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Release 7.1
Maintenance and Troubleshooting

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Preface

This section include the following:

- [Purpose](#) on page 11
- [Audience](#) on page 11
- [Reasons for reissue](#) on page 11
- [Related documents](#) on page 12

Purpose

The purpose of this document is to describe the maintenance of Operational Analyst, and certain troubleshooting procedures you can use if problems occur within various functional areas of Operational Analyst.

Audience

This document is written for:

- Customer administrators
- Customer personnel

Users of this document should have a working knowledge of Avaya Interaction Center or Avaya Call Management System, or both, and of how those products interact with Operational Analyst.

Reasons for reissue

Release 7.1 of Operational Analyst includes the following reporting enhancements:

- Aux Reason codes
- Agent availability by channel

Related documents

The following table lists all of the OA information, both documents and online help systems:

Title	Number	Compas ID
<i>Avaya Operational Analyst 7.1 What's New in Operational Analyst</i>	07-600837	111077
<i>Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites</i>	07-600833	111073
<i>Avaya Operational Analyst Release 7.1 Installation and Configuration</i>	07-600834	111074
<i>Avaya Operational Analyst Release 7.1 Maintenance and Troubleshooting</i>	07-600835	111076
<i>Avaya Operational Analyst Release 7.1 Reports Reference</i>	07-600836	111075
<i>Avaya Operational Analyst 7.1 Data API Utility</i>	07-600838	115820
<i>Avaya Operational Analyst 7.1 Administration Client Online Help</i>	See Administration client help or library CD-ROM	
<i>Avaya Operational Analyst 7.1 Basic Reports Online Help</i>	See Report client help	
Data Model Help	See product CD-ROM	
Security Guide	See product CD-ROM	

The following table lists IC information that may be helpful:

Title	Number	Compas ID
<i>Avaya Interaction Center Release 7.1 Installation Planning and Prerequisites</i>	07-300568	113230
<i>Avaya Interaction Center Release 7.1 Installation and Configuration</i>	07-300569	113231
<i>Avaya Interaction Center 7.1 Business Advocate Configuration and Administration</i>	07-300574	113148

The `Release.pdf` file contains the latest notes about installation of OA components. Avaya recommends that you read these notes before installation.

After installation, you can view the release notes at:

- `%PABASE%\doc\Release.pdf` (Windows)
- `$PABASE/doc/Release.pdf` (Solaris and AIX)

The default installation directories that represent `%PABASE%` and `$PABASE` are:

- `c:\Program Files\Avaya\BI` (Windows)
- `/export/home/biadmin/BI` (Solaris)
- `/home/biadmin/BI` (AIX)

The database operations explained in this document require the services of either a qualified database administrator or a systems integrator who possesses in-depth knowledge of database fundamentals and of the operating system. Some suggested reference materials include:

For Oracle databases:

- Oracle9i Database Installation Guide (Windows)
- Oracle9i Client Installation Guide Release 2 (9.2.0.1.0) for Windows
- Oracle9i Installation Guide Release 2 for UNIX Systems
- Oracle9i Administrator's Reference for UNIX Systems
- The Legato Storage Manager administrator guide
- Oracle 10g Installation Guide for Microsoft Windows
- Oracle 10g Client Installation Guide for Microsoft Windows
- Oracle 10g Installation Guide for Solaris Operating System (SPARC 64-Bit)
- Oracle 10g Client Installation Guide for Solaris Operating System (SPARC 64-Bit)
- Oracle 10g Administrator's Guide
- For Microsoft SQL databases:
 - Microsoft SQL Server 2000 Books Online
 - Microsoft database documentation
- For DB2 databases, the DB2 documentation, which is available online after you install the database software.
- For TimesTen databases, the TimesTen documentation, which is available online after you install the Real-time subsystem. The documentation is copied to the following location:
 - `%PABASE%\doc\TimesTen` (Windows)
 - `$PABASE/doc/TimesTen` (Solaris and AIX)

For detailed information about how to install operating system software, refer to the documentation that accompanies the operating system software.

Maintaining the historical database

To keep OA running smoothly, follow the procedures in this section to maintain the historical database.

This section includes the following topics:

- [Schema management](#) on page 15
- [Backing up the historical database](#) on page 18
- [Changing the user or system administration password](#) on page 29
- [Other maintenance procedures](#) on page 29



Important:

The database operations used with Avaya OA require the services of either a qualified database administrator (DBA) or a systems integrator who possesses an in-depth knowledge of database fundamentals on the installed operating system. Database operations should not be done by personnel not familiar with the database software.

Schema management

Schema management allows you to enable Aux Reason Code columns in a CMS historical store, either *cmsagent* or *cmsskill*. These columns are in disabled mode by default. This allows you to enable only the number of columns necessary for your CMS installation.

Note:

A qualified database administrator should perform all database backup and schema management activities.

This section includes the following topics:

- [Phases of schema management](#) on page 16
- [Preparing for schema management](#) on page 16
- [Performing schema management](#) on page 17

Phases of schema management

Schema management takes place in two phases: declaration and schema management. This section describes these phases.

Declaration

Declaration is the process of using the OA Administration Client to specify CMS Aux Reason Code columns to enable. The new specifications are referred to as the pending schema of the CMS historical store. Declarations can only be made against a pending schema; the current schema cannot be changed.

Schema management

Schema management is the process of changing the database tables as defined in the pending schema. To maximize the performance of this phase of the schema management process, OA 7.1 utilizes the database vendor-supplied utility **alter-table**. This utility allows in-place management of database tables, requiring much less down time than other methods of data migration.

The schema management activity is guided by the OA 7.1 **SchemaMgtUtil** utility. The purpose of **SchemaMgtUtil** is to apply the declared schema changes to the data stores. The **SchemaMgtUtil** utility reads information about the current and pending schemas, and makes the defined changes. This utility executes quickly and requires no user interaction.

Two instances of a schema management event cannot execute at the same time. If this is attempted, the second execution will fail. A lock, which is set in the CMS historical store where schema management is occurring, prevents conflict. The second attempt will not be able to get the lock, and it will fail.

Table lock conflicts cannot occur because the **SchemaMgtUtil** utility has exclusive access to the database. Avaya OA is shut down for schema management.

If the system is shut down or an unrecoverable error occurs during the schema management phase, the **SchemaMgtUtil** utility will attempt to resume and complete the schema management session from where the previous execution was terminated.

Preparing for schema management

Prior to performing schema management:

- Plan to do schema management during OA downtime. Schema management must be done when the OA system is shut down and unavailable for production. Off hours or low usage periods are a good time for schema management.
- Do a complete system backup before making any schema changes.

- Include temporary data storage in your schema change plan.

Performing schema management

Perform the following tasks:

Note:

A qualified database administrator should perform all database backup and schema management activities. If problems arise that cannot be resolved locally, contact Avaya Customer Support or your OA Professional Services representative for assistance.

1. Declaration

Use the OA Administration Client **Schemas** page to specify the CMS Aux Reason Codes columns to be enabled in either the CMS agent summary or the CMS skill summary data store. Refer to the Administration Client online help for details about performing the steps required to select the appropriate disabled columns.

2. OA backup #1

Perform a full backup of the OA historical database. For information about full backups see [Backing up the historical database](#) on page 18.

3. Schema management

Perform the following steps:

- a. If you are using the private synonym interface, execute:

```
ChangeDBuser -u OASchemaOwner -p OASchemaOwnerPassword
```

- b. At the command prompt stop OA by executing:

```
pa stop all
```

- c. At the command prompt, run **SchemaMgmt**:

```
SchemaMgtUtil -d historical store for Windows
```

OR

```
SchemaMgtUtil.sh - d historical store for Unix
```

where *historical store* is one of:

- cmsagent
- cmsskill

- d. If you are using the private synonym interface, execute:

```
ChangeDBuser -u OASynonymOwner -p OASynonymOwnerPassword
```

- e. Restart OA by executing at the command prompt:

```
pa start all
```

4. OA backup #2

Perform a full backup of the OA database after schema management is complete. For information about full backups see [Backing up the historical database](#) on page 18.

Backing up the historical database

Avaya recommends that you back up the historical database on a regular basis. This section describes the requirements for database backup, both in general terms for backup requirements and in specific terms for the different database software packages.

This section includes the following topics:

- [General backup requirements](#) on page 18
- [Backup requirements specific to Microsoft SQL](#) on page 20
- [Backup requirements specific to Oracle](#) on page 22
- [Backup requirements specific to DB2](#) on page 27

General backup requirements

This section describes general requirements for database backup, regardless of the database software being used.

This section includes the following topics:

- [Responsibilities of the DBA](#) on page 18
- [Types of backups](#) on page 18
- [Frequency of backups](#) on page 19
- [Recommended backup strategies](#) on page 19

Responsibilities of the DBA

A trained DBA or other qualified person should be available to customize and perform all of your backup operations. This includes management of tape backups, so that the tapes for both historical and system data are backed up and labeled correctly.

Types of backups

Avaya recommends that your backup strategy include a combination of incremental backups and full backups.

A full backup captures a snapshot of a database at a point in time. It provides a copy of the entire data structure from which the database could be restored in the event the database is lost or corrupted.

An incremental backup captures only the changes that have occurred in the data since the last backup, either full or incremental. To restore from incremental backups requires a full backup and all subsequent incremental backups since the last full backup.

Since a full backup captures all of the data, it takes considerably more time to complete than an incremental backup, especially on large databases. Therefore, your backup strategy should include both types of backup.

Frequency of backups

Schedule regular backups of all databases. Avaya recommends the following as a minimum backup frequency:

- Perform a full backup once a week.
- Perform an incremental backup once each day.

Do not schedule your full backup or incremental backup to run while system-scheduled jobs (such as Purge or Aggregation recovery) are running. You should do the backups during non-business hours. If your business runs 24-by-7, schedule your backups to run during low traffic periods.

Recommended backup strategies

The contact load and database activity of a contact center determines the best backup strategy for the contact center. These factors can change over time. Periodically review the Avaya OA reports on contact load and agent activity, and the results of the performance checks to determine if you need to adjust your backup strategy to better protect your data from loss.

The following table summarizes the strategies recommended by Avaya:

Database activity	Type and frequency of backup
Small	<ul style="list-style-type: none"> • Full backup of all databases daily • Transaction log backups every 30 minutes for Microsoft SQL and IBM DB2 • Archive log backups every 30 minutes for Oracle

Database activity	Type and frequency of backup
Medium	<ul style="list-style-type: none">● Full backup of all databases weekly● Incremental backups of all databases daily● Transaction log backups every 30 minutes for Microsoft SQL and IBM DB2● Archive log backups every 30 minutes for Oracle
Large	<ul style="list-style-type: none">● Full backups of all databases weekly● Incremental backups of all databases daily● Transaction log backups every 30 minutes for Microsoft SQL and IBM DB2● Archive log backups every hour for Oracle

You should analyze your particular business situation and design an appropriate backup strategy that affords you the greatest protection from data loss. A minimum strategy requires weekly full backup of OA databases and hourly transaction log or archive log backup.

Backup requirements specific to Microsoft SQL

This section lists the backup requirements that are specific to Microsoft SQL databases.

This section includes the following topics:

- [Checking the integrity of the Microsoft SQL Server database](#) on page 20
- [DBCCheck](#) on page 21
- [Periodic maintenance](#) on page 21
- [Restoring the Microsoft SQL Server database](#) on page 21
- [Related documents](#) on page 21

Checking the integrity of the Microsoft SQL Server database

Use the Query Analyzer tool to execute the `DBCC` command of the Microsoft SQL Server database server to check the consistency of the database and database objects. If you need to correct or repair errors you must put the database into single user mode.

Refer to Microsoft SQL Server Books Online for more information on using the `DBCC` command.

DBCheck

DBCheck is an audit process that runs once a day. **DBCheck** can be called by other components or run independently. It logs all of its actions into an activity log (%*PABASE%*\data\log\dbcheck\dbchecktrc.log). You can set the start time for **DBCheck** using the Administration client. The default time to run is after the system backup.

DBCheck performs the following actions:

1. Establishes database connection as the owner of the OA database.
2. Calls **MetadataSanityRun** to check for inconsistent metadata.
3. Scans the Microsoft SQL Server Logs for noteworthy events.

The **DBCheck** command does not initiate alarms and runs as user ID administrator.

Periodic maintenance

Some periodic maintenance tasks are run by **DBCheck** nightly. You should perform the others as instructed below.

- Look at the Event Viewer and Microsoft SQL Server Logs to see if any errors have been detected by **DBCheck** or Microsoft SQL Server.
- In general, the indexes on the OA historical table should be rebuilt after you delete more than 30% of the records in the table. If you do so, you should watch the growth of the **Tempdb** database.
- Maintain a transaction log folder that has enough space for several log files. If the transaction log folder becomes full, Microsoft SQL Server issues a warning and the database hangs until you free up some space in the destination log folder. View Microsoft SQL Server Books Online for details about transaction log maintenance.
- Back up the transaction logs to tape every 30 minutes. Then clean the destination so it can receive more transaction log files. You may use Microsoft SQL Server Enterprise Manager Backup or write your own scripts to accomplish this task.
- Monitor the OA historical filegroup on a weekly basis. As the historical database tables grow, you must add more datafiles to a filegroup whenever they have less than 20% free space or the amount of space needed for the next week of data.

Restoring the Microsoft SQL Server database

Please refer to Microsoft SQL Server Books Online, *Administering SQL Server*, for more detailed information on restoring your database.

Related documents

Consult the Microsoft SQL Server Books Online, *Administering SQL Server*, when doing Microsoft SQL backups.

Backup requirements specific to Oracle

This section lists the backup requirements that are specific to Oracle databases.

This section includes the following topics:

- [Required software configurations when using pabackup \(optional Avaya utility\)](#) on page 22
- [Backup using pabackup \(optional Avaya utility\)](#) on page 23
- [Recovering the Oracle database when using pabackup \(optional Avaya utility\)](#) on page 24
- [Location of files](#) on page 25
- [DBCCheck](#) on page 26
- [Periodic maintenance](#) on page 26
- [Related documents](#) on page 27

Required software configurations when using pabackup (optional Avaya utility)

During software installation, database setup must initialize the historical database parameter files with the parameters that the backup strategy needs if it is to operate.

To use the OA backup utility, you must do the following:

1. Install and configure Oracle Enterprise Edition on the OA historical server.
2. Put the historical database in ARCHIVELOG mode.
3. Set the Oracle Recovery Manager (RMAN) environment variables. The environment variables are:

```
NLS_LANG = AMERICAN_AMERICA.UTF8
```

```
NLS_DATE_FORMAT = 'Mon DD YYYY HH24:MI:SS'
```

Note:

The `NLS_LANG` variable shown here is the default. For other languages see the Oracle documentation. The national character set should always be UTF-8.

Backup using pabackup (optional Avaya utility)

In most cases, the standard Oracle backup commands should be used when backing up the historical database. As an option, Avaya has developed a script called **pabackup** that will back up the Oracle databases. This section describes the steps for doing a full and incremental backup of the OA Oracle historical database using **pabackup**.

To back up an Oracle database using **pabackup**:

1. Bring up Legato Storage Manager (LSM) and insure a tape drive has been configured and a tape has been labeled. Use the following commands:
 - For Windows, select **Start > Programs > NetWorkerGroup > NetWorker Administrator**
 - For Solaris, enter:


```
nwadmin
```
2. Change to the directory containing the backup scripts:
 - For Windows, `%PABASE%\data\admin\backup`
 - For Solaris, `cd $PABASE/data/admin/backup`
3. Execute one of the following backup commands:
 - `pabackup -f reg` for a full backup
 - `pabackup -i reg` for an incremental backup

Note:

An incremental backup can be done only if a full backup has already been done at least one time.

4. Monitor the backup with the LSM by selecting the **Monitor** tab for the server that is performing the backup.

The **Messages** window indicates what is being backed up and when the backup is finished. A backup of the database can take several hours, depending on the amount of data to back up and the type of tape device to which the backup is being made.

5. Check the backup log file.

If a backup seems to fail, or seems to be taking too long, the status of the backup, from Oracle's point of view, can be seen in the log file. The backup log file can be found at:

- `%PABASE%\data\log\backup` (Windows)
- `$PABASE/data/log/backup` (Solaris)

For a full backup, the Oracle log file is `backup_db_level_0.log`. For an incremental backup, the Oracle log file is `backup_db_level_1.log`.

6. Validate the backup using the Oracle tool RMAN.

After the database has been backed up, all archive log files are automatically deleted. A copy of the database control file is kept at:

- `%PABASE%\data\admin\backup\sys\BACKUP_CF.BK` (Windows)
- `$PABASE/data/admin/backup/sys/BACKUP_CF.BK` (Solaris)

This file should be saved to a permanent place if a point-in-time restore of the database is required in the future.

Recovering the Oracle database when using pabackup (optional Avaya utility)

If you use the `pabackup` script to back up the historical database, the instructions in this section will help you recover the database if it fails. If you use standard Oracle tools to create database backups, refer to the *Oracle Backup and Recovery Guide* to recover the database.

Note:

To recover to a point that is earlier than the latest full backup, you must have a copy of the Oracle database control file earlier than the full backup.

To recover the historical database to a point just before the failure, refer to the Oracle RMAN sample script `restore_db_cp.rcv` in `%PABASE%\data\admin\backup` (Windows) or `$PABASE/data/admin/backup` (Solaris). Be sure you also have all the incremental backups until the failure point and the redo log files generated after the latest incremental backup.

For other kinds of Oracle recoveries (for example, system tablespace recovery or open database recovery), refer to the *Oracle Backup and Recovery Guide*.

To restore the Oracle historical database.

1. Bring up the LSM and insure that the tape that contains the backup of the database to be restored is mounted.
 - For Windows, select **Start > Programs > NetWorkerGroup > NetWorker Administrator**.
 - For Solaris, enter:
`nwadmin`
2. Change to the directory containing the backup scripts:
 - For Windows, `%PABASE%\data\admin\backup`
 - For Solaris, `cd $PABASE/data/admin/backup`
3. Open a command window and run:
 - For Windows:
`set NLS_LANG=NLS_LANGUAGE_NLS_TERRITORY.NLS_CHARACTERSET`
 - For Solaris:
`export NLS_LANG=NLS_LANGUAGE_NLS_TERRITORY.NLS_CHARACTERSET`

For example, `AMERICAN_AMERICA.UTF8` is the correct value for `NLS_LANG` in the English version of OA.

4. If the Oracle control file is available, run the following commands in the command window:

- For Windows:

```
rman target sys/sys password nocatalog cmdfile
"\"%PABASE%\data\admin\backup\restore_db_cp.rcv\" log
"\"%PABASE%\data\log\backup\restore_db.log\""
```

- For Solaris:

```
rman target sys/sys password nocatalog cmdfile
"$PABASE/data/admin/backup/restore_db_cp.rcv" log
"$PABASE/data/log/backup/restore_db.log"
```

5. Monitor the restore with the LSM by selecting the **Monitor** tab for the server that is performing the restore.

The **Messages** window indicates when a restore is finished. A restore of the database can take several hours, depending on the amount of data to restore and the type of tape device from which the restore is being made.

6. Check the restore log file.

If a restore seems to fail, or seems to be taking too long, the status of the restore, from Oracle's point of view, can be seen in the log file. The restore log file can be found at:

- %PABASE%\data\log\backup (Windows)
- \$PABASE/data/log/backup (Solaris)

For a complete restore, the Oracle log file is `restore_db_cp.log`.

Location of files

The OA backup strategy writes its log files to:

- %PABASE%\data\log\backup (Windows)
- \$PABASE/data/log/backup (Solaris)

It writes the backup of the database control file to:

- %PABASE%\data\log\backup\sys (Windows)
- \$PABASE/data/log/backup/sys (Solaris)

All of the OA backup strategy RMAN command files are stored in:

- %PABASE%\data\log\backup (Windows)
- \$PABASE/data/log/backup (Solaris)

The Backup application for the historical database uses the `db.properties` file to get information on the database server and the database user id.

The Backup application for the historical database uses the historical database to get information on the tablespace names.

DBCheck

DBCheck is an audit process that runs once a day. **DBCheck** can be called by other components or run independently. It logs all of its actions into an activity log located at `%PABASE%\data\log\dbcheck\dbchecktrc.log` (Windows) or `$PABASE/data/log/dbcheck/dbchecktrc.log` (Solaris). You can set the start time for **DBCheck** using the Administration client. The default time to run is after the system backup.

DBCheck performs the following actions:

1. Establish database connection as the owner of the OA database.
2. Run **Analyze Table** on OA database tables.
3. Call **MetadataSanityRun** to check the inconsistent metadata.
4. Scan the Oracle Alert Log for noteworthy events (only on a database coresident with the Historical subsystem).
5. If the Oracle Alert Log is too large, roll it over for backup (only on a database coresident with the Historical subsystem).

DBCheck does not initiate alarms. **DBCheck** runs as the administrator user ID.

DBCheck can be reconfigured for checking database integrity and to gathers statistics for the Oracle cost-based optimizer. Currently, the default optimization level is used, but this can be changed by editing `%PABASE%\data\admin\dbcheck.tables` (Windows) or `$PABASE/data/admin/dbcheck.tables` (Solaris) and changing the percentage.

Periodic maintenance

Some periodic maintenance tasks are run by **DBCheck** nightly. You should perform the others as instructed below.

- Look at the Event Viewer in Windows or the `$PABASE/data/log/CentralError/CentralErrorLog.log` file on Solaris to see if any errors have been detected by **DBCheck**.
- In general, the indexes on the OA historical table should be rebuilt after you delete more than 30% of the records in the table. If you do so, you should watch the growth of the Oracle **TEMP** tablespace. If the used space in the **TEMP** tablespace is greater than 95%, extend the **TEMP** tablespace. For details about extending the **TEMP** tablespace, refer to the *Oracle Administrator Guide*.
- Monitor the Oracle rollback segment tablespace daily to be sure it has at least 30% free space. Purging many records will cause the rollback segment to grow rapidly. For example, purging over a million rows from the table can cause a rollback segment to reach up to 4 GB.

- Remove inactive Oracle rollback segments so that no more than 20 rollback segments exist at any time. Refer to the *Oracle Administrator Guide* for details about removing inactive rollback segments.
- Tune your redo logfiles. OA requires 50MB for each Oracle redo logfile to make sure checkpoints occur normally. If the checkpoint interval becomes less than 30 seconds, increase the logfile size to 100MB. An Oracle warning that Oracle failed to allocate redo logs indicates that heavy database activity requires more redo logs. Add more redo log groups to the Oracle database to resolve this problem. Please refer to the *Oracle Administrator Guide* and *Oracle Tuning* documentation for details on these tasks.
- Maintain a "clean" archive log destination for optimum OA operation. If the archive log destination becomes full, Oracle issues a warning and the database will hang until you free up some space in the archive log destination. The *Oracle Administrator Guide* contains details about archive log destination maintenance.
- Back up the archived logs to tape every 30 minutes. Then clean the destination so it can receive more archived log files. You may use `pabackup` or write your own scripts to accomplish this task. Refer to the *Oracle Backup and Recovery* documentation for details about writing a backup script.
- Monitor the OA historical tablespace on a weekly basis. As the historical database tables grow, you must extend the tablespaces whenever they have less than 20% free space or the amount of space needed for the next week of data.

Related documents

Consult the following documents when doing Oracle backups:

- *Oracle Backup and Recovery Guide*
- *Oracle Database Administrator Guide*
- *Oracle Administrator Guide*
- *Oracle Tuning*

Backup requirements specific to DB2

This section lists the backup requirements that are specific to DB2 databases.

This section includes the following topics:

- [DBCCheck](#) on page 28
- [Periodic maintenance](#) on page 28
- [Related documents](#) on page 28

DBCheck

DBCheck is an audit process that runs once a day. **DBCheck** can be called by other components or run independently. It logs all of its actions into an activity log located at `$PABASE/data/log/dbcheck/dbchecktrc.log`. You can set the start time for **DBCheck** using the Administration client. The default time to run is after the system backup.

DBCheck performs the following actions:

1. Establish database connection as the owner of the OA database.
2. Run `Update Statistic` on OA database tables.
3. Call `MetadataSanityRun` to check the inconsistent metadata.

DBCheck does not initiate alarms. **DBCheck** runs as the administrator user ID.

DBCheck can be reconfigured for checking database integrity. Currently, the default optimization level is used, but this can be changed by editing `$PABASE/data/admin/dbcheck.tables` and changing the percentage.

Periodic maintenance

Some periodic maintenance tasks are run by **DBCheck** nightly. You should perform the others as instructed below.

- Look at the `$PABASE/data/log/CentralError/CentralErrorLog.log` file to see if any errors have been detected by **DBCheck**.
- In general, the indexes on the OA historical table should be rebuilt after you delete more than 30% of the records in the table.
- Back up the transaction logs to tape every 30 minutes. Then clean the destination so it can receive more archived log files.
- Monitor the OA historical tablespace on a weekly basis. As the historical database tables grow, you must extend the tablespaces whenever they have less than 20% free space or the amount of space needed for the next week of data.

Related documents

Consult *IBM DB2 Universal Database Administration Guide: Implementation* when doing DB2 backups:

Changing the user or system administration password

Because of the sensitive nature of making password changes, this procedure is now located in the *Avaya Operational Analyst Security Guide* that is found on the OA software CD-ROM. Look for the file `SecurityGuide.pdf` in the `docs` directory.

Other maintenance procedures

The following monitoring procedures should be used daily to verify that the system is running properly and to verify that the data is being collected and archived as expected.

This section includes the following topics:

- [Checking Microsoft SQL Server log files](#) on page 29
- [Container status](#) on page 30
- [Scheduled jobs](#) on page 30
- [Interface services](#) on page 30
- [Event logs](#) on page 30
- [Avaya IC alarm monitor](#) on page 31

Checking Microsoft SQL Server log files

Part of routine maintenance should be checking the Microsoft SQL Server logs files to make sure they are not getting too large.

To check log files:

1. Open **Enterprise Manager**.
2. Click **SQL Server Group**.
3. Click `local host\instance name`.
4. Click **Management**.
5. Click **SQL Server Logs**.

Container status

Use the **Container Status** window of the Administration client to verify that the OA historical system is receiving the expected data. Status for aggregated and archived data can be viewed from this window. Therefore, this is the window that would be accessed to view the status of daily archived data each day, weekly archived data each week, and monthly archived data each month. In addition, the status of base interval data can be viewed daily as well.

Scheduled jobs

Use the **Scheduled Jobs** window of the Administration client to view the status of jobs. These status views can be views of system scheduled jobs, as well as on-demand and external jobs that may have been added. These status views can be used to determine if particular processes, such as aggregation or purge, have completed successfully.

If aggregation fails, go to **Container Status** and determine which job failed. If the job is recoverable, aggregation recovery may have already cleaned up the job, so you may not see any failed jobs in the **Container Status**.

Interface services

The **Interface Services** window of the Administration client can be used to view the status of OA services such as Data manager, Forwarder, Recorder, Forwarder-Recorder, Report data server, and the Report subsystem. This window indicates whether a process is currently enabled or not. If data is missing, then possibly the associated service has become disabled and needs to be enabled again. These services can be enabled from the **Interface Services** window as well.

Refer to the Administration client online help for more detailed information on monitoring and maintaining the system through these windows. From the Administration client, select **Help > Screen Help**.

Event logs

Monitor the application **Event Viewer** on Windows and the `$PABASE/data/log/CentralError/CentralErrorLog.log` file on Solaris and AIX every day in order to keep informed of error conditions that may have occurred.

In addition, on Solaris and AIX, system level errors are recorded in `/var/adm/messages` in much the same way as the **Windows Event** log. These messages will not be application specific with the exception of the `init` and `namesrv` processes since they run as daemons.

Avaya IC alarm monitor

Critical alarm conditions can be monitored and detected with the Avaya IC Alarm Monitor. See [Alarm messages](#) on page 68 for further information.

Troubleshooting overview

This section presents a suggested map for troubleshooting an OA system and information about how Avaya Customer Support can assist your troubleshooting efforts remotely.

Follow the troubleshooting map to help narrow the point of difficulty from broad, system-related areas to more specific targets like individual processes. The map contains references to other sections of the Troubleshooting Guide for more detailed information.

This section includes the following topics:

- [Path definitions](#) on page 33
- [Troubleshooting map](#) on page 35
- [Remote access](#) on page 37

Path definitions

It is important to understand the path definitions for the different operating systems:

- [Windows path definitions](#) on page 33
- [Solaris path definitions](#) on page 34
- [AIX path definitions](#) on page 34

Windows path definitions

The following variable is used in this document to represent the installation path for most OA software on Windows:

%PABASE%

For example, the location for a file in that path is shown as follows:

%PABASE%\stumbras\tomcat\work\localhost_8080

The following is the default installation path OA uses on a Windows server:

c:\Program Files\Avaya\BI

Note:

When installing OA, the **BI** portion of the path is not displayed when the default path is shown in the **Destination** dialog box. This is added as part of the installation.

The following variable is used in this document to represent the installation path for EC Server and EC Bridge software on Windows:

`%AVAYA_IC71_HOME%\bin`

Solaris path definitions

The following variable is used in this document to represent the installation path for most OA software on Solaris:

`$PABASE`

For example, the location for a directory in that path is shown as follows:

`$PABASE/data/log`

Depending on how the OS was installed and how the filesystems were created, the following is the default installation path OA uses on a Solaris server:

`/export/home/biadmin/BI`

Note:

When installing OA, the **BI** portion of the path is not displayed when the default path is shown in the **Destination** dialog box. This is added as part of the installation.

The following variables are used in this document to represent the installation path for the Sun Web Server software on Solaris:

`$SUN_WEB_HOME`

The following variables are used in this document to represent the installation path for EC Server software and libraries on Solaris:

`$AVAYA_IC71_HOME/bin`

`$AVAYA_IC71_HOME/lib`

AIX path definitions

The following variable is used in this document to represent the installation path for most OA software on AIX:

`$PABASE`

For example, the location for a directory in that path is shown as follows:

`$PABASE/data/log`

Depending on how the OS was installed and how the filesystems were created, the following is the default installation path OA uses on an AIX server:

`/home/biadmin/BI`

Note:

When installing OA, the **BI** portion of the path is not displayed when the default path is shown in the **Destination** dialog box. This is added as part of the installation.

The following variable is used in this document to represent the installation path for the WebSphere software on AIX:

`$WEBSHERE_HOME`

The following is the default WebSphere installation directory on an AIX server:

`/usr/WebSphere/AppServer`

The following variable is used in this document to represent the installation path for the DB2 database instance on AIX:

`$INSTANCE_ID_HOME`

The following variables are used in this document to represent the installation path for EC Server software and libraries on AIX:

`$AVAYA_IC71_HOME/bin`

`$AVAYA_IC71_HOME/lib`

The following is the default Avaya_IC_HOME directory on an AIX server:

`/opt/Avaya/IC71`

Troubleshooting map

To begin troubleshooting a problem with OA:

1. Log in using the appropriate user ID and password (see *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*).
2. Check the **Event Viewer** (Windows) or `$PABASE/data/log/CentralError/CentralErrorLog.log` file (Solaris and AIX) for messages that indicate particular problems. See [Error messages](#) on page 93 for details about locating and reading the logs.
3. Verify **Avaya Business Intelligence Service** and **ORBacus Naming Service** are running.

- On Windows: **Start > Programs > Administrative Tools > Services**.
If the services are not running, start them. If they do not start, use the Event Viewer to debug the system.
- On Solaris or AIX: From the command line enter:

```
ps -ef | grep initshr  
ps -ef | grep nameserv
```

If the services are not running, log in as **root** (**su - root**) and check the **/etc/inittab** settings and verify **initshr** and **nameserv** are set to respawn. Write the file and enter **init q** to restart the services. When finished, log out of root.

If the services do not start, use the trace files to debug the system. See [Trace files](#) on page 64 for more information.
- 4. Once **Avaya Business Intelligence Service** and **ORBacus Naming Service** are running, verify Master Operations Manager (MOM) is running. From the command line, enter:

```
. /opt/BI/.profile
```

(Solaris and AIX only)

```
pa list
```
- 5. If a list of processes is displayed, MOM is running. If the message **mom is not active** is displayed, enter **pa start all**.
See [Avaya OA processes](#) on page 42 for more information about MOM.
- 6. When MOM is running, verify other OA processes and services are running.
 - Enter the following commands to see which OA components have been installed:

```
oalist
```
 - Verify the base OA services are running via the **pa** or **amui** command:
 - **admb**, **adm0**, and **ams** for all servers.
 - **aut** and **schd** for the historical server.

Note:

The **ams** process will not be listed when the **amui** command is used. If **amui** runs successfully, then the **ams** process is running.

- Verify other processes are running based on what was shown with the **pa list** and **oalist** commands. For example, the **dm** and **dsrv** processes should be running if the Real-time subsystem is installed. Use the **pa** command to enable a process if it is not running. See [Avaya OA processes](#) on page 42 for more information on processes and the **pa** command.
- Verify that any previously administered forwarders, recorders, or forwarder-recorders are running (and which server they are running on) using the **Interface Services** screen of the Administration client. If not running, enable the services through this

same screen. Refer to the *Administration Client Help* for more information about using the **Interface Services** screen.

- If a process does not start, check the Windows **Event Viewer** or Solaris and AIX `$PABASE/data/log/CentralError/CentralErrorLog.log` for messages indicating particular problems. You may need to view the trace files to locate the problem. See [Trace files](#) on page 64 for more information.
7. Check log files at the following locations:
`%PABASE%\data\log` (Windows)
`$PABASE/data/log` (Solaris and AIX)
 8. For the Administration client and Report client, check the Java console for any messages that may have been logged. To open the Java console, double-click the Java console icon in the system tray.
 9. If you cannot find a process that you think should be running, verify the administration of the system through the Administration client **Subsystems** and **Interface Services** screens. Refer to the *Administration Client Help* for more information about using the Administration client **Subsystems** and **Interface Services** screens.
 10. See the OA support site for possible solutions to common problems.
<http://support.avaya.com/qg/>

Remote access

Avaya customer support representatives can access your OA system remotely to assist with troubleshooting if you are running on Windows. To enable this service, you must install pcAnywhere software, version 10.5 or later, on the systems requiring remote access.

To install pcAnywhere:

1. Install a standard modem and its associated driver. Verify the modem is accessible to the system via the Control Panel. Set the modem parameters according to this table:

Modem parameter	Value
Data Terminal Ready	On
Carrier Detect	On
Auto Answer	On
Display Result Codes	Off

Refer to the modem documentation for details on configuring these parameters.

Troubleshooting overview

2. Install pcAnywhere using the pcAnywhere documentation for installation instructions.

Troubleshooting tools

This section describes the various tools you have available to you while troubleshooting problems with OA components.

This section includes the following topics:

- [Using the oalist command](#) on page 39
- [Starting and stopping OA-related processes](#) on page 41
- [Data collection status for forwarders and recorders](#) on page 52
- [Monitoring the TimesTen database](#) on page 54
- [Event collector troubleshooting tools](#) on page 57
- [Event Collector Bridge troubleshooting tools](#) on page 59
- [Viewing load level on a host](#) on page 59
- [Testing the CORBA interface](#) on page 60
- [Diagnosing the Historical Delivery System files](#) on page 60
- [Other troubleshooting commands](#) on page 60
- [Using OA commands](#) on page 39

Using OA commands

Avaya recommends that you execute the commands described in this section using the OA user ID created in *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*. If you use the root user ID to execute these commands, ownership of some files may be changed, and the OA user ID may no longer be able to execute some of the commands.

Using the oalist command

The `oalist` command displays the components, server names, and user IDs currently installed on an OA server.

Troubleshooting tools

To use the `oalist` command:

1. Enter the following commands:

```
. /opt/BI/.profile (Solaris and AIX only)
```

```
oalist
```

A message similar to the following is displayed:

```
Subsystems installed
  Historical
  Real Time
  Reports
  Data API Utility

Server Names
  Historical: pez
  Historical Database: pez
Database information
  Type: DB2
  UserID: biadmin
  Instance Name: db2inst1
  OA DB Name: oadb
  OA DB Schema Name: oaschema
  IC UserID: icuser
  IC Repository DB Name: icschema
  CMS Historical Tables created
  IC Historical Tables created
  DB2 Path: /home/db2inst1
  DB2 Library Path: /home/db2inst1/sqlllib

User information
  OA User ID: biadmin
  Group ID: oaadmin

Reports information
  WebSphere Root: /usr/WebSphere/AppServer
  HTTP Root: /usr/IBMHttpServer
  WebSphere Application Server: server1
  WebSphere Admin Console User: biadmin

OA Software information
  Version Installed: 7.1.0.XXX
```

Starting and stopping OA-related processes

Under most circumstances, OA processes running on the historical and real-time servers are controlled behind the scenes or from the Administration client. When troubleshooting, it may be necessary to start and stop these processes directly. Avaya OA provides tools that allow access to these processes.

This section includes the following topics:

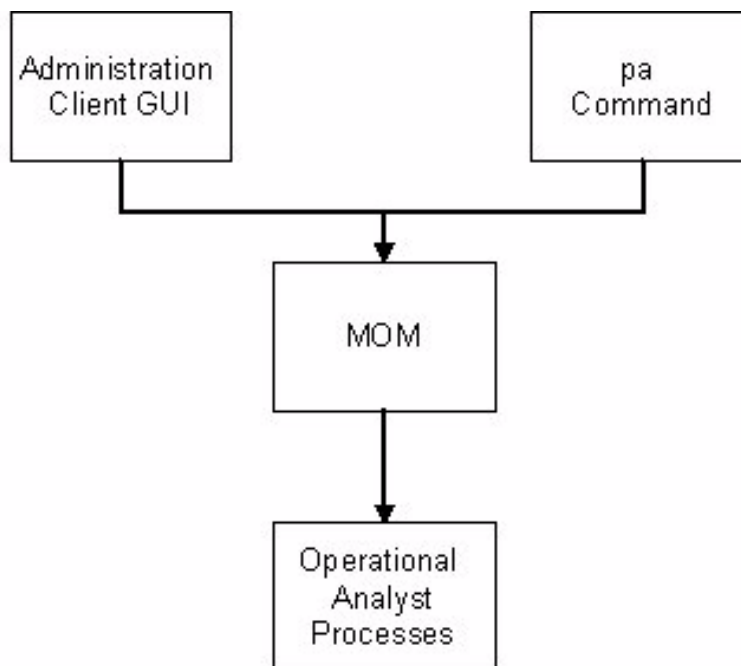
- [Overview](#) on page 41
- [Avaya OA processes](#) on page 42
- [Listing managed processes](#) on page 44
- [Using the pa command](#) on page 45
- [Forwarders and recorders](#) on page 48
- [Other OA services and processes](#) on page 49

Overview

The Master Operations Manager (MOM), shown below, is the behind-the-scenes controller of OA processes. On Windows, the MOM is started by the OA Service, under the control of the Service Control Manager (see the Services icon in the Computer Management menu under **Start > Programs > Administrative Tools > Services** menu). On Solaris and AIX, the MOM is started during system boot up via the `/etc/inittab` file. The OA Service is always running and does not need to be stopped or restarted.

A user may start and stop processes using either the Administration client or the `pa` utility. Both of these provide access to the MOM, which performs the actual work. The configuration of processes varies depending on your system configuration. The diagram below shows the OA startup and shutdown interaction.

The MOM receives input from an Administration client graphical user interface or from the command **pa**. From the Administration client **Interface Services** window, you can elect to disable or enable the forwarder, data manager, and data server processes on an OA server that has the Real-time subsystem, the recorder on an OA server that has the Historical subsystem, and the forwarder-recorder on a server that has both the Historical and Real-time subsystems. Using the **pa** command, you can elect to enable or disable these and other OA processes, or stop and start all OA processes.



The MOM maintains a list of all processes under MOM control. Upon stopping and re-starting the OA service (as during a reboot), the MOM remembers which processes were disabled and does not restart those processes.

Avaya OA processes

This table shows the processes controlled by the MOM and the respective servers on which they run.

Process	MOM process ID	OA server			
		Historical	Real-time	Report	CMS
admin mgr	admb	x	x	x	x
	adm0	x	x	x	x

Process	MOM process ID	OA server			
		Historical	Real-time	Report	CMS
application management server	ams	x	x	x	x
central report data server	crds			x	
data manager	dm		x		
data server	dsvr		x		
forwarder	fwdagent		x		
	fwdagentcomp		x		
	fwdagentjob		x		
	fwdagentstate		x		
	fwdcmSCALLhistory				x
	fwdcmssynonyms				x
	fwdcmsagent				x
	fwdcmscwc				x
	fwdcmsskill				x
	fwdcmsvsn				x
	fwddisplaynames		x		
	fwdjob		x		
	fwdserviceclass		x		
	fwdservicestate		x		
	fwdsyscomp		x		
MOM	N/A	x	x	x	x

Process	MOM process ID	OA server			
		Historical	Real-time	Report	CMS
recorder	recagent	x			
	recagentcomp	x			
	recagentjob	x			
	recagentstate	x			
	reccmsagent	x			
	reccmscallhistory	x			
	reccmscwc	x			
	reccmsskill	x			
	reccmssynonyms	x			
	reccmsvsn	x			
	recdisplaynames	x			
	recjob	x			
	recserviceclass	x			
	recservicestate	x			
	recsyscomp	x			
scheduler	schd	x			
security	aut	x			

Note:

MOM processes have process ID numbers as do other processes (see the `pa list` command described in [Using the pa command](#) on page 45). However, they are not used by MOM. MOM uses words such as **admb**.

Listing managed processes

To list the managed CORBA processes, use the following command:

```
amui [host hostname] list
```

This displays the list of managed processes running on the server *hostname*, or on the local server if *hostname* is not specified. These process names can be used to change the tracing level.

Using the `pa` command

This section describes how to use the `pa` command.

**CAUTION:**

Do not use the `pa` command logged in as `root`. If you use the `pa` command logged in as `root`, permissions for some commands may be changed and will not operate properly.

**Important:**

If you try to use the `pa` command on Solaris or AIX and you get the message `libOB.so.4.0.5 library not found`, it means that you are using the command with a user ID that is not assigned to the primary group ID. Log in with a user ID that is assigned to the primary group ID or reassign the user ID to the primary group ID.

Command line options: The `pa` command allows the enabling, starting, and stopping of OA processes. This interface allows a user with the proper permissions to shut down all processes at once or start all OA processes. Options used with `pa` are described below. Once executed, all commands indicate whether or not they executed successfully.

Note:

The process IDs are the MOM process IDs listed in the table in [Avaya OA processes](#) on page 42. They are not the operating system process IDs.

`pa active processId`

Determines if a process is currently running.

`pa cat`

Displays the MOM list of processes and their characteristics as contained in the `momtab` file. The output of the command for a historical server on Windows is shown below:

```
id:4:initdefault:
admb:234:respawn:{ }java -Xrs
com.avaya.cc.cvx.adminmgr.AdminMgrSrv.AdminMgrSrvBaseServer -v 30
adm0:234:respawn:{ }java -Xrs com.avaya.cc.cvx.adminmgr.AdminMgrSrv.AdminMgrSrvServer
-i 0 -v 30
ams:1234:respawn:{ }java -Xrs com.avaya.cc.cvx.appmanserver.AppManServer -v 10
aut:234:respawn:{umask=07}java -Xrs com.avaya.cc.cvx.autserver.main -v 10
schd:34:respawn:{ }java -Xrs com.avaya.cc.cvx.scheduler.Scheduler -v 30
reccmscallhistory:34:respawn:{ }$PABASE/bin/recorder -n cmscallhistory -v 10
reccmssynonyms:34:respawn:{ }$PABASE/bin/recorder -n cmssynonyms -v 10
reccmsagent:34:respawn:{ }$PABASE/bin/recorder -n cmsagent -v 10
reccmsskill:34:respawn:{ }$PABASE/bin/recorder -n cmsskill -v 10
reccmsvsn:34:respawn:{ }$PABASE/bin/recorder -n cmsvsn -v 10
reccmscwc:34:respawn:{ }$PABASE/bin/recorder -n cmscwc -v 10
recworkitem:34:off:{ }$PABASE/bin/recorder -n workitem -v 10
recdisplaynames:34:respawn:{ }$PABASE/bin/recorder -n displaynames -v 10
recagentstate:34:respawn:{ }$PABASE/bin/recorder -n agentstate -v 10
recagent:34:respawn:{ }$PABASE/bin/recorder -n agent -v 10
recservicestate:34:respawn:{ }$PABASE/bin/recorder -n servicestate -v 10
recserviceclass:34:respawn:{ }$PABASE/bin/recorder -n serviceclass -v 10
recprocess:34:off:{ }$PABASE/bin/recorder -n process -v 10
recivrport:34:off:{ }$PABASE/bin/recorder -n ivrport -v 10
recagentcomp:34:respawn:{ }$PABASE/bin/recorder -n agentcomp -v 10
recagentjob:34:respawn:{ }$PABASE/bin/recorder -n agentjob -v 10
recjob:34:respawn:{ }$PABASE/bin/recorder -n job -v 10
recsyscomp:34:respawn:{ }$PABASE/bin/recorder -n syscomp -v 10
<< END OF INITTAB >>
```

This file should not normally be edited. If it is edited, the only option that should be changed is the debug level (the `-v` option, which can be set to 10, 20, or 30).

pa disable processId

Disables any OA process. You can disable the recorder, forwarder, data manager, and data server, from the Administration client. Each request to disable a process is logged if tracing is enabled. For example, to disable the first administration manager on a historical server, enter **pa disable adm1**. See the process ID names shown in [Avaya OA processes](#) on page 42.

pa enable processId

Enables any OA process. From the Administration client **Interface Services** window, you can elect to enable the recorder, forwarder, data manager, and data server. Each request to enable a process is logged if tracing is enabled. For example, to enable **scheduler**, enter **pa enable schd**. See the process ID names shown in [Avaya OA processes](#) on page 42.

pa list

Displays the list of processes activated by the MOM and their current state. The output shown below is for a server that has the Historical subsystem. In this example:

- The date column indicates when an individual process was started.

- The fourth column displays when the status of the file was last changed. A period (.) means that the status of the file changed in the last 60 seconds. A time stamp is displayed when the status of the file was changed from 60 seconds to 24 hours ago. The word `old` is displayed if the status of the file changed more than 24 hours ago.
- The second to the last column shows its process ID as tracked by the operating system.
- The last column shows its process ID as tracked by the MOM. If the process display also includes the words `exit` or `term`, the process is not running. Unless the process has been stopped intentionally for troubleshooting, use `pa start` to restart the process.
- There should be several Java entries, and these lines should not have an exit code at the end of the line.
- If there are any exit codes displayed on the Java entries, that process is not running. Escalate the problem to Avaya Technical Support.
- The `id=aut` and `id=schd` will only display when the Historical subsystem is installed.

- The recorder entries are displayed only if you are collecting data from CMS or Avaya IC. Forwarder entries may be displayed on a server that has the Real-time subsystem installed.

.	system boot	Dec 20 07:54			
.	run-level 4	Dec 31 10:23	4	0	@
java	.	Dec 20 07:54	.	292	id=admb
java	.	Dec 20 07:54	.	52	id=adm0
java	.	Jan 02 16:16	.	995	id=ams
java	.	Dec 20 07:54	.	295	id=aut
java	.	Dec 20 07:54	.	296	id=schd
recorder	.	Dec 20 08:00	.	551	id=reccmsagent
recorder	.	Dec 20 08:00	.	405	id=reccmscwc
recorder	.	Dec 20 08:00	.	607	id=reccmsskill
recorder	.	Dec 20 08:00	.	406	id=reccmsvsn
recorder	.	Dec 20 08:00	.	625	id=reccmscallhistory
recorder	.	Dec 20 08:00	.	434	id=reccmssynonyms
recorder	.	Dec 31 10:23	.	576	id=recagent
recorder	.	Dec 31 10:23	.	700	id=recagentcomp
recorder	.	Dec 31 10:23	.	577	id=recagentjob
recorder	.	Dec 31 10:23	.	769	id=recagentstate
recorder	.	Dec 31 10:23	.	655	id=recjob
recorder	.	Dec 31 10:23	.	780	id=recserviceclass
recorder	.	Dec 31 10:23	.	686	id=recservicestate
recorder	.	Dec 31 10:23	.	220	id=recsyscomp
recorder	.	Dec 31 10:23	.	669	id=recdisplaynames

pa start all

Starts the MOM and all the processes.

pa state processId

Displays whether the process is enabled or disabled.

pa stop all

Stops the MOM and all the processes.

Forwarders and recorders

Forwarders are programs on CMS servers and Real-time servers used to send data to OA for collection and processing. Recorders are programs on the historical server to collect the data sent from CMS and Real-time servers.

To verify that forwarders or recorders are running, use the **pa list** command. Compare the list of forwarders and recorders displayed with the list shown in [Avaya OA processes](#) on page 42. You can also use the **pa active** or **pa state** commands to see if a particular forwarder or recorder is running.

If the forwarders are not running on the server, enter the following command using a forwarder process ID name shown in [Avaya OA processes](#) on page 42:

```
pa enable processID
```

If the recorders are not running on the OA Historical server, enter the following command using a recorder process ID name shown in [Avaya OA processes](#) on page 42:

```
pa enable processID
```

Note:

If you need to stop the forwarders or recorders, use the `pa stop` command.

You must manually start forwarders and recorders in the following situations:

- The database server goes out of service. When the server is back in service, you must restart the recorders.
- The CMS server goes out of service. When the server is back in service, you must restart the forwarders, and possibly the recorders.
- The server where the Historical subsystem is installed goes out of service. When the server is back in service, you must restart the recorders.

Other OA services and processes

In addition to the processes described in the previous sections, OA is dependent upon other services and processes that are not under the control of MOM.

This section includes the following topics:

- [Stopping and starting the Report subsystem and Web services](#) on page 49
- [Starting ORBacus Naming Service](#) on page 51
- [Stopping and starting TimesTen database services](#) on page 52
- [Starting Database services](#) on page 52
- [Stopping and starting the Event Collector and Event Collector Bridge](#) on page 52

Stopping and starting the Report subsystem and Web services

The section describes how to stop and start the Report subsystem and Web services.

To stop the Report subsystem and Web services on Windows

1. Log in using the appropriate user ID and password (see *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*).
2. Select **Start > Programs > Administrative Tools > Services**.
3. Stop the Stumbras-Tomcat service.

To start the Report subsystem and Web services on Windows

1. Log in using the appropriate user ID and password (see *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*).
2. Select **Start > Programs > Administrative Tools > Services**.
3. Start the Stumbras-Tomcat service.

To stop the Report subsystem and Web services on Solaris

1. Log in using the appropriate user ID and password (see *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*).
2. Enter the following commands:

```
cd $SUN_WEB_HOME/https-stumbras
./stop
```

To start the Report subsystem and Web services on Solaris

1. Log in using the appropriate user ID and password (see *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*).
2. Enter the following commands:

```
cd $SUN_WEB_HOME/https-stumbras
./start
```

To stop the Report subsystem and Web services on AIX

1. Log in using the appropriate user ID and password (see *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*).
2. From the `OA/bin` directory, enter:

```
stopWebSphere server1 -u userID
```

where *userID* is the user ID administered for Global Security on WebSphere. If a Global Security user ID has not been administered, do not use the user and password options.

To start the Report subsystem and Web services on AIX

1. Log in using the appropriate user ID and password (see *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*).

2. From the `OA/bin` directory, enter:

```
startWebSphere server1 -u userID
```

where *userID* is the user ID administered for Global Security on WebSphere and *userpassword* is the password for that user ID. If a Global Security user ID has not been administered, do not use the user and password options.

The following message is displayed.

```
.  
. .  
ADMU3000I: Server server1 open for e-business; process id is XXXXX
```

Starting ORBacus Naming Service

The ORBacus Naming Service must be running on all servers. To verify the service is running:

On Windows: Select **Start > Programs > Administrative Tools > Services**.

Look for **ORBacus Naming Service** and verify that it has a status of **Started**. If not, start it from this **Services** window.

On Solaris and AIX: From the command line enter `ps -ef | grep nameserv`.

If the service is running, a line containing the service name **nameserv**, UID, GID and other information about the service is displayed. If the service is not running a line containing only **grep nameserv** is displayed.

If the service is not running, as **root**, or with **root** privileges, edit `/etc/inittab` to see if **nameserv** is set to **respawn**.

- If **nameserv** is not currently set to **respawn**:
 1. Set **nameserv** to **respawn**
 2. Write the file
 3. Execute `init q`.
- If **nameserv** is currently set to **respawn**:
 1. Set **nameserv** to **off**.
 2. Write the file.
 3. Execute `init q`.
 4. Set **nameserv** to **respawn**.
 5. Write the file.
 6. Execute `init q` again.

Stopping and starting TimesTen database services

Services associated with the TimesTen database must be running on the real-time server. See [Stopping and starting TimesTen](#) on page 56 for information on starting TimesTen services.

Starting Database services

Services associated with the historical database must be running on the server containing the database. Please refer to the database documentation for details about its particular service requirements.

Stopping and starting the Event Collector and Event Collector Bridge

Use IC Manager to stop and start the Event Collector and Event Collector Bridge.

Data collection status for forwarders and recorders

Forwarders and recorders are responsible for feeding data to OA and making sure it is appropriately placed in the data stores. If data is missing from historical or real-time stores, or seems to be inaccurate compared to known IC or CMS activity, check to be sure the forwarders and recorders are correctly administered. Refer to the *Administration Client Help* for more information.

The `dcstat` (data collection status) command displays status and statistics of forwarders and recorders. The `dcstat` command uses the following syntax:

```
dcstat -n [fwd|rec]datastore [-a|-l|-c|-b|-r] [-h host] [-v  
0|10|20|30] [-t bits] [-i] [-z]  
dcstat -n dm -s source [-h host] [-i]  
dcstat -n db [-t table]
```

-a	Display all available status messages. This is equivalent to -l -c -b -r.
-b	Display status of data buffering.
-c	Display status of data collection.
-h	The service is on the specified host.
-i	Display the supported CORBA interface objects of the forwarder or recorder. Display the supported tables of the dm (data manager).
-l	Display status of data listening.

-n	The name of a service, database, or database table. For a forwarder or recorder, the prefix indicates the type and the suffix is an historical data store. For example, fwdcmscallhistory . For a CORBA request to the Data Manager, use dm . For a request to a database, use db . Anything else is assumed to be a table in the database.
-r	Display status of data recording.
-s	Source id that identifies a dm.
-t	Choose a specific table or all when -v 30 is used.
-v	Activate/deactivate the trace by changing the verbosity level. For example, 0 means off, 10 means trace events, 20 means trace interfaces, 30 means trace low-level functions.
-z	Reset all statistical counters to zero.

For example, if you want to view status of the forwarder for the agent data store, enter:

```
dcstat -n fwdagent -a
```

If you want to change the trace level for the recorder for the cmsskill data store to a debug level enter:

```
dcstat -n reccmsskill -v 30
```

When troubleshooting data collection from a CMS server, the following example shows the output for the command **dcstat -n fwdcmsagent -a** before data collection has been scheduled and run:

```
CRM_BI.root/collect.pkg/fwdcmsagent.obj @ leopard

Process: pid=12471 forwarder -n cmsagent -v 10
Status: 01/15/03 12:50:14 through 01/15/03 12:51:25
Trace: event
*:Listener:
  0 processData
hagent:CMSCollector:
  OK: 01/15/03 12:51:23
  0 queries
  0 collected
hCmsAgent@hawkeye:Sender:
  OK: 01/15/03 12:51:19
  0 processData
  0 delivered
```

The following example shows the output for the command `dcstat -n fwdcmsagent -a` after data collection has been scheduled and run:

```
CRM_BI.root/collect.pkg/fwdcmsagent.obj @ leopard

Process: pid=12471 forwarder -n cmsagent -v 10
Status: 01/15/03 12:50:14 through 01/15/03 12:55:06
Trace: event
*:Listener:
  1 processData - last at 01/15/03 12:54:15
hagent:CMSCollector:
  OK: 01/15/03 12:51:23
  1 queries - last at 01/15/03 12:50:17
    640 collected
hCmsAgent@hawkeye:Sender:
  OK: 01/15/03 12:51:19
  4 processData - last at 01/15/03 12:54:20
    640 delivered (1 intervals)
```

The `dcrun` (data collection run) command allows you to start and stop an entire set of forwarders or recorders. The `dcrun` command uses the following syntax:

```
dcrun [on|off] [cms|ic|sd] [fwd|rec]
```

on	Turn on the forwarders or recorders.
off	Turn off the forwarders or recorders.
cms	CMS forwarders or recorders.
ic	IC forwarders or recorders.
sd	Outbound call (soft dialer) forwarders or recorders.
fwd	Forwarders
rec	Recorders

For example, if you want to turn on all forwarders for CMS, enter:

```
dcrun on cms fwd
```

Monitoring the TimesTen database

This section describes the documentation and monitoring tools you can use to troubleshoot the TimesTen database.

This section includes the following topics:

- [Message logs](#) on page 55
- [TimesTen documentation](#) on page 55
- [Increasing TimesTen verbosity level](#) on page 55
- [Stopping and starting TimesTen](#) on page 56
- [Monitoring TimesTen memory usage](#) on page 56

Message logs

The TimesTen message logs are found in the Event Viewer for Windows. For Solaris, the logs are found in the location created in *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*. For AIX, the logs are found in the location created in *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*.

TimesTen documentation

TimesTen documentation is included on the OA distribution media. During the installation process the documentation is copied to these locations:

- Windows: %PABASE%\doc\TimesTen
- Solaris and AIX: \$PABASE/doc/TimesTen

Note:

To view the documentation you must have Adobe Acrobat Reader 5.0 or later installed.

Increasing TimesTen verbosity level

To assist in debugging TimesTen problems, increase the verbosity level:

1. Edit the following file:
 - c:\TimesTen\TimesTen5.1.34\avaya_bi\srv\info\ttendaemon.options (Windows)
 - /var/TimesTen/avaya_bi/ttendaemon.options (Solaris and AIX)

These paths are default installation locations.

2. Remove the # symbol from the #verbose line.
3. Stop and restart the TimesTen services as described in [Stopping and starting TimesTen](#) on page 56.

4. When debugging is complete, replace the # symbol.

Note:

Be sure the # is in place in the file during normal operation.

Stopping and starting TimesTen

Information about the procedure for starting or stopping TimesTen is located in *TimesTen Operation Guide Release 5.1*, in the chapter titled *Working with the TimesTen Data Manager Daemon*. This manual is the file `operations.pdf` in the documentation directory described in [TimesTen documentation](#) on page 55.

Monitoring TimesTen memory usage

The best way to monitor memory usage in TimesTen is to use `ttIsq1` and the `dssize` stored procedure. There is no explicit logging done in TimesTen or OA to notify users that a memory threshold setting has been exceeded.

If you see TimesTen-related errors logged by OA, and the associated TimesTen error numbers are 802 or 6220 through 6223, TimesTen is notifying OA of memory related issues. 802 is an "out-of-memory" error, and the others are "threshold exceeded" warnings.

TimesTen error and warning messages can be viewed in the *TimesTen API and SQL Reference Guide Release 5.1*. It is available in file `tt_ref.pdf` in the documentation directory described in [TimesTen documentation](#) on page 55. Other TimesTen documents found there will have more information on `ttIsq1` and `dssize`.

To run `dssize`:

1. At the command line type `ttIsq1 -connStr "dsn=dss128"`.
2. At the **Command>** prompt, type `dssize m;`

The `dssize` command displays the memory usage (in MB) similar to this:

PERM_ALLOCATED_SIZE:	25
PERM_IN_USE_SIZE:	1
PERM_IN_USE_HIGH_WATER:	1
TEMP_ALLOCATED_SIZE:	8
TEMP_IN_USE_SIZE:	1
TEMP_IN_USE_HIGH_WATER:	1

where:

Parameter	Represents
PERM_ALLOCATED_SIZE:	Size of the permanent memory segment. This is where OA tables are stored.
PERM_IN_USE_SIZE:	Out of the allocation, how much is actually in use.
PERM_IN_USE_HIGH_WATER:	High water mark. This may be higher than in_use.
TEMP_ALLOCATED_SIZE:	Size of the temporary memory segment. This segment is used byTimesTen for temporary tables.
TEMP_IN_USE_SIZE:	Out of the temporary memory allocation, how much is actually in use.
TEMP_IN_USE_HIGH_WATER:	High water mark of the temporary memory segment. This may be higher than in_use.

Event collector troubleshooting tools

The event collector (EC or Source-EC server) captures real-time events from the IC system and forwards them to the data manager. If EC is not administered correctly, or is not operating, no new contact center information is available for real-time reporting or for aggregation and reporting in the historical database. Check EC administration and status via IC Manager. See *Avaya Operational Analyst Release 7.1 Installation and Configuration* for details on how to configure the EC.

EC log files can be found in `%AVAYA_IC71_HOME%\logs\ecServerName.log` (Windows) or `$AVAYA_IC71_HOME/logs/ecServerName.log` (Solaris and AIX) where *ecServerName* is the name of the EC instance configured in IC Manager.

The logging flags are set in IC Manager. Select the **Server** tab and the **ECServer** process. In the resulting dialog select the **Debug** tab, then click **Trace Levels**. The **Trace Levels** dialog box appears with the following options:

Flag	Definition
usr1- General EC server logging enabled.	Logs EC startup and shutdown messages.
usr2 - ICServerProxy package logging enabled.	Logs interactions with IC servers.
usr3 - EventMapper package logging enabled.	Logs data transformation performed in preparation for forwarding to the datamanager.

Flag	Definition
usr4 - ECCommon package logging enabled.	Logs general EC services messages.
usr5 - EC/OA IDL package logging enabled.	Logs high level interactions between EC and data manager.
usr6 - RTProxy package logging enabled.	Logs detailed data sent from EC to data manager.
usr7 - General debug tracing logging enabled.	Debug logging in EC enabled. Do not use unless directed by Avaya technical support.
usr8 - Function entry and exit logging enabled.	Detailed EC function tracing enabled. Do not use unless directed by Avaya technical support.

Other non-EC specific logging flags of interest include:

Flag	Description
msg	Incoming/outgoing messages from/to IC servers.
flush	Immediately flushes I/O to disk.

EC can also record incoming and outgoing events. This can be very useful for replicating problems. Recording is enabled via configuration variables that are defined in the EC server configuration dialog described above for the logging flags. Instead of opening the **Debug** tab, open the **Configuration** tab. On this tab, the following parameters control recording:

Parameter	Values
ECR_ENABLED=y	enables recording, default is n
ECR_ROLLOVER_BYTES=bytes	0 disables file size limits, default is 1MB
ECR_ROLLOVER_FILES=num	0 disables limits, default is 10
ECR_ROLLOVER_SECONDS=num	0 disables, default is 0; 1800 is useful for 1/2 hour snapshots

Note:

Do not enable recording via the ECR* flags listed above unless directed to do so by Avaya customer support.

Event Collector Bridge troubleshooting tools

The Event Collector Bridge captures real-time events from the Avaya Business Advocate system and forwards them to the Event Collector. If ECB is not administered correctly, or is not operating, the Event Collector will not be able to PumpUp. Check ECB administration and status via IC Manager.

ECB log files can be found at:

- `%AVAYA_IC71_HOME%\logs\ecbServerName.log` (Windows)
- `$AVAYA_IC71_HOME/logs/ecbServerName.log` (Solaris and AIX)

where `ecbServerName` is the name of the ECB instance configured in IC Manager.

The logging flags are set in IC Manager. To set the trace levels:

1. Select the **Server** tab and the **Event Collector Bridge** process.
2. In the resulting dialog select the **Debug** tab, then click **Trace Levels**.

The **Trace Levels** dialog box appears with the following options:

Flag	Definition
usr1 - General ECB server logging enabled.	Must be turned on to enable general ECB trace logging.
usr2	Not used.
usr3	Not used.
usr4	Not used.
usr5	Not used.
usr6	Not used.
usr7	Not used.
usr8 - Function entry and exit logging enabled.	Detailed ECB function tracing enabled. Do not use unless directed by Avaya technical support.

Viewing load level on a host

To view the CPU load level on a host, use the following command:

```
amui [host hostname] load
```

With this command, you can display the load level of the CPU on server *hostname*, or on the local server if *hostname* is not specified.

Testing the CORBA interface

Diagnosing the Historical Delivery System files

The Historical Delivery System (HDS) files are created whenever the system first initializes or when the Real-time database forwards data to the historical database using the `fwddisplaynames` command.

These files are located in the following directory:

- `%PABASE%\add_on\data\hds` (Windows)
- `$PABASE/add_on/data/hds` (Solaris and AIX)

The files in this directory are in the form `dbtable.dat` where `dbtable` is the name of a database table. You can use these files to determine if the correct table data is being forwarded to the historical database.

Other troubleshooting commands

This section describes various other troubleshooting commands that can be used to track problems with OA.

This section includes the following topics:

- [testalarms](#) on page 61
- [TraceConv](#) on page 61
- [Whattime](#) on page 61

testalarms

The **testalarms** command tests the configuration and interface for forwarding of alarms. The test alarms are recorded in the *\$PABASE/data/log/CentralError/CentralErrorLog.log* file. The command displays the following information:

```
Beginning testalarms...
Alarms forwarded to server vtex-6.dr.avaya.com which is of type IC.

Raising emergency priority alarm.
Raising high priority alarm.
Raising low priority alarm.
Raising informational priority alarm.
Clearing emergency priority alarm.
Clearing high priority alarm.
Clearing low priority alarm.
Clearing informational priority alarm.

See CentralErrorLog to verify status of this test.
Problems encountered are documented there.
If alarms processed successfully, then view the alarms for
vtex-6.dr.avaya.com on the Alarm Monitor to verify the
test alarms were received.
```

TraceConv

The **TraceConv** command takes the information in a pre-OA 7.1 log file, converts the time stamps into a more understandable format, and orders the entries from oldest to newest. For example:

```
TraceConv autsvrTrc.log > Conv_autsvrTrc.log
```

If **TraceConv** is run against an OA 7.1 log file, the following message is displayed:

```
Bad trace date stamp, does not start with "+++".
Skipping file...
```

Whattime

The **Whattime** command converts a time stamp from a pre-OA 7.1 log file into a more understandable format. For example, to convert a time stamp, enter:

```
Whattime time_stamp
```


Troubleshooting OA components

This section presents monitoring and troubleshooting information about core OA components. This information will help you determine possible sources of difficulty in various portions of OA, like historical or real-time databases, OA subsystems, and various data and user interfaces. Trace files, alarm messages and error messages are valuable tools, and this section helps to clarify the information they provide.

This section includes the following topics:

- [General OA troubleshooting](#) on page 63
- [Trace files](#) on page 64
- [Alarm messages](#) on page 68
- [Error messages](#) on page 93
- [Troubleshooting the TimesTen database](#) on page 97
- [Troubleshooting the historical database](#) on page 100
- [Data manager, report data server, and central report data server](#) on page 111
- [Troubleshooting data collection problems](#) on page 113
- [Troubleshooting for Cognos](#) on page 119

General OA troubleshooting

This section describes solutions to general OA problems.

This section includes the following topics:

- [Order of starting Avaya IC and OA servers](#) on page 63
- [Power failures on Avaya IC and OA servers](#) on page 64

Order of starting Avaya IC and OA servers

When returning servers into operation after maintenance, adding, repairing, or upgrading, use the following sequence:

1. Start all Avaya IC servers. See *Avaya Interaction Center Release 7.1 Installation and Configuration* for more information.

2. Verify that the Avaya IC servers can communicate with other Avaya IC servers.
3. Start processes and services on all OA servers. See [Starting and stopping OA-related processes](#) on page 41 for more information.
4. Verify that the OA servers can communicate with all other servers in the configuration.

Power failures on Avaya IC and OA servers

Since power failures can randomly affect servers, the servers may power-up and restart in random order. Use the following sequence to bring the servers back up in proper order:

1. Stop processes and services on all OA servers. See [Starting and stopping OA-related processes](#) on page 41 for more information.
2. Start all Avaya IC servers. See *Avaya Interaction Center Release 7.1 Installation and Configuration* for more information.
3. Verify that the Avaya IC servers can communicate with other Avaya IC servers.
4. Start processes and services on all OA servers. See [Starting and stopping OA-related processes](#) on page 41 for more information.
5. Verify that the OA servers can communicate to all other servers in the configuration.

Trace files

Trace files allow you to isolate and diagnose problems within a process as well as problems between communicating processes.

Note:

Trace files are not intended for customer use, but rather for Avaya customer support representatives, system verification engineers, or development engineers who are engaged in troubleshooting OA problems.

This section includes the following topics:

- [Loginfile file](#) on page 65
- [Locating trace files](#) on page 65
- [Trace levels](#) on page 66

Logininfo file

The `logininfo` file contains the trace log parameters used by the Logger to determine the name, location, size, and number of rollover files associated with each component. The `logininfo` file is located at:

- `%PABASE%\data\admin\logininfo` (Windows)
- `$PABASE/data/admin/logininfo` (Solaris and AIX)

The `logininfo` file specifies information for OA server and the OA Administration client. The following is an example of some entries in this file:

```
dbchecktrc data/log/dbcheck/dbchecktrc 150000 10
reccmsagent data/log/recorder/cmsagentTrc 500000 3
```

The first two items of each entry should not be changed (slashes or backslashes are required). The third item specifies the maximum size of the trace file in bytes and can be changed to a value of 100000 to 10000000. The fourth item specifies the maximum number of rollover files and can be changed to a value of 3 to 99. If you need larger or more log files, you can modify these two items. However, if you increase these values, be sure to verify that there is enough disk space on the machine to save the larger log files.

Locating trace files

Most of the trace files are located in directories under the `%PABASE%\data\log` (Windows) or `$PABASE/data/log` (Solaris and AIX) directory. To locate a particular server trace file, edit the `logininfo` file described above and find the path and filename (the second item in the entry) associated with the process of interest.

Some of the trace directories include the following:

- `adminmgr`
- `aggregate`
- `appman`
- `autserver`
- `backup`
- `CentralError` (UNIX only)
- `config`
- `dbcheck`
- `dbsetup`
- `histexport`

- `initsrv`
- `loadmon`
- `metadata`
- `migration`
- `purge`
- `recorder`
- `sanity`
- `scheduler`
- `scripts`

Trace levels

Note:

The Report subsystem does not use this trace level scheme.

Trace files contain trace information that results from the trace level you set. There are three levels of tracing available: Event level (10), Interface level (20), and Debug level (30). The Event level tracing provides the least amount of information, Interface level provides more detailed trace information, and the Debug level provides the most detailed trace information.

Trace levels above Event level (10) produce a large volume of data and should be used sparingly, especially the Debug level (30). The large amount of data logged can affect the overall performance and throughput of OA.

Note:

If anti-virus software is running on a system where a high level of tracing is enabled, performance may be further impacted. This is especially noticed when the trace levels are increased for Data Manager and Aggregation. While troubleshooting at this level, be sure to configure the anti-virus software so that it does not scan the trace files. If the system performance is still impaired, you may consider turning off the anti-virus software while capturing the trace information needed.

Trace levels can be changed dynamically or statically. Dynamic changes apply only to the currently running processes. If the trace level must be maintained on an on-going basis even after stopping and restarting a process, the trace level must be changed statically.



Important:

Turning trace off (set to zero) for a process results in no logging of trace messages in OA trace files for that process. However, trace messages continue to be written to the Windows `Event Log` and to `CentralErrorLog.log` on UNIX machines whether trace is on or off.

This section includes the following topics:

- [Dynamic trace level changes](#) on page 67
- [Static trace level changes](#) on page 67
- [Administration client trace levels](#) on page 68

Dynamic trace level changes

The Application Management Framework provides the capability to dynamically change the tracing level for all of the OA CORBA servers. With this functionality, you do not need to stop processes to change the tracing level. Keep in mind that the level that you set is only valid as long as the current instance of the process is running. It will be reset to the values in MOM if the process restarts.

The command-line tool syntax is:

```
amui [host hostname] process processname tlevel level
```

where

- *hostname* is the IP or DNS name of the host where the CORBA process is running, localhost is used if not specified.
- *processname* is the name of the CORBA process.
- *level* is a valid trace level of 0,10,20, or 30.

For example:

```
amui host oalab process recagentstate tlevel 30
```

sets the trace level of the `recagentstate` process to the highest debug level.

Static trace level changes

If it becomes necessary to permanently change the tracing level for a process, edit the `%PABASE%\data\admin\mom\etc\momtab` (Windows) or `$PABASE/data/admin/mom/etc/momtab` (Solaris and AIX) file. This file contains entries for each of the processes that MOM controls. The line associated with the process of interest must be modified, then the process must be stopped and restarted for the change to take effect.

For example, consider this excerpt from a `momtab` file:

```
admb:234:respawn:java com.avaya.cc.cvx.adminmgr.AdminMgrSrv.AdminMgrSrvBaseServer -v 10
adm0:234:respawn:java com.avaya.cc.cvx.adminmgr.AdminMgrSrv.AdminMgrSrvServer -i 0 -v 10
ams:1234:respawn:java com.avaya.cc.cvx.appmanserver.AppManServer -v 0
```

To permanently increase the trace level for the **admb** process to the highest debug level, change **-v 10** to **-v 30**. Then stop and restart the **admb** process via the **pa** command. (See [Using the pa command](#) on page 45 for more information.)

Note:

Do not modify any other values in the `momtab` file.

Administration client trace levels

See [AdminPol.html](#) on page 131 for details on setting Administration client trace levels.

Alarm messages

When an alarm occurs, OA forwards an alarm message to the IC Alarm Server where the Source-EC (Event Collector) subsystem is installed. Alarms can be viewed in the Alarm Monitor of IC Manager. The IC Alarm Server may be on a Windows, Solaris, or AIX system. Avaya IC alarms are viewed using the IC Alarm Monitor. This viewer resides on a client machine and is therefore supported only on Windows systems. The IC Alarm Viewer provides a GUI interface to view and clear alarms. It can view the alarms of multiple Alarm Servers.

An OA alarm is cleared through software by raising an informational alarm. Cleared alarms should clearly state that the specific condition no longer exists.

In addition to being forwarded to an IC Alarm Server, OA alarms are also logged into the local OA central error log (the Windows **Event Viewer** or the Solaris and AIX `$PABASE/data/log/CentralError/CentralErrorLog.log` file), as well as into trace files if tracing is activated.

Note:

In a CMS-only configuration, alarms are logged only in the `CentralErrorLog.log` file and trace files (if tracing is activated) because there is no associated IC system to receive the alarm messages.

This section includes the following topics:

- [Viewing alarms](#) on page 69
- [Alarm properties](#) on page 69
- [Alarm tables](#) on page 69

Viewing alarms

To view alarms on an Avaya IC system, from IC Manager select **Tools > Alarm Monitor**.

Alarm properties

The alarm properties, stored in the `%PABASE%\data\admin\server.properties` (Windows) or `$PABASE/data/admin/server.properties` (Solaris and AIX) file, specify the host type and location of the alarm server to receive the alarms. This file is configured during installation, and under normal conditions does not require editing. However, if error messages are logged indicating that alarm messages cannot be forwarded because of incorrect properties values, edit the file and assure these two entries are as follows:

```
AlarmHostType=IC
```

```
AlarmServer=<alarmserver location>
```

where `alarmserver location` is the fully qualified IP address of the alarm server that is to receive the alarms. (For example: `myAlarmServerName.denver.avaya.com.`)

Alarm tables

Alarms originate from several OA sources. The following tables present the alarms from each of the sources. To aid your understanding of the information presented in the tables, review these tips:

- The *Alarm message* column of the tables shows the message as it appears in the IC Alarm Monitor and the error log.
- In some cases in the tables an alarm message has an ellipsis (...) at the end of the text. This indicates that the actual alarm message will present more information based on where in the product the alarm is generated.
- Some alarm message entries contain a list of strings within square brackets, like `[a1 | a2 | a3]`. This indicates that one of the values in the list appears in the actual alarm message.
- Many entries specify file path names. While Windows notation `%PABASE%` and `\` is used in the paths specified in the entries, you can replace them with `$PABASE` and `/` respectively for Solaris and AIX.
- In entries where lengthy path names must be broken, they are broken at a directory boundary. Always consider path names to be unbroken.

The alarm tables in this section include:

- [Administration Manager alarm messages](#) on page 70

Troubleshooting OA components

- [Scheduler alarm messages](#) on page 75
- [DBService alarm messages](#) on page 75
- [Data Manager alarm messages](#) on page 75
- [Report Data Server alarm messages](#) on page 79
- [Central Report Data Server alarm messages](#) on page 81
- [Forwarder alarm messages](#) on page 83
- [Forwarder or recorder alarm messages](#) on page 85
- [Event Collector alarm messages](#) on page 85
- [Event Collector Bridge alarm messages](#) on page 91

Administration Manager alarm messages

Alarm message	Description	Resolution
Exception when resolving Admin Manager reserve server. Check MOMTAB to be sure it is being launched...	Unable to resolve administration manager reserve server with the naming service.	Check the %PABASE% \data\admin\mom\etc\momtab file to be sure the adm0 and admb entries are set to respawn , not off . Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service.
Exception when narrowing Admin Manager reserve server. Check MOMTAB to be sure it is being launched...	Unable to narrow the object reference.	Check the %PABASE% \data\admin\mom\etc\momtab file to be sure the adm0 and admb entries are set to respawn , not off . Stop and restart adm0 using these commands: pa disable adm0 and pa enable adm0 .
Exception when starting [adm1 adm2 adm3 adm4 adm5] process...	Unable to connect to an administration manager server on the historical server.	Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service. Check for networking problems.
Server [adm1 adm2 adm3 adm4 adm5] failed to register with base server - exiting	The administration manager base server has died.	Execute the pa list command to see if admb is running. If not, restart it using pa enable admb .

Alarm message	Description	Resolution
Exception when resolving [adm1 adm2 adm3 adm4 adm5]...	Unable to resolve one of [adm1 adm2 adm3 adm4 adm5] with the naming service. This could be because the administration manager server is not running.	Reconnect from the Administration client.
Exception when narrowing [adm1 adm2 adm3 adm4 adm5]...	Unable to narrow the object reference.	Stop and restart adm0 using pa disable adm0 and pa enable adm0 .
Exception when setting up monitoring of [adm0 adm1 adm2 adm3 adm4 adm5]...	Server did not start properly, or quit.	For adm0 , stop and restart using pa disable adm0 and pa enable adm0 . For others, if Administration client is available, then attempt to reconnect to the server by selecting File > Reconnect , or restart the Administration client.
AdminMgrSrvBaseServer unable to get lock. Check the momtab file to be sure that only one AdminMgrSrvBaseServer is being launched.	Unable to get lock.	<p>Check the %PABASE% \data\admin\mom\etc\momtab file to be sure there is only one AdminMgrSrvBaseServer set to respawn.</p> <p>If logging in to the Administration client with the OA User ID configured during installation, check permissions of the %PABASE%\data\runtime\lock directory and verify this ID has permission to write to this directory.</p> <p>If logging in to the Administration client with a different User ID, verify this User ID is a member of the OA Group ID configured during installation. Then check permissions of the %PABASE%\data\runtime\lock directory and verify this group has permission to write to this directory.</p>

Alarm message	Description	Resolution
ALARM - emergency: OA AdminMgrSrv 558=AdminMgrSrvServer0: failed to get lock for AdminMgrSrvServer0CVXLock: All locks in use for file c:\Program Files\Avaya\BI\data\runtime\lock\AdminMgrSrvServer0Lck	Administration Manager lock files exist and must be deleted before continuing.	<p>Do the following:</p> <ol style="list-style-type: none"> 1. Log in as an OA administrative user. 2. In a command prompt window, enter: pa stop all. 3. Using Control Panel > Administrative Tools > Services, stop the Avaya Business Intelligence service. 4. Delete all files in the c:\Program Files\Avaya\BI\data\runtime\lock folder on the server where the Historical subsystem is installed. 5. Using Control Panel > Administrative Tools > Services, start the Avaya Business Intelligence service. 6. In a command prompt window, enter: pa start all.
ALARM - emergency: OA AdminMgrSrv 4301=Exception when resolving CRM_BI.root/core.pkg/AdminMgr0.obj. Check MOMTAB to be sure it is being launched. org.omg.CosNaming.NamingContextPackage.NotFound null		
Exception raised during ORB initialization:...	Unable to initialize the ORBacus ORB; may be using incorrect ORB.	<p>Verify in the %PABASE%\AdminPol.html (or %PABASE%\AdminSig.html) file that for the entry PARAM NAME="java_archive", jars/ OB.jar and jars/OBNaming.jar are included in the VALUE specified.</p> <p>Verify that the OB.jar and OBNaming.jar files exist in %PABASE%\jars directory.</p>
Exception raised during creation of mySrv:...	Problem with CORBA.	<p>Check system resources: disk space, memory, etc.</p> <p>Contact Avaya customer support.</p>
Could not publish object reference:...	Unable to publish an object reference with the naming service.	<p>Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service.</p> <p>Stop and restart the Administration Manager Base Server using pa disable admb and pa enable admb.</p>

Alarm message	Description	Resolution
AdminMgrSrvBaseServer could not initialize as monitoree:...	Monitor cannot publish interface with the naming service.	Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service. Stop and restart the Administration Manager Base Server using <code>pa disable admb</code> and <code>pa enable admb</code> .
Exception raised during impl_is_ready:...	Unable to start CORBA event loop.	Check the CLASSPATH environment variable to be sure that server.jar appears in the CLASSPATH before any JRE entries, or before any other ORB entries.
AdminMgrSrvServer [0 1 2 3 4 5] : failed to get lock for AdminMgrSrvServer [0 1 2 3 4 5]...	Unable to launch an Administration client.	Execute the <code>pa list</code> command to see if admb is running. If not, start it using <code>pa enable admb</code> . Possible race condition; wait 30 seconds and try again. If logging in to the Administration client with the OA User ID configured during installation, check permissions of the <code>%PABASE%\data\runtime\lock</code> directory and verify this ID has permission to write to this directory. If logging in to the Administration client with a different User ID, verify this User ID is a member of the OA Group ID configured during installation. Then check permissions of the <code>%PABASE%\data\runtime\lock</code> directory and verify this group has permission to write to this directory.
Exception raised during Monitoree initialization for...	Monitor cannot publish interface with the naming service.	Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service. Stop and restart this server.
System exception starting thread...	Unable to start thread to monitor activity of reserve server (adm0) and Administration client servers. Possibly out of threads.	Check system resources like: threads being used, and memory. Contact Avaya customer support.

Alarm message	Description	Resolution
NotInitializedException raised during creation of mySrv...	Problem with CORBA.	Check system resources like: disk space and memory. Contact Avaya customer support.
Cannot resolve reference to base server:...	Unable to resolve administration manager base server with the naming service.	Check the <code>%PABASE%\data\admin\mom\etc\momtab</code> file to be sure the admb entry is set to respawn , not off . Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service.
Cannot narrow reference to base server:...	Unable to narrow the object reference.	Check the <code>%PABASE%\data\admin\mom\etc\momtab</code> file to be sure the admb entry is set to respawn , not off . Stop and restart admb using <code>pa disable admb</code> and <code>pa enable admb</code> .
AdminMgrSrvServer can't monitor base server...	Server did not start properly, or quit.	Stop and restart admb using <code>pa disable admb</code> and <code>pa enable admb</code> .
Exception raised during creation of myImpl...	Unable to start CORBA event loop.	Check the CLASSPATH environment variable to be sure that server.jar appears in the CLASSPATH before any JRE entries, or before any other ORB entries.
Alarm message containing error number 4202.	Unable to initialize the naming service.	Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service.
Alarm message containing error number 4701.	Monitor cannot publish interface with the naming service.	Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service. Stop and restart this server.

Scheduler alarm messages

Alarm message	Description	Resolution
ExecutionManager:: ExecutionManager: Process failed to start schedule entry name: <i>SomeName</i> process type: <i>SomeProcessType</i>	System scheduled process failed to start.	Check the Windows Event Viewer or Solaris and AIX <i>\$PABASE/data/log/CentralError/CentralErrorLog.log</i> file for other error messages that may indicate the problem. OA will try to start the process at the next scheduled time. If it continues to fail then check the trace files associated with the process. Contact Avaya customer support.

DBService alarm messages

Alarm message	Description	Resolution
DBService:initialize: RT_359: Unable to connect to TimesTen DB.	Cannot connect to the TimesTen database.	Verify the TimesTen services are running: TimesTen Data Manager and TimesTen Server. Start them if they are not running. See Stopping and starting TimesTen on page 56 for information on starting TimesTen services. If TimesTen is running, run ttisql and attempt to connect to the database. If this is successful then Contact Avaya customer support.

Data Manager alarm messages

Alarm message	Description	Resolution
IntervalExportDone:processEvent():Exception requesting Application Management Server to release database from Extreme load level	Unable to release database resource from extreme CPU load level. Possibly a CORBA error.	If AMS is not running then this is okay. Run the pa list command to see if the ams process is running. If AMS is running, then this condition should self-correct after a time-out period and the resource will be released.
DataManager:DataManager() RT_104: Failed to get properties.	Unable to get properties values.	Verify the administration manager is running.

Alarm message	Description	Resolution
RT_108: ORB not initialized exception.	Unable to initialize connection monitoring.	Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service. Stop and restart data manager.
RT_109: Error while initializing connection monitor.	Unable to initialize connection monitoring.	Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service. Stop and restart data manager.
BulkDeliverer:notifyAboutActiveFiles():RT_111: CORBA call timed out for table <i>TableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
SynonymExporter:publishData():RT_111: CORBA call timed out for table <i>TableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
SynonymExporter:unloadDataAndNotify():RT_111: CORBA call timed out for table <i>TableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
WorkitemDataSet:attemptDataDelivery():RT_111: CORBA call timed out for table <i>TableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
WorkitemDataSet:notifyAboutActiveFile():RT_111: CORBA call timed out for table <i>TableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
RT_113: Failed to initialize ORB	Unable to initialize the ORBacus ORB. May be using an incorrect ORB.	Check the CLASSPATH environment variable to be sure that server.jar appears in the CLASSPATH before any JRE entries, or before any other ORB entries.
RT_115: Failed to initialize name service	Unable to initialize the naming service	Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service.

Alarm message	Description	Resolution
BulkDeliverer:notifyAboutActiveFiles():RT_118: CORBA Communication Failure for table <i>SomeTableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
SynonymExporter:publishData():RT_118: CORBA Communication Failure for table <i>SomeTableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
SynonymExporter:unloadDataAndNotify():RT_118: CORBA Communication Failure for table <i>SomeTableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
WorkitemDataSet:attemptDataDelivery():RT_118: CORBA Communication Failure for table <i>SomeTableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
WorkitemDataSet:notifyAboutActiveFile():RT_118: CORBA Communication Failure for table <i>SomeTableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
DataManager:DataManager() RT_135: Failed to get Default properties.	Unable to get properties values.	Verify the administration manager is running.
BulkDeliverer:notifyAboutActiveFiles():RT_137: Forwarder failed to take the data. for table <i>SomeTableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
SynonymExporter:publishData():RT_137: Forwarder failed to take the data. for table <i>SomeTableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
SynonymExporter:unloadDataAndNotify():RT_137: Forwarder failed to take the data. for table <i>SomeTableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
WorkitemDataSet:attemptDataDelivery():RT_137: Forwarder failed to take the data. for table <i>SomeTableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.
WorkitemDataSet:notifyAboutActiveFile():RT_137: Forwarder failed to take the data. for table <i>SomeTableName</i>	CORBA connection between data manager and forwarder went down.	Generally self-correcting. The alarm is cleared after the next successful CORBA call.

Alarm message	Description	Resolution
DataManager:registerWithAMF() RT_139: Error creating ApplicationManager instance	Unable to create application manager instance.	Check system resources like disk space and memory. Contact Avaya customer support.
DataManager:registerWithAMF() RT_140: Error creating ResourceManager instance...	Unable to create resource manager instance.	Check system resources like disk space and memory. Contact Avaya customer support.
RT_200: Cannot write to event buffer files	I/O Error trying to write to file %PABASE%\add_on\ data\dm\ EventBufferX.txt	Check available disk space. Check the permissions of %PABASE%\add_on\data\dm directory and EventBufferX.txt file and verify that the OA Administration User configured during installation has permission to write to this directory and file. Verify the file is not currently in use (for example, being edited).
RT_203: System initialization failed - Exiting	A process upon which the data manager depends failed to start, such as EventProcessor, or EventManager.	Check the Windows Event Viewer or Solaris and AIX \$PABASE/ data/log/CentralError/ CentralErrorLog.log file for other error messages that may indicate the problem and other details. Check the %PABASE%\data\log\ datamanager\dmTrc.log file for other trace messages. May need to increase the trace level for the dm process, restart the data manager, and look at the log file again.
RT_208 Failed to register gateway with name service	Unable to register the gateway with the ORBacus Naming Service.	Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service. Contact Avaya customer support.

Alarm message	Description	Resolution
RT_228: PABASE not set, cannot open event buffer files	PABASE environment variable is not set.	PABASE needs to be set to the base directory of the OA installation.
DataManager OA:RT:DataManager: 0=<MethodName>: RT_600 : Error executing the SQL - 227. java.sql.SQLException: [TimesTen][TimesTen x.x.x ODBC Driver][TimesTen]TT6002: Lock request denied because of deadlock Related to this message, you will also see one or more RT_128 messages.	This message is logged as a result of a resource conflict between two OA processes.	Despite the severity reported (ERROR - high), the message is only informational in nature. OA will recover from the condition.

Report Data Server alarm messages

Alarm message	Description	Resolution
DataServerMain: RT_104: Failed to get properties.	Unable to get properties values.	Check that the administration manager is running.
DataServerMain:initializeCorba(): RT_114 :Failed to initialize BOA	Unable to initialize the ORBacus ORB.	Check system resources like disk space and memory. Contact Avaya customer support.
DataServerMain: RT_135: Failed to get Default properties.	Unable to get properties values.	Check that the administration manager is running.
DataServerMain:registerWithAMF(): RT_139: Error creating ApplicationManager instance...	Unable to create Application Manager instance.	Check system resources: disk space, memory, etc. Contact Avaya customer support.
DataServerMain:registerWithAMF(): RT_140: Error creating ResourceManager instance...	Unable to create resource manager instance.	Check system resources like disk space and memory. Contact Avaya customer support.

Alarm message	Description	Resolution
DataServerMain:Main() RT_203: System initialization failed - Exiting	A process upon which the data server depends failed to start.	Check the Windows Event Viewer or Solaris and AIX <code>\$PABASE/data/log/CentralError/CentralErrorLog.log</code> file for other error messages that may indicate the problem and other details. Check the <code>%PABASE%\data\log\dataserver\dsTrc.log</code> file for other trace messages. May need to increase the trace level for the ds process, restart the data server, and look at the log file again.
DataServerMain:Main() RT_314: The following required tables are missing from data base:...	Tables are missing from the TimesTen database.	Stop and restart data manager. May need to use ttisql to drop u.wkheader table and then restart data manager.
DataServerMain:initializeCorba(): RT_328: Failed to register RDS.	Unable to register the report data server with the naming service.	Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service.
DataServerMain:initializeCorba(): RT_330: Error in getting system state.		Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service.
DataServerMain:registerSubComponents() RT_332: Exception: Unsupported version.	Incompatible IDLs.	Possibly bad installation. Contact Avaya customer support.
DataServerMain:registerSubComponents() RT_333: Failed to resolve gateway narrow.	Incompatible IDLs.	Possibly bad installation. Contact Avaya customer support.

Alarm message	Description	Resolution
DataSetManager:Constructor: RT_374: File Error...	File path does not exist.	Verify %PABASE%\add_on\ data\dsvr directory exists and that the OA Administration User configured during installation has permission to write to this directory. If the dsvr_restartnum.dat file exists in that directory, be sure that the OA Administration User configured during installation has permission to write to this file.
DSRestartnum:restartNum: RT_381: Could not get strings from properties file to build restart num file name	Unable to get values from properties file.	Verify the administration manager is running.

Central Report Data Server alarm messages

Alarm message	Description	Resolution
DataSetMain: RT_104: Failed to get properties.	Unable to get properties values.	Check that the administration manager is running.
DataSetMain:initializeCorba(): RT_114 :Failed to initialize BOA	Unable to initialize the ORBacus ORB.	Check system resources like disk space and memory. Contact Avaya customer support.
DataSetMain: RT_135: Failed to get Default properties.	Unable to get properties values.	Check that the administration manager is running.
DataSetMain:registerWithAMF(): RT_139: Error creating ApplicationManager instance...	Unable to create Application Manager instance.	Check system resources: disk space, memory, etc. Contact Avaya customer support.
DataSetMain:registerWithAMF(): RT_140: Error creating ResourceManager instance...	Unable to create resource manager instance.	Check system resources like disk space and memory. Contact Avaya customer support.

Alarm message	Description	Resolution
DataServerMain:Main() RT_203: System initialization failed - Exiting	A process upon which the data server depends failed to start.	<p>Check the Windows Event Viewer or Solaris and AIX <code>\$PABASE/data/log/CentralError/CentralErrorLog.log</code> file for other error messages that may indicate the problem and other details.</p> <p>Check the <code>%PABASE%\data\log\dataserver\dsTrc.log</code> file for other trace messages.</p> <p>May need to increase the trace level for the ds process, restart the data server, and look at the log file again.</p>
DataServerMain:initializeCorba(): RT_328: Failed to register RDS.	Unable to register the report data server with the naming service.	Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service.
DataServerMain:initializeCorba(): RT_330: Error in getting system state.		Verify the ORBacus Naming Service is running. If the service is not running, see Starting ORBacus Naming Service on page 51 for information about starting the service.
DataServerMain:registerSubComponents() RT_332: Exception: Unsupported version.	Incompatible IDLs.	Possibly bad installation. Contact Avaya customer support.
DataServerMain:registerSubComponents() RT_333: Failed to resolve gateway narrow.	Incompatible IDLs.	Possibly bad installation. Contact Avaya customer support.
DataSetManager:Constructor: RT_374: File Error...	File path does not exist.	<p>Verify <code>%PABASE%\add_on\data\dsvr</code> directory exists and that the OA Administration User configured during installation has permission to write to this directory. If the dsvr_restartnum.dat file exists in that directory, be sure that the OA Administration User configured during installation has permission to write to this file.</p>

Alarm message	Description	Resolution
DSRestartnum:restartNum: RT_381: Could not get strings from properties file to build restart num file name	Unable to get values from properties file.	Verify the administration manager is running.
DataSetMain: RT_434	Do not have any RDS connections to handle requests at this time.	Make sure that the Report Data Servers are running on all Real-time servers.

Forwarder alarm messages

Alarm message	Description	Resolution
CMSAcid X has 15 minute intervals	CMS interval size is invalid for OA.	Unadminister that ACD source on OA using the Administration client Interface Services page. Change the interval value on CMS to 30 following instructions in the CMS documentation. This involves data migration, etc.
<i>SomeId</i> :CMSCollector terminated abnormally...	An unhandled exception was thrown.	Restart the forwarder. If the alarms persists, contact Avaya customer support.
<i>SomeId</i> :ECHCollector terminated abnormally...	An unhandled exception was thrown.	Restart the forwarder. If the alarms persists, contact Avaya customer support.
<i>SomeId</i> :HDSCollector terminated abnormally...	An unhandled exception was thrown.	Restart the forwarder. If the alarms persists, contact Avaya customer support.
<i>SomeId</i> :Buffer terminated abnormally...	An unhandled exception was thrown.	Restart the forwarder. If the alarms persists, contact Avaya customer support.
<i>SomeId</i> :Exporter terminated abnormally...	An unhandled exception was thrown.	Restart the forwarder. If the alarms persists, contact Avaya customer support.

Alarm message	Description	Resolution
<i>SomeTableName</i> : CMSReader: <i>specific error message</i>	There is a database problem causing <i>SomeTableName</i> to be unreachable for reading.	<i>Specific error message</i> should indicate more detail of the problem. Verify database services are running. Check that <i>SomeTableName</i> exists in the database. Check for networking problems. Check disk space.
unable to open <i>SomeFileName</i> : <i>specific error message</i>	Unable to open file.	<i>Specific error message</i> should indicate more detail of the problem. Check permissions of <i>SomeFileName</i> and verify that the OA Administration User configured during installation has permission to write to this file. Remove the file if it exists and its permissions are correct, and restart the forwarder.
unable to read <i>SomeFileName</i> : <i>specific error message</i>	Unable to open file.	<i>Specific error message</i> should indicate more detail of the problem. Check permissions of <i>SomeFileName</i> and verify that the OA Administration User configured during installation has permission to write to this file. Remove the file if it exists and its permissions are correct, and restart the forwarder.
unable to read <i>SomeFileName</i> : infinite loop	Possibly corrupt file.	Data has been lost, but the condition is self-correcting.
<i>SomeTableName</i> : buffer full; purging oldest data	Buffer became full. Data is lost.	Increase the size of the buffer using the Administration client Interface Services page. This may improve future buffer performance during system outages.
unable to write <i>SomeFileName</i> : <i>specific error message</i>	Unable to write file. Data is lost.	<i>Specific error message</i> should indicate more detail of the problem. Check disk space and free up space if possible.

Forwarder or recorder alarm messages

Alarm message	Description	Resolution
<i>SomeId</i> :Clock terminated abnormally...	An unhandled exception was thrown.	Restart the forwarder or recorder. If the alarm persists, contact Avaya customer support.
<i>SomeTableName</i> : CRTable: <i>specific error message</i>	There is a database problem causing <i>SomeTableName</i> to be unreachable for writing.	<i>Specific error message</i> should indicate more detail of the problem. Verify database services are running. Check that <i>SomeTableName</i> exists in the table. Check for networking problems. Check disk space.

Event Collector alarm messages

Alarm message	Description	Resolution
EC.AssignFailure: Assign for <Server>.assign failed. "Verify that the server for <Server>.assign is configured correctly and running.	This is most typically a probably assigning to an ADU server where <Server> is the ADU server alias name.	Using IC Manager, verify the IC ADU Server is properly administered and is running.
EC.AssignFailure: Unable to assign to primary ECB server. Verify ECB servers are configured correctly	Failed to assign to any of the Event Collector Bridge servers configured in the system.	Using IC Manager, verify the OA Event Collector Bridge Server is properly administered and is running. Verify that at least one (or the only one) is running as the Primary Event Collector Bridge Server (see the Event Collector Bridge alarm messages on page 91 for more information on Primary vs. Standby mode).
EC.AssignFailure: Assign to DS server failed. Verify DS server is configured correctly	EC was unable to connect to the IC Directory Server.	Using IC Manager, verify the IC Directory Server is properly administered and is running.

Alarm message	Description	Resolution
EC.ConnectionMonitoring: ConnectionMonitor AlreadyInitializedException.	EC failed to initialize its CORBA infrastructure.	The most likely cause of this problem is an improper installation of EC. Reinstall EC per <i>Avaya Operational Analyst Release 7.1 Installation and Configuration</i> and restart. If the problem persists, contact Avaya customer support.
EC.ConnectionMonitoring: ConnectionMonitor CORBA::SystemException.	EC failed to initialize its CORBA infrastructure.	The most likely cause of this problem is an improper installation of EC. Reinstall EC per <i>Avaya Operational Analyst Release 7.1 Installation and Configuration</i> and restart. If the problem persists, contact Avaya customer support.
EC.ConnectionMonitoring: ConnectionMonitor InitializeException.	EC failed to initialize its CORBA infrastructure.	The most likely cause of this problem is an improper installation of EC. Reinstall EC per <i>Avaya Operational Analyst Release 7.1 Installation and Configuration</i> and restart. If the problem persists, contact Avaya customer support.
EC.ConnectionMonitoring: Failed to initialize the monitoree interface.	Internal EC Error	Verify the local ORBacus Naming Service is operating normally. If the problem persists, contact Avaya customer support.
EC.DMConnectionProblem: Connection to DataManager Lost	The DataManager process has unexpectedly terminated or a networking problem exists.	Verify that the DataManager process is running. Verify that there are no networking problems between the system where the Event Collector is running and the system where the DataManager process is running.
EC.DMConnectionProblem: Failed to establish connection to DM within 5 minutes of initial ECServer startup.	The Event Collector cannot establish a connection to the DataManager process.	Verify that the DataManager process is running. Verify that there are no networking problems between the system where the Event Collector is running and the system where the DataManager process is running.
EC.EstablishedDataManager Connection: Connection to DataManager has been established.	EC has successfully established connectivity to its associated data manager	No action required.

Alarm message	Description	Resolution
EC.ICMapperControllerFailed: An unexpected failure occurred in the EC process.	EC will be automatically shut down and restarted. Additional details regarding the failure will be included in the error message.	Contact Avaya customer support.
EC.ICMapperControllerFailed: Memory allocation failure, requesting EC shutdown	EC ran out of memory during normal execution or the heap is corrupted.	The server hosting EC may not have been configured with sufficient memory. Verify the host server has sufficient RAM. If the problem persists, contact Avaya customer support.
EC.ICProxyInitFailure, emergency, Failed to initialize Media Queue ADU proxy	This indicates that the EC server was unable to assign an ADU server to proxy media queue events.	Verify that the EC server's domain contains an ADU server in its failover path. Refer to <i>Avaya Interaction Center Release 7.1 Installation Planning and Prerequisites</i> for more information.
EC.ICProxyInitFailure: "Maximum number of ADU proxies has been exceeded. Use the MAX_AGENT_ADU_DOMAINS property to increase this number.	The Event Collector has been configured to monitor too many agent ADU servers.	Use IC Manager to decrease the number to "Domains to Monitor" for the Event Collector or use IC Manager to configure a value for MAX_AGENT_ADU_DOMAINS which will be sufficient for monitoring the requested number of agent ADU servers.
EC.ICProxyInitFailure: Assign to local ADU server failed. Verify ADU server is configured correctly.	EC was unable to connect to the local ADU Server	Using IC Manager, verify that the local ADU server is properly administered and is running.
EC.ICProxyInitFailure: Failed to initialize DS proxy	Internal failure.	Contact Avaya customer support.
EC.ICProxyInitFailure: Failed to initialize ECBridge proxy	Internal failure.	Contact Avaya customer support.
EC.ICProxyInitFailure: Failed to initialize local ADU proxy.	Internal failure.	Contact Avaya customer support.

Alarm message	Description	Resolution
EC.ICServerFailure:Unexpected IC server failure	The IC CORBA infrastructure notified Event Collector (EC) that one of the required IC Servers failed (for example, ADU Server, Directory Server).	In normal operating conditions the condition will be transient and EC will recover without any external intervention. If the problem persists, verify: <ul style="list-style-type: none"> • The network is operating normally. • All required servers are operational (no machines crashed). • EC server and required IC servers (for example, ADU Server, Directory Server) are properly configured. If the problem persists, contact Avaya customer support.
EC.ICServerSuccessfulAssign: <Server>.assign: Successfully assigned to server.	This is normal and expected during startup.	No action required.
EC.LostDataManagerConnection: Connection to DataManager was lost.	The EC connection to its associated data manager process failed.	Under normal conditions EC will recover the connection to the data manager. If the problem persists for more than a couple of minutes, verify: <ul style="list-style-type: none"> • The associated data manager is executing and is reachable (ping the data manager host machine) • The ORBacus Naming Service is operational. • If the problem persists, contact Avaya customer support.
EC.MTTVersionMatch: MTT BuiltWith version does not match the RunningWith version.	Informational alarm indicating that the "builtwith" version of the IC Multithreaded toolkit does not match the version that the Event Collector is currently "runningwith".	This is not necessarily a problem. However, Avaya customer support may want to know if this alarm is occurring if other problems are also reported.

Alarm message	Description	Resolution
EC.MultipleWAAMonitors: There are multiple ECServers configured to monitor the WAA	More that one Event Collector has been configured to monitor the IC WAA events. There should only be one running Event Collector that is doing this. If there are multiple monitors, email/chat queue status counts may be incorrect.	Make sure that only ONE running Event Collector has the "Monitor WAA" option selected.
EC.NoWAAMonitor: There are no ECServers configured to monitor the WAA	No Event Collectors have been configured to monitor the IC WAA events.	Make sure that one Event Collector has the "Monitor WAA" option selected.
EC.ORBacusInitialize: Couldn't start the CORBA event loop.	EC failed to initialize its CORBA infrastructure.	The most likely cause of this problem is an improper installation of EC. Reinstall EC per <i>Avaya Operational Analyst Release 7.1 Installation and Configuration</i> and restart. If the problem persists, contact Avaya customer support.
EC.ORBacusInitialize: Failed to initialize ORB server.	EC failed to initialize its CORBA infrastructure.	The most likely cause of this problem is an improper installation of EC. Reinstall EC per <i>Avaya Operational Analyst Release 7.1 Installation and Configuration</i> and restart. If the problem persists, contact Avaya customer support.
EC.PropertyReadError: Failed to read server properties.	Internal failure.	Contact Avaya customer support.
EC.ProxyAssign: Failed to set the ADU proxy assign criteria.	Internal failure.	Contact Avaya customer support.
EC.PumpUpFailure: <ECServer>: PumpUp Failed.	Internal failure.	Contact Avaya customer support.
EC.PumpUpFailure: ADU pump-up failed	Internal failure.	Contact Avaya customer support.
EC.PumpUpFailure: DS pump-up failed	Internal failure.	Contact Avaya customer support.
EC.PumpUpFailure: ECBridge pump-up failed	Internal failure.	Contact Avaya customer support.

Alarm message	Description	Resolution
EC.PumpUpFailure: Failed to send default queue service class events.	Internal failure.	Contact Avaya customer support.
EC.PumpUpFailure: Invalid state transition from PUMPUP_STATE_COMPLETE	Internal failure.	Contact Avaya customer support.
EC.PumpUpFailure: PumpUpState transition from invalid state (<state>)	Internal failure.	Contact Avaya customer support.
EC.PumpUpFailure: PumpUpState transition from PUMPUP_STATE_FAILED	Internal failure.	Contact Avaya customer support.
EC.PumpUpStarted: <ECServer>: PumpUp Started.	A PumpUp has started.	This is normal and is expected during a normal PumpUp.
EC.PumpUpSuccessful: <ECServer>: PumpUp Successful.	A PumpUp has successfully finished.	This is normal and is expected during a normal PumpUp.
EC.QueueHighWater: ECQueue: queueName has reached the high water mark.	The named queue's size has exceeded the configured warning threshold.	Verify: <ul style="list-style-type: none"> • Network throughput to data manager is adequate. • Data manager is operating normally and has adequate server resources (for example, memory, CPU). • EC process is getting adequate server resources (for example, memory, CPU). If the problem persists, contact Avaya customer support.
EC.QueueSizeLimit:ECQueue: queueName has encountered a queue limit exception	The named queue has exceeded its configured maximum size limit due to a performance bottleneck.	Verify: <ul style="list-style-type: none"> • Network throughput to data manager is adequate • Data manager is operating normally and has adequate server resources (for example, memory, CPU) • The EC process is getting adequate server resources (for example, memory, CPU). If the problem persists, contact Avaya customer support.

Event Collector Bridge alarm messages

Alarm message	Description	Resolution
ECB.CannotChangeRunTimeDir: Failed to set run time directory to: <directory>	Could not set the current run time directory.	Make sure that the specified <directory> exists.
ECB.CannotConnectToMSMQ: <ECBServer>: Cannot open MSMQ: <msmqname> Error: <errornumber>	Failed an MSMQ connection.	The ECB receives information from Business Advocate on a private MSMQ called pa_admin. Prior to installing and starting any ECB, verify that the permissions on the pa_admin MSMQ are adequate for the user id under which the Avaya IC ORB Service 7.1 runs. Refer to the MSMQ administration information in <i>Avaya Interaction Center Release 7.1 Installation and Configuration</i> and in <i>Avaya Interaction Center Release 7.1 Installation Planning and Prerequisites</i> .
ECB.CannotResolveMSMQName: Failed to resolve MSMQ format name for <msmqname>	Failed an MSMQ connection.	Make sure that the specified MSMQ exists.
ECB.ConnectedToMSMQ: <ECBServer>: Successful connection to MSMQ: <msmqname>	Indicates a successful connection to the specified MSMQ.	This is expected during normal operation.
ECB.FailedAdvocateProxyInit: Failed to initialize the AdvocateProxy object.	Failed to initialize the Advocate interface objects.	Make the Event Collector Bridge is running on system which is also running Avaya Business Advocate. Make sure that the PumpUpApp.dll is registered (regsvr32 PumpUpApp.dll).
ECB.FailedECBridgeInit: FATAL - Failed to initialize the ECBridge object.	Internal failure.	Contact Avaya customer support.
ECB.GeneralInitFailure: FATAL - Exception thrown while creating one or more ECBridge objects.	Internal failure.	Contact Avaya customer support.
ECB.LostMSMQConnection: Lost connection to MSMQ: <msmqname>	MSMQ or network failure has caused the loss of an MSMQ connection.	Verify that MSMQ is up an running OK. Verify that there are no networking problems between the system where the Event Collector Bridge is running and the system where the MSMQ it is monitoring exists.

Alarm message	Description	Resolution
ECB.MSMQAlreadyOpen: <ECBServer>: <msmqname>: already open for exclusive access. Running in Standby mode for now.	"Informational alarm.	This is normal and expected for any Event Collector Bridge that is running in Standby mode.
ECB.MTTVersionMatch: MTT BuiltWith version does not match the RunningWith version.	Informational alarm indicating that the "builtwith" version of the IC Multithreaded toolkit does not match the version that the Event Collector is currently "runningwith".	This is not necessarily a problem. However, Avaya customer support may want to know if this alarm is occurring if other problems are also reported.
ECB.PumpUpFailure: Failed to signal PumpUp start: <error_message>	Internal failure.	Contact Avaya customer support.
ECB.PumpUpFailure: Failed to get Process Map admin data: <error_message>	Internal failure.	Contact Avaya customer support.
ECB.PumpUpFailure: Failed to get Service Goals admin data: <error_message>	Internal failure.	Contact Avaya customer support.
ECB.PumpUpFailure: Failed to get Service Class admin data: <error_message>	Internal failure.	Contact Avaya customer support.
ECB.PumpUpFailure: Failed to get Agent admin data: <error_message>	Internal failure.	Contact Avaya customer support.
ECB.PumpUpFailure: Exception occurred during PumpUp.	Internal failure.	Contact Avaya customer support.
ECB.PumpUpFailure: Failed to signal PumpUp end: <error_message>	Internal failure.	Contact Avaya customer support.
ECB.XMLParseError: Unable to process an administration event.	Internal failure.	Contact Avaya customer support.

Error messages

Avaya OA utilizes a central error logging concept for tracking warning and error conditions that occur. When a warning or error occurs, OA records a message in a log file on the local machine. Event, audit and alarm messages are also recorded into this log file.

This section includes the following topics:

- [Windows message log](#) on page 93
- [Solaris and AIX message log](#) on page 95
- [Windows Internet Information Services \(IIS\) message log](#) on page 95
- [Common error messages](#) on page 96

Windows message log

On Windows systems, the messages are logged by the Event Viewer Service. In order for OA to log the messages, the Event Viewer Service must be running. This service is generally started automatically.

To verify the Event Viewer Service is running on the OA server:

1. Select **Start > Programs > Administrative Tools > Services**.
2. Look for **EventLog**.

The status of this service should be **Started**. If it is not, highlight the service and click **Start** to start the process.

This section includes the following topics:

- [Configuring the log](#) on page 93
- [Viewing the log](#) on page 94

Configuring the log

Many Windows applications log messages into the Event Viewer, including OA. If the log file reaches capacity, no more messages can be stored, possibly resulting in the loss of valuable troubleshooting information. To ensure adequate log file space, you should increase the log size to at least 2 MB.

To increase the size of the log:

1. Select **Start > Programs > Administrative Tools > Event Viewer**.
2. Select **Application Log** from the tree-view.
3. Select **Action > Properties**.

4. Enter the desired size in the **Maximum log size** text box.
5. Select **OK** to save your change.

You can specify the behavior the Event Viewer exhibits when the log file reaches capacity by choosing one of the options in the **When maximum log size is reached** section of the log properties dialog:

- **Overwrite events as needed** results in removing the oldest message when a new message is written.
- **Overwrite events older than X days** may result in the log file reaching capacity, depending on message volume, log file size, and the number of days specified.
- **Do not overwrite events (clear log manually)** results in the log file reaching capacity unless you monitor and maintain it regularly.

Carefully consider which option fits your system requirements, and maintain the log file appropriately by saving its contents to a file and then clearing the file on a regular basis.

Viewing the log

The central error log messages can be viewed using the Event Viewer, which allows users to view events on the local machine. Users can also view events of other machines on the network.

To view events:

1. Select **Start > Programs > Administrative Tools > Event Viewer**.
2. Select **Application** from the **Log** menu to view the application log.

You can select individual events and double-click them to see event details. Warning, error, event and audit messages are logged into the event viewer, as well as alarm messages that have also been forwarded to the Alarm Manager.

In the Event Viewer, the **Source** value of OA messages is usually prefixed with **OA_** to facilitate filtering OA messages. Messages are assigned a **Type** based on their priority. This table describes the assignments.

Type	Priority	Message content	Icon
Error	High	Alarms, high severity errors	Red stop sign
Warning	Medium	Warnings, event level messages	Yellow exclamation point (!)
Information	Informational	Informational and audit messages	Blue letter "i"

Note:

Audit messages pertain to security events such as logon on the Administration client or accessing secure files.

Solaris and AIX message log

On Solaris and AIX, the error, warning, event and audit messages are logged in a central error log file that can be viewed by editing the file with any text editor. The file is a simple text file that resembles the trace log files. There is no log viewer for viewing these messages. The central error log file resides in the `$PABASE/data/log/CentralError` directory and is named `CentralErrorLog.log`.

**Important:**

The permissions on the `CentralErrorLog.log` file must match the group and user IDs created to install the OA software. If the permissions are not correct on this file, no log entries will be written to the file.

The messages in the central error log for Solaris and AIX are prefixed with priority and severity indicators to help track conditions that require immediate attention. The priority indicators are:

- **ALARM**
- **ERROR**
- **EVENT**
- **AUDIT**

and the severity indicators are:

- **emergency**
- **high**
- **low**
- **info**

Windows Internet Information Services (IIS) message log

The Windows Internet Information Services (IIS) has its own logging mechanism. When running OA reports, log entries are created each time a basic report is accessed and each time that a basic real-time report is refreshed. When a large number of reports are accessed, the IIS log files can grow to a large size and consume large amounts of disk space. These log files grow progressively because IIS has no mechanism in place to automatically remove older files. If disk space becomes full, this can impact performance of OA processes on that system. Therefore, one of the following should be done:

- Turn off logging for the OA reports. If this logging is turned off, no log entries will be written for any OA Basic Report access or report refresh.

- Administer IIS to create these log files on a disk partition dedicated solely to report logging. If this disk becomes full, there will be no performance impact to OA or Basic Reports, but no reporting messages will be written to the log files.
- Continually monitor the disk space consumed by these log files and purge files as needed.

If you create a dedicated disk partition to contain IIS log files, follow these steps to change the IIS logging directory on Windows 2000:

1. As an Administrator, start the Internet Service Manager.
2. Expand the tree to **servername > Default Web Site**.
3. Right click on **Default Web Site** and choose **Properties**.
4. Under the **Web Site** tab of the **Default Web Site Properties** window, click on the **Properties** box.
5. In the **General Properties** tab of the **Extended Logging Properties** window, under **Log file directory**, enter the directory into which logs are to be created.
6. Select **OK** twice.

If you create a dedicated disk partition to contain IIS log files, follow these steps to change the IIS logging directory on Windows Server 2003:

1. As an Administrator, start the Internet Service Manager.
2. Expand the tree to **servername > Web Sites > Default Web Site**.
3. Right click on **Default Web Site** and choose **Properties**.
4. Under the **Web Site** tab of the **Default Web Site Properties** window, click on the **Properties** box.
5. In the **General** tab of the **Logging Properties** window, under **Log file directory**, enter the directory into which logs are to be created.
6. Select **OK** twice.

Common error messages

This section lists common error messages and possible solutions.

Message: You receive the following message:

```
+ Mar 20, 2003 23:55:07.411 [pid=2528] [Pollin]:
DBOperations::readSchedWork: couldn't get work items java.sql.SQLException:
connection exception - communication link failure
```

Description: The scheduler is not running, there are SQL exceptions, the database is not available, or you cannot connect to the database.

Resolution: The database has been restarted and you must restart OA.

Troubleshooting the TimesTen database

TimesTen is the physical database that hosts the OA real-time database. This section provides some information about troubleshooting TimesTen. For information about monitoring the TimesTen database, see [Monitoring the TimesTen database](#) on page 54.

This section includes the following topics:

- [General TimesTen problems](#) on page 97
- [TimesTen will not start](#) on page 97
- [TimesTen data store corruption](#) on page 98
- [TimesTen data store repair](#) on page 98
- [Cannot connect to the TimesTen database](#) on page 99
- [Poor TimesTen performance](#) on page 99

General TimesTen problems

To troubleshoot general problems with TimesTen, refer to the *TimesTen Java Developer's and Reference Guide Release 5.0*. This manual is in the file `java_dev.pdf` in the documentation directory described in [TimesTen documentation](#) on page 55.

TimesTen will not start

Symptom: The TimesTen database will not start.

Solution: Review the TimesTen log files for clues about the cause of the problem. The most common reasons for failure are listed in this table:

Reason for failure	Corrective action
Inadequate paging file size	Set the paging file (swapfile) to 150% - 200% of the RAM installed in your system.
Database corruption	See TimesTen data store repair on page 98.
C:\temp directory does not exist.	Set the TEMP and TMP environment variables to point to the desired "temp" directory. If TimesTen still does not start, create C:\temp.

TimesTen data store corruption

Symptom: It is possible for the TimesTen database to get into an inconsistent state that will prevent applications from connecting to it. To detect that this has happened:

1. The data manager and/or data server processes will not complete initialization, or will fail after initialization. In this case these processes will report one or more of the following errors:
 - RT_359: Unable to connect to TimesTen DB
 - RT_129: Unable to recover from error encountered processing a database request; The RT Service is being shut down to initiate recovery.
 - TimesTen error message: data store segment inconsistent and corrupt
2. Try to connect to the TimesTen database using the `ttIsq1` utility. To do that, perform the following at the Windows command prompt:

```
ttIsq1
connect "dsn=dss128";
```

Solution: If, after step 2, `ttIsq1` reports an error connecting to the database, or reports that a recovery is under way and that recovery does not complete in a reasonable amount of time, then it is likely that the database is corrupt and must be rebuilt from scratch.

TimesTen data store repair

Symptom: The Event Viewer on the real-time server shows repeated errors from the TimesTen data manager indicating that the data store segment is inconsistent and corrupt. Repeated efforts to connect to the database fail.

Solution: A manual procedure may be necessary to recover from this situation.

Action	Details
Stop the real-time data manager and data server	Use the Administration client Interface Services screen to disable the data manager
Move all TimesTen files to another location (they may be needed later to diagnose specific problems).	The TimesTen files are located in <code>%PABASE%\add_on\TimesTen</code> (Windows) or <code>\$PABASE/add_on/TimesTen</code> (Solaris and AIX). The filenames have the pattern <code>rtpa.txt.*</code> .

Action	Details
Force the re-creation of the TimesTen database	From the command prompt: <pre>ttIsql connect "dsn=dss128;OverWrite=1"; exit;</pre>
Start the real-time data manager and data server	Use the Administration client Interface Services screen to enable the data manager. The data store should recover and a pump up will be initiated automatically.

Cannot connect to the TimesTen database

Symptom: On a Solaris or AIX system, Data Manager fails to run after installation, upgrade, or modify because it can't connect to the TimesTen database. The following error messages appear in the Central Error Log:

```
<DataManager.OA:RT:DataManager:> [pid=1813] ALARM - emergency: DataManager
OA:RT:DataManager: 0=DBService:initialize: RT_359:Unable to connect to TimesTen DB.
```

```
<DataManager.OA:RT:DataManager:> [pid=1839] ERROR - high: DataManager
OA:RT:DataManager: 0=DBService:initDataBase: RT_359:Unable to connect to TimesTen DB. :
java.sql.SQLException: [TimesTen][TimesTen x.x.xx ODBC Driver]Data source name not
found and no default driver specified
```

Solution: From a command prompt:

1. Enter the following commands:

```
cd /var/TimesTen
cp sys.odbc.ini sys.odbc.ini.backup
cat sys.odbc.ini.old >>sys.odbc.ini
```

2. Restart Data Manager.

Poor TimesTen performance

Symptom: The performance of the TimesTen application is not adequate.

Solution: The SMP Optimization Level (SMPOptLevel) may not be set properly. The SMPOptLevel parameter for TimesTen should be set on the server where the Real-time subsystem is installed. The procedure for setting this parameter differs for Windows and Solaris and AIX.

Windows setup: To set the SMPOptLevel parameter:

1. Select **Start > Settings > Control Panel**.
The **Control Panel** dialog box is displayed.
2. Select **Administrative Tools**.
The **Administrative Tools** dialog box is displayed.
3. Select **Data Services (ODBC)**.
The **ODBC Data Source Administrator** dialog box is displayed.
4. Under the **System DSN** tab, select **dss128**.
5. Click **Configure**.
6. Select the **First Connection** tab.
7. Under the **SMP Optimization Level**, enter 0 if the server has one CPU, or enter 1 if the server has two or more CPUs.
8. Click **OK** three times so save the setting.

Solaris and AIX setup: To set the SMPOptLevel parameter:

1. Open a command prompt window.
2. Enter:

```
vi /var/TimesTen/sys.odbcc.ini
```
3. Search for the SMPOptLevel parameter.
4. Change the value to 0 if the server has one CPU, or change it to 1 if the server has two or more CPUs.
5. Press **Esc**.
6. Enter:

```
:wq!
```


This writes and quits the file.

Troubleshooting the historical database

This section describes symptoms seen when troubleshooting the historical database.

This section includes the following topics:

- [Interval Aggregation fails to complete successfully](#) on page 101
- [System-scheduled purge fails on Oracle](#) on page 103

- [Open cursors exceeded on Oracle](#) on page 104
- [Exceeding the maximum number of connections](#) on page 105
- [Authentication adapter initialization failed](#) on page 105
- [CMS data not aggregated](#) on page 105
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- [Forwarder and recorder not transferring data](#) on page 106
- [Microsoft SQL problems after an upgrade](#) on page 107
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- [DB2 Maximum token limitation when running reports](#) on page 109
- [Microsoft SQL schema table error](#) on page 110
- [Oracle private synonym user database access issues](#) on page 110

Interval Aggregation fails to complete successfully

Symptom: Every scheduled aggregation fails.

In OA 7.1, there is no longer any upper limit on the number of enabled containers or in the number of rules each container can contain. This means that a customer could create enough containers, or containers that are so large, that it is not possible to aggregate all of the data within a 30 minutes interval.

Solution: If all scheduled aggregation jobs are failing, it is most likely due to the administered containers. Disable some containers or reduce the size of some containers until aggregation can successfully complete within a 30 minutes time frame.

Symptom: Interval Aggregation time exceeds 30 minutes.

Interval Aggregation must complete within 30 minutes for OA to work properly. If your aggregation time is approaching 30 minutes or has exceeded 30 minutes, and the size of your containers are not too large (as described earlier), this may indicate a performance problem.

Solution: Slow aggregation times sometimes equate to a database performance problem. To determine the cause of a database problem run a performance monitoring tool on the database server to locate the server resource that is being over utilized. Run the performance monitoring tool during the time when Aggregation is running slowly.

Disk I/O - The most common database issue will be a disk contention problem caused by having more than one high activity table (either DBMS internal files such as temp space or transaction logs, or OA tables such as HISTCMSAGENT) physically located on the same disk drive. To determine where you have a disk contention problem:

- Solaris and AIX: Run the `iostat -xnp 5` command. This command reports the disk and tape I/O activity on your server and refreshes every 5 seconds. The %b column in the output indicates the percent of time the disk is busy. Disks running at or near 100 are being over-utilized.
- Windows: Run the Performance monitoring tool under Administrative Tools and select the Physical Disk as the performance object. Any disk with an Average Disk Queue Length greater than 2 and a Disk Transfers/sec. greater than 100 is a bottleneck.

Once you have determined which disk is causing performance problems, look at the OA data files and internal DBMS files that co-reside on that disk. The files that are updating the most frequently will be the cause of the disk contention. Move one or more of these files to an under utilized disk to improve performance.

Scheduled Database Jobs - The Purge, Aggregation Recovery, and Database Check jobs can cause database contention that slows down Interval Aggregation. Try to schedule these jobs to run during periods of low database activity to minimize the performance impact on Interval Aggregation.

Symptom: Interval Aggregation fails.

Solution: This problem occurs due to database contention related to the number of containers administered and the number of rules defined in each container. The contention may cause Interval Aggregation to take longer than 30 minutes, which causes the next Interval Aggregation to fail. When an Interval Aggregation fails, it will appear in Scheduler with a status of failed. The failed data can be recovered by scheduling an Aggregation job for the failed interval or waiting for the next Aggregation Recovery to run. The next Aggregation Recovery should recover the failed data, but it may cause another Interval Aggregation to fail.

This problem is most likely to occur if Interval Aggregation regularly takes close to 30 minutes to run. The duration of Interval Aggregation can be determined by viewing the status of System scheduled jobs in the Scheduler. Interval Aggregation duration can be shortened by reducing the number or size of their containers until they can be successfully aggregated within a 30 minute interval.

Symptom: Aggregation Recovery may take longer than 6 hours, causing failed status of subsequent Aggregation Recovery jobs.

Solution: If Aggregation Recovery is enabled, it will be started by the scheduler every 6 hours. Depending on the number and size of containers administered, Aggregation Recovery may take longer than 6 hours, which causes the next scheduled Aggregation Recovery job to fail. Since Aggregation Recovery jobs collect 24 hours of data, if the current Aggregation Recovery job completes within 24 hours, no data will be missed and no action is necessary.

However, if Aggregation Recovery takes longer than 24 hours to complete, the next execution may not recover data missed during the previous execution. If this situation occurs, it is recommended that Aggregation Recovery be disabled in the scheduler. Missed data can be recovered by scheduling an Aggregation job when database activity is low.

Symptom: On demand aggregation or aggregation recovery fail with the message **OutOfMemoryError**.

Solution: This failure results from insufficient java heap in the Java Virtual Machine (JVM) executing the aggregation application. This is independent of the memory available on the machine. Aggregation recovery or on demand aggregation can run out of memory in the JVM heap area even though the machine may still have memory available. The default java heap size depends on JVM vendor. Increasing the available java heap can fix this problem.

To increase available java heap:

1. On the server where the Historical subsystem is installed, enter:

```
pa off schd
```

2. Do one of the following:

- For On Demand Aggregation, execute the following query on the database:

```
update sched_proc_detail set path='java -Xmx256m
com.avaya.cc.cvx.aggregate.AggOnDemand -v 10 where
process_name='Aggregate'
```

- For Aggregation Recovery, execute the following query on the database:

```
update sched_proc_detail set path='java -Xmx256m
com.avaya.cc.cvx.aggregate.AggRecovery where
process_name='AggRecovery'
```

3. On the server where the Historical subsystem is installed, enter:

```
pa on schd
```

System-scheduled purge fails on Oracle

Symptom: System scheduled Purge fails on Oracle with the following errors in the Event Viewer:

```
ORA-01562: failed to extend rollback segment
ORA-01650: unable to extend rollback segment
Skipping this table or dataType.
```

Purge is failing due to insufficient disk capacity in the Oracle Rollback segment to accommodate a large Purge transaction. In a normal scenario, the retention period for data can be engineered to maintain tablespaces at the recommended 20% minimum free space. This involves one of the following approaches:

- When longer data retention is wanted and disk space is sufficient, additional datafiles are added to the tablespace to provide capacity; or
- Tune retention periods for target data store types to maintain the data at a volume that is 20% less than the space available to the specific tablespace.

The latter approach involves maintaining retention periods and tablespaces consistent with the initial configuration (as recommended by Avaya).

The problematic scenario involves a configuration where insufficient disk capacity exists in the Rollback segment to accommodate a potentially large transaction by Purge. This may cause System Scheduled Purge failure when retention periods are reduced to address capacity issues. Logic exists in Purge to break down potentially large transactions into manageable transaction sizes. This mechanism can be exploited to address the failed Purge condition.

Solution: Several things can be done to solve this problem:

- Analyze the current tablespaces to determine if disk space can be reallocated to those areas that need more space.
- Allocate a new disk drive to provide more space.
- Prior to execution of the next Scheduled System Purge:
 1. Using the Administration client, reduce retention values for target store types.
 2. Use sqlplus to execute the following queries:
- 3. Verify successful execution of System Scheduled Purge.
- 4. After successful System Scheduled Purge, use sqlplus to execute the following queries:

```
update cvxconfig set value conf_value = 1
where conf_name='PURGE_MAX_BASE_RANGE';
update cvxconfig set value conf_value = 1
where conf_name='PURGE_MAX_AGG_RANGE';
```

```
update cvxconfig set value conf_value = 7
where conf_name='PURGE_MAX_BASE_RANGE';
update cvxconfig set value conf_value = 7
where conf_name='PURGE_MAX_AGG_RANGE';
```

Open cursors exceeded on Oracle

Symptom: The following message is displayed:

ORA-01000: maximum open cursors exceeded

Solution: The Oracle DBA should increase the value of the `open_cursor` parameter in the Oracle server.

Exceeding the maximum number of connections

Symptom: Applications accessing the database may fail due to exceeding the maximum number of connections. If a large number of historical reports or historical data exports are run simultaneously, it's possible to exceed the maximum number of connections supported by the database. If this occurs, some connections may fail, which may cause failures of any application using the database or failure of query operation by applications using the database.

Solution: Limit the number of users who run simultaneous historical reports or data exports, or modify the database configuration to increase the maximum number of connections allowed.

Authentication adapter initialization failed

Symptom: The forwarder or recorder for the Oracle OA historical database may report the following error: "Authentication adapter initialization failed."

This occurs because Oracle uses the Windows Network Authentication Service to authenticate the OA forwarder's ODBC connection to the DB, and the server network domain configuration is set up incorrectly.

Solution: For details about how to set up an Oracle client/server network configuration with security authentication on Windows, please refer to the Oracle Net8 Administration Guide. As an alternative "quick fix" to circumvent this potentially complicated task, we suggest disabling this authentication by modifying the Oracle `../network/admin/sqlnet.ora` file to comment out the "SQLNET.AUTHENTICATION_SERVICE = (NTS)" line.

CMS data not aggregated

Symptom: CMS data may not be aggregated if CMS clock is far out of sync with OA

If the CMS master ACD clock is later than the OA clock, transfer of CMS data to OA may not complete in time for the scheduled Interval Aggregation job. This may prevent some of the CMS data from being aggregated. If the Aggregation Recovery job is enabled, the data will be automatically recovered within a day. If the Aggregation Recovery job is not enabled, the user will need to schedule an Aggregation job to recover lost data.

Solution: This problem can be avoided by periodically resetting the CMS master ACD clock to match the OA clock. The switch ACD software does not currently allow for automatic synchronization with OA, so this must be done manually when necessary. See *Avaya Operational Analyst Release 7.1 Installation and Configuration* for more information.

Incomplete aggregation

Symptom: Interval Aggregation may start before CMS interval data is entirely transferred, causing incomplete aggregation.

This occurs if the amount of time CMS takes to archive the interval data, plus the amount of time it takes to transfer the data over the network, is longer than the aggregation offset time administered on OA. The default aggregation offset is 10 minutes.

Solution: In order to properly tune this offset, use Container Status Administration to view the Last Updated column of the Base Interval Data collection. Check the Last Updated time for a few intervals during the busy hour and adjust the scheduled start time of regular aggregation to be a minute or two after the latest Base Interval completion time. CMS customers with large amounts of data may have to set this value to as much as 25 minutes. Incomplete aggregations will be recovered automatically if the Aggregation Recovery job is enabled, or they can be recovered manually by scheduling an Aggregation job when database activity is low.

Forwarder and recorder not transferring data

Symptom: Data missing for a particular data store. Running `dcstat -n` or checking the log file for the particular data store produces errors such as the following:

- `can't insert NULL`
- `invalid number`
- `data truncation`

Solution: Disable the forwarder, remove the forwarder's buffer file, then enable the forwarder. If the problem persists, contact services.

Symptom: Data may overfill a forwarder-recorder data stream and data will not be updated in the historical database. You will probably see a database error indicating bad data (for example, "can't insert NULL", or "invalid number"). This error will persist and no data will be recorded.

Solution: The workaround is to disable the forwarder, remove the forwarder's data storage file, then enable the forwarder. This has only been seen with the `displaynames` forwarder so no data is lost because the forwarder updates all of the display names data when it restarts.

Symptom: Recorder fails on Oracle 10g with error message "Cannot access libraries."

Solution: Execute the following prior to installing Oracle 10g:

```
chmod -R <client_home>
```

where `<client_home>` equals `$ORACLE_HOME`

Microsoft SQL problems after an upgrade

Symptom: After upgrading Microsoft SQL to Service Pack 3, the following error may appear for all recorders (in this case recdisplaynames):

```
ALARM - emergency: OA recdisplayname 1080=AgentInfo@qebi2450j: (5) SQL call failed. 53,
-1, 08001, [Microsoft][ODBC SQL Server Driver][DBNETLIB]SQL Server does not exist or
access denied. ** AND ** [Microsoft][ODBC SQL Server Driver][DBNETLIB]ConnectionOpen
(Connect()). MSSQL Database installation followed by SP3 application may change ODBC
Data Source Attributes
```

This results from the application of SP3 to the Microsoft SQL database modifying Data Source attributes.

Solution: Do the following:

1. Update the Network Port for the OA ODBC Data Source.
If not known, determine Server Network Default Port. On the database server:
 - a. Go to **Programs > Microsoft SQL Server > Server Network Utility**.
 - b. Choose the OA database instance.
 - c. Select **TCP_IP**.
 - d. Select **Properties**.
 - e. Note the port number.
2. Update the ODBC Data Source Network Port:
 - a. Go to **Programs > Administrative Tools > Data Sources (ODBC)**.
 - b. Select the **System DSN** tab.
 - c. Double-click **PA_DSN**.
 - d. Press **Next** through the first window.
 - e. On the second window, select **Client Configuration**. In this window, click **Dynamically determine port twice**. This will allow port entry. Enter the noted port number.
 - f. Select **OK**.
 - g. Select **Next** (getting to this window verifies ODBC connectivity to the database).
 - h. Select **Next**.
 - i. Select **Finish**.

DB2 log files

To aid in troubleshooting problems with the DB2 database, check for error conditions in the following log files:

- `$PABASE/data/log/dbsetup` for OA database setup
- `$INSTANCE_ID_HOME/sql1lib/db2dump/db2diag.log` for diagnostic log

Note:

This is the default location for the DB2 diagnostic log. To determine the actual location, use the following command:

```
db2 get dbm cfg | grep DIAGPATH
```

- `/tmp/db2setup.log` for software installation
- `/tmp/dasicrt.log` for administration server creation
- `/tmp/db2icrt.log` for instance creation

Running out of space on DB2

The following table provides solutions for a variety "out of space" error messages that you may see in the `db2diag.log` file.

Message	Description	Solution
Tablespace 3 (TEMPSPACE1) is full	You need to add a container to tablespace, in this case the temp space tablespace.	<ul style="list-style-type: none"> • Use <code>db2 list tablespaces show detail</code> to verify that the tablespace is full. • Use a control center to add additional containers to the tablespaces. The database will rebalance load among all new containers, this will take several minutes.

Message	Description	Solution
DIA3612C Disk was full	One or more tablespaces are full.	<ul style="list-style-type: none"> ● If the tablespace is SMS, increase or grow the filesystem or volume. ● If the tablespace is DMS, Use a control center to add additional containers to the tablespaces. The database will rebalance load among all new containers, this will take several minutes.
DIA3609C Log file was full	Existing logs are not sufficient to accommodate the current transaction.	<ul style="list-style-type: none"> ● Increase the number of primary and secondary log files. ● Increase the size of existing log files (you do not want to make them too large in order to avoid wasting space). ● Restart the database (this will kill all connections to the database).

DB2 schema table error

Symptom: The following error is displayed:

```
DB2: "SQL0575N View or summary table <OBJECT_NAME> cannot be used because it
has been marked inoperative. SQLSTATE=51024"
```

On an AIX/DB2 platform, if any REPOSITORY schema table is recreated by any means, the corresponding OA schema view has to be recreated manually. Otherwise existing views become invalid and applications such as the Reporting subsystem will fail with the preceding error message.

Solution: The DBA should drop each OA schema view to each recreated repository schema table and recreate it using any supported tool. By convention, each OA schema view needs to have the same name as its corresponding repository schema table.

In addition, if any or all of the repository schema tables EMPLOYEE, WORKGROUP or GROUPEMEMBER are recreated, the OA schema view WORKGROUPEMEMBER must be recreated. To recreate this view, rerun the script:

```
$PABASE/data/admin/install/db2scripts/workgroup_view.sql
```

DB2 Maximum token limitation when running reports

Symptom: The following error is displayed when running a non-aggregated report:

SQL0101N The statement is too long or too complex.

The statement could not be processed because it exceeds a system limit for either length or complexity, or because too many constraints or triggers are involved.

Solution: Reduce the size of the workgroup you are trying to generate the report for, or increase DB2 configurables STMTHEAP and APPLHEAPS2 until the report query succeeds.

Microsoft SQL schema table error

Symptom: One of the following errors is displayed:

```
MSSQL: "Server: Msg 4413, Level 16, State 1, Line 1, Could not use view or function <OBJECT_NAME> because of binding errors.
```

```
MSSQL: "Server: "View or function '<OBJECT_NAME>' has more column names specified than columns defined".
```

On a platform with Microsoft SQL, if any repository database table is recreated by any means, the corresponding OA database view has to be recreated manually. Otherwise existing views become invalid and applications such as the Reporting subsystem will fail with the preceding errors.

Solution: The DBA should drop each OA database view to each recreated repository database table and recreate it using any supported tool. By convention, each OA database view needs to have the same name as its corresponding repository database table.

In addition, if any or all of the repository database tables EMPLOYEE, WORKGROUP or GROUPEMEMBER are recreated, the OA database WORKGROUPEMEMBER view must be recreated. To recreate this view rerun the script:

```
%PABASE%/data/admin/install/mssqlscripts/workgroup_view.sql
```

Oracle private synonym user database access issues

Symptom: The Oracle private synonym user cannot access the database.

Solution: Complete the following steps in order:

1. If the database connection fails, use sqlplus to verify SynonymOwner and SynonymOwnerPassword are set correctly. If they are not, re-execute ChangeDBUser.
2. If the database connection is successful but database access fails refer to the private synonym user troubleshooting procedure in *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*.

Data manager, report data server, and central report data server

The data manager stores data originating in IC into the real-time database. Real-time data is used in real-time reports and is also forwarded to the historical database. If real-time reports do not reflect current data, or if the real-time database appears to be missing data, there may be a problem with the data manager process. It may be improperly administered, or it may not be in an operational state. Check data manager status via the Administration client (see the *Administration Client Help*) or by using the `pa` command.

Report data server (RDS) provides up-to-date data to the real-time reports. It monitors the real-time database for changes to data and forwards the changes to the Report subsystem. If real-time reports do not reflect current data, there may be a problem with the data server process. It may be improperly administered, or it may not be operational. Check data server status via the Administration client (see the *Administration Client Help*) or by using the `pa` command.

This section includes the following topics:

- [Data manager, RDS, or CRDS fails](#) on page 112
- [CRDS troubleshooting](#) on page 112

Data manager, RDS, or CRDS fails

If the data manager, RDS, or central report data server (CRDS) fail to start or fail after initially starting, take these actions:

1. Check the process logs for details about the failures. The logs are:

Data manager	<code>datamanager\dmTrc.log</code> (Windows) <code>datamanager/dmTrc.log</code> (Solaris and AIX)
RDS	<code>dataserver\dsTrc.log</code> (Windows) <code>dataserver/dsTrc.log</code> (Solaris and AIX)
CRDS	<code>dataserver\CRDSTrc.log</code> (Windows) <code>dataserver/CRDSTrc.log</code> (Solaris and AIX)

and are located in:

Windows	<code>%PABASE%\data\log</code>
Solaris and AIX	<code>\$PABASE/data/log</code>

See [Trace files](#) on page 64 for more information on tracing and logging.

2. Verify that the Orbacus Naming Service is running and operational. See [Troubleshooting map](#) on page 35 for details.
3. Verify that TimesTen is running by looking for the TimesTen Data Manager service in the services log.
4. If TimesTen is available and operational, use `ttIsq1` to verify TimesTen is accessible. See [TimesTen data store corruption](#) on page 98.
5. If `ttIsq1` cannot access TimesTen, see [Troubleshooting the TimesTen database](#) on page 97.
6. If you receive an alarm message, see [Alarm messages](#) on page 68 for an interpretation of the message.

CRDS troubleshooting

Symptom: Reports only display data from one real-time source.

Solution: This will happen if the CRDS temporarily loses a connection to one of the RDSs on one of the real-time sources. If this problem persists, do the following:

1. Using the Administration client, verify that a CRDS is enabled. This will happen automatically when more than one real-time source is enabled. First, look in the **Interface Services** tab under OA Administration. Verify that there are at least two Data Managers and two RDS interface service types added and enabled. If these do not exist, add them at this time.
2. Look in the **Subsystems** under OA Administration on the Administration client. Verify that at least one Report subsystem has been added. If a Report subsystem does not exist, add a Report subsystem at this time.

If the Report subsystem either exists, or has been added, verify that a CRDS Interface Service type exists and is synchronized under the **Interface Services** tab.

If all of the above steps have been verified and the reports still only display data from one of the real-time sources, check to see if an error has been logged in either the Event Viewer for Windows or the Central Error log for Solaris and AIX. Check for an error indicating that the CRDS has lost a connection to one of the RDSs. If this is the case, the CRDS should restore the connection when the RDS becomes available.

Symptom: There is an error indicating that the CRDS does not have any RDS connections to respond to requests.

Solution: Verify that the RDS instances are running using either the Administration client, or the `pa` command. If they are not running, start the RDS instances. If the problem persists, restart the CRDS process.

Troubleshooting data collection problems

Avaya OA can collect data from several sources, including a CMS server or an Avaya IC event collector server (also known as EC or Source-EC). This section describes ways to troubleshoot problems when collecting data from these sources.

This section includes the following topics:

- [CMS subsystem problems](#) on page 114
- [Event Collector failures](#) on page 115
- [Event Collector Bridge failures](#) on page 117

CMS subsystem problems

This section describes symptoms and solutions for specific problems with the Source-CMS subsystem.

Symptom: When running the `dcstat` command on CMS forwarders, the following message is displayed:

```
-908: [Informix] [Informix ODBC Driver] [Informix] Attempt to connect to database
server (oacms_ol) failed.
```

Description: This error has been seen on R3V9 versions of CMS. The installation of the CMS source subsystem on the CMS will add parameters to the `onconfig.cms` and `sqlhosts` files in order for the forwarders to connect to the Informix IDS database. The `onconfig.cms` and `sqlhosts` files are only read when IDS is brought on-line. For more information about the `dcstat` command, see [Forwarders and recorders](#) on page 48.

Solution: Since the `onconfig.cms` and `sqlhosts` files are only read when IDS is brought on-line, IDS and CMS must be restarted. This only applies to R3V9 versions of CMS since IDS on R3V11 and later versions of CMS are brought on-line with the OA parameters necessary for the forwarders to connect in those files.

Symptom: After upgrading the CMS subsystem, the forwarders are running, but no data is being forwarded to the Historical subsystem.

Description: The probable cause of this symptom is that the Historical subsystem and its administration manager were not running at the time that the CMS subsystem was upgraded. The Historical subsystem and Administration manager must be running to assure the CMS forwarders are updated properly.

Solution: Do the following:

1. Stop the CMS forwarders
2. Start the Historical subsystem
3. Verify the Historical subsystem administration manager is running
4. Start the CMS forwarders.

Once this is done, the CMS forwarders will be updated and will begin forwarding data.

Symptom: Upon starting any CMS forwarder, an Informix error occurs indicating a problem with the database connection.

Description: The Informix password stored within OA does not match the Informix password stored within UNIX. If a password mismatch exists, the forwarder will not restart. Executing `ChangeCMSDBPWD.sh -s` does not change the OS-level Informix password.

Solution: Do the following:

1. Execute `ChangeCMSDBPWD.sh -s`
2. Execute `passwd informix` using the same password given in `ChangeCMSDBPWD.sh -s`

Event Collector failures

This section describes Event Collector failures and possible solutions. To assist in gathering Event Collector information, see [Event collector troubleshooting tools](#) on page 57.

Symptom: Poor event collector performance

Event Collector performance can be affected by many situations, including:

- An improperly configured host server.
- Inadequate physical memory can increase virtual memory paging to the point where event collector cannot process any events.
- An overloaded server running too many IC or OA processes. Symptoms of this type of problem include:
 - Poor EC performance
 - EC "Queue limits exceeded" errors
 - Failures of other IC or OA processes co-located with EC.

Solution: Investigate doing any or all of the following:

- Reconfigure the host server
- Add memory to the server
- Reduce the number of components running on servers
- Add more servers to the configuration.

Symptom: The event collector fails.

Solution: Do the following:

1. Verify the EC is configured as described in *Avaya Operational Analyst Release 7.1 Installation and Configuration*. Make sure that the following options are populated and configured correctly for EC in IC Manager:
 - Site

Troubleshooting OA components

- Domains to Monitor
 - Real-Time System ID (The OA real-Time Source ID)
 - Data Manager Host
2. Verify that each domain specified under "Domains to Monitor" contains an ADU server.
 3. Try to start the Event Collector via IC Manager. Check IC Manager for the Event Collector status. The status should be reported as "Up"
 4. Inspect the error logs to be sure the prerequisite services are available:
 - ORBacus Naming Service - On Windows, check system Services to verify that it is Started. On Unix, use `ps -ef | grep nameserv` to see if nameserv is in the list of running applications. If the local ORBacus naming service is not running, there will be an alarm logged by EC similar to: "EC.ConnectionMonitoring, emergency, Failed to initialize the monitor interface."
 - ADU - Verify that the ADU server in the EC server local domain has a status of "Up".
 - DS - Verify that at least one IC Directory Server (DS) for the IC site is up and running (status of "Up").
 5. If the Event Collector cannot connect to the Data Manager:
 - a. Verify that the correct values have been administered in IC Manager for the Real-Time System ID and the Data Manager Host name or IP address of the target Real-Time system.
 - b. Verify on the target OA Real-Time system that the Data Manager process is running.
 - c. If the Event Collector and the OA Real-Time subsystems are installed on separate machines, verify the network is operating correctly by attempting to ping the associated Data Manager host server from the EC host server.

Symptom: The Event Collector does not automatically restart after an abnormal termination.

The Event Collector may fail to automatically restart after it crashes. This happens even though the "Autostart" option is selected for the server configuration of the Event Collector. The only known reason for this is that the Event Collector was manually shut down and restarted by way of the IC Manager user interface after IC was started. Once the Event Collector has been shut down and restarted in this manner, it is not automatically restarted by IC after it crashes. This is because IC automatically starts a server when another process in the vesp/CORBA environment requests its services; as the Event Collector offers no services able to be requested by other processes in the vesp/CORBA environment, it will not be automatically restarted.

Solution: The only way to reestablish automatic restarts is to stop and restart all of IC or reboot the system.

Symptom: You receive the following alarm message:

EC.ICProxyInitFailure, emergency, Failed to initialize Media Queue ADU proxy

Solution: This indicates that the EC server was unable to assign to an ADU server to proxy media queue events. Verify that the EC server's domain contains an ADU server in its failover path. Refer to *Avaya Interaction Center Release 7.1 Installation Planning and Prerequisites* for more information.

Symptom: The Event Collector cannot assign to the Event Collector Bridge (ECB).

Solution: Check the following:

1. Make sure that the ECB in the system is running.
2. Make sure that the at least one ECB (or the only ECB) in the system is functioning as the Primary ECB. See [Event Collector Bridge failures](#) on page 117 for more information on debugging ECB problems.

Symptom: After successful Event Collector pump-up, some ADU data appears incorrect in reports.

Solution: Wait at least two minutes after the appearance of the successful pump-up message to allow viable ADU data to be posted for reporting.

Event Collector Bridge failures

This section describes Event Collector Bridge (ECB) failures and possible solutions. To assist in gathering Event Collector Bridge information, see [Event Collector Bridge troubleshooting tools](#) on page 59.

Symptom: The event collector bridge will not start or will not stay running.

Solution: Do the following:

1. Verify that the ECB is configured as described in *Avaya Operational Analyst Release 7.1 Installation and Configuration*. Make sure that the system specified for **Advocate Host** under the **Event Collector Bridge** tab is correct and that a "pa_admin" MSMQ exists on that system. Make sure that the "pa_pumpup" MSMQ exists on the system where ECB is running.
2. Try to start the Event Collector Bridge via IC Manager. Check IC Manager for the Event Collector Bridge status. The status should be reported as "Up."
3. Verify that Avaya Business Advocate is correctly installed on the same system where ECB is running. If ECB cannot establish interface connections to Advocate at startup, then it will fail to start.

Symptom: The event collector bridge will not function as the primary.

Solution: Check the primary/standby status of ECB by looking at the **Advanced/Server Status** properties in IC Manager. If there are multiple ECBs in the system, only one ECB will be allowed to function as the primary. If none of the ECBs are functioning as the primary, there is some sort of MSMQ problem. Make sure that the "pa_admin" MSMQ exists and is available. If there are multiple Avaya Business Advocate systems (primary/standby) then the "pa_admin" MSMQ *must* exist on the primary Advocate system and *all* ECBs must specify this system name for **Advocate Host**.

Symptom: The event collector bridge will not perform a PumpUp against Advocate.

Solution: Do the following:

1. Verify that Advocate is functioning properly.
2. Verify that there are no problems accessing the pa_admin or pa_pumpup MSMQs.
3. Verify that the correct version of the Microsoft XML parser exists on the system. It should be at least Microsoft XML Parser Version 3.0 SP1. Internet Explorer Version 6.0 and later supplies an acceptable minimum version of the Microsoft XML parser. It can also be downloaded directly from Microsoft's website and then installed.

Symptom: The event collector bridge PumpUp takes a long time.

Solution: Do the following:

1. Check the number of Agents, Service Classes and Agent capability/profile sets defined in Advocate. Large numbers of agents and capability/profile sets will generate a large number of PumpUp events to be processed by ECB.
2. Verify the configuration of virus scanning software on the Advocate/ECB system. If log files, database files, and temp files are being scanned, this can make Advocate PumpUp extremely slow. Consider not scanning the log, database, and temp files.

Symptom: Users are not able to read or write data to or from the central MSMQ.

Advocate (multiple or single) and ECB (multiple or single) all use a single central designated MSMQ for reading and writing Advocate administrative update information. This MSMQ is associated with only one server. If the server for the MSMQ goes out of service, gets disconnected from the network, or has its Microsoft Messaging service stopped, users are not able to read or write data to or from the central MSMQ.

Solution: If the secondary server, MSMQ service, or ECB fails (this would be on the system that does not host the MSMQ), the main system ECB takes control and services EC client requests. This is because the server and single-share MSMQ are still fully functional. In some respects, this is like a "one-way" failover. If this configuration is not in place, you must manually restart the EC and ECB services.

Troubleshooting for Cognos

This section contains troubleshooting information for Cognos.

Symptom: When using Impromptu Administrator 6.2 with Transformer 7.1 MR1 without the web deployment (that is, without IWR or PowerPlay Server), a message similar to the following is displayed while generating a cube:

(TR0118) Transformer can't read the database [dbname] defined in %PABASE%\bi\reports\cognos\cubes\mma\timeintervals.iqd.

Solution: If the following file:

`dmsiss32.dll`

does not exist in the following directory:

`COGNOS_INSTALL_DIRECTORY\cer3\bin` directory

copy the following file:

`COGNOS_INSTALL_DIRECTORY\cer1\bin\dmsiss32.dll`

to the following directory:

`COGNOS_INSTALL_DIRECTORY\cer3\bin`

Troubleshooting for Data Export Utility

This section contains troubleshooting information for Data Export Utility.

Symptom: Data Export Utility fails to run when it is installed on a Unix system without Historical, Reporting, RealTime, or CMS-Source subsystems.

When Data Export Utility is installed stand-alone, the owner for the CentralErrorLog is set to root rather than the login you specified during installation, usually biadmin. If you run Utility as root and then try to run it as biadmin, the Utility cannot open the log files and fails.

Solution: Either remove the \$PABASE/data/log/CentralError/* files or change owner of \$PABASE/data/log/CentralError/* from root to the correct login.

Troubleshooting the Administration client

This section provides some tips on troubleshooting the Administration client. Here you can find information about various error messages you may see, and explanations of behaviors you may encounter.

This section includes the following topics:

- [General Administration client issues](#) on page 121 deals with a variety of problems that you might encounter. It includes "hangs," long waits, and data entry problems.
- [Administration client Java plug-in and Java console](#) on page 128 concentrates on Java Console configurations that may aid you in resolving Administration client initialization issues.
- [Log files](#) on page 129 describes how you can use the log files to identify problems as well as explain the log errors.
- [Administration client administration screen problems](#) on page 137 lists problems that you may encounter with a particular administration screen, with corresponding solutions.
- [Administration client status messages](#) on page 143 explains what the status messages mean.
- [Administration client error messages](#) on page 145 lists error dialogs that you might encounter and provides suggestions on how you might resolve the errors.

General Administration client issues

This section lists a collection of common problems and their solutions. It focuses on issues that you might encounter while launching the Administration client or while using it. It deals with any difficulty that is not specific to an Administration client module or an administration screen.

General Administration client issues include:

- [Authentication problems](#) on page 122
- [Client not updated](#) on page 123
- [Connectivity](#) on page 123
- [Unreadable characters after upgrade of Avaya OA software](#) on page 124
- [Data Entry](#) on page 124
- [General Protection Faults](#) on page 125
- [Initialization Errors](#) on page 125

- [Long wait time](#) on page 126
- [Page faults](#) on page 127
- [Printing](#) on page 127
- [Unresponsive system](#) on page 127

Authentication problems

This section describes problems seen when users are unable to log on to the Administration client.

Note:

All references to domains in this section refer to software residing on Windows servers only.

Symptom: You see the message:

"An invalid user name or password was entered Please try again."

Solution: The cause can be one of the following:

- The user ID is not defined.
- The user ID is wrong.
- The password for the user is wrong.

Symptom: You see the message:

"The user is not authorized to do administration. Please try again."

Solution: The user is not a member of the administration group (the group is defined when installing the Historical subsystem).

Symptom: You see the message:

"An instance of the authentication service could not be created. The user name and password could not be authenticated. Please try to login again."

Solution: The cause can be one of the following:

- The administration client configuration is not pointing to the right host for the Historical subsystem. This is set in the `AdminPol.html` or `AdminSig.html` files. Refer to the `SERVER_NAME` applet parameter in that file.
- The network is not configured properly for the Administration client host to reach the server where the Historical subsystem is installed.
- The naming service is not running on the server where the Historical subsystem is installed.

- The authentication service is not running on the server where the Historical subsystem is installed.
- If this problem persists, contact Avaya technical support.

Symptom: When logging on to the administration client, the following error message is displayed:

"The maximum number of erroneous login attempts has been reached for this user name. Administration cannot be done without a valid login. You must wait for the administered timeout period before trying to login again with this user name."

Solution: This means that you have reached the maximum number of attempts to log on to the client. You need to wait 10 minutes (default value) before you can try again with the same user ID.

Client not updated

Symptom: Avaya OA does not automatically update the configuration data displayed in the Administration client. You may see either of the following messages:

This request is inconsistent with the server database.

Please select View->Refresh from the menu bar and try again.

Avaya OA allows up to five Administration clients to connect to the server simultaneously. It does not lock any user out and keep him or her from administering the data. If more than one person is administering the Administration client, the first one to save the configuration settings will have his or her entries saved; the other administrators will have their entries rejected. This is because the update value of the first person matches the value in the database, while the update values of the subsequent users are out of sync with the database (because the first person has already changed the value). This first-person rule prevents other users from destroying the initial changes another user has made. Refresh your administration screen periodically to ascertain that you are working with the latest configuration.

Solution: Refresh the administration screen often by clicking **View > Refresh** on the Administration client menu.

Connectivity

Symptom: The Administration client establishes a CORBA connection when you launch it. The connection may break if you are not using the Administration client for a while (a "time-out").

Solution: You can re-establish the CORBA connection by clicking **File > Reconnect** in the Administration client menu. If the problem persists and an error message notifies you that the server is unavailable, close your Internet Explorer browser, then relaunch the Administration client.

Unreadable characters after upgrade of Avaya OA software

Symptom: After an upgrade, characters stored in the database are displayed as unreadable characters (squares) in the Administration client browser window.

Solution: The characters are not displayed correctly until the browser is closed and restarted, relaunching the Administration client. Administration client users should always log out before doing any OA software upgrades.

Symptom: Thai characters are not displayed correctly.

Solution: You must install the Tahoma font and change the Administration client `FONT` parameter to Tahoma.

Data Entry

Symptom	Description	Resolution
The Administration client is not recognizing my shortcut keys.	Your entries might be applying to the browser and not the Administration client.	Click anywhere within the administration screen or a dialog box to activate the shortcut keys and to start entering your configuration.
The Administration client is not accepting my input.	Your entries might be applying to the browser and not the Administration client.	Click anywhere within the administration screen or a dialog box to activate the shortcut keys and to start entering your configuration.
The text boxes are not accepting my input. It accepts the first few digits, but not the succeeding ones.	The text boxes have a defined minimum and maximum range.	If you enter a value larger than the maximum permissible value, the Administration client will not display the digit where you have exceeded the limit. For example, if you enter 13 in the date field for the month, only the 1 will be echoed since 13 is an illegal parameter. If you enter a value below the minimum, the client will either not display your entry or convert your entry to the minimum value when you move on to the next field.

General Protection Faults

General Protection Faults (GPF) happen when an application, such as the Administration client, attempts to read or write data that is outside its permission rights.

You can track down the GPFs by eliminating suspects one by one.

To isolate the source:

1. Shut down all applications one at a time ending with Internet Explorer.
2. If the GPF persists, re-launch the Administration client from Internet Explorer. Type in `c:\Program Files\Avaya\BI\AdminPol.html` (if you did not use the default installation, enter the appropriate address) in the Address text box.

An alternative solution is to change your computer's system video mode to use the Windows standard VGA driver (16 color VGA). If this solves your problem, then your original video driver may have problems. Contact your video card vendor for an updated video driver.

Initialization Errors

If the Administration client does not seem to be initializing, it might either be not responding or is experiencing initialization errors.

Check the Windows Task Manager to see if the Administration client has stopped responding. If that is not the issue, close the Administration client, open the Java Console and open the Administration client again to see if initialization errors are still occurring.

Initialization errors are most likely caused by problems with the system environment. It might be a security problem (policy files), invalid installation file structure (missing directories or files), invalid file permissions (read only), incomplete environment variable specification (PATH), missing or unregistered libraries, or corrupt jar files.

The PATH is set during installation and initial set-up. For more information, see *Avaya Operational Analyst Release 7.1 Installation and Configuration*.

If you see any of the following errors when starting the Administration client, this usually means the wrong version of the JRE was installed and the correct version needs to be installed:

No JDK 1.4.2 support for APPLET!!

JRE not installed correctly

Browser settings are incorrect!!!

Active X components could not be started when the client was launched

Long wait time

Symptom	Description	Resolution
The Administration client takes a long time to load.	The Administration client does not load.	Re-launch your browser and the Administration client.
	<p>The Java Console is empty. It may display the following text immediately after the Administration client initializes:</p> <pre> Java(TM) Plug-in: Version 1.4.2_08 Using JRE version 1.4.2_08 Java HotSpot(TM) Client VM User home directory = C:\ WINNT\Profiles\... Proxy Configuration: Manual Configuration Proxy: co.proxy.avaya.com:8000 Proxy Overrides: *.avaya.com, <local> Jar cache enabled. Initializing the OA admin client applet... </pre>	<p>The Administration client cannot find the Java Security Plug-in, therefore it tries to download the plug-in from Sun Microsystems. This may take a while to complete.</p> <p>The Administration client launches as soon as the download is complete and the plug-in is available.</p>
The Administration client is taking a long time to load and is not generating error messages.	The Administration client is responding and is not reporting or logging errors.	<p>This might be an initialization error or an unresponsive system (hang) problem.</p> <p>Close the Administration client then start the Java Console. Start the Administration client again and look at the Java Console error log.</p> <p>If it appears to be an initialization error, check the environment.</p> <p>The most likely cause of this error is an improperly set or incomplete environment variable specification (PATH). The PATH is set during installation and initial set-up. For more information, see <i>Avaya Operational Analyst Release 7.1 Installation and Configuration</i>.</p> <p>If this is not the source of the error, you may have a security problem (invalid or missing policy files), invalid installation file structure (missing directories or files), invalid file permissions, missing or unregistered libraries, or corrupt jar files.</p> <p>If the Java Console does not display any output, refer to the solution proposed above.</p> <p>Also refer to Initialization Errors on page 125.</p>

Page faults

Page faults occur when your computer is low on RAM or swap file space. You must either increase the RAM or the swap file size.

Printing

You cannot print the Administration client user interface (UI) by using the **Print** menu in the browser or by pressing **Ctrl+P**.

To print the Administration client UI, select **File > Print** in the Administration client menu bar.

Unresponsive system

Sometimes the Administration client does not respond to your input. To determine whether the Administration client is just taking a long time to process input or is not responding, use Windows Task Manager.

This table lists a few things you can do when the Administration client freezes.

Symptom	Description	Resolution
JRE freezes	The Java Console is completely empty and a download dialog box appears. A Java Console in debug mode may cause this.	Disable debugging. To disable debugging: <ol style="list-style-type: none">1. Go to the Java Plug-in Control Panel.2. Select the Advanced tab.3. Clear the Enable Debug check box.4. Click Apply.5. Close the Java Plug-in Control Panel.

Administration client Java plug-in and Java console

As an additional troubleshooting aid, the Administration client logs messages in the Java Security Plug-in Java console window. The Java Console helps you diagnose problems that might occur when the applet initializes.

This section includes the following topics:

- [Accessing the Java Plug-in Control Panel](#) on page 128
- [Enabling the Java Console](#) on page 128
- [Recycle Classloader](#) on page 129

Accessing the Java Plug-in Control Panel

The Java Plug-in Control Panel lets you configure the security plug-in, the Java console, and JAR caching. You need to use the control panel to troubleshoot certain problems.

To access the Java Plug-in Control Panel (JRE 1.3) in Windows:

1. Select **Start > Settings > Control Panel**.
2. Double-click **Java Plug-in**.

The **Java Plug-in Control Panel** launches.

Enabling the Java Console

You can view the Java Console to troubleshoot initialization errors.



Tip:

The Java Console, while useful for diagnosing problems, need not be enabled under normal operations.

To enable the Java Console:

1. Launch the Java Plug-in Control Panel.
2. In the **Basic** tab, select **Show Java Console**.
3. Click **Apply**, then close the window.
4. Re-launch the Administration client.

The Java Console appears when the Administration client is starting.

**Tip:**

To disable the Java console, follow the procedure above except to clear the **Show Java Console** check box.

Recycle Classloader

Enable the Recycle Classloader option so you can launch the Administration client more than once from one browser.

To recycle the classloader:

1. Launch the Java Plug-in Control Panel.
2. In the **Basic** tab, select **Recycle classloader**.
3. Click **Apply**, then close the window.
4. Restart the Administration client.

**Tip:**

To disable recycling of classloader, follow the procedure above except to clear the **Recycle classloader** check box.

Log files

If you want to find out why the system is not working as it should, you should look at the trace files:

- The Administration client trace files are in `%PABASE%\data\log\adminclient\`.
- The Administration manager trace files are in `%PABASE%\data\log\adminmgr\`.

This section includes the following topics:

- [Configuring the log files](#) on page 129
- [Error types and codes](#) on page 131

Configuring the log files

You can customize your trace files to give more or less information. This level of detail is configured in two places: the `loginfo` file and the `AdminPol.html` file. The sections below detail how you can modify them to suit your needs

Logininfo

Administration client files: You can change the size and roll-over of the trace file. The file is in `%PABASE%\data\admin\`.

The entry in the `loginfo` file for the Administration client trace files might look like this:

```
adminClientTrace data/log/adminclient/adminClientTrc 150000 3
```

where:

- `adminClientTrace` is the name of the entry. Do not change this value.
- `data/log/adminclient/adminClientTrc` is the directory location of the trace file. Do not change this value.
- `150000` is the size of the trace file. The size of the trace file can be from `100000` to `10000000`. You may specify this value to be whatever is appropriate for your needs.
- `3` is the roll over count. You can specify a value of `3` to `99`. When a trace file reaches the maximum size, it rolls over. This means that the current trace file is renamed with an `.nn` insert (where `.nn` is a number). For example, `adminClientTrc-1.log` becomes `adminClientTrc-1.01.log` when it reaches the maximum limit. If there already is an `adminClientTrc-1.01.log` file, that existing file becomes `adminClientTrc-1.02.log`. While the logged messages are rolling over, OA continues logging the latest messages on the original file (which in this case is: `adminClientTrc-1.log`).



Tip:

To determine which client trace file is being used, click **View > Trace File Location** in the Administration client menu bar. The Administration client displays the name and location of the trace file it is using.

Administration manager files: The entry in the `loginfo` file for the Administration manager trace files might look like this:

```
adminMgrTrace data/log/adminmgr/logentry 150000 3
```

where:

- `logentry` includes the following Administration manager entries:
 - `adminbaselog`
 - `adminbasetrc`
 - `adminsrvadm`
 - `adminsrvlog`
 - `adminsrvtrc`
- `adminMgrTrace` is the name of the entry. Do not change this value.
- `data/log/adminmgr/logentry` is the directory location of the trace file. Do not change this value.

- 150000 is the size of the trace file. The size of the trace file can be from 100000 to 10000000. You may specify this value to be whatever is appropriate for your needs.
- 3 is the roll over count. You can specify a value of 3 to 99. When a trace file reaches the maximum size, it rolls over. This means that the current trace file is renamed with an `.nn` insert (where `.nn` is a number). For example, `adminsrvtrc-1.log` becomes `adminsrvtrc-1.01.log` when it reaches the maximum limit. If there already is an `adminsrvtrc-1.01.log` file, that existing file becomes `adminsrvtrc-1.02.log`. While the logged messages are rolling over, OA continues logging the latest messages on the original file (which in this case is: `adminsrvtrc-1.log`).

**Tip:**

To determine which client trace file is being used, click **View > Trace File Location** in the Administration client menu. The Administration client displays the name and location of the trace file it is using.

AdminPol.html

You can change the detail level of your trace file as well as activate the CORBA tracing. If you selected the default location during installation, this file would be in `C:\Program Files\Avaya\BI\`.

Attribute	Description	Default Value	Possible Values
TRACE_LEVEL	Specifies the level of trace information to collect	10	10 - Event level trace.
			20 - Interface level trace.
			30 - Debug level trace. This produces the highest number of trace messages.
CORBA_TRACE	Enables CORBA tracing. Enabling this results in a voluminous trace log. Turn on only when necessary.	No	Yes
			No

Error types and codes

Avaya OA logs an error in the following conditions:

Troubleshooting the Administration client

- The Administration client cannot access required resources, such as the resource bundles for internationalization.
- The Administration client cannot get a server connection.
- The Administration client is not in sync with the OA server.
- CORBA exceptions are caught.

This table lists error types the Administration client uses:

ID	Error Type
1050 to 1100	Database
4101 to 4300	Common CORBA
4301 to 4400	Common object
11601 to 11700	Registration
11801 to 11900	Administration client
11901 to 12000	Administration client/server
12001 to 12100	Administration client
12101 to 12200	Server metadata
12501 to 12600	Migration
12601 to 12700	Maximum capacity
12901-13000	Scheduling

This section includes the following topics:

- [Administration client error codes](#) on page 132
- [Administration client-server error codes](#) on page 135
- [CORBA error codes](#) on page 136
- [Common objects error codes](#) on page 137
- [Registration error codes](#) on page 137

Administration client error codes

This table lists error codes related to the Administration client.

Error Code	Description	Resolution
AC_INTERNAL_ERROR (12003)	<p>Internal error. This generally indicates one of the following types of errors:</p> <ul style="list-style-type: none">● The code is out of sync with UI (user interface) files (.gui).● What the Administration client supports is out of sync with what the server supports.● Page and server access classes are out of sync.● Missing objects within the client (null).● Unknown server error code received by Administration client.	Contact Avaya customer support and report the error. The representative will contact the appropriate developers.

Error Code	Description	Resolution
AC_LOST_CONNECTION (12002)	The Administration client cannot establish connection with the server.	<p>Reconnect by clicking File > Reconnect on the Administration client menu.</p> <p>If this error persists, make sure that the server is running and the AdminMgrSrvBase process is executing.</p> <p>If the AdminMgrSrvBase process cannot create AdminMgrSrv processes, the Administration client will not be able to connect to the server.</p> <p>Check the log file to see if there are other errors, such as ORB initialization failures, which could result from improperly-set classpath or policy files.</p> <p>The classpath is set in Start > Settings > Control Panel > System Environment during installation and initial set-up. For more information, see <i>Avaya Operational Analyst Release 7.1 Installation and Configuration</i>.</p>
AC_MISSING_RESOURCES (12001)	The Administration client cannot find the language resource bundles needed to execute.	Contact Avaya customer support and report the error. The representative will contact the appropriate developers.

Administration client-server error codes

This table lists error codes related to the Administration client-server issues.

Error Code	Description	Resolution
ADMIN_DATABASE_UNAVAILABLE (12102)	The database is not available.	Investigate the server logs to determine why the database is unavailable. It could be because: <ul style="list-style-type: none"> • The database is down • The JDBC driver is not able to connect • Allowed database connections are exhausted
ADMIN_INVALID_IDL_VERSION (12106)	The Administration client and Administration Manager server component use IDL to communicate with each other. The client and server must use compatible versions of the IDL. Incompatible versions result in this error.	Upgrade either the Administration client or the server, or both.
ADMIN_SERVER_CONFIG_NOT_KNOWN (12158)	The administration client could not get the server configuration from the historical server.	This could be a connectivity problem, or an installation problem.
ADMIN_SVC_DISABLE_OVERRIDE (12160)	The administrator has decided to delete or modify a subsystem that has services in an enabled or unknown state.	Manual cleanup of interface services that were not disabled prior to subsystem modification or deletion may be needed.

CORBA error codes

This table lists error codes related to CORBA issues.

Error Code	Description	Resolution
CORBA_EXCEPTION (4201)	ORB initialization failure. The server connection could not be established.	Reconnect by clicking File > Reconnect in the menu bar. This will not work until the underlying problem is fixed. The most likely cause of this error is an improperly set CLASSPATH environment variable. It is set in Start > Settings > Control Panel > System Environment during installation and initial set-up. For more information, see <i>Avaya Operational Analyst Release 7.1 Installation and Configuration</i> .
ORBIX_NARROW (4108)	The Administration client cannot establish a connection because it is unable to get the right version of server object to connect.	The AdminMgrSrv process could not be created. This may either be a server problem or a CORBA problem. Investigate the Administration client and server trace files to determine the cause.
ORBIX_NS_BIND (4104)	The Administration client is unable to bind to the AdminMgrSrvBase server process while attempting to connect.	The Administration client attempt this operation three times before failing. Connection failure may be because of a AdminMgrSrvBase server process that is not running or a CORBA problem. Investigate the Administration client and server trace files to determine the cause.

Common objects error codes

This table lists error codes related to common objects.

Error Codes	Description	Resolution
OBJ_INVALID_STATE (4301) OBJ_INVALID_VALUE (4302)	The server returned an invalid value to the Administration client.	Contact Avaya customer support and report the error. The representative will contact the appropriate developers.

Registration error codes

This table lists error codes related to registration.

Error Codes	Description	Resolution
REG_INVALID_SUBSYSTEM (11817)	Internal error. The Administration client received an unknown subsystem type.	Contact Avaya customer support and report the error. The representative will contact the appropriate developers.

Administration client administration screen problems

This section addresses some of the common problems you might encounter while managing your data in the administration screen.

This section includes the following topics:

- [Container profiles](#) on page 138
- [Scheduled jobs](#) on page 140
- [Interface Services](#) on page 140
- [Subsystems](#) on page 141
- [Miscellaneous](#) on page 143

Container profiles

Problem	Description	Resolution
The Administration client does not allow you to enable or disable a container.	Display name information is not available.	Verify that data is being received from the CMS or Avaya IC system.
	The data could not be aggregated within the 30 minute interval.	Limit the administrator from creating too many containers.
<p>Aggregation fails with a message similar to the following:</p> <pre>The container is defined as two rules rule 1- workgroup 1 (agent1, agent2) and svcclassid='svc1' rule 2- workgroup 2 (agent2, agent3) and ALL svcclassid. AggRegularMgr: processAggException() java.sql.SQLException: ORA-00001: unique constraint (ORACLE.SYS_C001911) violated</pre>	When an IC agent container is defined, the same agent may be included in two different work groups. That means two rules within a container may contain the same agent. This failed condition applies to Agent, agentComp, and agentJob stores.	<p>This configuration would be rare for a container, but if there is a failed container in this situation, do one of the following:</p> <ul style="list-style-type: none"> ● Reconfigure the container to not use the "ALL" condition for the service class if you must have the two overlap work groups defined in the same container. ● Split the work groups into separate containers. ● Readminister the work group to avoid the duplicate agent in the overlap work groups.

The requirement for the creation of any container is that you have the necessary display name information (rows in the Info tables). Each historical store has different requirements, as shown in the following table:

Historical store	Info tables
Agent state	Workgroup
Agent service class	Workgroup and SvcClassInfo
Service class state	SvcClassInfo
Service class summary	SvcClassInfo
Agent completion code	Workgroup, DialerInfo, and JobInfo
Agent job	Workgroup, DialerInfo, and JobInfo
Agent Reason	ReasonTypeInfo and ReasonCodeInfo

Historical store	Info tables
Reason Summary	ReasonTypeInfo and ReasonCodeInfo
Job summary	DialerInfo and JobInfo
System completion code	DialerInfo and JobInfo

If there are no administered workgroups, containers for the historical stores that require a workgroup cannot be administered. This is also true for all other Info tables and historical stores. The following is how rows are created in the Info tables:

Workgroup: Administered in IC. When they are added in IC, they are available for container administration.

DialerInfo: Dialers are also administered. This information is obtained at pump-up time and through administration events.

AgentInfo: Agents are also administered. This information is obtained at pump-up time and through administration events.

JobInfo: Jobs are known when they are loaded into a dialer. The agent association is created when an agent works on a job. A watch event notifies the system of these events. This data is sent to the Historical subsystem by the bulk HDS deliverer. That means it is not available in historical (that is, for container admin) until the end of each base interval. If you create a job and load it into a dialer, you will probably have to wait until the end of that base interval (every 30 minutes) to be able to do container administration for it.

AgentCapSetInfo: Business Advocate service classes are administered. This information is obtained at pump-up time and through administration events.

AgentSvcClassInfo: Rows are generated in this table when an agent is associated with a service class (IC queue). It is dependent on the HDS delivery mechanism when this is available. It is part of the bulk delivery system, meaning this information is not available until the end of each base interval.

ReasonInfo: Rows in this table are derived from changes to the ClassificationCode table in the IC Repository. This table contains the display name for the agent entered reason codes. Agent entered reason codes are codes entered by the agent to provide a reason that can be associated with a state change.

ReasonTypeInfo: Contains the display names for the various types of agent entered reason codes. Rows in this table are derived from changes to the ClassType column in the ClassificationCode table in the IC Repository. This table Contains the display names for the various types of agent entered reason codes and only supports one row corresponding to the type Aux Reason Code.

Scheduled jobs

Problem	Description	Resolution
Aggregation for every other interval is failing.	You are trying to aggregate too much data each interval (either too many containers or containers are too large).	Aggregation recovery should eventually remedy this problem, but you may want access to your aggregated data sooner than aggregation recovery can provide. If this scenario is encountered, you should reduce the number or size of your containers.

Interface Services

Problem	Description	Resolution
Changes to interface services are not recognized.	Another administrator might have saved changes and your administration screen is not reflecting the latest configuration settings.	Refresh the screen by clicking View > Refresh on the Administration client menu.
Interface services are not synchronized.	<p>When the server and the Administration client hold different information about a service, they are not synchronized. Synchronization has failed.</p> <p>You can monitor the synchronization status of your interface services in the Synchronized column of the Interface Services results screen.</p>	<p>Disable then re-enable the service. If this does not clear the problem because the service is unreachable (the service state is displayed in the Status column of the Interface Services screen), you must manually disable and enable the service in the command line:</p> <ol style="list-style-type: none"> 1. Navigate to the Interface Services administration screen. 2. Look up the interface service name in the Name column. 3. Log into the subsystem host where the wayward service is located. 4. Disable the service with this command: <code>pa disable <name></code>. 5. Re-enable the service with this command: <code>pa enable <name></code>.

Problem	Description	Resolution
What is the interface service name?	You need to know the interface service name if you wish to do something with an interface service over the command line. The interface service name is an internally assigned name the server uses to identify the service. You cannot modify the name.	To find the interface service name, Navigate to the Interface Services administration screen and look up the interface service name in the Name column. Use the name to troubleshoot the interface service.
Cannot modify, enable, or disable a service (buttons are grayed out)	Modify/enable/disable are not allowed until the status of the service is known.	Select services from table (highlight them) and select View status .
Cannot select all services to get status.	Services can only be selected one at a time.	Select Edit > Select All or Edit > Select None to select or deselect all services.

Subsystems

Problem	Description	Resolution
The Administration client does not accept the subsystem configuration.	The subsystem name must be unique.	Enter a unique name.
Cannot add a report subsystem.	Avaya OA supports no more than one Report subsystem on any server.	Do not exceed these constraints.
Cannot add a Real-time subsystem.	OA supports no more than two Real-time subsystems on a server. A Real-time subsystem cannot reside on a server where a CMS subsystem is already installed.	Do not exceed these constraints.
Cannot add a Historical subsystem.	OA allows only 1 Historical subsystem, which is created during the OA installation process.	

Problem	Description	Resolution
Cannot add a CMS subsystem.	<p>CMS subsystems are subject to these constraints:</p> <ul style="list-style-type: none"> ● Only one CMS subsystem per server. ● CMS subsystems cannot be added to servers where a Historical subsystem is already assigned. ● CMS subsystems cannot be added to servers where a Real-time subsystem is already assigned. 	
Cannot add an IC source subsystem.	Only one IC source subsystem is allowed per Real-time subsystem.	Add a new Real-time subsystem to support the new IC source subsystem, then add the IC source subsystem.
Cannot add an ACD source subsystem.	A CMS subsystem supports a maximum of eight ACD source subsystems.	Add a new CMS subsystem, then add the ACD source subsystem.
Cannot delete an ACD source subsystem.	The system scheduled job cannot be deleted, so the subsystem cannot be deleted.	Disable the system scheduled job.
Cannot delete or modify a subsystem.	There are services associated with the subsystem in an enabled or unknown state. These services will be deleted from the OA database, leaving them inaccessible from the Administration client.	Disable all associated services before deleting the subsystem. If you choose not to disable the services, they may become inaccessible from the client and remain in an executing status on the server.
Cannot delete a CMS or Real-time subsystem.	The subsystem has associated source subsystems.	Delete or reassign the source subsystems to a new CMS or Real-time subsystem.
Cannot delete a Historical subsystem.	OA does not allow the Historical subsystem to be deleted.	

Miscellaneous

Problem	Description	Resolution
The daily interval name on the Interval drop-down box for real time reports is not being displayed.	When the name or time of the daily intervals is changed on the Administration client daily intervals page, the report user should see the daily interval name on the Interval drop-down box for real time reports.	If they are using a new browser or they refresh their browser, they will see the changes. If they use the same window without refreshing, they will not see the interval name change. This is because Stumbras only reads the daily interval info when the input page is first displayed or refreshed.

Administration client status messages

This section describes and explains some status messages you might receive while using the OA Administration client.

This section includes the following topics:

- [Interface services](#) on page 143
- [Schemas](#) on page 144

Interface services

Status Message	Description
Change(s) cancelled. Ready.	Your changes have been removed and are not going to be sent to the server.
Disabling services may result in the loss of data.	Disabling the interface service stops it from running and might result in lost data. Some interface services have pre-administered buffer space that mitigates data loss for brief periods of time.
Modifying this service may result in the loss of data.	Because you need to disable an interface service when you modify it, data might be lost.
One or more changes failed. Ready.	One or more changes failed on the server.

Status Message	Description
Pressing Cancel causes all unsaved administration changes to be deleted.	All the changes you made since the last save will be discarded.
Retrieving data from server.	The Administration client is waiting for the server to send it requested data.
Sending change(s) to the server.	The Administration client is sending your changes to the server.
There are unsaved administration changes for this screen.	You have not saved your changes.

Schemas

Status Message	Description
A migration has started. The schema can't be accessed at this time.	OA is migrating data from one table to another, therefore you cannot view the schema. Wait until the migration is done.
Could not get requested data from the server. Please try again later.	The server data is not available. Try your request again later.
Change(s) cancelled. Ready.	Your changes have been removed and not sent to the server.
Change failed. Ready.	Your change request failed. Try again.
Change(s) succeeded. Ready.	Your change request is successfully being sent to the server. You may now make more changes.
Current and Pending schemas exist. Current schema can only be viewed.	When both current and pending schemas for a historical store exist, you can only view the current schema and not modify it. If you want to modify your schema, make your changes to the pending schema.
Migration in progress. Current schema can only be viewed until the migration completes.	OA is migrating data from one table to another, therefore you cannot view the schema. Wait until the migration is done.
Retrieving data from server.	The Administration client is waiting for the server to send it the requested data.

Status Message	Description
Save cancelled at user's request.	The changes were not sent to the server at your request.
Sending change(s) to the server.	The Administration client is sending your changes to the server.
There are unsaved administration changes for this screen.	You have not saved your changes.

Administration client error messages

This section describes and explains some error messages you might receive while using the OA Administration client.

Note:

Some of the descriptions and resolutions proposed are vague because the problems arise out of third-party software or defective hardware. You may need to look at the other vendors' troubleshooting documentation or contact their technical support department.

This section includes the following topics:

- [General](#) on page 146
- [Connection](#) on page 147
- [Containers](#) on page 149
- [Container archives](#) on page 150
- [Daily intervals](#) on page 151
- [Database and data access](#) on page 152
- [Interface services](#) on page 153
- [Retention periods](#) on page 154
- [Scheduled jobs](#) on page 155
- [Schemas](#) on page 156
- [Subsystems](#) on page 158

General

This section pertains to error messages that you might encounter while using any of the OA administration screens.

Error message	Description	Resolution
Client could not start. Unable to load presentation widgets.	The Administration client applet could not start because it could not load the presentation widgets.	Make sure the image directory is available and contains .gui and .gif files.
Host name contains illegal characters: \ / { ' " or Esc.	Your host name has illegal characters.	Do not use \ / { ' " or Esc when you name your host machine.
Host name exceeds maximum length of 20 characters.	The host machine name is too long. The maximum is 20 characters.	Give your host machine a shorter name.
Internal parameter syntax error. Client and server are out of sync. Contact your support organization.	Administration parameter validation failed due to a syntax error. The Administration client and the server are out of sync.	Contact your support organization.
Mandatory entry was left blank. Please enter a value in field: field name.	You skipped a mandatory data entry field.	Go back and enter a valid entry on the mandatory field.
Paste failed. The clipboard may be empty or a type mismatch occurred. Make sure non-numeric characters aren't being pasted into a field allowing only numeric values.	Your paste attempt failed.	Try again.

Error message	Description	Resolution
This request is inconsistent with the server database. Please refresh and try again.	OA allows multiple Administration clients to connect to the server simultaneously but does not automatically update the administration data. Someone else has changed the configuration settings and your Administration client is not reflecting the latest administration data.	Refresh your administration screen by clicking View > Refresh on the Administration client menu. For more details, see Client not updated on page 123.
Unknown error received from server, error index number: xxxxx	The Administration client and the administration server components are out of sync.	Try again, if problem persists, contact Avaya customer support.

Connection

Error message	Description	Resolution
A connection to the server database can't be created. Administration can't be done without a database connection.	OA could not establish a database connection. The Administration client needs a database connection to send your administration requests.	Try again. If the problem persists, contact your support organization to troubleshoot the database connection error.
Administration client couldn't connect to server.	The Administration client cannot establish a connection with the server	See Connectivity on page 123.
Administration client received unexpected exception.	The Administration client caught an unexpected exception during construction. This is generally an exception generated by the server when it encounters problems while the Administration client is connected to it.	Try again. If this problem persists, contact customer support.

Error message	Description	Resolution
Administration client couldn't connect to server due to ORB initialize failure.	The Administration client could not initialize the Object Request Broker.	The most likely cause of this error is an improperly set CLASSPATH environment variable. It is set in Start > Settings > Control Panel > System Environment during installation and initial set-up. For more information, see <i>Avaya Operational Analyst Release 7.1 Installation and Configuration</i> . See also Initialization Errors on page 125.
Server connection has been lost due to a CORBA failure. To continue, please reconnect.	CORBA failure occurred during initialization.	Reconnect to the server by clicking File > Reconnect in the Administration client menu bar.
The maximum number of allowed client/server connections are currently in use. This client can't connect to the server until another client exists. Please try again later.	Avaya OA allows a maximum of 5 Administration clients to connect to the server.	Try again later, when there are not as many Administration client users.

Error message	Description	Resolution
There is a problem with the server connection. Please exit this dialog.	The server connection has been lost.	Reconnect to the server by clicking File > Reconnect in the Administration client menu bar.
Use File > Reconnect to reconnect. If this problem persists contact your support organization.	<p>The client-server connection is lost or could not be established.</p> <p>This might be a temporary problem or a CORBA problem.</p>	<p>Reconnect to the server by clicking File > Reconnect in the Administration client menu bar.</p> <p>If this does not work, check the system environment to make sure that the problem is not due to an improperly set CLASSPATH environment variable.</p> <p>The CLASSPATH is set in Start > Settings > Control Panel > System > Environment during installation and initial set-up. For more information, see <i>Avaya Operational Analyst Release 7.1 Installation and Configuration</i>.</p> <p>See also Initialization Errors on page 125.</p>

Containers

Error message	Description	Resolution
Container name contains illegal character: \ / { ' " or Esc.	The container name contains one or more illegal characters.	Do not use \ / { ' " or Esc when you name your container.
Container name exceeds maximum length of 40 characters.	The container name is too long. The Administration client allows a maximum of 40 characters	Give the container a shorter name.
The following container name is not unique:	The container name is not unique.	Give the container a unique name.

Container archives

Error message	Description	Resolution
An external user has corrupted the data for the historical subsystem.	Another user might have corrupted the Historical subsystem.	Determine the damage and repair it.
Internal server error or client and server are out of sync. Contact your support organization.	Either an internal server error occurred or the Administration client and the server are out of sync. The asynchronism is most likely caused by differing client and server software versions.	Upgrade the software version in your client or server.
Server error occurred, please try again. If this error continues, contact your support organization.	A server error occurred.	Try again. If the problem persists, contact your support organization to troubleshoot the server error.
This request is inconsistent with the server database. Please refresh and try again.	OA allows multiple Administration clients to connect to the server simultaneously but does not automatically update the administration data. Someone else has changed the configuration settings and your Administration client is not reflecting the latest administration data.	Refresh your administration screen by clicking View > Refresh on the Administration client menu. For more details, see Client not updated on page 123.

Daily intervals

Error message	Description	Resolution
Fixed Interval name specified is not unique. Specify a unique name.	The daily interval name is not unique.	Give the daily interval a unique name.
Fixed Interval start time specified has already been used. Specify an unused start time.	You have already defined a daily interval with the same start time.	Specify a different start time or not create a duplicate daily interval.
Internal server error or client and server are out of sync. Contact support.	Either an internal server error occurred or the Administration client and the server are out of sync. The asynchronism is most likely caused by differing client and server software versions.	Upgrade the software version in your client or server.
This request is inconsistent with the server database. Please refresh and try again.	OA allows multiple Administration clients to connect to the server simultaneously but does not automatically update the administration data. Someone else has changed the configuration settings and your Administration client is not reflecting the latest administration data.	Refresh your administration screen by clicking View > Refresh on the Administration client menu. For more details, see Client not updated on page 123.
Unknown error received from server, error index number: xxxxx	The Administration client and the administration server components are out of sync.	Try again, if problem persists, contact Avaya customer support.

Database and data access

Persistent database problems might be generated by third-party applications, flawed configuration, or faulty hardware. Consult the appropriate troubleshooting documentation.

Error message	Description	Resolution
A connection to the server database can't be created. Administration can't be done without a database connection.	OA could not establish a database connection. The Administration client must have a database connection to send your administration requests.	Try again. If the problem persists, contact your support organization to troubleshoot the database connection error.
Can't access the database at this time. Please try again later.	OA could not access the database.	Try again later. If the problem persists, contact your support organization to troubleshoot the database connection error.
Data could not be accessed on the server. If this condition persists, contact your support organization.	OA could not access the database.	Reconnect by clicking File > Reconnect in the Administration client menu. See also Connectivity on page 123.
Database SQL error occurred. If this error continues, contact your support organization.	An SQL error occurred on the server.	Contact your support organization to troubleshoot the SQL error.
Database update failed, please try again. If this error continues, contact your support organization.	The database update failed.	Try again. If the problem persists, contact your support organization to troubleshoot the database connection error.

Error message	Description	Resolution
Server connection has been lost due to a CORBA failure.	CORBA failure occurred during initialization.	Contact Avaya customer support.
This request is inconsistent with the server database. Please refresh and try again.	OA allows multiple Administration clients to connect to the server simultaneously but does not automatically update the administration data. Someone else has changed the configuration settings and your Administration client is not reflecting the latest administration data.	Refresh your administration screen by clicking View > Refresh on the Administration client menu. For more details, see Client not updated on page 123.

Interface services

Error message	Description	Resolution
A service can't be found. Please refresh the screen and try again.	The Administration client could not find the service.	Refresh your administration screen by clicking View > Refresh on the Administration client menu.
An error occurred obtaining data from server. Please try again later.	The Administration client encountered an error while retrieving data from the server.	Try again later.
Host could not be contacted.	The Administration client could not reach the host machine of the interface service	Make sure that the server where the interface service resides in is not down.
Initialization server could not be contacted.	InitSrv process couldn't be contacted.	Try again later.
Internal server error or client and server are out of sync. Contact your support organization.	Either an internal server error occurred or the Administration client and the server are out of sync. The asynchronism is most likely caused by differing client and server software versions.	Upgrade the software version in your client or server.

Error message	Description	Resolution
One or more changes failed. Ready.	One or more changes failed on the server.	Try again later.
Server connection has been lost due to an ORBacus failure.	CORBA failure occurred during initialization.	Contact Avaya customer support.
Services of this type cannot be modified. Changes to this service's configuration are equivalent to a delete.	You can not modify recorders.	Do not attempt to modify recorders.
The client encountered network failure. Please try this operation again later.	Network error.	Contact your support organization.
This <interface service type> could not be disabled. Unable to contact Initialization Server.	The Administration client could not disable the interface service because it could not reach the InitSrv process.	Try again later.
Unknown error received from server, error index number: xxxxx	The Administration client and the administration server components are out of sync.	Try again. If the problem persists, contact Avaya customer support.

Retention periods

Error message	Description	Resolution
Internal server error or client and server are out of sync. Contact support.	Either an internal server error occurred or the Administration client and the server are out of sync. The asynchronism is most likely caused by differing client and server software versions.	Upgrade the software version in your client or server.

Error message	Description	Resolution
The historical subsystem must be administered to access this page.	You need to configure the Historical subsystem first before you can do anything with this administration screen.	Go to the Subsystems screen and make sure the Historical subsystem exists and is configured properly (correct host, IP Address, and so on.).
Unknown error received from server, error index number: xxxxx	The Administration client and the administration server components are out of sync.	Try again. If the problem persists, contact Avaya customer support.

Scheduled jobs

Error message	Description	Resolution
Can't aggregate data prior to the container creation date.	You entered an invalid date range. OA cannot aggregate data that does not exist.	Enter a valid date range.
Job name contains illegal character: \ / { ' " or Esc.	Your scheduled job name has illegal characters.	Do not use \ / { ' " or Esc when you name your host machine.
Scheduled job name exceeds maximum length of 40 characters.	The scheduled job name is too long. The maximum is 40 characters.	Give your scheduled job a shorter name.
The Recurrence specifies date which do not exist.	You may not configure an external job to recur every 30 if your recurrence cycle includes February, which does not have 30 days.	You must enter a valid day for the months.

Schemas

Error message	Description	Resolution
A schema field can't be found. Please refresh the screen and try again.	The Administration client is not synchronized with the server.	Refresh your administration screen by clicking View > Refresh on the Administration client menu.
An error occurred validating the schema change request. Please try the change again. Contact your support organization if the problem persists.	OA could not validate the schema change requests.	Try your request again later. If the problem persists, contact your support organization.
Inconsistent data found in data schema tables. Contact your support organization.	The data schema tables are inconsistent. Your tables might contain data types that OA does not support.	Contact your DBA. If you are the DBA, investigate your database and refer to the database vendor's documentation.
Internal server error occurred for data schema request. Contact your support organization.	You have an internal server error.	Contact your support organization.
Internal server error or client and server are out of sync. Contact your support organization.	You either have an internal server error or the Administration client and the server are out of sync. The asynchronism is most likely caused by differing client and server software versions.	Upgrade the software version in your client or server.
Internal parameter syntax error: client and server are out of sync. Contact your support organization.	The Administration client parameter validation failed due to a syntax error.	Contact your support organization.

Error message	Description	Resolution
Invalid date field entry for: <field name>. Please enter time as mm-dd-yyyy.	You did not enter a valid date format.	You must use the mm-dd-yyyy format. The month and the day must have two digits, and the year must have four. July 4, 2001 should be entered as 07/04/2001.
Invalid time field entry for: <field name>. Please enter time as hh:mm.	You did not enter a valid time format.	You must use the hh:mm format. You must use two digits for the hour and the minutes. 3:02 a.m. must be entered as 03:02.
More than one schema field is selected. Please select one schema field and try again.	You tried to select two schema fields.	Modify only one field at a time.
Numeric field contains non-numeric character(s).	You have entered characters that are inconsistent with the field data type, that is you entered non-numeric characters.	Remove the non-numeric characters and enter valid characters. Enter numbers only.
Request failed. There isn't enough disk space to complete associated migration.	You do not have sufficient disk space to accommodate the new schema. The migration can not be completed because of this limitation.	Be less ambitious with your additions or increase your disk space
Required schema fields can't be modified.	You can not modify required schema fields.	You just have to leave the field alone.
Server couldn't get required resources. Please try again later.	The Administration client and the server may be out of sync. Or the server components may not be able to get needed resources, such as logging components.	Try again later. If this problem persists, contact your support organization. See also General Administration client issues on page 121.
The default time is not correct. Please enter time as hh:mm:ss.	Time was entered incorrectly.	You must use the hh:mm:ss format. You must use two digits for the hour minutes, and seconds. 3:02:05 a.m. must be entered as 03:02:05.

Error message	Description	Resolution
The default value is not within the specified precision.	You have entered a default value that is not within the precision.	Enter a value that is within the specified precision.
This request is inconsistent with the server database. Please refresh and try again.	OA allows multiple Administration clients to connect to the server simultaneously but does not automatically update the administration data. Someone else has changed the configuration settings and your Administration client is not reflecting the latest administration data.	Refresh your administration screen by clicking View > Refresh on the Administration client menu. For more details, see Client not updated on page 123.
Unknown error received from server, error index number: xxxxx	The Administration client and the administration server components are out of sync.	Try again, if problem persists, contact Avaya customer support.

Subsystems

Error message	Description	Resolution
A non-unique site id has been specified: nnn	The site ID you entered is not unique.	You must have a unique site ID.
An invalid IP Address was specified. Please enter an address in the format: n.n.n.n, where each n is from 0 to 255.	You entered an invalid IP address.	Enter an IP address in a format n.n.n.n format, where each "n" is a value from 0-255.
Client and server out of sync of server components can't be accessed. Contact your support organization.	The Administration client and the server are not in sync. This is most likely caused by differing client and server software versions.	Upgrade the software version in your client or server.
Corrupt data has been found in the database for the historical subsystem.	There is invalid data in your database. This could occur if someone manually alters the database.	Check to see if someone altered the database and if so, investigate the first day of week, first hour of day and the archive operations. Reverse the changes.

Error message	Description	Resolution
Database contains corrupt subsystem information. Contact your support organization.	The database has no information about the subsystem, the Historical subsystem is not in the database, or someone manually altered the database.	Check to see if someone altered the database.
Host name contains illegal characters: \ / { ' " or Esc.	The host name has illegal characters.	Do not use \ / { ' " or Esc when you name your host machine.
Internal server error or client and server are out of sync. Contact your support organization.	The Administration client and the server are not in sync. This is most likely caused by differing client and server software versions.	Upgrade the software version in your client or server.
IP Address could not be derived from Host Name. Please enter a valid Host Name or IP Address.	OA could not look up the IP address using the provided host name. You have either provided a non-existent host name or your host does not have a DNS/hosts entry.	Enter a valid host name.
Server connection has been lost due to a CORBA failure. Please reconnect.	CORBA failure occurred during initialization.	Reconnect to the server by clicking File > Reconnect in the Administration client menu bar.
The following subsystem could not be deleted, one or more containers include its source id: xxxxx	OA cannot delete the source subsystem because it still contains containers.	You must delete the containers first before you can remove the subsystem.
The following subsystem name is not unique: xxxxx	You have entered a subsystem name that already exists.	Enter a different name.
The historical subsystem can not be deleted.	You can not delete the Historical subsystem.	Do not try to delete the Historical subsystem.

Troubleshooting the Administration client

Error message	Description	Resolution
Unable to lock the database tables needed to make this change. Please try again later.	Someone else is working on the database. The tables are locked and unavailable.	Try again later.
Unknown error received from server, error index number: xxxxx	The Administration client and the administration server components are out of sync.	Try again. If the problem persists, contact Avaya customer support.

Troubleshooting Basic Reports and the report server

This section presents information about Basic Reports operation and the sources that provide the data Basic Reports utilize. The information in this section is designed to help you identify possible Basic Report trouble situations and associated corrective actions, and to provide you with details about the various database elements involved in the calculations required by each report.

This section includes the following topics:

- [Historical report size limit](#) on page 161
- [Report client Java plug-in and Java console](#) on page 162
- [Authentication problems](#) on page 164
- [General problems](#) on page 166
- [Troubleshooting Stumbras](#) on page 182

Historical report size limit

By default, historical reports (including Work Item Detail) return no more than 500 rows. The one exception is the CMS Detail Report, which returns by default 5000 rows. These limits are imposed to prevent extremely large query jobs that could immobilize the report and historical database servers.

If a historical report reaches the row limit, an information page is displayed requesting that the input criteria be adjusted to reduce the number of rows returned. In certain circumstances, the row limit may be too low.

To increase the row limit:

1. Open the following file (default installation location shown):
 - `%PABASE%/stumbras/webapp/WEB-INF/config/Reports/DBTypeInfo/DBTypeInfo.properties` (Windows)
 - `$SUN_WEB_HOME/https-stumbras/webapp/WEB-INF/config/Reports/DBTypeInfo/DBTypeInfo.properties` (Solaris Sun Java Web Server 6.0)
 - `$SUN_WEB_HOME/https-stumbras/webapps/WEB-INF/classes/Reports/DBTypeInfo/DBTypeInfo.properties` (Solaris Sun Java Web Server 6.1)

- `$WEBSPPHERE_HOME/installedApps/hostname/OAReports.ear/stumbras.war/WEB-INF/classes/Reports/DBTypeInfo/DBTypeInfo.properties` (AIX; *hostname* is the name of the OA server)

Note:

Avoid using a file editor such as Windows Notepad that can corrupt the file content by changing the encoding format. Use an editor that guarantees the UTF8 encoding format, such as WordPad or TextPad.

2. Set `ID_MAX_ROWNUM` to a value greater than the current limit.
3. Save the file.
4. Stop and restart the Stumbras service for the change to take effect.



CAUTION:

Changing this limit can affect report and database server performance and kill the server processes.

Report client Java plug-in and Java console

As an additional troubleshooting aid, the Report client logs messages in the Java Security Plug-in Java console window. The Java Console helps you diagnose problems that might occur when the applet initializes.

This section provides information to help you use the Java Console. Topics in this section include:

- [Accessing the Java Plug-in Control Panel](#) on page 162
- [Enabling the Java Console](#) on page 163
- [Recycle Classloader](#) on page 163

Accessing the Java Plug-in Control Panel

The Java Plug-in Control Panel lets you configure the security plug-in, the Java console, and Jar caching. You need to use the control panel to troubleshoot certain problems.

To access the Java Plug-in Control Panel (JRE 1.4) in Windows:

1. Select **Start > Settings > Control Panel**.
2. Double-click **Java Plug-in**.

The **Java Plug-in Control Panel** launches.

Enabling the Java Console

You can view the Java Console to troubleshoot initialization errors.

**Tip:**

The Java Console, while useful for diagnosing problems, need not be enabled under normal operations.

To enable the Java Console:

1. Launch the Java Plug-in Control Panel.
2. In the **Basic** tab, select **Show Java Console**.
3. Click **Apply**, then close the window.
4. Re-launch the Report client.

The Java Console appears when the Report client is starting.

**Tip:**

To disable the Java console, follow the procedure above except to clear the **Show Java Console** check box.

Recycle Classloader

Enable the Recycle Classloader option so you can launch the Report client more than once from one browser.

To recycle the classloader:

1. Launch the Java Plug-in Control Panel.
2. In the **Basic** tab, select **Recycle classloader**.
3. Click **Apply**, then close the window.
4. Restart the Report client.

**Tip:**

To disable recycling of classloader, follow the procedure above except that you clear the **Recycle classloader** check box.

Authentication problems

This section describes problems seen when users are unable to log on to the Report client.

Note:

All references to domains in this section refer to software residing on Windows servers only.

Symptom	Solution
When a user enters an incorrect user name or password, the authentication login dialog box is redisplayed. This will repeat up until the maximum number of retries has been met.	<p>The cause can be one of the following:</p> <ul style="list-style-type: none"> • The user entered the wrong user ID or password. Enter the correct user ID and password. • The user ID is not defined. • The password for the user is wrong. <p>Verify all of the above on the server where the Report subsystem is installed.</p>
You see the message: "The user is not authorized to do reports. Please try again."	The user is not a member of the reports group (the group is defined when installing the Historical subsystem).
You see the message: "An instance of the authentication service could not be created. The user name and password could not be authenticated. Please try to login again."	<p>The cause can be one of the following:</p> <ul style="list-style-type: none"> • The Report subsystem is not pointing to the right host name for the Historical subsystem. This is set in the <code>%PABASE%\AdminPol.html</code> or <code>%PABASE%\AdminSig.html</code> files. Refer to the <code>SERVER_NAME</code> applet parameter in that file. • The naming service is not running on the report server. • The authentication service is not running on the server where the Historical subsystem is installed. <p>If this problem persists, contact Avaya technical support.</p>
<p>When logging on to the Report client, the following error message is displayed after you have failed to log in successfully after the allowed number attempts (default is three):</p> <pre>Error: 401 Location:/Stumbras/tree-viewer No detailed message</pre>	This means that you have reached the maximum number of attempts to log on to the client. You need to wait 10 minutes (default value) before you can try again with the same user ID.

Symptom	Solution
<p>When attempting to access the Report server, the following is displayed:</p> <p>You are not authorized to view this page.</p> <p>You do not have permission to view this directory or page using the credentials you supplied.</p> <p>HTTP 401.1 - Unauthorized: Login Failed Internet Information Services.</p>	<p>For Windows 2000 on the server machine containing the Report subsystem:</p> <ol style="list-style-type: none"> 1. Select Start > Programs > Administrative Tools > Internet Services Manager. 2. Expand the tree view: <i>server-name</i> > Default Web Site. 3. Right click on the Default Website > Properties. 4. Select the Directory Security tab. 5. Click Edit under the Anonymous access and Authentication control section. Verify that only the Anonymous access box is checked in the first section and the Integrated Windows authentication box is checked in the Authenticated access section. 6. Click Edit next to Account used for Anonymous Access. In the Anonymous User Account window, verify that the value in the Username box is IUSR_<ServerName>, where <ServerName> is the name of this server machine. If the machine was restored from an image that is not specifically for this machine, then this name will be incorrect which will cause IIS Anonymous Authentication to fail. If it is not correct, put in the correct machine name. Leave Allow IIS to control password checked. 7. Click OK twice, and then click Apply. 8. When the Inheritance Overrides box is displayed, do NOT select Jakarta; just click OK. 9. Click OK once more. 10. Exit the Internet Services Manager and attempt to display the Basic Reports again. If this value was incorrect previously, then the login window should now be displayed.

Symptom	Solution
<p>When attempting to access the Report server, the following is displayed:</p> <p>You are not authorized to view this page.</p> <p>You do not have permission to view this directory or page using the credentials you supplied.</p> <p>HTTP 401.1 - Unauthorized: Login Failed Internet Information Services.</p>	<p>For Windows 2003 Server on the server machine containing the Report subsystem:</p> <ol style="list-style-type: none"> 1. Select Start > Programs > Administrative Tools > Internet Information Services Manager. 2. Expand the tree view: <i>server-name</i> > Web Sites > Default Web Site. 3. Right click on the Default Website and select Properties. 4. Select the Directory Security tab. 5. Click Edit under the Authentication and access control section. Verify that only the Enable anonymous access box is checked in the first section and the Integrated Windows authentication box is checked in the Authenticated access section. 6. Verify that the value in the Username box is IUSR_<ServerName>, where <i><ServerName></i> is the name of this server machine. If the machine was restored from an image that is not specifically for this machine, then this name will be incorrect which will cause IIS Anonymous Authentication to fail. If it is not correct, put in the correct machine name. 7. Click OK twice, and then click Apply. 8. Exit the Internet Information Services Manager and attempt to display the Basic Reports again. If this value was incorrect previously, then the login window should now be displayed.

General problems

Basic Reports depends on many OA components and services being present, correctly configured, and running. The table below describes several possible trouble symptoms and actions you can take to resolve the problems.

**CAUTION:**

For many of these solutions, you are told to reinstall the JRE and Report client files. If the Administration client is installed on the same system, the Administration client may stop working with the new JRE.

Symptom	Possible cause	Solution
An error is displayed when clicking the <code>localhost/report1</code> link.	Services not running.	<ol style="list-style-type: none"> 1. Verify that the Web service is running. For Windows, verify that it is set for automatic operation. 2. Verify that the Data Manager is administered and running using: <ul style="list-style-type: none"> <code>pa disable dm</code> <code>pa enable dm</code> 3. Verify that the network is functional. 4. Verify that the Report subsystem is administered and running. <p>Refer to the <i>Administration Client Help</i> for more information about how to verify the status of the services and subsystems.</p>
Unsatisfied link error	Missing JRE or Report client files	<p>Install the correct JRE and Report client files before launching any graphical reports.</p> <ol style="list-style-type: none"> 1. Open a browser and go to the URL <code>http://<hostname:port number if any>/reports1</code>. 2. Click on the last link from the tree-view in the left pane. 3. If the correct JRE is not installed, install the correct JRE. 4. Install the Report client files.
Unsatisfied link error because of failure to initialize <code>JNv2432.dll</code>	Incompatible hardware or software such as the graphics adapter.	See <i>Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites</i> . Update your client PC to meet the minimum requirements.
In CMS-only installations real-time reports and IC data-related reports are shown in the tree view. Clicking those reports causes an error.	Operating as designed. The reports are shown in the tree-view even though the OA installation does not include an IC subsystem.	You can modify the tree-view page for your installation to remove the offending reports from the tree-view. Contact your Avaya representative for assistance.

Symptom	Possible cause	Solution
Basic Reports do not run on a report client.	<ol style="list-style-type: none"> 1. Report client files are not installed. 2. Insufficient swap space. 	<p>Install the correct JRE and Report client files:</p> <ol style="list-style-type: none"> 1. Open a browser and go to the URL <code>http://<hostname:port number if any>/reports1</code>. 2. Click on the last link from the tree-view in the left pane. 3. If the correct JRE is not installed, install the correct JRE. 4. Install the report client files by clicking Install Reporting Support Files in the tree-view.
<p>Report client installer does not launch. The error message may indicate JVM is not found.</p> <p>Note: On Windows XP systems no error message appears and the right pane is blank.</p>	JRE is not installed on the report client machine.	<p>Install the correct JRE and Report client files:</p> <ol style="list-style-type: none"> 1. Open a browser and go to the URL <code>http://<hostname:port number if any>/reports1</code>. 2. Click on the last link from the tree-view in the left pane. 3. If the correct JRE is not installed, install the correct JRE. 4. Install the report client files by clicking Install Reporting Support Files in the tree-view.
You receive a contract failure exception trying to run reports.	The Report client files have been installed on a Windows Server 2003 server, which is not supported.	Remove the Report client files from the Windows 2003 server. Do not attempt to run reports from a Windows Server 2003 server.
<p>Basic Reports do not run after an upgrade from 6.0.x to 6.1.3.</p> <p>Note: This is not a problem when upgrading from 6.1.x to 6.1.3.</p>	The correct report client files are not installed.	<p>Install the correct JRE and Report client files:</p> <ol style="list-style-type: none"> 1. Open a browser and go to the URL <code>http://<hostname:port number if any>/reports1</code>. 2. Click on the last link from the tree-view in the left pane. 3. If the correct JRE is not installed, install the correct JRE. 4. Install the report client files by clicking Install Reporting Support Files in the tree-view.

Symptom	Possible cause	Solution
Table-based Basic Reports run, but no graphical reports run.	Report client is not installed.	Install the correct JRE and Report client files: <ol style="list-style-type: none"> 1. Open a browser and go to the URL <code>http://<hostname:port number if any>/reports1</code>. 2. Click on the last link from the tree-view in the left pane. 3. If the correct JRE is not installed, install the correct JRE. 4. Install the report client files by clicking Install Reporting Support Files in the tree-view.
Report client is installed, but the applet is gray and no graphical reports appear.	Missing or incompatible Java Runtime Environment (JRE) or Java plug-in version.	Download and install JRE patch from http://java.sun.com , or uninstall the current JRE or Java plug-in and launch the applet. This prompts you to download the correct plug-in. Alternatively, install the JRE on the report client machine from the installation CD.
Cannot run reports for multiple servers.	The same Internet Explorer session is pointing to multiple report servers. This is a Java limitation.	Launch a new Internet Explorer session for each report server by selecting the IE desktop icon or through the Start > Programs menu.
Date-time information does not reflect my time zone.	User's time zone setting is incorrectly specified. (Each user must do this.)	<ol style="list-style-type: none"> 1. Select User Settings from the tree-view. 2. Select the desired time zone from the menu. 3. Select Save to permanently set the time zone. 4. Verify whether the IC time zone administration set to GMT. If this is incorrect, all real-time and historical date time information will be skewed and misinterpreted. 5. Verify that the ECH setting (from CMS to OA) has been done properly. If the time zone adjustment setting is incorrect, the CMS date time information can be also skewed.
The daily interval name on the Interval drop-down box for real time reports is not being displayed.	When the name or time of the daily intervals is changed on the Administration client daily intervals page, the report user should see the daily interval name on the Interval drop-down box for real time reports.	If they are using a new browser or they refresh their browser, they will see the changes. If they use the same window without refreshing, they will not see the interval name change. This is because Stumbras only reads the daily interval info when the input page is first displayed or refreshed.

Symptom	Possible cause	Solution
Negative duration values appear in any real-time reports.	IC and OA server clocks are not synchronized.	Follow the instructions in <i>Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites</i> to set server clock synchronization.
Aggregation selection box is empty on historical report input pages.	No containers defined.	Verify that containers are properly administered and enabled. Allow time for new data to aggregate. Refer to the <i>Administration Client Help</i> for more information about administering containers and scheduling jobs.
Graphical reports response is slow or reports do not appear.	Temporary directories are full.	As reports are accessed, associated Java JAR files are copied to the C:\temp or C:\winnt\temp folders. These files are not removed programmatically, and over time can consume a significant amount of memory. Delete these files on a regular basis to eliminate this problem.
You can log in to the Report server, but all reports show "Null PointerExceptions."	Communication between the Admin Manager and Stumbras may be down, resulting in missing database configuration information.	Review the ConfigService.properties file in: <ul style="list-style-type: none"> • %PABASE%\Stumbras\webapp\WEB-INF\config\ConfigService (Windows) • \$SUN_WEB_HOME/https-stumbras/webapp/WEB-INF/config/ConfigService (Solaris Sun Java Web Server 6.0) • \$SUN_WEB_HOME/https-stumbras/webapps/WEB-INF/config/ConfigService (Solaris Sun Java Web Server 6.1) • \$WEBSphere_HOME/installedApps/hostname/OAReports.ear/stumbras.war/WEB-INF/config/ConfigService/ConfigService (AIX) for configuration information. If this file does not exist, the report server and the Admin Manager are not communicating. See Troubleshooting Stumbras on page 182 for more information.

Symptom	Possible cause	Solution
No Agent data in reports or some Agent data is missing	Agents are not properly configured with the role of "Agent" in IC Manager.	Verify that the role of Agent is selected in the agent's Security tab properties in IC Manager.
	Agent not administered for the correct domain in IC Manager.	Verify that the domain specified in the agent's General tab is a domain that contains an OA Event Collector for the OA real-time system where the reports are being run.
	IC Agent ADU servers are not running.	Verify the status the IC agent domain ADU servers. They should be up and running.
	IC Agent ADU failover strategy is not correct.	Verify the IC system failover strategy for agent domain ADUs. The agent ADU server for the agent data in question may have failed over to an ADU server in another domain. Agent ADU servers must not be allowed to failover to ADU servers in domains that are not monitored by OA Event Collectors.
	The agent may have failed over to an agent ADU domain that feeds a different OA Event Collector.	Verify that the agents in question have not failed over to another agent ADU domain. If multiple Event Collectors and OA real-time systems are configured, the agent's data may be appearing on a different OA real-time system's report.

Symptom	Possible cause	Solution
<p>On some OA installations, there have been problems selecting a large number of agents or service classes from a report input page that can create a large SQL query, which causes both DataManager and DataServer to crash. The DataManager and DataServer are java processes associated with the real time subsystem.</p> <p>The issue manifests itself initially as an error message on the report just after hitting the Submit button on the final input page of the report. After the initial error, the OA system is unresponsive to requests to start a new report for about one minute while the DataManager and the DataServer are restarting.</p> <p>An additional characteristic of this problem is that several errors will be logged in the <code>\$PABASE/data/log/CentralError/CentralErrorLog.log</code> file on Solaris and AIX, or the Event Viewer on Windows, by the OA DataManager, indicating that the Data Store has been invalidated. See example below:</p> <pre>ERROR - high: DataManager OA:RT:DataManager: 0=DBService:invalidateDatabase: Database is invalidated. Please Reconnect::java.sql.SQLException: [TimesTen] [TimesTen x.x.x ODBC Driver] [TimesTen] TT0994: Data store connection terminated. Please reconnect. -- file "sqlAPI.c", lineno 1175, procedure "sb_sqlExec ()"</pre>		<p>Edit the <code>momtab</code> entry for DataServer on the server that is running the Real-time subsystem. The <code>momtab</code> file is located at the following location:</p> <pre>%PABASE%\data\admin\mom\etc\ momtab (Windows) \$PABASE/data/admin/mom/etc/ momtab (Solaris and AIX)</pre> <p>Edit the entry to include <code>-Xss8m</code>. The entry should look similar to the one below:</p> <pre>dsvr:4:respawn:{ }java -Xrs -DUSE_ADS=N -Xmx256m -Xss8m com.avaya.cc.rtdss.ds.DataServerMain -v 0</pre>
<p>When a user selects a large number of service classes in the input page of the Service Class and Queue Performance report, the performance of the Report subsystem diminishes.</p>	<p>Too many service classes in the input page of the Service Class and Queue Performance report were selected.</p>	<p>Though there is no limit to the number of service classes that can be entered on the input page, Avaya recommends that you limit your queries to 25 service classes or less.</p>

Symptom	Possible cause	Solution
With DB2, some of the historical reports are displaying the following error message: COM.ibm.db2.jdbc. DB2Exception: [IBM] [CLI Driver] CLI0115E Invalid cursor state. SQLSTATE=24000	This is caused when the DB2 server or client software has been installed without the recommended fixpak (patch) from IBM.	Apply the recommended DB2 fixpack on the machine where the DB2 server and client software is installed. See <i>Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites</i> .

Symptom	Possible cause	Solution
OA real-time reports may show agents with deferred email contacts that are never completed.	This may be caused by ADU server behavior that removes, or clips, "old" data based on a configurable definition of what "old" is considered to be. OA monitors Agent records within the ADU to gather data on agent status. This monitoring is affected by record clipping. Email contact information in the Agent ADU record is susceptible to clipping because it can be relatively long-lived. If the Agent ADU record included deferred emails that were clipped by the ADU server, it is possible that OA will not be able to track subsequent activity against deferred emails when they become active again.	<p>Contact information in the Agent ADU record is stored in an entity called a container. An ADU server is configured with a maximum number of containers an Agent ADU record may contain. As a workaround, the maximum number of containers that the ADU server will allow can be modified. As there is an impact in terms of ADU memory usage and event collector startup time, it is recommended that only the maximum number of email containers be changed. Additionally, it is recommended that the maximum number of email containers be no more than 50.</p> <p>To modify the default value:</p> <ol style="list-style-type: none"> 1. Log in to IC Manager. 2. Selecting the Server tab. 3. For each ADU server defined in the installation: <ol style="list-style-type: none"> a. Right click on the associated ADU entry and select Edit.... b. In the resulting dialog select the ADU tab. c. Right click somewhere on the background of the resulting page and select Show advanced properties.... d. Scroll down until the Subcontainer instances... button is visible and click it. e. The default value for the email subcontainer is represented by the entry email.4 where 4 is the default number of allowed subcontainers for the email channel. Increase this number to an appropriate value and select OK. It may take some experimentation to arrive at an appropriate value based on the email traffic volume and the length of time it typically takes to complete an email contact. When determining the new value keep in mind that the associated ADU server will require additional memory for each additional subcontainer.

Symptom	Possible cause	Solution
Multiple agent login IDs for the same agent. In the input page of agent related historical reports, the old login ID will appear deleted while the new login ID for the same agent will appear active.	IC Agent administration in IC Manager allows the agent login ID to be modified. When this happens, OA will maintain two independent agent records that belong to the same agent. Ultimately, both real-time and historical reports will display two separate agent records without combining the two agent data since agents are distinguished by their login IDs in OA. Until the real-time interval rolls over, the real-time agent reports will continue to display as separate agents.	When changing an agent login ID, delete the agent and then re-add the agent with the new login ID.

Symptom	Possible cause	Solution
Assigning a previously used login ID to a new agent may cause agent data to be misidentified.	IC agents are uniquely identified in the OA database by their login ID, which is stored in the AgentLogin field in various tables. If an agent is deleted, and later a new agent is added using the same login ID, OA considers them the same agent. The display name for the old agent will be overwritten by the new name and will no longer be available. Historical reports may show data for the new agent and the old agent together. This same situation applies to CMS agents, VDNs, Skills, and Call Work Codes.	To avoid this situation, do not assign a previously used login ID to a new agent.
Agents that are in a working state during a pump-up will be put in the unknown state.	Works as designed.	No action required. All time that the agent spends working on the contact that they were assigned to during pump-up will be captured in the unknowndur for the agent. If the agent changes focus to work on a different contact that has been assigned after pump-up they will go to the working state. If the agent changes their focus again back to the original contact that they were working during pump-up, they will again return to the unknown state. When the agent finishes all work for contacts that existed at the time of pump-up, they should not go to the unknown state unless an attempt is made to put the agent in a working or wrap-up state and the contact assigned to them does not exist in the real-time DataManager.
VOIP calls are not included in the voice queue.	Works as designed.	No action required. All VOIP calls are included in the channel.voice.default queue.

Symptom	Possible cause	Solution
IC did not send a queue key to OA.	OA tracks the work item under the channel default queue.	<p>There is no solution to this condition. The following is a list of possible situations:</p> <ul style="list-style-type: none"> • A call that is transferred, consulted, or conferenced with another agent directly without going through a queue. For example, agent-to-agent transfer, agent making an outbound call to a customer, and so on. • In a multi-site configuration, a call that is transferred, consulted, conferenced to another site. A site is defined by having an Event Collector monitoring its ADUs. In this situation, regardless if the call is being parked in a queue in another site, OA will track is in the default queue. • TSQS is in a bad state and needs to be restarted. • TS does not have a corresponding TSQS. • Either TS or TSQS (whichever one allows you to configure the ACD) has the wrong ACD configured.
On Solaris systems, a second "firewall" authentication prompt may appear when the first report is launched in a browser window. The immediate workaround is to complete the authentication prompt window with the login/password used during initial report login. This will not occur in the same browser window after the firewall has been authenticated.	The Report subsystem server and the Report client machine may reside in different domains. The report user is being asked to authenticate into the new domain.	<p>Use a fully qualified host name of the report server to access reports</p> <p>Verify the Report server and Report client are in the appropriate trust relationship.</p>
	The Sun Web Server is not installed with a fully qualified name.	<p>Verify there is a file <code>http-<i>[fully qualified host name of the report server]</i></code> under <code>\$SUN_WEB_HOME</code> (as opposed to <code>http-<i>[the short host name]</i></code>).</p> <p>For instance, if the fully qualified host name of the report server is "peak1.domain2.com", then "http-peak1.subnet.companyname.com" is correct and "http-peak1" is not correct. If the short name was used during installation, reinstall the Sun Web Server and the OA Report subsystem.</p>

Symptom	Possible cause	Solution
No agent data in reports or some agent data is missing.	Agents are not properly configured with the role of Agent in IC Manager.	Verify that the role of Agent is selected in the agent's Security tab properties in IC Manager.
	IC Agent ADU servers are not running.	Verify the status of the IC agent domain ADU servers. They should be up and running.
	IC Agent ADU failover strategy is not correct.	Verify the IC system failover strategy for agent domain ADUs. The agent ADU server for the agent data in question may have failed over to an ADU server in another domain. Agent ADU servers must not be allowed to failover to ADU servers in domains that are not monitored by OA Event Collectors.
	EC server may not be configured to monitor the correct agent ADU domains.	Verify the list of monitored domains for EC server under the EventCollector tab for EC server in IC Manager. Also verify that a single domain has not been selected multiple times.
	Misconfigured IC system.	Verify that the IC system is configured in IC Manager as directed in <i>Avaya Interaction Center Release 7.1 Installation and Configuration</i> .
Real-Time tabular and graphical reports may occasionally fail to refresh based on the load of the Real-Time data web server and the report refresh interval.	The user sees a "Cannot Find Server" or "The page cannot be displayed" error, which is displayed in the web browser. Third-party software constraint.	Refresh the web page via the Refresh toolbar button. To make this problem less likely to occur, use slower refresh rates or run fewer reports per web server. Graphical reports may stop refreshing.
	The communication between the Real-time and Report subsystems are not working temporarily.	Close the browser and re-start. If the problem persists, verify that the Real Time and Report subsystems are operational.

Symptom	Possible cause	Solution
Browser window disappears	Insufficient graphics memory	To run the graphical reports, your graphics adapter should have a minimum of 8MB in memory. When the graphics adapter does not have enough memory, you may experience losing the browser windows after a graphical report has started. It is also possible that the browser window may disappear before the report has fully launched. Upgrade the graphics adapter.
	Insufficient virtual memory (swap space)	<p>If the amount of RAM on your PC already exceeds the minimum requirement for the virtual memory space (700 MB or more), it is not necessary to change the virtual memory space. If does not meet the 700 MB minimum, you must increase virtual memory to 700 MB or greater. To change the virtual memory:</p> <ol style="list-style-type: none"> 1. Select Start > Programs > Settings > Control Panel. 2. Select the Systems icon. 3. From the Systems dialog, select the Advanced tab. 4. In the Advanced tab, select Performance Options. 5. When the Performance Options dialog opens up, select Change. This will open the Virtual Memory window. 6. Enter a value of 700 (or greater) in the Initial size field. The Maximum size field should be something greater than the Initial size field value. 7. Click OK three times to accept the change.

Symptom	Possible cause	Solution
Browser window disappears (continued)	Missing JRE	<p>You should first verify whether the JRE has been installed. Two ways to verify this are:</p> <ul style="list-style-type: none"> ● If you have access to the registry, open the registry and select HKEY_LOCAL_MACHINE\SOFTWARE\JavaSoft. In this folder, expand both the Java Plug-in and Java Runtime Environment subfolders and verify whether you see a folder for 1.3.1_06. If you do not see this, install the correct JRE. ● Search directories on your hard disk(s) and find out whether you have the correct JRE. The default location of the JRE is found in: C:\Program Files\JavaSoft\JRE\1.3.1_06. If you cannot find this JRE, install the correct JRE.
	Unable to launch the Java Plug-in Control Panel	<p>To run the graphical reports, you must use the companion driver issued for the graphics adapter on your PC. If you use Microsoft's default driver, you may experience loss of browser windows while graphical reports are running. To verify or change the driver:</p> <ol style="list-style-type: none"> 1. Right-click on your mouse from your desktop area and select Properties. 2. From the Display Properties dialog box, select the Settings tab. 3. From the Settings tab, select Advanced. This will open a new dialog box. 4. Select the Adapter tab. 5. Select Properties. 6. In the displayed dialog box, select Driver. 7. Select a suitable driver compatible with your graphics adapter.
	Old graphics driver	<p>In some cases, the companion driver for your graphics adapter has been installed but the driver may be outdated causing a loss of browser windows. Visit the web site of your graphics adapter vendor and download the latest driver. If necessary, consult the installation guide issued by your graphics adapter vendor.</p>
	Incorrect resolution	<p>The minimum requirement for graphics resolution is 1024 x 768 pixels and 32,768 colors. If your resolution is too low, you may experience this problem. Increase the resolution to 1024 x 768.</p>

Symptom	Possible cause	Solution
Real-time reports momentarily display errors.	This situation can occur when the process that collects operational data from the contact center is disrupted for any reason.	The user must start the report again.
Real-time reports are missing information.	This situation can occur when the process that collects operational data from the contact center is disrupted for any reason.	When data collection resumes this condition will correct itself. At this point, the reports will once again display the desired information.
Printing a graphical report and then canceling it will cause Error dialogue to appear.	This is a third-party software constraint.	Click OK on the error dialogue.
In the Work Item report's Input Page, when any of the duration or count fields are left with zeros, the Work Item Detail Reports will ignore zero values. Given certain input options, this may appear as missing data.	Information only.	No action required.
You can still run reports after using the Administration client to remove the Report subsystem.	The Report subsystem is still actively in service.	OA does not guarantee correct functionality if the user continues to run the reports after the report subsystem has been deleted. Stop the Stumbras-Tomcat service for IIS on Windows, stop the Stumbras virtual host server for the Sun Web Server on Solaris, or stop the Stumbras virtual host server for WebSphere on AIX.

Symptom	Possible cause	Solution
agentcapsetinfo has 98 in the agentrole column for the channel.voice.default service class	You will not have agent roles defined for an agent for the default svcclass unless you administer one for that agent in a capability set in a profile that matches the default svcclass (for example, _Channel._Call).	Administering default service classes is not enough. You also have to administer matching capability sets for the agent.
Words may be split across lines in reports	Browser-controlled text wrapping	Adjust the browser window either wider or narrower to resolve the text wrapping problem.

Troubleshooting Stumbras

Stumbras is the reporting framework that provides authentication, services that maintain historical database pool connections and real-time connections, and other useful functionality to report applications.

This section includes the following topics:

- [Viewing and changing the error logging level](#) on page 182
- [Common Stumbras problems](#) on page 183
- [Troubleshooting Stumbras on Solaris](#) on page 184
- [Troubleshooting Stumbras on AIX](#) on page 189

Viewing and changing the error logging level

Stumbras offers a logging service, which by default logs to the OA main logger and the Stumbras in-memory logger.

To view and change the error logging level:

1. Enter:

```
http://hostname/stumbras/admin
```


where *hostname* is the name of your Report server.
2. In the left pane, select **Logging Admin**.
3. In the right pane, select **Runtime Settings**.

4. Under **Current Logging Level**, select **Change** to view the current setting.
5. To increase the number of messages captured, set the log level to **DEBUG**. Use this level carefully since increasing the number of messages can affect disk space and system performance.
6. Select **Set**.

Note:

You must have administrator privileges to set the debugging level.

Common Stumbras problems

This table lists some common Stumbras trouble symptoms and solutions.

Symptom	Possible cause	Solution
Cannot connect to the database.	Profile service failed.	<p>Verify the dbname assigned is the same as the dbpool name used by the DbPool service. (The name is case sensitive.)</p> <p>Verify the JDBC driver name matches the relevant HTDB server type. The implementation class should be:</p> <ul style="list-style-type: none"> ● Oracle: com.avaya.stumbras.services.profile.Oracle9iStorage ● SQL Server 2000: com.avaya.stumbras.services.profile.JdbcBlobStorage DB2: com.avaya.stumbras.services.profile.JdbcBlobStorage
No real-time reports run and an error page is displayed.	RTPA service failed to start.	Verify the Admin Manager is running and is configured for Stumbras.
No historical reports run and an error page is displayed.	DbPool service failed to start.	Verify the Admin Manager is running and is configured for Stumbras.

Symptom	Possible cause	Solution
Valid Stumbras users are denied access.	Authorization server failed.	Verify that the authorization server (autserver) is running on the server where the Historical subsystem is installed. Note: After 3 consecutive login failures, you are locked out and you must wait for 10 minutes before trying again.
Report tree-view is not displayed (Windows only)	Stumbras failed to start.	Check these log and error files for information: <code>\$PABASE/data/log/reports/reportlog.XX.log</code> <ul style="list-style-type: none"> • <code>../tomcat/jvm.stderr</code> • <code>../tomcat/jvm.stdout</code> • <code>../tomcat/hs_pidXXX.log</code> (where <code>XXX</code> is some number) • <code>../tomcat/logs/isapi.log</code> • <code>../tomcat/logs/jasper.log</code> • <code>../tomcat/logs/servlet.log</code> • <code>../tomcat/logs/tomcat.log</code>
The HTML links in the tree-view do not work (Solaris only)	The client PC is in a different subnet than the Report server.	For Solaris reporting only, if the client PC is in a different subnet than the Report server, the hosts file on the client PC should be modified to include the Report server.

Troubleshooting Stumbras on Solaris

This section describes troubleshooting information for Stumbras on Solaris using the Sun Web Server software.

This section includes the following topics:

- [Variables](#) on page 185
- [Sun Web Server log files](#) on page 185
- [Basic Stumbras troubleshooting](#) on page 185
- [Common problems and solutions](#) on page 187
- [Troubleshooting firewall authentication issues](#) on page 188

Variables

Throughout this troubleshooting, the following variables are used:

- **\$PABASE** refers to the default OA installation directory, usually `/export/home/biadmin/BI`.
- **\$STUMBRASBASE** refers to the Stumbras home directory, usually `$SUN_WEB_HOME/https-stumbras`.

Sun Web Server log files

Log messages for Sun Web Server are saved at:

`$STUMBRASBASE/log/errors`

Log messages for Stumbras are saved at:

`/opt/BI/data/log/reports/reportlog.log`

Check these log files for Sun Web Server problems.

Basic Stumbras troubleshooting

To verify basic functionality:

1. Verify that the correct version of Sun Web server was installed, and that it was installed correctly. See *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*.

The Sun Web Server should be installed with the FQDN for the application server. This is key to avoiding firewall issues.

The Sun Web Server installs two servers under the install directory (the default is `$SUN_WEB_HOME`). A valid installation will result in:

- An administrative server called `https-admsrv`
- A Web server called `https-[fully qualified server name]` (for example, `https-system.dr.company.com`).
- If the OA Report subsystem has been administered and the Web server is running, then there will be a third server, a Report server called `https-stumbras`.

Verify the web server name is fully qualified, for example, `https-system.dr.company.com` instead of `https-system`. If it is not, you should reinstall the Sun Web Server and the Report subsystem using the fully qualified server name.

2. Verify that the Report subsystem has been configured.

Using the Subsystems screen of the Administration client, verify that the Report subsystem has been configured. See *Avaya Operational Analyst Release 7.1 Installation and Configuration*.

3. Verify that Stumbras is running. From a command line, enter:

```
ps -ef | grep stumbras
```

If Stumbras is running, a message similar to the following is displayed:

- For Sun Java 6.0:

```
biadmin 6141      1  0   Dec 31 ?           0:00 ./uxwdog -d /usr/iplanet/servers/
https-stumbras/config
biadmin 6143 6142  0   Dec 31 ?           1:01 ns-httpd -d /usr/iplanet/servers/
https-stumbras/config
biadmin 6142 6141  0   Dec 31 ?           0:03 ns-httpd -d /usr/iplanet/servers/
https-stumbras/config
biadmin   254    182  0 10:38:51 pts/11    0:00 grep https-stumbras
```

- For Sun Java System Web Server 6.1:

```
biadmin 28604 28603  0 16:38:23 ?           1:58 webserverd -r /opt/SUNWwbsvr -d //o
pt/SUNWwbsvr/https-stumbras/config -n https-st
biadmin 28602      1  0 16:38:22 ?           0:00 ./webserverd-wdog -r /opt/SUNWwbsvr
-d //opt/SUNWwbsvr/https-stumbras/config -n h
biadmin 28603 28602  0 16:38:22 ?           0:01 webserverd -r /opt/SUNWwbsvr -d //o
pt/SUNWwbsvr/https-stumbras/config -n https-st
biadmin 29266 29259  0 18:55:22 pts/22    0:00 grep https-stumbras
```

4. Verify that the Report subsystem configuration was successful.

When the Report subsystem is configured, the Administration manager only updates changes every four to five minutes, so the change may not appear immediately. When successful, two files are created:

- **`$PABASE/data/admin/stumbras.properties`**
- **`$STUMBRASBASE/webapp/WEB-INF/config/ConfigService/ConfigService.properties`** (Solaris Sun Java Web Server 6.0)
- **`$STUMBRASBASE/webapps/WEB-INF/config/ConfigService/ConfigService.properties`** (Solaris Sun Java Web Server 6.1)

If these files have not been created, check the file permissions of their directories.

5. Verify that the report page displays and tries to authenticate the user.

When the Report server URL is entered, the reports page displaying AVAYA in the main frame and a blank left frame appears. A pop-up windows requests the user to authenticate.

If a Page not found error occurs:

- Check the URL for the format **`http://[fully qualified server name]:[stumbras port number]/reports1`**.
- Verify that Stumbras is running using **`ps -ef | grep stumbras`**.


- Verify that there are no network blockages.

When the user is correctly authenticated, the pop-up window closes and the left frame displays the tree view with links to OA reports.

If the authentication pop-up closes, yet the reporting tree does not appear (with or without an error message), verify the authentication status. Check the `$PABASE/data/log/CentralErrorLog/CentralErrorLog.log` and `$PABASE/data/log/reports/reports.log` error files.

Common problems and solutions

This section contains some common Stumbras symptoms and solutions.

Symptom	Solution
Failed authentication on the Solaris machine.	Verify the user ID, user password, and that the user is a member of the reports group.
Failed authentication at the network level.	Verify that the user ID and password authenticates across the network.
Login attempts failed three times and caused a lockout.	<p>Verify that the user ID, password, and group are correct. The file <code>\$PABASE/data/admin/autserver.properties</code> specifies the lockout time and number of allowed retries. If these are modified, the autserver process must be stopped and restarted.</p> <p> SECURITY ALERT: Changing the allowed number of retries can open your system to possible attacks from unauthorized persons. Avaya recommends that you do not increase the number of allowed retries.</p>

Symptom	Solution
Authentication request was not received (does not appear in <code>autserverTrc.log</code> logs).	Look at the Web server Stumbras logs (report logging will not yet have been turned on) in <code>\$STUMBRASBASE/logs/errors</code> . This may indicate that the system has not initialized correctly. This could be caused by file permission problems. Check the <code>/tmp/https-stumbras</code> directory for permissions. If the user and group are not set correctly, stop the Web server, remove the <code>/tmp/https-stumbras</code> directory, and restart the Web server. The directory will be recreated with the proper permissions.
The HTML links in the tree-view do not work.	For Solaris reporting only, if the client PC is in a different subnet than the Report server, the hosts file on the client PC should be modified to include the Report server. The hosts file is located at <code>c:\WINDIR\system32\drivers\etc</code> where <code>WINDIR</code> is <code>Winnt</code> for Windows 2000 and <code>Windows</code> for Windows XP.

Troubleshooting firewall authentication issues

On some systems, when the first report is launched from the client, a second authentication screen pops up and requests a network password to cross a firewall. After the user correctly authenticates once, the request no longer occurs.

All subsequent authentication requests come from Java and are not explicitly called from Stumbras. The problem can occur for a variety of reasons, and therefore has several workarounds. You may be experiencing some or all of these problems.

To troubleshoot firewall authentication problems:

1. Verify that the Sun Web Server was installed correctly. See *Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites*.

The Sun Web Server should be installed with the FQDN for the application server. This is key to avoiding firewall issues.

The Sun Web Server installs two servers under the install directory (the default is `$SUN_WEB_HOME`). A valid installation will result in:

- An administrative server called `https-admsrv`
- A Web server called `https-[fully qualified name]` (for example, `https-system.dr.company.com`).
- If the OA Report subsystem has been administered and the Web server is running, then there will be a third server, a Report server called `https-stumbras`.

Verify the web server name is fully qualified, for example, `https-system.dr.company.com` instead of `https-system`. If it is not, you should reinstall the Sun Web Server using the fully qualified server name.

2. Compare the domains of the Report subsystem server and Report client.

The Report subsystem and the Report client do not need to be in the same domain or in a trusted relationship. However, if they are not, the fully qualified host name must be used for the report URL. For example, `http://system.dr.company.com:11000/reports1` instead of `http://system:11000/reports1`.

3. Verify that the Report subsystem was installed correctly.

Check the following two files to verify that they each reference the correct fully qualified Report server name (the server where the Sun Web Server is installed).

- `$SUN_WEB_HOME/https-stumbras/config/server.xml`
- `$SUN_WEB_HOME/https-stumbras/config/webpub.conf`

Troubleshooting Stumbras on AIX

This section contains troubleshooting information for WebSphere installed on the AIX operating system.

This section includes the following topics:

- [Variables](#) on page 189
- [WebSphere log files](#) on page 189
- [WebSphere trouble conditions](#) on page 190

Variables

Throughout this troubleshooting, the following variables are used:

- `$PABASE` refers to the default OA installation directory, usually `/home/biadmin/BI`.
- `$WEBSPHERE_HOME` refers to the default WebSphere installation directory, usually `/usr/WebSphere/AppServer`.
- `hostname` is the name of the OA server.

WebSphere log files

Log messages for WebSphere are saved at:

`$WEBSPHERE_HOME/logs/server1`

Log messages for Stumbras are saved at:

`/opt/BI/data/log/reports/reportlog.log`

Log messages for the OA installation of Stumbras under WebSphere (OAReports.ear) are saved at:

`/home/biadmin/ws_install_logs`

Check these log files for WebSphere-related problems.

WebSphere trouble conditions

This section contains a variety of possible trouble conditions and solutions to the condition.

Symptom	Solution
WebSphere will not start	<ul style="list-style-type: none">● Check the <code>\$WEBSPHERE_HOME/logs/server1</code> log files.● When running WebSphere as a non-root user, permission changes may be incomplete. Check the following:<ul style="list-style-type: none">– Remove the WebSphere logs after each failed attempt.– Use <code>ls -lR \$WEBSPHERE_HOME</code> to find files that do not have the correct permissions. Correct as needed. See <i>Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites</i> for more information.– The non-root user must be a member of the primary group.– The primary group of the non-root user must match the group given to WebSphere to "Run As." See <i>Avaya Operational Analyst Release 7.1 Installation Planning and Prerequisites</i> for more information.
OA reports will not run	<ul style="list-style-type: none">● Check the <code>\$WEBSPHERE_HOME/logs/server1</code> messages.● There may be a possible conflict with the default context root of "/". Do the following:<ul style="list-style-type: none">– Using the WebSphere Administrative Console, select Enterprise Applications to check for other applications with the default context root.– Remove the applications or lower their weight. <p>Note: Never remove the Administrative Console Enterprise Applications. Remove any other applications that are not used, or lower their restart time.</p>

Symptom	Solution
Basic Stumbras functionality not working correctly even though the wsinst.sdtout file indicated the Reporting subsystem installed successfully.	<ul style="list-style-type: none"> ● Check the <code>/opt/BI/data/log/reports/reportlog.log</code> file. Verify that there are five lines showing that services have been started. ● <code>OAReports.ear</code> may not have been installed properly. Verify the installation by checking that the directory <code>\$WEBSPPHERE_HOME/installedApps/hostname/OAReports.ear/stumbras.war</code> has subdirectories of <code>META-INF</code>, <code>WEB-INF</code>, <code>reports1</code>, <code>reports2</code>, and <code>stumbras</code>. ● Check the messages in the log files at <code>/home/biadmin/ws_install_logs</code>. ● If there are no obvious installation errors perform the following steps: <ul style="list-style-type: none"> ● Increase available file system space so that <code>/usr</code> has about 7GB and <code>/tmp</code> has about 6GB. ● Uninstall the Report subsystem. ● Reinstall the Report subsystem.
Stumbras cannot connect to the historical database	<ul style="list-style-type: none"> ● Check the <code>/opt/BI/data/log/reports/reportlog.log</code> file. Verify that there are five lines showing that services have been started. ● If the DBPool service (the connection to the historical database) has not started: <ul style="list-style-type: none"> – Verify that the database name is <code>OADB_AKA</code> in the <code>\$WEBSPPHERE_HOME/installedApps/hostname/OAReports.ear/stumbras.war/WEB-INF/config/ConfigService/ConfigService.properties</code>. – Verify the database connection by using <code>db2 connect to OADB_AKA as user using password</code>. ● <code>OAReports.ear</code> may not have been installed properly. Verify the installation by checking that the directory <code>\$WEBSPPHERE_HOME/installedApps/hostname/OAReports.ear/stumbras.war</code> has subdirectories of <code>META-INF</code>, <code>WEB-INF</code>, <code>reports1</code>, <code>reports2</code>, and <code>stumbras</code>. ● Check the messages in the log files at <code>/home/biadmin/ws_install_logs</code>. ● If there are no obvious installation errors, increase available file system space, uninstall the Report subsystem, and reinstall the Report subsystem.

Symptom	Solution
The login ID used to access the reports will not authenticate.	<ul style="list-style-type: none"> • Check the authentication and report logs. • The login ID is not in the correct group. It must be a member of the reports group. Check the <code>/opt/BI/data/admin/autserver.properties</code> file and <code>/etc/group</code>. • The password is invalid. Verify that the password works when logging in to the OS. • The authentication server is not running. Use the <code>ps -ef grep autserver</code> command on the server where the Historical subsystem is installed to verify that the autserver process is running. • WebSphere was not restarted properly: <ul style="list-style-type: none"> – Only <code>OAReports.ear</code> was restarted. – The <code>/opt/BI/.profile</code> was not run prior to starting WebSphere.
All OA processes stopped on the server where the Report subsystem is installed	<p>If WebSphere is running as <code>root</code> (not the recommended configuration) and Stumbras writes the last error message into <code>\$PABASE/data/log/CentralError/CentralErrorLog.log</code> before rolling over, Stumbras will change the permissions of <code>CentralErrorLog.log</code> to <code>root</code>. Other processes will not be able to write to <code>CentralErrorLog.log</code> and will not start. Do the following:</p> <ul style="list-style-type: none"> • Check for <code>root</code> ownership of <code>CentralErrorLog.log</code> files. Restore ownership to the appropriate group and user. • Change WebSphere to run as a non-root user. • Restart OA (<code>ps start all</code>).
Cannot connect to the real-time database	<ul style="list-style-type: none"> • Verify that the <code>dm</code>, <code>dsvr</code>, and <code>crds</code> processes are running on the server where the Real-time subsystem is installed. • Verify that the Corba gateway addresses appear in <code>\$WEBSPPHERE_HOME/installedApps/hostname/OAReports.ear/stumbras.war/WEB-INF/config/ConfigService/ConfigService.properties</code>. • Stop and start <code>dm</code>, followed by <code>crds</code>, if you have more than one Real-time subsystem.
Graphical reports do not display the pop-up screen to save the report	The correct version of WebSphere has not been installed. Install WebSphere 5.0.1.

Appendix A: Basic Report calculations

This section presents the database items used in the calculations for the Basic Reports. If you are interested in a more high-level discussion of the generic values used in the calculations, see *Avaya Operational Analyst Release 7.1 Reports Reference*.

The reports in this section include:

- [Agent Set Outcome Codes - Historical](#) on page 194
- [Agent Set Outcome Codes - Real-time](#) on page 195
- [Agent Performance - Historical - CMS Version](#) on page 196
- [Agent Performance - Historical - IC Version](#) on page 198
- [Agent Performance - Real-time](#) on page 200
- [Agent Performance by Job - Historical](#) on page 202
- [Agent Performance by Job - Real-time](#) on page 205
- [Agent Performance by Service Class and Queue - Historical](#) on page 208
- [Agent Performance by Service Class and Queue - Real-time](#) on page 211
- [Agent Performance by Skill - Historical](#) on page 213
- [Agent Time in State - Real-time](#) on page 216
- [Job Performance - Historical](#) on page 217
- [Job Performance - Real-time](#) on page 220
- [Service Class and Queue Performance - Historical](#) on page 221
- [Service Class and Queue Performance - Real-time](#) on page 225
- [Service Class and Queue Status - Real-time](#) on page 228
- [Service Class and Queue Volume - Historical](#) on page 233
- [Skill Performance - Historical](#) on page 235
- [System Set Completion Codes - Historical](#) on page 238
- [System Set Completion Codes - Real-time](#) on page 239
- [Telephone Number States - Real-time](#) on page 239
- [Detail reports](#) on page 240

Agent Set Outcome Codes - Historical

The OA database items used to determine the content of the drop-down lists are:

Input screen	Database table	Database item
Agents	Employee GroupMember Workgroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key and GroupMember.EmployeeGroup = Employee.PKey and GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups
Jobs	JobInfo DialerInfo AgentCompCode	JobInfo.JobName (DialerInfo.DialerName) where AgentCompCode.JobID = JobInfo.JobID and where AgentCompCode.DialerID = DialerInfo.DialerID
Outcome Codes to Include	AgentCompCodeInfo	AgentCompCodeName where ClassCodeType = 3 (outcome code)

The OA database items and calculations used to populate the table are:

Visual Representation	Database table	Database value or calculation
<outcome code count>	AgentCompCode	AgentCompCodeCnt summed over the report interval where JobID = the ID of this job and AgentLogin = the login ID of this agent and AgentCompCodeID = the ID of this outcome code
Total	N/A	The sum of the values in the respective column
<agent name (agent ID)>	AgentState	AgentName (AgentLogin)
<job name (dialer name)>	JobInfo DialerInfo AgentCompCode	JobInfo.JobName (DialerInfo.DialerName) where AgentCompCode.JobID = JobInfo.JobID and where AgentCompCode.DialerID = DialerInfo.DialerID
<outcome code x name>	AgentCompCodeInfo	AgentCompCodeName where AgentCompCodeID = an ID of one of the selected outcome codes
<all other outcome codes for agent x and job y>	AgentCompCode	sum of all AgentCompCodeCnt summed over the report interval where JobID = the ID of this job and AgentLogin = the login ID of this agent and AgentCompCodeID = the ID of an unselected outcome code

Agent Set Outcome Codes - Real-time

The OA database items used to determine the content of the drop-down lists are:

Input screen	Database table	Database item
Agents	Employee GroupMember Workgroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key and GroupMember.EmployeeGroup = Employee.PKey and GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups
Jobs	JobSummary DialerInfo	JobSummary.JobName (DialerInfo.DialerName) where JobSummary.DailerID = DialerInfo.DialerID
Outcome Codes to Include	AgentCompCodeInfo	AgentCompCodeName where ClassCodeType = 3 (outcome code)

The OA database items and calculations used to populate the table are:

Visual Representation	Database table	Database value or calculation
<outcome code count>	AgentCompCode	AgentCompCodeCnt where JobID = the ID of this job and AgentLogin = the login ID of this agent and AgentCompCodeID = the ID of this outcome code
Total	N/A	The sum of the values in the respective column
<agent name (agent ID)>	AgentState	AgentName (AgentLogin)
<job name (dialer name)>	JobSummary DialerInfo	JobSummary.JobName (DialerInfo.DialerName) where JobSummary.DialerID = DialerInfo.DialerID
<outcome code x name>	AgentCompCode	AgentCompCodeName where AgentCompCodeID = an ID of one of the selected outcome codes
<all other outcome codes for agent x and job y>	AgentCompCode	sum of all AgentCompCodeCnt where JobID = the ID of this job, AgentLogin = the login ID of this agent, AgentCompCodeID = the ID of an unselected outcome code

Agent Performance - Historical - CMS Version

The OA database items used to determine administered agents for the input screen are:

Input parameter	Database table	Database item
Agents	CMSAgentInfo	LogName (LogID, <Data Source Name>)

The OA database items and calculations used to populate the report floor are:

Statistic	Database table	Database item or calculation
Number of ACD Calls	CmsAgent	acdcalls + da_acdcalls summed across all skills for this agent
Average ACD Duration	CmsAgent	(acdtime + da_acdtime) / (acdcalls + da_acdcalls) the numerator and denominator are separately summed across all records for this agent
Average ACW Duration	CmsAgent	(acwtime + da_acwtime) / (acdcalls + da_acdcalls) the numerator and denominator are separately summed across all records for this agent

The OA database items used to determine the content of the screen tip on data columns are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	Associated agent name
Date	N/A	The associated date/time category
<name of statistic being displayed>	N/A	Height of the column

The OA database items used to determine the screen tip data for x-axis labels are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From associated floor x-axis label
Login ID	CMSAgentInfo	LogID
Data Source	N/A	The data source from the input page selection

The OA database items used to determine the screen tip data for y-axis labels are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label

The OA database items and calculations used to populate the left and right walls are:

Floor statistic	Database item or calculation
Number of ACD Calls	When the selected statistic for the wall is Total of Floor Data : ($b_1 + b_2 + b_3 + \dots + b_n$) where b = the value a floor column for this Skill, and where n = the number of columns on the floor for this Skill or date as appropriate
<ul style="list-style-type: none"> Number of ACD Calls Average ACD Duration Average ACW Duration 	When the selected statistic for the wall is Average of Floor Data : $[(c_1 + c_2 + c_3 + \dots + c_n) / (b_1 + b_2 + b_3 + \dots + b_n)]$ where c = is the numerator used to calculate the height of the floor column and where b = the denominator used to calculate the height of the floor column and where n = the number of columns on the floor for this Skill or date as appropriate.

The OA database items used to determine the content of the left wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From associated floor x-axis label
<name of statistic being displayed>	N/A	Value of respective bar

The OA database items used to determine the content of the right wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Value of respective bar

Agent Performance - Historical - IC Version

The OA database items used to determine administered agents for the input screen are:

Input parameter	Database table	Database item
Agents	Employee GroupMember Workgroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key and GroupMember.EmployeeGroup = Employee.PKey and GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups

The OA database items and calculations used to populate the report floor are:

Statistic	Database table	Database item or calculation
Number of Work Items Completed	AgentSvcClass AgentJob	AgentSvcClass.WkForwardedCnt + AgentSvcClass.WkTransferredCnt
Number of Work Items Opened	AgentSvcClass AgentJob	AgentSvcClass.WkOpenedCnt + AgentJob.WkOpenedCnt
Average Work Duration	AgentSvcClass AgentJob	[(WkWorkDur summed across all records in AgentSvcClass for this agent) + (WkWorkDur summed across all records in AgentJob for this agent)] / [((WkForwardedCnt + WkTransferredCnt) summed across all records in AgentSvcClass for this agent) + (WkForwardedCnt summed across all records in AgentJob for this agent)]
Average Wrap-Up Duration	AgentSvcClass AgentJob	[(WkWrapupDur summed across all records in AgentSvcClass for this agent) + (WkWrapupDur summed across all records in AgentJob for this agent)] / [((WkForwardedCnt + WkTransferredCnt) summed across all records in AgentSvcClass for this agent) + (WkForwardedCnt summed across all records in AgentJob for this agent)]

The OA database items used to determine the content of the screen tip on floor columns are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From associated floor x-axis label
Date	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Value of respective column

The OA database items used to determine the screen tip data for x-axis labels are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From associated floor x-axis label
Login ID	AgentInfo	AgentLogin

The OA database items used to determine the screen tip data for y-axis labels are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label

The OA database items and calculations used to populate the left and right walls are:

Floor statistic	Database item or calculation
<ul style="list-style-type: none"> • Number of Work Items Forwarded • Number of Work Items Opened 	<p>When the selected statistic for the wall is Total of Floor Data: $(b_1 + b_2 + b_3 + \dots + b_n)$ where b = the value a floor column for this service class or queue, and where n = the number of columns on the floor for this service class/queue or date as appropriate</p> <p>Note that the walls shall not display Total of Floor Data when Average type statistics are displayed on the floor.</p>
<ul style="list-style-type: none"> • Number of Work Items Forwarded • Number of Work Items Opened • Average Work Duration • Average Wrap-Up Duration 	<p>When the selected statistic for the wall is Average of Floor Data: $[(c_1 + c_2 + c_3 + \dots + c_n) / (b_1 + b_2 + b_3 + \dots + b_n)]$ where c = is the numerator used to calculate the height of the floor column and where b = the denominator used to calculate the height of the floor column and where n = the number of columns on the floor for this service class/queue or date as appropriate.</p>

Appendix A: Basic Report calculations

The OA database items used to determine the content of the left wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From associated floor x-axis label
<name of statistic being displayed>	N/A	Value of respective bar

The OA database items used to determine the content of the right wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Value of respective bar

Agent Performance - Real-time

The OA database items used to determine administered agents for the input screen are:

Input parameter	Database table	Database item
Agents	Employee GroupMember Workgroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key and GroupMember.EmployeeGroup = Employee.PKey and GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups

The OA database items and calculations used to populate the report floor are:

Statistic	Database table	Database item or calculation
Number of Work Items Open	AgentState	WkOpenCnt
Average Work Duration	AgentSvcClass AgentJob	$\frac{[(\text{WkWorkDur summed across all records in AgentSvcClass for this agent}) + (\text{WkWorkDur summed across all records in AgentJob for this agent})]}{[(\text{WkForwardedCnt} + \text{WkTransferredCnt}) \text{ summed across all records in AgentSvcClass for this agent}) + (\text{WkForwardedCnt summed across all records in AgentJob for this agent})]}$
Average Wrap-Up Duration	AgentSvcClass AgentJob	$\frac{[(\text{WkWrapupDur summed across all records in AgentSvcClass for this agent}) + (\text{WkWrapupDur summed across all records in AgentJob for this agent})]}{[(\text{WkForwardedCnt} + \text{WkTransferredCnt}) \text{ summed across all records in AgentSvcClass for this agent}) + (\text{WkForwardedCnt summed across all records in AgentJob for this agent})]}$
Idle Available Duration	AgentState	<p>If AgentState = Idle and Availability = Available, then Idle Available Duration = IdleAvailDur + ((Current_Time_of_Day) - MAX(AgentState.StateStartTime, start of current base interval))</p> <p>else</p> <p>Idle Available Duration = IdleAvailDur</p>
Aux Work Duration	AgentState	<p>If AgentState = On Break, then On Break Duration = OnBreakDur + ((Current_Time_of_Day) - MAX(AgentState.StateStartTime, start of current base interval))</p> <p>else</p> <p>On Break Duration = OnBreakDur</p>

The data base items used to determine the contents of the screen tip are:

Screen tip label text	Database table	Database item or calculation
Agent	AgentState	AgentName
Login ID	AgentState	AgentLogin
Login Date/Time	AgentState	LoginTime

Screen tip label text	Database table	Database item or calculation
<i>name of statistic being displayed</i>	N/A	Value of respective column.
Agent State	AgentState	AgentStateName
Current Mode	AgentState	<p>If AgentState.Mode = 1 (inbound) display StaticNameInfo.DisplayName where StaticNameInfo.IDType = "Mode" and StaticNameInfo.ID = 1</p> <p>If AgentState.Mode = 2 (outbound) display StaticNameInfo.DisplayName where StaticNameInfo.IDType = "Mode" and StaticNameInfo.ID = 2</p> <p>If AgentState.Mode = 3 (aux) or 0 (unknown) display <blank></p>
If AgentState.JobsSubscribedCnt > 0 Number of Subscribed Jobs	AgentState	JobsSubscribedCnt

Agent Performance by Job - Historical

The OA database items used to determine drop-down box items for the input screen are:

Input parameter	Database table	Database Item
Agents	Employee GroupMember Workgroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key and GroupMember.EmployeeGroup = Employee.PKey and GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups
Jobs	AgentJob	AgentJob.JobID + JobInfo.JobName

The OA database items used to determine the entities on the report floor are:

Statistic	Database table	Database item or calculation
Average Work Duration¹	AgentJob	WkWorkDur / (WkForwardedCnt + WkTransferredCnt)
Average Wrap-Up Duration	AgentJob	WkWrapupDur / (WkForwardedCnt + WkTransferredCnt)
Total Work Duration	AgentJob	WkWorkDur

Total Wrap-Up Duration	AgentJob	WkWrapupDur
Average Preview Duration	AgentJob	WkPreviewDur / WkPreviewCnt
Number of Work Items Completed	AgentJob	WkForwardedCnt
Number of Work Items Rejected	AgentJob	WkRejectedCnt
Number of Work Items Previewed	AgentJob	WkPreviewCnt

1. WkWorkDur includes outbound call initiating and ringing time.

The OA database items used to determine the content of the floor column screen tips are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From x-axis label
Job	N/A	From y-axis label
Date	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Height of the column

The OA database items used to determine the screen tip data for x-axis labels are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From associated floor x-axis label
Job	N/A	From associated floor x-axis label
Login ID	AgentJob	AgentLogin
Dialer	AgentJob DialerInfo	DialerInfo.DialerName where DialerInfo.DialerID = AgentJob.DialerID and DialerInfo.JobID = AgentJob.JobID

The OA database items used to determine the screen tip data for y-axis labels are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label

Appendix A: Basic Report calculations

The OA database items and calculations used to populate the left and right walls are:

Floor statistic	Database item or calculation
<ul style="list-style-type: none">● Total Work Duration● Total Wrap-Up Duration● Number of Work Items Completed● Number of Work Items Rejected● Number of Work Items Previewed	<p>When the selected statistic for the wall is Total of Floor Data:</p> <p>$(b_1 + b_2 + b_3 + \dots + b_n)$ where b = the value of a floor column for this service class/queue/agent/date, and where n = the number of columns on the floor for this service class/queue/agent or date as appropriate</p> <p>Note that the walls shall not display Total of Floor Data when Average type statistics are displayed on the floor.</p>
<ul style="list-style-type: none">● Average Work Duration● Average Wrap-Up Duration● Total Work Duration● Total Wrap-Up Duration● Average Preview Duration● Number of Work Items Completed● Number of Work Items Rejected● Number of Work Items Previewed	<p>When the selected statistic for the wall is Average of Floor Data:</p> <p>$[(c_1 + c_2 + c_3 + \dots + c_n) / (b_1 + b_2 + b_3 + \dots + b_n)]$ where c = is the numerator used to calculate the height of the floor column and where b = the denominator used to calculate the height of the floor column and where n = the number of columns on the floor for this service class/queue/agent or date as appropriate</p>

The OA database items used to determine the content of the left wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From associated floor x-axis label
Job	N/A	From associated floor x-axis label
<name of statistic being displayed>	N/A	Value of respective bar

The OA database items used to determine the content of the right wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Value of respective bar

Agent Performance by Job - Real-time

The OA database items used to determine drop-down box items for the input screen are:

Input parameter	Database table	Database Item
Agents	Employee GroupMember Workgroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key and GroupMember.EmployeeGroup = Employee.PKey and GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups
Jobs	JobSummary DialerInfo	JobSummary.JobName (DialerInfo.DialerName) where JobSummary.DialerID = DialerInfo.DialerID

The OA database items used to determine the entities on the report floor are:

Statistic	Database table	Database item or calculation
Average Work Duration ¹	AgentJob	WkWorkDur / (WkForwardedCnt + WkTransferredCnt)
Average Wrap-Up Duration	AgentJob	WkWrapupDur / (WkForwardedCnt + WkTransferredCnt)
Total Work Duration	AgentJob	WkWorkDur
Total Wrap-Up Duration	AgentJob	WkWrapupDur
Average Preview Duration	AgentJob	WkPreviewDur / WkPreviewCnt
Number of Work Items Completed	AgentJob	WkForwardedCnt
Number of Work Items Rejected	AgentJob	WkRejectedCnt
Number of Work Items Previewed	AgentJob	WkPreviewCnt

1. WkWorkDur includes outbound call initiating and ringing time.

The OA database items used to determine the content of the floor column screen tips are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	Associated agent name
Job	N/A	Associated job name
<name of statistic being displayed>	N/A	Height of the column

Appendix A: Basic Report calculations

The OA database items used to determine the screen tip data for x-axis labels are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From associated floor x-axis label
Login ID	AgentState	AgentLogin
Current State	AgentState	AgentState
Current Job	AgentState JobSummary	If AgentState.Mode = 2 (outbound) then Display: JobSummary.JobName where AgentState.JobID = JobSummary.JobID and AgentState.DialerID = JobSummary.DialerID
Login Date/Time	AgentState	LoginTime
Number of Subscribed Jobs	AgentState	JobsSubscribedCnt

The OA database items used to determine the screen tip data for y-axis labels are:

Screen tip label text	Database table	Database item or calculation
Job	N/A	From associated floor y-axis label
Dialer	JobSummary DialerInfo	DialerInfo.DialerName where DialerInfo.DialerID = JobSummary.DialerID
Current State	JobSummary	JobStateName
Number of Agents Subscribed	JobSummary	AgentsSubscribedCnt

The OA database items and calculations used to populate the left and right walls are:

Floor statistic	Database item or calculation
<ul style="list-style-type: none"> • Total Work Duration • Total Wrap-Up Duration • Number of Work Items Completed • Number of Work Items Rejected • Number of Work Items Previewed 	<p>When the selected statistic for the wall is Total of Floor Data:</p> <p>$(b_1 + b_2 + b_3 + \dots + b_n)$ where b = the value of a floor column for this service class/queue/agent/date, and where n = the number of columns on the floor for this service class/queue/agent or date as appropriate</p> <p>Note that the walls shall not display Total of Floor Data when Average type statistics are displayed on the floor.</p>
<ul style="list-style-type: none"> • Average Work Duration • Average Wrap-Up Duration • Total Work Duration • Total Wrap-Up Duration • Average Preview Duration • Number of Work Items Completed • Number of Work Items Rejected • Number of Work Items Previewed 	<p>When the selected statistic for the wall is Average of Floor Data:</p> <p>$[(c_1 + c_2 + c_3 + \dots + c_n) / (b_1 + b_2 + b_3 + \dots + b_n)]$ where c = is the numerator used to calculate the height of the floor column and where b = the denominator used to calculate the height of the floor column and where n = the number of columns on the floor for this service class/queue/agent or date as appropriate</p>

The OA database items used to determine the content of the left wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From associated x-axis label
<name of statistic being displayed>	N/A	Value of respective bar

The OA database items used to determine the content of the right wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Job	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Value of respective bar

Agent Performance by Service Class and Queue - Historical

The OA database items used to determine drop-down box values for the input screen are:

Input parameter	Database table	Database item
Agents	Employee GroupMember Workgroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key and GroupMember.EmployeeGroup = Employee.PKey and GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups
Service Classes	SvcClassInfo	SvcClassName
Queues	SvcClassInfo	SvcClassName (SvcClassID)

The OA database items used to determine the entities on the report floor are:

Statistic	Database table	Database item or calculation
Average Work Duration	AgentSvcClass	WkWorkDur / (WkForwardedCnt + WkTransferredCnt)
Average Wrap-Up Duration	AgentSvcClass	WkWrapUpDur / WkForwardedCnt + WkTransferredCnt)
Number of Work Items Opened	AgentSvcClass	WkOpenedCnt
Number of Work Items Completed	AgentSvcClass	WkForwardedCnt + AgentSvcClass.WkTransferredCnt
Average Customer Hold Duration	AgentSvcClass	CustomerHeldDur / CustomerHeldCnt
Average Deferred Duration	AgentSvcClass	WkHeldDur / WkHeldCnt

The OA database items used to determine the content of the screen tip on floor columns are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	Associated agent name
Service Classes	N/A	Associated service class name
Queues	N/A	Associated queue name
Date	N/A	The associated date/time category
For Service Class related rows in Report by Service Class or Queue type reports: Current Role	AgentCapSetInfo StaticNameInfo	StaticNameInfo.DisplayName where StaticNameInfo.IDType = "AgentRole" and StaticNameInfo.ID = AgentCapSetInfo.AgentRole for this agent login and this service class.
<name of statistic being displayed>	N/A	Height of respective column

The OA database items used to determine the screen tip data for x-axis labels are:

Screen tip label text	Database table	Database item or calculation
Agent	AgentInfo	AgentName AgentLogin
Agent ID	AgentInfo	AgentName AgentLogin
Service Class	SvcClassInfo	SvcClassInfo.SvcClassName where SvcClassInfo.SvcClassID = the ID of this service class
Queue	SvcClassInfo	SvcClassID
Queue ID	SvcClassInfo	SvcClassID

The OA database items used to determine the screen tip data for y-axis labels are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label

Appendix A: Basic Report calculations

The OA database items and calculations used to populate the left and right walls are:

Floor statistic	Database item or calculation
<ul style="list-style-type: none"> Number of Work Items Opened Number of Work Items Completed 	<p>When the selected statistic for the wall is Total of Floor Data:</p> <p>$(b_1 + b_2 + b_3 + \dots + b_n)$ where b = the value of a floor column for this service class/queue/agent/date, and where n = the number of columns on the floor for this service class/queue/agent or date as appropriate</p> <p>Note that the walls shall not display Total of Floor Data when Average type statistics are displayed on the floor.</p>
<ul style="list-style-type: none"> Average Work Duration Average Wrap-Up Duration Number of Work Items Opened Number of Work Items Completed Average Customer Hold Duration Average Deferred Duration 	<p>When the selected statistic for the wall is Average of Floor Data:</p> <p>$[(c_1 + c_2 + c_3 + \dots + c_n) / (b_1 + b_2 + b_3 + \dots + b_n)]$ where c = is the numerator used to calculate the height of the floor column and where b = the denominator used to calculate the height of the floor column and where n = the number of columns on the floor for this service class/queue/agent or date as appropriate</p>

The OA database items used to determine the content of the left wall screen tip are:

Screen tip label text	Database table	Database item or calculation
For Report by Agent "Display service class/queue labels"	N/A	From associated floor x-axis label
For Report by Service Class/Queue Display Agent Label	N/A	From associated floor x-axis label
<name of statistic being displayed>	N/A	Value of respective bar

The OA database items used to determine the content of the right wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Value of respective bar

Agent Performance by Service Class and Queue - Real-time

The OA database items used to determine drop-down box values for the input screen are:

Input parameter	Database table	Database item
Agents	Employee GroupMember Workgroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key and GroupMember.EmployeeGroup = Employee.PKey and GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups
Service Classes	SvcClassInfo	SvcClassName
Queues	SvcClassInfo	SvcClassName (QueueID)

The OA database items used to determine the entities on the report floor are:

Statistic	Database table	Database item or calculation
Average Work Duration	AgentSvcClass	WkWorkDur / (WkForwardedCnt + WkTransferredCnt)
Average Wrap-Up Duration	AgentSvcClass	WkWrapUpDur / (WkForwardedCnt / WkTransferredCnt)
Number of Work Items Opened	AgentSvcClass	WkOpenedCnt
Number of Work Items Completed	AgentSvcClass	WkForwardedCnt + AgentSvcClass.WkTransferredCnt
Average Customer Hold Duration	AgentSvcClass	CustomerHeldDur / CustomerHeldCnt
Average Deferred Duration	AgentSvcClass	WkHeldDur / WkHeldCnt
For Service Classes: <Column Color>	AgentCapSetInfo	Map AgentRole for this AgentLogin and SvcClassID to the specified color for this role.

Appendix A: Basic Report calculations

The OA database items used to determine the content of the screen tip on floor columns are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From associated floor x-axis label
Service Classes	N/A	From associated floor y-axis label
Queues	N/A	From associated floor y-axis label
Agent Role	StaticNameInfo AgentCapSetInfo	StaticNameInfo.DisplayName where StaticNameInfo.IDType = "AgentRole" and StaticNameInfo.ID = AgentCapSetInfo.AgentRole and AgentCapSetInfo.AgentLogin = the login ID of this agent and AgentCapSetInfo.SvcClassID = the service class ID of this service class
<name of statistic being displayed>	N/A	Height of respective column

The OA database items used to determine the screen tip data for x-axis labels are:

Screen tip label text	Database table	Database item or calculation
Agent	AgentState	AgentName
Login ID	AgentState	AgentLogin

The OA database items used to determine the screen tip data for y-axis labels are:

Screen tip label text	Database table	Database item or calculation
Service Classes	SvcClassInfo	SvcClassName
Queue	SvcClassInfo	SvcClassName SvcClassID
Queue ID	SvcClassInfo	SvcClassName SvcClassID

The OA database items and calculations used to populate the left and right walls are:

Floor Statistic	Data Base Item or Calculation
<ul style="list-style-type: none"> ● Number of Work Items Opened ● Number of Work Items Completed 	<p>When the selected statistic for the wall is Total of Floor Data: $(b_1 + b_2 + b_3 + \dots + b_n)$ where b = the value a floor column for this service class or queue, and where n = the number of columns on the floor for this service class/queue or agent as appropriate.</p> <p>Note that the walls shall not display Total of Floor Data when Average type statistics are displayed on the floor.</p>
<ul style="list-style-type: none"> ● Average Work Duration ● Average Wrap-Up Duration ● Number of Work Items Opened ● Number of Work Items Completed ● Average Customer Hold Duration ● Average Deferred Duration 	<p>When the selected statistic for the wall is Average of Floor Data: $[(c_1 + c_2 + c_3 + \dots + c_n) / (b_1 + b_2 + b_3 + \dots + b_n)]$ where c = is the numerator used to calculate the height of the floor column and where b = the denominator used to calculate the height of the floor column and where n = the number of columns on the floor for this service class/queue or agent as appropriate.</p>

Agent Performance by Skill - Historical

The OA database items used to determine drop-down box values for the input screen are:

Input parameter	Database table	Database item
Agents	CmsAgentInfo	LogName (<Data Source Name>)
Skills	CmsSkillInfo	SplitName (<Data Source Name>)

The OA database items and calculations used to populate the report floor are:

Statistic	Database table	Database item or calculation
Number of ACD Calls	CmsAgent	acdcalls + da_acdcalls
Average ACD Duration	CmsAgent	$(acvertime + da_acvertime) / (acdcalls + da_acdcalls)$
Average ACW Duration	CmsAgent	$(acvertime + da_acvertime) / (acdcalls + da_acdcalls)$

Appendix A: Basic Report calculations

The OA database items used to determine the content of the floor column screen tips are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	Associated agent name
Skill	N/A	Associated skill name
Date	N/A	The associated date/time category
<name of statistic being displayed>	N/A	Height of the column

The OA database items used to determine the screen tip data for x-axis labels are:

Screen tip label text	Database table	Database item or calculation
Agent	N/A	From associated floor x-axis label
Login ID	CMSAgentInfo	LogID
Data Source	N/A	The data source from the input page selection

or

Screen tip label text	Database table	Database item or calculation
Skill	N/A	From associated floor x-axis label
Data Source	N/A	The data source from the input page selection

The OA database items used to determine the screen tip data for y-axis labels are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label

The OA database items and calculations used to populate the left and right walls are:

Floor statistic	Database item or calculation
Number of ACD Calls	When the selected statistic for the wall is Total of Floor Data : $(b_1 + b_2 + b_3 + \dots + b_n)$ where b = the value a floor column for this Skill, and where n = the number of columns on the floor for this Skill/agent or date as appropriate.
<ul style="list-style-type: none"> • Number of ACD Calls • Average ACD Duration • Average ACW Duration 	When the selected statistic for the wall is Average of Floor Data : $[(c_1 + c_2 + c_3 + \dots + c_n) / (b_1 + b_2 + b_3 + \dots + b_n)]$ where c = is the numerator used to calculate the height of the floor column and where b = the denominator used to calculate the height of the floor column and where n = the number of columns on the floor for this Skill/Agent or date as appropriate.

The OA database items used to determine the content of the left wall screen tip are:

Screen tip label text	Database table	Database item or calculation
For Report by Agent "Skill"	N/A	From associated floor x-axis label
For Report by Skill "Agent"	N/A	From associated floor x-axis label
<name of statistic being displayed>	N/A	Value of respective bar

The OA database items used to determine the content of the right wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Value of respective bar

Agent Time in State - Real-time

The OA database items used to determine the content of drop-down boxes are:

Drop-down box	Database table	Database item or calculation
Agents	Employee GroupMember Workgroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key, GroupMember.EmployeeGroup = Employee.PKey, GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups
Agent States	N/A	Include the following entries: 1. Busy This Service Class, Queue, or Job 2. Busy Other Service Class, Queue or Job 3. Idle 4. AuxWork
Service Classes	SvcClassInfo	SvcClassName
Queues	SvcClassInfo	SvcClassName (SvcClassID)
Jobs	JobSummary DialerInfo	JobSummary.JobName (DialerInfo.DialerName) where JobSummary.DialerID = DialerInfo.DialerID

The OA database items and calculations used to populate the **Agent Time in State** table are:

Visual representation	Database table	Database value or calculation
Number of Agents Found		The number of records that comprise the table
Agent	AgentState	AgentName
State (displayed only if multiple states are selected or if either of the "Busy" states is selected)	AgentState	AgentStateName
Availability	AgentState	AvailabilityName
Time in State	AgentState	Now - StateStartTime

Visual representation	Database table	Database value or calculation
Service Class, Queue, Job (displayed only if multiple service classes and/or queues are selected or if the state Busy Other Service Class or Queue has been selected)	AgentState SvcClassInfo	If AgentState.SvcClassID <> NULL then Display SvcClassInfo.SvcClassName where AgentState.SvcClassID = SvcClassInfo.SvcClassID Else if AgentState.JobID <> NULL then Display JobSummary.JobName where AgentState.JobID = JobSummary.JobID Else Display <blank>
Time in Focus	AgentState	If AgentState.AgentState is working or wrap-up Display: Now - AgentState.FocusChangeTime otherwise
Role (displayed only if a single service class is selected. Not displayed if multiple service classes and/or queues are selected nor if a single queue is selected)	AgentState AgentCapSetInfo StaticNameInfo	Display StaticNameInfo.DisplayName where StaticNameInfo.IDType = "AgentRole" and where StaticNameInfo.ID = AgentCapSetInfo.AgentRole (where AgentState.AgentLogin = AgentCapSetInfo.AgentLogin and <the ID of the selected service class> = AgentCapSetInfo.SvcClassID) If there is no record in AgentCapSetInfo for this combination of AgentLogin and SvcClassID, display Blank Exception: the Not Administered and Unknown roles always appear in the table as long as the other input parameters are met.

Job Performance - Historical

The OA database items used to determine drop-down box items for the input screen are:

Input parameter	Database table	Database Item
Jobs	JobSummary DialerInfo	JobSummary.JobName (DialerInfo.DialerName) where JobSummary.DialerID = DialerInfo.DialerID

Appendix A: Basic Report calculations

The OA database items used to determine the entities on the report floor are:

Statistic	Database table	Database item or calculation
Hit Rate	JobSummary	$[(\text{WkPredictiveCnt} / \text{WkAttemptedCnt})] * 100$
Number of Work Items Completed	JobSummary	WkForwardedCnt
Nuisance Call Rate	JobSummary	$[\text{NuisanceCnt} / (\text{NuisanceCnt} + \text{WkPredictiveCnt})] * 100$
Number of Telephone Numbers Unreachable	JobSummary	WkUnreachableCnt
Maximum Number of Agents Subscribed	JobSummary	MaxSubscribedCnt
Number of Telephone Numbers Loaded	JobSummary	WkLoadedCnt

The OA database items used to determine the content of the data column screen tips are:

Screen tip label text	Database table	Database item or calculation
Job	N/A	From associated x-axis
Date	N/A	The date represented by the brushed column
<name of statistic being displayed>	N/A	Value of respective column

The OA database items used to determine the screen tip data for x-axis labels are:

Screen tip label text	Database table	Database item or calculation
Job	JobInfo JobSummary	JobName where JobInfo.JobID = JobSummary.JobID
Dialer	JobInfo DialerInfo JobSummary	DialerInfo.DialerName where DialerInfo.DialerID = JobSummary.DialerID

The OA database items used to determine the screen tip data for y-axis labels are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label

The OA database items and calculations used to populate the left and right walls are:

Floor statistic	Database item or calculation
<ul style="list-style-type: none"> Number of Work Items Completed Number of Nuisance Calls Number of Telephone Numbers Unreachable Number of Telephone Numbers Loaded 	<p>When the selected statistic for the wall is Total of Floor Data:</p> <p>$(b_1 + b_2 + b_3 + \dots + b_n)$ where b = the value of a floor column for this service class/queue/agent/date, and where n = the number of columns on the floor for this service class/queue/agent or date as appropriate</p> <p>Note that the walls shall not display Total of Floor Data when Average type statistics are displayed on the floor.</p>
<ul style="list-style-type: none"> Hit Rate Number of Work Items Completed Nuisance Call Rate Number of Nuisance Calls Number of Telephone Numbers Unreachable Maximum Number of Agents Subscribed Number of Telephone Numbers Loaded 	<p>When the selected statistic for the wall is Average of Floor Data:</p> <p>$[(c_1 + c_2 + c_3 + \dots + c_n) / (b_1 + b_2 + b_3 + \dots + b_n)]$ where c = is the numerator used to calculate the height of the floor column and where b = the denominator used to calculate the height of the floor column and where n = the number of columns on the floor for this service class/queue/agent or date as appropriate</p>

The OA database items used to determine the content of the left wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Job	N/A	From associated x-axis label
<name of statistic being displayed>	N/A	Value of respective bar

Appendix A: Basic Report calculations

The OA database items used to determine the content of the right wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Value of respective bar

Job Performance - Real-time

The OA database items used to determine drop-down box items for the input screen are:

Input parameter	Database table	Database Item
Jobs	JobSummary DialerInfo JobSummary	JobInfo.JobName (DialerInfo.DialerName) where JobSummary.JobID = JobInfo.JobID and where JobSummary.DialerID = DialerInfo.DialerID

The OA database items and calculations used to populate the report floor are:

Statistic selected	Database table	Database item or calculation
Hit Rate	JobSummary	HitRate * 100
Average Work Duration¹	AgentJob	(WkWorkDur1 + ... + WkWorkDurn) / (WkForwardedCnt1 + ... + WkForwardedCntn + WkTransferredCnt1 + ... + WkTransferredCntn) for all "n" agents where JobID = the ID of this job
Average Wrap-Up Duration	AgentJob	(WkWrapupDur1 + ... + WkWrapupDurn) / (WkForwardedCnt1 + ... + WkForwardedCntn + WkTransferredCnt1 + ... + WkTransferredCntn) for all "n" agents where JobID = the ID of this job
Nuisance Call Rate	JobSummary	[NuisanceCnt / (NuisanceCnt + WkPredictiveCnt)] * 100

1. WkWorkDur includes outbound call initiating and ringing time.

The OA database items used to determine the content of the screen tips are:

Screen tip label text	Database table	Database item or calculation
Job	JobSummary	JobName
Dialer	JobSummary DialerInfo	DialerInfo.DialerName where JobSummary.DialerID = DialerInfo.DialerID
Current State	JobSummary	JobStateName
In Calendar	JobSummary	If InCalendarInd = "1" "Yes" else "No"
Number of Agents Subscribed	JobSummary	AgentsSubscribedCnt
Telephone Numbers Loaded	JobSummary	WkLoadedCnt
Telephone Numbers Unscheduled	JobSummary	WkUnscheduledCnt
Telephone Numbers Processed	JobSummary	WkProcessedCnt
Telephone Numbers Rescheduled	JobSummary	WkScheduledCnt
Telephone Numbers Unreachable	JobSummary	WkWunreadableCnt
<name of statistic being displayed>	N/A	Value of respective column

Service Class and Queue Performance - Historical

The OA database items used to determine drop-down box items for the input screen are:

Input parameter	Database table	Database Item
Service Classes	SvcClassInfo	SvcClassName
Queues	SvcClassInfo	SvcClassName (SvcClassID)

Appendix A: Basic Report calculations

The OA database items and calculations used to populate the report floor are:

Statistic selected	Database table	Database item or calculation
Percentage of Work Items Handled Within Service Level¹	SvcClassSummary	If UpperThreshold != Null $\frac{\text{WkOpenOnTargetCnt}}{(\text{WkOpenOnTargetCnt} + \text{WkOpenBehindCnt} + \text{WkOpenCriticalCnt} + \text{WkOpenAheadCnt} + \text{WkOpenNoGoalCnt})} * 100\%$ else blank
Number of Work Items Offered	SvcClassSummary	WkArrivedCnt
Number of Work Items Completed	SvcClassSummary	WkForwardedCnt + AgentSvcClass.WkTransferredCnt
Number of Abandoned Work Items²	SvcClassSummary	AbandBehindCnt + AbandOnTargetCnt+ AbandNoGoalCnt + AbandAheadCnt + AbandCriticalCnt

Statistic selected	Database table	Database item or calculation
Average Wait Time¹	SvcClassSummary	WkInQueueDur / (WkOpenBehindCnt + WkOpenOnTargetCnt + WkOpenNoGoalCnt + WkOpenCriticalCnt + WkOpenAheadCnt)
Average Time to Abandon²	SvcClassSummary	AbandDur / (AbandBehindCnt + AbandOnTargetCnt + AbandNoGoalCnt + AbandAheadCnt + AbandCriticalCnt)

1. During the 30-minute interval in which Data Manager is started, WkOpenBehindCnt, WkOpenOnTargetCnt, and WkInQueueDur contain incorrect interval data. The data corrects itself on the first 30-minute interval rollover after Data Manager pump-up completes. Archived data for the day, week, or month containing the incorrect interval is affected slightly.
2. During the 30-minute interval in which Data Manager is started, AbandBehindCnt and AbandOnTargetCnt contain incorrect interval data. The data corrects itself on the first 30-minute interval rollover after Data Manager pump-up completes. Archived data for the day, week, or month containing the incorrect interval is affected slightly.

The OA database items used to determine the content of the data column screen tips are:

Screen tip label text	Database table	Database item or calculation
For Service Classes: Service Class	N/A	The label of the associated Service Class or Queue
For Queues: Queue	N/A	The label of the associated Service Class or Queue
Date	N/A	The Date represented by the brushed column
<name of statistic being displayed>	N/A	Value of respective column

The OA database items used to determine the screen tip data for x-axis labels are:

Screen tip label text	Database table	Database item or calculation
For Service Classes: Service Class	N/A	From associated floor x-axis label
For Queues: Queue	N/A	From associated floor x-axis label
For Queues: QueueID	SvcClassInfo	SvcClassID

Appendix A: Basic Report calculations

The OA database items used to determine the screen tip data for y-axis labels are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label

The OA database items and calculations used to populate the left and right walls are:

Floor statistic	Database item or calculation
<ul style="list-style-type: none">● Number of Work Items Offered● Number of Work Items Completed● Number of Abandoned Work Items	When the selected statistic for the wall is Total of Floor Data : $(b_1 + b_2 + b_3 + \dots + b_n)$ where b = the value a floor column for this service class or queue, and where n = the number of columns on the floor for this service class/queue or date as appropriate.
<ul style="list-style-type: none">● Percentage of Work Items Handled Within Service Level● Number of Work Items Offered● Number of Work Items Completed● Number of Abandoned Work Items● Average Wait Time● Average Time to Abandon	When the selected statistic for the wall is Average of Floor Data : $[(c_1 + c_2 + c_3 + \dots + c_n) / (b_1 + b_2 + b_3 + \dots + b_n)]$ where c = the numerator used to calculate the height of the floor column and where b = the denominator used to calculate the height of the floor column and where n = the number of columns on the floor for this service class/queue or date as appropriate.

The OA database items used to determine the content of the left wall screen tip are:

Screen tip label text	Database table	Database item or calculation
For Service Classes: Service Class	N/A	From associated floor x-axis label
For Queues: Queue	N/A	From associated floor x-axis label
<name of statistic being displayed>	N/A	Value of respective bar

The OA database items used to determine the content of the right wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Value of respective bar

Service Class and Queue Performance - Real-time

The OA database items used to determine drop-down box items for the input screen are:

Input parameter	Database table	Database item
Service Classes	SvcClassInfo	SvcClassName
Queues	SvcClassInfo	SvcClassName (SvcClassID)

The OA database items and calculations used to populate the report floor are:

Statistic	Database table	Database item or calculation
Percentage of Work Items Handled Within Service Level ¹	SvcClassSummary	If SvcGoalID != "1" $\frac{(\text{WkOpenOnTargetCnt})}{(\text{WkOpenCriticalCnt} + \text{WkOpenOnTargetCnt} + \text{WkOpenBehindCnt} + \text{WkOpenAheadCnt} + \text{WkOpenNoGoalCnt})} * 100\%$ else blank
Number of Work Items in Queue	SvcClassState	QueueSizeCnt
Number of Work Items Offered	SvcClassSummary	WkArrivedCnt
Number of Work Items Completed	SvcClassSummary	WkForwardedCnt + AgentSvcClass.WkTransferredCnt
Number of Abandoned Work Items ²	SvcClassSummary	AbandBehindCnt + AbandOnTargetCnt + AbandNoGoalCnt + AbandAheadCnt + AbandCriticalCnt
Average Wait Time	SvcClassSummary	Given that: $X = \text{WkOpenCriticalCnt} + \text{WkOpenBehindCnt} + \text{WkOpenOnTargetCnt} + \text{WkOpenAheadCnt} + \text{WkOpenNoGoalCnt}$ If $X > 0$ Then display $\text{WkInQueueDur} / X$ If $X = 0$ Then display nothing

Appendix A: Basic Report calculations

Statistic	Database table	Database item or calculation
Latest Average Wait Time¹	SvcClassSummary	<p>Given that:</p> $X = \text{WkOpenCriticalCnt} + \text{WkOpenAheadCnt} + \text{WkOpenBehindCnt} + \text{WkOpenOnTargetCnt} + \text{WkOpenNoGoalCnt}$ <p>And "n" represents the current database values and "n-1" represents the database values at the time of the previous report update,</p> <p>Then:</p> <p>When "n" is the first update of the report (that is, where there is no "n-1") or where "n" is the first update of the report for the current interval then:</p> <p style="padding-left: 40px;">If $X(n) > 0$ Then Average Wait Time = $\text{WkInQueueDur}(n) / X(n)$</p> <p style="padding-left: 40px;">If $X(n) = 0$ Then display no column at all</p> <p>And when "n" is not the first update of the report (that is, where there is an "n-1") then</p> <p style="padding-left: 40px;">If $X(n) - X(n-1) > 0$ Then Average Wait Time = $[\text{WkInQueueDur}(n) - \text{WkInQueueDur}(n-1)] / [X(n) - X(n-1)]$</p> <p style="padding-left: 40px;">If $X(n) - X(n-1) = 0$ then display no column at all</p>
Average Time to Abandon	SvcClassSummary	$\text{AbandDur} / (\text{AbandBehindCnt} + \text{AbandOnTargetCnt} + \text{AbandNoGoalCnt} + \text{AbandAheadCnt} + \text{AbandCriticalCnt})$

Statistic	Database table	Database item or calculation
Percentage of Matched Work Items	SvcClassSummary AgentSvcClass AgentCapSetInfo	<p>For Service Classes: Display [(AgentSvcClass.WkForwardedCnt1 + AgentSvcClass.WkForwardedCnt2 + ... + AgentSvcClass.WkForwardedCntn + WkTransferredCnt) / SvcClassSummary.WkForwardedCnt] * 100</p> <p>where n = number of agents who's role is regular relative to this service class as determined by obtaining the list of AgentIDs from AgentCapSetInfo where SvcClassID = the service class ID of this service class and AgentRole = 0 (regular)</p> <p>For Queues: Display <blank></p>

1. During the 30-minute interval in which Data Manager is started, WkOpenBehindCnt, WkOpenOnTargetCnt, and WkInQueueDur contain incorrect interval data. The data corrects itself on the first 30-minute interval rollover after Data Manager pump-up completes. Archived data for the day, week, or month containing the incorrect interval is affected slightly.
2. During the 30-minute interval in which Data Manager is started, AbandBehindCnt and AdandOnTargetCnt contain incorrect interval data. The data corrects itself on the first 30-minute interval rollover after Data Manager pump-up completes. Archived data for the day, week, or month containing the incorrect interval is affected slightly.

The OA database items used to determine the content of the screen tip are:

Screen tip label text	Database table	Database item or calculation
For Service Classes: Service Class For Queues: Queue	SvcClassInfo	SvcClassName
For Queues: QueueID	SvcClassState	SvcClassID
For Service Classes: Service Class State	SvcClassState	SvcClassStateName

Screen tip label text	Database table	Database item or calculation
For Service Classes and Queues: Channel Type	SvcClassState SvcClassQualInfo ChannelInfo	ChannelInfo.ChannelName where: SvcClassState.SvcClassID = SvcClassInfo.SvcClassID and SvcClassInfo.ChannelID = ChannelInfo.ChannelID
<i>name of statistic being displayed</i>	N/A	Value of respective column.

Service Class and Queue Status - Real-time

The OA database items used to determine drop-down box items for the input screen are:

Input parameter	Database table	Database item
Service Classes	SvcClassInfo	SvcClassName
Queues	SvcClassInfo	SvcClassName (SvcClassID)

The OA database items used to determine the content of the label screen tips are:

Screen tip label text	Database table	Database item or calculation
For Service Classes: Service Class	SvcClassInfo	SvcClassName
For Queues: Queue	SvcClassInfo	SvcClassName
For Queues: QueueID	SvcClassState	SvcClassID
For Service Classes: Current State	SvcClassState	SvcClassStateName
For Service Classes Critical Threshold	SvcClassGoalInfo	if CriticalThreshold != NULL then CriticalThreshold else "None"

Screen tip label text	Database table	Database item or calculation
For both Service Classes and Queues: Upper Threshold	SvcClassGoalInfo	if UpperThreshold != NULL then UpperThreshold else "None"
For Service Classes: Lower Threshold	SvcClassGoalInfo	if LowerThreshold != NULL then LowerThreshold else "None"

The OA database items and calculations used to populate the floor are:

Statistic	Database table	Database item or calculation
Number of Work Items in Queue	SvcClassState	QueueSizeCnt
Service Class State	SvcClassState SvcClassInfo	<p>For Advocate-delivered service classes (that is, SvcClassInfo.QueueType = Advocate and SvcClassState.EWT != NULL):</p> <p>SvcClassState.SvcClassState, where</p> <ul style="list-style-type: none"> ● Unknown = a gap in the ribbon or histogram ● Agents Available = -3 ● Queue Empty = -2 ● Ahead of Target = -1 ● On Target = 0 ● Future Risk = 1 ● Immediate Risk = 2 ● Behind Target = 3 ● Critical = 4 <p>Note: all numbers are relative to the floor, which is at 0.</p> <p>The color of a ribbon or a histogram corresponds to the current Service Class state. States are organized into categories and each category is distinguished by its color:</p> <ul style="list-style-type: none"> ● Red = Critical, ● Yellow = Behind Target, ● Green = On Target, Future risk, Immediate Risk ● Blue = Ahead of Target, Agents Available, and Queue empty. <p>For Non-Advocate-delivered service classes and Queues (that is, EWT = NULL):</p> <ul style="list-style-type: none"> ● display nothing

Appendix A: Basic Report calculations

Statistic	Database table	Database item or calculation
Oldest Wait Time	SvcClassState	If OldestArrivalTime != Null then Now - OldestArrivalTime else blank
Average Wait Time ¹	SvcClassSummary	Given that: $X = \text{WkOpenCriticalCnt} + \text{WkOpenBehindCnt} + \text{WkOpenOnTargetCnt} + \text{WkOpenAheadCnt} + \text{WkOpenNoGoalCnt}$ If $X > 0$ Then display $\text{WkInQueueDur} / X$ If $X = 0$ Then display nothing
Latest Average Wait Time	SvcClassSummary	Given that: $X = \text{WkOpenCriticalCnt} + \text{WkOpenBehindCnt} + \text{WkOpenOnTargetCnt} + \text{WkOpenAheadCnt} + \text{WkOpenNoGoalCnt}$ And "n" represents the current database values and "n-1" represents the database values at the time of the previous report update, Then: When "n" is the first update of the report (that is, where there is no "n-1") or where "n" is the first update of the report for the current interval then If $X(n) > 0$ Then Average Wait Time = $\text{WkInQueueDur}(n) / X(n)$ If $X(n) = 0$ Then display a "gap" in the ribbon or histogram And when "n" is not the first update of the report (that is, where there is an "n-1") then If $X(n) - X(n-1) > 0$ Then Average Wait Time = $[\text{WkInQueueDur}(n) - \text{WkInQueueDur}(n-1)] / [X(n) - X(n-1)]$ If $X(n) - X(n-1) = 0$ then display a "gap" in the ribbon or histogram

1. During the 30-minute interval in which Data Manager is started, WkOpenBehindCnt, WkOpenOnTargetCnt, and WkInQueueDur contain incorrect interval data. The data corrects itself on the first 30-minute interval rollover after Data Manager pump-up completes. Archived data for the day, week, or month containing the incorrect interval is affected slightly.

The OA database items and calculations used to populate the left wall are:

Statistic	Database table	Database value or calculation
Number of Work Items in Queue	SvcClassState	QueueSizeCnt
Average Wait Time	SvcClassSummary	Given that: $X = WkOpenCriticalCnt + WkOpenBehindCnt + WkOpenOnTargetCnt + WkOpenAheadCnt + WkOpenNoGoalCnt$ If $X > 0$ Then display $WkInQueueDur / X$ If $X = 0$ Then display nothing
Expected Wait Time	SvcClassState	For Service Classes: If EWT != NULL and EWTUsed = 1 then EWT else blank For Queues: blank
Oldest Wait Time	SvcClassState	For Queues: Now - OldestArrivalTime For Service Classes: blank
30-Minute Average Wait Time	N/A	$[Latest AWT_{(1)} + Latest AWT_{(2)} + \dots Latest AWT_{(N)}] / N$ N = The total number of Latest AWT values generated over the 30 minute period.

The OA database items used to determine the content of the left wall bar screen tips are:

Screen tip label text	Database table	Database item or calculation
For Service Classes: Service Class	N/A	From associated floor label
For Queues: Queue	N/A	From associated floor label
<name of statistic being displayed>	N/A	Value of respective bar

Appendix A: Basic Report calculations

The OA database items and calculations used to populate the right wall are:

Visual representation	Database Table.Column	Database value or calculation
Pie slice size	<p>Where AgentCapSetInfo.SvcClassID = the ID of the selected service class</p> <p><Role> Pie:</p> <p>and where AgentCapSetInfo.AgentRole = <Role> according to the following:</p> <ul style="list-style-type: none">● 0 = Regular● 1 = Reserve● 2 = Backup <p><State> slice:</p> <p>and where:</p> <p>AgentState.AgentState = <state> according to the following:</p> <ul style="list-style-type: none">● Idle = 3● AuxWork = 5● Busy this Service Class = 1 & 2 & 7 and AgentState.SvcClassID = the ID of the selected service class● Busy other Service Class, Queue, Job = 1 & 2 & 7 and AgentState.SvcClassID != the ID of the selected service class	Count the number of matching records
Total that appears beneath pie label in parenthesis "()".	N/A	The sum of the pie slice sizes for a pie.

The OA database items used to determine the content of the right wall bar screen tips are:

Screen tip label text	Database table	Database item or calculation
Service Class	N/A	Name of the selected Service Class
Agent State	N/A	Name of the state associated with this pie slice
Number of Agents in this State and Role	N/A	Value of this pie slice

Service Class and Queue Volume - Historical

The OA database items used to determine drop-down box items for the input screen are:

Input parameters	Database table	Database item
Service Classes	SvcClassInfo	SvcClassName
Queues	SvcClassInfo	SvcClassName (SvcClassID)

The OA database items used to populate the floor are:

Statistic	Database table	Database item or calculation
Work Offered	SvcClassSummary	WkArrivedCnt
Work Completed	SvcClassSummary	WkForwardedCnt + AgentSvcClass.WkTransferredCnt

The OA database items used to determine the screen tip data for x-axis labels are:

Screen tip label text	Database table	Database item or calculation
Service Class	N/A	From associate floor x-axis label
Queue	N/A	From associated floor x-axis label
Queue ID	SvcClassInfo	SvcClassID

The OA database items used to determine the screen tip data for y-axis labels are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label

The OA database items used to determine the content of the screen tip on floor columns are:

Screen tip label text	Database table	Database item or calculation
Service Class	N/A	The name of the associated service class
Queues	N/A	The name of the associated queue
Date	N/A	The associated y-axis label

Appendix A: Basic Report calculations

Screen tip label text	Database table	Database item or calculation
Work Offered	N/A	Value of the New Arrivals column
Work Completed	N/A	WkForwardedCnt + AgentSvcClass.WkTransferredCnt

The OA database items and calculations used to populate the left wall are:

Statistic	Database table	Database value or calculation
Average Wait Time¹	SvcClassSummary	<p>For each selected Service Class or Queue</p> $[(a_1 + a_2 + \dots a_n)] / [(b_1 + b_2 + \dots b_n)]$ <p>where</p> <p>$a = \text{WkInQueueDur}$</p> <p>$b = \text{Sum} [\text{WkOpenBehindCnt} + \text{WkOpenNoGoalCnt} + \text{WkOpenOnTargetCnt} + \text{WkOpenCriticalCnt} + \text{WkOpenAheadCnt}]$</p> <p>and n = the number of "y" time categories.</p>

1. During the 30-minute interval in which Data Manager is started, WkOpenBehindCnt, WkOpenOnTargetCnt, and WkInQueueDur contain incorrect interval data. The data corrects itself on the first 30-minute interval rollover after Data Manager pump-up completes. Archived data for the day, week, or month containing the incorrect interval is affected slightly.

The OA database items used to determine the content of the left wall screen tip are:

Screen tip label text	Database table	Database item or calculation
For Service Classes: Service Class	N/A	The Service Class name of the associated floor, x-axis label
For Queues: Queue	N/A	The Queue name of the associated floor, x-axis label
Average Wait Time	N/A	Value of the bar

The OA database items used to determine the content of the right wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor label
Average Wait Time	N/A	Value of respective bar

The OA database items used to determine the entities on the right wall are:

Statistic	Database table	Database value or calculation
Average Wait Time	SvcClassSummary	<p>For each selected Service Class or Queue $[(a_1 + a_2 + \dots a_n)] / [(b_1 + b_2 + \dots b_n)]$</p> <p>where</p> <p>$a = \text{WkInQueueDur}$</p> <p>$b = \text{Sum} [\text{WkOpenBehindCnt} + \text{WkOpenNoGoalCnt} + \text{WkOpenOnTargetCnt} + \text{WkOpenCriticalCnt} + \text{WkOpenAheadCnt}]$</p> <p>where n = the number of service classes and queues on the x-axis.</p>

Skill Performance - Historical

The OA database items used to determine drop-down box items for the input screen are:

Input Parameter	Database Table	Database Item
Skills	CmsSkillInfo	SplitName (<Data Source Name>)

Appendix A: Basic Report calculations

The OA database items and calculations used to populate the report floor are:

Statistic	Database table	Database item or calculation
Percentage of Calls Handled Within Service Level	CMSSkill	Acceptable / CallsOffered * 100%
Number of ACD Calls	CmsSkill	acdcalls
Average Speed of Answer	CmsSkill	anstime / acdcalls
Number of Abandoned Calls	CmsSkill	abncalls
Average Time to Abandon	CmsSkill	abntime / abncalls

The OA database items used to determine the content of the data column screen tips are:

Screen tip label text	Database table	Database item or calculation
Skill	N/A	From associated floor x-axis label
Date	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Value of floor column

The OA database items used to determine the screen tip data for x-axis labels are:

Screen tip label text	Database table	Database item or calculation
Skill	N/A	From associated floor x-axis label
Data Source	N/A	The data source from the input page selection

The OA database items used to determine the screen tip data for y-axis labels are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label

The OA database items and calculations used to populate the left and right walls are:

Floor Statistic	Database Item or Calculation
<ul style="list-style-type: none"> ● Number of ACD Calls ● Number of Abandoned Calls 	When the selected statistic for the wall is Total of Floor Data : $(b_1 + b_2 + b_3 + \dots + b_n)$ where b = the value of a floor column for this Skill, and where n = the number of columns on the floor for this Skill or date, as appropriate.
<ul style="list-style-type: none"> ● Percentage of Calls Handled Within Service Level ● Number of ACD Calls ● Average Speed of Answer ● Number of Abandoned Calls ● Average Time to Abandon 	When the selected statistic for the wall is Average of Floor Data : $[(c_1 + c_2 + c_3 + \dots + c_n) / (b_1 + b_2 + b_3 + \dots + b_n)]$ where c = is the numerator used to calculate the height of the floor column, and where b = the denominator used to calculate the height of the floor column, and where n = the number of columns on the floor for this Skill or date as appropriate.

The OA database items used to determine the content of the left wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Skill	N/A	From associated floor x-axis label
<name of statistic being displayed>	N/A	Value of respective bar.

The OA database items used to determine the content of the right wall screen tip are:

Screen tip label text	Database table	Database item or calculation
Date	N/A	From associated floor y-axis label
<name of statistic being displayed>	N/A	Value of respective bar.

System Set Completion Codes - Historical

The OA database items used to determine the content of the drop-down lists are:

Input screen	Database table	Database item
Jobs	JobInfo DialerInfo SysCompCode	JobInfo.JobName (DialerInfo.DialerName) where SysCompCode.JobID = JobInfo.JobID and where SysCompCode.DialerID = DialerInfo.DialerID
Completion Codes to Include	StaticNameInfo	DisplayName where IDType = SysCompCode

The OA database items and calculations used to populate the table are:

Visual Representation	Database table	Database value or calculation
<completion code count>	SysCompCode	SysCompCodeCnt summed over the report interval where JobID = the ID of this job and SysCompCodeID = the ID of this completion code
Total	N/A	The sum of the values in the respective column
<job name (dialer name)>	JobInfo DialerInfo SysCompCode	JobInfo.JobName (DialerInfo.DialerName) where SysCompCode.JobID = JobInfo.JobID and where SysCompCode.DialerID = DialerInfo.DialerID
<completion code x name>	StaticNameInfo	DisplayName where IDType = SysCompCode and ID = an ID of one of the selected completion codes
<all other outcome codes for agent x and job y>	SysCompCode	Sum of all SysCompCodeCnt summed over the report interval where JobID = the ID of this job and SysCompCodeID = the ID of an unselected completion code

System Set Completion Codes - Real-time

The OA database items used to determine the content of the drop-down lists are:

Input screen	Database table	Database item
Jobs	JobSummary DialerInfo	JobSummary.JobName (DialerInfo.DialerName) where JobSummary.DailerID = DialerInfo.DialerID
Completion Codes to Include	StaticNameInfo	DisplayName where IDType = SysCompCode

The OA database items and calculations used to populate the table are:

Visual Representation	Database table	Database value or calculation
<completion code count>	SysCompCode	SysCompCodeCnt where JobID = the ID of this job and SysCompCodeID = the ID of this completion code
Total	N/A	The sum of the values in the respective column
<job name (dialer name)>	JobSummary DialerInfo	JobSummary.JobName (DialerInfo.DialerName) where JobSummary.DialerID = DialerInfo.DialerID
<completion code x name>	StaticNameInfo	DisplayName where IDType = SysCompCode and ID = an ID of one of the selected completion codes
<all other outcome codes for agent x and job y>	SysCompCode	sum of all SysCompCodeCnt where JobID = the ID of this job and SysCompCodeID = the ID of an unselected completion code

Telephone Number States - Real-time

The OA database items used to determine the content of the drop-down lists are:

Input screen	Database table	Database item
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Appendix A: Basic Report calculations

Jobs	JobSummary DialerInfo	JobSummary.JobName (DialerInfo.DialerName) where JobSummary.DialerID = DialerInfo.DialerID
Telephone Number States to Include	StaticNameInfo	DisplayName where IDType = PhoneNumState

The OA database items and calculations used to populate the table are:

Visual Representation	Database table	Database value or calculation
<telephone number state count>	PhoneNumState	PhoneNumStateCnt where JobID = the ID of this job and PhoneNumStateID = the ID of this call state
Total	N/A	The sum of the values in the respective column
<job name (dialer name)>	JobSummary DialerInfo	JobSummary.JobName (DialerInfo.DialerName) where JobSummary.DialerID = DialerInfo.DialerID
<telephone number state x name>	StaticNameInfo	DisplayName where IDType = PhoneNumState and ID = an ID of one of the selected call states
<all other telephone number states for job y>	PhoneNumState	Sum of all PhoneNumStateCnt where JobID = the ID of this job and PhoneNumStateID = the ID of an unselected call state

Detail reports

The following section describes related detail reports.

This section includes the following topics:

- [Work Item Detail](#) on page 241
- [Segment Information Detail](#) on page 245
- [Wrap-up Codes Detail](#) on page 249
- [CMS Call Detail](#) on page 252
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Work Item Detail

The data used to populate the Channels and Agents drop-down boxes on the input page are determined as follows:

Input Element	Database Table	Database Item or Calculation
Channels	N/A	The following items: <ul style="list-style-type: none">● Voice● Email● Text Chat
Agents	Employee GroupMember WorkGroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key and GroupMember.EmployeeGroup = Employee.PKey and GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups

Appendix A: Basic Report calculations

The OA database items used to determine the records that comprise the Work Item Detail report and the content of the report columns are:

Report Column	Database table	Calculation
This record is included if the criteria in the calculation column are met. The value displayed in the Date column is the value contained in the associated Contact field.	Contact	If Contact.CreateTime is within the date range selected in the Date Range portion of the input page Then display Contact.CreateTime
If the From text box is populated then this record is included if the criteria in the calculation column are met	Contact MediaInteraction	If Selected Channels includes Voice then MediaInteraction.Type = 2 (that is, voice), and MediaInteraction.ANI contains value in From box, and Contact.VDUID = MediaInteraction.Contact_Key If Selected Channels includes Email then MediaInteraction.Type = 0 (that is, email), and MediaInteraction.Sender contains value in From box, and Contact.VDUID = MediaInteraction.Contact_Key If Selected Channels includes Text Chat then MediaInteraction.Type = 1 (that is, chat), and MediaInteraction.UserName contains value in From box, and Contact.VDUID = MediaInteraction.Contact_Key If the user selects more than one channel then these criteria are "OR'd" together.

Report Column	Database table	Calculation
If the To input box is populated then this record is included if the criteria in the calculation column are met.	Contact MediaInteraction	<p>If Selected Channels includes Voice then MediaInteraction.Type = 2 (that is, voice), and MediaInteraction.DNIS contains value in To box, and Contact.VDUID = MediaInteraction.Contact_Key</p> <p>If Selected Channels includes Email then MediaInteraction.Type = 0 (that is, email), and MediaInteraction.Recipient contains value in To box, and Contact.VDUID = MediaInteraction.Contact_Key</p> <p>If the user selects more than one channel then these criteria are "OR'd" together.</p>
If one or more values in the Channel drop-down box are selected then this record is included if the criteria in the calculation column are met.	Contact MediaInteraction	<p>If Selected Channels includes Voice then MediaInteraction.Type = 2 (that is, voice), and Contact.VDUID = MediaInteraction.Contact_Key</p> <p>If Selected Channels includes Email then MediaInteraction.Type = 0 (that is, email), and Contact.VDUID = MediaInteraction.Contact_Key</p> <p>If Selected Channels includes Text Chat then MediaInteraction.Type = 1 (that is, chat), and Contact.VDUID = MediaInteraction.Contact_Key</p> <p>If the user selects more than one channel then these criteria are "OR'd" together.</p>
If one or more values in the Agent drop-down box are selected then this record is included if the criteria in the calculation column are met.	Contact RoutingEvent AgentSegment	If AgentSegment.Employee_Key = the selected agent PKEY value and Contact.VDUID = RoutingEvent.Contact_Key and AgentSegment.Segment_Key = RoutingEvent.UUID and AgentSegment.ParticipationRole = 0 (that is, Primary Agent)

Appendix A: Basic Report calculations

Report Column	Database table	Calculation
If the value in the Time in System drop-down boxes is > 0 then this record is included if the criteria in the calculation column are met. The value displayed in the Time in System column is the value contained in the associated Contact field.	Contact	If Contact.Duration meets the input criterion include this record and display Contact.Duration
If the value in the Number of Times Handled pull-down box is > 0 then this record is included if the criteria in the calculation column are met. The value displayed in the Number of Times Handled column is the value contained in the associated Contact field.	Contact	If Contact.Interactions meets the input criterion include this record and display Contact.Interactions
If the value in the Number of Times Held or Deferred drop-down boxes is > 0 then this record is included if the criteria in the calculation column are met. The value displayed in the Number of Times Held or Deferred column is the value contained in the associated MediaInteraction field.	Contact RoutingEvent	<p>If Selected Channels includes Voice then RoutingEvent.HoldCount meets the input criterion, and Contact.VDUID = RoutingEvent.Contact_Key</p> <p>If Selected Channels includes Email then RoutingEvent.DeferCount meets the input criterion, and Contact.VDUID = RoutingEvent.Contact_Key</p> <p>If Selected Channels includes Text Chat then RoutingEvent.Web_Defer_Count meets the input criterion, and Contact.VDUID = RoutingEvent.Contact_Key</p> <p>If the user selects more than one channel then these criteria are "OR'd" together.</p>
Job	Contact	If Contact.JobID <> Null then display JobInfo.JobName where JobInfo.JobID = Contact.JobID Else Display <blank>

The data used to determine the content of the report heading are:

Heading Item	Database Table	Calculation
Number of Work Items Found	N/A	The number of rows that make up the report
Average Time in System	N/A	Average of values in the Time in System column
Average Number of Times Handled	NA	Average of values in the Number of Times Handled column
Average Number of Times Held or Deferred	N/A	Average of values in the Number of Times Held or Deferred column

Segment Information Detail

The data used to populate the Channel and Agent drop-down boxes on the input page are determined as follows:

Input Element	Database Table	Database Item or Calculation
Channel	N/A	The following items: <ul style="list-style-type: none"> • Voice • Email • Text Chat
Agent	Employee GroupMember WorkGroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key and GroupMember.EmployeeGroup = Employee.PKey and GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups

The OA database items used to determine the content of the Segment Information report elements are

Report element	Database table	Database item or calculation
Work Item ID	Contact	VDUID
Start Time	N/A	start time of first segment

Appendix A: Basic Report calculations

Report element	Database table	Database item or calculation
Agent	RoutingEvent AgentSegment Employee	For IC Repository records: If there is a record in AgentSegment where AgentSegment.Segment_Key = RoutingEvent.UUID then Employee.FullName where Employee.Pkey = AgentSegment.Employee_Key, and AgentSegment.ParticipationRole = 0, and AgentSegment.Segment_Key = RoutingEvent.UUID else <blank>
	CmsCallHistory CmsAgentInfo	For Call History records: If CmsCallHistory.AnsLogin = <blank> <blank> else CmsAgentInfo.LogName where CmsCallHistory.AnsLogin = CmsAgentInfo.LogID and CmsCallHistory.SourceID = CmsAgentInfo.SourceID
Service Class, Queue or Skill	RoutingEvent Queue	For IC Repository records: If RoutingEvent.SvcClassID <> Null then Display SvcClassInfo.SvcClassName where RoutingEvent.SvcClassID = SvcClassInfo.SvcClassID Else Display Queue.QueueName where RoutingEvent.Queue_Key = Queue.PKey
	CmsCallHistory CmsSkillInfo	For Call History records: if CmsCallHistory.DispSplit = -1 then <blank> else CmsSkillInfo.SplitName where CmsCallHistory.DispSplit = CmsSkillInfo.Split and CmsCallHistory.SourceID = CmsSkillInfo.SourceID

Report element	Database table	Database item or calculation
From	Media Interaction	<p>For IC Repository records:</p> <p>If MediaInteraction.Type = 2 (that is, voice) then display MediaInteraction.ANI</p> <p>If MediaInteraction.Type = 0 (that is, email) then display MediaInteraction.Sender</p> <p>If MediaInteraction.Type = 1 (that is, chat) then display MediaInteraction.UserName</p>
	CmsCallHistory	<p>For CallHistory records:</p> <p>if CmsCallHistory.Calling_Pty != NULL then</p> <p>display CmsCallHistory.Calling_Pty</p> <p>else</p> <p>display <blank></p>
To	Media Interaction	<p>For IC Repository records:</p> <p>If MediaInteraction.Type = 2 (that is, voice) then display MediaInteraction.DNIS</p> <p>If MediaInteraction.Type = 0 (that is, email) then display MediaInteraction.Recipient</p> <p>If MediaInteraction.Type = 1 (that is, chat) then display <Blank></p>
	CmsCallHistory	<p>For CallHistory records:</p> <p>if CmsCallHistory.FirstVdn != NULL then</p> <p>display CmsCallHistory.FirstVdn</p> <p>else</p> <p>display <blank></p>

Appendix A: Basic Report calculations

Report element	Database table	Database item or calculation
Channel	MediaInteraction	<p>For IC Repository records:</p> <p>If MediaInteraction.Type = 2 (that is, voice) then display "Voice"</p> <p>If MediaInteraction.Type = 0 (that is, email) then display "Email"</p> <p>If MediaInteraction.Type = 1 (that is, chat) then display "Text Chat"</p> <p>For CallHistory records:</p> <p>"Voice"</p>
Duration	RoutingEvent	<p>For IC Repository records:</p> <p>If MediaInteraction.Type = 2 (that is, voice)</p> <p style="padding-left: 40px;">RoutingEvent.voicetalktime + RoutingEvent.voiceholdtime + RoutingEvent.WrapTime</p> <p>If MediaInteraction.Type = 0 (that is, email)</p> <p style="padding-left: 40px;">RoutingEvent.emailwritetime + RoutingEvent.emailinacttime + RoutingEvent.defertime</p> <p>If MediaInteraction.Type = 1 (that is, chat)</p> <p style="padding-left: 40px;">RoutingEvent.chattalktime + RoutingEvent.chatholdtime + RoutingEvent.WrapTime</p>
	CmsCallHistory	<p>For Call History records:</p> <p style="padding-left: 40px;">CmsCallHistory.AcwTime + CmsCallHistory.TalkTime</p>

Wrap-up Codes Detail

The data used to populate the Channel and Agent drop-down boxes on the input page are determined as follows:

Input Element	Database Table	Database Item or Calculation
Channel	N/A	The following items: <ul style="list-style-type: none"> • Voice • Email • Text Chat
Agent	Employee GroupMember WorkGroup Channel	Display Employee.FullName (Employee.LoginName) where Employee.Pkey = Channel.Employee_Key and GroupMember.EmployeeGroup = Employee.PKey and GroupMember.WorkgroupGroup = Workgroup.Pkey for one of the selected workgroups

The OA database items used to determine the content of the Wrap-up Codes report elements are:

Report element	Database table	Database item or calculation
Work Item ID	N/A	From Work Item ID element of the Segment report.
Agent	N/A	From the Agent column of this segment of the Segment report.
Duration	N/A	From the Duration column of this segment of the Segment report.

Appendix A: Basic Report calculations

Report element	Database table	Database item or calculation
<category codes>	Contact RoutingEvent TaskPerformed TaskPerformedCode ClassificationCode	<p>If reached from the Segment Information report: Display ClassificationCode.Name where TaskPerformed.RoutingEvent_Key = RoutingEvent.UUID and TaskPerformed.Pkey = TaskPerformedCode.TaskPerformed_Key and ClassificationCode.Pkey = TaskPerformedCode.Code_Key and ClassificationCode.CodeType = 1 (that is, Category Code)</p> <p>If reached from the Work Item Detail report: Display ClassificationCode.Name where: RoutingEvent.Contact_Key = Contact.VDUID and TaskPerformed.RoutingEvent_Key = RoutingEvent.UUID and TaskPerformed.Pkey = TaskPerformedCode.TaskPerformed_Key and ClassificationCode.Pkey = TaskPerformedCode.Code_Key and ClassificationCode.CodeType = 1 (that is, Category Code)</p>

Report element	Database table	Database item or calculation
<reason codes>	Contact RoutingEvent TaskPerformed TaskPerformedCode ClassificationCode	<p>If reached from the Segment Information report: Display ClassificationCode.Name where TaskPerformed.RoutingEvent_Key = RoutingEvent.UUID and TaskPerformed.Pkey = TaskPerformedCode.TaskPerformed_Key and ClassificationCode.Pkey = TaskPerformedCode.Code_Key and ClassificationCode.CodeType = 4 (that is, Reason Code)</p> <p>If reached from the Work Item Detail report: Display ClassificationCode.Name where: RoutingEvent.Contact_Key = Contact.VDUID and TaskPerformed.RoutingEvent_Key = RoutingEvent.UUID and TaskPerformed.Pkey = TaskPerformedCode.TaskPerformed_Key and ClassificationCode.Pkey = TaskPerformedCode.Code_Key and ClassificationCode.CodeType = 4 (that is, Reason Code)</p>

Appendix A: Basic Report calculations

Report element	Database table	Database item or calculation
<outcome codes>	Contact RoutingEvent TaskPerformed TaskPerformedCode ClassificationCode	<p>If reached from the Segment Information report:</p> <p>Display ClassificationCode.Name where TaskPerformed.RoutingEvent_Key = RoutingEvent.UUID and TaskPerformed.Pkey = TaskPerformedCode.TaskPerformed_Key and ClassificationCode.Pkey = TaskPerformedCode.Code_Key and ClassificationCode.CodeType = 3 (that is, Outcome Code)</p> <p>If reached from the Work Item Detail report:</p> <p>Display ClassificationCode.Name where: RoutingEvent.Contact_Key = Contact.VDUID and TaskPerformed.RoutingEvent_Key = RoutingEvent.UUID and TaskPerformed.Pkey = TaskPerformedCode.TaskPerformed_Key and ClassificationCode.Pkey = TaskPerformedCode.Code_Key and ClassificationCode.CodeType = 3 (that is, Outcome Code)</p>

CMS Call Detail

The data used to populate the Data Source drop-down list are:

Input Screen Element	Database Tables	Database Item or Calculation
Data Sources	Subsystem Source	Subsystem.Name where: Subsystem.ID = Source.SubsystemID and Source.SourceType = 100 (ACD)

The data used to populate the Skills, VDNs, Agents, and Call Work Codes drop-down lists are:

Input Screen Element	Database Tables	Database Item or Calculation
Skills	CmsSkillInfo	SplitName (<Data Source Name>)
VDNs	CmsVdnInfo	VdnName (<Data Source Name>)
Agents	CmsAgentInfo	LogName (LogID)
Call Work Codes	CmsCwcInfo	CwcName (<Data Source Name>)

The database items used to determine the records that comprise the report and the content of the report columns are:

Report Column	Database Tables	Calculation ¹
The value displayed in the "Date" column is the value contained in the associated CmsCallHistory field.	CmsCallHistory	If CmsCallHistory.SegStart of the first segment is within the date range selected in the "Date Range" portion of the input page Then display CmsCallHistory.SegStart
If the To input box is populated then this record is included if the criteria in the calculation column are met.	CmsCallHistory	matches all or part of CmsCallHistory.FirstVdn for segment 1 of the call if CmsCallHistory.FirstVdn != NULL then display CmsCallHistory.FirstVdn else display <blank>
If the From input box is populated then this record is included if the criteria in the calculation column are met.	CmsCallHistory	matches all or part of CmsCallHistory.Calling_Pty for segment 1 of the call if CmsCallHistory.Calling_Pty != NULL then display CmsCallHistory.Calling_Pty else display <blank>
If the one or more values in the Skills pull-down are selected then this record is included if the criteria in the calculation column are met.	CmsCallHistory CmsSkillInfo	matches CmsCallHistory.DispSplit
If the one or more values in the VDNs pull-down are selected then this record is included if the criteria in the calculation column are met.	CmsCallHistory CmsVdnInfo	matches CmsCallHistory.DispVdn

Appendix A: Basic Report calculations

Report Column	Database Tables	Calculation ¹
If one or more values in the Agent pull-down are selected then this record is included if the criteria in the calculation column are met.	CmsCallHistory CmsAgentInfo	matches CmsCallHistory.AnsLogin
If one or more values in the Call Work Codes pull-down are selected then this record is included if the criteria in the calculation column are met.	CmsCallHistory CmsCwcInfo	matches CmsCallHistory.Cwc1 or CmsCallHistory.Cwc2 or CmsCallHistory.Cwc3 or CmsCallHistory.Cwc4 or CmsCallHistory.Cwc5 or CmsCallHistory.LastCwc

1. A call is included if the criteria in the calculation column are met.

The database items used to determine the content of the report heading are:

Heading Item	Database Tables	Calculation
Number of Work Items Found	N/A	The number of rows that make up the report

Segment Information for CMS Call Detail

The database items used to determine the content of the report heading are:

Report Element	Database Tables	Database Item or Calculation
Skill	N/A	Same as Call Detail report heading
VDN	N/A	Same as Call Detail report heading
Agent	N/A	Same as Call Detail report heading
Call Work Code	N/A	Same as Call Detail report heading
Data Source	N/A	Same as Call Detail report heading
Total Wait Time	N/A	Total of values in the Wait Time column
Total Number of Times Held	N/A	Total of values in the Times Held column

The database items used to determine the content of the report elements are:

Report Element	Database Tables	Database Item or Calculation
Call ID	CmsCallHistory	CallID
Start Time	CmsCallHistory	CmsCallHistory.SegStart of first segment
Agent	CmsCallHistory CmsAgentInfo	If CmsCallHistory.AnsLogin = <blank> else CmsAgentInfo.LogName where CmsCallHistory.AnsLogin = CmsAgentInfo.LogID and CmsCallHistory.SourceID = CmsAgentInfo.SourceID
Skill	CmsCallHistory CmsSkillInfo	If CmsCallHistory.DispSplit = Null then <blank> else CmsSkillInfo.SplitName where CmsCallHistory.DispSplit = CmsSkillInfo.Split and CmsCallHistory.SourceID = CmsSkillInfo.SourceID
VDN	CmsCallHistory CmsVdnInfo	If CmsCallHistory.DispVdn = <blank> then <blank> else CmsVdnInfo.VdnName where CmsCallHistory.DispVdn = CmsVdnInfo.Vdn and CmsCallHistory.SourceID = CmsVdnInfo.SourceID
Wait Time	CmsCallHistory	CmsCallHistory.DispTime
Times Held	CmsCallHistory	CmsCallHistory.Held
Hold Time	CmsCallHistory	CmsCallHistory.AnsHoldTime
Talk Time	CmsCallHistory	CmsCallHistory.TalkTime
ACW Time	CmsCallHistory	CmsCallHistory.AcwTime
Duration	CmsCallHistory	CmsCallHistory.AcwTime + CmsCallHistory.TalkTime

Appendix A: Basic Report calculations

Report Element	Database Tables	Database Item or Calculation
Disposition	CmsCallHistory	CmsCallHistory.Disposition where the value displayed a string based on the value of this field according to the following mapping: 1 - Connected 2 - Answered 3 - Abandoned 4 - Interflowed 5 - Forced Busy 6 - Forced Disconnect 7 - Other
Data Source	CmsCallHistory Subsystem Source	Subsystem.Name where: Subsystem.ID = CmsCallHistory.SourceID and Source.SourceType = 100 (ACD)

Call Work Codes Detail

The database items used to determine the content of the report heading are:

Report Element	Database Tables	Database Item or Calculation
Skill	N/A	Same as Call Detail report heading
VDN	N/A	Same as Call Detail report heading
Agent	N/A	Same as Call Detail report heading
Call Work Code	N/A	Same as Call Detail report heading
Data Source	N/A	Same as Call Detail report heading

The database items used to determine the content of the report elements are:

Report Element	Database Tables	Database Item or Calculation
Call ID	CmsCallHistory	CallID
Agent	CmsCallHistory CmsAgentInfo	If CmsCallHistory.AnsLogin = <blank> else CmsAgentInfo.LogName where CmsCallHistory.AnsLogin = CmsAgentInfo.LogID and CmsCallHistory.SourceID = CmsAgentInfo.SourceID
Duration	CmsCallHistory	CmsCallHistory.AcwTime + CmsCallHistory.TalkTime
Skill	CmsCallHistory CmsSkillInfo	If CmsCallHistory.DispSplit = Null then <blank> else CmsSkillInfo.SplitName where CmsCallHistory.DispSplit = CmsSkillInfo.Split and CmsCallHistory.SourceID = CmsSkillInfo.SourceID
VDN	CmsCallHistory CmsVdnInfo	If CmsCallHistory.DispVdn = <blank> then <blank> else CmsVdnInfo.VdnName where CmsCallHistory.DispVdn = CmsVdnInfo.Vdn and CmsCallHistory.SourceID = CmsVdnInfo.SourceID
<first call work code> display line only if CmsCallHistory.Cwc1 != Null	CmsCallHistory	display: CmsCwcInfo.CwcName where CmsCallHistory.Cwc1 = CmsCwcInfo.Cwc and CmsCallHistory.SourceID = CmsVdnInfo.SourceID
<second call work code> display line only if CmsCallHistory.Cwc2 != Null	CmsCallHistory	display: CmsCwcInfo.CwcName where CmsCallHistory.Cwc2 = CmsCwcInfo.Cwc and CmsCallHistory.SourceID = CmsVdnInfo.SourceID
<third call work code> display line only if CmsCallHistory.Cwc3 != Null	CmsCallHistory	display: CmsCwcInfo.CwcName where CmsCallHistory.Cwc3 = CmsCwcInfo.Cwc and CmsCallHistory.SourceID = CmsVdnInfo.SourceID
<fourth call work code> display line only if CmsCallHistory.Cwc4 != Null	CmsCallHistory	display: CmsCwcInfo.CwcName where CmsCallHistory.Cwc4 = CmsCwcInfo.Cwc and CmsCallHistory.SourceID = CmsVdnInfo.SourceID

Appendix A: Basic Report calculations

Report Element	Database Tables	Database Item or Calculation
<fifth call work code> display line only if CmsCallHistory.Cwc5 != Null	CmsCallHistory	display: CmsCwcInfo.CwcName where CmsCallHistory.Cwc5 = CmsCwcInfo.Cwc and CmsCallHistory.SourceID = CmsVdnInfo.SourceID
<last call work code> display line only if CmsCallHistory.LastCwc != Null	CmsCallHistory	display: CmsCwcInfo.CwcName where CmsCallHistory.LastCwc = CmsCwcInfo.Cwc and CmsCallHistory.SourceID = CmsVdnInfo.SourceID

Glossary

Administration screen	Screen on the right side of the OA Client interface that contains information about configuration settings which are selected in the navigation tree.
ADU	Agent data unit
Agent	A customer service representative (CSR). An agent is a person qualified to handle customer requests. He or she may deal with customers directly or just process customer requests.
Aggregated data	<p>Data that OA has aggregated or summarized. Aggregated data has the minimum value (least), maximum value (greatest), sum, or a combination of those values, for each data period. Each column in the schema can be set to a different aggregation behavior, as long as it contains numeric data.</p> <p>Aggregation occurs at an offset after the end of each base interval. The default offset is 10 minutes, but the offset can be set from 10 to 25 minutes by modifying the system scheduled aggregation job.</p>
Aggregation	OA aggregates or summarizes data by selecting the minimum value (least), maximum value (greatest), or sum of a numerical measure for a particular data period. A data period involves one base interval.
Aggregation job	<p>Job that aggregates data. An aggregation job summarizes data by selecting the minimum value (least), maximum value (greatest), sum of each data period, or a combination of those options.</p> <p>A system scheduled aggregation job runs at an offset after the end of a base interval. The default offset is 10 minutes, but the offset can be set from 10 to 25 minutes by modifying the system scheduled aggregation job. This job aggregates data for that interval only.</p> <p>An on-demand aggregation job can aggregate data for multiple intervals, up to 24 hours of data.</p>
Aggregation recovery job	Job that re-aggregates and archives container data that was not successfully aggregated in the past 30 hours. If enabled, the aggregation recovery job runs every six hours and aggregates data that was not successfully aggregated in previous attempts.
API	Application Program Interface. An API is a set of routines that allows an application program to gain access to the operating system or application program. A developer who wants to build a program that makes requests to the operating system or application must use the prescribed method.

Archive

Archive	The act of compressing and summarizing aggregated data into the historical database. While aggregation occurs for every base interval, archiving occurs on a daily, weekly or monthly basis, with the frequency determined by your configuration, which is specified in the Container Archives administration screen.
Archived data	Aggregated data that has been stored in the historical database. The data is categorized into daily, weekly and monthly archives.
Avaya CMS Analytical license	This license is used for configurations that allow only Avaya CMS as a data source to Avaya OA (no Avaya IC data source). With this license, you get both Basic Reports and Advanced Reports.
Avaya IC and Avaya CMS Analytical license	This license is used for configurations that allow Avaya IC and Avaya CMS as data sources to Avaya OA. With this license, you get both Basic Reports and Advanced Reports.
back-end database	A database that is located on a different machine than where the Historical subsystem software is installed.
Base interval	OA lumps IC real-time data into 30-minute intervals in the Historical subsystem. Also called intervals. See also base interval data.
Base interval data	Real-time data that OA has lumped into 30-minute intervals. The Real-time subsystem summarizes IC data into 30-minute intervals and transfers it to the Historical subsystem, which proceeds to aggregate the base interval data into containers.
Business Communication Solutions and Integration (BCSI)	The Avaya support organization previously know as the Professional Services Organization (PSO). This organization provides professional services and networking consulting.
CDE	Common Desktop Environment, a windows-like desktop environment used with Solaris.
Container	Metadata that defines how data should be sifted and stored in the historical database. The term "container" can represent both the table definition as well as the data contained in the table.
Container aggregation job	Scheduled job that aggregates selected containers. You specify the aggregation period and select the containers in the Scheduled Jobs administration screen.
Container data purge job	Scheduled job that purge aggregated and archived data. You specify which data in the containers and archives to delete in the Scheduled Jobs administration screen.
Container filter	Container definitions that you customize. A filter determines which fields of the base interval data are aggregated into a container. It specifies the name, data fields and default values for each container.

Container limit	Limit or constraint that you set on your containers. This enhances data calculation performance and disk usage. You can configure the maximum number of containers and rules in the Container Archives administration screen.
Container profile	Includes the definition and the name of a container. Container profiles contain rules that detail what fields a container should have and what sort of data it should collect. Each container has a profile which has a filter that may contain from one to 100 rules.
Container rule	Defines which rows of data in the historical store should be collected. Each container has a profile and a profile may have from one to 100 rules. Also called filter rules or rules.
Coordinated Universal Time	Coordinated Universal Time (UTC). Formerly called Greenwich Mean Time (GMT). UTC reflects the time in the prime meridian and uses a 24-hour format. For example, it uses 14:00 to represent 2:00 p.m. OA stores data in UTC but converts the time to the local time of the client.
CORBA	Common Object Request Broker Architecture. CORBA is a way to create and manage distributed program objects in a network. It lets programs developed by different vendors or programs scattered throughout different servers communicate. A program in a client can request services from a program in a server without having to understand where the server is in a distributed network or what the interface to the server program is.
Current schema	The existing schema that is being used. The current schema is the pre-migration schema.
Daemon	A program that runs continuously in the background and handles periodic service requests. The daemon forwards the requests to other programs or processes them as appropriate.
Daily interval	A 24-hour shift that OA uses for real-time statistical reporting.
Data dictionary	A database about data and databases. The data dictionary holds the name, type, range of values, source, and authorization for access for each data element in the contact center's files and databases.
Data manager	An interface service that resides on a server where a Real-time subsystem is installed. The data manager receives events, maintains real-time status information, summarizes data into fixed thirty-minute intervals, and forwards the data to the forwarders, a set of Real-time subsystem services.
Data type	Category of data. Each type is a set of data with values that have predefined characteristics and has a specified range of values and a specific way of being processed by the computer and stored by the database.
Database check job	A job that inspects the overall state of the historical database. A database check job fine-tunes the database by scanning the database and its error logs, as well as updating the statistics on tables. It also reports inconsistent metadata and rolls over the error log file to prevent it from growing unbounded. It runs daily if enabled.

Default schema

Default schema	Schema that is pre-configured in OA. You can revert back to the pre-configured default schema if you decide to discard your changes. You need to migrate your data, however.
Detail data	<p>Historical data that cannot be aggregated.</p> <p>Detail data contains information about the work item, such as the customer ID, work item ID and the origination.</p>
Detail data purge job	Scheduled job that purges selected detail data. You select which detail data to purge in the Scheduled Jobs administration screen.
Disabled container	Container that is not collecting or aggregating data.
Disabled interface service	Data collection service that is not running.
Disabled job	A job that has been configured but is not activated to run.
Display name	A meaningful name associated with a value in the database. For example, instead of displaying the agent ID, OA Administration Client displays the agent name; so it will display " John Smith " instead of " 1021454540554 ."
EDU	Electronic Data Unit
Enabled container	Container that is collecting or aggregating data.
Enabled interface service	Data collection service that is running.
Enabled job	A job that will execute at scheduled times. See also disabled job.
Event	An activity or change of state that occurs in a contact center. Examples include: a change in port state, an agent logging in, or a call transfer.
Execution frequency	See recurrence.
External job	Custom-designed instruction set that specifies when certain processes should be executed. You can add an external job, whose scripts reside in the historical server, into OA Administration Client and schedule its execution.
Failed	Data collection status that indicates database errors.
Filter	See container filter.
Filter rule	See container rule.
Forwarder	An interface service that resides on CMS or Real-time subsystems. The forwarder transfers the data it receives to its corresponding recorder. When the recorder is not available, the forwarder buffers the detailed data until the recorder is on-line again.
FQDN	Fully-qualified domain name
GMT	<p>Greenwich Mean Time. Also known as UTC (Coordinated Universal Time). GMT reflects the time at the prime meridian and uses a 24-hour format. For example, it uses 14:00 to represent 2:00 p.m.</p> <p>OA stores data in UTC but converts the time to the local time of the client.</p>

historical database	Where historical data about your contact center is collected and stored.
historical server	The server where the Historical subsystem is installed.
Historical store	<p>Storage location where historical or long-term contact center performance information is stored in a database. Each historical store consists of a database table or a group of database tables. OA has 11 stores that accumulate a variety of report-related data from IC or ACD systems.</p> <p>The IC historical stores are:</p> <ul style="list-style-type: none"> ● Agent service class ● Agent state ● Agent reason code ● Reason code summary ● Service class summary ● Service class state ● Display names <p>The ACD historical stores are:</p> <ul style="list-style-type: none"> ● CMS agent summary ● CMS call work codes ● CMS skill summary ● CMS VDN summary ● CMS call history ● CMS display names
Historical subsystem	Along with the source subsystem, Real-time subsystem, Report subsystem, and CMS subsystem, the Historical subsystem constitutes the OA data collection system. The Historical subsystem pertains to all OA components and services that involve historical data.
IC	Avaya Interaction Center.
IDL	See <i>Interface Definition language</i> .
IIS	Internet Information Service, the Web server software for Windows.
Incomplete	Data collection status that indicates there is missing data and the container or archive is missing the data for at least one base interval.
Info store	Historical store with a group of database tables that keeps track of the display names for the data fields.
Interface definition language	A language used to communicate with various software components in a CORBA network.

Interface service

Interface service	Process that automatically collects data in the background while the system is up. An interface service handles periodic service requests and forwards the requests to other programs or processes as appropriate. The OA interface services include: <ul style="list-style-type: none">• Data manager• Report data server• Report Subsystem• The respective forwarders and recorders for each historical store.
Interface service name	The internal name that the OA Administration client uses to identify, enable and disable the services. You cannot change the names of the services.
Interval data	See base interval data.
Java database connectivity	Java Database Connectivity. An application program interface (API) specification for connecting Java programs to a database. The API lets you request statements in Structured Query Language (SQL) which are then sent to the program that manages the database.
JDBC	See Java database connectivity.
JDK	Java Developer's Toolkit
Job	Instruction set that specifies when certain processes should be executed. The Scheduled Jobs administration screen enables you to automate certain tasks such as data purges and aggregation.
JRE	Java RunTime Environment
Migration	The process by which OA alters the database tables to conform to a new schema and moves the data to the new tables.
MSMQ	Microsoft Message Queue. MSMQ is a software program that allows programs to send messages to other programs.
Navigation tree	Tree that appears on the left side of your OA Administration client interface, and contains various configuration tools for customizing and managing data collection.
No data	Data collection status that indicates no data exists. OA did not find matching records.
Not null	Clause in a column or field that specifies that the column or field cannot contain a null value. You must define a default value.
Null	Special value in the database which represents an unknown value. A null value is not the same as blank (which is a valid character), zero (which is a valid number), or a zero length string.
On-demand job	A scheduled job you define to execute tasks on specific data only once at a particular time or regularly on a recurring basis. An on-demand job is different from a system scheduled job in that it is limited in scope and applies to selected data. On-demand job types include:

	<ul style="list-style-type: none"> ● Aggregation ● Container purge ● Detail purge ● Data collection ● External
ORB	In distributed computing, an Object Request Broker (ORB) is an agent that dispatches requests to other agents.
Parameter	A piece of information, such as a file name, a coordinate, or a range of values, that is passed to a program by a user or another program.
Pending schema	A custom-defined schema that is not implemented until migration.
pid	See <i>Process ID</i> .
Process ID	Identification name or number for an OA process.
Purge	The deletion of selected container data or detail data.
Purge job	A job that deletes selected containers and detail data from the historical database. A purge job is different from a system-scheduled purge job in that it is more focused and deletes only particular pieces of data you specify in the Scheduled Jobs administration screen.
RAID	Redundant Array of Inexpensive Disks
Real-time subsystem	Along with the source subsystem, Historical subsystem, Report subsystem, and CMS subsystem, the Real-time subsystem constitutes the OA data collection system. The Real-time subsystem pertains to all OA components and services that involve real-time data.
Recorder	<p>An interface service that resides in the Historical subsystem. The recorder time stamps the data it receives from the forwarder and inserts the data into the historical database.</p> <p>There are up to 11 recorders, one for each historical store.</p>
Report subsystem	The self-contained OA reporting subsystem application programming interface (API) that provides an environment to create reports based on the OA real-time data. It is a subsystem that lets you develop servlet-based applications for Web-based reporting and monitoring for your contact center.
Reporting Framework (Stumbras) API	Provides a programming interface for report writers with useful functionality such as RTPA Service for the real-time data access and DB Pool Service for connecting the historical database.
Retention period	The length of time OA retains data.
Rule	See container rule.

Schema

Schema	The overall structure of the database tables that store information: user profile data, content metadata, or pure structured information. In the simplest case, a database schema has a single database table of user information. Each record (row) within this table might represent a unique customer, with each field (column) representing relevant customer information (address, city, phone number, and so on.). More complex schema would involve multiple database tables related to one another through a common unique identifier. Such relational database tables are necessary for more complex data schemas for performance and easier administration.
Select	To select an item, click the item's name or icon. Selected items appear highlighted on the screen.
Service	See <i>interface service</i> .
Service class	A logical category used to measure service levels and define goals for that work. A particular service class can consist of any combination of interaction source (such as call, fax, or email), customer class (such as Platinum, Gold, or Silver), or activity (such as new loan or account inquiry).
Source-CMS subsystem	OA subsystem that collects CMS historical data.
Source-EC subsystem	OA subsystem that collects data from Avaya IC.
Source-EC Bridge subsystem	OA subsystem that collects data from Business Advocate.
SQL	See <i>Structured Query Language</i> .
Status window	Window on the results screen that lets you view the status of elements such as your schemas or interface services that you have set up.
Store	See historical store.
String	A data type of a column in a table which is composed of a sequence of characters usually representing human-readable text. The column must be a contiguous set of alphanumeric characters that does not contain numbers used for calculations. Names, addresses and error messages are examples of strings.
Structured Query Language	Structured Query Language. The standard programming language for getting information from and updating a database. Queries let you select, insert, update, find out the location of data, etc.
Subsystem	<p>A major component that constitutes the OA data collection system. The available subsystems are:</p> <ul style="list-style-type: none">● Historical● Real-time● Report● Source (CMS, EC, and EC-Bridge)

Summary data	<p>Data that pertains to the performance of the contact center. While detail data tracks work items, summary data tracks agents and IVR systems. Summary data is also aggregated and, if configured, stored in containers and archives.</p> <p>These historical stores contain summary data:</p> <ul style="list-style-type: none"> ● Agent service class ● Agent state ● Service class summary ● Service class state ● CMS agent summary ● CMS call work codes ● CMS skill summary ● CMS VDN summary
Summary historical store	<p>A historical store that contains aggregated data. Available summary historical stores are:</p> <ul style="list-style-type: none"> ● Agent service class ● Agent state ● Service class summary ● Service class state ● CMS agent summary ● CMS call work codes ● CMS skill summary ● CMS VDN summary
Sun Java System Web Server	<p>The new product name for the Solaris Web Server, formerly Sun ONE Web Server, and before that, iPlanet.</p>
System scheduled aggregation job	<p>A job that aggregates base interval data. This job executes on every base interval, that is, in 30-minute increments, if enabled.</p>
System scheduled job	<p>A job that is executed on a system-wide level. This job applies to all the containers and data in the system. The following types of jobs are system scheduled jobs: aggregation, aggregation recovery, ACD display name collection, database check and database purge.</p> <p>See also on-demand jobs.</p>
System scheduled purge job	<p>A job that deletes container and detail data from the historical database according to the data retention limits defined in the Retention Periods administration screen. A system-scheduled purge job is different from on-demand purge jobs in that it executes on the entire system and not just on a particular set of data. This executes daily, if enabled.</p>

TNS

TNS Transparent Network Substrate

Tree A way of structuring information, where sublevels are shown as branches of a higher level. The navigation tree in OA Administration client contains a tree of configuration tools. Items on a tree are also referred to as nodes.

Unicode A character set that can accommodate the alphabet of most of the world's languages. Unicode can accommodate 65,536 different characters rather than just 256, and uses two bytes for each character rather than one.

UTC Coordinated Universal Time. Formerly called Greenwich Mean Time (GMT). UTC reflects the time in the prime meridian and uses a 24-hour format. For example, it uses 14:00 to represent 2:00 p.m.

OA stores data in UTC but converts the time to the local time of the client.

Widget A graphical user interface element that lets you interact with the application. Examples of widgets include drop-down lists, buttons, text boxes, and radio buttons.

Work item Data that describes the flow of work through a business process. This data may include details about the agents involved with the work, the amount of time the item spent in various queues, and any follow-up calls.

Workflow The flow of work in a business process; work travels from one point to another so that necessary tasks can be completed on that piece of work.

x-axis On graphical reports, the x-axis applies to the left-to-right labels of the report floors, left walls, and right walls.

y-axis On graphical reports, the y-axis applies to:

- the front-to-back labels on the report floor.
- the bottom-to-top labels on the report left walls and right walls.

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