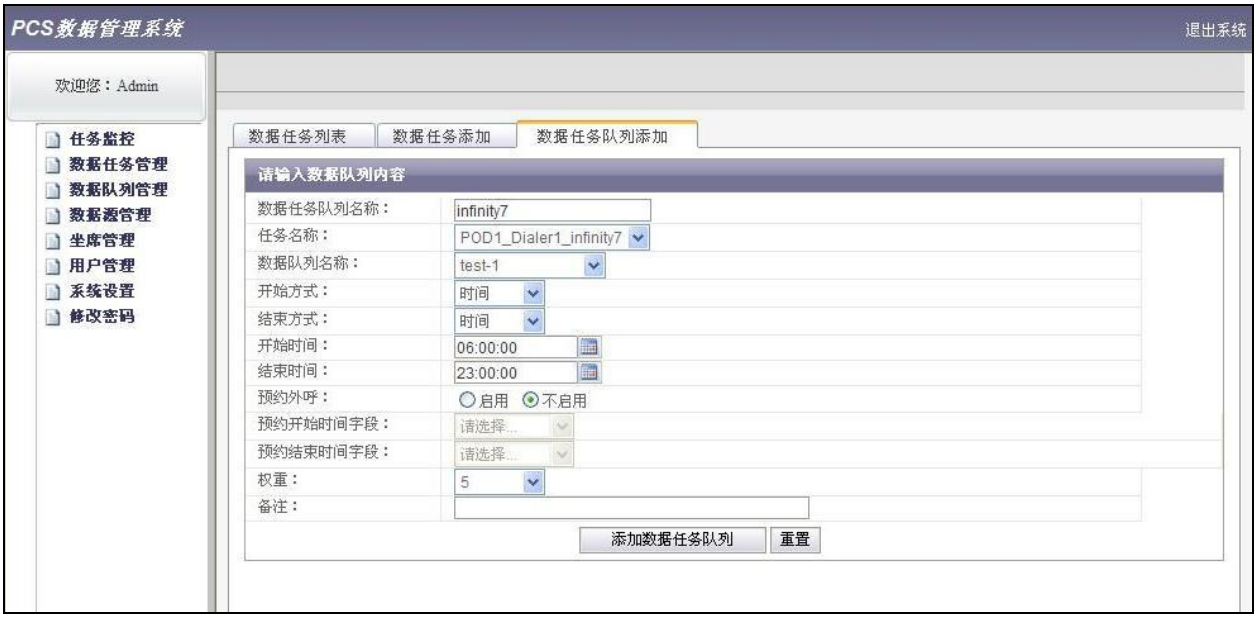


©2012 Avaya Inc. All Rights Reserved.

6.7. Administer Job Data Selection

Select **数据任务管理** from the left pane, and click on the **数据任务队列添加** tab to add an entry to associate the data selection with a job. Enter the following values for the specified fields, and retain the default values for the remaining fields.

- **数据任务队列名称:** Enter a desired job data selection name.
- **任务名称:** Select the appropriate name reflecting the job data from **Section 6.5**.
- **数据队列名称:** Select the 数据队列名称 from **Section 6.6**.
- **开始方式:** "时间"
- **结束方式:** "时间"
- **开始时间:** Select the desired start time.
- **结束时间:** Select the desired end time.
- **预约外呼:** Select and set the calling interval for record selection as desired.
- **权重:** Select the desired weight.



©2012 Avaya Inc. All Rights Reserved.

7. Verification Steps

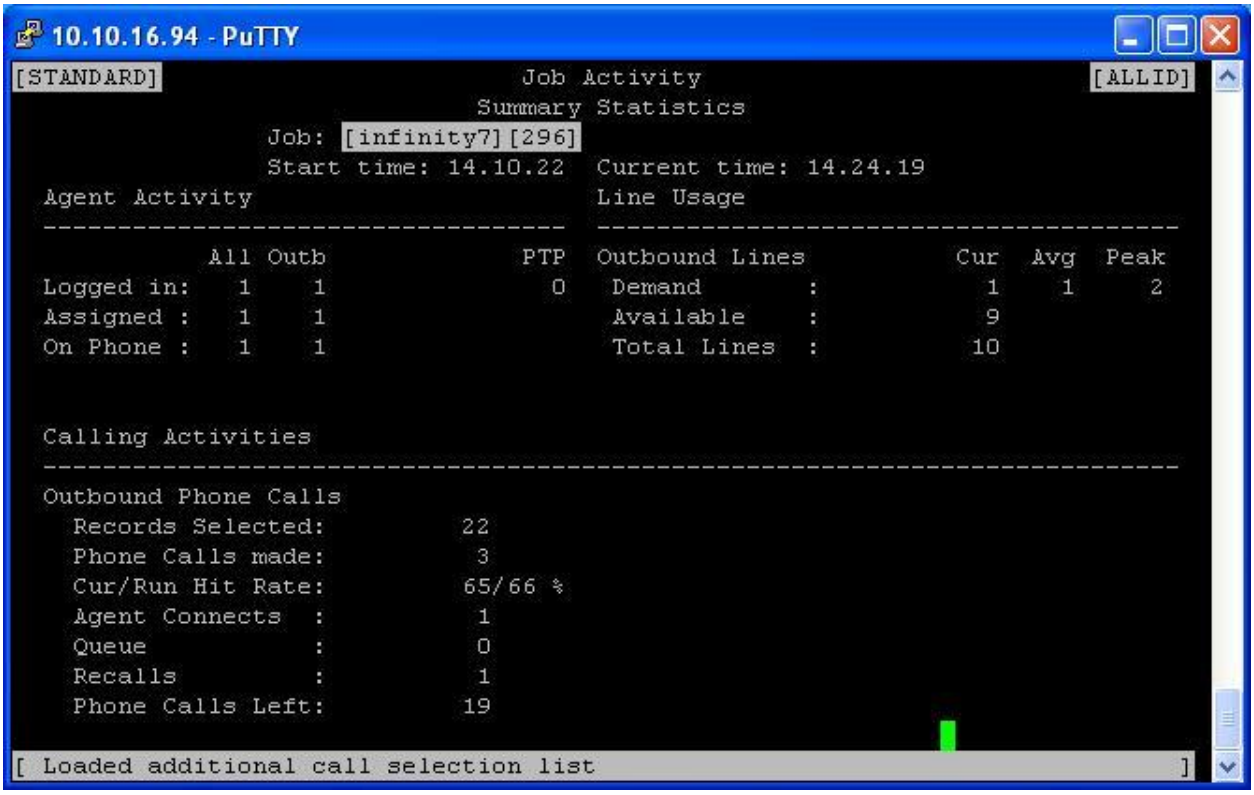
This section provides the tests that can be performed to verify proper configuration of Proactive Contact and PCS DataManager.

7.1. Verify Avaya Proactive Contact

Log into the Linux shell of the Proactive Contact server, and issue the "netstat | grep enserver" command. Verify that there is an entry showing an **ESTABLISHED** connection between the Proactive Contact Event Server and the PCS DataManager server running the PCSEventService component, as shown below.

```
$ netstat | grep enserver
tcp        0      0 PC41:enserver_ssl           PC41:41868                ESTABLISHED
tcp        0      0 PC41:enserver_ssl           PC41:32897                ESTABLISHED
tcp        0      0 PC41:41868                  PC41:enserver_ssl         ESTABLISHED
tcp        0      0 PC41:enserver_ssl           10.10.16.67:50599         ESTABLISHED
tcp        0      0 PC41:32897                  PC41:enserver_ssl         ESTABLISHED
```

Start the infinite job, and log agents in to handle the outbound calls. Issue the "jobmon" command and select the applicable job to monitor. In the **Job Activity Summary Statistics** screen, verify that records are being selected and that phone calls are being made, as shown below.



©2012 Avaya Inc. All Rights Reserved.

7.2. Verify Ulane Tech PCS DataManager

Follow the procedures in **Section 6.2** to launch the PCS DataManager web interface. Select **任务监控** from the left pane, to display the screen below. Verify that there is an entry reflecting the active infinite job, and the following field values match the corresponding values from Proactive Contact.

- **服务器名称:** The host name of Proactive Contact from **Section 5.3**.
- **任务名称:** The job name from **Section 7.1**.
- **总外呼数:** The records selected from **Section 7.1**.
- **剩余外呼数:** The phone calls left from **Section 7.1**.
- **拔通总数量:** The phone calls made from **Section 7.1**.
- **座席登录数:** The logged in value from **Section 7.1**.
- **任务开始时间:** The start time from **Section 7.1**.

©2012 Avaya Inc. All Rights Reserved.

8. Conclusion

These Application Notes describe the configuration steps required for Ulane Tech PCS DataManager to successfully interoperate with Avaya Proactive Contact with PG230. All feature and serviceability test cases were completed with observations noted in **Section 2.2**.

9. Additional References

This section references the product documentation relevant to these Application Notes.

1. *Administering Avaya Aura*™ *Communication Manager*, Document 03-300509, Issue 6.0, Release 6.0, June 2010, available at http://support.avaya.com.

2. *Administering Avaya Proactive Contact*, Release 4.2, May 2010, available at http://support.avaya.com.

3. *Avaya PCS 数据管理系统*, V1.6.1, September 2012, available from Ulane Support.

©2012 Avaya Inc. All Rights Reserved.

©2012 Avaya Inc. All Rights Reserved.
Avaya and the Avaya Logo are trademarks of Avaya Inc. All trademarks identified by ® and ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners. The information provided in these Application Notes is subject to change without notice. The configurations, technical data, and recommendations provided in these Application Notes are believed to be accurate and dependable, but are presented without express or implied warranty. Users are responsible for their application of any products specified in these Application Notes.

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 devconnect@avaya.com.

©2012 Avaya Inc. All Rights Reserved.