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Avaya Solution & Interoperability Test Lab

Application Notes for Calabrio WFM 8.3.4 and Avaya Contact Center Manager Server 7.0 – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Calabrio WFM 8.3.4.20 to interoperate with Avaya Contact Center Manager Server 7.0. Calabrio Workforce Management is a work force management solution that provides forecasting, scheduling, and monitoring of work for contact centre representatives. Calabrio Workforce Management uses the historical call volumes from CCMS to produce forecasts and schedules for contact center representatives, and then uses the real-time agent status data from CCMS to check the representative adherence to the schedules.

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

VK; Reviewed:
SPOC 8/20/2010

Solution & Interoperability Test Lab Application Notes
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Calabrio_WFM

1. Introduction

These Application Notes describe the configuration steps required for Calabrio WFM 8.3.4 to interoperate with Avaya Contact Center Manager Server (CCMS).

Calabrio Workforce Management uses the historical call volumes from CCMS to produce forecasts and schedules for contact center representatives, and then uses the real-time agent status data from CCMS to check the representative adherence to the schedules. The collection of historical DN/Skillset/Agent call volumes from the Nortel CCMS is done querying the Nortel statistical database via ODBC.

The integration of real-time Agent status changes is done using the Nortel SDK client (version 6 now) on the Calabrio server, TCP/IP communication is established at the start up of the Real-Time service in the Calabrio system

1.1. Interoperability Compliance Testing

The interoperability compliance testing focused on verifying Calabrio for the following on both Historical and Realtime data:

1. Installation and configuration
2. Historical data collection
3. Historical data capture (processing)
4. Real Time data acquisition and display

1.2. Support

Technical support on Calabrio WFM can be obtaining by contacting Symmetrics directly at:

Address:
Calabrio, Inc.
605 highway 169 North
Minneapolis, MN 55441

**Website:** www.Calabrio.com
Phone: 1.763.592.4600
Fax: 1.763.592.4605

2. Reference Configuration

A server with the Calabrio WFM software is installed and a CCMS platform is available during the test execution. Microsoft SQL Server 2005 (Express version) is installed co-resident with the Calabrio WFM Application.

The Calabrio server has the RTDSDK client for Real-Time data integration.

Calabrio Workforce Management integration with Nortel CC7 is achieved through ODBC access to CCMS_STAT database namespace and TCP/IP communication with the RTD package.
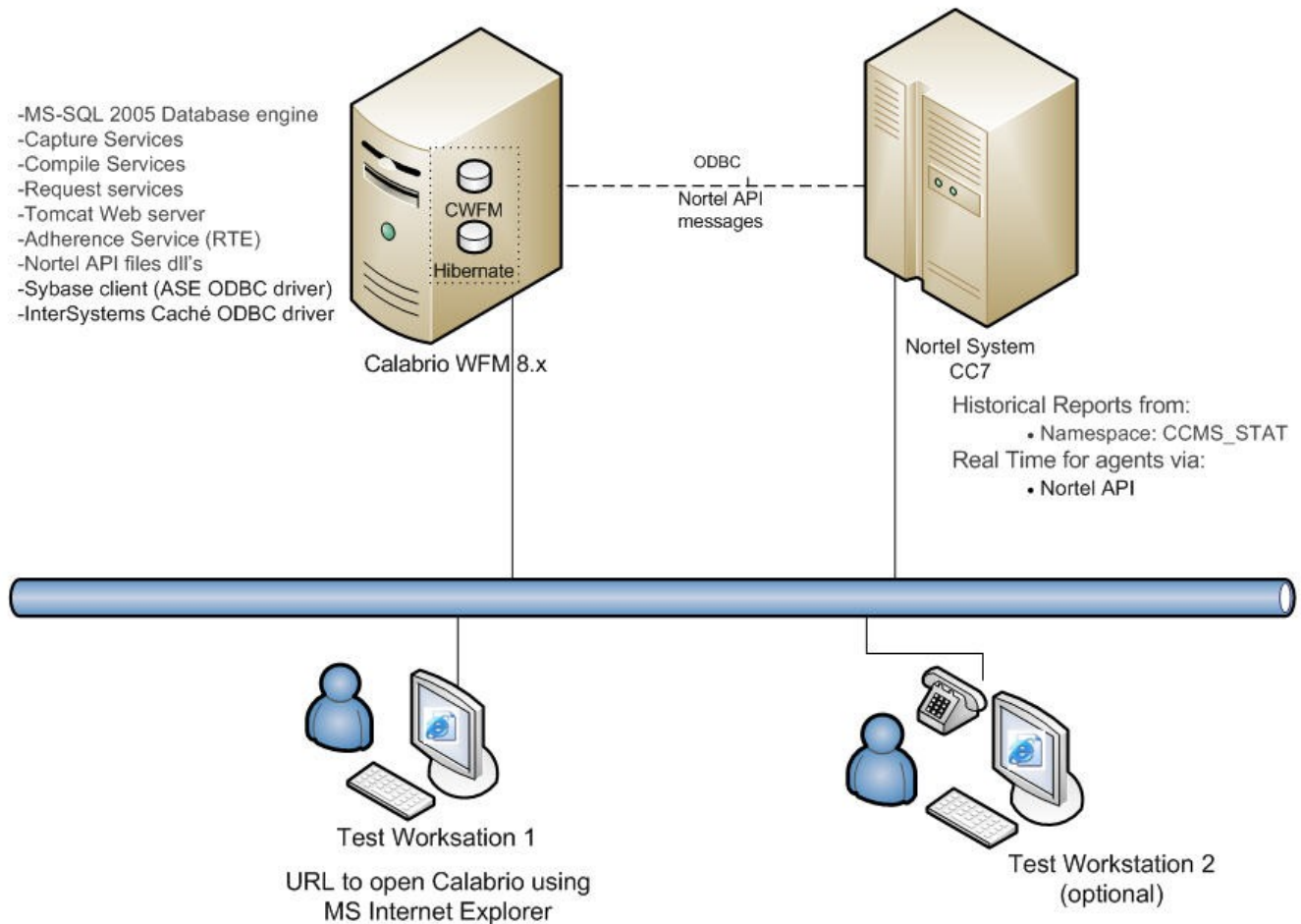
Figure 1: Reference Configuration

These application notes assume that Communication Server Release 6.0, Contact Center Manager Server 7.0, Contact Center Server Utility 7.0 and Contact Center Manager Administrator 7.0 are already installed and basic configuration steps have been performed. Only steps relevant to Access Class and User creation on Contact Center Server Utility 7.0 will be described in this document.   For further details on configuration steps not covered in this document, consult the appropriate document in **Section 10**.

- Contact Center Manager Server should be running Release 7.0 or higher. The sample data should contain multiple records for each historical data interval. All historical statistics should be pegging on the test server, to include historical and contact data.
- **Calabrio WFM** is installed on Windows 2003 R2 server.

3. Equipment and Software Validated

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

Equipment/Application	Software version
Contact Center Manager Server running on Windows 2003Server Standard Edition	7.0 (with Server Utility) – SU_02/SUS_0201
Contact Center Manager Administrator running on Windows 2003 Server	7.0 – SU_02/SUS_0201
Calabrio WFM with MS-SQL and Intersystems ODBC Driver for Cache database running on Windows 2003 Server	8.3.4.20, MS-SQL 2005 Database engine
Communication Server	Release 6.0
i2050 IP Softphone	Release 2.0

4. Configure Avaya Communication Server

No special configuration is required on Communication Server Release 6.0.
Any phones currently supported by Contact Center Manager Server 7.0 can be used to collect reports. For the purpose of this compliance testing i2050 IP Softphones were used.

5. Configure Avaya Contact Center Manager Server 7.0

The compliance test environment consisted of a Contact Center Manger Server 7.0 server with historical data base populated with call data. Call data was generated by running normal skillset based routing calls through the Contact Center Manager Server 7.0.

This section describes a procedure for setting up:
- A new Access Class on Contact Center Server Utility
- A new user in Contact Center Manager

Configuration in the following sections is only for the fields where a value needs to be entered or modified. Default values are used for all other fields.
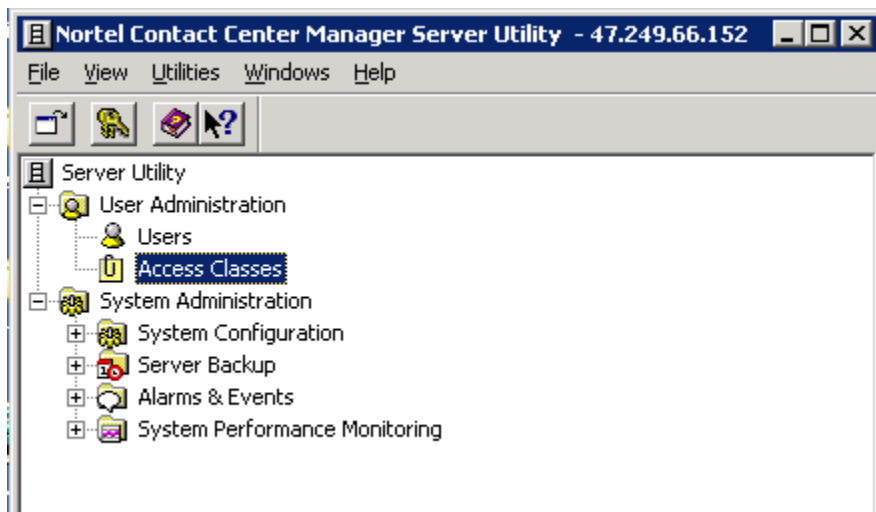
5.1. Access Class

A new Access Class (for example named Developer RTDRSM) was created on Contact Center Server Utility.

To create the access class, on the Contact Center Utility Server navigate to Programs → Nortel →Contact Center → Server Utility → Server Utility.
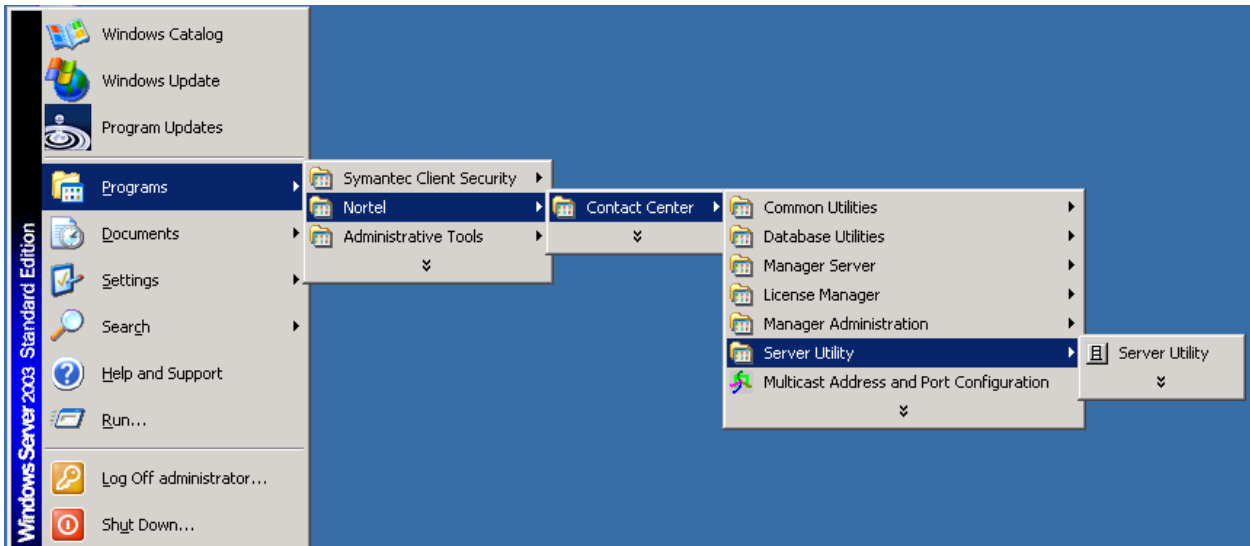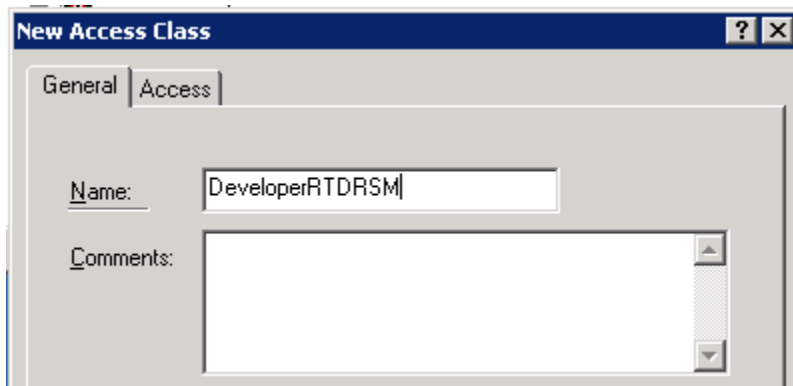
In Contact Center Manager Server Utility, go to Access Classes by double clicking on "Access Classes":

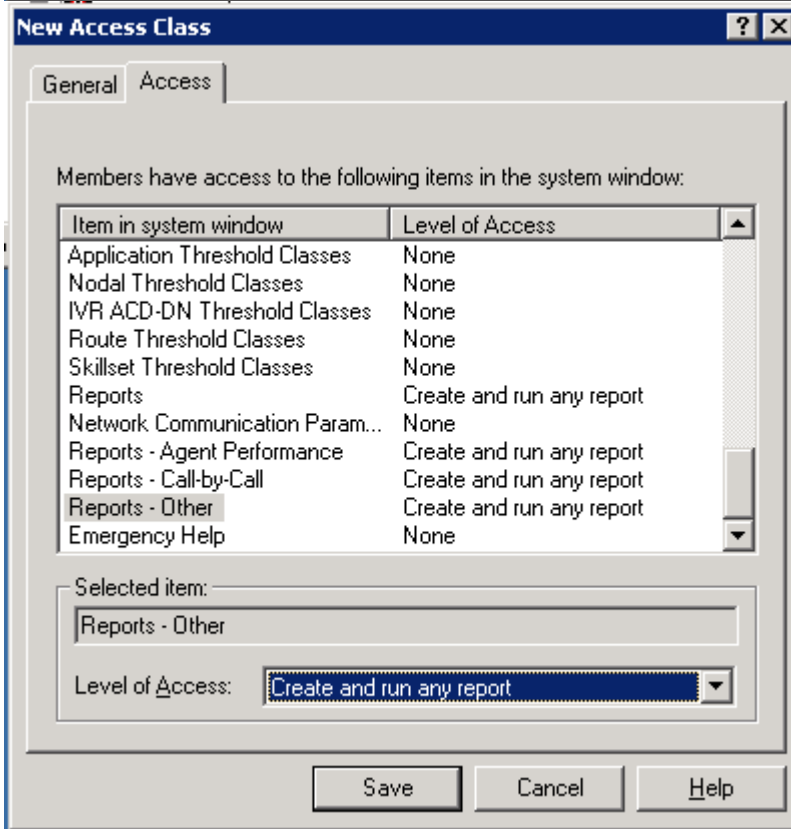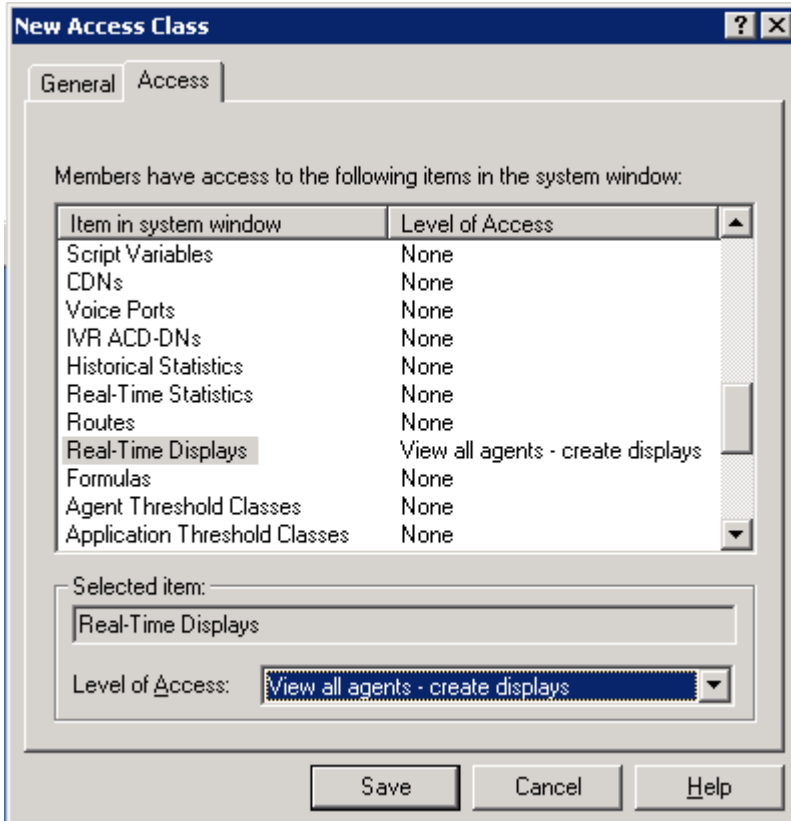To create new Access Class, select New from the File menu:
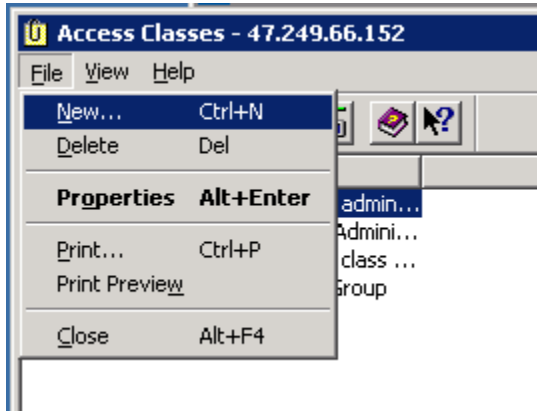
In the General tab, enter a descriptive name. For the sample configuration DeveloperRTDRSM was entered.

In the Access tab, select the following permissions:

| Item in system window	Level of Access
Real-Time Displays	View all agents – create displays
Reports – Agent Performance	Create and run any report
Reports – Call-by-Call	Create and run any report
Reports – Others	Create and run any report

The screens below show the steps to grant the above permissions.

New Access Class   ? ✕

General | Access |

Members have access to the following items in the system window:

Item in system window	Level of Access
Script Variables	None
CDNs	None
Voice Ports	None
IVR ACD-DNs	None
Historical Statistics	None
Real-Time Statistics	None
Routes	None
Real-Time Displays	View all agents - create displays
Formulas	None
Agent Threshold Classes	None
Application Threshold Classes	None

Selected item:

Real-Time Displays

Level of Access: View all agents - create displays ▼

[Save]   [Cancel]   [Help]

New Access Class   ? ✕

General | Access |

Members have access to the following items in the system window:

Item in system window	Level of Access
Application Threshold Classes	None
Nodal Threshold Classes	None
IVR ACD-DN Threshold Classes	None
Route Threshold Classes	None
Skillset Threshold Classes	None
Reports	Create and run any report
Network Communication Param...	None
Reports - Agent Performance	Create and run any report
Reports - Call-by-Call	Create and run any report
Reports - Other	Create and run any report
Emergency Help	None

Selected item:

Reports - Other

Level of Access: Create and run any report ▼
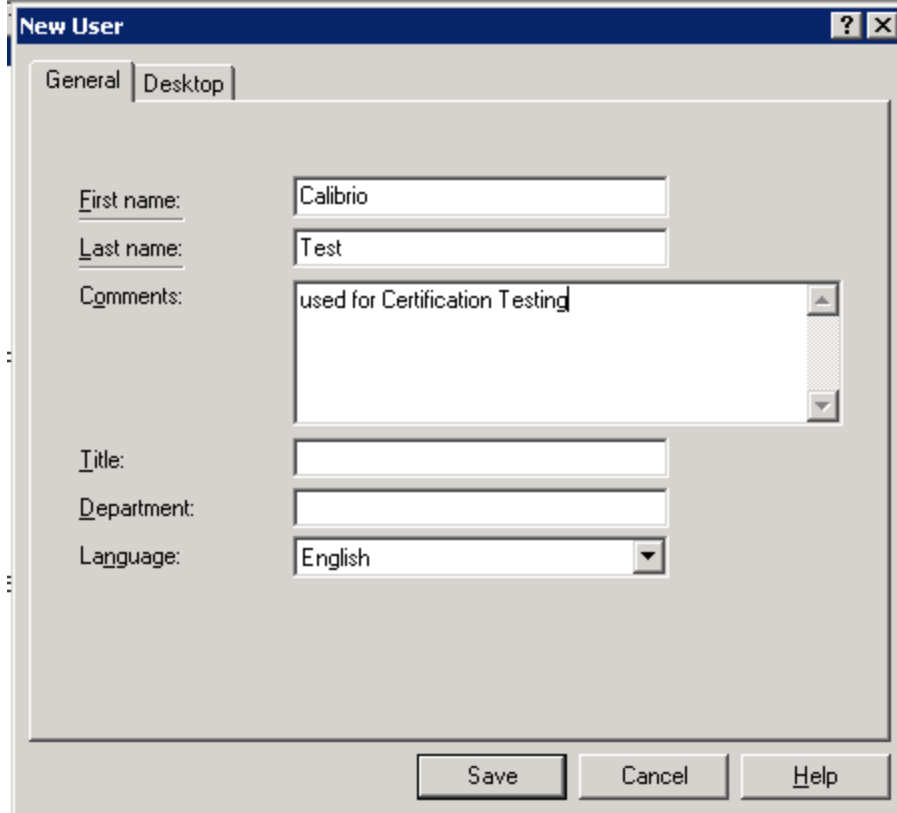
[Save]   [Cancel]   [Help]

5.2. New User

To create the new users, on the Contact Center Utility Server navigate to Programs → Nortel →Contact Center → Server Utility → Server Utility.

To create a new user on Contact Center Manager server, choose "Users" from Server Utility, then File →New on Users menu.
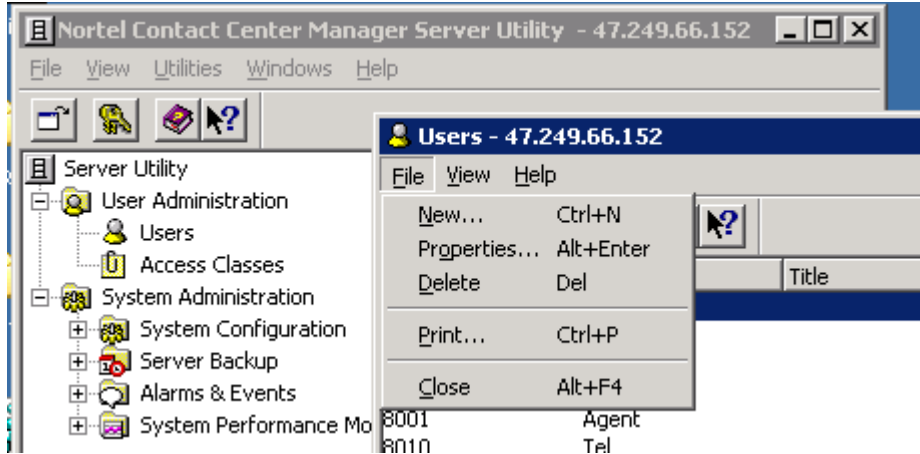
In the general tab, enter user information:

In Desktop tab, set userID and select the Access Class created in **Section 5.1.**

Click "Save" to save the new user.

The above user login was used by Calabrio WFM to obtain Realtime and Historical data from CCMS.

Historical data was generated by running voice traffic on the system over the course of a couple of weeks.

6. Configure Calabrio WFM

Calabrio WFM software installation prompts for CCMS IP address and port information. Choose ACD Connection on the left-hand side menu. In the drop-down menu, choose "Nortel SymposiumMeridian 1". Note screenshot below is from the Calabrio WFM installation guide, therefore the IP address and user name do not match what was used during testing.
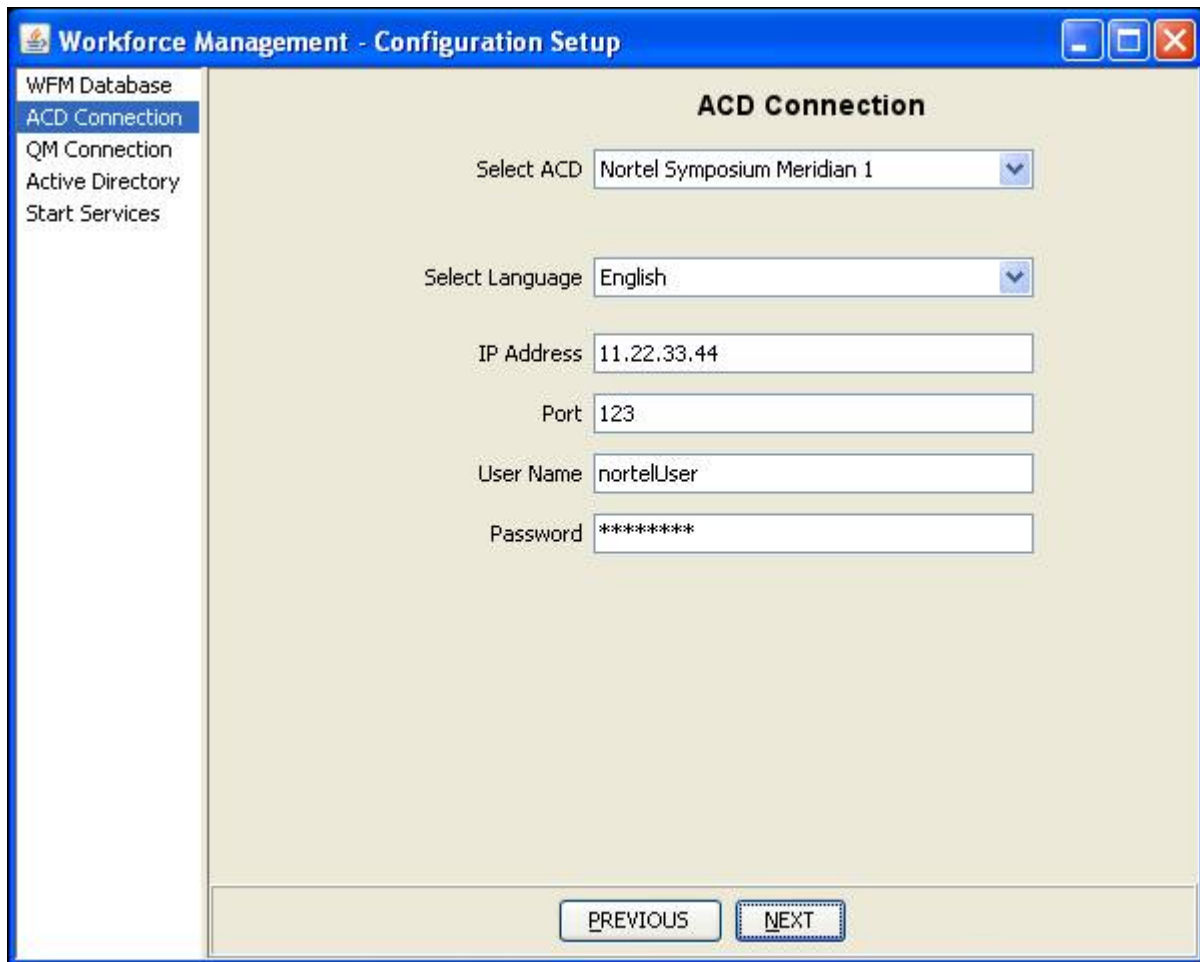
For IP address enter the IP address of the CCMS server. For Port number, enter the port number through which WFM listens for realtime data updates.

Username and password are as configured in **Section 5.2**.

WFM 8.3.4 was developed for CCMS 6.0, and some adjustments were needed to make it compatible for CCMS 7.0. Two ODBC System DSNs need to be created manually. The names of these DSNs are: acdDbMainCC7 and acdDBBackupCC7.

1. On WFM server navigate to Start → All Programs → Administrative Tools → Data Sources (ODBC):
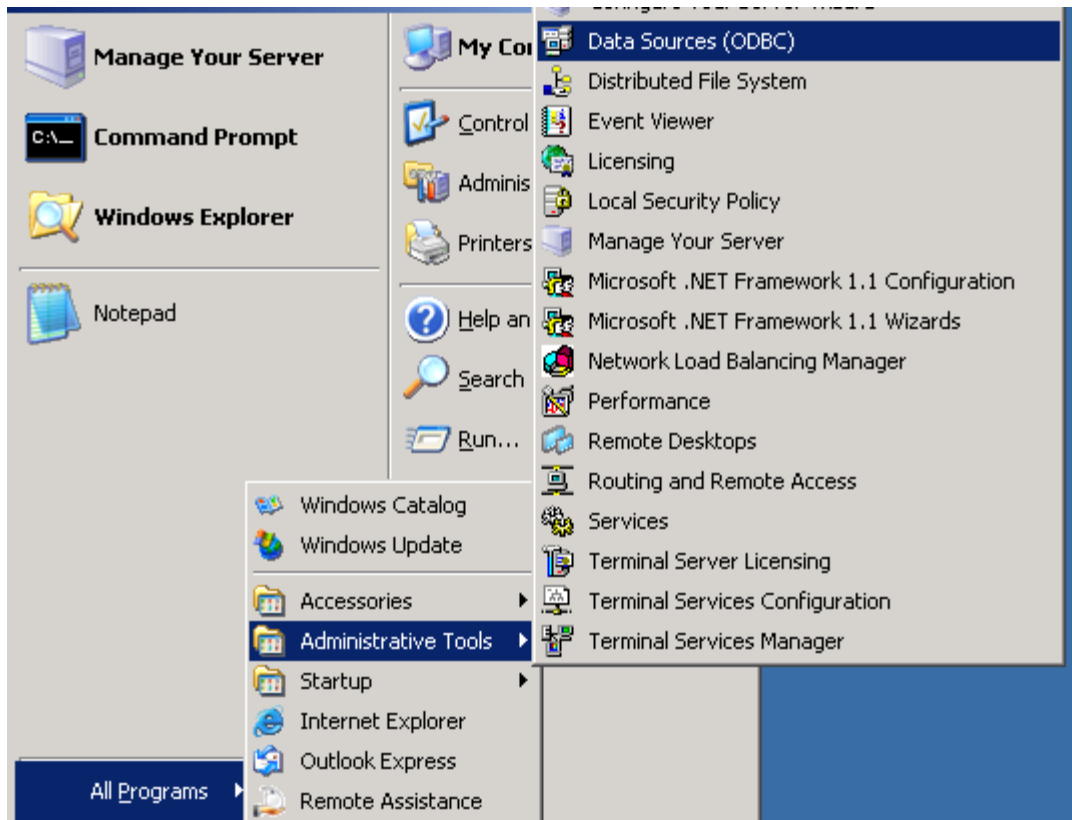
In System DSN tab, click on "New". Enter Source Name, Host IP (CCMS IP address), Port (default is 1972), Cache Namespace (CCMS_STAT). User Name entered here is the user as configured in **Section 5.2**:

Repeat above for DSN source acdDBStandbyCC7.

2. Modify the registry setting for WFM to include the DNS name. For Registry key My Computer\HKLM\Software\Spanlink\WFM\OOC\Server\Symposium\DSN modify the value to acdDBMainCC7.

3. Modify the registry setting for WFM to include the DNS name. For Registry key My Computer\HKLM\Software\Spanlink\WFM\OOC\Server\Symposium\DSN2 modify the value to acdDBStandbyCC7.
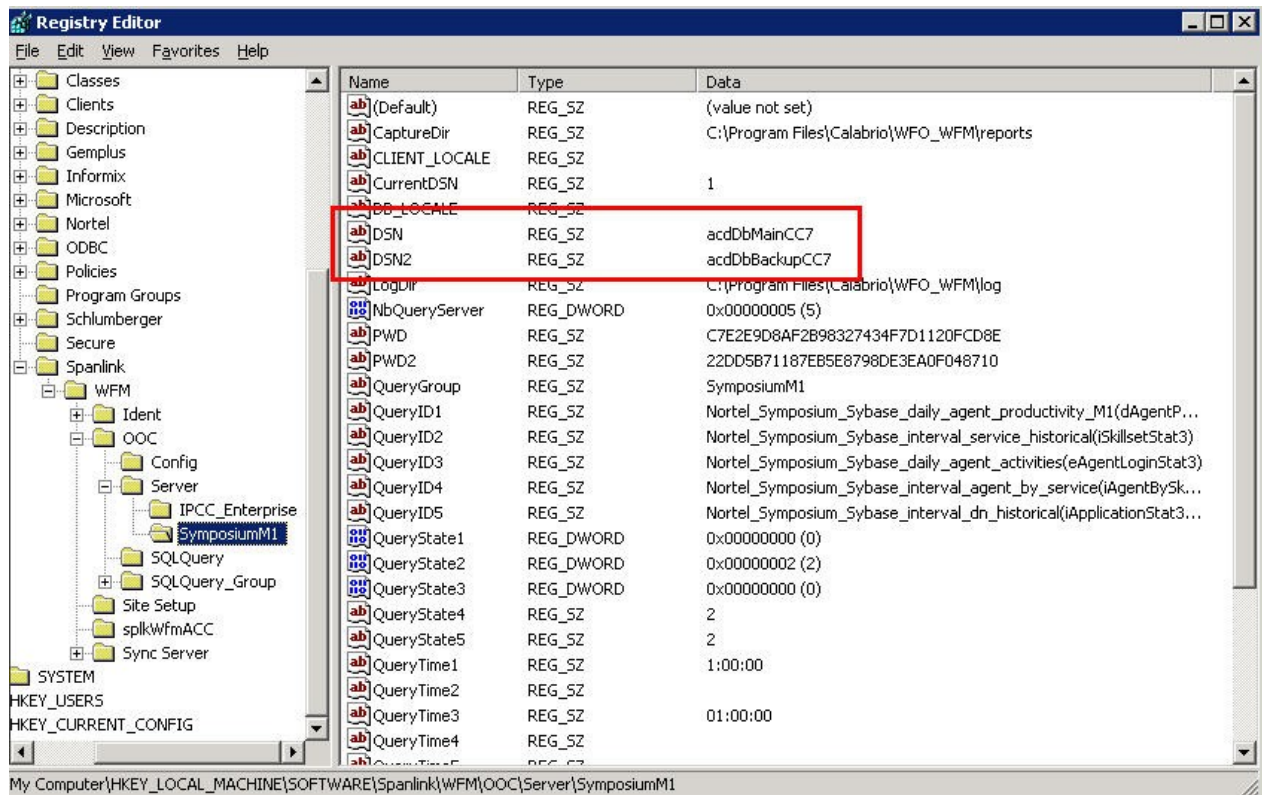
4. Update queries within the registry that WFM uses. The following content should be placed into a .reg file and run on the WFM server:

```
Windows Registry Editor Version 5.00

[HKEY_LOCAL_MACHINE\SOFTWARE\Spanlink\WFM\OOC\SQLQuery]
"NbQuery"="5"
"SQLQueryName1"="Nortel_Symposium_Sybase_daily_agent_productivity_M1(dAgentPerformanc
eStat3)"
"SQLQuery1"="SELECT
dAPStat.Timestamp,dAPStat.AgentLogin,dAPStat.AgentSurName,dAPStat.AgentGivenName,dAPSt
at.SupervisorLogin,dAPStat.SupervisorSurName,dAPStat.SupervisorGivenName,dAPStat.ACDCalls
Answered,dAPStat.ACDCallsConfToOther,dAPStat.ACDCallsTalkTime,dAPStat.ACDCallsTransfer
redToOther,dAPStat.BreakTime,dAPStat.CallsAnswered,dAPStat.CDNCallsConfToOther,dAPStat.A
CDCallsConfToIncalls,dAPStat.CDNCallsConfToCDN,dAPStat.DNCallsConfToDN,dAPStat.DNCal
lsConfToDN,dAPStat.CallsOffered,dAPStat.CallsReturnedToQ,dAPStat.CallsReturnedToQDueToTi
meout,dAPStat.CDNCallsTransferredToOther,dAPStat.ACDCallsTransferredToIncalls,dAPStat.CDN
CallsTransferredToCDN,dAPStat.DNCallsTransferredToDN,dAPStat.DNCallsTransferredToDN,dA
PStat.ConsultationTime,dAPStat.DNCallsConfToOther,dAPStat.DNCallsTransferredToOther,dAPSta
t.DNInExtCalls,dAPStat.DNInExtCallsTalkTime,dAPStat.DNInIntCalls,dAPStat.DNInIntCallsTalkTi
me,dAPStat.DNOutExtCalls,dAPStat.DNOutExtCallsTalkTime,dAPStat.DNOutIntCalls,dAPStat.DN
OutIntCallsTalkTime,dAPStat.HoldTime,dAPStat.LoggedInTime,dAPStat.NACDCallsAnswered,0,d
```

PStat.NACDCallsTalkTime,0,dAPStat.NetworkCallsAnswered,dAPStat.NetworkCallsTalkTime,dAP
Stat.NotReadyTime,dAPStat.ReservedForCall,dAPStat.ReservedTime,dAPStat.RingTime,dAPStat.Sh
ortCallsAnswered,dAPStat.TalkTime,dAPStat.WaitingTime,dAPStat.WalkawayTime,dAPStat.UserI
D,dAPStat.SupervisorUserID,dAPStat.Time,dAPStat.SiteID,dAPStat.Site FROM
dAgentPerformanceStat dAPStat WHERE dAPStat.Timestamp >= {ts 'DATEADD(d,-
1,%STARTDATE%){YYYY-MM-DD} 00:00:00'} AND dAPStat.Timestamp <= {ts 'DATEADD(d,-
1,%ENDDATE%){YYYY-MM-DD}
23:59:59'}""SQLQueryName2"="Nortel_Symposium_Sybase_interval_service_historical(iSkillsetSta
t3)""SQLQuery2"="SELECT
iSkillStat.Timestamp,iSkillStat.SkillsetID,iSkillStat.Skillset,iSkillStat.ApplicationID,iSkillStat.Applic
ation,iSkillStat.ActiveTime,iSkillStat.AllAgentBusyTime,iSkillStat.CallsAnswered,iSkillStat.CallsAn
sweredAfterThreshold,iSkillStat.CallsAnsweredDelay,iSkillStat.MaxAnsweredDelay,iSkillStat.NetCa
llsAnswered,iSkillStat.TotalStaffedTime,iSkillStat.Time,iSkillStat.SiteID,iSkillStat.Site,iSkillStat.Cal
lsOffered,iSkillStat.SkillsetAbandoned,iSkillStat.SkillsetAbandonedDelay,iSkillStat.SkillsetAbandon
edAftThreshold,iSkillStat.MaxSkillsetAbandonedDelay FROM iSkillsetStat iSkillStat WHERE
iSkillStat.Timestamp >= {ts 'DATEADD(h,-0,%STARTDATE% %STARTTIME%){YYYY-MM-
DD HH:MM:SS}'} AND iSkillStat.Timestamp < {ts 'DATEADD(h,-0,%ENDDATE%
%ENDTIME%){YYYY-MM-DD
HH:MM:SS}'}""SQLQueryName3"="Nortel_Symposium_Sybase_daily_agent_activities(eAgentLog
inStat3)""SQLQuery3"="SELECT
eALStat.Timestamp,eALStat.AgentLogin,eALStat.AgentSurName,eALStat.AgentGivenName,eALSt
at.EventType,eALStat.UserID,eALStat.Time,eALStat.SiteID,eALStat.Site,eALStat.PositionID,eALSt
at.Duration FROM eAgentLoginStat eALStat WHERE eALStat.Timestamp >= {ts 'DATEADD(d,-
1,%STARTDATE%){YYYY-MM-DD} 00:00:00'} AND eALStat.Timestamp <= {ts 'DATEADD(d,-
1,%ENDDATE%){YYYY-MM-DD} 23:59:59'} order by
eALStat.AgentLogin,eALStat.Timestamp,eALStat.SequenceNumber""SQLQueryName4"="Nortel_S
ymposium_Sybase_interval_agent_by_service(iAgentBySkillsetStat3)""SQLQuery4"="SELECT
iAgentbySkillset.Timestamp,iAgentbySkillset.AgentLogin,iAgentbySkillset.AgentSurName,iAgentby
Skillset.AgentGivenName,iAgentbySkillset.SkillsetID,iAgentbySkillset.Skillset,iAgentbySkillset.Call
sAnswered,iAgentbySkillset.PostCallProcessingTime,iAgentbySkillset.ShortCallsAnswered,iAgentby
Skillset.TalkTime,iAgentbySkillset.UserID,iAgentbySkillset.Time,iAgentbySkillset.SiteID,iAgentby
Skillset.Site,iAgentbySkillset.TotalStaffedTime FROM iAgentBySkillsetStat
iAgentbySkillsetWHERE iAgentbySkillset.Timestamp >= {ts 'DATEADD(h,-0,%STARTDATE%
%STARTTIME%){YYYY-MM-DD HH:MM:SS}'} AND iAgentbySkillset.Timestamp < {ts
'DATEADD(h,-0,%ENDDATE% %ENDTIME%){YYYY-MM-DD
HH:MM:SS}'}""SQLQueryName5"="Nortel_Symposium_Sybase_interval_dn_historical(iApplicatio
nStat3New)""SQLQuery5"="SELECT
iAppStat.Timestamp,iAppStat.ApplicationID,iAppStat.Application,iAppStat.CallsAbandoned,iAppSt
at.CallsAnswered,iAppStat.CallsOffered,iAppStat.IVRTerminated,iAppStat.Time,iAppStat.SiteID,iA
ppStat.Site,iAppStat.IVRAbandoned,iAppStat.TimeBeforeInterflow,iAppStat.CallsAbandonedAftThr
eshold,iAppStat.CallsAnsweredAftThreshold,iAppStat.CallsAnsweredDelay,iAppStat.CallsAnswered
DelayAtSkillset FROM iApplicationStat iAppStat WHERE iAppStat.Timestamp >= {ts
'DATEADD(h,-0,%STARTDATE% %STARTTIME%){YYYY-MM-DD HH:MM:SS}'} AND
iAppStat.Timestamp < {ts 'DATEADD(h,-0,%ENDDATE% %ENDTIME%){YYYY-MM-DD
HH:MM:SS}'}"

Note: The above steps are not necessary once Calabrio releases Service Release SR1. Schedule for release of SR1 has yet to be determined.

7. General Test Approach and Test Results

Compliance Test bed was setup with historical data populated. Each test was run as described in the test plan developed by Calabrio. The test cases verified the correct configuration of the Calabrio WFM connection to Contact Center Manager Server 7.0. The test cases also verified the correct acquisition of data by Calabrio WFM. All test cases completed successfully.

8. Verification Steps

The historical data collected by WFM was verified against the data contained in the CCMS database. The real-time data collected by WFM was verified against the CCMS Real-time displays.

9. Conclusion

These Application Notes describe the configuration steps required for Calabrio WFM 8.3.4.20 to retrieve data from Avaya Contact Center Manager Server 7.0. All functional test cases were completed successfully

10. Additional References

Avaya product documentation for Contact Center Manager Server can be found at
http://support.nortel.com/

The following documentation was provided by Calabrio:
[1] wfm834install-calabrio.pdf
[2] wfm834admin-calabrio.pdf