



NICE PUBLIC SAFETY SOLUTIONS NICE INFORM AUDIO ANALYTICS TROUBLESHOOTING GUIDE

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1 Introduction

This guide provides helpful hints and solutions for troubleshooting NICE Inform Audio Analytics. It is aimed at all users who need to diagnose issues with the software components. It is advised that the latest version of this document appropriate to the installed version of NICE Inform is obtained from ExtraNICE <http://www.extranice.com/>

Issues relating to NICE Inform are not detailed in this guide. This is covered in the *NICE Inform Troubleshooting Guide* on ExtraNice or on the NICE Inform installation media.

2 Diagnosing issues with NICE Inform Audio Analytics

This section provides an overview of how to diagnose issues with NICE Inform Audio Analytics.

The solutions provided in this guide are categorized into the following areas:

- Setup / Configuration
- General application use (within NICE Inform)

Each solution consists of an overview of the problem (as seen from a user perspective), further detail including possible error messages from log files or the applications, possible root cause, and description of steps to mitigate the issue.

To use this guide, check the index for symptoms that match what you are seeing. If so, navigate to that solution and see if the further symptom section also matches. If you think this has precisely defined your issue, apply the resolution and see if the issue is resolved.

If you encounter an issue with NICE Inform Audio Analytics not included in this guide, consider the following to help diagnosis:

- **Effect** – what went wrong and what process caused you to find the issue? Screen shot and step by step description are always useful for you and NICE if the issue needs to be escalated.
- **Repeatability** – does the problem always occur in the same situation, or does it appear random?
- **Scope** – does the problem have an effect on the whole application or within a specific part?
- **Messages** – NICE Inform dialog messages help understand the issue.
- **Log files** – Inform client or server log files can provide valuable insights into issues.

2.1 Locating NICE Inform Audio Analytics log files

The NICE Inform Audio Analytics services log their diagnostic information to a specific location. This section details how to locate the log files on Microsoft Windows Server 2012 and 2008.

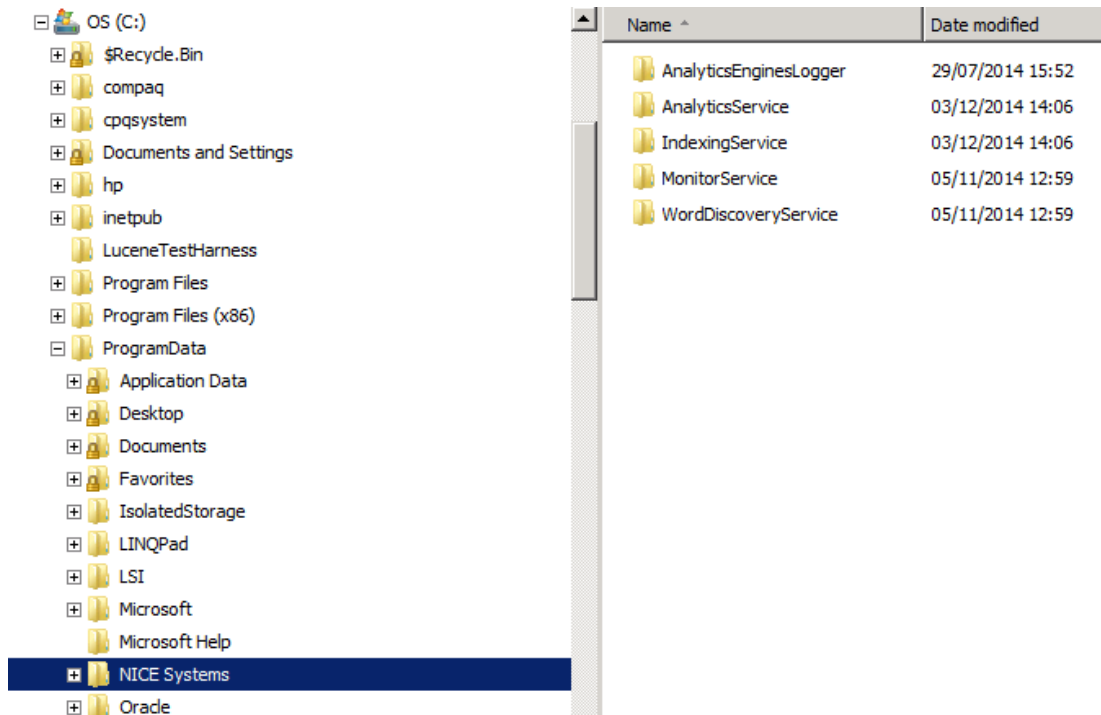
NOTE: The NICE Diagnostic Tool is the preferred method of collecting all of the NICE Inform Audio Analytics logs. It is provided by NICE Support and is also available on the NICE Inform installation media.

Details on setting the logging levels can be found in the [Debugging NICE Inform Audio Analytics](#) section of this document.

Figure 1 shows the location of all the folders which contain individual log files specific to each NICE Inform Audio Analytics service.

NOTE: All analytics logs are located on the C: drive, regardless of where the service has been installed.

Figure 1: Log files location (Microsoft Windows Server 2008 & 2012)



2.2 Log file configuration for NICE Inform Audio Analytics

Using the IndexingService log as an example, there are a number of log files plus the current file which is called **InformIndexingServer.log**. Each old log file has a number between 1 and 20, with 1 being the most recent. Once the current log file has reached its maximum size, the oldest file (e.g. **InformIndexingServer.log.20**) is deleted and all the subsequent text files are shifted up one in the list i.e. what was 4 becomes 5, 3 becomes 4 and so on, so that **InformIndexingServer.log** can become **InformIndexingServer.log.1**. A new empty **InformIndexingServer.log** file is created and all the latest log information is written to that file.

NOTE: By default a maximum of 20 log files are created.

3 Issues setting up NICE Inform Audio Analytics

This section identifies issues that may occur when installing and configuring NICE Inform Audio Analytics. It also provides extra information and potential solutions to these issues.

3.1 Port number in use error when installing NICE Inform Audio Analytics service

SYMPTOM

A similar error message (depending on the service you are installing) is displayed when installing an NICE Inform Audio Analytics service:

“The port number is already used by another Analytics server.”

CAUSE

The port number entered is a duplicate of another NICE Inform Audio Analytics service.

RESOLUTION

Enter a unique port number for the service into the **Port** text box.

The default port numbers are as follows:

- NICE Analytics - Analytics Service: **8096**
- NICE Analytics - Word Discovery Service: **8092**
- NICE Analytics - Indexing Service: **8094**

4 General Issues using NICE Inform Audio Analytics

This section identifies general issues that may occur when using NICE Inform Audio Analytics within the NICE Inform application. It also provides extra information and potential solutions to these issues.

4.1 A call is not returned from a word search, yet the word is spoken within the audio

SYMPTOM




You listen to a call and can hear a word spoken, and yet this call was not returned when you did a word search for this term.

CAUSE

NICE Inform uses statistical modelling to match spoken words and as such is not guaranteed to match every word. Detection accuracy is generally around 60-70%. However, this can be affected by factors such as audio level, speaker accent, speaker clarity, audio quality, background noise etc.

It is also possible that either the resource was not being analyzed during the time of the search (if recently reconfigured), or the **NICE Analytics - Analytics Service** has not yet processed the audio.

RESOLUTION

- ▶ To check if the resource is being analyzed and if the NICE Analytics - Analytics Service has processed the audio:
 1. Expand the **Audio Analytics**  node and then expand the **Analytics Servers**  node.
 2. Select the **Analytics Server**  node and click the **Resources** tab. The **Resources** page is presented.
 3. Within the **Resources** table check the following information:
 - **Added On** – the date the resource was added to the analytics server.
 - **Last item processed** – the date the last item was processed on this resource.

4.2 NICE Inform API user account has been locked

SYMPTOM

In NICE Inform System Administration, the analytics status displays the following message:

“Login failed using the specified NICE Inform API user details”

The NICE Inform Server logs display the following errors:

2014-09-23 14:57:11,285 [47] ERROR Nice.Inform.Server.LoginServer. [] -
[LoginServer.CheckValidLogin] CheckValidLogin: User account '**API user account name**'
bad password count exceeded, disabling







2014-09-23 14:57:26,261 [49] ERROR Nice.Inform.Server.LoginServer. [] -
[LoginServer.CheckValidLogin] CheckValidLogin: User account '**API user account name**' is
automatically disabled

NOTE: For help locating the NICE Inform server log files, refer to the *NICE Inform Troubleshooting Guide*.

CAUSE

The NICE Inform Analytics servers use the NICE Inform API to obtain calls and user account has been locked due to the Analytics Service attempting to connect to the NICE Inform API user too many times with the incorrect password.

RESOLUTION

- ▶ To update the NICE Inform API user account:
 4. Within NICE Inform, navigate to the **System Administration** application. In the tree pane, expand the **Recording Systems**  node and then expand the **Site**  node.
 5. Expand the **Audio Analytics**  node and then expand the **Analytics Servers**  node.
 6. Select the **Analytics Server**  node and click the **General** tab. The **General** page is presented.
 7. Select the correct username from the **NIAPI username** drop down list and enter password within the **NIAPI password** text box.
 8. Click the **Save** button.
 9. Navigate to the **User Administration** application. In the tree pane, select the **All Users**  node.
 10. Double-click the required NICE Inform API user from the list in the right-hand panel and click the **Inform User** tab.
 11. Uncheck the following options:
 - User permanently locked out
 - User automatically locked out
 12. Click the **Save** button.
 13. Log on to the server running the **NICE Analytics - Analytics Service** and restart it.

4.3 The Analytics server cannot log in to the NICE Inform server

SYMPTOM






The following analytics server status message is displayed in the table on the Analytics Servers page within NICE Inform:

“Login failed using the specified NICE Inform API user details”

CAUSE

The NICE Inform Analytics servers use the NICE Inform API to obtain calls and incorrect password has been entered for the NICE Inform API user.

RESOLUTION

- ▶ To ensure the Analytics server can log in to the NICE Inform server:
 1. Within NICE Inform, navigate to the **System Administration** application. In the tree pane, expand the **Recording Systems**  node and then expand the **Site**  node.
 2. Expand the **Audio Analytics**  node and then expand the **Analytics Servers**  node.
 3. Select the **Analytics Server**  node and click the **General** tab. The **General** page is presented.
 4. Enter the correct password for the NICE Inform API user in the text box provided.
 5. Click the **Save** button.
 6. Log into the server running the **NICE Analytics - Analytics Service** and restart the service.

4.4 No analytics resources are available for selection


SYMPTOM

In NICE Inform System Administration, there are no resources available for selection within the resources tab of the Analytics server.






CAUSE

The user group that the NICE Inform API user resides has not been given access to any resources.

RESOLUTION

- ▶ To attach resources to the user group that the NICE Inform API user resides:
 1. Within NICE Inform, navigate to the **User Administration** application.
 2. Expand the **All users**  node and select the user group where the NICE Inform API user resides.

NOTE: If no user group exists, one needs adding and the API user needs adding to the group. Refer to the NICE Inform Help to add a new user group.

3. Click the **Resources** tab and click the **View all resources** link.
4. Click the **Attach** button.
5. Use the **Attach Resources Wizard** to attach resources that you require adding for the Analytics server to this user group.
6. Navigate to the **System Administration** application. In the tree pane, expand the **Recording Systems**  node and then expand the **Site**  node.
7. Expand the **Audio Analytics**  node and then expand the **Analytics Servers**  node.
8. Select the **Analytics Server**  node and click the **Resources** tab.
9. Click the **Add** button.
10. Use the **Audio Analytics Resources Wizard** to add the resources that you require for the Analytics server.

4.5 NICE Inform API user does not have access to all specified resources

SYMPTOM


The following Analytics server status message is displayed in the table on the Analytics Servers page within NICE Inform:

“The NICE Inform API user does not have access to all specified resources”

CAUSE

The NICE Inform API user account has had its access to the analytics resources removed.

RESOLUTION

- ▶ To attach resources back to the NICE Inform user account:
 1. Within NICE Inform, navigate to the **User Administration** application.
 2. Expand the **All users**  node and select the user group where the NICE Inform API user resides.

NOTE: If no user group exists, one needs adding and the API user needs adding to the group. Refer to the NICE Inform Help to add a new user group.

3. Click the **Resources** tab and click the **Attach** button.
4. Use the **Attach Resources Wizard** to attach resources that you require adding for the Analytics server to this user group.

5. If the Analytics server status message has not changed to “OK”, stop the Analytics service. The Analytics Monitor service restarts the Analytics service.

4.6 NICE Inform cannot connect to the Analytics server

SYMPTOM






The following Analytics server status message is displayed in the table on the Analytics Servers page within NICE Inform:

“Unable to connect to the Analytics Server”

CAUSE

The NICE Inform server cannot connect to the Analytics server most likely due to a configuration issue.

RESOLUTION

- ▶ To ensure the NICE Inform server connects to the Analytics server:
 1. Within NICE Inform, navigate to the **System Administration** application. In the tree pane, expand the **Recording Systems**  node and then expand the **Site**  node.
 2. Expand the **Audio Analytics**  node and then expand the **Analytics Servers**  node.
 3. Select the **Analytics Server**  node and click the **General** tab. The **General** page is presented.
 4. Check that all the settings for the Analytics server are correct.
 5. Log on to the server running the **NICE Analytics - Analytics Service** and confirm that it is running. If so, stop the service. The NICE Analytics - Analytics Monitor Service restarts the NICE Analytics - Analytics Service.

4.7 NICE Inform cannot connect to the Index server

SYMPTOM

The following Analytics server status message is displayed in the table on the Analytics Servers page within NICE Inform:

“Unable to connect to the Index Server”






The NICE Inform Server logs display the following error:

```
2015-01-15 10:24:26,745 [QueryThread8] ERROR  
Nice.Inform.Server.Query.AudioAnalyticsRetriever. [] -  
[AudioAnalyticsRetriever.GetAnalyticResults] Exception getting audio analytics results from  
index server
```

CAUSE

The NICE Inform server cannot connect to the Index server most likely due to a configuration issue.

RESOLUTION

- ▶ To ensure the NICE Inform server connects to the Index server:
 1. Within NICE Inform, navigate to the **System Administration** application. In the tree pane, expand the **Recording Systems**  node and then expand the **Site**  node.
 2. Expand the **Audio Analytics**  node and then expand the **Analytics Servers**  node.
 3. Select the **Analytics Server**  node and click the **Index** tab. The **Index** page is presented.
 4. Check that all the settings for the Index server are correct.
 5. Log on to the server running the **NICE Analytics - Indexing Service** and confirm that it is running. If so, stop the service. The NICE Analytics - Analytics Monitor Service restarts the NICE Analytics - Indexing Service.

4.8 NICE Inform cannot connect to the Word Discovery server

SYMPTOM






The following Analytics server status message is displayed in the table on the Analytics Servers page within NICE Inform:

“Unable to connect to the Word Discovery Server”

CAUSE

The NICE Inform server cannot connect to the Word Discovery server most likely due to a configuration issue.

RESOLUTION

- ▶ To ensure the NICE Inform server connects to the Word Discovery server:
 1. Within NICE Inform, navigate to the **System Administration** application. In the tree pane, expand the **Recording Systems**  node and then expand the **Site**  node.
 2. Expand the **Audio Analytics**  node and then expand the **Analytics Engines**  node.
 3. Select the required **Word Discovery Engine**  node.
 4. Click the **General** tab and the **General** page is presented.
 5. Check that all the settings for the Word Discovery engine are correct.
 6. Log on to the server running the **NICE Analytics - Word Discovery Service** and confirm that it is running. If so, stop the service. The NICE Analytics - Analytics Monitor Service restarts the NICE Analytics - Word Discovery Service.

4.9 Index server error when searching for calls with analytics detections in Reconstruction

SYMPTOM

The following search error is displayed within NICE Inform Reconstruction:



“An error occurred while searching this data source. Some results may be missing from this data source”



CAUSE


The NICE Inform server cannot connect to the Index server.

RESOLUTION

▶ To ensure the NICE Inform server connects to the Index server:

1. Within NICE Inform, navigate to the **System Administration** application. In the tree pane, expand the **Recording Systems**  node and then expand the **Site**  node.

NOTE: Expand the **Audio Analytics**  node and then expand the **Analytics Servers**  node.

2. Select the **Analytics Server**  node and click the **Index** tab. The **Index** page is presented.
3. Check that all the settings for the Index server are correct.
4. Log into the server running the **NICE Analytics - Indexing Service** and check that it is running. If so, stop the service. The NICE Analytics - Analytics Monitor Service restarts the NICE Analytics - Indexing Service.

4.10 NICE Recording C: drive may become full after a period of time running analytics

SYMPTOM

The NICE Recording C: drive may become full after running NICE Inform Audio Analytics for a period of time depending on the level of analyzed channel hours.

The default cache location for NICE Recording audio is:

C:\ProgramData\Cybertech\MediaManager

NOTE: This could affect recording if not resolved.

CAUSE

Retrieving audio via the NICE Recording CoreAPI (e.g relaying and analyzing audio) creates a temporary files cache on the C: drive.

The files in the cache are not critical for operation, but this cache is not managed. The management of the cache is a future feature.

RESOLUTION

- ▶ To manage the files within the cache:
 1. On the NICE Recording server navigate to the following location:
C:\ProgramData\Cybertech\MediaManager
 2. Select all and delete the files.

4.11 Word Discovery Engines are not successfully initialized on Microsoft Windows Server 2012

SYMPTOM

Calls are being downloaded by the Analytics Server but are not processed by Word Discovery Engines running on Microsoft Windows Server 2012.

The Word Discovery Service logs display the following error:

```
2015-02-20 07:28:24,861 [6] ERROR
Inform.AudioTranscriptionService.TranscriptionEngineManager. [] -
[TranscriptionEngineManager.CreateEngines] Transcription engine instance has failed to
initialise...
```

The Analytics Engines Logger logs display the following error:

```
2015-02-20 07:28:24,520 | INFO | 6 | | AnalyticsEnginesWrapper | Configurator..ctor:
Configurator constructor finished successfully
```

```
2015-02-20 07:28:24,861 | ERROR | 6 | | AnalyticsEnginesWrapper | Engine..ctor: Unknown
Error occured at Engine constructor | System.AccessViolationException: Attempted to read
or write protected memory. This is often an indication that other memory is corrupt.
```

```
at AnalyticsEnginesWrapper.EngineFacade.SAE_CreateEngine(AnalyticEngines
engineType, Void* config, Void*& engine, ResultClass** output)
```

```
at AnalyticsEnginesWrapper.Engine..ctor(AnalyticEngines engType, Configurator cfg,
ResultClass& outResults)
```

CAUSE

The .NET Framework 3.5 Feature is not installed.

RESOLUTION

Install the **.NET Framework 3.5** Feature on the server running the Word Discovery Service and then restart the server.

5 Debugging NICE Inform Audio Analytics

This section details how to change the level of detail logged and size of log files for each NICE Inform Audio Analytics service for debugging purposes.

- To locate the NICE Inform Audio Analytics logs, refer to the [Locating NICE Inform Audio Analytics log files](#) section.

5.1 Setting log detail level

By default the level of detail (Level value) is set to “**INFO**”. This means that the NICE Inform Audio Analytics services logs include general operational, error and warning information. If a particular issue arises when using NICE Inform Audio Analytics which is possible to replicate, change the level of detail to “**DEBUG**”. When going back to the generated logs all debugging information is recorded.

- ▶ To change the log detail for all NICE Inform Audio Analytics services logs:
 1. Browse to one of the following locations:
 - **Analytics service:** *C:\Program Files (x86)\NICE Systems\Nice Inform\Analytics*
 - **Indexing service:** *C:\Program Files (x86)\NICE Systems\Nice Inform\Analytics\indexing*
 - **Monitor service:** *C:\Program Files (x86)\NICE Systems\Nice Inform\Analytics\Monitor*
 - **Word Discovery service:** *C:\Program Files\NICE Systems\Nice Inform\Analytics\WordDiscovery*
 2. Using the Analytics service as an example, open the following file using Notepad: **Inform.AnalyticsServiceHost.exe.config** and scroll down to a section resembling that shown in [Figure 2](#).

Figure 2: Setting log detail level

```
<level value="INFO"/>
<appender-ref ref="RollingFile"/>
<appender-ref ref="ConsoleAppender"/>
<appender-ref ref="TraceAppender"/>
</root>
<!-- Settings for the loggers for each class that uses its own logger. -->
<!-- The level value can be changed to DEBUG to show all logging info for that
class. -->
<!-- Level values are DEBUG, INFO, WARN, ERROR -->
<logger name="Inform.AnalyticsService.CallManagement.CallTranscriber">
<level value="INFO"/>
</logger>
<logger name="Inform.AnalyticsService.ConnectionManagement">
<level value="INFO"/>
</logger>
<logger name="Inform.AnalyticsService.ResourceProgress">
<level value="INFO"/>
</logger>
</log4net>
```

3. There may be several entries for level (**<level value="INFO">**). Change all of them to the same setting unless you are given specific instructions by NICE Systems support.

NOTE: When you have completed your diagnostics ensure the level of detail is set back to its original value as leaving it in **"DEBUG"** mode rapidly fills the log files.

5.2 Setting log size

▶ To control the number and size of each log file:

1. Browse to one of the following locations:
 - **Analytics service:** *C:\Program Files (x86)\NICE Systems\Nice Inform\Analytics*
 - **Indexing service:** *C:\Program Files (x86)\NICE Systems\Nice Inform\Analytics\indexing*
 - **Monitor service:** *C:\Program Files (x86)\NICE Systems\Nice Inform\Analytics\Monitor*
 - **Word Discovery service:** *C:\Program Files\NICE Systems\Nice Inform\Analytics\WordDiscovery*
2. Using the Analytics service as an example, open the following file using Notepad: **Inform.AnalyticsServiceHost.exe.config** and scroll down to a section resembling that shown in [Figure 3](#).

Figure 3: Setting log size

```
<appender name="RollingFile" type="log4net.Appender.RollingFileAppender">
;
<lockingModel type="log4net.Appender.FileAppender+MinimalLock" />
<file value="{(ProgramData)}\Nice
Systems\AnalyticsService\Logs\InformAnalyticsService.log"/><appendToFile value="true"/>
<maximumFileSize value="10000KB"/><maxSizeRollBackups value="20"/><param name=
"RollingStyle" value="Size"/><layout type="log4net.Layout.PatternLayout">
<param name="ConversionPattern" value="%tdate [%t] %-5p %c [] - %m%n"/>
</layout>
</appender>
```

3. Set the required file size of the log file. The file size of each of the log files can be changed by editing the **maximumFileSize** KB value. Change the value to that desired and save the changes.

NOTE: By default, log files are a maximum of 1000 KB in size.

TIP: NICE recommends a log file size of 20000 KB when using DEBUG level logging.

4. Set the number of log files. The number of log files created is set by editing the **maxSizeRollBackups** value. Change the value to that desired and save the changes.

NOTE: By default, a maximum of 20 log files are created.

5. Once updated ensure that all changes are saved to the text file.



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