RHEL: Resize/disable /dev/shm filesystem

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# Tested on RHEL 5, 6 & 7


# Notes from www.walkernews.net, www.generation-linux.fr and Red Hat
web site

# Thanks to big memory size, nowadays most of RAM is not used at all.
It is thus possible
# to allocate a part of this physical memory to be used as storage.

# The name given to a temporary unix file is 'tmpfs'. From Linux 2.6
on this tmpfs is based
# on ramfs. It is possible to fix a limit to its size in a way that
system will allocate
# memory dynamically.

# By default, RHEL and most Linux distributions mount tmpfs (a RAM-
based temporarily
# filesystem for shared memory) on /dev/shm directory and this
temporarily filesystem size
# is always set to be half of the installed memory.

# If that default size is not something expected, we can increase or
reduce the /dev/shm
# filesystem size.

# We may drop or disable this temporarily RAM-based filesystem
entirely, to prevent it
# from auto-mount during system boot-up, if none of the application
in our server is relying
# on shared memory function or explicitly using tmpfs.
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# Implementation
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# By default, tmpfs is mounted during system start-up and its
definition in /etc/fstab looks
# like this (on RHEL 7 there's no specification in /etc/fstab file by
default):

   tmpfs                   /dev/shm                tmpfs
defaults        0 0

# What produces, for a system with 16 GB of RAM, a F.S. like this:

df -k
   [...]
   tmpfs                 7.8G     0  7.8G   0% /dev/shm



# Creating own tmpfs
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# Create a mount point on /mnt/mytmpfs.

mkdir /mnt/mytmpfs

# Change directory permissions so anyone will be able to
read/write/execute on it

chmod 777 /mnt/mytmpfs

# Finally, mount 'tmpfs' the usual way
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mount -t tmpfs -o size=256M tmpfs /mnt/mytmpfs

Remember that **if we don't specify the size, it will be half the RAM**.

For this F.S. to be mounted during system boot-up, add it to /etc/fstab file:

tmpfs /mnt/mytmpfs tmpfs defaults,size=256M 0 0

To increase or decrease /dev/shm filesystem size

Open /etc/fstab and locate the line of /dev/shm and use the tmpfs size option to specify
desired size (on RHEL 7, add the line if not present):

e.g. 512MB:

tmpfs /dev/shm tmpfs defaults,size=512m 0 0

e.g. 2GB:

tmpfs /dev/shm tmpfs defaults,size=2g 0 0

To make change effective immediately, run following mount command to remount the
/dev/shm filesystem:

mount -o remount /dev/shm

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# Disabling /dev/shm filesystem
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# Actually, Linux allocates the memory for this tmpfs on demand
basis, up to the maximum
# size shown in 'df -h' command output. If none of the application is
using the /dev/shm,
# this tmpfs in fact does not consume any memory space. So, why
disable it?

# Anyway, if you prefer to disable /dev/shm temporarily just execute
the umount command:

   umount /dev/shm

# To prevent tmpfs from auto-mount each time RHEL boots up, just
comment out or delete
# corresponding line from /etc/fstab.


# On RHEL 7 API file systems are mounted by systemd. As they
constitute an important mean of
# communication kernel<->userspace and userspace<->userspace they are
mounted automatically
# without user confirmation. It is possible to disable the automatic
mounting of some of them,
# but /dev/shm should always become available, so better leave it
mounted ;)
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