

Time Triggers

[Previous](#) [Up](#) [Next](#)

In this section we show an alternative to time-based attributes, using time triggers.

The following suite based generated variables are available for time-based triggers.

(In ecflow_ui, select a suite, then look at the variables tab)

- DD day of the month
- DOW day of the week, 0-6, where 0 is Sunday
- DOY day of the year
- ECF_DATE YYYYMMDD year, month, day format. This has the same format as repeat date.
- MM month 01-12
- TIME HHMM
- YYYY year

These time-based variables on the suite, use the suites calendar. The suites calendar can be configured with the clock attribute.


Here are examples of time attributes and the corresponding trigger examples

```
time 23:00          # trigger :TIME == 2300
date 1.*.*          # trigger :DD == 1
day monday          # trigger :DOW == 1
```

The ':' means a search for the variable up the node tree.

Triggers can also use AND/OR logic and the full range of operators <,>,<=,>=

Time attributes	time based trigger	combination
<pre>task t1 day monday time 13:00</pre>	<pre>task t1 trigger :DOW == 1 and :TIME >= 1300</pre>	<pre>task t1 day monday trigger :TIME >= 1300</pre>

 It should be noted that relative time(time +00:01) are not possible with time-based triggers, and time series are more problematic.

Text

Let us modify the previous definition file for *family* f2.
For brevity, we have omitted the previous *family* f1

```
# Definition of the suite test
suite test
  edit ECF_INCLUDE "$HOME/course" # replace '$HOME' with the path to your home directory
  edit ECF_HOME      "$HOME/course"

  family f2
    edit SLEEP 20
    task t1
      trigger :ECF_DATE ==20200720 and :TIME >= 1000
    task t2
      trigger :DOW == 4 and :TIME >= 1300
    task t3
      trigger :DD == 1 and :TIME >= 1200
    task t4
      trigger (:DOW == 1 and :TIME >= 1300) or (:DOW == 5 and :TIME >= 1000)
    task t5
      trigger :TIME == 0002 # 2 minutes past midnight
  endfamily
endsuite
```

Python

For brevity, we have left out [family f1](#). In python this would be:

\$HOME/course/test.py

```
import os
from ecflow import Defs,Suite,Family,Task,Edit,Trigger,Complete,Event,Meter,Time,Day,Date,Edit

def create_family_f2():
    return Family("f2",
        Edit(SLEEP=20),
        Task("t1", Trigger(":ECF_DATE ==20200720 and :TIME >= 1000")),
        Task("t2", Trigger(":DOW == 4 and :TIME >= 1300")),
        Task("t3", Trigger(":DD == 1 and :TIME >= 1200")),
        Task("t4", Trigger("(:DOW == 1 and :TIME >= 1300) or (:DOW == 5 and :TIME >=
1000)")),
        Task("t5", Trigger(":TIME == 0002")))

print("Creating suite definition")
home = os.path.join(os.getenv("HOME"), "course")
defs = Defs(
    Suite("test",
        Edit(ECF_INCLUDE=home,ECF_HOME=home),
        create_family_f2()
    ))
print(defs)

print("Checking job creation: .ecf -> .job0")
print(defs.check_job_creation())

print("Checking trigger expressions")
errors = defs.check()
assert len(errors) == 0,errors

print("Saving definition to file 'test.def'")
defs.save_as_defs("test.def")
```

What to do

1. Make the changes to the [suite definition](#) file
2. Replace the [suite](#)
python: python3 test.py; python3 client.py
text: ecflow_client --suspend=/test ; ecflow_client --replace=/test test.def
3. [ecflow_ui](#) has a special window to explain why a task is [queued](#). Select a [queued](#) task and click on the 'Why' tab'

4. Vary the time triggers so that all task runs

[Previous](#) [Up](#) [Next](#)