



Application Notes for Teleopti CCC with Avaya IQ using the Teleopti Historical Interface – Issue 1.0

Abstract

These Application Notes describe the configuration steps required to integrate Teleopti CCC with Avaya IQ using the Teleopti Historical interface to capture ACD call center data from Avaya Aura™ Communication Manager. Teleopti CCC is a workforce management solution used to forecast, plan and schedule operations for contact centers. Teleopti CCC uses the historical interface to capture queue and agent data from Avaya IQ. This interface is provided by Avaya Professional Services.

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 configuration steps required to integrate Teleopti CCC with Avaya IQ using the Teleopti Historical interface to capture ACD call center data from Avaya Aura™ Communication Manager. Teleopti CCC is a workforce management solution used to forecast, plan and schedule operations for contact centers. Teleopti CCC uses the historical interface to capture queue and agent data from Avaya IQ. This interface is provided by Avaya Professional Services.

The Avaya IQ Teleopti historical interface generates the following reports:

- Queue Report
- Agent Report
- Agent Queue Report
- Queue Distribution Report (currently not used by Teleopti CCC 7.1)

Note: Sample data for each report is provided in the Appendix of these Application Notes.

The historical data is sent periodically by Avaya IQ to a separate FTP server at the end of each predetermined interval (e.g., 15 minutes). The Teleopti historical interface on Avaya IQ starts up automatically at system boot up and transmits historical interval data using FTP. A Linux “cron” daemon is scheduled to run 10 minutes after an interval completes. Teleopti CCC retrieves the data from the FTP server, parses the raw data streams, and makes the data available for viewing on its client software. Avaya Professional Services installs and configures the Teleopti historical interface on Avaya IQ.

1.1 Interoperability Compliance Testing

The interoperability compliance test focused on verifying the ability of Teleopti CCC to receive historical data via FTP from Avaya IQ and to parse and display the data accurately on the Teleopti CCC application.

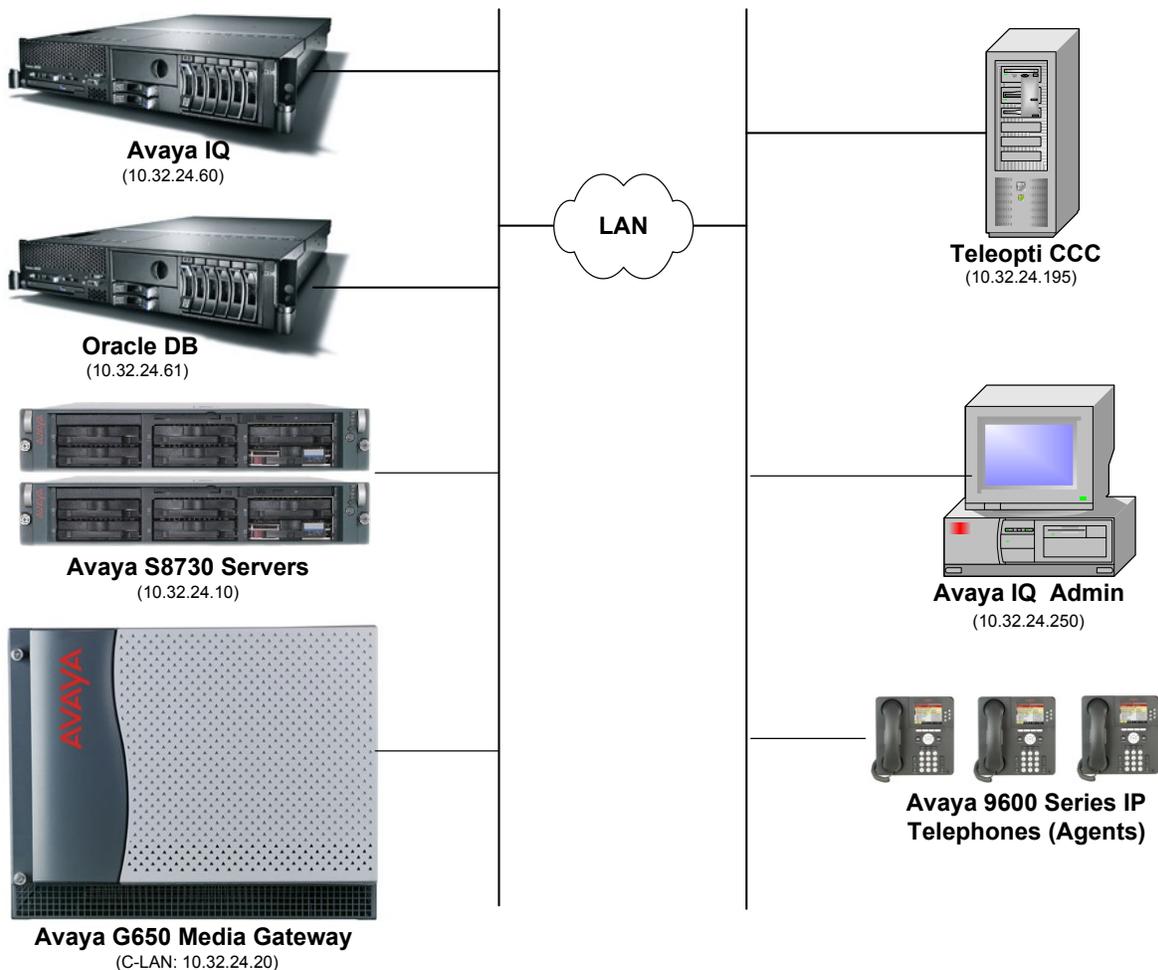
1.2 Support

Technical support on Teleopti CCC can be obtained via web, phone, or email.

- **Web:** <http://www.teleopti.com>
- **Phone:** +46 8 568 950 10
- **Email:** support@teleopti.com

2 Reference Configuration

The network diagram below illustrates the test configuration. In this configuration, Avaya Aura™ Communication Manager receives calls to the skills and VDNs monitored by Avaya IQ. The calls are then routed to available agents in the ACD call center. Call center information is sent from Communication Manager to Avaya IQ over a configured link. Avaya IQ stores the call and agent data in its database and also sends the data to Teleopti CCC using the Teleopti historical interface. The Teleopti CCC application is used to view the historical data and the Avaya IQ Admin PC is used to access the Teleopti historical interface menu. The Avaya IQ OAM and Reporting interfaces are accessed from an Internet browser on any Windows PC.



Teleopti CCC with Avaya Aura™ Communication Manager and Avaya IQ

3 Equipment and Software Validated

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

Equipment	Software
Avaya S8730 Servers and Avaya G650 Media Gateway	Avaya Aura™ Communication Manager 5.2.1 (R015x.02.1.016.4) with Service Pack 1 (Patch 17959)
Avaya IQ	5.0.1
Avaya 9600 Series IP Telephones	3.0 (H.323)
Teleopti CCC Teleopti Log Server Teleopti ETL Tool	7.1.206.31127

4 Configure Avaya Aura™ Communication Manager

This section provides the procedures for configuring Avaya Aura™ Communication Manager. The procedures include the following areas:

- Verify Communication Manager Options
- Administer reporting adjunct release
- Administer IP node names for C-LAN
- Administer IP interface for C-LAN
- Administer processor interface channel
- Administer measured VDN
- Administer measured Skill

The detailed administration of contact center devices such as ACD/Skill, VDN, Vector, and Agents are assumed to be in place. These Application Notes will only cover how to enable ACD/Skill, VDN, and Agent data to be sent to Avaya IQ.

4.1 Verify Communication Manager Software Options

Log into the System Access Terminal (SAT) to verify that the Communication Manager license has proper permissions for features illustrated in these Application Notes. Use the “display system-parameters customer-options” command to verify that the **G3 Version** field is set to “V15” on **Page 1**, as shown below.

```
display system-parameters customer-options                               Page 1 of 11
                                OPTIONAL FEATURES

G3 Version: V15                                                    Software Package: Standard
  Location: 1                                                            RFA System ID (SID): 1
  Platform: 6                                                            RFA Module ID (MID): 1

                                USED
                                Platform Maximum Ports: 48000 222
                                Maximum Stations: 36000 149
                                Maximum XMOBILE Stations: 0 0
  Maximum Off-PBX Telephones - EC500: 5 0
  Maximum Off-PBX Telephones - OPS: 100 10
  Maximum Off-PBX Telephones - PBFMC: 0 0
  Maximum Off-PBX Telephones - PVFMC: 0 0
  Maximum Off-PBX Telephones - SCCAN: 0 0
```

Navigate to **Page 6** and verify that the **Call Center Release** field is set to “5.0”, as shown below.

```
display system-parameters customer-options                               Page 6 of 11
                                CALL CENTER OPTIONAL FEATURES

                                Call Center Release: 5.0

                                ACD? y                                Reason Codes? y
                                BCMS (Basic)? y                      Service Level Maximizer? n
                                BCMS/VuStats Service Level? y      Service Observing (Basic)? y
  BSR Local Treatment for IP & ISDN? n                            Service Observing (Remote/By FAC)? y
                                Business Advocate? y                Service Observing (VDNs)? y
                                Call Work Codes? y                  Timed ACW? y
  DTMF Feedback Signals For VRU? y                                Vectoring (Basic)? y
                                Dynamic Advocate? y                 Vectoring (Prompting)? y
  Expert Agent Selection (EAS)? y                                Vectoring (G3V4 Enhanced)? y
                                EAS-PHD? y                           Vectoring (3.0 Enhanced)? y
  Forced ACD Calls? n                                            Vectoring (ANI/II-Digits Routing)? y
                                Lookahead Interflow (LAI)? y        Vectoring (G3V4 Advanced Routing)? y
  Multiple Call Handling (On Request)? y                          Vectoring (CINFO)? y
  Multiple Call Handling (Forced)? y                              Vectoring (Best Service Routing)? y
  PASTE (Display PBX Data on Phone)? y                           Vectoring (Holidays)? n
  (NOTE: You must logoff & login to effect the permission changes.) Vectoring (Variables)? y
```

4.2 Administer Adjunct CCR Release

Use the “change system-parameters features” command and navigate to **Page 12**. Set the **Report Adjunct Release** field to the software release of Avaya IQ. In this case, “5.0” is used to correspond to Avaya IQ software release 5.0.

```
change system-parameters features                                     Page 12 of 18
      FEATURE-RELATED SYSTEM PARAMETERS

AGENT AND CALL SELECTION
      MIA Across Splits or Skills? y
      ACW Agents Considered Idle? y
      Call Selection Measurement: current-wait-time
Service Level Supervisor Call Selection Override? n
      Auto Reserve Agents: all

CALL MANAGEMENT SYSTEM
      REPORTING ADJUNCT RELEASE
      CMS (appl mis): R15
      IQ (appl ccr): 5.0

      BCMS/VuStats LoginIDs? y
      BCMS/VuStats Measurement Interval: hour
BCMS/VuStats Abandon Call Timer (seconds):
      Validate BCMS/VuStats Login IDs? n
      Clear VuStats Shift Data: on-login
      Remove Inactive BCMS/VuStats Agents? n
```

4.3 Administer IP Node Name for C-LAN

Use the “change node-names ip” command, to add entries for Avaya IQ and the C-LAN that will be used for connectivity. In this case, “avayaiq” and “10.32.24.60” are entered as **Name** and **IP Address** for the Avaya IQ server, and “clancrm” and “10.32.24.20” are entered as **Name** and **IP Address** for the C-LAN. The actual node names and IP addresses may vary. Submit these changes.

```
change node-names ip                                             Page 1 of 2
      IP NODE NAMES

      Name          IP Address
avayaiq          10.32.24.60
clancrm          10.32.24.20
```

4.4 Administer IP Interface for C-LAN

Add the C-LAN to the system configuration using the “add ip-interface 1a04” command. The actual slot number may vary. In this case, “1a04” is used as the slot number. Enter the C-LAN node name assigned from **Section 4.3** in the **Node Name** field.

Enter proper values for the **Subnet Mask** and **Node Name** fields. In this case, 255.255.255.0 is used so “/24” is entered and “clancrm” corresponds to the C-LAN used in the network configuration for these Application Notes. Set the **Enable Interface** field to “y”. Default values may be used in the remaining fields. Submit these changes.

```
add ip-interface 1a04                                     Page 1 of 3
                                                         IP INTERFACES
                                                         Type: C-LAN
                                                         Slot: 01A04           Target socket load and Warning level: 400
Code/Suffix: TN799 D           Receive Buffer TCP Window Size: 8320
Enable Interface? y           Allow H.323 Endpoints? y
                                                         VLAN: n               Allow H.248 Gateways? y
Network Region: 1             Gatekeeper Priority: 5
                                                         IPV4 PARAMETERS
Node Name: clancrm
Subnet Mask: /24
Gateway Node Name: Gateway001
                                                         Ethernet Link: 1
Network uses 1's for Broadcast Addresses? y
```

4.5 Administer Processor Interface Channel

Assign a new processor interface channel with the “change communication-interface processor-channels” command. Add an entry with the following values and submit the changes.

- **Enable:** “y”
- **Appl.:** “ccr”
- **Mode:** “s” for server mode.
- **Interface Link:** Link number for the C-LAN configured in **Section 4.4**.
- **Interface Chan:** TCP channel number for Avaya IQ. In this case “5002”.
- **Destination Node:** Avaya IQ server node name from **Section 4.3**.
- **Destination Port:** “0”
- **Session Local:** Corresponding channel number in **Proc Chan** field. In this case “1”.
- **Session Remote:** Corresponding channel number in **Proc Chan** field. In this case “1”.

The **Interface Chan** field contains the Avaya IQ TCP channel number, which is defined as part of the Avaya IQ installation. For the compliance testing, TCP channel number of “5002” was used.

```
change communication-interface processor-channels                               Page 1 of 24
                                PROCESSOR CHANNEL ASSIGNMENT
Proc                               Gtwy      Interface      Destination      Session      Mach
Chan Enable  Appl.   To Mode Link/Chan      Node          Port  Local/Remote ID
  1:   y    ccr           s   1   5002  avayaiq         0     1     1
  2:   n
```

4.6 Administer Measured VDN

Use the “change vdn n” command, where “n” is the extension of the VDN to be measured by Avaya IQ. Set the **Measured** field to “external” or “both” to enable measurement data on the VDN to be sent to Avaya IQ. Repeat this step for all VDNs that will be monitored by Avaya IQ.

```
change vdn 75000                                                             Page 1 of 3
                                VECTOR DIRECTORY NUMBER

                                Extension: 75000
                                Name*: IQ VDN 1
                                Destination: Vector Number      250
                                Attendant Vectoring? n
                                Meet-me Conferencing? n
                                Allow VDN Override? n
                                COR: 1
                                TN*: 1
                                Measured: both
                                Acceptable Service Level (sec): 20
                                Service Objective (sec): 20
                                VDN of Origin Annc. Extension*:
                                1st Skill*:
                                2nd Skill*:
                                3rd Skill*:

* Follows VDN Override Rules
```

4.7 Administer Measured Skill

Use the “change hunt-group n” command, where “n” is the extension of the ACD/Skill group number to be measured by Avaya IQ. Set the **Measured** field to “external” or “both” to enable real-time measurement data on the ACD/Skill group and the associated agents to be sent to Avaya IQ. Repeat this step for all ACD/Skill groups that will be measured by Avaya IQ.

```
change hunt-group 250                                     Page 2 of 3
                                                         HUNT GROUP
Skill? y          Expected Call Handling Time (sec): 180
AAS? n           Service Level Target (% in sec): 80 in 20
Measured: both Service Objective (sec): 20
Supervisor Extension: Service Level Supervisor? n
Controlling Adjunct: none
VuStats Objective:
Timed ACW Interval (sec): Dynamic Queue Position? n
Multiple Call Handling: none
Interruptible Aux Threshold: none
Redirect on No Answer (rings):
Redirect to VDN:
Forced Entry of Stroke Counts or Call Work Codes? n
```

5 Configure Avaya IQ

Configuration of the Teleopti historical interface is performed by Avaya Professional Services and is outside the scope of these Application Notes. After the interface is configured, the user can follow the procedure below to enable the interface. The historical interface was configured to generate four reports.

Note: For detailed instructions on configuring Avaya IQ, including administering the link to Communication Manager, refer to [3]. Link administration is not covered in these Application Notes since the focus is on the Teleopti historical interface.

5.1 Configure config File

The config file located in the /opt/Avaya/pserv/teleopti directory was configured as follows. The config file includes an entry for each session or report. The config file is configured by Avaya Professional Services, but it is included here for informational purposes.

```
#!/usr/local/bin/ksh
# make a backup of this file before modifying
# see instructions on kona for values of specific items
set -a                # automatically export all variables

sessions=4           # number of sessions to run

source[1]=1          # source number for report output
report[1]=queue      # queue, agent, agent_queue, queue_dist
time[1]=ALL          # time to run (set to ALL for interval reports)
int[1]=15            # 0,15,30,60 (set to 0 for daily trend)
time[1]=ALL          # time to run (only valid for daily reports)
rname[1]="Teleopti Queue-11_28_2007_17_27_28" # exact report name
zone[1]=2            # time zone parameter
tz[1]=US/Eastern     # source timezone
group[1]="Queue Group EIDs=2" # group EID(s)
login[1]=*****      # API login
pword[1]=*****      # API password
send[1]=ftp          # ftp, sftp, ldc, socket
port[1]=7000         # port number (only used for sockets)
file[1]=queue_[yr4][mon][day]_[intr].txt #
[mon][day][yr2][yr4][intr][hr][mn][source]
dir[1]=.             # ftp, sftp, ldc directory to put files
host[1]=ftp.teleopti.com # ftp, sftp, socket destination host name or ip
user[1]=*****      # ftp, sftp login
pass[1]='*****'    # ftp password
type[1]=put          # ftp, ldc put or append (sftp is always put)
mode[1]=ascii        # ftp ascii or binary

source[2]=1          # source number for report output
report[2]=agent      # queue, agent, agent_queue, queue_dist
time[2]=ALL          # time to run (set to ALL for interval reports)
int[2]=15            # 0,15,30,60 (set to 0 for daily trend)
rname[2]="Teleopti Agent-11_28_2007_17_28_09" # exact report name
zone[2]=2            # time zone parameter
tz[2]=US/Eastern     # source timezone
group[2]="Work Group EIDs=2" # group EID(s)
login[2]=*****      # API login
pword[2]=*****      # API password
```

```

send[2]=ftp # ftp, sftp, ldc, socket
port[2]=7000 # port number (only used for sockets)
file[2]=agent_[yr4][mon][day]_[intr].txt #
[mon][day][yr2][yr4][intr][hr][mn][source]
dir[2]=. # ftp, sftp, ldc directory to put files
host[2]=ftp.teleopti.com # ftp, sftp, socket destination host name or ip
user[2]=***** # ftp, sftp login
pass[2]='*****' # ftp password
type[2]=put # ftp, ldc put or append (sftp is always put)
mode[2]=ascii # ftp ascii or binary

source[3]=1 # source number for report output
report[3]=agent_queue # queue, agent, agent_queue, queue_dist
time[3]=ALL # time to run (set to ALL for interval reports)
int[3]=15 # 0,15,30,60 (set to 0 for daily trend)
rname[3]="Teleopti Agent-Queue-11_28_2007_17_29_06" # exact report name
zone[3]=2 # time zone parameter
tz[3]=US/Eastern # source timezone
group[3]="Work Group EIDs=2" # group EID(s)
login[3]=***** # API login
pword[3]=***** # API password
send[3]=ftp # ftp, sftp, ldc, socket
port[3]=7000 # port number (only used for sockets)
file[3]=agent_queue_[yr4][mon][day]_[intr].txt #
[mon][day][yr2][yr4][intr][hr][mn][source]
dir[3]=. # ftp, sftp, ldc directory to put files
host[3]=ftp.teleopti.com # ftp, sftp, socket destination host name or ip
user[3]=***** # ftp, sftp login
pass[3]='*****' # ftp password
type[3]=put # ftp, ldc put or append (sftp is always put)
mode[3]=ascii # ftp ascii or binary

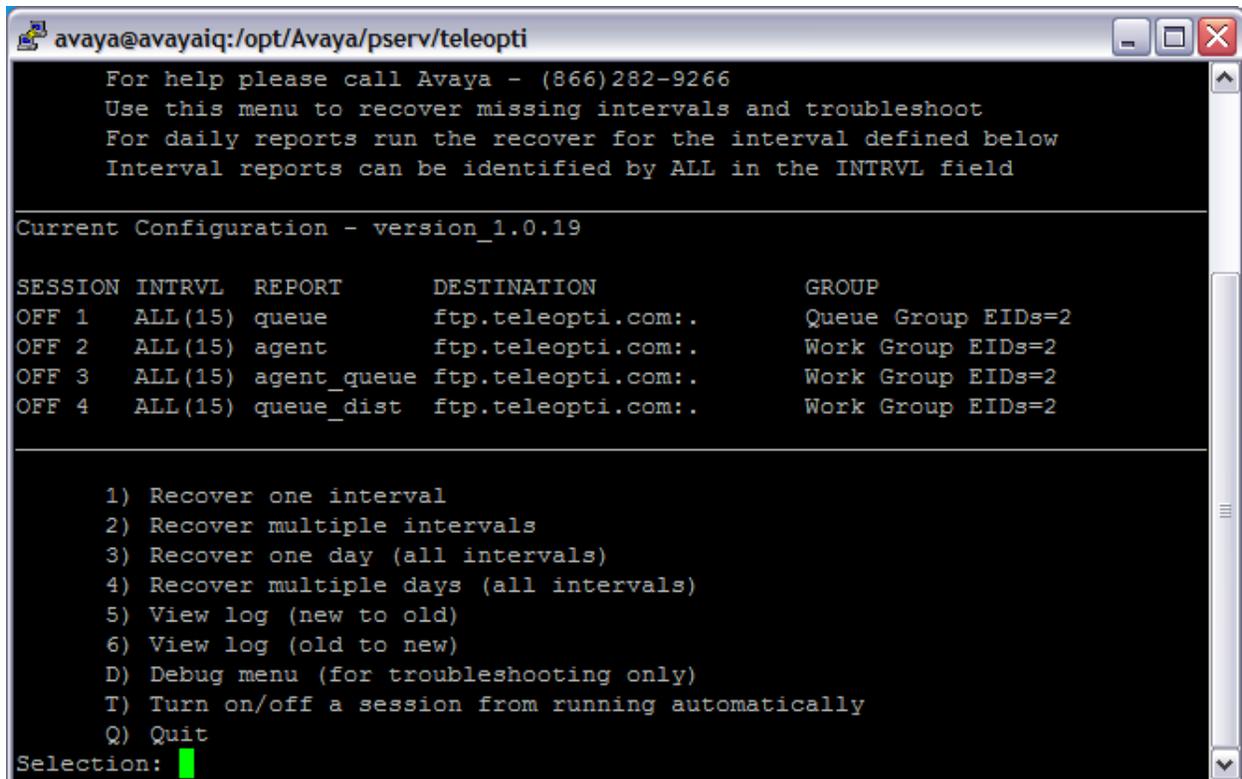
source[4]=1 # source number for report output
report[4]=queue_dist # queue, agent, agent_queue, queue_dist
time[4]=ALL # time to run (set to ALL for interval reports)
int[4]=15 # 0,15,30,60 (set to 0 for daily trend)
tz[4]=US/Eastern # source timezone
rname[4]="Teleopti Queue Distribution-11_28_2007_17_29_53" # exact report name
zone[4]=2 # time zone parameter
group[4]="Work Group EIDs=2" # group EID(s)
login[4]=***** # API login
pword[4]=***** # API password
send[4]=ftp # ftp, sftp, ldc
file[4]=queue_dist_[yr4][mon][day]_[intr].txt #
[mon][day][yr2][yr4][intr][hr][mn][source]
dir[4]=. # ftp, sftp, ldc directory to put files
host[4]=ftp.teleopti.com # ftp, sftp destination host name or ip
user[4]=***** # ftp, sftp login
pass[4]='*****' # ftp password
type[4]=put # ftp, ldc put or append (sftp is always put)
mode[4]=ascii # ftp ascii or binary

```

5.2 Enable Historical Interface

Use a terminal emulator to connect to Avaya IQ and log in with the appropriate credentials. At the command prompt, follow these steps:

- Change to the `/opt/Avaya/pserv/teleopti` directory
- Run the `./menu` command to display the **Teleopti Historical Interface Menu** shown below.



```
avaya@avayaiq:/opt/Avaya/pserv/teleopti
For help please call Avaya - (866)282-9266
Use this menu to recover missing intervals and troubleshoot
For daily reports run the recover for the interval defined below
Interval reports can be identified by ALL in the INTRVL field

Current Configuration - version_1.0.19

SESSION INTRVL  REPORT      DESTINATION      GROUP
OFF 1    ALL(15)  queue        ftp.teleopti.com:.  Queue Group EIDs=2
OFF 2    ALL(15)  agent        ftp.teleopti.com:.  Work Group EIDs=2
OFF 3    ALL(15)  agent_queue  ftp.teleopti.com:.  Work Group EIDs=2
OFF 4    ALL(15)  queue_dist   ftp.teleopti.com:.  Work Group EIDs=2

1) Recover one interval
2) Recover multiple intervals
3) Recover one day (all intervals)
4) Recover multiple days (all intervals)
5) View log (new to old)
6) View log (old to new)
D) Debug menu (for troubleshooting only)
T) Turn on/off a session from running automatically
Q) Quit
Selection: █
```

The Teleopti historical interface may be turned on and off. Enter 'T' to toggle the interface on or off, followed by the **Enter** key. When prompted for the session(s) to stop or start, enter the appropriate session number or enter "1 2 3 4" to toggle the status of all the sessions, followed by the **Enter** key as shown below. In the configuration, session numbers 1-4 were used, one session per report.

```

avaya@avayaiq:/opt/Avaya/pserv/teleopti

This will toggle the session to run or not run automatically
You can still run a manual recover from the menu
* If the session is currently on it will be turned off
* If the session is currently off it will be turned on

Current Configuration - version_1.0.19

SESSION INTRVL  REPORT      DESTINATION      GROUP
OFF 1   ALL(15) queue    ftp.teleopti.com:. Queue Group EIDs=2
OFF 2   ALL(15) agent    ftp.teleopti.com:. Work Group EIDs=2
OFF 3   ALL(15) agent_queue ftp.teleopti.com:. Work Group EIDs=2
OFF 4   ALL(15) queue_dist ftp.teleopti.com:. Work Group EIDs=2

Enter session number(s) or press <ENTER> for all sessions [ex. 1 2 4]: 1 2 3 4

```

After toggling the session status, the session status is updated and the status is displayed as ON as shown below.

```

avaya@avayaiq:/opt/Avaya/pserv/teleopti

For help please call Avaya - (866)282-9266
Use this menu to recover missing intervals and troubleshoot
For daily reports run the recover for the interval defined below
Interval reports can be identified by ALL in the INTRVL field

Current Configuration - version_1.0.19

SESSION INTRVL  REPORT      DESTINATION      GROUP
ON 1   ALL(15) queue    ftp.teleopti.com:. Queue Group EIDs=2
ON 2   ALL(15) agent    ftp.teleopti.com:. Work Group EIDs=2
ON 3   ALL(15) agent_queue ftp.teleopti.com:. Work Group EIDs=2
ON 4   ALL(15) queue_dist ftp.teleopti.com:. Work Group EIDs=2

1) Recover one interval
2) Recover multiple intervals
3) Recover one day (all intervals)
4) Recover multiple days (all intervals)
5) View log (new to old)
6) View log (old to new)
D) Debug menu (for troubleshooting only)
T) Turn on/off a session from running automatically
Q) Quit
Selection:

```

6 Configure Teleopti CCC

This section provides the procedures for configuring Teleopti CCC. The procedures fall into the following areas:

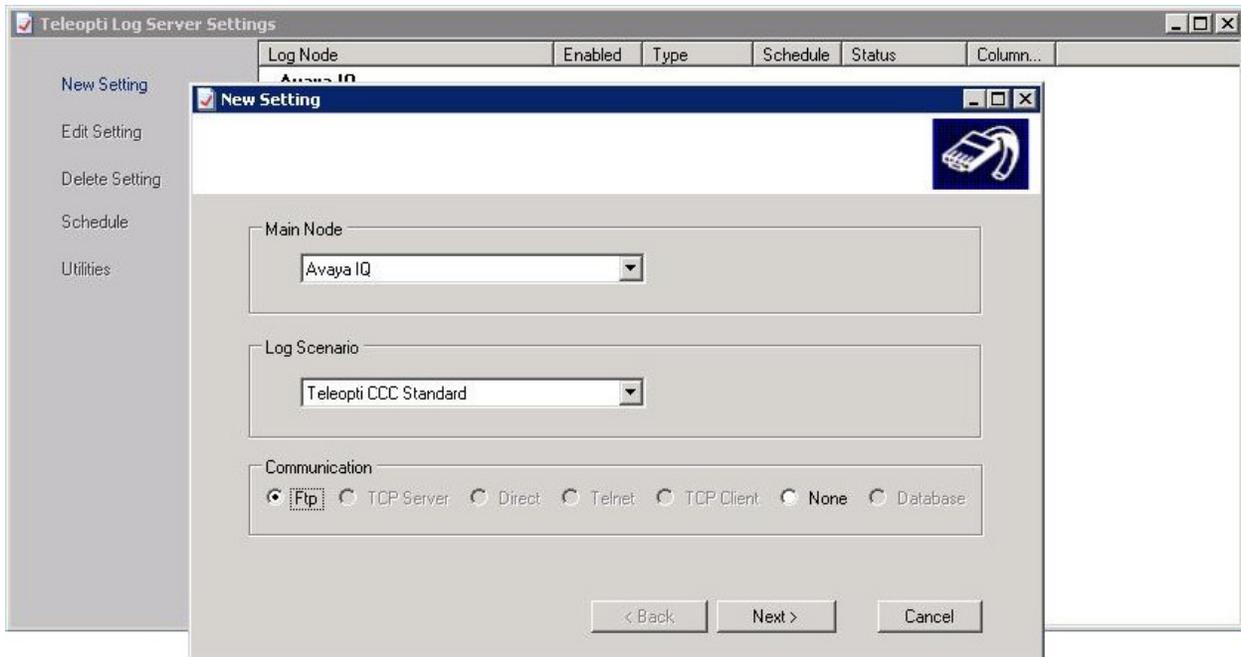
- Administer historical interface via the Teleopti Log Server
- Administer Teleopti ETL Tool to schedule processing of the data

Configuration of Teleopti CCC is typically performed by Teleopti technicians. The procedural steps are presented in these Application Notes for informational purposes.

6.1 Configure Historical Interface

The historical interface is configured via the **Teleopti Log Server**. Launch the **Teleopti Log Server** by navigating to Teleopti→Teleopti Log→Teleopti Log Server Settings. Click on the **New Setting** option.

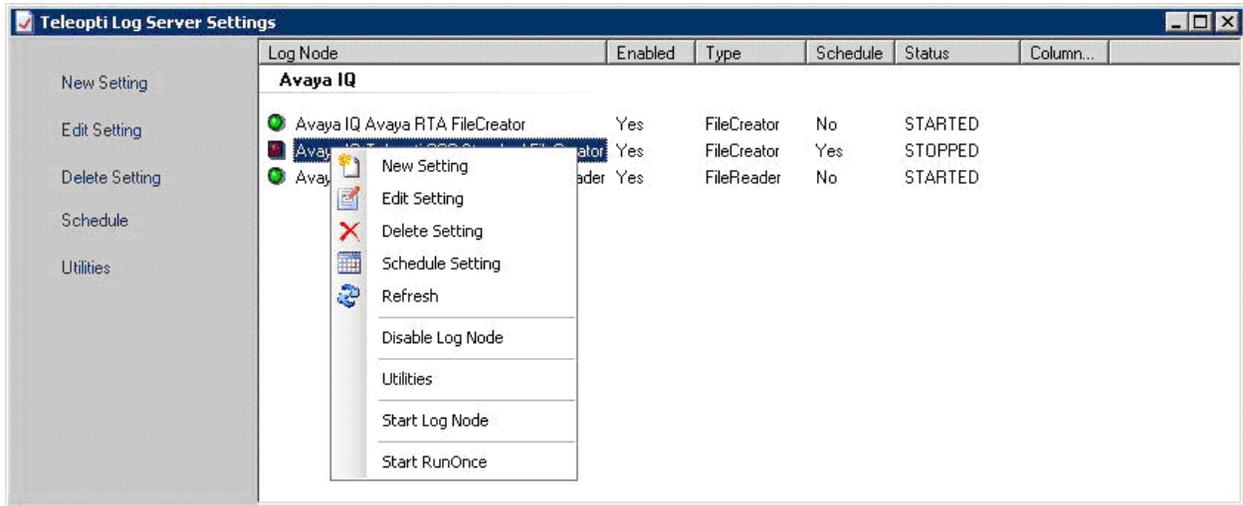
In the **New Setting** window, set the **Main Node** field to “Avaya IQ” and the **Log Scenario** field to “Teleopti CCC Standard”. The **Communication** field should be set to “Ftp”. Click **Next**.



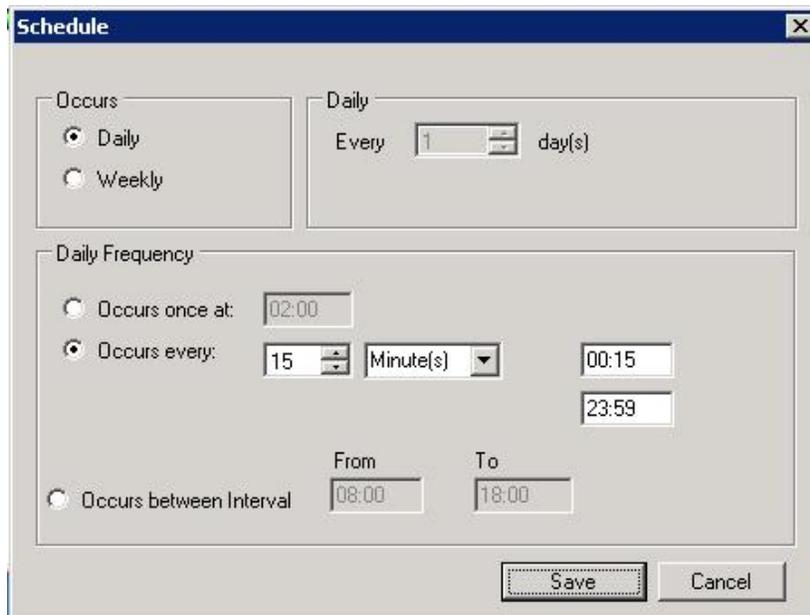
In the **Edit Setting** window, set the fields as shown below, and then click **Finish**.

parameter	value
FileName	*.txt
HostName	ftp.teleopti.com
Passive	False
PassWord	*****
Path	C:\AvayaIQ
RemoteDir	
TimeOut	20
UserName	username
Commands	GetFiles;DeleteFiles
ShowDebug	True
Delimiter	SemiColon

Two entries are created in the **Teleopti Log Server Settings** window: *Avaya IQ Teleopti CCC Standard FileCreator* and *Avaya IQ Teleopti CCC Standard FileReader*. Right-mouse click on *Avaya IQ Teleopti CCC Standard FileCreator* and select **Schedule Setting** to schedule when data files should be retrieved from the FTP server and stored in a predefined directory on the Teleopti CCC server. The data directory was specified in the **Path** field when the historical interface was configured above in the **New Setting** window. The **Path** field was set to C:\Avaya IQ. After storing the data in the specified directory, *Avaya IQ Teleopti CCC FileReader* will take the data and put it in the log database.



In the **Schedule** window, configure the **Occurs every** field to “15 Minute(s)”. For this compliance testing, Avaya IQ sent historical data every 15 minutes. The **Schedule** should be configured to correspond to the customer’s environment. Click **Save**.



6.2 Administer Teleopti ETL Tool

Teleopti CCC needs to be configured with the schedule for how often it processes the data in the log database and stores it in its aggregation or reporting database (i.e., analytics database).

The schedule for processing the data is configured via the Teleopti ETL Tool, which can be launch by navigating to Teleopti→Teleopti ETL Tool. The following window displays the schedule that was configured during the compliance test.

ScheduleName	JobName	Enabled	Description
Intraday	Intraday	True	Occurs every day every 15 minute(s) between 00

The following window displays the configuration details for the schedule. The intraday data is processed every 15 minutes per the configuration below.

Schedule Name: Intraday Enabled
Job: Intraday

Daily Frequency
 Occurs once at: 00:00
 Occurs every: 15 minute(s) Starting at: 00:23 Ending at: 23:59

Job Parameters
Log Data Source: Teleopti CCC Agg: Avaya IQ

Initial - Relative Data Period
 Today
 Start: 0 day(s) End: 365 day(s)

Queue Statistics - Relative Data Period
 Today
 Start: -1 day(s) End: 0 day(s)

Agent Statistics - Relative Data Period
 Today
 Start: -1 day(s) End: 0 day(s)

Schedule - Relative Data Period
 Today
 Start: -60 day(s) End: 365 day(s)

Forecast - Relative Data Period
 Today
 Start: -60 day(s) End: 365 day(s)

Description
Occurs every day every 15 minute(s) between 00:23 and 23:59. Using the log data source 'Teleopti CCC Agg: Avaya IQ'.

OK Cancel

7 General Test Approach and Test Results

The interoperability compliance test included feature and serviceability testing. The feature testing focused on verifying that Teleopti CCC can receive, parse and display historical data from Avaya IQ, including Queue (Split/Skill) and Agent data.

The feature test cases were performed manually. Incoming calls were made to the monitored Queues and Routing Points to generate call center data that is sent to Teleopti CCC.

The serviceability testing focused on verifying the ability of Teleopti CCC to receive data after toggling the status of the historical interface and to receive historical data recovered for a specific date and time interval.

The verification of all tests included checking the accuracy and proper display of historical data at the Teleopti CCC server.

All test cases passed.

8 Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Aura™ Communication Manager, Avaya IQ, and Teleopti CCC.

8.1 Verify Avaya Aura™ Communication Manager

Verify the status of the processor interface channel by using the “status processor-channels n” command, where “n” is the processor channel number from **Section 4.5**. Verify that the **Session Layer Status** is “In Service”, and that the **Socket Status** is “TCP connected”, as shown below.

```
status processor-channels 1
                        PROCESSOR-CHANNEL STATUS

Channel Number: 1
Session Layer Status: In Service
Socket Status: TCP connected
Link Number: 1
Link Type: ethernet
Message Buffer Number: 0

Last Failure: Far end sent disconnect messag
At: 01/25/10 15:26
```

Verify the status of the TCP/IP link number by using the “status link n” command, where “n” is the TCP/IP link number assigned to the C-LAN used to connect to the Avaya IQ server from **Section 4.4**. Verify that the **Link Status** is “connected”, and that the **Service State** is “in-service/active”, as shown below.

```
status link 1
                        LINK/PORT STATUS
Page 1 of 5

Link Number: 1
Link Status: connected
Link Type: ethernet

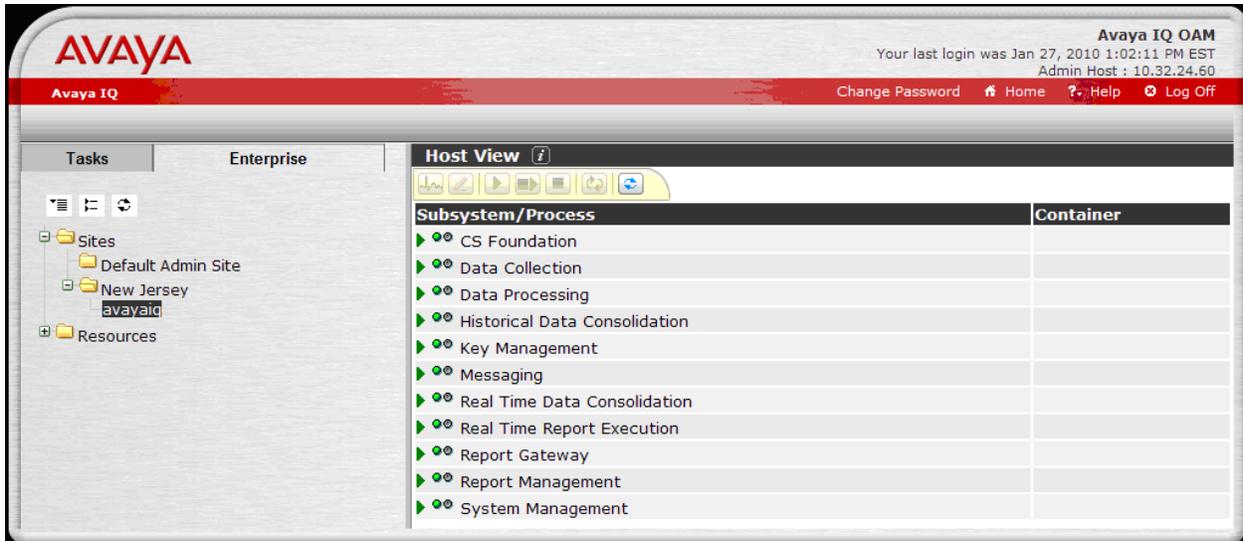
Service Port Location: 01A0417

Service State: in-service/active
Node Name: clancrm
Source IP Address: 10.32.24.20/24

Broadcast Address: 10.32.24.255
Physical Address: 00:04:0d:4a:ef:9c
Enabled? yes
Maintenance Busy? no
Active Channels: 2
```

8.2 Verify Avaya IQ

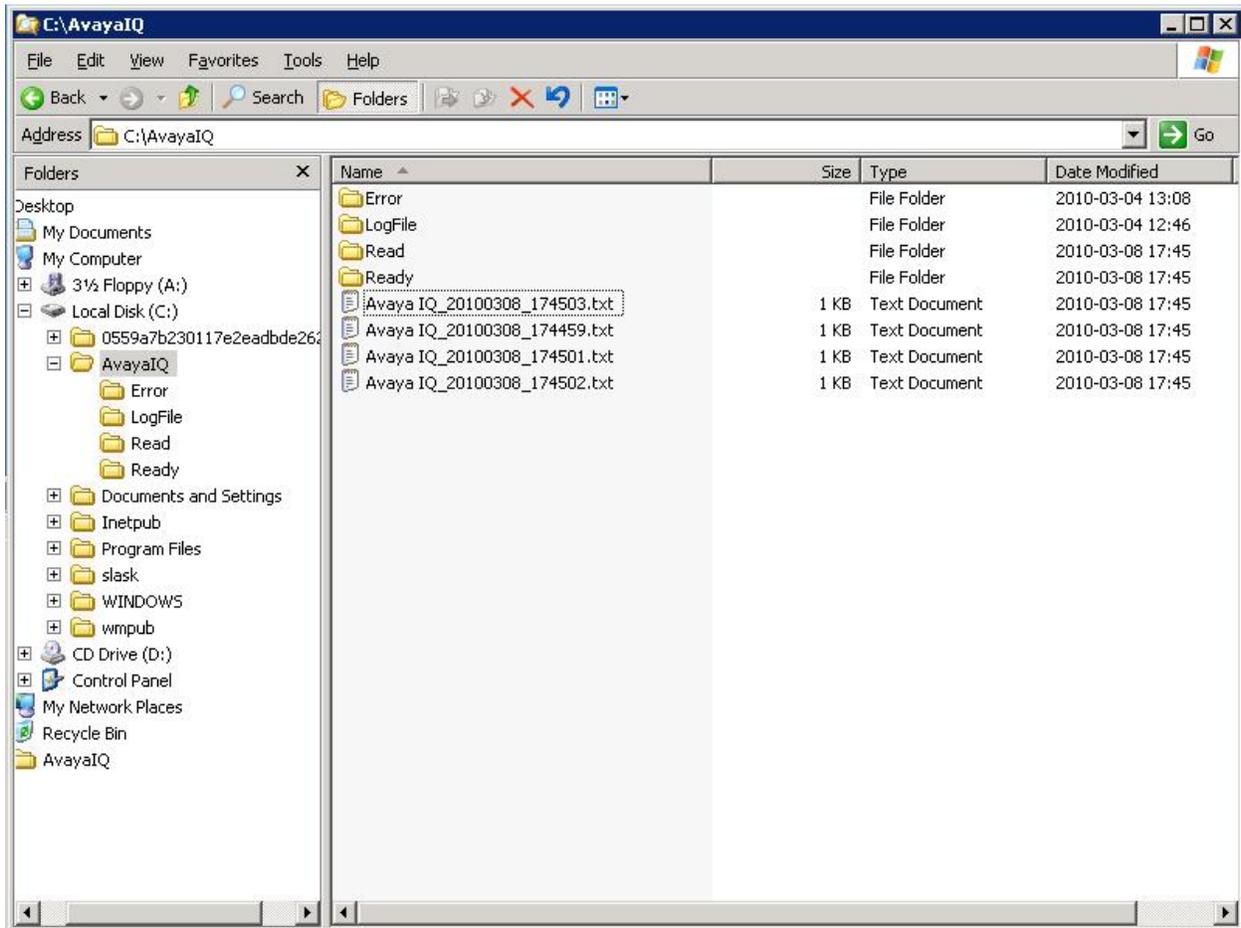
From an Internet browser, access the Avaya IQ OAM Interface by entering `https://<IP Addr>:28443/CS-OAM` as the URL. Log in with the proper credentials. From the OAM interface, select the **Enterprise** tab in the left pane and navigate to Sites→Default Admin Site→<site name> to display the status of all the Avaya IQ processes. Ensure that all the processes have been started as indicated by a green LED besides each process as shown in the figure below.



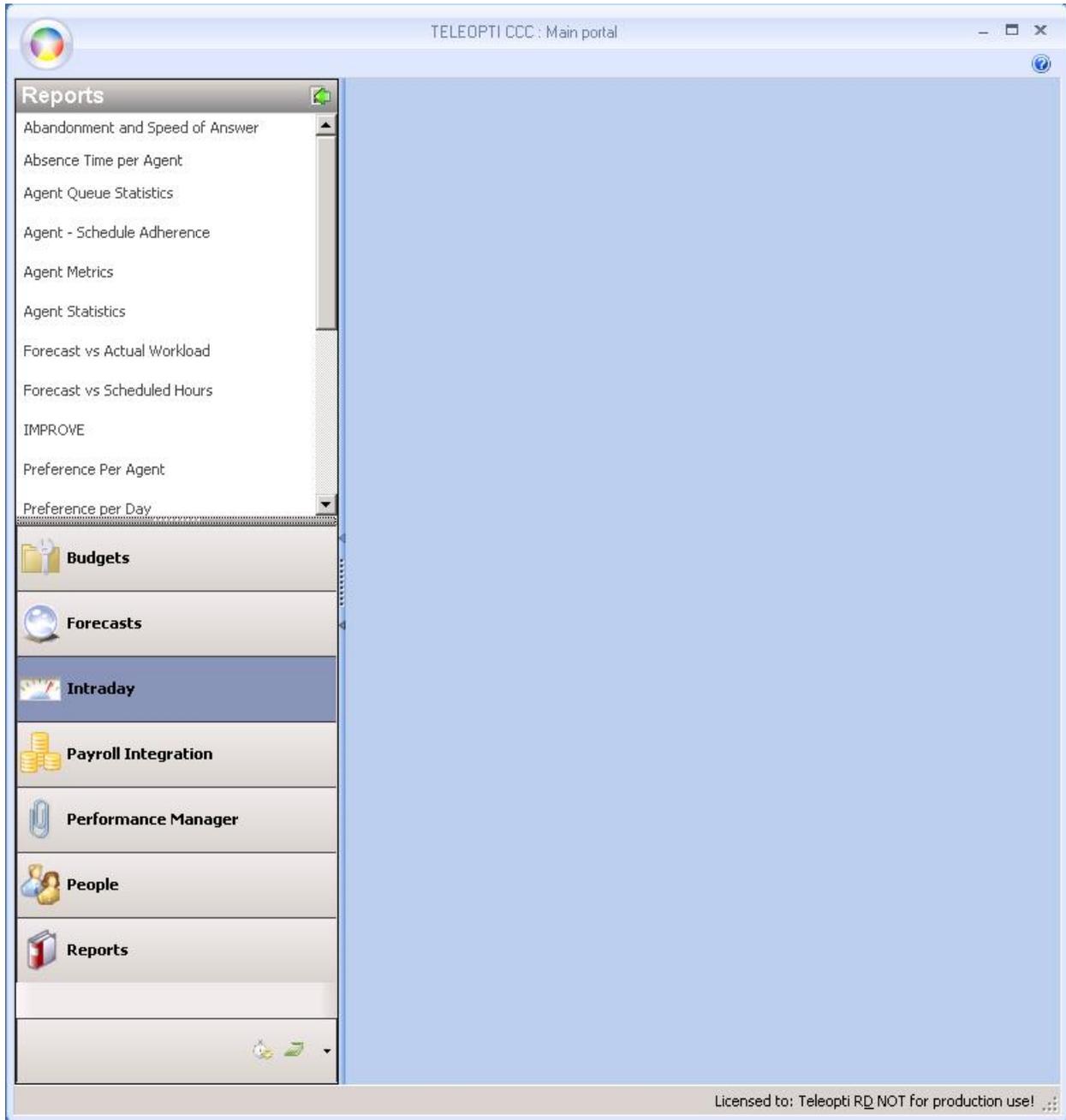
To verify that the session that the Teleopti historical interface is turned on, access the Teleopti historical interface menu as shown in **Section 5.2**.

8.3 Verify Teleopti CCC

This section verifies that Teleopti CCC can receive, parse, and display historical call center data from Avaya IQ. This data is displayed in three reports: Queue, Agent, and Agent Queue reports. To generate data, create call center activity by placing calls to monitored queues and routing points. Wait a few minutes after the time interval expires. For example, during the compliance test, a 15-minute time interval was used and the data was sent via FTP to Teleopti CCC about 10 minutes after the interval expired. Teleopti CCC retrieved the call center data from a separate FTP server and then stored it in the C:\Avaya IQ directory as shown below. Periodically, Teleopti CCC would read the data from this directory, parse it, and store it in its database. Teleopti CCC can then generate reports using this data as shown in the subsequent sections.



To generate reports, open the Teleopti CCC application. The **Main Portal** window is displayed as shown below. Note that Teleopti CCC may require the user to log into the **Reports** module.



8.3.1 Verify Queue Report

To create a Queue report, select *Queue Statistics* under **Reports** from the **Main Portal** window. A report filter window is displayed as shown below. Select the Queue(s) and time period of interest, and then click the icon with magnifying glass at the bottom of the window.

demo demo (demo)

Queue Statistics

Skill:	<div style="border: 1px solid gray; padding: 2px;">Not Defined Channel sales Direct sales Direct sales campaign Email Invoice</div>	>> > < <<	<div style="border: 1px solid gray; padding: 2px;">Avaya IQ</div>
Workload:	<div style="border: 1px solid gray; height: 40px;"></div>	>> > < <<	<div style="border: 1px solid gray; padding: 2px;">Avaya IQ</div>
Queue:	<div style="border: 1px solid gray; height: 40px;"></div>	>> > < <<	<div style="border: 1px solid gray; padding: 2px;">IQ Queue 1 (250)</div>

Date From:	3/8/2010	Date To:	3/8/2010
Interval From:	00:00	Interval To:	24:00
Time Zone:	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna		

The Queue report is opened within an internet browser window. Below is a sample Queue report.

demo demo (demo)

Queue Statistics																
3/8/2010 9:06 PM																
1 (1)																
Selections Skill: Avaya IQ,Not Defined Workload: Avaya IQ,Not Defined Queue: IQ Queue 1 (250),IQ Queue 2 (260) Date: 3/8/2010 Interval: 00:00 - 24:00 Time Zone: (GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna																
Date / Interval	Queue	Offered Calls	Answered Calls	Answered Within Service Level	Abandoned Calls	Abandoned Within Service Level	Abandoned Short Calls	Overflow Out Calls	Overflow In Calls	Speed of Answer	Talk Time	After Call Work (ACW)	Handle Time	Time to Abandon	Longest Delay in Queue, Answered	Longest Delay in Queue, Abandoned
Totals:		36	25	22	8	0	0	0	0	0:04:49	0:34:29	0:30:52	1:05:21	0:00:51	0:00:37	0:00:25
3/8/2010		36	25	22	8	0	0	0	0	0:04:49	0:34:29	0:30:52	1:05:21	0:00:51	0:00:37	0:00:25
10:45-11:00	IQ Queue 1 (250)	0	0	0	0	0	0	0	0	0:00:00	0:30:42	0:30:05	1:00:47	0:00:00	0:00:00	0:00:00
11:00-11:15	IQ Queue 1 (250)	8	6	5	2	0	0	0	0	0:00:42	0:00:46	0:00:22	0:01:08	0:00:02	0:00:29	0:00:03
11:15-11:30	IQ Queue 1 (250)	6	4	4	2	0	0	0	0	0:00:27	0:00:04	0:00:25	0:00:29	0:00:02	0:00:19	0:00:03
12:00-12:15	IQ Queue 1 (250)	10	7	6	2	0	0	0	0	0:01:43	0:01:03	0:00:00	0:01:03	0:00:23	0:00:37	0:00:25
12:00-12:15	IQ Queue 2 (260)	1	1	1	0	0	0	0	0	0:00:03	0:00:12	0:00:00	0:00:12	0:00:00	0:00:03	0:00:00
14:00-14:15	IQ Queue 1 (250)	7	4	3	2	0	0	0	0	0:01:37	0:01:24	0:00:00	0:01:24	0:00:24	0:00:33	0:00:24
14:00-14:15	IQ Queue 2 (260)	2	1	1	0	0	0	0	0	0:00:13	0:00:05	0:00:00	0:00:05	0:00:00	0:00:11	0:00:00
14:15-14:30	IQ Queue 1 (250)	2	2	2	0	0	0	0	0	0:00:04	0:00:13	0:00:00	0:00:13	0:00:00	0:00:03	0:00:00
Totals:		36	25	22	8	0	0	0	0	0:04:49	0:34:29	0:30:52	1:05:21	0:00:51	0:00:37	0:00:25

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8.3.2 Verify Agent Report

To create an Agent report, select *Agent Statistics* under **Reports** from the **Main Portal** window. A report filter window is displayed as shown below. Select the Agents and time period of interest, and then click the icon with magnifying glass at the bottom of the window.

demo demo (demo)

The Agent report is opened within an internet browser window. Below is a sample Agent report.

demo demo (demo)

Date / Interval	Agent	Acd Login	Logged In Time	Ready Time	Not Ready Time	Idle Time	Admin Time	Direct Outbound Calls	Direct Outbound Calls Talk Time	Direct Incoming Calls	Direct Incoming Calls Talk Time
Totals:			26:08:42	26:07:30	0:01:12	10:12:33	0:00:00	1	0:00:05	3	0:00:30
3/8/2010			26:08:42	26:07:30	0:01:12	10:12:33	0:00:00	1	0:00:05	3	0:00:30
00:15-00:30	Ashley Andeen	IQ Agent 2	0:15:00	0:15:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
00:15-00:30	Juancho Banaag	IQ Agent 3	0:30:00	0:30:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
00:15-00:30	Pierre Baldi	IQ Agent 1	0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
00:15-00:30	Prashant Arora	IQ Agent 0	0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
00:45-01:00	Ashley Andeen	IQ Agent 2	0:15:00	0:15:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
00:45-01:00	Juancho Banaag	IQ Agent 3	0:30:00	0:30:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
00:45-01:00	Pierre Baldi	IQ Agent 1	0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
00:45-01:00	Prashant Arora	IQ Agent 0	0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
01:15-01:30	Ashley Andeen	IQ Agent 2	0:15:00	0:15:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
01:15-01:30	Juancho Banaag	IQ Agent 3	0:30:00	0:30:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
01:15-01:30	Pierre Baldi	IQ Agent 1	0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
01:15-01:30	Prashant Arora	IQ Agent 0	0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
01:45-02:00	Ashley Andeen	IQ Agent 2	0:15:00	0:15:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
01:45-02:00	Juancho Banaag	IQ Agent 3	0:30:00	0:30:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
01:45-02:00	Pierre Baldi	IQ Agent 1	0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
01:45-02:00	Prashant Arora	IQ Agent 0	0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
02:15-02:30	Ashley Andeen	IQ Agent 2	0:15:00	0:15:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00

8.3.3 Verify Agent Queue Report

To create an Agent Queue report, select *Agent Queue Statistics* under **Reports** from the **Main Portal** window. A report filter window is displayed as shown below. Select the Agents and time period of interest, and then click the icon with magnifying glass at the bottom of the window.

demo demo (demo)

Agent Queue Statistics

Skill:	<ul style="list-style-type: none">Not DefinedChannel salesDirect salesDirect sales campaignEmailInvoice	<ul style="list-style-type: none">>>><<<	<ul style="list-style-type: none">Avaya IQ
Workload:		<ul style="list-style-type: none">>>><<<	<ul style="list-style-type: none">Avaya IQ

Date From:	3/8/2010
Date To:	3/8/2010
Interval From:	00:00
Interval To:	24:00
Site:	All
Team:	Team Preferences
Agents:	All
Time Zone:	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna



The Agent Queue report is opened within an internet browser window. Below is a sample Agent Queue report consisting of two pages.

demo demo (demo)

Agent Queue Statistics							
Skill:		Avaya IQ					
Workload:		Avaya IQ					
Site:		All					
Team:		Team Preferences					
Agents:		All					
Date:		3/8/2010					
Interval:		00:00 - 24:00					
Time Zone:		(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna					
Date / Interval	Queue	Agent	Acid Login	Answered Calls	Transferred Calls	Talk Time	After Call Work (ACW)
Totals:				26	5	0:34:29	0:30:52
3/8/2010				26	5	0:34:29	0:30:52
10:45-11:00	IQ Queue 1 (250)	Ashley Andeen	IQ Agent 2	0	0	0:00:03	0:30:05
10:45-11:00	IQ Queue 1 (250)	Prashant Arora	IQ Agent 0	1	0	0:30:39	0:00:00
11:00-11:15	IQ Queue 1 (250)	Ashley Andeen	IQ Agent 2	6	0	0:00:46	0:00:22
11:15-11:30	IQ Queue 1 (250)	Ashley Andeen	IQ Agent 2	4	0	0:00:04	0:00:25
12:00-12:15	IQ Queue 1 (250)	Ashley Andeen	IQ Agent 2	5	3	0:00:57	0:00:00
12:00-12:15	IQ Queue 1 (250)	Juancho Banaag	IQ Agent 3	0	0	0:00:00	0:00:00
12:00-12:15	IQ Queue 1 (250)	Pierre Baldi	IQ Agent 1	2	1	0:00:06	0:00:00
12:00-12:15	IQ Queue 2 (260)	Juancho Banaag	IQ Agent 3	1	0	0:00:12	0:00:00
14:00-14:15	IQ Queue 1 (250)	Ashley Andeen	IQ Agent 2	2	0	0:01:01	0:00:00
14:00-14:15	IQ Queue 1 (250)	Pierre Baldi	IQ Agent 1	1	0	0:00:21	0:00:00
14:00-14:15	IQ Queue 1 (250)	Prashant Arora	IQ Agent 0	1	1	0:00:02	0:00:00
14:00-14:15	IQ Queue 2 (260)	Juancho Banaag	IQ Agent 3	1	0	0:00:05	0:00:00
14:15-14:30	IQ Queue 1 (250)	Ashley Andeen	IQ Agent 2	2	0	0:00:13	0:00:00
Totals:				26	5	0:34:29	0:30:52

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Agent Statistics												
Date / Interval		Agent	Accl Login	Logged In Time	Ready Time	Not Ready Time	Idle Time	Admin Time	Direct Outbound Calls	Direct Outbound Calls Talk Time	Direct Incoming Calls	Direct Incoming Calls Talk Time
Totals:				26:08:42	26:07:30	0:01:12	10:12:33	0:00:00	1	0:00:05	3	0:00:30
12:30-12:45	Juancho Banaag	IQ Agent 3		0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
12:30-12:45	Pierre Baldi	IQ Agent 1		0:30:00	0:30:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
12:30-12:45	Prashant Arora	IQ Agent 0		0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
12:45-13:00	Ashley Andeen	IQ Agent 2		0:14:13	0:14:09	0:00:04	0:14:08	0:00:00	0	0:00:00	0	0:00:00
12:45-13:00	Juancho Banaag	IQ Agent 3		0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
12:45-13:00	Pierre Baldi	IQ Agent 1		0:29:30	0:29:27	0:00:03	0:14:25	0:00:00	0	0:00:00	0	0:00:00
12:45-13:00	Prashant Arora	IQ Agent 0		0:19:57	0:19:53	0:00:04	0:04:53	0:00:00	0	0:00:00	0	0:00:00
13:00-13:15	Ashley Andeen	IQ Agent 2		0:15:00	0:15:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
13:00-13:15	Juancho Banaag	IQ Agent 3		0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
13:00-13:15	Pierre Baldi	IQ Agent 1		0:30:00	0:30:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
13:00-13:15	Prashant Arora	IQ Agent 0		0:30:00	0:30:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
13:15-13:30	Ashley Andeen	IQ Agent 2		0:15:00	0:15:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
13:15-13:30	Juancho Banaag	IQ Agent 3		0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
13:15-13:30	Pierre Baldi	IQ Agent 1		0:30:00	0:30:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
13:15-13:30	Prashant Arora	IQ Agent 0		0:30:00	0:30:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
13:30-13:45	Ashley Andeen	IQ Agent 2		0:15:00	0:15:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
13:30-13:45	Juancho Banaag	IQ Agent 3		0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
13:30-13:45	Pierre Baldi	IQ Agent 1		0:30:00	0:30:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
13:30-13:45	Prashant Arora	IQ Agent 0		0:30:00	0:30:00	0:00:00	0:15:00	0:00:00	0	0:00:00	0	0:00:00
13:45-14:00	Ashley Andeen	IQ Agent 2		0:14:44	0:14:36	0:00:08	0:14:35	0:00:00	0	0:00:00	0	0:00:00
13:45-14:00	Juancho Banaag	IQ Agent 3		0:15:00	0:15:00	0:00:00	0:00:00	0:00:00	0	0:00:00	0	0:00:00
13:45-14:00	Pierre Baldi	IQ Agent 1		0:29:25	0:29:21	0:00:04	0:14:20	0:00:00	0	0:00:00	0	0:00:00
13:45-14:00	Prashant Arora	IQ Agent 0		0:29:11	0:29:09	0:00:02	0:14:08	0:00:00	0	0:00:00	0	0:00:00
14:00-14:15	Ashley Andeen	IQ Agent 2		0:15:07	0:14:57	0:00:10	0:13:41	0:00:00	0	0:00:00	0	0:00:00
14:00-14:15	Juancho Banaag	IQ Agent 3		0:17:00	0:16:49	0:00:11	0:01:41	0:00:00	0	0:00:00	0	0:00:00
14:00-14:15	Pierre Baldi	IQ Agent 1		0:17:09	0:17:09	0:00:00	0:01:10	0:00:00	0	0:00:00	1	0:00:06
14:00-14:15	Prashant Arora	IQ Agent 0		0:17:06	0:17:05	0:00:01	0:01:02	0:00:00	1	0:00:05	0	0:00:00
Totals:				26:08:42	26:07:30	26:07:30	10:12:33	0:00:00	1	0:00:05	3	0:00:30

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9 Conclusion

These Application Notes describe the configuration steps required to integrate Teleopti CCC with Avaya IQ using the Teleopti historical interface to capture call center data from Avaya Aura™ Communication Manager. All feature and serviceability test cases were completed successfully.

10 References

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

- [1] *Administering Avaya Aura™ Communication Manager*, Document 03-300509, Issue 5.0, Release 5.2, May 2009, available at <http://support.avaya.com>.
- [2] *Avaya IQ Overview*, Release 5.0, September 2009, available at <http://support.avaya.com>.
- [3] *Implementing Avaya IQ*, Release 5.0, September 2009, available at <http://support.avaya.com>.
- [4] *Administering Avaya IQ*, Release 5.0, September 2009, available at <http://support.avaya.com>.
- [5] *Teleopti CCC User Manual*, Version 7, available from Teleopti.

11 Appendix – Sample Historical Reports

This section presents sample historical reports containing Queue, Agent, Agent Queue, and Queue Distribution data. Note that Teleopti CCC 7.1 does not currently use the Queue Distribution data.

Sample Queue Report:

```
Teleopti.Queue.Data
interval;date;time;queue;queue_name;offd_direct_call_cnt;overflow_in_call_cnt
;aband_call_cnt;overflow_out_call_cnt;answ_call_cnt;queued_and_answ_call_dur;
queued_and_aband_call_dur;talking_call_dur;wrap_up_dur;queued_answ_longest_qu
e_dur;queued_aband_longest_que_dur;avg_avail_member_cnt;ans_servicelvl_cnt;
wait_dur;aband_short_call_cnt;aband_within_sl_cnt
15;20100315;11:00;250;IQ Queue 1
(250);17;0;4;0;11;86;6;142;96;27;8;0;10;0;0;0
15;20100315;11:00;260;IQ Queue 2 (260);2;0;0;0;1;1;0;5;0;1;0;0;1;0;0;0
```

Sample Agent Report:

```
Teleopti.Agent.Data
interval;date;time;agent_id;agent_name;avail_dur;tot_work_dur;pause_dur;wait_
dur;wrap_up_dur;direct_out_call_cnt;direct_out_call_dur;direct_in_call_cnt;di
rect_in_call_dur
15;20100315;11:00;76301;IQ Agent 0;485;502;17;312;0;1;22;1;4
15;20100315;11:00;76302;IQ Agent 1;450;644;194;133;212;0;0;3;27
15;20100315;11:00;76303;IQ Agent 2;884;892;8;333;0;1;4;0;0
15;20100315;11:00;76304;IQ Agent 3;454;458;4;438;0;0;0;1;6
```

Sample Agent Queue Report:

```
Teleopti.AgentQueue.Data
interval;date;time;agent_id;agent_name;queue;queue_name;talking_call_dur;wrap
_up_dur;answ_call_dur;transfer_out_call_cnt
15;20100315;11:00;76301;IQ Agent 0 (76301);0;None;26;0;2;0
15;20100315;11:00;76301;IQ Agent 0 (76301);250;IQ Queue 1 (250);62;0;4;0
15;20100315;11:00;76302;IQ Agent 1 (76302);0;None;27;0;3;1
15;20100315;11:00;76302;IQ Agent 1 (76302);250;IQ Queue 1 (250);26;96;3;0
15;20100315;11:00;76303;IQ Agent 2 (76303);0;None;4;0;1;0
15;20100315;11:00;76303;IQ Agent 2 (76303);250;IQ Queue 1 (250);54;0;3;1
15;20100315;11:00;76304;IQ Agent 3 (76304);0;None;6;0;1;0
15;20100315;11:00;76304;IQ Agent 3 (76304);260;IQ Queue 2 (260);5;0;1;0
```

Sample Queue Distribution Report:

```
Sample Queue Distribution Report:
Teleopti.QueueDist.Data
interval;date;time;queue;queue_name;threshold;answ_within_threshold;answ_after_threshold;aband_within_interval;aband_after_interval
15;20100315;11:00;0;;0;0;0;0;0;0
15;20100315;11:00;0;None;0;0;0;0;0;0
15;20100315;11:00;250;IQ Queue 1 (250);20;0;0;0;0;0
15;20100315;11:00;260;IQ Queue 2 (260);20;0;0;0;0;0
```

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