

Diagnosis of defective HW is realized by using exact methods on selected HW errors and many other HW errors can be determined based on evaluating information recorded and saved in CM.

## Exact methods for determining HW errors by CM

### 1. Disk errors.

**Diagnosis of disks** is either performed by tests by an external program, or monitoring of S.M.A.R.T. parameters. Read more about monitoring of disks' health in the section [S.M.A.R.T. Health of disks](#) [1].

### 2. Monitoring of HW status of servers.

Thanks to Watches, we can monitor several server parameters, whose faulty values indicate HW errors. More about monitoring of servers' HW can be found in the section [Monitoring of HW status of servers](#) [2].

### 3. Monitoring of the insides of PC a NB

Through Watches, several computer parameters can be monitored. Find out more about monitoring of PC and NB in the section [Monitoring of the insides of PC, NB](#) [3]

## Analytical methods

### 1. Online information

One way how to determine a defective HW by using analytical methods is to watch the section **Online information** on CM portal. More about evaluation of data and graphs can be found in the section [View of load \(overload\) of a computer through Online information - state for the past 48 hrs](#) [4]

The screenshot shows the 'Online information' section of the Customer Monitor portal. The interface is in a light blue theme. The top navigation bar includes 'Admin zóna', 'Prehľadanie a Vyhodnotenie', 'Customer Desk', and 'Inovative Communicator'. The left sidebar contains a tree view with categories like 'Upozornenia', 'Zobrazenia', and 'Manažerské informácie'. The main content area is titled 'Zóny' and contains several sections:

- System usage:** A table showing system metrics:
 

Cpu system usage	28 %
Cpu kernel usage	12 %
Memory usage	88 %
Disk activity	10 %
Disk avg read queue	1
Disk avg write queue	0
- Processes by cpu:** A table showing processes running on the CPU:
 

Process 1	C:\Monitor\modules\backup\BackupPlus.exe (11 %)
Process 2	C:\Program Files (x86)\Mozilla Firefox\firefox.exe (6 %)
- Processes by memory:** A table showing processes using memory:
 

Process 1	System ( MB)
Process 2	audiodg.exe ( MB)
- Local ip:** A table showing network information:
 

Ip mac	172.16.75.119 / AC:81:12:C8:F8:AC
Gateway ip mac	172.16.75.1 / 88:1B:21:92:04:E2
Adapter name	Wi-Fi adapter Broadcom 43130N 802.11b/g/n 1x1
Avg down speed in last 30s	99 B/s
Avg up speed in last 30s	99 B/s

Image: Online informácie

Example of use: When a PC is frozen or in an error state, save the status from online information, where you can see the processes, which currently load the processor and the memory. If these information differ at the next PC failure, you might assume that it's a case of defective HW.

Data in online information are evaluated in 3 minutes intervals and only display two processes, which load the PC the most.

## 2. System information from C-Monitor Console

The difference between Online information and system info is, that in system info, the data are updated every 30 seconds and it shows all processes of the selected PC.

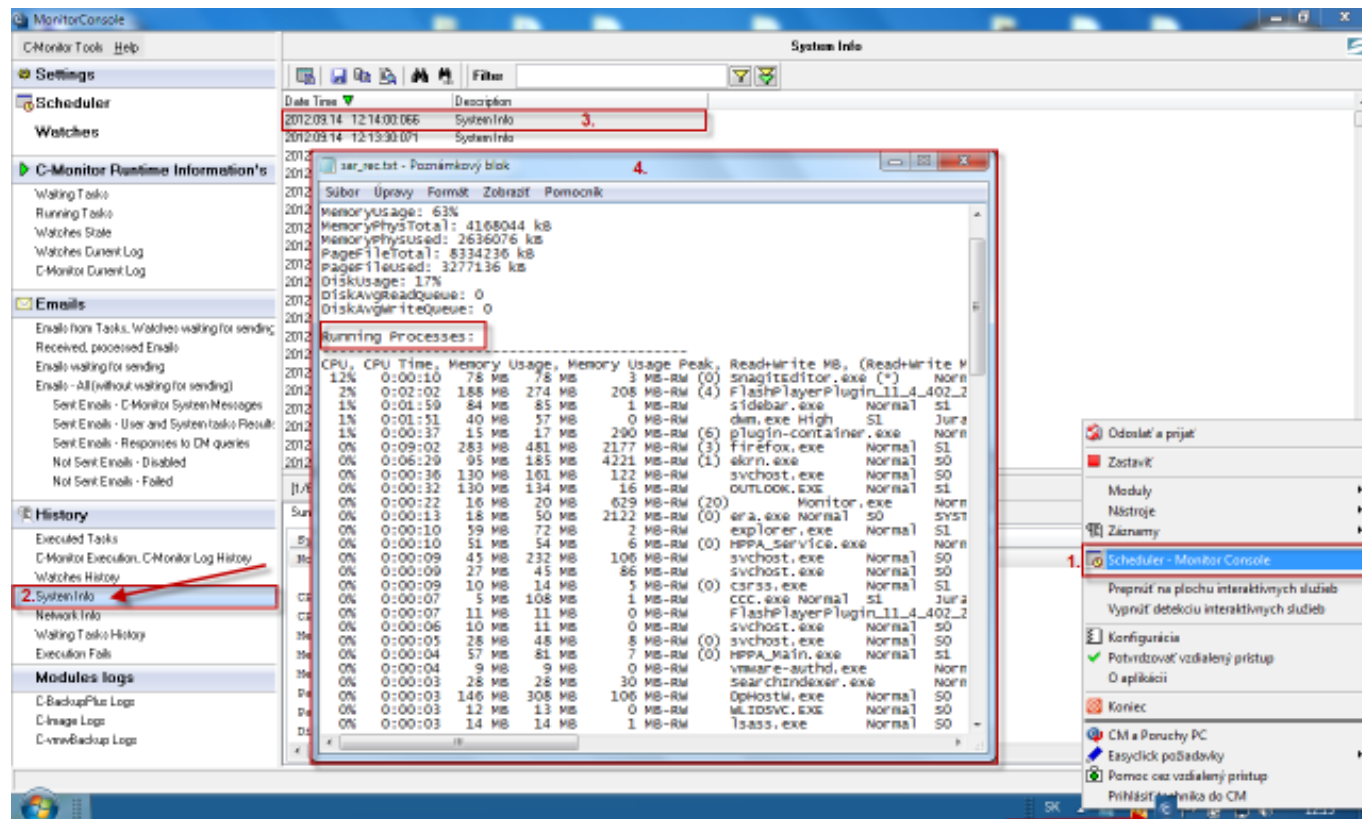


Image: Systémové informácie z C-Monitor Console

## 3. Confirmation of complete PC shutdown due to HW error or power outage (c-monitor log)

When the shutdown was caused by SW, it usually ends up in the blue screen. When it's a spontaneous shutdown, the last archived C-Monitor Log won't contain App Exit Request at the end. In other cases of HW and SW errors you may see the blue screen, and in other cases of the shutdown you should notice a correct request for computer shutdown in the C-Monitor Log. Confirmation of power outage can be solved by a better UPS and its enhanced monitoring.

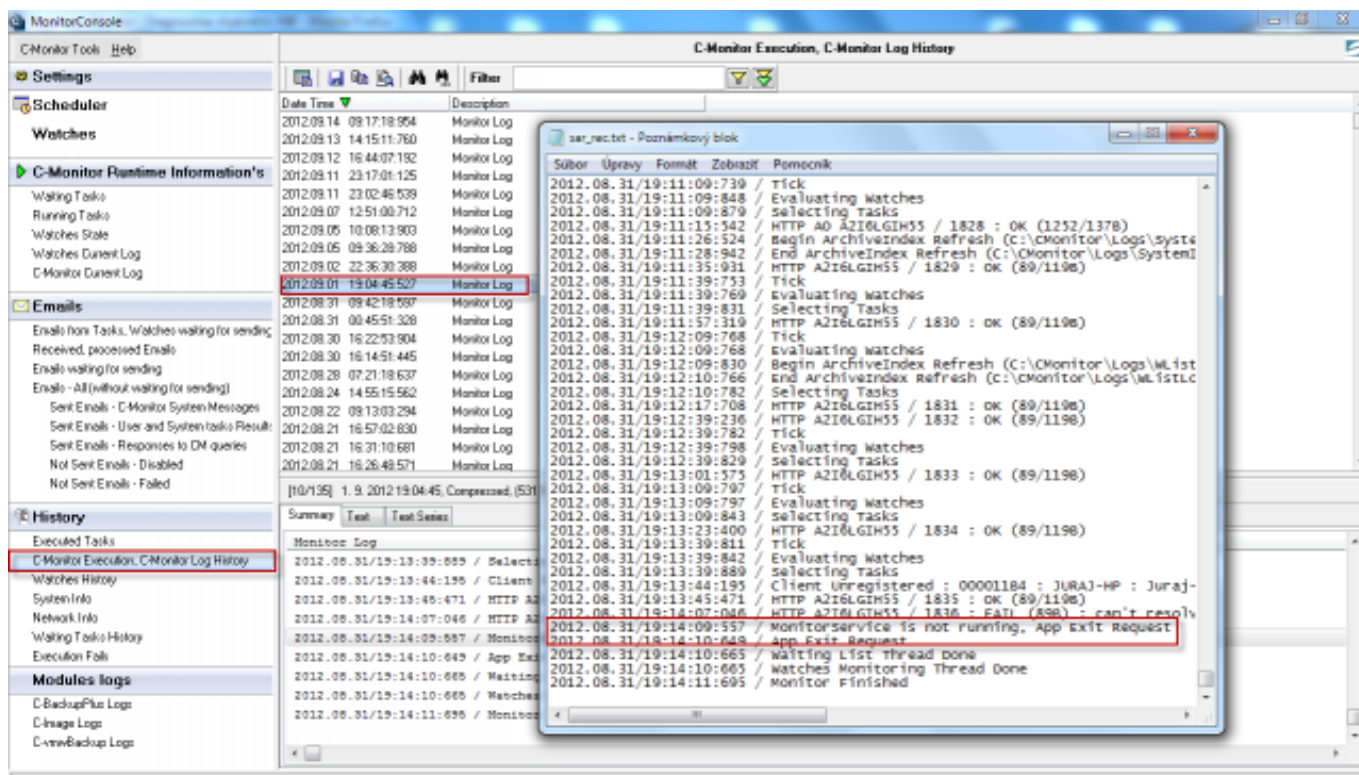
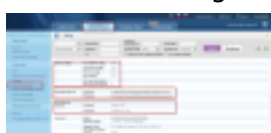


Image: Potvrdenie úplného vypnutia PC z dôvodu HW chyby alebo výpadku energie (c-monitor log)

Date:

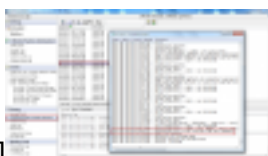
03/03/2012



[5]



[6]



[7]

## Links

[1] <https://customermonitor.eu/how-cm-works-0/monitoring-and-diagnostics/free-space-and-health-drives/s-m-r-t-health-disks>

[2] <https://customermonitor.eu/how-cm-works-0/monitoring-and-diagnostics/diagnostic-defective-hw/monitoring-servers-status-through>

[3] <https://customermonitor.eu/how-cm-works-0/monitoring-and-diagnostics/diagnostic-defective-hw/monitoring-insides-pc-nb>

[4] <https://customermonitor.eu/how-cm-works-0/monitoring-and-diagnostics/load-overload-servers-and-computers/view-load-overload>

[5] [https://customermonitor.eu/sites/default/files/online%20onfo\\_0.png](https://customermonitor.eu/sites/default/files/online%20onfo_0.png)

[6] <https://customermonitor.eu/sites/default/files/system%20info.png>

[7] <https://customermonitor.eu/sites/default/files/app%20exit.png>