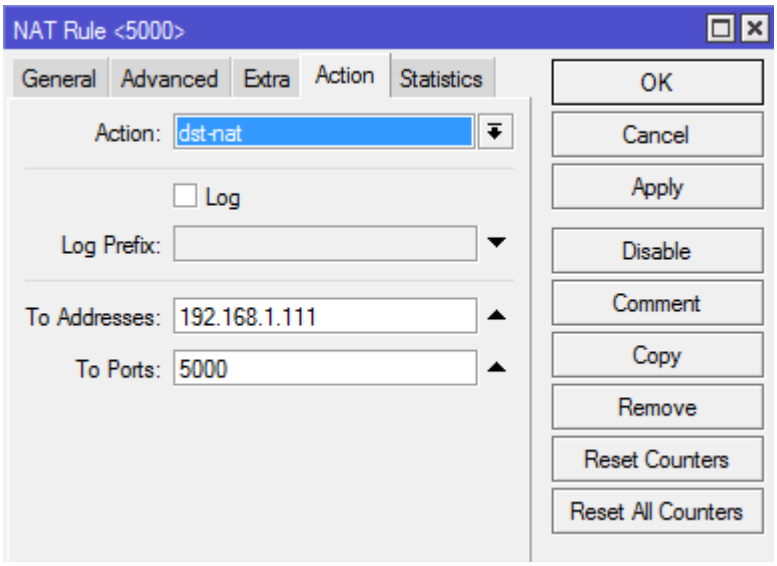
FG / CAT-372:

SMC / CAT-375:

The 5000 port MUST point to the master controller. In the bad old days when we willingly reprogrammed a site to have a different controller as the master, this would either get forgotten or, when the site was fixed and brought back to how it should be, was forgotten then. Moral: DON'T REPROGRAM A SITE TO USE A DIFFERENT MASTER THAN .111!



A controller should have these processes running:

```
root@RTU03:/home/twave# ps aux | grep python
root      1556 22.4  4.6  26080 23600 ?        Rs   May13 6937:32 /usr/bin/python /home/twave/application.py
twave     1569  0.0  1.9  12424 10136 ?        Ss   May13   1:11 /usr/bin/python /usr/bin/gunicorn -w 4 -b 0.0.0.0:5000 web2:app
twave     1616  0.5  4.9  28916 25340 ?        S    May13 157:17 /usr/bin/python /usr/bin/gunicorn -w 4 -b 0.0.0.0:5000 web2:app
twave     1617  0.5  4.9  28764 25168 ?        S    May13 156:58 /usr/bin/python /usr/bin/gunicorn -w 4 -b 0.0.0.0:5000 web2:app
```

```
twave     1618  0.5  4.9  28760 25240 ?        S    May13 156:33 /usr/bin/python /usr/bin/gunicorn -w 4 -b 0.0.0.0:5000 web2:app

twave     1619  0.5  4.9  28860 25340 ?        S    May13 157:18 /usr/bin/python /usr/bin/gunicorn -w 4 -b 0.0.0.0:5000 web2:app
```

If one or more processes has/have stopped, we can find out why. Type python followed by the process name and watch for where it crashes:

```
root@RTU03:/home/twave# python application.py

Platform:  Linux {'db_prefix': '/home/twave/', 'on_controller': True}

Analog Inputs {u'econ_signal': 0.0, u'media_temp': 79.93, u'current_sensor': 0.0, u'outside_temp': 90.52, u'pre_cool_temp': 81.48}

Digital Inputs {u'dehumid_call': 0.0, u'cool_call2': 0.0, u'econ_call': 0.0, u'heat_call': 0.0, u'fan_call': 1.0, u'cool_call1':
0.0}

Test Points:  {}

{'wetbulb': 0, 'data': 0, 'dewpoint': 0, 'temp': 0, 'humidity': 0}

{'web_outside_wetbulb': 0, 'web_outside_dewpoint': 0, 'web_comm': 0, 'web_outside_humidity': 0, 'web_outside_temp': 0}

manual standard

Service Switch =  0.0

DC Site: 0.0 Mode: 0.0 Command: 0.0

{'condenser_cmd': 0, 'fan_cmd': 1, 'web_outside_wetbulb': 0, 'web_outside_humidity': 0, 'web_outside_dewpoint': 0, 'econ_output':
0, 'web_outside_temp': 0, 'dual_cool_mode': 0, 'dual_cool_cmd': 0, 'sim_fan_sts': 0, 'econ_cmd': 0, 'web_comm': 0, 'pump_cmd': 0}

Analog Outputs {u'econ_output': 0.0}

Digital Ouputs {u'sim_fan_sts': 0.0, u'econ_cmd': 0.0, u'condenser_cmd': 0.0, u'fan_cmd': 1.0, u'pump_cmd': 0.0}

Analog Inputs {u'econ_signal': 0.0, u'media_temp': 80.0, u'current_sensor': 0.0, u'outside_temp': 90.41, u'pre_cool_temp': 81.48}

Digital Inputs {u'dehumid_call': 0.0, u'cool_call2': 0.0, u'econ_call': 0.0, u'heat_call': 0.0, u'fan_call': 1.0, u'cool_call1':
0.0}

Test Points:  {}

manual standard

Service Switch =  0.0

DC Site: 0.0 Mode: 0.0 Command: 0.0

{'econ_output': 0, 'fan_cmd': 1, 'dual_cool_mode': 0, 'dual_cool_cmd': 0, 'sim_fan_sts': 0, 'econ_cmd': 0, 'condenser_cmd': 0,
'pump_cmd': 0}

Analog Outputs {u'econ_output': 0.0}

Digital Ouputs {u'sim_fan_sts': 0.0, u'econ_cmd': 0.0, u'condenser_cmd': 0.0, u'fan_cmd': 1.0, u'pump_cmd': 0.0}

Analog Inputs {u'econ_signal': 0.0, u'media_temp': 79.86, u'current_sensor': 0.0, u'outside_temp': 90.52, u'pre_cool_temp': 81.48}

Digital Inputs {u'dehumid_call': 0.0, u'cool_call2': 0.0, u'econ_call': 0.0, u'heat_call': 0.0, u'fan_call': 1.0, u'cool_call1':
0.0}

Test Points:  {}

manual standard

Service Switch =  0.0

DC Site: 0.0 Mode: 0.0 Command: 0.0

{'econ_output': 0, 'fan_cmd': 1, 'dual_cool_mode': 0, 'dual_cool_cmd': 0, 'sim_fan_sts': 0, 'econ_cmd': 0, 'condenser_cmd': 0,
'pump_cmd': 0}

Analog Outputs {u'econ_output': 0.0}

Digital Ouputs {u'sim_fan_sts': 0.0, u'econ_cmd': 0.0, u'condenser_cmd': 0.0, u'fan_cmd': 1.0, u'pump_cmd': 0.0}

Analog Inputs {u'econ_signal': 0.0, u'media_temp': 79.86, u'current_sensor': 0.0, u'outside_temp': 90.52, u'pre_cool_temp': 81.48}

Digital Inputs {u'dehumid_call': 0.0, u'cool_call2': 0.0, u'econ_call': 0.0, u'heat_call': 0.0, u'fan_call': 1.0, u'cool_call1':
0.0}

Test Points:  {}

manual standard

Service Switch =  0.0

DC Site: 0.0 Mode: 0.0 Command: 0.0

{'econ_output': 0, 'fan_cmd': 1, 'dual_cool_mode': 0, 'dual_cool_cmd': 0, 'sim_fan_sts': 0, 'econ_cmd': 0, 'condenser_cmd': 0,
'pump_cmd': 0}

Analog Outputs {u'econ_output': 0.0}

Digital Ouputs {u'sim_fan_sts': 0.0, u'econ_cmd': 0.0, u'condenser_cmd': 0.0, u'fan_cmd': 1.0, u'pump_cmd': 0.0}

Analog Inputs {u'econ_signal': 0.0, u'media_temp': 80.0, u'current_sensor': 0.0, u'outside_temp': 90.41, u'pre_cool_temp': 81.39}
```

```
Digital Inputs {u'dehumid_call': 0.0, u'cool_call2': 0.0, u'econ_call': 0.0, u'heat_call': 0.0, u'fan_call': 1.0, u'cool_call1': 0.0}

Test Points:  {}

manual standard

Service Switch =  0.0

DC Site: 0.0 Mode: 0.0 Command: 0.0

{'econ_output': 0, 'fan_cmd': 1, 'dual_cool_mode': 0, 'dual_cool_cmd': 0, 'sim_fan_sts': 0, 'econ_cmd': 0, 'condenser_cmd': 0, 'pump_cmd': 0}

Analog Outputs {u'econ_output': 0.0}

Digital Ouputs {u'sim_fan_sts': 0.0, u'econ_cmd': 0.0, u'condenser_cmd': 0.0, u'fan_cmd': 1.0, u'pump_cmd': 0.0}

Analog Inputs {u'econ_signal': 0.0, u'media_temp': 80.19, u'current_sensor': 0.0, u'outside_temp': 90.31, u'pre_cool_temp': 81.39}

Digital Inputs {u'dehumid_call': 0.0, u'cool_call2': 0.0, u'econ_call': 0.0, u'heat_call': 0.0, u'fan_call': 1.0, u'cool_call1': 0.0}

Test Points:  {}

manual standard

Service Switch =  0.0

DC Site: 0.0 Mode: 0.0 Command: 0.0

{'econ_output': 0, 'fan_cmd': 1, 'dual_cool_mode': 0, 'dual_cool_cmd': 0, 'sim_fan_sts': 0, 'econ_cmd': 0, 'condenser_cmd': 0, 'pump_cmd': 0}

Analog Outputs {u'econ_output': 0.0}

Digital Ouputs {u'sim_fan_sts': 0.0, u'econ_cmd': 0.0, u'condenser_cmd': 0.0, u'fan_cmd': 1.0, u'pump_cmd': 0.0}

Analog Inputs {u'econ_signal': 0.0, u'media_temp': 79.93, u'current_sensor': 0.0, u'outside_temp': 90.41, u'pre_cool_temp': 81.48}

Digital Inputs {u'dehumid_call': 0.0, u'cool_call2': 0.0, u'econ_call': 0.0, u'heat_call': 0.0, u'fan_call': 1.0, u'cool_call1': 0.0}

Test Points:  {}

manual standard

Service Switch =  0.0

DC Site: 0.0 Mode: 0.0 Command: 0.0

{'econ_output': 0, 'fan_cmd': 1, 'dual_cool_mode': 0, 'dual_cool_cmd': 0, 'sim_fan_sts': 0, 'econ_cmd': 0, 'condenser_cmd': 0, 'pump_cmd': 0}

Analog Outputs {u'econ_output': 0.0}

Digital Ouputs {u'sim_fan_sts': 0.0, u'econ_cmd': 0.0, u'condenser_cmd': 0.0, u'fan_cmd': 1.0, u'pump_cmd': 0.0}

Analog Inputs {u'econ_signal': 0.0, u'media_temp': 80.0, u'current_sensor': 0.0, u'outside_temp': 90.41, u'pre_cool_temp': 81.39}

Digital Inputs {u'dehumid_call': 0.0, u'cool_call2': 0.0, u'econ_call': 0.0, u'heat_call': 0.0, u'fan_call': 1.0, u'cool_call1': 0.0}

Test Points:  {}

manual standard

Service Switch =  0.0

DC Site: 0.0 Mode: 0.0 Command: 0.0

{'econ_output': 0, 'fan_cmd': 1, 'dual_cool_mode': 0, 'dual_cool_cmd': 0, 'sim_fan_sts': 0, 'econ_cmd': 0, 'condenser_cmd': 0, 'pump_cmd': 0}

Analog Outputs {u'econ_output': 0.0}

Digital Ouputs {u'sim_fan_sts': 0.0, u'econ_cmd': 0.0, u'condenser_cmd': 0.0, u'fan_cmd': 1.0, u'pump_cmd': 0.0}

Analog Inputs {u'econ_signal': 0.0, u'media_temp': 80.1, u'current_sensor': 0.0, u'outside_temp': 90.31, u'pre_cool_temp': 81.39}

Digital Inputs {u'dehumid_call': 0.0, u'cool_call2': 0.0, u'econ_call': 0.0, u'heat_call': 0.0, u'fan_call': 1.0, u'cool_call1': 0.0}

Test Points:  {}

manual standard

Service Switch =  0.0

DC Site: 0.0 Mode: 0.0 Command: 0.0

{'econ_output': 0, 'fan_cmd': 1, 'dual_cool_mode': 0, 'dual_cool_cmd': 0, 'sim_fan_sts': 0, 'econ_cmd': 0, 'condenser_cmd': 0, 'pump_cmd': 0}

^CTraceback (most recent call last):

  File "application.py", line 298, in <module>

    application()

  File "application.py", line 292, in application
```

```
    time.sleep(1)
KeyboardInterrupt
root@RTU03:/home/twave# ps aux | grep python
root      1556 22.4  4.6  26080 23600 ?        Ss   May13 6940:55 /usr/bin/python /home/twave/application.py
twave     1569  0.0  1.9  12424 10136 ?        Ss   May13   1:12 /usr/bin/python /usr/bin/gunicorn -w 4 -b 0.0.0.0:5000 web2:app
twave     1616  0.5  4.9  28916 25340 ?        S    May13 157:21 /usr/bin/python /usr/bin/gunicorn -w 4 -b 0.0.0.0:5000 web2:app
twave     1617  0.5  4.8  28540 25020 ?        S    May13 157:02 /usr/bin/python /usr/bin/gunicorn -w 4 -b 0.0.0.0:5000 web2:app
twave     1618  0.5  4.9  28760 25240 ?        S    May13 156:39 /usr/bin/python /usr/bin/gunicorn -w 4 -b 0.0.0.0:5000 web2:app
twave     1619  0.5  4.9  28860 25340 ?        S    May13 157:22 /usr/bin/python /usr/bin/gunicorn -w 4 -b 0.0.0.0:5000 web2:app
root     11834  0.0  0.2   2080  1072 pts/0    S+   21:18   0:00 grep python
root@RTU03:/home/twave# ./all_stop
bash: ./all_stop: No such file or directory
root@RTU03:/home/twave# ./all_stop.sh
root@RTU03:/home/twave# ./all_start.sh
.
.
.
.
(this one didn't crash)
```

To list all the files on a controller, you can use the commands dir or ls:

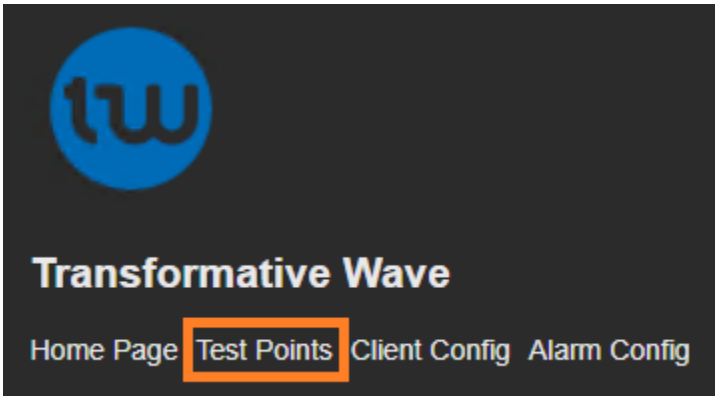
```
root@RTU03:/home/twave# dir
AHU01.db  RTU04.db   alarm.db         application.py             db_setup.pyc             release\ notes.txt  web2.py
AHU02.db  RTU05.db   alarm_comm.db    config.csv                 dc_alarm_logic.py        site_history.db     web2.pyc
AHU03.db  RTU06.db   alarm_notify.py  config.db                  get-pip.py               smc_interface.py
AHU04.db  RTU07.db   all_reset.sh     controller_point_list.csv  install.sh               smc_interface.pyc
AHU05.db  RTU08.db   all_start.sh     current_weather.py         peer_communications.py   static
RTU01.db  RTU09.db   all_stop.sh      current_weather.pyc        peer_communications.pyc  templates
RTU02.db  RTU10.db   api_data.db      data.py                    platform_check.py        test_points.py
RTU03.db  alarm.csv  application.db   db_setup.py                platform_check.pyc       test_points.pyc
```

To list the details of the files, use the command ls -l:

```
root@RTU03:/home/twave# ls -l
total 1728
-rw-r--r-- 1 twave twave   11264 Aug 24  2018 AHU01.db
-rw-r--r-- 1 twave twave   11264 Aug 24  2018 AHU02.db
-rw-r--r-- 1 twave twave   11264 Aug 24  2018 AHU03.db
-rw-r--r-- 1 twave twave   10240 Aug 24  2018 AHU04.db
-rw-r--r-- 1 twave twave   10240 Aug 24  2018 AHU05.db
-rw-r--r-- 1 twave twave   14336 Aug 24  2018 RTU01.db
-rw-r--r-- 1 twave twave   11264 Aug 24  2018 RTU02.db
-rw-r--r-- 1 twave twave   11264 Aug 24  2018 RTU03.db
-rw-r--r-- 1 twave twave   11264 Aug 24  2018 RTU04.db
-rw-r--r-- 1 twave twave   11264 Aug 24  2018 RTU05.db
-rw-r--r-- 1 twave twave   11264 Aug 24  2018 RTU06.db
-rw-r--r-- 1 twave twave   10240 Aug 24  2018 RTU07.db
-rw-r--r-- 1 twave twave   10240 Aug 24  2018 RTU08.db
-rw-r--r-- 1 twave twave   10240 Aug 24  2018 RTU09.db
-rw-r--r-- 1 twave twave   10240 Aug 24  2018 RTU10.db
-rw-r--r-- 1 twave twave     491 Aug 24  2018 alarm.csv
-rw-r--r-- 1 twave twave    3072 Aug 24  2018 alarm.db
-rw-r--r-- 1 twave twave    3072 Aug 24  2018 alarm_comm.db
-rw-r--r-- 1 twave twave    8583 Aug 24  2018 alarm_notify.py
-rwxr-xr-x 1 twave twave     203 Aug 24  2018 all_reset.sh
```

```
-rwxr-xr-x 1 twave twave     108 Aug 24  2018 all_start.sh
-rwxr-xr-x 1 twave twave     106 Aug 24  2018 all_stop.sh
-rw-r--r-- 1 twave twave    5120 Jun  3 21:05 api_data.db
-rw-r--r-- 1 twave twave    5120 Jun  3 21:08 application.db
-rw-r--r-- 1 twave twave   11368 Aug 24  2018 application.py
-rw-r--r-- 1 twave twave     968 Aug 24  2018 config.csv
-rw-r--r-- 1 twave twave    3072 Sep  6  2018 config.db
-rw-r--r-- 1 twave twave    2870 Aug 24  2018 controller_point_list.csv
-rw-r--r-- 1 twave twave    1812 Aug 24  2018 current_weather.py
-rw-r--r-- 1 root  root     1881 Aug 24  2018 current_weather.pyc
-rw-r--r-- 1 twave twave    9814 Aug 24  2018 data.py
-rw-r--r-- 1 twave twave   13308 Aug 24  2018 db_setup.py
-rw-r--r-- 1 root  root    11695 Aug 24  2018 db_setup.pyc
-rw-r--r-- 1 twave twave    3190 Aug 24  2018 dc_alarm_logic.py
-rw-r--r-- 1 twave twave 1412744 Aug 24  2018 get-pip.py
-rwxr-xr-x 1 twave twave     548 Aug 24  2018 install.sh
-rw-r--r-- 1 twave twave    1737 Aug 24  2018 peer_communications.py
-rw-r--r-- 1 root  root     1464 Aug 24  2018 peer_communications.pyc
-rw-r--r-- 1 twave twave     336 Aug 24  2018 platform_check.py
-rw-r--r-- 1 root  root      524 Aug 24  2018 platform_check.pyc
-rw-r--r-- 1 twave twave     107 Aug 24  2018 release notes.txt
-rw-r--r-- 1 twave twave   27648 Aug 24  2018 site_history.db
-rw-r--r-- 1 twave twave    6915 Aug 24  2018 smc_interface.py
-rw-r--r-- 1 root  root     5911 Aug 24  2018 smc_interface.pyc
drwxr-xr-x 2 twave twave    1024 Aug 24  2018 static
drwxr-xr-x 2 twave twave    1024 Aug 24  2018 templates
-rw-r--r-- 1 twave twave    1308 Aug 24  2018 test_points.py
-rw-r--r-- 1 root  root     1123 Aug 24  2018 test_points.pyc
-rw-r--r-- 1 twave twave   25128 Aug 24  2018 web2.py
-rw-r--r-- 1 twave twave   16378 Aug 24  2018 web2.pyc
```

The Test Points tab of the controller's web page provides a DualCool / Standard / Auto service switch, manipulable values for all sensors (to see their impact on operation), and manual activation or deactivation of processes. Note: ALWAYS return temperatures to –100° to disable the sensors' test mode. And, if you have to enable or disable any function, MAKE A FRESHDESK NOTE for those who could later wonder why ONE controller wasn't following the path of ALL the others!



Test Points			
Service Switch	Auto ▼		
Outside Temp	-100.0	Fan Call	Auto ▼
Outside Dewpoint	-100.0	Cool1 Call	Auto ▼
Media Temp	-100.0	Cool2 Call	Auto ▼
Pre Cool Temp	-100.0	Heat Call	Auto ▼
		Econ Call	Auto ▼
		Dehumidication Call	Auto ▼