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Software AG Zementis Predictive Analytics 10.7.0.2

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#### Release Notes:

- \* A Zementis Product License Key is required in order to use Zementis Server. Please contact Software AG directly to obtain your Product License Key.
- \* If you have an existing Zementis Server installation, please take a backup of artifacts uploaded in Zementis Server (Models & Resources). Sources for these artifacts can be downloaded from Zementis Web Console. Alternatively, you can use the migration script available under migration folder of Zementis 10.7.0.2 distribution package. If Zementis Server is deployed as a Java library, sources for these artifacts can be downloaded by invoking `ModelsServiceProvider.exportSource(modelName)` and `LibraryManager.exportResourceFile(name)` respectively.
- \* Upgrading to Zementis 10.7.0.2 will require a clean repository store.

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Feature Log:

- \* Support for ONNX model, ONNX resource, and ONNX pipeline via Java API.
- \* Support for multi-variate State Space models.
- \* Support for Confidence Intervals for State Space models.
- \* Support for multi-valued output for multi-step forecasts and confidence intervals.
- \* Improved the correction process on known syntactic and semantic problems found in the PMML.
- \* Support for MaximumLikelihoodStats with KalmanState representation in ARIMA models.
- \* Support for Confidence Intervals for non-seasonal ARIMA models.

Since Version 10.5.0:

- \* Support for Object Detection using RetinaNet.
- \* Support for Seasonal ARIMA Time Series Models.
- \* Support for Python script execution in PMML.
- \* Compliance with PMML 4.4 release features:
  - support for Lag@aggregation=stddev
  - support for Constant@missing
  - support for Anomaly Detection release schema

Since Version 10.4:

- \* New UI based on Angular framework.
- \* Zementis Server available as a Docker image.
- \* Enhanced support for CNNs with Pooling Layer optimizations.
- \* Support for Lag Expressions.
- \* Updated REST API to support authentication tokens and license management.
- \* Compliance with upcoming PMML 4.4 release features:
  - Support for multiple model methods "weightedSum" and "weightedMedian"
  - Support for new MiningField@invalidValueReplacement attribute
    - Support for new Lag@aggregate attribute
  - Support for new Built-in Functions: isValid, isValid, modulo(%), sin, asin, sinh, cos, acos, cosh, tan, atan, tanh, rint, hypot, ln1p, expm1
- \* Integration with Software AG Update Manager for fix delivery.

Since Version 10.3:

- \* Visualize Model KPIs including memory metrics and prediction metrics.

- \* Support for Anomaly Detection models based on isolation forest and one-class support vector machines.
- \* Support life-cycle operations and configuration management via SAG Command Central.
- \* Adopted Level 2 of DBP common design language.

Since Version 10.2:

- \* Support for PMML representation of MobileNets, an efficient Convolutional Neural Networks architecture for mobile vision applications.
- \* Updated the REST API to OpenAPI Specification 2.0 and REST UI to Swagger UI 3.9.0.
- \* Upgraded JDK compatibility to JDK 8.

Since Version 10.1:

- \* Optimized processing of large tree-ensemble models and deep learning models.
- \* New design for Zementis Web Console.
- \* Portable Java client for REST services that allows full duplex streaming for batch apply operation.
- \* Improved message reporting in PMML when performing syntactic and semantic checks.

Since Version 5.0:

- \* Compatibility and automatic model conversion to PMML 4.3.
- \* Support for deep learning models.
- \* Support for k-NN algorithm.
- \* New design for Zementis Web Console.
- \* Download/upload serialized model:
  - Protect and deliver your proprietary models with Zementis without revealing model internals, i.e., without exposing the PMML model to a 3rd party
- \* Model activation/de-activation at runtime:
  - De-activation evicts model from JVM heap, allowing Zementis Server to manage more models than available heap
- \* Support for binary (octet-stream) data type.
- \* Asynchronous processing for data residing on Amazon AWS S3 bucket via REST/Web Service API.
- \* Improved support for STATISTICA models.

Since Version 4.2.5:

- \* Added support for managing custom resources via Web Service and RESTful API.
- \* Simplified Java API for easy integration with existing Java applications.
- \* Fast model upload option for PMML files that do not require comprehensive syntactic and semantic corrections.
- \* Added concurrency and batch-size parameters to Zementis SOAP Web Service and Zementis RESTful API for batch scoring.
- \* Zementis Server certified for deployment on Apache Tomcat 7.x. and 8.x.
- \* Compatibility and automatic model conversion to PMML 4.2.1.
- \* Optimized data pre- and post-processing including input validation for handling invalid, missing and outlier values.

Since Version 4.0:

- \* Compatibility and automatic model conversion to PMML 4.2. Support for all the new features introduced in PMML 4.2, including:
  - TextIndex element for text mining
  - Built-in functions matches, replace and concat
  - ComplexPartialScore element for Scorecards
  - TargetValueStats element for Naive Bayes classifiers
  - Usage type change from "predicted" to "target"
  - Simplified Output element features and support for segment id for multiple models
- \* Automatic placement of Output element in a PMML file if missing and creation of an output field to represent the predicted value.
- \* Deprecated Zementis extensions to PMML 4.1:
  - Built-in functions zementis:matches, zementis:replace and zementis:concat
  - Scorecard extension "PARTIAL\_SCORE\_FIELD"
- \* Optimized Random Forest model processing to speed up loading time and reduce memory footprint.
- \* Added RESTful API on top of Zementis scoring engine. This feature is available when Zementis is deployed as a server.
- \* Added 'explainApply' operation to Zementis SOAP Web Service.

Since Version 3.8:

- \* PMML conversion/correction is by-passed if an already Zementis-converted PMML file is uploaded.
- \* Users can now upload compressed PMML file (zip/gzip). The PMML file needs to be the only entry in the zip/gzip file.
- \* In a multiple-model, users can now access specific segment outputs from

the top model.

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Questions/Support:

If you need technical support, please visit our support site at :

<http://softwareag.com/support>

<http://support.zementis.com>

Please contact Software AG Zementis for additional assistance by visiting :

<http://empower.softwareag.com/ContactSupport/>