ARWATCHDOG

8/12/2015

The purpose of **AR**WatchDog is to report on software usage throughout an organisation.

Some software is quite expensive and ideally you want to ensure that the software is deployed to people that will gain the greatest benefit from having the software installed on their computer. Likewise if the software is not being used on a computer then the software should be removed and installed elsewhere.

ARWatchDog tracks software as it is opened and closed on a computer. These details are written back to a central store. The central data can then be analysed in respect to:
- Users
- Computers
- Total Software in Use at any time of day
- Maximum numbers of software in use and how often this occurs

With this information it is much easier to make decisions about:
- Which users do not use the software frequently and therefore should have the software removed from their computers
- Which computers rarely run the software and therefore could have the software removed.
- Looking at how peak demand periods and low demand periods could be better balanced. e.g., If Thursdays are a peak Revit day and Mondays are a low demand day, can staffing be altered to balance these?
- Whether license numbers are too high or too low. If peak numbers (licenses held) are consistently reached e.g., for 20 hours a week, extra license may be needed. If peak numbers are much less than the total number of licenses held then some licenses could be retired.

ARWatchDog relies on a "service" which must be installed on each computer to have processes monitored. This requires a network license file as well as a configuration file that defines what is monitored and where log files should be written.

Once data has been generated **AR**WatchDog-Analyse is used to process the log files and create summaries of the information.

INSTALLING ARWATCHDOG

Folder Structure for **AR**WatchDog

ARWatchDog requires several shared network folders to function. As part of the install process subfolders are created under your selected central folder. This central folder should have full read/write permissions for all computers and users.

If your central folder were name "ARWatchDog" the following structure would result:
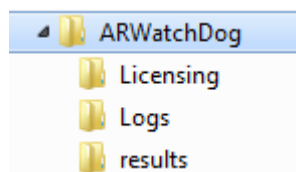
The root folder "ARWatchDog" should be in a network share (e.g., \\server\share\ARWatchDog"). The root should have full read/write permissions enabled for all computers and these should propagate to the sub folders.

Licensing:
Contains the "license???.xml" file and the control file "ARWatchDogLicenses.txt"

NOTE: The license???.xml" also needs to be in the "C:Program Files\ARWatchDog" folder on each computer using ARWatchDog.

Logs:
The Central Log File Store folder. All computer process log files will be copied here.

Results:
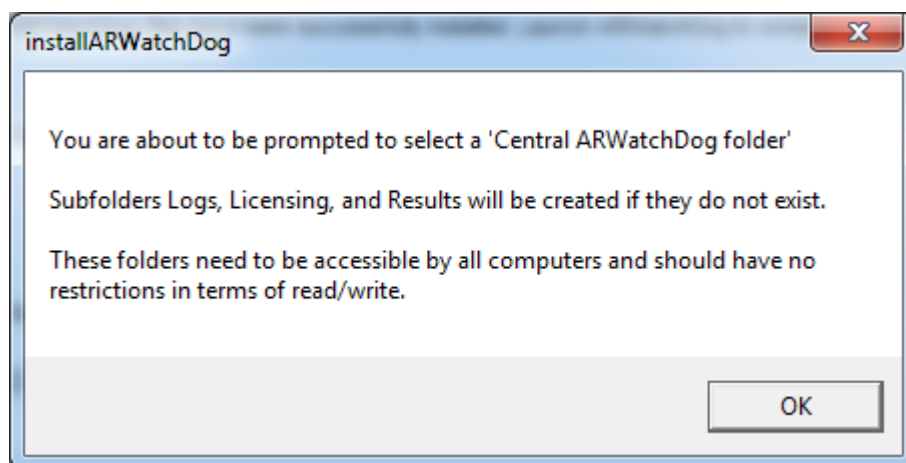The location where analysis results are written.

To install ARWatchDog run the install executable **"InstallARWatchDog.exe"**.

This will:
- Create the folder "C:\Program Files\ ARWatchDog"
- Install and activate the ARWatchDog service
- Add ARWatchDog to your list of "Programs". This will contain an uninstall option as well as the ARWatchDog-Analyser
- Start the ARWatchDog-Analyser to let you request a trial license or request a purchased license.

Central Store

During the install process you will be asked to select a **Central Store** location. This is a folder accessible by all computers i.e., with full read/write capabilities. Sub folders Logs, Licensing, and Results will be created below this folder if they do not exist.

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installARWatchDog   ✕

You are about to be prompted to select a 'Central ARWatchDog folder'

Subfolders Logs, Licensing, and Results will be created if they do not exist.

These folders need to be accessible by all computers and should have no restrictions in terms of read/write.

OK

Note: The Central Log File Store only has logs posted to it when certain triggers occur. Before this takes place the process logs are stored in the local log file, "ARWD.log" file which is in the "C:\Windows\Temp" folder. Central logs are only created when the ARWatchDog Service is stopped, the computer is shutdown, or Midnight occurs.
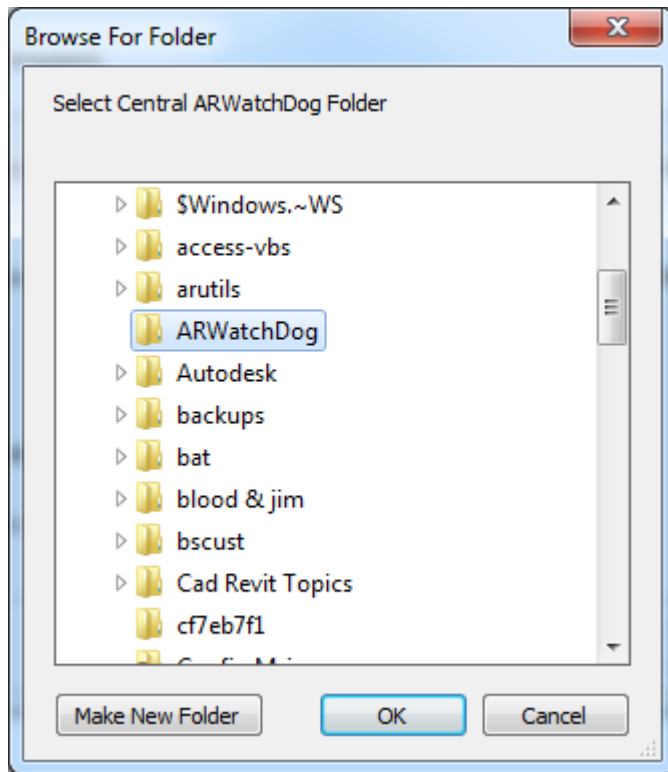
Selecting a Central Store folder
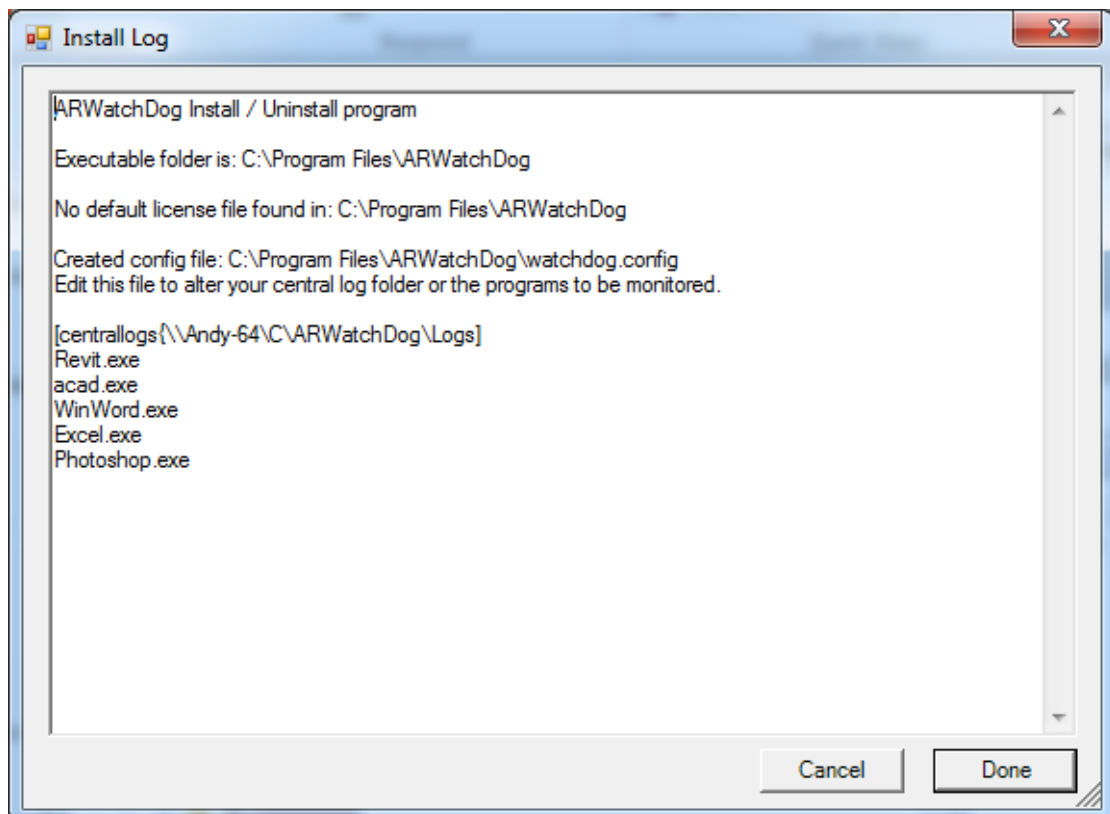
The install log. Note that the file watchdog.config has been created with the "CentralLog" folder set, as well as a number of default programs set for monitoring. This file can later be edited by notepad to add/remove programs for monitoring or to alter the central store.
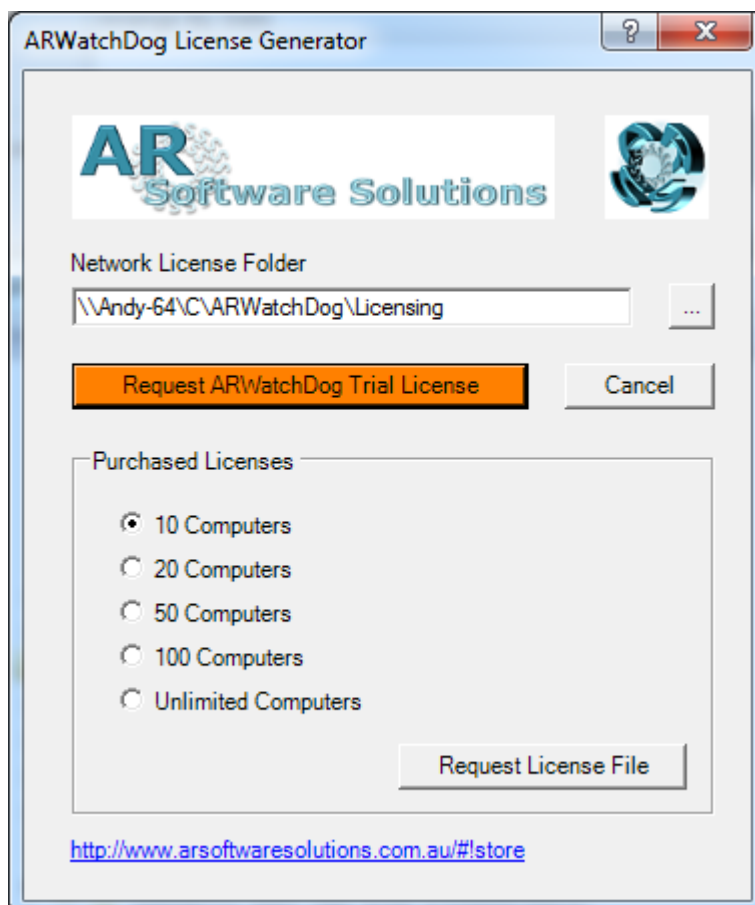
Once the final screen has been exited the **AR**WatchDog-Analyse program will be started and you will be prompted to generate a trial license / full license.

User details form for a trial license request

License / Trial License request form. The network license folder has been set to the "Licensing" folder created by the earlier part of the install. Note that you can change this to any folder.

Network License Folder

This is a folder that is accessible by all your computers and has full read/write permissions set. This folder monitors how many computers are running **AR**WatchDog and will only allow you to run as many as you have purchased.

WARNING: Choose this folder carefully as a new license would need to be issued if you change your mind!

Request AR WatchDog **Trial License**

Generate a trial license. This should open your email program and include details to send to AR Software Solutions.

Note: If your email program does not open, please send the "request*.xml" file located in "C:\Program Files\ **AR**WatchDog" to info@arsoftwaresolutions.com.au.

Request License File

Select the "Network License Folder" and the number of licenses you have purchased. An email will be generated to request your license file. A license file will be returned once it has been confirmed and processed.

Completing the install process:

Edit watchdog.config:

Once you have sent off your license request you may want to edit the file "watchdog.config" to alter the programs that are monitored. Do this using "Notepad.exe".

Note: If you wish to deploy an updated watchdog.config place the updated file in the **Central Log File Store** (Logs) folder and this change will be propagated to all computers.

Note: Place your watchdog.config file in the same folder as the Installer program and this will be copied when you run the installer for other computers.

The License????.xml file:

When you receive this file place it in "c:\program files\ARWatchDog" and also the "Network License Folder".

Note: Once the license file has been installed on all computers you can update the license files on all computers by placing the new file in the "Network Licensing folder" (ARWatchDog\Licensing if using the default setup).

Note: Place your License???.xml file in the same folder as the Installer program and this will be copied when you run the installer for other computers.

Automating the FULL install for other computers

Once you have your watchdog.config file and license????.xml files you can place these in the same folder as the installer executable and these will be copied during the install. You therefore avoid the prompts about the "central store folder" or the network licensing folder.

*Automating the **ARWatchDog** service install*

It is possible to just install the **AR**WatchDog service on a computer. Simply copy the files:

- **AR**WatchDog.Exe
- Watchdog.config

- License????.xml

to a folder on the target computer. For consistency use the folder "C:\Program Files\ ARWatchDog".

Executing ARWatchDog.exe will then install and start the "ARWatchDog" service.

Note: To uninstall ARWatchDog.exe installed by this method from the command line run the command:
- ARWatchDog.exe /u

ACTIVATING / LICENSING ARWATCHDOG

ARWatchDog requires a license file to run. Trial license files can be obtained to test the software before purchasing. Trial licenses are restricted to a number of computers for a defined trial period. The first time you run the ARWatchDog-Analyser program you will be asked to **request a trial license**. You will need to send this to AR Software Solutions and await a licence???.xml file. This license file should be placed in "c:\Program Files\ARWatchDog" on all computers.

NOTE: To be prompted for a new license file, delete the "license???.xml" and "request???.xml" files in the "C:\Program Files\ARWatchDog" folder.

WATCHDOG.CONFIG – DEFINING WHAT TO WATCH

ARWatchDog can watch all processes that start and stop on a computer however this would provide a great deal of useless information. Typically you will be interested in a number of specific executables, e.g., AutoCAD, Revit, Photoshop, Microsoft Project. These can be defined in the configuration file by referring to the name of the executable, e.g. for Revit this is Revit.exe.

The configuration file allows you to:
- Specify the executables to be "Watched"
- Specify the central folder where log files will be stored [central] keyword

Example WATCHDOG.Config file

[centrallog{\\myserver\share\ARWatchDog\logs]
Revit.exe
Word.exe
Photoshop.exe

ARWATCHDOG-ANALYSE - ANALYSING THE DATA

Once you have data from a number of computers you will want to analyse the gathered data. Start the program from the start bar or use the program with command line options.
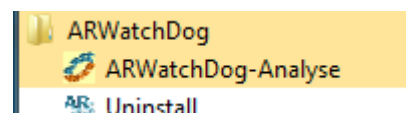
You will need to specify the log files to be processed, where the results are to be written, and also which reports you want generated.
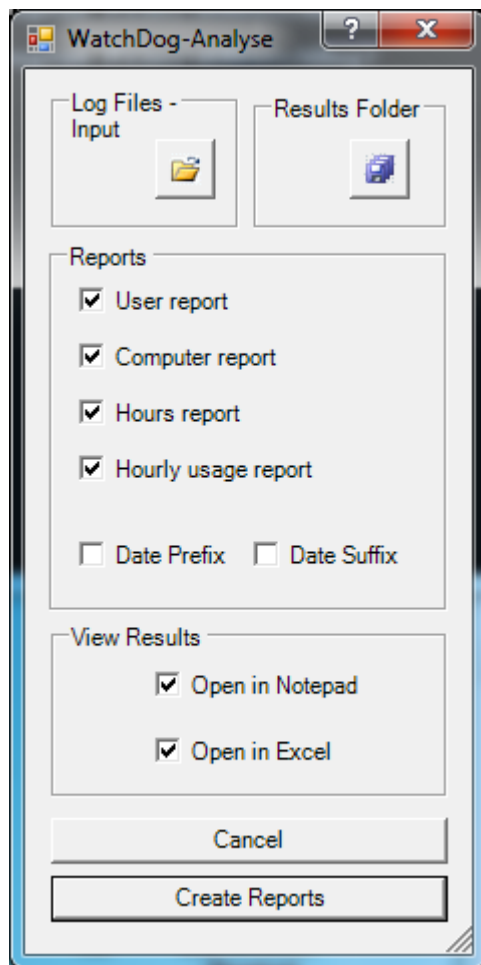
The **AR**WatchDog-Analyse *dialog*

Log Files Input
Allows you to select one or more log files from the Central Log File Store to be processed.
Each computer has a new log file created each day and therefore you may want to select
quite a number of log files for processing.

Results Folder
The folder where results will be written. Typically "ARWatchDog\Results".

Reports

User / Computer / Hours / Hourly
Refer below for more details.

Note: All reports use "tab" delimited files and can therefore be opened in Excel.

Date Prefix / Date Suffix
Add a date as a prefix or suffix to the generated reports. The dates are reverse date
format i.e., yyyymmdd

View Results

Open in Notepad
Open the results files in Notepad

Open in Excel
Open the results in Excel

Create Reports
Generate the selected reports

REPORT TYPES

User Report

This report will list software usage (total hours) by USER for the period of the record files.

	A	B	C	D	E
1	User	Software	Version	Hours	Bar Graph
2					
3	Andy	Notepad	6.1.7600.16385	8:00:24	--------
4	Andy	REVIT	14.0.7157.6000	1:00:28	-
5	Andy	REVIT	15.0.7157.6000	0:45:28	
6	Andy	WINWORD	14.0.7157.5000	1:00:08	-
7					
8	Jim	Autocad	6.1.7600.16385	26:00:10	-------------------------
9	Jim	Notepad	6.1.7600.16385	2:00:28	--
10	Jim	WINWORD	14.0.7157.5000	3:00:16	---
11	Jim	WINWORD	14.0.7157.6000	2:00:56	--

User/Software/Version
Too obvious to comment on

Hours
The total hours a user is using the software. Note that multiple copies of the same software, e.g., running two copies of Revit 2015 results in this count being considered as a single license.

Bar Graph
This is a simple "Bar Graph" giving a visual queue as to the hours a user is using the license.

Computer Report

This report will list software usage (total hours) by COMPUTER for the period of the record files. This ignores which user opened the software.

	A	B	C	D	E	
1	Computer	Software	Version	Hours	Bar Graph	
2						
3	Andy-32	Notepad	6.1.7600.16385	4:00:14	----	
4						
5	Andy-64	Notepad	6.1.7600.16385	4:00:10	----	
6	Andy-64	REVIT	14.0.7157.6000	1:00:28	-	
7	Andy-64	REVIT	15.0.7157.6000	0:45:28		
8	Andy-64	WINWORD	14.0.7157.5000	1:00:08	-	
9						
10	Jim-64	Autocad	6.1.7600.16385	26:00:10	-------------------------	
11	Jim-64	Notepad	6.1.7600.16385	2:00:28	--	
12	Jim-64	WINWORD	14.0.7157.5000	3:00:16	---	
13	Jim-64	WINWORD	14.0.7157.6000	2:00:56	--	

Computer/Software/Version
Too obvious to comment on

Hours

The total hours software is active on a computer. Note that multiple instances of the same software is only counted once, e.g., running two copies of Revit 2015 only gives a single count.

Bar Graph

This is a simple "Bar Graph" giving a visual queue as to the hours a computer is running the specified software.

Hours Report

This report will list system wide software usage (total hours) for the period of the log files. Each version of software will be listed. Where two or more versions are being used a total for each version as well as a total for all versions will be given.

	A	B	C	D
1	Software	Version	Hours	Bar Graph
2				
3	Autocad	6.1.7600.16385	26:00:10	-------------------------
4				
5	Notepad	6.1.7600.16385	10:00:52	----------
6				
7	REVIT	14.0.7157.6000	1:00:28	-
8	REVIT	15.0.7157.6000	0:45:28	
9	REVIT	TOTAL	1:45:56	-
10				
11	WINWORD	14.0.7157.5000	4:00:24	----
12	WINWORD	14.0.7157.6000	2:00:56	--
13	WINWORD	TOTAL	6:01:20	------
14				

Software/Version

Too obvious to comment on

Hours

The total hours software is being used system wide. Note: Running two or more instances of software on a computer results in a single count, e.g., two instances of Revit 2015 results in a single count.

Bar Graph

This is a simple "Bar Graph" giving a visual queue as to the hours the software is in use.

Hourly usage report

This report lists each software based on the **number of times a certain number of licenses are in use**, e.g., 1 AutoCAD license is in use in an hour period 10 times, 2 AutoCAD licenses are in use in an hour 15 times, etc.

Additionally this report will list the number of licenses in use for each software **hour by hour** for the period of the record files.

	A	B	C	D	E
1	Software	Version	InUse in an Hour	Occurrence	Bar Graph
2					
3	Autocad	6.1.7600.16385	1	28	--------------------------
4					
5	Notepad	6.1.7600.16385	1	4	----
6	Notepad	6.1.7600.16385	2	1	-
7	Notepad	6.1.7600.16385	3	2	--
8					
9	REVIT	14.0.7157.6000	1	2	--
10	REVIT	15.0.7157.6000	1	2	--
11					
12	WINWORD	14.0.7157.5000	1	3	---
13	WINWORD	14.0.7157.5000	2	2	--

Number of hours that X license are in use

Software/Version
Too obvious to comment on

InUse in an Hour
This is the total number of licenses in use in an hour

Occurrence
The number of times X number of licenses are in use in an hour

Bar Graph

This is a simple "Bar Graph" giving a visual queue as to the hours the software is in use.

	A	B	C	D
16	Date	Software	Count	Bar Graph
17				
18	**Autocad**			
19	Monday, 5 October 2015 4:00:00 PM	Autocad	1	-
20	Monday, 5 October 2015 5:00:00 PM	Autocad	2	--
21	Monday, 5 October 2015 6:00:00 PM	Autocad	3	---
22	Monday, 5 October 2015 7:00:00 PM	Autocad	3	---
23	Monday, 5 October 2015 8:00:00 PM	Autocad	3	---
24	Monday, 5 October 2015 9:00:00 PM	Autocad	2	--
25	Monday, 5 October 2015 10:00:00 PM	Autocad	1	-
26				
27	Tuesday, 6 October 2015 6:00:00 PM	Autocad	1	-
28	Tuesday, 6 October 2015 7:00:00 PM	Autocad	1	-
29	Tuesday, 6 October 2015 8:00:00 PM	Notepad	1	-
30				
31	**REVIT**			
32	Monday, 5 October 2015 3:00:00 PM	REVIT	1	-
33	Monday, 5 October 2015 3:00:00 PM	REVIT	1	-
34	Monday, 5 October 2015 4:00:00 PM	REVIT	1	-
35	Monday, 5 October 2015 4:00:00 PM	REVIT	1	-
36	Monday, 5 October 2015 5:00:00 PM	REVIT	1	-
37	Monday, 5 October 2015 5:00:00 PM	REVIT	1	-
38				
39	**WINWORD**			
40	Monday, 5 October 2015 2:00:00 PM	WINWORD	2	--
41	Monday, 5 October 2015 3:00:00 PM	WINWORD	2	--

Hour by hour report for license usage

Command Line Options

Use **AR**WatchDog-Analyser from the command line to generate reports. This could be setup as a scheduled task depending on your needs.

Usage:

ARWatchDog-Analyse.exe /eExportFolder [/wWild] [/fInputLogFile] [/u] [/c [/h] [/s]

> /e - Export Folder e.g., /ec:\temp\logs
> /f - Input file (Multiple) e.g. /fc:\temp\1.log /f:c:\temp\2.log etc.
> /w - Wild file specify e.g., /wc:\temp*.log
> /u - Create user report
> /c - Create computer report
> /h - Create hours report
> /a - Create hourly / summary analysis
> /p - Prefix file names with creation date
> /s - Suffix file names with creation date

UNINSTALLING ARWATCHDOG

To uninstall **AR**WatchDog simply select the "**Uninstall**" option under the "**AR**WatchDog" program entry.
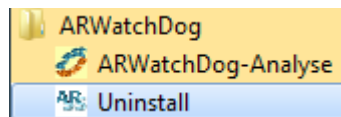
UNINSTALLING THE AR**WATCHDOG** SERVICE

To uninstall the **AR**WatchDog service from a computer simply run the command with a "/U" argument:

- ARWatchDog.exe /u

Note: You may need to follow this with deletion of the folder "c:\Program Files\ARWatchDog"

IMPORTANT CONCEPTS

Local log files:
Stored in c:\windows\temp and is named "ARWD.log". These are generated when the service is stopped, or at midnight.

Install Folder for ARWatchDog:

C:\Program Files\ARWatchDog. This should contain a copy of
- the network license file
- the watchdog.config file

Network Licensing Folder: (Default folder - **ARWatchDog\Licensing)**

A manager defined folder with full read/write capabilities for all computers. Computers obtain licenses to enable them to generate process logs.

Place updated versions of the network license file in this folder to update all local installations of **AR**WatchDog.

Central Log File Store: (Default folder - **ARWatchDog\Logs)**

The location for all computer log files.

Place updated versions of the **WATCHDOG.CONFIG** file in this folder to update all local installations of **AR**WatchDog.

Results Folder: (Default folder - **ARWatchDog\Results)**

The location for resultant analysis files.

Service:

The service appears under the list of services as **AR**WatchDog and can be stopped and started as you can do with any service.