Application Notes for Avotus Professional 3.15/Enterprise 4.0 and Avaya™ S8700 Media Server with Avaya™ MCC1 Media Gateway- Issue 1.0

Abstract

The Avotus Telecom Billing System (TBS) resident in both Avotus Professional 3.15 and Avotus Enterprise 4.0 was compliance tested with the Avaya™ S8700 Media Server/Avaya™ MCC1 Media Gateway. The objective of the test was to evaluate interoperability of the Avotus TBS with the Avaya Media Servers that use Reliable Session Protocol as the CDR transport protocol. All test cases were completed successfully. Information in these notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the Developer*Connection* Program at the Avaya Solution and Interoperability Test Lab.

©2003 Avaya Inc. All Rights Reserved.

1. Introduction

These Application Notes describe the compliance-testing configuration used to test the Avotus Telecom Billing System application, which is part of the Avotus Professional 3.15 and Avotus Enterprise 4.0 product suites. The TBS collects, costs and reports CDR transactions from the Avaya™ S8700 Media Server/Avaya™ MCC1 Media Gateway over the Reliable Session Protocol (RSP). The Avotus TBS resides on a standard Windows 2000 server and uses the Avotus implementation of the Avaya™ Reliable Data Transport Tool (RDTT), which terminates RSP and converts CDR records from the S8700 to a format readable by the Avotus application. RSP is an application layer protocol that uses TCP/IP to provide reliable delivery of CDR records.

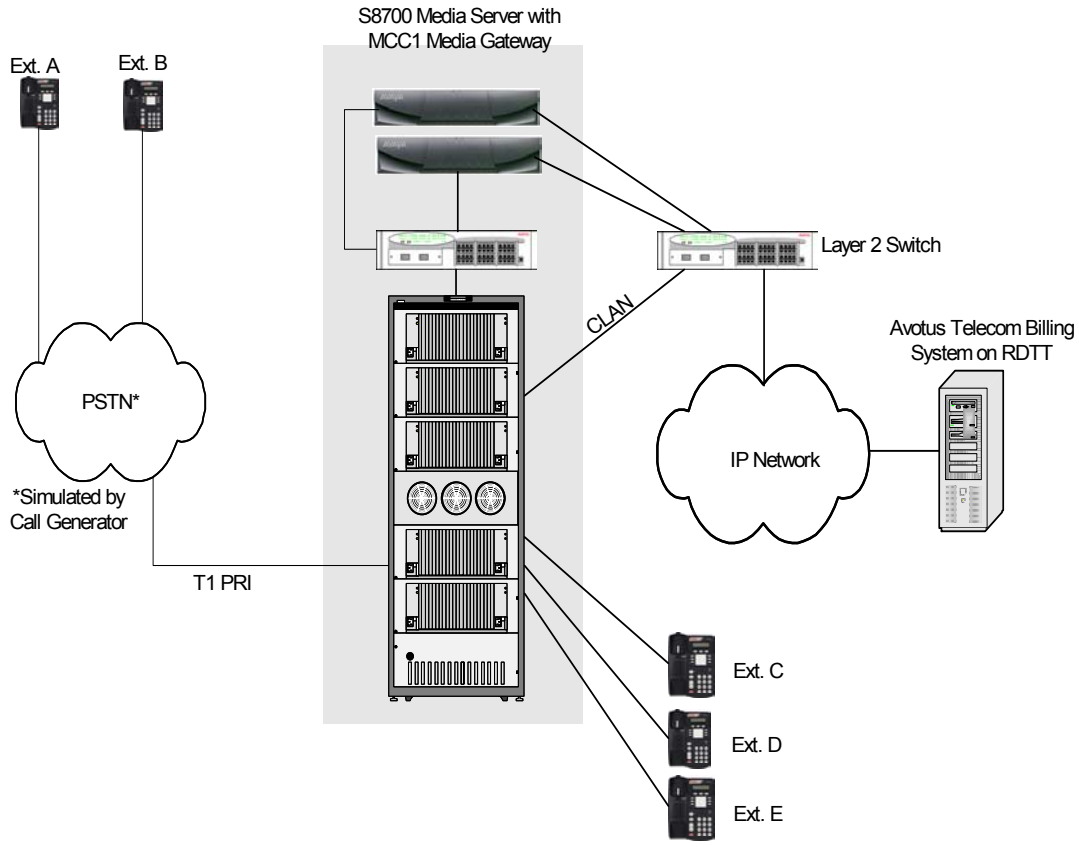


Figure 1: Avaya Developer*Connection* Compliance Test Configuration

2. Equipment and Software Validated

The following equipment and software were used for the test configuration as shown in **Figure 1**:

©2003 Avaya Inc. All Rights Reserved.

Equipment	Software/Release
Avaya™ S8700 Media Server with Avaya™ MCC1 Media Gateway	Communication Manager Software Release 1.2
Avotus Application Server	Microsoft Windows 2000 with Service Pack 2
Avotus Implementation of Reliable Data Transport Tool	3.15
Avotus Common Interface Framework Components	
Collection Script (RSP_AVAYAEXPD.COL)	N/A
Data Script Engine (DSE.DLL)	2.20.0713
Avotus Common Billing Application Component	
TBS Costing Engine (TBSCost.DLL)	2.30.0219

3. Configure the Avaya S8700 Media Server for CDR Connection

The Avotus TBS communicates with the S8700 via the C-LAN board. A CDR link between the C-LAN and the server running the Avotus software must be established. The next series of steps are performed through the System Access Terminal (SAT) interface. When prompted, supply an appropriate login and password to login to the SAT.

On the **change node-names ip** form, add an entry for the machine where the Avotus software will reside. Create a name for that end-point and enter its IP address. Also, add an entry for the C-LAN board and enter its IP address if not already in the form.

```
change node-names ip                                          Page   1 of   1
                                IP NODE NAMES
    Name                  IP Address          Name              IP Address
AvayaRSP                172.16 .252.62                          .   .   .
Medpro                  10 .0  .2  .3                          .   .   .
avotusserver            10 .0  .0  .2                          .   .   .
clan-1c04               10 .0  .2  .2                          .   .   .
default                 0  .0  .0  .0                          .   .   .
gateway                 172.16 .252.4                          .   .   .
procr                   172.16 .252.112                        .   .   .
```

From the **add data-module** form, choose an extension that fits the dial plan of the PBX. Enter the Type as **Ethernet**. In the Port field, enter the location of the C-LAN board as shown below. The channel that should be associated with the location is **17**. Choose a Link number between 1 and 99. Add a meaningful name.

```
change data-module 24999                                      Page   1 of   1
                              DATA MODULE

  Data Extension: 24999           Name: ethernet port 1c04
            Type: ethernet
            Port: 01C0417
            Link: 1
```

On Page 1 of the **change ip-services** form, choose **CDR1** as the Service Type. In the Local Node field, enter the name of the C-LAN board from the **change node-names ip** form. Local Port will default to 0. For the Remote Node, enter the name of the Avotus server added in the **change**

©2003 Avaya Inc. All Rights Reserved.

node-names ip form. For the Remote Port, choose port **9000** if available. If not, choose another port number. Note the port number, as this will be needed when administering the RDTT.

```
change ip-services                                              Page   1 of   3

                                  IP SERVICES
 Service     Enabled     Local        Local       Remote      Remote
  Type                   Node         Port        Node        Port
CDR1                 clan-1c04        0       avotusserver    9000
```

On Page 3 of the **change ip-services** form, set the Reliable Protocol to **Y**.

```
change ip-services                                              Page   3 of   3

                            SESSION LAYER TIMERS
  Service     Reliable  Packet Resp   Session Connect  SPDU  Connectivity
   Type       Protocol     Timer       Message Cntr    Cntr     Timer

 CDR1            y         30               3          3         60
```

On the **change system-parameters cdr** form, set the CDR Date Format to **month/day**, the Primary Output Format to **expanded** and the Primary Output Endpoint to **CDR1**. For the purposes of testing, both Intra-switch CDR and Outgoing Call Trunk Splitting were set to **Y**. Individual customer needs will determine these settings at the customer location.

```
change system-parameters cdr                                    Page   1 of   1
                           CDR SYSTEM PARAMETERS

 Node Number (Local PBX ID): 28                    CDR Date Format: month/day
      Primary Output Format: expanded      Primary Output Endpoint: CDR1
    Secondary Output Format:
          Use ISDN Layouts? n
       Use Enhanced Formats? n      Condition Code 'T' For Redirected Calls? n
Modified Circuit ID Display? n                  Remove # From Called Number? n
                 Record Outgoing Calls Only? n            Intra-switch CDR? y
  Suppress CDR for Ineffective Call Attempts? y     Outg Trk Call Splitting? y
     Disconnect Information in Place of FRL? n       Outg Attd Call Record? n
                                                    Interworking Feat-flag? n
 Force Entry of Acct Code for Calls Marked on Toll Analysis Form? n
                                  Calls to Hunt Group - Record: member-ext
Record Called Vector Directory Number Instead of Group or Member? n
         Record Called Agent Login ID Instead of Group or Member? n
     Inc Trk Call Splitting? n
  Record Non-Call-Assoc TSC? n           Call Record Handling Option: warning
      Record Call-Assoc TSC? n   Digits to Record for Outgoing Calls: dialed
   Privacy - Digits to Hide: 0               CDR Account Code Length: 15
```

When using the intra-switch CDR feature, go to the **change intra-switch-cdr** form. Add all internal extensions for which CDR records are to be generated.

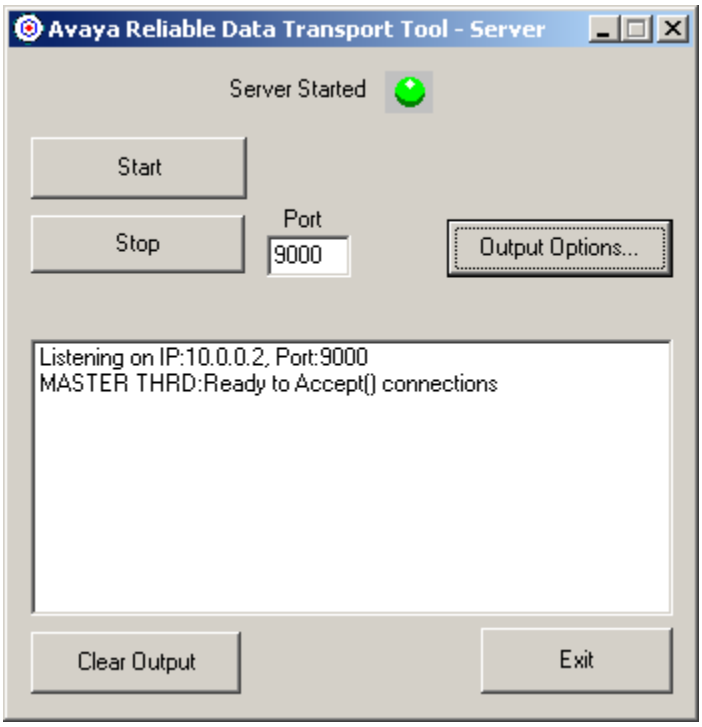
©2003 Avaya Inc. All Rights Reserved.

```
change intra-switch-cdr                                        Page   1 of   2
                          INTRA-SWITCH CDR

Assigned Members:   2    of 5000   administered
  1: 20001     19:           37:           55:           73:           91:
  2: 20002     20:           38:           56:           74:           92:
  3:           21:           39:           57:           75:           93:
  4:           22:           40:           58:           76:           94:
  5:           23:           41:           59:           77:           95:
  6:           24:           42:           60:           78:           96:
  7:           25:           43:           61:           79:           97:
  8:           26:           44:           62:           80:           98:
  9:           27:           45:           63:           81:           99:
 10:           28:           46:           64:           82:          100:
 11:           29:           47:           65:           83:          101:
 12:           30:           48:           66:           84:          102:
 13:           31:           49:           67:           85:          103:
 14:           32:           50:           68:           86:          104:
 15:           33:           51:           69:           87:          105:
 16:           34:           52:           70:           88:          106:
 17:           35:           53:           71:           89:          107:
 18:           36:           54:           72:           90:          108:
```

4. Configure the Reliable Data Transport Tool

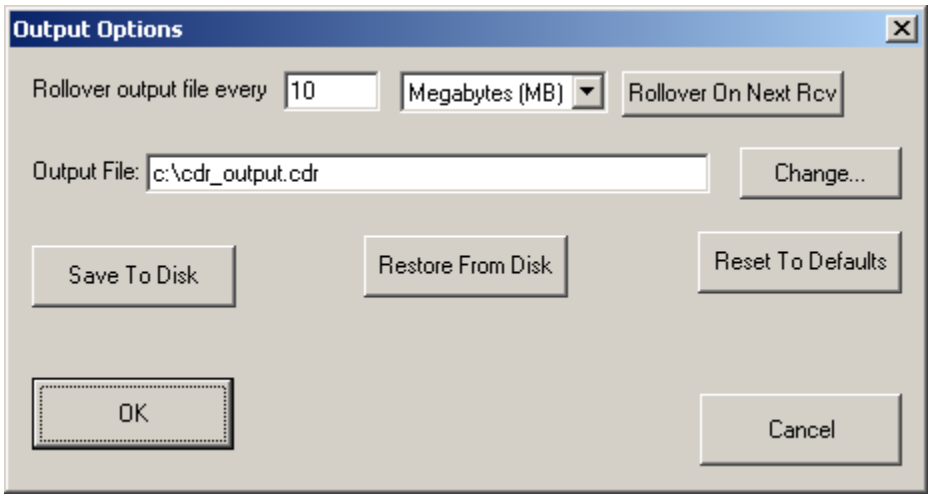
On the machine where Avotus is to be installed, create an **Avaya** folder and copy **Server.exe** (RDTT tool) to this location. Run the **Server.exe** file. This will launch the RDTT. On the first screen, enter the Port number that was administered on the S8700 **change ip-services** form as the Remote Port.



Click on **Output Options…** to launch the box below. In the "Rollover output file every" field, enter the desired number of **Megabytes** or **Kilobytes** which will trigger the current output file to be copied to a backup file, and then create a new, empty output file. In the "Output File:" field,

©2003 Avaya Inc. All Rights Reserved.

enter the name and the path of the CDR output file. Note the name and location of this file, because it will be used in the configuration of the Telecom Billing System. Click **OK**.



After configuring the TBS, click the **Start** button on the RDTT Server in order to start the collection of CDR data.

5. Configure the Telecom Billing System

After RSP is configured to output CDR to the desired location, the Telecom Billing System must be configured to collect from the RDTT output file. To configure any other functionality of TBS, refer to the User Guide.

5.1. Create Batch File

RDTT will receive the CDRs and output the records to a file. To ensure there is no sharing violation with reading or writing to/from this file, the Avotus Scheduler will move the existing data file before collecting from it. TBS will collect from the moved file and then delete it once it has collected all the data.

To do this, create a batch file that will move the output. The Avotus Scheduler will execute this batch file before it collects from the moved file. The batch file should be located in the same directory as the CDR files. The Batch file should contain the following command line:

move c:\<path>*cdr_output.cdr* c:\<path>*NewFile.cdr*

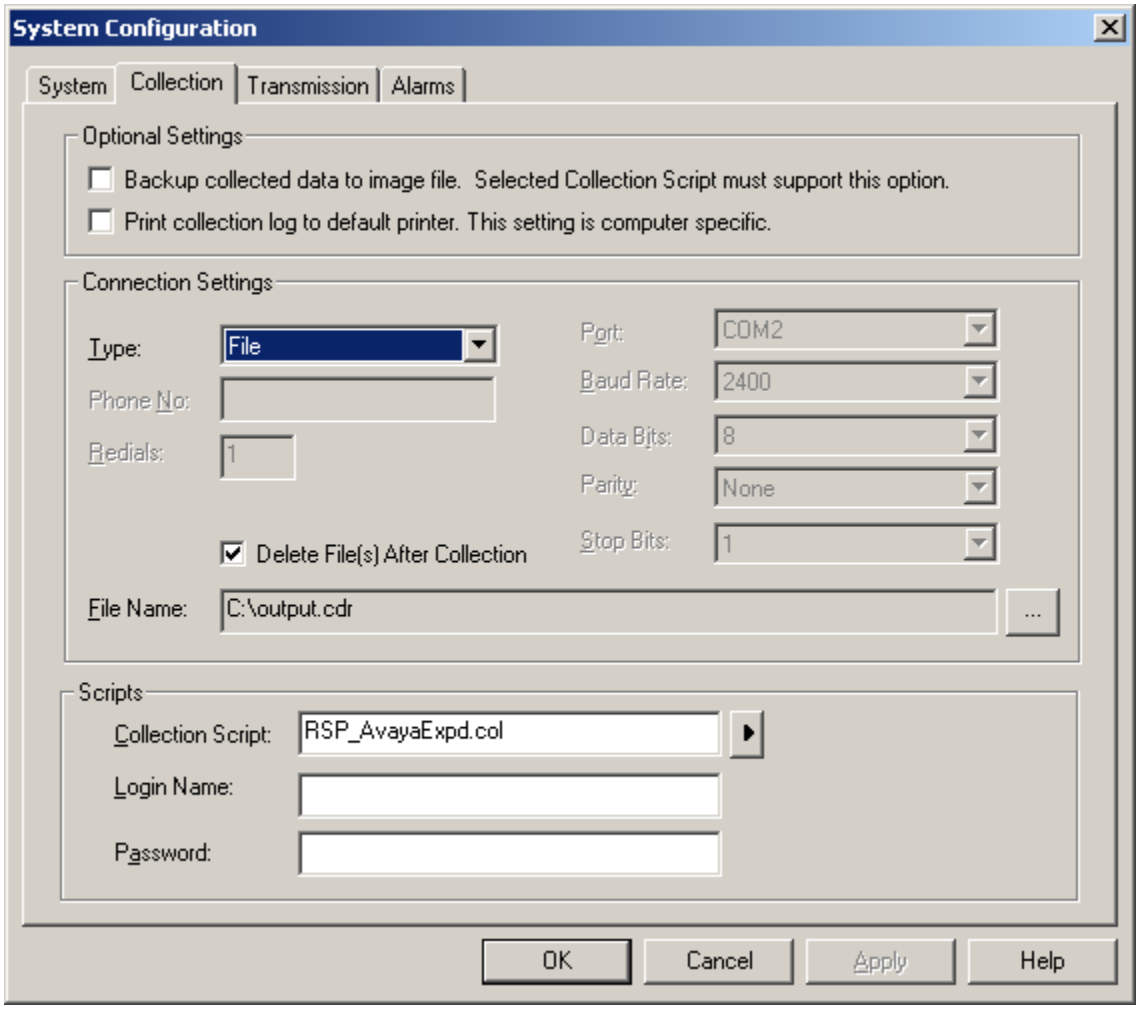
The first file path and name were configured in the RDTT above. The second file path and name will be configured in the System Configuration screen, Collection tab shown later in these Application Notes.

5.2. Configure CDR Collection

1. Launch TBS to configure the collection properties.
2. Enter the login information. Expand the Avotus Administrator to show all sites.

©2003 Avaya Inc. All Rights Reserved.

3. Expand the desired site to show all applications under this site.
4. Double click on **TBS**.
5. Within TBS, go to Tools→Collection→Configuration.
6. Enter the information as shown below.
7. In the Connection Settings frame, set Type to **File**.
8. Ensure that "Delete File(s) after collection" is checked.
9. For the File Name, click the Ellipsis button (**…**) and browse to the *NewFile.cdr* location. *NewFile.cdr* is the name of the file that the RDTT output file created using the batch file.
10. In the Scripts frame, enter the Collection Script as **RSP_AvayaExpd.col**. Click **Apply** and **OK.**

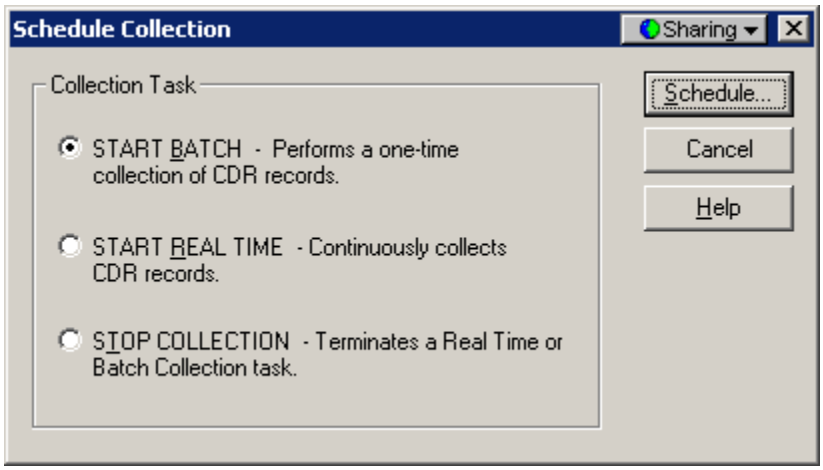


5.3. Schedule the Move and Collection Tasks

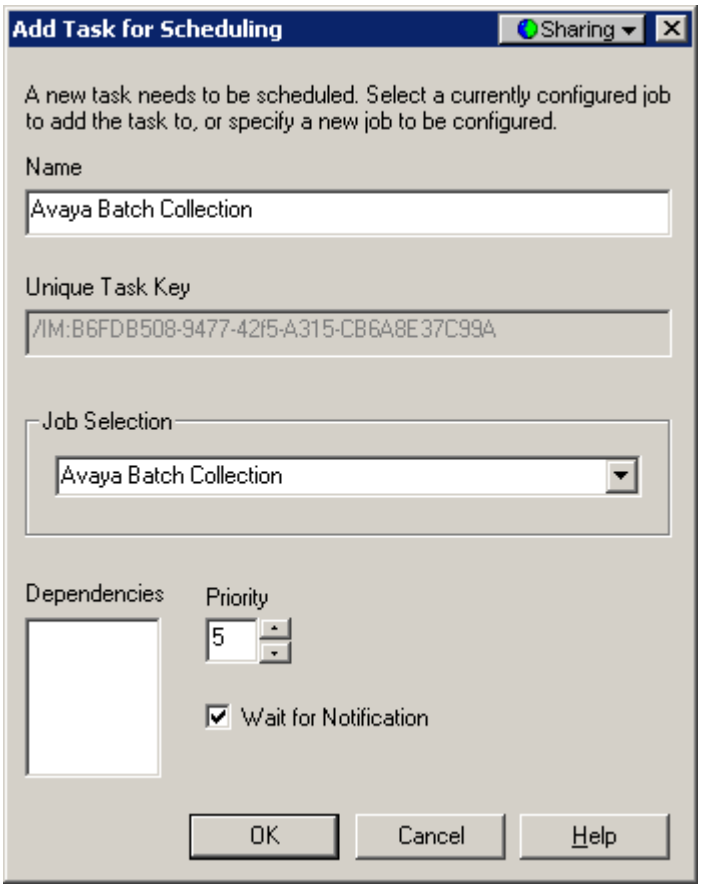
1. From the TBS menu, select Tools→Collection→Schedule.

©2003 Avaya Inc. All Rights Reserved.

2. On the Schedule Collection screen, choose a collection method, i.e., Start Batch or Start Real Time and click **Schedule**.

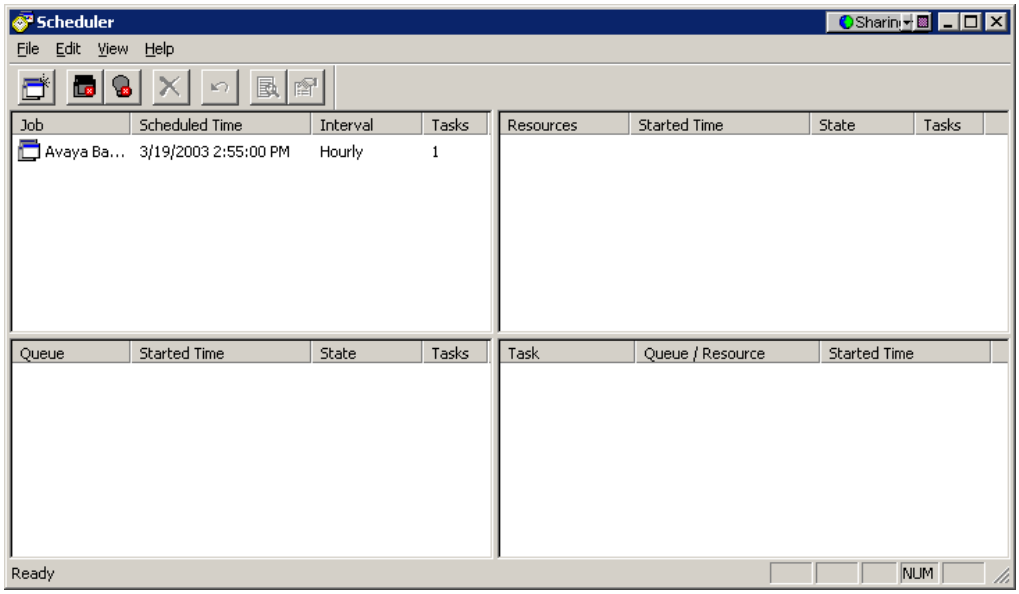


3. On the Add Task for Scheduling screen, enter a **Name** for the task.
4. In the **Job Selection** field, enter a name for the Job. Accept the default **Priority** value.
5. Click **OK**.

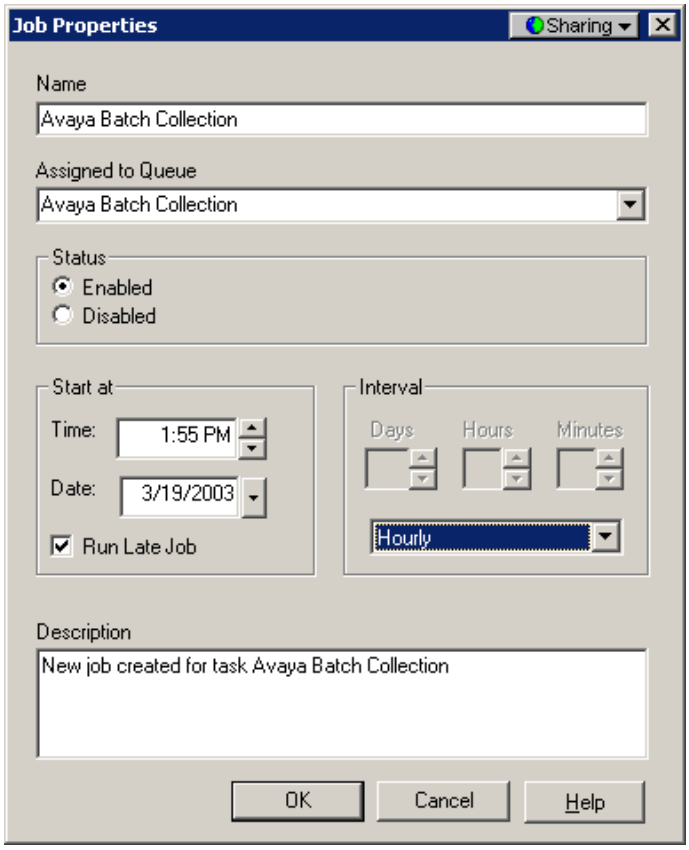


6. On the Scheduler, right click on the newly created Job. Select **Properties**.

©2003 Avaya Inc. All Rights Reserved.



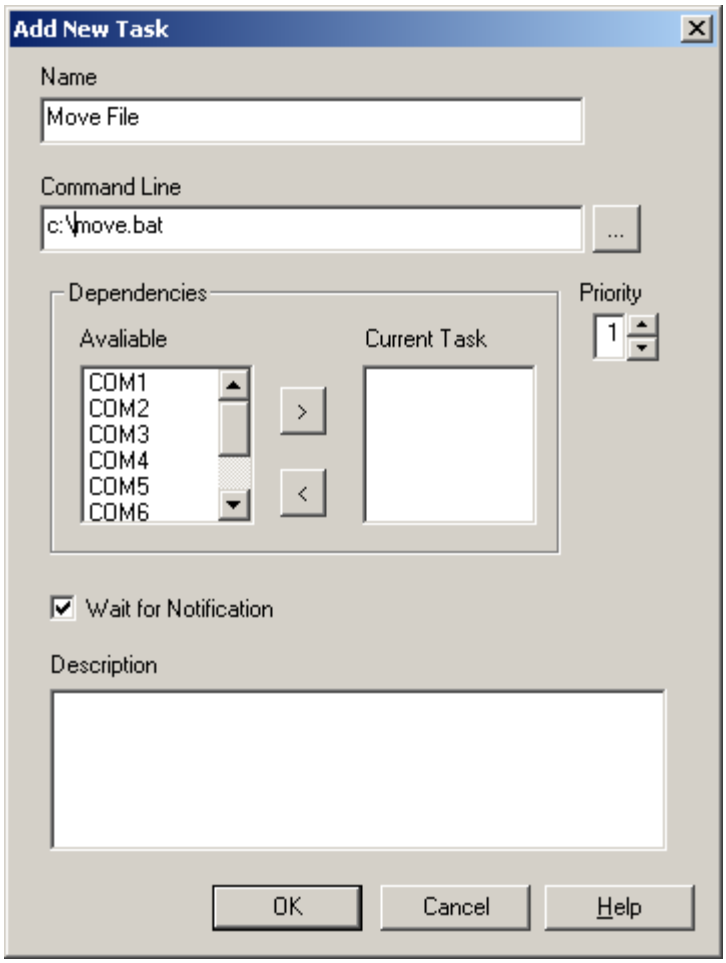
7. Fill in the properties accordingly, setting the desired **Interval** and enable the job.



8. After adding this job to the Scheduler, create a new task within the scheduled job. This will execute the move batch file before running the collection task.
9. Right click the newly created job within Scheduler and select **Task List**.
10. Go to File→New. Fill in that task name and description.

©2003 Avaya Inc. All Rights Reserved.

11. Assign it a Priority of 1.
12. In the command line, enter the path and name of the batch file that was previously created.
13. Click **OK**.



6. General Test Approach

The interoperability test included feature functionality and performance testing. Two primary components of the Avotus solution were tested: the Avotus RDTT and the Telecom Billing System.

First, the Avotus implementation of the Reliable Data Transport Tool was tested under load to verify that it caused no significant performance degradation on the installation server. In order to gather performance statistics, the 2morrow Visual Server Monitor was used. A bulk call generator was used to generate 6000 BHCC. The RDTT was also tested for its accuracy in terminating and converting the RSP protocol. The Message Sequence Trace feature was used on the S8700 to gather all IP transmissions sent over the CDR link to the Avotus Server. A portion

©2003 Avaya Inc. All Rights Reserved.

of this trace was manually converted from ASCII hex to ASCII text and compared with the CDR output file generated by the RDTT.

Second, the Telecom Billing System was tested to ensure that it correctly handled CDR records with regard to cost allocation. This was done over a load of 6000 BHCC. Complex call scenarios were performed to test the proper allocation of such call types as conference and transfer.

7. Support

Avotus support is a paid contract service. To find out more information about Avotus support, please call the Avotus Sales Helpdesk toll-free at 1-866-542-3018.

8. Verification Steps

To verify that the RSP connection has been configured properly and is able to communicate between the S8700 and the Avotus Server, run the command **status cdr-link** on the S8700. Verify that the Link State is UP. Place a call and verify that the appropriate records are generated and received by the Avotus application.

9. Conclusion

This compliance test verified that Avotus has successfully implemented the Reliable Data Transport Tool and is able to correctly manipulate the CDR records generated by the S8700 Media Server using the configuration described in these Application Notes.

©2003 Avaya Inc. All Rights Reserved.

©2003 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 Developer*Connection* Program at devconnect@avaya.com.