

# 2024

Guide to the  
DLX Direct Lending Index Series



# Guide to the DLX Direct Lending Index Series

LPX AG

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The Guide sets out the ground rules for the construction and maintenance of the DLX Direct Lending Index Series.

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## 1 General Index Information

The design of DLX Direct Lending Index Series, hereafter “DLX Index” or “DLX Indices”, is based on a proprietary industry classification scheme, which ensures the representative composition of the DLX indices focusing on a universe of global listed companies, which primarily provide debt and mezzanine capital to mainly private middle market companies. Eligible constituent selection is based on individual company research, which ensures a look-through on the investment portfolio level. From this background, the DLX Indices are suitable for mapping the risk and return characteristics of the direct lending asset class.

A key challenge in direct lending is that there is no standard industry classification scheme available that ensures for the consistent identification of a global universe of listed direct lending companies. In the field of indexing, a reliable industry classification scheme is crucial to the design of representative performance benchmarks. The industry classification scheme developed by LPX AG enables the identification and classification of a global set of direct lending companies that provide debt and/or mezzanine capital to private middle market companies.

The DLX indices contribute to the investment process by serving as a relevant and representative performance benchmark and as an effective research tool. The design, development and delivery of the DLX indices ensure that they are investable, tradable and transparent.

LPX AG reserves the right to deviate from the rules set forth in this Index Guide in case the properties of the base universe impede to follow the stipulated index construction rules. In such a case all relevant stakeholders will be informed and changes to the index construction methodology will be communicated on the LPX AG corporate website at the earliest possible date.

### 1.1 DLX Direct Lending Index Series

The DLX Direct Lending Index Series is the first listed benchmark for the direct lending asset class. The design and selection methodology of the DLX indices, which includes the definition of the base universe and selection of eligible index constituents, follows the rules as described in Section 2.

#### DLX Direct Lending Index

The DLX Index is designed to represent the 30 most highly capitalized direct lending companies. The DLX index is characterized by a broad diversified private debt portfolio in mainly middle market companies. The reference currency of the DLX Index is USD. The index is available as a Total Return (Net) and Price Index (PI). The index is calculated in real-time and distributed to a broad array of data vendors.

## 1.2 Reference Date, Weighting and Cap

The reference date is chosen such that a minimum of 10 initial constituents are ensured. The DLX indices are calculated according to the calculation algorithm described in Section 3 of this Guide. In order to limit the weight of individual constituents in the indices, a cap (the variable is defined as “CAP” in this Guide) is set for the market capitalization of any single constituent of the index (see Section 3 for details). If the number of constituents of an index is 15 or more, a cap of 15% or less is implemented for any single constituent (refer to Table 1 for the current cap applied in the respective index). An overview of the characteristics of the DLX indices is presented in Table 1.

**Table 1:** Characteristics of the DLX Direct Lending Index Series

Index	Fixed Number of Constituents	Reference date	Launch date	CAP	Chaining dates <sup>a</sup>
DLX Direct Lending	25	31.12.2008	24.07.2018	7.5%	Jan, July

<sup>a</sup> For the ordinary chaining dates as depicted in Table 1, the following rule applies: For the calendar months Jan, Apr, July, and Oct, the chaining date takes place on the SECOND THURSDAY of the respective month. In case the chaining date falls on a bank holiday the chaining date is preponed T-1. Generally, the share fixing takes place in T-5, where T refers to the chaining date. The effective date of the chaining is by definition T+1. The index changes (i.e., index mutations) are communicated on the LPX AG corporate website at the earliest possible date.

## 1.3 Prices

Official closing prices from the primary stock exchanges of the respective index constituent securities are used for the calculation of the DLX indices. In the case that the official closing price of a constituent instrument is not available (i.e., suspension, illiquidity, bank holiday, etc.), the previous official closing price is used for the specific instrument for index calculation. In the event of a suspension during trading hours, the last price determined before such a suspension is used for subsequent calculations. If such suspension occurs before the start of trading, the closing price of the previous day is used. In the event of an exchange holiday, the closing prices from the previous day are used. LPX AG publishes the indices for every day except for Saturdays and Sundays. There are generally no index holidays.

## 1.4 Calculation Frequency

Generally, official closing index values are calculated and disseminated via appropriate channels. Furthermore, the DLX indices are calculated in real-time during official trading hours and disseminated to a broad array of data vendors. For details on the underlying data provider mnemonics refer to Section 7.

## 1.5 Country Allocation

The DLX base universe includes companies that are traded on regulated exchanges worldwide. The base universe is continuously reviewed and new eligible companies are added in accordance to Section 2.2. The constituents of the DLX base universe are traded on the stock exchanges as outlined in Table 2.<sup>2</sup>

**Table 2:** DLX Base Universe - Global Stock Exchanges

Country	Exchange Name	MIC <sup>a</sup>
Australia	Australian Stock Exchange (ASE)	XASX
Belgium/Luxembourg	EN Brussels	XBRU
Brazil	Sao Paulo Stock Exchange (BOVESPA)	BVMF
Canada	Toronto Stock Exchange (TSX)	XTSE
Chile	Santiago Stock Exchange	XSGO
China	HKEx (Hong Kong Stock Exchange)	XHKG
France	NYSE Euronext	XPAR
Germany	Deutsche Börse XETRA	XETR
Greece	Athens Exchange SE	XATH
Hong Kong	HKEx (Hong Kong Exchanges and Clearing)	XHKG
Indonesia	Indonesia Stock Exchange (IDX)	XIDX
Italy	Borsa Italiana SpA	MTAA
Japan	Tokyo Stock Exchange (TSE)	XTKS
Malaysia	Bursa Malaysia	XKLS
Mexico	Bolsa Mexicana De Valores (BMV)	XMEX
New Zealand	NZX (New Zealand Stock Exchange)	XNZE
Philippines	Philippine Stock Exchange (PSE)	XPHS
Singapore	Singapore Stock Exchange (SGX)	XLON
Spain	Soc.Bol SIBE	XMCE
Switzerland	SWX Swiss Exchange	XSWX
Switzerland	Virt-X Exchange	XVTX
Thailand	The Stock Exchange of Thailand (SET)	XBKK
Turkey	Istanbul Stock Exchange	XIST
United Kingdom	London Stock Exchange (LSE)	XLON
United States	NYSE (New York Stock Exchange)	XNYS
United States	NASDAQ National Market System	XNGS
United States	NASDAQ National Market System	XNMS

<sup>a</sup> refers to Market Identification Code ISO 10383 (MIC).

<sup>2</sup>LPX AG reserves the right to add further exchanges to the list above.

## 1.6 Currency Conversion

The foreign exchange rates used in the calculation of the DLX Indices are the WM/Reuters Closing Spot Rates, compiled by the WM Company. In the event that WM/Reuters Closing Spot Rates are not published by the WM Company, the previous day's rates will be used to calculate the DLX Indices.

## 1.7 Error Correction Policy

The objective is to maintain the DLX indices to the highest standards of accuracy and integrity, using reliable data sources and following best practice in statistical and operational procedures. Where material errors occur in data or in calculation procedures, these are corrected promptly (i.e., within one business day). However, LPX AG is conscious of the risk of damaging the confidence of users through the frequent publication of amendments where trivial statistical errors have occurred that do not materially affect the accuracy of the published index series.

# 2 Choice of Index Constituents

## 2.1 Preamble

A key challenge in direct lending is that there is no standard industry classification scheme available that ensures for the consistent identification of a global universe of listed direct lending companies. Moreover, Listed Debt is a niche market when compared to the overall listed security market. In order to identify a representative universe of listed debt companies/funds, the following admission criteria are defined:

- Provision of debt capital as defined under Section 2.2.
- At least 50% of total assets must fall under the defined debt categories as depicted in Table 3.
- Listed on an eligible stock exchange as defined in Table 2.

Due to the stock exchange listing, the companies/funds are subject to transparency requirements, which provide information about the investment strategy as well as the composition of the debt portfolio. The types of debt, which are eligible are defined in Table 3. In order to determine the degree of diversification, information regarding the geographical and sectoral distribution of the debt portfolio is also evaluated. Only publicly available information is used as officially published by the companies.

**Table 3:** Types of Debt

The table outlines the different types of debt and/or mezzanine capital.

Type	Definition
Senior Debt	Senior Debt refers to financing through senior loans that may be secured or unsecured.
Junior Debt	Junior Debt are financial instruments that rank lower than other claims against the debtor company in the case of insolvency. These can also be secured or unsecured.
Mezzanine	Mezzanine is a hybrid of debt and equity. It is often used subordinately to bank financing. The total return results from the current interest and an additional participation in the equity of the company.
Convertible Debt	Convertible Debt gives the holder the right to convert a bond into shares during a conversion period at a predefined ratio; otherwise, the bond matures at maturity.

## 2.2 Methodology

The DLX base universe is a subset of the global equity universe. Based on a multi-step research approach, a global set of eligible constituents are identified and classified using a standard classification scheme.

1. Identification of listed companies, which provide debt and/or mezzanine capital to private middle market companies. These companies form the DLX raw universe.
2. Screening of the raw universe on a single constituent basis. Look through on investment portfolio level and standardized classification of the underlying debt investments.
3. Analysis of the underlying investment portfolio in order to measure percentage share of debt and/or mezzanine capital. A company is considered as a listed direct lending company if at least 50% of the investment portfolio is allocated in debt and/or mezzanine capital including cash and cash equivalents. A classification of the different types of debt and/or mezzanine is depicted in Table 3.

Within the framework of a continuous research process, LPX AG checks whether a company currently in the base universe is still an eligible constituent or whether new companies that have previously not been considered should be included.



## 2.3 Liquidity Analysis (LA)

The DLX Indices are adjusted for liquidity where liquidity is defined as how often and in what volume an instrument is traded on the underlying primary stock exchange. The rationale behind the liquidity analysis is to ensure that the DLX indices are representative and replicable. For the liquidity analysis annual averages are used for every potential DLX index member<sup>3</sup>. Specifically, the following ratios are calculated within the framework of the liquidity analysis:

### Ratios

The specific liquidity ratios are:

- a maximum average bid-ask spread (BAS)
- an average minimum market capitalization [mEUR] (MV)
- an average minimum trading volume per trading day measured relative to the market capitalization (TV)
- a minimum trade continuity (CT)

### Criteria

The following table summarizes the criteria that are applied to each of the DLX indices. In the event that a company does not fulfill one of the criteria, the company is not eligible for inclusion in the respective index, which means that the criteria are so-called "KO criteria".

**Table 4:** Ratios of Liquidity Analysis

Index Name	BAS <sup>a</sup>	MV <sup>a</sup>	TV <sup>a</sup>	CT <sup>a</sup>	Ranking
DLX Direct Lending	1.0%	mEUR 250	0.07%	95%	MV

<sup>a</sup> LPX AG reserves the right to deviate from the liquidity thresholds as depicted in Table 4, in case of minor violations in order to minimize fluctuations in the index. LPX AG reserves the right to consult stakeholders regarding the current liquidity of index constituent securities.

### Ranking

Generally, the DLX Indices are ranked according to the market capitalization of the underlying constituents. Specifically, the companies that fulfil the liquidity criteria as outlined in Table 4 are brought into a ranking list according to their market capitalization (at the time of the liquidity analysis).

### Time and Frequency of the Liquidity Analysis

The liquidity analysis is carried out twice a year on the first trading day in December and June and serves as a basis for the composition of the DLX Indices.

<sup>3</sup>The use of annual averages implies that a minimum trading history of one year is a prerequisite for an instrument to become a potential eligible member of a DLX index.

## Ordinary Adjustment

An ordinary adjustment of the DLX indices takes place according to the predefined chaining dates for the DLX indices as outlined in Table 1 on a half-yearly (quarterly) basis based on closing prices of the respective chaining date. The effective date of the new composition is, by definition, one trading day after the chaining date. Companies that no longer fulfil one of the “KO criteria” as outlined in Table 4 are replaced. In such a case, the successor is the company with the highest rank better than “n”<sup>4</sup> that was not previously included in the index, where “n” indicates the number of companies in the respective index.

**Table 5:** Ranking-Supported Adjustments

Index	R1	R2	R3
DLX Direct Lending	$[n \times 1.2]$	n	$[\frac{n}{2}]$

A constituent of the index that is ranked in the respective ranking list at R1 or worse is replaced, assuming a constituent exists, which is ranked at R2 or better in the ranking list. A non-index-constituent that is ranked at R3 or better in the respective ranking list is included in the index, if a company currently in the index has a lower rank than R2.

At the end of the process of ordinary adjustments, there is a new constituent list for the respective index. At the same time, a new ranking list of possible successors is created. These ranking lists are created using the methodology as outlined in Table 4, i.e., those companies (not currently in the index) with the highest market capitalization get the top rank and are therefore the first candidates to advance in case of an ordinary adjustment.

## Extraordinary Adjustment

Adjustments due to extraordinary events will also be carried out. LPX AG reserves the right to deviate from the said rules for ordinary or extraordinary adjustment in exceptional cases. The adjustments applied will be communicated in advance via appropriate channels.

## Constituent Replacement due to a Delisting

Constituents that have applied for a de-listing at an exchange or for whom bankruptcy proceedings have been adjudicated will be excluded from the index effective not later than the day when the security is last traded at an exchange. In case the security is removed before that date, LPX AG will communicate the change in index composition in advance via appropriate channels. The company with the highest rank of the successor list will succeed in the index as outlined in Section 2.3.

## Merger of Two Index Constituents

If an existing index constituent is acquired for eligible shares (or a combination of eligible shares and cash) by another index constituent, the existing constituent is deleted (not later than) on the effective date of acquisition. The company with the highest rank of the successor list will succeed in the index as outlined in Section 2.3.

<sup>4</sup> $[x]$  denotes the largest integer smaller than x.

**Merger of an Index Constituent with a Non-Index Constituent**

If an existing index constituent is acquired for eligible shares (or a combination of eligible shares and cash) by a quoted non-constituent, the merged company is continued in the index if eligible in all other respects of this Guide. If the requirements defined in Section 2.2 are not fulfilled, the merged company is replaced by the company with the highest rank of the successor list.

**Spin-off**

If an existing index constituent spins off a company, the spun-off company enters the index for a period of minimum 5 trading days. After that period the company will be removed from the index or, in case all criteria are met, will remain in the index.

### 3 Calculation Methods

#### 3.1 Index Formulae (Single Stock Distribution Reinvestment)

The calculation of the DLX indices follows the following formulae:

$$I_t^{TR} = k_t^{TR} \times \frac{\sum_{i=1}^{n_t} p_{i,t} \times w_{i,t} \times aa_{i,t} \times c_{i,t}^{TR}}{\sum_{i=1}^{n_0} p_{i,0} \times aa_{i,0} \times w_{i,0}} \times Basis_0^{TR} \quad (1)$$

$$I_t^{PI} = k_t^{PI} \times \frac{\sum_{i=1}^{n_t} p_{i,t} \times w_{i,t} \times aa_{i,t} \times c_{i,t}^{PI}}{\sum_{i=1}^{n_0} p_{i,0} \times aa_{i,0} \times w_{i,0}} \times Basis_0^{PI} \quad (2)$$

$TR, PI$	Total Return, Price Index
$I_t^{TR}, I_t^{PI}$	Index level (TR, PI)
$k$	Index-specific chaining factor
$n$	Number of constituents in the index
$p$	Price in local currency
$w$	Exchange rate
$aa$	Capped number of shares (constant between chaining dates)
$c$	Current adjustment factor
$Basis$	Index-specific constant value
$t$	Index of time (daily)
$i$	Index of index constituents

### 3.2 Cap

One week before each chaining date, the weight of any constituent (i.e., the number of shares  $aa_i$ ) is determined in such a way that "Current CAP" holds for every index constituent, as defined in Table 1. Between each chaining date, which occurs semi-annually or quarterly, depending on the respective index,  $aa_i$  remains constant. The chaining dates are outlined in Table 1.

### 3.3 Corporate Actions

For the calculation of the DLX indices the following corporate actions are taken into account. The adjustment factors are defined for both price (PI) and total return (TR) index. The following formulae are applied to determine the adjustment factors:

$$c_{i,t}^{TR} = a_{i,t}^{TR} \times b_{i,t}^{TR} \times e_{i,t}^{TR} \times f_{i,t}^{TR} \quad (3)$$

$$c_{i,t}^{PI} = a_{i,t}^{PI} \times b_{i,t}^{PI} \times e_{i,t}^{PI} \times f_{i,t}^{PI} \quad (4)$$

$$e_{i,t} = b_{i,t}^{PI} \times e_{i,t}^{PI} \times f_{i,t}^{PI} \quad (5)$$

where the auxiliary factors  $a, b, e, f$ , for both the price (PI) and total return (TR) version are defined in the following paragraphs.

#### Cash Dividends and Special Distributions

Cash dividends include regular dividends (denoted by and expressed per share on the ex date), as well as special cash dividends. Other special distributions include bonus shares as well as spin-offs (denoted by SD and expressed per share on the ex date). For the TR indices all cash dividends and special distributions are included in the calculation. In contrast, for the PI indices only the special distributions are considered. The following formulae apply to the auxiliary factor  $a$ :

$$a_{i,t}^{TR} = \begin{cases} 1, & \text{if } t = 1 \\ a_{i,t-1}^{TR} & \text{if } t \neq k, D_{i,t} = 0, SD_{i,t} = 0 \\ \left(1 + \frac{(1-Q)D_{i,t}}{p_{i,t-1} - (1-Q)D_{i,t}}\right) \times a_{i,t-1}^{TR} \text{ or } \left(1 + \frac{(1-Q)SD_{i,t}}{p_{i,t-1} - (1-Q)SD_{i,t}}\right) \times a_{i,t-1}^{TR}, & \text{if } t \neq k, D_{i,t} \neq 0 \text{ or } SD_{i,t} \neq 0 \end{cases} \quad (6)$$

$$a_{i,t}^{PI} = \begin{cases} 1, & \text{if } t = 1 \\ a_{i,t-1}^{PI} & \text{if } t \neq k, SD_{i,t} = 0 \\ \left(1 + \frac{(1-Q)SD_{i,t}}{p_{i,t-1} - (1-Q)SD_{i,t}}\right) \times a_{i,t-1}^{PI} \text{ or } \left(1 + \frac{(1-Q)SD_{i,t}}{p_{i,t-1} - (1-Q)SD_{i,t}}\right) \times a_{i,t-1}^{TR}, & \text{if } t \neq k, SD_{i,t} \neq 0 \end{cases} \quad (7)$$

with

$k$	Index of chaining dates
$t$	Index of time (daily)
$i$	Index of constituents

### Stock Splits and Reverse Splits

This section does not only include stock splits, but also reverse splits (stock consolidation). The split ratio is denoted by  $SPR$  on the ex date. The auxiliary adjustment factor  $b$  is calculated according to the following formulae

$$b_{i,t}^{TR} = \begin{cases} 1, & \text{if } t = 1 \\ b_{i,t-1}^{TR} & \text{if } t \neq k, SPR_{i,t} = 1 \\ SPR_{i,t} \times b_{i,t-1}^{TR} & \text{if } t \neq k, SPR_{i,t} \neq 0 \end{cases} \quad (8)$$

$$b_{i,t}^{PI} = b_{i,t}^{TR} \text{ for all } i,t \quad (9)$$

### Bonus Shares of the same Company

Bonus shares from the same company are treated equivalently as a stock split. The variable  $B$  denotes the number of bonus shares per share held on the ex date. The auxiliary adjustment factor  $b$  is calculated according to the following formulae

$$e_{i,t}^{TR} = \begin{cases} 1, & \text{if } t = k \\ e_{i,t-1}^{TR} & \text{if } t \neq k, B_{i,t} = 0 \\ (1 + B_{i,t}) \times e_{i,t-1}^{TR} & \text{if } t \neq k, B_{i,t} \neq 0 \end{cases} \quad (10)$$

$$e_{i,t}^{PI} = e_{i,t}^{TR} \text{ for all } i,t \quad (11)$$

### Subscription Rights

Subscription rights are not taken into account by LPX AG until the ex date, where the value of the subscription rights is reinvested in the company according to the subscription rate ratio  $SRR$  leading to the same amount of invested capital as before the transaction. The auxiliary adjustment factor  $f$  is calculated according to the following formulae

$$f_{i,t}^{TR} = \begin{cases} 1, & \text{if } t = k \\ f_{i,t-1}^{TR} & \text{if } t \neq k, SRR_{i,t} = 1 \\ SRR_{i,t} \times f_{i,t-1}^{TR} & \text{if } t \neq k, SRR_{i,t} \neq 0 \end{cases} \quad (12)$$

$$f_{i,t}^{PI} = f_{i,t}^{TR} \text{ for all } i,t \quad (13)$$

**Table 6:** Example: Subscription Rights

The following table outlines the index treatment of subscription rights of constituents instruments.

	Formulae	Constituent
Shares to be issued	(1)	1000
Old number of shares	(2)	3000
Share price <sub>t-1</sub>	(3)	100
Issue price of new shares	(4)	80
Subscription ratio	(5)	3
Expected share price after the issue	(6) = [(1) × (4) + (2) × (3)] ÷ [(1) + (2)]	95
Value of subscription right (share price dilution)	(7) = [(3) - (6)]	5
Number of shares in the index	(8)	3000
Value of subscription rights	(9) = [(7) × (8)]	15000
Number of additional shares	(10) = [(9) ÷ (6)]	157.89
Correction factor	(11) = [(10) + (8)] ÷ (8)	1.052632

### Other Corporate Actions

Any corporate actions, which have not been outlined in the aforementioned paragraphs, but which will be taken into account for the calculation of the DLX indices, are communicated in advance via appropriate channels.

## 4 Chaining

An overview of the ordinary chaining dates of the DLX indices is provided in Table 1. Due to extraordinary corporate events as outlined in Section 4 there may also be extraordinary chaining, which follows the same methodology as for the ordinary chaining. On every calculation day, LPX AG determines a chaining factor. The index-specific chaining factor  $K$  is calculated as follows:

$$k_t^{TR} = \begin{cases} 1, & \text{if } t = 0 \\ \frac{TRIndex}{ZW_{t=j}} & \text{if } t = j + 1 \\ k_{t-1}^{TR} & \text{if } t \neq j + 1, t \neq 0 \end{cases} \quad (14)$$

$$k_t^{PI} = \begin{cases} 1, & \text{if } t = 0 \\ \frac{PIIndex}{ZW_{t=j}} & \text{if } t = j + 1 \\ k_{t-1}^{PI} & \text{if } t \neq j + 1, t \neq 0 \end{cases} \quad (15)$$

The index is calculated with the old index composition at a chaining date, while the intermediate value  $ZW$  is calculated with the new index composition. The intermediate value is calculated as follows:

$$ZW_{t=j}^{TR} = \frac{\sum_{i=1}^{n_t} p_{i,t} \times w_{i,t} \times aa_{i,t}}{\sum_{i=1}^{n_t} p_{i,0} \times w_{i,0} \times aa_{i,0}} \times Basis_0^{TR} \quad (16)$$

$$ZW_{t=j}^{PI} = \frac{\sum_{i=1}^{n_t} p_{i,t} \times w_{i,t} \times aa_{i,t}}{\sum_{i=1}^{n_t} p_{i,0} \times w_{i,0} \times aa_{i,0}} \times Basis_0^{PI} \quad (17)$$

## 5 Amendments

- i The design and calculation methodology of the DLX Indices is overseen by index oversight on a regular basis at least once per year. The Index Oversight Directive is available upon request to all stakeholders. In case of a revision of the Guide, all stakeholders will be informed as soon as possible. The Guide is publicly available on the LPX corporate website.
- ii For complaints please contact [complaints@lpx-group.com](mailto:complaints@lpx-group.com). Details concerning the complaint process can be obtained upon request.



## 6 Data Vendor Codes

The DLX Direct Lending indices are available via major third party data providers. An overview on the various data vendor codes is depicted in the following table.

**Table 7:** Data Vendor Codes

<b>Total Return TR</b>							
	<b>CCY</b>	<b>Base Date</b>	<b>Launch Date</b>	<b>Valor CH</b>	<b>ISIN</b>	<b>Bloomberg</b>	<b>Reuters</b>
DLX Direct Lending Index TR	USD	31.12.08	24.07.18	3630407	CH0036304076	LPXIDITC	.LPXDITC
<b>Price Index PI</b>							
	<b>CCY</b>	<b>Base Date</b>	<b>Launch Date</b>	<b>Valor CH</b>	<b>ISIN</b>	<b>Bloomberg</b>	<b>Reuters</b>
DLX Direct Lending Index PI	USD	31.12.08	24.07.18	3630414	CH0036304142	LPXIDIPC	.LPXDIPC

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