



## / Engineer Training PAE-2016

### CHARACTERISTICS AND REQUIREMENTS

#### 1. Characteristics

- Length of the face-to-face program: **15 hours.**
- Length of the online program: **12 hours.**

#### 2. Requirements

- This course requires **a minimum of a year of experience** in Pandora FMS or a **PAT certification**
- Intermediate skills in networking
- Advanced skills in Linux
- Intermediate skills in scripting
- 1 computer per student (it will be provided by Ártica ST in the face-to-face program)
- Network in the classroom to connect all hosts (including the teacher)
- Windows/Linux systems with 2GB RAM and 10GB free disk.
- VirtualBox installed in their systems

### SYLLABUS

#### 1. WEB MONITORING

- Introduction to Web monitoring
- Definition of Goliat server (performance, features, configuration, check types, parameters)
- Examples of modules
- Exercise on Web monitoring





## 2. SERVER PLUGINS

- Introduction to server plugins
- Definition of server plugins (performance, features, configuration, check types, parameters)
- Nagios compatibility, manual register y PSPZ plugins
- Considerations adopted from working with plugins
- Examples of usage
- Exercise on monitoring with server plugins

## 3. AGENT PLUGINS

- Introduction to agent plugins
- Concept and definition of agent plugins (performance, features, configuration, check types, parameters)
- Module library and online plugins
- Examples on plugins
- Exercise on monitoring with agent plugins

## 4. FILE COLLECTIONS

- Introduction to file collections
- Concept and definition of file collections (performance, features, configuration, application and parameters)
- Practical exercise

## 5. MONITORING POLICIES

- Introduction to policies
- Concepts (difference between templates and policies, adopted modules, linked and unlinked p.e)
- Definition of policies (performance, features, configuration, agents, modules, alerts, queues, Fcs, application, parameters...)
- Practical exercise





## 6. MONITORING WITH SOFTWARE AGENTS

- Introduction to broker and proxy mode
- Concepts and definition of agents under these modes (performance, features, configuration, agents, parameters)
- Exercise on advanced local monitoring (using Fcs, policies and proxies)

## 7. ADVANCED SNMP

- Introduction to SNMP
- Concepts and definition of SNMP Polling and received SNMP trap handling (performance, features, configuration, parameters)
- SNMP monitoring tools in Pandora FMS (SNMP Walks, SNMP Explorer, MIB Loader Enterprise, SNMP Recon Scripts)
- SNMP alert system and SNMP Trap Forwarding
- Alert definition on redirected traps, trap filtering and usage cases
- Practical exercise on SNMP alert traps

## 8. SYNTHETIC MODULES

- Introduction to synthetic modules
- Concepts and definition of synthetic modules (performance, features, configuration, types)
- Examples on synthetic operations

## 9. SERVICES

- Introduction to monitoring services
- Concept and definition of service in Pandora FMS (performance, features, configuration...)





- Representation of the status of a service as an agent module (Pred. Server) or in the visual console
- Examples of usage

## 10. INVENTORY

- Introduction to the server inventory and software agents in Pandora FMS.
- Concepts and definition of inventory modules (performance, features, configuration, differences between the systems)
- Types of modules with remote and local inventory. Utility and use (hardware, software, as SO, custom fields ...)
- Events and Change Management
- Exercise

## 11. HIGH AVAILABILITY (HA)

- Introduction to High Availability
- Concepts, performance, features, configuration, types of HA and mapping modes
- HA in Data Server by means of HA Load Balancer and internal Software Agents.
- HA in remote components through the HA internal system
- Switchover
- HA in MySQL (Active/Active Cluster and Active/passive DRBD)
- Examples of usage (usually of the HA internal system)

## 12. EXTERNAL AUTHENTICATION

- Introduction to external authentication systems
- Concepts and definition of external authentication systems (operation, configuration, parameters, types of system...)





- Examples of usage (if we have the time, a demonstration with a remote Pandora)

### 13. DIMENSIONING OF HIGH CAPACITY ENVIRONMENTS

- Introduction to dimensioning of high capacity environments
- Historic DB
- Concepts and definitions (load balancing, fine tuning, load measurement, module configuration by type, server resources...)
- Dimensioning Examples (extension of Resource / threads / servers to reduce execution intervals P.E)
- Diagnostic and capacity tools
- Dimensioning / tuning exercise

### 14. ADVANCED MANAGEMENT OF PANDORA FMS

- Introduction to advanced utilities in Pandora FMS (Web API, CLI, SQL interface)
- Description of various utilities for the maintenance and management of Pandora FMS (operation, configuration, types, parameters ...)
- Examples of usage

### 15. FINAL EXAM

- \* PAE Certification Exam





## CERTIFICATION EXAM

- \* This certification verifies that you are capable to implement and deploy Pandora FMS successfully.
- \* **By passing the certification exam, you will obtain the PAE certification.**
- \* This exam can be done online or face-to-face.
- \* Language: **English**

## TRAINING MATERIAL AND RESOURCES

Each student will receive the documents below:

1. The official documentation of the course (in PDF)
2. The presentation of the course
3. An attendance certificate

Once the program is over, each student is entitled to do an online certification exam (PAT or PAE). If the student passes the exam, they will obtain an administrator certificate (PAT or PAE).

