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 \rightarrow 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 \rightarrow 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 \rightarrow 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

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Charon demo dashboard





Alert email example – License expiration

Problem started at 13:36:26 on 2019.01.07

Customized script to send alerts Severity: Average Original problem ID: 984557 Problem name: License will expire soon : 10-Jan-2019. License: 100 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 = FFFFFFF.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) 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 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 <u>info@stromasys.com</u>



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)

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



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 <u>sysgroup.fr</u> 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!

Contact us: <u>alexandre.souf@stromasys.com</u> <u>bruno.miretti@stromasys.com</u>

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

