



**PANDORAFMS**  
E N T E R P R I S E

# Learning Guide

## PAE (EN) Engineer Course

### Pandora FMS

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## 1. RULES

### 1.1 Requirements

For a better use of the course is necessary to have an intermediate knowledge of networks and Linux systems. We recommend to do previously the course "**NSP (EN): Networks and Systems for Pandora FMS**" in which there is a summary of everything necessary about network administration to be able to understand all the topics and manage Pandora FMS in an efficient way.

In addition, for a maximum use of this course, one year of experience with Pandora FMS or having passed the course "**PAT (ES): Pandora FMS Technical**" is required.

### 1.2 General evaluation system

The PAE Course: Pandora FMS Engineer course is divided in a theoretical part and a practical part, being necessary to pass the theoretical part only to pass the course.

#### 1.2.1 Theoretical part

The theoretical part of the course comprises the resolution of 10 self-assessments covering each of the course topics, and a final self-assessment covering the entire course.

Topic self-assessments consist of 10 questions per self-assessment, where a minimum grade of 7 will be required to pass. There will be 2 attempts for each self-evaluation to pass it, with a period of 15 minutes to make each of the attempts. Within the attempts, the questions will be made in a sequential way, that is to say, if we pass to the next question, we will not be able to return to the previous one.

The final self-assessment consists of 30 questions, where a minimum grade of 7 will be required in order to pass. There will be 3 attempts with a time of 30 minutes to make each attempt. Those students who do not manage to pass some self-evaluation will have to contact the tutor to look for a solution to their problem.

#### 1.2.2 Practical part

The practical part of the course consists of the resolution of 6 practical cases divided between each of the topics of the course.

For each practical case, a doc or pdf file with the student's proposed resolution must be provided. Without this answer the student will not be able to visualize the solution proposed for the practical case.

### 1.2.3 Additional observations

There is a general forum for doubts related to the Pandora FMS tool, as well as a specific forum for each topic where doubts related to the study of each topic can be raised.

Additionally, there will be a fixed tutoring schedule with the course teacher, where special cases of problems raised by students can be solved.

The information reflected in this course enables you to obtain the official PAE certification, which includes two tests: a theoretical test and a practical test. If you wish to obtain this certification, contact Ártica ST's commercial team to contract the service and the exams.

## 2. COURSE OBJECTIVES

Upon finishing this course, you will be able to:

1. **Perform advanced monitoring, in distributed architectures and high availability environments.**
2. **Operate with plugins (server and agent).**
3. **Use the Pandora FMS monitoring policy system and manage Pandora FMS services.**

To do so, you will have theoretical resources and complementary case studies for a better understanding of the application.

At the end of each thematic unit you will have a self-assessment to be able to consolidate the knowledge and to verify your degree of comprehension.

Also, you have links to Pandora FMS resources with which you can expand your knowledge

## 3. COURSE STRUCTURE

The course includes the following thematic units:

1. **Monitoring with advanced software agents and distributed architectures.** In this topic you will learn to monitor complex and distributed architectures through four different components: the software agent in proxy mode, the software agent in broker mode, the Satellite Server and the Export Server. You will discover its main features, when it is advisable to use them and how to configure them in Pandora FMS.

2. **Monitoring with remote server plugins.** This section deals with all the key aspects of monitoring with server plugins, based on the remote execution of scripts from the Pandora FMS server. You will learn how to register them (manually and automatically) and then use them in the agents. In addition, a series of examples will be presented to better understand these plugins and their operations.
3. **Monitoring with agent plugins.** In this unit you will study how to perform monitoring with custom programs or scripts that are executed on software agents. You will learn how to configure them and use them in the agents with the help of a series of examples. Finally, there is a summary box that presents the differences between the server plugins and the agent plugins.
4. **Monitoring policies.** This section explains what monitoring policies are, what they are used for, and how they are especially advantageous for large environments. You will learn how to create, manage, eliminate, duplicate, configure and apply policies, as well as recognize the three types of modules that you can encounter when working with this system. Lastly, an example of a policy applied to a group of agents will facilitate learning.
5. **Advanced SNMP.** In this unit, there will be a reminder of the basic aspects of monitoring with SNMP dealt within the course PAT (EN): Pandora FMS Technical and you will learn about new topics in both SNMP polling (recon script) and SNMP traps (customization of traps and environments with many traps).
6. **Service monitoring.** This section examines the basic concepts of monitoring services and how they are configured in Pandora FMS. You will learn how to view them and group them together in order to develop better operations.
7. **High Availability (HA).** Although Pandora FMS is a very stable application, it may be necessary to establish load balancing and high availability mechanisms in critical and/or heavily loaded environments. In this topic you will learn how these functions are performed in the various components of Pandora FMS that can operate in HA.
8. **Pandora FMS advanced management.** A series of advanced features of Pandora FMS that have not been dealt with throughout the course will be introduced, such as: external authentication, database management, system backups, Tentacle configuration, optimizations for high capacity environments, integrations with third parties with the external API and with CLI, as well as the creation of events in the command line.

9. **Monitoring and collection of logs.** You will learn about monitoring and collecting logs on Pandora FMS in detail, based on the ElasticSearch+LogStash technology.
10. **Web user experience.** In this last unit, you will see what web user experience in Pandora FMS consists of and how to install and configure the WUX server. Lastly, you will learn how to record a web session and show the collected data.