

Protecting identities with
intelligent authentication



Free MemCache Script creation and cron job

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Version History

Release Date	Description	Version	Author
30/12/2021	Initial Creation	V1.0	Pablo Garcia

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Pre-requisites

This list defines the pre-requisites necessary to perform this Documentation.

#	Description
1	Linux OS commands
2	Perl Script Code
3	Webmin Config

This document explains the code to be implemented into a Perl script which consist of a pair of OS commands to free MemCache at OS Level.

This execution increases available RAM memory and is recommended high load environments with limited/constrained resources.

Useful commands

```
free -h
```

```
[root@single ~]# free -h
total        used        free      shared      buffers      cached
Mem:       7.8G       7.6G      204M      16K       234M      6.1G
-/+ buffers/cache:   1.3G      6.5G
Swap:      1.0G      43M     980M
```

```
top -S -d 0.1
```

```
[root@single ~]# top -S -d 0.1

top - 18:29:20 up 26 days, 7:30, 1 user, load average: 0.00, 0.00, 0.00
Tasks: 150 total, 1 running, 149 sleeping, 0 stopped, 0 zombie
Cpu(s): 0.0%us, 0.0%sy, 0.0%ni, 100.0%id, 0.0%wa, 0.0%hi, 0.0%si, 0.0%st
Mem: 8176280k total, 7967524k used, 208756k free, 240036k buffers
Swap: 1048572k total, 44404k used, 1004168k free, 6351656k cached

      PID USER      PR  NI    VIRT    RES    SHR    S %CPU %MEM      TIME+ COMMAND
 83025 root      20   0 15024 1364 1008 R 18.9  0.0  0:00.35 top
    1 root      20   0 19356 1248 1048 S  0.0  0.0  56:21.37 init
    2 root      20   0     0     0     0 S  0.0  0.0  0:00.00 kthreadd
    3 root      RT   0     0     0     0 S  0.0  0.0  0:01.25 migration/0
    4 root      20   0     0     0     0 S  0.0  0.0  0:10.13 ksoftirqd/0
    5 root      RT   0     0     0     0 S  0.0  0.0  0:00.00 stopper/0
    6 root      RT   0     0     0     0 S  0.0  0.0  0:02.99 watchdog/0
    7 root      RT   0     0     0     0 S  0.0  0.0  0:01.65 migration/1
    8 root      RT   0     0     0     0 S  0.0  0.0  0:00.00 stopper/1
    9 root      20   0     0     0     0 S  0.0  0.0  0:05.93 ksoftirqd/1
   10 root      RT   0     0     0     0 S  0.0  0.0  0:02.07 watchdog/1
   11 root      RT   0     0     0     0 S  0.0  0.0  0:01.25 migration/2
   12 root      RT   0     0     0     0 S  0.0  0.0  0:00.00 stopper/2
   13 root      20   0     0     0     0 S  0.0  0.0  0:15.83 ksoftirqd/2
   14 root      RT   0     0     0     0 S  0.0  0.0  0:02.06 watchdog/2
   15 root      RT   0     0     0     0 S  0.0  0.0  0:01.94 migration/3
   16 root      RT   0     0     0     0 S  0.0  0.0  0:00.00 stopper/3
```

0.1 is the info refresh time (default 1 sec.)

These commands print Memory Status at **OS level**.

TOTAL RAM USED RAM FREE RAM TOTAL SWAP USED SWAP CACHED MEM

Top also shows **current time**; **uptime in days and hours, minutes**; CPU %load; PID, %CPU, %MEM of consumption of processes.

Free cached memory results in free RAM too and can help to the whole system to overcome high load peaks if it is programmatically set up.

Not all systems could need this but is recommended if resources are fair in contrast to the use of the product.

Script code and creation

The script is a perl execution of two OS commands that free the CachedMem at OS level.

CODE

```
#!/usr/bin/perl -w
use strict;

my $cmd = "sync && sysctl -w vm.drop_caches=3";
my $result = `\$cmd`;
print $result;
```

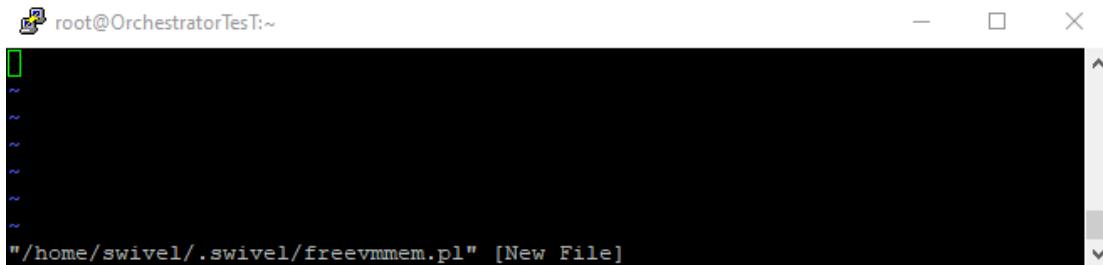
1. Log in to the OS console via CMI

```
To continue to the Linux command prompt please enter the CMI password or press  
"Return" to return back to the menu
```

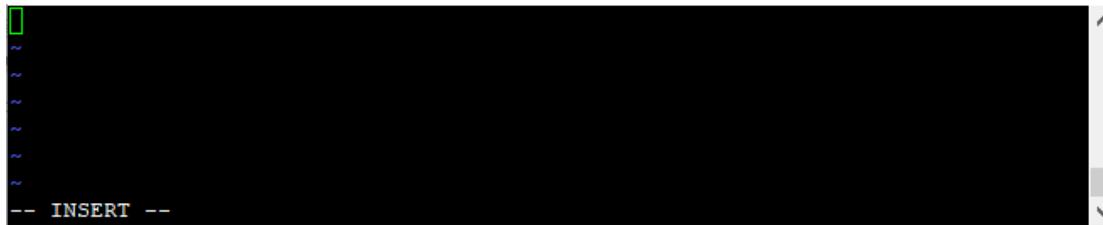
```
Password:  
INFO: Command Line accessed  
Type 'exit' to return to CMI  
  
[root@single ~]#
```

2. Create a file in /home/swivel/.swivel/freevmmem.pl

```
[root@single ~]#vi /home/swivel/.swivel/freevmmem.pl
```



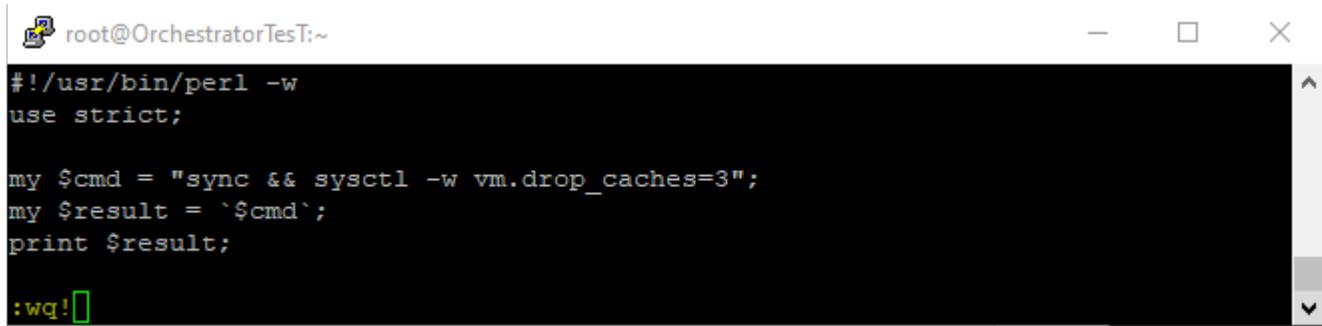
3. Press 'A' button to present *INSERT*



4. Copy the *CODE* and paste (right button)



5. Save the file (*ESC* key + **:wq!** and *ENTER*)



```
root@OrchestratorTest:~  
#!/usr/bin/perl -w  
use strict;  
  
my $cmd = "sync && sysctl -w vm.drop_caches=3";  
my $result = `"$cmd`;  
print $result;  
  
:wq!
```

6. File ownership and permissions

```
[root@single ~]#ls -la /home/swivel/.swivel/freevmmem.pl  
-rw-r--r-- 1 root root 117 Dec 29 18:55 /home/swivel/.swivel/freevmmem.pl  
  
[root@single ~]# chown swivel:swivel /home/swivel/.swivel/freevmmem.pl  
  
[root@single ~]# chmod 755 /home/swivel/.swivel/freevmmem.pl  
  
[root@single ~]# ls -la /home/swivel/.swivel/freevmmem.pl  
-rwxr-xr-x 1 swivel swivel 117 Dec 29 18:55 /home/swivel/.swivel/freevmmem.pl
```

7. At this point, script can be executed manually,

```
[root@single ~]# sudo perl /home/swivel/.swivel/freevmmem.pl  
vm.drop_caches = 3  
[root@single ~]#
```

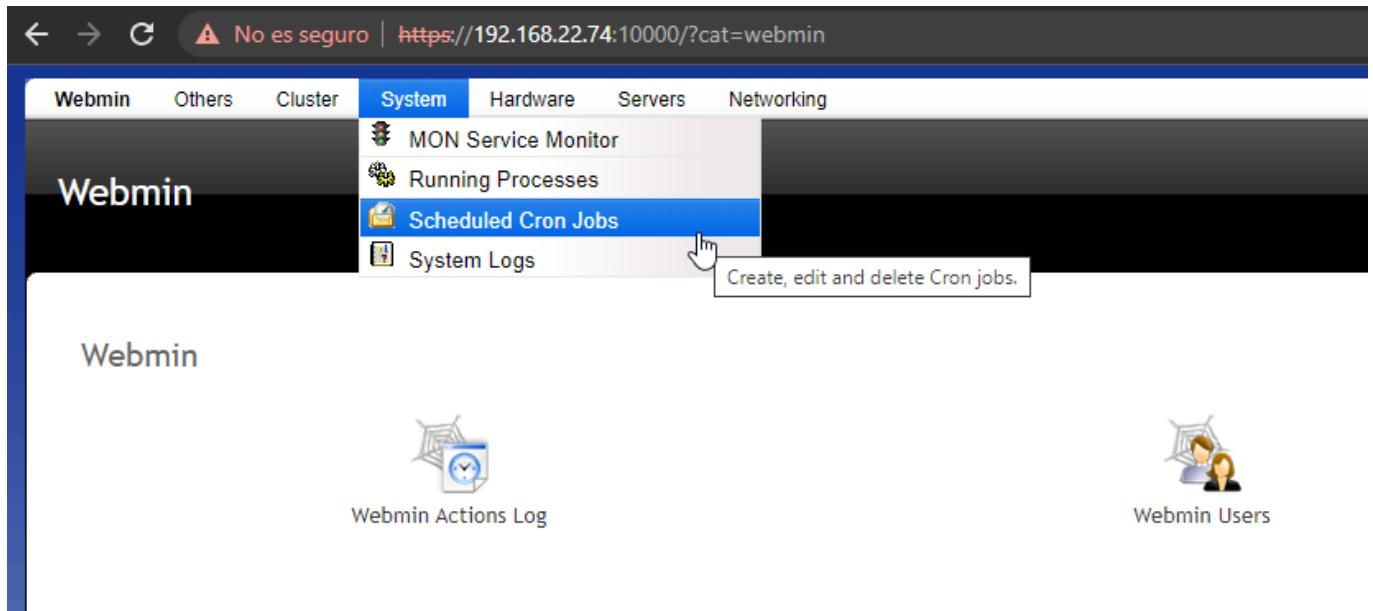
But if the objective is executing this script programmatically, this must be done using a cron job which is configured using Webmin.

Webmin cronjob config

1. Enable webmin from CMI

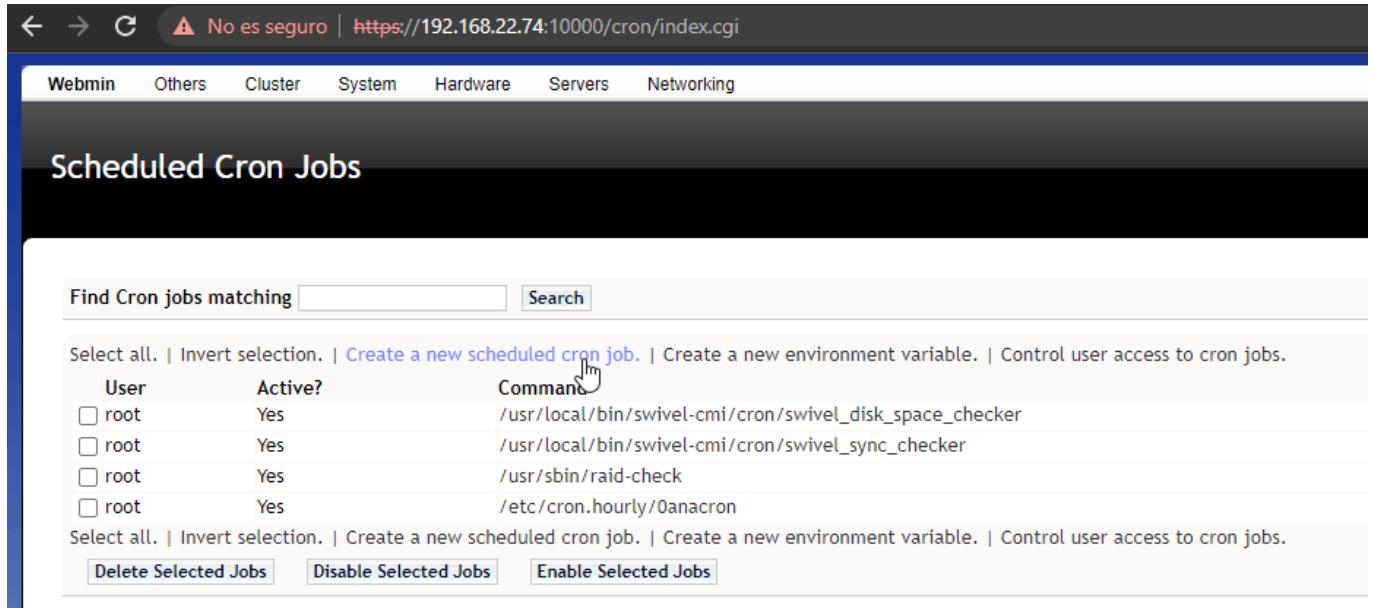
3) Appliance → 2) Start or Stop Services → Webmin (5)

2. Access to Webmin and go to System→Scheduled Cron Jobs



The screenshot shows the Webmin interface with the title bar indicating "No es seguro | https://192.168.22.74:10000/?cat=webmin". The top navigation bar has tabs for "Webmin", "Others", "Cluster", "System" (which is highlighted in blue), "Hardware", "Servers", and "Networking". A sub-menu for "System" is open, showing options: "MON Service Monitor", "Running Processes", "Scheduled Cron Jobs" (which is also highlighted in blue), and "System Logs". A tooltip at the bottom right of the sub-menu says "Create, edit and delete Cron jobs." Below the menu, there's a main content area titled "Webmin" with two icons: "Webmin Actions Log" (with a clock icon) and "Webmin Users" (with a user icon).

3. Create a new scheduled cron job



The screenshot shows the "Scheduled Cron Jobs" configuration page. The top navigation bar includes "Webmin", "Others", "Cluster", "System", "Hardware", "Servers", and "Networking". The main title is "Scheduled Cron Jobs". There is a search bar with "Find Cron jobs matching" and a "Search" button. Below the search bar is a link to "Create a new scheduled cron job". The main content area displays a table of scheduled cron jobs:

User	Active?	Commands
<input type="checkbox"/> root	Yes	/usr/local/bin/swivel-cmi/cron/swivel_disk_space_checker
<input type="checkbox"/> root	Yes	/usr/local/bin/swivel-cmi/cron/swivel_sync_checker
<input type="checkbox"/> root	Yes	/usr/sbin/raid-check
<input type="checkbox"/> root	Yes	/etc/cron.hourly/0anacron

Below the table are links for "Select all.", "Invert selection.", "Create a new environment variable.", and "Control user access to cron jobs.". At the bottom are buttons for "Delete Selected Jobs", "Disable Selected Jobs", and "Enable Selected Jobs".

4. Complete the Cront Job with:

- Execute as (root)
- Command (sudo perl /home/swivel/.swivel/freevmmem.pl)
- When to execute (this depends on necessary), this example shows all months, days, hours and minutes 0, 15, 30 and 45 (which means: *every 15 minutes*)

Webmin Others Cluster System Hardware Servers Networking Logout [Module Index](#)

Create Cron Job

Show sidebar »

Job Details

Execute cron job as ...
 Yes No

Command

Input to command

Description

When to execute

Simple schedule .. Times and dates selected below ..

Minutes	Hours	Days	Months	Weekdays																																																																																																																																																																																																						
<input type="radio"/> All	<input checked="" type="radio"/> All	<input checked="" type="radio"/> All	<input checked="" type="radio"/> All	<input checked="" type="radio"/> All																																																																																																																																																																																																						
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Note: Ctrl-click (or command-click on the Mac) to select and de-select minutes, hours, days and months.

Date range to execute

Run on any date
 Only run from / Jan / ... to / Jan / ...

5. Below, press Create to create this cron job, which will be listed in the Scheduled Cron Jobs

Webmin Others Cluster System Hardware Servers Networking Logout [Module Config](#)

Scheduled Cron Jobs

Show sidebar »

Find Cron jobs matching

Select all. | Invert selection. | Create a new scheduled cron job. | Create a new environment variable. | Control user access to cron jobs.

User	Active?	Command	Move
<input type="checkbox"/> root	Yes	/usr/local/bin/swivel-cmi/cron/swivel_disk_space_checker	
<input type="checkbox"/> root	Yes	/usr/local/bin/swivel-cmi/cron/swivel_sync_checker	
<input type="checkbox"/> root	Yes	/usr/sbin/raid-check	
<input type="checkbox"/> root	Yes	/etc/cron.hourly/0anacron	
<input checked="" type="checkbox"/> root	Yes	sudo perl /home/swivel/.swivel/freevmmem.pl	

Select all. | Invert selection. | Create a new scheduled cron job. | Create a new environment variable. | Control user access to cron jobs.

6. Clicking on it from the list, it is possible to Edit in any moment. Also can be Run Now or Save and Run Now to see if everything is fine:

Job Details

Execute cron job as

Active? Yes No

Command

Description

When to execute

Simple schedule .. Times and dates selected below ..

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Note: Ctrl-click (or command-click on the Mac) to select and de-select minutes, hours, days and months.

Date range to execute

Run on any date
 Only run from / Jan to / Jan

The output for the execution should be like the following image:

Execute Cron Job

Output from command sudo perl /home/swivel/.swivel/freemmmem.pl ..

```
vm.drop_caches = 3
```

The result of the execution (either programmatically, from Webmin or OS command line) can be shown below (example):

```
[root@OrchestratorTest ~]# free -h
      total        used        free      shared      buffers      cached
Mem:       7.8G       7.6G     183M        16K       237M       6.1G
-/+ buffers/cache:    1.3G      6.5G
Swap:      1.0G       43M     980M
[root@OrchestratorTest ~]# date
Wed Dec 29 19:32:08 CET 2021
[root@OrchestratorTest ~]# date
Wed Dec 29 19:34:32 CET 2021
[root@OrchestratorTest ~]# free -h
      total        used        free      shared      buffers      cached
Mem:       7.8G       1.2G     6.6G        16K       3.7M       23M
-/+ buffers/cache:    1.1G      6.7G
Swap:      1.0G       43M     980M
[root@OrchestratorTest ~]# [REDACTED]
```

More than 6GB of cached memory free, 6.4 GB RAM free.