

# Understanding BEx Query Designer: Part-5 Query Element Properties



## Applies to:

SAP NetWeaver BW.

## Summary

This document is the fifth installment of a 6 part Query Designer Training guide for Beginners. It deals with understanding the need and use manipulating the properties of the query elements and the query itself to get the desired result. This document will also be helpful to intermediate and advanced level users to learn some usually ignored but helpful facts about the Query Designer.

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## The BEx Query Designer

### Definition

It is an Independent desktop application for defining queries.

### Use

You analyze the dataset of the Business Information Warehouse by defining queries for InfoProviders using the BEx Query Designer. By selecting and combining InfoObjects (characteristics and key figures) or reusable structures in a query, you determine the way in which you navigate through and evaluate the data in the selected InfoProvider.

### Integration

You open the Query Designer from Start/Programs/Business Explorer/Query Designer.

You can also call up the BEx Query Designer from the following components:

- BEx Analyzer
- BEx Web Application Designer
- Crystal Reports (Crystal Reports  $\geq$  8.5 incl. CR add-ons for SAP)

### Features

The BEx Query Designer contains the following functions:

- You can use the queries that you define in the query designer for OLAP reporting and also for tabular reporting.
- You can parameterize the queries by using variables for characteristic values, hierarchies, hierarchy nodes, texts, or formulas.
- You can select InfoObjects more precisely by:
  - . Restricting characteristics to characteristic values, characteristic intervals and hierarchy nodes
  - . Defining formulas
  - . Defining selections
  - . Defining reusable calculated and restricted key figures.
  - . Using local or reusable structures
  - . Defining exceptions
  - . Defining conditions

The most significant components of the query definition are the filter and navigation:

- Selections in the **filter** have a limiting effect on the whole query. When defining the filter, you select characteristic values from one or more characteristics or from a key figure. All of the InfoProvider data is aggregated using the filter selection of the query. The filter selection cannot be changed by navigation.
- For navigation, you select user-defined characteristics and determine the content of the rows and columns of the query. You use this selection to determine the data areas of the InfoProvider over which you want to navigate. The arrangement of the contents of the rows and columns also determines the default view of the query and the rows and columns axes in the results area.

After it is inserted into the Web browser, a query is displayed in the default initial view. By navigating through the query, you can generate different views of the InfoProvider data, by dragging one of the user-defined characteristics into the rows or columns of the query, for example, or by filtering a characteristic according to a single characteristic value.

With the definition of a query, the InfoProvider data can be evaluated specifically and quickly. The more detail in which the query is defined, the quicker its execution and navigation.

## Query Element Properties

All components of query including the query itself have their own set of properties. These properties determine the behavior of the element. The properties for the selected query element are visible in the properties screen area of the BEx Query Designer. Also, you can select a query element for which you have to define the properties from the dropdown available in the Properties screen area.

This document will explain all the settings contained in the Properties pane of the query designer.

We will be discussing the following:

- Characteristic Query Element Properties
- Key Figure Query Element Properties
- Query Properties

in detail.

## Characteristic Query Element Properties

We will explain the different properties that correspond to a characteristic query element. Select the characteristic for which you want to define the properties as shown below.

The screenshot displays the SAP BEx Query Designer interface. The main workspace is divided into several sections:

- Rows/Columns:** Contains a tree view for 'Free Characteristics' and a 'Rows' section with a tree view showing 'Customer' and 'Product'.
- Columns:** Contains a tree view for 'Key Figures' with items: Quantity, Revenue, Revenue-2001, Revenue-2002, and Growth %.
- Preview:** A table showing the data for the selected characteristics. The table has columns for 'Quantity', 'Revenue', 'Revenue-2', and 'Reve'. The rows are categorized by 'a-Customer', 'b-Customer', 'a-Product', and 'b-Product'.
- Properties:** A panel on the right showing the properties for the selected characteristic, 'Customer (Drilldown Characteristic)'. It includes tabs for 'General', 'Display', 'Hierarchy', and 'Planning'. The 'Description' field is set to 'Customer', and the 'Technical Name' is 'ZAD\_CUST'.

At the bottom of the main workspace, there are tabs for 'Filter', 'Rows/Columns', and 'Conditions'.

## Characteristic Properties: General tab

**Properties**

Customer (Drilldown Characteristic)

Advanced

General Display Hierarchy Planning

**Description**

Customer

☒ Use Standard Text

**Technical Name**

ZAD\_CUST

In the general tab, you maintain the description of the characteristic of the query which will be displayed in the query output when it is executed.

If you use the 'Use Standard Text' checkbox, the description as mentioned in the InfoObject definition is selected.

The Technical name of the Characteristic will also be displayed as seen below.

## Characteristic Properties: Display tab

**Value Display**

Display as

Key

No Display

Key and text

Text

Key

Text and Key

**Sorting**

Sort Characteristic

As in the Query

Customer

Customer Group

**Advanced**

General Display Hierarchy Planning

**Value Display**

Display as

Key

Text View

Short Text

☒ Use Characteristic Setting

**Sorting**

Sort Characteristic

As in the Query

Sort by

As in the Query

Sort Direction

As in the Query

☐ Use Characteristic Setting

**Results Rows**

Always Suppress

Always Display

Display If More than One Value

Always Suppress

The Display Tab is divided into the following 3 sections:

### 1. Value Display Section

To select the way the characteristic values should be displayed.( No Display, Key and Text, text, key or text and key)

In the text view drop down, you can specify if you want the short, medium or long text to be displayed.

### 2. Sorting Section

In this section, you will define if the characteristic will be sorted in ascending or descending in the query output.

### 3. Result Rows Section

The result rows section allows you to set the display options of the summations in the query output.

#### Characteristic Properties: Hierarchy tab

The screenshot shows the 'Hierarchy' tab in the SAP BEx Query Designer. It includes the following sections:

- Advanced** (selected) | General | Display | Hierarchy | Planning
- ☐ Activate Hierarchy Display
- Selected Hierarchy**: A list box showing 'No Hierarchies Exist for These Characteristics'.
- Hierarchy Parameters**:
  - Expand to level**: A dropdown menu set to '0'.
  - ☒ Use Hierarchy Setting
  - Position of Lower-Level Nodes**:
    - ☐ Above
    - ☒ Below
    - ☒ Use Hierarchy Setting
  - Values of Posted Nodes**:
    - ☒ Always Show
    - ☐ Hide
    - ☐ Use Hierarchy Setting
  - Nodes with Only One Lower-Level Node**:
    - ☒ Always Show
    - ☐ Hide
    - ☐ Use Hierarchy Setting
  - Sorting**:
    - Sort by: A dropdown menu set to 'As in the Hierarchy'.
    - Sort Direction: A dropdown menu set to 'Ascending'.
    - ☐ Use Characteristic Setting

If the characteristic, for which properties are being maintained, contains hierarchies built on it, then you can set different properties on the Hierarchy tab. On this tab, you can select the hierarchy to be used in the query, and you can define the display sorting settings for the selected hierarchy.

## Characteristic Properties: Planning tab

Advanced

General Display Hierarchy **Planning**

**Planning on Hierarchy Nodes**

☒ No Budgeting

☐ Bottom-Up Budgeting (Roll Up Value)

☐ Top-Down Budgeting (Posting to Higher-Level Nodes)

☐ Top-Down Budgeting (Posting to Root Node)

The option specific to planning on hierarchy nodes are available on the Planning tab of characteristic properties. This setting is relevant for input-ready queries only.

## Characteristic Properties: Advanced tab

General Display Hierarchy Planning

Advanced

**UID**

DA00VC6L00K137J6MF6MM387

**Access Type for Result Values**

☒ Posted Values

☐ Characteristic Relationships

☐ Master Data

☒ Use Characteristic Setting

**Filter Value Selection During Query Execution**

☒ Only Posted Values for Navigation

☐ Only Values in InfoProvider

☐ Values in Master Data Table

☐ Characteristic Relationships

☒ Use Characteristic Setting

**Refresh Variables**

☒ Refresh Dynamically

☐ Refresh As Designed

☒ Use Characteristic Setting

The properties related to data access and data selection are maintained on the Advanced tab of the characteristic properties.

The Advanced Tab is divided into the following 3 sections:

### 1. Access Type for Result Values

In this section you can define what values of the characteristic should be displayed in the query output. These options are:



- **Posted Value:** Upon selection of this option, only posted values of the characteristics are displayed in the query output.
- **Characteristic Relationships:** Upon selection of this option, you can display the data as per characteristic relationships.
- **Master data:** Upon selection of this option, all the characteristic values from the master data are displayed irrespective of whether transaction data exists for those values or not.

## 2. Filter Value Selection During Query Execution

This setting determines the list of values you would get while selecting a filter value during query execution.

## 3. Refresh Variables

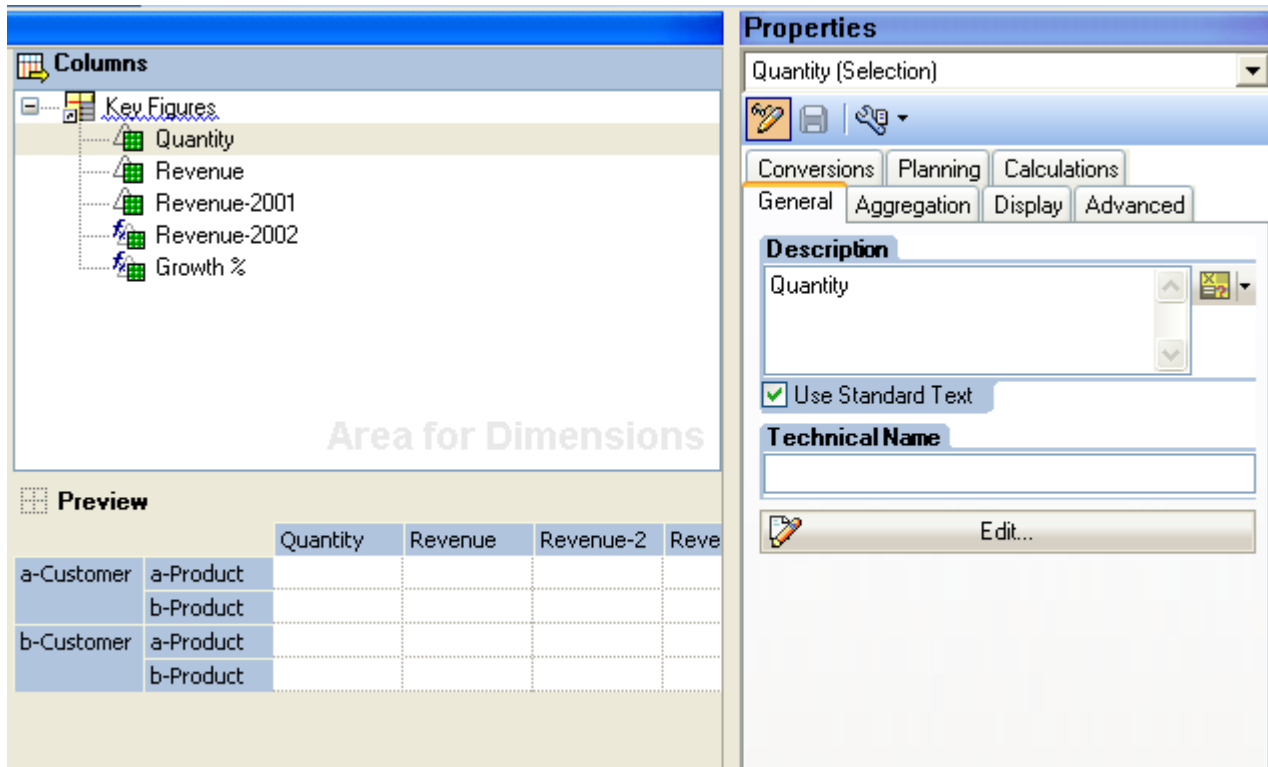
Here you can make variable refresh settings using either of the following options available:

- **Refresh Dynamically**  
If you choose this option, the system refreshes the workbook or Web application using the settings from the current navigation view.
- **Refresh as Designed**  
If you choose this option, the system refreshes the workbook or Web application using the hierarchy and filter settings from Query Designer.

## Key Figure Query Element Properties

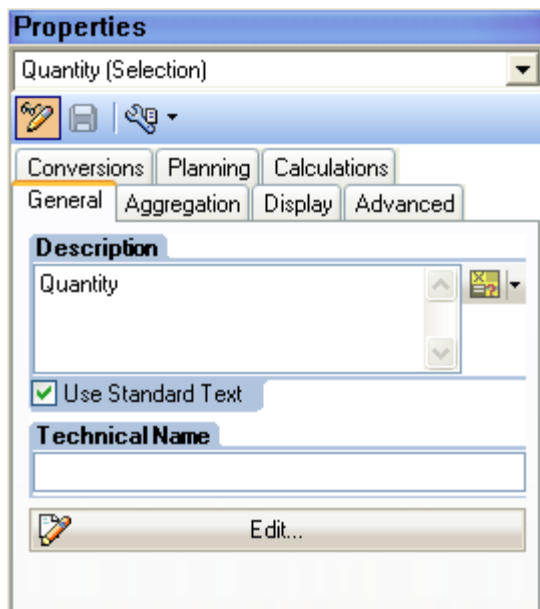
Now, we will look at the different properties for key figure query elements.

Click on the key figure whose properties have to be modified. The properties pane will display the key figure settings as shown below.



We will now look at the different tabs available under key figure properties pane.

#### Key figure Properties: General tab



You can maintain the description and technical name of the query element in this tab. To maintain the default description, click on the 'Use Standard Text' checkbox. Or else you can uncheck this checkbox and provide your own description to be shown in the query output.

You can also edit the definition of this element by clicking the Edit button.

## Key figure Properties: Aggregation tab

**Properties**

Quantity (Selection) ▼

Conversions Planning Calculations

General **Aggregation** Display Advanced

**Aggregation**

Exception Aggregation

Use Standard Aggregation ▼

Ref. Characteristic ▼

Here you can specify how the aggregation should take place for the key figure when the query is executed. This tab is enabled only for the query elements of type formula or Calculated Key Figures.

## Key figure Properties: Display tab

**Properties**

Quantity (Selection) ▼

Conversions Planning Calculations

General Aggregation **Display** Advanced

**Hide**

☒ Always Show

☐ Always Hide

☐ Hide (Can Be Shown)

☒ Use Default Settings

**Highlight**

Normal Display ▼

☐ Use Default Settings

**Number of Decimal Places**

0,000 ▼

☒ Use Default Settings

**Scaling Factor**

1 ▼

☒ Use Default Settings

**Sign Change**

☒ Keep +/- Sign

☐ Reverse Sign

☐ Use Default Settings

**Status of Node**

Not Expandable ▼

Use the settings under the Hide section if you want to hide the key figure in the output. There is also an option available to highlight the key figure value under the Highlight section. Additional settings related to the number of decimal places, scaling factor, and so on, can be set under the display tab.

#### Key figure Properties: Advanced tab

The screenshot shows the 'Properties' dialog box for a 'Quantity (Selection)' element. The 'Advanced' tab is selected. Under the 'UID' section, the value 'DAD0WVC6L023EBV1TPAERGVR' is entered. Below this, the 'Constant Selection' section contains a description: 'With this setting, the selection becomes independent of filter settings. The result remains constant during navigation'. At the bottom, there is an unchecked checkbox labeled 'Constant Selection'.

The constant selection setting is available only for the elements of type selections or Restricted key figures.

The setting of constant selection is used if you want to keep the characteristic selections mentioned in the definition of the selection/RKF as a constant. It means that during the query execution, the restrictions applied on the key figure do not change.

#### Key figure Properties: Conversions tab

The screenshot shows the 'Properties' dialog box for a 'Quantity (Selection)' element, with the 'Conversions' tab selected. It features two main sections: 'Currency Translation' and 'Unit Conversion'. The 'Currency Translation' section includes 'Conversion Type' (set to 'Cannot Determine Default Value'), 'Target Currency' (with a currency selection icon), and an unchecked 'Use Precalculated Value' checkbox. The 'Unit Conversion' section includes 'Conversion Type' (set to 'Cannot Determine D'), 'Target Unit' (with a unit selection icon), and another unchecked 'Use Precalculated Value' checkbox.

The settings on the Conversions tab are useful if there is a key figure of type amount or quantity included in the query element definition, and you need to convert the amount or quantity in the uniform currency/unit.

The currency Translation section of this tab is available for key figures of the type amount. Here, you can define the way the amount needs to be converted by specifying the Conversion type and the Target Currency to which the key figure value is translated.

The key figure is of type quantity, the Unit conversion section of this tab is enabled. Similar to the settings for currency translation, here you have to define the Conversion Type and the Target Unit as parameters for unit conversion.

#### Key figure Properties: Planning tab

The screenshot shows the 'Properties' dialog box with the 'Planning' tab selected. The 'Quantity (Selection)' dropdown is at the top. Below it are icons for edit, save, and help. The tabs are 'General', 'Aggregation', 'Display', 'Advanced', 'Conversions', 'Planning' (selected), and 'Calculations'. The main text area contains the following sections:

- Change Data**
  - ☒ Not Input-Ready (Not Relevant for Locking)
  - ☐ Not Input-Ready (Relevant for Locking)
  - ☐ Input-Ready (Relevant for Locking)
- Planning on Totals**
  - ☒ No Disaggregation
  - ☐ Disaggregate Value Entered
  - ☐ Disaggregate Difference to Value Entered
- Type of Distribution**
  - ☒ Equal Distribution
  - ☐ Analog Distribution (Self-Reference)
  - ☐ Analog Distribution (With Reference to Following Structure Element)

At the bottom, there is a large empty text area with a dropdown arrow on the right.

The Planning tab allows you to set the properties for a key figure included in an input-ready query.

## Key figure Properties: Calculations tab

**Properties**

Quantity (Selection) ▼

General Aggregation Display Advanced

Conversions Planning **Calculations**

All settings for calculations are applied to the displayed data only

**Local Calculations**

Calculate Results As...  
(Nothing Defined) ▼

Calculate Single Values As...  
(Nothing Defined) ▼

☐ Cumulated

☐ Also Apply to Results

Calculation Direction  
Use Default Direction ▼

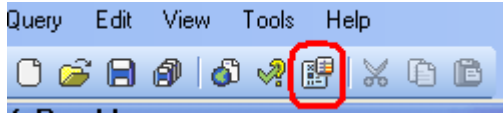
☐ Use Precalculated Value

The calculations tab allows you to define the way you want the results and the single values to be calculated for the report output.

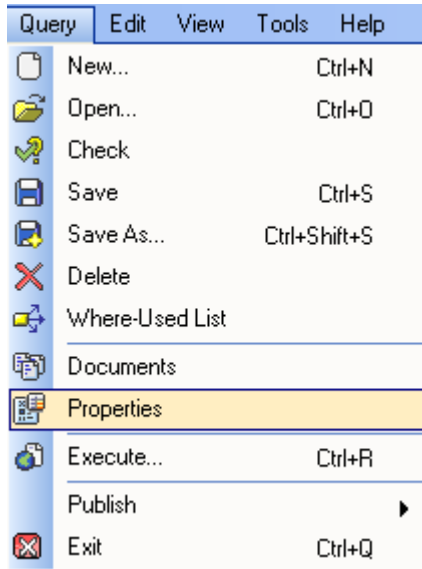
The option you choose in the Calculate Result As area will recalculate the result per the selected option. Similarly, the option you select under Calculate Single Value As will influence the way single values are recalculated for the query output display.

## Query Properties

Different properties are defined at query level. To display these properties, click on the Query properties button from the menu bar as shown below.



Alternatively open the Query properties by selecting Query→ Properties as shown below.



There are seven different tabs where you can set the query properties.

These tabs will now be explained in detail.

## Query Properties: General tab

**Properties**

a1111 (Query)

Rows/Columns | Value Display | Planning | Advanced

General | Variable Sequence | Display

**Description**

a1111

**Technical Name**

A1111

**InfoProvider**

ZAD\_IC

**Key Date**

☐ Use Standard Date

The general tab of the query properties displays the technical name and allows you to maintain the description of the query. This description is visible to the report user when the query is executed.

If the query involves time-dependant master data, then the date specified in the Key Date field is used to derive the values from the time-dependant data. You can maintain any specific date in the query, or you can use a characteristic variable on the date as a more flexible option.

If nothing is included in the Key Date settings of the query, then the date of query execution is considered as the key date for that query.

## Query Properties: Variable Sequence Tab

**Properties**

a1111 (Query)

Rows/Columns | Value Display | Planning | Advanced

General | Variable Sequence | Display

**Variable Sequence**

Up Arrow | Down Arrow

It displays the list of all the variables that are enabled for user entry. You can change the order in which the variable should appear in the selection screen, when it is executed.



## Query Properties: Display tab

**Properties**  
a1111 (Query)

Rows/Columns | Value Display | Planning  
Advanced  
General | Variable Sequence | **Display**

**Display Options**

☒ Adjust Formatting after Refreshing  
☒ Hide Repeated Key Values  
☐ Display Scaling Factors for Key Figures

**Document Links**

☐ For InfoProvider Data  
☐ For Master Data  
☐ For Metadata

The formatting, display of key values, and display of scaling factors settings are done in the Display Options section.

When you use the Hide Repeated Key Values setting, the key values that are repeated in successive records are hidden, and only the first record displays the characteristic value, which is repeated.

You can also select if you want to provide document links in the query by selecting the relevant Checkboxes.

## Query Properties: Rows/Columns tab

Advanced  
General | **Rows/Columns** | Variable Sequence | Display  
Value Display | Planning

**Result Position**

**Rows**  
☐ Above  
☒ Below

**Columns**  
☐ Left  
☒ Right

**Suppress Zeros**

**Suppress Zeros**  
☒ Do Not Suppress  
☐ Active  
☐ Active (All Values = 0)

**Effect on**  
☒ Rows  
☐ Columns  
☐ Rows and Columns

10	10	0	20
10	-10	0	0
0	0	0	0
20	0	0	20

This tab allows you to maintain settings related to rows and columns displayed in the query result.

The position of the result rows and result columns is determined based on the settings maintained under the Result Position section.

You can also decide to suppress the zero values from the query output in the Suppress Zeros section.

Here, you can decide if you want to apply the suppression either to rows or columns or to both rows and columns in the Effect On section. This tab also displays a preview of the settings chosen on this tab.

#### Query Properties: Value Display tab

Advanced | General | Variable Sequence | Display | Rows/Columns | **Value Display** | Planning

**Display of +/- Signs**

☒ Before the Number -123.45  
☐ After the Number 123.45-  
☐ In Parentheses (123.45)

**Zero Value Display**

Display Zeros  
 Zero with Currer ▼  
 Show Zeros as

The settings related to key figure display, such as display of +/- signs or display of zero values, are maintained on the Value Display tab.

#### Query Properties: Planning tab

a1111 (Query) ▼

Advanced | General | Variable Sequence | Display | Rows/Columns | Value Display | **Planning**

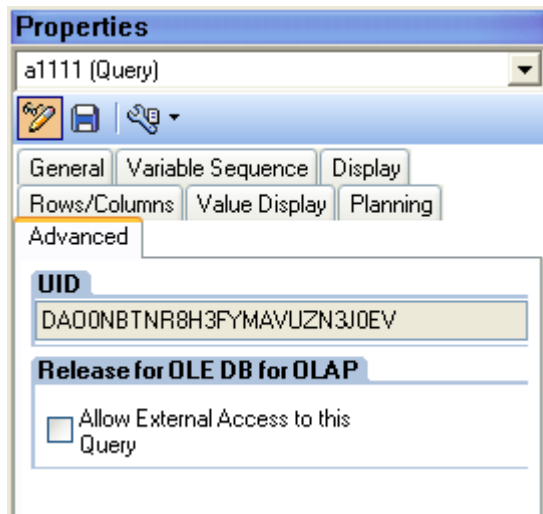
This setting determines whether the query is started in display or change mode

**Startup View**

☐ Start Query in Change Mode

The planning tab is relevant only to the input-ready queries where you can make the setting to open the query in change mode. This means users can enter and change the key figure values that are enabled for input.

## Query Properties: Advanced tab



The Allow External Access to This Query setting on this tab determines if the query can be executed through OLE DB for OLAP.

## Related Content

[http://help.sap.com/saphelp\\_erp2004/helpdata/en/4d/e2bebb41da1d42917100471b364efa/content.htm](http://help.sap.com/saphelp_erp2004/helpdata/en/4d/e2bebb41da1d42917100471b364efa/content.htm)

<http://sapdocs.info/sap/bw-bi-bobj/sap-bex-query-designer/>

[http://help.sap.com/saphelp\\_nw04/helpdata/en/f1/0a569ae09411d2acb90000e829fbfe/content.htm](http://help.sap.com/saphelp_nw04/helpdata/en/f1/0a569ae09411d2acb90000e829fbfe/content.htm)

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