

Zabbix - demo

Monitoring emulated servers with
Charon-AXP, Charon-VAX, Charon-PDP,
Charon-SSP, Charon-PAR

Stromasys – June, 2021



Zabbix

- Zabbix is an enterprise-class open source distributed monitoring solution.
- Zabbix is software that monitors numerous parameters of a network and the health and integrity of servers. Zabbix uses a flexible notification mechanism that allows users to configure e-mail based alerts for virtually any event. This allows a fast reaction to server problems. Zabbix offers excellent reporting and data visualisation features based on the stored data.
- More at <https://www.zabbix.com/>



Context

- Stromasys provides emulators for legacy servers hosted on Windows or Linux standard X86/X64 platforms
- For the purpose of this presentation I will focus on OpenVMS
- Our customers run critical systems – most of them out of support from HPE/VSI for OpenVMS – they chose to freeze their environment
- Issues:
 - Keep some monitoring on critical systems seen as black boxes
 - Help and anticipate classical production issues : hardware, disk space, ram, high cpu
 - Loss of competence – servers are managed by teams who don't know OpenVMS => need to locate files, changes, alerts : done with zabbix

Demonstration LAB

- 6 CentOS virtual machines running on VMware: 4x CentOS7, 1x Windows Server 2016, 1x Windows 7 Ultimate
 - Zabbix server on Linux only, here CentOS7
- Zabbix server running version 4.4.x (latest available)
- For the demo we will focus on a Zabbix client running on CentOS7 with Charon-AXP V4.10 installed
 - One OpenVMS 8.4 Charon virtual machine
 - One Tru64 5.1b Charon virtual machine
 - One Solaris 10 Charon virtual machine
- Alerts are setup to send customized emails

Charon monitoring rules

- Service status: stopped, starting, started, etc...
- Monitoring rules:
 - Communication lost with license key / cleared when communication is restored or if license is found or when service is stopped
 - License has changed / cleared if « license found » message is detected or when service is stopped
 - USB dongle removal detected (immediate detection) / cleared when arrival detected or when service is stopped
 - All other WARNING* messages / cleared when service is started
 - All other ERROR* messages / cleared when service is started
 - For Charon-SSP, all other FATAL messages
 - License expiration → alert sent several days before expiration
 - Charon product version has changed + on Windows, list of installed versions has changed (on Linux: 1 version at a time)
 - On Windows (Charon-AXP/VAX/PDP): Charon service state, path (meaning change in Charon version) and startup type
 - Connection to console for AXP and SSP only
 - Information is reported in the log file
 - This is not the case for VAX (and HPA)
 - Log and configuration file existence
 - For AXP/VAX/PDP
 - tick for license check (alert if no data is received)
 - CPU BUGCHECK
 - Sentinel driver: process monitoring, version change, configuration settings for Sentinel Admin Control Center (remote access) change (compared to what is expected/users)
 - Automatically filled repository for log and configuration files (Charon servers on Linux only):
 - Configuration file copied upon change (manual edit or modified date change)
 - Latest log file copied when the virtual machine is stopped
 - And more: debugging mode or log counters enabled or not in log, startup type for Charon-SSP, etc...

Virtual machines monitoring rules

- System just started (information)
- Zabbix agent not responding → could mean the process, the network or the system is down
- Changes: password file, hostname, kernel
- Too many processes running
- CPU, swap space and memory usage
- Demo: file does not exist → /tmp/testfile
 - On Tru64, for the demo → auto recovery (file re-created automatically)
- Automatic discovery of new NIC and filesystems
 - NIC: up or down, depending on Operating system, performances
 - File systems: lack of free space + on Tru64 V5.1: mounted or not
 - For VMS: disks, shadowsets monitoring, print and job queues, tapes, custom applications (backup sets), etc...
- Easy to setup templates:
 - For Charon virtual machines and services monitoring
 - For legacy operating systems

Charon dashboard



Charon demo dashboard

Custom scripts
to monitor
applications,
here backups



Alert email example – License expiration

Customized
script to
send alerts

Problem started at 13:36:26 on 2019.01.07

Severity: Average

Original problem ID: 984557

Problem name: License will expire soon : 10-Jan-2019. License: 100- . Product: CHARON-SSP/4M, CHARON-SSP/4U, CHARON-SSP/4U+ for Linux x64

Host: [CHARON] SSP - CentOS7 ()

Operating system: CentOS Linux 7 (Core)

Event found

Expiration: 10-Jan-2019. License: 100- . Product: CHARON-SSP/4M, CHARON-SSP/4U, CHARON-SSP/4U+ for Linux x64

Description

The license detected on this server will expire soon. Please update it as soon as possible.

Cleared when

- no license is about to expire or
- manually acknowledged

Host information

Location: Geneva Lab ESX

Folder: Zabbix Tests

Name: Zabbix Client - CentOS7 - CharonSSP

Contact name: Bruno

Installer name: Vasco

Notes

Alert email example – CPU Halted

Problem started at 09:32:35 on 2018.12.04

Severity: High

Original problem ID: 641559

Problem name: Charon/ds20 ds20vms - CPU0 Halted

Host: [CHARON] AXP V4.9 - CentOS7 ()

Operating system: CentOS Linux 7 (Core)

Product: CHARON-AXP (AlphaServer DS20), V 4.9 B 19402

Log file: /charon/logs/ds20vms.log

Configuration file: /charon/ds20vms.cfg

Event found

20181204:093254:INFO :0:000003C3:21264_vms_(43): CPU0 Halted (HALT INSTRUCTION @PC = FFFFFFFF.8008FA84)

Description

CPU0 Halted message found in log file /charon/logs/ds20vms.log

Cleared when

- the virtual machine is stopped (a guest operating system reboot is not enough) or
- manually acknowledged

Host information

Location: Geneva Lab ESX

Folder: Zabbix Tests

Name: Zabbix Client - CentOS7 - CharonAXP

Contact name: Bruno

Installer name: Bruno

Alert email example – CPU Halted - Resolved

Problem has been resolved at 09:33:25 on 2018.12.04

Severity: High

Original problem ID: 641559

Problem name: Charon/ds20 ds20vms - CPU0 Halted

Host: [CHARON] AXP V4.9 - CentOS7 (1 [REDACTED])

Operating system: CentOS Linux 7 (Core)

Product: CHARON-AXP (AlphaServer DS20), V 4.9 B 19402

Log file: /charon/logs/ds20vms.log

Configuration file: /charon/ds20vms.cfg

Acknowledgement history

2018.12.04 09:33:24 "Bruno Miretti Administrator (Bruno)"

Action: Close problem

Shutdown to set auto_action to restart at SRM prompt



Description

CPU0 Halted message found in log file /charon/logs/ds20vms.log

Cleared when

- the virtual machine is stopped (a guest operating system reboot is not enough) or
- manually acknowledged

Host information

Location: Geneva Lab ESX [REDACTED]

Folder: Zabbix Tests

Name: Zabbix Client - CentOS7 - CharonAXP

Contact name: Bruno

Installer name: Bruno

Alert email example – Shutdown detected (SSP)

Problem started at 11:00:13 on 2019.07.08

Severity: Warning

Original problem ID: 1342022

Problem name: Charon/ssp4u myvm - Shutdown detected

Host: [CHARON] SSP - CentOS7 ()

Operating system: CentOS Linux 7 (Core)

Product: Charon-SSP/4U v3.0.1

Log file: /myvm/myvm.log

Configuration file: /opt/charon-agent/ssp-agent/ssp/sun-4u/myvm/myvm.cfg

Event found

2019-07-08 11:00:13 INFO CIH prom_poweroff: exit

Description

A shutdown of the virtual machine operating system has been detected (prom_poweroff) in log file /myvm/myvm.log

Cleared when

- the virtual machine (service) is stopped or
- the virtual machine is booted ("Idle handle enabled" detected) or
- manually acknowledged

Host information

Location: Geneva Lab ESX

Folder: Zabbix Tests

Name: Zabbix Client - CentOS7 - CharonSSP

Contact name: Bruno

Installer name: Vasco

Contract number or customer name: Stromasys

Notes

Demo

- OpenVMS demo
 - Press CTRL-P on the system console -> CPU0 Halted alert
 - Unmount a disk and mount again
- Tru64 V5.1b demo
 - Start/stop virtual machine / Tru64 V5.1
 - Connect to the system (OPA0) console
 - Unmount a file system
 - Remove the file used for demo to check automatic action is performed to solve the problem
 - Update the configuration file, check the copy is performed to the repository
 - Stop the virtual machine, check the log file is copied
 - Check email alerts received and their counter alerts

Short video / Charon log monitoring

- Details:

- Connection to the ds20vms system console generates displays an alert (grey color) on the dashboard (No alert by mail sent)
- CTRL-P is pressed on the console and the problem is solved manually.

Please feel free to contact us to watch this video
Too big to share in this presentation
info@stromasys.com

Short video / Tru64 monitoring

- Details:

- /data2 filesystem will be filled then freed (interval=1min)
- /data1 filesystem will be unmounted/mounted: monitoring done with a combination of Tru64 EVM filter and zabbix_sender (quite immediate)

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Zabbix current restrictions with Charon

- Charon products and versions for logs and services monitoring
 - Charon-AXP/VAX V4.9 minimum on Linux and Windows (+PDP)
 - Charon-SSP 3.0.1 on Linux (also works with 2.0.5, minimum version)
 - Charon-HPA → possible to monitor but the log is not really designed for this (no counter alerts for example)
- Agent support on:
 - Tru64 V5.1x
 - OpenVMS Alpha 7.3-2 and more (agent provided by sysgroup.fr team)
 - Solaris 2.5.1, 4, 5, 6 and 7 with some limitations (less functionalities/old agents)
 - Solaris 8, 9 and 10
- Not supported today (development required)
 - Tru64 V4.0x → Compilation of agent on going/need to test communications and features+create the associated templates
 - OpenVMS Alpha < 7.3-2 and VAX VMS
 - OpenVMS file content monitoring (log)
 - Solaris 2.5.1, 4, 5, 6 and 7 with recent agent version
 - HP-UX: not implemented/tested

For more details!

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Consider Stromasys solutions for legacy servers:
when downtime is not an option!