Overview of monitoring tools in CM

This component has such functionalities integrated, which monitor a particular state and if something is out of expected range or a failure occurs, the system generates reports in various forms as a record to CM portal, email or SMS.

Overview of the main monitoring functionalities :

Watches - Online Monitoring

   List of requirements for OS Windows

   List of requirements for OS Linux/FreeBSD, Mac OS X

   Monitoring of environment

   Monitoring of HW state of servers (HP, DELL, Fujitsu)

Monitoring of connection between the CM Server and PC (component CM Connection guard) [1] [2]

Regular monitoring of parameters of computers and servers

Evaluating of logs, reports from other programs „External programs"

Indirect monitoring of functioning of applications „Watchdog for files"

Sending change of an error log file directly to the Operator

Main Properties :

- Support for operating systems MS Windows, Linux/FreeBSD, Mac OS X.
- Notification to operators and their superiors by Email, SMS dashboard in the CM portal
- Notification to the PC user (customer) directly on the computer or by notification messages
- Great settings for prevention of unwanted notification messages
- Detailed historical data in CM portal for 2 months, summarized up to 1,5 year
- An option to perform an automatic corrective action after an error state occurs
- High versatility of settings in every type of monitoring

Watches - online monitoring

Is focused on overseeing of critical and important parts of the infrastructure. Online monitoring Watches are done by the C-Monitor client, which submits the data to the CM Server for display and

central notification. The C-Monitor client has its options for notification and performance of corrective actions. Conditional evaluating is also available, which enables to set a very precise monitoring and avoid spamming from the monitoring.

The functioning principle of CM Online Watches is based on conditions, within which there are limits defined – limit values deciding whether the state is good or bad. Thanks to the condition system, the application is far wider than as it is at other systems with fixed predefined rules. To determine the final state of Watch, a logical operation is chosen in the form :

State of Watch is FAIL if (NOT ALL / NONE / ALL /AT LEAST ONE) conditions are true.

Shortened overview of monitoring parameters within CM Online Watches (Windows)

Conditions :

Memory Usage - occupacion of physical or total created RAM including „swap"
CPU Usage - percentage average CPU kernel load in total
Disk Activity - percentage load of disks (on Linux also individually)
Disk Queue Length - at Windows OS parameter indicating load of disk (number of disk operations waiting to be processed).
Network Adapter Usage - percentage load of network adapter.
Internet IP Traffic - data transfer speed on the internet (beyond LAN)
Internet IP Transferred Data - transfered data on the internet (beyond LAN)
Free Space on Disk - remaining empty space on disk
Exists File - presence of the selected file
File Size - size of the selected file
File Size in Directory - size of the selected files in directory
Exists Directory - available directory to read
Directory Accessible - available directory to read and write
LoggedOn User - logged on user
OS Running Time - Operation System running time
Operating System Started - the OS has been started a certain interval ago
Date - defining a limit date
Day of Week - day of Week
Time - defining a limit time
Time Range - defining an interval
Current IP - current IP address (from any network adapter)
Performance Counter - reading of any counter in OS Windows
Hardware Monitoring - reading of temperature, blower rotation... from a chip on the motherboard
Ping - valid response from a particular network location (IP address)
Ping Round Trip Time - response time of a particular network location (IP address)
Ping Packet Loss – counting of lost packets when testing a response
SMTP - basic functioning of communication on the SMTP protocol
POP3 - basic functioning of communication on the POP3 protocol
HTTP, HTTPS - comparing strings aquired from a http or https page (also via Proxy)
HTTP, HTTPS response time - load *time* of selected http or https page (also via Proxy)
Transfer Speed - transfer speed on local network adapter
Transfer Speed of FTP - transfer speed of transfer from/to a FTP location
SNMP – reading parameters by the SNMP protocol
Enviroment Monitoring (SNMP) - measuring of temperature, humdity by devices HW Group Poseidon
Enviroment Monitoring (HTTP) - measuring of temperature, humdity by devices Wanet WARIO
E-Mail Loop Test - sending a unique email by SMTP server and receiving by POP3 within a time limit
EventLog Events Count - number of critical events on roles of Windows 2008 and higher of servers
Chat - internal script language in C-Monitor for creating automated, more complex measurements
Chat Variable - transfer of a variable from the script to be evaluated by C-Monitor
Chat Numeric Variable - transfer of a numerical variable from the script to be evaluated by C-

Monitor
Chat Vector Variable - variable transfer at once (vector) from the script to be evaluated by C-Monitor
Service status - state of a service
Loaded Device Driver - presence of a driver in memory (system)
Running Process - presence of a process in memory
Running User Process - presence of a process in memory under concrete users
Unauthorized Admin Process - login of unauthorized user with admin permissions
Process Usage - load of CPU or RAM from a concrete process
Network Presented - active network from any adapter
Watch State - input for evaluation from another Watch (Watch concatenation)

Predefined templates in wizard in Watches:

Predefined performance templates :
General performance - summary view of load of servers
SQL memory, Page splits, Users – Efficiency of MS SQL servers, part 1.
SQL Transactions and deadlocks - Efficiency of MS SQL servers, part 2.
SQL query response time - Efficiency of MS SQL servers based on counting of response from access to DB and performing a simple task
SQL query with table response time - Efficiency of MS SQL servers based on counting time of creation and deletion of a table in DB
Terminal active sessions – number of actively logged users to the terminal server

Predefined health templates :
WIN Server roles Event errors – automatic detection of server roles and searching of errors in Eventlog
MS SQL Query test – Availability of MS SQL servers based on work with tables
APC UPS Status a Low Energy – state of APC backup power sources aquired from local installation of Powerchute Business edition

Shortened overview of monitoring parameters within CM Online Watches (Linux/FreeBSD, Mac OS X) :

Conditions :

CPU Usage
Disk Free Space
Disk Usage
HTTP(s) response
Load Average
Memory Usage
Network Adapter Usage
OS Running Time
OS Started
Ping
Ping Packet Loss
Ping Round Trip Time
Process Running

Monitoring of environment

Monitoring of environment via connected devices for change of physical units into digital form for the Ethernet network. Supported devices are of the brands Wario and Poseidon, both available at contact [3] address.

The most common measured units are :
Temperature
Humidity
Outages of 230V
Contacts - for instance for access to server room or rack

With these devices, the following can be measured :
Power consumption, meteorological variables - precipitation, wind velocity and direction ...

Monitoring of HW state of servers (HP, DELL, Fujitsu)

Monitoring evaluates the state of hardware of servers using the manufacturers' tools. Monitoring is supported for every operating system, on which it´s possible to install the manufacturer´s monitoring system. This involves the programs: Insight Manager (HP), Open Manage (DELL). C-Monitor client reads values via SNMP through Watch, evaluates them and subsequently sends them to the CM Server. The solution is preconfigured, in the Wizard in C-MonitorConsole/Watches you choose the type of server, which you want to be monitored and then you only have to append the IP address. In the manual Monitoring HW HP, DELL, FUJITSU, there is a description for preparatory installation for operating systems Windows and vmware ESX.

The Monitored HW parameters :

No-failure operation of RAM
No-failure operation of disks (including automatic detection of occupied slots)
No-failure operation of RAID disk fields
No-failure operation of Power supplies
No-failure operation of blowers
Temperatures on various places inside the server in limit values
State of network adapter

Regular monitoring of important computer parameters

Automatic, once in 24 hours performed check of important parameters of computers and servers The parameters are gathered automatically, with no need for configuration (preset configuration is a part of C-Monitor) and preset are also the limits for notifications on the CM Server. These are data gathered by the module C-Descript, limits for warnings are differentiated on the basis of the selected Priority. In case the failure was not removed, the warnings are escalated to a superior worker.

Empty space of drives
    information about every partition of a connected local drive
  information about connected network disks of the last connected user
HW faultiness of disks
    Data about the „health" state of S.M.A.R.T disks (except disks on RAID allotters)
State of the antivirus program
  state of update and functioning of the antivirus program on the basis of Security Center from WIN OS – for every antivirus on every WIN OS (since WIN XP up to WIN8)
  state of update of the antivirus program with concrete date of the last update (ESET, AVG, Microsoft Security Essentials, McAfee, Norton Antivirus, GFI Vipre)
    expiration of license validity ESET, AVG on every OS, other antiviruses only on WIN8
State of service packs and repair packs - registration according to the last successful installation
Last restore point check (System Restore)
Size of data files of programs for email on PC
  Size of mail clients data files: Outlook, Outlook Express, Windows Live Mail
  Size of data files of programs for emails on Servers
  Data files size and eventually even clipboards of the server system MS Exchange (setting through

Watches)
Connection of a PC that is not registered in CM into a network
   List of computers, which were connected to the network and are not in CM

Evaluation of logs, reports and other programs „External programs"

Evaluation of logs from any kind of application / External programs - Processing of any mail from a third-side application, watchdog for its regular delivering, so that the administrator has support at monitoring of the state of processes and applications that are not directly supported in CM.
From the monitored application, a mail must be sent on the CM Server´s address, and the success rate criteria / errors and interval of message sending from the program are defined in CM.
Evaluated are the texts in the message body and in the attachment. Formats are html and plain text.
Final state is available in the Zone External programs and error states are in the section Errors.

Indirect monitoring of functioning of applications „Watchdog for files"

Watchdog for changed files - Via the C-Monitor´s task „Files Watchdog", a list of files changed compared to the previous launch of „Files Watchdog" is collected. If the list is empty, i.e. there was no change, it signals an error state. This is suitable for simplified checking of programs activity, where the change is expected in beforehand defined intervals and a change in files indicates, with high reliability the correct function of the monitored file, for instance records from a camera systems, tarificators, exports from SQL databases and so on. The data on the server are displayed in the Zone – Watchdog for files and the error states are in the section Errors.

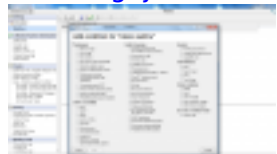## Sending of change of an error log file directly to the Operator

**Sending of (changed) content of a log file to the administrator´s (operator´s)
address** - Via C-Monitor client´s task „Send log file(s) to admin´s email address" it is possible to capture the change of the monitored file and send the change content to any address. The thing is that some applications have such error states log, into which if anything is written, it means it has to be solved. The administrator also receives directly the error´s description in his mailbox and can react way faster. The entire function of this watchdog goes beyond the CM Server (C-Monitor client sends data directly to the selected email address)

Date:
12/21/2012External Links:
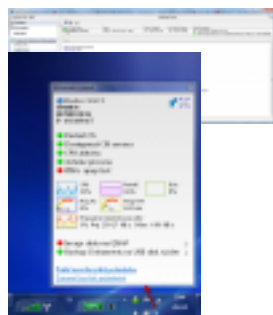Ako funguje CM - Monitoring a diagnostika [4]Images:

[5]

[6]

[7]

[8]

[12]

[9]

[10]

[11]

[13]

Links
[1] https://customermonitor.co/components/cm-connection-guard
[2] https://customermonitor.co/komponenty/cm-backup#C-Image
[3] https://customermonitor.co/contact
[4] https://customermonitor.co/node/314
[5] https://customermonitor.co/sites/default/files/pridanie%20watchu%20cez%20c-monitor.png
[6] https://customermonitor.co/sites/default/files/pridanie%20podmienok%20k%20watchu.png
[7] https://customermonitor.co/sites/default/files/pridanie%20watchu%20cez%20cm%20portal.png
[8] https://customermonitor.co/sites/default/files/pridanie%20podmienok%20watchu%20cez%20cm%20portal.png
[9] https://customermonitor.co/sites/default/files/stav%20watchu.png
[10] https://customermonitor.co/sites/default/files/staw%20watchu%20na%20cm%20serveri.png
[11] https://customermonitor.co/sites/default/files/historia%20watchu.png
[12] https://customermonitor.co/sites/default/files/watches%20v%20tabulkovej%20forme.png
[13] https://customermonitor.co/sites/default/files/Informacny_panel__do_Komponentov.png