



twinFinTM

Analytics Without Constraints



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nzAnalytics Starter Kit

Data Prep

Data Profiling / Descriptive Statistics

Probability Density and Inverse Functions

General Diagnostic Measures

Error Calculation

Statistics

Histogram and Frequency Table

Quantiles

Parametric Statistics

Non-Parametric Statistics

Moments

Sampling

Uniform Random Sampling

Data Prep / Transformations

Binning and Discretization

Standardization and Normalization



nzAnalytics Starter Kit

Data Mining	Predictive Analytics		Spatial
Association Rules Mining Association	Sample Size One-Way ANOVA	Bayesian Methods Classifier Graphical Model	Geometric Functions Geometric Information Geometric Object Manipulation
Clustering K-Means Hierarchical Clustering	Regression Linear Regression	Model Testing Error Calculation	Geometric Analytics Conversion Comparison Distance and Area
Feature Extraction Dimension Reduction	Classification Decision Trees Neighborhood Methods		



Open Source Analytics

R Analytics		Scientific Analytics	
Horizontal	Vertical	Horizontal	Horizontal
<ul style="list-style-type: none">• Bayesian• Cluster• Distributions• Graphics• Graphical Models• Machine Learning• Multivariate• Natural Language Processing• Optimization• Robust Statistical Metrics• Spatial• Survival Analysis• Time Series	<ul style="list-style-type: none">• Econometrics• Experimental Design• Computational Physics• Clinical Trials• Environmetrics• Finance• Genetics• Medical Imaging• Pharmacokinetics• Phylogenetics• Psychometrics• Social Sciences	<ul style="list-style-type: none">• Bayesian• Complex Numbers• Special Functions• Permutations• BLAS Support• Eigensystems• Quadrature• Quasi-Random Sequences• Statistics• N-Tuples• Simulated Annealing• Interpolation• Chebyshev Approximation• Discrete Hankel Transforms• Minimization• Physical Constants• Discrete Wavelet Transforms	<ul style="list-style-type: none">• Roots of Polynomials• Vectors and Matrices• Sorting• Linear Algebra• Fast Fourier Transforms• Random Numbers• Random Distributions• Histograms• Monte Carlo Integration• Differential Equations• Numerical Differentiation• Series Acceleration• Root-Finding• Least-Squares Fitting• IEEE Floating-Point• Basis Splines



nzMatrix

Matrix Operations

- Parallel Basic Linear Algebra
- Basic Linear Algebra
- Linear Equations
- Least Squares
- Eigenvalues & Eigenvectors
- Singular Value Decomposition
- Matrix Factorization & Inversion
- Matrix Element Scalar Functions
- Matrix Reduction Functions
- Matrix Inquiry Functions
- Matrix Reshaping Functions

Accessible from R,
Python, Java, etc.
via ODBC and
Stored Procedures



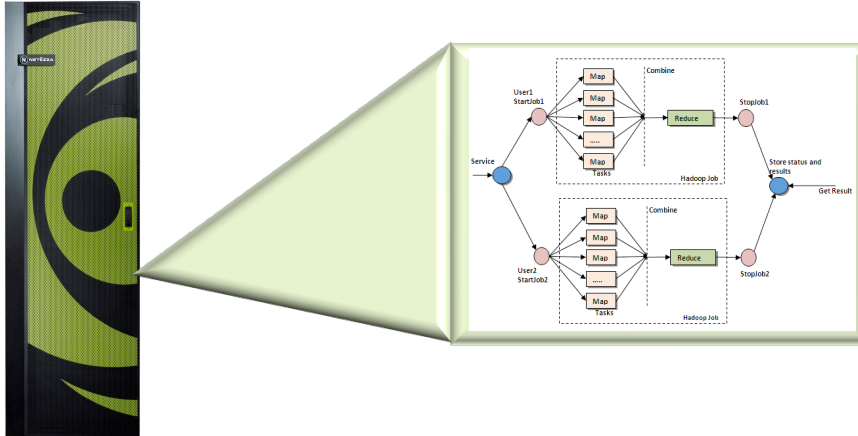
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nzEngine for Hadoop

Hadoop/MapReduce framework inside the appliance

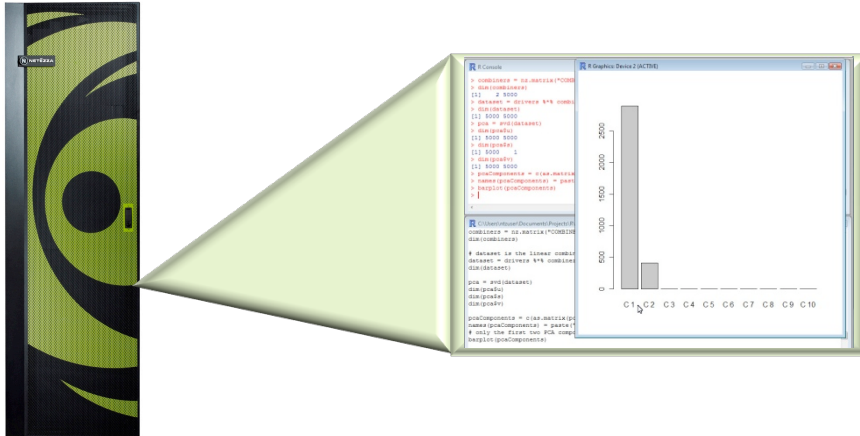


- Invoke Hadoop jobs like UDFs
- Combine ubiquity of SQL with flexibility of MapReduce
- Port existing jobs and functions as-is



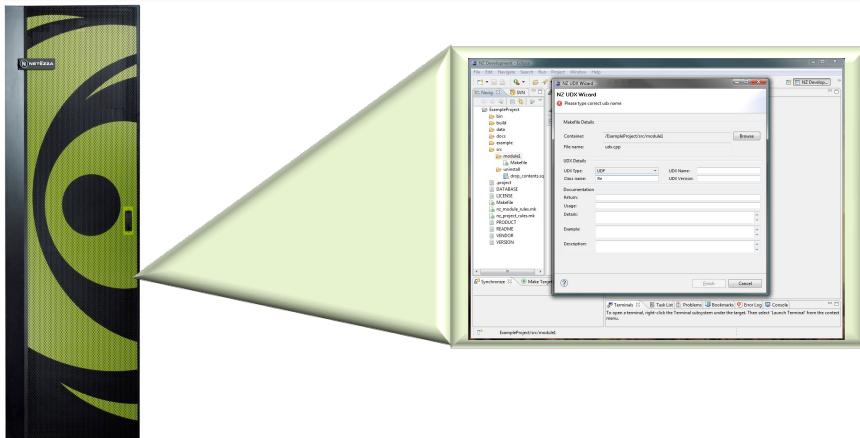
Model Building Made Easy

R Client integrated via nzEngine for R for in-database analytics processing



- Use standard R interface on client
- Leverage Netezza AMPP for scaling up R
- Power R models with nzAnalytics and nzMatrix for scaling up analytics

Eclipse integrated via plug-in



- Wizards to make it easy to create projects, stored procedures and user defined functions
- Utilities for convenience (ie: SQL window, source code control, terminal window)

