

**London SPAN Version 4
Parameter File Format**

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1 INTRODUCTION

This document contains details of the format of the London SPAN version 4 parameter file. This file contains all the parameters and risk arrays required to calculate SPAN margins.

1.1 Changes from Version 3 Format

London SPAN Version 4 is an upgrade from Version 3, which is also known as LME SPAN.

This document contains the full revised file specification, highlighting the changes from Version 3 to Version 4. In summary, the changes are as follows:

- Record Type 10: SPAN Header Record – content of Format Version field is now 4 rather than 3. Note that this version number can be used to determine the structure of certain records that have changed in format.
- Record Type 30: Combined Contract Details – New field introduced to define the Strategy Spread Method
- Record Type 34: Intercontract Tier Details – New record to define intercontract tiers to be used in Multi-Tier Intercontract Spreads
- Record Type 35: Strategy Spread Details – New record to define the strategy spreads

2 PHYSICAL FILE FORMAT

There is one file generated for Powernext Futures Market cleared by LCH.Clearnet SA and margined using SPAN.

2.1 File Encoding Format

The file is available in the following format:

- All data stored as printable ASCII characters
- Records are variable length, with CR/LF characters appended

2.2 Record Types

The record types and ordering of the data in the file have been derived from the SPAN contract hierarchy. The hierarchy is as follows:

- Exchange
- Combined Contract
- Contract
- Expiry
- Series

This is translated into record types as follows:

- Record Types 10 - 19: Common data
- Record Types 20 - 29: Exchange related data
- Record Types 30 - 39: Combined Contract related data
- Record Types 40 - 49: Contract related data
- Record Types 50 - 59: Expiry related data
- Record Types 60 - 69: Series related data

The file is ordered in the following manner:

10 Common Data

20 Exchange Details

30 Combined Contract Details

40 Contract Details

50 Contract Expiry Details

60 Series Details

60 Series Details

50 Contract Expiry Details

60 Series Details

60 Series Details

40 Contract Details

50 Contract Expiry Details

60 Series Details

60 Series Details

50 Contract Expiry Details

60 Series Details

60 Series Details

30 Combined Contract

repeated sequence of record types 40, 50, 60

30 Combined Contract

repeated sequence of record types 40, 50, 60

20 Exchange Details

repeated sequence of record types 30, 40, 50, 60

2.3 The Combined Contract Concept

The purpose of the combined contract code is to indicate that there can be multiple contract codes which refer to the same underlying contract and which are treated as one for the purpose of margin calculations.

For each combined contract code, any number of individual contract codes and generic contract types (future/option) can be specified as belonging to the combined contract. The fact that an individual contract or contracts belong to a combined contract is known from its position in the risk parameter file. All contract records that follow a combined contract record "belong" to that combined contract. The combined contract code will be unique within a given market.

This situation occurs where two or more different contract codes are applied to the same underlying contract within the same market.

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2.3.1 How Combined Contract Codes Affect Margin Calculations

As described above, the purpose of the combined contract code is to indicate that more than one contract code and contract type can all refer to the same underlying contract.

The initial margin for each combined contract includes scanning risk, Interprompt and Prompt Date charges (subject to the short option minimum charge).

2.4 Currency Exponent

The currency exponent is a scaling factor which, for example, can apply to contracts priced in Japanese Yen. It is also used in SPAN for Rounding Definitions.

Where values for a contract are too large for reasonable reporting, e.g. the scanning range may be of the order of 2,000,000 Yen, the values are expressed in thousands on the margin reports.

The currency exponent (eg set to 2 for Yen) is used to achieve correct scaling for all the charge rates and the value losses in margin reports for contracts in the relevant currencies.

- The value losses are transmitted in ticks in the risk arrays. The 16 profit/loss scenarios for the positions held by the member are calculated as follows:

Value loss in ticks x tick value x lot size x number of lots

Rounding is applied to the value losses in currency units for the 16 scenarios by calculating 10 to the power of the currency exponent, to set the rounding level.

Example:

$10^2 = 100$ means that values will be rounded to the nearest 100 currency units (ie nearest 100 Yen);

$10^0 = 1$ means that values will be rounded to the nearest currency unit.

- Value losses are then scaled on reports by dividing by 10 to the power of the currency exponent so that they are reported for example in hundreds of Yen. As the value losses have been previously rounded to the nearest hundred, no numbers which are significant are lost eg a value loss of 1,250,540 Yen becomes 1,250,500 Yen which is scaled to 12,505 hundreds of Yen.

Charge rates are also scaled on reports by dividing the rate by ten to the power of the currency exponent.

Example:

Short Option Minimum Rate for a Yen based contract = 200 Yen

The rate is scaled to be 2 hundreds of Yen.

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Thus, $\frac{200}{10^2} = \frac{200}{100} = 2$

3 RECORD FORMATS

The tables on the following pages describe the contents of each record type in detail.

For each field, the following information is given:

- Length, in bytes.
- Beginning ("from") and Ending ("to") positions on the record, in bytes.
- Field Type.
- Optional indicator (a "Y" means the field is optional).
- Field name and description.

The field types are as follows:

AN Alphanumeric - any printing ASCII
 N Integer number, right justified, optional sign (-), zero filled
 Real Floating point number, right justified, optional sign (-), blank filled
 Date Date in format YYYYMMDD - DD = 00 for month values
 Time Time in format HHMMSS

Following each table, notes provide information regarding the purpose of each record and additional description data regarding particular fields.

3.1 Record Type 10: SPAN File Header Record

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 10
1	3	3	AN		File Type
2	4	5	N		Format Version
8	6	13	Date		Business Date
2	14	15	AN		File Identifier
8	16	23	Date		Creation Date
6	24	29	Time		Creation Time
3	30	32	N		Number of Scenarios

Notes:

- The File Type field indicates whether the file contains modelling data ("M") or risk array data ("R").

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- Format version indicates the format of the file
- Business Date indicates the date to which the file pertains.
- File identifier will be "F" for final arrays, "E" for early arrays or "I" for intraday arrays.
- The creation date and time indicate exactly when the file was created.
- The number of scenarios is currently set to 16.

3.2 Record Type 11: Contract Type Mapping Record

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 11
2	3	4	AN		Contract Type
1	5	5	AN		Generic Contract Type
20	6	25	AN		Contract Type Description

Notes:

- The purpose of this record is to enable the correct generic contract type to be obtained for a given contract type.

Examples of valid combinations are as follows:

Generic Contract Type	Contract Type	Description of Underlying Contract
F	F	Future
I	I	Index
S	S	Stock
U	U	Underlying future
O	C, P	Future/index/stock
A	CA, PA	Average of forwards
M	M	Monthly forward
D	D	Daily forward
E	E	Futures in delivery

3.3 Record Type 12: Currency Details

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 12
3	3	5	AN		Currency Code
20	6	25	AN		Currency Description
2	26	27	N		Currency Exponent

Notes:

- The purpose of this record is to define, for each currency, the currency codes and exponent values.

The possible currency codes, together with their exponent values, are given below:

Currency	Currency Code	Currency Exponent
US Dollars	USD	0
British Pounds	GBP	0
Japanese Yen	JPY	2
Euro	EUR	0
Swiss Francs	CHF	0

- Further codes may be added in the future.

3.4 Record Type 13: Currency Conversion Details

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 13
3	3	5	AN		Contract Currency
3	6	8	AN		Margin Currency
10	9	18	Real		Contract / Margin Currency multiplier (FX Rate)
6	19	24	Real		Percentage FX Shift Up
6	25	30	Real		Percentage FX Shift Down

Notes:

- The purpose of this record is to provide currency exchange rates.
In London SPAN Version 4, a combined contract may consist of contracts of differing currencies. For example, the combined contract CA consists of CAD, CAM, CAS and CAY. The "contract currency code" of these contracts is USD, DEM, GBP and JPY respectively. The "margin currency code" of the combined contract is USD, so before the scenario loss values for the four contracts can be accumulated at the combined contract level they must be converted to the margin currency.
- The currency multiplier field is held to six decimal places.

3.5 Record Type 14: Intercontract Spread Details

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 14
3	3	5	AN		Contract Group
3	6	8	N		Spread Priority
2	9	10	N		Spread Method Code – Always 10
6	11	16	Real		Spread Credit Rate (%)
7	17	23	N		Offset Rate
2	24	25	N		Number of Legs
3	26	28	AN		Exchange Code 1
3	29	31	AN		Combined Contract 1
2	32	33	N		Tier Number 1
1	34	34	AN		Spread Side 1
2	35	36	N		Delta/Spread Ratio 1
3	37	39	AN		Exchange Code 2
3	40	42	AN		Combined Contract 2
2	43	44	N		Tier Number 2
1	45	45	AN		Spread Side 2
2	46	47	N		Delta/Spread Ratio 2
3	48	50	AN	Y	Exchange Code 3

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3	51	53	AN	Y	Combined Contract 3
2	54	55	N	Y	Tier Number 3
1	56	56	AN	Y	Spread Side 3
2	57	58	N	Y	Delta/Spread Ratio 3
3	59	61	AN	Y	Exchange Code 4
3	62	64	AN	Y	Combined Contract 4
2	65	66	N	Y	Tier Number 4
1	67	67	AN	Y	Spread Side 4
2	68	69	N	Y	Delta/Spread Ratio 4

Notes:

- The purpose of this record is to list the allowable multi-tier intercontract spreads for each contract group and to provide parameters for each spread. Different combined contracts may be in different contract groups, so may be subject to different spreading rules.
- A separate record is provided for each allowable spread. For a given contract spread group, the allowable spread records are sorted in order by spread priority.
- LCH.Clearnet has defined two intercontract spread methods. Their codes are numbers 2 or 10.
- The Offset Rate is only applicable for Method 2, and the Spread Credit Rate is only applicable for Method 10.
- For each such spread, there are a minimum of two, and a maximum of four legs to the spread. Each group of five fields, Exchange Code, Combined Contract Code, Tier Number, Delta/Spread Ratio and Spread Side, pertains to a single leg.
- For each leg, the Tier Number indicates the Intercontract Tier Number for the specified Combined Contract. These tiers are defined in record type 34.
- For each leg, the Delta/Spread Ratio indicates the amount of delta for that leg consumed by each spread. For example, a typical two-legged spread might be a 1:1 spread, or a 2:1 spread. A three-legged spread might be 1:1:1, or 2:1:3, etc.

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- For each leg, the Spread Side indicates on which side of the spread that leg must be. The possible values for the spread side are "A" or "B".

This value indicates only that certain legs of the spread must be on opposite sides from each other, and not that a particular leg must be net long or short.

- The Exchange Code value for each leg of the spread will indicate the exchange to which this leg of the spread pertains.

3.6 Record Type 15: Scenario Descriptions

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 15
3	3	5	N		Scenario Number
15	6	20	AN		Scenario Description
3	21	23	N		Paired Scenario Number

Notes:

- The purpose of this record is to detail any parameters associated with a scenario.
- The paired scenario number is needed during the intercontract spreading calculations.

3.7 Record Type 16: Margin Group Descriptions

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 16
3	3	5	AN		Initial Margin Group
25	6	30	AN		Initial Margin Group Description

Notes:

- The purpose of this record is to list the margin groups with their descriptions.

Currently, there is the following margin group:

PNX Powernext

- Margin groups are used to restrict the offsetting of Net Liquidation Value with initial margins.

3.8 Record Type 20: Exchange Details

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 20
3	3	5	AN		Exchange Code
9	6	14	AN		Exchange Short Name
2	15	16	AN		File Identifier

Notes:

- The purpose of this record is to detail any parameters associated with an exchange.
- All succeeding records in the file relate to the exchange given in this record, until superseded by another exchange record.
- Powernext exchange code is : P
- .

3.9 Record Type 30: Combined Contract Details

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 30
3	3	5	AN		Combined Contract Code
20	6	25	AN		Combined Contract Name
3	26	28	AN		Contract Group
3	29	31	AN		Initial Margin Group
3	32	34	AN		Margin Currency Code
4	35	38	Real		Extreme Price Shift
6	39	44	Real		Loss Covered (%)

Parameter File Format

10	45	54	N		Short Option Minimum Charge Rate
2	55	56	N		Strategy Spread Method Code
2	57	58	N		Interprompt Spread Method Code
2	59	60	N		Prompt Date Method Code
8	61	68	Date		End of Risk Period

Notes:

- The purpose of this record is to detail any parameters associated with a combined contract.
- All succeeding records in the file relate to the combined contract given in this record, until superseded by another combined contract record.
- The contract group field indicates to which contract group this contract belongs for intercontract spreading purposes.
- The initial margin group field indicates to which initial margin group this contract belongs for net margin calculation purposes.
- The margin currency code indicates to which currency the loss values for contracts belonging to this combined contract should be converted.
- The extreme price shift field is held to two decimal places.
- The loss covered field is a percentage and is held as a decimal number, e.g. 35% is held as 0.35.
- The strategy spread method will be either 1 (no charge) or 10 (strategy spreads), in which case record 35 details spreads to use in the strategy spread calculation.
- The Interprompt spread method will be either 1 (no charge) or 10 (multi-tier approach), in which case records 31 and 32 detail the tiers and leg spreads to use in the multi-tier spread calculation.
- The Prompt Date method will either be 1 (no charge) or 10 (multi-tier approach), in which case record 33 details the Expiry Groups for which charges should be applied. The Expiry Groups method cannot be 10 if the Interprompt spread method is 1, as Prompt Date calculations depend on the Interprompt routines being performed first.

3.10 Record Type 31: Month Tier Details

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 31
2	3	4	N		Number of Tiers
2	5	6	N		Tier Number 1
8	7	14	Date		Starting Expiry Group 1
8	15	22	Date		Ending Expiry Group 1
2	23	24	N	Y	Tier Number 2
8	25	32	Date	Y	Starting Expiry Group 2
8	33	40	Date	Y	Ending Expiry Group 2
2	41	42	N	Y	Tier Number 3
8	43	50	Date	Y	Starting Expiry Group 3
8	51	58	Date	Y	Ending Expiry Group 3
2	59	60	N	Y	Tier Number 4
8	61	68	Date	Y	Starting Expiry Group 4
8	69	76	Date	Y	Ending Expiry Group 4
2	77	78	N	Y	Tier Number 5
8	79	86	Date	Y	Starting Expiry Group 5
8	87	94	Date	Y	Ending Expiry Group 5
2	95	96	N	Y	Tier Number 6
8	97	104	Date	Y	Starting Expiry Group 6
8	105	112	Date	Y	Ending Expiry Group 6
2	113	114	N	Y	Tier Number 7
8	115	122	Date	Y	Starting Expiry Group 7
8	123	130	Date	Y	Ending Expiry Group 7
2	131	132	N	Y	Tier Number 8
8	133	140	Date	Y	Starting Expiry Group 8
8	141	148	Date	Y	Ending Expiry Group 8

Notes:

- This record details the tiers to be used for the Interprompt spread calculation.
- Tier numbers two to eight are optional.
- If more than eight tiers are required, there will be more than one record 31.

3.11 Record Type 32: Leg Spread Details

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 32
3	3	5	N		Interprompt Spread Priority
10	6	15	N		Spread Charge Rate
2	16	17	N		Number of Legs
2	18	19	N		Tier Number 1
2	20	21	N		Delta Spread Ratio 1
1	22	22	AN		Market Side 1
2	23	24	N		Tier Number 2
2	25	26	N		Delta Spread Ratio 2
1	27	27	AN		Market Side 2
2	28	29	N	Y	Tier Number 3
2	30	31	N	Y	Delta Spread Ratio 3
1	32	32	AN	Y	Market Side 3
2	33	34	N	Y	Tier Number 4
2	35	36	N	Y	Delta Spread Ratio 4
1	37	37	AN	Y	Market Side 4

Notes:

- This record details legs for a particular spread.
- Each leg consists of three fields, the tier number for the leg, the delta spread ratio and the market side of the leg ("A" or "B").
- Each spread must have at least two legs. Data relating to legs three and four is optional.
- There may be many spread records, ordered by spread priority.

3.12 Record Type 33: Prompt Date Charge Details

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 33
2	3	4	N		Number of Expiry Groups
8	5	12	Date		Expiry Group 1

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10	13	22	N		Spread Charge 1
10	23	32	N		Outright Charge 1
1	33	33	AN		Delta Sign 1
8	34	41	Date	Y	Expiry Group 2
10	42	51	N	Y	Spread Charge 2
10	52	61	N	Y	Outright Charge 2
1	62	62	AN	Y	Delta Sign 2
8	63	70	Date	Y	Expiry Group 3
10	71	80	N	Y	Spread Charge 3
10	81	90	N	Y	Outright Charge 3
1	91	91	AN	Y	Delta Sign 3
8	92	99	Date	Y	Expiry Group 4
10	100	109	N	Y	Spread Charge 4
10	110	119	N	Y	Outright Charge 4
1	120	120	AN	Y	Delta Sign 4

Notes:

- This record gives details of the Expiry Groups for which a charge must be applied.
- Expiry Groups two to four are optional. If more than four Expiry Groups are required, there will be more than one record 33. There may be many Prompt Date records.
- Each Expiry Group has associated with it a spread charge, an outright charge and a delta sign.
- The delta sign can be "L" (apply charges only if delta for the prompt date is long), "S" (apply charges only if delta for the prompt date is short), or "B" (apply charges whether delta is long or short).

3.13 Record Type 34: Intercontract Tier Details

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 34
2	3	4	N		Number of Intercontract Tiers
2	5	6	N		Intercontract Tier Number 1
2	7	8	N		Starting Month Tier Number
2	9	10	N		Ending Month Tier Number 1

Parameter File Format

2	11	12	N	Y	Intercontract Tier Number 2
2	13	14	N	Y	Starting Month Tier Number 2
2	15	16	N	Y	Ending Month Tier Number 2
2	17	18	N	Y	Intercontract Tier Number 3
2	19	20	N	Y	Starting Month Tier Number 3
2	21	22	N	Y	Ending Month Tier Number 3
2	23	24	N	Y	Intercontract Tier Number 4
2	25	26	N	Y	Starting Month Tier Number 4
2	27	28	N	Y	Ending Month Tier Number 4
2	29	30	N	Y	Intercontract Tier Number 5
2	31	32	N	Y	Starting Month Tier Number 5
2	33	34	N	Y	Ending Month Tier Number 5
2	35	36	N	Y	Intercontract Tier Number 6
2	37	38	N	Y	Starting Month Tier Number 6
2	39	40	N	Y	Ending Month Tier Number 6
2	41	42	N	Y	Intercontract Tier Number 7
2	43	44	N	Y	Starting Month Tier Number 7
2	45	46	N	Y	Ending Month Tier Number 7
2	47	48	N	Y	Intercontract Tier Number 8
2	49	50	N	Y	Starting Month Tier Number 8
2	51	52	N	Y	Ending Month Tier Number 8

Notes:

- This record details the tiers to be used for the multi-tier intercontract spread calculation.
- Tier numbers two to eight are optional.
- If more than eight tiers are required, there will be more than one record 34.

3.14 Record Type 35: Strategy Spread Details

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 35
3	3	5	N		Strategy Spread Priority
10	6	15	N		Spread Charge Rate
2	16	17	N		Number of Legs

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8	18	25	Date		Expiry Group 1
2	26	27	N		Delta Spread Ratio 1
1	28	28	AN		Market Side 1
8	29	36	Date		Expiry Group 2
2	37	38	N		Delta Spread Ratio 2
1	39	39	AN		Market Side 2
8	40	47	Date	Y	Expiry Group 3
2	48	49	N	Y	Delta Spread Ratio 3
1	50	50	AN	Y	Market Side 3
8	51	58	Date	Y	Expiry Group 4
2	59	60	N	Y	Delta Spread Ratio 4
1	61	61	AN	Y	Market Side 4
8	62	69	Date	Y	Expiry Group 5
2	70	71	N	Y	Delta Spread Ratio 5
1	72	72	AN	Y	Market Side 5
8	73	80	Date	Y	Expiry Group 6
2	81	82	N	Y	Delta Spread Ratio 6
1	83	83	AN	Y	Market Side 6
8	84	91	Date	Y	Expiry Group 7
2	92	93	N	Y	Delta Spread Ratio 7
1	94	94	AN	Y	Market Side 7
8	95	102	Date	Y	Expiry Group 8
2	103	104	N	Y	Delta Spread Ratio 8
1	105	105	AN	Y	Market Side 8

Notes:

- This record details legs for a particular strategy
- Each leg consists of three fields, the expiry group for the leg, the delta spread ratio and the market side of the leg ("A" or "B").
- Each spread must have at least two legs. Data relating to legs three through eight is optional.
- There may be many strategy spread records, ordered by spread priority.

3.15 Record Type 40: Contract Details

Parameter File Format

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 40
3	3	5	AN		Contract Code
1	6	6	AN		Generic Contract Type
20	7	26	AN		Contract Description
3	27	29	AN		Contract Currency
6	30	35	N		Tick Denominator
6	36	41	N		Minimum Price Fluctuation (in ticks)
14	42	55	Real		Tick Value
8	56	63	Real		Delta Divisor
6	64	69	N		Decimal Locator
6	70	75	N		Strike Denominator
7	76	82	N		Scanning Range (in ticks)
1	83	83	N		Settlement Style Method

Notes:

- The purpose of this record is to detail parameters associated with a contract.
- All succeeding records in the file relate to the contract given in this record, until superseded by another contract record.
- The contract currency field indicates the currency of the values in the risk arrays for this contract.
- The tick value field is held to five decimal places.
- The delta divisor is used to scale a contract's delta, eg. in Interprompt spreading where combined contracts have varying contract sizes.
- The decimal locator and strike denominator fields are used to convert the strike price on record 60, which is in display format, into a decimal value.
- The settlements style field has the following values:
 - Futures style (futures and futures style options)

3.16 Record Type 50: Contract Expiry Details

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 50
8	3	10	Date		Expiry Date
8	11	18	Real		Discount Factor
6	19	24	Real		Volatility Shift Up (%)
6	25	30	Real		Volatility Shift Down (%)
3	31	33	N		Number of Expiry Groups
8	34	41	Date		Expiry Group 1
8	42	49	Date	Y	Expiry Group 2
8	50	57	Date	Y	Expiry Group 3
8	58	65	Date	Y	Expiry Group 4
8	66	73	Date	Y	Expiry Group 5
8	74	81	Date	Y	Expiry Group 6
8	82	89	Date	Y	Expiry Group 7
8	90	97	Date	Y	Expiry Group 8
8	98	105	Date	Y	Expiry Group 9
8	106	113	Date	Y	Expiry Group 10
8	114	121	Date	Y	Expiry Group 11
8	122	129	Date	Y	Expiry Group 12
8	130	137	Date	Y	Expiry Group 13
8	138	145	Date	Y	Expiry Group 14
8	146	153	Date	Y	Expiry Group 15
8	154	161	Date	Y	Expiry Group 16
8	162	169	Date	Y	Expiry Group 17
8	170	177	Date	Y	Expiry Group 18
8	178	185	Date	Y	Expiry Group 19
8	186	193	Date	Y	Expiry Group 20
8	194	201	Date	Y	Expiry Group 21
8	202	209	Date	Y	Expiry Group 22
8	210	217	Date	Y	Expiry Group 23
8	218	225	Date	Y	Expiry Group 24
8	226	233	Date	Y	Expiry Group 25
8	234	241	Date	Y	Expiry Group 26
8	242	249	Date	Y	Expiry Group 27
8	250	257	Date	Y	Expiry Group 28
8	258	265	Date	Y	Expiry Group 29
8	266	273	Date	Y	Expiry Group 30
8	274	281	Date	Y	Expiry Group 31
8	282	289	Date	Y	Expiry Group 32

Notes:

- The purpose of this record is to detail any parameters associated with a contract expiry.
- All succeeding records in the file relate to the expiry date given in this record, until superseded by another contract expiry record.

Note: The expiry date field is analogous to the option contract month field of the risk array record in previous versions of the risk parameter file format.

- For ordinary futures and options, there will be one expiry group. (In this case, the expiry group 1 field is analogous to the futures contract month field of the risk array record in the previous versions of the risk parameter file format.)
- In either case, as a precursor to the Interprompt spread calculation, it is necessary to apportion the delta for a particular expiry date to all the expiry groups listed. In other words, divide the delta by the number of expiry groups, and allocate this divided delta to the given expiry groups.
- The discount factor field should be stored to six decimal places.
- The volatility shift up and volatility shift down fields are percentages and are held as decimal numbers, e.g. 15% is held as 0.15.

3.17 Record Type 60: Series Details (Risk Array Record)

Length	From	To	Type	Opt	Description
2	1	2	N		Record Type - Always 60
8	3	10	N		Strike Price
2	11	12	AN		Contract Type
5	13	17	N		Lot Size
8	18	25	N		Settlement Price
9	26	34	Real		Composite Delta
7	35	41	N		Loss Value 1
7	42	48	N		Loss Value 2
7	49	55	N		Loss Value 3
7	56	62	N		Loss Value 4
7	63	69	N		Loss Value 5
7	70	76	N		Loss Value 6
7	77	83	N		Loss Value 7
7	84	90	N		Loss Value 8
7	91	97	N		Loss Value 9
7	98	104	N		Loss Value 10
7	105	111	N		Loss Value 11
7	112	118	N		Loss Value 12
7	119	125	N		Loss Value 13
7	126	132	N		Loss Value 14
7	133	139	N		Loss Value 15
7	140	146	N		Loss Value 16

Notes:

- Settlement / Closing price is expressed in a whole number of ticks for contracts quoted in points and ticks. For example, a price of $1 \frac{5}{32}$ would appear as 37.
- The composite delta is held to four decimal places.
- The risk array values are given in a whole number of ticks.
- Each value represents the loss (gain) per single long position. Here "long" refers to long futures, long puts and long calls.