**About this course**



**TN612 IBM SmartCloud Analytics Predictive** **Insights 1.3.3 Implementation and Configuration**

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This two and one-half day class provides a complete overview of the Predictive Insights product. It introduces analytics and how it is used to create automated thresholds, and draws relationships between key performance indicators (KPIs). You learn to select useful KPIs from their monitored data and develop data models that are fed into the analysis engine. You also learn how to install and configure the analysis engine to account for different monitoring environments, and how to use the interface and interpret various alarms.

This training provides and overview of how analytics is used to monitor and alarm on services. It then describe the architecture and installation process of the Predictive Insights solutions. You then learn about how the solution collects monitoring data from various data sources and then use a mediation tool to select and filter the data inside these data sources. You learn how to configure the server and then analyze data to search for anomalies that can lead to service disruptions. Students complete exercises to install the software and use the mediation tool to connect to and manipulate data sources. They then configure the server and analyze these data sources and review the anomalies generated. You learn how to use advanced mediation techniques using the third-party tool logstash.

The lab environment for this course uses the RHEL 6.5 platform.

For information about other related courses, visit the Cloud & Smarter Infrastructure education training paths website:

ibm.com/software/software/tivoli/education/

**Details**

**Delivery method** Classroom or instructor-led online (ILO)

**Course level** ERC 1.0

This course is an update to the TN611 course. It includes new materials for advanced mediation

**Product and version** IBM Operations Analytics Predictive Insights 1.3.3

**Duration** 2.5 days

**Skill level** Intermediate

# About the student

This course is designed for an intermediate user who has experience with both monitoring tools (for example, IBM® Tivoli® Monitoring) and the Linux operating system.

Before taking this course, make sure that you can use basic Linux operating system commands such as **cd**, **more**, **tail**, **ls**, as well as how to include JAR files to a class path for Java applications to find new or modified code.

# Learning objectives



**Learning objectives**

In this course, you learn to perform the following tasks:

* Describe how analytics improves problem detection
* Install the Predictive Insights software
* Describe and mediate data sources that provide the basis of the analytics model
* Configure the server to perform an analysis
* Analyze and anomalies and review their details
* Learn techniques to help mediate complex data

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The objectives of each unit are as follows:

* + Unit 1 Overview
    - Describe how analytics improves problem detection
    - Describe how Predictive Insights learns about system performance
    - Describe when Predictive Insights alarms on anomalies
  + Unit 2 Architecture
    - Describe the server layout options
    - Describe the roles of each server in the implementation
    - Calculate the required resources for implementation
  + Unit 3 Installation
    - Describe the installation process
    - Describe potential problems with installation
    - Validate that installation is successful
  + Unit 4 Data Modeling
    - Select useful key performance indicators
    - Connect to external data sources
    - Model data sources with client mediation utility
    - Deploy data model
  + Unit 5 Configuring and Operating the Server
    - Configure the server for important properties
    - Start and monitor the analysis of your data
    - Enrich alarms
    - Suppress various alarms
    - Interact with alarms inside the GUI
    - Describe the data that is associated with an alarm
    - Search for various anomalies and metrics
  + Unit 6 Administration
    - Address problems with installation
    - Fix common problems with mediation tool
    - Remediate startup issues with analytics server
    - Troubleshoot issues with extraction
    - Debug problems with alarms
  + Unit 7 Advanced Mediation
    - Describe the third-party tool logstash
    - Build logstash conf files for mediating data
    - Describe mediation considerations

# Course agenda

The course contains the following units:

1. Predictive Insights overview

This unit provides an overview of the Predictive Insights solution and how you use it to detect problems in your infrastructure. You are introduced to the statistical models that you use for the monitoring data that you collect about your applications and servers. Using this model, you determine normal operations and then use alarms to alert you when your infrastructure deviates from normal operations.

1. Architectural information

This unit is about the physical and logical server layout that is needed to implement Predictive Insights. You discover the role of each piece of the architecture. You also learn how to segment data to support large implementation and the resources necessary to support them.

1. Installation

This unit provides an overview of the prerequisites and installation process for Predictive Insights. It also presents an optional process to validate that the installation was successful.

In the following exercises, you install InfoSphere® Streams and IBM Operations Analytics Predictive Insights on the DB2® OMNIbus, and Web GUI software that is installed and running on your virtual machine. This installation is stand-alone with most software installed under one user.

1. Data sources and modeling

This unit provides information about how data is collected and modeled with Predictive Insights. You learn about key performance indicators and how they are selected from the monitoring data that is available. You learn about the supported data sources and how to connect to them, manipulate the data sources, and select only the items that should be analyzed.

In the following exercises, you learn about the three data sources that are available in this training. One source is a set of comma-separated value (CSV) files, and the other two are data that is in the DB2 and PostgreSQL databases. You connect to these data sources and model the data within them by using the data mediation tool that you installed earlier. You use the mediation tool to select appropriate KPIs and filter unnecessary resources from the data. You then deploy the model to the Predictive Insights server. As an optional exercise, you configure the mediation client and server to use the data that is in the PostgreSQL database.

1. Configuring and operating the server

This unit describes how to configure the most important aspects of an analytics server. You learn how to start the server and analysis, and ensure that both are operating correctly. You also learn how to suppress alarms and work with the data that is generated when an alarm occurs.

In this set of exercises, you configure the server for important attributes that determine the aggregation interval that it uses for data extraction and how many weeks it is used for training.

You also start the analysis of the historical data that was modeled in Unit 4, Exercise 11 on page 62. You check various logs and file systems to see the progress of the data extraction. Finally, you review the alarms that are generated by Predictive Insights.

1. Administration and troubleshooting

This unit provides information about common administrative tasks and troubleshooting techniques.

1. Advanced mediation techniques

This unit describes the tools and techniques to be used to mediate data that is not in the correct format for consumption by Predictive Insights.

In this set of exercises, your introduction to logstash includes building a simple configuration file to work with a log file that is a combination of useful metric data and log messages that must be removed. For testing purposes, you stream messages to standard input, parse and modify each message, and then sending the results to standard output. Because you are using standard input, you use the head command and pipe the data stream into logstash with a command similar to this one: