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# Microsoft R Training: Machine Learning Server

3 days (21 hours)

## Presentation

Machine Learning Server (previously named Microsoft R Server) is a flexible enterprise platform for analyzing large-scale data, creating intelligent applications and discovering valuable insights across the enterprise, now with full support for Python and R.

Transform your business with enterprise-class data analytics based on R and Python, using your existing data and investments.

In September 2017, Microsoft R Server was launched under the new name of Microsoft Machine Learning Server. In version 9.2.1, Machine Learning Server added support for the full lifecycle of Python-based analysis to its list of enhancements to machine learning and AI capabilities. R capabilities were also improved. In the latest [version 9.4](#), Machine Learning Server improves the operationalization and deployment of web services containing R or Python code.

## Objectives

- Explain how Microsoft R Server and Microsoft R Client work
- Use R Client with R Server to explore large amounts of data in different data stores
- Visualize data using graphs and plots
- Transform and cleanse large data sets
- Implement options to divide analysis work into parallel tasks
- Create and evaluate regression models generated from Big Data
- Create, mark and deploy partition models generated from Big Data
- Use R in SQL Server and Hadoop environments.

## Target audience

IT professionals, technicians, administrators and engineers.

## Prerequisites

- Experience with R programming, familiarity with common R packages, knowledge of common statistical methods and data analysis best practices.
- Know the basics of the Microsoft Windows operating system.

## Further information

- As an introduction to [Artificial Intelligence](#), we offer you the following training course
- Complementary technology
  - [TensorFlow](#) from Google
  - [Pytorch](#) from Facebook

## Microsoft R Training Program: Machine Learning Server

### Presentation

- About Machine Learning Server
- What's new?
- New server name R

### Install & configure

- Install & configure
  - Choose a configuration
  - Stand-alone deployments
  - Multi-user client and server topology
  - Large-scale multi-user topologies
  - Choose a platform
  - Start installation
  - Local tools
  - windows
  - linux
  - hadoop
  - Configure for operation
  - Azure cloud
  - Customer side
  - Older versions of the R server

### Quick starts

- Python
  - Deploying the model as a service
  - Integrate real-time service into an application with Swagger
  - Run binary classifications
  - Create a linear regression model
  - PySpark and revoscalepy interoperability
  - Python examples for MicrosoftML
- R
  - Run R code with new functions
  - Deploying the model as a service
  - Explore R-to-RevoScaleR
  - Import and transform data
  - Visualize and analyze data
  - Analysis of flight delay data
  - Loan data analysis
  - Analysis of census data
  - Big data computing tips
  - Working with larger data sets
  - Example of data in RevoScaleR
  - RevoScaleR rxExExecBy example of parallel processing
  - R server with Sparklyr example
  - R examples for MicrosoftML
  - Solution models

## Formula

- Calculate context
- Distributed calculation
- Web Services
- Pre-formed models
- MicrosoftML
- RevoScaleR

## Practical guides

- Data&models
- Operationalize models and code
- Run R code remotely
- Advanced R development

## Reference

- Python packages
- R packages

## Resources

- Product comparison
- Maintenance support policy
- Known problems
- Obsolete and discontinued functions
- Refuse the collection of usage data
- Additional resources

## Companies concerned

This course is aimed at both individuals and companies, large or small, wishing to train their teams in a new advanced computer technology, or to acquire specific business knowledge or modern methods.

## Positioning on entry to training

Positioning at the start of training complies with Qualiopi quality criteria. As soon as registration is finalized, the learner receives a self-assessment questionnaire which enables us to assess his or her estimated level of proficiency in different types of technology, as well as his or her expectations and personal objectives for the training to come, within the limits imposed by the selected format. This questionnaire also enables us to anticipate any connection or security difficulties within the company (intra-company or virtual classroom) which could be problematic for the follow-up and smooth running of the training session.

## Teaching methods

Practical course: 60% Practical, 40% Theory. Training material distributed in digital format to all participants.

## Organization

The course alternates theoretical input from the trainer, supported by examples, with brainstorming sessions and group work.

## Validation

At the end of the session, a multiple-choice questionnaire verifies the correct acquisition of skills.

## Sanction

A certificate will be issued to each trainee who completes the course.