Windows**CRON**   *Contents*

Overview

WindowsCRON (like the Unix utility from which its name comes) provides the facilities for Windows to execute tasks at specified times or intervals. The interface, however, is a bit more friendly than that of the Unix version.

Tasks may be added and edited using the visual, check-all-that-apply approach of Windows.

Please be sure and read the Release notes section for any late-breaking news about this version of WindowsCRON.

Features

Associations
Error reporting
Event logging
Log file manipulation
Meta tasks
Periodic and one-shot execution
Information window

Associations - WindowsCRON fully supports file extension/application associations. Instead of entering an application name and data file for a task, you may enter just the data file name.

Error reporting - There are three levels of error reporting available for non-fatal errors. WindowsCRON can do any of the following after an error occurs:

* Nothing
* Blink its icon until you check the log file
* Pop up a message box informing you of the error

If logging is enabled, an entry will always be written to the log file.

Event logging - If you enable event logging, WindowsCRON will log all significant events, such as changes to the task list, the execution of a task or purging the log file.

Log-file manipulation - WindowsCRON provides the facilities to view its log file on-screen, print it to a printer or to purge the file.

Meta tasks - WindowsCRON has several predefined meta tasks which may be added to the task list just like any other. Meta tasks, however, do not actually cause WindowsCRON to execute another application. Instead, they direct WindowsCRON to do something such as printing a copy of its log file.

Periodic execution - In addition to allowing the user to execute a task on a given date or dates, WindowsCRON also allows periodic tasks. These can be set to execute every hour, every day, every week or every month. A check-box allows the designation of a one-shot task, to be deleted after being executed.

Information window - WindowsCRON's information window displays the current date and time, elapsed time which Windows has been running and the number of tasks scheduled for executed on that day. The window is updated every 10 seconds.

Installing Windows**CRON**

Installing WindowsCRON is pretty straight-forward. Simply copy WINCRON.EXE into a directory on the search path. WINCRON.INI can be placed either in the same directory as the EXE file, or in the <u>Windows directory.</u>If WindowsCRON cannot file a INI file at start up, it will create one in the Windows directory.

There are also two dynamic-link libraries. COMMDLG.DLL and SHELL.DLL are required for WindowsCRON to run and should be installed in the Windows system directory.

Currently, there are two versions of the WindowsCRON help file. These files are different. Be sure to copy the correct help file into a directory in your path.

WindowsCRON determines what version of Windows it is running on and opens the corresponding help file. So, be sure to install the correct version in the directory with the EXE file (or anywhere else on the search path).

Please read the Release notes section for any late-breaking information about this version of WindowsCRON.

Menu options

Disable/Enable CRON
Tasks
Options
Logging
Info
About
Help

Disable/Enable CRON

This toggle allows the disabling or enabling of WindowsCRON. When disabled, no tasks will be executed, though all other functions remain operative. WindowsCRON will remember whether or not it is enabled across sessions. If WindowsCRON is loaded and finds that it is disabled (i.e. it was disabled the last time it was closed) it will put up a message box warning that it is disabled.

The state is stored in the WINCRON.INI file as shown below.

```
Enable=[0/1]
```

Tasks

Selecting the Tasks item from the WindowsCRON menu brings up a dialog box showing the titles of all tasks stored in WINCRON.INI. From here, tasks may be added, deleted or edited.

Select Add to add a new task to the list or Delete to remove an old task. Double-click on a task to edit or change any values. Select Done when finished.

A WindowsCRON task is a description consisting of a command line to execute and a time specification which indicates when the command line should be executed.

The Add Task dialog contains fields to enter the command line, time, date and to check-off the days and months to execute the task. Tasks may also be set to execute at a regular interval. Radio buttons allow hourly, daily, weekly and monthly periods.

Task descriptions are stored in WINCRON.INI in the `[Tasks]` section. The format is summarized below, under Format.

WindowsCRON checks the task list every minute and executes any tasks which are pending. Because of the relatively low resolution, tasks may be delayed by up to one minute from the specified time. Don't be alarmed when a task doesn't execute at precisely the time specified; be patient.

In addition, because the timer message in Windows is given a low priority, it is possible that extreme system loads will cause task execution delays in excess of one minute. No tasks will be lost, however.

Adding tasks
Meta tasks
Storage format

Adding tasks

The Add Task dialog box allows entry and editing of task parameters. Select Add from the Tasks dialog box to add a new task, double-click a current task to edit its parameters or drag and drop a file on the WindowsCRON icon.

Most of the fields in the dialog box are fairly self-explanatory. The title of the task goes in the Task Title box, the command line to execute in the Command box. Meta tasks may be entered by hand or selected from the combo box. Push the Add button to add a task and clear the fields to enter another.

Three radio buttons control how the application will be displayed: minimized, maximized or default. If the selection is default and the command line calls a DOS application, the window is displayed according to the application's PIF file. The Browse button opens a dialog which can be used to locate the desired executable, batch file, etc.

The lower half of the dialog box contains fields for selecting when the task will execute. The time-of-day is in 24-hour format; the date field is the day of the month. Check all days of the week and months that apply. When adding a new task, the time is set to 00:00, the date 00, no days are checked and all months are.

If a program or associated data file was dragged and dropped on WindowsCRON, the time, date and day are set according to the current clock.

Five radio buttons control how WindowsCRON interprets the other settings. Selecting As Shown will cause WindowsCRON to execute the task precisely as the parameters specify. The other four options specify some period for the task to repeat.

For example, a task is set to execute Daily, it will be run every day at the hours and minutes specified, in the months specified. Selecting Hourly will run the task every hour at the minutes specified on the days and in the months checked.

Note that this allows irregular but periodic tasks. A task could be set to run hourly on Monday and Thursday during February, March and May.

To make this a little easier to understand, WindowsCRON disables the fields which will be "ignored" by a given period setting. So, selecting Daily will disable the Days and Date fields.

Meta tasks

A normal task for WindowsCRON is a command line with program and parameters. At the specified interval, WindowsCRON will start the application with this command line.

Meta tasks, on the other hand, do not start applications. They instead are instructions to WindowsCRON to perform some internal operation.

Currently, there are six meta tasks available (the meta task code for each is given in brackets):

Print log [#print_log]
Purge log [#purge_log]
Message box [#message]
Restart Windows [#restart_windows]
Log entry [#log_entry]

A Meta task is added to the task list just like any other and is executed according to the time specification just like any other. The difference is that instead of a title, a meta task code appears in the Task Title field. These codes may either be entered by hand or chosen from the Meta Tasks combo box.

The key to recognizing meta tasks is the leading '#' character in the title field. Therefore, using the '#' character in standard task titles should be avoided.

Future extensions may include control of other application windows, keyboard simulation, DDE and message-passing meta tasks.

Print log [#print_log] - Prints a copy of the current log file to the default printer on the default port. Note that since printing the log from a meta task implies there will be no human interaction, no printer set-up dialog appears (as does with Logging Print). Like it says, it goes to the default place.

Purge log [#purge_log] - Purges the contents of the current log file. Note that since this is a non-interactive task directive, there is no confirmation.

Message box [#message] - Pops up a message box with the text entered in the Task Command field of the Add Task dialog box. Note that WindowsCRON is suspended until the message box is dismissed.

Restart Windows [#restart_windows] - Causes Windows to restart, as if loaded from the DOS command line. Be careful with this one for two reasons: first (obviously) it restarts Windows, so unless the load= line in WIN.INI is setup to get everything running (including WindowsCRON) without attention, restarting will just be a dead-end.

Second, if any applications running at the time of the restart request prompt for confirmation before allowing themselves to be shut down, the whole system will get hung up until somebody answers the question.

Log entry [#log_entry] - Writes the text from the Command field into the log file, just like any other WindowsCRON entry. This will work whether or not logging is enabled. If disabled, however, make sure that the log file name specified in WINCRON.INI is valid.

Task storage format

Tasks are stored in WINCRON.INI in the `[Tasks]` section. Each entry is in the format shown below. All fields must be included.

```
<title>=0xMMMM,0xDDDD,HH:MM,DD,O,S,B,<command line>
```

`<title>` is the task title displayed in the Tasks dialog. No spaces or funny characters are allowed. Entries will be truncated at the first invalid character.

`MMMM` and `DDDD` are 16-bit hexadecimal numbers which specify which months and which days a task will be executed. Each bit represents one month or day. January and Sunday are the LSBs.

`HH:MM` are the hours and minutes at which a task will be executed. This is in 24-hour format.

`DD` is the date (day of the month) a task will be executed (starting at 1).

`O` is the period (hourly, etc.) for the task Valid values are zero through four:

```
0 - As specified
1 - Hourly
2 - Daily
3 - Weekly
4 - Monthly
```

`S` specifies how the task will be displayed:

```
1 - Default
2 - Minimized
3 - Maximized
```

`B` determines if the task is a one-shot event; it will be deleted after it is executed.

```
1 - One shot
0 - Eternal
```

`<command line>` is the entire text of the command line to be executed. This may contain any characters you which, up to the end of the line.

Logging

Note that all options on the Logging sub-menu are disabled when event logging is turned off.

View
Print
Purge

View log

Selecting Logging View will open a window which displays the contents of the current log file. Scrolling up and down (left and right, too) is done with the scroll bars.

The window is modeless, so WindowsCRON will continue to run normally even while the window is open. The window can be closed with the close box, like any other window, or by selecting Logging View again (to uncheck the menu option).

The window is also live; it will update every time a new entry is written to the log file. WindowsCRON stores the size and position of the log window so the appearance of the window can be customized. The parameters are stored in WINCRON.INI as follows:

```
WindowPos=x1,y1,x2,y2
    x1,y1 = screen coordinates of the top-left of the window
    x2,y2 = screen coordinates of the lower-right of the window
WindowStyle=[1/2/3]
    1 - Default
    2 - Minimized
    3 - Maximized
```

Print log

When the user selects Logging Print, a printer-setup dialog box appears. After choosing the right printer, port and options, click "ok" to print the current log file. WindowsCRON just uses the default font for the printer.

If event logging is enabled, an entry is added to the log file showing when it was printed.

Purge log

Logging Purge empties the current log file, after asking for confirmation. An entry is written into the now-empty log file stating when the file was purged.

Information window

The WindowsCRON information window displays the current time and date (updated every 10 seconds), the amount of time that Windows has been running and the number of tasks scheduled for executed on that day. The window is autonomous, so it can be left open as a clock without affecting other WindowsCRON functions.

Close the window by double-clicking on the close box, or by selecting the Info menu option again to uncheck it.

Help

The help menu has several options for providing help.
Opens the Windows Help engine to this help file for WindowsCRON. (And you wondered how you got here, right?)

About

Selecting this menu option opens the "about WinowsCRON" dialog box. Whaddya expect?

Options

The options dialog allows the user to configure several options and defaults for WindowsCRON. All of the options are stored in WindowsCRON's initialization file, WINCRON.INI.

The synopses after each option show the format in which the setting is stored in WINCRON.INI, under the `[Options]` section.

Logging

If the "log transactions" box is checked, WindowsCRON will log all of its activities to the log file specified in the edit box. The default name is "WINCRON.LOG." If no directory path or drive name is specified, the log file is created in the <u>Windows directory.</u>

WindowsCRON will write an entry into the log file for any of several events. Each entry begins with the day, date and time its was written. The events which will be logged are:

```
* Execution of a task
* Failure to execute a task
* Changes to the task list (additions, edits, deletions)
* Printing or purging the log file
* Turning logging on or off
* Starting or terminating WindowsCRON
* Enabling or disabling WindowsCRON

Logging=[0/1]
LogfileName=<filespec>
```

Error reporting

These radio buttons control what action WindowsCRON takes when it encounters an error executing a task. If this option is "off," no action will be taken. If set to "soft," WindowsCRON will start its icon blinking if an error occurs. Click on the icon to reset the error; you can use the <u>Logging View</u> option to examine the log file and see what happened.

If set to "loud," WindowsCRON will beep and pop up a message box informing the user of the error. Note that some errors cannot be suppressed by turning error reporting off or down to soft. These are "fatal" errors, which render WindowsCRON unusable anyway. Out-of-memory while building a task list, for example.

```
ErrorLevel=[0/1/2]
      0 - Loud
      1 - Soft
      2 - Off
```

Default period

This chooses the default execution period for a new task. When you use <u>Tasks Add</u> to enter a new task, the period is initially set to the option specified here.

```
Period=[0/1/2/3/4]
    0 - As shown
    1 - Hourly
    2 - Daily
    3 - Weekly
    4 - Monthly
```

System logging

If checked, WindowsCRON will write an entry to the log file every time a new top-level window is created or destroyed. This corresponds (roughly) to starting and terminating applications. This check box will be disabled under pre-3.1 Windows. Note that log entries written as a result of system logging will say that the action was performed by the user (e.g. "Application 'foo' started by user").

```
SysLogging=[0/1]
```

Suspicious extension warning

If checked, WindowsCRON will warn you if you have entered a command for a task which specifies neither a program or an associated data file. Useful to catch stupid mistakes before walking away and letting WindowsCRON try to do something which it can't do.

As of this release, Windows occasionally decides to pop up its own box asking you to insert the "right" disk in drive "A" if it cannot find the command you wanted. This, of course, brings everything to a grinding halt. So, leave the warning enabled. It will catch almost all problems like this before you walk away.

```
Warning=[0/1]
```

Windows directory - The Windows directory is the directory where WIN.COM and other start-up files reside.

Programs - A program is assumed to be a file with an extension listed after the "programs" entry in the "windows" section of WIN.INI. This usually includes "exe," "com," "pif" and "bat."

Associations - An associated data file is a file which has its extension listed in the "extensions" section of WIN.INI with an associated application.

Release notes - 28 September, 1991

This is version 1.0 of WindowsCRON, the first official release to the general public. Almost all known bugs have been fixed and all planned features have been implemented.

Known problems
* Try clicking on the system menu box of the Logging View window. Strange, eh?   I haven't been able to figure that one out yet. Any suggestions are welcome. *Still haven't been able to fix this.*

* The Delete button in the Tasks dialog sometimes misbehaves. It should be disabled unless a task is actually highlighted in the list box. Sometimes it isn't, though.

* I don't think printing works under Windows 3.0. I can't figure this one out either, as it works fine on my system. Try it and let me know.

* I have had reports that entering a new path and filename for the log file causes major problems, but I haven't been able to reproduce the problem.

* I have also had reports that the Logging View window blows up the debug kernel. Again, I have not been able to reproduce this problem.

* This help file isn't very good. Along with adding more features (and fixing any bugs which surface) rewriting this help file is slated for the next release.

Information

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version 1.0
help file revision 0.58-ND

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Much development time went into WindowsCRON. If you find it useful, please send $25 (US) to the author to offset development costs and ensure continued support and new products.

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