



Analyze Re Data Formats

(Version 3.8)

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OVERVIEW

This document summarizes the data formats that are consumed by Analyze Re. Examples are provided for each of the types of data.

TYPES OF DATA CAPTURED BY ANALYZE RE

1. **Event Catalog**

Event catalogs contain event information referenced by ELTs and YELTs. They can be custom Event Catalogs generated by user or provided by vendors the user licenses such as RMS, AIR and CoreLogic.

2. **Simulation Grid / YEQT**

Contains simulation information that is used to simulate ELTs. They can be custom Simulations generated by user or provided by vendors the user licenses such as RMS, AIR and CoreLogic.

3. **Exchange Rates**

Rates to be used internally when combining losses and applying financial terms using different currencies.

4. **Event Loss Table (ELT) :**

- User defined loss data from csv file
- RiskLink (RMS) generated losses
- AIR CatRader generated losses
- AIR Classic2 generated losses
- Parametric Loss Sets

5. **Year Event Loss Table (YELT)**

YELT data captures already simulated event loss information, circumventing the need for a Simulation Grid / YEQT.

- CoreLogic RQE generated losses

6. **Year Loss Table (YLT)**

YLT data captures yearly aggregated loss and optionally reinstatement information for a treaty.

7. **Contract Terms**

Core contract terms (required for application of financial terms) in addition to any metadata the user wishes to associate with the contract.

DATA STRUCTURE REQUIREMENTS

Mandatory fields for each resource are indicated in **bold**. The required field names are **case-insensitive** meaning that “Loss” is the equivalent to “LOSS”.

NOTE: All data is expected to be provided in **csv** (comma separated value) plain text files. These files can be zipped together into a single package.

Analyze Re typically uses Sharefile to securely exchange these data files with clients. If you do not have access to Sharefile alternate arrangements can be made.

For performance reasons, many input formats have required data types and a required sort order.

EVENT CATALOG

EVENT CATALOG GENERAL FORMAT

Event Catalogs csv files must contain an **EventId** column and a **Rate** column. All other columns are treated as attributes of the events and are captured by Analyze Re as metadata. These attributes can be referenced when creating loss output filters.

EventId,	Model,	Year,	Day,	Rate,	Peril,	Region
110000002,	11,	1,	32,	0.0001,	EQ,	CA
110000010,	11,	1,	54,	0.0001,	EQ,	CA
110000071,	11,	1,	188,	0.0001,	EQ,	CA
110000365,	11,	2,	0,	0.0001,	HU,	CA
110000474,	11,	2,	44,	0.0001,	HU,	TX
110000691,	11,	2,	260,	0.0001,	HU,	TX

CONSTRAINTS

- The file must be in **csv** format(comma separated values)
- The file must be sorted by **EventId** (ascending).
- All **EventIds** must be valid integers.
- **EventIds** must be globally unique (across all regions/perils).
- Rate values do not matter for static simulations.
- To avoid loss of numeric precision, the use of scientific notation for number is **strongly** discouraged.
- Digit group separators (comma) must be removed from numbers: 9,000,000 must be: 9000000

SIMULATION GRID

SIMULATION GRID GENERAL FORMAT

Simulation Grids are *only* required for processing [ELT Loss Sets](#). The Quantile value in the SimGrid represents the correlated quantile that approximately describes the industry loss quantile.

TrialId,	Day,	EventId,	Quantile
1,	0,	2940432,	0.605796
1,	34.234,	2937851,	0.450675
1,	45,	2940327,	0.83264
2,	0,	2940432,	0.992682

CONSTRAINTS

- The file must be in **csv** format(comma separated values)
- The file must be sorted first by **TrialId** (ascending), and next by **Day** (ascending).
- The smallest **TrialId** must be greater than or equal to 1.
- The largest **TrialId** must be less than or equal to the specified Trial Count. i.e. if Simgrid size = 50000 max **TrialId** in Simgrid flat file should be 50000.
- All **EventIds** that appear in the SimGrid file must be in the Event Catalog associated with this SimGrid.
- Sparse SimGrids (missing **TrialIds**) are supported.
- The **Day** column can also be called **Sequence** and has decimals between 0.0 and 365 (unless multi-year)
- To avoid loss of numeric precision, the use of scientific notation for number is **strongly** discouraged.
- Digit group separators (comma) must be removed from numbers: 9,000,000 must be: 9000000

EXCHANGE RATE TABLE

The Exchange Rate Table collection contains a set of [ISO 4217](#) currencies with associated exchange rates. Exchange Rate Tables are used to perform currency conversions during simulations.

Exchange Rate data can be obtained from a number of free services. Customers are able to upload rate tables as needed, and can provide only those currencies that are relevant for the deals being simulated.

The Exchange Rate Table expects that rates are provide in `base_currency` per unit of foreign currency. For example, if the Exchange Rate Table has a base currency of `USD` and the rate corresponding to `EUR` is 1.5, this denotes that one `EUR` is equivalent to 1.5 `USD`.

Exchange Rate Table data is typically represented by a csv file. In order to upload an Exchange Rate Table to the PRIME server, the csv file must contain three mandatory columns: “**currency**”, “**date**”, and “**rate**”. An example of an Exchange Rate Table csv file:

currency,	date,	rate,
CUC,	2014-09-28T00:00:00Z,	0.99
EUR,	2014-09-28T00:00:00Z,	2.00
CAD,	2014-09-28T00:00:00Z,	1.05
JPY,	2014-09-28T00:00:00Z,	0.50
CAD,	2014-09-27T00:00:00Z,	0.89
EUR,	2014-09-27T00:00:00Z,	1.26

CONSTRAINTS

- The file must be in **csv** format(comma separated values)
- The **currency** values must be valid 3-character [ISO 4217](#) currencies.
- The **date** values must be [ISO 8601](#) datetime values.
- The rate values should follow the formula: **rate** = (base Currency / **currency**).

ELT Loss SET

ELT GENERAL FORMAT

Generalized ELT csv files need an **EventId** and **Loss** column:

EventId,	Loss
510000004,	16311.35
510000009,	43406293.73
510000016,	102047365.9

ELT WITH SECONDARY UNCERTAINTY

ELTs with secondary uncertainty such as those generated by RMS models can add **3** additional columns to supply the independent and correlated standard deviations and the exposure values:

EventId,	Loss,	STDDEVI,	STDDEVC,	EXPVALUE
510000004,	16311.35,	318423.6,	1397240,	132000000
510000009,	43406293.73,	515769.7,	2384100,	143000000
510000016,	102047365.9,	487.1335,	577.0876,	819141.6

CONSTRAINTS

- The file must be in **csv** format(comma separated values)
- All **EventIds** must be valid integers.
- The **EventIds** must be present in the associated Event Catalog.
- To avoid loss of numeric precision, the use of scientific notation for number is **strongly** discouraged.
- Digit group separators (commas) must be removed from numbers: 9,000,000 must be: 9000000
- Zero **Loss** value should be omitted.

YELT Loss SET

Generalized YELT csv files need an **TrialId**, **Sequence**, **EventId** and **Loss** column:

YELT LOSS SET GENERAL FORMAT

TrialId,	EventId,	Sequence,	Loss
1,	2900407,	0,	197.6432
1,	2900408,	1.5,	3.355968
3,	2900526,	0.325,	9278.264
3,	2901182,	202,	2152.086
3,	2901443,	345,	0.14122
23,	2902052,	2,	607491.1

NET YELT LOSS SET WITH REINSTATEMENT INFORMATION

Reinstatement Premium and Brokerage amounts for each occurrence in the trial are supplied as a percentage of the premium. The onus is on the user to ensure these figures correctly reflect the reinstatements being allocated to each occurrence in the loss set.

NOTE: The **ReinstatementPremium** and **ReinstatementBrokerage** values must be a percentage of the associated Layer's Premium.

NOTE: When **ReinstatementPremium** and **ReinstatementBrokerage** values are included, the Loss Type of the associated LossSet should be 'LossNetOfAggregateTerms'.

TrialId,	EventId,	Sequence,	Loss,	ReinstatementPremium,	ReinstatementBrokerage
1,	2900407,	0,	197.6432,	0.02,	0.076036
1,	2900408,	1.5,	3.355968,	0.6703,	0.09455
3,	2900526,	0.325,	9278.264,	0.13605,	0.05907
3,	2901182,	202,	2152.086,	0.06418,	0.0274
3,	2901443,	345,	0.14122,	0.053,	0.01786
23,	2902052,	2,	607491.1,	0.0106373,	0.05363

CONSTRAINTS

- The file must be in **csv** format(comma separated values)
- The file must be sorted first by **TrialId**, then **Sequence** (ascending)
- All **EventIds** must be valid integers.
- The **EventIds** must be present in the associated Event Catalog.
- All **Sequence** numbers must be decimals starting at 0.0, usually less than 365.0 (unless multi-year)
- The **Sequence** field can also be called **Day**.
- To avoid loss of numeric precision, the use of scientific notation for number is **strongly** discouraged.
- Digit group separators (commas) must be removed from numbers: 9,000,000 must be: 9000000
- Zero **Loss** value should be omitted.

YLT Loss SET

Generalized YLT csv files need an **TrialId** and **Loss** column:

YLT LOSS SET GENERAL FORMAT

TrialId,	Loss
1,	0
2,	0
3,	1938194.655
4,	40000000.00

YLT LOSS SET WITH REINSTATEMENT INFORMATION

Reinstatement Premium and Brokerage amounts accumulated for the given trial year are supplied as a percentage of the premium. The onus is on the user to ensure these figures do not exceed the total number of reinstatements available to the contract associated with this YLT.

NOTE: The **ReinstatementPremium** and **ReinstatementBrokerage** values must be a percentage of the associated Layer's Premium.

NOTE: When **ReinstatementPremium** and **ReinstatementBrokerage** values are included, the Loss Type of the associated LossSet should be 'LossNetOfAggregateTerms'.

TrialId,	Loss,	Reinstatement Premium,	Reinstatement Brokerage
1,	0,	0.0,	0.0
2,	0,	0.0,	0.0
3,	1938194.655,	0.67,	0.335
4,	40000000.00,	1.54,	0.77

CONSTRAINTS

- The file must be in csv format(comma separated values).
- The file must be sorted first by **TrialId** (ascending).
- To avoid loss of numeric precision, the use of scientific notation for number is **strongly** discouraged.
- Digit group separators (commas) must be removed from numbers: 9,000,000 must be: 9000000
- Zero **Loss** value can be omitted (we recommend that you do to save on upload time).

CUSTOM DISTRIBUTION DATA FOR PARAMETRIC LOSS SETS**FREQUENCY DISTRIBUTION**

Probability,	Frequency
0.2,	1
0.2,	0
0.2,	3
0.2,	4
0.2,	5

SEASONALITY DISTRIBUTION

Probability,	Day
0.2,	34
0.2,	25
0.3,	365
0.2,	231
0.2,	12

SEVERITY DISTRIBUTION

Probability,	Loss
0.2,	100000
0.2,	500000
0.3,	300000
0.2,	200000
0.2,	2000

CONTRACT TERMS

REQUIRED CONTRACT TERMS

Analyze Re requires only the contract terms necessary to accurately apply per-event and aggregate financial terms to losses that contract is subject to. For example, a standard CatXL layer may have to supply the following terms:

Attachment, Limit, Reinstatements (a list of per-reinstatement premium and brokerage fees), **Nth** (Attaching Event Number), **Franchise Deductible, Participation, Net Premium**, etc.

At no point is the user required to supply any sort of cedent description or other proprietary identifying information.

Analyze Re makes it easy to identify layers by providing users with unrestricted metadata dictionary in which they can store anonymized lookup keys or anything other information they would like to associate with a contract. Analyze Re also supplies users with the ability to search resources on their description to assist in finding existing information that has been persisted on the server.