sar

- **[How to use SAR to Monitor System Performance in Red Hat Enterprise Linux - Red Hat Customer Portal](#)**

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sar??????????- Sar - RedHat/CentOS
??? CPU ?????????????

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- ??? CentOS/RedHat 5+??????????
- ?????????????????????????????????

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- CPU / IO / System / Nice / Idle percentages
- Network Traffic / Network Errors
- Load Average and Run queue
- Interrupts
- Memory Free / Cached / Buffered / Swapped
- Device usage per Major/Minor number
- And many others

Sar ????

- SAR writes to log files in /var/log/sa. This directory holds two types of files - sa\#\# files (binary) and sar\#\# files (text).
- The number at the end of the file corresponds to the day of the month that file was recording.
- For example, an sa03 file refers to the 03 day of the month.
- When the sysstat package is installed it places a file into /etc/cron.d/sysstat.
- This sets up two cron jobs.
  1. job to record statistics every 10 minutes.
  2. job to write the binary sa\#\# file to a text sar\#\# file once a day (typically right before midnight).
- Additionally, it places a configuration file in /etc/sysconfig/sysstat.
- ??????????????????????? /etc/sysconfig/sysstat?
  Note that RHEL 4/5 sysstat does not support keeping more than 1 month of data; however, in RHEL6 if a HISTORY value greater than 28 is declared, SAR log files are

automatically split up into separate directories.

Sar Cron Jobs?
/etc/cron.d/sysstat

```
# run system activity accounting tool every 10 minutes
*/10 * * * * root /usr/lib/sa/sa1 1 1


# generate a daily summary of process accounting at 23:53
53 23 * * * root /usr/lib/sa/sa2 -A
```

If it is desired for SAR to collect data more frequently, simply change "*/10" to a new interval.

For example, if to make SAR to track every 5 minutes, simply change to "*/5".

> **" NOTE:**
>
> SAR does not add significant load to a server. It safely can be tuned down to 2 minute intervals without seeing a significant problem. SAR also does not grab individual block data.
>
> RHEL 8/9 ???? crontab ??????? interval????????

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RedHat 5/6/7/8/9

```
yum install sysstat
```

For RHEL 8/9 only

```
systemctl start sysstat-collect.timer
```

?? Interval (for RHEL 8/9)

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```
systemctl cat sysstat-collect.timer
export SYSTEMD_EDITOR=/usr/bin/vi
systemctl edit sysstat-collect.timer
```

?????????: `/etc/systemd/system/sysstat-collect.timer.d/override.conf` ????????

> " NOTE: ??? OnCalendar=<??>??????????????

```
[Unit]
Description=Run system activity accounting tool every 1 minute

[Timer]
OnCalendar=
OnCalendar=*:00/1
```

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```
systemctl daemon-reload
systemctl restart sysstat-collect.timer
```

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```
systemctl cat sysstat-collect.timer
systemctl status sysstat-collect.timer
```

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???? CPU ??

```
# 􀀀􀀀􀀀􀀀􀀀
sar -P ALL

# 􀀀􀀀 CPU
sar -u
```

?????? 13 ??????

```
sar -n ALL -f /var/log/sa/sa13
```

???????? 7 ? ?? 10:00 - 14:00 ??????????????????

```
sar -r -s 10:00:00 -e 14:00:00 -f /var/log/sa/sa07 -o /tmp/mem.txt
```

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```
# CPU on the Fly 10 times every 2 seconds
sar -u 2
sar -u 2 10
# Output to the file and read the file
sar -u 2 10 -o cpu.sa >/dev/null 2>&1
sar -f cpu.sa

# Memory
# kbcommit & %commit is the overall memory used including RAM & Swap
sar -r 1
sar -r 1 10

# Swap
sar -S 1
sar -S 1 10

# I/O
sar -b 1
sar -b 1 10
sar -p -d 1
sar -p -d 1 10

# Paging
# - majflts/s shows the major faults per second means number of pages loaded into the memory from disk
(swap),
#   if its value is higher then we can say that system is running out of RAM.
# - %vmeff indicates the number of pages scanned per second, if it's vaule is 100 % its is consider OK and
#   when it is below 30 % then there is some issue with virtual memory. Zero value indicates that there is no
page scanned during that time.
sar -B 1

# Network
sar -n ALL
```

> **❝ Tips:**

- Memory Swaping ???papgin/papgout/majflt ?????????

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RedHat ??????????????

I/O ????: https://access.redhat.com/labs/rhiou/

> " ??????? lsblk ??????????? lsblk.out????????????? sarXX ??????????????? I/O ??????

Memory ????: https://access.redhat.com/labs/rhma/

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- Monitoring Linux system resources using SAR (System Activity Report)
- Sar command usage with examples in Linux
- The Sysadmin's Toolbox: sar