

Input File Formats

Atoti CVA Risk Capital

5.1

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Input file formats

This document contains the file formats for the CSV files that can be used by clients as input to the Atoti CVA Risk Capital Reference Implementation.

Portfolio data, reference data and configuration files need to be replaced with organization's data. Regulatory parameters files contain the default set of parameters as in BCBS and as a start can be left unchanged.

Sample input files are included in the source distribution. These files are loaded during testing of the reference implementation and provide examples of each of the file types.

A note on file name patterns

The files and their respective names are used as inputs for the Atoti CVA Risk Capital. These files however are read by name according to a pattern, so you can add characters before and after the listed names, such as timestamps or ID numbers. ex: [reference-names-attributes.csv] will be accepted also as [reference-names-attributes_1104894920.csv] and [file1.reference-names-attributes.csv].

- *Configuration files*
- *Portfolio risk data*
- *Reference data*
- *Regulatory parameters*

Configuration files

Approval to use SA

The file indicates availability of regulatory approval to use SA approach. It defines the choice of approach for the official CVA risk capital measure.

| Field | Key | Null | FieldType | Description | Example |
|----------|-----|------|--------------------|-----------------|------------|
| AsOfDate | Y | N | Date, 'YYYY-MM-DD' | Risk value date | 2018-09-28 |

| | | | | | |
|---------------|---|---|--------------------|---|---|
| SaCvaApproval | N | Y | String, 'Y' or 'N' | Indicates whether supervisory approval for SA-CVA exists for a date | Y |
|---------------|---|---|--------------------|---|---|

Buckets - Commodity

Buckets configuration files contain mappings of the sensitivity fields to SA-CVA Buckets. Their content needs to be updated to translate the organization's classifications to the ones defined in [MAR50.74].

| Field | Key | Null | FieldType | Description | Example |
|-------------------|-----|------|---------------------------------|---|-----------------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| CommodityGroup | Y | N | String | Organization's commodity groups classifier corresponding to commodity group in [MAR50.74] | Metals - non-precious |
| BucketNumber | Y | N | String | Bucket number, as defined in [MAR50.74]. | 5 |
| BucketDescription | N | Y | String | Human-readable description of a bucket. The field is not used at the moment. | Metals - non-precious |

Buckets - Cpty credit spread

Buckets configuration files contain mappings of the sensitivity fields to SA-CVA Buckets. Their content needs to be updated to translate the organization's classifications to the ones defined in [MAR50.63].

| Field | Key | Null | FieldType | Description | Example |
|----------|-----|------|---------------------------------|-----------------|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |

| | | | | | |
|-------------------|---|---|--------|--|--|
| Sector | Y | N | String | Organization's sector attribute corresponding to sectors in [MAR50.63] | Sovereigns |
| BucketNumber | N | N | String | Bucket number. | 1 |
| BucketSuffix | N | Y | String | Allows defining a BucketNumber subcategory - a) and b) - for the risk weight lookup - see [MAR50.63] | a) |
| BucketDescription | N | Y | String | Human-readable description of a bucket. The field is not used at the moment. | Sovereigns including central banks, multilateral development banks |

Buckets - Equity

Buckets configuration files contain mappings of the sensitivity fields to SA-CVA Buckets. Their content needs to be updated to translate the organization's classifications to the ones defined in [MAR50.70].

| Field | Key | Null | FieldType | Description | Example |
|----------|-----|------|---------------------------------|---|---------------------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| Sector | Y | N | String | Organization's sector attribute corresponding to sectors in [MAR50.70] | Technology |
| Size | Y | N | String | Field used to map sensitivities to a bucket: 'Large' 'Small' 'Other' | Large |
| Economy | Y | N | String | Field used to map sensitivities to a bucket: 'Emerging market economies' 'Advanced economies' 'Other' | Emerging market economies |

| | | | | | |
|-------------------|---|---|--------|--|--|
| BucketNumber | N | N | String | Bucket number | 4 |
| BucketDescription | N | Y | String | Human-readable description of a bucket. The field is not used at the moment. | Large Emerging Financials including government-backed financials, real estate activities, technology |

Buckets – Foreign exchange

Buckets configuration files contain mappings of the sensitivity fields to SA-CVA Buckets. Their content needs to be updated to translate the organization’s classifications to the ones defined in [MAR50.59]

| Field | Key | Null | FieldType | Description | Example |
|-------------------|-----|------|---------------------------------|--|------------|
| AsOfDate | Y | N | String with format ‘YYYY-MM-DD’ | Risk value date | 2018-09-28 |
| RiskFactorCcy | Y | N | String | Foreign currency, defined as risk factor in [MAR50.61] | USD |
| BucketNumber | N | N | String | Bucket number. For Foreign Exchange - it is the same as RiskFactorCurrency. | USD |
| BucketDescription | N | Y | String | Bucket number. For Foreign Exchange - it is the same as RiskFactorCurrency. The field is not used at the moment. | USD |

Buckets – Interest rate

Buckets configuration files contain mappings of the sensitivity fields to SA-CVA Buckets. Their content needs to be updated to translate the organization’s classifications to the ones defined in [MAR50.54].

| Field | Key | Null | FieldType | Description | Example |
|-------------------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| RiskFactorCcy | Y | N | String | Currency of interest rate/inflation curve | USD |
| BucketNumber | N | N | String | Bucket number. For Interest Rate - it is the same as RiskFactorCurrency. | USD |
| BucketDescription | N | Y | String | Bucket number. For Interest rate - it is the same as RiskFactorCurrency. The field is not used at the moment. | USD |

Buckets - Reference credit spread

Buckets configuration files contain mappings of the sensitivity fields to SA-CVA Buckets. Their content needs to be updated to translate the organization's classifications to the ones defined in [MAR50.66].

| Field | Key | Null | FieldType | Description | Example |
|---------------|-----|------|---------------------------------|--|---------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| Sector | Y | N | String | Organization's sector attribute corresponding to sectors in [MAR50.66] | Manufacturing |
| CreditQuality | Y | N | String | Field used to map sensitivities to a bucket, must contain one of the following: 'HY' 'IG' 'NR' | IG |
| BucketNumber | N | N | String | Bucket number. | 4 |

| | | | | | |
|-------------------|---|---|--------|--|---|
| BucketDescription | N | Y | String | Human-readable description of a bucket. Used for analytical purposes | IG Basic materials, energy, industrials, agriculture, manufacturing, mining and quarrying. The field is not used at the moment. |
|-------------------|---|---|--------|--|---|

Carved out netting sets

The file lists the netting sets carved out from SA approach (see [MAR50.8]).

| Field | Key | Null | FieldType | Description | Example |
|---------------|-----|------|---|---|---------------------|
| AsOfDate | Y | N | Date, 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| NettingSetIds | N | Y | String Array or String with set format, separated by semicolons | List of netting sets excluded from SA-CVA (to be treated according to BA-CVA) | 72394;374269;374295 |

Credit Quality Mapper

The file must contain a category for each credit quality. This category is used to determine whether two credit quality should be considered the same.

| Field | Key | Null | FieldType | Description | Example |
|----------|-----|------|---------------------------------|------------------|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date. | 2018-09-28 |

| | | | | | |
|---------------|---|---|--------|---|-------|
| ParameterSet | Y | Y | String | Specifies the parameter set to which the parameter belongs. If no ParameterSet is defined within the file, it will default to BCBS. | BCBS |
| CreditQuality | Y | N | String | The credit quality to which a category is assigned. | HY |
| Category | N | N | String | The category assigned to a credit quality. | HY/NR |

FX Rates

FX Rates in Reference Currency.

| Field | Key | Null | FieldType | Description | Example |
|------------|-----|------|-----------|--|------------|
| AsOfDate | Y | N | String | The effective date. | 2018-12-05 |
| BaseCcy | Y | N | String | The base currency. The left side of the currency pair. | USD |
| CounterCcy | Y | N | String | The counter currency. The right side of the currency pair. | EUR |
| FxRate | N | N | Double | The Forex rate between the BaseCcy and CounterCcy. | 1.13 |

Regulatory vertices

The file must contain regulatory vertices per risk class, sensitivity type and set.

| Field | Key | Null | FieldType | Description | Example |
|----------|-----|------|---------------------------------|-----------------|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |

| | | | | | |
|-----------------|---|---|--------------------------|---|---------------|
| Index | Y | N | String, integer | Index of a vertex (tenor), used to sort vertices. Must be 0 for the first tenor. | 2 |
| Vertex | Y | N | Double | Tenor in years. Must be a tenor defined in regulatory calculation. | 0.25 |
| RiskClass | N | N | String | Risk classes, or risk types, defined in [MAR50.43]: 'interest rate', 'counterparty credit spread' | interest rate |
| SensitivityType | Y | N | String 'delta' or 'vega' | Allows to apply these vertices to delta or vega sensitivities | delta |
| ParameterSet | Y | Y | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |

Portfolio risk data

Delta sensitivities of Hedges

This File contains delta sensitivities of the hedge trades.

| Field | Key | Null | FieldType | Description | Example |
|----------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| TradeId | Y | N | String | if coming from multiple systems, Trade Ids may need to prepend source system to the id for uniqueness. Used for analytical purposes | MX-283749 |

| | | | | | |
|----------------|---|---|--|--|----------------------------------|
| RiskClass | Y | N | String | Risk classes, or risk types, defined in [MAR50.43]: 'interest rate', 'foreign exchange', 'counterparty credit spread', 'reference credit spread', 'equity', 'commodity' | Interest rate |
| RiskFactorId | Y | N | String | Represents internal identifier of the risk factor, for example: Curve identifier for Interest Rate, Currency identifier for Foreign Exchange, Credit curve identifier for Counterparty Credit Spread and Reference Credit Spread, Equity identifier for Equity, Commodity identifier for Commodity | AAPL |
| TenorLabels | Y | Y | Array of strings with date format 'YYYY-MM-DD' or strings representing year fractions, for example '2Y', separated by semicolons | Vector of dates that correspond to tenors. Tenor structure of risk factors is required for some of the interest rate risk factors and counterparty credit spread risk factors. It is optional to provide tenor structure for other risk classes. If TenorLabels are expected for a risk factor, but not provided, they are assumed to map to regulatory vertices. If provided TenorLabels are not expected for a risk factor, sensitivity will be aggregated across tenors | 2018-03-20;2019-09-20;2023-03-20 |
| Sensitivities | N | N | String Array or String with set format, separated by semicolons | Single value or vector of sensitivities (for different tenors) | ::120038.65 |
| SensitivityCcy | N | N | String | Sensitivity value currency. | EUR |

| | | | | | |
|------------------|---|---|--------|--|----|
| ReferenceName | N | Y | String | Identifier of a reference instrument, should match reference instruments static data files for the corresponding risk class. For 'foreign exchange' must contain currency code (RiskFactorCcy). Can be null if RegulatoryBucket is provided for 'counterparty credit spread', 'reference credit spread', 'equity', 'commodity'. | DB |
| RegulatoryBucket | N | Y | String | String corresponding to Bucket number. If RiskFactorIds were provided, this field can be Null. This field is expected to contain the bucket number for: - 'reference credit spread', - 'equity', - 'commodity', since the methodology prescribes to calculate sensitivities by bumping all instruments in a bucket simultaneously, it might be that total sensitivity is not attributed to individual instruments (risk factors). The value must match bucket numbers in the bucket configuration files. Regulatory bucket prevails over derived bucket. | 1 |
| BucketSuffix | N | Y | String | Allows defining a BucketNumber subcategory - a) and b) - for the risk weight lookup - see [MAR50.63] | a) |

Delta sensitivities of the Regulatory CVA

This File contains delta sensitivities of the Regulatory CVA. If the upstream risk system can decompose

netting set level sensitivities down to trades, then the field NettingSetTradeId can be populated with the trade identifiers.

| Field | Key | Null | FieldType | Description | Example |
|--------------|-----|------|---------------------------------|---|---------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| NettingSetId | Y | N | String | Identifier of a netting set. | 72394 |
| RiskClass | Y | N | String | Risk classes, or risk types, defined in [MAR50.43]: 'interest rate', 'foreign exchange', 'counterparty credit spread', 'reference credit spread', 'equity', 'commodity' | Interest rate |
| RiskFactorId | Y | N | String | Represents internal identifier of the risk factor, for example: Curve identifier for Interest Rate, Currency identifier for Foreign Exchange, Credit curve identifier for Counterparty Credit Spread and Reference Credit Spread, Equity identifier for Equity, Commodity identifier for Commodity. | AAPL |

| | | | | | |
|----------------|---|---|--|---|----------------------------------|
| TenorLabels | Y | Y | Array of strings with date format 'YYYY-MM-DD' or strings representing year fractions, for example '2Y', separated by semicolons | Vector of dates that correspond to tenors. Tenor structure of risk factors is required for some of the interest rate risk factors and counterparty credit spread risk factors. It is optional to provide tenor structure for other risk classes. If TenorLabels are expected for a risk factor, but not provided, they are assumed to map to regulatory vertices. If provided TenorLabels are not expected for a risk factor, sensitivity will be aggregated across tenors. | 2018-03-20;2019-09-20;2023-03-20 |
| Sensitivities | N | N | String Array or String with set format, separated by semicolons | Single value or vector of sensitivities (for different tenors) | ::120038.65 |
| SensitivityCcy | N | N | String | Currency of sensitivity values. | EUR |
| ReferenceName | N | Y | String | Identifier of a reference instrument, should match reference instruments static data files for the corresponding risk class. For 'foreign exchange' must contain currency code (RiskFactorCcy). Can be null if RegulatoryBucket is provided for 'counterparty credit spread', 'reference credit spread', 'equity', 'commodity'. | DB |

| | | | | | |
|-------------------|---|---|--------|--|----|
| RegulatoryBucket | N | Y | String | String corresponding to Bucket number. If RiskFactorIds were provided, this field can be Null. This field is expected to contain the bucket number for: - 'reference credit spread', - 'equity', - 'commodity', since the methodology prescribes to calculate sensitivities by bumping all instruments in a bucket simultaneously, hence it might be that total sensitivity is not attributed to individual instruments (risk factors). The value must match bucket numbers in the bucket configuration files. Regulatory bucket prevails over derived bucket. | 1 |
| BucketSuffix | N | Y | String | Allows defining a BucketNumber subcategory - a) and b) - for the risk weight lookup - see [MAR50.63] | a) |
| NettingSetTradeId | Y | Y | String | Identifier of a trade (unique per netting set), contributing into the NettingSetId, if a sensitivity has been attributed to trades. | a) |

Exposures at default

The file provides the risk data required by the Reduced BA approach, specifically exposures at default and effective maturities of netting sets, falling under CVA capital requirements.

| Field | Key | Null | FieldType | Description | Example |
|-------|-----|------|-----------|-------------|---------|
|-------|-----|------|-----------|-------------|---------|

| | | | | | |
|-------------------|---|---|---------------------------------|--|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| NettingSetId | Y | N | String | Identifier of a netting set | 72394 |
| EADCcy | N | N | String | Currency of EAD value | EUR |
| EAD | N | N | Double | Exposure at default (EAD) for a netting set calculated in the same way as the bank calculates it for CCR Capital | 23479.34 |
| EffectiveMaturity | N | N | Double | Effective maturity of a netting set in years, in accordance with [MAR50.15] | 2.3 |
| UnderIMM | N | N | String, 'Y' and 'N' | This field is 'Y' if the EAD was computed using IMM approach. | Y |

Hedges risk data

The file provides eligible hedges risk data - reducing BA-CVA capital charge according to the Full BA-CVA Approach.

| Field | Key | Null | FieldType | Description | Example |
|----------|-----|------|---------------------------------|--|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| TradeId | Y | N | String | Primary trade identifier. Must match Trade Attributes file. Note: If coming from multiple systems, Trade Ids may need to prepend source system to the id for uniqueness. | MX-283749 |

| | | | | | |
|-------------------|---|---|--------|---|--------|
| Notional | N | N | Double | Notional value in accordance with [MAR50.23] and [MAR50.24] | 200000 |
| NotionalCcy | N | N | String | Currency of notional value | EUR |
| RemainingMaturity | N | N | Double | Remaining maturity of the hedge trade in years | 3 |

Sensitivity Files

Input files should be created according to the standard ISDA CRIF (Common Risk Interchange Format). For details on how to become a licensed CRIF user, contact ISDA at analytics@isda.org.

Vega sensitivities of Hedges

This File contains vega sensitivities of the hedge trades.

| Field | Key | Null | FieldType | Description | Example |
|-----------|-----|------|---------------------------------|---|---------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| TradeId | Y | N | String | if coming from multiple systems, Trade Ids may need to prepend source system to the id for uniqueness. Used for analytical purposes | MX-283749 |
| RiskClass | Y | N | String | Risk classes, or risk types, defined in [MAR50.45]: 'interest rate', 'foreign exchange', 'counterparty credit spread', 'reference credit spread', 'equity', 'commodity' | Interest rate |

| | | | | | |
|----------------|---|---|--------|--|-----------|
| RiskFactorId | Y | N | String | Represents internal identifier of the risk factor, for example: Vol surface identifier for Interest Rate, Currency identifier for Foreign Exchange, Credit curve identifier for Counterparty Credit Spread and Reference Credit Spread, Equity identifier for Equity, Commodity identifier for Commodity | AAPL |
| Sensitivity | N | N | Double | Sensitivity value | 120038.65 |
| SensitivityCcy | N | N | String | Sensitivity value currency. | EUR |
| ReferenceName | N | Y | String | Identifier of a reference instrument, should match reference instruments static data files for the corresponding risk class. For 'foreign exchange' must contain currency code (RiskFactorCcy). Can be null if RegulatoryBucket is provided for 'reference credit spread', 'equity', 'commodity'. | DB |

| | | | | | |
|------------------|---|---|--------|--|---|
| RegulatoryBucket | N | Y | String | String corresponding to Bucket number. If RiskFactorIds were provided, this field can be Null. This field is expected to contain the bucket number for: - 'reference credit spread', - 'equity', - 'commodity', since the methodology prescribes to calculate sensitivities by bumping all instruments in a bucket simultaneously, hence it might be that total sensitivity is not attributed to individual instruments (risk factors). The value must match bucket numbers in the bucket configuration files. Regulatory bucket prevails over derived bucket. | 1 |
|------------------|---|---|--------|--|---|

| | | | | | |
|--------------|---|---|--------|--|----|
| BucketSuffix | N | Y | String | Allows defining a BucketNumber subcategory - a) and b) - for the risk weight lookup - see [MAR50.63] | a) |
|--------------|---|---|--------|--|----|

Vega sensitivities of the Regulatory CVA

This File contains vega sensitivities of the Regulatory CVA. If the upstream risk system can decompose netting set level sensitivities down to trades, then the field NettingSetTradeId can be populated with the trade identifiers.

| Field | Key | Null | FieldType | Description | Example |
|--------------|-----|------|---------------------------------|------------------------------|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| NettingSetId | Y | N | String | Identifier of a netting set. | 72394 |

| | | | | | |
|----------------|---|---|--------|--|---------------|
| RiskClass | Y | N | String | Risk classes, or risk types, defined in [MAR50.43]: 'interest rate', 'foreign exchange', 'counterparty credit spread', 'reference credit spread', 'equity', 'commodity' | Interest rate |
| RiskFactorId | Y | N | String | Represents internal identifier of the risk factor, for example: vol surface identifier for Interest Rate, Currency identifier for Foreign Exchange, Credit curve identifier for Counterparty Credit Spread and Reference Credit Spread, Equity identifier for Equity, Commodity identifier for Commodity | AAPL |
| Sensitivity | N | N | Double | Value of sensitivity | 120038.65 |
| SensitivityCcy | N | N | String | Currency of sensitivity values. | EUR |
| ReferenceName | N | Y | String | Identifier of a reference instrument, should match reference instruments static data files for the corresponding risk class. For 'foreign exchange' must contain currency code (RiskFactorCcy). Can be null if RegulatoryBucket is provided for 'reference credit spread', 'equity', 'commodity' | DB |

| | | | | | |
|-------------------|---|---|--------|--|----|
| RegulatoryBucket | N | Y | String | String corresponding to Bucket number. If RiskFactorIds were provided, this field can be Null. This field is expected to contain the bucket number for: - 'reference credit spread', - 'equity', - 'commodity', since the methodology prescribes to calculate sensitivities by bumping all instruments in a bucket simultaneously, hence it might be that total sensitivity is not attributed to individual instruments (risk factors). The value must match bucket numbers in the bucket configuration files. Regulatory bucket prevails over derived bucket. | 1 |
| BucketSuffix | N | Y | String | Allows defining a BucketNumber subcategory - a) and b) - for the risk weight lookup - see [MAR50.63] | a) |
| NettingSetTradeId | Y | Y | String | Identifier of a trade (unique per netting set), contributing into the NettingSetId, if a sensitivity has been attributed to trades. | a) |

Reference data

Legal relationship

The file must contain pairs of all legally related entities: counterparty vs hedge reference names for BA approach and pairs of credit names in SA approach. Legal relationship is used to define correlations in BA and SA approaches.

| Field | Key | Null | FieldType | Description | Example |
|----------------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| Entity1 | Y | N | String | For BA calculations: Counterparty identifier or hedge reference name identifier: For SA calculations: reference credit name identifier. | 2 |
| Entity2 | Y | N | String | For BA calculations: Counterparty identifier or hedge reference name identifier: For SA calculations: reference credit name identifier. | 3 |
| LegallyRelated | N | N | String, Y or N | This field indicates whether two entities are legally related. | Y |

Netting set attributes

The file must list all the netting sets and their attributes for all exposures managed in the CVA Portfolio

| Field | Key | Null | FieldType | Description | Example |
|----------------|-----|------|---------------------------------|-----------------------------|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| NettingSetId | Y | N | String | Identifier of a netting set | 324826 |
| CounterpartyId | N | N | String | Key of the counterparty | DB |

Reference names

The file provides static (or slow moving) attributes of the reference instruments or internal risk factors from the organization's data management/risk systems.

| Field | Key | Null | FieldType | Description | Example |
|---------------|-----|------|---------------------------------|--|---------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| RiskClass | Y | N | String | One of these risk classes: 'interest rate', 'foreign exchange', 'credit spread', 'equity', 'commodity' | Credit spread |
| ReferenceName | Y | N | String | For RiskClass = 'credit spread': credit name identifier. Must match: - reference names from risk factors (SA) - reference names from hedge notionals file (BA) - CVA counterparty identifiers for exposures at default and regulatory CVA sensitivities files. For RiskClass = 'interest rate': reference rate identifier. Must match reference name from risk factors (SA). For RiskClass = 'foreign exchange': currency identifier. For RiskClass = 'equity': equity identifier Must match reference name from risk factors (SA). For RiskClass = 'commodity': commodity identifier Must match reference name from risk factors (SA) | AAPL |
| IsSingleName | N | Y | String, 'Y' and 'N' | This is relevant for RiskClass = 'credit spread', otherwise can be Null. Indicates whether the credit name is a single name or an index | N |

| | | | | | |
|---------------|---|---|--|--|-------------------------|
| IndexMembers | N | Y | String representing index constituents | This is relevant for RiskClass = 'credit spread', otherwise can be Null. This field is applicable when IsSingleName is 'N'. The field must contain the list of CreditNames, representing Index Members as of risk value date. | AES;AKS-Corp;CVSHLD;DNY |
| IndexWeights | N | Y | String representing index constituents weights | This is relevant for RiskClass = 'credit spread', otherwise can be Null. This field is applicable when IsSingleName is 'N'. The field must contain the weights of Index Members as of risk value date, the total of weights must be equal to 1. If the field is blank, the members are assumed to be equally weighted. | 0.25;0.25;0.25;0.25 |
| CreditQuality | N | Y | String | This is relevant for RiskClass = 'credit spread', otherwise can be Null. The field must contain one of the following values: 'HY', 'IG', 'NR' | HY |
| Sector | N | Y | String | This is relevant for RiskClass = 'credit spread' and RiskClass = 'equity', otherwise can be Null. It must contain sector attribute of the reference name and must match 'Sector' field in the buckets configuration files (for the corresponding risk class). | Industrials |

| | | | | | |
|----------------|---|---|--------|---|----------------------------------|
| Region | N | Y | String | For counterparty/hedge reference names this field must contain region attribute of the reference name to evaluate whether the counterparty/hedge belong to the same region or not (see [MAR50.26]). For risk class equity this field must contain economy (region) attribute of the reference name, for example: 'Emerging market economies', 'Advanced economies', 'Other' and must match 'Economy' in the buckets configuration file. | South America |
| RiskFactorCcy | N | Y | String | Currency code. Cannot be null for RiskClass = 'interest rate' | NOK |
| CurveType | N | Y | String | This is relevant for RiskClass = 'interest rate', otherwise can be Null. Must contain 'Inflation' for inflation curves and may contain any values for other curve types.. | Inflation |
| Size | N | Y | String | This is relevant for RiskClass = 'equity', otherwise can be Null. This field must contain one of these values, defined in [MAR50.70], allowed values: 'Large', 'Small' or 'Other'. | Small |
| CommodityGroup | N | Y | String | This is relevant for RiskClass = 'commodity', otherwise can be Null. Should reflect commodity groups which match buckets configuration file. | Precious metals (including gold) |

Trades attributes

Trades attributes is a snapshot of all hedge trades in the CVA portfolio. The Solution expects that eligibility of hedges (see fields IsBaEligible and IsSaEligible) is evaluated by the upstream system.

| Field | Key | Null | FieldType | Description | Example |
|----------------|-----|------|---------------------------------|--|-------------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| TradeDate | N | Y | String with format 'YYYY-MM-DD' | This field shall contain trade date to be used for analytical purposes | 2018-09-27 |
| TradeId | Y | N | String | Primary trade identifier. Must match Trade Attributes file. Note: If coming from multiple systems, Trade Ids may need to prepend source system to the id for uniqueness. | MX-283749 |
| LegalEntity | N | Y | String | Balance sheet legal entity code | ActiveBank |
| CounterpartyId | N | Y | String | Identifier of the trade counterparty. May contain book for internal counterparties. | US_RATES_LIN |
| ProductId | N | Y | String | Internal products taxonomy | CDS |
| Book | N | N | String | The book to map the trade to (must match the node in the organisational hierarchy). | CVA_RATES |
| ReferenceName | N | Y | String | For BA eligible trades, this field must contain reference name identifier, which matches credit spread reference data. | Deutsche_Bank_USD |

| | | | | | |
|-------------------------|---|---|--------------------|--|----------|
| HedgedCVACounterpartyId | N | Y | String | This field is used for BA-CVA eligible trades: to map hedges to counterparties (BA-CVA) and should contain Counterparty key for single name hedges - the counterparty which a trade is intended to hedge, not the counterparty of the trade (see the second term in the K_hedged formula, which loops over counterparties and subtracts SNH from SCVA) It can be empty for BA-CVA eligible trades only if HedgedCVANettingSet has been provided. | DB |
| HedgedCVANettingSetId | N | Y | String | This field is optional and allows to map hedge trades via NettingSetId. This is useful when some of the netting sets are carved out from SA-CVA calculation - sensitivities of corresponding hedges will be also be moved out of the official capital calculation. | NS236342 |
| IsSaEligible | N | Y | String, 'Y' or 'N' | The attribute contains 'Y' for trades eligible for BA-CVA according to para [MAR50.37], [MAR50.39] and 'N' for the rest. | Y |
| IsBaEligible | N | N | String, 'Y' or 'N' | The attribute contains 'Y' for trades eligible for BA-CVA according to para [MAR50.17], [MAR50.19] and 'N' for the rest. | Y |

Regulatory parameters

Corr – Buckets – Commodity

The file is used to set cross buckets correlations for risk class commodity.

| Field | Key | Null | FieldType | Description | Example |
|-------------------------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this parameter. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |
| ParameterSet | Y | N | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |
| BucketNumber1 | Y | N | String | Should match bucket number in the buckets configuration file. One of the buckets in a pair. | 2 |
| BucketNumber2 | Y | N | String | Should match bucket number in the buckets configuration file. One of the buckets in a pair. | 3 |
| CrossBucketsCorrelation | N | N | Double | Cross-buckets correlation value in numeric format | 0.2 |

Corr – Buckets – Counterparty credit spread

The file is used to set cross buckets correlations for risk class counterparty credit spread.

| Field | Key | Null | FieldType | Description | Example |
|-------|-----|------|-----------|-------------|---------|
|-------|-----|------|-----------|-------------|---------|

| | | | | | |
|-------------------------|---|---|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this parameter. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |
| ParameterSet | Y | N | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |
| BucketNumber1 | Y | N | String | Should match bucket number in the buckets configuration file. One of the buckets in a pair. | 2 |
| BucketNumber2 | Y | N | String | Should match bucket number in the buckets configuration file. One of the buckets in a pair. | 3 |
| CrossBucketsCorrelation | N | N | Double | Cross-buckets correlation value in numeric format | 0.2 |

Corr - Buckets - Equity

The file is used to set cross buckets correlations for risk class Equity.

| Field | Key | Null | FieldType | Description | Example |
|----------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this parameter. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |

| | | | | | |
|-------------------------|---|---|--------|---|------|
| ParameterSet | Y | N | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |
| BucketNumber1 | Y | N | String | Should match bucket number in the buckets configuration file. One of the buckets in a pair. | 2 |
| BucketNumber2 | Y | N | String | Should match bucket number in the buckets configuration file. One of the buckets in a pair. | 3 |
| CrossBucketsCorrelation | N | N | Double | Cross-buckets correlation value in numeric format | 0.2 |

Corr – Buckets – Reference credit spread

The file is used to set cross buckets correlations for risk class reference credit spread.

| Field | Key | Null | FieldType | Description | Example |
|--------------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this parameter. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |
| ParameterSet | Y | N | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |

| | | | | | |
|-------------------------|---|---|--------|---|-----|
| BucketNumber1 | Y | N | String | Should match bucket number in the buckets configuration file. One of the buckets in a pair. | 2 |
| BucketNumber2 | Y | N | String | Should match bucket number in the buckets configuration file. One of the buckets in a pair. | 3 |
| CrossBucketsCorrelation | N | N | Double | Cross-buckets correlation value in numeric format | 0.2 |

Corr – Risk factors – Interest rate delta

The file is used to set risk factors correlations for interest rate delta risk factors.

| Field | Key | Null | FieldType | Description | Example |
|--------------------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this parameter. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |
| ParameterSet | Y | Y | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |
| IsLiquidOrDomestic | Y | N | String, 'Y' or 'N' | Indicates whether the correlations refer to currencies listed in [MAR50.56] | Y |
| IsInflation | Y | N | String, 'Y' or 'N' | Indicates whether the risk weights refer to inflation curves | Y |

| | | | | | |
|------------------------|---|---|--------|--|----------|
| Tenor1 | Y | Y | String | Two fields should contain pairs of tenors defined in [MAR50.56] when IsLiquidOrDomestic contains 'Y' and IsInflation is 'N': 1 year 2 years 5 years 10 years 30 years Otherwise it must be Null. | 1 year |
| Tenor2 | Y | Y | String | Two fields should contain pairs of tenors defined in [MAR50.56] when IsLiquidOrDomestic contains 'Y' and IsInflation is 'N': 1 year 2 years 5 years 10 years 30 years Otherwise it must be Null. | 30 years |
| RiskFactorsCorrelation | N | N | Double | The correlation in numeric format. | 0.9 |

CVARC Parameters

The file must contain the list of parameters. It covers the parameters defined as scalar values. Parameter values defined as matrices (for instance, bucket/bucket correlation) use separate files.

| Field | Key | Null | FieldType | Description | Example |
|--------------|-----|------|---------------------------------|---|--------------------------------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Risk value date | 2018-09-28 |
| Key | Y | N | String | Key of a parameter. See the list of allowed keys in the Parameter Sets guide. | sa.eq.delta.cross.bucket.correlation |
| Value | Y | N | Double | Value of the parameter | 0.6 |
| ParameterSet | Y | Y | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |

RW

The file is used to set risk weights per Sector and Credit quality.

| Field | Key | Null | FieldType | Description | Example |
|---------------|-----|------|---------------------------------|---|---------------------------------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this property. Subsequent entries with later dates will apply an end to this date range. | 2018-09-28 |
| ParameterSet | Y | Y | String | Specifies the parameter set to which the RiskWeight belongs | BCBS |
| CreditQuality | Y | N | String | Credit quality of a CVA counterparty or hedge reference name: IG, HY, NR | IG |
| Sector | Y | N | String | Sector of a CVA counterparty or of the hedge reference name | Sovereigns Including Central Banks |
| RiskWeight | N | N | Double | Risk weight as defined in [MAR50.16] of the Basic Approach for CVA | 0.005 |

RW – Commodity delta

The file is used to set risk weights for commodity delta risk factors.

| Field | Key | Null | FieldType | Description | Example |
|-------|-----|------|-----------|-------------|---------|
|-------|-----|------|-----------|-------------|---------|

| | | | | | |
|--------------|---|---|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this parameter. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |
| ParameterSet | Y | Y | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |
| BucketNumber | Y | N | String | Must match bucket number from the buckets configuration file. | 3 |
| RiskWeight | N | N | Double | The weight in numeric format. | 0.03 |

RW – Counterparty credit spread delta

The file is used to set risk weights for counterparty credit spread delta risk factors.

| Field | Key | Null | FieldType | Description | Example |
|---------------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this parameter. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |
| ParameterSet | Y | Y | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |
| CreditQuality | Y | N | String | Credit quality - 'HY', 'IG' or 'NR'. Must match buckets configuration files. | HY |
| BucketNumber | Y | N | String | Must match bucket number from the buckets configuration files. | 3 |

| | | | | | |
|--------------|---|---|--------|--|------|
| BucketSuffix | Y | Y | String | Allows defining a BucketNumber subcategory - a) and b) - for the risk weight lookup - see [MAR50.63] | a) |
| RiskWeight | N | N | Double | The weight in numeric format. | 0.03 |

RW – Equity delta

The file is used to set risk weights for equity delta risk factors.

| Field | Key | Null | FieldType | Description | Example |
|--------------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this parameter. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |
| ParameterSet | Y | Y | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |
| BucketNumber | Y | N | String | Must match bucket number from the buckets configuration file. | 3 |
| RiskWeight | N | N | Double | The weight in numeric format. | 0.03 |

RW – Interest rate delta

The file is used to set risk weights for interest rate delta risk factors.

| Field | Key | Null | FieldType | Description | Example |
|----------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this parameter. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |

| | | | | | |
|--------------------|---|---|--------------------|--|-------|
| ParameterSet | Y | Y | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |
| IsLiquidOrDomestic | Y | N | String, 'Y' or 'N' | Indicates whether the risk weights refers to currencies listed in [MAR50.56] | Y |
| IsInflation | Y | N | String, 'Y' or 'N' | Indicates whether the risk weights refer to inflation curves | Y |
| Tenor | Y | Y | String | Should contain tenors (in years) defined in [MAR50.56] when IsLiquidDomestic contains 'Y' and IsInflation is 'N'. Otherwise it must be Null. Must match vertices configuration file. | 1 |
| RiskWeight | N | N | Double | The weight in numeric format. | 0.005 |

RW – Reference credit spread delta

The file is used to set risk weights for reference credit spread delta risk factors.

| Field | Key | Null | FieldType | Description | Example |
|--------------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this parameter. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |
| ParameterSet | Y | Y | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |
| BucketNumber | Y | N | String | Must match bucket number from the buckets configuration files. | 3 |

| | | | | | |
|------------|---|---|--------|-------------------------------|------|
| RiskWeight | N | N | Double | The weight in numeric format. | 0.03 |
|------------|---|---|--------|-------------------------------|------|

RW – Vega

The file is used to set parameter values for computing vega risk weights.

| Field | Key | Null | FieldType | Description | Example |
|--------------|-----|------|---------------------------------|---|------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this parameter. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |
| ParameterSet | Y | Y | String | Specifies the parameter set to which the parameter belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |
| RiskClass | Y | N | String | Risk classes, or risk types, defined in [MAR50.45]: 'interest rate', 'foreign exchange', 'counterparty credit spread', 'reference credit spread', 'equity', 'commodity' | Commodity |
| RW | N | N | Double | Parameter RW for calculating vega risk weight | 0.55 |
| ParameterC | N | N | Double | Parameter under the square root of vega risk weight formula | 12 |
| Bucket | N | N | String | Bucket number | 4 |

Special currencies

The file provides the list of currencies, set in [MAR50.56]

| Field | Key | Null | FieldType | Description | Example |
|-------|-----|------|-----------|-------------|---------|
|-------|-----|------|-----------|-------------|---------|

| | | | | | |
|--------------|---|---|--|--|-----------------------------|
| AsOfDate | Y | N | String with format 'YYYY-MM-DD' | Indicates the start date for this currency. Subsequent entries with later dates will apply an end to this date range | 2018-09-28 |
| ParameterSet | Y | Y | String | Specifies the parameter set to which the list of currencies belongs to. If no ParameterSet is defined within the file, it will default to BCBS | BCBS |
| Currencies | N | Y | String representing a list of currencies | Currencies defined in [MAR50.56] for the purposes of interest rate and inflation sensitivities definition | USD;EUR;GBP;AUD;CAD;SEK;JPY |