

Scheduled Task v1.1

Grasshopper Component User Guide

DRAFT



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1 Description

ScheduledTask is a Grasshopper component that provides a way to persist a payload using the Windows Task Scheduler.

The ScheduledTask component uses the Windows Task Scheduler 1.0 COM interface to create a new scheduled task. The component installs a stub executable as the task; the stub is configured to run the input payload. The stub and payload are stored at user specified locations on the target file system.

The scheduled task may be configured to trigger on either system startup or user logon. The trigger can be configured to activate on a specific date; until the trigger is activated, the task will not run. Once triggered, the task can remain active for a specified duration. The task executable can be run periodically throughout the duration by specifying an interval. The trigger can be configured to kill the task at the end of the duration.

Once installed, the component will trigger the scheduled task immediately by default. However, it can be configured to wait until triggered naturally. The task may also be configured with a maximum run time.

2 Usage

2.1 Builder Command Line

```
add component scheduledtask -n NAME -t PATH -p PATH [-d DESC] [-r TYPE]
                             [--begin DATE] [--duration TIME] [--interval TIME]
                             [--kill-at-end] [--wait-to-run] [--max-run-time TIME]
                             [--stubname] [--killfile]

-n/--task-name NAME          cover name of the scheduled task
-t/--task PATH              target path of the task executable stub
-p/--payload PATH          target path of the payload
-d/--description DESC      cover description of the scheduled task
-r/--trigger TYPE          trigger type {logon|startup} [default startup]

--begin DATE               date to activate trigger (yyyy-mm-dd) [default today]
--duration TIME            period for task to remain active once triggered [default
None]
--interval TIME           interval to run task stub through duration [default None]
--kill-at-end             kill task after duration [default False]

--wait-to-run             wait until triggered to run [default False]
--max-run-time TIME       maximum time task allowed to run [default INFINITE]
--stubname STUBNAME      alternate stubname to use {A|B|ESET} [default A]
--killfile PATH          Path of kill file, whose existence will cause the persistence
and payload              to be uninstalled
```

Example

```
(gh) add component scheduledtask
-n ExampleTask
-t "c:\windows\task.exe"
-p "c:\windows\payload.exe"
-d "An example of how to create a scheduled task component."
-r logon
```

2.2 Supported Payload Types

ScheduledTask accepts input payloads in EXE or DLL formats for the x86 or x64 architectures. ScheduledTask is a terminating component and does not output a payload.

Input Type	Output Type(s)
x86 EXE	None
x64 EXE	None
x86 DLL	None
x64 DLL	None

2.3 Supported Variant Stub Names

As part of the ScheduledTask component 1.1 version, variant stubs were added. Three stubs are available the default stub (Stub A), Stub B, and Stub ESET.

1. The default stub (A) uses the grasshopper common code base and uses resources data to store configuration information.
2. Stub B uses data segment variable to for configuration data, and calls schtask.exe to manipulate scheduled tasks.
3. ESET stub uses the signed ESETCRACKME executable as a task and a stub dll with the same name which it will automatically load, as well as a separate code base from the default base.

2.4 Uninstall Procedure**Manual**

The manual uninstall procedure consists of the following steps:

1. Stop the scheduled task, if it is running.
`schtasks /End /TN <TASK_NAME>`
2. Kill the process executing the payload (if payload was an EXE).
`taskkill /F /IM <PAYLOAD_NAME>`
3. Remove the scheduled task from the Windows Task Scheduler.
`schtasks /Delete /TN <TASK_NAME>`
4. Delete the stub and payload executables from the filesystem.
`del /F <TASK_PATH> <PAYLOAD_PATH>`

Autonomous

The autonomous uninstall procedure consists of the following steps:

1. Delete the payload from the filesystem.

When the stub detects that the payload has been deleted, it will execute the autonomous uninstall. The stub checks for the payload every minute. The autonomous uninstall will perform the following steps:

1. Remove the scheduled task from the Windows Task Scheduler.
2. Delete itself from the filesystem.

Kill File

The kill file uninstall procedure consists of the following steps:

1. Create a file on the file system at path specified for kill file parameter at build time.

When the stub detects the presence of the kill file, it will execute the kill file uninstall procedure. The stub checks for the kill file every minute. The uninstall proceeds through the following steps:

1. Wait half a minute before starting uninstall.
2. Attempt to signal and/or stop the payload for uninstall.
3. Secure delete the payload. If this fails, arrange to delete on reboot.
4. Remove the scheduled task from the Windows Task Scheduler.
5. Remove the kill file.
6. Delete itself from the filesystem.

NOTE: If the payload is a DLL, the stub will attempt to free library. If the payload has not performed a “safety load” on itself and does not shutdown, it may crash the host process.

NOTE: If payload is an EXE payload, the payload will be terminated using TerminateProcess and securely deleted.

NOTE: If the uninstall fails, the kill file remains and the uninstall will be attempted again on the next boot.

3 Footprint

File System

- Payload Executable, located at a user specified location
- Payload Directory, may have been created
- Task Stub Executable, located at a user specified location
- Task Stub Directory, may have been created
- Scheduled Task XML, located at %SYSTEMROOT%\System32\Tasks\<<TASK_NAME>