Nagios Core - Understanding retention.dat and modified_attributes

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Overview

This KB article explains the purpose of the `retention.dat` file and how to modify it when required.

This is an advanced topic and care should be taken.

State Retention File

This is the file that Nagios will use for storing status, downtime, and comment information before it shuts down. When Nagios is restarted it will use the information stored in this file for setting the initial states of services and hosts before it starts monitoring anything.

In your `nagios.cfg` file this will be defined as follows:

```
state_retention_file=/usr/local/nagios/var/retention.dat
```

Modifying retention.dat

When nagios is stopped, you can actually go in and edit attributes in the retention.dat file. Then when Nagios starts again it will include these changes you have made.

However ...

You also have to define the `modified_attributes=` directive so Nagios knows which entries in the retention.dat file will override the settings in the configuration files. This might seem overly complicated however this is normally controlled by the Nagios process, manually modifying the `retention.dat` is not commonly done.

modified_attributes=

Here is a list of the available modified attributes (taken from source code common.h):

Attribute	Value
NONE	0
NOTIFICATIONS ENABLED	1
ACTIVE CHECKS ENABLED	2
PASSIVE CHECKS ENABLED	4
EVENT HANDLER ENABLED	8
FLAP DETECTION ENABLED	16

FAILURE PREDICTION ENABLED	32
PERFORMANCE DATA ENABLED	64
OBSESSIVE HANDLER ENABLED	128
EVENT HANDLER COMMAND	256
CHECK COMMAND	512
NORMAL CHECK INTERVAL	1024
RETRY CHECK INTERVAL	2048
MAX CHECK ATTEMPTS	4096
FRESHNESS CHECKS ENABLED	8192
CHECK TIMEPERIOD	16384
CUSTOM VARIABLE	32768
NOTIFICATION TIMEPERIOD	65536

If you want to use multiple options you simply need to add the values together.

Example 1

You want to disable flap detection on a host. Looking at the table above, that has the value of **16**. The two lines that require changing are:

```
modified_attributes=16
flap_detection_enabled=0
```

The modified host object in retention.dat would look like this:

```
host {
host_name=test_host
modified_attributes=16
check_command=check-host-alive!!!!!!!
check_period=24x7
notification_period=24x7
event_handler=
has_been_checked=1
check_execution_time=4.004
check_latency=0.000
check_type=0
current_state=0
last_state=0
last_hard_state=0
last_event_id=0
current_event_id=0
current_problem_id=0
last_problem_id=0
plugin_output=PING OK - Packet loss = 0%, RTA = 0.05 ms
long_plugin_output=
performance_data=rta=0.047000ms;3000.000000;5000.000000;0.000000 pl=0%;80;100;0
last_check=1468566875
next_check=1468567179
```

```
check_options=0
current_attempt=1
max_attempts=5
normal_check_interval=5.000000
retry_check_interval=5.000000
state_type=1
last_state_change=1446704088
last_hard_state_change=1446704088
last_time_up=1468566879
last_time_down=0
last_time_unreachable=0
notified_on_down=0
notified_on_unreachable=0
last_notification=0
current_notification_number=0
current_notification_id=0
notifications_enabled=1
problem_has_been_acknowledged=0
acknowledgement_type=0
active_checks_enabled=1
passive_checks_enabled=1
event_handler_enabled=1
flap_detection_enabled=0
process_performance_data=1
obsess=1
is_flapping=0
percent_state_change=0.00
check_flapping_recovery_notification=0
state_history=0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
}
```

Example 2

You want to disable active checks AND disable notifications on a host . Looking at the table above, the total of those two options has a value of **3**. The three lines that require changing are:

```
modified_attributes=3
notifications_enabled=0
active_checks_enabled=0
```

The modified host object in retention.dat would look like this:

```
host {
host_name=test_host
modified_attributes=3
check_command=check-host-alive!!!!!!!
check_period=24x7
notification_period=24x7
event_handler=
has_been_checked=1
check_execution_time=4.004
check_latency=0.000
```

```
check_type=0
current_state=0
last_state=0
last_hard_state=0
last_event_id=0
current_event_id=0
current_problem_id=0
last_problem_id=0
plugin_output=PING OK - Packet loss = 0%, RTA = 0.05 ms
long_plugin_output=
performance_data=rta=0.047000ms;3000.000000;5000.000000;0.000000 pl=0%;80;100;0
last_check=1468566875
next_check=1468567179
check_options=0
current_attempt=1
max_attempts=5
normal_check_interval=5.000000
retry_check_interval=5.000000
state_type=1
last_state_change=1446704088
last_hard_state_change=1446704088
last_time_up=1468566879
last_time_down=0
last_time_unreachable=0
notified_on_down=0
notified_on_unreachable=0
last_notification=0
current_notification_number=0
current_notification_id=0
notifications_enabled=0
problem_has_been_acknowledged=0
acknowledgement_type=0
active_checks_enabled=0
passive_checks_enabled=1
event_handler_enabled=1
flap_detection_enabled=1
process_performance_data=1
obsess=1
is_flapping=0
percent_state_change=0.00
check_flapping_recovery_notification=0
state_history=0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
}
```

Important

Any changes you make to `retention.dat` need to be done when Nagios is stopped, otherwise they will be overridden by the Nagios process when it is instructed to stop.

Final Thoughts

For any support related questions please visit the Nagios Support Forums at:

http://support.nagios.com/forum/

Posted by: **tlea** - Fri, Jul 15, 2016 at 3:32 AM. This article has been viewed 4219 times.

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