

# Data Lake Visualization

## User Guide

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# 1 Service Overview

## 1.1 What Is DLV?

Data Lake Visualization (DLV) is a one-stop data visualization platform that adapts to various data sources in the cloud or on-premises. By dragging and dropping 2D and 3D visual components on DLV, you can quickly customize and create a data screen of your own.

### Edition Specifications

DLV provides three editions: Basic, Advanced, and Professional. For details about edition specifications, see [Table 1-1](#).

**Table 1-1** Edition specifications

Function	Description	Advanced	Professional
Workspaces	Number of workspaces that can be created	20	
Publish & Share	Public without restrictions (The access URL of a screen is accessible without restrictions.)	√	√
	Publish with passwords	√	√
	Publish with tokens	√	√



Function	Description	Advanced	Professional
Scenario Template	Security Situation Awareness, Energy and Chemical Industry Management, and Real-Time Monitoring of Cloud Computing-Driven Industrial Internet	√	√
	Other templates (continuously updated): Sales Cockpit, Smart Tourism, Medical Consumables, Order Monitoring, Galaxy Data Monitoring, Data Monitoring Platform, and Education Digitalization Distribution, Big Data Platform for Transportation Industry, and Data Center Cloud Monitoring	√	√
Templates	Number of available templates	All templates are available.	
Max. Number of Screens	Maximum number of screens	20	50

Function	Description	Advanced	Professional
Data Source Type	RDS for MySQL, RDS for GaussDB, MySQL, CSV, and static JSON	√	√
	RDS for PostgreSQL, RDS for SQL Server, GaussDB(DWS), DDM, OBS, DLI, MapReduce Service (MRS) Hive, MRS SparkSQL, API, APIG, and DAYU.	√	√
	MRS ClickHouse, PostgreSQL, Oracle, SQL Server, GaussDB(for Influx), CSS Elasticsearch, and Elasticsearch	x	√

Function	Description	Advanced	Professional
Chart	<ul style="list-style-type: none"> <li>● <b>Basic chart components:</b> Line, bar, pie, percentage, radar, scatter, bubble, region ranking, combination, horizontal bar, dual-Y axis line, dual-Y axis combination, radial bar, horizontal capsule bar, scanning radar, image video, carousel, title, text, word cloud, timer, carousel table, ticker board, marquee, carousel list bar, key-value table, relationship network, border, decoration, custom background, time selector, WT bar, WT line, WT horizontal bar, WT radar, WT scatter, WT combination, WT dual-Y line, and WT dual-Y combination</li> <li>● <b>Basic 2D map subcomponents:</b> Flying line, drilldown, heatmap layer, and hover text</li> <li>● <b>World map subcomponents:</b></li> </ul>	√	√

Func tion	Description	Ad va nc ed	Professional
	Flying line and heatmap layer		
	<ul style="list-style-type: none"> <li>• <b>Advanced chart components:</b> Liquid, horizontal stacked bar, WT horizontal stacked bar, rose, horizontal bi-directional bar, heatmap, step, FLV video stream player, rectangle tree, gauge, and funnel</li> <li>• <b>Basic 2D map subcomponents:</b> Scatter, advanced scatter layer, and carousel video</li> <li>• <b>World map subcomponents:</b> Scatter and advanced scatter layer</li> </ul>	√	√
	<b>Professional chart components:</b> WT line waterfall, sunburst, radial tree, Sankey, arc in polar coordinates, arc, tree, progress, bar heatmap, and RTMP video stream player	x	√
Map Component	<b>3D map component:</b> globe, globe (advanced)	x	√
Interaction Support	Callback variables	√	√
	Callback custom variables	√	√

Function	Description	Advanced	Professional
	Basic interaction components: full screen, iFrame, search, timeline, tab list, and geographical search	√	√
	Advanced interaction components: tab, check box, multi-option drop-down list, and vertical timeline	x	√
Permission	Top, bottom, up, down, copy, delete, alignment, and layout	√	√
	Lock/unlock, hide/display, and rename	√	√
Auxiliary Function	Rulers and auxiliary lines	√	√

## 1.2 Advantages

### Diverse Visual Components

DLV provides various visual components, including common data charts, graphs, and controls.

### Professional Display of Geographical Information

DLV supports display of geographic tracks, flying lines, heatmaps, regions, and 3D globe, and allows layering of geographical data.

### User-friendly GUI

DLV allows you to build screens only by drag-and-drop without programming. You can customize the screen size based on the device resolution.

## Various Data Sources

DLV can seamlessly integrate with Data Warehouse Service (DWS), Data Lake Insight (DLI), Relational Database Service (RDS), and Object Storage Service (OBS), and supports local CSV files, online APIs, and the private cloud data of enterprises.

## 1.3 Use Cases

### Security Situation Awareness

DLV presents details about every security incident on screens to help trace all security intrusions, which facilitates security incidents handling of cloud enterprises.

#### Benefits of Security Situation Awareness

- Real-time security awareness: Detect security threats in real time, effectively preventing security incidents.
- Access source tracking: Intuitively track security threat sources with 2D and 3D map components.

### Operation Management Dashboard

By accessing enterprise operation data, you can obtain information on production status, product quality, and sales status, providing a visualized decision-making basis for enterprise managers.

#### Benefits of Operation Management Dashboard

- Real-time visibility of operational status: The operational status of an enterprise is displayed in a visualized manner in real-time, allowing enterprise managers to stay updated on the current status of the enterprise.
- Easy to use: The component-based drag-and-drop orchestration makes it easy to use.

## 1.4 Functions

### Data

On the **Data** tab page, you can create data connections to connect to your data sources. The following data sources are supported:

- OBS
- DWS
- DLI
- MRS Hive
- MRS SparkSQL
- RDS for MySQL

- RDS for PostgreSQL
- RDS for SQL Server
- DDM
- Local CSV files

## Screens

This section describes how to create a screen by using a scenario template and how to edit, copy, delete, preview, and publish existing screens.

## Scenario Templates

DLV provides scenario-based templates to help you quickly design and configure screens that address your specific application requirements. DLV provides the following scenario templates that are continuously updated: Blank Template, Security Situation Awareness, Energy and Chemical Management, Real-Time Monitoring Platform for Cloud Computing-based Industrial Internet, Sales Cockpit, Smart Tourism, Medical Consumables, Order Monitoring, Galaxy Data Monitoring, Data Monitoring Platform, Education Digitalization Distribution, Big Data Platform for Transportation Industry, and Data Center Cloud Monitoring.

## Preview

You can preview screens in real time to learn screen effect whenever you want.

## Publish

DLV allows you to publish and share your latest or historical version of screens.

# 1.5 Related Services

## CDM

DLV uses Cloud Data Migration (CDM) as a connection agency to access data sources in a Virtual Private Cloud (VPC).

## IAM

Identity and Access Management (IAM) authenticates access to DLV.

# 1.6 Constraints

Before using DLV, be aware of the following use restrictions:

- DLV can be used only on PCs. Compatibility with other terminals are not ensured.
- The supported browser types and versions are listed as follows:
  - Google Chrome 59 or later
- DLV does not support CDM (2.9 or later) as the network proxy.

## 1.7 Basic Concepts

### Regions and AZs

For more information, see [Regions and AZs](#).

### Project

A project is a collection of resources and a minimum authorization unit. Users' resources must be mounted to a project. Projects are used to isolate resources between different departments, different projects, or different environments, such as the R&D environment, test environment, and production environment, in the same project.

### Workspace

A workspace enables the administrator to manage user (member) permissions, resources, and underlying compute engines of DLV.

Each team can have an independent workspace.

You can manage workspaces, data connections, screens, combined screens, and applications only after being added to workspaces and assigned permissions.

In workspace management, the administrator can add other users to the workspace and set roles such as administrator, developer, analyst, and visitor preset by DLV for users to implement multi-role collaborative development.

### Member and Role

A member is a user who has been granted permission to access or use the workspace created on the cloud. When adding a workspace member, you need to set a role.

A role has a predefined combination of permissions. Different roles are assigned different permissions. After a role is assigned to a member, the member has all the permissions of that role. Each member must have at least one role, but they can have multiple roles assigned at the same time.

A workspace role can be an administrator, developer, analyst, or visitor.

### Data Source

A data source is where data comes from. DLV provides multiple types of data connection: static data, APIs, databases, CSV files, APIG, and OBS.

### Component

A component is a basic configurable module used to create a screen. DLV supports the following types of components: regular charts, maps, media, text, relational networks, materials, interaction, and others.



## Canvas

A canvas is an interface editor used to edit components of DLV. On a canvas, you can design page layout and match colors for components and associate data sources with charts. All applications are published only in the canvas.

## Layer

A layer refers to the precise positioning of a component on a screen. It is similar to a slide that contains elements such as text or graphics and is then combined with other slides in sequence to produce the final effect of a page.

# 2 Preparatory Work

## 2.1 Buying Resource Packages

### Background

- By default, only cloud accounts can buy DLV packages. By default, your cloud account can perform all operations on DLV.
- Only the users with the **DLV FullAccess** or **Tenant Administrator** permission can buy DLV packages. Therefore, to buy DLV packages, users must be granted the permissions.

 **NOTE**

The **Tenant Administrator** permission has all cloud service administrator permissions except the IAM management permission. For security purposes, you are not advised to grant this permission to IAM users. Exercise caution when performing this operation.

### Buying Resource Packages

- Step 1** Log in to the management console.
- Step 2** On the top navigation bar, choose **Enterprise Intelligence > Data Lake Visualization**.
- Step 3** On the displayed page, select a region and edition based on service requirements, set related parameters, and click **Buy Now**.

**Table 2-1** Parameter description

Parameter	Description
Region	Region where the DLV instance resides. Resources in different regions cannot communicate with each other.
Edition	Edition to be charged. Currently, two editions (advanced and professional) are supported.

Parameter	Description
Specifications	Description of the edition functions.

**Step 4** Read the DLV service statement carefully. If you agree to the statement, click **OK**. The order confirmation page is displayed.

**Step 5** After confirming that the order is correct, click **Submit**. Click **Back to DLV Console** to go to the DLV console.

----End

## 2.2 (Optional) Creating Workspaces

This section describes how to create workspaces. After a user purchases DLV, the system creates a default workspace named **default** for the user by default and assigns the administrator role to the user. You can use the default workspace or create a workspace by referring to this section.

A workspace enables its administrator to manage user (member) permissions, resources, and underlying compute engines of DLV.

Each team has an independent workspace.

You can manage workspaces, data connections, screens, screen combinations, and applications only after being added to workspaces and assigned permissions.

In the workspace management, the administrator can add other users to a workspace and assign roles to them, such as **Administrator**, **Developer**, **Analyst**, and **Visitor** that are preset on DLV.

### Context

- Cloud accounts or users with the **DLV FullAccess** can perform all operations on DLV by default.
- Only the users with the **DLV FullAccess** or **Tenant Administrator** permission can create, delete, or modify workspaces and set the default workspace.  
The **Tenant Administrator** permission has all cloud service administrator permissions except the IAM management permission. For security purposes, you are not advised to grant this permission to IAM users. Exercise caution when performing this operation.
- An IAM user can access a workspace only after being added as a member of the workspace.

### Creating Workspaces

**Step 1** Log in to the DLV console.

**Step 2** In the navigation tree on the left, click **Control Center > Workspace**.


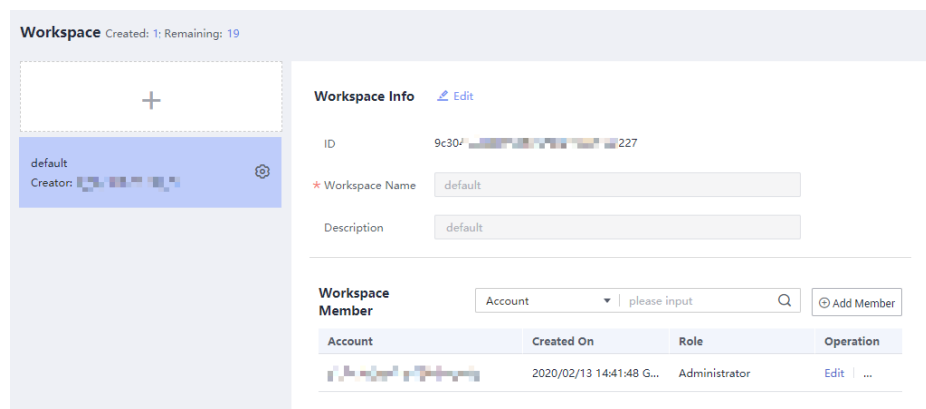
**Step 3** On the **Workspace** page, click  to create a workspace.

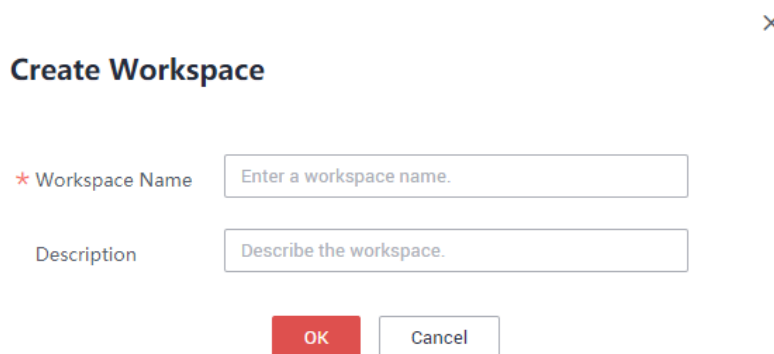
Figure 2-1 Workspace



**Step 4** In the **Create Workspace** dialog box, set the following parameters and click **OK**.

- **Workspace Name:** A workspace name can contain only letters, numbers, underscores (\_), and hyphens (-), and cannot exceed 32 characters.
- **Description:** Description of the workspace.

Figure 2-2 Creating a workspace



## 2.3 Granting Permissions to IAM Users

### 2.3.1 Creating Users and Assigning DLV Permissions

This section describes how to use IAM to implement fine-grained permissions control for your DLV resources. With IAM, you can:

- Create IAM users for employees based on the organizational structure of your enterprise. Each IAM user has their own security credentials, providing access to DLV resources.
- Grant only the permissions required for users to perform a specific task.
- Entrust a cloud account or service to perform professional and efficient O&M on your DLV resources.

If your cloud account does not need individual IAM users for permissions management, then you may skip over this chapter.

This section describes the procedure for granting permissions. **Permission Assigning Process** shows the procedure. You can use either of the following methods to grant DLV permissions to a user:

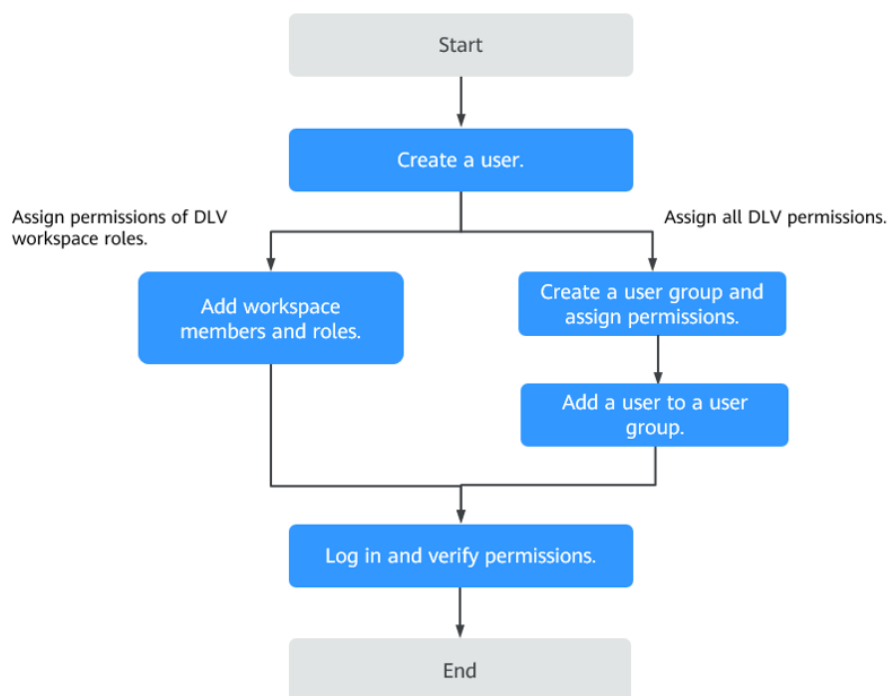
- **Creating Users and Assigning Permissions of DLV Workspace Roles**
- **Creating Users and Assigning All DLV Permissions**

## Prerequisites

- Before granting permissions to a user, learn about the DLV workspace roles and permissions that can be assigned to the user and select the roles and permissions based on the site requirements.

## Permission Assigning Process

Figure 2-3 Process for assigning DLV roles to users



## Creating Users and Assigning Permissions of DLV Workspace Roles

### Step 1 Create a user.

Log in to the IAM console and create a user.

### Step 2 Adding Workspace Members and Roles

Log in to the DLV console as the user created in **Step 1** and add the user as a member and role of the workspace to be authorized. Assume that only the visitor role of the DLV workspace is granted to the user.

### Step 3 Log in and verify the permissions.

Log in to the DLV console by using the user created, and verify the granted permissions of the user as follows:

- Log in to the DLV console and switch to the authorized workspace. On the **Screens** page, click **New Screen** to create a screen. If the screen cannot be created, the visitor role has taken effect.
- In the service list area, select any service except DLV (assume that policies of other services are not granted to the user). If a message appears indicating that you have no permission to access the service, the visitor role has taken effect.

----End

## Creating Users and Assigning All DLV Permissions

To grant an IAM user permission to create a workspace, you need to grant the IAM user the **DLV FullAccess** policy, so that the user can perform all permissions on DLV. You can grant DLV policies to a user group. In this way, after you add a user to the user group, the user will have the corresponding permissions.

### Step 1 Create a user.

Log in to the IAM console and create a user.

### Step 2 Create a user group and assign permissions to it.

Create a user group on the IAM console, and assign the **DLV FullAccess** permission to the group.

#### NOTE


- The **DLV FullAccess** permission is not granted to the existing users. To obtain this permission, log in to the IAM console and grant the permission to the existing users.

### Step 3 Add a user to a user group.

On the IAM console, add the user created in [Step 1](#) to the user group.

### Step 4 Log in and verify the permissions.

Log in to the DLV console by using the user created, and verify the granted permissions of the user.

- Log in to the DLV console and click  on the **Workspace** page to create a workspace. If a workspace can be created, the **DLV FullAccess** permission has taken effect.
- In the service list area, select any service except DLV. If a message appears indicating that you have no permission to access the service, the **DLV FullAccess** permission has already taken effect.

----End

# 3 Introducing the DLV Console

The DLV console consists of five functional modules: Screens, Scenario Templates, Data, Documentation, and Screen Development.

## Logging In to the DLV Console

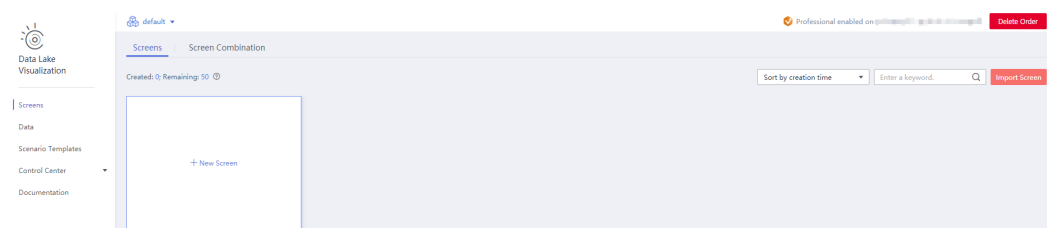
- Step 1** Log in to the management console.
- Step 2** On the top navigation bar of the page, choose **Enterprise Intelligence > Data Lake Visualization**. The DLV console is displayed.

----End

## Screens

Log in to the DLV console. In the navigation tree, select **Screens**, and then click the **Screens** tab. On the **Screens** page, you can create, edit, preview, publish, copy, delete, and rename a screen, and view the existing screens.

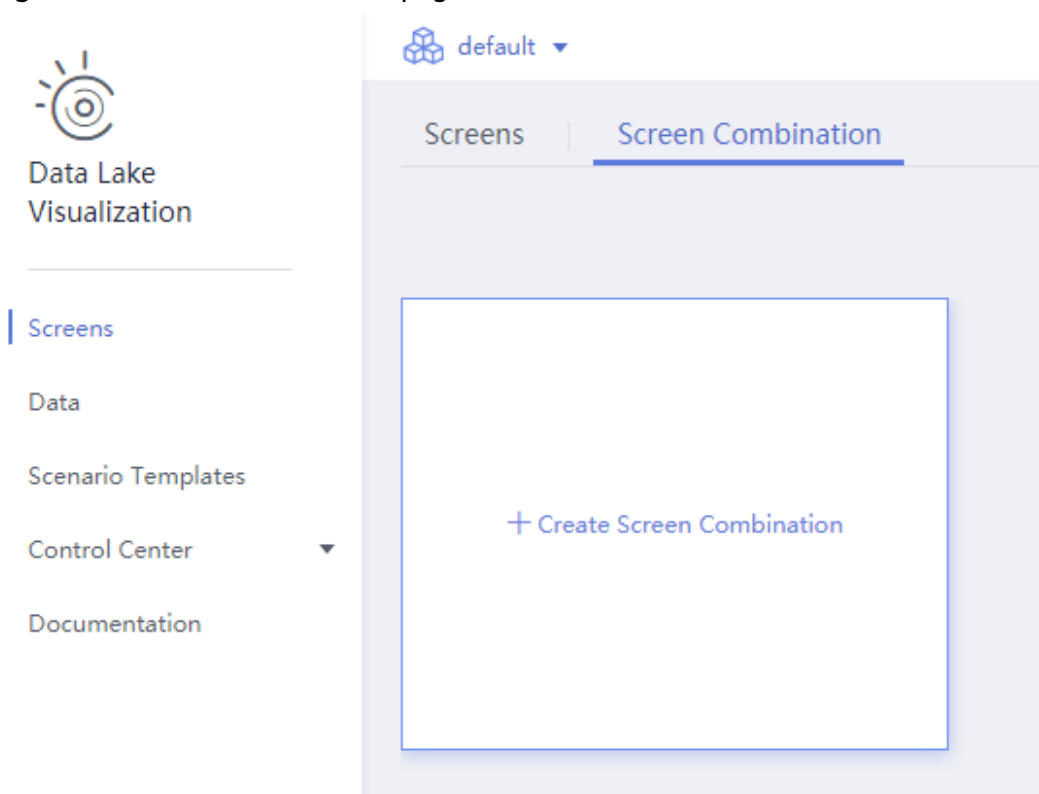
Figure 3-1 Screens page



## Screen Combination

Log in to the DLV console. In the navigation tree, select **Screens**, and then click the **Screen Combination** tab. On the **Screen Combination** page, you can create, edit, preview, publish, copy, delete, and rename a screen combination, and view the existing screens.

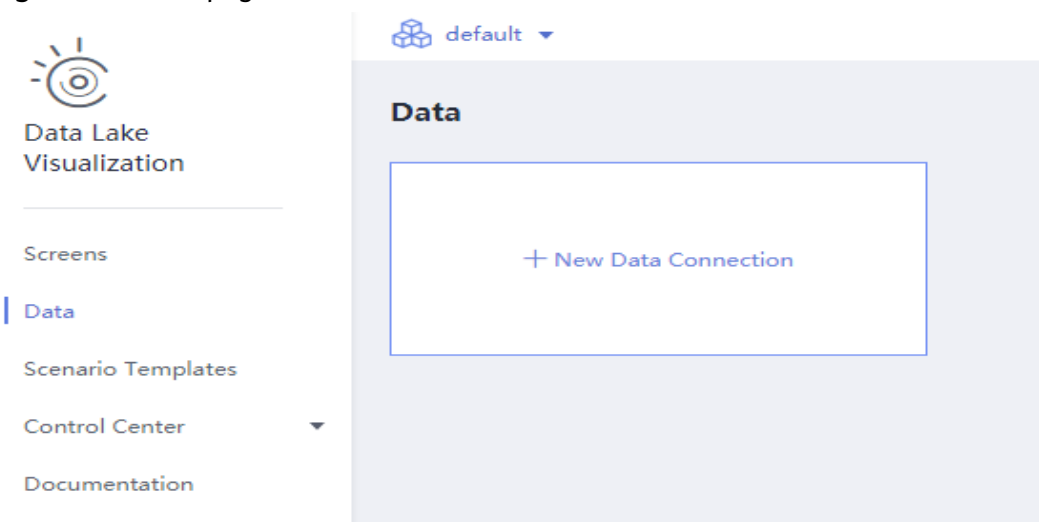
**Figure 3-2** Screen Combination page



## Data

Log in to the DLV console. In the navigation tree, select **Data**. On the **Data** page, you can create, edit, delete, and view a data connection. DLV provides more than 10 types of data sources. You can select a data source type as required.

**Figure 3-3** Data page



## VPC Connection Management

Log in to the DLV console. In the navigation tree, choose **Control Center > VPC Connection Management**. You can use a VPC connection to connect a cloud data

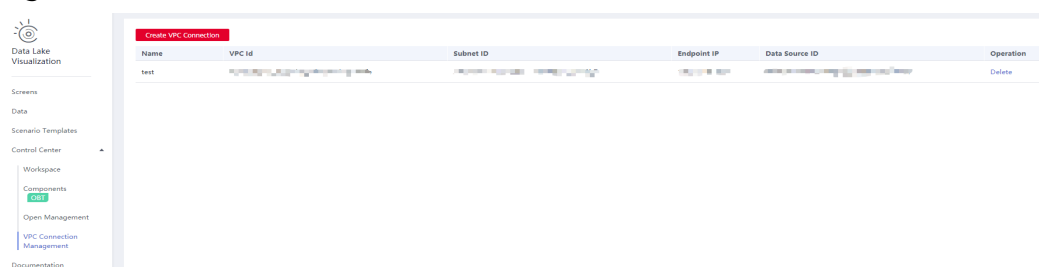


source to DLV for data display on screens. On this page, you can create and delete VPC connections.

DLV supports the following data sources connected through VPC:

- DWS
- RDS for MySQL
- RDS for GaussDB
- RDS for PostgreSQL
- RDS for GaussDB for Influx
- RDS for SQL Server
- Cloud Search Service (Elasticsearch)

**Figure 3-4** VPC connections



## Open Management

Log in to the DLV console. In the navigation tree, choose **Control Center > Open Management**. You can create, edit, delete, reset, and view applications on this page.

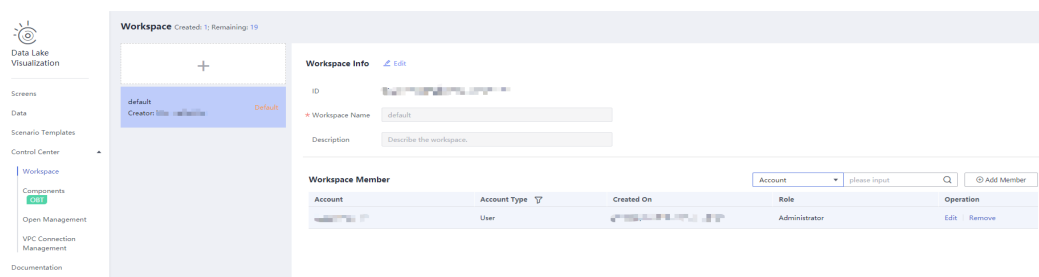
## Scenario Templates

Log in to the DLV console. In the navigation tree, select **Scenario Templates**. On the **Scenario Templates** page, you can view all templates. The system simulates users' application scenarios and builds templates to suit specific scenario requirements.

## Workspace Management

Log in to the DLV console. In the navigation tree, choose **Control Center > Workspace**. On this page, you can create, edit, and delete workspaces, set default workspaces, add members, and view workspaces.

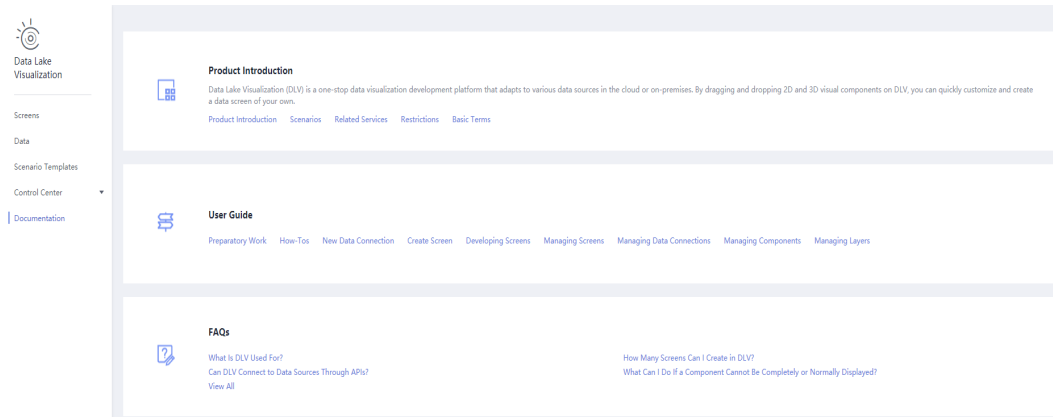
**Figure 3-5** Workspace page




## Documentation

Log in to the DLV console. In the navigation tree, select **Documentation**. On the **Documentation** page, you can obtain desired help information, including product introduction, user guide, and FAQs.

Figure 3-6 Documentation page



## Screen Development

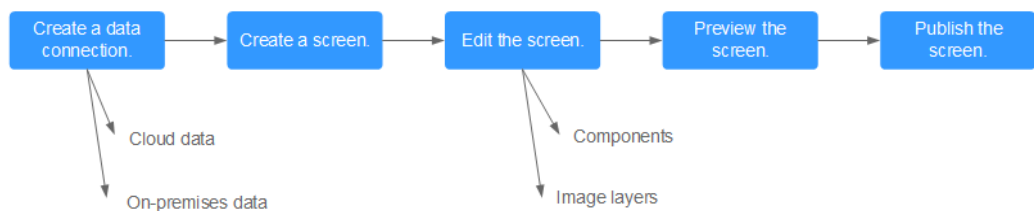
Log in to the DLV console. In the navigation tree, select **Screens**. Locate the screen to be edited and click . The screen development page is displayed. On the screen development page, you can use the canvas, components, layers, and preview and publish functions required for data development. The screen development page is a major functional interface of DLV.

# 4 How-Tos

## 4.1 Use Process

Before developing a screen, understand the process of using DLV. [Figure 4-1](#) illustrates the DLV use flowchart. You can perform all the operations in the flowchart on the DLV console.

**Figure 4-1** Use flowchart



1. Creating data connections: Connect to data sources required for screen creation. If static data is used, skip this step.
2. Creating screens: Use a template to create a screen.
3. Editing screens: Configure the pattern, data, interaction of components and manage image layers.
4. Previewing screens: Preview your created screens.
5. Publishing screens: Publish your created screens.

## 4.2 Creating Screens Quickly (Interaction)

You can use the interaction function to implement data linkage between components on screens.

This example demonstrates how to implement data linkage between components through geographical search and bar charts. The general procedure is as follows:

1. [Adding and Configuring Components](#)
2. [Previewing and Publishing Screens](#)

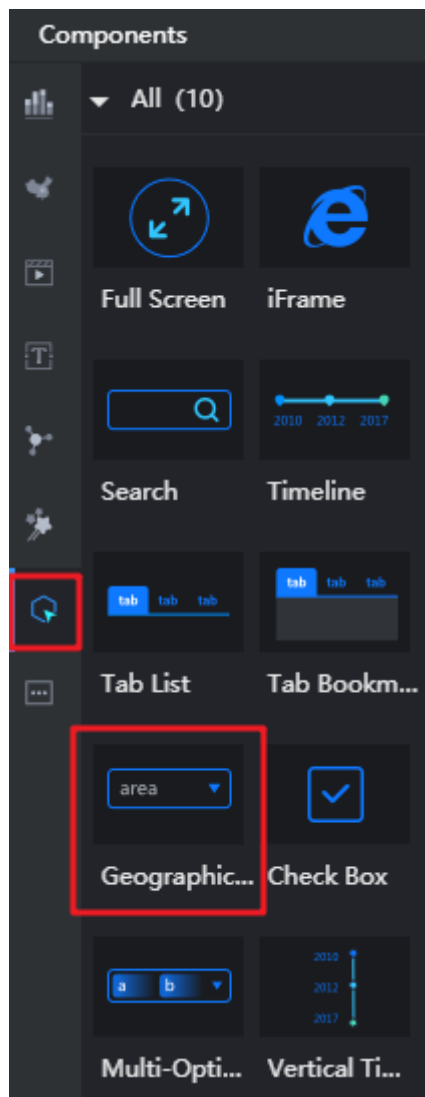
## Prerequisites

You have logged in to the DLV console and created a screen using a blank template.

## Adding and Configuring Components

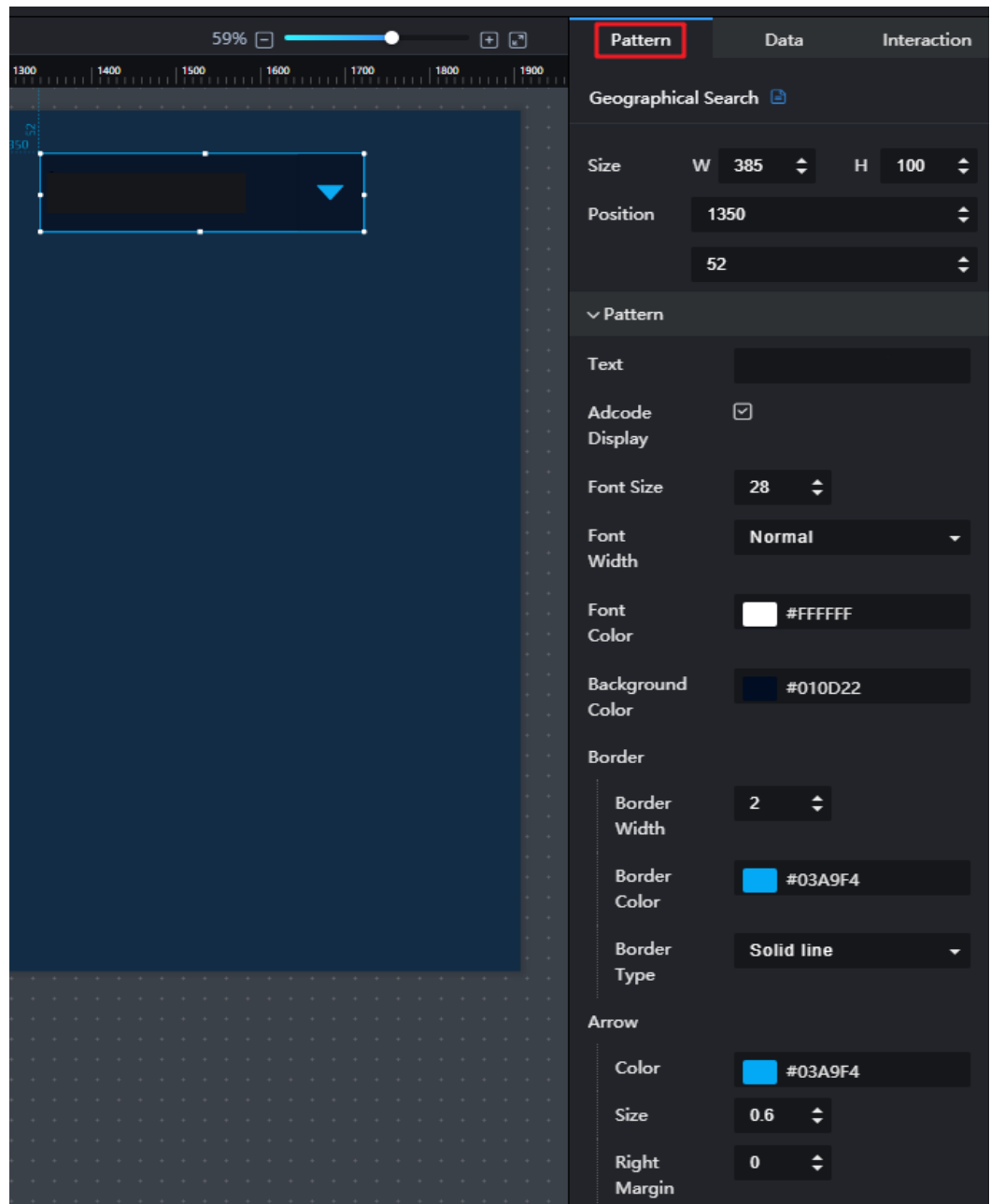
- Step 1** Open the screen development page, click the **Interaction** icon, and select **Geography Search** in the **Components** list.

**Figure 4-2** Selecting the geographical search component



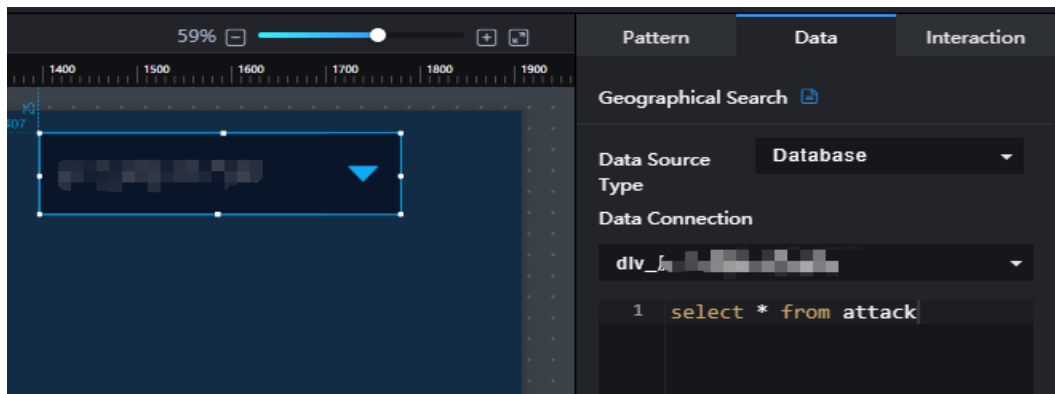
- Step 2** On the **Pattern** panel, configure the geographical search component. In this example, use the default settings.

**Figure 4-3** Configuring the geographical search component



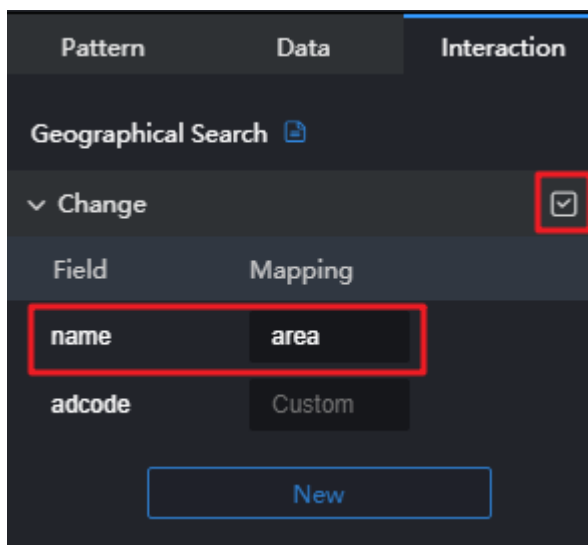
**Step 3** Switch to the **Data** panel and set the data of the geographical search component.

**Figure 4-4** Setting the data of the geographical search component



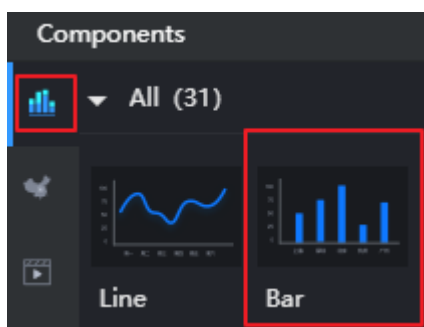
**Step 4** Switch to the **Interaction** panel and define and use interaction variables.

**Figure 4-5** Defining and using interaction variables

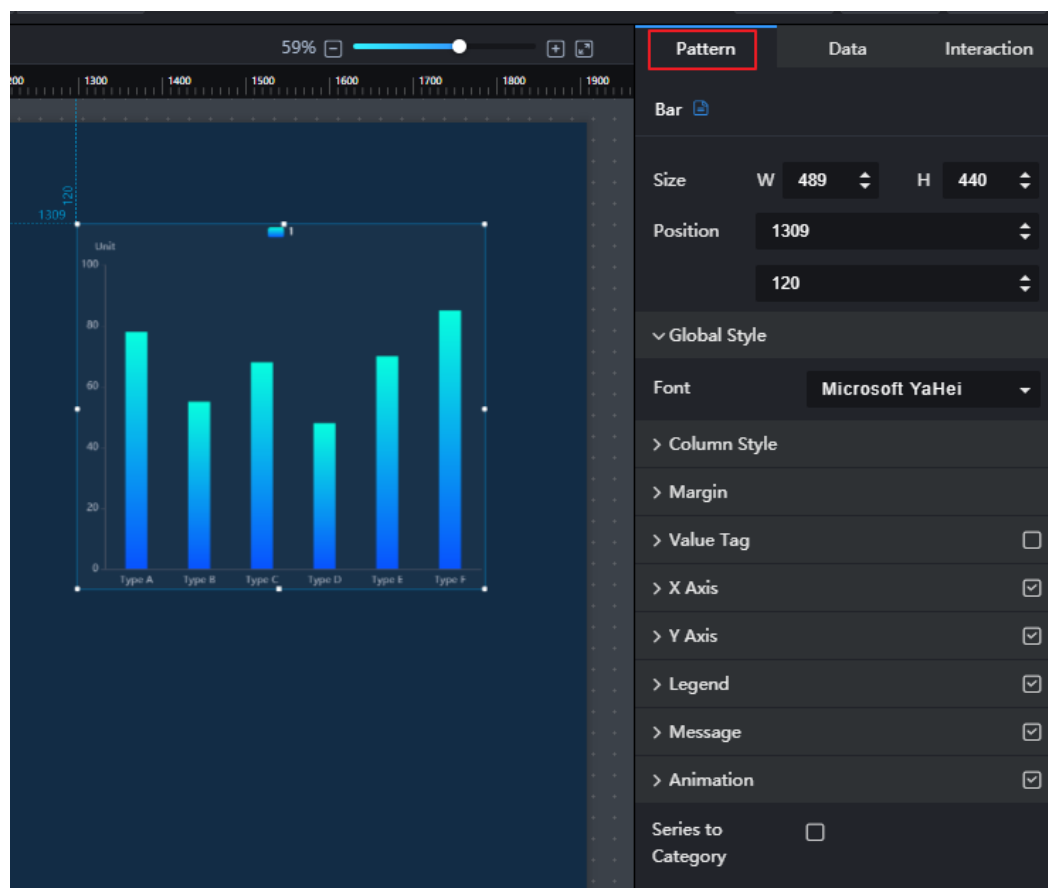


**Step 5** In the component list on the left, choose **Charts > Bar**.

**Figure 4-6** Selecting a bar chart component



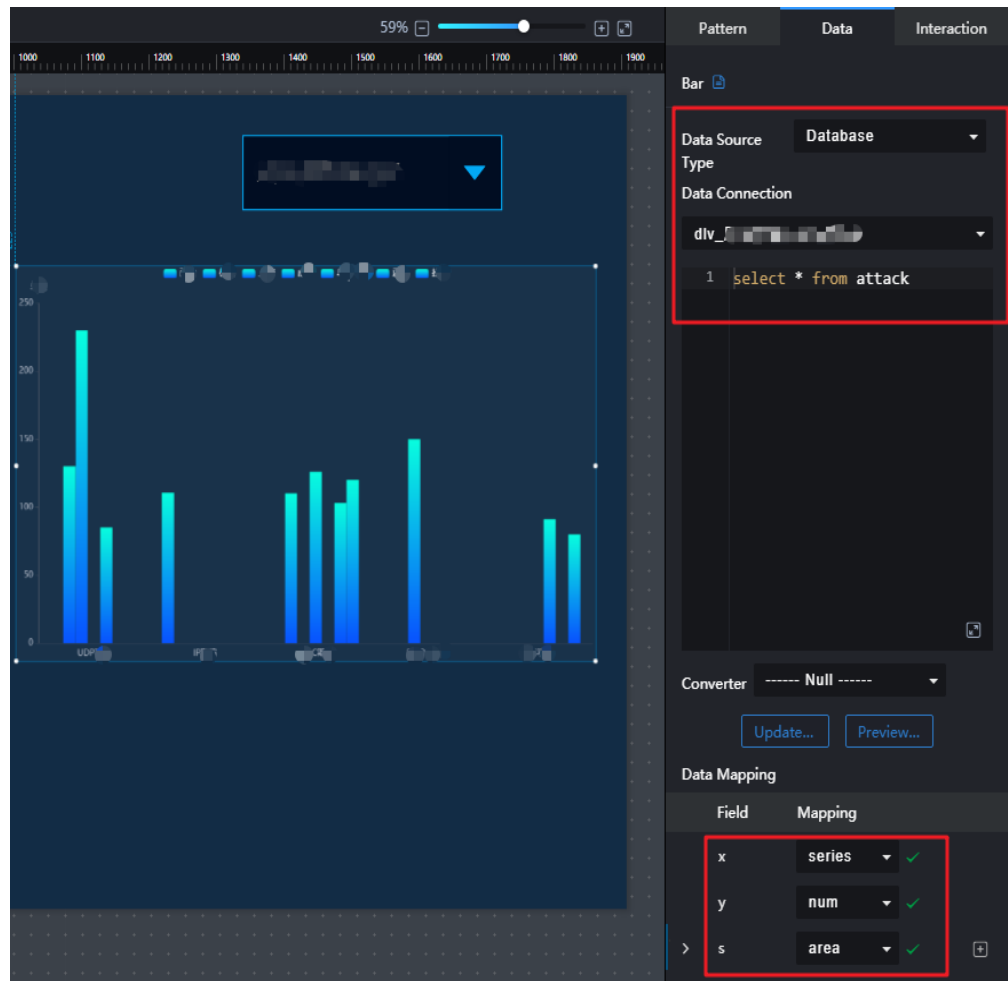
**Step 6** On the **Pattern** tab page, configure the bar chart pattern. This example uses the default settings.

**Figure 4-7** Configuring the bar chart pattern

**Step 7** Switch to the **Data** tab page and configure the bar chart.

1. Configure field mapping and select a data source type. As shown in [Figure 4-8](#), the component is associated with dynamic data.

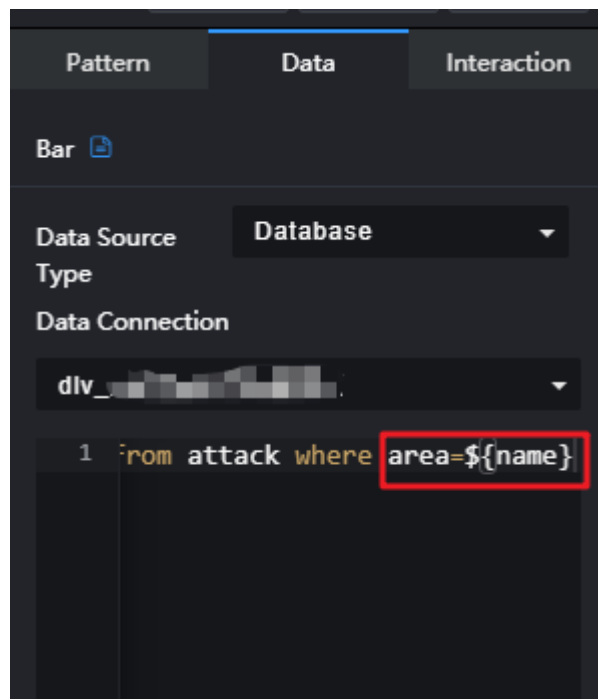
Figure 4-8 Associating with dynamic data



2. Press **Shift+\$** to reference the interaction variable **\${name}** defined in [Step 4](#).





**Figure 4-9** Referencing the interaction variable

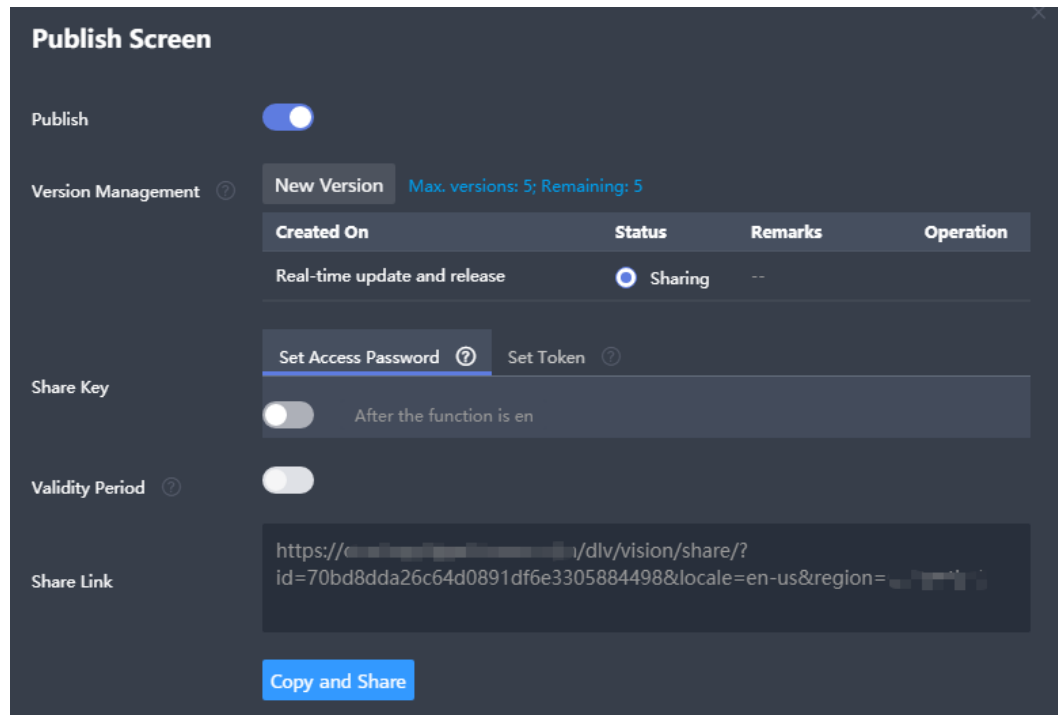


----End

## Previewing and Publishing Screens

- Step 1** In the upper right corner of the screen development page, click  **Preview** to preview the screen.
- Step 2** If you reset the geographical location in the geographical search, the bar chart displays only the data of the corresponding location.
- Step 3** After ensuring that interaction works, click  **Publish** in the upper right corner of the screen development page, configure publish parameters, and then share the screen with other users.

**Figure 4-10** Publishing and sharing the screen



----End

# 5 Managing Workspaces

---

## 5.1 Managing Workspaces

A workspace enables its administrator to manage user (member) permissions, resources, and underlying compute engines of DLV.

Each team has an independent workspace.

You can manage workspaces, data connections, screens, screen combinations, and applications only after being added to workspaces and assigned permissions.

In the workspace management, the administrator can add other users to a workspace and assign roles to them, such as **Administrator**, **Developer**, **Analyst**, and **Visitor** that are preset on DLV.


### Background

- Cloud accounts or users with the **DLV FullAccess** can perform all operations on DLV by default.
- Only the users with the **DLV FullAccess** or **Tenant Administrator** permission can create, delete, or modify workspaces and set the default workspace.  
The **Tenant Administrator** permission has all cloud service administrator permissions except the IAM management permission. For security purposes, you are not advised to grant this permission to IAM users. Exercise caution when performing this operation.
- An IAM user can access a workspace only after being added as a member of the workspace.

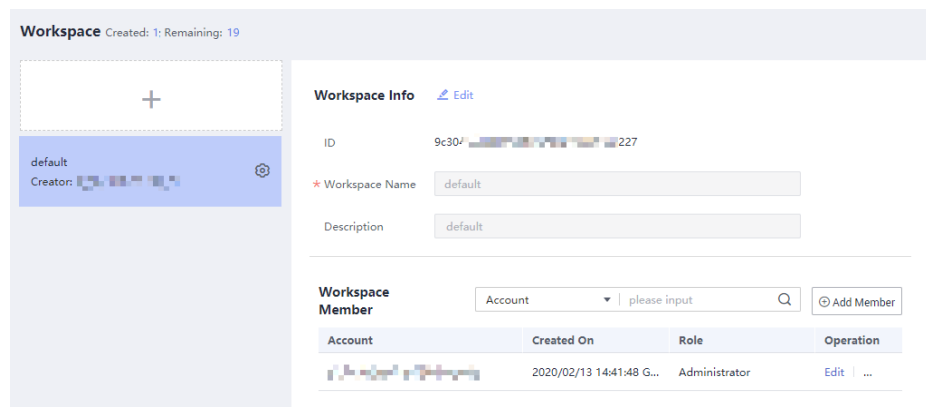
### Creating Workspaces

**Step 1** Log in to the DLV console.

**Step 2** In the navigation tree on the left, click **Control Center > Workspace**.

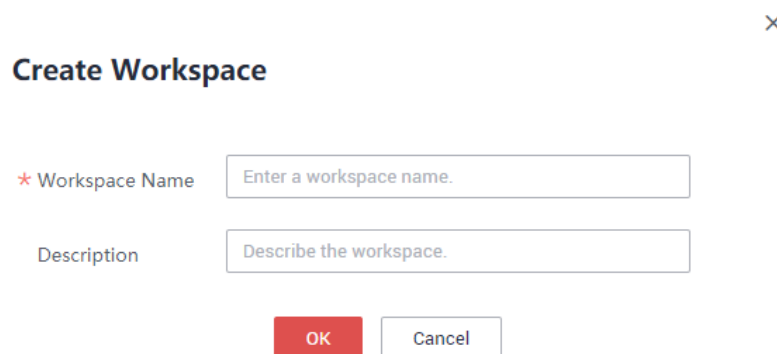
**Step 3** On the **Workspace** page, click  to create a workspace.

**Figure 5-1** Workspace




- Step 4** In the **Create Workspace** dialog box, set the following parameters and click **OK**.
- **Workspace Name:** A workspace name can contain only letters, numbers, underscores (\_), and hyphens (-), and cannot exceed 32 characters.
  - **Description:** Description of the workspace.

**Figure 5-2** Creating a workspace

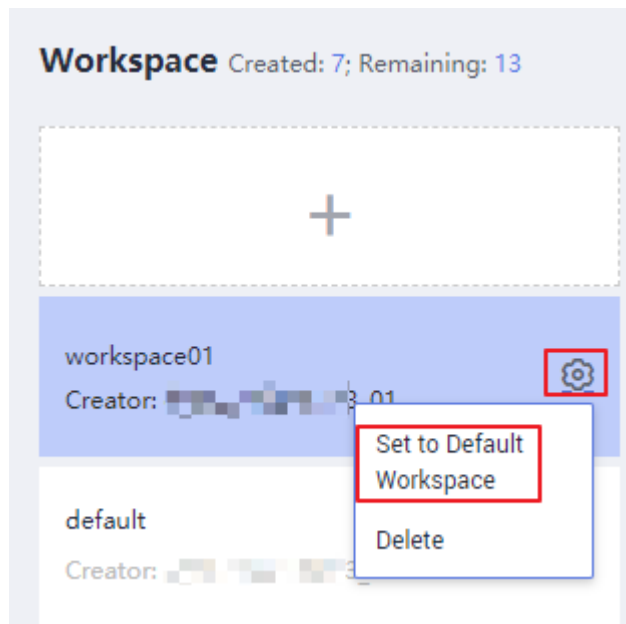


----End

## Setting the Default Workspace

- Step 1** Log in to the DLV console.
- Step 2** In the navigation tree on the left, click **Control Center > Workspace**. The **Workspace** page is displayed.
- Step 3** In the workspace list, click the workspace to be set, click , and choose **Set to Default Workspace** from the shortcut menu.

**Figure 5-3** Setting the default workspace



After the setting is completed, the **Default** icon is displayed next to the workspace name.

**Figure 5-4** Default workspace



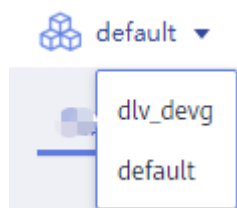
----End

## Switching Workspaces

**Step 1** Log in to the DLV console.

**Step 2** Click the workspace drop-down list in the upper left corner of the page. On the displayed workspace panel, click the workspace that you want to switch to.

**Figure 5-5** Switching a workspace

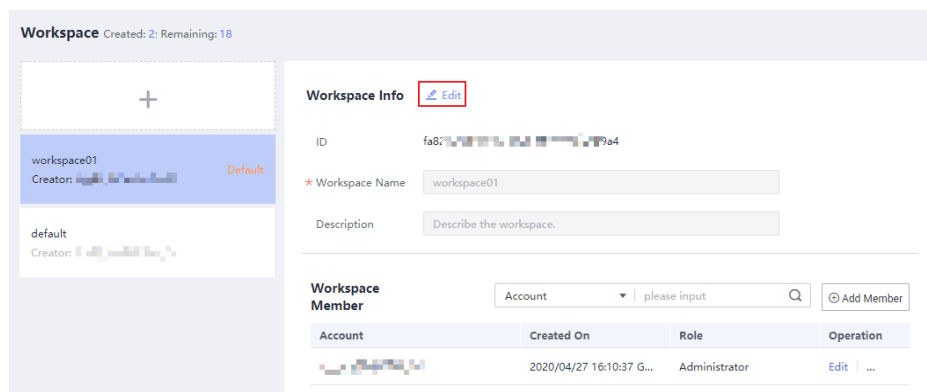


----End

## Modifying Workspaces

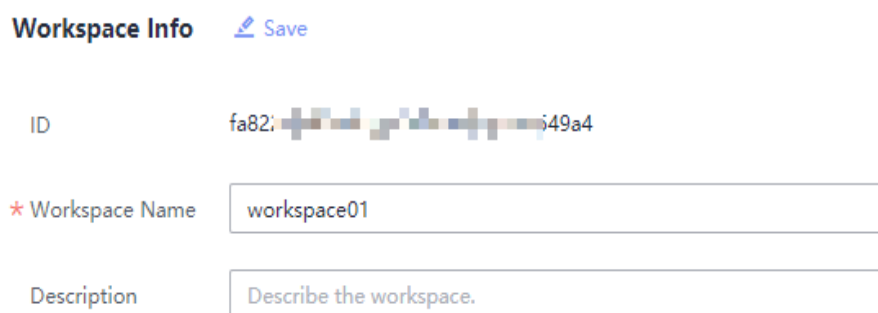
- Step 1** Log in to the DLV console.
- Step 2** In the navigation tree on the left, click **Control Center > Workspace**. The **Workspace** page is displayed.
- Step 3** In the workspace list, select the workspace to be modified and click **Edit**.

**Figure 5-6** Editing a workspace



- Step 4** In the **Workspace Info** area, set the following parameters and click **Save**.
  - **Workspace Name:** A workspace name can contain only letters, numbers, underscores (\_), and hyphens (-), and cannot exceed 32 characters.
  - **Description:** Description of the workspace.

**Figure 5-7** Modifying the workspace information




----End

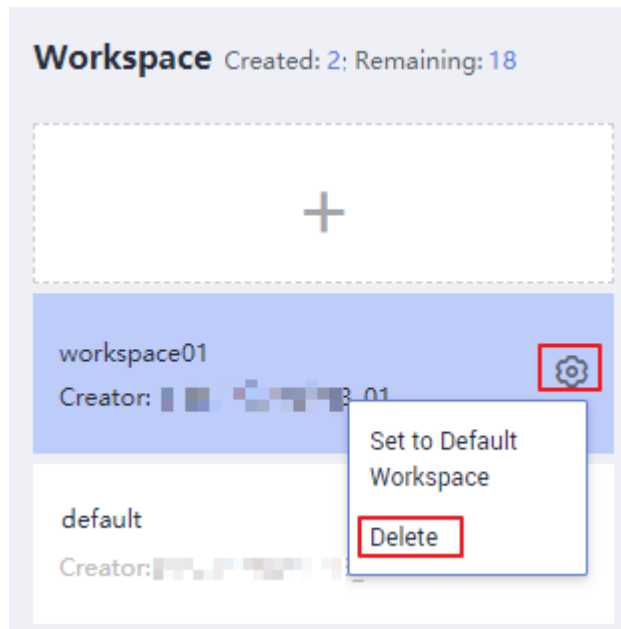
## Deleting Workspaces

After a workspace is deleted, all resources in the workspace are deleted and cannot be recovered. Exercise caution when performing this operation.

- Step 1** Log in to the DLV console.
- Step 2** In the navigation tree on the left, click **Control Center > Workspace**. The **Workspace** page is displayed.

**Step 3** In the workspace list, click the workspace to be deleted, click , and choose **Delete** from the shortcut menu.

**Figure 5-8** Deleting a workspace



**Step 4** In the displayed dialog box, select **After you delete this workspace, all resources in it cannot be restored**, and click **OK**.

----End

## 5.2 Managing Members

This section describes how to add members and roles to a workspace, as well as the permissions and differences of the roles.

If you want to use DLV through a cloud account, skip this section.

If you need to invite other users to use DLV, prepare an IAM user by referring to the instructions in [Creating Users and Assigning DLV Permissions](#) and perform the following operations.

### Background

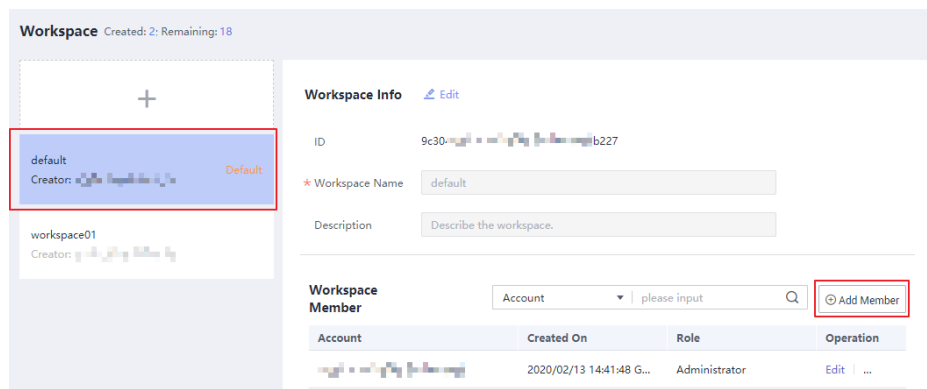
- The cloud account has all execution permissions of DLV. By default, the account has permission to add workspace members.
- If a sub-user of an account needs to add workspace members, the account needs to grant the required permissions to the sub-user. Only the following three types of sub-user have permission to add workspace members:
  - User who is assigned the DLV workspace administrator role and has the **IAM ReadOnlyAccess** permission
  - User who has the **DLV FullAccess** permissionBy default, a user with the **DLV FullAccess** permission can perform all operations on DLV.

- User who has the **Tenant Administrator** permission  
The **Tenant Administrator** permission has all cloud service administrator permissions except the IAM management permission. For security purposes, you are not advised to grant this permission to IAM users.  
To grant the preceding permissions to a sub-user, log in to the IAM console, create a user group, grant the required permissions to the user group, and add the sub-user to the user group.

## Adding Workspace Members and Roles

- Step 1** Log in to the DLV console.
- Step 2** In the navigation tree on the left, click **Control Center > Workspace**. The **Workspace** page is displayed.
- Step 3** In the workspace list, click the workspace you want to access. In the **Workspace Member** area, click **Add Member**.

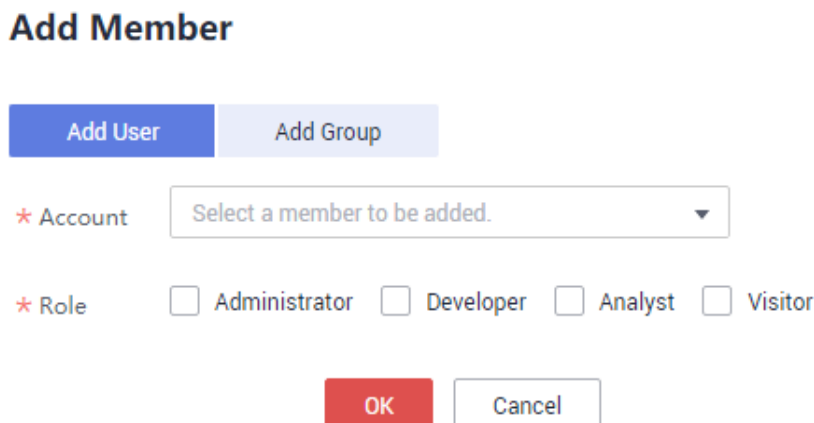
Figure 5-9 Selecting a workspace



- Step 4** In the **Add Member** dialog box, use either of the following methods to add a member or user group:
- **Add User**
    - **Account:** Select one or more members from the drop-down list.
    - **Role:** All selected member accounts will be set as the selected role. The role can be **Administrator**, **Developer**, **Analyst**, and **Visitor**. Each role has different workspace access permissions. The workspace creator is the administrator role by default.
  - **Add Group**
    - **Account:** Select one or more user groups from the drop-down list.
    - **Role:** All selected user groups will be set as the selected roles, and users in these user groups will obtain the permissions of the selected roles.



**Figure 5-10** Adding a member



**Step 5** Click **OK**. View or modify the existing members and roles in the member list, or delete a member from the workspace.

----End

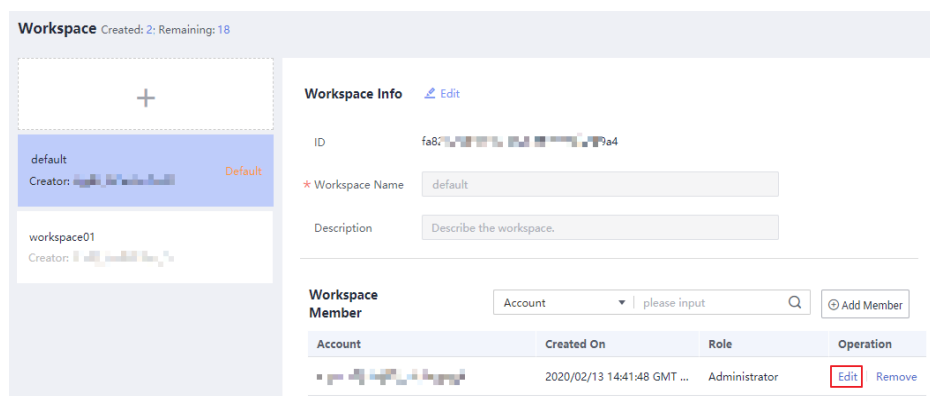
## Modifying Member Roles

**Step 1** Log in to the DLV console.

**Step 2** In the navigation tree on the left, click **Control Center > Workspace**. The **Workspace** page is displayed.

**Step 3** In the workspace list, click the workspace to be set. In the **Workspace Member** area, locate the member to be edited, and click **Edit** in the **Operation** column.

**Figure 5-11** Workspace member



**Step 4** In the **Edit Member** dialog box, select one or more roles and click **OK**.

The role can be **Administrator**, **Developer**, **Analyst**, and **Visitor**. Each role has different workspace access permissions. The workspace creator is the administrator role by default.

Figure 5-12 Editing a member

### Edit Member

Account

\* Role  Administrator  Developer  Analyst  Visitor

**Step 5** After the member is added, you can view the member and the member role in the workspace member list.

----End

## Removing Members

**Step 1** Log in to the DLV console.

**Step 2** In the navigation tree on the left, click **Control Center > Workspace**. The **Workspace** page is displayed.

**Step 3** In the workspace list, click the workspace to be set. In the **Workspace Member** area, locate the member to be deleted and click **Remove** in the **Operation** column.

Figure 5-13 Removing a member

Workspace Created: 2 | Remaining: 18

+

default  
Creator: [Avatar] Default

workspace01  
Creator: [Avatar]

**Workspace Info** [Edit](#)

ID: fa82c1e1-1234-5678-9012-345678901234

\* Workspace Name:

Description:

**Workspace Member**

Account:  |

Account	Created On	Role	Operation
[Avatar]	2020/02/13 14:41:48 GMT ...	Administrator	Edit <span style="border: 1px solid red; padding: 2px;">Remove</span>
[Avatar]	2020/02/11 17:57:13 GMT ...	Administrator	Edit   Remove

**Step 4** In the dialog box that is displayed, click **OK**.

----End

# 6 Creating Data Connections

---

Source data required for screen creation can be static data or non-static data.

- Static data: You can enter and use static data on the screen development page.
- Non-static data: Non-static data is stored locally or in other cloud services.

Assume that user data is stored in Data Warehouse Service (DWS). The following section describes how to establish a data connection between DLV and DWS on the **Data** page. After the data connection is successfully created, DLV can use data in DWS.

For details about more data sources, see [Creating Data Connections](#).

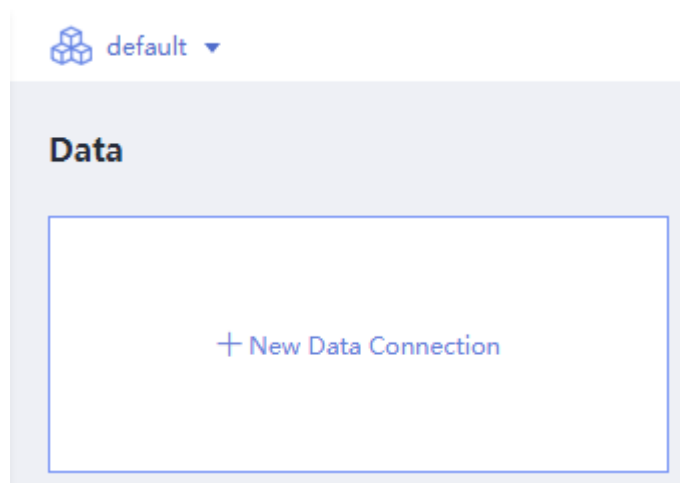
## Prerequisites

- You have obtained the IP address, port number, username, and password of DWS.
- To enable network communication between DLV and DWS, you can use a VPC connection as a network proxy. Create a VPC connection by referring to instructions in [Managing VPC Connections](#).

## Creating a Data Connection

- Step 1** Log in to the DLV console.
- Step 2** In the navigation pane on the left, click **Data**.
- Step 3** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

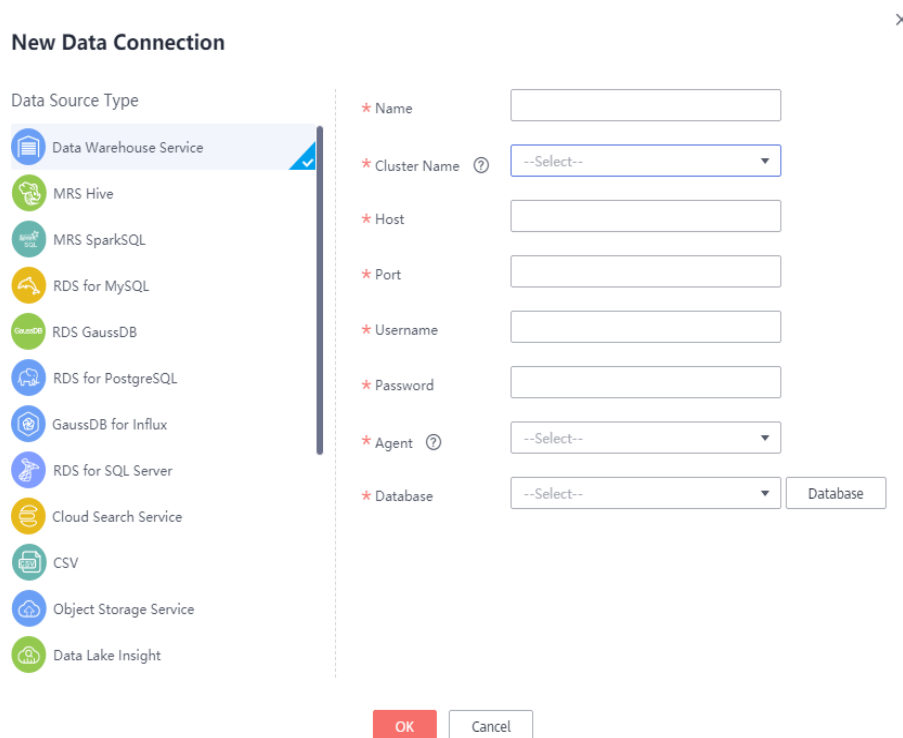
**Figure 6-1** Creating a data connection



**Step 4** In the data source list, choose **Data Warehouse Service**. Specify the related parameters. For details about how to create a data connection, see [Data Connection Overview](#).

For example, if **Data Source Type** is set to **Data Warehouse Service**, configure the data source parameters by referring to [Table 6-1](#).

**Figure 6-2** Configuring the data source



**Table 6-1** DWS data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Cluster Name	Name of the DWS cluster. To create a DWS cluster, click <b>Create Cluster</b> next to the drop-down list.
Domain Name	After a DWS cluster is selected, an intranet domain name of a database will be automatically matched. The domain name is alterable.
Port	After a DWS cluster is selected, a database port will be automatically matched. The port is alterable.
Username	Username of the database. The database user must have permission to access data tables and metadata.
Password	Password of the database user.
Agent	Select an available connection agent. To use the VPC connection, create a VPC connection by referring to instructions in <a href="#">Managing VPC Connections</a> .
Database	You can select a database from the <b>Database</b> drop-down list. <b>NOTE</b> If there is no database displayed, check whether the database username and password are correct. Then, ensure that security group rules have been configured to allow database connections. Ensure that the CDM proxy and the DB instance are in the same VPC. If the fault persists, contact technical support. Currently, DLV cannot use CDM 2.9 or later as a proxy.

**Step 5** Click **OK**.

----End

# 7 Creating Screens

---

DLV offers multiple scenario templates. You can select one template based on actual scenario requirements before creating a screen. DLV does not allow creating or modifying existing templates. If you want to create a screen based on an existing screen, you can copy, import, or export the screen. For details, see [Copying Screens](#) and [Importing and Exporting Screens](#).

This chapter describes how to create a screen by using a blank template. Before creating a screen, you need to understand the following information:

- Users of the advanced edition can create a maximum of 20 screens.
- Users of the professional edition can create a maximum of 50 screens.

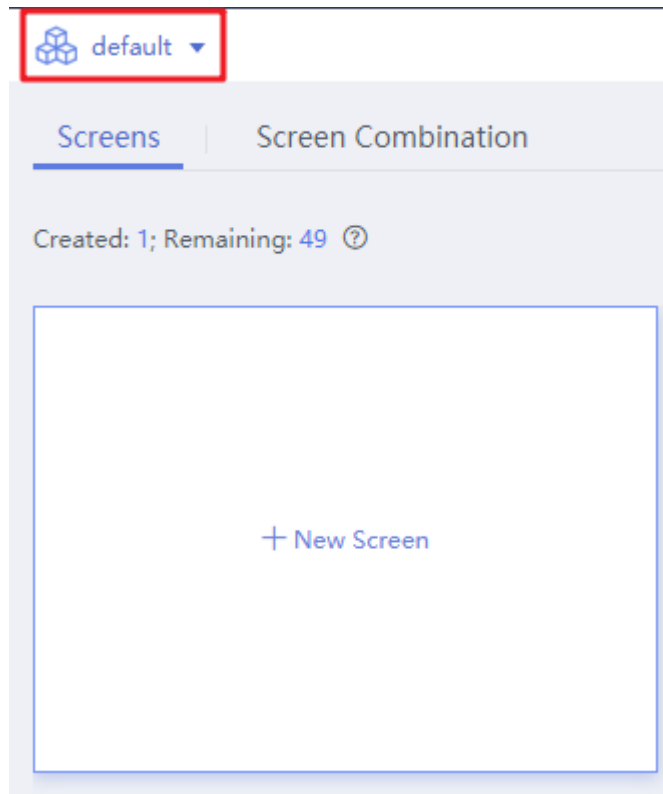
To increase quota, submit a service ticket.

## Creating Screens

**Step 1** Log in to the DLV console.

**Step 2** Click the workspace drop-down list in the upper left corner of the page. On the displayed workspace panel, click the workspace that you want to switch to.

**Figure 7-1** Switching a workspace



**Step 3** On the **Screens** page, click **New Screen**.

**Step 4** On the **Scenario Templates** page, select a template from the scenario template list on the left, for example, select a blank template. Enter a screen name.

- A screen name can contain only letters, numbers, underscores (\_), and hyphens (-), and cannot exceed 32 characters.

**Step 5** Click **Create Screen**. The screen development page is automatically displayed after the screen is successfully created.


----End

# 8 Developing Screens

## 8.1 Editing Screens




This section uses a bubble chart as an example to describe how to edit a screen.

### Screen Development Page






Log in to the DLV console. On the **Screens** page, locate the screen to be edited and click  on the screen.

On the screen development page, you can design and develop screens based on service requirements, add components, configure page layouts, associate data sources, and publish screens.

**Table 8-1** Functional area description


No.	Functional Area	Description
1	Component area	In the component area, DLV provides various components for you to add them to the canvas. For details about the components, see <a href="#">Overview</a> .
2	Layer area	In the layer area, the name and thumbnail of each layer in a screen can be displayed, facilitating layer search. For details about layer management, see <a href="#">Managing Layers</a> .
3	Canvas	Canvas of the screen.
4	Canvas zoombar	Drag the zoombar or click  or  to zoom in or zoom out the canvas. Click  to adapt the canvas to the screen.



No.	Functional Area	Description
5	Horizontal ruler	When the button in the upper left corner of the canvas displays as  , move the pointer to the horizontal rule area. When the pointer changes to a bidirectional arrow and a red auxiliary line is displayed on the canvas, double-click the mouse to add a red auxiliary line.
6	Vertical ruler	When the button in the upper left corner of the canvas displays as  , move the pointer to the vertical rule area. When the pointer changes to a bidirectional arrow and a red auxiliary line is displayed on the canvas, double-click the mouse to add a red auxiliary line.
7	Configuration panel	When you select a screen or a component, the configuration information is displayed on the configuration panel. For details about how to configure a screen, see <a href="#">Editing Screens</a> . For details about how to configure components, see <a href="#">Component Guide</a> .
8	Publish area	The buttons in the publish area are described as follows:  <b>Back</b> : return to the DLV console homepage. The modifications made on the screen development page are automatically saved.  <b>Preview</b> : preview a screen. During the screen development, you can preview the screen effect whenever you want. For details, see <a href="#">Previewing Screens</a> .  <b>Publish</b> : publish a screen. After a screen is developed, you can share your screen with other users after publishing it. For details, see <a href="#">Publishing Screens</a> .
9	Panel control area	Used to control the area displayed or hidden on the screen development page.
10	Layout	You can select multiple components to align them.

## Editing Screens

**Step 1** Log in to the DLV console.

**Step 2** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

**Figure 8-1** Editing a screen

**Step 3** On the canvas, set the screen parameters on the **Page Settings** panel on the right.

- **Screen Size:** width and height of the canvas. Unit: pixel.
- **Background Color:** background color of the screen.
- **Background Image:** You can upload a custom image as the background image of the screen. If this parameter is not set, no background image is available by default.
- **Display Mode:** zoom mode of the screen.
- **Thumbnail:** Click **Capture Image** to take a thumbnail of the current screen as the screen cover. When you search for the screen on the **Screens** page, you can see the thumbnail.

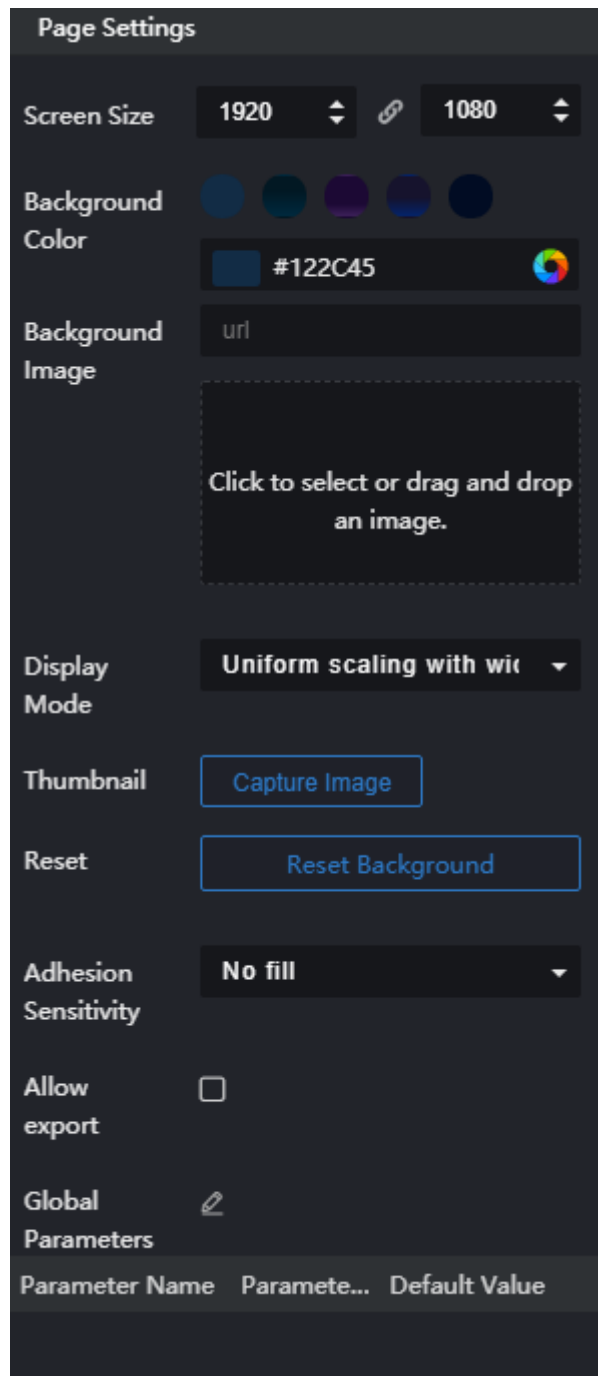
---

**CAUTION**

Using a thumbnail as a screen cover may disclose your data.

- 
- **Reset:** Click **Reset Background** to restore the default background color and image.
  - **Adhesion Sensitivity:** If this parameter is set to **No fill**, this function is disabled. If this parameter is set to another value, when you drag a component to the position close to another component or auxiliary line and the distance between them is less than or equal to this value, the component automatically adheres to the other component or auxiliary line. Unit: pixel.
  - **Allow export:** If this parameter is selected, the screen can be exported as an image or a PDF file.
  - **Global Parameters:** global interaction parameters.

**Figure 8-2** Screen page setting



**Step 4** Add and manage components.

Add required components to the canvas. For details, see [Managing Components](#).

**Step 5** Manage layers.

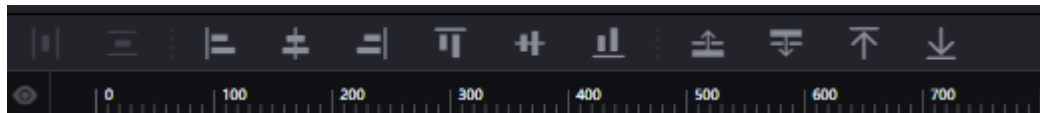
After adding a component, you can manage the layer. For details, see [Managing Layers](#).

----End

## Arranges Components

After adding components to the canvas, you can select multiple components and click the buttons in the layout area above the canvas to arrange the components.

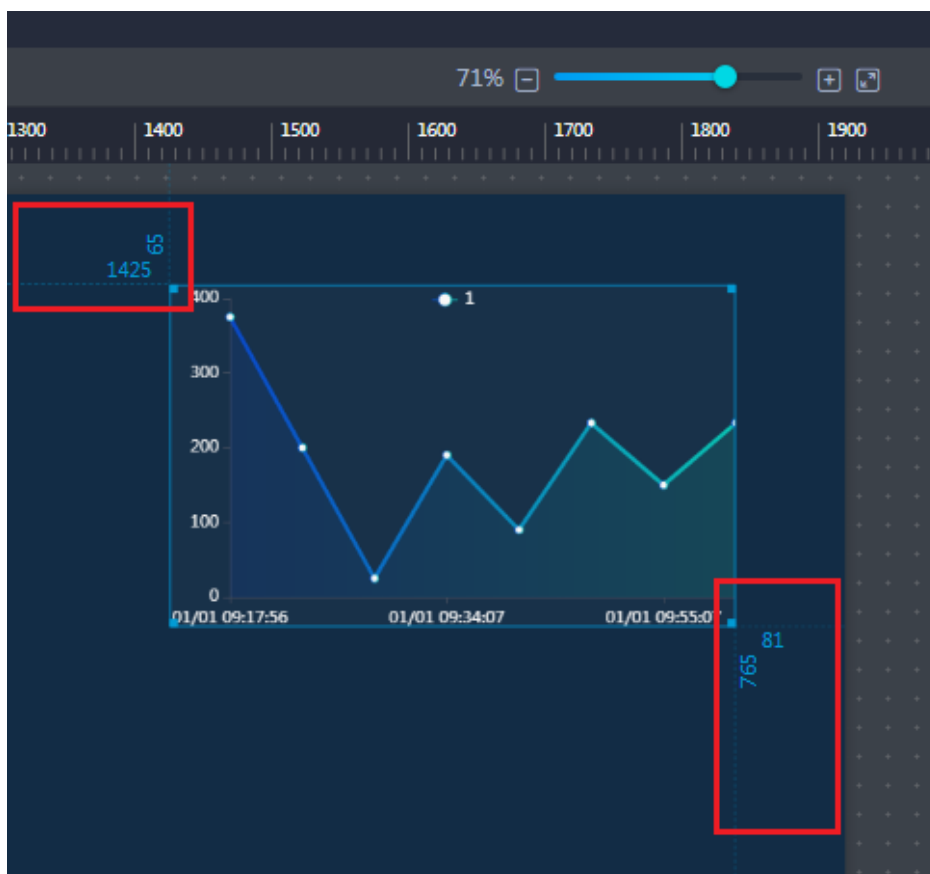
Figure 8-3 Layout



## Coordinates and Coordinate Auxiliary Lines of Components


In the upper left and lower right corner of a component, the coordinates and coordinate auxiliary lines of the component are displayed.

Figure 8-4 Coordinates and coordinate auxiliary lines of a component





## Auxiliary Lines

- Adding auxiliary lines

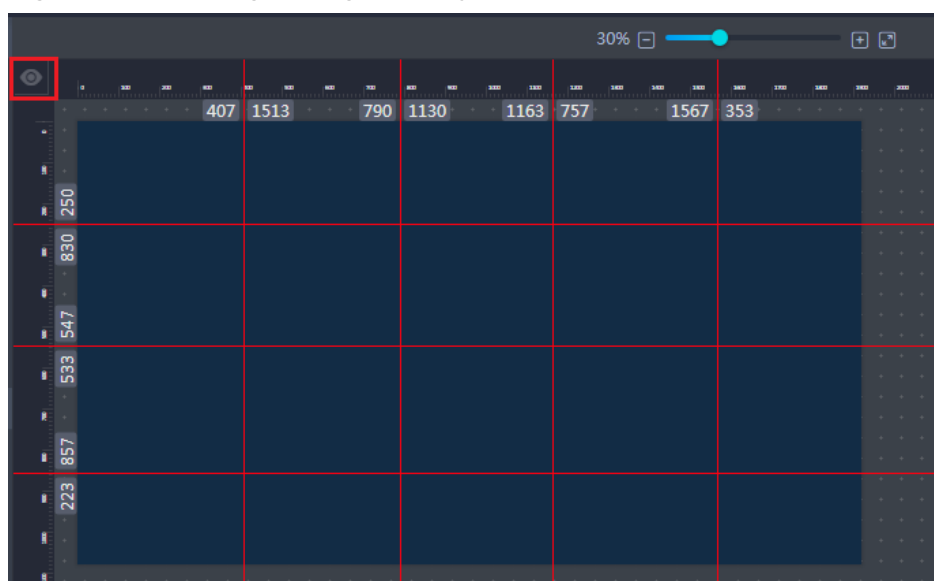
When the button in the upper left corner of the canvas displays as , move the pointer to the top of the canvas or on the left of the ruler. When the pointer changes to a bidirectional arrow and a red auxiliary line is displayed on the canvas, click the mouse to add a red auxiliary line. You can add multiple horizontal or vertical auxiliary lines to the canvas.

**Figure 8-5** Auxiliary lines



- Adjusting positions of auxiliary lines**  
 Move over a red auxiliary line and hold down the left mouse button while dragging the auxiliary line until to a desired position on the canvas. The distance between the auxiliary line and the left, right, upper, and lower boundaries of the canvas is displayed on the ruler.
- Showing/Hiding auxiliary lines**  
 Click  in the upper left corner of the canvas to hide all auxiliary lines. In this case, you cannot add auxiliary lines.  
  
 To display all auxiliary lines again, click  in the upper left corner of the canvas. You can add auxiliary lines.

**Figure 8-6** Showing/Hiding auxiliary lines




- Deleting auxiliary lines**

In the canvas, move over a red auxiliary line. When the pointer changes to a bidirectional arrow, hold down the left mouse button while dragging the auxiliary line to remove it from the canvas. Alternatively, right-click the auxiliary line and choose **Delete** from the shortcut menu.

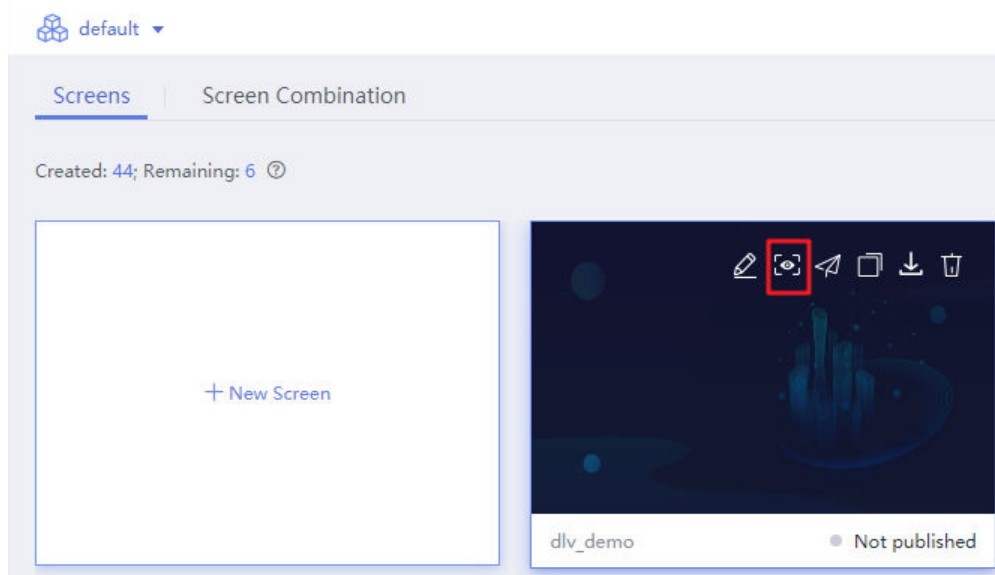
## 8.2 Previewing Screens

During screen development, you can preview the screen effect whenever you want.

Two entrances into the preview page are available:

- In the upper right corner of the screen development page, click the **Preview** icon.
- On the **Screens** page, locate the screen to be previewed and click  on the screen.

**Figure 8-7** Preview entrance 2




## 8.3 Publishing Screens

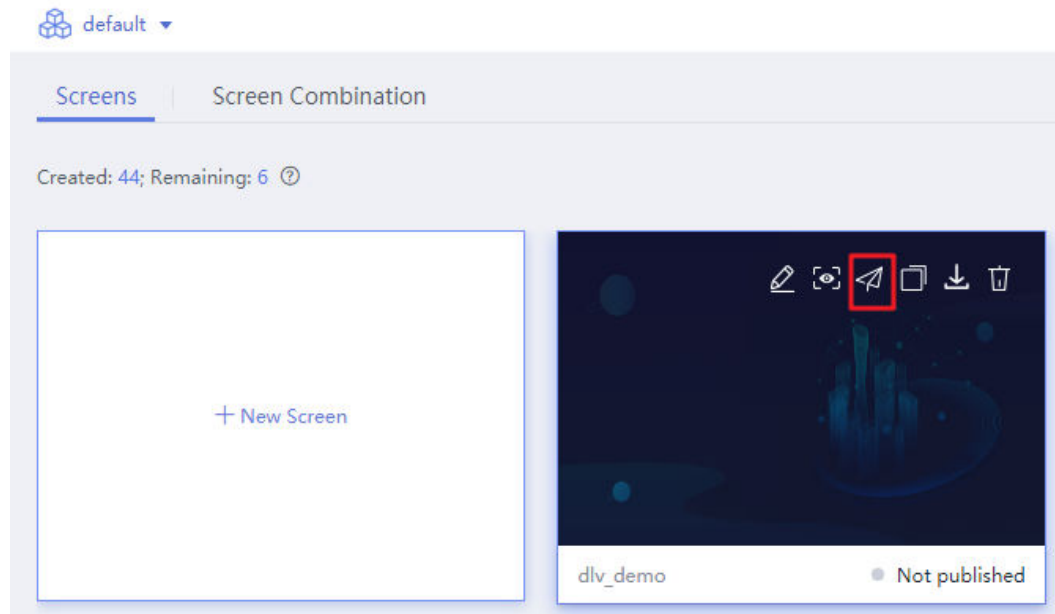
After a screen is developed, you can share your screen with other users by publishing it.


### Publishing Screens

**Step 1** Log in to the DLV console.

**Step 2** On the **Screens** page, locate the screen to be published and click  on the screen.

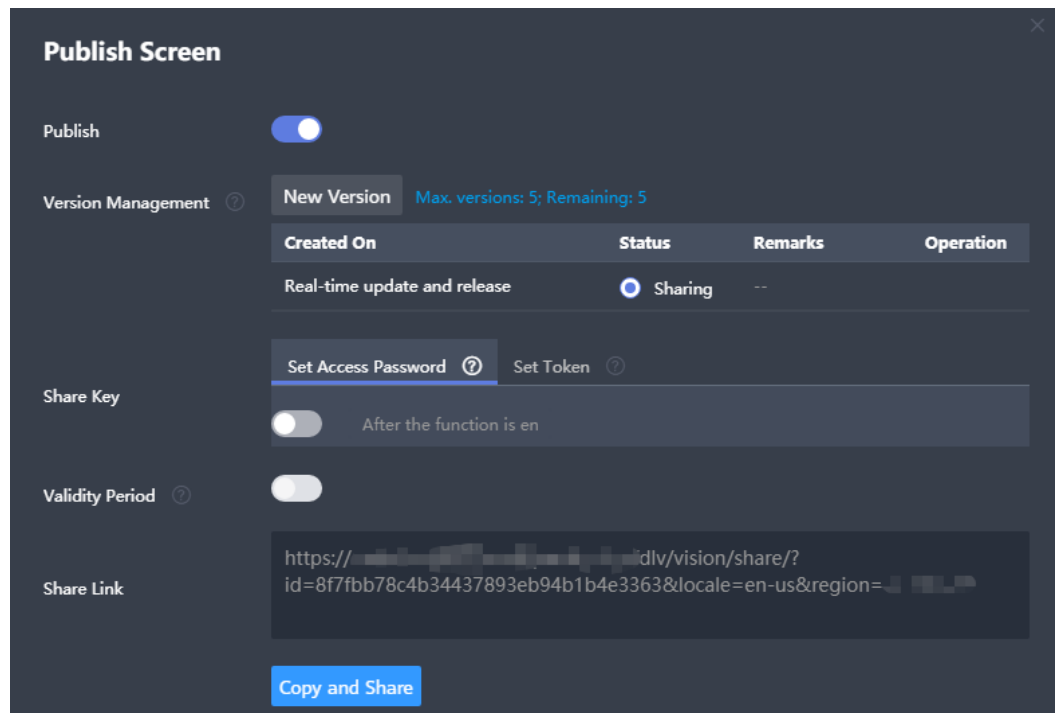
**Figure 8-8** Publishing a screen



You can also click  in the upper right corner of the screen development page to publish the screen.

**Step 3** On the displayed page, configure publish parameters.

**Figure 8-9** Configuring publish parameters



### Publish

Specifies whether others can share your created screens (see [Figure 8-9](#)). After the screen is published, other users can access the screen without logging in to DLV. They only need to open the browser and enter the shared link in the address box to access the screen.

### Version Management

Specifies a sharable version.

- Real-time version: When the current version of screen is modified, users who are sharing it can synchronously use the latest version of screen. It is the default option and cannot be deleted.
- Historical version: When the current version of screen is modified, users who are sharing it cannot use the latest version of screen but can only use the original one.

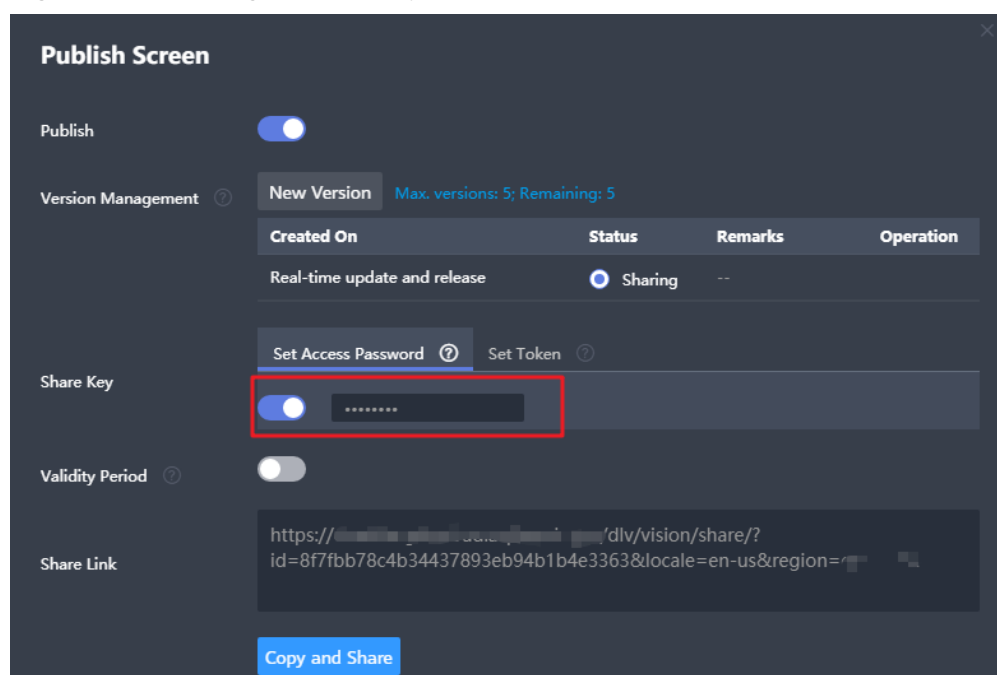
### Share Key

Specifies a screen sharing mode.

- Public sharing: If a user does not configure password access or token authentication for a screen, the screen is accessed through the shared link. The basic edition of DLV supports only the public sharing mode.
- Password access: On the **Set Access Password** tab page, enable password access and set a password. After the password is set successfully, other users need to enter the password when they want to access the screen through the shared link.

After **Validity Period** is enabled, you do not need to perform verification again within the validity period after successful verification unless the validity period expires. If this function is disabled, each access requires verification.

**Figure 8-10** Setting the access password

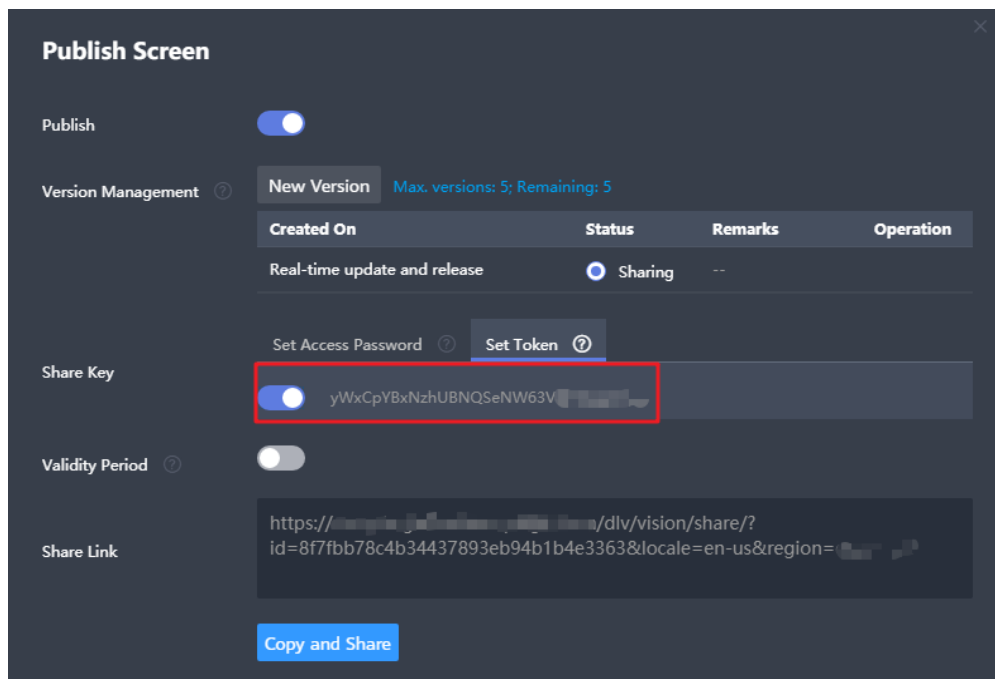


- Token access: On the **Set Token** tab page, enable token verification.



The system randomly generates a token. You need to record it for future use. After **Validity Period** is enabled, you do not need to perform verification again within the validity period after successful verification unless the validity period expires. If this function is disabled, each access requires verification.

**Figure 8-11** Setting a token



After the token for the screen is generated, you have to perform the following steps before accessing the screen:

#### NOTE

To prevent replay attacks, ensure that token authentication is used and the time difference between the DLV client and the DLV server is within 1 minute. If the time difference exceeds 1 minute, authentication fails.

- Publish the screen and record the shared screen code (a character string behind **share** in the shared link).
- Connect the screen code with the current time (millisecond) and separate them with a vertical bar (|).
- Use the token to encrypt the character string in **Step 3.b** through HMAC-SHA256 base64.
- Name the time and the encrypted signature **dlv\_time** and **dlv\_signature**, respectively.
- Add them to **querystring** of the shared link.

An example is provided as follows:

Java:

```
package com.test;
import java.security.*;
import javax.crypto.*;
import javax.crypto.spec.SecretKeySpec;
import org.apache.commons.codec.binary.Base64;
```

```
import java.net.URLEncoder;

public class ShareWithTokenTest {

    public static void main(String[] args) throws Exception {
        System.out.println(getShareUrlWithToken("*****722467a9477b5b*****",
        "*****r1tyy1C7Jenni3p*****"));
    }

    public static String getShareUrlWithToken(String shareID, String token){
        long time = System.currentTimeMillis();
        String data = shareID + "|" + time;
        String signature = HMACSHA256(data.getBytes(), token.getBytes());
        String url = "https://console.com/dlv/vision/share/?id="+shareID +"&dlv_time="+time
        +"&dlv_signature="+ signature+"&locale=zh-cn&region=";
        return url;
    }

    //Use HmacSHA256 for signature.
    public static String HMACSHA256(byte[] data, byte[] key)
    {
        try {
            SecretKeySpec signingKey = new SecretKeySpec(key, "HmacSHA256");
            Mac mac = Mac.getInstance("HmacSHA256");
            mac.init(signingKey);
            return URLEncoder.encode(Base64.encodeBase64String(mac.doFinal(data)));
        } catch (NoSuchAlgorithmException e) {
            e.printStackTrace();
        } catch (InvalidKeyException e) {
            e.printStackTrace();
        }
        return null;
    }
}
```

#### NOTE

Replace the following parameters in the preceding code based on the site requirements:

In `System.out.println(getShareUrlWithToken("*****3b44722*****5b888211bca", "*****er1tyy1C7J*****JxellPz8P"), *****4722467a9477*****11bca` indicates the parameter value following **share** in the URL, and `*****er1tyy1C7*****pzJxe***8P` indicates the parameter value in the shared key.

In `String url = "https://console.g42cloud.aspiegel.com/dlv/vision/share/?id="+shareID +"&dlv_time="+time+"&dlv_signature="+ signature+"&locale=zh-cn&region=, locale=zh-cn` indicates the language ID, **en-us** indicates the English language, and **region=xxx** indicates the area where the service is deployed.

----End

# 9 Managing Screens

---

## 9.1 Copying Screens


This section describes how to copy a screen.

### Prerequisites

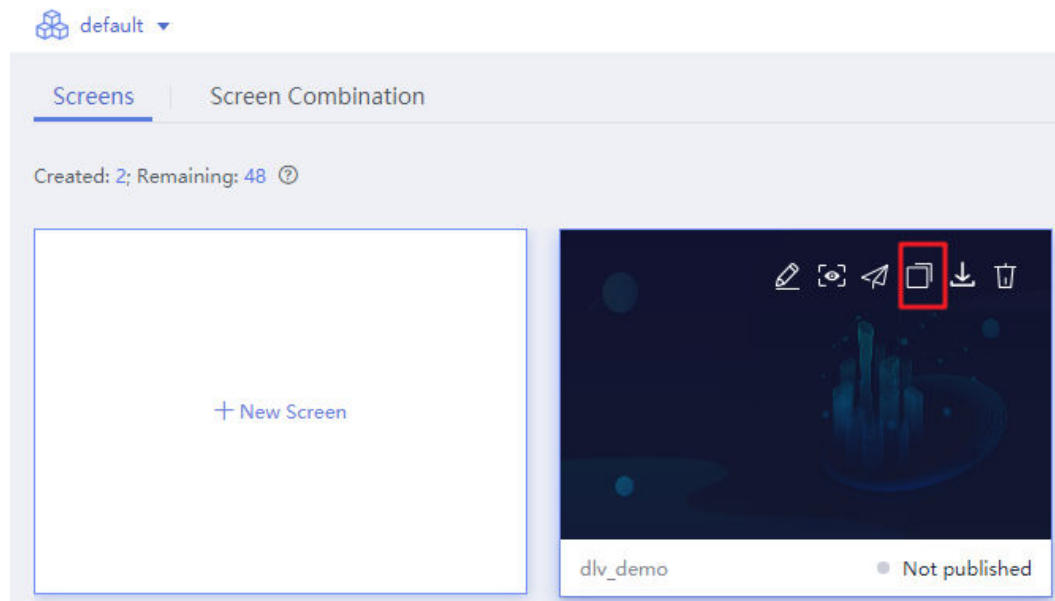
Before copying a screen, ensure that the screen already exists. If there are no screens on **Screens**, create one. For details about how to create a screen, see [Creating Screens](#).

### Procedure

**Step 1** Log in to the DLV console.

**Step 2** On the **Screens** page, locate the screen to be copied and click  on the screen and select the target workspace. A screen named *Original screen name\_copy* is created.

**Figure 9-1** Copying a screen



**Step 3** Mouse over the name of the screen to change it.

**Figure 9-2** Changing the screen name



----End

## 9.2 Deleting Screens


This section describes how to delete a screen.

### Prerequisites

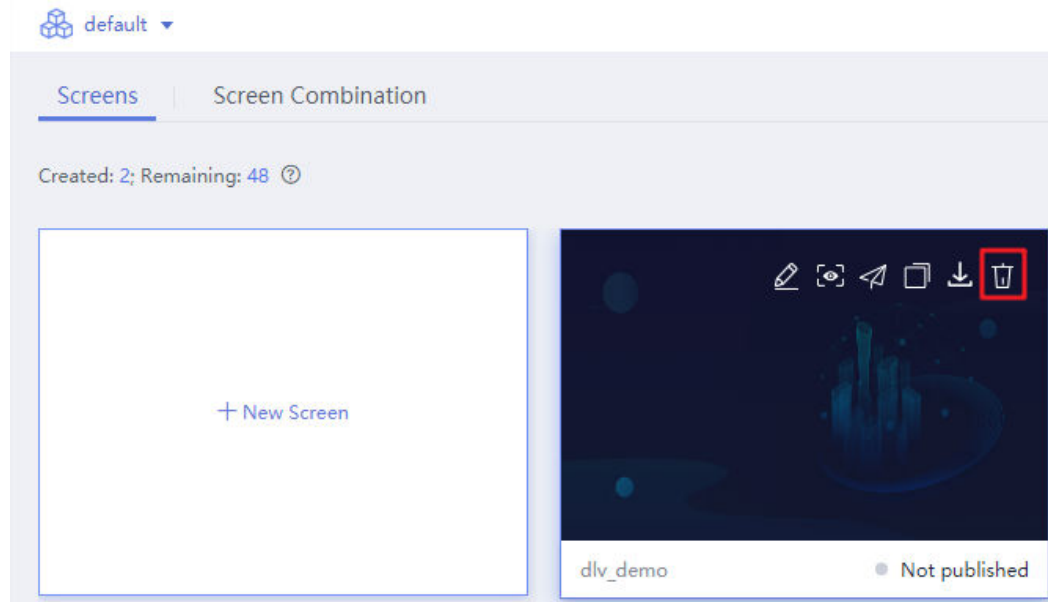
Before deleting a screen, ensure that the screen is no longer used. Deleting screens cannot be recovered. Exercise caution before performing this operation.

## Procedure

**Step 1** Log in to the DLV console.

**Step 2** On the **Screens** page, locate the screen to be deleted and click  on the screen.

**Figure 9-3** Deleting a screen



**Step 3** In the displayed dialog box, click **Yes**.

----End

## 9.3 Searching for Screens


This section describes how to search for a screen.

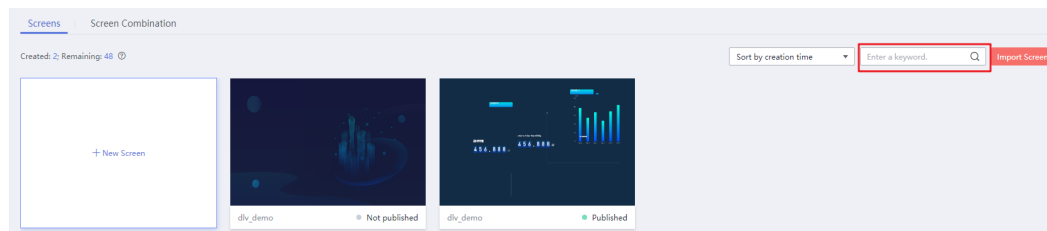
### Prerequisites

Before searching for a screen, ensure that the screen already exists. If there are no screens on **Screens**, create a screen. For details about how to create a screen, see [Creating Screens](#).

### Procedure

**Step 1** Log in to the DLV console.

**Step 2** On the **Screens** page, select a screen sorting mode, enter the name or keyword of the target screen in the search box, and click .

**Figure 9-4** Searching for a screen

For example, if you enter **screen** in the search box, all screens whose names contain **screen** are displayed.

The following sorting modes are provided on the **Screens** page:

- **Sort by name:** Sort the screen names in ascending alphabetical order.
- **Sort by creation time:** Screens are sorted by creation time in descending order. The latest screen is displayed at the top.
- **Sort by modification time:** Sort the screens by modification time in descending order. The latest modified screen is displayed at the top.

----End

## 9.4 Importing and Exporting Screens


DLV allows you to export a developed screen and import the exported screen to DLV.

### Precautions for Importing Screens

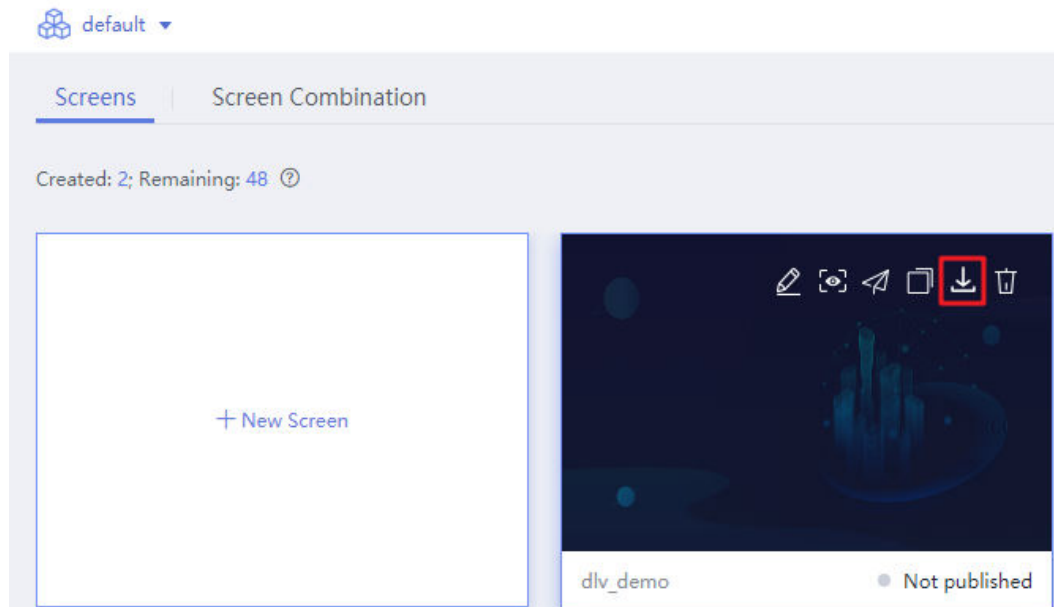
- You can import screens that are exported from DLV in one region to DLV in another region.
- You can import screens exported by one account or IAM user to DLV purchased by another user.
- After the screen exported from an earlier edition of DLV is imported to a later edition of DLV, the screen configuration and components are still of the edition when the screen is exported. To use the latest edition of components, you need to add the components again on the screen.
- After a screen is imported successfully, you need to reconfigure the data source of each component on the screen.
- After a screen is imported successfully, the interaction needs to be recreated.

### Exporting Screens

**Step 1** Log in to the DLV console.

**Step 2** On the **Screens** page, locate the screen to be exported and click  on the screen.

**Figure 9-5** Exporting a screen



----End

## Importing Screens

**Step 1** Log in to the DLV console.

**Step 2** In the upper right corner of the **Screens** page, click **Import Screen**, select the exported screen, and click **Open** to import the screen.

If the import is successful, a message is displayed in the upper right corner of the console, indicating that the screen is imported successfully.

**Figure 9-6** Importing a screen



----End

## 9.5 Changing a Screen Name

This section describes how to change the name of a screen.

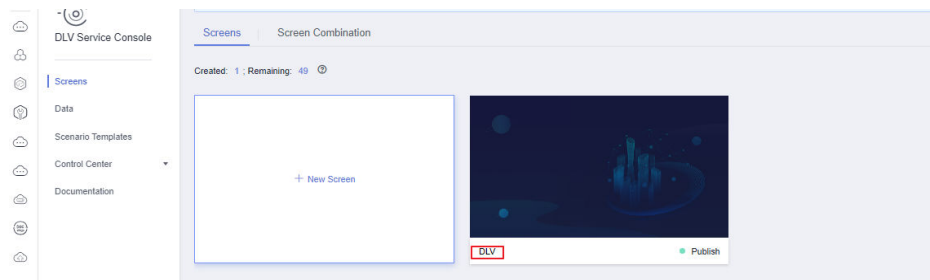
### Prerequisites

There is a screen available in the system before you change its name.

## Procedure

- Step 1** Log in to the DLV console.
- Step 2** Choose **Screens**. On the tab page displayed, locate the screen you want to change the name for, move the cursor over the icon of the screen, and click the screen name in the lower left corner.

**Figure 9-7** Changing a screen name



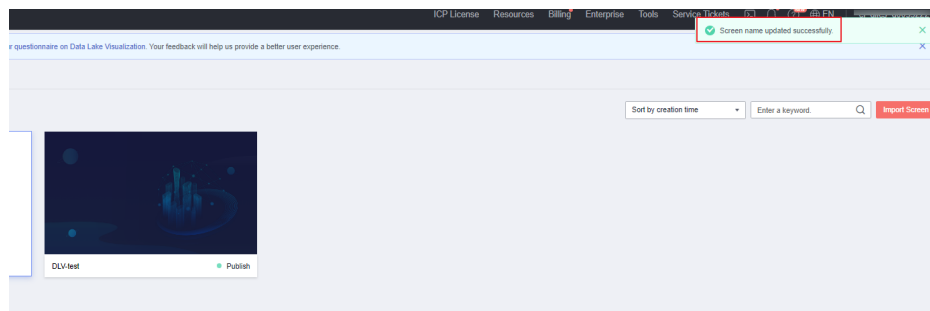
- Step 3** Enter a new screen name.

**NOTE**

The name can contain a maximum of 32 characters. Only letters, digits, underscores (\_), and hyphens (-) are allowed.

- Step 4** Move the cursor away from the screen name and click the screen name again. If the screen name is changed successfully, message "Screen name updated successfully." is displayed.

**Figure 9-8** Screen name updated successfully



----End



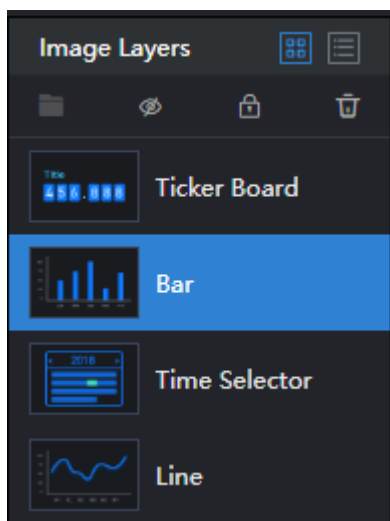
# 10 Managing Layers

If multiple components are deployed or nested in the canvas, the layer function helps you quickly locate a component.

## Modifying the Layer Position of a Component

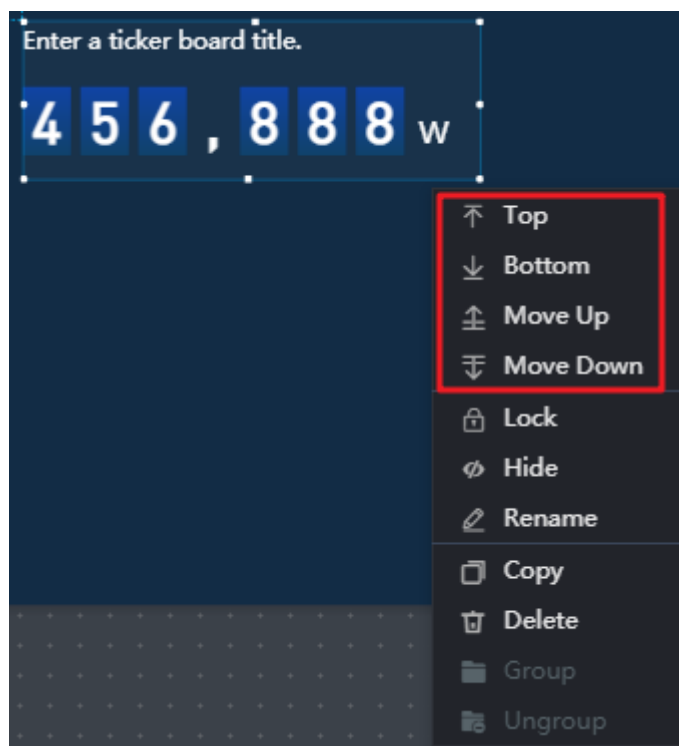
Method 1: Select a component in the layer list and drag the component to a specific layer.

**Figure 10-1** Modifying the layer position of a component (method 1)




Method 2: Right-click on a component in the canvas and choose **Top**, **Bottom**, **Move Up**, or **Move Down**.

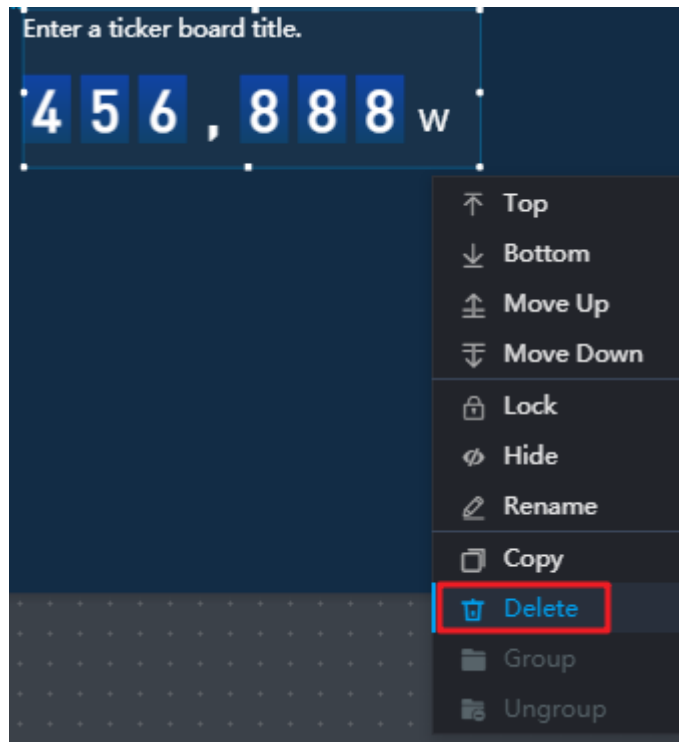
**Figure 10-2** Modifying the layer position of a component (method 2)



## Deleting a Layer

In the layer area, select a component in the layer list or right-click a component in the canvas and click  from the shortcut menu to delete the component.

**Figure 10-3** Deleting a layer



# 11 Data Connection Management

---

## 11.1 Creating Data Connections

### 11.1.1 Data Connection Overview

DLV provides various data sources. When using a screen, you can create data connections based on the data storage location. Data results will then display on the screen.

Log in to the DLV console and click the **Data** tab to manage data sources.

DLV supports the following types of data sources:

- APIs
- Databases
- Files
- Others

#### APIs

DLV supports [API](#) data sources.

#### Databases

DLV supports the following types of databases:

- [DWS](#)
- [DLI](#)
- [MRS Hive](#)
- [MRS SparkSQL](#)
- [MapReduce Service \(ClickHouse\)](#)
- [RDS for MySQL](#)
- [RDS for PostgreSQL](#)

- [RDS for SQL Server](#)
- [RDS for GaussDB](#)
- [RDS for GaussDB for Influx](#)
- [Oracle](#)
- [MySQL](#)
- [PostgreSQL](#)
- [SQL Server](#)
- [DDM](#)

## Files

The DLV supports the following types of files data:

- [Static data](#)
- [CSV files](#)

## Others

- [OBS](#)
- [Cloud Search Service](#)
- [Elasticsearch](#)
- [DAYU DLM](#)
- [API Gateway](#)

## 11.1.2 Using Static Data Sources

When using static data sources, you do not need to create data connections. You can directly paste static data in JSON format to the data editing page.

### Using Static Data

**Step 1** Log in to the DLV console and click the **Screens** tab.


**Step 2** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

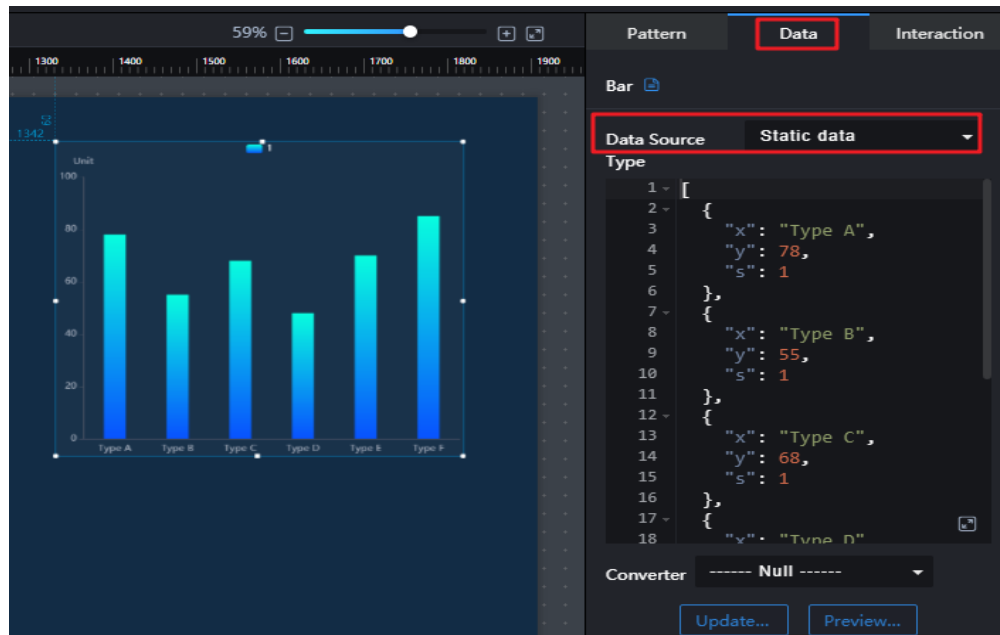
Figure 11-1 Editing a screen



**Step 3** Select a component, for example, a bar chart. The component is displayed in the canvas. Click the component and then the **Data** panel on the right of the page.

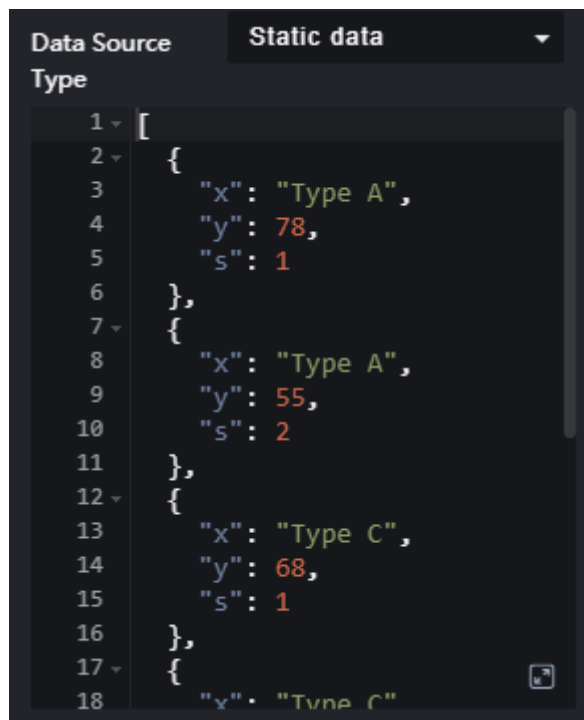
**Step 4** On the **Data** panel, set **Data Source Type** to **Static data**.


Figure 11-2 Static data source



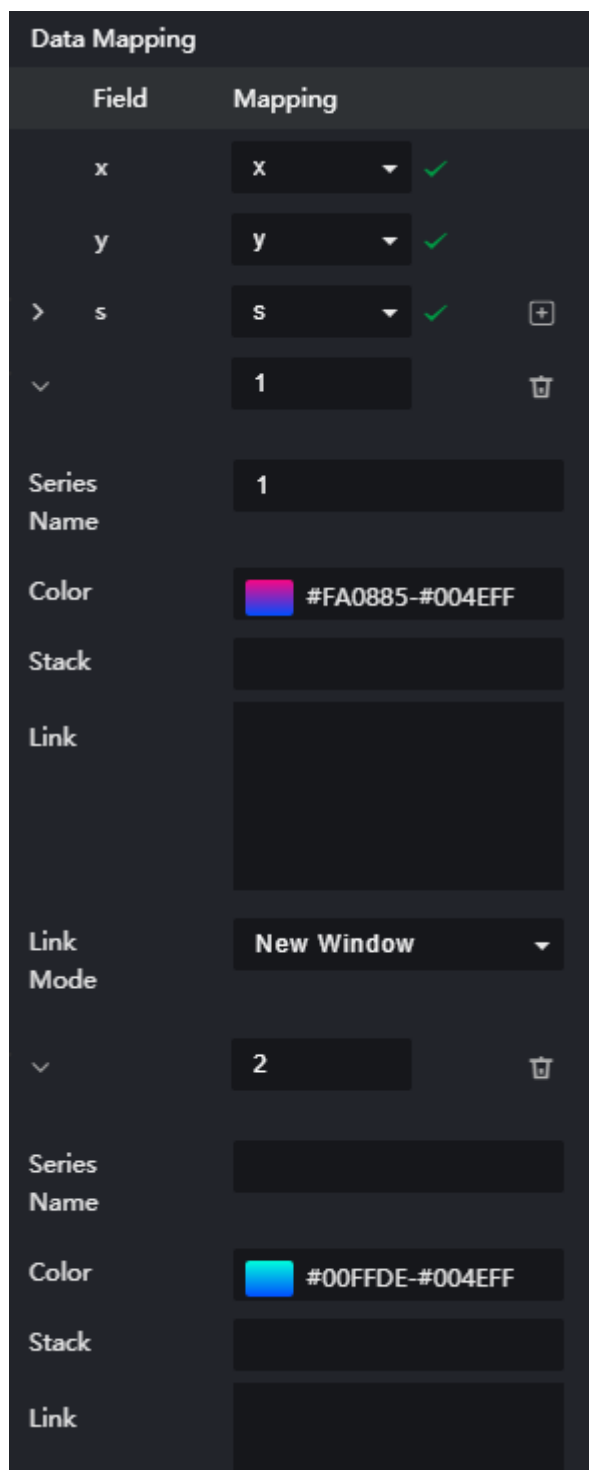
**Step 5** Paste static data in JSON format to the data editing area.

Figure 11-3 Pasting static data



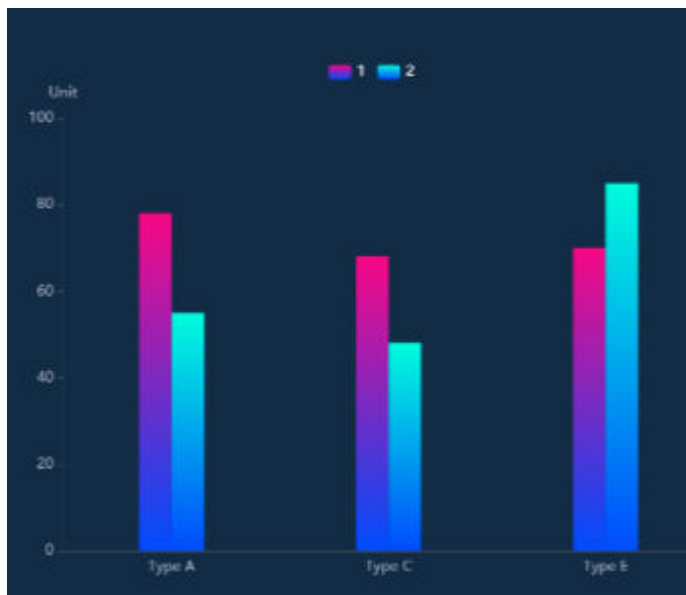
**Step 6** Configure field mapping. In this example, **x** is mapped to **x**, **y** to **y**, and **s** to **s**. Click  on the right of **s** to add two series values (1 and 2) and set different colors for them.

**Figure 11-4** Configuring mapping and color



**Step 7** View the effect of the configured screen component.



**Figure 11-5** Screen effect

----End

### 11.1.3 Creating API Data Connections

You can call a third-party Representational State Transfer (REST) API to obtain source data. The HTTP body in the RESTful API response is the source data. DLV can parse the source data in the response and display it on the screen. Without the need to create a data connection, you can directly configure the URL of the API data source on the **Data** panel.


#### Use Restrictions

To connect to data sources through the REST API, ensure that the following conditions are met:

- The REST API for obtaining source data can communicate with the cloud network.
- The REST API for obtaining source data can be called only using HTTPS GET requests, and the HTTP body in the API response result must be in JSON format.
- For the API data sources, DLV parses only level-1 JSON arrays similar to the JSON structure of the static data source. Multi-layer nested JSON structure is not supported.

#### Using API Data Sources

**Step 1** Log in to the DLV console and click the **Screens** tab.

**Step 2** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

**Figure 11-6** Editing a screen



**Step 3** Select a component, for example, a bar chart. The component is displayed in the canvas. Click the component and then the **Data** panel on the right of the page.

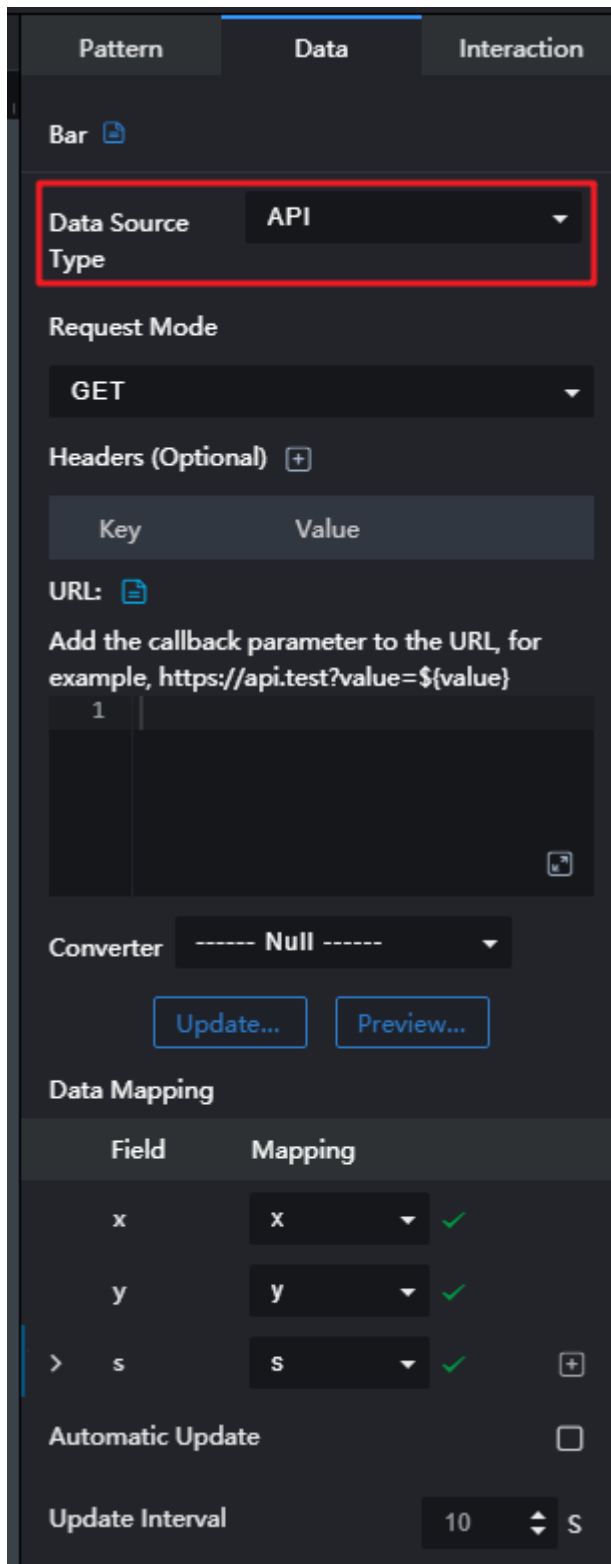
**Step 4** On the **Data** panel, set **Data Source Type** to **API**.

**Step 5** Enter a complete URL in the editing area.

**NOTE**

DLV supports only HTTPS-based API requests.

Figure 11-7 Creating an API data source



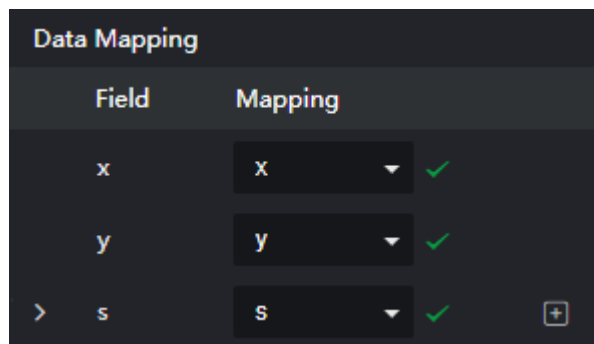
**Step 6** Click **Preview Response Result** to view the data response result.

Figure 11-8 Viewing the response result



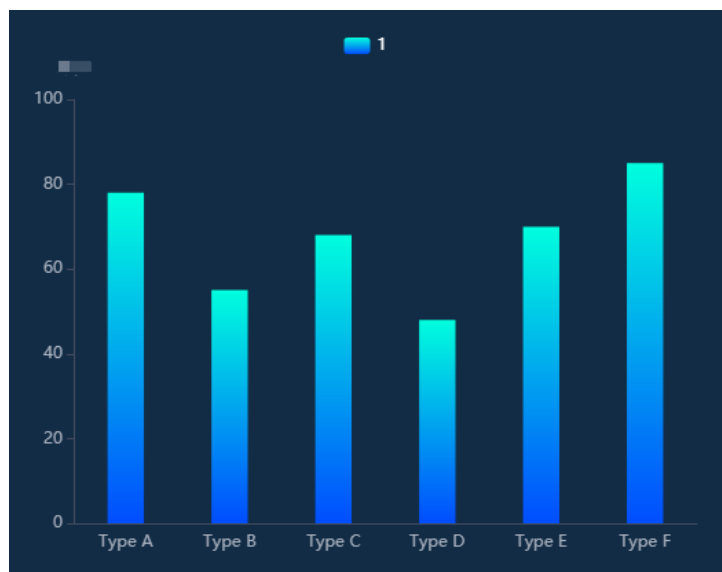
**Step 7** Configure the field mapping based on the attribute name of the response data.

Figure 11-9 Configuring the mapping



**Step 8** View the effect of the configured screen component.

Figure 11-10 Screen effect



----End

### 11.1.4 Creating API Gateway Data Connections

API Gateway is a high-performance, high-availability, and secure API hosting service provided by cloud for enterprise developers and partners.

Before establishing a data connection to API Gateway, ensure that the following condition is met:

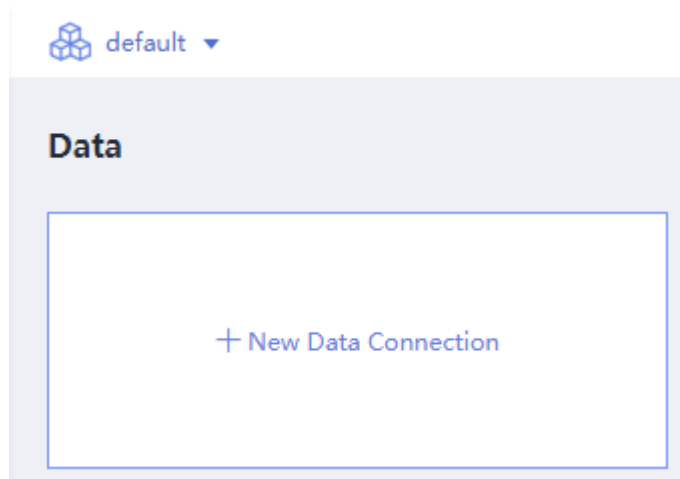
- You have obtained an AppKey and AppSecret.

#### Creating API Gateway Data Connections

**Step 1** Log in to the DLV console.

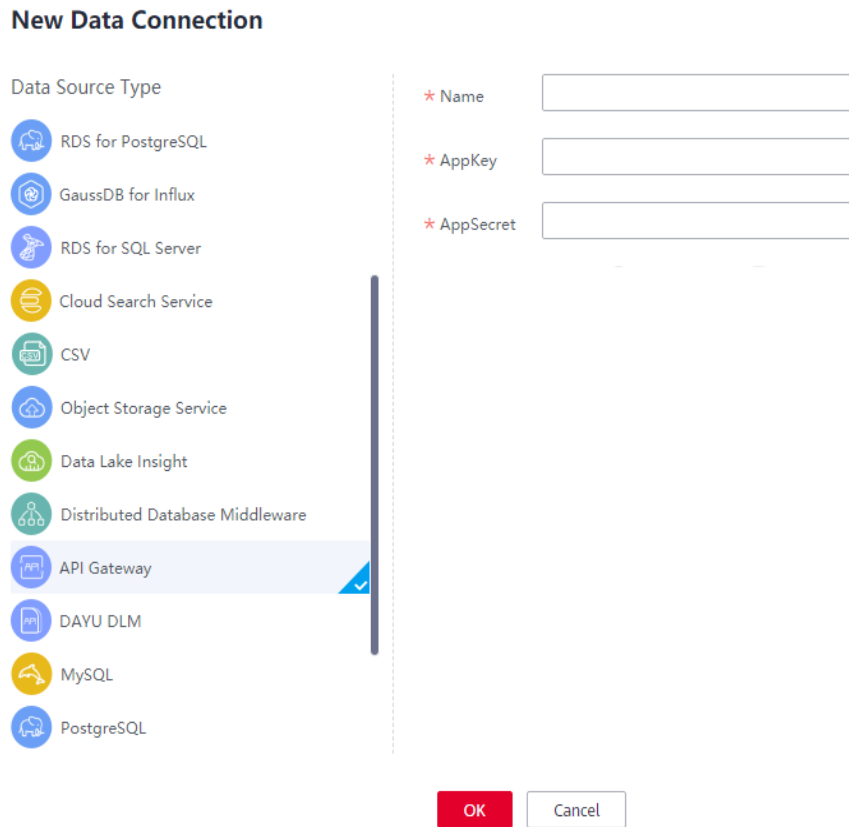
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

Figure 11-11 Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **API Gateway** and set the related parameters.

**Figure 11-12** API Gateway



**Table 11-1** APIG data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
AppKey	Enter the AppKey. If the authentication mode of APIG is APP, enter an AppKey. If another authentication mode is used, enter any character to ensure that the text box is not blank.
AppSecret	Enter the AppSecret. If the authentication mode of APIG is APP, enter an AppSecret value. If another authentication mode is used, enter any character to ensure that the text box is not blank.

**Step 4** Click **OK**.

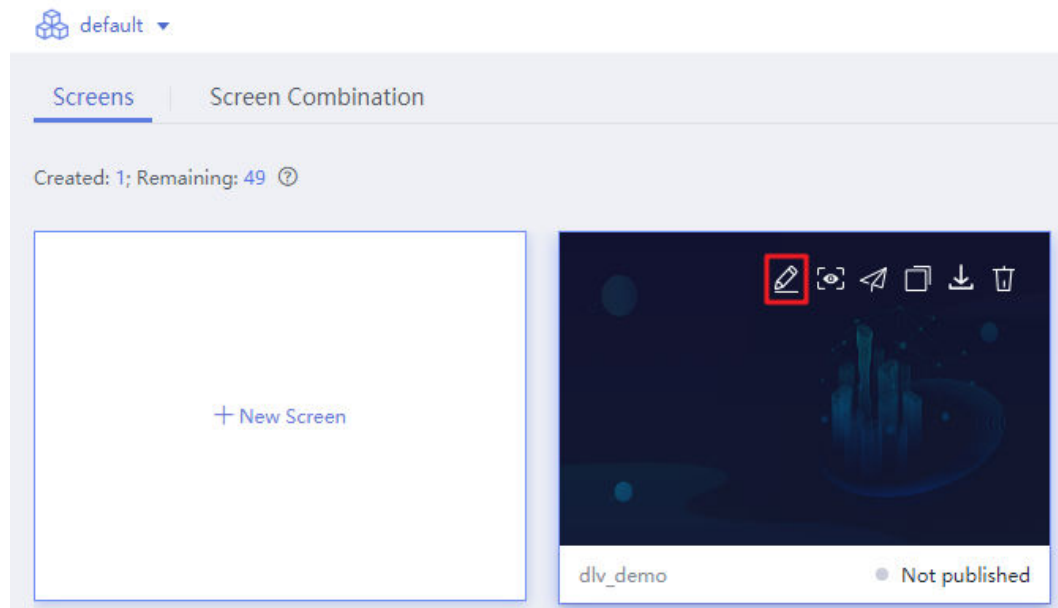
**----End**

## Using APIG Data Sources

**Step 1** Log in to the DLV console.

**Step 2** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

**Figure 11-13** Editing a screen

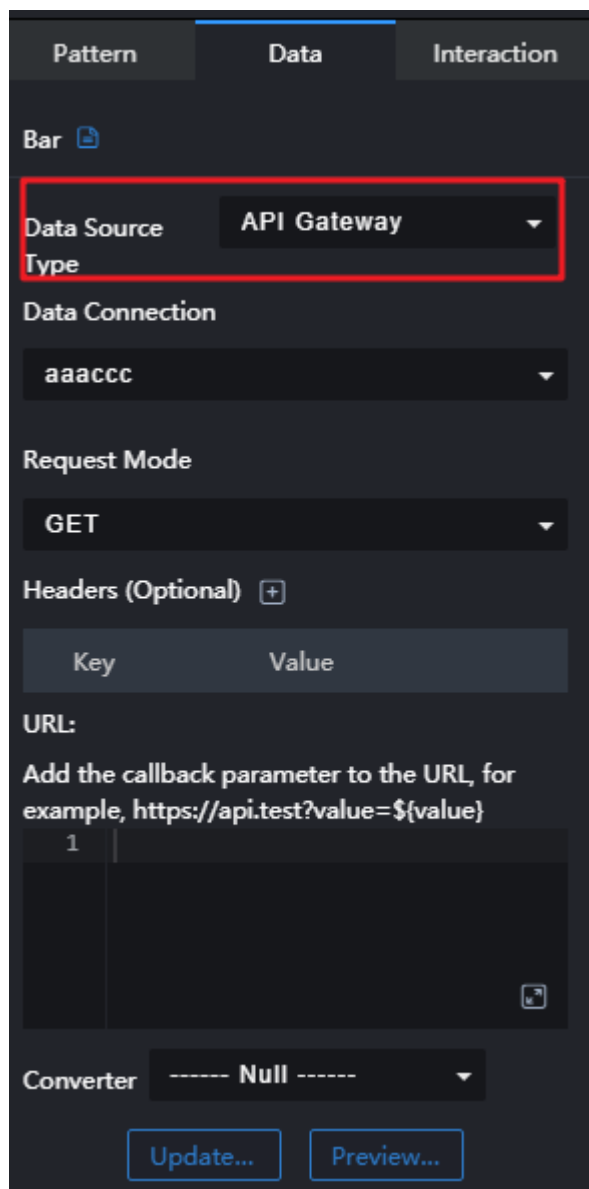


**Step 3** Select a component, for example, a bar chart. The component is displayed in the canvas. Click the component and then the **Data** panel on the right of the page.

**Step 4** Set the following parameters on the **Data** panel:

- **Data Source Type:** Set this parameter to **API Gateway**.
- **Data Connection:** Select an API Gateway data connection from **Data Connection**.
- **Request Mode:** Select the request mode of API Gateway.
- **URL:** Enter the request URL in the editing area.

Figure 11-14 Adding an API Gateway data connection



**Step 5** Click **Preview Response Result** to view the data response result.

----End

### 11.1.5 Creating CSV File Data Connections

You can upload local CSV files to OBS and establish a data connection with DLV. Alternatively, you can create a data connection between a CSV file stored in OBS and DLV. Then, the data in the CSV file can be displayed on DLV screens.

Before establishing a data connection to CSV files, ensure that the following conditions are met:

- You have obtained an Access Key ID (AK) and Secret Access Key (SK).  
For details about how to obtain them, see [Obtaining AK and SK](#).
- An OBS bucket is available.



## CSV File Format Description

The CSV file data source supports the following CSV file formats:

- Only commas (,) can be used as separators in CSV files. CSV files are encoded in UTF-8 format (without BOM).
- When a screen uses the CSV data source, the first row in the CSV file is parsed as the table header by default.

If the CSV file to be uploaded does not have a table header, you can add one before uploading the file. Alternatively, you can select **Default Table Header** in the data source settings of the screen to add a default table header to the CSV file.

- In a CSV file, if a field value is enclosed in double quotation marks, the double quotation marks are parsed as a part of the field value, and are displayed as "\" on the screen. If a field value contains single quotation marks, the field is not affected.

For example, if the CSV file contains the following records, "abc" is displayed as "\"abc\"".

```
1,"abc",2
```

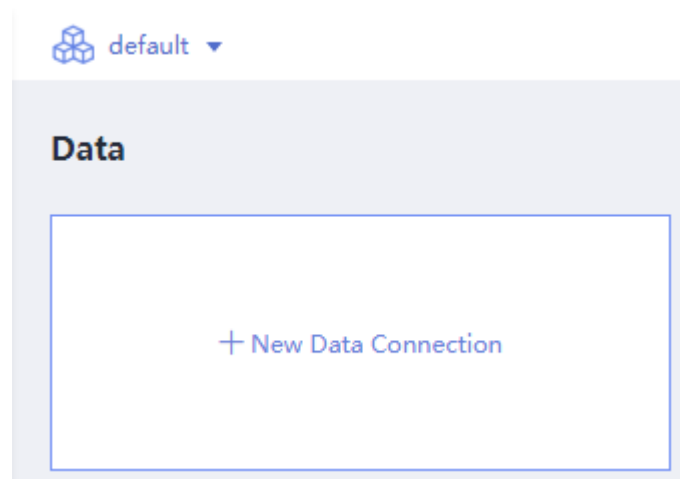
- Only one CSV file can be uploaded through a data connection, and the file size cannot exceed 10 MB. If the size of a CSV file exceeds 10 MB, the file can be uploaded only through the OBS client.

## Adding CSV File Data Sources

**Step 1** Log in to the DLV console.

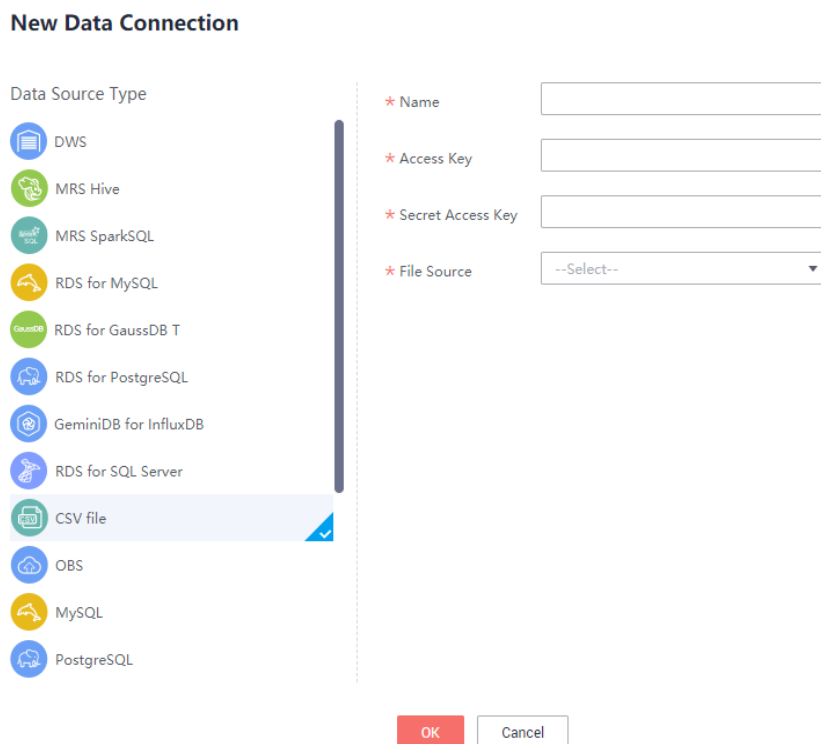
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-15** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **CSV** and set the related parameters. Click **OK**.

**Figure 11-16** Creating a CSV data connection



**Table 11-2** describes the data connection parameters of CSV files.

**Table 11-2** CSV file data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Access Key	Enter the AK. Obtain it by referring to <a href="#">Obtaining AK and SK</a> .
Secret Access Key	Enter the SK. Obtain it by referring to <a href="#">Obtaining AK and SK</a> .
File Source	Local files and OBS files are supported.
File Path	<ul style="list-style-type: none"> <li>If you set <b>File Source</b> to <b>Local files</b>, click <b>OBS</b> in <b>File Path</b>. In the displayed dialog box, select an OBS directory. The local files will be uploaded to the OBS directory first. See <a href="#">Figure 11-17</a>.</li> <li>If you set <b>File Source</b> to <b>OBS files</b>, click <b>OBS</b> in <b>File Path</b>. In the displayed dialog box, select the CSV file in the OBS bucket. See <a href="#">Figure 11-18</a>. For details about the CSV file format requirements, see <a href="#">CSV File Format Description</a>.</li> </ul> <p>Ensure that you have the read and write permissions on the specified OBS bucket.</p>

Parameter	Description
File	If you set <b>File Source</b> to <b>Local files</b> , click <b>Select File</b> . In the displayed dialog box, select the CSV file to be uploaded. Click <b>OK</b> . For details about the CSV file format requirements, see <a href="#">CSV File Format Description</a> .

- When **File Source** is set to **Local files**:

**Figure 11-17** Setting File Source to Local files

The screenshot shows a configuration dialog box with the following fields and controls:

- Name:** dlv\_csv
- Access Key:** [Redacted]
- Secret Access Key:** [Redacted]
- File Source:** Local files (dropdown menu)
- File Path:** obs-dlv/ (text input) and OBS (button)
- File:** A table with columns for file name, size, and status. The table contains one entry: Data.csv, 2.40KB, Wait. There is a close button (X) to the right of the table.
- Buttons:** OK (red) and Cancel (white) buttons at the bottom.

- When **File Source** is set to **OBS files**:



**Figure 11-19** Editing a screen

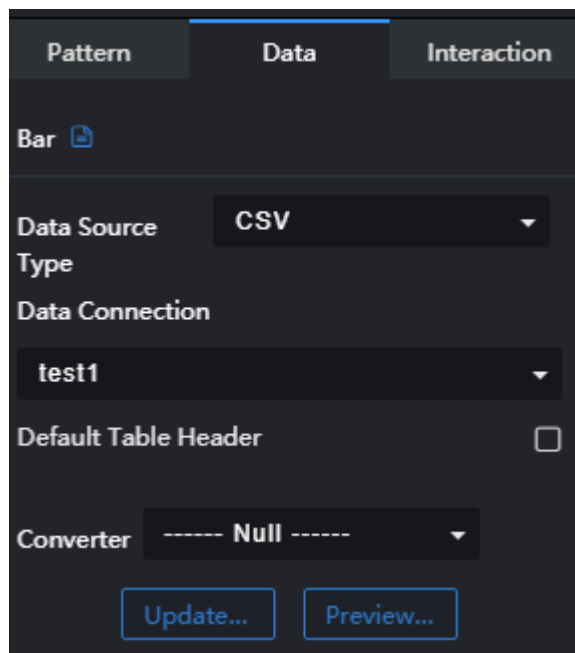


**Step 3** Select a component, for example, a bar chart. The component is displayed in the canvas. Click the component and then the **Data** panel on the right of the page.

**Step 4** Set the following parameters on the **Data** panel:

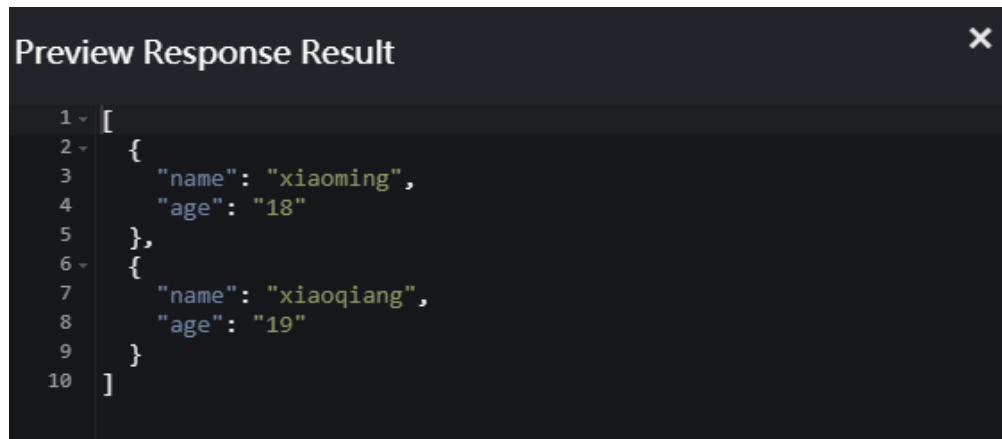
- **Data Source Type:** Set this parameter to **CSV**.
- **Data Connection:** Select a CSV file data connection from **Data Connection**.

**Figure 11-20** Selecting a CSV file data connection



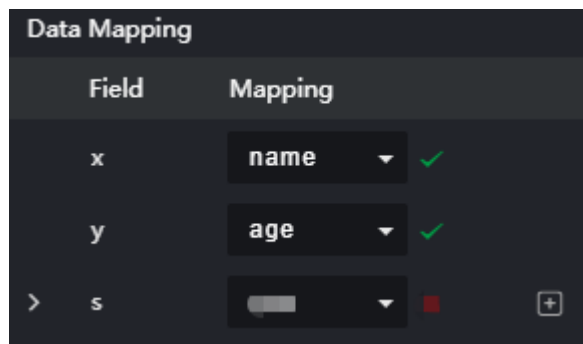
**Step 5** Click **Preview Response Result** to view the data response result.

**Figure 11-21** Viewing the response result

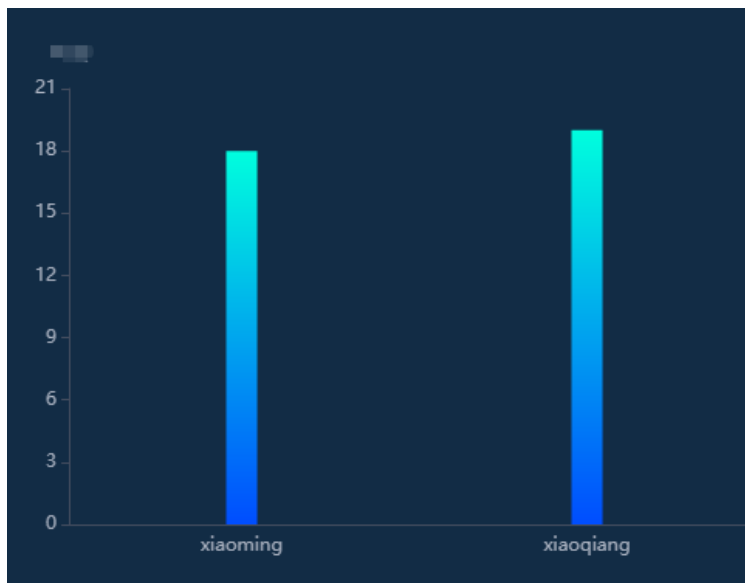


**Step 6** Configure the field mapping based on the attribute name of the response data. In this example, **x** is set to **name**, **y** is set to **age**, and **s** is left blank or set to any value.

**Figure 11-22** Configuring the mapping



**Step 7** View the effect of the configured screen component.

**Figure 11-23** Screen effect

----End

## 11.1.6 Creating Object Storage Service Data Connections

You can set up a data connection between DLV and Object Storage Service (OBS) to display data in CSV files stored on OBS on DLV screens. To connect to OBS, ensure that the following conditions are met:

- DLV and the OBS data source to be connected must be in the same region.
- You have obtained an Access Key (AK) and Secret Access Key (SK).  
For details about how to obtain them, see [Obtaining AK and SK](#).
- You have obtained OBS endpoints. For details, see [Regions and Endpoints](#).

### Obtaining AK and SK

- Step 1** Log in to the management console.
- Step 2** Mouse over the username in the upper right corner and select **My Credentials** from the drop-down list.
- Step 3** On the **My Credentials** page, click **Access Keys**.

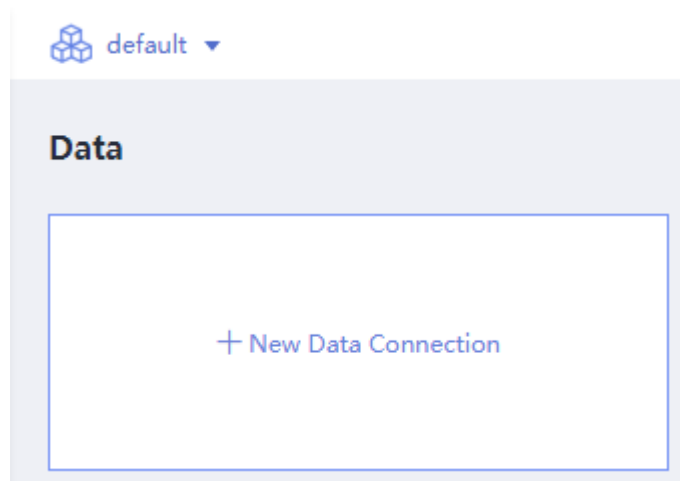
On the **Access Keys** page, you can view the existing AKs. To obtain both the AK and SK, click **Create Access Key** to create and download an access key. The downloaded key file contains the AK and SK.

----End

### Adding OBS Data Sources

- Step 1** Log in to the DLV console.
- Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

Figure 11-24 Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **Object Storage Service** and set the related parameters.

Figure 11-25 Creating an OBS data connection

**New Data Connection**

Data Source Type

- DWS
- MRS Hive
- MRS SparkSQL
- RDS for MySQL
- RDS for GaussDB T
- RDS for PostgreSQL
- GeminiDB for InfluxDB
- RDS for SQL Server
- CSV file
- OBS
- MySQL
- PostgreSQL

\* Name

\* Access Key

\* Secret Access Key

\* Endpoint  [View Endpoint](#)

**Table 11-3** describes the OBS data connection parameters.



**Table 11-3** OBS data connection parameters


Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Access Key	Enter the AK. Obtain it by referring to <a href="#">Obtaining AK and SK</a> .
Secret Access Key	Enter the SK. Obtain it by referring to <a href="#">Obtaining AK and SK</a> .
Endpoint	Enter the <b>OBS endpoint</b> based on the region of the OBS bucket where data is stored. Example: <b>obs.ap-southeast-1.myhuaweicloud.com</b>

**Step 4** Click **OK**.

----End

## Using OBS Data Sources

**Step 1** Log in to the DLV console and click the **Screens** tab.

**Step 2** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

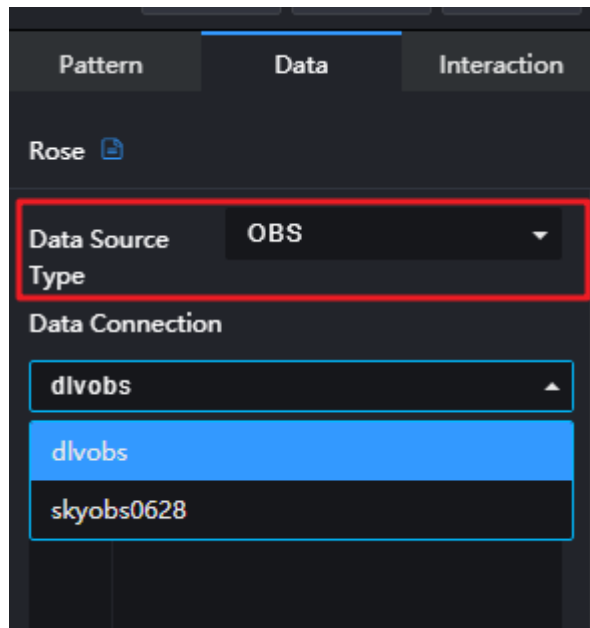
**Figure 11-26** Editing a screen



**Step 3** Select a rose chart component from the component list on the left, click the **Data** tab, and set **Data Source Type** to **OBS**.

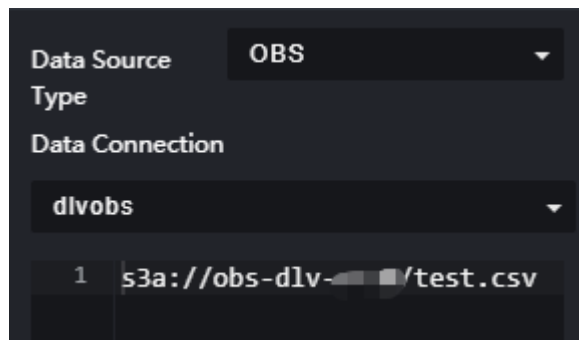
**Step 4** In the **Data Connection** drop-down list, select a created OBS data connection.

**Figure 11-27** Configuring the OBS data connection



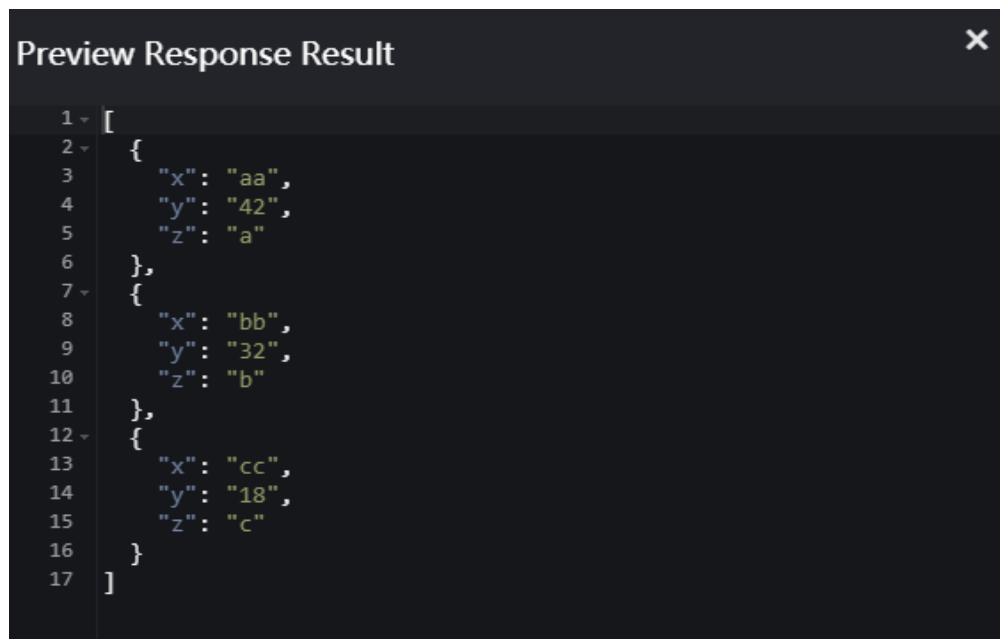
**Step 5** On the displayed OBS page, select the required OBS bucket and files and click **OK**. The system automatically enters the OBS file path in the text box.


**Figure 11-28** Automatically displaying OBS file path



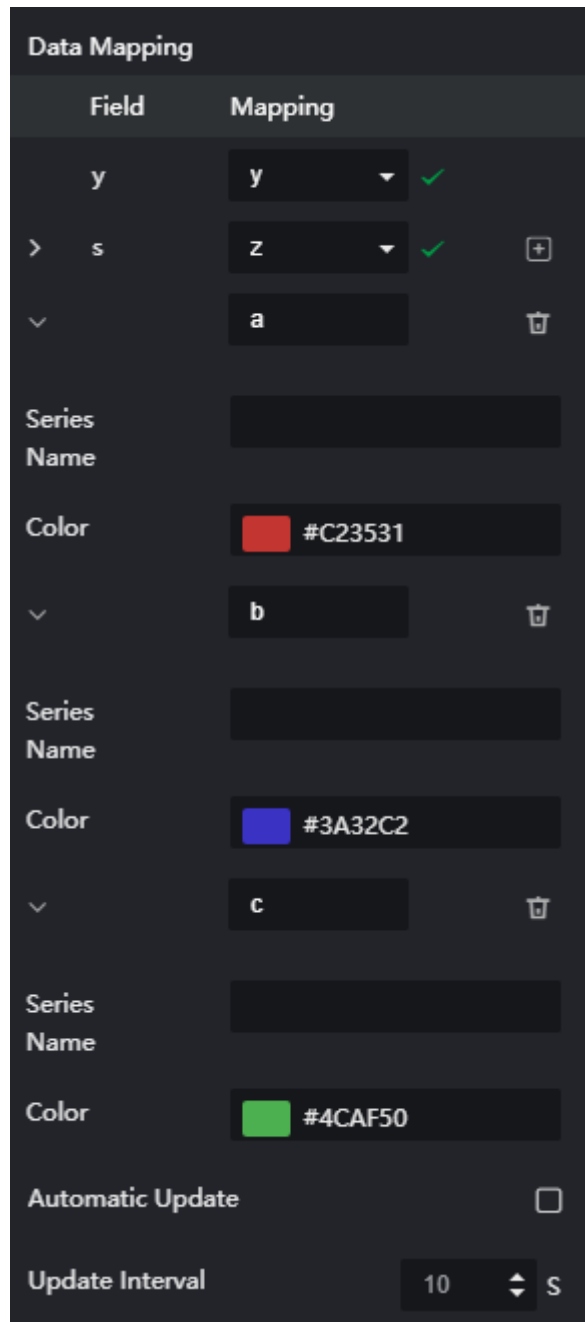
**Step 6** Click **Preview Response Result** to view the data response result.

Figure 11-29 Viewing the response result



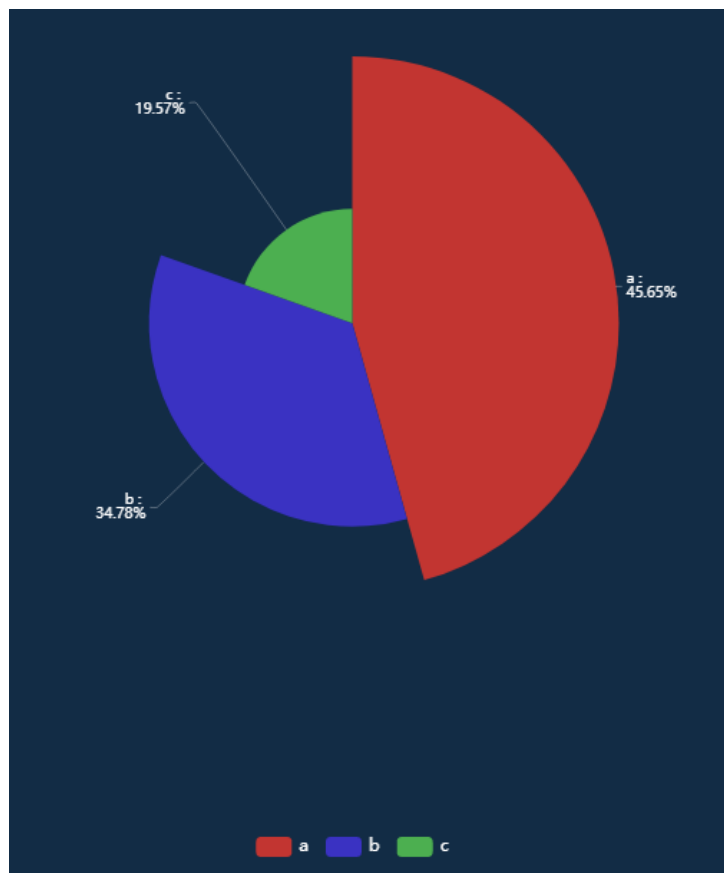
**Step 7** Based on the response data, set **y** to **y** and **s** to **z**. Click  on the right of **s** to add three series values which are all **z**, and set different display colors.

**Figure 11-30** Configuring the mapping



**Step 8** View the effect of the configured screen component.

Figure 11-31 Screen effect



----End

### 11.1.7 Creating Data Warehouse Service Data Connections

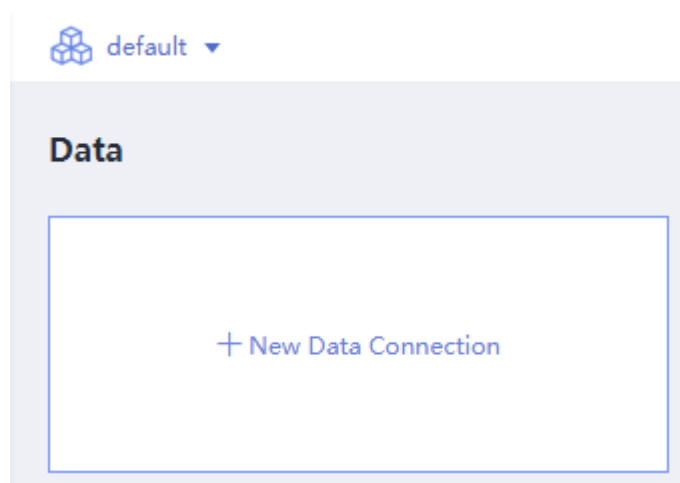
Before establishing a data connection to Data Warehouse Service (DWS), ensure that the following conditions are met:

- You have obtained the IP address, port number, username, and password of DWS.
- To enable network communication between DLV and DWS, you can use a VPC connection as a network proxy. Create a VPC connection by referring to instructions in [Managing VPC Connections](#).

#### Creating a DWS Data Connection

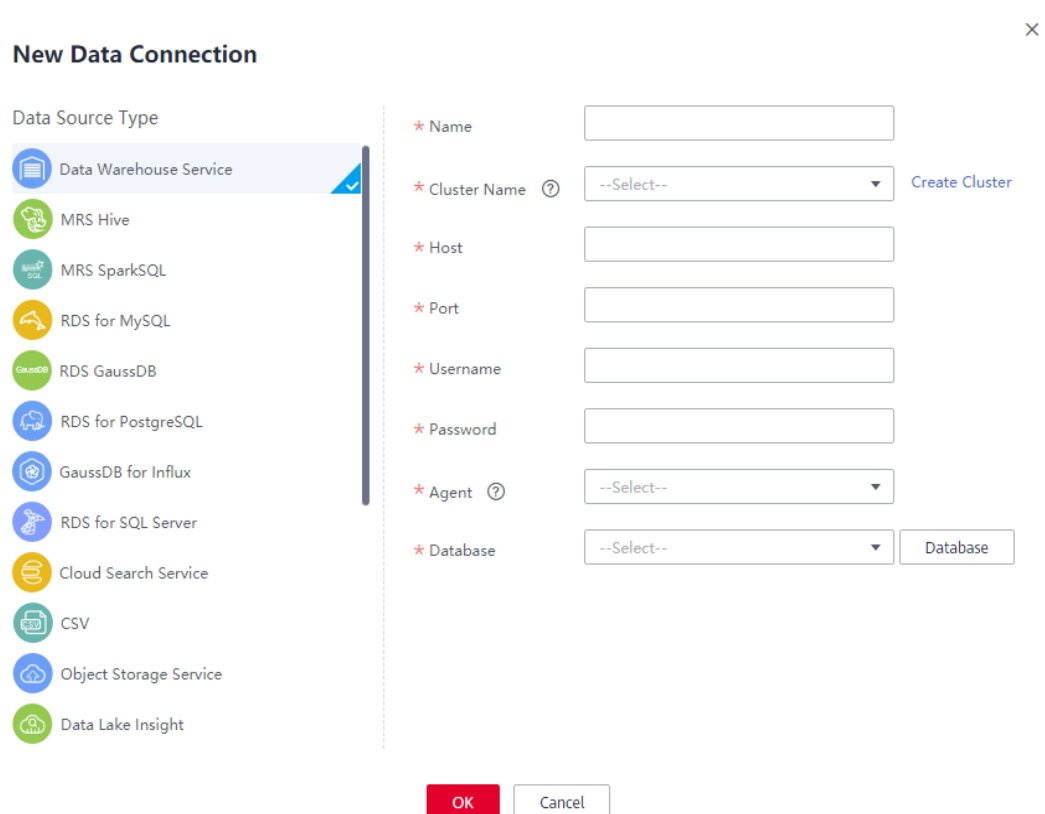
- Step 1** Log in to the DLV console.
- Step 2** In the navigation pane on the left, click **Data**.
- Step 3** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

Figure 11-32 Creating a data connection



**Step 4** In the **New Data Connection** dialog box, set **Data Source Type** to **DWS** and set the related parameters.

Figure 11-33 Creating a DWS data connection



**Table 11-4** DWS data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Cluster Name	Name of the DWS cluster. To create a DWS cluster, click <b>Create Cluster</b> next to the drop-down list.
Domain Name	After a DWS cluster is selected, an intranet domain name of a database will be automatically matched. The domain name is alterable.
Port	After a DWS cluster is selected, a database port will be automatically matched. The port is alterable.
Username	Username of the database. The database user must have permission to access data tables and metadata.
Password	Password of the database user.
Agent	Select an available connection agent. To use the VPC connection, create a VPC connection by referring to instructions in <a href="#">Managing VPC Connections</a> .
Database	You can select a database from the <b>Database</b> drop-down list. <b>NOTE</b> If there is no database displayed, check whether the database username and password are correct. Then, ensure that security group rules have been configured to allow database connections. Ensure that the CDM proxy and the DB instance are in the same VPC. If the fault persists, contact technical support. Currently, DLV cannot use CDM 2.9 or later as a proxy.


**Step 5** Click **OK**.

----End

## Using DWS Data Sources

The following example compares visits of a service in different channels through a pie chart.

**Step 1** Log in to the DLV console and click the **Screens** tab.

**Step 2** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

**Figure 11-34** Editing a screen

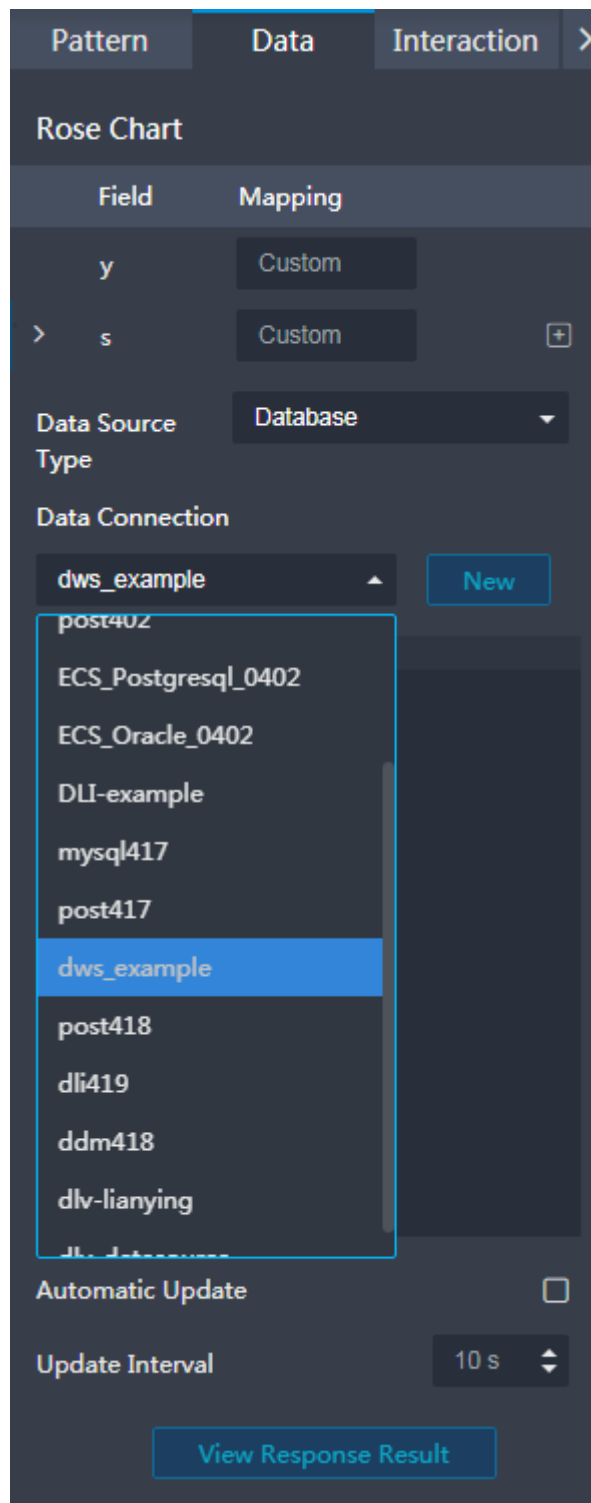


**Step 3** Select a pie chart component from the component list on the left, click the **Data** tab, and set **Data Source Type** to **Database**.

**Step 4** In the **Data Connection** drop-down list, select a created DWS data connection.

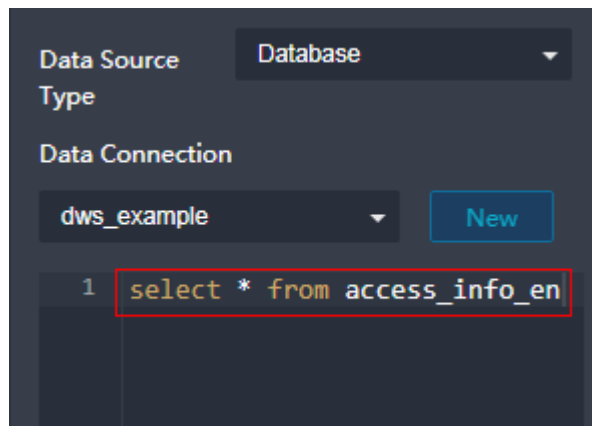


**Figure 11-35** Selecting a DWS data connection



**Step 5** Enter the SQL statement in the SQL editing box.

**Figure 11-36** Executing the SQL statement



**Step 6** Click **View Response Result** to view the data response result.

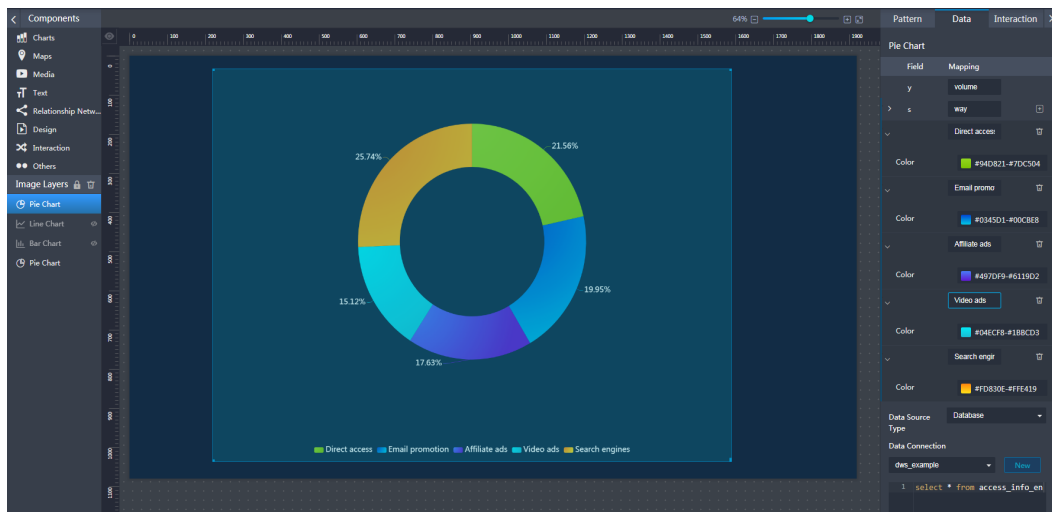
**Figure 11-37** Viewing the response result



**Step 7** Configure field mapping based on the response data.

Set **y** to **volume** and **s** to **way** and then set the legend color.

Figure 11-38 Screen effect



----End

### 11.1.8 Creating Data Lake Insight Data Connections

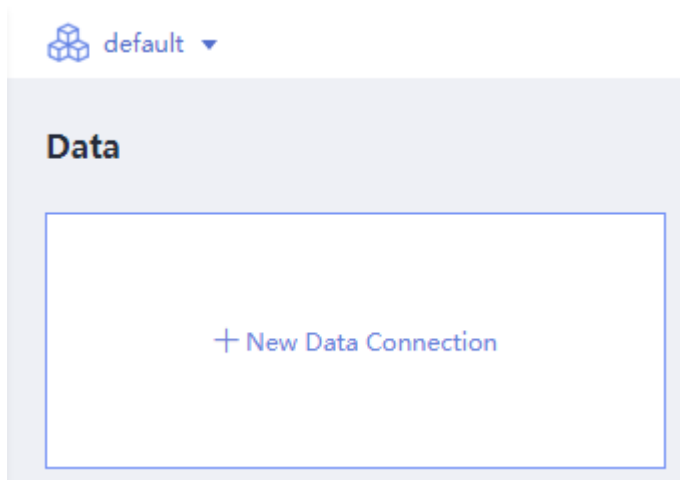
Before establishing a data connection to Data Lake Insight (DLI), ensure that the following condition is met:

- You have created DLI databases and resource queues.

#### Creating a DLI Data Connection

- Step 1** Log in to the DLV console.
- Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

Figure 11-39 Creating a data connection



- Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **DLI** and set the related parameters.

**Figure 11-40** Creating a DLI data connection

**Table 11-5** describes the DLI data connection parameters.

**Table 11-5** DLI data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Database	You can select a database from the <b>Database</b> drop-down list.
Resource Queue	Select an available DLI resource queue. <b>default</b> is the preset DLI resource queue.
Authorize Access	When you create a DLI data connection for the first time, you will be reminded to authorize access to DLI. After the authorization, you will not be asked to do so when you create DLI data connections later.

**Step 4** Click **OK**.

----End

## Using DLI Data Sources

You can configure and use DLI data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.9 Creating MRS Hive Data Connections

Before establishing a data connection to MapReduce (MRS) Hive, ensure that the following conditions are met:

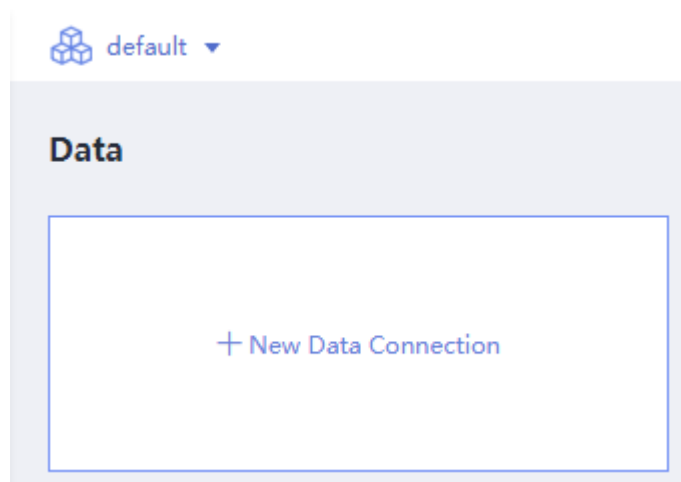
- An MRS cluster earlier than 2.0.0 has been created. The cluster contains Hive components. Kerberos authentication has been disabled for the MRS cluster. DLV does not support MRS Hive data sources with Kerberos authentication enabled.
- You have obtained the MRS Hive address.

#### Creating an MRS Hive Data Connection

**Step 1** Log in to the DLV console.

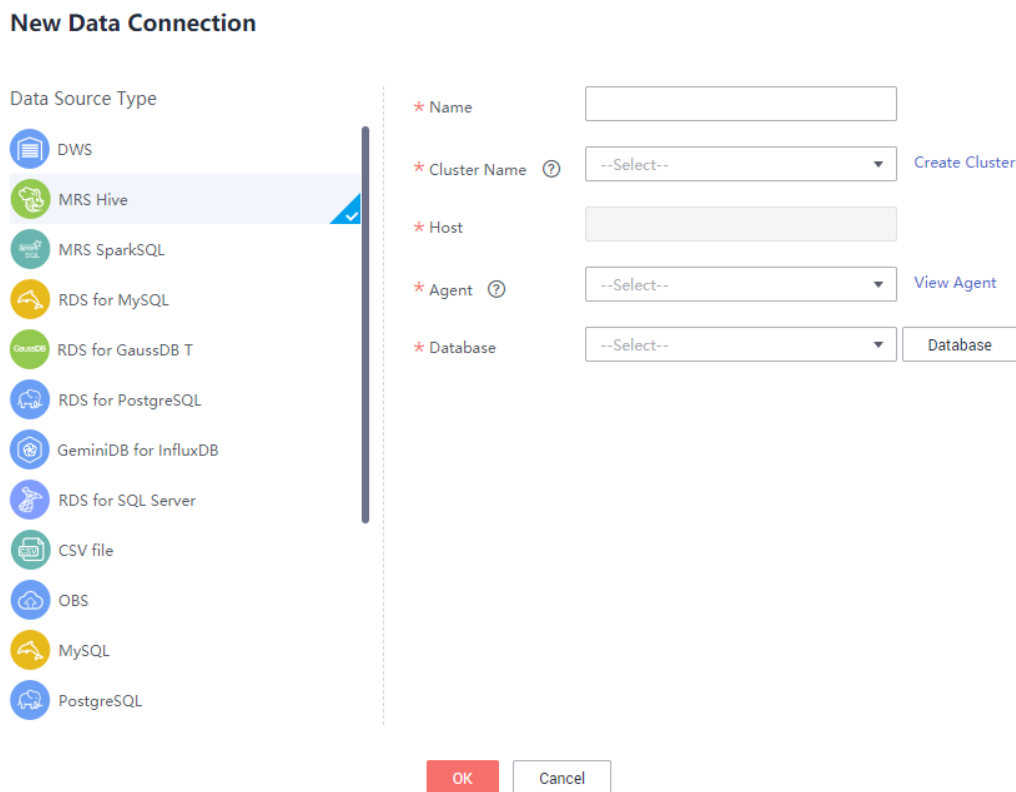
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-41** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **MRS Hive** and set the related parameters.

**Figure 11-42** Creating an MRS Hive data connection



**Table 11-6** MRS Hive data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Cluster Name	Name of the MRS cluster.
Domain Name	After an MRS cluster is selected, the preferred private IP address of the cluster will be automatically matched. The domain name cannot be changed.
Agent	Select an available connection agent.
Database	You can select a database from the <b>Database</b> drop-down list.

**Step 4** Click **OK**.

**----End**

## Using MRS Hive Data Sources

You can configure and use MRS Hive data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.10 Creating MRS SparkSQL Data Connections

Before establishing a data connection to MRS SparkSQL, ensure that the following conditions are met:

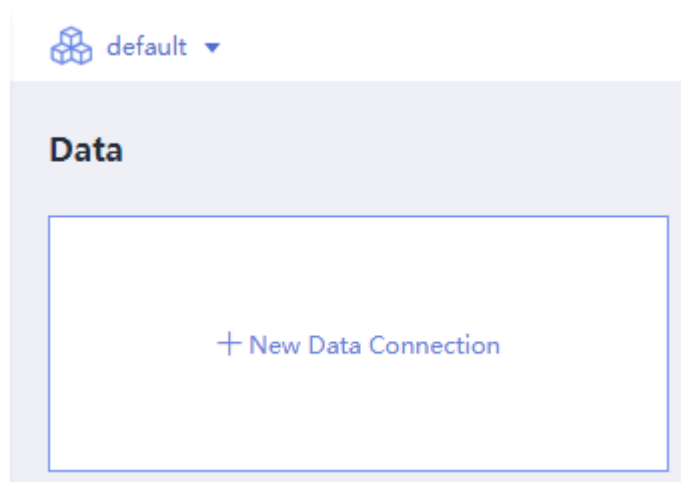
- You have created an MRS cluster of a version earlier than 2.x that is deployed with Spark, and Kerberos authentication has been disabled for the MRS cluster. DLV does not support MRS SparkSQL data sources with Kerberos authentication enabled.
- You have obtained the MRS SparkSQL address.

#### Creating an MRS SparkSQL Data Connection

**Step 1** Log in to the DLV console.

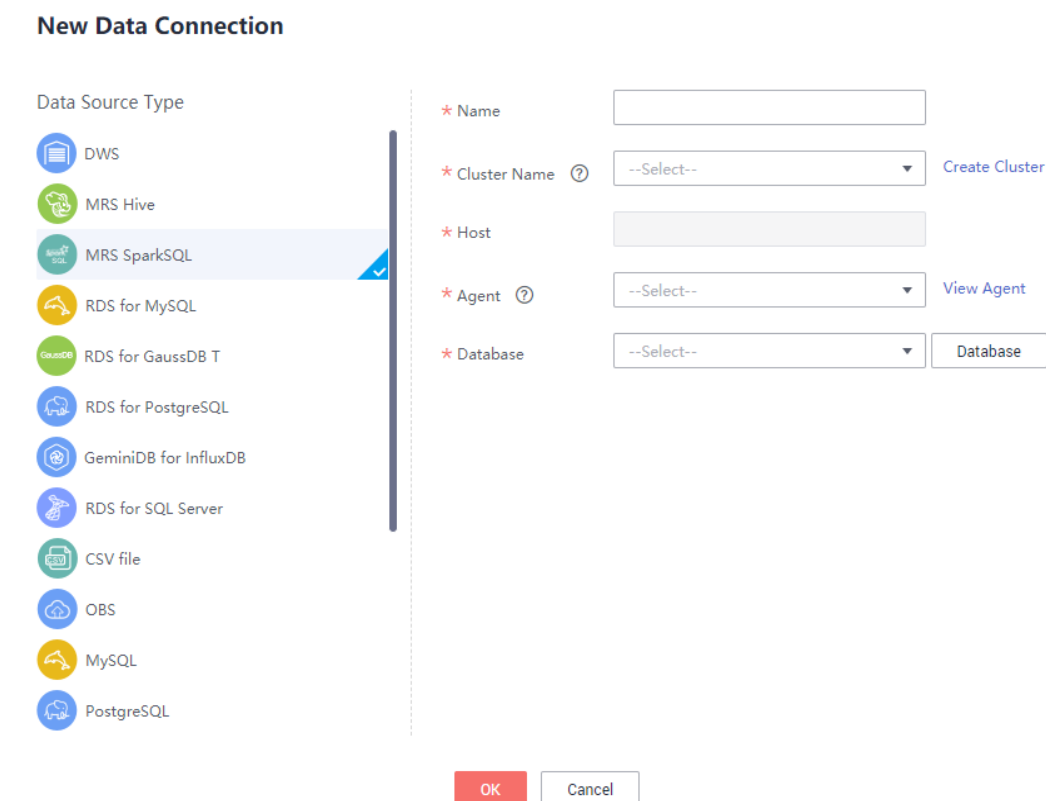
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-43** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **MRS SparkSQL** and set the related parameters.

**Figure 11-44** Creating an MRS SparkSQL data connection



**Table 11-7** describes the MRS SparkSQL data connection parameters.

**Table 11-7** MRS SparkSQL data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Cluster Name	Name of the MRS cluster.
Domain Name	After an MRS cluster is selected, the preferred private IP address of the cluster will be automatically matched. The domain name cannot be changed.
Agent	Select an available connection agent.
Database	You can select a database from the <b>Database</b> drop-down list.

**Step 4** Click **OK**.

----End



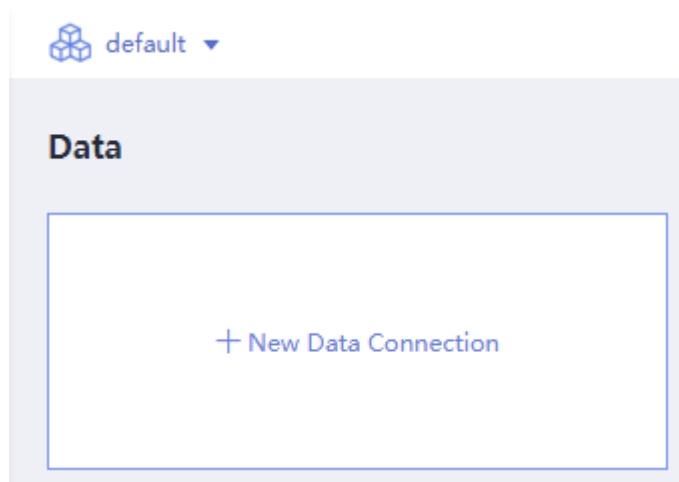
## Using MRS SparkSQL Data Sources

You can configure and use MRS SparkSQL data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.11 Creating ClickHouse Data Connections

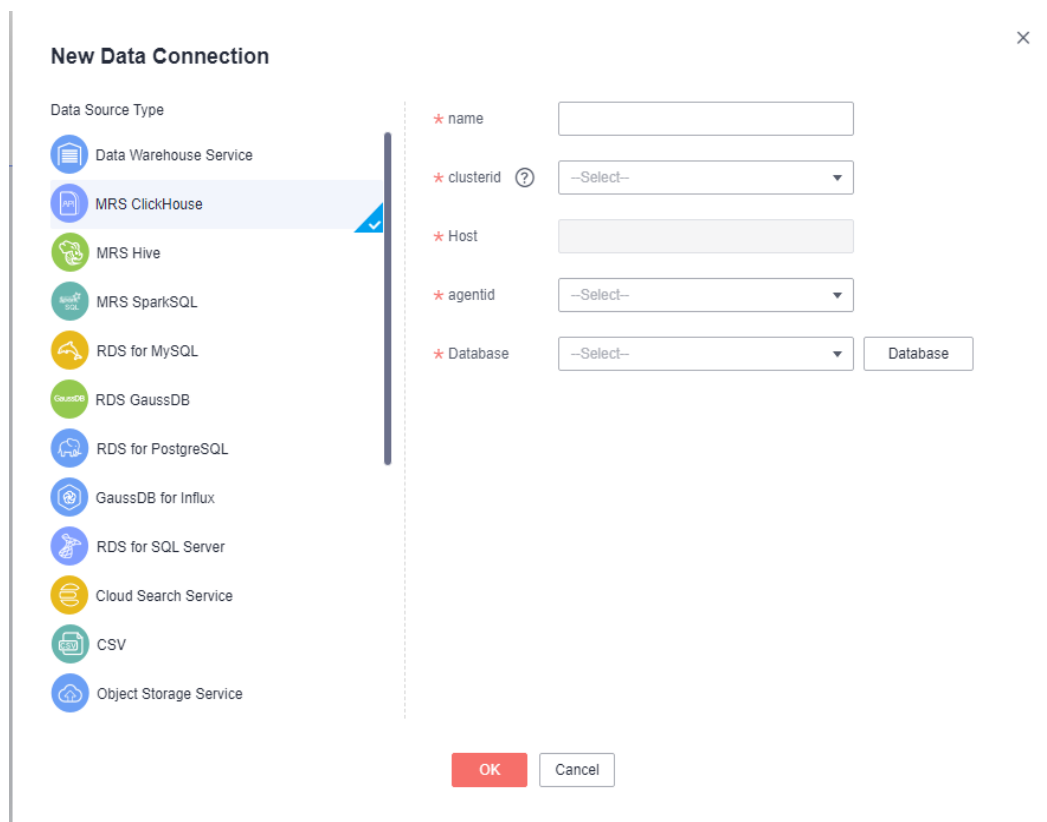
- Step 1** Log in to the DLV console.
- Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-45** Creating a data connection



- Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **MRS ClickHouse** and set the related parameters.

**Figure 11-46** Creating a ClickHouse data connection



To connect to ClickHouse, configure the parameters as described in [Table 11-8](#).

**Table 11-8** ClickHouse data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Cluster ID	ID of the MRS cluster.
Host	After an MRS cluster is selected, the preferred private IP address of the cluster will be automatically matched. The domain name cannot be changed.
Agent	Select an available connection agent.
Database	You can select a database from the <b>Database</b> drop-down list.

**Step 4** Click **OK**.

----End

## Using MRS ClickHouse Data Sources

You can configure and use MRS ClickHouse data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.12 Creating RDS for MySQL Data Connections

Before establishing a data connection to Relational Database Service (RDS) for MySQL, ensure that the following conditions are met:

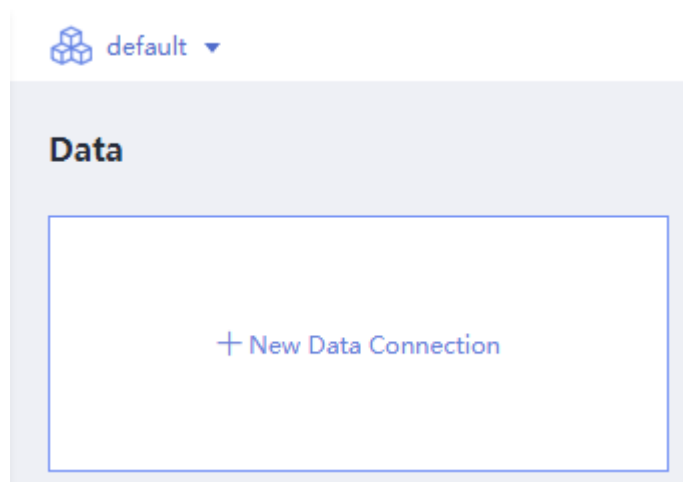
- You have obtained the address, port number, username, and password of RDS for MySQL.
- To enable network communication between DLV and RDS, you can use a VPC connection as a network proxy. Create a VPC connection by referring to instructions in [Managing VPC Connections](#).

#### Creating an RDS for MySQL Data Connection

**Step 1** Log in to the DLV console.

**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-47** Creating a data connection















**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **RDS for MySQL** and set the related parameters.

**Figure 11-48** Creating an RDS for MySQL data connection

**New Data Connection**

Data Source Type

-  DWS
-  MRS Hive
-  MRS SparkSQL
-  RDS for MySQL
-  RDS for GaussDB T
-  RDS for PostgreSQL
-  GeminiDB for InfluxDB
-  RDS for SQL Server
-  CSV file
-  OBS
-  MySQL
-  PostgreSQL

\* Name

\* Instance ID

\* Host

\* Port

\* Username

\* Password

\* Agent  [View Agent](#)

\* Database

**Table 11-9** describes the RDS for MySQL data connection parameters.

**Table 11-9** RDS for MySQL data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Instance ID	ID of the database instance.
Domain Name	After an instance ID is selected, an intranet IP address of a database is automatically matched. The domain name cannot be changed.
Port	After an instance ID is selected, a database port is automatically matched. The port cannot be changed.
Username	Username of the database. The database user must have permission to access data tables and metadata.
Password	Password of the database user.

Parameter	Description
Agent	Select an available connection agent, such as VPC connection, CDM proxy, or Internet. To use the VPC connection, create a VPC connection by referring to instructions in <a href="#">Managing VPC Connections</a> .
Database	You can select a database from the <b>Database</b> drop-down list.

**Step 4** Click **OK**.

----End

## Using RDS for MySQL Data Sources

You can configure and use RDS for MySQL data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.13 Creating RDS for PostgreSQL Data Connections

Before establishing a data connection to RDS for PostgreSQL, ensure that the following conditions are met:

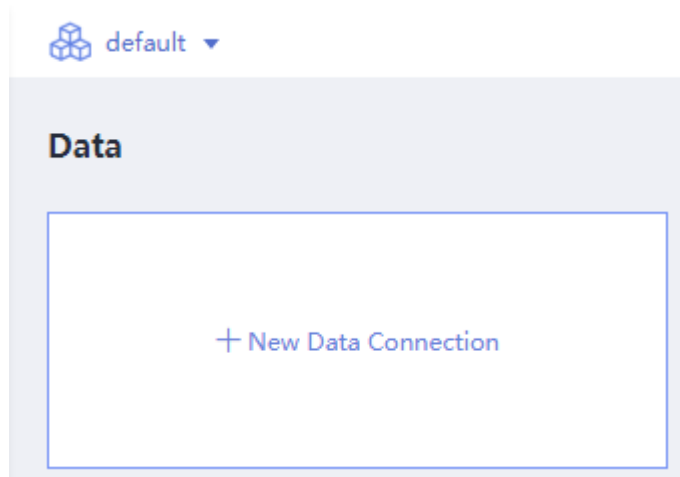
- You have obtained the address, port number, username, and password of RDS for PostgreSQL.
- To enable network communication between DLV and RDS, you can use a VPC connection as a network proxy. Create a VPC connection by referring to instructions in [Managing VPC Connections](#).

## Creating an RDS PostgreSQL Data Connection

**Step 1** Log in to the DLV console.

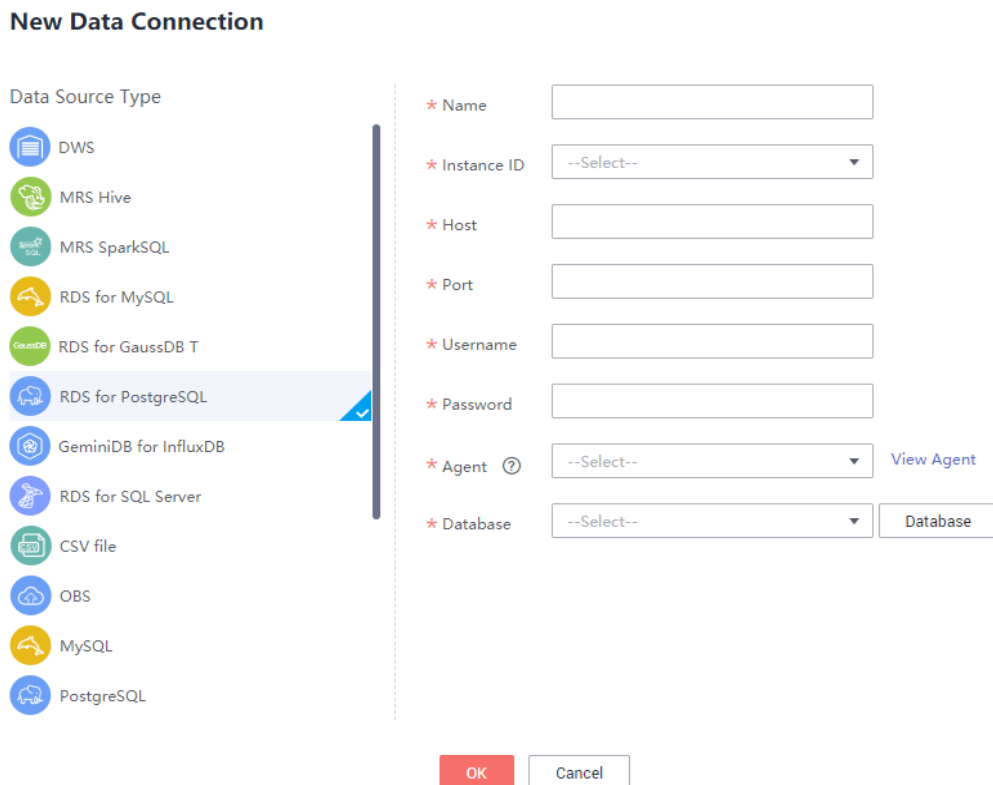
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-49** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **RDS for PostgreSQL** and set the related parameters.

**Figure 11-50** Creating an RDS for PostgreSQL data connection



**Table 11-10** describes the RDS for PostgreSQL data connection parameters.

**Table 11-10** RDS for PostgreSQL data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Instance ID	ID of the database instance.
Domain Name	After an instance ID is selected, an intranet IP address of a database is automatically matched. The domain name cannot be changed.
Port	After an instance ID is selected, a database port is automatically matched. The port cannot be changed.
Username	Username of the database. The database user must have permission to access data tables and metadata.
Password	Password of the database user.

Parameter	Description
Agent	Select an available connection agent, such as VPC connection, CDM proxy, or Internet. To use the VPC connection, create a VPC connection by referring to instructions in <a href="#">Managing VPC Connections</a> .
Database	You can select a database from the <b>Database</b> drop-down list.

**Step 4** Click **OK**.

----End

## Using RDS for PostgreSQL Data Sources

You can configure and use RDS for PostgreSQL data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.14 Creating RDS for SQL Server Data Connections

Before establishing a data connection to RDS for SQL Server, ensure that the following conditions are met:

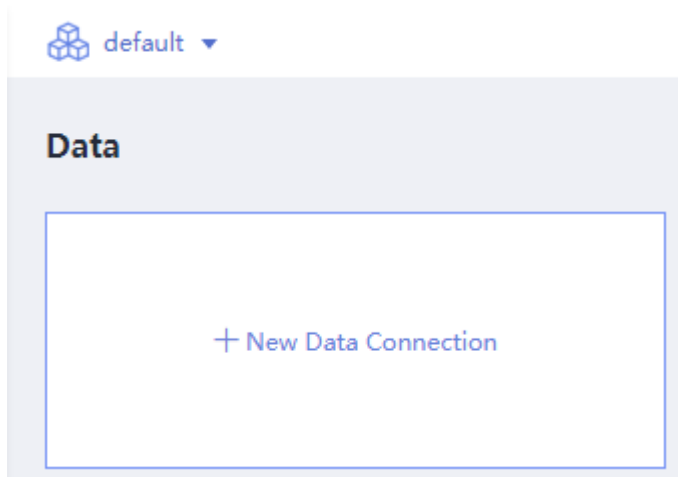
- You have obtained the address, port number, username, and password of RDS for SQL Server.
- To enable network communication between DLV and RDS, you can use a VPC connection as a network proxy. Create a VPC connection by referring to instructions in [Managing VPC Connections](#).

## Creating an RDS for SQL Server Data Connection

**Step 1** Log in to the DLV console.

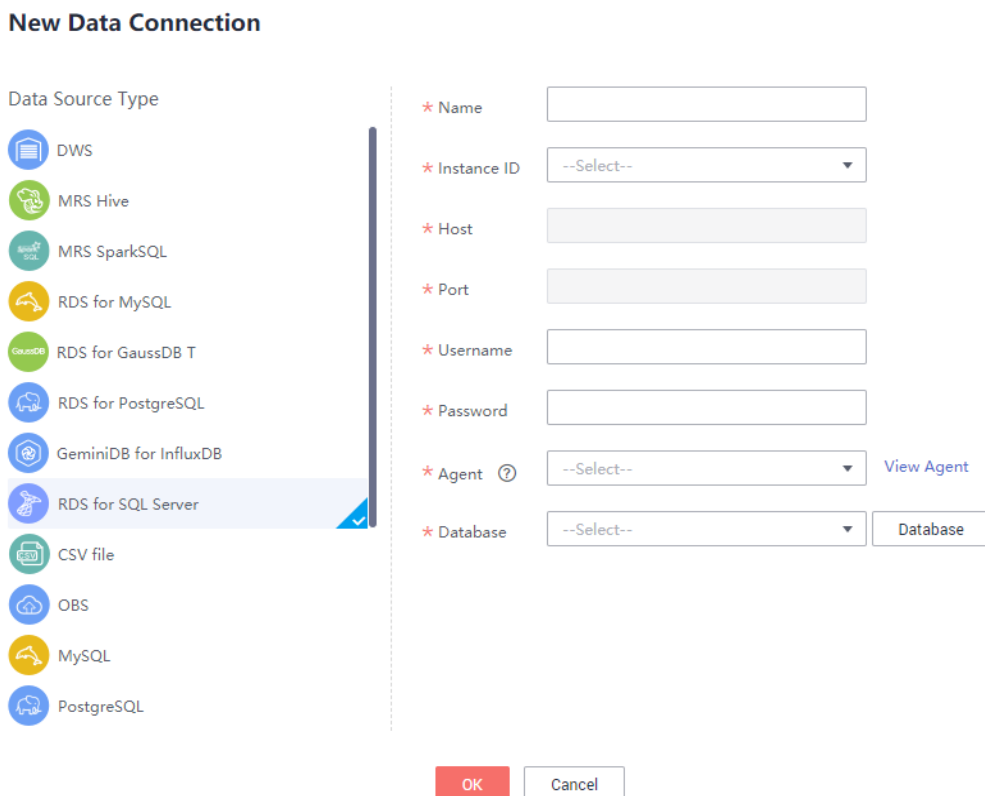
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-51** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **RDS for SQL Server** and set the related parameters.

**Figure 11-52** Creating an RDS for SQL Server data connection



**Table 11-11** describes the RDS for SQL Server data connection parameters.

**Table 11-11** RDS for SQL Server data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Instance ID	ID of the database instance.
Domain Name	After an instance ID is selected, an intranet IP address of a database is automatically matched. The domain name cannot be changed.
Port	After an instance ID is selected, a database port is automatically matched. The port cannot be changed.
Username	Username of the database. The database user must have permission to access data tables and metadata.
Password	Password of the database user.



Parameter	Description
Agent	Select an available connection agent, such as VPC connection, CDM proxy, or Internet. To use the VPC connection, create a VPC connection by referring to instructions in <a href="#">Managing VPC Connections</a> .
Database	You can select a database from the <b>Database</b> drop-down list.

**Step 4** Click **OK**.

----End

## Using RDS for SQL Server Data Sources

You can configure and use RDS for SQL Server data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.15 Creating RDS for GaussDB Data Connections

Before establishing a data connection to RDS for GaussDB, ensure that the following conditions are met:

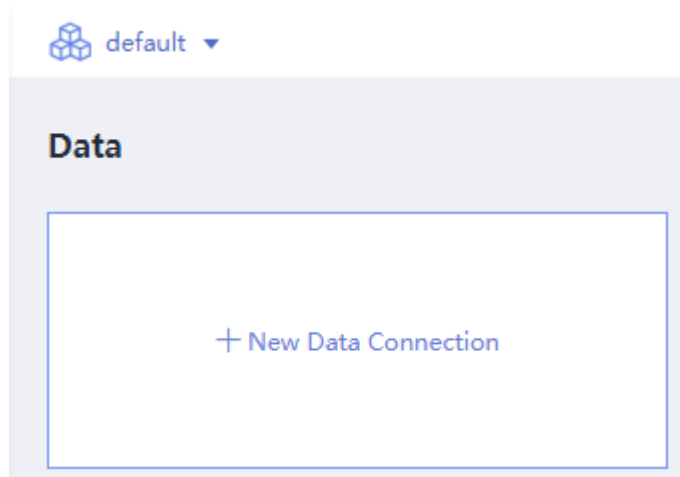
- You have obtained the IP address, port number, username, and password of RDS for GaussDB.
- To enable network communication between DLV and RDS, you can use a VPC connection as a network proxy. Create a VPC connection by referring to instructions in [Managing VPC Connections](#).

## Creating an RDS for GaussDB Data Connection

**Step 1** Log in to the DLV console.

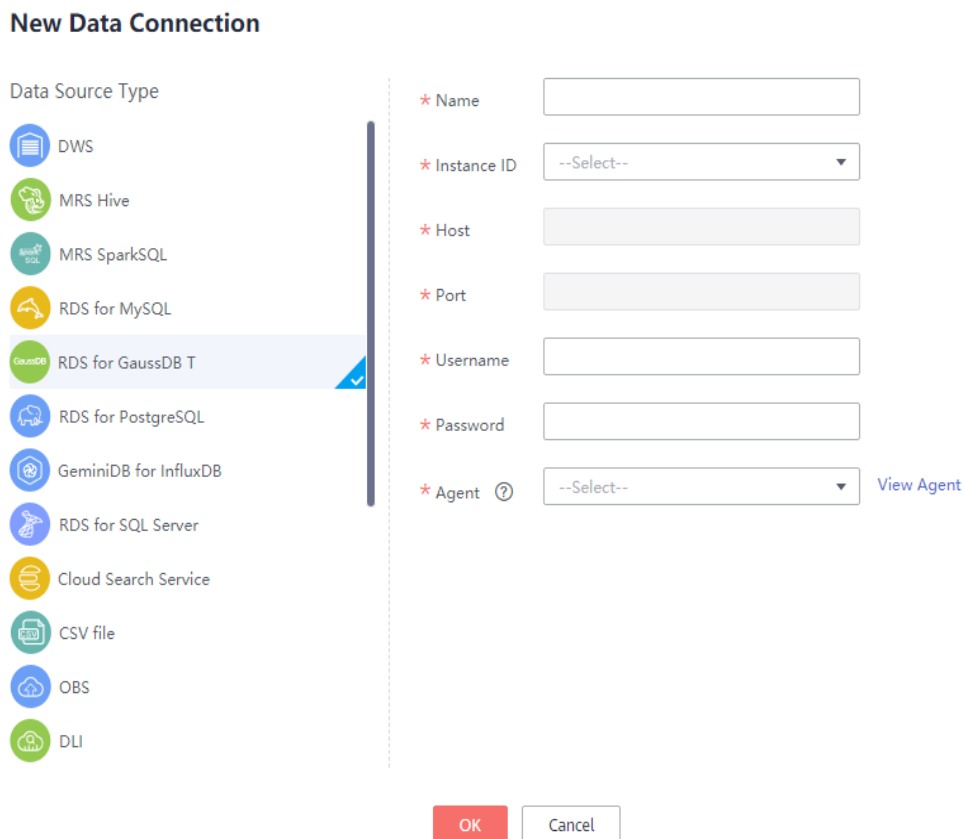
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-53** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **RDS for GaussDB** and set the related parameters.

**Figure 11-54** Creating an RDS for GaussDB data connection



**Table 11-12** describes the RDS for GaussDB data connection parameters.

**Table 11-12** RDS for GaussDB data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Instance ID	ID of the database instance.
Host	After an instance ID is selected, an intranet IP address of a database is automatically matched. The domain name cannot be changed.
Port	After an instance ID is selected, a database port is automatically matched. The port cannot be changed.

Parameter	Description
Username	Username of the database. The database user must have permission to access data tables and metadata.
Password	Password of the database user.
Agent	Select an available connection agent, such as VPC connection, CDM proxy, or Internet. To use the VPC connection, create a VPC connection by referring to instructions in <a href="#">Managing VPC Connections</a> .

**Step 4** Click **OK**.

----End

## Using GaussDB Data Sources

You can configure and use GaussDB data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.16 Creating GeminiDB Influx API Data Connections

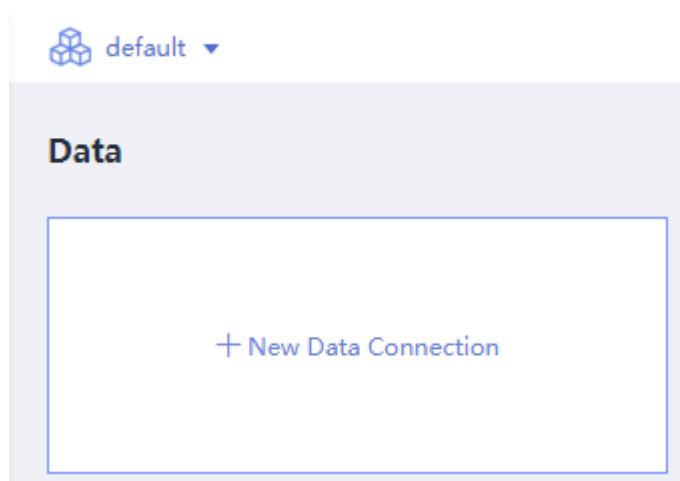
Before establishing a data connection to GeminiDB Influx API, ensure that the following conditions are met:

- You have obtained the IP address, port number, username, and password of GeminiDB Influx API.
- To enable network communication between DLV and RDS, you can use a VPC connection as a network proxy. Create a VPC connection by referring to instructions in [Managing VPC Connections](#).

#### Creating a GeminiDB Influx API Data Connection

**Step 1** Log in to the DLV console.

**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-55** Creating a data connection

**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **GeminiDB Influx API** and set related parameters.

When connecting to GeminiDB Influx API, set parameters according to [Table 11-13](#).

**Table 11-13** GeminiDB Influx API data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Host	Intranet IP address of the GeminiDB for InfluxDB instance to be connected.
Port	Port of the GeminiDB for InfluxDB instance to be connected.
Username	Username of the database. The database user must have permission to access data tables and metadata.
Password	Password of the database user.
Agent	Select an available connection agent, such as VPC connection, CDM proxy, or Internet. To use the VPC connection, create a VPC connection by referring to instructions in <a href="#">Managing VPC Connections</a> .
Database	You can select a database from the <b>Database</b> drop-down list.

**Step 4** Click **OK**.

----End

## Using GeminiDB Influx API Data Sources

You can configure and use GeminiDB Influx API data sources by referring to [Using DWS Data Sources](#).

## 11.1.17 Creating Cloud Search Service Data Connections

Before establishing a data connection to Cloud Search Service (CSS), ensure that the following conditions are met:

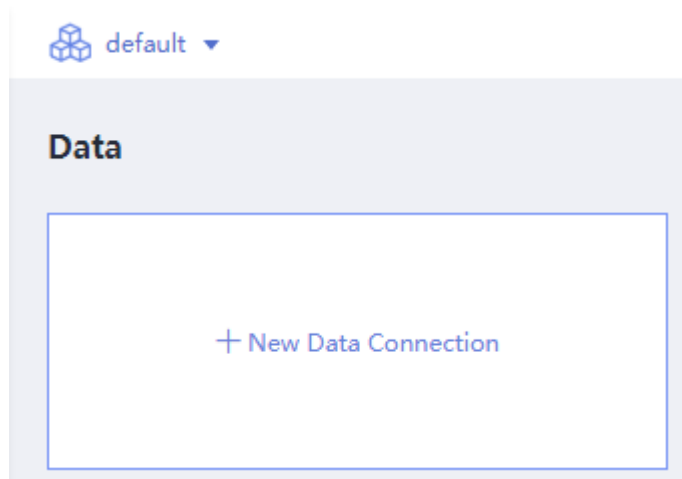
- You have obtained the IP address and port number of CSS.
- To enable network communication between DLV and CSS, you can use a VPC connection as a network proxy. Create a VPC connection by referring to instructions in [Managing VPC Connections](#).

### Creating CSS Data Connections

**Step 1** Log in to the DLV console.

**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-56** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **Cloud Search Service** and set the related parameters.

**Table 11-14** describes the CSS data connection parameters.

Figure 11-57 Creating a CSS data connection

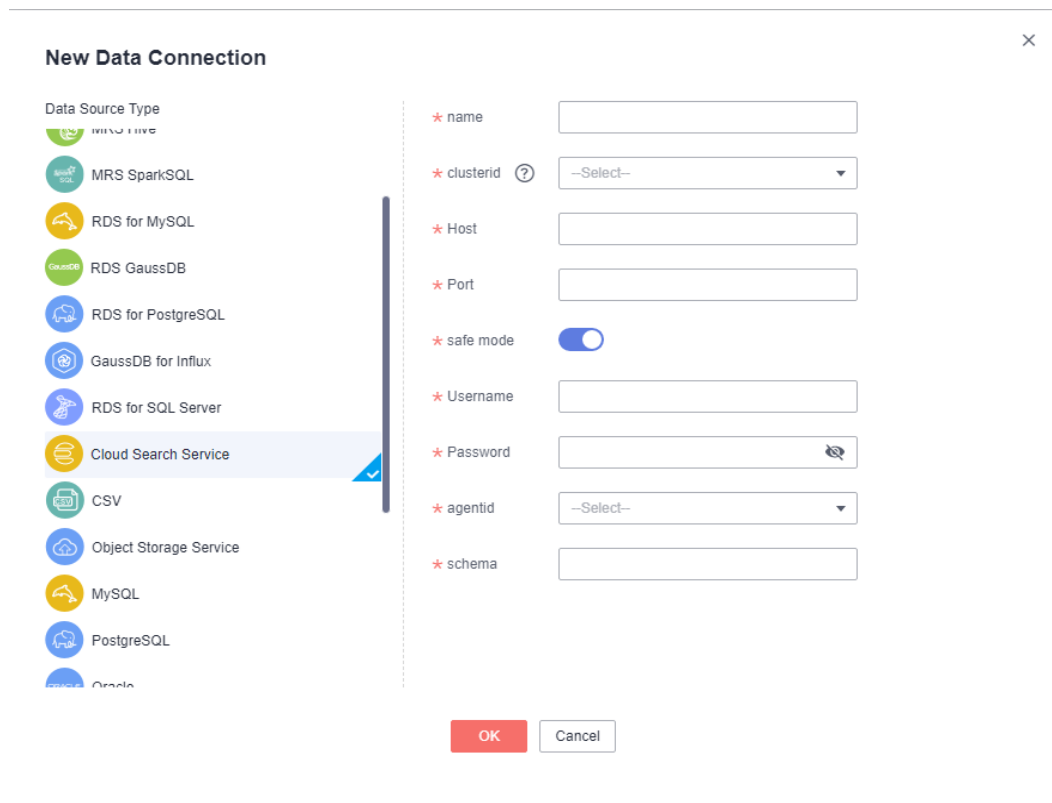


Table 11-14 CSS data connection parameters

Parameter	Description
name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
clusterid	Name of the CSS cluster to be connected.
Host	Intranet IP address of the CSS cluster to be connected.
Port	Port of the CSS cluster to be connected.
safe mode	Whether the security mode will be enabled for the CSS cluster you want to connect to. By default, the security mode is disabled.
Username	Administrator account of the CSS cluster. This parameter is valid only when <b>Security Mode</b> is available. The default value is <b>admin</b> .
Password	Administrator account of the CSS cluster. This parameter is valid only when <b>Security Mode</b> is available. The default value is <b>admin</b> .
Agent	Select an available connection agent, such as VPC connection, CDM proxy, or Internet. To use the VPC connection, create a VPC connection by referring to instructions in <a href="#">Managing VPC Connections</a> .
schema	Enter a mapping name that is different from the index name.

**Step 4** Click **OK**.

----End

## Using Cloud Search Service Data Sources

You can configure and use the Cloud Search Service data source by referring to [Using DWS Data Sources](#).

### 11.1.18 Creating a DAYU Data Connection

Before connecting to DAYU, ensure that the following conditions are met:

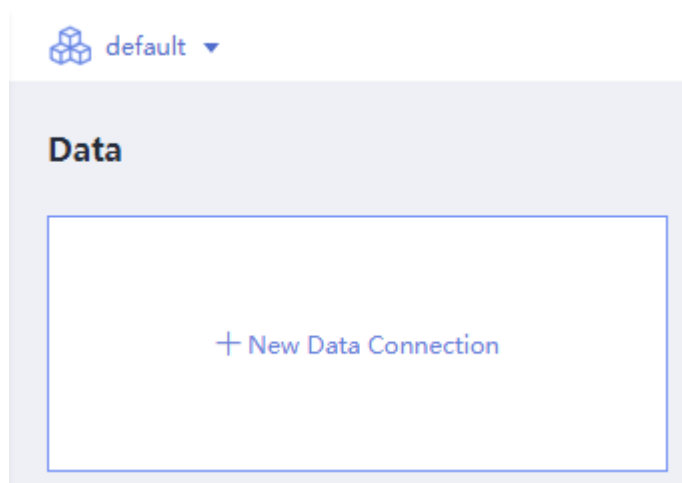
You have obtained the AppKey and AppSecret of the DAYU data source application.

#### Creating a DAYU Data Connection

**Step 1** Log in to the DLV console.

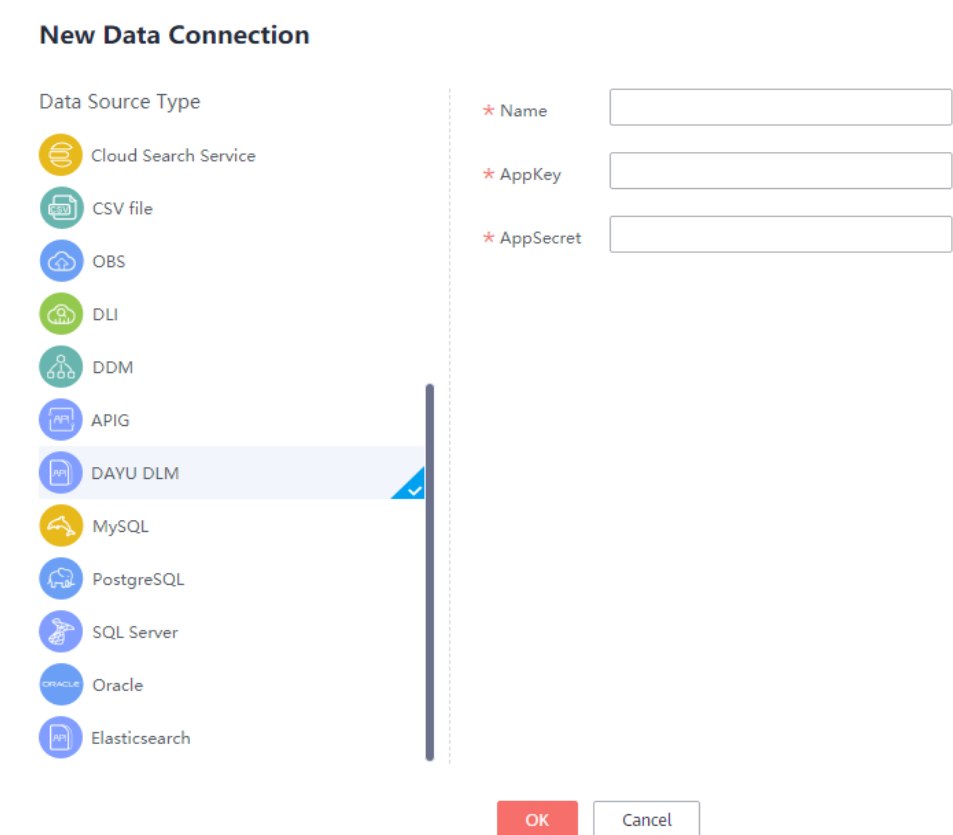
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-58** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **DAYU** and set related parameters.

**Figure 11-59** Creating a DAYU data connection



**Table 11-15** describes the DAYU data connection parameters.

**Table 11-15** DAYU data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
AppKey	Enter the AppKey of DAYU.
AppSecret	Enter the AppSecret of DAYU.

**Step 4** Click **OK**.

----End

## Using a DAYU Data Connection

You can configure and use DAYU data source by referring to the instructions in [Using API Data Sources](#).



## 11.1.19 Creating DDM Data Connections

Before establishing a data connection to Distributed Database Middleware (DDM), ensure that the following conditions are met:

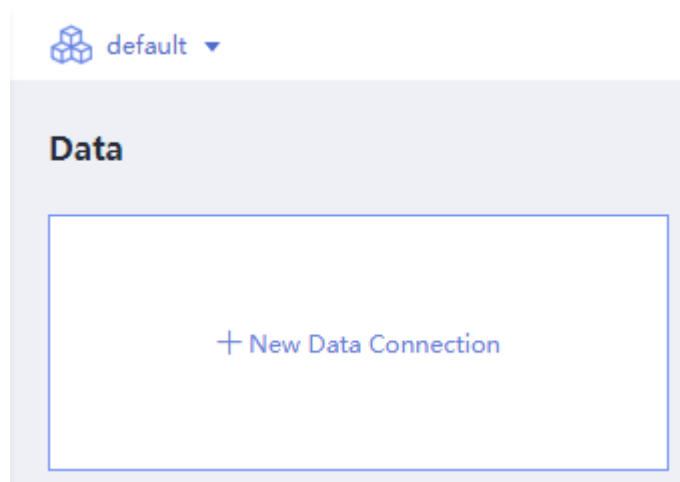
- You have obtained the IP address, username, and password of DDM.

### Creating a DDM Data Connection

**Step 1** Log in to the DLV console.

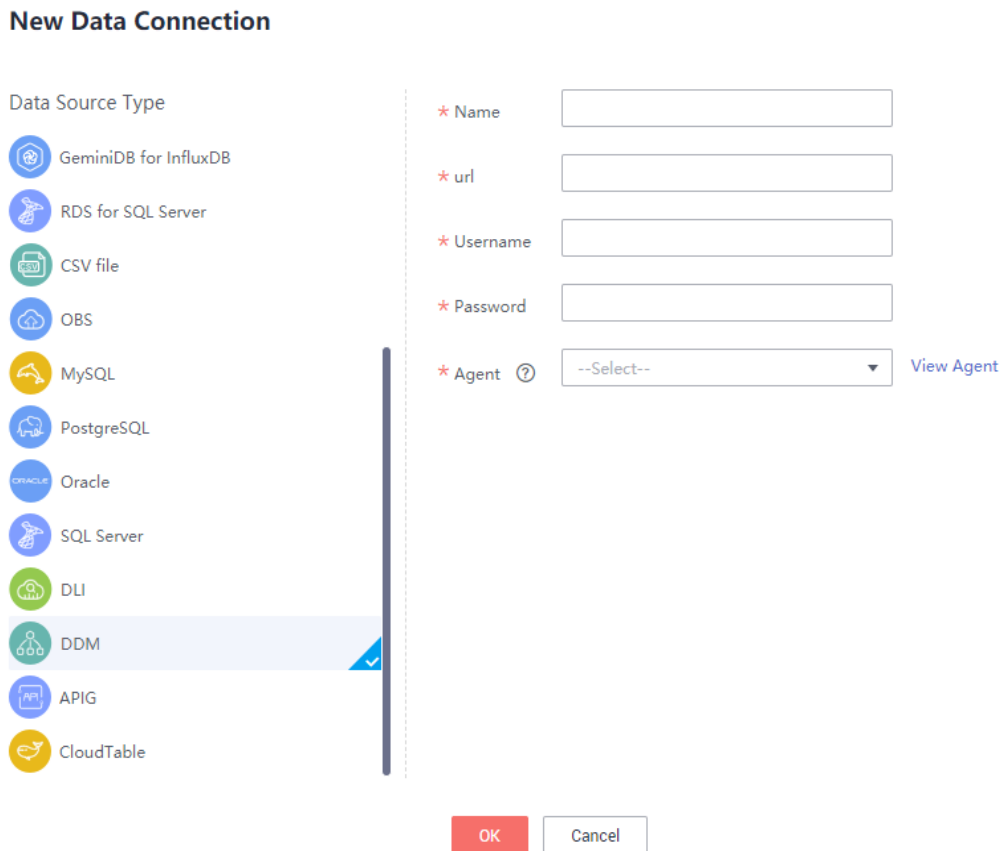
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-60** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **DDM** and set the related parameters.

**Figure 11-61** Creating a DDM data connection



**Table 11-16** describes the DDM data connection parameters.

**Table 11-16** DDM data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
URL	JDBC connection address of the DDM schema. For details about how to obtain the URL, see "How Do I Obtain a JDBC Connection Address of a DDM Schema?" in <i>DLV FAQs</i> .
Username	Username of the schema. The schema user must have permission to access data tables and metadata.
Password	Password of the schema user.
Agent	Select an available connection agent.

**Step 4** Click **OK**.

----End

## Using DDM Data Sources

You can configure and use DDM data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.20 Creating Oracle Data Connections

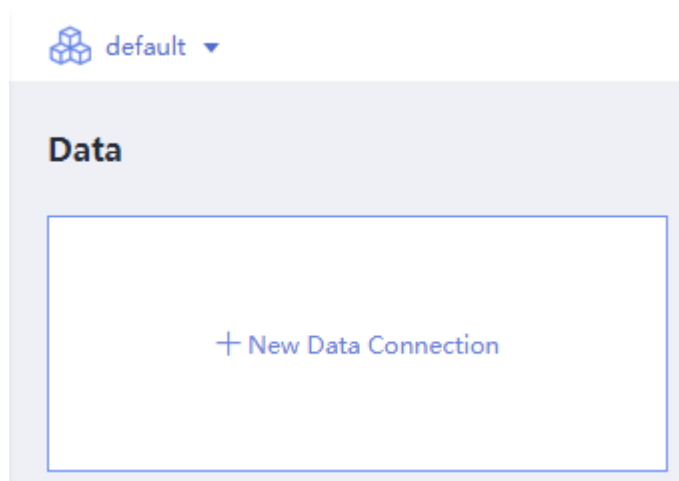
Before establishing a data connection to Oracle, ensure that the following condition is met:

You have obtained the IP address, port number, username, password, and service name of Oracle.

#### Creating an Oracle Data Connection

- Step 1** Log in to the DLV console.
- Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-62** Creating a data connection















- Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **Oracle** and set the related parameters.

**Figure 11-63** Creating an Oracle data connection

**New Data Connection**

Data Source Type

-  GeminiDB for InfluxDB
-  RDS for SQL Server
-  CSV file
-  OBS
-  MySQL
-  PostgreSQL
-  Oracle ✓
-  SQL Server
-  DLI
-  DDM
-  APIG
-  CloudTable

\* Name

\* Host

\* Port

\* Username

\* Password

\* Service Name

\* Agent ?  [View Agent](#)

[Creating Oracle Data Connections](#) describes the Oracle data connection parameters.

**Table 11-17** Oracle data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Domain Name	IP address of the database.
Port	Port of the database.
Username	Username of the database. The database user must have permission to access data tables and metadata.
Password	Password of the database user.
Service Name	Service name of the database.

Parameter	Description
Agent	Select an available connection agent.

**Step 4** Click **OK**.

----End

## Using Oracle Data Sources

You can configure and use Oracle data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.21 Creating MySQL Data Connections

Before establishing a data connection to a MySQL database, create a MySQL data connection first.

#### Prerequisites

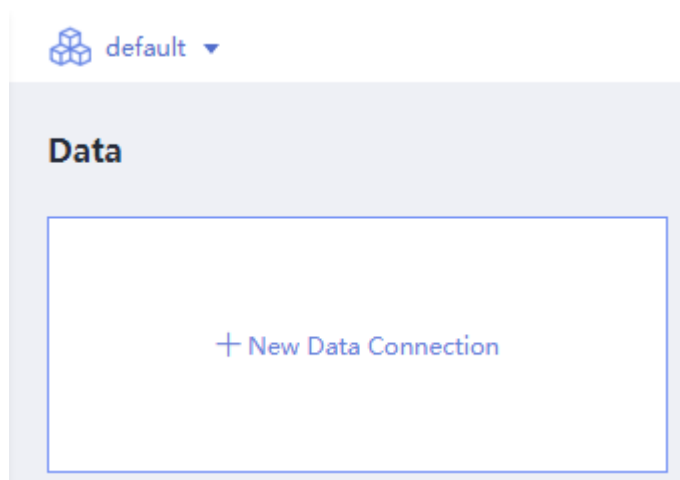
- You have obtained the IP address and port number of the MySQL data source, and the username and password for logging in to the MySQL database. In addition, you must have the SELECT permission on the database to be connected.

#### Creating a MySQL Data Connection

**Step 1** Log in to the DLV console.

**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-64** Creating a data connection















**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **MySQL** and set the related parameters.

**Figure 11-65** Creating a MySQL data connection

**New Data Connection**

Data Source Type

-  DWS
-  MRS Hive
-  MRS SparkSQL
-  RDS for MySQL
-  RDS for GaussDB T
-  RDS for PostgreSQL
-  GeminiDB for InfluxDB
-  RDS for SQL Server
-  CSV file
-  OBS
-  MySQL
-  PostgreSQL

\* Name

\* Host

\* Port

\* Username

\* Password

\* Agent ?  [View Agent](#)

\* Database

**Table 11-18** describes the MySQL data connection parameters.

**Table 11-18** MySQL data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Domain Name	IP address of the database. Private zones are not supported.
Port	Port of the database.
Username	Username of the database. The database user must have permission to access data tables and metadata.
Password	Password of the database user.
Agent	Select an available connection agent.
Database	You can select a database from the <b>Database</b> drop-down list.

**Step 4** Click **OK**.

----End

## Using MySQL Data Sources

You can configure and use the MySQL data source by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.22 Creating PostgreSQL Data Connections

Before establishing a data connection to PostgreSQL, ensure that the following condition is met:

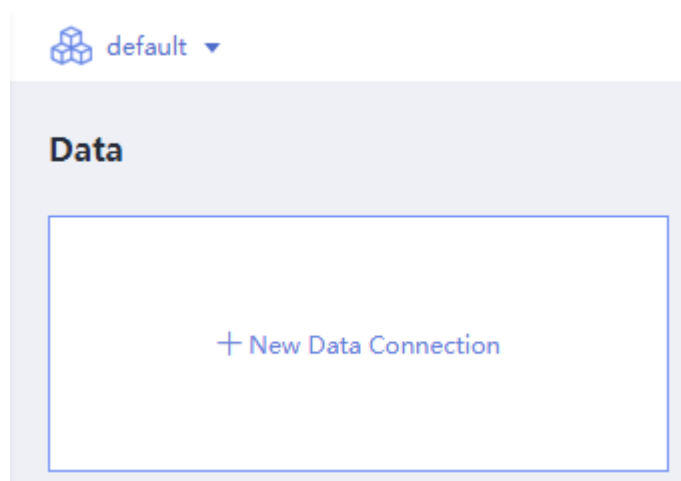
- You have obtained the address, port number, username, and password of PostgreSQL.

#### Creating a PostgreSQL Data Connection

**Step 1** Log in to the DLV console.

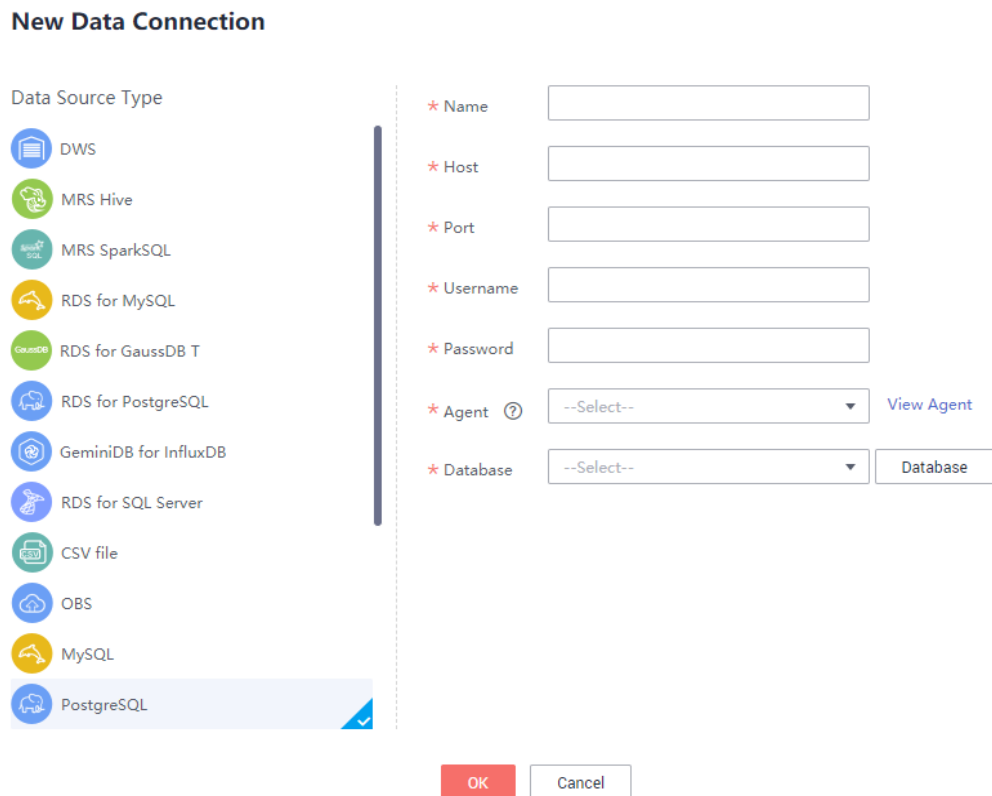
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-66** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **PostgreSQL** and set the related parameters.

**Figure 11-67** Creating a PostgreSQL data connection



**Table 11-19** describes the PostgreSQL data connection parameters.

**Table 11-19** PostgreSQL data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Domain Name	IP address of the database.
Port	Port of the database.
Username	Username of the database. The database user must have permission to access data tables and metadata.
Password	Password of the database user.
Agent	Select an available connection agent.
Database	You can select a database from the <b>Database</b> drop-down list.

**Step 4** Click **OK**.

----End



## Using PostgreSQL Data Sources

You can configure and use PostgreSQL data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.23 Creating SQL Server Data Connections

Before establishing a data connection to SQL Server, ensure that the following condition is met:

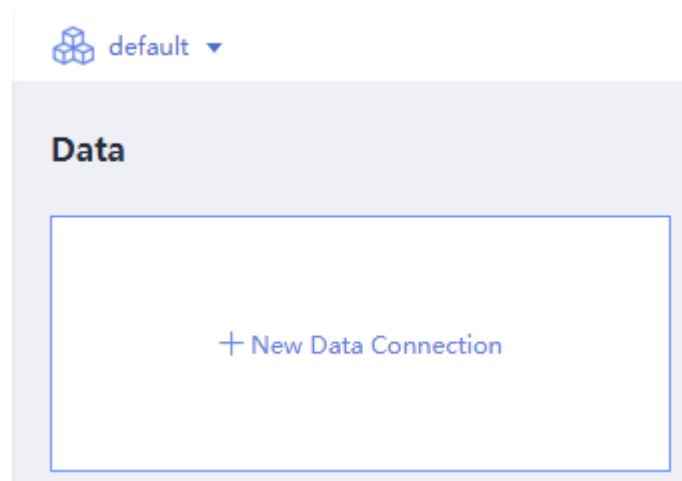
- You have obtained the IP address, port number, username, and password of SQL Server.

#### Creating an SQL Server Data Connection

**Step 1** Log in to the DLV console.

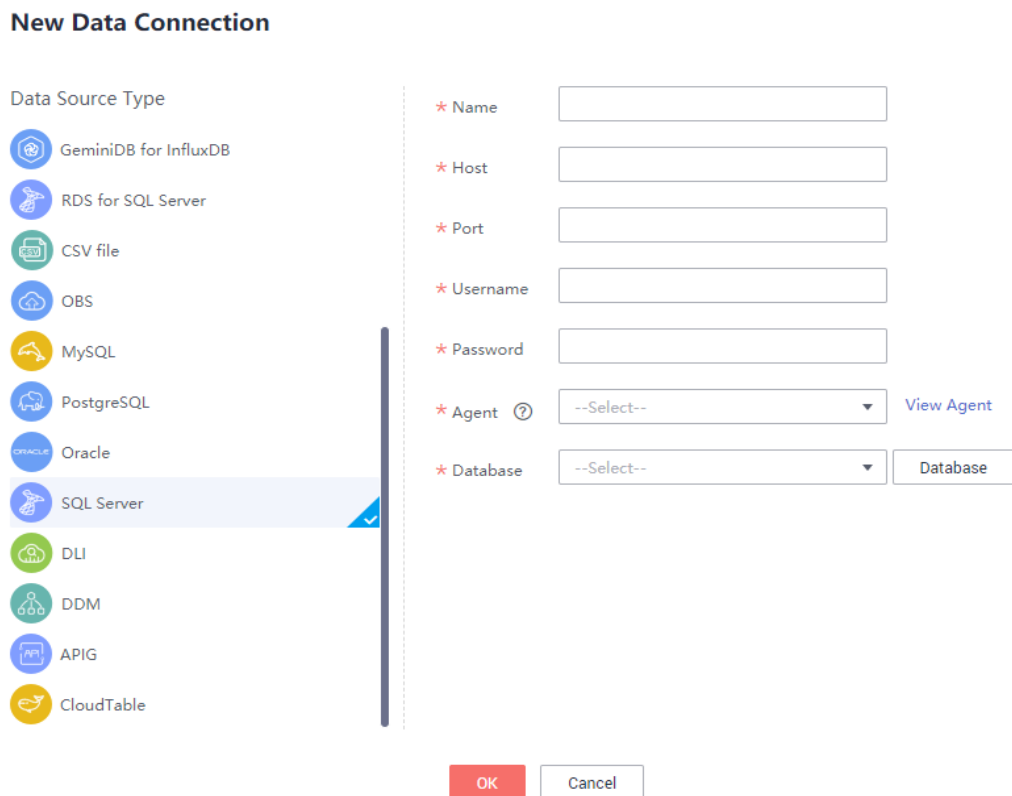
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-68** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **SQL Server** and set the related parameters.

**Figure 11-69** Creating an SQL Server data connection



**Table 11-20** SQL Server data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Domain Name	IP address of the database.
Port	Port of the database.
Username	Username of the database. The database user must have permission to access data tables and metadata.
Password	Password of the database user.
Agent	Select an available connection agent.
Database	You can select a database from the <b>Database</b> drop-down list.

**Step 4** Click **OK**.

----End

## Using SQL Server Data Sources

You can configure and use SQL Server data sources by referring to the instructions in [Using DWS Data Sources](#).

### 11.1.24 Creating Elasticsearch Data Connections

Before establishing a data connection to Elasticsearch, ensure that the following conditions are met:

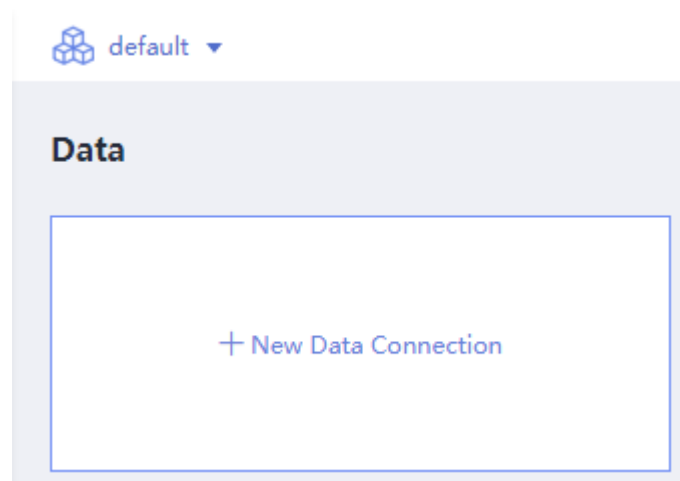
- You have obtained the IP address and port number of the Elasticsearch data source.

## Creating Elasticsearch Data Connections

**Step 1** Log in to the DLV console.

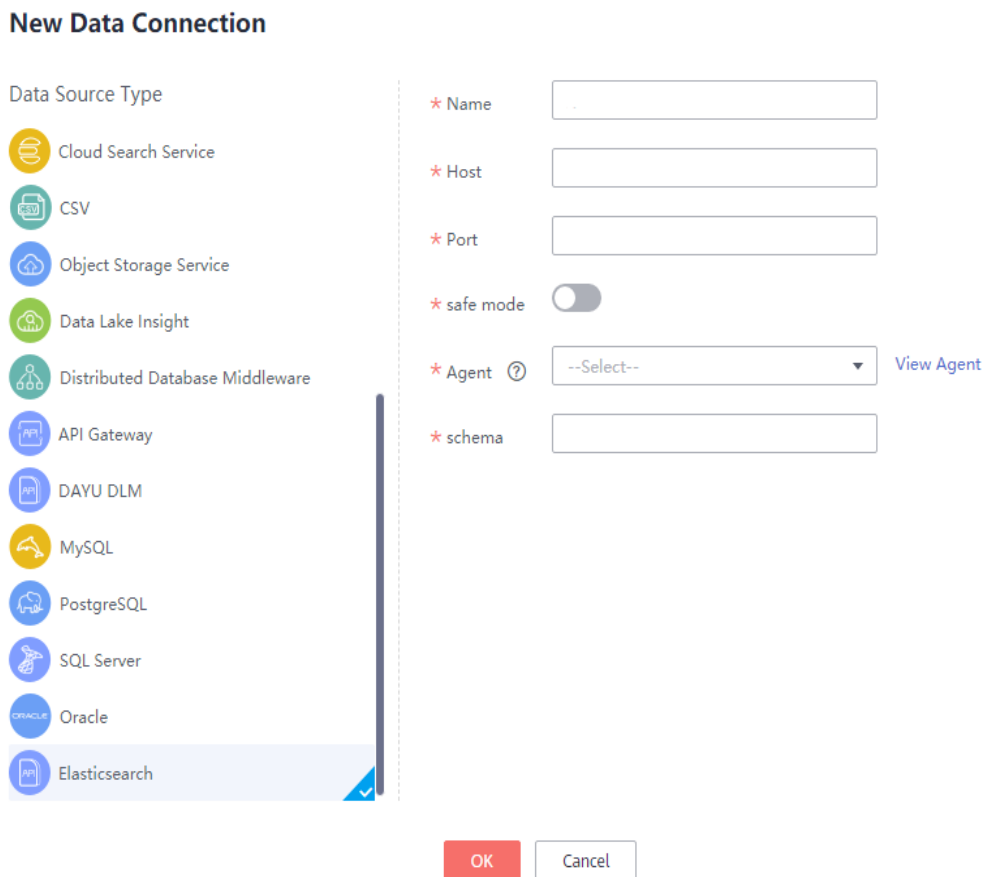
**Step 2** On the **Data** page, click the workspace drop-down list at the top of the page, select the workspace to be accessed, and click **New Data Connection**.

**Figure 11-70** Creating a data connection



**Step 3** In the **New Data Connection** dialog box, set **Data Source Type** to **Elasticsearch** and set the related parameters.

**Figure 11-71** Creating Elasticsearch Data Connections



When you create a connection to Elasticsearch, configure the parameters as described in [Table 11-21](#).

**Table 11-21** Elasticsearch data connection parameters

Parameter	Description
Name	Name of the data connection. Must contain 1 to 32 characters and contain only letters, digits, hyphens (-), and underscores (_).
Host	Intranet IP address of the Elasticsearch cluster to be connected.
Port	Port number of the Elasticsearch cluster to be connected.
Security Mode	Whether the security mode will be enabled for the Elasticsearch cluster you want to connect to. By default, the security mode is disabled.
Username	Administrator account name of the Elasticsearch cluster. This parameter is valid only when <b>Security Mode</b> is enabled.
Password	Administrator password of the Elasticsearch cluster. This parameter is valid only when <b>Security Mode</b> is enabled.

Parameter	Description
Agent	Select an available connection agent.
schema	Enter a mapping name that is different from the index name.

**Step 4** Click **OK**.  
----End

## Using Elasticsearch Data Sources

You can configure and use the Elasticsearch data source by referring to the instructions in [Using DWS Data Sources](#).

## 11.2 Editing Data Connections

After a data connection is added, you can edit it based on actual requirements.

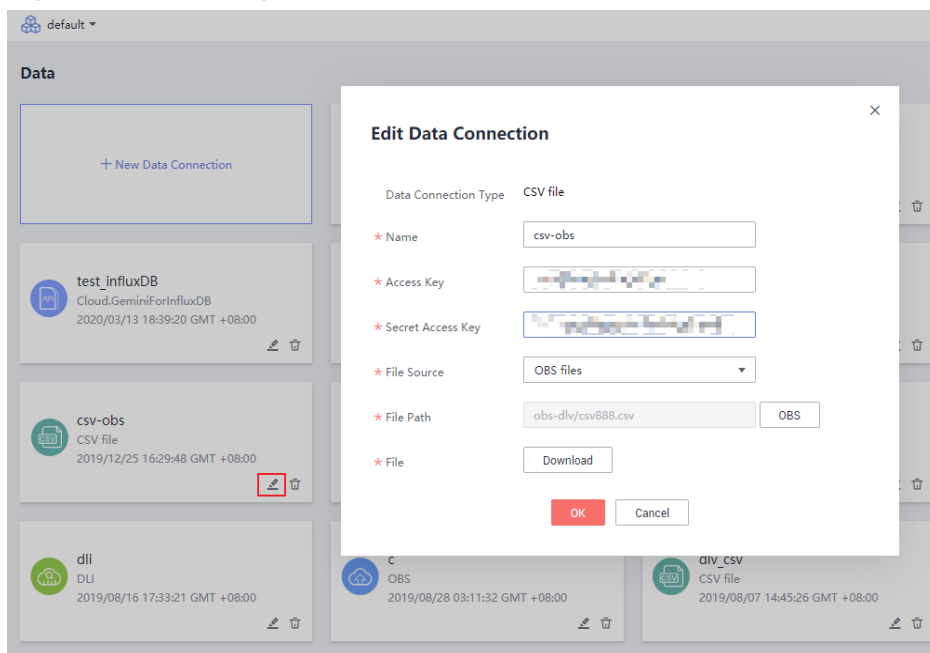
You can edit data connections on either of the following pages:

1. [Data Page](#)
2. [Screen Editing Page](#)

### Data Page


On the **Data** page, click  in the lower right corner of the data connection that you want to edit. In the **Edit Data Connection** dialog box, specify related parameters. For details about data connection parameters, see [Creating Data Connections](#).

**Figure 11-72** Editing a data connection

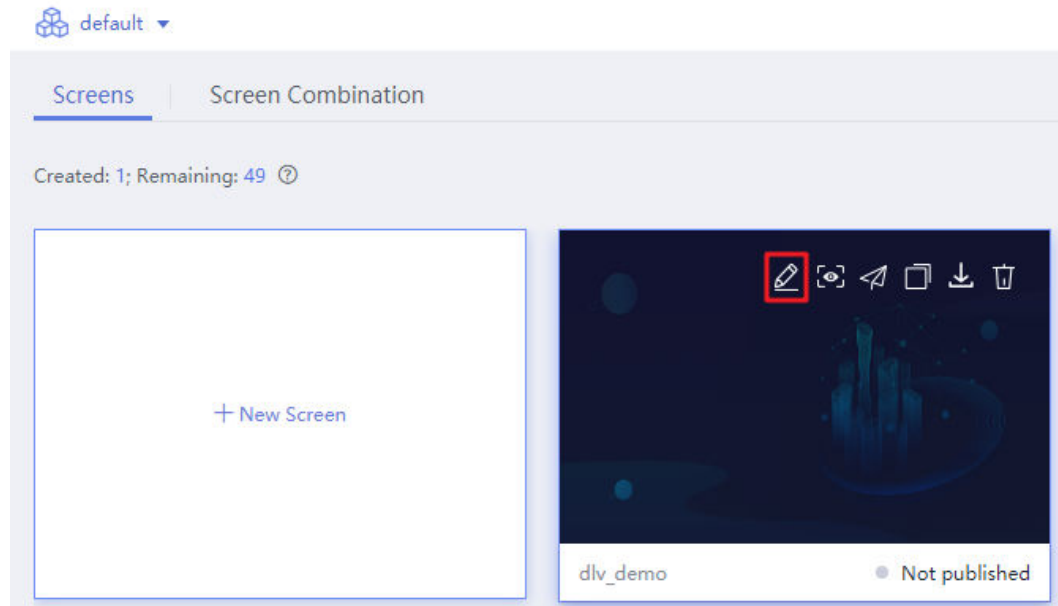


## Screen Editing Page

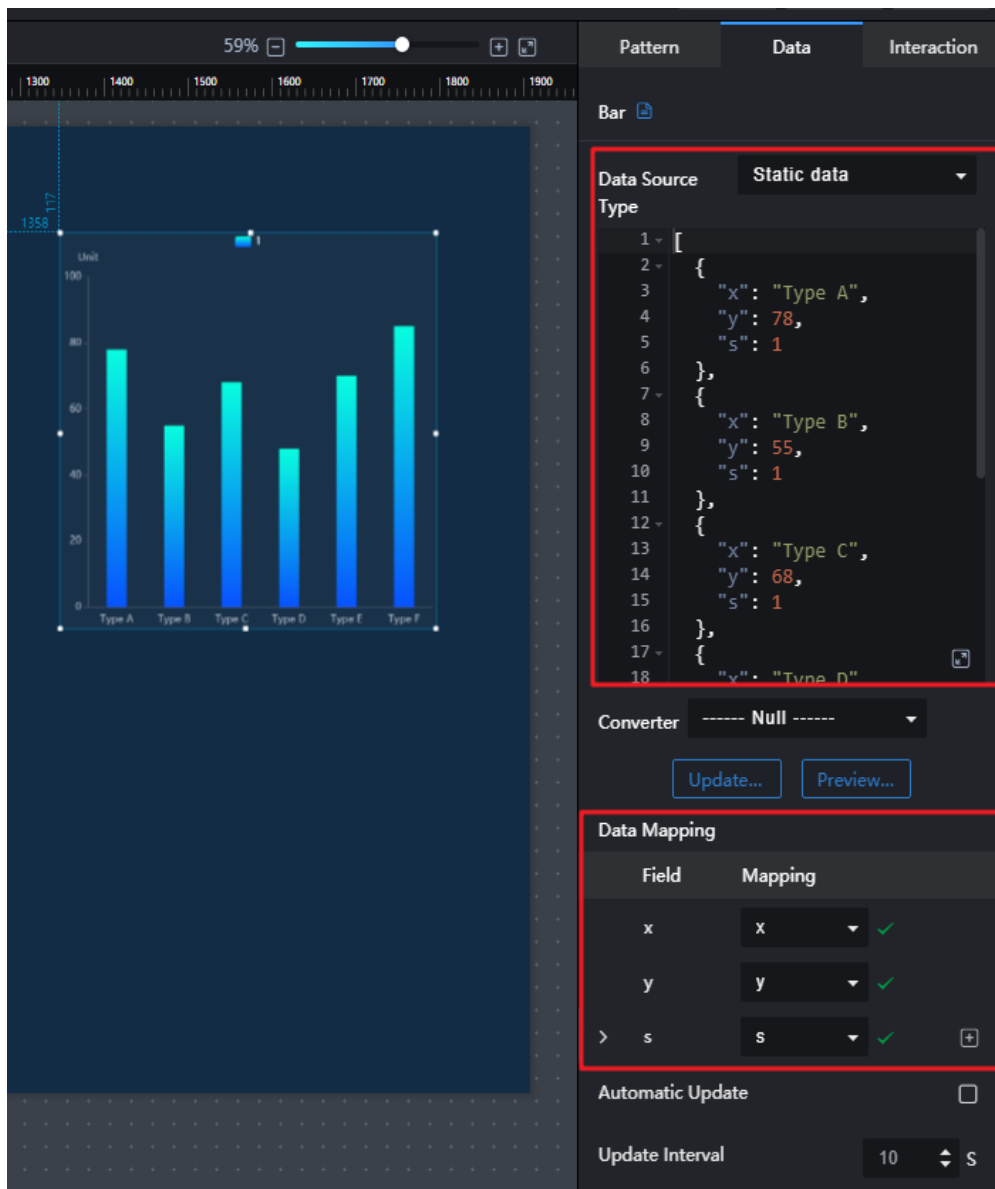
**Step 1** Log in to the DLV console and click the **Screens** tab.

**Step 2** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

**Figure 11-73** Editing a screen

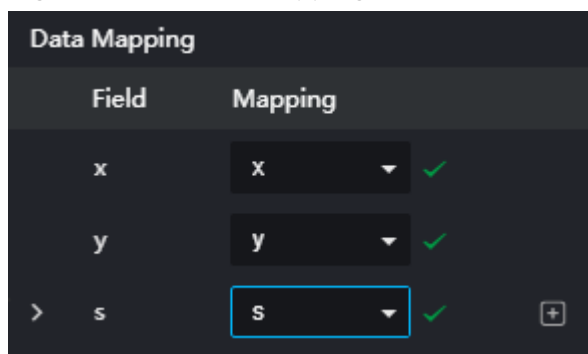


**Step 3** In the canvas, select a component, click the **Data** tab, and modify the data configuration on the displayed data page.



- Data Mapping**  
 When the attribute names in the response data are the same as the field values, the mapping is automatically completed. If data is complex, you need to manually enter the returned attribute names to configure the mapping.

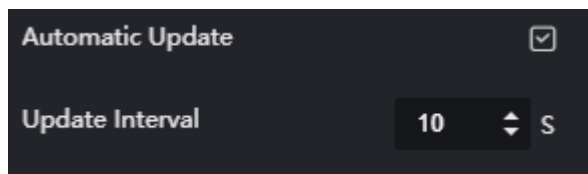
Figure 11-74 Field mapping



- **Automatic Update**

When **Automatic Update** is selected, the data update request is sent to the background at a specified interval. You can customize the interval in **Update Interval**.

Figure 11-75 Automatic update



----End

## 11.3 Searching for Data Connections

You can quickly locate the corresponding data connection by using the search function in the upper right of the page.

### Procedure


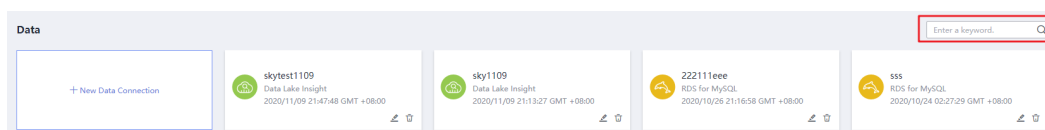
- Step 1** Log in to the DLV console.
- Step 2** In the navigation pane on the left, choose **Data**.
- Step 3** Move the pointer over the search box in the upper right corner of the page and enter the keyword of the data connection name. Click . The desired data connection is displayed.

Figure 11-76 Searching for a data connection



----End

## 11.4 Deleting Data Connections

You can delete unused data connections from the data connection list.


### Prerequisites

Before deleting a data connection, ensure that the data connection is not used by any screens. A deleted data connection cannot be recovered. Exercise caution when performing this operation.

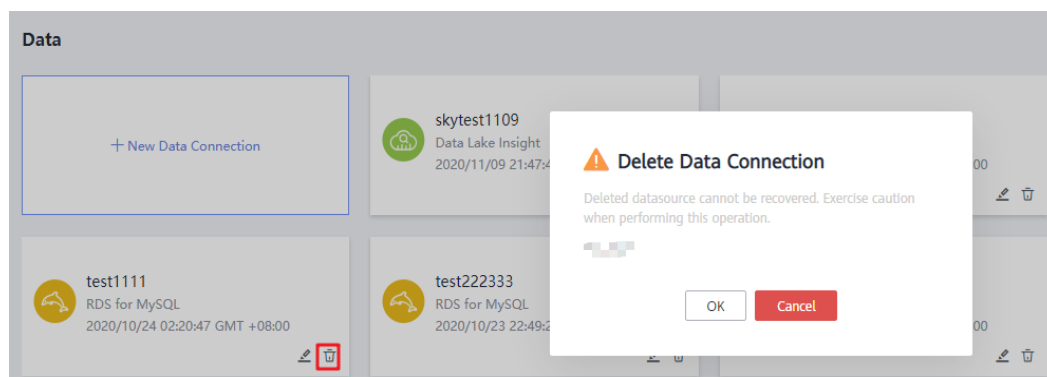


## Procedure

**Step 1** Log in to the DLV console.

**Step 2** On the **Data** page, click the deletion icon  in the lower right corner of the data connection that you want to delete.

**Figure 11-77** Deleting a data connection



**Step 3** In the **Delete Data Connection** dialog box, click **Yes**.

----End

## 11.5 Managing VPC Connections

You can use a VPC connection to connect a cloud data source to DLV for data display on screens.

DLV supports the following data sources connected through VPC:

- DWS
- MapReduce Service ClickHouse
- RDS for MySQL
- RDS for GaussDB
- RDS for PostgreSQL
- GeminiDB for InfluxDB (RDS for GaussDB for Influx)
- RDS for SQL Server
- Cloud Search Service
- Custom data sources on ECSs

### Prerequisites

- Only users with the **DLV FullAccess** and **VPC Endpoint Administrator** permissions or users with the **Tenant Administrator** permission can create or delete VPC connections.

The **Tenant Administrator** permission has all cloud service administrator permissions except the IAM management permission. For security purposes, you are not advised to grant this permission to IAM users. Exercise caution when performing this operation.

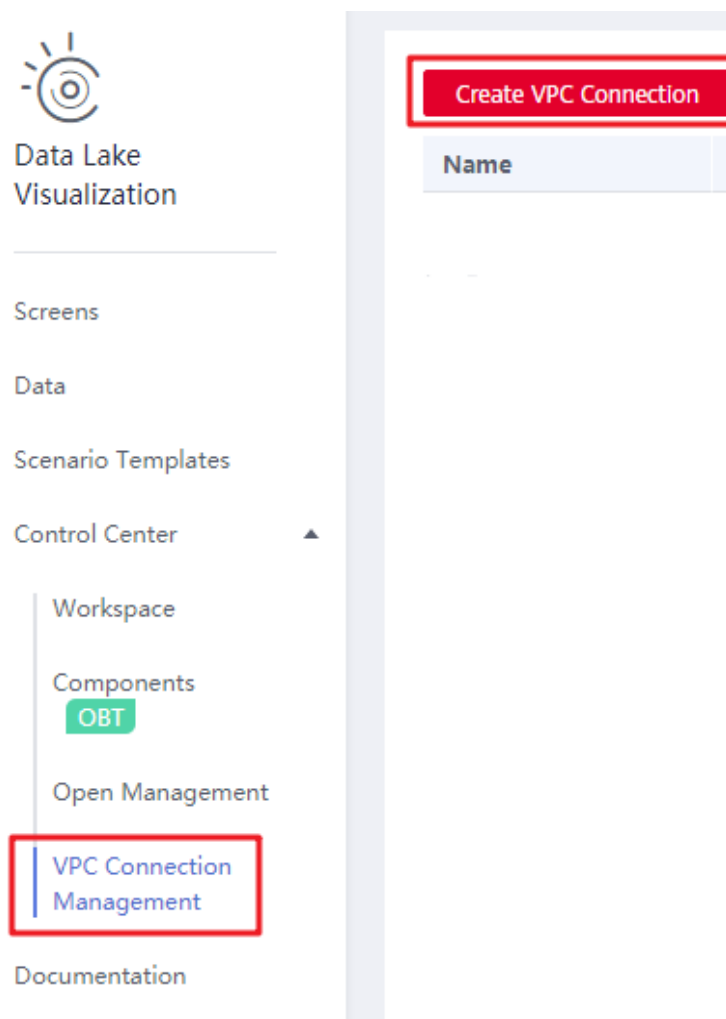
- The data source instance to be connected has been created.
- The corresponding security group rules have been configured.

## Create VPC Connections

**Step 1** Log in to the DLV console.

**Step 2** Choose **Control Center > VPC Connection Management**. Click **Create VPC Connection**.

**Figure 11-78** Creating a VPC connection



**Step 3** Configure the following parameters.

**Table 11-22** Parameters for creating a VPC connection

Parameter	Description
Region	Select the region where the DLV screen is located.
Connection Name	Enter the name of the VPC connection.

Parameter	Description
Service Category	Select the type of the data source to be connected through the VPC. The following types of data sources are supported: <ul style="list-style-type: none"> <li>• DWS</li> <li>• MapReduce Service ClickHouse</li> <li>• RDS for MySQL</li> <li>• RDS for GaussDB</li> <li>• RDS for PostgreSQL</li> <li>• GeminiDB for InfluxDB (RDS for GaussDB for Influx)</li> <li>• RDS for SQL Server</li> <li>• Cloud Search Service</li> <li>• Custom data sources on ECSs</li> </ul>
Instance	Instances of the data source you want to connect to. (This is required for all data sources except the custom data sources on ECSs.)
Private IP Addresses	Private IP addresses of ECSs. This parameter is mandatory only when custom data sources are configured on ECSs.
VPC ID	ID of the VPC used by ECSs. This parameter is mandatory only when custom data sources are configured on ECSs.
Network ID	IP address of the VPC subnet used by ECSs. This parameter is mandatory only when custom data sources are configured on ECSs.
Security Group ID	ID of the security group used by ECSs. This parameter is mandatory only when custom data sources are configured on ECSs. Use commas (,) to separate multiple IDs.

Figure 11-79 Connection parameters

### Create VPC Connection

★ Region

★ Connection Name

★ Service Category

★ Instance

**Step 4** Click **OK**.

After the VPC connection is added, you can choose **Data > New Data Connection** to create a data connection and use the VPC connection as the connection proxy.

----End

## Deleting VPC Connections

**Step 1** Log in to the DLV console.

**Step 2** Choose **Control Center > VPC Connection Management**.

**Step 3** Locate the row containing the VPC connection to be deleted, and click **Delete** in the **Operation** column.

----End

# 12 Managing Components

---

## 12.1 Overview

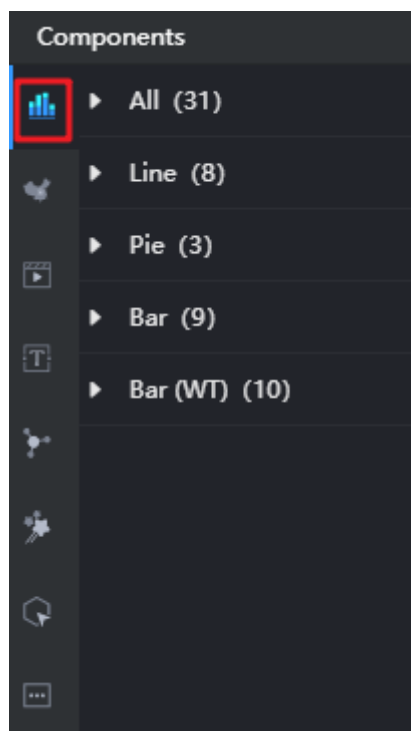
DLV provides various components. Currently, the following types of components are supported:

- [Charts](#)
- [Maps](#)
- [Media](#)
- [Text](#)
- [Relationship Network](#)
- [Design](#)
- [Interaction](#)
- [Others](#)

### Charts

Chart components include the line chart, bar chart, pie chart, percentage, rose chart, radar chart, scatter chart, bubble chart, liquid chart, region ranking, combination chart, horizontal bar chart, horizontal bi-directional bar chart, radar scanning, stacked bar chart, and heatmap.

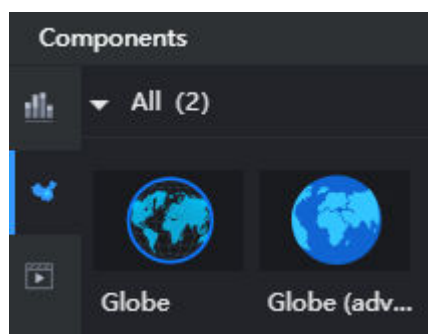
Figure 12-1 Charts



## Maps

Map components include the globe and globe (advanced).

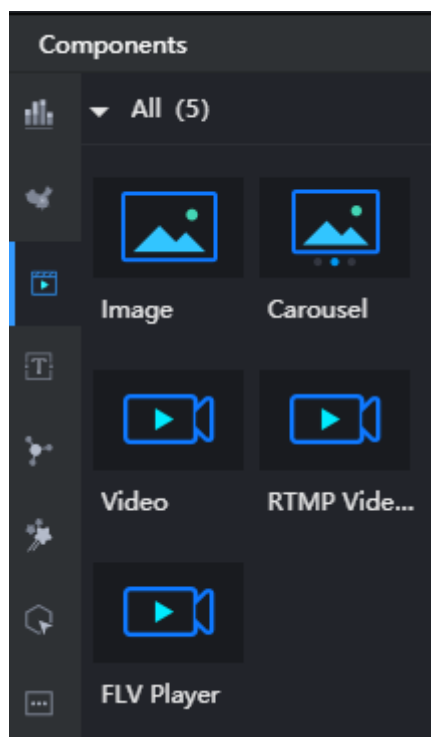
Figure 12-2 Map components



## Media

Media components include **Image**, **Carousel**, **Video**, **RTMP Video Stream Player**, and **FLV Player**.

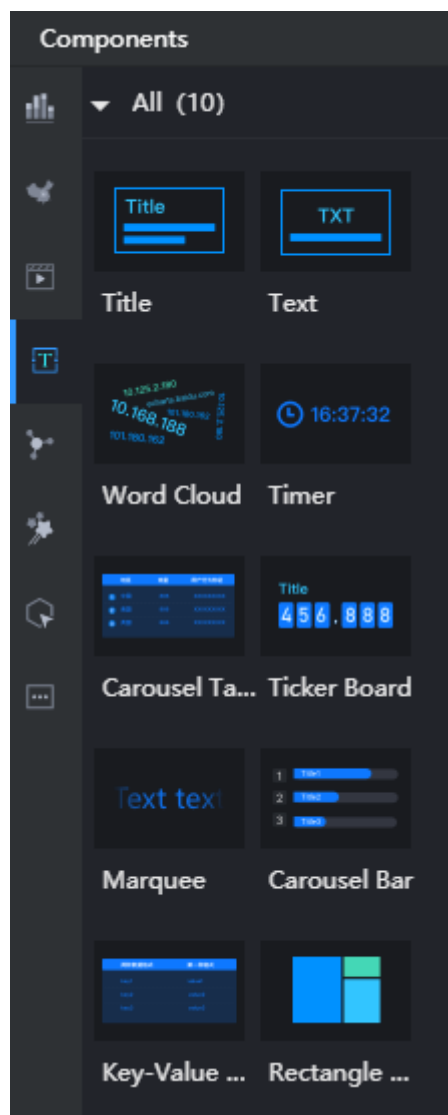
**Figure 12-3** Media components



## Text

Text components include the title, text, word cloud, timer, carousel table, ticker board, marquee, carousel bar chart, key-value table, and treemap.

Figure 12-4 Text components

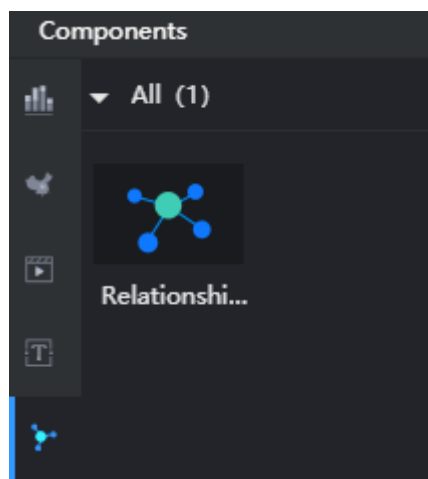


## Relationship Network

Currently, DLV provides only one type of relationship network component.



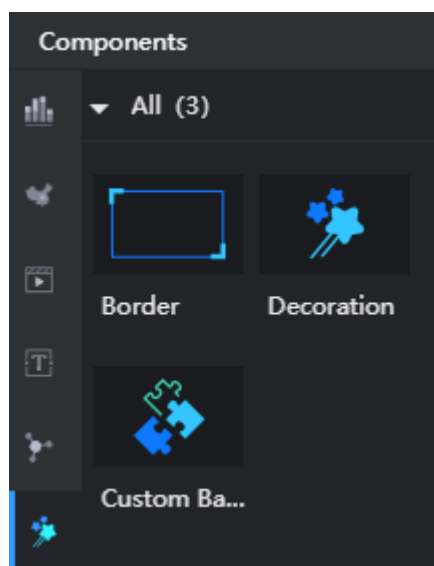
**Figure 12-5** Relationship network component



## Design

Design components include the border, decoration, and custom background.

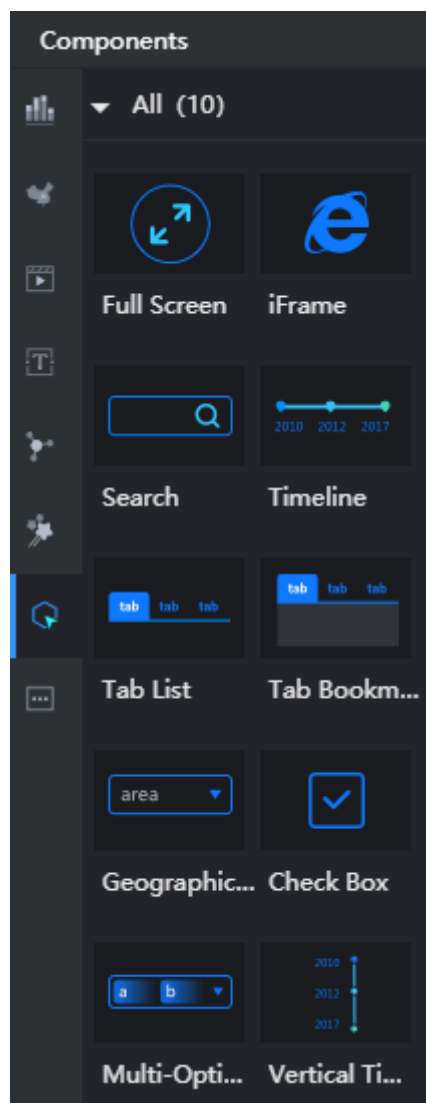
**Figure 12-6** Design components



## Interaction

Interaction components include **Full Screen**, **iFrame**, **Search**, **Timeline**, **Tab List**, **Tab Bookmark**, **Geographical Search**, **Check Box**, **Multi-Option Drop-Down List**, and **Vertical Timeline**.

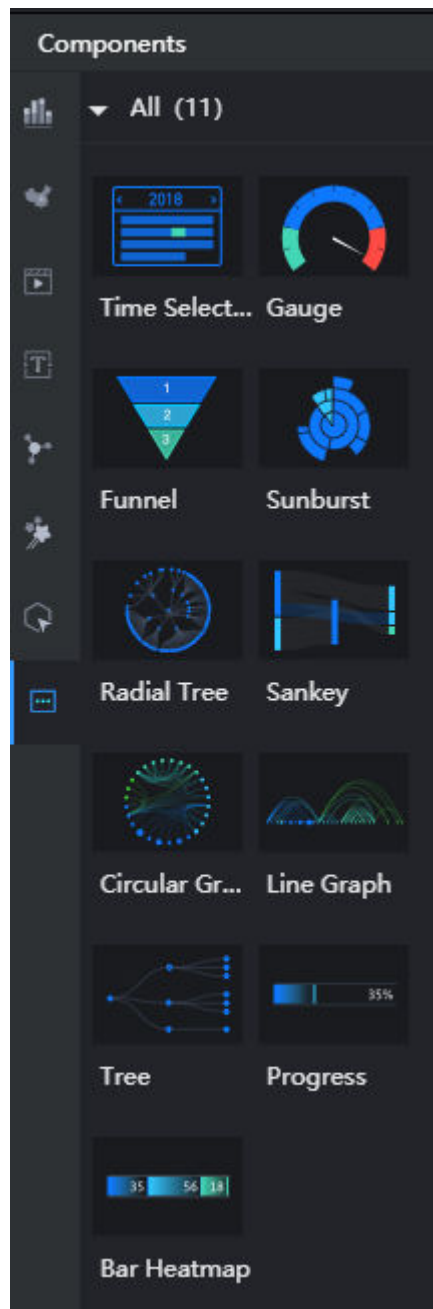
Figure 12-7 Interaction components



## Others

Other types of components include the time selector, gauge, and funnel chart.

Figure 12-8 Other components



## 12.2 Adding Components

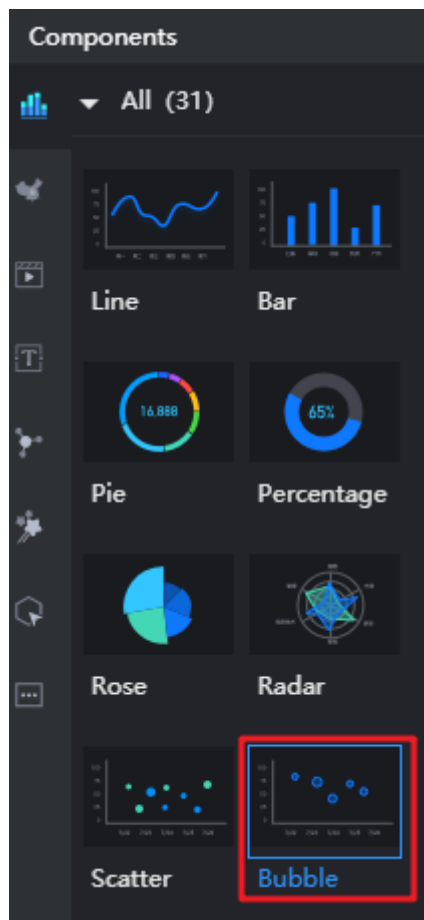
After creating a screen, you can add required components to it. DLV provides various visualized components to help you quickly develop your screens. This section describes how to add components to a screen.

### Adding Components

- Step 1** Log in to the DLV console.
- Step 2** On the **Screens** page, click **New Screen**.

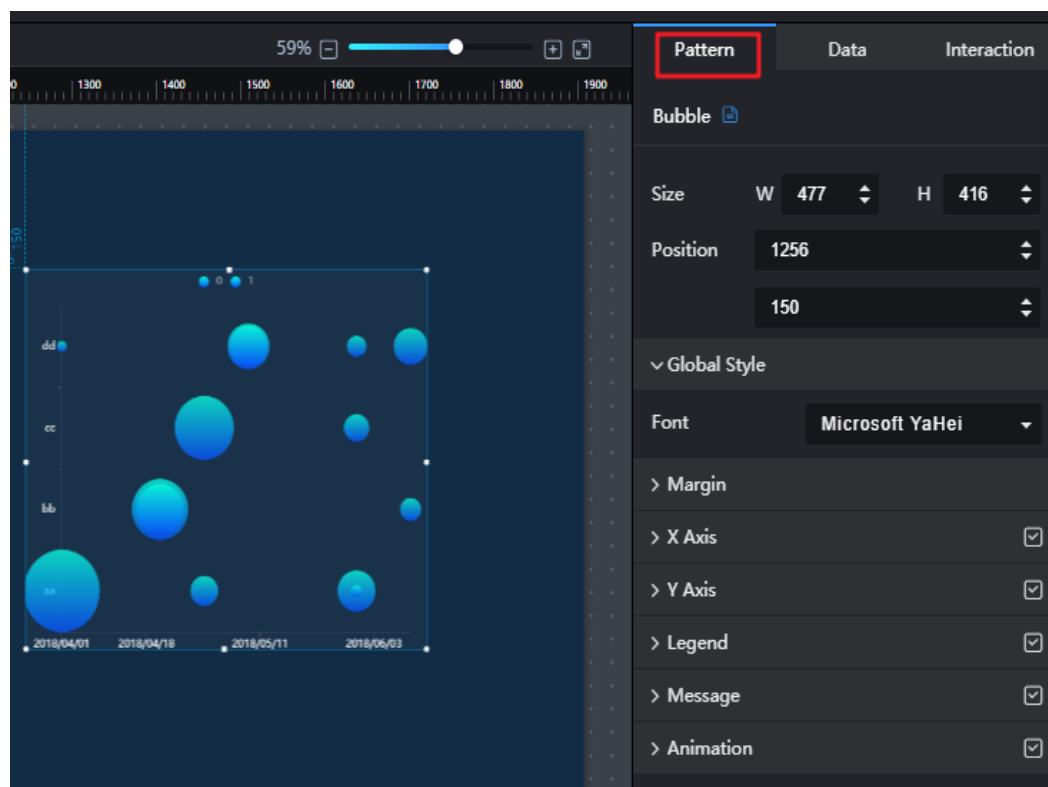
- Step 3** On the **Scenario Templates** page, select a template from the scenario template list on the left, for example, select a blank template. Enter a screen name.
- A screen name can contain only letters, numbers, underscores (\_), and hyphens (-), and cannot exceed 32 characters.
- Step 4** Click **Create Screen**. The screen development page is automatically displayed after the screen is successfully created.
- Step 5** On the screen development page, move the cursor to a component type in the component list and click the icon of a component to add it to the screen.
- For example, you can add a bubble chart to the canvas by clicking it.

**Figure 12-9** Selecting a component



- Step 6** On the **Pattern** tab in the right pane, configure the component pattern.
- This example uses the default settings. For details about component pattern settings, see [Configuring the Component Pattern](#).

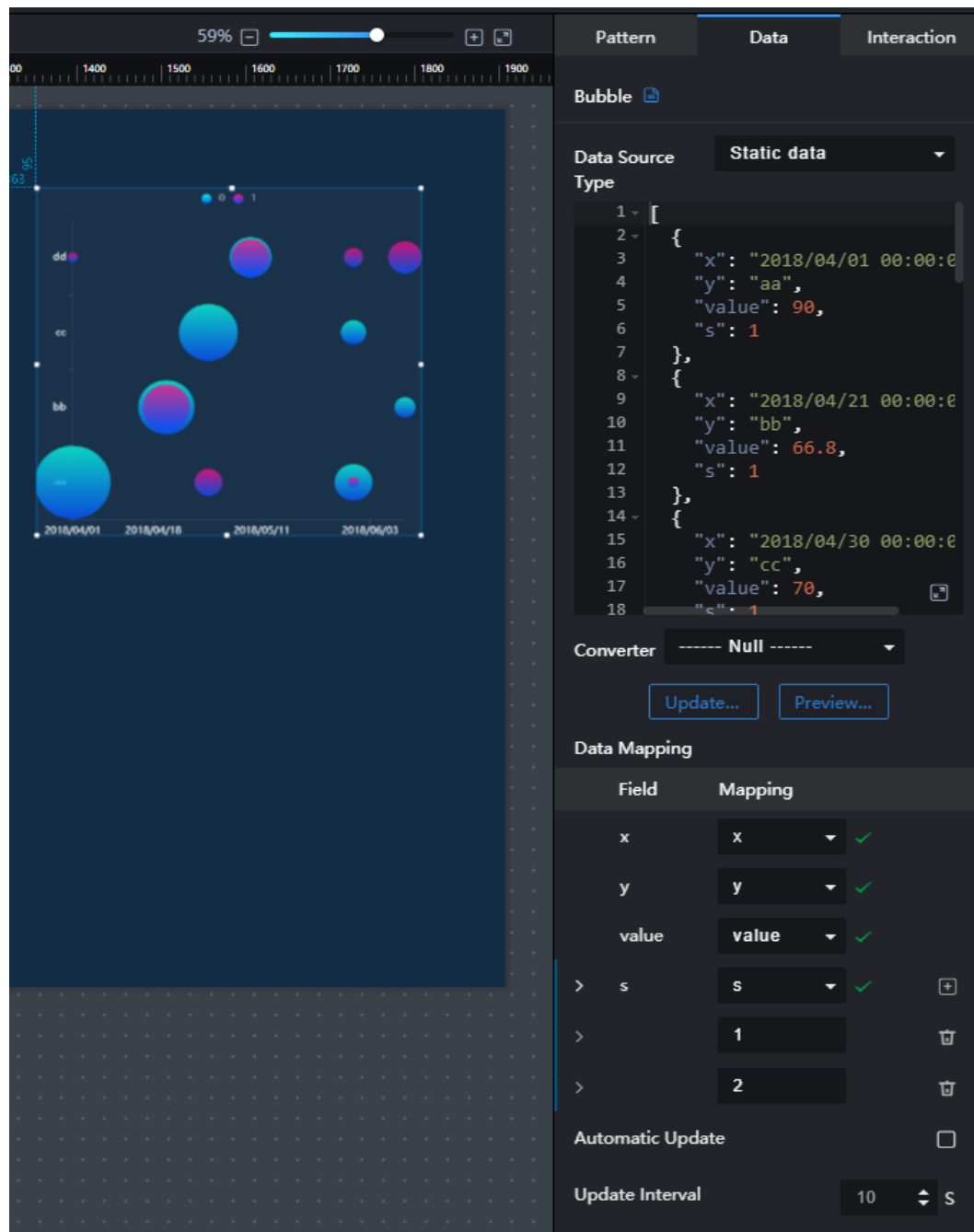
Figure 12-10 Configuring the component pattern



**Step 7** On the **Data** tab page in the right pane, configure the component data.

In this example, static data is used. For details about more data settings, see [Configuring Component Data](#).

Figure 12-11 Configuring the component data



**Step 8** On the **Interaction** tab page in the right pane, configure the component interaction. The example component does not provide the interaction function. For details about the interaction settings, see [Configuring Component Interaction](#).

----End

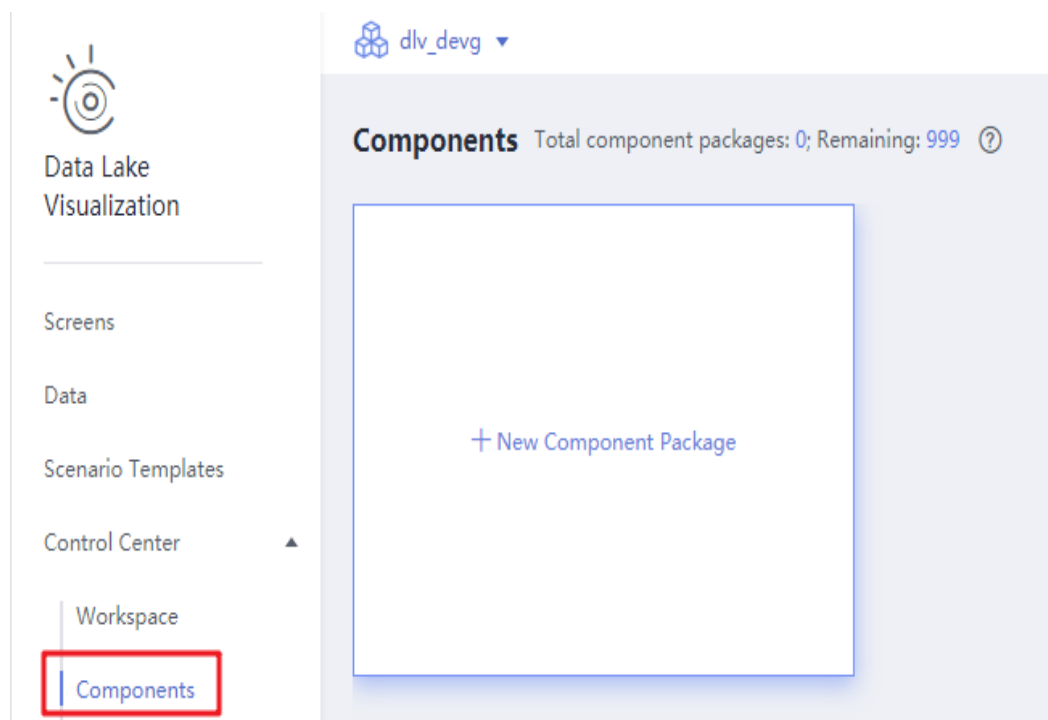
## 12.3 Uploading Custom Components

You can use the developer tool provided by DLV to customize components. After custom components are uploaded to the component package and approved by the technical personnel, you can use them on DLV.

## Creating a Component Package

**Step 1** Log in to the DLV console. In the navigation pane on the left, choose **Control Center > Components**.

**Figure 12-12** Components



**Step 2** On the **Components** page, click **New Component Package**.

**Step 3** In the **New Component Package** dialog box, configure the following parameters and click **OK**.

- **Package Name:** The package name defines the component namespace in the component package and cannot be modified after being created. A package name must start with letters. It can contain only letters, digits, underscores (\_), and hyphens (-), and cannot exceed 32 characters.
- **Display Name:** display name of a component package in the component list. You can change the name at any time. A display name can contain only letters, digits, underscores (\_), and hyphens (-), and cannot exceed 32 characters.
- **Cover:** Click to upload a component package cover. The size of the cover cannot exceed 1 MB. Only the PNG, JPEG, JPG, and BMP formats are supported.
- **Description:** description of a component package. The value contains a maximum of 200 characters.

**Figure 12-13** Creating a component package

### New Component Package

\* Package Name

\* Display Name

Cover Click to upload a component package cover. The size of the cover cannot exceed 1 MB.

Description  0/200

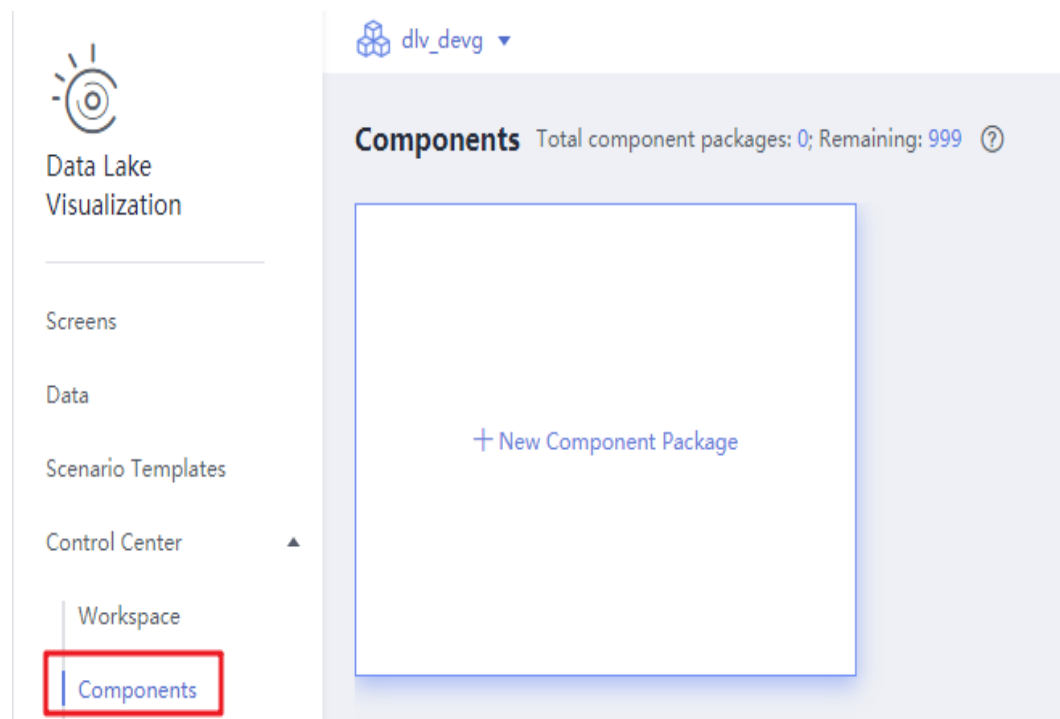
----End

## Customizing a Component

- Step 1** Log in to the DLV console. In the navigation pane on the left, choose **Control Center > Components**.



**Figure 12-14** Components



**Step 2** On the **Components** page, click **Download Developer Tool** in the upper right corner to download the developer tool.

**Step 3** Use the developer tool to customize components based on the specifications. For details, see the *Data Lake Visualization Developer Guide*.

----End

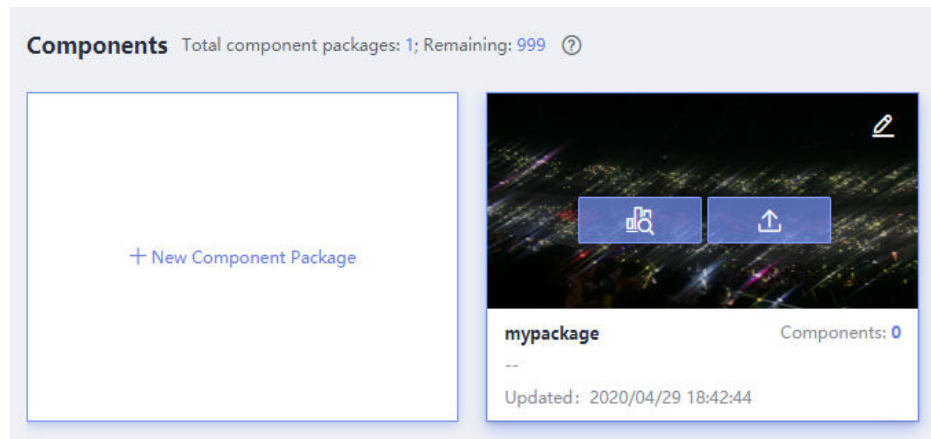
## Uploading a Component

**Step 1** Log in to the DLV console. In the navigation pane on the left, choose **Control Center > Components**.

**Step 2** Locate the component package for which you want to upload a component and move the pointer over the component package. Operation buttons are displayed

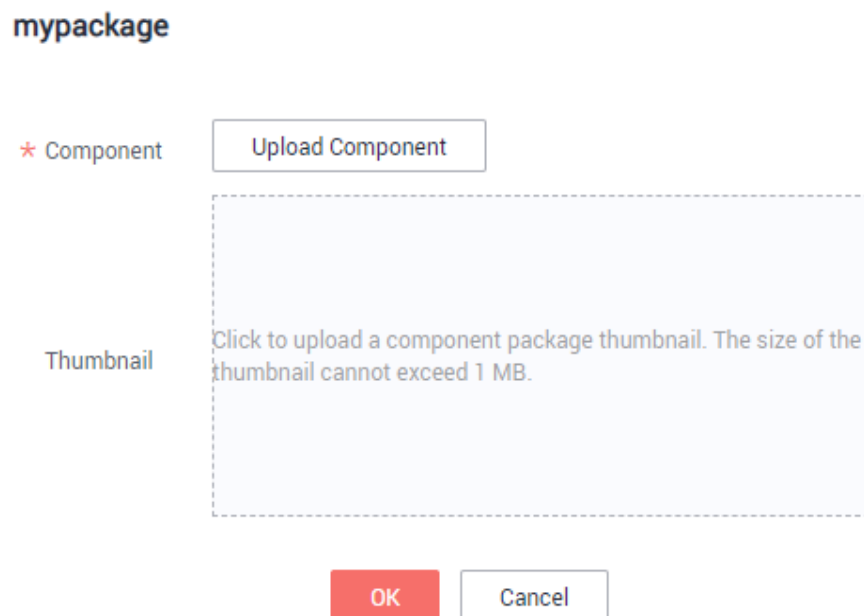
over the component package. Click  to upload the component.

Figure 12-15 Component package



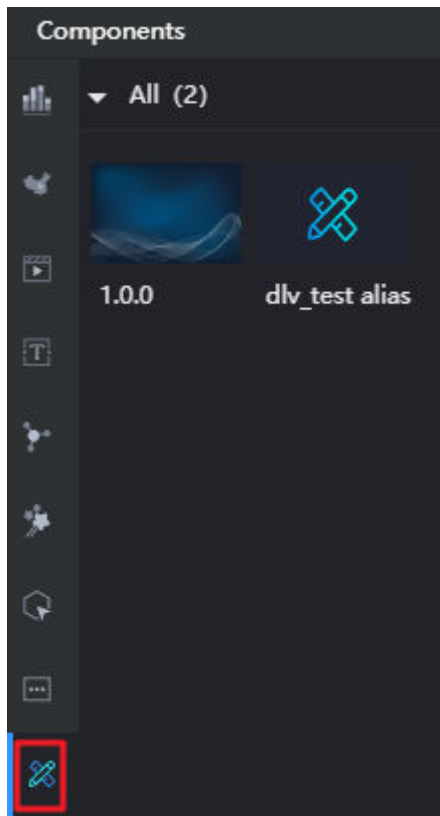
- Step 3** In the displayed dialog box, complete the following configurations. Click **OK**.
- **Component:** Click **Upload Component** to upload a custom component.
  - **Thumbnail:** Click to upload a component thumbnail. The size of the thumbnail cannot exceed 1 MB. Only the PNG, JPEG, JPG, and BMP formats are supported.

Figure 12-16 Uploading a component



- Step 4** After the component is uploaded, wait for the technical personnel for review. DLV technical personnel will process your application as soon as possible.
- Step 5** After the application is approved, go to the screen editing page. The uploaded custom component is displayed in the custom component list. You can use the custom component during screen development.

**Figure 12-17** Customizing a component

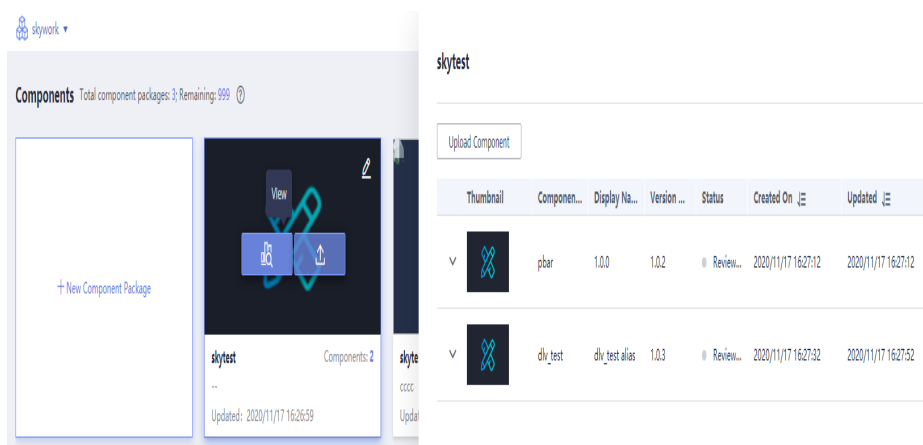


----End



## Editing a Component Package

On the **Components** page of the DLV console, locate the component package to be edited. Move the pointer over the component package. Operation buttons of the component package are displayed.

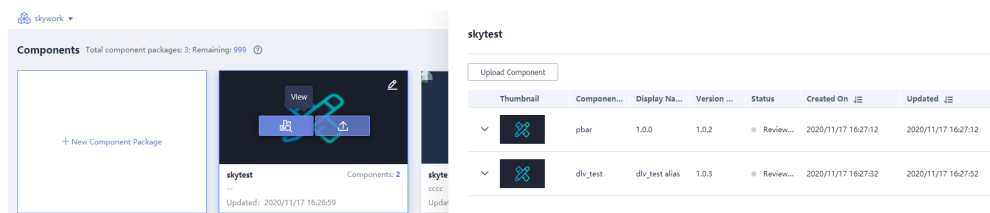
**Figure 12-18** Managing a component



- : edits and modifies the information of a component package.

- : uploads a component.
- : views a component package. The component list of a component package is displayed on the right of the page, including the component thumbnail, package name, display name, version, status, creation time, and update time.


**Figure 12-19** Viewing a component package



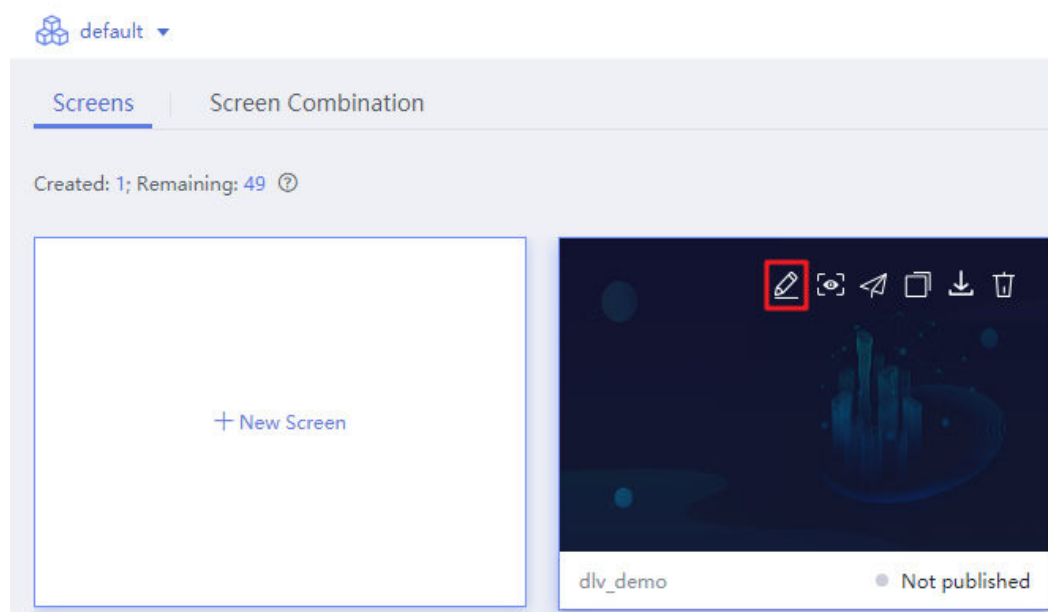
## 12.4 Locking Components

This section describes how to lock and unlock a component in the canvas.

### Procedure

- Step 1** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

**Figure 12-20** Editing a screen



- Step 2** Right-click a component in the canvas and select **Lock** from the shortcut menu. Alternatively, right-click a component in the layer area and select **Lock** from the shortcut menu.

Figure 12-21 Locking a component on the canvas

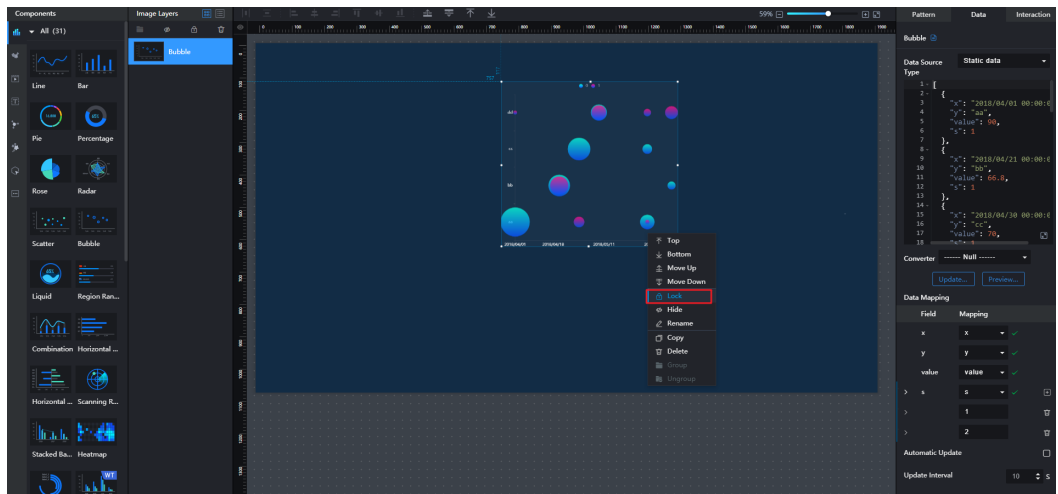
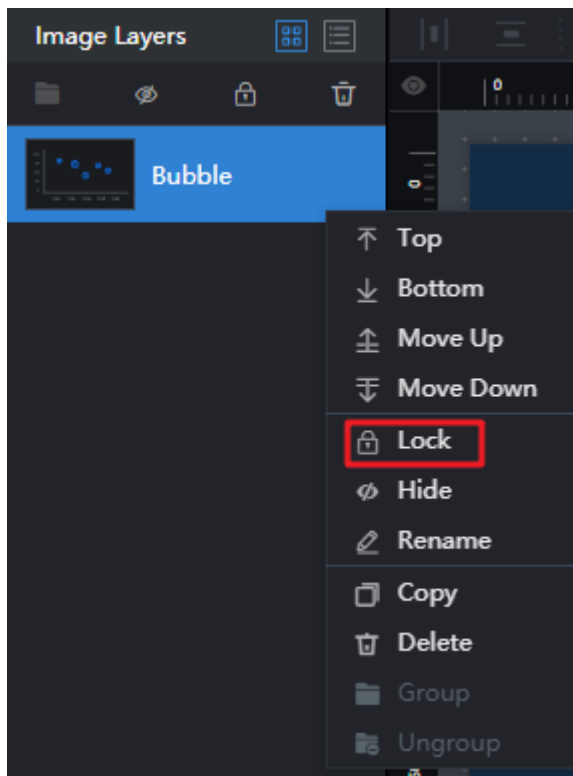


Figure 12-22 Locking a component in the layer




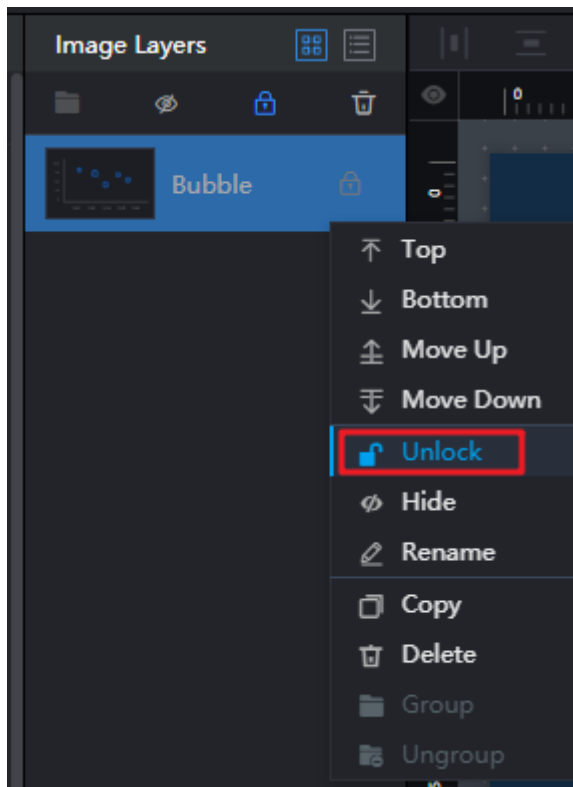
**Step 3** After a component is locked, it cannot be moved or edited. To re-edit the component, select it and click , or right-click on it and choose **Unlock** from the shortcut menu to unlock the component.

Figure 12-23 Unlocking a component



----End

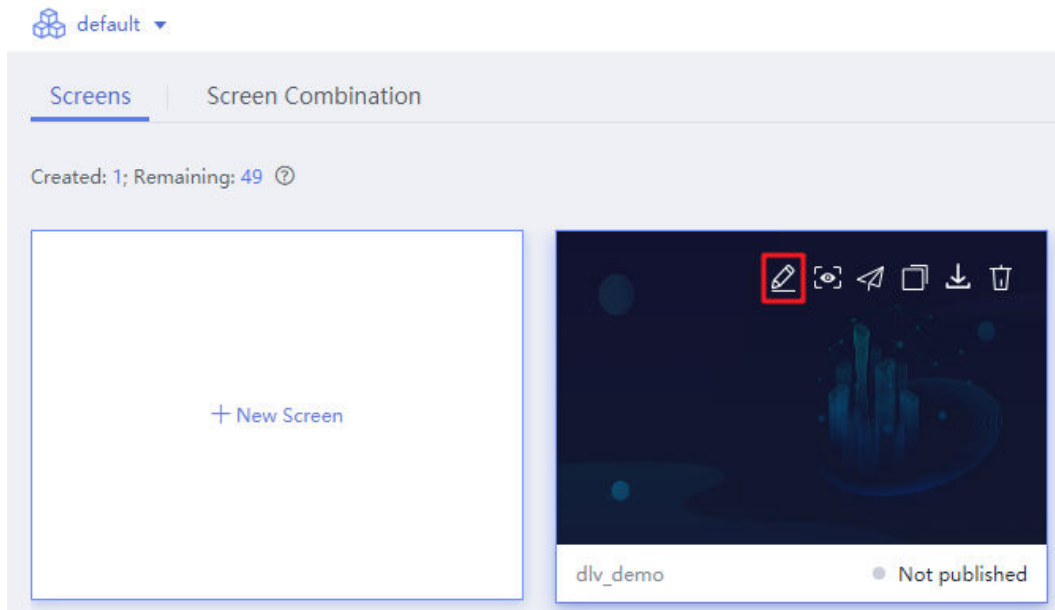
## 12.5 Hiding Components

This section describes how to hide a component in the canvas.

### Procedure

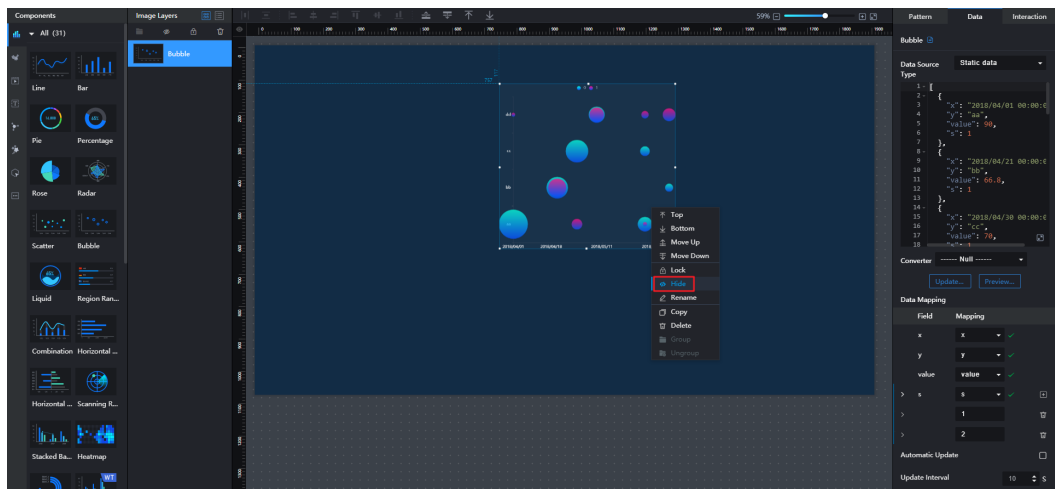
- Step 1** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

Figure 12-24 Editing a screen

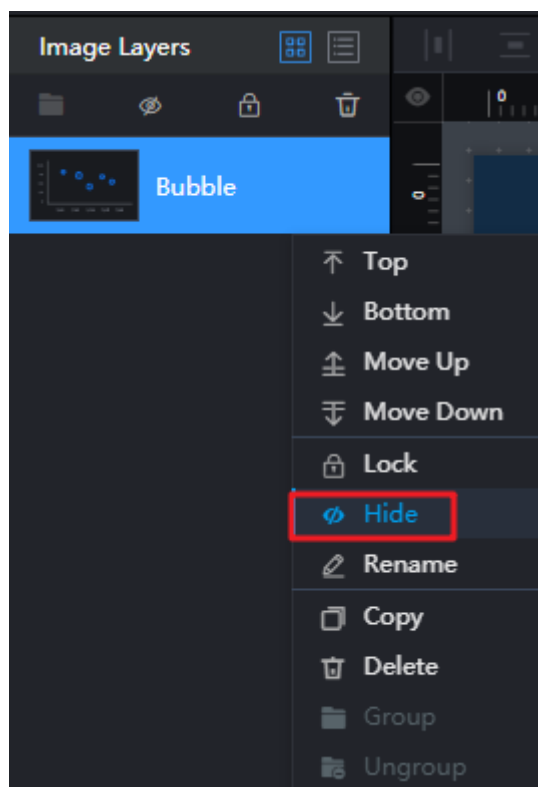



**Step 2** Right-click a component in the canvas and select **Hide** from the shortcut menu. Alternatively, right-click a component in the layer area and select **Hide** from the shortcut menu.

Figure 12-25 Hiding a component in the canvas



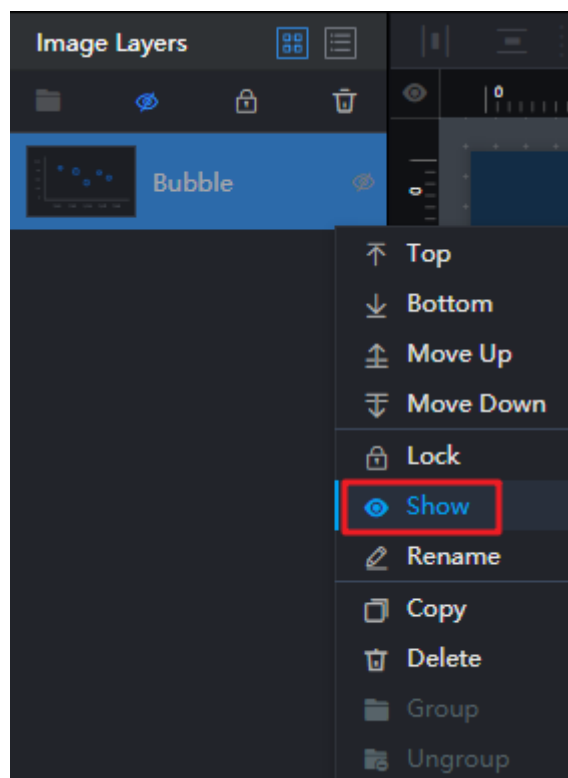
**Figure 12-26** Hiding a component in the layer



**Step 3** To show the component, select it and click , or right-click on it and choose **Show** from the shortcut menu.



**Figure 12-27** Showing a component



----End

## 12.6 Renaming Components

This section describes how to rename a component in the canvas.

### Procedure


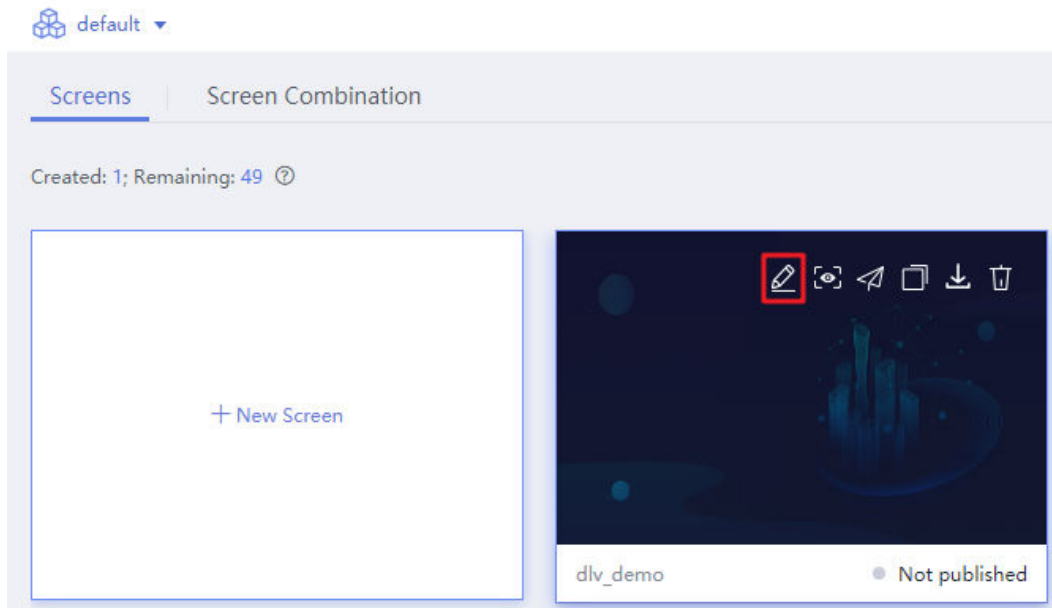
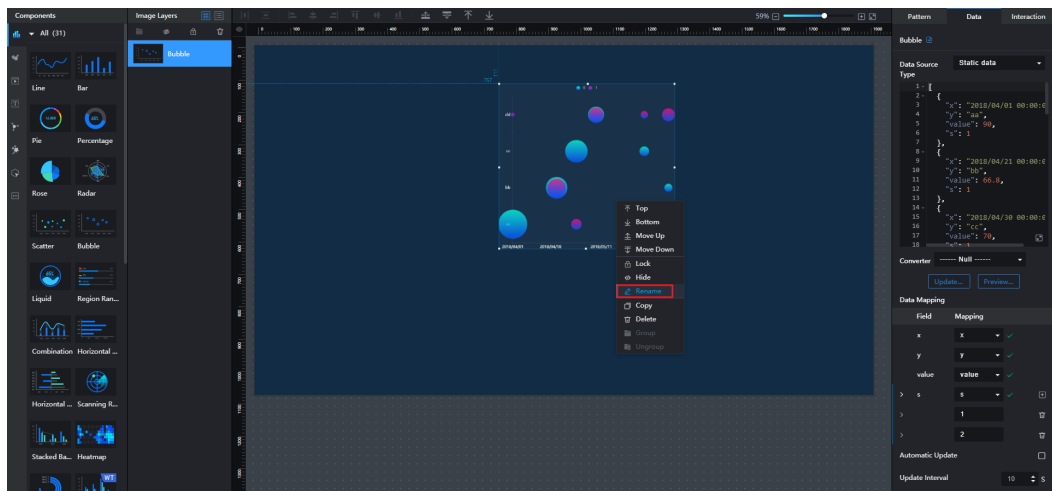
- Step 1** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

Figure 12-28 Editing a screen

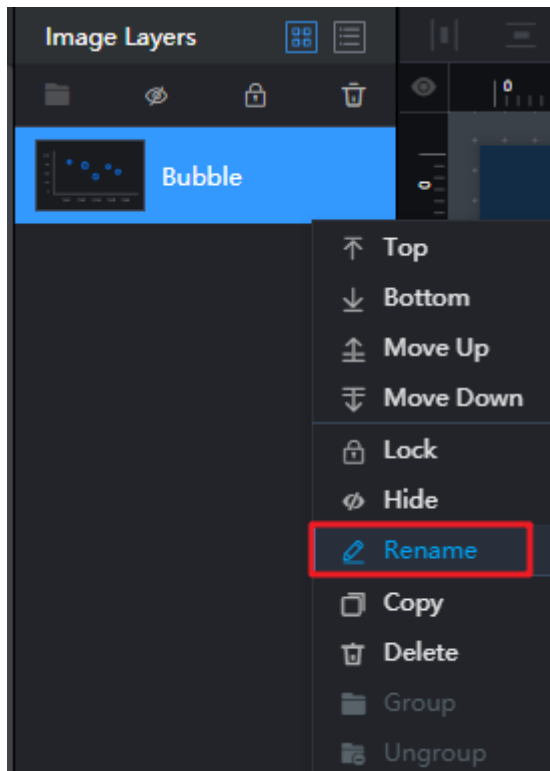


**Step 2** Right-click a component in the canvas and select **Rename** from the shortcut menu. Alternatively, right-click a component in the layer area and select **Rename** from the shortcut menu.

Figure 12-29 Renaming a component in the canvas



**Figure 12-30** Renaming a component in the layer



**Step 3** Rename the component in the component list.

----End

## 12.7 Copying Components

This section describes how to copy a component in the canvas. The copied component has the same pattern, data, and interaction configuration information as the original one.

### Procedure

**Step 1** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

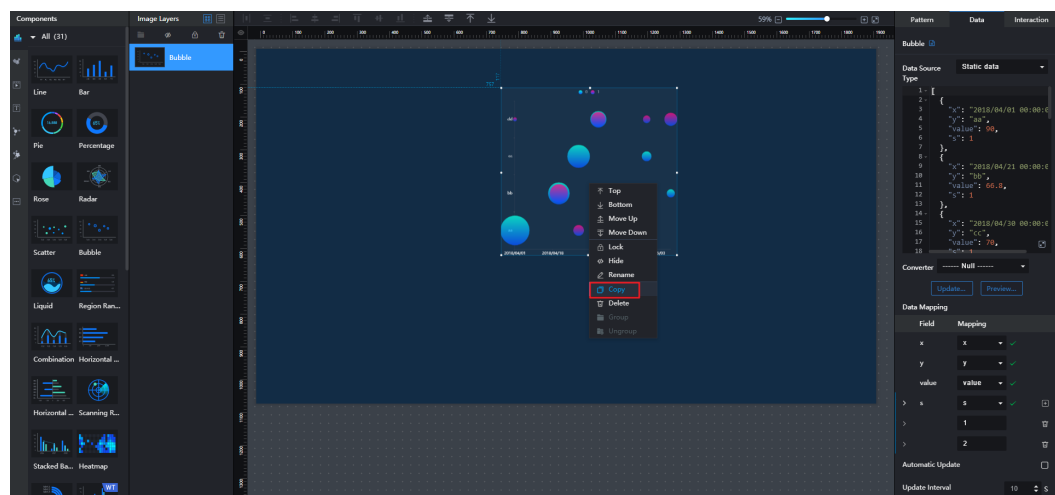
**Figure 12-31** Editing a screen



**Step 2** Right-click a component in the canvas and select **Copy** from the shortcut menu. Alternatively, right-click a component in the layer area and select **Copy** from the shortcut menu.

Alternatively, you can select a component, press **Ctrl+C** to copy the component, and then press **Ctrl+V** to paste the component.

**Figure 12-32** Copying a component



----End

## 12.8 Deleting Components

This section describes how to delete a component from the canvas. A deleted component cannot be recovered. Exercise caution when performing this operation.

## Procedure

- Step 1** On the **Screens** page, locate the screen to be edited and click  on the screen. The screen development page is displayed.

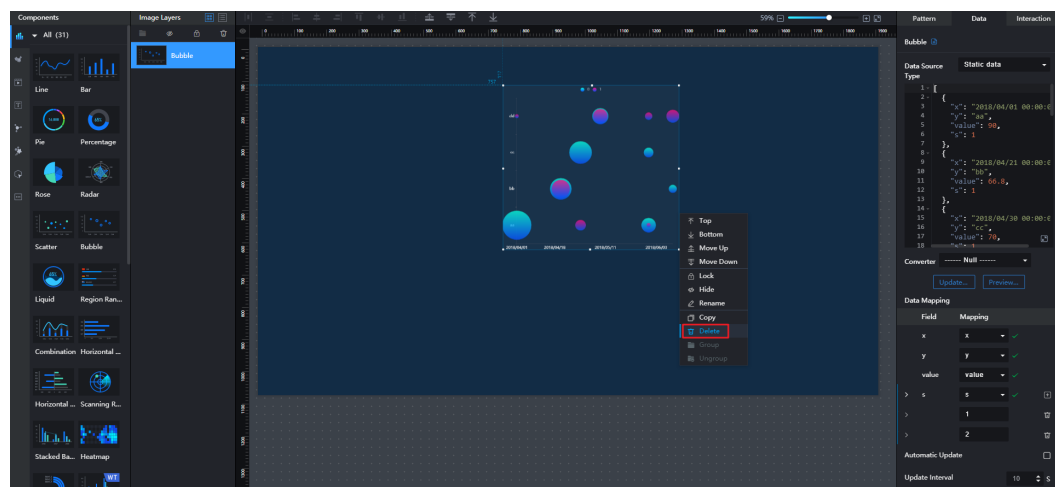
**Figure 12-33** Editing a screen



- Step 2** Right-click a component in the canvas and select **Delete** from the shortcut menu. Alternatively, right-click a component in the layer area and select **Delete** from the shortcut menu.

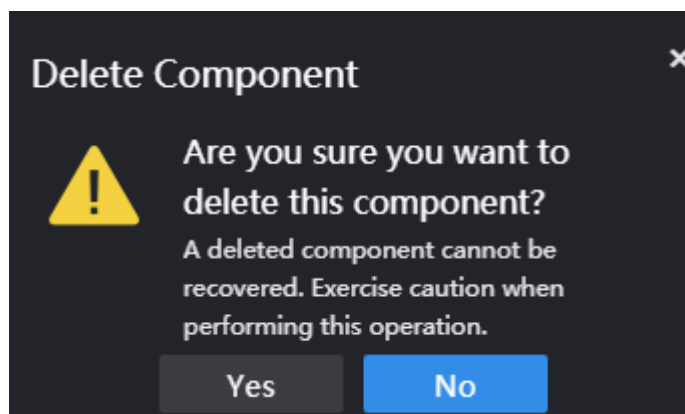
You can also select a component and then press **Delete** on the keyboard to delete it.

**Figure 12-34** Deleting a component



- Step 3** In the displayed dialog box, click **Yes**.

**Figure 12-35** Confirming component deletion

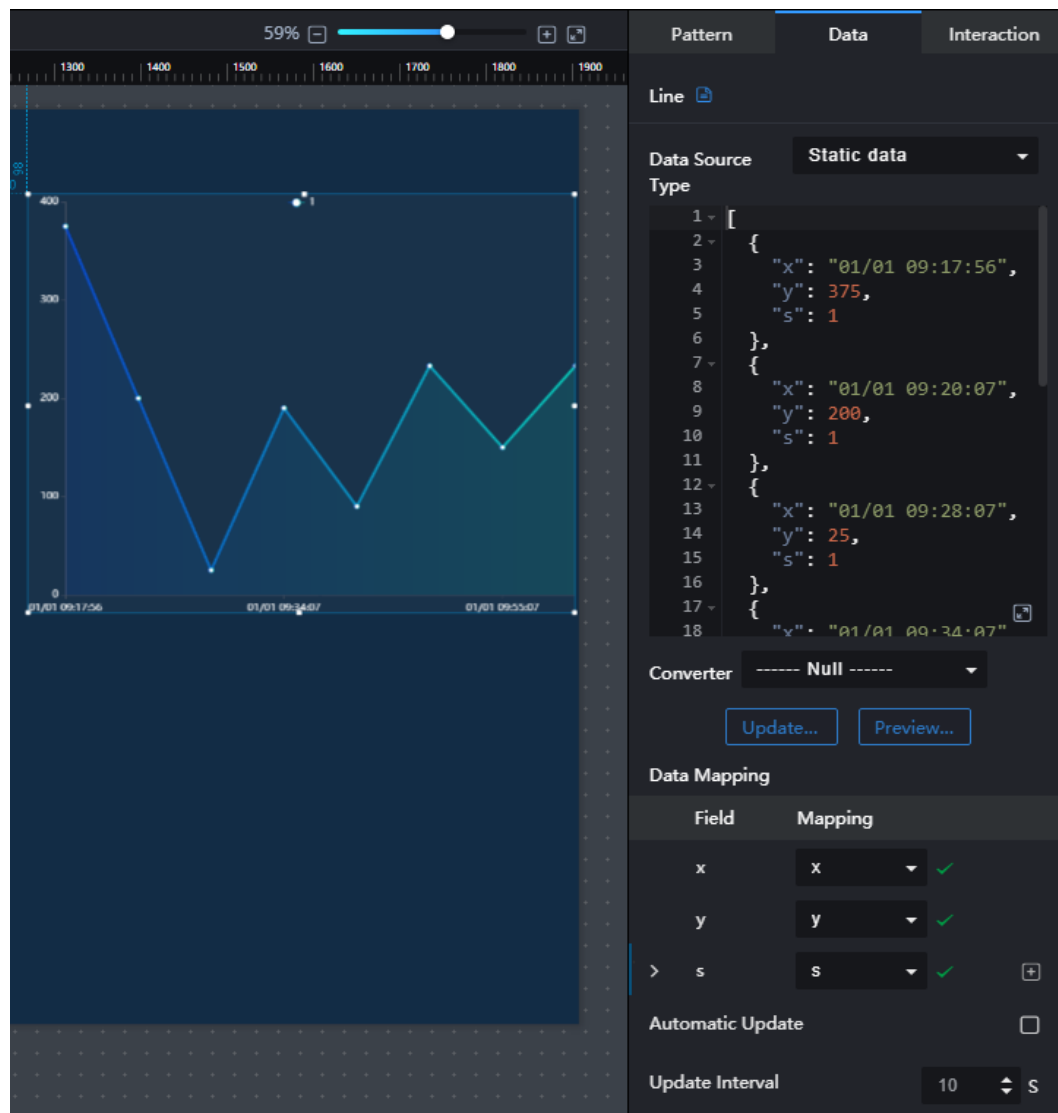


----End

## 12.9 Configuring Component Data

This section uses a line component as an example to describe how to configure component data parameters.

Figure 12-36 Configuring component data of a line chart



### Data Source Type


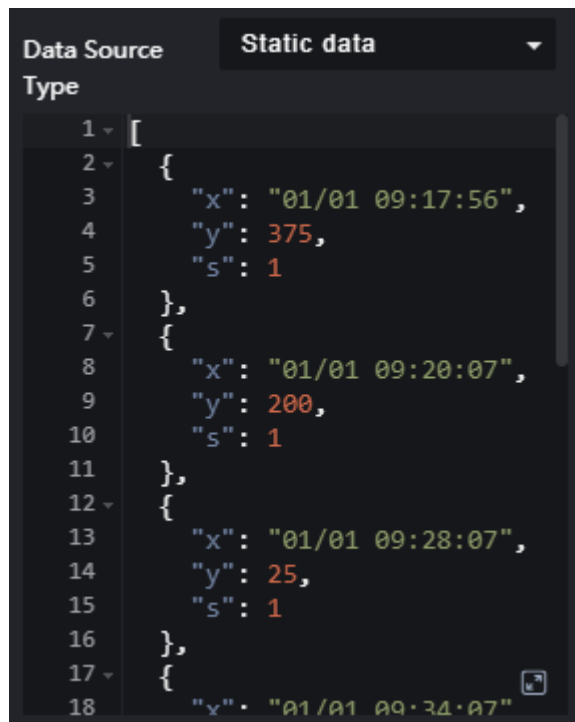
After selecting the data source type of a chart, you can view or edit the corresponding content in the data area. You can click  in the lower right corner of the data area to zoom in the data area window. This helps you view and edit data.

Figure 12-37 Data area



The system provides the following data sources for users to select:

- Static data

The following displays a data format example. You can adjust the data values according to your specific requirements, or paste the prepared JSON data.

```
[
  {
    "x": "01/01 09:17:56",
    "y": 375,
    "s": 1
  },
  {
    "x": "01/01 09:20:07",
    "y": 200,
    "s": 1
  },
  {
    "x": "01/01 09:28:07",
    "y": 25,
    "s": 1
  },
  {
    "x": "01/01 09:34:07",
    "y": 190,
    "s": 1
  },
  {
    "x": "01/01 09:40:07",
    "y": 90,
    "s": 2
  },
  {
    "x": "01/01 09:49:07",
    "y": 233,
    "s": 2
  },
]
```



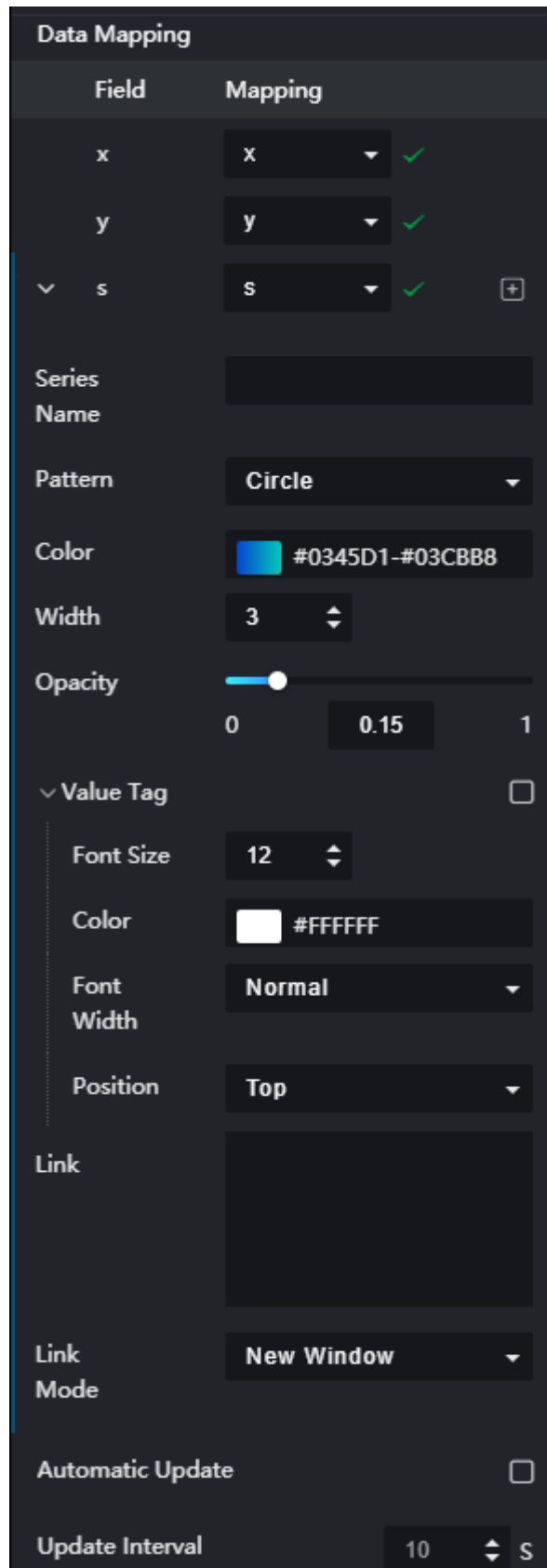
```
{
  "x": "01/01 09:55:07",
  "y": 150,
  "s": 2
},
{
  "x": "01/01 10:30:07",
  "y": 233,
  "s": 2
}
]
```

- **API**  
DLV can connect to data sources through APIs. For details about the data format, see the example in the **Static data** pane. For details about how to add API data sources, see [Creating API Data Connections](#).
- **Database, CSV file, API Gateway, DAYU DLM, Elasticsearch, and OBS**  
If you select this type of data source, you need to select the corresponding data connection. For details about data connections, see [Creating Data Connections](#). For details about the data format, see the example in the **Static data** pane.

### Data Mapping

The system allows you to customize field mappings.

Figure 12-38 Data mapping (line chart)



Field	Mapping
x	x ✓
y	y ✓
s	s ✓

Series Name

Pattern: Circle

Color: #0345D1-#03CBB8

Width: 3

Opacity: 0.15

Value Tag

- Font Size: 12
- Color: #FFFFFF
- Font Width: Normal
- Position: Top


Link

Link Mode: New Window

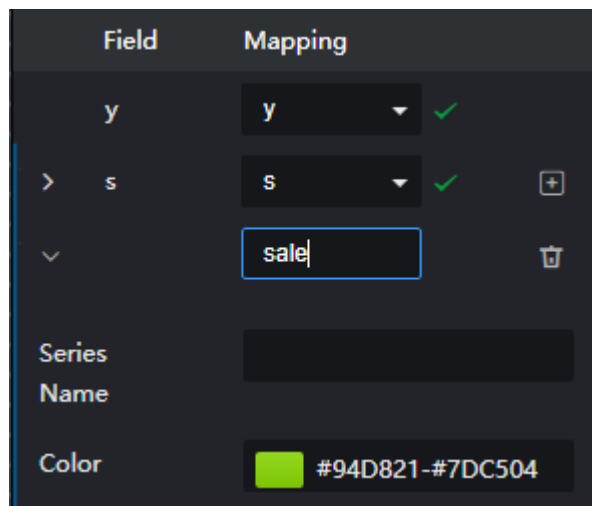
Automatic Update

Update Interval: 10 S

## Data Field Settings

Click  next to the field to be modified and set the field in the drop-down list.

**Figure 12-39** Field settings – pie chart



- **Series Name:** name of the series the field belongs to
- **Color:** color of the field in a chart

## Data Series

The **s** field is a data series field. Data is grouped based on the value of the **s** field. As shown in [Figure 12-38](#), the data whose value of **s** is **1** belongs to one group and the data whose value of **s** is **2** belongs to another group.


- Adding a data series



Click  next to the **s** field to add a data series.

- Configuring a data series



Click  in front of a data series. On the displayed page, configure the following data series parameters.

- **Series Name:** name of the data series.
- **Pattern:** coordinate shape of the data series. The value can be **Circle**, **Rectangle**, **Triangle**, or others.
- **Color:** curve color of the data series.
- **Width:** curve width of the data series.
- **Opacity:** fill color transparency of the data series.
- **Value Tag:** If this option is selected, the value of the corresponding point is displayed in the chart. You can set the font size, color, font width, and position of the value tag.
- **Link:** Set the hyperlink of the data series.
- **Link Mode:** Possible values are **New window**, **Current page**, and **Floating panel**.

### Automatic Update

If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.

### Preview Result

You can click **Update Query** to manually update the component data when the data source changes. Click **Preview Result** to view the information about the selected data source.

#### NOTE

A data request will time out in 60s. You need to allow for factors such as network latency and SQL execution efficiency to ensure that the data request is successful.

### Converter

Convert the data into the data that meets the display requirements. For details, see [Using a Converter](#).

## 12.10 Configuring Component Interaction

This section uses the tab list and line chart as an example to describe the component interaction configuration. In DLV, component interaction configuration indicates that a component transfers parameters to other components when responding to user operations or automatically triggering updates. The parameters can be used as dynamic variables during data query in other components. If you can select  on the **Interaction** tab page of a component, the component supports the interaction function. Otherwise, the component does not support the interaction function.

Figure 12-40 Supporting the interaction function

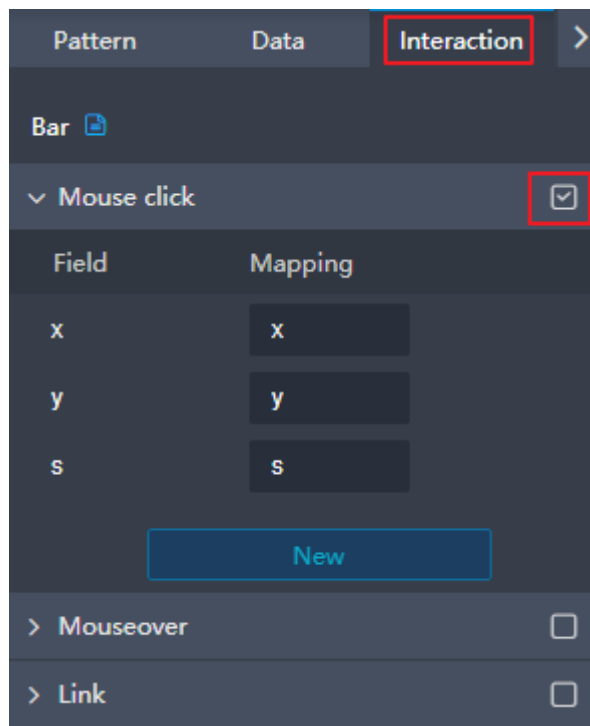
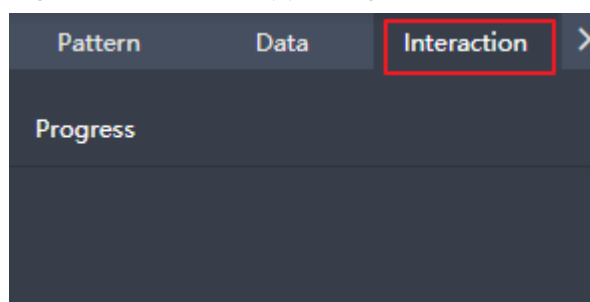


Figure 12-41 Not supporting the interaction function



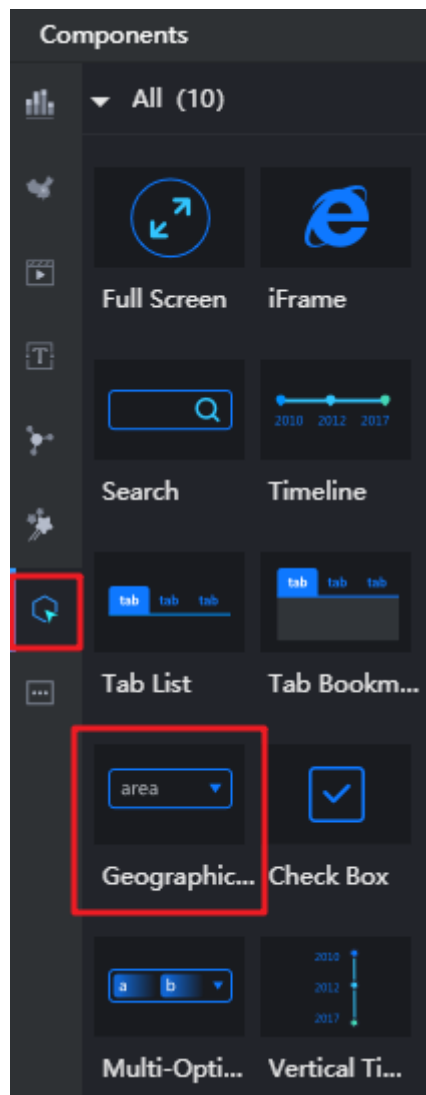
## Prerequisites

- You have enabled the required service and created a database instance.
- The corresponding data has been stored in the database instance.

## Adding and Configuring Components

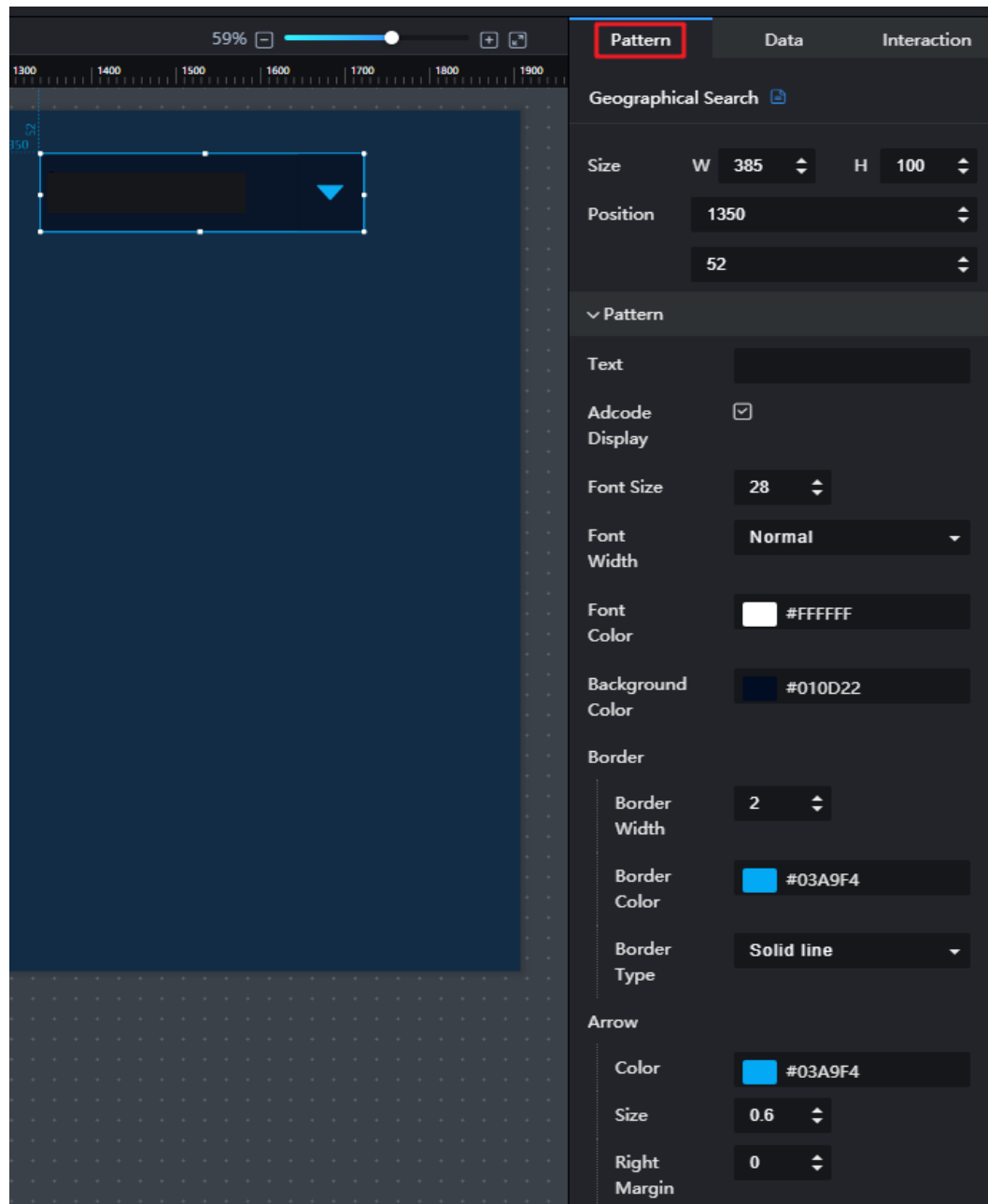
- Step 1** Open the screen development page, click the **Interaction** icon, and select **Geography Search** in the **Components** list.

**Figure 12-42** Selecting the geographical search component



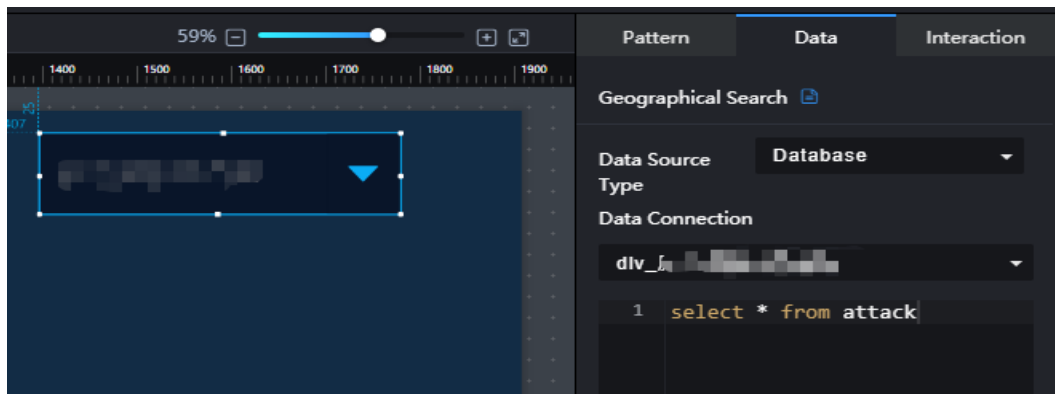
**Step 2** On the **Pattern** panel, configure the geographical search component. In this example, use the default settings.

Figure 12-43 Configuring the geographical search component



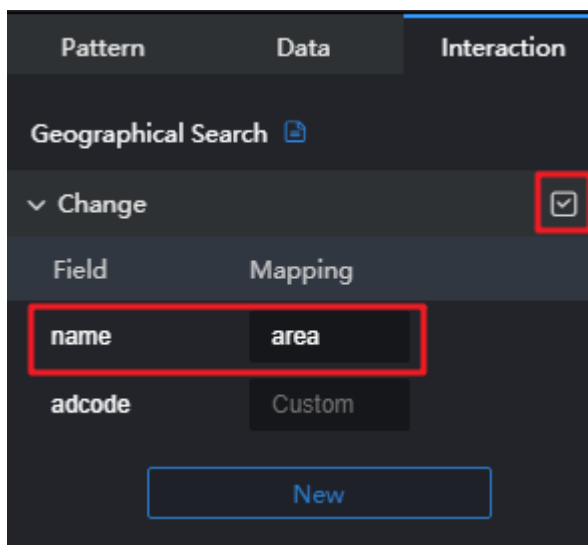
**Step 3** Switch to the **Data** panel and set the data of the geographical search component.

**Figure 12-44** Setting the data of the geographical search component



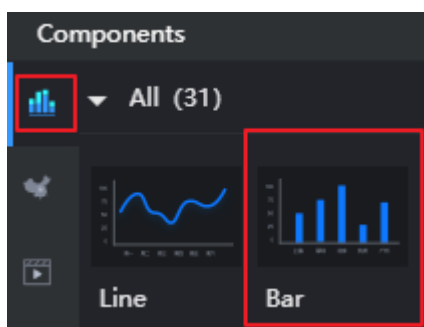
**Step 4** Switch to the **Interaction** panel and define and use interaction variables.

**Figure 12-45** Defining and using interaction variables



**Step 5** In the component list on the left, choose **Charts > Bar**.

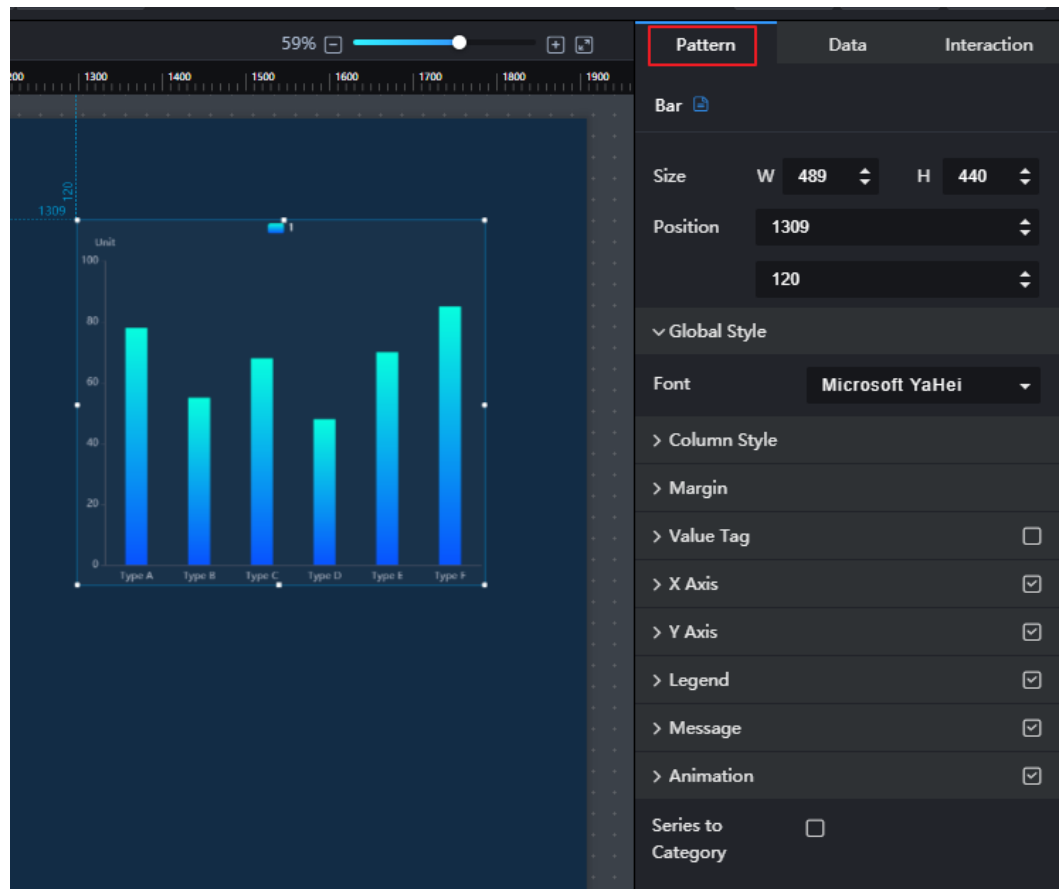
**Figure 12-46** Selecting a bar chart component



**Step 6** On the **Pattern** tab page, configure the bar chart pattern. This example uses the default settings.



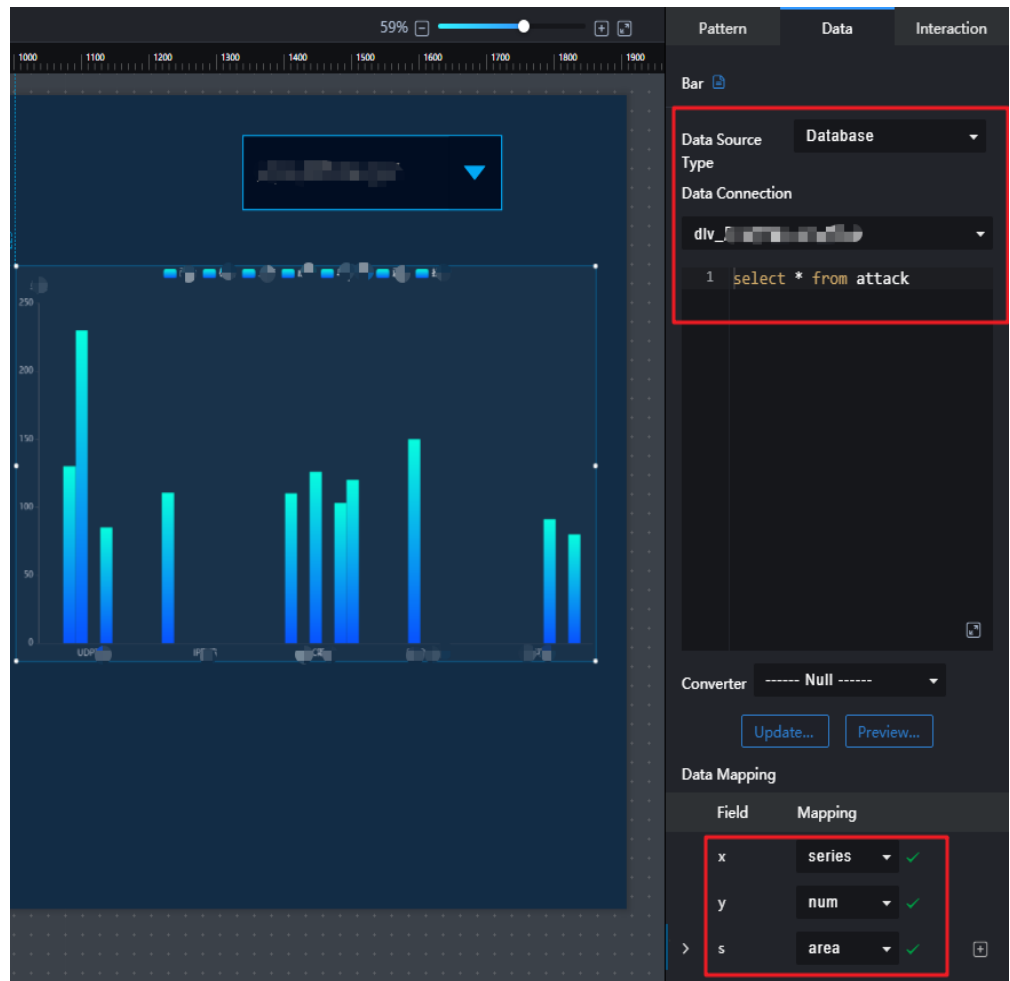
Figure 12-47 Configuring the bar chart pattern



**Step 7** Switch to the **Data** tab page and configure the bar chart.

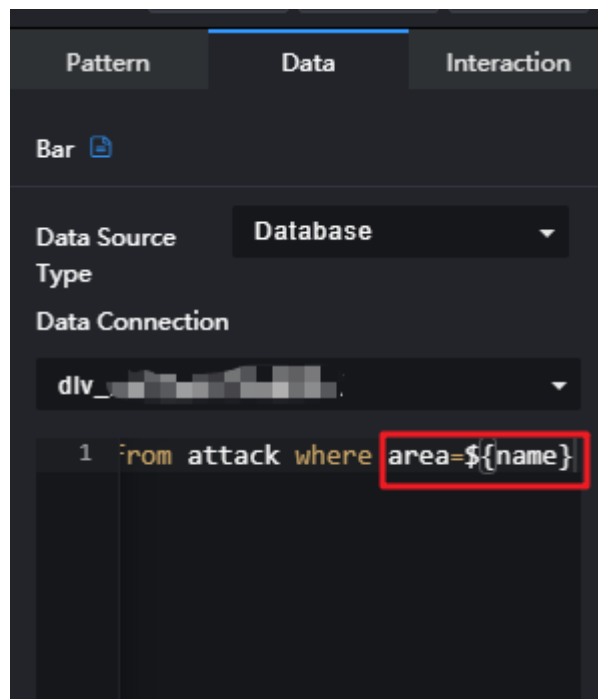
1. Configure field mapping and select a data source type. As shown in [Figure 12-48](#), the component is associated with dynamic data.

Figure 12-48 Associating with dynamic data





2. Press **Shift+\$** to reference the interaction variable **\${name}** defined in **Step 4**.

**Figure 12-49** Referencing the interaction variable

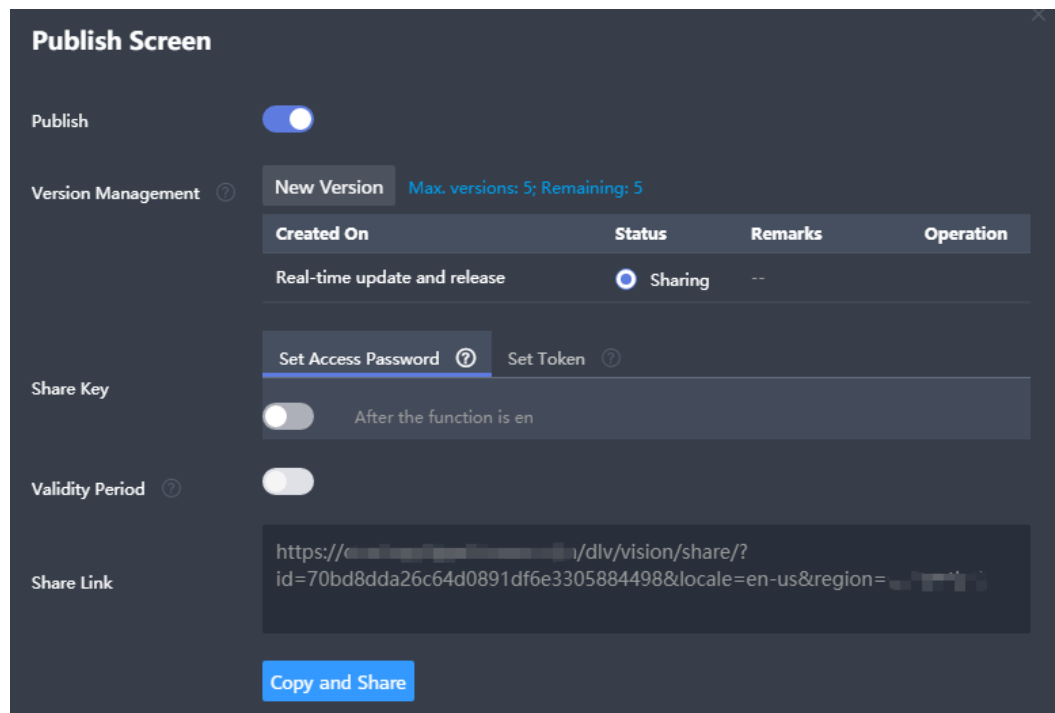


----End

## Previewing and Publishing Screens

- Step 1** In the upper right corner of the screen development page, click  to preview the screen.
- Step 2** If you reset the geographical location in the geographical search, the bar chart displays only the data of the corresponding location.
- Step 3** After ensuring that interaction works, click  in the upper right corner of the screen development page, configure publish parameters, and then share the screen with other users.

**Figure 12-50** Publishing and sharing the screen



----End

## Enabling Interaction

To enable the interaction function, you can select  on the **Interaction** tab page. When the value of the tab component changes, the value is transferred to other components.

## Field Mapping

Configure field mappings When variable ``${data}`` is used in other components, the value mapped by **label** can be obtained.

## 12.11 Configuring Drilldown

You can set link interaction to implement drilldown. Link interaction allows users to open a page specified by a link when clicking a component. In a link, users can specify one or more interaction variables. The system can transfer the data clicked on the component to the hyperlink as variable values. In this way, the details can be displayed in a drill-down manner.

### Configuring Drilldown

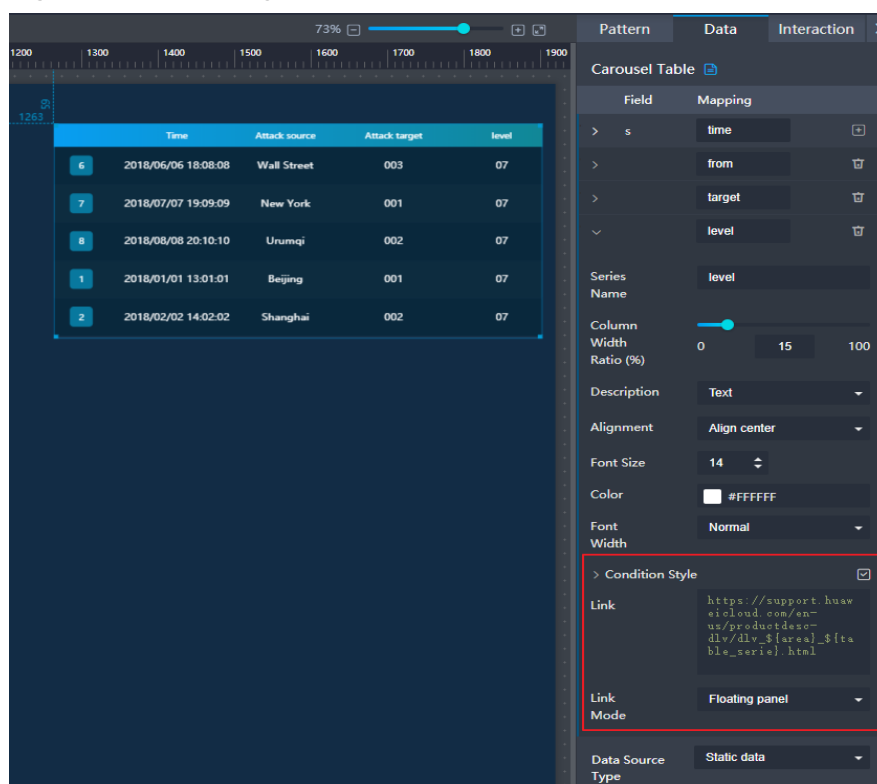
The following uses a carousel table component as an example to describe how to implement drilldown.

**Step 1** Create a screen and add a carousel table component.

**Step 2** Click the component. On the **Data** tab page, expand a series field and configure a link and link mode for the series.

- **Link:** target link to which the web page points when a data item in component widget is clicked.
- **Link Mode:** The options are **New window**, **Current page**, and **Floating panel**. Assume that the floating panel mode is selected in this example.
  - **New window:** The target link opens a new browser window.
  - **Current page:** The target link opens a window in the current browser window.
  - **Floating panel:** The target link opens a floating window in the center of the current screen.

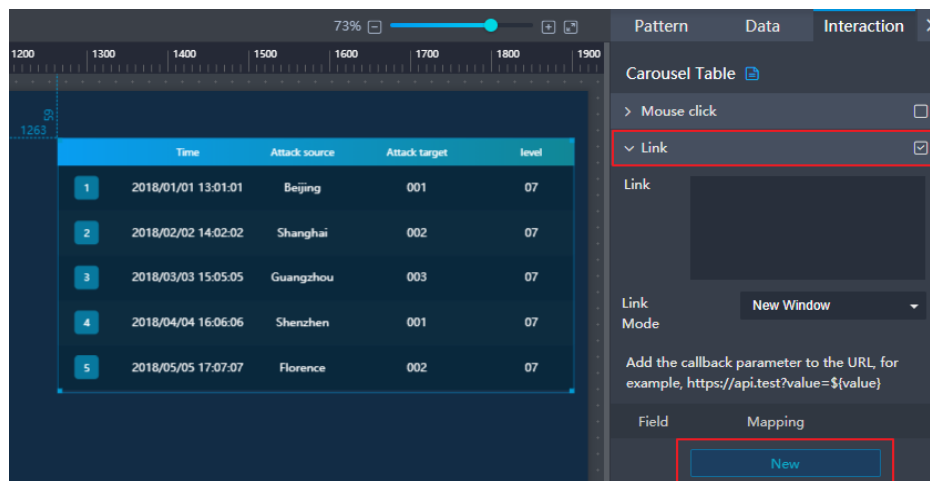
**Figure 12-51** Setting a link



**Step 3** Open the **Interaction** panel of the carousel table component and select **Link** to enable the link interaction.

You can set the link and link mode for all series. If the link and link mode are set for each series on the **Data** panel, the settings on the **Data** panel take precedence.

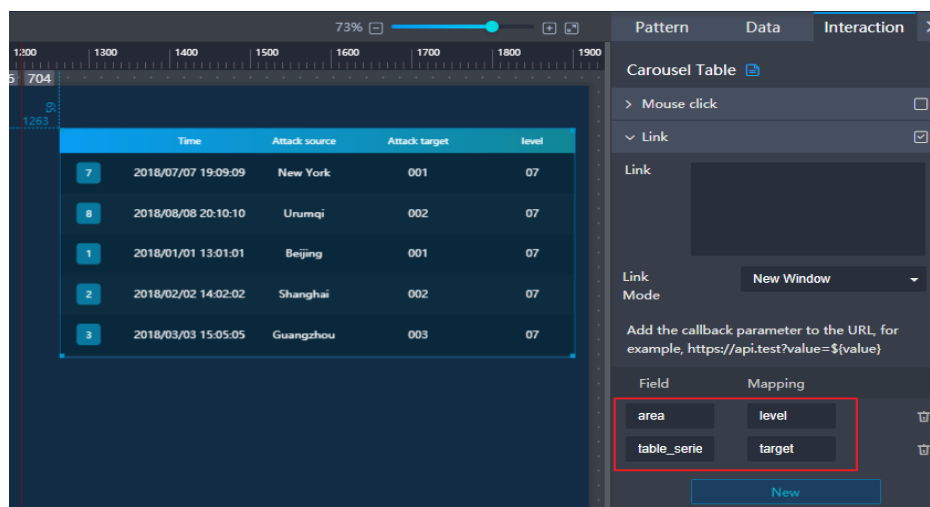
Figure 12-52 Enabling link interaction



**Step 4** If you need to use the clicked component data as the value of the interaction variable in the link, click **New** to create an interaction variable and set the mapping between the interaction variable and field.

For example, create an interaction variable shown in Figure 12-53. If you click a data record when viewing a screen, the values of the **area** and **series** fields corresponding to the data are transferred to the **area** and **table\_series** variables in the link. In this way, the link displays the corresponding details page.

Figure 12-53 Creating interaction variables




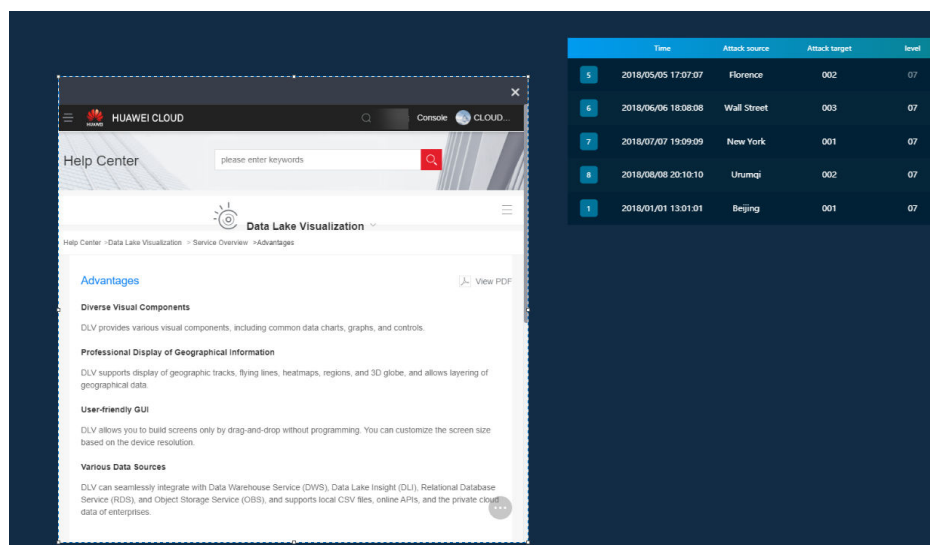
**Step 5** After the link is configured, click  in the upper right corner of the page to preview the screen. Then click a data item in the component to open the corresponding link and the details.

Figure 12-54 Floating panel



----End

## 12.12 Setting URL Parameter Interaction

After setting the hash parameter, you can view the data specified by the hash parameter from the dynamic data sources (API data source or database data source).

### Configuring URL Parameter Interaction

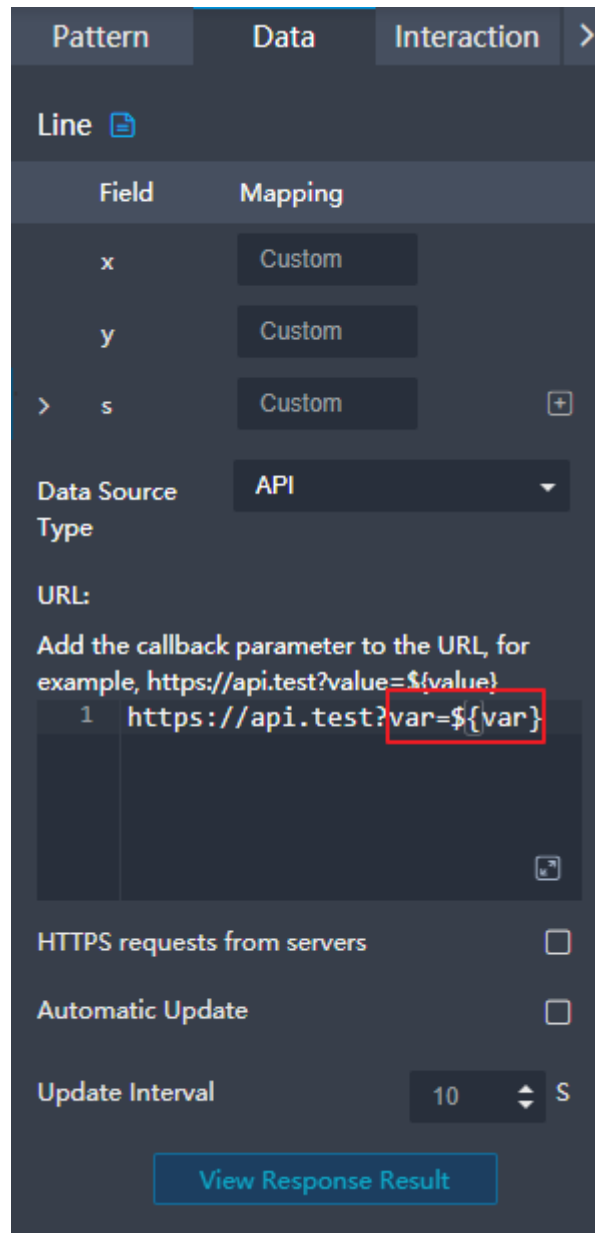
The following uses the API data source and database data source as an example to describe how to implement URL interaction.

- Step 1** Create a screen and add a component to the canvas. On the **Data** panel, set **Data Source Type** to the dynamic data source, such as **API** or **Database**. Configure the data source, and add a URL interaction variable in format of  $\${Interaction\ variable\ name}$ .

You can add URL interaction variables based on service requirements. The following are some simple examples for reference:

- For API data sources, use URL interaction variables. The following are URL configuration examples:
  - Example 1: Use a URL interaction variable in the URL of the API data source:  
`https://api.test?var=${var}`

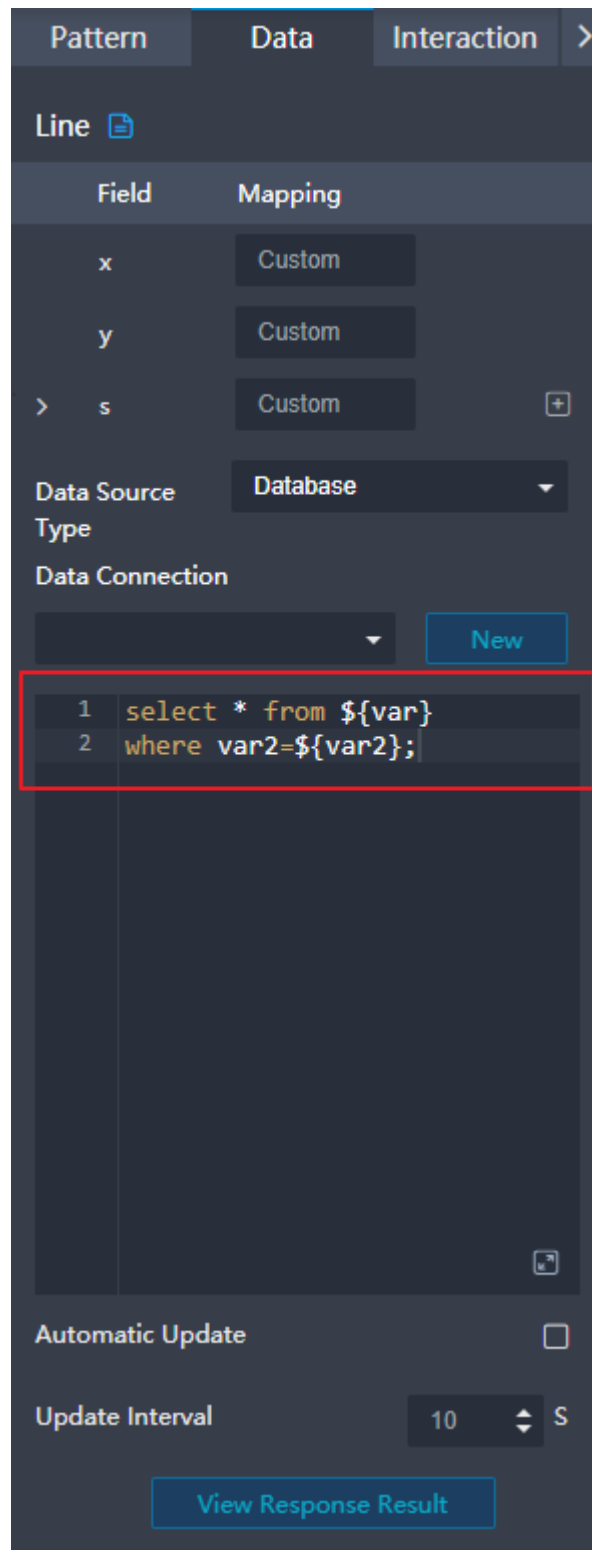
**Figure 12-55** URL interaction variable



- Example 2: Use multiple URL interaction variables in the URL of the API data source and use ampersands (&) to separate variables.  
`https://api.test?var=${var}&var2=${var2}`
- For database data sources, use URL interaction variables in SQL statements. The following are configuration examples:
  - Example 1: Use multiple URL interaction variables in SQL statements.  
`select * from ${var} where var2=${var2};`



Figure 12-56 URL interaction variable: SQL



- Example 2: Use multiple URL interaction variables in SQL statements.  
select \${var} from \${var2};

**Step 2** After the link is configured, click  in the upper right corner of the page to preview the screen. Add an interaction variable at the end of the URL of the screen

preview page and access the page again to view the drilldown effect of the link. If drilldown effect is correctly displayed, go to the next step.

For example, the URL of the screen preview page is as follows:

Add the following interaction variables to the end of the URL of the screen preview page:

- Example 1:
- Example 2: If a URL contains multiple hash parameters, use ampersands (&) to separate them.

**Step 3** Publish the screen and obtain the screen URL. For details, see [Publishing Screens](#).

For example, the URL of the screen is as follows:

**Step 4** In the URL obtained in the previous step, set the default value of the variable by setting the hash parameter. The parameter name is the same as the URL interaction variable name set in the data source.

Example 1:

Example 2: If a URL contains multiple hash parameters, use ampersands (&) to separate them. For example, the following example sets the interaction variables **var** and **var2** at the same time:

**Step 5** In the browser or application code, use the URL of the screen to which the hash parameter is added to access the screen data specified by the parameter.

Use the URL in the preceding example to access the screen. When the page is opened, the value of the interaction variable **var** of the screen component is set to **value**, and the value of the interaction variable **var2** is set to **value2**.

----End

## 12.13 Using a Converter

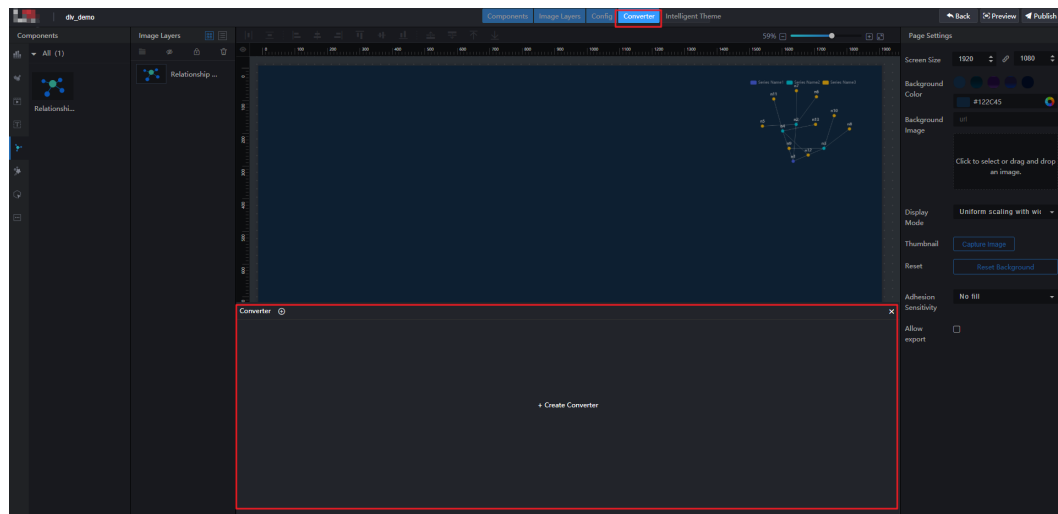
When the result returned by the component does not meet the display requirements or requires secondary processing and conversion, you can use a converter to edit the code to process the data returned by the component.



### Procedure

**Step 1** Create a screen and go to the screen editing page.

**Step 2** Click **Converter** at the top of the page. The converter editing area is displayed at the bottom of the page.

Figure 12-57 Converter



**Step 3** In the converter editing area, click **Create Converter** and enter the converter name. After the converter is created, move the cursor to the row where the converter is located, click  to rename the converter, or click  to delete the converter. If the number of **Linked Components** is not **0**, cancel the link and then delete the converter.

A converter name can contain only letters, numbers, underscores (\_), and hyphens (-), and cannot exceed 32 characters.

**Step 4** Click a converter name to expand the converter code area and edit and run the code.



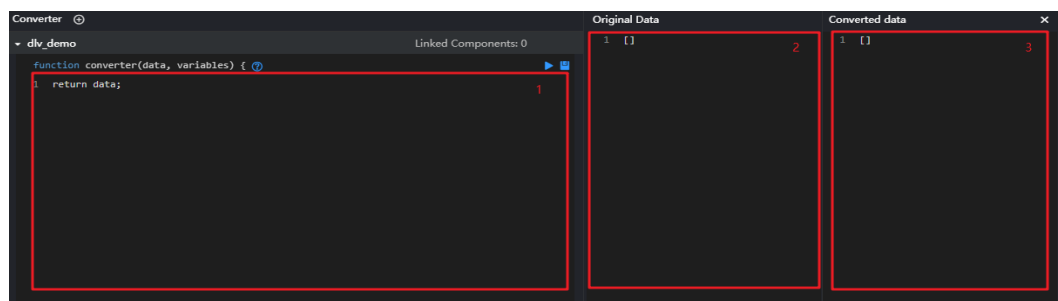
1. Write JavaScript code in area 1.
2. Enter the data to be processed in area 2. The system transfers the original data to the **data** of the code editor for compilation.
3. Click  in the code editing area to run the code. The converted result data is displayed in area 3.
4. Click  in the code editing area to save the code in the converter.

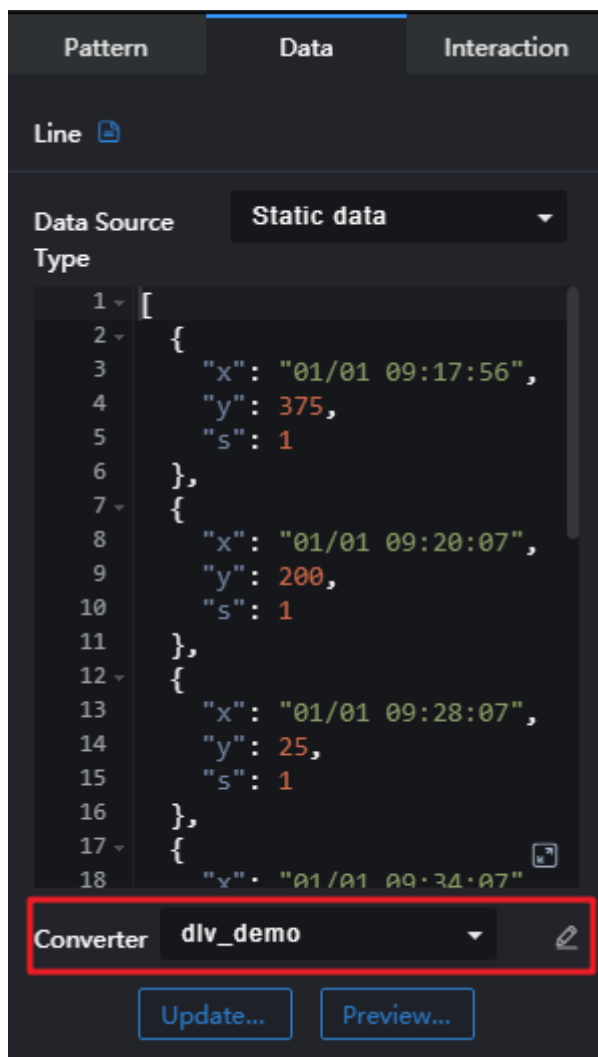
Figure 12-58 Converter code area




**Step 5** Link the converter to components.

1. Select the components you want to link to the converter and switch to the **Data** panel.
2. Select the converter you created next to **Converter**.

Figure 12-59 Selecting a converter



3. Modify the converter code. Click the  icon on the right of the converter to modify, run, and save the code. The **Original Data** area displays the request response data or static data of the current component.

----End

## Sample Code

For details about the JavaScript syntax, see <https://developer.mozilla.org/en-US/docs/Web/JavaScript>.

- Data conversion example 1 (when the data structure in the returned weather data is complex and the indicator data is scattered, the data is converted into a simple format for display)
  - Code
 

```
return data.results[0].weather_data.map(it => {
  return {
    date: it.date,
    weather: `${it.weather} ${it.wind} ${it.temperature}`
  };
});
```

- Original data

```
{
  "error": 0,
  "status": "success",
  "date": "2020-11-27",
  "results": [{
    "currentCity": "city A",
    "pm25": "119",
    "index": [],
    "weather_data": [{
      "date": "Wednesday, September 16 (real-time temperature: 28°C)",
      "dayPictureUrl": "http://s1.bdstatic.com/r/www/aladdin/img/new_weath/
bigicon/3.png",
      "nightPictureUrl": "http://s1.bdstatic.com/r/www/aladdin/img/new_weath/
bigicon/3.png",
      "weather": "Overcast to cloudy,",
      "wind": "East wind 3 to 4 mph,",
      "temperature": "25 to 15°C"
    },
    {
      "date": "Thursday",
      "dayPictureUrl": "http://s1.bdstatic.com/r/www/aladdin/img/new_weath/
icon/5.png",
      "nightPictureUrl": "",
      "weather": "Cloudy to sunny,",
      "wind": "Northwest breeze,",
      "temperature": "26 to 12°C"
    },
    {
      "date": "Friday",
      "dayPictureUrl": "http://s1.bdstatic.com/r/www/aladdin/img/new_weath/
icon/1.png",
      "nightPictureUrl": "",
      "weather": "Sunny,",
      "wind": "East breeze,",
      "temperature": "30 to 16°C"
    },
    {
      "date": "Saturday",
      "dayPictureUrl": "http://s1.bdstatic.com/r/www/aladdin/img/new_weath/
icon/5.png",
      "nightPictureUrl": "",
      "weather": "Cloudy to overcast,",
      "wind": "Southeast wind 3 to 4 mph,",
      "temperature": "30 to 18°C"
    }
  ]
}]
}
```

- Converted data

```
[
  {
    "date": "Wednesday, September 16 (real-time temperature: 28°C)",
    "weather": "Overcast to cloudy, East wind 3 to 4 mph, 15°C to 25°C"
  },
  {
    "date": "Thursday",
    "weather": "Cloudy to sunny, Northwest breeze, 12°C to 26°C"
  },
  {
    "date": "Friday",
    "weather": "Sunny, East breeze, 16°C to 30°C"
  },
  {
    "date": "Saturday",
    "weather": "Cloudy to overcast, Southeast wind 3 to 4 mph, 18°C to 30°C"
  }
]
```

- Data conversion example 2 (when data with multiple **series** values is returned, only data items whose value of **series** is **Search** are displayed.)
  - Code

```
return data.filter (it => it.series === 'Search');
```
  - Original data

```
[
  {
    "area": "city A",
    "series": "Speed",
    "num": "120",
    "id": "1"
  },
  {
    "area": "city B",
    "series": "Search",
    "num": "150",
    "id": "2"
  },
  {
    "area": "city C",
    "series": "3",
    "num": "120",
    "id": "3"
  },
  {
    "area": "aa",
    "series": "44",
    "num": "44",
    "id": "5"
  }
]
```
  - Converted data

```
[
  {
    "area": "city B",
    "series": "Search",
    "num": "150",
    "id": "2"
  }
]
```
- Data conversion example 3 (when the data is a decimal, the data is converted into a percentage and is displayed with two decimal places)
  - Code

```
return data.map(it => {
  it.y = (it.y * 100).toFixed(2);
  return it;
});
```
  - Original data

```
[
  {
    "x": "Type A",
    "y": 0.78,
    "s": 1
  },
  {
    "x": "Type B",
    "y": 0.55,
    "s": 1
  },
  {
    "x": "Type C",
    "y": 0.68,
    "s": 1
  },
  {

```

```

    "x": "Type D",
    "y": 0.48,
    "s": 1
  },
  {
    "x": "Type E",
    "y": 0.7,
    "s": 1
  },
  {
    "x": "Type F",
    "y": 0.85,
    "s": 1
  }
]

```

- Converted data

```

[
  {
    "x": "Type A",
    "y": "78.00",
    "s": 1
  },
  {
    "x": "Type B",
    "y": "55.00",
    "s": 1
  },
  {
    "x": "Type C",
    "y": "68.00",
    "s": 1
  },
  {
    "x": "Type D",
    "y": "48.00",
    "s": 1
  },
  {
    "x": "Type E",
    "y": "70.00",
    "s": 1
  },
  {
    "x": "Type F",
    "y": "85.00",
    "s": 1
  }
]

```

- Data conversion example 4 (when the returned data is an empty array [], the data is converted into 0 for display)

- Code

```

if (Array.isArray(data) && data.length === 0) {
  const item = {};
  item['finalName'] ='Modification times'
  item['finalValue'] = 0;
  data.push(item)
  return data;
} else {
  return data;
}

```

- Original data

```

[]

```

- Converted data

```

[
  {
    "finalName": "Modification times",

```

```
"finalValue": 0
}
]
```

- Data conversion example 5 (**variables.cato** is referenced in the code to display only the data selected in the drop-down box in the bar chart component)

- Code

```
return data.filter(it => it.cato === variables.cato);
```

- Original data

```
[
  {
    "cato": "city A",
    "num": 678,
    "id": "0"
  },
  {
    "cato": "city B",
    "num": 0,
    "id": "0"
  },
  {
    "cato": "city C",
    "num": 379,
    "id": "0"
  },
  {
    "cato": "city D",
    "num": 678,
    "id": "0"
  },
  {
    "cato": "city E",
    "num": 6666.0024,
    "id": "0"
  },
  {
    "cato": "city F",
    "num": 12345.667,
    "id": "0"
  },
  {
    "cato": "city G",
    "num": 89080,
    "id": "0"
  },
  {
    "cato": "city H",
    "num": 89080,
    "id": "0"
  },
  {
    "cato": "city I",
    "num": 654321.3,
    "id": "0"
  }
]
```

- Converted data

```
[
  {
    "cato": "city A",
    "num": 678,
    "id": "0"
  }
]
```



# 13 Component Guide

---

## 13.1 Line Chart Components

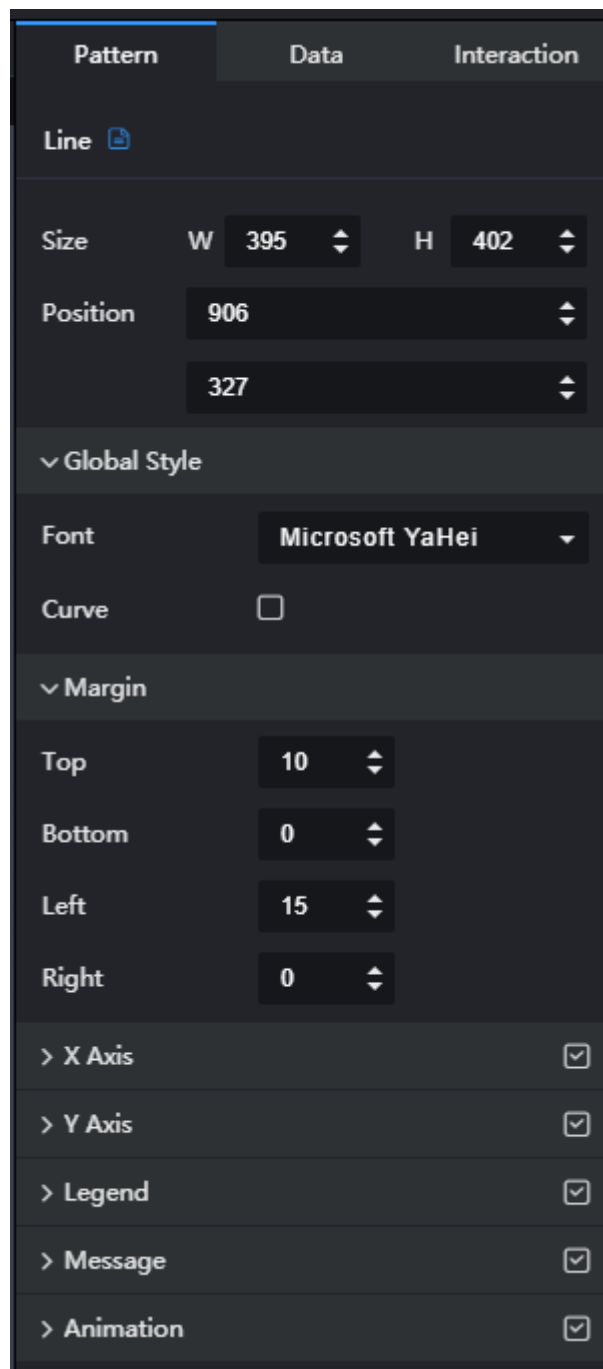
### 13.1.1 Line Chart

This section describes parameters of a line chart.

#### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-1 Size and position of a line chart



- **Global Style**
  - **Font:** text font.
  - **Curve:** to set a curve by clicking .
- **Margin**
  - **Top:** spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.






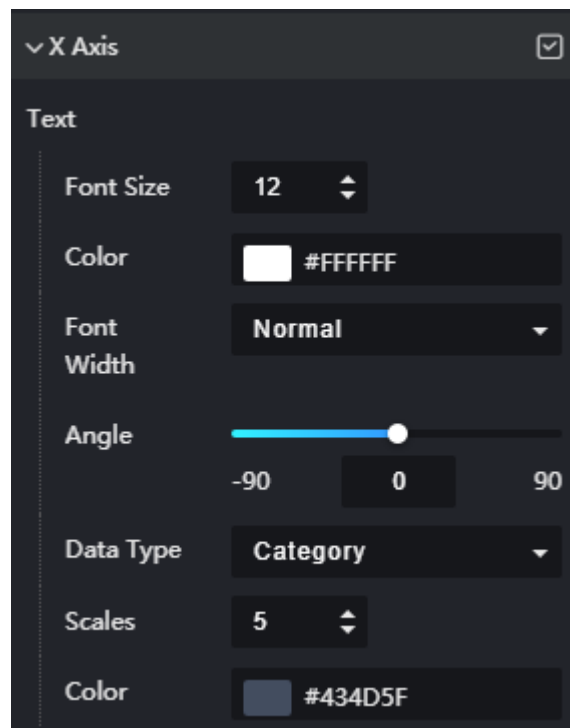


- **Bottom:** spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **Left:** spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **Right:** spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **X Axis**
  - **X Axis:** to show or hide the X axis by clicking  or .
  - **Text:** text style of the X axis, including **Font Size**, **Color**, **Font Width**, and **Angle**.
  - **Data Type:** data type of the X axis. The value can be **Value**, **Category**, **Time**, or **Log**.
  - **Scales:** When **Data Type** is set to **Value** or **Time**, the number of displayed labels is automatically displayed based on the value of **Scales**. This parameter is invalid when **Data Type** is set to other values.
  - **Color:** color of the X axis.

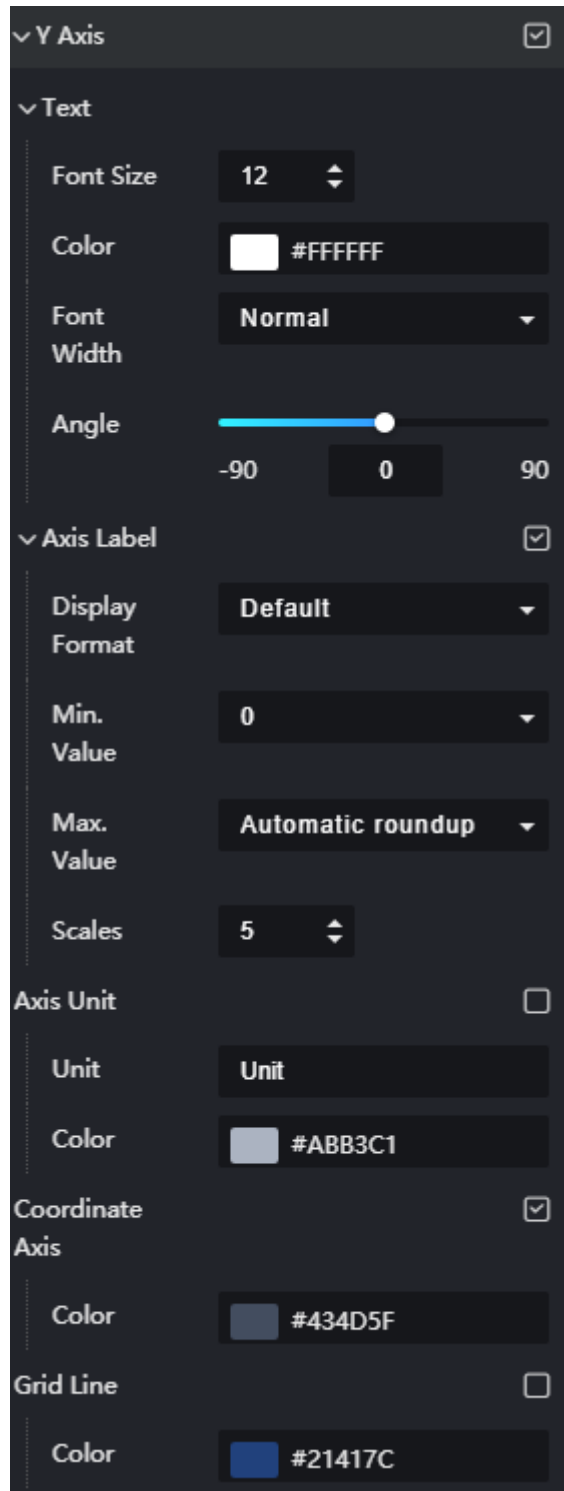
Figure 13-2 X axis of a line chart



- **Y Axis**
  - **Y Axis:** to show or hide the Y axis by clicking  or .
  - **Text:** text style of the Y axis, including **Font Size**, **Color**, **Font Width**, **Display Format**, **Angle**, and **Axis Label**.
  - **Axis Unit:** unit of the Y axis.

- **Coordinate Axis:** color of the Y axis.
- **Grid Line:** grid line color of the Y axis.

Figure 13-3 Y axis of a line chart

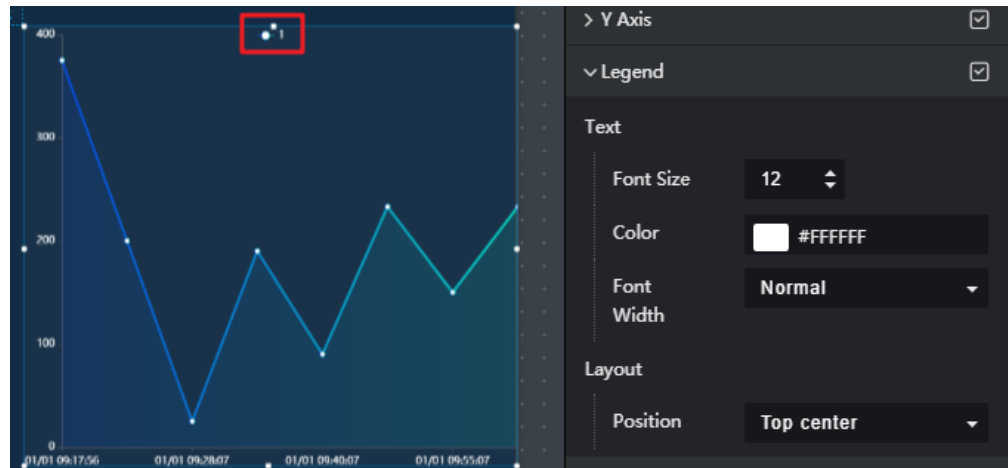


- **Legend**

- **Legend:** to show or hide the legend by clicking  or .

- **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
- **Layout:** position where the legend is located.

Figure 13-4 Legend of a line chart



- **Message**


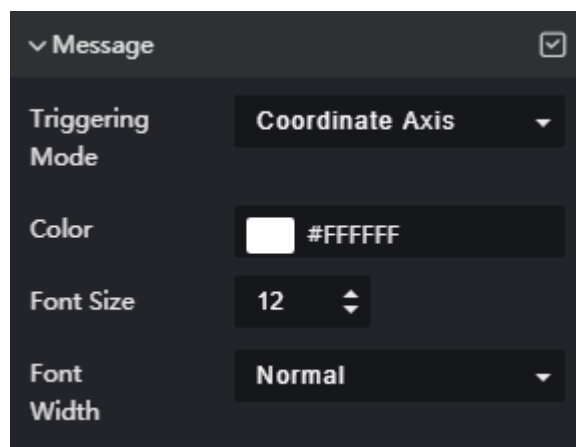


- **Message:** If you click , a message will pop up when you hover over a previewed or published component.
- **Triggering Mode:** to set the triggering mode of messages. The options are **Coordinate Axis** and **Data**.
- **Color:** font color of the message.
- **Font Size:** font size of the message.
- **Font Width:** font width of the message.

Figure 13-5 Message of a line chart

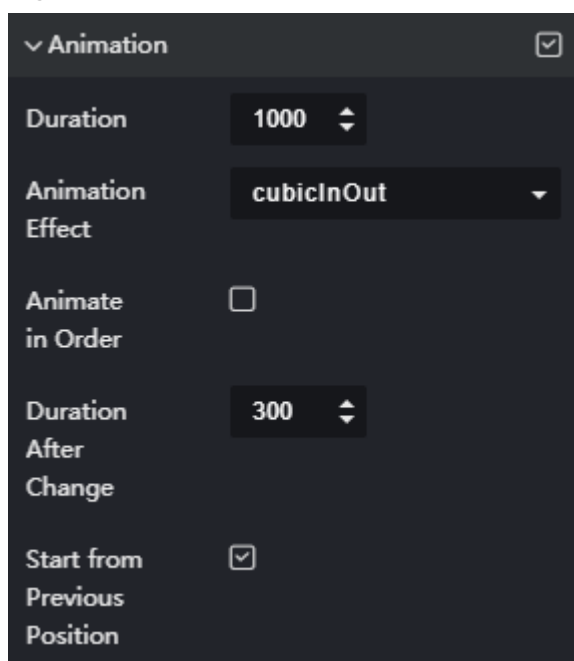


- **Animation**

- Click  or  next to **Animation** to hide or show animation, respectively.
- **Duration:** duration of the first rendering of the component, in ms.

- **Animation Effect:** The system provides multiple common animation slow-moving effects.
- **Animate in Order:** If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.
- **Duration After Change:** animation duration when the component data is updated, in ms.
- **Start from Previous Position:** If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

**Figure 13-6** Animation (line chart)



## Data

For details about how to configure component data, see [Configuring Component Data](#).

## Interaction

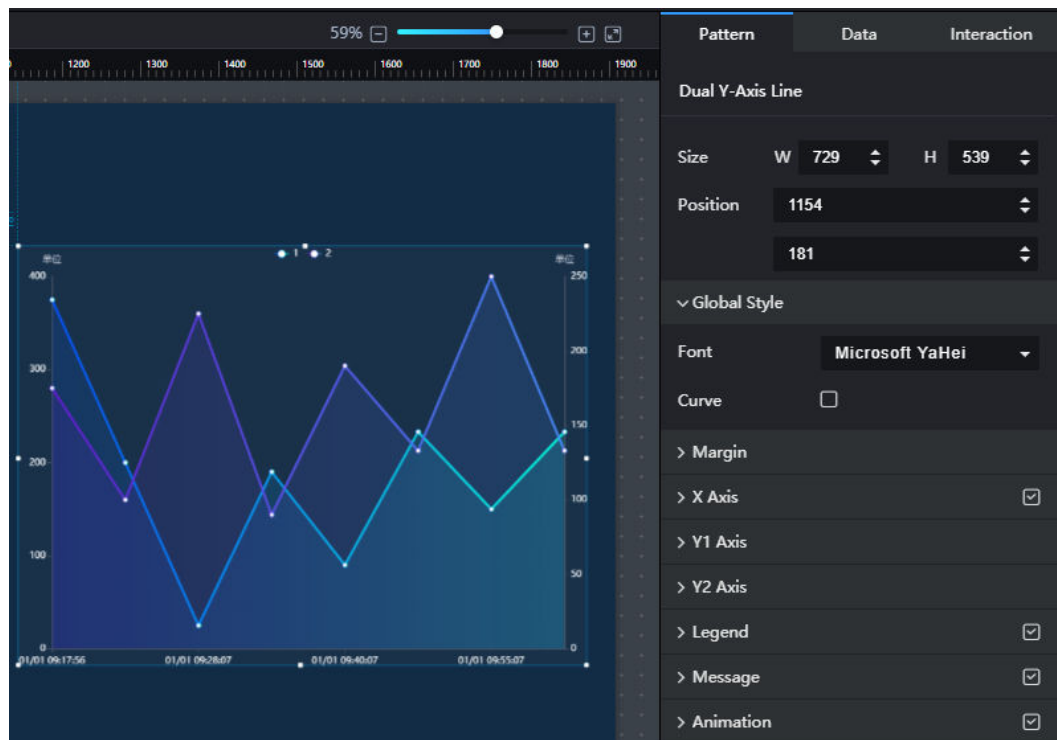
For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.1.2 Dual Y-Axis Line

A dual Y-axis line chart can display the data change trend of multiple series of each category. One category can display the data of multiple series. A dual Y-axis line chart contains two series by default. You can add a series value of a field that represents a series in the source data table to be a series. You can add multiple series. Each series of data is marked on coordinates in the form of points, and connected to points in a line.

This section describes parameters of a dual Y-axis line chart.

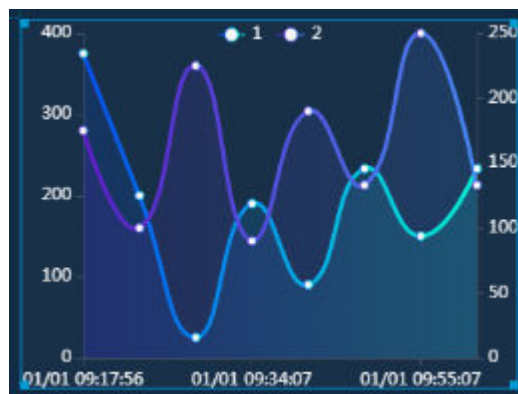
**Figure 13-7** Dual Y-axis line chart



## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - **Font:** font of the text.
  - **Curve:** When this function is enabled, the broken lines become curved lines.

**Figure 13-8** Curve of a dual Y-axis line







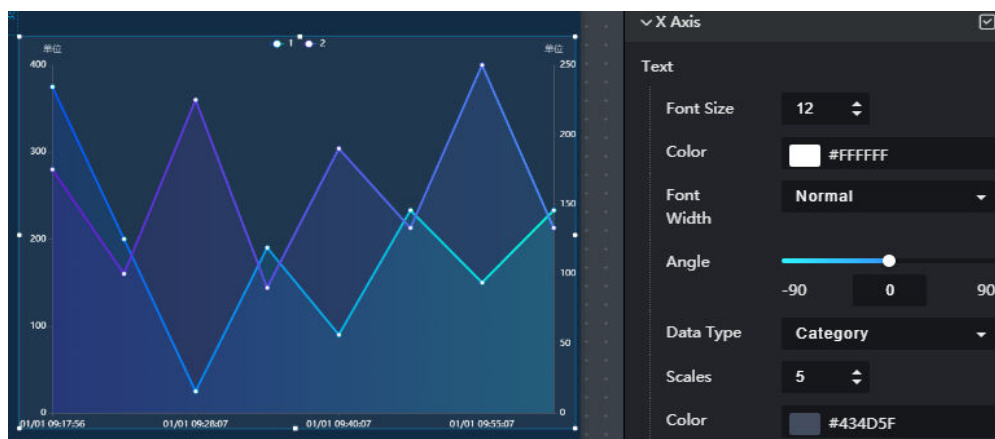
- **Margin**
  - **Top**: spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom**: spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Left**: spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Right**: spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **X Axis**: to show or hide the X axis. When this option is selected, you can set the X axis style.
  - **Font Size**: font size of the axis label text.
  - **Color**: font color of the axis label text.
  - **Font Width**: font width of the axis label text.
  - **Angle**: tilt angle of the axis label text.
  - **Data Type**: data type of the field corresponding to the axis. The value can be **Value**, **Category**, **Time**, or **Log**.
  - **Scales**: When **Data Type** is set to **Value** or **Time**, the number of displayed labels is automatically displayed based on the value of **Scales**. This parameter is invalid when **Data Type** is set to other values.
  - **Color**: color of the axis.

Figure 13-9 X axis of a dual Y-axis line chart

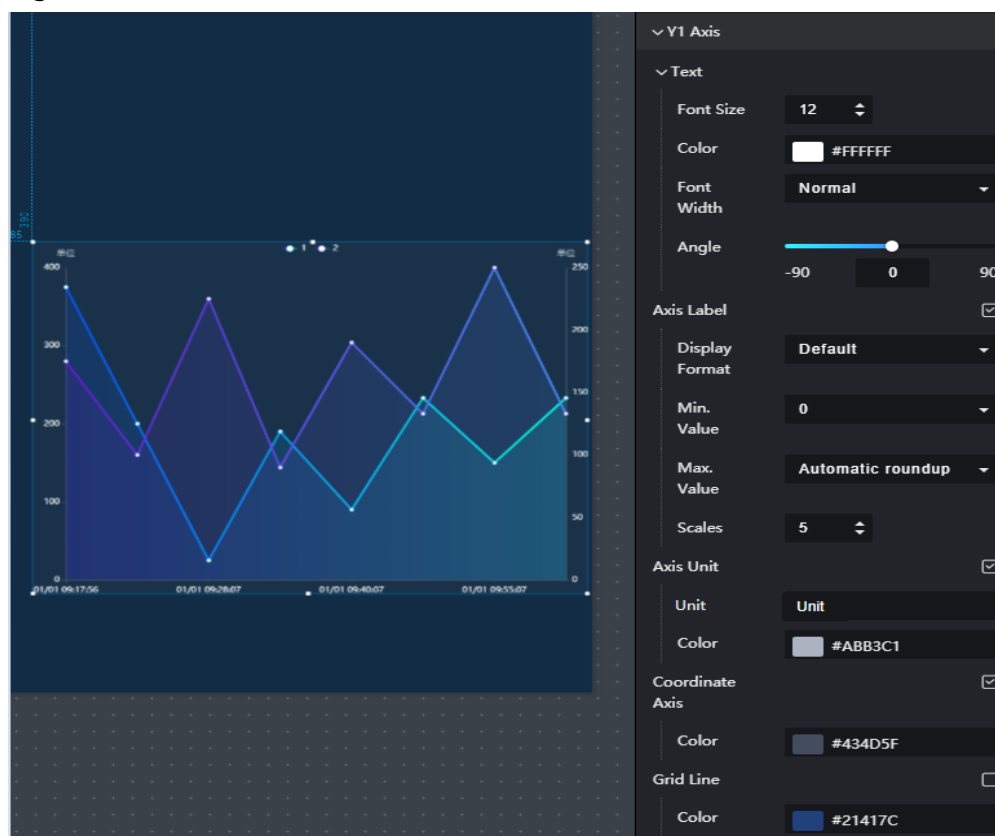


- **Y1 Axis**
  - **Font Size**: font size of the axis label text.
  - **Color**: font color of the axis label text.
  - **Font Width**: font width of the axis label text.
  - **Angle**: tilt angle of the axis label text.
  - **Axis Label**: to show or hide the axis labels. When this function is enabled, you can set the following parameters:



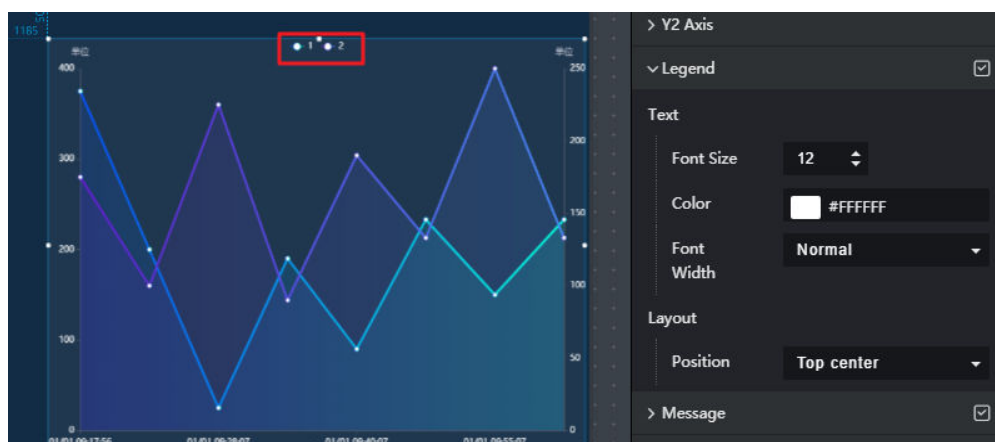
- **Display Format:** display format of the scale value on the axis.
- **Min. Value:** the minimum value of the axis. You can enter a value or select a value from the drop-down list. When this parameter is set to the minimum value, the start value of the axis is the minimum value in the current data.
- **Max. Value:** the maximum value of the axis. You can enter a value or select a value from the drop-down list. When this parameter is set to the maximum value, the start value of the axis is the maximum value in the current data.
- **Scales:** intervals of data items on the coordinate axis.
- **Axis Unit:** to show or hide the axis unit. When this function is enabled, the axis unit is displayed on the top of the chart. The unit can be displayed only when **Top** under **Margin** is set to a value greater than or equal to 40.
  - **Unit:** unit of the coordinate axis, for example, kilometer, byte/second, or GB.
  - **Color:** font color of the text.
- **Coordinate Axis:** to show or hide the axis. You can set the color of the axis when you select this option.
- **Grid Line:** to show or hide the grid lines. You can set the color of the grid lines when you select this option.

Figure 13-10 Y1 axis of a dual Y-axis line chart



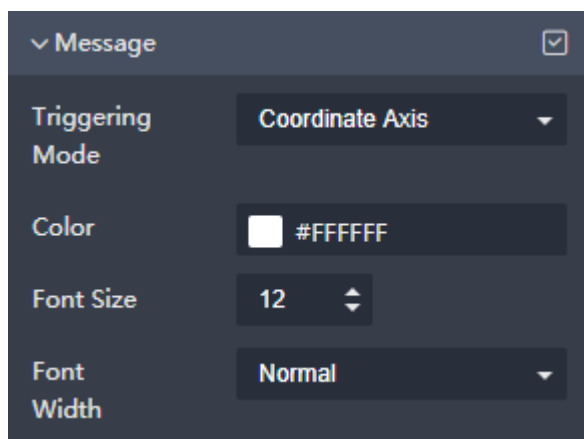
- **Y2 Axis**  
The Y2 axis is the Y axis on the right. The configuration items are the same as those of the Y1 axis. For details, see the description of **Y Axis**.
- **Legend:** to show or hide the legend. When this option is selected, you can set the legend style.
  - **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
  - **Layout**
    - **Position:** position of the legend.

**Figure 13-11** Legend of a dual Y-axis line chart



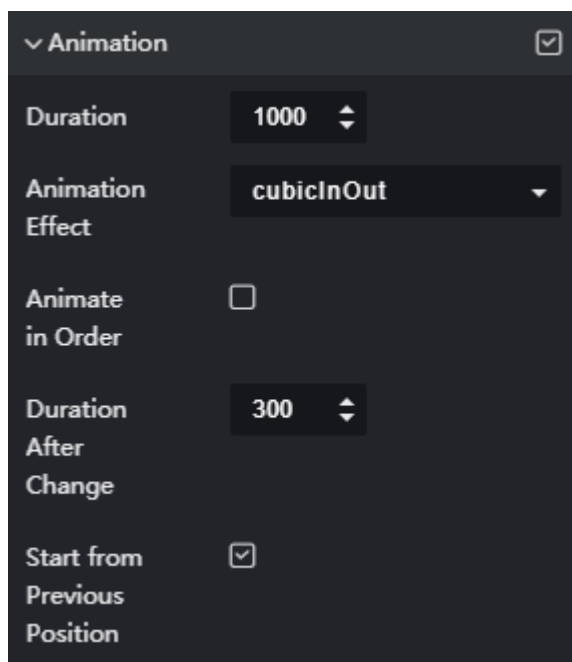
- **Message:** to show or hide the prompt information. After this function is enabled, a message is displayed when you mouse over or click on the screen during the screen preview.
  - **Triggering Type:** type of the prompt message.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.

**Figure 13-12** Message



- Animation



- Click  or  next to **Animation** to hide or show animation, respectively.
- **Duration**: duration of the first rendering of the component, in ms.
- **Animation Effect**: The system provides multiple common animation slow-moving effects.
- **Animate in Order**: If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.
- **Duration After Change**: animation duration when the component data is updated, in ms.
- **Start from Previous Position**: If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

**Figure 13-13** Animation (line chart)

## Data

- **Data Source Type**: to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter**: Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Data Mapping**: The data format of a dual Y-axis line chart consists of the following fields:
  - **x**: category, corresponding to the X axis. The data type of this field must be the same as that of the [X Axis](#).
  - **y**: data, corresponding to Y1 axis or Y2 axis.

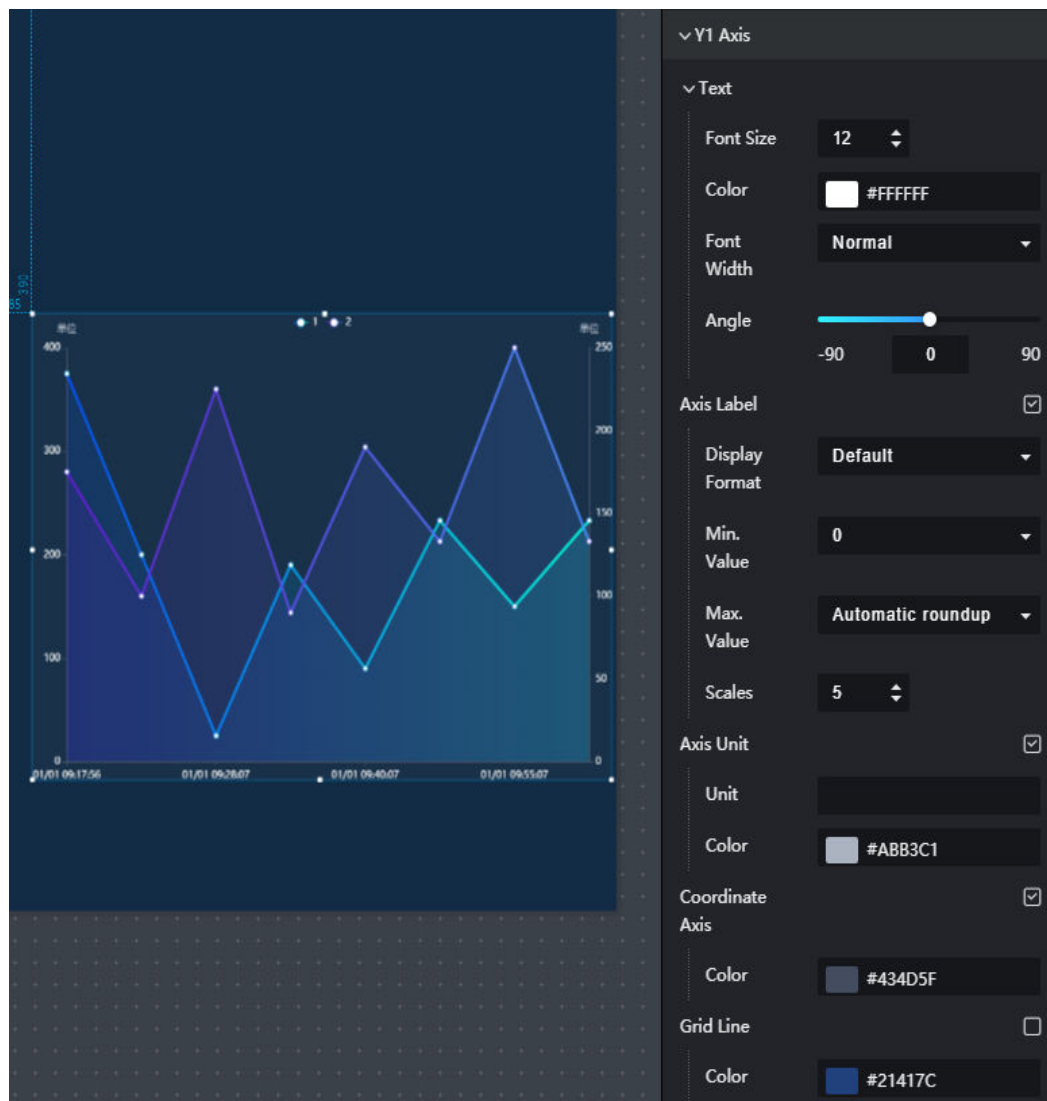
- **s**: series. You can set a value of the **s** field to a series. You can add multiple series. The value of each series can be mapped to different Y coordinates.

Click  on the right of **s** to add a series. To delete an added series, click  on the right of the series.

Add a series as follows:

- **Series Value**: Enter a value of the **s** field. If the series value is empty, the value of the corresponding **s** field is used by default.
- **Series Name**: self-definable. If the series name is empty, the series value is used as the series name by default.
- **Shape**: shape of the points on the line.
- **Color**: color of the line.
- **Width**: line width of the line.
- **Opaque**: opacity of the area covered by the broken line. A larger value indicates lower transparency.
- **Reference Axis**: Y1 axis or Y2 axis.
- **Value Tag**: to show or hide the value tag. After selecting this option, you can set the font size, color, font width, and position of the value tag.
- **Link**: target link to which the web page points when a data item in component widget is clicked.
- **Link Mode**:
  - **New window**: The target link opens a new browser window.
  - **Current page**: The target link opens a window in the current browser window.
  - **Floating panel**: The target link opens a floating window in the center of the current screen.
- **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result**: Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

Figure 13-14 Data of the dual Y-axis line chart



## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.1.3 WT Line Chart

This section describes parameters of a WT line chart.

### Pattern

The pattern configuration of a WT line chart is similar to that of a line chart. For details, see [Pattern](#).

### Data

The data configuration of a WT line chart is similar to that of a line chart. For details, see [Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.1.4 Dual Y-Axis Line (WT)

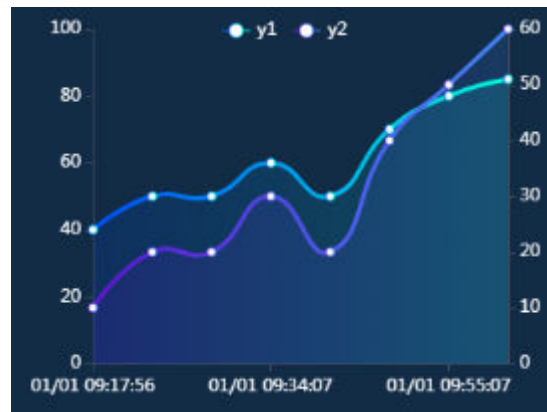
A WT dual Y-axis line chart is a chart component of the wide table (WT) type. It can be used to display the data change trend of multiple series under each category. One category can display the data of multiple series. A WT dual Y-axis line chart contains two series by default. You can add a series value of a field that represents a series in the source data table to be a series. You can add multiple series. Each series of data is marked on coordinates in the form of points, and connected to points in a line.

Figure 13-15 WT dual Y-axis line chart



## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - **Font:** font of the text.
  - **Curve:** When this function is enabled, the broken lines become curved lines.

**Figure 13-16** Curve of a WT dual Y-axis line





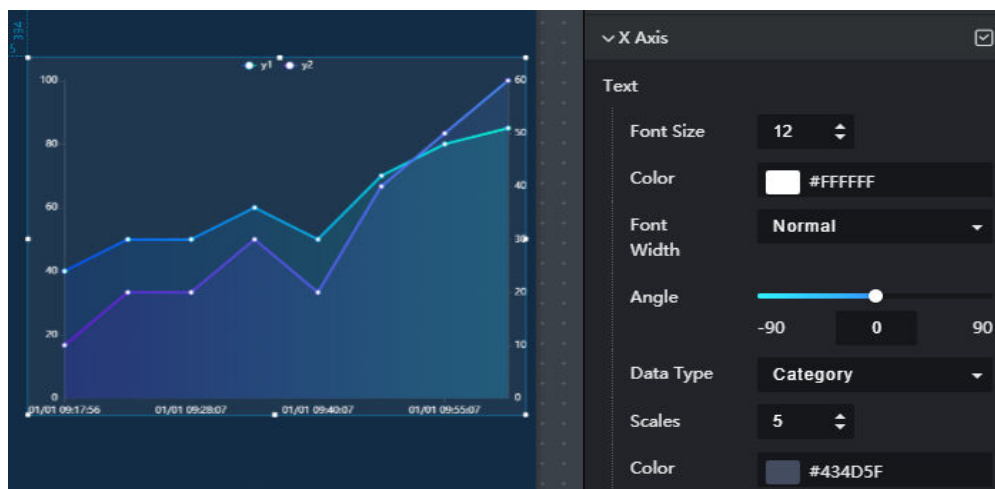
- **Margin**
  - **Top:** spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom:** spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Left:** spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Right:** spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **X Axis:** to show or hide the X axis. When this option is selected, you can set the X axis style.
  - **Font Size:** font size of the axis label text.
  - **Color:** font color of the axis label text.
  - **Font Width:** font width of the axis label text.
  - **Angle:** tilt angle of the axis label text.
  - **Data Type:** data type of the field corresponding to the axis. The value can be **Value**, **Category**, **Time**, or **Log**.
  - **Scales:** When **Data Type** is set to **Value** or **Time**, the number of displayed labels is automatically displayed based on the value of **Scales**. This parameter is invalid when **Data Type** is set to other values.
  - **Color:** color of the axis.

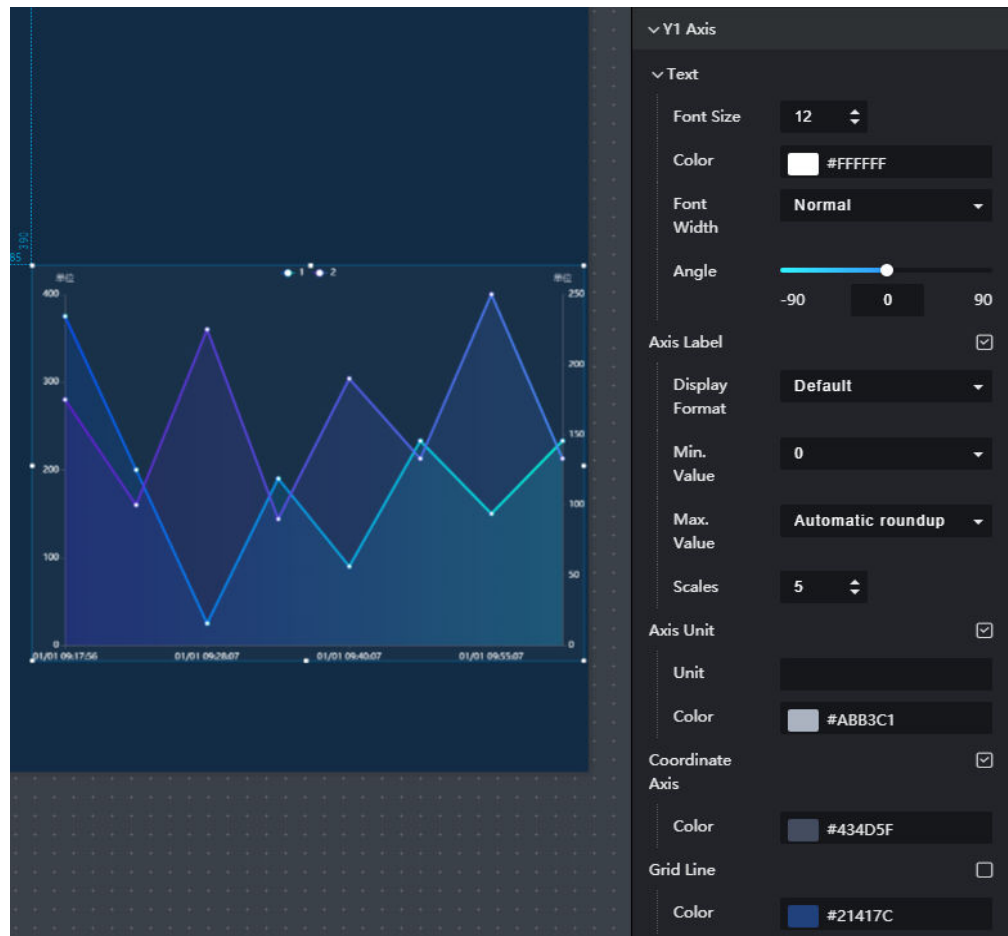
Figure 13-17 X axis of a WT dual Y-axis line chart



- **Y1 Axis**
  - **Font Size:** font size of the axis label text.
  - **Color:** font color of the axis label text.
  - **Font Width:** font width of the axis label text.
  - **Angle:** tilt angle of the axis label text.
  - **Axis Label:** to show or hide the axis labels. When this function is enabled, you can set the following parameters:
    - **Display Format:** display format of the scale value on the axis.
    - **Min. Value:** the minimum value of the axis. You can enter a value or select a value from the drop-down list. When this parameter is set to the minimum value, the start value of the axis is the minimum value in the current data.
    - **Max. Value:** the maximum value of the axis. You can enter a value or select a value from the drop-down list. When this parameter is set to the maximum value, the start value of the axis is the maximum value in the current data.
    - **Scales:** intervals of data items on the coordinate axis.
  - **Axis Unit:** to show or hide the axis unit. When this function is enabled, the axis unit is displayed on the top of the chart. The unit can be displayed only when **Top** under **Margin** is set to a value greater than or equal to 40.
    - **Unit:** unit of the coordinate axis, for example, kilometer, byte/second, or GB.
    - **Color:** font color of the text.
  - **Coordinate Axis:** to show or hide the axis. You can set the color of the axis when you select this option.
  - **Grid Line:** to show or hide the grid lines. You can set the color of the grid lines when you select this option.

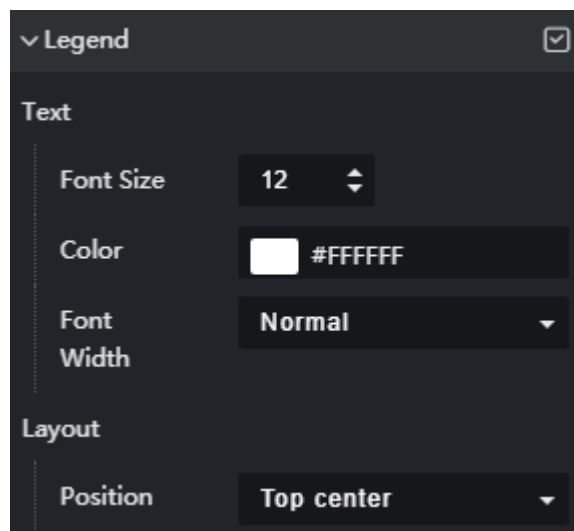


Figure 13-18 Y1 axis of a WT dual Y-axis line chart



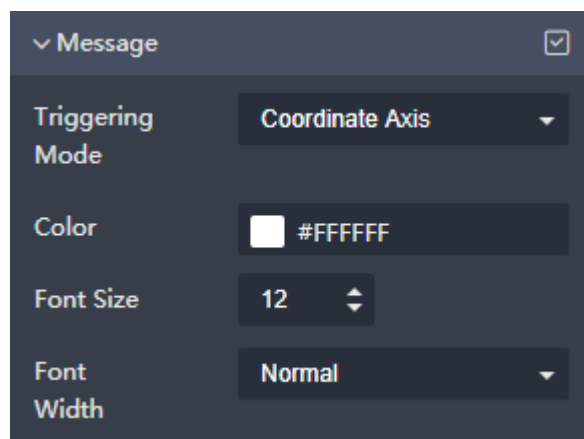
- **Y2 Axis**  
The Y2 axis is the Y axis on the right. The configuration items are the same as those of the Y1 axis. For details, see the description of [Y Axis](#).
- **Legend:** to show or hide the legend. When this option is selected, you can set the legend style.
  - **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
  - **Layout:** position where the legend is located in the component.

Figure 13-19 Legend



- **Message:** to show or hide the prompt information. After this function is enabled, a message is displayed when you mouse over or click on the screen during the screen preview.
  - **Triggering Type:** type of the prompt message.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.

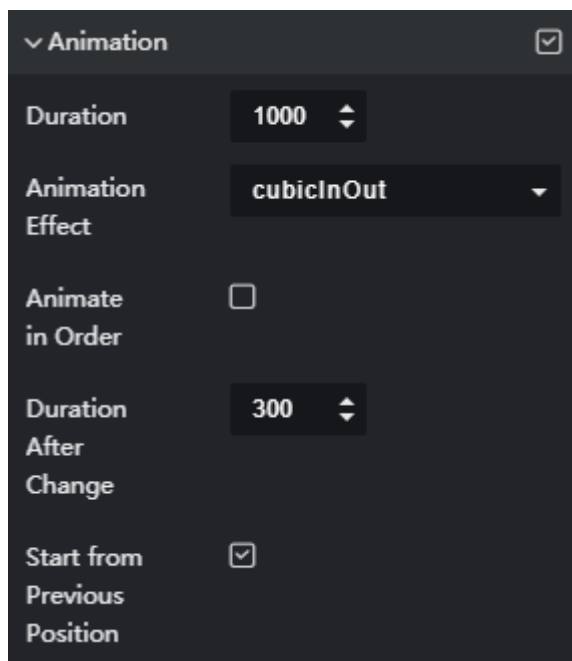
Figure 13-20 Message



- **Animation**
  - Click  or  next to **Animation** to hide or show animation, respectively.
  - **Duration:** duration of the first rendering of the component, in ms.
  - **Animation Effect:** The system provides multiple common animation slow-moving effects.
  - **Animate in Order:** If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.

- **Duration After Change:** animation duration when the component data is updated, in ms.
- **Start from Previous Position:** If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.



Figure 13-21 Animation (line chart)



## Data

The data format of the WT dual Y-axis line chart is a wide table structure. The related fields are placed in the same table to form a database table with many fields. The WT dual Y-axis line chart contains three fields by default: x, y1, and y2.

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **x:** category of a line chart or bar chart, corresponding to the X axis.
- **y:**  
By default, the following two series are included:
  - **y1:** data of the **y1** series. **y1** is the field name in the mapped source data. **y1** corresponds to the left Y1 axis by default.
  - **y2:** data of the **y2** series. **y2** is the field name in the mapped source data. **y2** corresponds to the right Y2 axis by default.

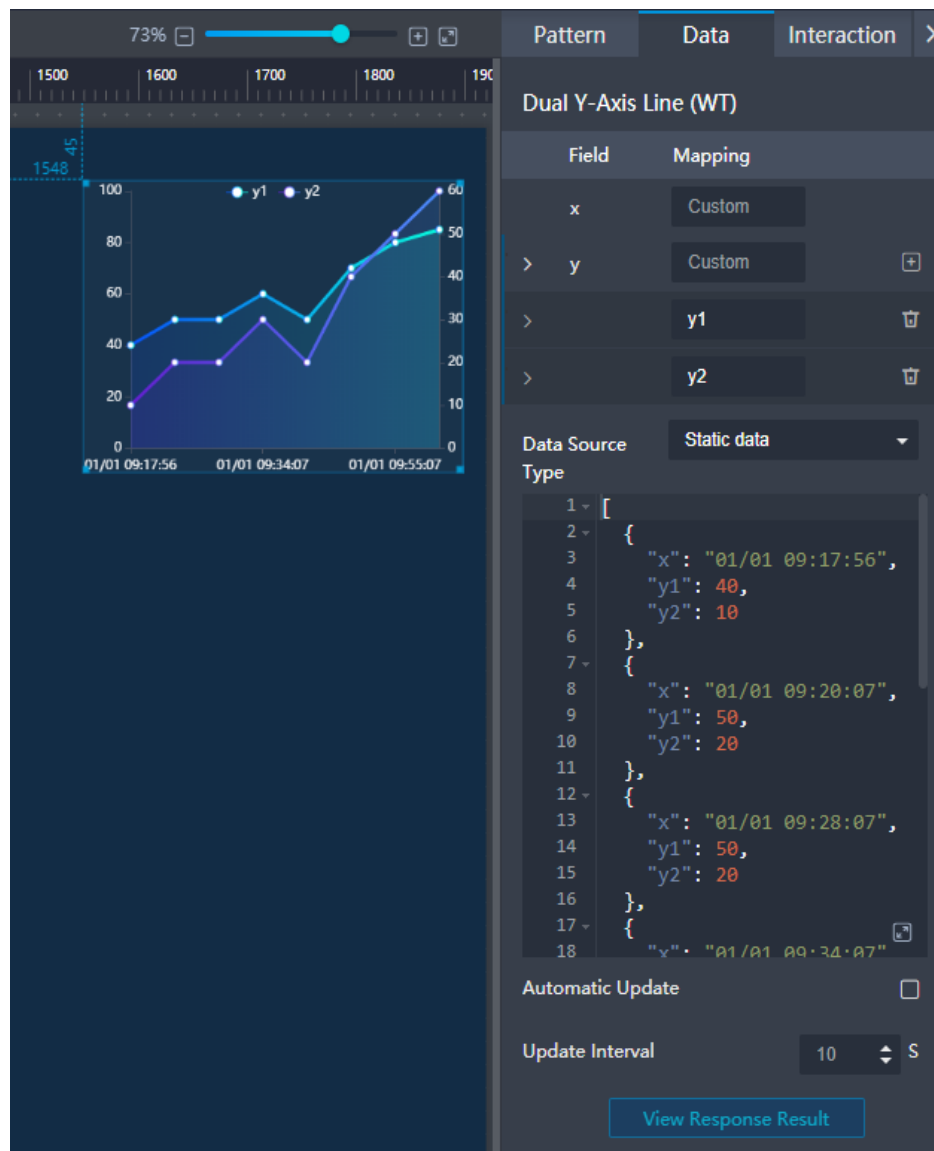
Click  on the right of **y** to add a series. To delete an added series, click  on the right of the series.

Add a series as follows:

- **Series Value:** field name in the mapped source data.

- **Series Name:** self-definable. If the series name is empty, the series value is used as the series name by default.
- **Shape:** shape of the points on the line.
- **Color:** color of the line.
- **Width:** line width of the line.
- **Opaque:** opacity of the area covered by the broken line. A larger value indicates lower transparency.
- **Reference Axis:** Y1 axis or Y2 axis.
- **Value Tag:** to show or hide the value tag. After selecting this option, you can set the font size, color, font width, and position of the value tag.
- **Link:** target link to which the web page points when a data item in component widget is clicked.
- **Link Mode:**
  - **New window:** The target link opens a new browser window.
  - **Current page:** The target link opens a window in the current browser window.
  - **Floating panel:** The target link opens a floating window in the center of the current screen.
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

Figure 13-22 Data of the WT dual Y-axis line chart



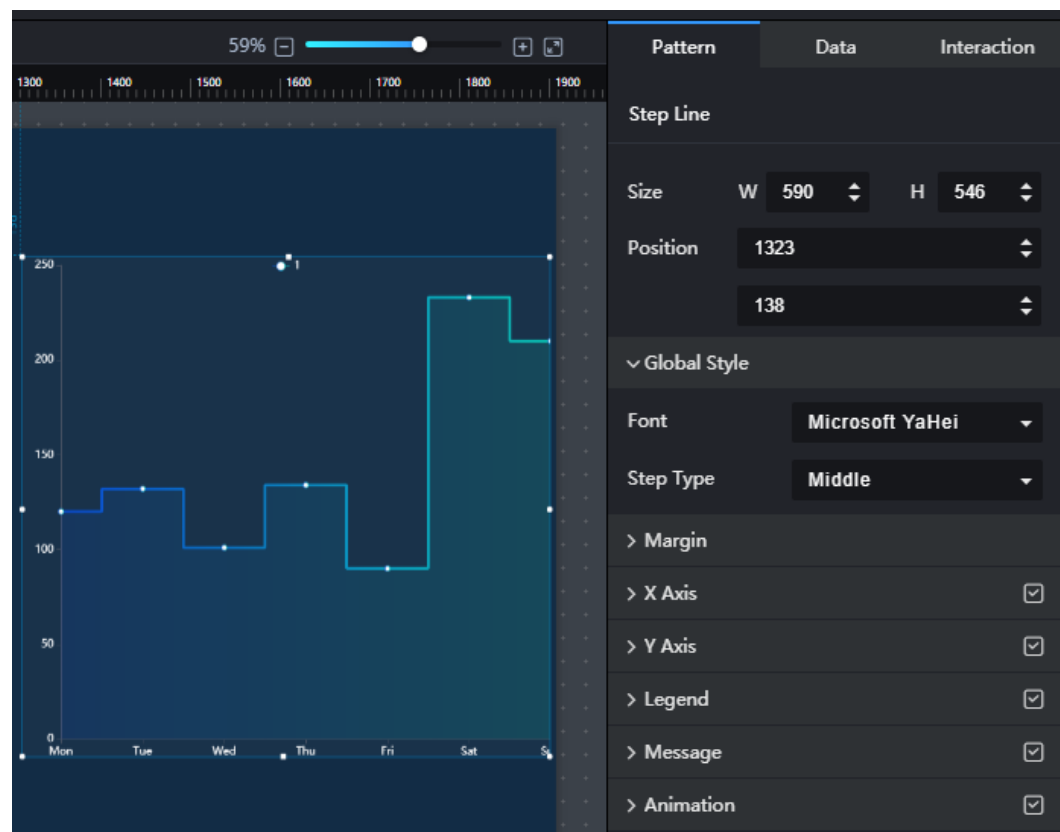
## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).





### 13.1.5 Step Line

A step line chart can show the change of irregular and stepped jump values, and the change is not linear and coherent. This topic describes the configuration items of the step line component.

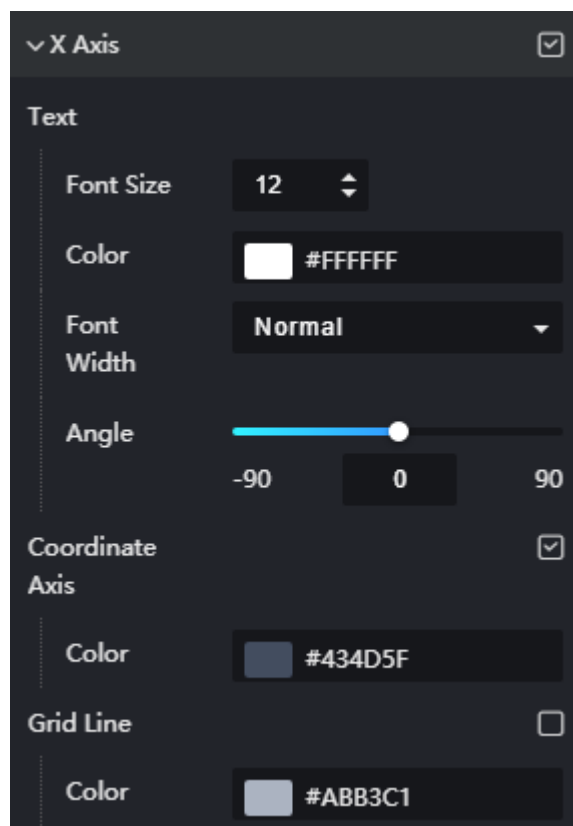
Figure 13-23 Step line



## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - **Font:** font of the text.
  - **Step Type:** position of a data point on the step line.
- **Margin**
  - **Top:** spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom:** spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Left:** spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Right:** spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **X Axis:** to show or hide the X axis. When this option is selected, you can set the X axis style.

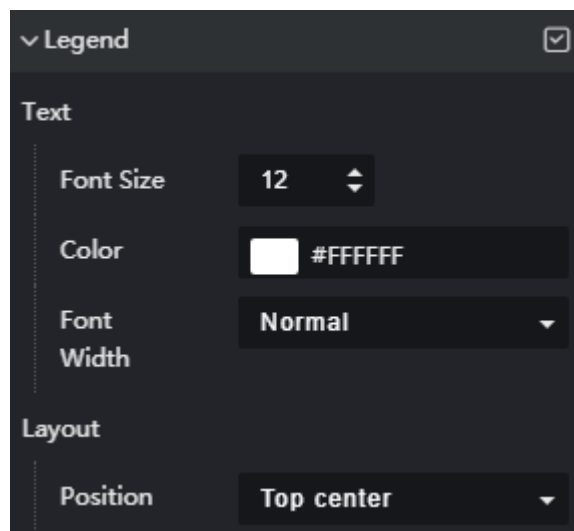
- **Font Size:** font size of the axis label text.
- **Color:** font color of the axis label text.
- **Font Width:** font width of the axis label text.
- **Angle:** tilt angle of the axis label text.
- **Coordinate Axis:** to show or hide the axis.
  - **Color:** color of the axis.
- **Grid Line:** to show or hide the grid lines.
  - **Color:** color of the axis.

**Figure 13-24** X axis

- **Y Axis:** to show or hide the Y axis. When this option is selected, you can set the Y axis style.

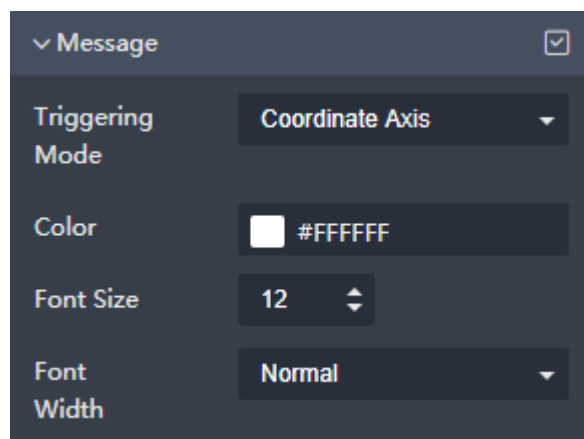
The configuration items of the Y axis are similar to those of the X axis. For details, see [X Axis](#).
- **Legend:** to show or hide the legend. When this option is selected, you can set the legend style.
  - **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
  - **Layout:** position where the legend is located in the component.

Figure 13-25 Legend



- **Message:** to show or hide the prompt information. After this function is enabled, a message is displayed when you mouse over or click on the screen during the screen preview.
  - **Triggering Type:** type of the prompt message.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.

Figure 13-26 Message

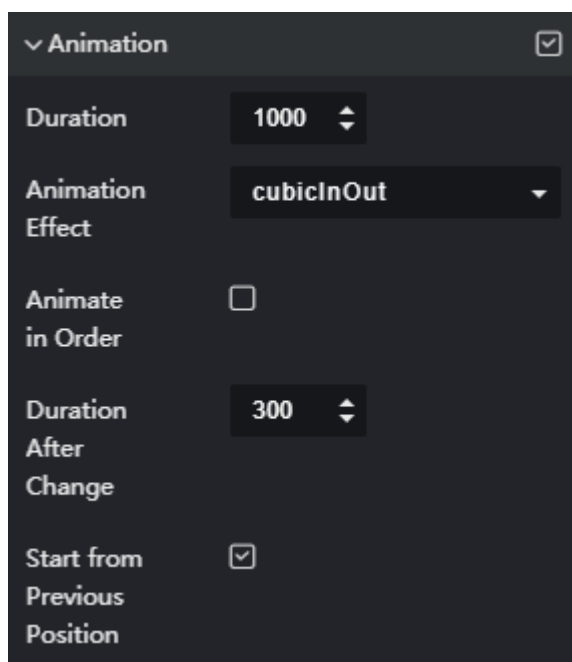


- **Animation**
  - Click  or  next to **Animation** to hide or show animation, respectively.
  - **Duration:** duration of the first rendering of the component, in ms.
  - **Animation Effect:** The system provides multiple common animation slow-moving effects.
  - **Animate in Order:** If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.





- **Duration After Change:** animation duration when the component data is updated, in ms.
- **Start from Previous Position:** If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

Figure 13-27 Animation (line chart)



## Data

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Data Mapping:** The data format of the line step consists of the following fields:
  - **x:** category, corresponding to the X axis.
  - **y:** data, corresponding to the Y axis.
  - **s:** series. You can set a value of the **s** field to a series. You can add multiple series. The value of each series can be mapped to different Y coordinates.

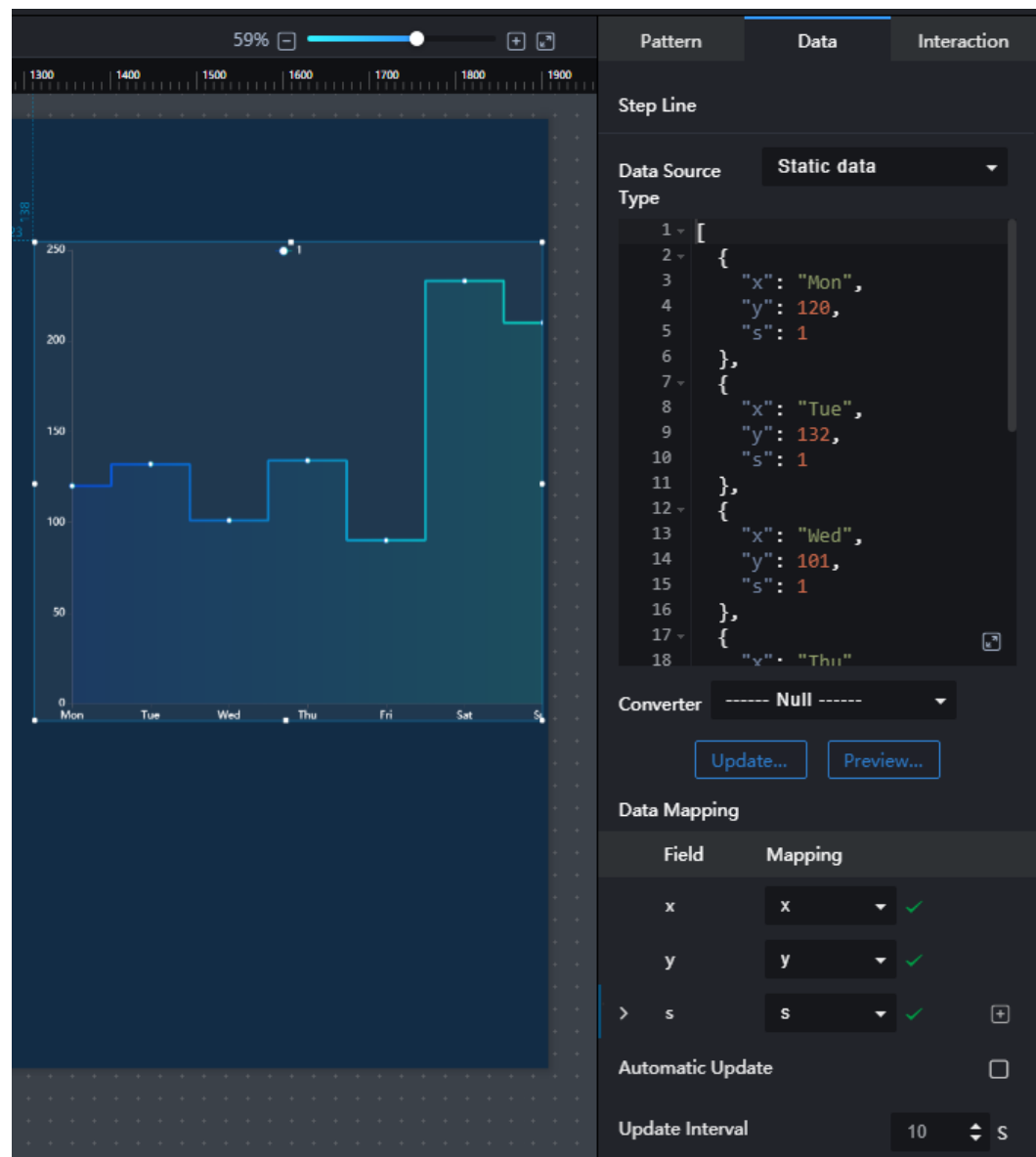
Click  on the right of **s** to add a series. To delete an added series, click  on the right of the series.

Add a series as follows:

- **Series Value:** Enter a value of the **s** field. If the series value is empty, the value of the corresponding **s** field is used by default.

- **Series Name:** self-definable. If the series name is empty, the series value is used as the series name by default.
  - **Shape:** shape of the points on the line.
  - **Color:** color of the axis.
  - **Width:** line width of the line.
  - **Opaque:** opacity of the area covered by the broken line. A larger value indicates lower transparency.
  - **Value Tag:** to show or hide the value tag. After selecting this option, you can set the font size, color, font width, and position of the value tag.
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
  - **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

Figure 13-28 Data of the step line



## Interaction

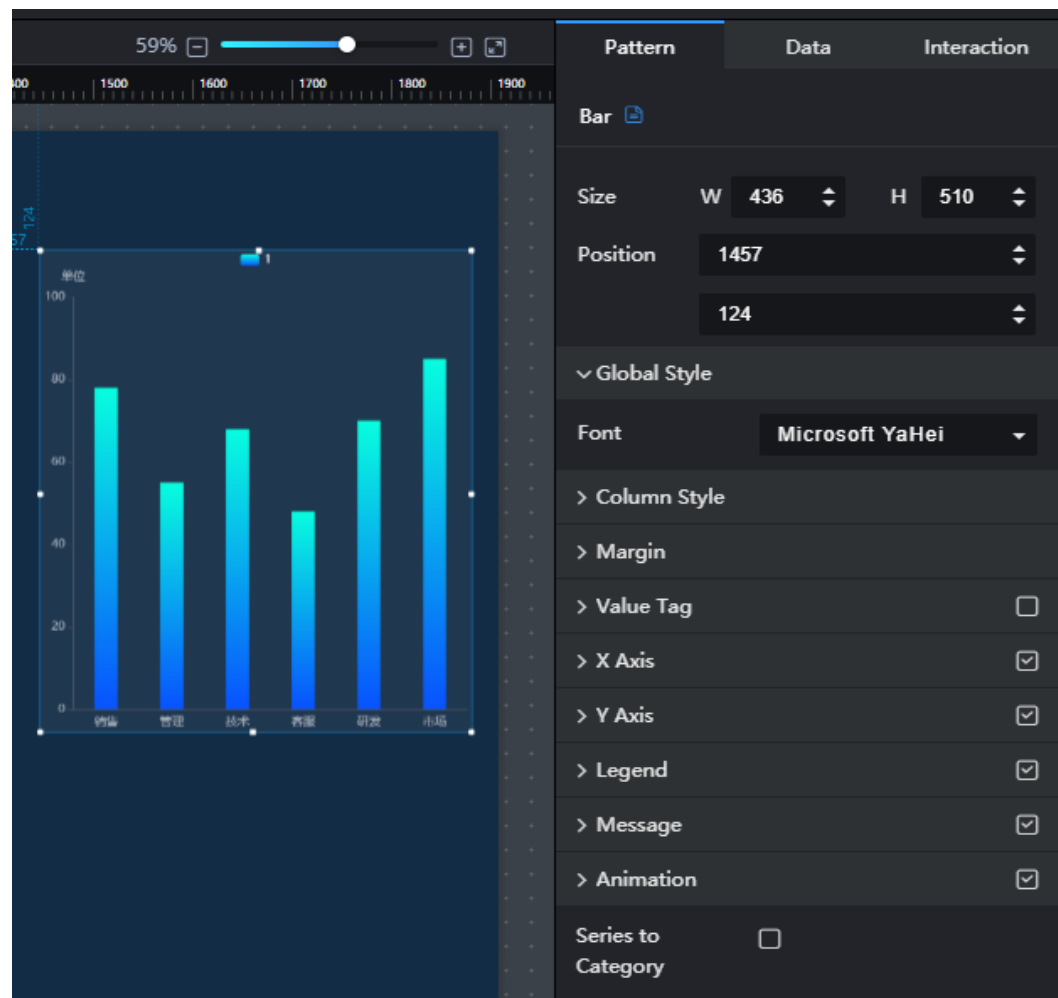
For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.2 Bar Charts

### 13.2.1 Bar Chart

This section describes parameters of a bar chart.

Figure 13-29 Bar chart



## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - Font:** text font.
- **Column Style**
  - **Column Width:** width of the column.
  - **Column Angle:** round-corner angle of the column.
  - **Series Spacing:** distance between series.
- **Margin**
  - **Top:** spacing between the top sides of the chart and the component layer. You can enter a value or click to adjust the spacing.
  - **Bottom:** spacing between the bottom sides of the chart and the component. You can enter a value or click to adjust the spacing.







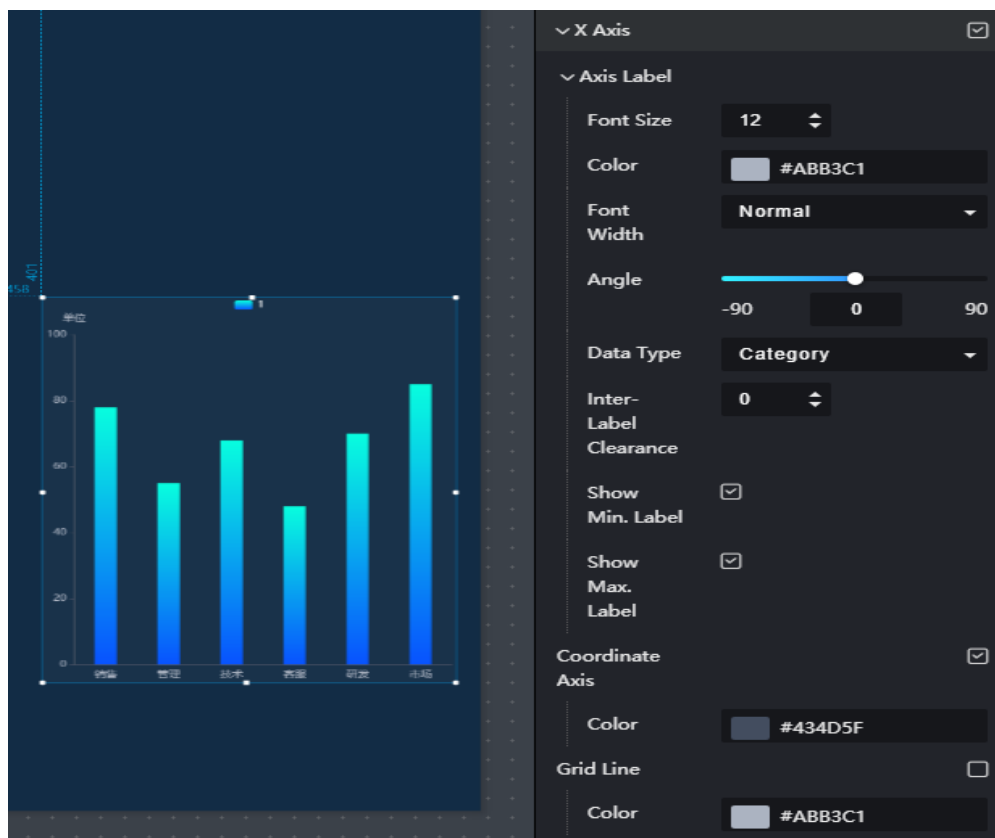
- **Left:** spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **Right:** spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **Value Tag**
  - **Value Tag:** to show or hide the value tag by clicking  or .
  - **Font Size:** font size of the value tag.
  - **Color:** font color of the value tag.
  - **Font Width:** font width of the value tag.
  - **Position:** position of the value tag. The options are **Top**, **Align right**, **Inside**, **Align left**, **Bottom**, **Inside left**, **Inside right**, **Inside top**, and **Inside bottom**.
- **X Axis**
  - **X Axis:** to show or hide the X axis by clicking  or .
  - **Axis Label:** text style of the X axis, including **Data Type**, **Font Size**, **Color**, **Font Width**, **Angle**, **Inter-Label Clearance**, **Show Min. Label**, and **Show Max. Label**.
  - **Coordinate Axis:** color of the X axis.
  - **Grid Line:** grid line color of the X axis.

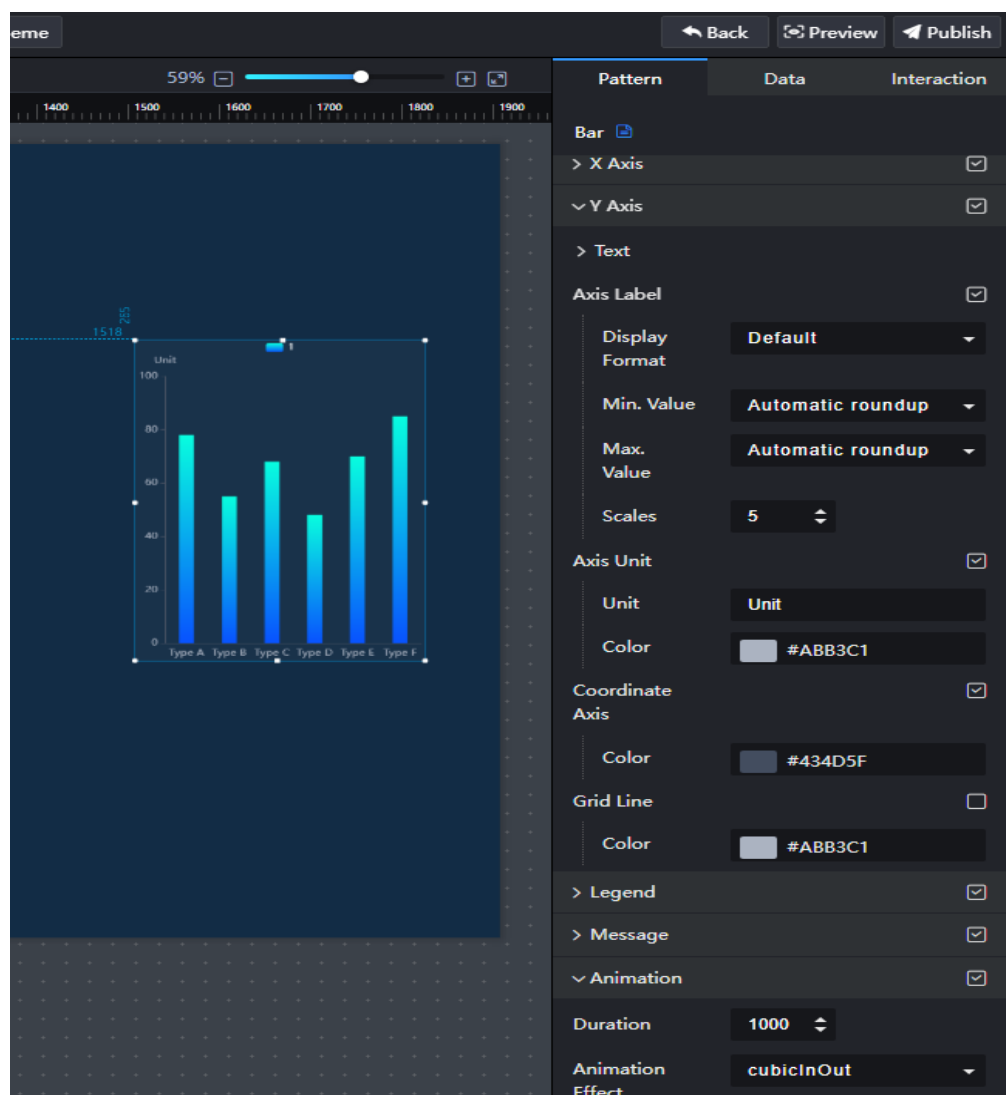
Figure 13-30 X axis of a bar chart



- **Y Axis**

- **Y Axis:** to show or hide the Y coordinate by clicking  or .
- **Text:** text style of the Y axis, including **Font Size**, **Font Color**, **Font Width**, and **Angle**.
- **Axis Label:** text style of the Y axis, including **Display Format**, **Min. Value**, **Max. Value**, and **Scales**.
- **Axis Unit:** unit of the Y axis.
- **Coordinate Axis:** color of the Y axis.
- **Grid Line:** grid line color of the Y axis.

Figure 13-31 Y axis of a bar chart



- **Legend**


- **Legend:** to show or hide the legend by clicking  or .
- **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.

- **Layout:** position where the legend is located.



Figure 13-32 Legend of a bar chart



- **Message**

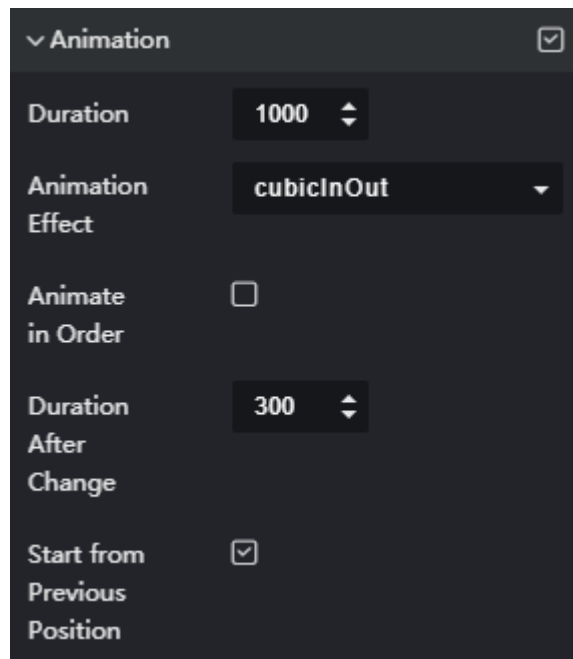
- **Message:** If you click , a message will pop up when you hover over a previewed or published component.
- **Triggering Mode:** to set the triggering mode of messages. The options are **Coordinate Axis** and **Data**.
- **Color:** font color of the message.
- **Font Size:** font size of the message.
- **Font Width:** font width of the message.

- **Animation**


- Click  or  next to **Animation** to hide or show animation, respectively.
- **Duration:** duration of the first rendering of the component, in ms.
- **Animation Effect:** The system provides multiple common animation slow-moving effects.
- **Animate in Order:** If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.

- **Duration After Change:** animation duration when the component data is updated, in ms.
- **Start from Previous Position:** If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

**Figure 13-33** Animation (line chart)



- **Series to Category**

To convert series to category, click .

- Display category: all series are displayed on the coordinate axis by category.
- Display series: all categories are displayed on the coordinate axis by series.

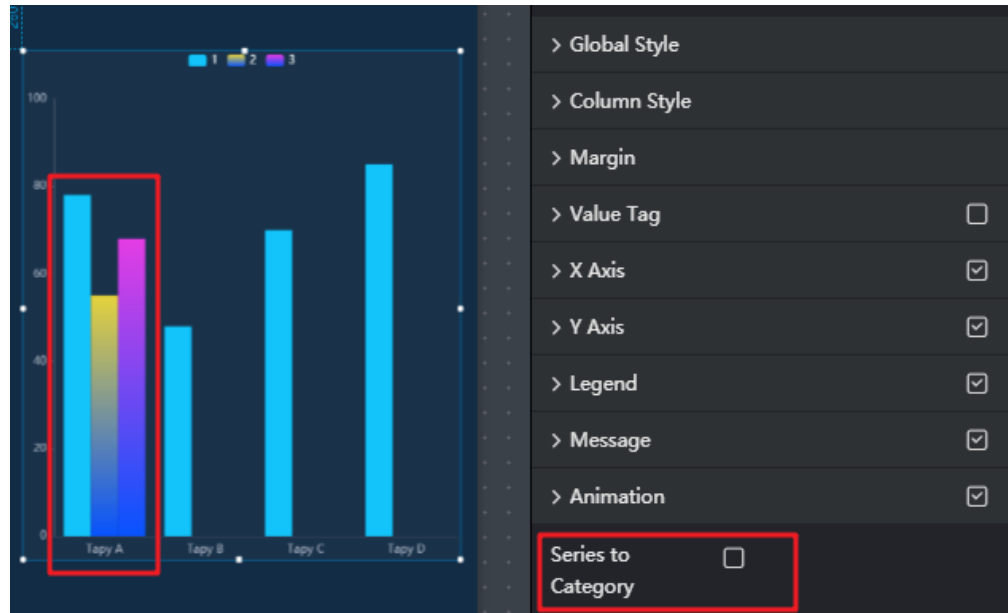
Assume that the first three records of the static data are modified as follows:

```
[
  {
    "x": "Type A",
    "y": 78,
    "s": 1
  },
  {
    "x": "Type A",
    "y": 55,
    "s": 2
  },
  {
    "x": "Type A",
    "y": 68,
    "s": 3
  }
]
```

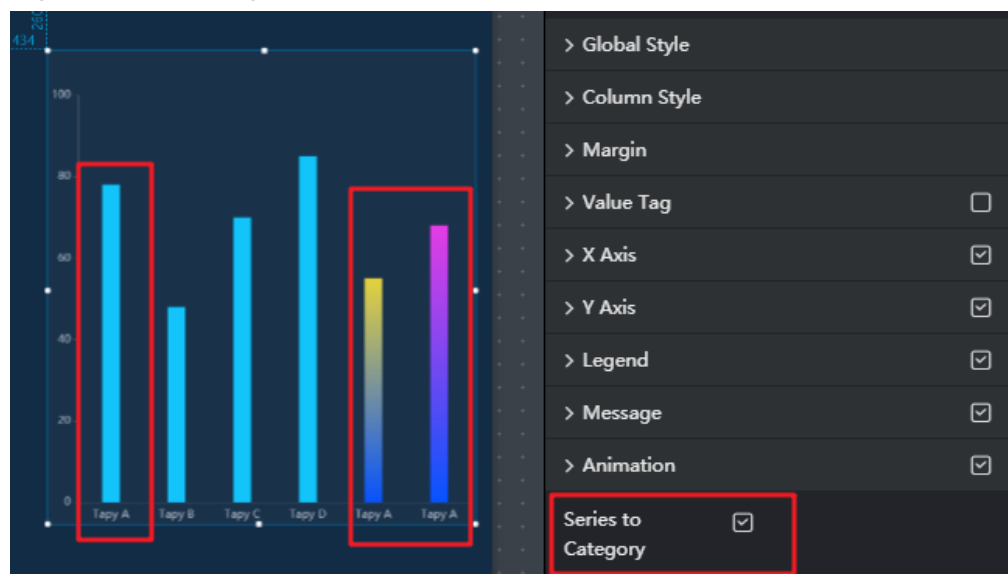


On the **Data** panel, add three series whose values are 1, 2, and 3, and set different colors for the three series. **Figure 13-34** shows the series, and **Figure 13-35** shows the categories.

**Figure 13-34** Series of a bar chart



**Figure 13-35** Categories of a bar chart





## Data

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Data Mapping:** The data format contains the following fields by default. Set the field names in the data source to which each field is mapped. If the field

names are left empty, the field names are the same as those in the data source to which each field is mapped.

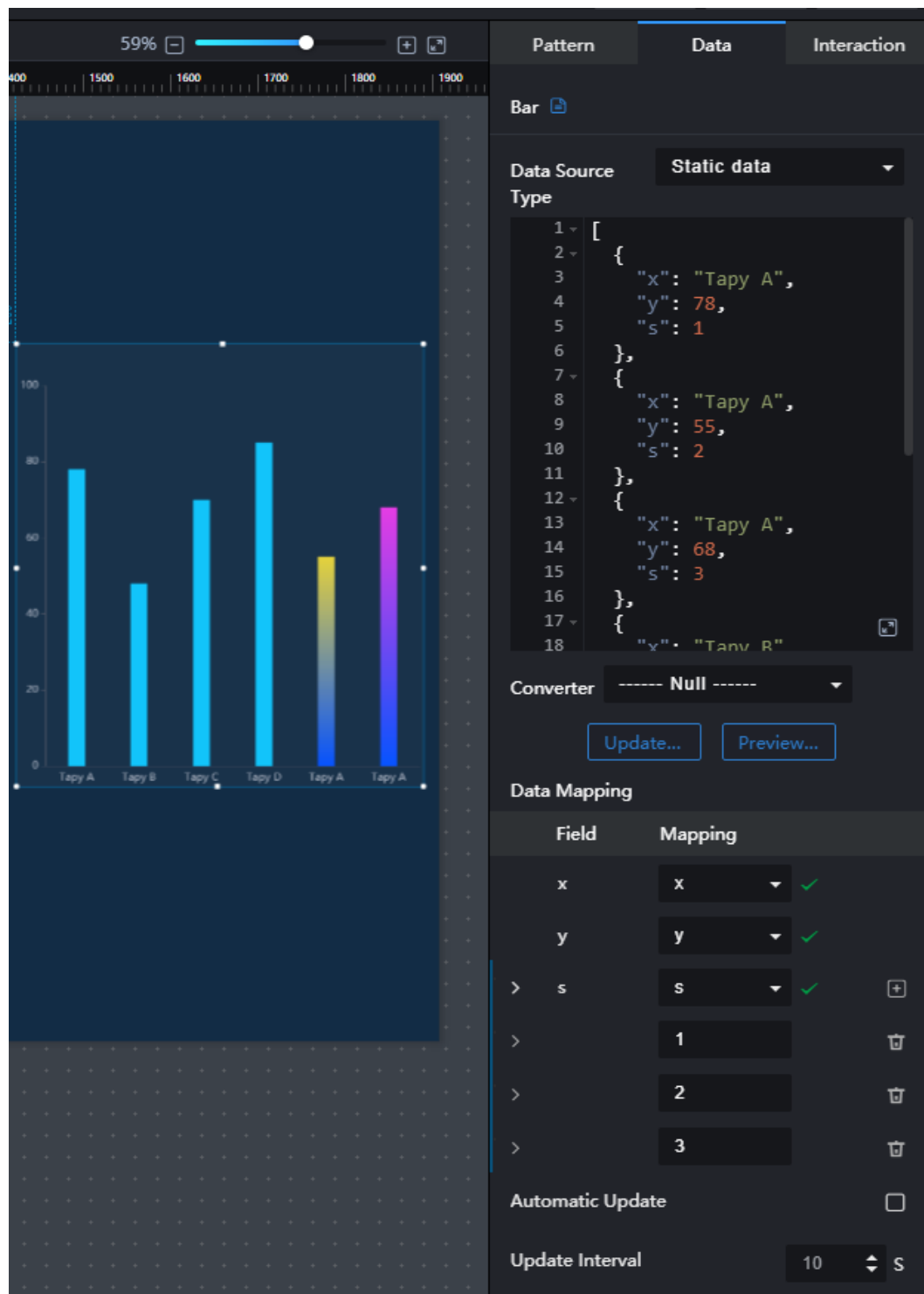
- **x**: category, corresponding to the X axis.
- **y**: data of series, corresponding to the Y axis.
- **s**: series. You can set a value of the **s** field to a series. Multiple series can be added.

Click  on the right of **s** to add a series. To delete an added series, click  on the right of the series.

Add a series as follows:

- **Series Value**: Enter a value of the **s** field. If the series value is empty, the value of the corresponding **s** field is used by default.
- **Series Name**: self-definable. If the series name is empty, the series value is used as the series name by default.
- **Color**: color of the column in the series.
- **Stack**: stack name. You can enter a user-defined name. If the same stack name is set for different series (with different **s** values) of the same category (with the same **x** value), the series data is displayed in the stack.
- **Link**: target link to which the web page points when a data item in component widget is clicked.
- **Link Mode**:
  - **New window**: The target link opens a new browser window.
  - **Current page**: The target link opens a window in the current browser window.
  - **Floating panel**: The target link opens a floating window in the center of the current screen.
- **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result**: Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

Figure 13-36 Data panel of a bar chart



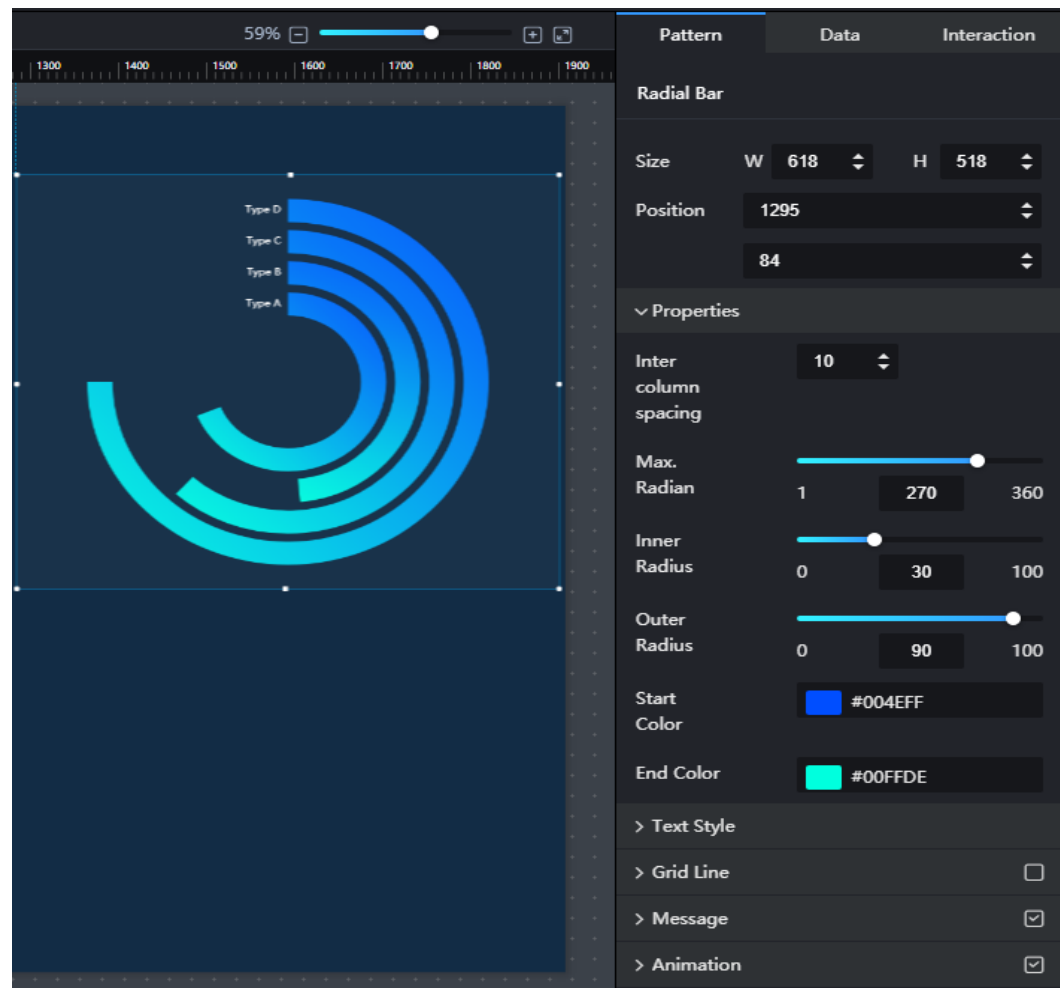
## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.2.2 Radial Bar

The radial bar chart is a type of bar chart, which is used to compare data of different series. This section describes parameters of a radial bar.

Figure 13-37 Radial bar

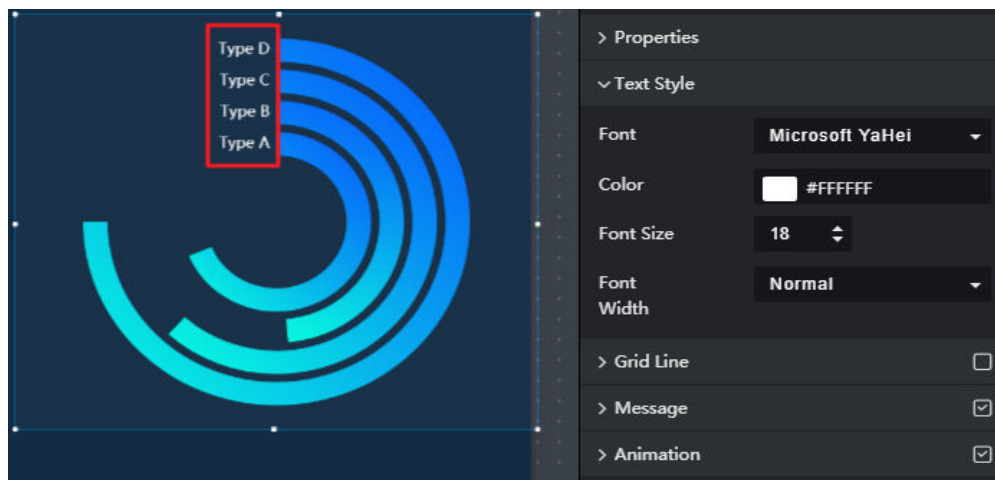


### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Properties**
  - **Inter-Column Spacing:** distance between columns. Unit: pixel.
  - **Max. Radian:** maximum radian of a circular column, that is, a radian of a circular column whose value is the largest in the radial bar. The radians of other circular columns decrease proportionally according to the values. When this parameter is set to **360**, the largest ring-shaped column is displayed as a circle. The unit is degree (°).
  - **Inner Radius:** radius of the inner circle of a circular column.

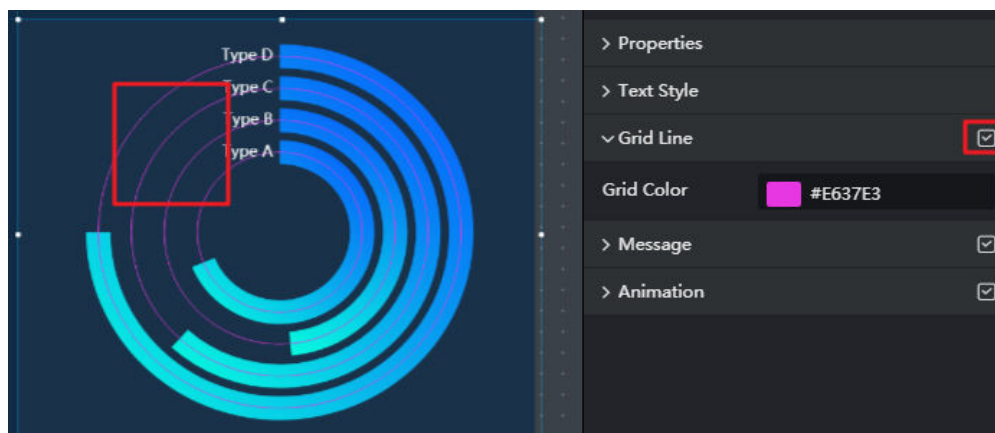
- **Outer Radius:** radius of the outer circle of a circular column.
- **Start Color:** color of the start point of a circular column.
- **End Color:** color of the end point of a circular column.
- **Text Style**


Figure 13-38 Text style of a radial bar



- **Grid Line:** to show or hide the grid lines. Figure 13-39 shows the grid lines.  
**Grid Color:** color of the grid lines.

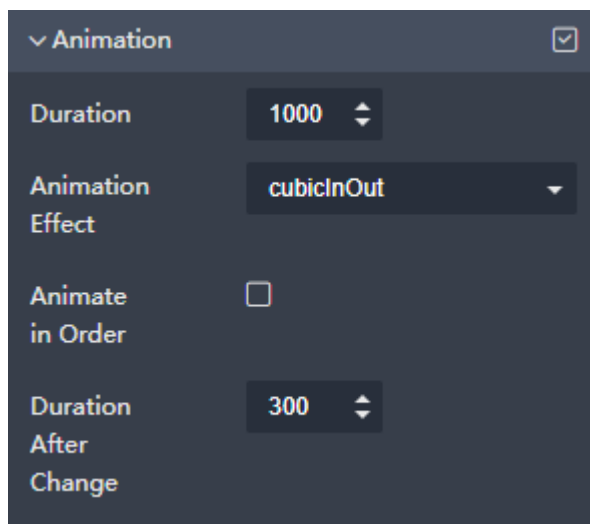
Figure 13-39 Grid lines of a radial bar



- **Message:** to show or hide the prompt information. After this function is enabled, a message is displayed when you mouse over or click on the screen during the screen preview. You can click  Preview in the upper right corner of the page to preview the page.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.
- **Animation:** After this function is enabled, the animation effect of the radial bar is displayed.
  - **Duration:** duration of the animation when the radial bar is displayed for the first time. Unit: ms.

- **Animation Effect:** different animation effects available in the drop-down list.
- **Animate in Order:** After the function is enabled, the circular columns of each series are animated in sequence. If this option is deselected, all circular columns are animated at the same time.
- **Duration After Change:** animation duration of the circular columns after data is updated. Unit: ms.

**Figure 13-40** Animation of a radial bar chart



## Data

For details about how to configure component data, see [Configuring Component Data](#).

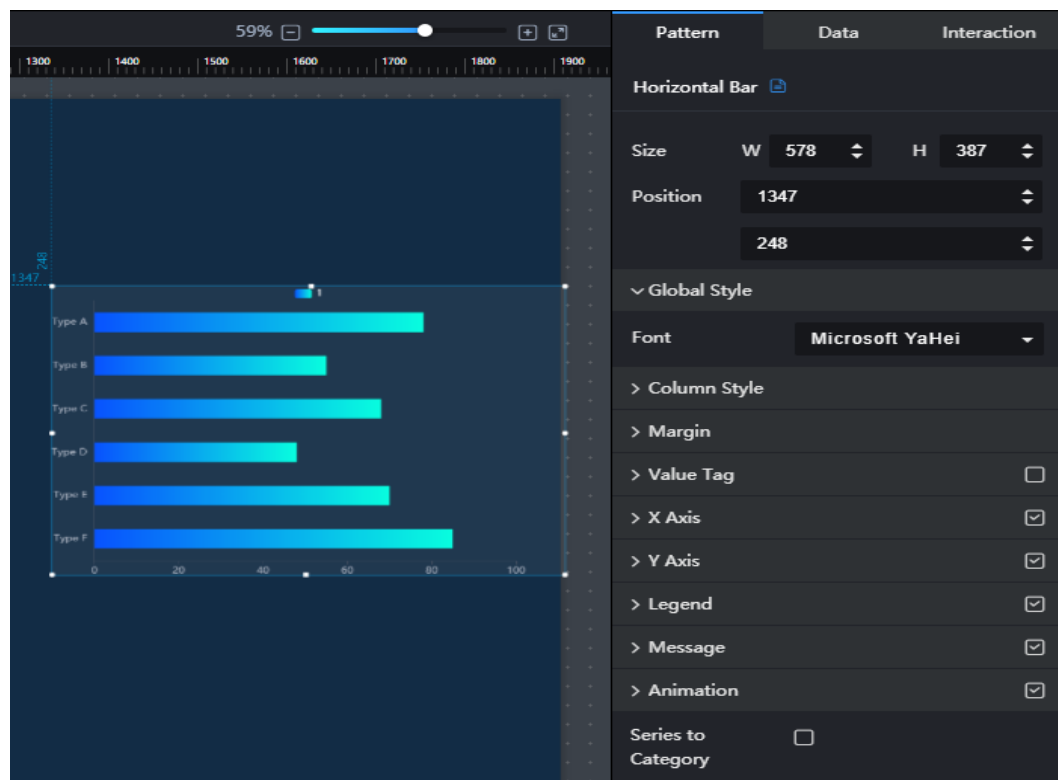
## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).





### 13.2.3 Horizontal Bar Chart

This section describes parameters of a horizontal bar chart.

Figure 13-41 Horizontal bar chart



## Pattern

- **Size/Position**
  - **Size**: width and height of the component. Unit: pixel.
  - **Position**: position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - Font**: text font.
- **Column Style**
  - **Column Width**: width of the column.
  - **Column Angle**: round-corner angle of the column.
  - **Series Spacing**: distance between series.
- **Margin**
  - **Top**: spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom**: spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Left**: spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Right**: spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.

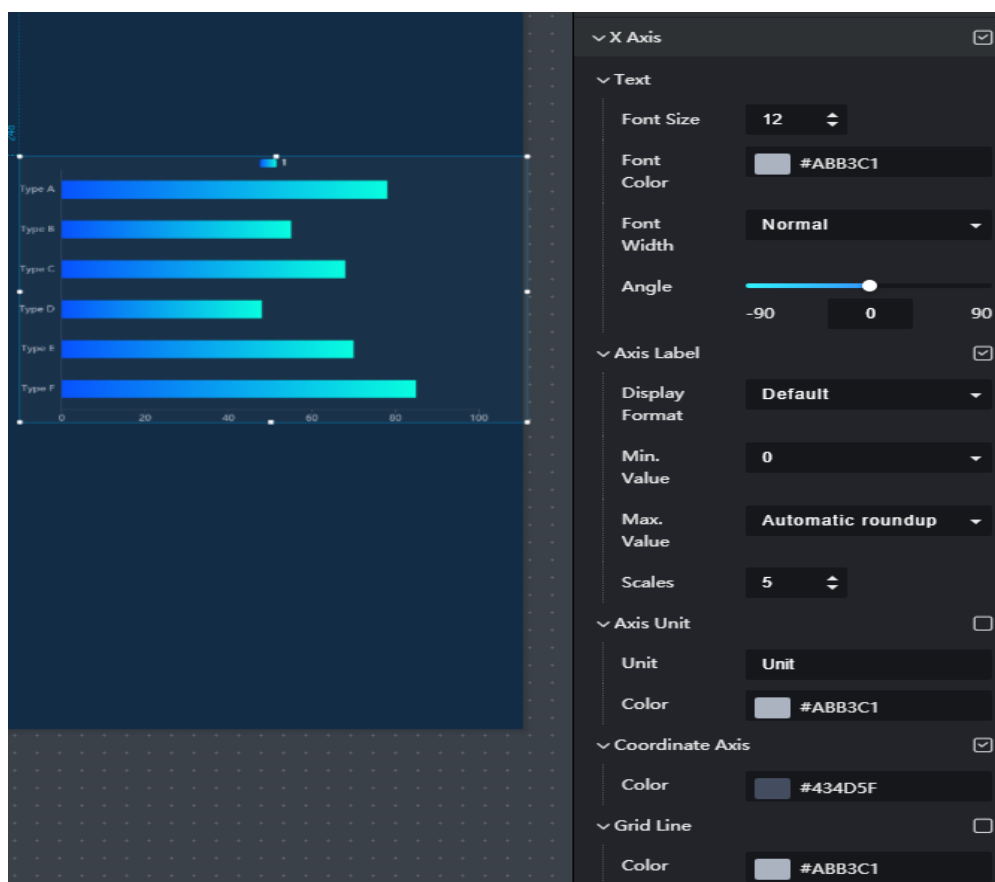
- **Value Tag**

- **Value Tag:** to show or hide the value tag by clicking  or .
- **Font Size:** font size of the value tag.
- **Color:** font color of the value tag.
- **Font Width:** font width of the value tag.
- **Position:** position of the value tag. The options are **Top, Align right, Inside, Align left, Bottom, Inside left, Inside right, Inside top,** and **Inside bottom.**

- **X Axis**

- **X Axis:** to show or hide the X axis by clicking  or .
- **Text:** text style of the X axis, including **Font Size, Color, Font Width,** and **Angle.**
- **Axis Label:** to set the display format, maximum value, and minimum value of the X axis.
- **Axis Unit:** to set the unit and font color of the X axis.
- **Coordinate Axis:** color of the X axis.
- **Grid Line:** grid line color of the X axis.

Figure 13-42 X axis of a horizontal bar chart

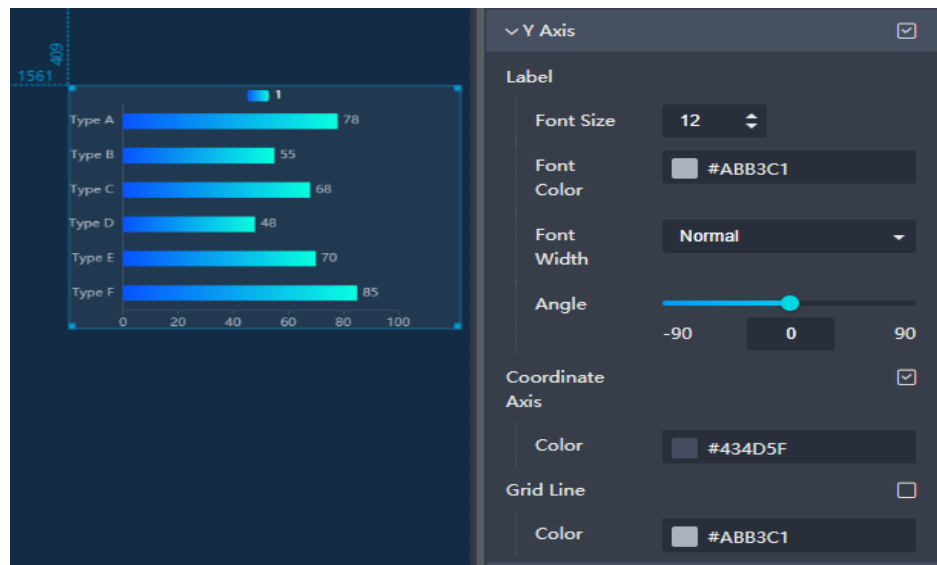


- **Y Axis**



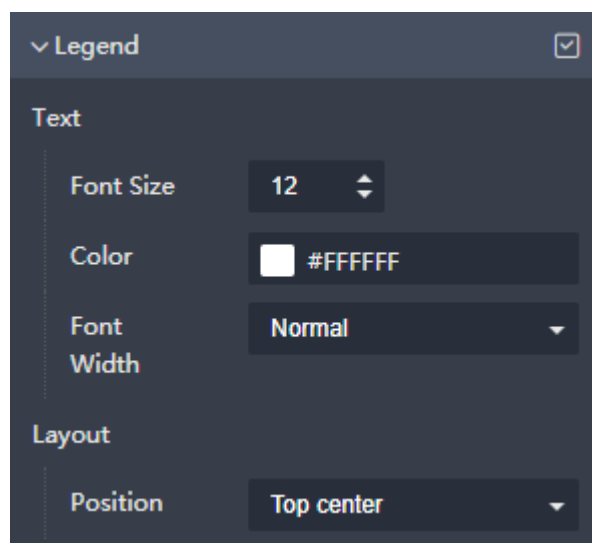
- **Y Axis:** to show or hide the Y axis by clicking  or .
- **Label:** text style of the Y axis, including **Font Size**, **Color**, **Font Width**, and **Angle**.
- **Coordinate Axis:** color of the Y axis.
- **Grid Line:** grid line color of the Y axis.

Figure 13-43 Y axis of a horizontal bar chart



- **Legend**
  - **Legend:** to show or hide the legend by clicking  or .
  - **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
  - **Layout:** position where the legend is located.

Figure 13-44 Legend of a horizontal bar chart



- **Message**


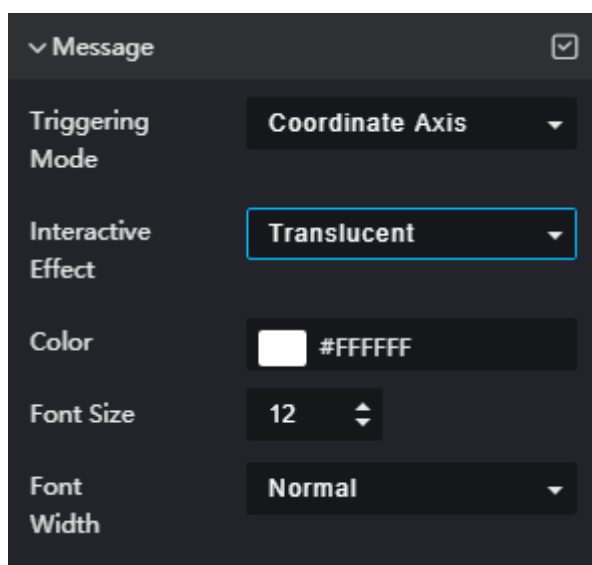


- **Message:** If you click , a message will pop up when you hover over a previewed or published component.
- **Triggering Mode:** to set the triggering mode of messages. The options are **Coordinate Axis** and **Data**.
- **Interactive Effect:** The bar effect is displayed when the prompt message is triggered.
- **Color:** font color of the message.
- **Font Size:** font size of the message.
- **Font Width:** font width of the message.

Figure 13-45 Message of a horizontal bar chart



## Data

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Data Mapping:** The data format contains the following fields by default. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
  - **x:** category, corresponding to the X axis.
  - **y:** data of series, corresponding to the Y axis.
  - **s:** series. You can set a value of the **s** field to a series. Multiple series can be added.

Click  on the right of **s** to add a series. To delete an added series, click  on the right of the series.

Add a series as follows:

- **Series Value:** Enter a value of the **s** field. If the series value is empty, the value of the corresponding **s** field is used by default.
- **Series Name:** self-definable. If the series name is empty, the series value is used as the series name by default.
- **Color:** color of the column in the series.
- **Stack:** stack name. You can enter a user-defined name. If the same stack name is set for different series (with different **s** values) of the same category (with the same **x** value), the series data is displayed in the stack.
- **Link:** target link to which the web page points when a data item in component widget is clicked.
- **Link Mode:**
  - **New window:** The target link opens a new browser window.
  - **Current page:** The target link opens a window in the current browser window.
  - **Floating panel:** The target link opens a floating window in the center of the current screen.
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

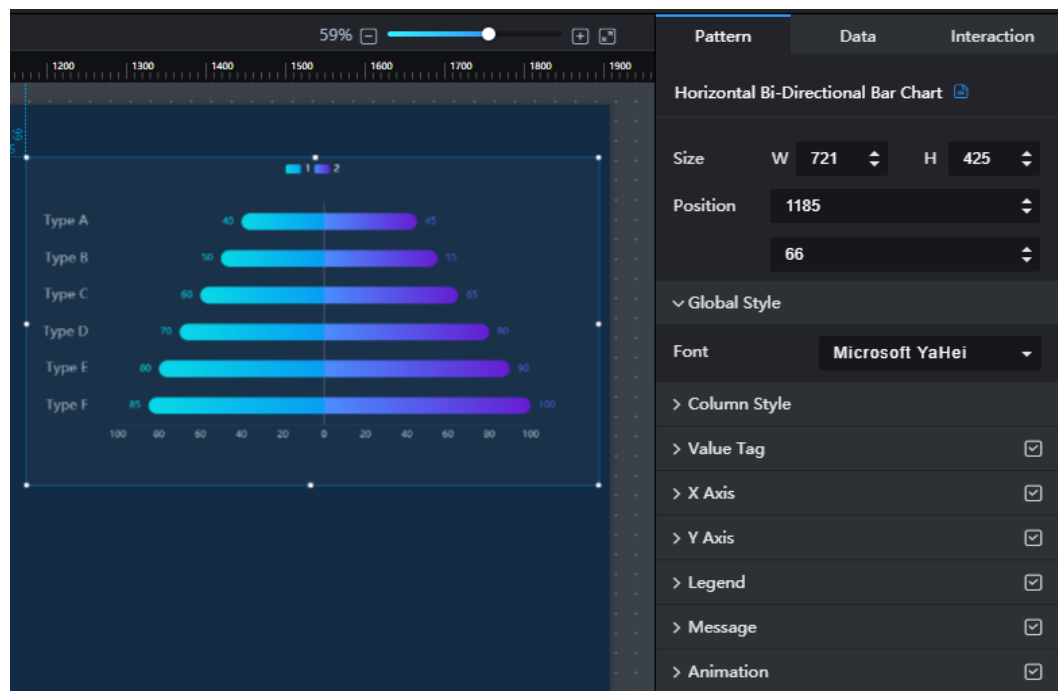
## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.2.4 Horizontal Bi-Directional Bar Chart

This section describes parameters of a horizontal bi-directional bar chart.

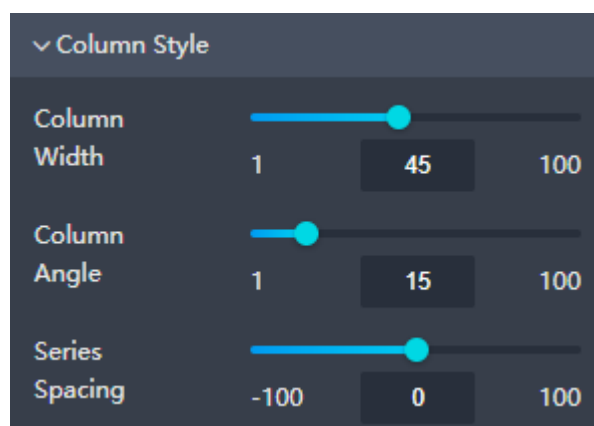
Figure 13-46 Horizontal bi-directional bar chart



## Pattern

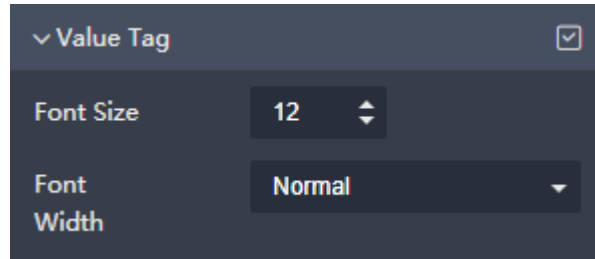
- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - Font:** text font.
- **Column Style**
  - **Column Width:** width of the column.
  - **Column Angle:** round-corner angle of the column.
  - **Series Spacing:** distance between series.

Figure 13-47 Column style of a horizontal bi-directional bar chart



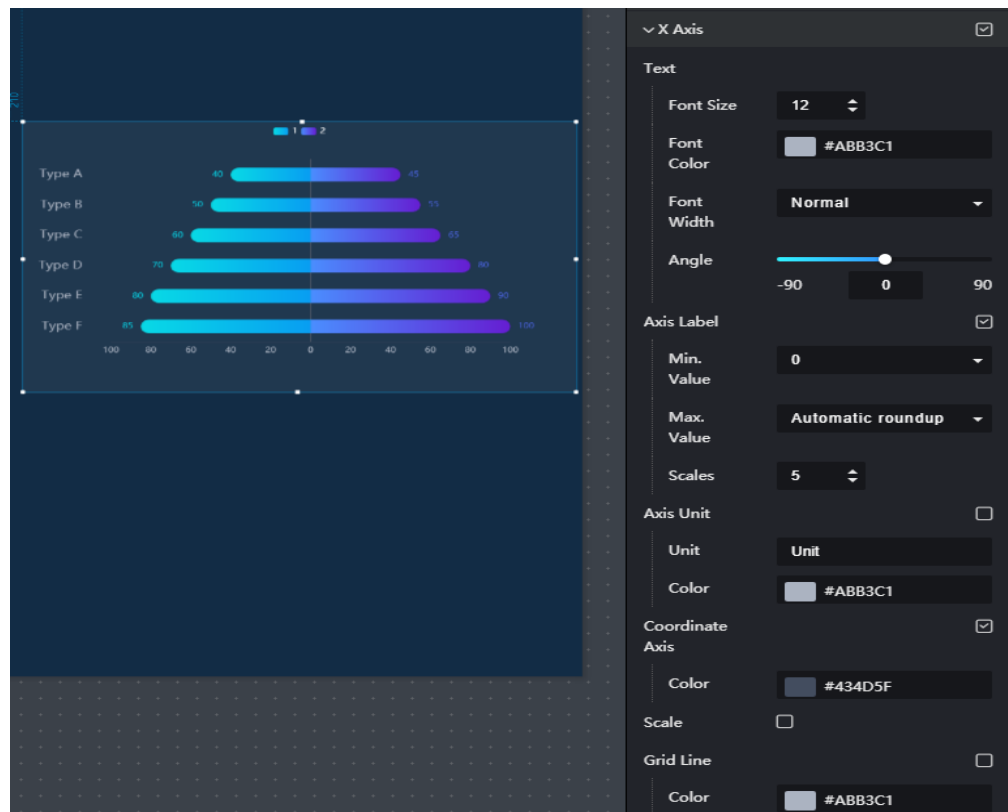
- **Value Tag**
  - **Value Tag:** to show or hide the value tag by clicking  or .
  - **Font Size:** font size of the value tag.
  - **Font Width:** font width of the value tag.

Figure 13-48 Value tags of a horizontal bi-directional bar chart



- **X Axis**
  - **X Axis:** to show or hide the X axis by clicking  or .
  - **Text:** text style of the X axis, including **Font Size, Color, Font Width, and Angle.**
  - **Axis Label:** to set the maximum value, minimum value, and scales of the X axis.
  - **Axis Unit:** to set the unit and font color of the X axis.
  - **Coordinate Axis:** color of the X axis.
  - **Scale:** to show or hide the scales by clicking  or .
  - **Grid Line:** grid line color of the X axis.

Figure 13-49 X axis of a horizontal bi-directional bar chart



- **Y Axis**

- **Y Axis:** to show or hide the Y axis by clicking  or .
- **Text:** text style of the Y axis, including **Font Size**, **Color**, **Font Width**, and **Angle**.
- **Coordinate Axis:** color of the Y axis.
- **Grid Line:** grid line color of the Y axis.

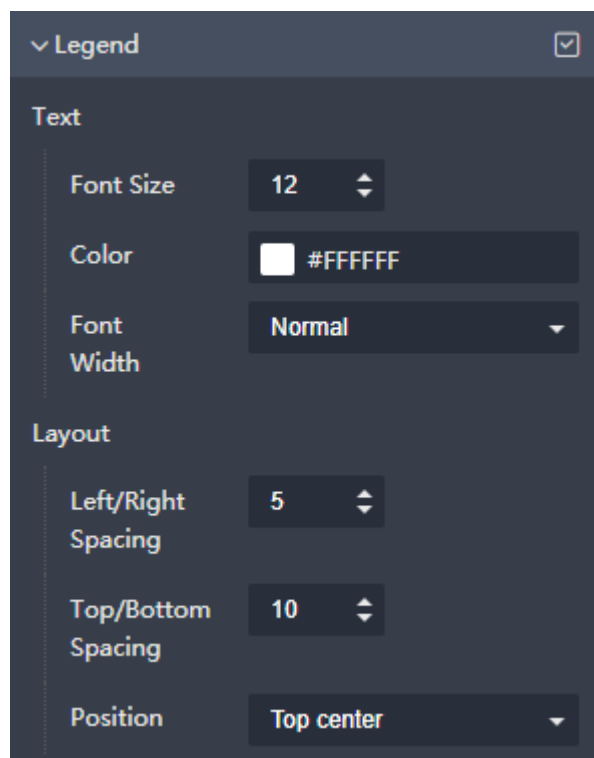
Figure 13-50 Y axis of a horizontal bi-directional bar chart



- **Legend**

- **Legend:** to show or hide the legend by clicking  or .
- **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
- **Layout:** layout style of the legend, including **Left/Right Spacing**, **Top/Bottom Spacing**, and **Position**.

**Figure 13-51** Legends of a horizontal bi-directional bar chart



- **Message**

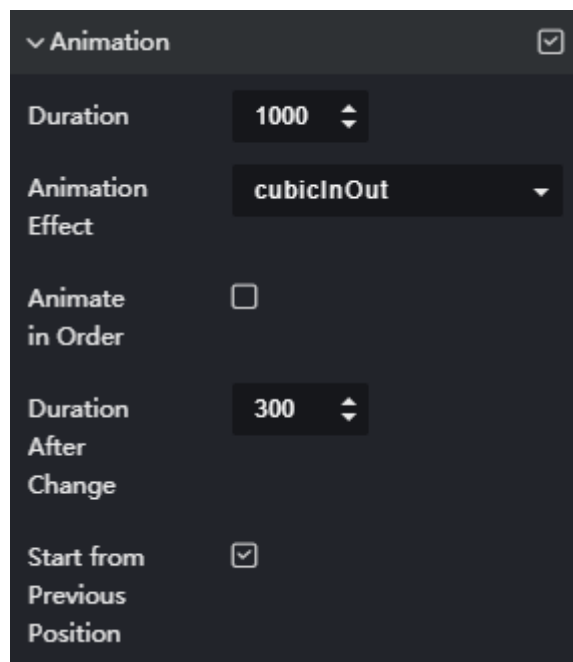
- **Message:** If you click , a message will pop up when you hover over a previewed or published component.
- **Triggering Mode:** to set the triggering mode of messages. The options are **Coordinate Axis** and **Data**.
- **Color:** font color of the message.
- **Font Size:** font size of the message.
- **Font Width:** font width of the message.

- **Animation**

- Click  or  next to **Animation** to hide or show animation, respectively.
- **Duration:** duration of the first rendering of the component, in ms.
- **Animation Effect:** The system provides multiple common animation slow-moving effects.
- **Animate in Order:** If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.

- **Duration After Change:** animation duration when the component data is updated, in ms.
- **Start from Previous Position:** If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

Figure 13-52 Animation (line chart)



## Data

For details about how to configure component data, see [Configuring Component Data](#).

## Interaction

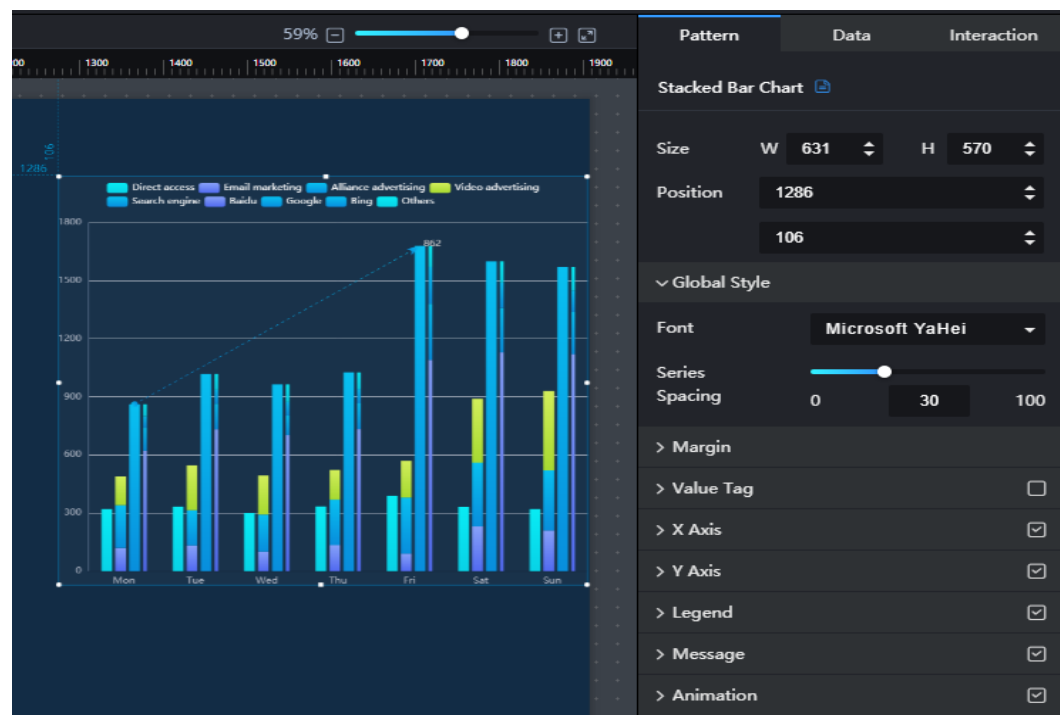
For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.2.5 Stacked Bar Chart







This section describes parameters of a stacked bar chart.



Figure 13-53 Stacked bar chart



## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - **Font:** text font.
  - **Series Spacing:** spacing between chart series.
- **Margin**
  - **Top:** spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom:** spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Left:** spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Right:** spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **Value Tag**
  - **Value Tag:** to show or hide the value tag by clicking  or .
  - **Font Size:** font size of the value tag.
  - **Font Width:** font width of the value tag.

- **Color:** font color of the value tag.
- **Position:** position of the value tag. The options are **Top**, **Align right**, **Inside**, **Align left**, **Bottom**, **Inside left**, **Inside right**, **Inside top**, and **Inside bottom**.
- **X Axis**
  - **X Axis:** to show or hide the X axis by clicking  or .
  - **Text:** text style of the X axis, including **Font Size**, **Color**, **Font Width**, and **Angle**.
  - **Coordinate Axis:** color of the X axis.
  - **Scale:** to show or hide the scales by clicking  or .
  - **Grid Line:** grid line color of the X axis.

Figure 13-54 X axis of a stacked bar chart

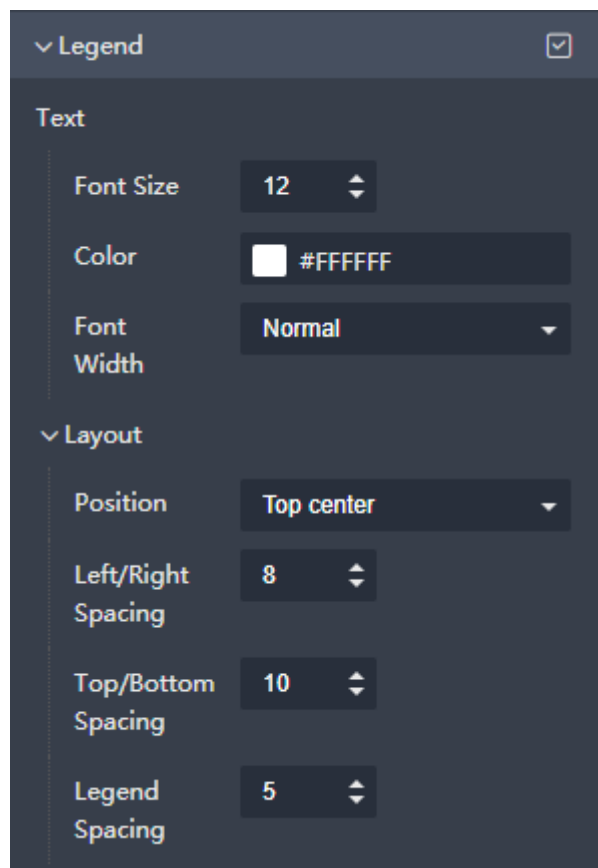





- **Y Axis**
  - **Y Axis:** to show or hide the Y axis by clicking  or .
  - **Text:** text style of the Y axis, including **Font Size**, **Color**, **Font Width**, **Angle**, and **Axis Label**.
  - **Coordinate Axis:** color of the Y axis.
  - **Grid Line:** grid line color of the Y axis.
  - **Axis Unit:** to set the unit and font color of the Y axis.

Figure 13-55 Y axis of a stacked bar chart



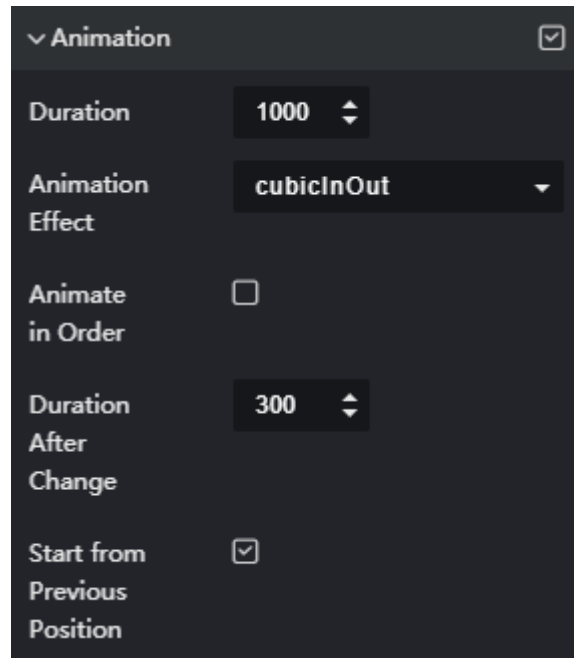
- **Legend**
  - **Legend:** to show or hide the legend by clicking  or .
  - **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
  - **Spacing:** distance between legends, including **Left/Right Spacing** and **Top/Bottom Spacing**.

**Figure 13-56** Legends of a stacked bar chart

- **Message**
  - **Message:** If you click , a message will pop up when you hover over a previewed or published component.
  - **Triggering Mode:** to set the triggering mode of messages. The options are **Coordinate Axis** and **Data**.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.
- **Animation**
  - Click  or  next to **Animation** to hide or show animation, respectively.
  - **Duration:** duration of the first rendering of the component, in ms.
  - **Animation Effect:** The system provides multiple common animation slow-moving effects.
  - **Animate in Order:** If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.
  - **Duration After Change:** animation duration when the component data is updated, in ms.
  - **Start from Previous Position:** If this option is selected, the animation is played from the position of the previous data when the component data

is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

**Figure 13-57** Animation (line chart)



## Data

For details about how to configure component data, see [Configuring Component Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.2.6 Horizontal Capsule Bar

The horizontal capsule bar is a type of bar chart, which is used to compare data of different series. This section describes parameters of a horizontal capsule bar.

Figure 13-58 Horizontal capsule bar

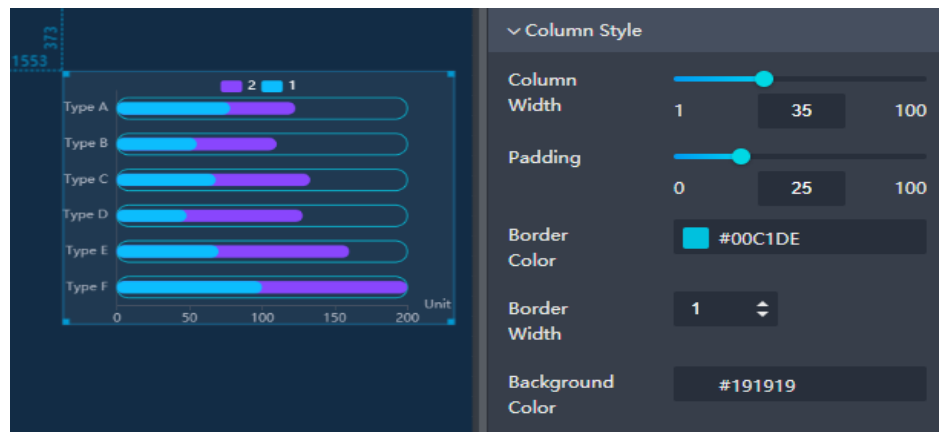


## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**

**Font:** font of the text.
- **Column Style**
  - **Column Width:** width of the column.
  - **Padding:** distance between the capsule and the border line
  - **Border Color:** color of the border line of the capsule.
  - **Border Width:** width of the border line of the capsule. Unit: pixel.
  - **Background Color:** fill color of the column.

Figure 13-59 Column style of a horizontal capsule bar







- **Margin**
  - **Top:** spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom:** spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Left:** spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Right:** spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **Value Tag:** to show or hide the value tag. Figure 13-60 shows the value tags. The value tag has the following configuration items:
  - **Font Size:** font size of the value tag.
  - **Color:** font color of the value tag.
  - **Font Width:** font width of the value tag.
  - **Position:** position where the value tag is displayed.
  - **Distance:** distance display based on the position of the value tag. Unit: pixel.

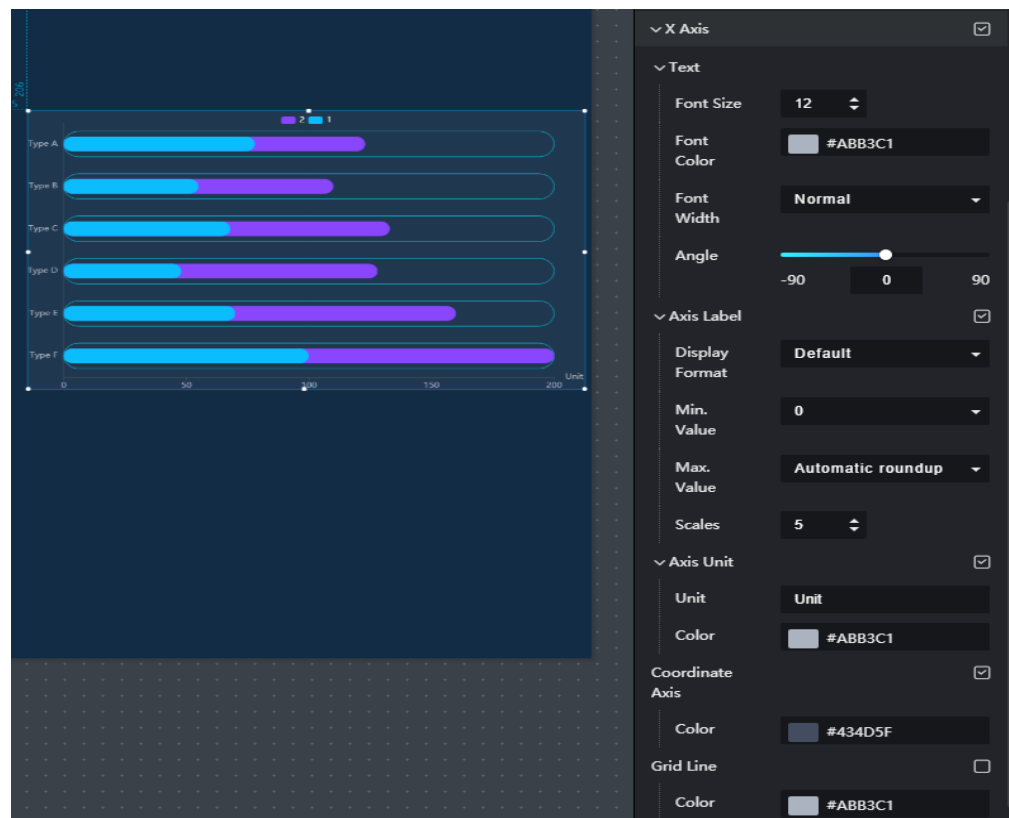
Figure 13-60 Value tags of a horizontal capsule bar



- **X Axis:** to show or hide the X axis. When this option is selected, you can set the X axis style.
  - **Font Size:** font size of the axis label text.
  - **Font Color:** font color of the axis label text.
  - **Font Width:** font width of the axis label text.
  - **Angle:** tilt angle of the axis label text.
  - **Axis Label:** to show or hide the axis labels. When this function is enabled, you can set the following parameters:
    - **Display Format:** display format of the scale value on the axis.
    - **Min. Value:** the minimum value of the axis. You can enter a value or select a value from the drop-down list. When this parameter is set to the minimum value, the start value of the axis is the minimum value in the current data.
    - **Max. Value:** the maximum value of the axis. You can enter a value or select a value from the drop-down list. When this parameter is set to the maximum value, the start value of the axis is the maximum value in the current data.
    - **Scales:** intervals of data items on the coordinate axis.
  - **Axis Unit:** to show or hide the axis unit. When this function is enabled, the axis unit is displayed on the right of the X axis. The unit can be displayed only when **Right** under **Margin** is set to a value greater than or equal to 40.
    - **Unit:** unit of the coordinate axis, for example, kilometer, byte/second, or GB.
    - **Color:** font color of the text.
  - **Coordinate Axis:** to show or hide the axis. You can set the color of the axis when you select this option.
  - **Grid Line:** to show or hide the grid lines. You can set the color of the grid lines when you select this option.

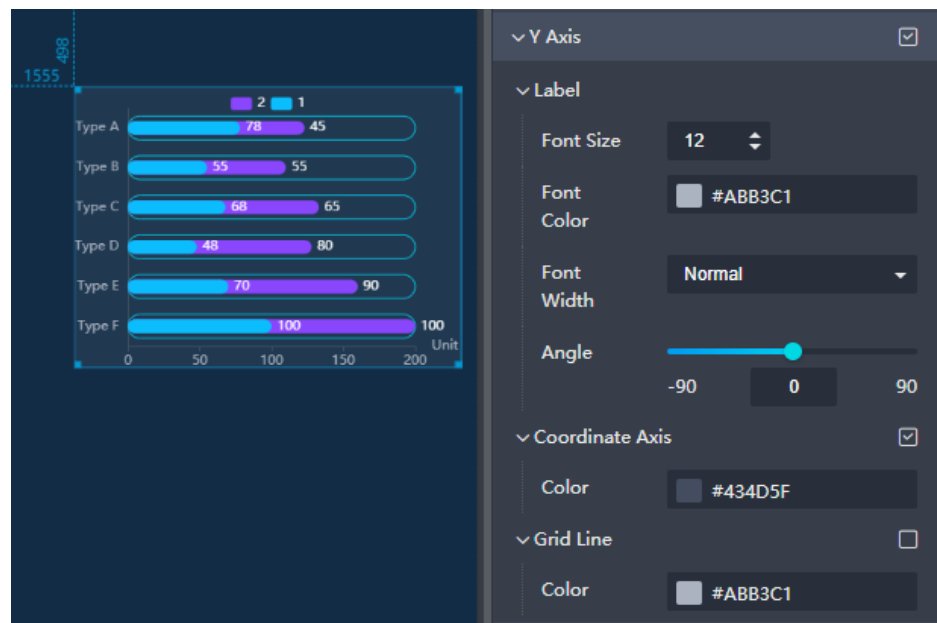


Figure 13-61 X axis of a horizontal capsule bar chart



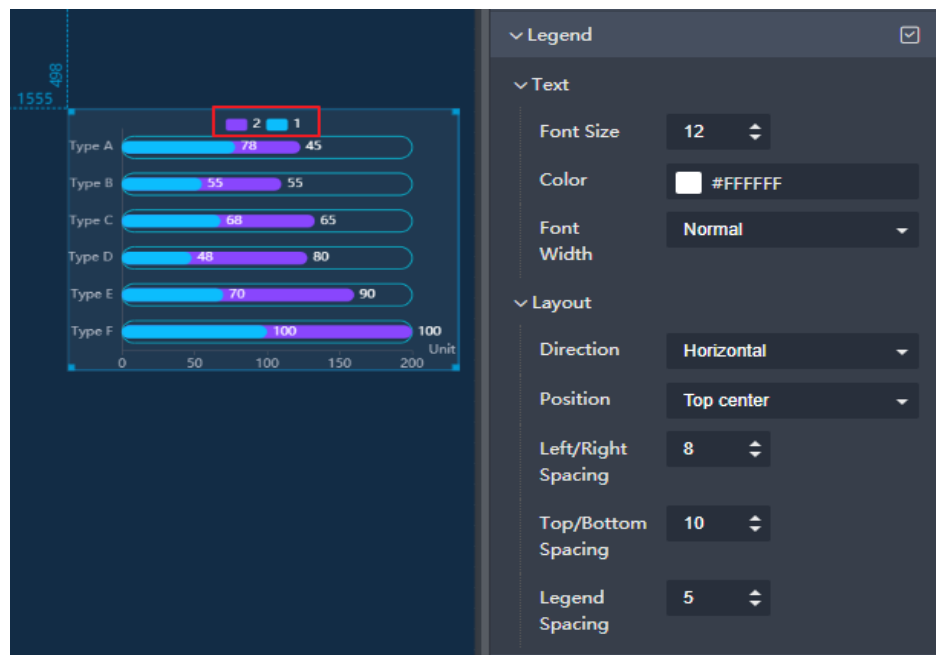
- **Y Axis**
  - **Font Size:** font size of the axis label text.
  - **Font Color:** font color of the axis label text.
  - **Font Width:** font width of the axis label text.
  - **Angle:** tilt angle of the axis label text.
  - **Coordinate Axis:** to show or hide the axis. You can set the color of the axis when you select this option.
  - **Grid Line:** to show or hide the grid lines. You can set the color of the grid lines when you select this option.

Figure 13-62 Y axis of a horizontal capsule bar chart



- **Legend:** to show or hide the legend. When this option is selected, you can set the legend style.
  - **Font Size:** font size of the legend text.
  - **Color:** font color of the legend text.
  - **Font Width:** font width of the legend text.
  - **Layout**
    - **Direction:** direction of the legend.
    - **Position:** position of the legend.
    - **Left/Right Spacing:** distance between the legend and the left boundary of the component. This parameter does not take effect when **Position** is set to **Top center** or **Bottom center**.
    - **Left/Right Spacing:** distance between the legend and the top boundary of the component.
    - **Legend Spacing:** distance between two adjacent legends.

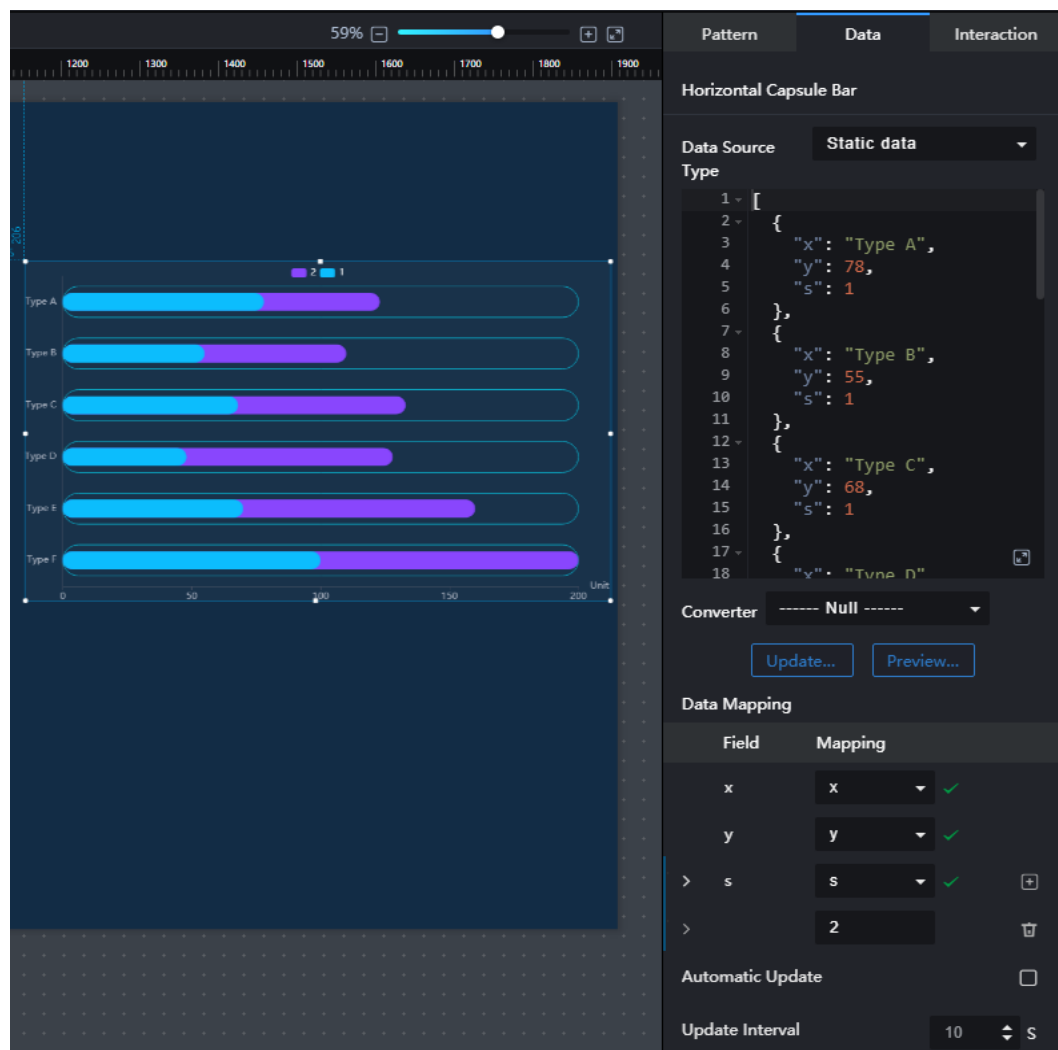
Figure 13-63 Legends of a horizontal capsule bar chart





- **Message:** to show or hide the prompt information. After this function is enabled, a message is displayed when you mouse over or click on the screen during the screen preview.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.

## Data

Figure 13-64 Data of a horizontal capsule bar chart



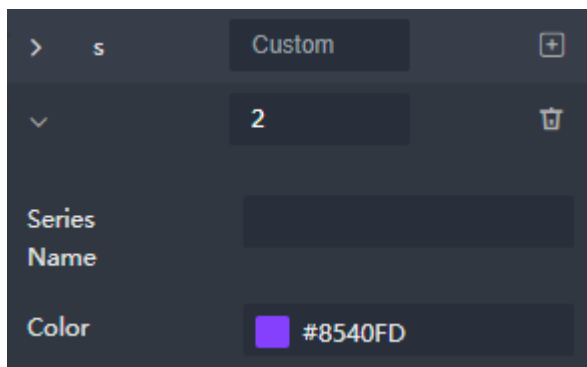
- **Data Source Type:** Select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Data Mapping:** The data format consists of the following fields:
  - **x:** category, corresponding to the X axis. The data type of this field must be the same as that of the **X Axis**.
  - **y:** data, corresponding to the Y axis.
  - **s:** series. You can set a value of the **s** field to a series. You can add multiple series. The value of each series can be mapped to different Y coordinates.

Click  on the right of **s** to add a series. To delete an added series, click  on the right of the series.

Add a series as follows:

- **Series Value:** Enter a value of the **s** field. If the series value is empty, the value of the corresponding **s** field is used by default.
- **Series Name:** self-definable. If the series name is empty, the series value is used as the series name by default.
- **Color:** color of the column in the series.

**Figure 13-65** Series of a horizontal capsule bar chart



- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.2.7 WT Bar Chart

**Wide Table (WT)** charts differ greatly from other charts in data structure. The data structure of WT charts refers to creating database tables with multiple fields by putting related fields in one table.

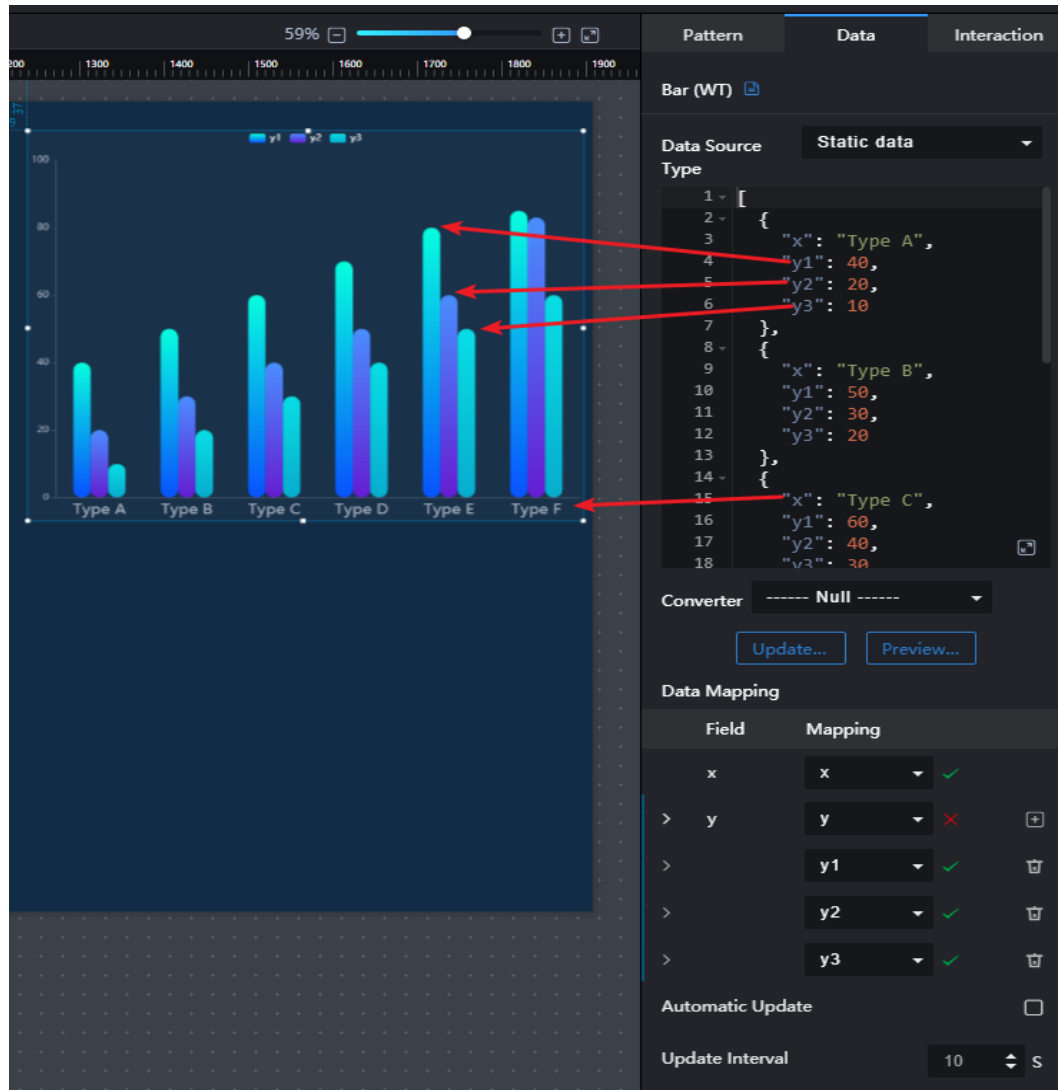
This section describes parameters of a WT bar chart.

## Pattern

The pattern configuration of a WT bar chart is similar to that of a bar chart. For details, see [Pattern](#).




## Data

The data structure of the WT bar chart is as follows:



```
[
  {
    "x": "Type A",
    "y1": 40,
    "y2": 20,
    "y3": 10
  },
  {
    "x": "Type B",
    "y1": 50,
    "y2": 30,
    "y3": 20
  },
  {
    "x": "Type C",
    "y1": 60,
    "y2": 40,
    "y3": 30
  },
  {
    "x": "Type D",
    "y1": 70,
    "y2": 50,
    "y3": 40
  },
  {
    "x": "Type E",
    "y1": 80,
    "y2": 60,
    "y3": 50
  },
  {
    "x": "Type F",
    "y1": 90,
    "y2": 70,
    "y3": 60
  }
]
```

```
"x": "Type E",  
  "y1": 80,  
  "y2": 60,  
  "y3": 50  
},  
{  
  "x": "Type F",  
  "y1": 85,  
  "y2": 83,  
  "y3": 60  
}  
]
```

- The **x** field indicates the category.
- The **y** field indicates the data series (group). Y maps different fields to indicate different data series (groups). Data is displayed in groups based on the fields mapped by y.
  - Add a data series: Click  next to y to add a data series. To delete an added series, click  on the right of the series.  
Add a series as follows:
    - **Series Value:** field name in the mapped source data.
    - **Series Name:** self-definable. If the series name is empty, the series value is used as the series name by default.
    - **Color:** color of the column in the series.
    - **Stack:** stack name. You can enter a user-defined name. If the same stack name is set for different series of the same category (with the same x value), the series data is displayed in the stack.
    - **Link:** target link to which the web page points when a data item in component widget is clicked.
    - **Link Mode:**
      - **New window:** The target link opens a new browser window.
      - **Current page:** The target link opens a window in the current browser window.
      - **Floating panel:** The target link opens a floating window in the center of the current screen.
  - Configure a data series: Click  in front of the data series, and then configure the specified style (such as the series name and color) of the series on the expanded panel.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.2.8 WT Horizontal Bar Chart

This section describes parameters of a WT horizontal bar chart.

## Pattern

The pattern configuration of a WT horizontal bar chart is similar to that of a horizontal bar chart. For details, see [Pattern](#).

## Data

The data configuration of a WT horizontal bar chart is similar to that of a horizontal bar chart. For details, see [Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.2.9 WT Stacked Bar Chart

This section describes parameters of a WT stacked bar chart.

### Pattern

The pattern configuration of a WT stacked bar chart is similar to that of a stacked bar chart. For details, see [Pattern](#).

### Data

The data configuration of a WT stacked bar chart is similar to that of a stacked bar chart. For details, see [Data](#).

### Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.3 Combination Charts

### 13.3.1 Combination Chart

This section describes parameters of a combination chart.

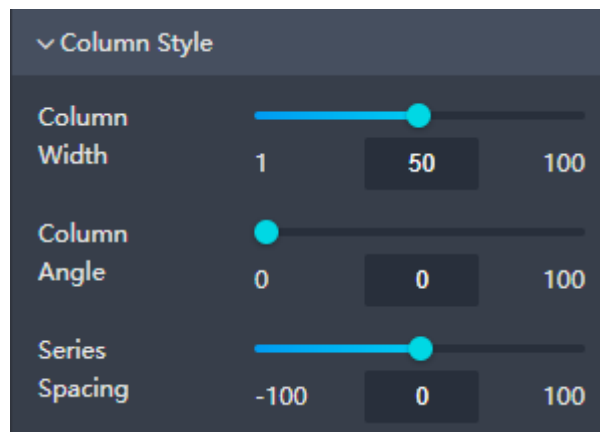


Figure 13-66 Combination chart



## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - Font:** text font.
- **Column Style**
  - **Column Width:** width of the column.
  - **Column Angle:** round-corner angle of the column.
  - **Series Spacing:** distance between series.

**Figure 13-67** Column style of a combination chart








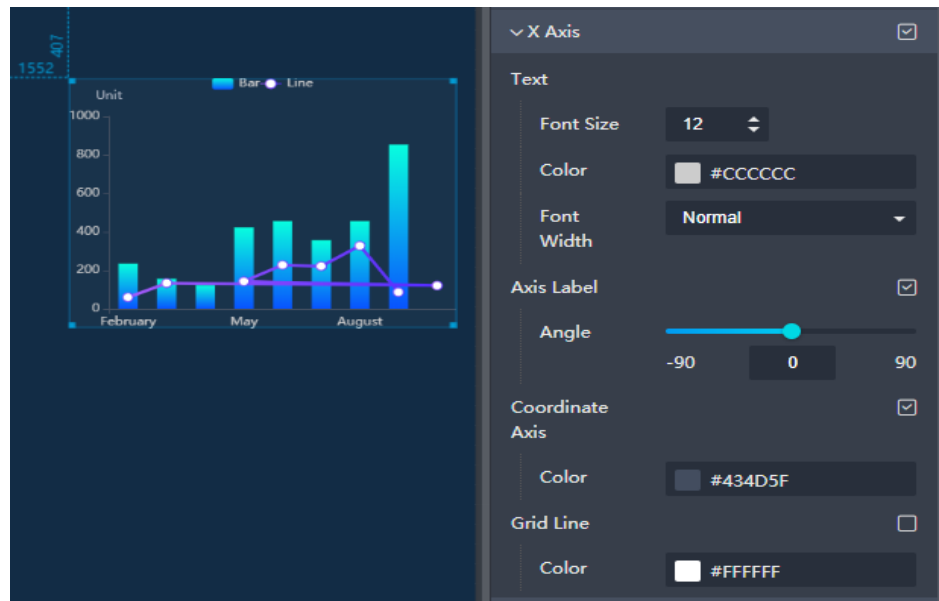
- **Margin**
  - **Top**: spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom**: spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Left**: spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Right**: spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **X Axis**
  - **X Axis**: to show or hide the X axis by clicking  or .
  - **Text**: text style of the X axis, including **Font Size**, **Color**, and **Font Width**.
  - **Axis Label**: to set the label angle by dragging .
  - **Coordinate Axis**: color of the X axis.
  - **Grid Line**: grid line color of the X axis.

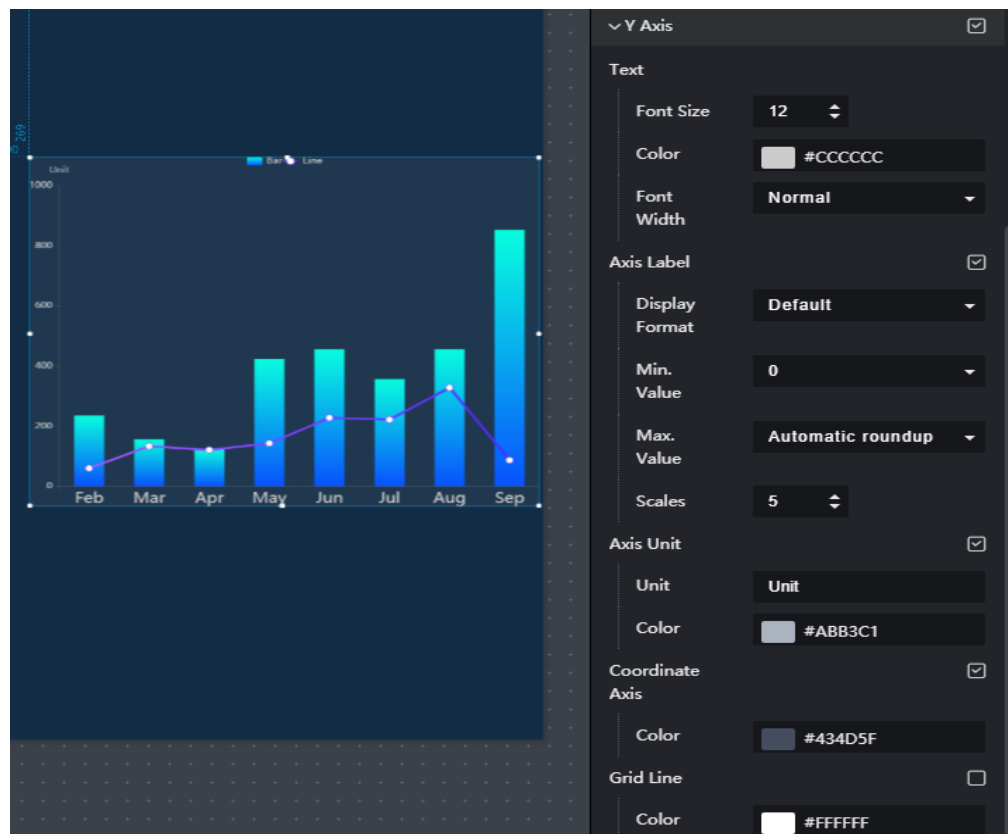
Figure 13-68 X axis of a combination chart



- **Y Axis**

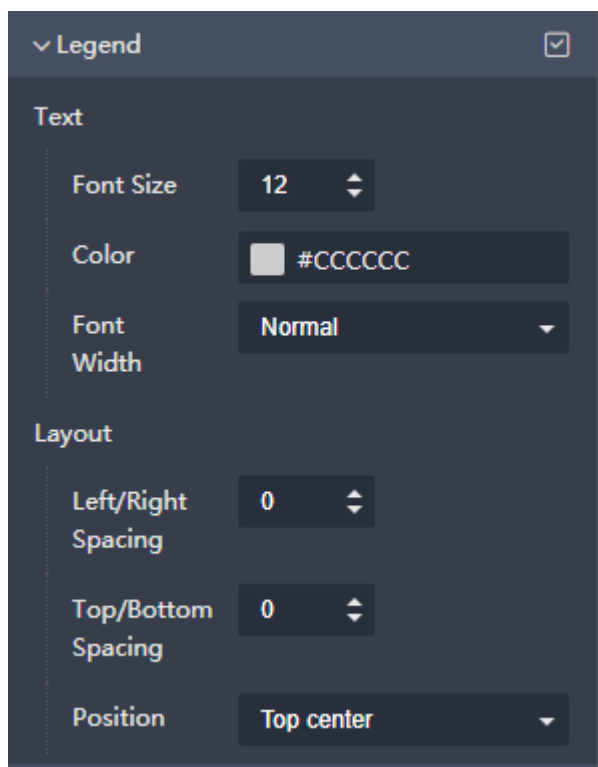
- **Y Axis:** to show or hide the Y axis by clicking  or .
- **Text:** text style of the Y axis, including **Font Size**, **Color**, and **Font Width**.
- **Axis Label:** to set the display format, maximum value, and minimum value of the Y axis.
- **Axis Unit:** to set the unit and font color of the Y axis.
- **Coordinate Axis:** color of the Y axis.
- **Grid Line:** grid line color of the Y axis.




Figure 13-69 Y axis of a combination chart

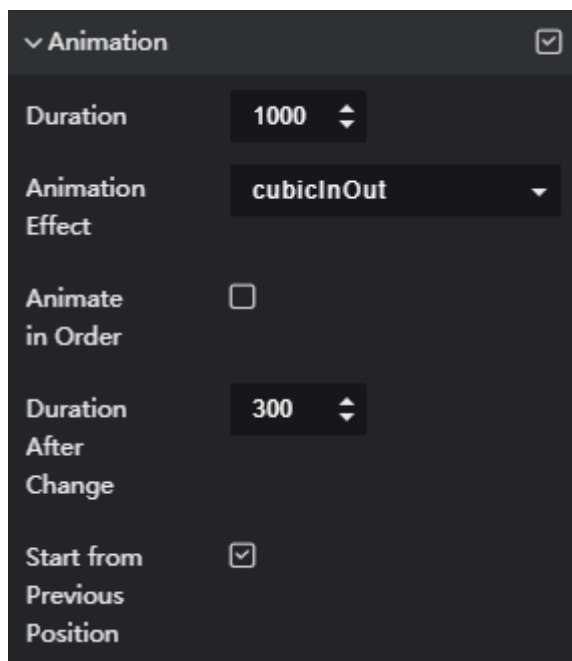


- **Legend**

- **Legend:** to show or hide the legend by clicking  or .
- **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
- **Layout:** layout style of the legend, including **Left/Right Spacing**, **Top/Bottom Spacing**, and **Position**.

**Figure 13-70** Legend of a combination chart



- **Message**
  - **Message:** If you click , a message will pop up when you hover over a previewed or published component.
  - **Triggering Mode:** to set the triggering mode of messages. The options are **Coordinate Axis** and **Data**.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.
- **Animation**
  - Click  or  next to **Animation** to hide or show animation, respectively.
  - **Duration:** duration of the first rendering of the component, in ms.
  - **Animation Effect:** The system provides multiple common animation slow-moving effects.
  - **Animate in Order:** If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.
  - **Duration After Change:** animation duration when the component data is updated, in ms.
  - **Start from Previous Position:** If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

**Figure 13-71** Animation (line chart)

## Data

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Mapping:** The data format contains the following fields by default. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.

- **x:** category of a line chart or bar chart, corresponding to the X axis.
- **y:** data of series, corresponding to the Y axis.
- **s:** series. You can set a value of the **s** field to a series. Multiple series can be added. The series data can be displayed in a bar chart or a line chart.

Click  on the right of **s** to add a series. To delete an added series, click  on the right of the series.

Add a series as follows:

- **Series Value:** Enter a value of the **s** field. If the series value is empty, the value of the corresponding **s** field is used by default.
- **Bar:** whether to display the bar chart. If this parameter is selected, you can set the style of the bar chart. The configuration items are as follows:

**Series Name:** self-definable. If the series name is empty, the series value is used as the series name by default.

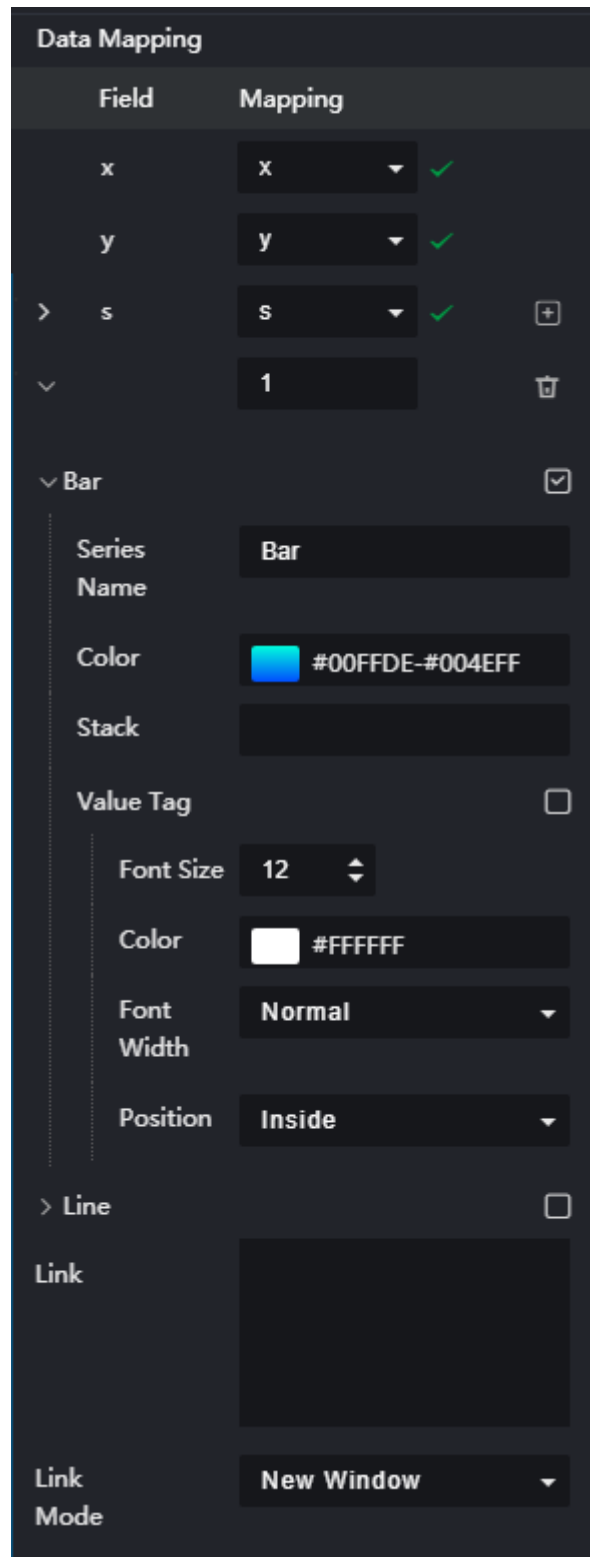
**Color:** color of the column in the series.

**Stack:** stack name. You can enter a user-defined name. If the same stack name is set for different series of the same category (with the same x value), the series data is displayed in the stack.

**Value Tag:** to show or hide the value tag. After selecting this option, you can set the font size, color, font width, and position of the value tag.

- **Line:** whether to display the line chart. If this parameter is selected, you can set the style of the line chart.

Figure 13-72 Series of a combination chart



- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.



- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.3.2 Dual Y-Axis Combination

A dual Y-axis combination chart consists of a bar chart and a line chart and displays the values of different series under the same category. In a dual Y-axis combination chart, you can view the data comparison between multiple series under each category and the data change trend of each series.

This section describes parameters of a dual Y-axis combination chart.

Figure 13-73 Dual Y-axis combination chart



## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - Font:** font of the text.





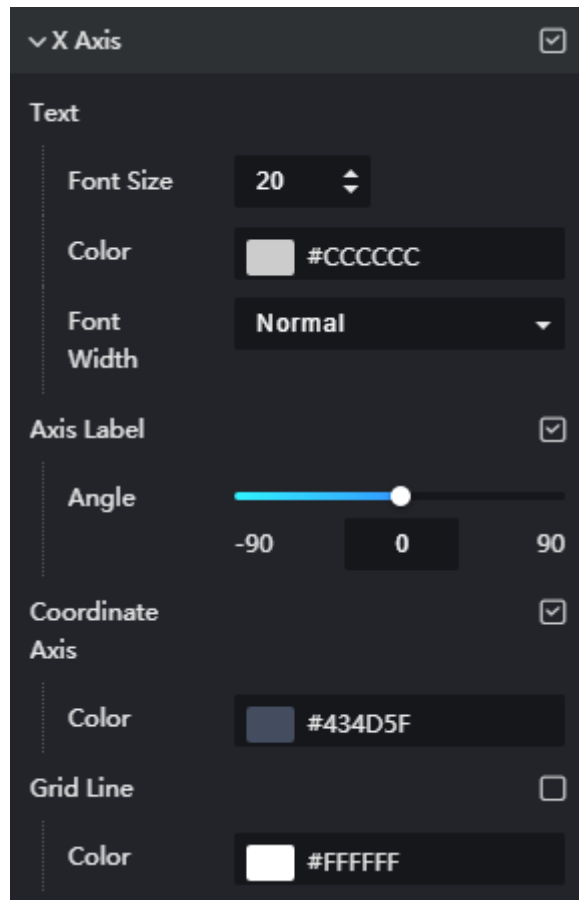
- **Column Style**
  - **Column Width:** width of the column.
  - **Column Angle:** round-corner angle of the column.
  - **Series Spacing:** distance between two adjacent series.
- **Margin**
  - **Top:** spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom:** spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Left:** spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Right:** spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **X Axis:** to show or hide the X axis. When this option is selected, you can set the X axis style.
  - **Font Size:** font size of the axis label text.
  - **Color:** font color of the axis label text.
  - **Font Width:** font width of the axis label text.
  - **Axis Label:** to show or hide the axis labels. When this function is enabled, you can set the angle of the axis label text.
  - **Coordinate Axis:** to show or hide the axis. You can set the color of the axis when you select this option.
  - **Grid Line:** to show or hide the grid lines. You can set the color of the grid lines when you select this option.

Figure 13-74 X axis of a dual Y-axis combination chart



- **Y1 Axis**
  - **Font Size:** font size of the axis label text.
  - **Color:** font color of the axis label text.
  - **Font Width:** font width of the axis label text.
  - **Axis Label:** to show or hide the axis labels. When this function is enabled, you can set the following parameters:
    - **Display Format:** display format of the scale value on the axis.
    - **Min. Value:** the minimum value of the axis. You can enter a value or select a value from the drop-down list. When this parameter is set to the minimum value, the start value of the axis is the minimum value in the current data.
    - **Max. Value:** the maximum value of the axis. You can enter a value or select a value from the drop-down list. When this parameter is set to the maximum value, the start value of the axis is the maximum value in the current data.
    - **Scales:** intervals of data items on the coordinate axis.
  - **Axis Unit:** to show or hide the axis unit. When this function is enabled, the axis unit is displayed on the top of the chart. The unit can be displayed only when **Top** under **Margin** is set to a value greater than or equal to 40.

- **Unit:** unit of the coordinate axis, for example, kilometer, byte/second, or GB.
- **Color:** font color of the text.
- **Coordinate Axis:** to show or hide the axis. You can set the color of the axis when you select this option.
- **Grid Line:** to show or hide the grid lines. You can set the color of the grid lines when you select this option.

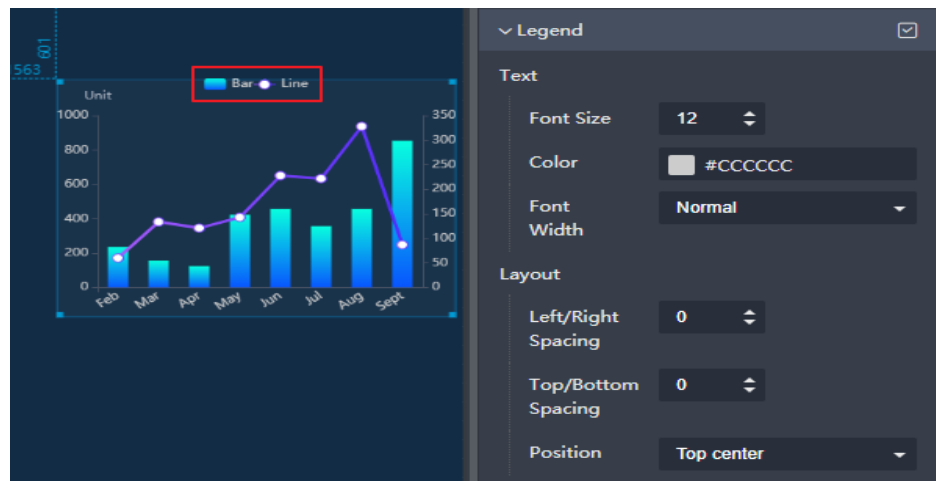
Figure 13-75 Y1 axis of a dual Y-axis combination chart



- **Y2 Axis**

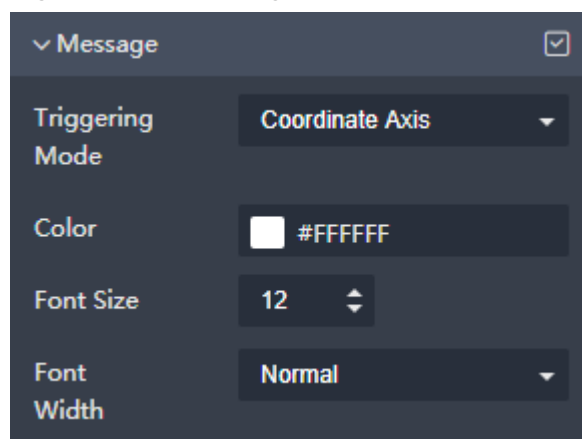
The Y2 axis is the Y axis on the right. The configuration items are the same as those of the Y1 axis. For details, see the description of [Y Axis](#).
- **Legend:** to show or hide the legend. When this option is selected, you can set the legend style.
  - **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
  - **Layout**
    - **Legend Spacing:** distance between two adjacent legends.
    - **Left/Right Spacing:** distance between the legend and the top boundary of the component.
    - **Position:** position of the legend.

**Figure 13-76** Legends of a dual Y-axis combination chart



- **Message:** to show or hide the prompt information. After this function is enabled, a message is displayed when you mouse over or click on the screen during the screen preview.
  - **Triggering Type:** type of the prompt message.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.

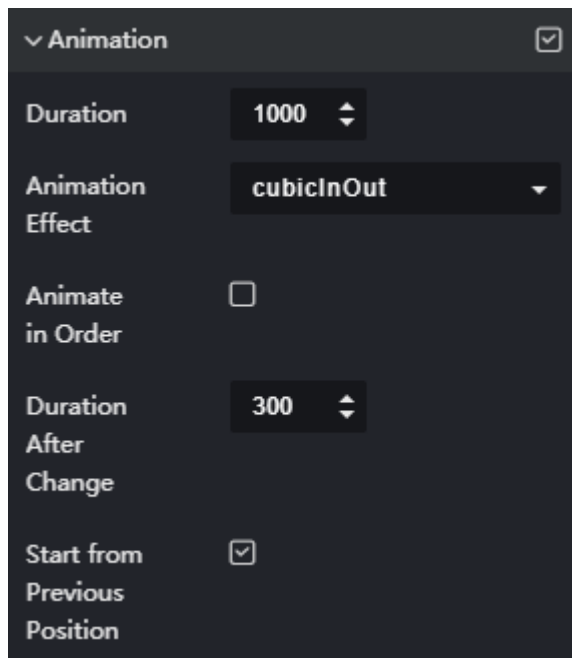
**Figure 13-77** Message



- **Animation**
  - Click  or  next to **Animation** to hide or show animation, respectively.
  - **Duration:** duration of the first rendering of the component, in ms.
  - **Animation Effect:** The system provides multiple common animation slow-moving effects.
  - **Animate in Order:** If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.
  - **Duration After Change:** animation duration when the component data is updated, in ms.

- **Start from Previous Position:** If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

Figure 13-78 Animation (line chart)





## Data

The dual Y-axis combination chart contains three fields by default: x, y, and s.

- **Data Mapping**

- **x:** category of a line chart or bar chart, corresponding to the X axis.
- **y:** data of series, corresponding to Y1 axis or Y2 axis.
- **s:** series. You can set a value of the **s** field to a series. You can add multiple series. The value of each series can be mapped to different Y coordinates.

Click  on the right of **s** to add a series. To delete an added series, click  on the right of the series.

Add a series as follows:

- **Series Value:** field name in the mapped source data. If the series value is left blank, the value of the corresponding Y field is used by default.
- **Bar:** whether to display the bar chart. If this parameter is selected, you can set the style of the bar chart. The configuration items are as follows:

**Series Name:** self-definable. If the series name is empty, the series value is used as the series name by default.

**Color:** color of the column in the series.

**Stack:** stack name. You can enter a user-defined name. If the same stack name is set for different series of the same category (with the same x value), the series data is displayed in the stack.

**Value Tag:** to show or hide the value tag. After selecting this option, you can set the font size, color, font width, and position of the value tag.

- **Line:** whether to display the line chart. If this parameter is selected, you can set the style of the line chart.
- **Reference Axis:** Y1 axis or Y2 axis.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.3.3 WT Combination Chart

This section describes parameters of a WT combination chart.

#### Pattern

The pattern configuration of a WT combination chart is similar to that of a combination chart. For details, see [Pattern](#).

#### Data

The data configuration of a WT combination chart is similar to that of a combination chart. For details, see [Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.3.4 Double-Axis Combination (WT)

A WT dual Y-axis combination chart is a type of wide table (WT) component. It consists of a bar chart and a line chart and displays the values of different series under the same category. In a WT dual Y-axis combination chart, you can view the data comparison between multiple series under each category and the data



change trend of each series. A WT dual Y-axis combination chart contains two series by default. You can add a series value of a field that represents a series in the source data table to be a series. You can add multiple series.

This section describes parameters of a WT dual Y-axis combination chart.



Figure 13-79 WT dual Y-axis combination chart



## Pattern

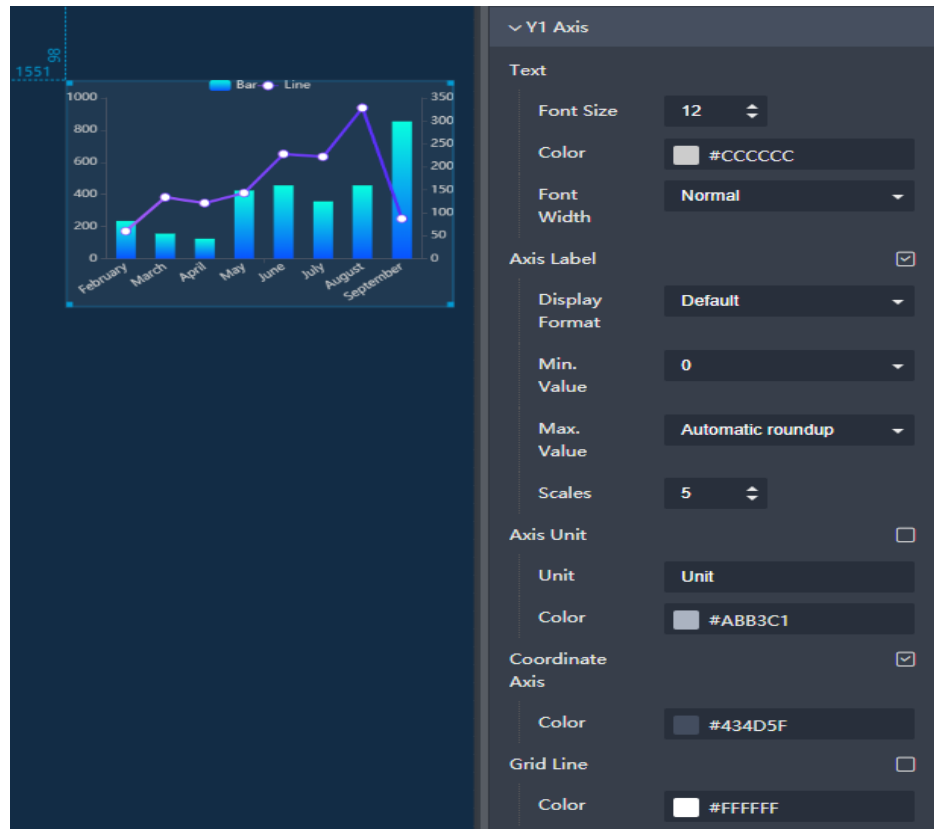
- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - Font:** font of the text.
- **Column Style**
  - **Column Width:** width of the column.
  - **Column Angle:** round-corner angle of the column.
  - **Series Spacing:** distance between two adjacent series.
- **Margin**
  - **Top:** spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom:** spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.



- **Left:** spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **Right:** spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **X Axis:** to show or hide the X axis. When this option is selected, you can set the X axis style.
  - **Font Size:** font size of the axis label text.
  - **Color:** font color of the axis label text.
  - **Font Width:** font width of the axis label text.
  - **Axis Label:** to show or hide the axis labels. If this option is selected, you can set **Angle**, **Data Type**, **Inter-Label Clearance**, **Scales**, **Show Min. Label**, and **Show Max. Label**.
  - **Coordinate Axis:** to show or hide the axis. You can set the color of the axis if you select this option.
  - **Grid Line:** to show or hide the grid lines. You can set the color of the grid lines if you select this option.
- **Y1 Axis**
  - **Font Size:** font size of the axis label text.
  - **Color:** font color of the axis label text.
  - **Font Width:** font width of the axis label text.
  - **Axis Label:** to show or hide the axis labels. When this function is enabled, you can set the following parameters:
    - **Display Format:** display format of the scale value on the axis.
    - **Min. Value:** the minimum value of the axis. You can enter a value or select a value from the drop-down list. When this parameter is set to the minimum value, the start value of the axis is the minimum value in the current data.
    - **Max. Value:** the maximum value of the axis. You can enter a value or select a value from the drop-down list. When this parameter is set to the maximum value, the start value of the axis is the maximum value in the current data.
    - **Scales:** intervals of data items on the coordinate axis.
  - **Axis Unit:** to show or hide the axis unit. When this function is enabled, the axis unit is displayed on the top of the chart. The unit can be displayed only when **Top** under **Margin** is set to a value greater than or equal to 40.
    - **Unit:** unit of the coordinate axis, for example, kilometer, byte/second, or GB.
    - **Color:** font color of the text.
  - **Coordinate Axis:** to show or hide the axis. You can set the color of the axis when you select this option.

- **Grid Line:** to show or hide the grid lines. You can set the color of the grid lines when you select this option.

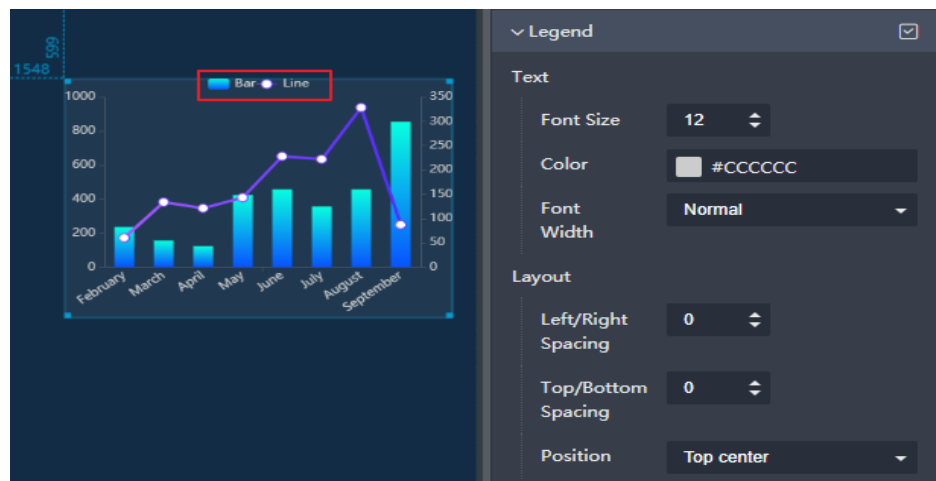
**Figure 13-80** Y1 axis of a WT dual Y-axis combination chart



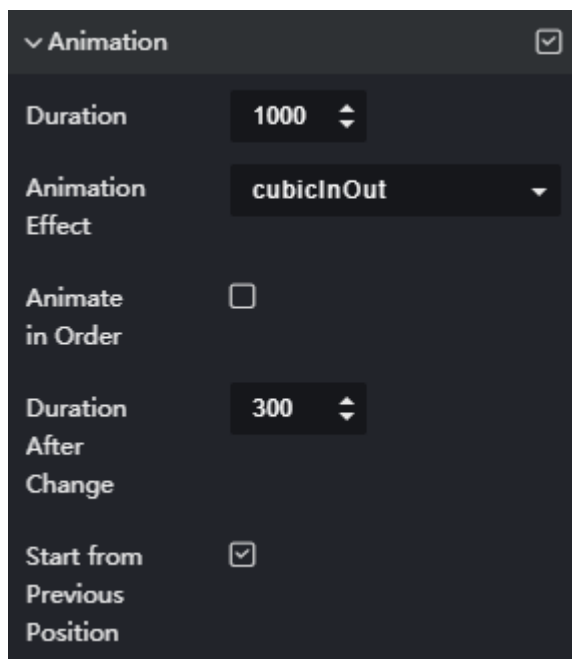
- **Y2 Axis**

The Y2 axis is the Y axis on the right. The configuration items are the same as those of the Y1 axis. For details, see the description of [Y Axis](#).
- **Legend:** to show or hide the legend. When this option is selected, you can set the legend style.
  - **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
  - **Layout**
    - **Legend Spacing:** distance between two adjacent legends.
    - **Left/Right Spacing:** distance between the legend and the top boundary of the component.
    - **Position:** position of the legend.

**Figure 13-81** Legends of a WT dual Y-axis combination chart



- **Message:** to show or hide the prompt information. After this function is enabled, a message is displayed when you mouse over or click on the screen during the screen preview.
  - **Triggering Type:** type of the prompt message.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.
- Animation
  - Click  or  next to **Animation** to hide or show animation, respectively.
  - **Duration:** duration of the first rendering of the component, in ms.
  - **Animation Effect:** The system provides multiple common animation slow-moving effects.
  - **Animate in Order:** If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.
  - **Duration After Change:** animation duration when the component data is updated, in ms.
  - **Start from Previous Position:** If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

**Figure 13-82** Animation (line chart)



## Data

The data format of the WT dual Y-axis combination chart is a wide table structure. The related fields are placed in the same table to form a database table with many fields. The WT dual Y-axis combination chart contains three fields by default: x, y1, and y2.

- **x**: category of a line chart or bar chart, corresponding to the X axis.
- **y**: data series (group). **y** maps different fields to represent different data series (groups). Data is displayed in groups based on the fields mapped by **y**.

By default, the following two series are included:

- **y1**: data of the **y1** series. **y1** is the field name in the mapped source data. The bar chart is displayed by default, corresponding to the Y1 axis on the left. You can set **Bar**, **Line**, and **Reference Axis**.
- **y2**: data of the **y2** series. **y2** is the field name in the mapped source data. The line chart is displayed by default, corresponding to the Y2 axis on the right. You can set **Bar**, **Line**, and **Reference Axis**.

Click  on the right of **y** to add a series. To delete an added series, click  on the right of the series.

Add a series as follows:

- **Series Value**: field name in the mapped source data.
- **Bar**: whether to display the bar chart. If this parameter is selected, you can set the style of the bar chart. The configuration items are as follows:
  - Series Name**: self-definable. If the series name is empty, the series value is used as the series name by default.
  - Color**: color of the column in the series.

**Stack:** stack name. You can enter a user-defined name. If the same stack name is set for different series of the same category (with the same x value), the series data is displayed in the stack.

**Value Tag:** to show or hide the value tag. After selecting this option, you can set the font size, color, font width, and position of the value tag.

- **Line:** whether to display the line chart. If this parameter is selected, you can set the style of the line chart.
- **Reference Axis:** Y1 axis or Y2 axis.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

Figure 13-83 Data of a WT dual Y-axis combination chart



## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.4 Pie Charts

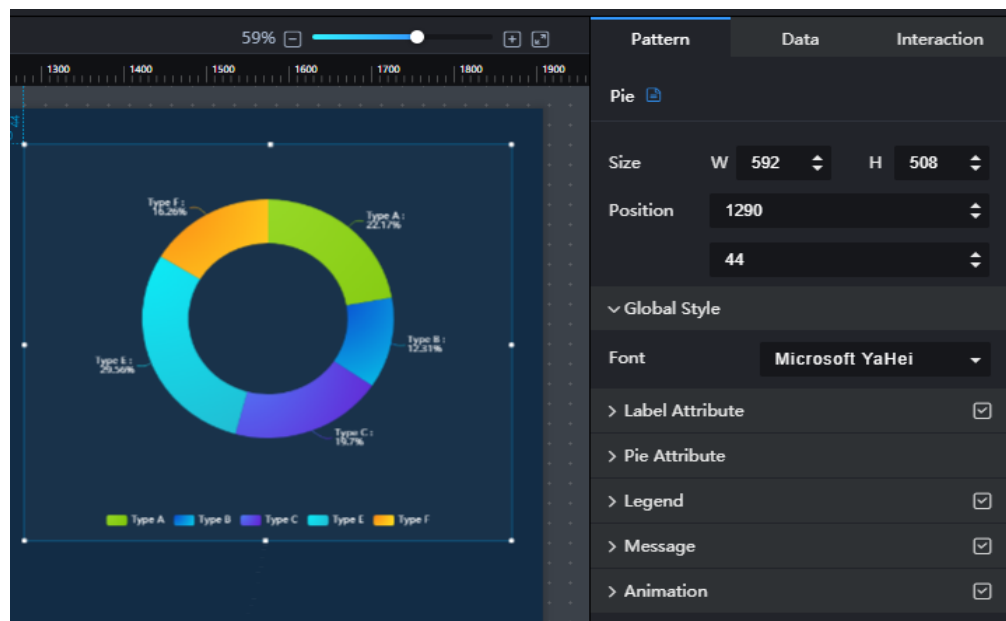
### 13.4.1 Pie Chart

This section describes parameters of a pie chart.

#### Pattern

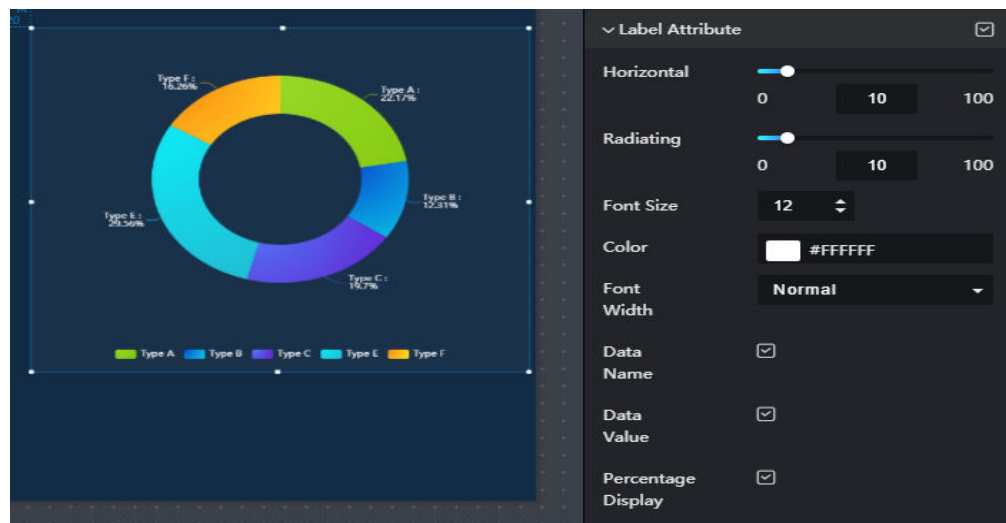
- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-84 Size and position of a pie chart



- **Global Style**
  - Font:** text font.
- **Label Attribute**
  - **Label Attribute:** to show or hide label attributes, click  or .
  - **Horizontal:** horizontal stretch length of the leader line.
  - **Radiating:** radiating stretch length of the leader line.
  - **Font Size:** font size of the tag value.
  - **Color:** font color of the tag value.
  - **Font Width:** font width of the tag value.
  - **Data Name:** whether to display the data name.
  - **Data Value:** whether to display the data value
  - **Percentage Display:** whether to display percentage. To display the label value in percentage, click ; to display the label value in data, click .

Figure 13-85 Label attributes of a pie chart












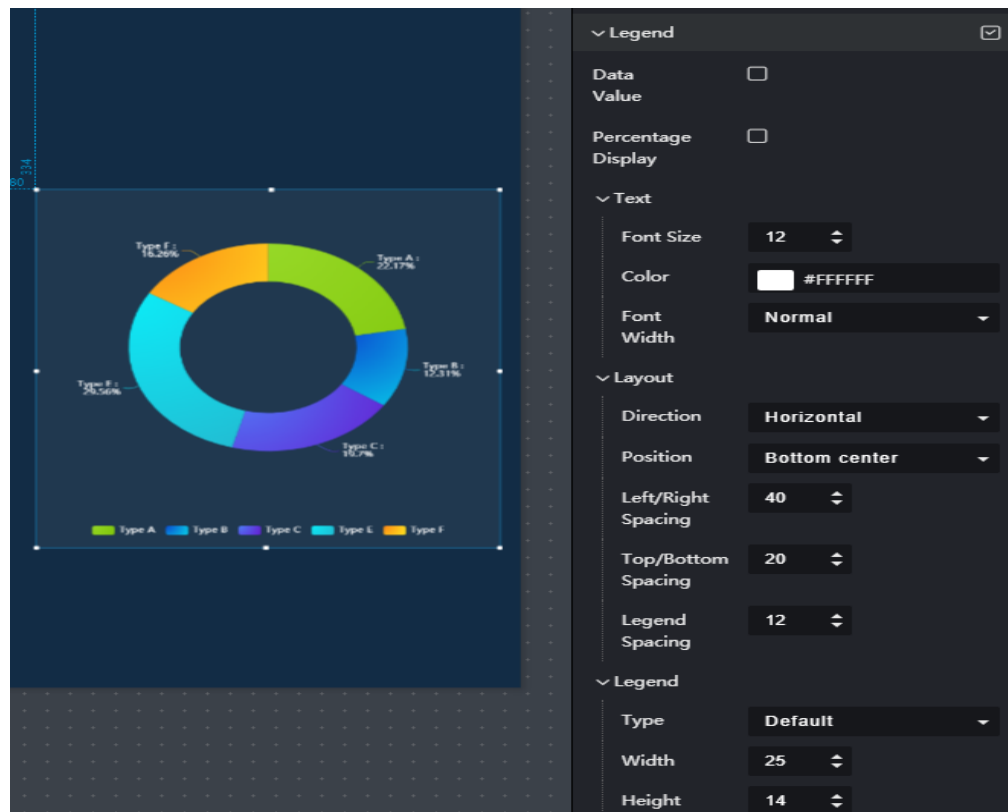


- **Pie Attribute**
  - **Inner Radius:** to set the inner radius of the pie chart by entering a value or dragging .
  - **Outer Radius:** to set the outer radius of the pie chart by entering a value or dragging .
  - **Horizontal Moving:** to set the horizontal position of the pie chart center by entering a value or dragging .
  - **Vertical Moving:** to set the vertical position of the pie chart center by entering a value or dragging .
- **Legend**
  - **Legend:** to show or hide the legend by clicking  or .
  - **Data Value:** whether to display the data value in the legend
  - **Percentage Display:** whether to display percentage in the legend
  - **Font Size:** font size of the legend text.
  - **Color:** font color of the legend text.
  - **Font Width:** font width of the label text.
  - **Direction:** direction of the legend.
  - **Position:** position of the legend.
  - **Left/Right Spacing:** to set the spacing between legends by entering a value or clicking .
  - **Top/Bottom Spacing:** to set the spacing between the legend and the bottom edge of the container by entering a value or clicking .
  - **Legend Spacing:** Set the spacing between legends by entering a value or clicking  to adjust the value.





Figure 13-86 Legend of a pie chart



- **Message**

- **Message:** If you click , a message will pop up when you hover over a previewed or published component.
- **Data Name:** If you click , data names will be displayed when you hover over a previewed or published component.
- **Color:** font color of the message.
- **Font Size:** font size of the message.
- **Font Width:** font width of the message.

- **Animation**

- Click  or  next to **Animation** to hide or show animation, respectively.
- **Duration:** duration of the first rendering of the component, in ms.
- **Animation Effect:** The system provides multiple common animation slow-moving effects.
- **Duration After Change:** animation duration when the component data is updated, in ms.
- **Start from Previous Position:** If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

## Data

For details about how to configure component data, see [Configuring Component Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

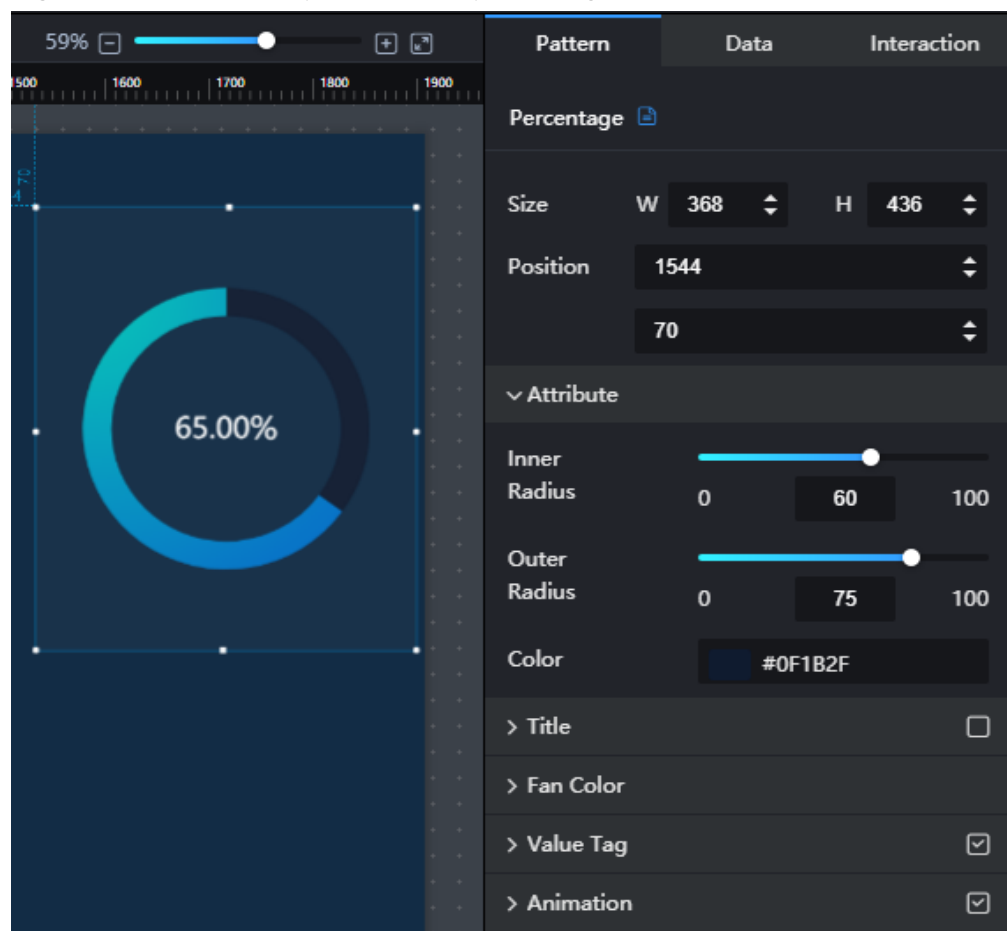
## 13.4.2 Percentage


This section describes parameters of a percentage chart.


### Pattern


- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-87 Size and position of a percentage chart



- **Attribute**
  - **Inner Radius:** to set the inner radius of the percentage chart by entering a value or dragging .

- **Outer Radius:** to set the outer radius of the percentage chart by entering a value or dragging .
- **Color:** color of the remaining fan.
- **Title**
  - **Title:** to show or hide the title by clicking  or .
  - **Title Name:** name of the title.
  - **Font Size:** font size of the title.
  - **Color:** font color of the title.
  - **Font Width:** font width of the title.
  - **Font:** font of the title.
- **Fan Color**

**Color:** color of the fan displayed in percentage.
- **Value Tag**
  - **Value Tag:** to show or hide the value tag by clicking  or .
  - **Value Size:** font size of the percentage.
  - **Value Color:** font color of the percentage.
  - **Percent Size:** size of the percent.
  - **Percent Color:** font color of the percent.
  - **Left/Right Spacing:** to set the spacing between the number and percent by entering a value or dragging .
  - **Font Width:** font width of the number.
  - **Font:** font of the number.
  - **Decimal Places:** the number of decimal places in a percentage.

## Data

For details about how to configure component data, see [Configuring Component Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

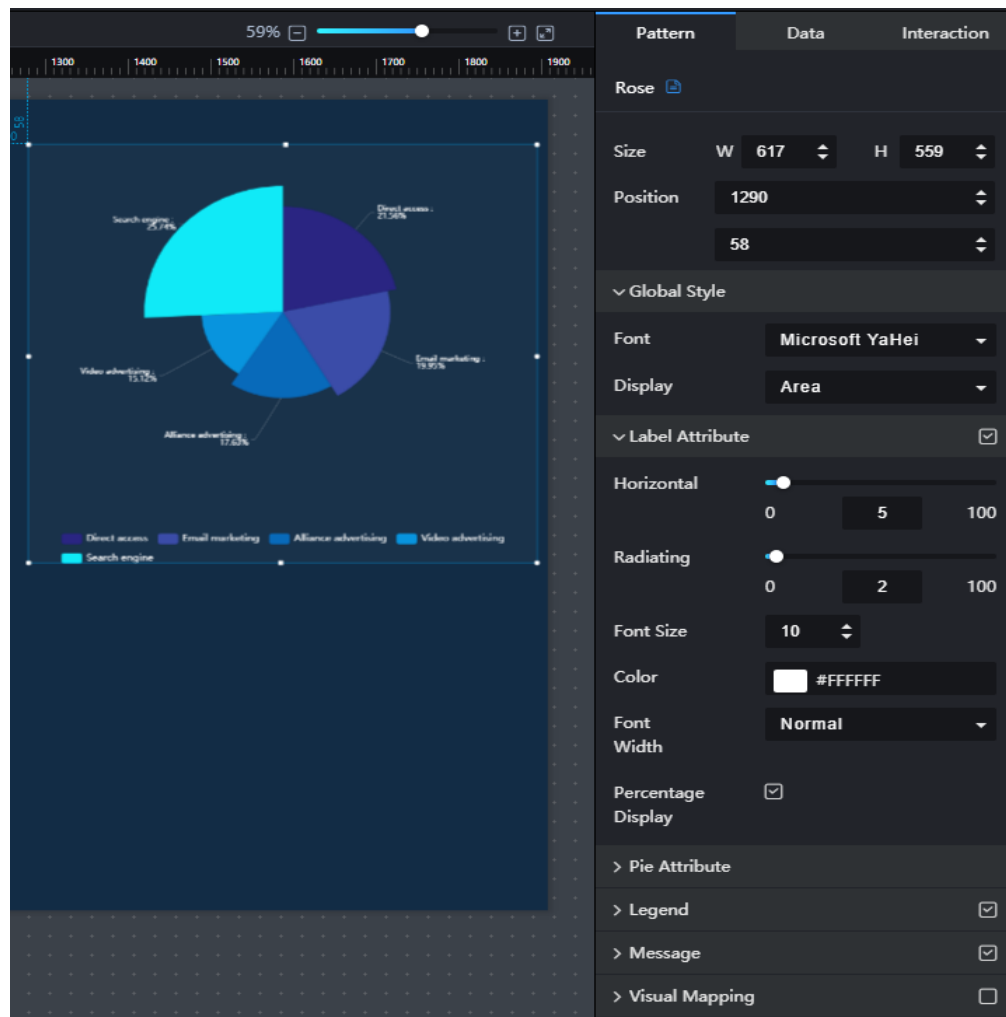
### 13.4.3 Rose Chart

This section describes parameters of a rose chart.


















## Pattern


- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-88 Size and position of a rose chart

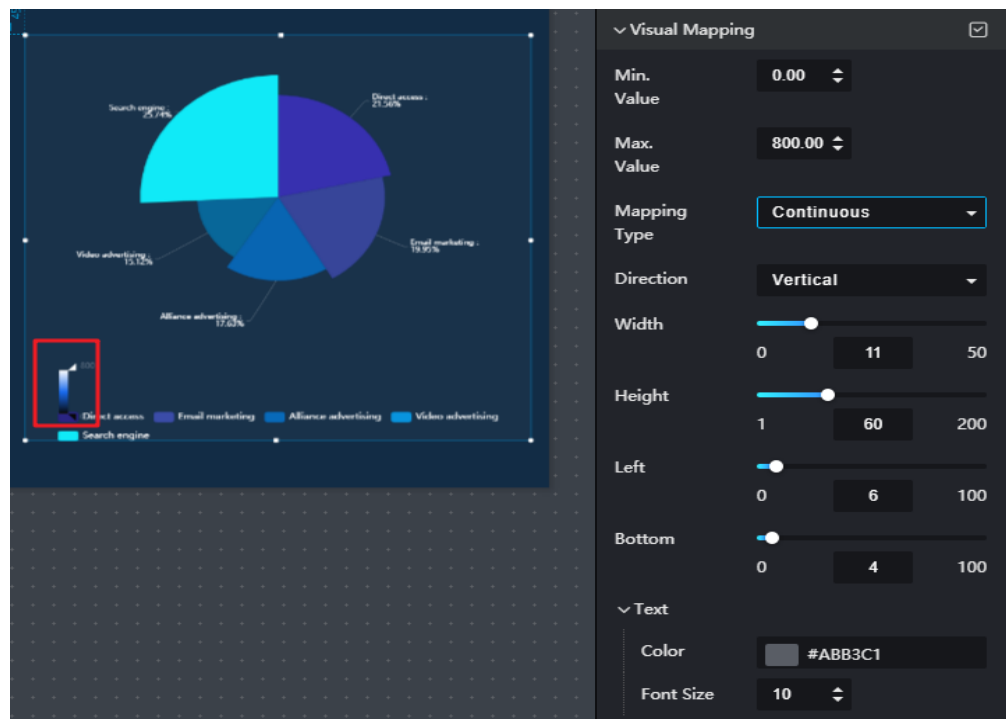


- **Global Style**
  - **Font:** text font.
  - **Display:** The options are **Radius** and **Area**.
    - **Radius:** The data value is in direct proportion to the radius of each fan.
    - **Radius and Center Angle:** The data size is displayed by area.
- **Label Attribute**
  - **Label Attribute:** to show or hide label attributes, click  or .
  - **Horizontal:** horizontal stretch length of the leader line.
  - **Radiating:** radiating stretch length of the leader line.
  - **Font Size:** font size of the label value.
  - **Color:** font color of the label value.
  - **Font Width:** font width of the label value.
  - **Percentage Display:** whether to display percentage. To display the label value in percentage, click ; to display the label value in data, click .

- **Pie Attribute**
  - **Inner Radius:** to set the inner radius of the pie chart by entering a value or dragging .
  - **Outer Radius:** to set the outer radius of the pie chart by entering a value or dragging .
  - **Horizontal Moving:** to set the horizontal position of the pie chart center by entering a value or dragging .
  - **Vertical Moving:** to set the vertical position of the pie chart center by entering a value or dragging .
- **Legend**
  - **Legend:** to show or hide the legend by clicking  or .
  - **Font Size:** font size of the legend text.
  - **Color:** font color of the legend text.
  - **Font Width:** font width of the label text.
  - **Left/Right Spacing:** to set the spacing between legends by entering a value or clicking .
  - **Top/Bottom Spacing:** to set the spacing between the legend and the bottom edge of the component by entering a value or clicking .
  - **Position:** position of the legend.
- **Message**
  - **Message:** If you click , a message will pop up when you hover over a previewed or published component.
  - **Data Name:** If you click , data names will be displayed when you hover over a previewed or published component.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.
- **Visual Mapping**
  - **Visual Mapping:** to show or hide virtual mapping by clicking  or .
  - **Min. Value:** to set the minimum value of visual mapping by clicking .
  - **Max. Value:** to set the maximum value of visual mapping by clicking .
  - **Mapping Type:** type of the mapping. The options are **Segment-based** and **Continuous**.
  - **Direction:** direction of the mapping. The options are **Horizontal** and **Vertical**.
  - **Width:** to set the width of the mapping by entering a value or dragging .
  - **Height:** to set the height of the mapping by entering a value or dragging .
  - **Left:** to set the distance between the mapping and the left side of the component by entering a value or dragging .

- **Bottom:** to set the distance between the mapping and the bottom of the component by entering a value or dragging .
- **Text:** color and font size of the mapping text.

**Figure 13-89** Visual mapping of a rose chart



## Data

For details about how to configure component data, see [Configuring Component Data](#).

## Interaction

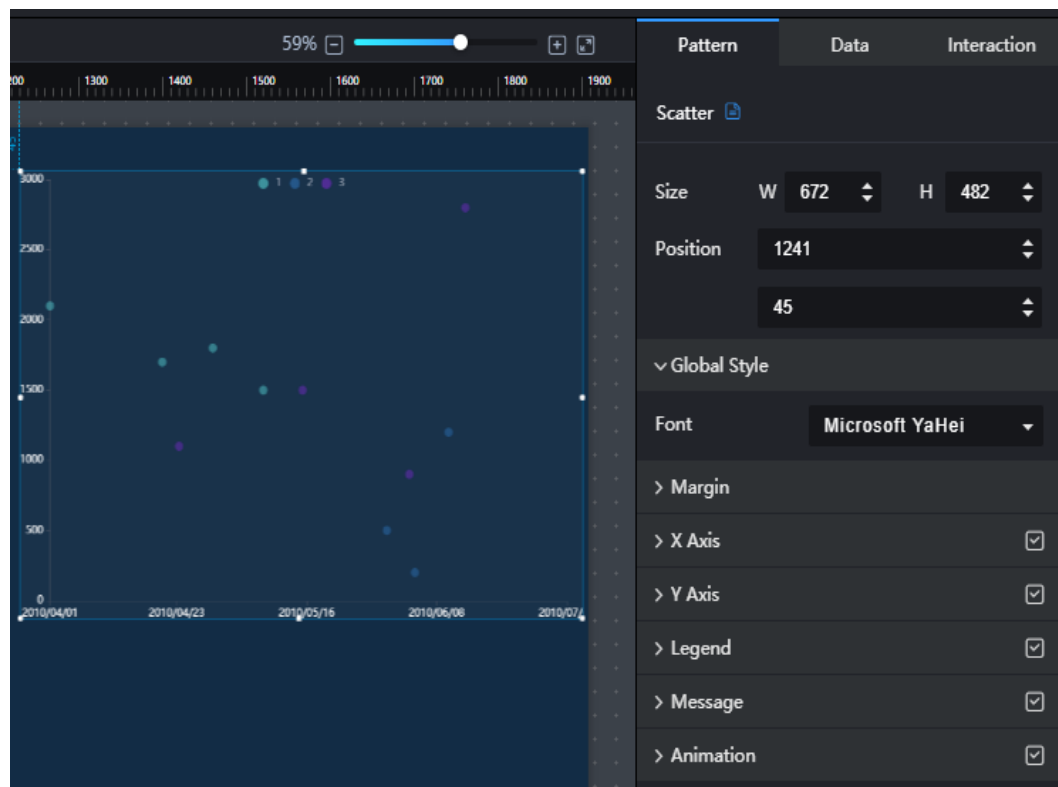
For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

# 13.5 Scatter Charts







## 13.5.1 Scatter Chart

This section describes parameters of a scatter chart.

Figure 13-90 Scatter chart

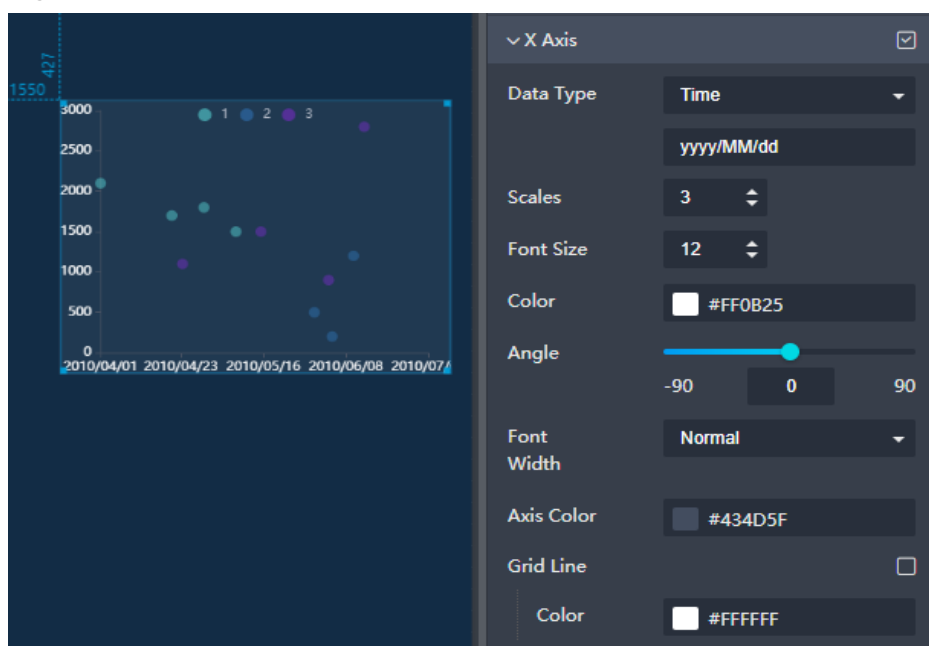


## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - Font:** text font.
- **Margin**
  - **Top:** spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom:** spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Left:** spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Right:** spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **X Axis**
  - **X Axis:** to show or hide the X axis by clicking  or .
  - **Data Type:** data type of the X axis. The value can be **Value**, **Category**, **Time**, or **Log**.

- **Scales:** When **Data Type** is set to **Value** or **Time**, the number of displayed labels is automatically displayed based on the value of **Scales**. This parameter is invalid when **Data Type** is set to other values.
- **Font Size:** font size of the X axis text.
- **Color:** font color of the X axis text.
- **Angle:** angle of the X axis text.
- **Font Width:** font width of the X axis text.
- **Axis Color:** color of the X axis.
- **Grid Color:** grid line color of the X axis.

Figure 13-91 X axis of a scatter chart

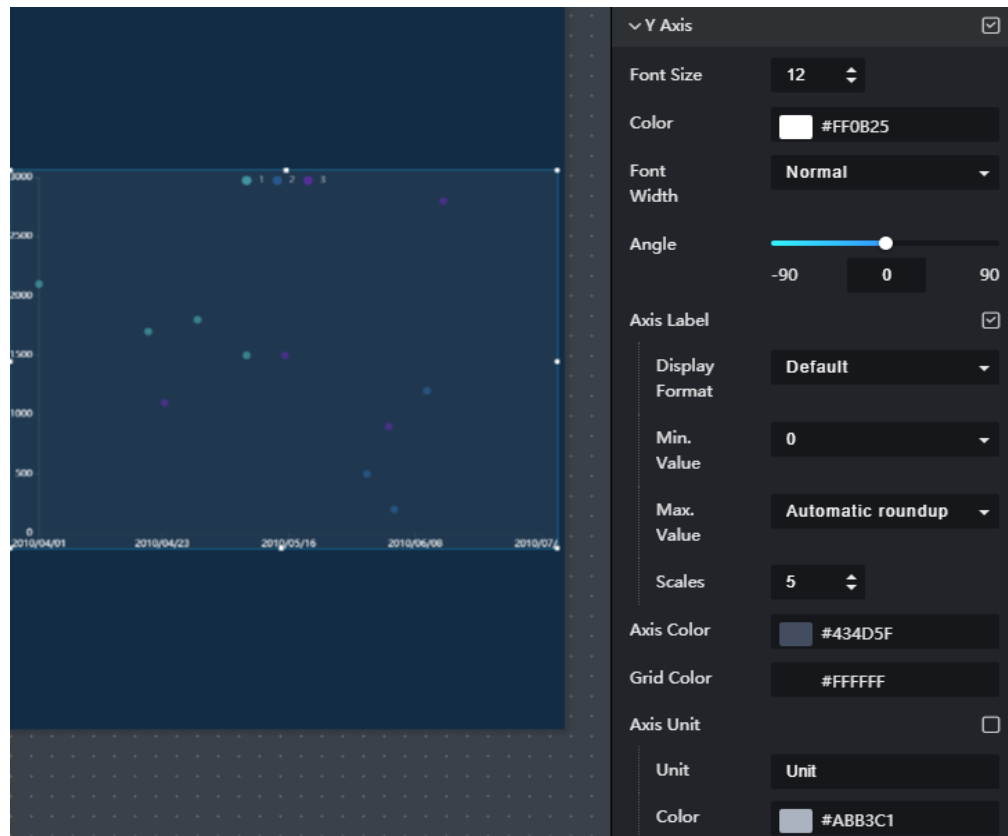


- **Y Axis**

- **Y Axis:** to show or hide the Y axis by clicking  or .
- **Font Size:** font size of the Y axis text.
- **Color:** font color of the Y axis text.
- **Font Width:** font width of the Y axis text.
- **Angle:** angle of the Y axis text.
- **Axis Label:** to set the display format, maximum value, minimum value, and scales of the Y axis.
- **Axis Color:** color of the Y axis.
- **Grid Color:** grid line color of the Y axis.
- **Axis Unit:** to set the unit and font color of the Y axis.



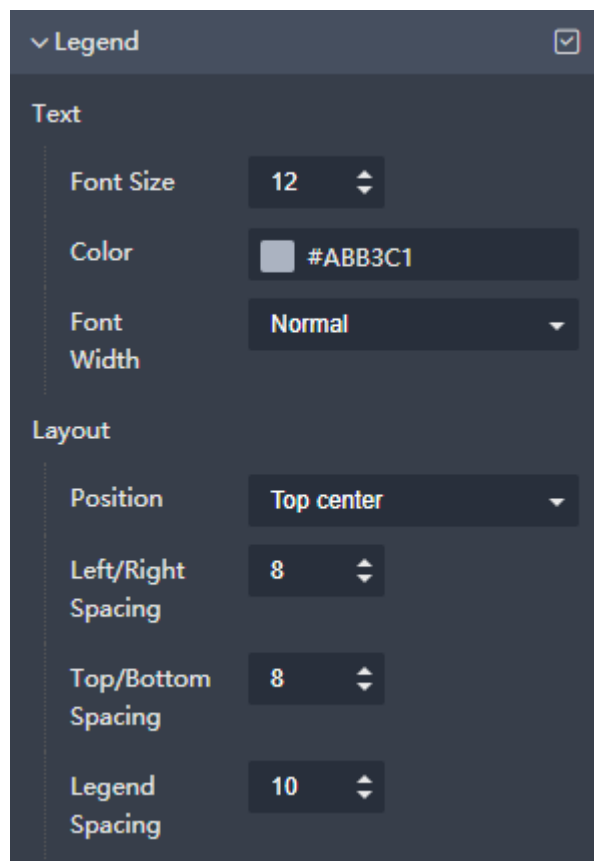
Figure 13-92 Y axis of a scatter chart



- **Legend**

- **Legend:** to show or hide the legend by clicking  or .
- **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
- **Layout:** layout style of the legend, including **Position**, **Left/Right Spacing**, **Top/Bottom Spacing**, and **Legend Spacing**.

Figure 13-93 Legends of a scatter chart



- **Message**


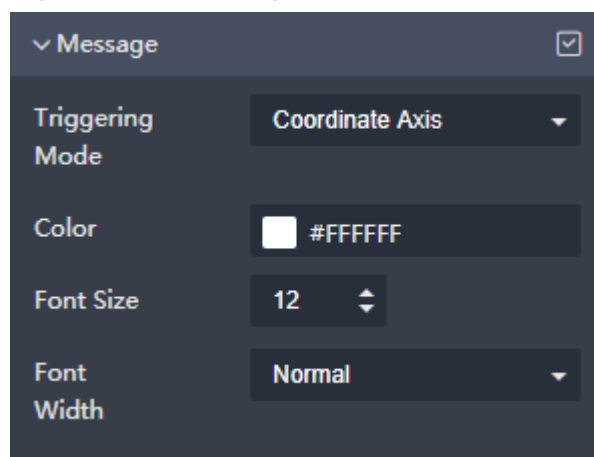
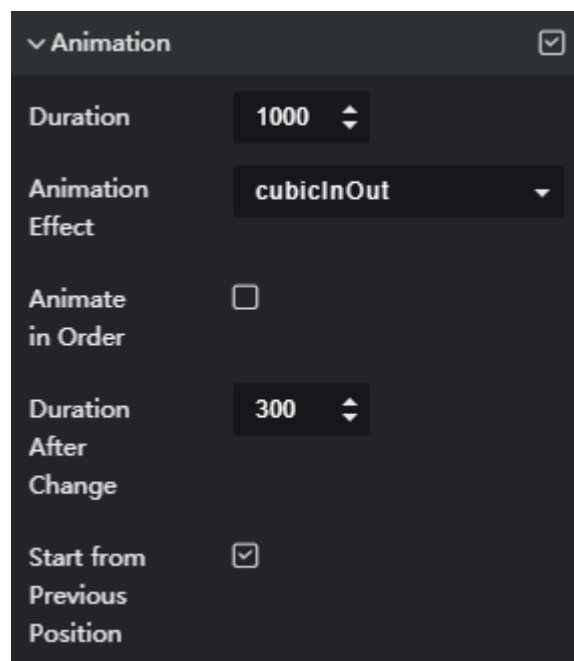
- **Message:** If you click , a message will pop up when you hover over a previewed or published component.
- **Triggering Mode:** to set the triggering mode of messages. The options are **Coordinate Axis** and **Data**.
- **Color:** font color of the message.
- **Font Size:** font size of the message.
- **Font Width:** font width of the message.

Figure 13-94 Message of a scatter chart



- Animation
  - Click  or  next to **Animation** to hide or show animation, respectively.
  - **Duration**: duration of the first rendering of the component, in ms.
  - **Animation Effect**: The system provides multiple common animation slow-moving effects.
  - **Animate in Order**: If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.
  - **Duration After Change**: animation duration when the component data is updated, in ms.
  - **Start from Previous Position**: If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

**Figure 13-95** Animation (line chart)

## Data

For details about how to configure component data, see [Configuring Component Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.5.2 WT Scatter Chart

This section describes parameters of a WT scatter chart.

## Pattern

The pattern configuration of a WT scatter chart is similar to that of a scatter chart. For details, see [Pattern](#).

## Data

The data configuration of a WT scatter chart is similar to that of a scatter chart. For details, see [Data](#).

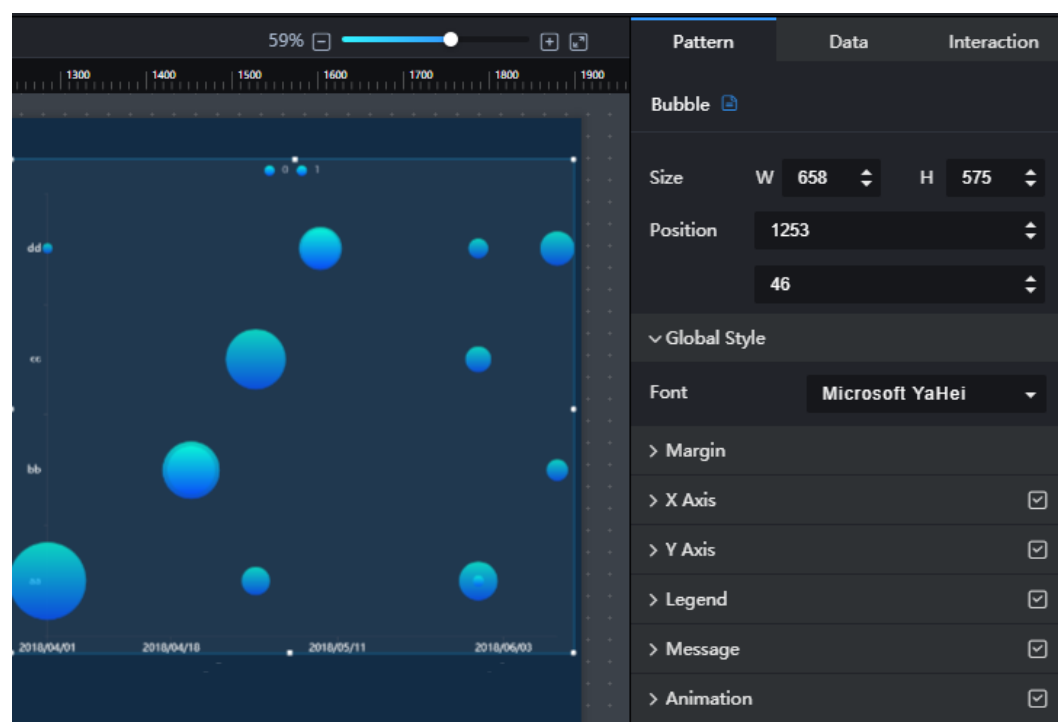
## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.5.3 Bubble Chart

This section describes parameters of a bubble chart.

Figure 13-96 Bubble chart



## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - Font:** text font.







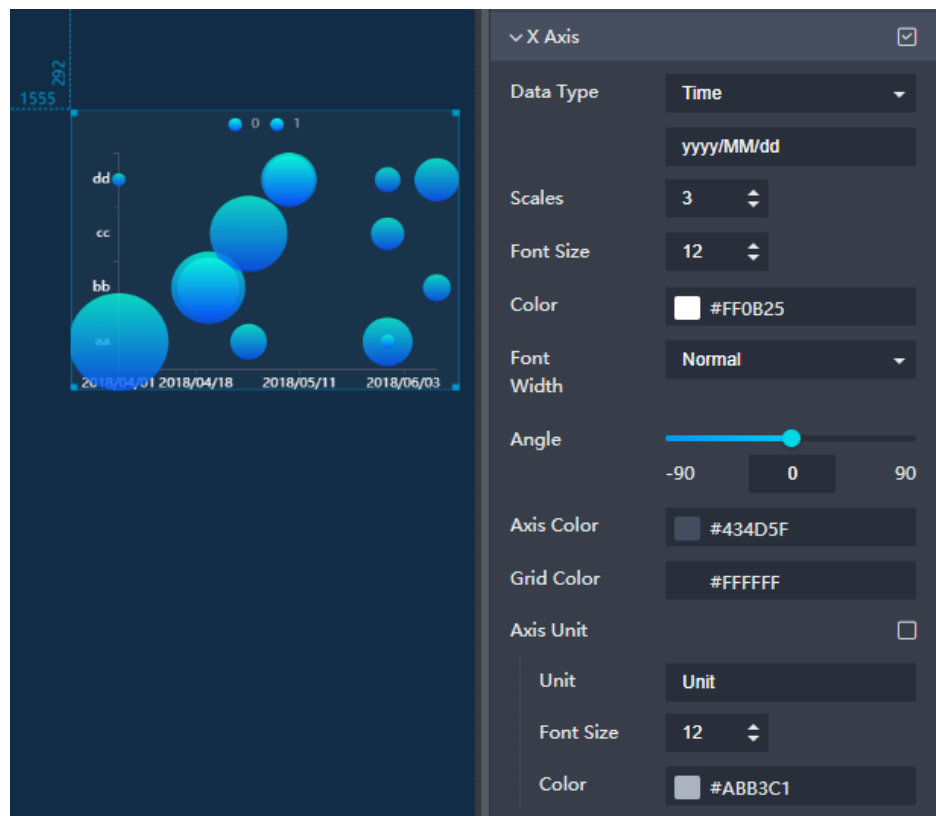
- **Margin**
  - **Top:** spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom:** spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Left:** spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Right:** spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **X Axis**
  - **X Axis:** to show or hide the X axis by clicking  or .
  - **Data Type:** data type of the X axis. The options are **Value**, **Category**, **Time**, and **Log**.
  - **Scales:** When **Data Type** is set to **Value** or **Time**, the number of displayed labels is automatically displayed based on the value of **Scales**. This parameter is invalid when **Data Type** is set to other values.
  - **Font Size:** font size of the X axis text.
  - **Color:** font color of the X axis text.
  - **Font Width:** font width of the X axis text.
  - **Angle:** angle of the X axis text.
  - **Axis Color:** color of the X axis.
  - **Grid Color:** grid line color of the X axis.
  - **Axis Unit:** to set the unit, font size, and font color of the X axis.

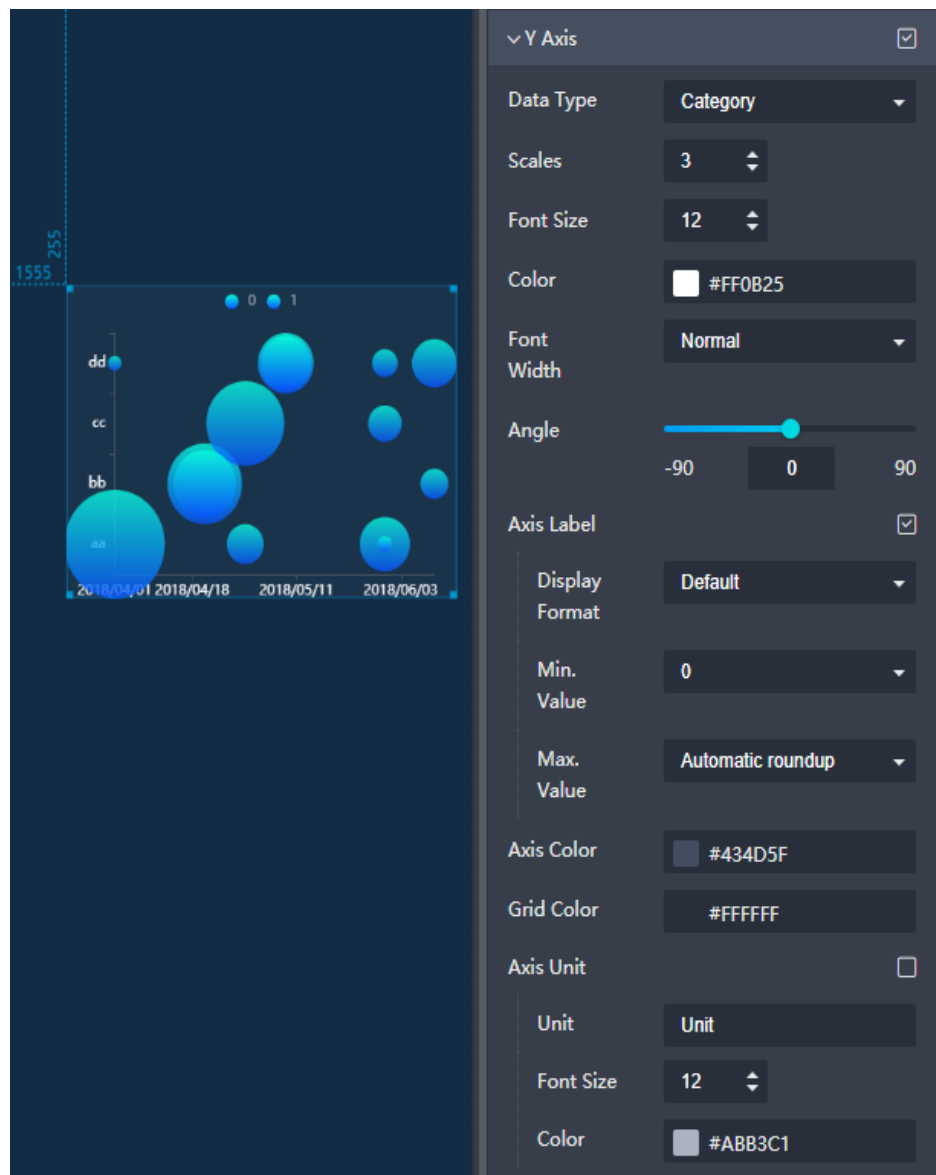
Figure 13-97 X axis of a bubble chart



- **Y Axis**

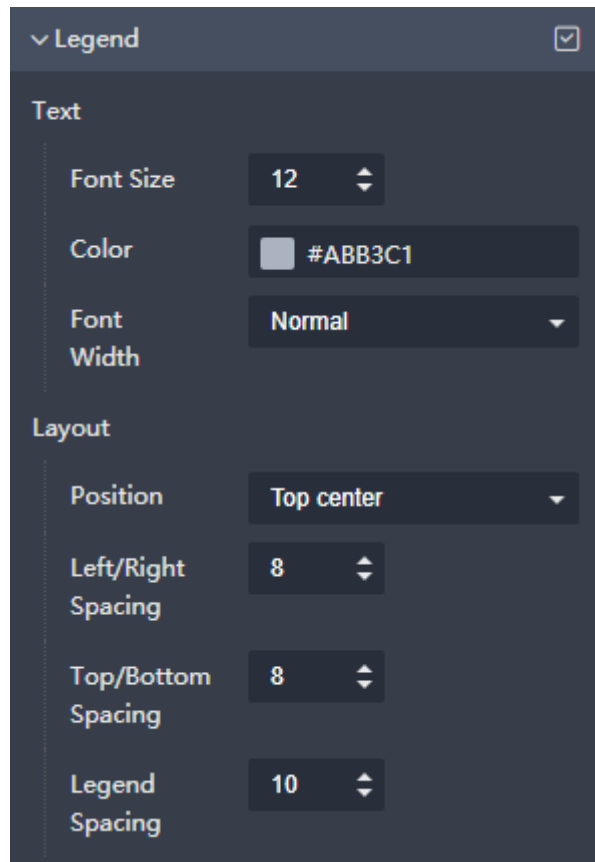
- **Y Axis:** to show or hide the Y axis by clicking  or .
- **Data Type:** data type of the Y axis. The options are **Value** and **Category**.
- **Scales:** When **Data Type** is set to **Value**, the number of displayed labels is automatically displayed based on the value of **Scales**. This parameter is invalid when **Data Type** is set to **Category**.
- **Font Size:** font size of the Y axis text.
- **Color:** font color of the Y axis text.
- **Font Width:** font width of the Y axis text.
- **Angle:** angle of the Y axis text.
- **Axis Label:** to set the display format, maximum value, and minimum value of the Y axis.
- **Axis Color:** color of the Y axis.
- **Grid Color:** grid line color of the Y axis.
- **Axis Unit:** to set the unit and font color of the Y axis.

Figure 13-98 Y axis of a bubble chart




- **Legend**
  - **Legend:** to show or hide the legend by clicking  or .
  - **Text:** text style of the legend, including **Font Size**, **Color**, and **Font Width**.
  - **Layout:** layout style of the legend, including **Position**, **Left/Right Spacing**, **Top/Bottom Spacing**, and **Legend Spacing**.

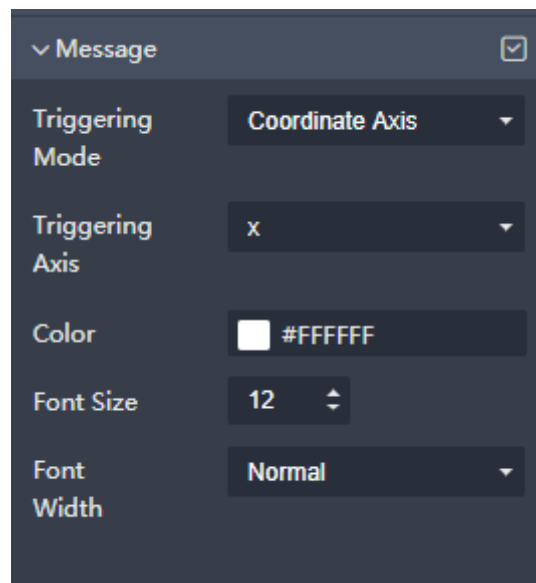
Figure 13-99 Legends of a bubble chart



- **Message**

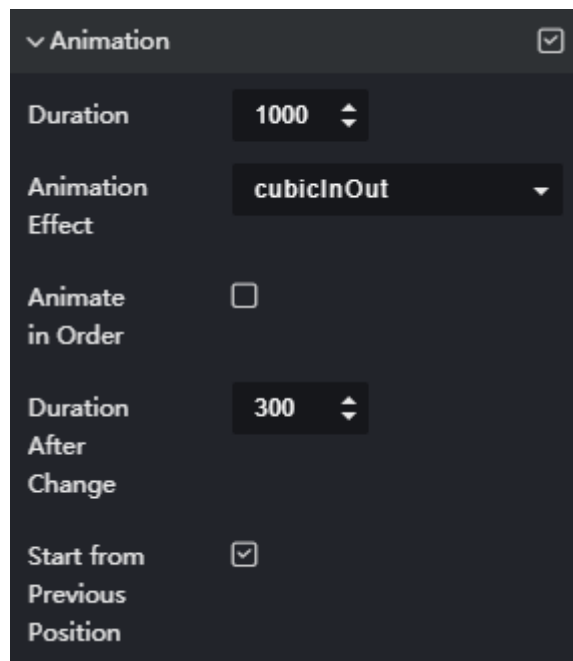
- **Message:** If you click , a message will pop up when you hover over a previewed or published component.
- **Triggering Mode:** to set the triggering mode of messages. The options are **Coordinate Axis** and **Data**.
- **Color:** font color of the message.
- **Font Size:** font size of the message.
- **Font Width:** font width of the message.



**Figure 13-100** Message of a bubble chart

- Animation
  - Click  or  next to **Animation** to hide or show animation, respectively.
  - **Duration**: duration of the first rendering of the component, in ms.
  - **Animation Effect**: The system provides multiple common animation slow-moving effects.
  - **Animate in Order**: If this option is selected, the series are animated in sequence. If this option is deselected, all series are animated at the same time.
  - **Duration After Change**: animation duration when the component data is updated, in ms.
  - **Start from Previous Position**: If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

Figure 13-101 Animation (line chart)



## Data

For details about how to configure component data, see [Configuring Component Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

# 13.6 Other Charts

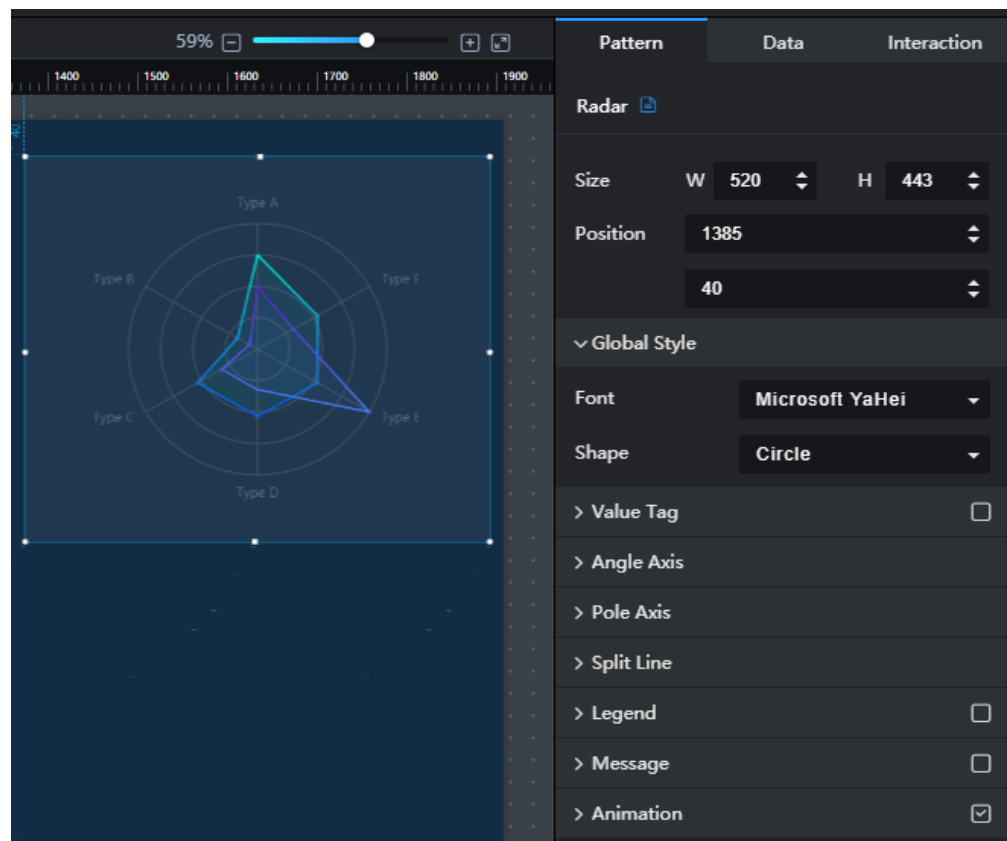
## 13.6.1 Radar Chart

This section describes parameters of a radar chart.

### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-102 Size and position of a radar chart




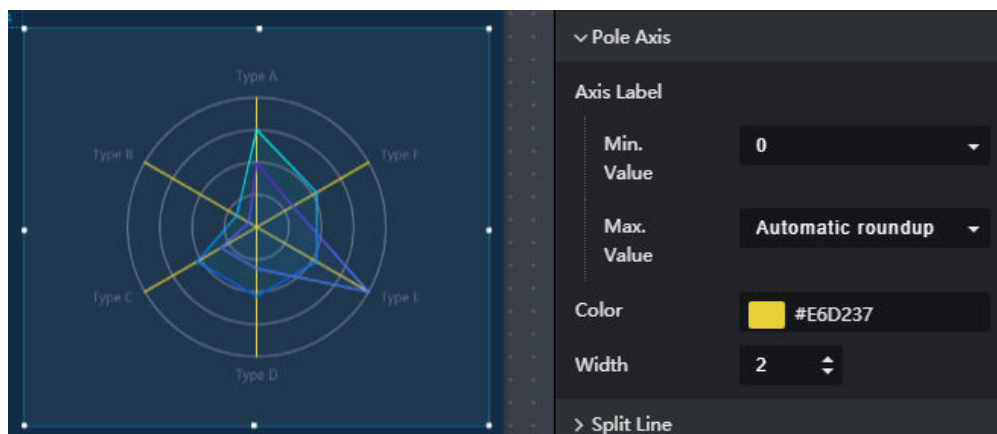
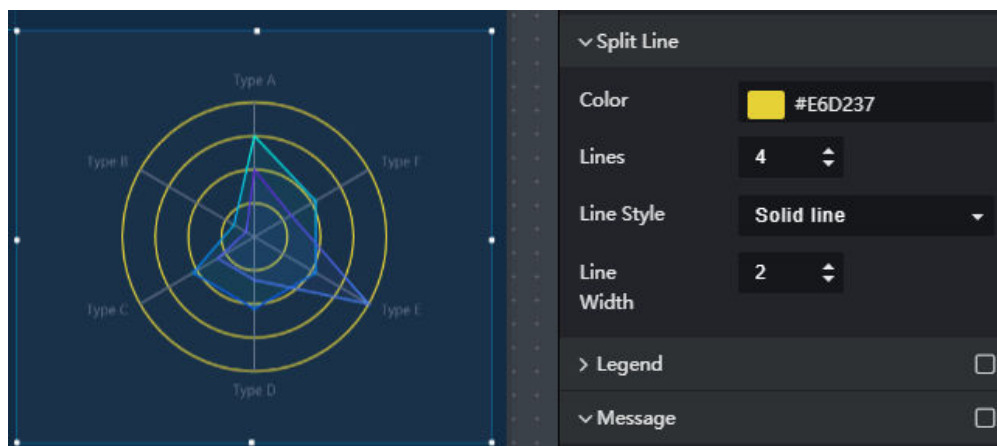
- **Global Style**
  - **Font:** text font.
  - **Shape:** shape of the image. The options are **Circle** and **Polygon**.
- **Value Tag**
  - **Value Tag:** to show or hide value tags by clicking  or .
  - **Font Size:** font size of the label value.
  - **Color:** font color of the tag value.
  - **Font Width:** font width of the tag value.
- **Angle Axis**
  - **Text:** to set the font size, color, and font width of the text.
  - **Rotation Angle:** to set the rotation angle by entering a value or dragging .
- **Pole Axis**
  - **Axis Label:** to set the maximum and minimum values of the pole axis.
  - **Color:** color of the pole axis.
  - **Width:** width of the pole axis.

Figure 13-103 Polar axes of a radar chart





- **Split Line**
  - **Color:** color of the split line.
  - **Lines:** to set the number of the split lines by entering a value or clicking
  - **Line Style:** style of split lines. The options are **Solid line**, **Dotted line**, and **Dash-dot line**.
  - **Line Width:** to set the width of the split lines by entering a value or clicking

Figure 13-104 Split lines of a radar chart



- **Legend**
  - **Legend:** to show or hide the legend by clicking  or .
  - **Text:** to set the font size, color, and width of the legend.
  - **Layout:** to set the legend position, left/right spacing, top/bottom spacing, and inter-legend spacing.
- **Message**
  - **Message:** If you click , a message will pop up when you hover over a previewed or published component.
  - **Color:** font color of the message.

- **Font Size:** font size of the message.
- **Font Width:** font width of the message.
- Animation
  - Click  or  next to **Animation** to hide or show animation, respectively.
  - **Duration:** duration of the first rendering of the component, in ms.
  - **Animation Effect:** The system provides multiple common animation slow-moving effects.
  - **Duration After Change:** animation duration when the component data is updated, in ms.
  - **Start from Previous Position:** If this option is selected, the animation is played from the position of the previous data when the component data is updated. If this option is deselected, the animation is played from the initial position when the component data is updated.

## Data

For details about how to configure component data, see [Configuring Component Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.6.2 WT Radar Chart

This section describes parameters of a WT radar chart.

#### Pattern

The pattern configuration of a WT radar chart is similar to that of a radar chart. For details, see [Pattern](#).

#### Data

The data configuration of a WT radar chart is similar to that of a radar chart. For details, see [Data](#).

#### Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

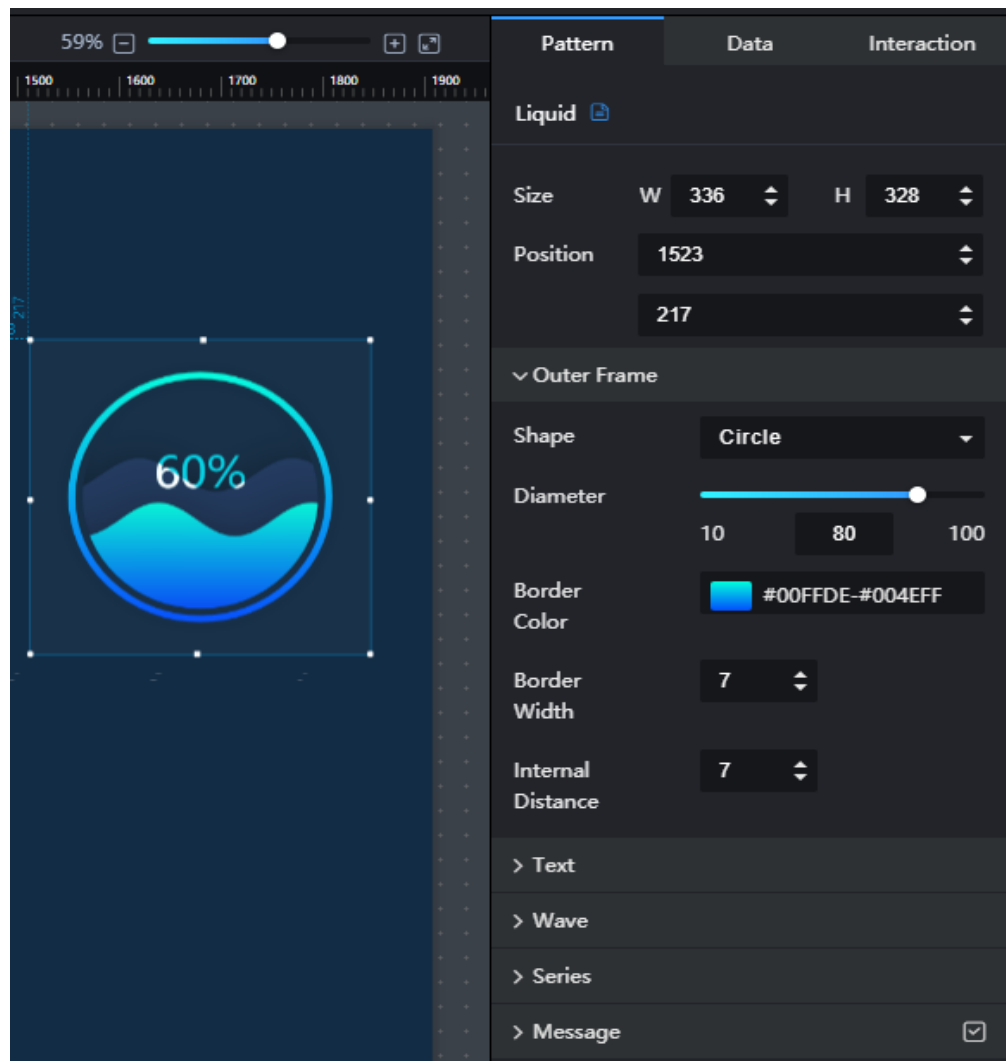
### 13.6.3 Liquid Chart


This section describes parameters of a liquid chart.




## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-105 Size and position of a liquid chart

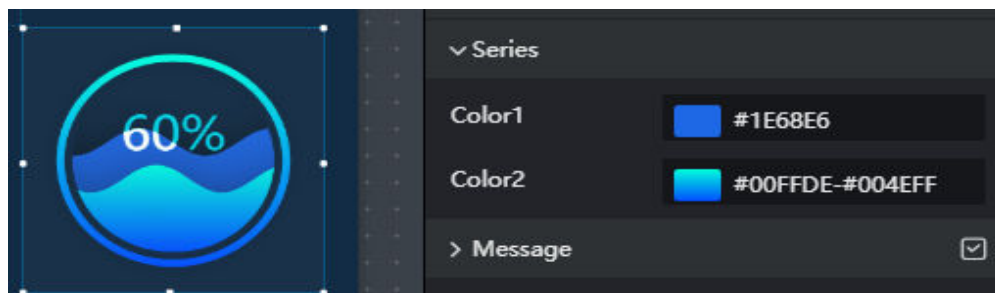



- **Outer Frame**
  - **Shape:** shape of the outer frame.
  - **Diameter:** to set the diameter of the outer frame by entering a value or dragging .
  - **Border Color:** border color of the outer frame.
  - **Border Width:** border width of the outer frame.
  - **Internal Distance:** distance between the wave and outer frame.
- **Text**
  - **Font:** text font.

- **Color:** font color of the text.
- **Overlap Color:** overlap color between the wave and text.
- **Font Size:** font size of the text.
- **Font Width:** font width of the text.
- **Relative Position:** Relative position of the text in the liquid chart. The options are **Top**, **Vertical center**, and **Bottom**.
- **Wave**
  - **Wavelength:** to set wavelength by entering a value or dragging .
  - **Amplitude:** to set the wave amplitude by entering a value or dragging .
  - **Cycle:** to set a cycle by entering a value or dragging .
  - **Animation:** to set whether to display animation effect and the animation direction.
- **Series**

**Color:** to set the wave color by clicking the color editor.

Figure 13-106 Series of a liquid chart



- **Message**
  - **Message:** If you click , a message will pop up when you hover over a previewed or published component.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.

## Data

For details about how to configure component data, see [Configuring Component Data](#).



## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.6.4 Region Ranking



This section describes parameters of a region ranking chart.

## Pattern



- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - **Font:** text font.
  - **Font Size:** font size of the text.
  - **Color:** font color of the text.
  - **Icon:** to show or hide the icon by clicking  or .
  - **Icon Size:** to set the icon size.
- **Column Style**
  - **Height:** height of the column.
  - **Quantity:** number of the displayed columns.
  - **Color:** to set the column color by clicking the color editor.

## Data

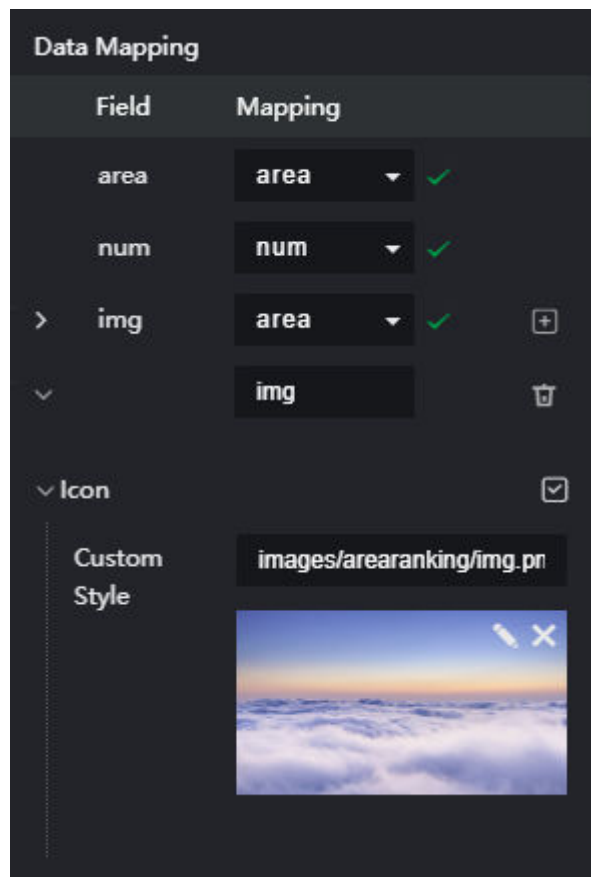
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
  - **area:** name of the area.
  - **num** data.
  - **img:** custom style name of the icon. This field is optional.

Click  on the right of the **img** field to add a custom icon style. To delete an added custom style, click  on the right of the series.

To add a custom style, do as follows:

- **Series Value:** Enter a value of the **img** field. If the **img** field of a region in the source data is the same as the value of this parameter, the icon of the custom style is displayed in the region ranking. If the **img** field of a region in the source data is not specified or does not match the series value of the custom style, the default icon style is displayed in the region ranking.
- **Icon:** to show or hide the icon.
- **Custom Style** to set a custom icon. You can click  to upload a local icon or click  to delete the icon.



**Figure 13-107** Adding an icon style

- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

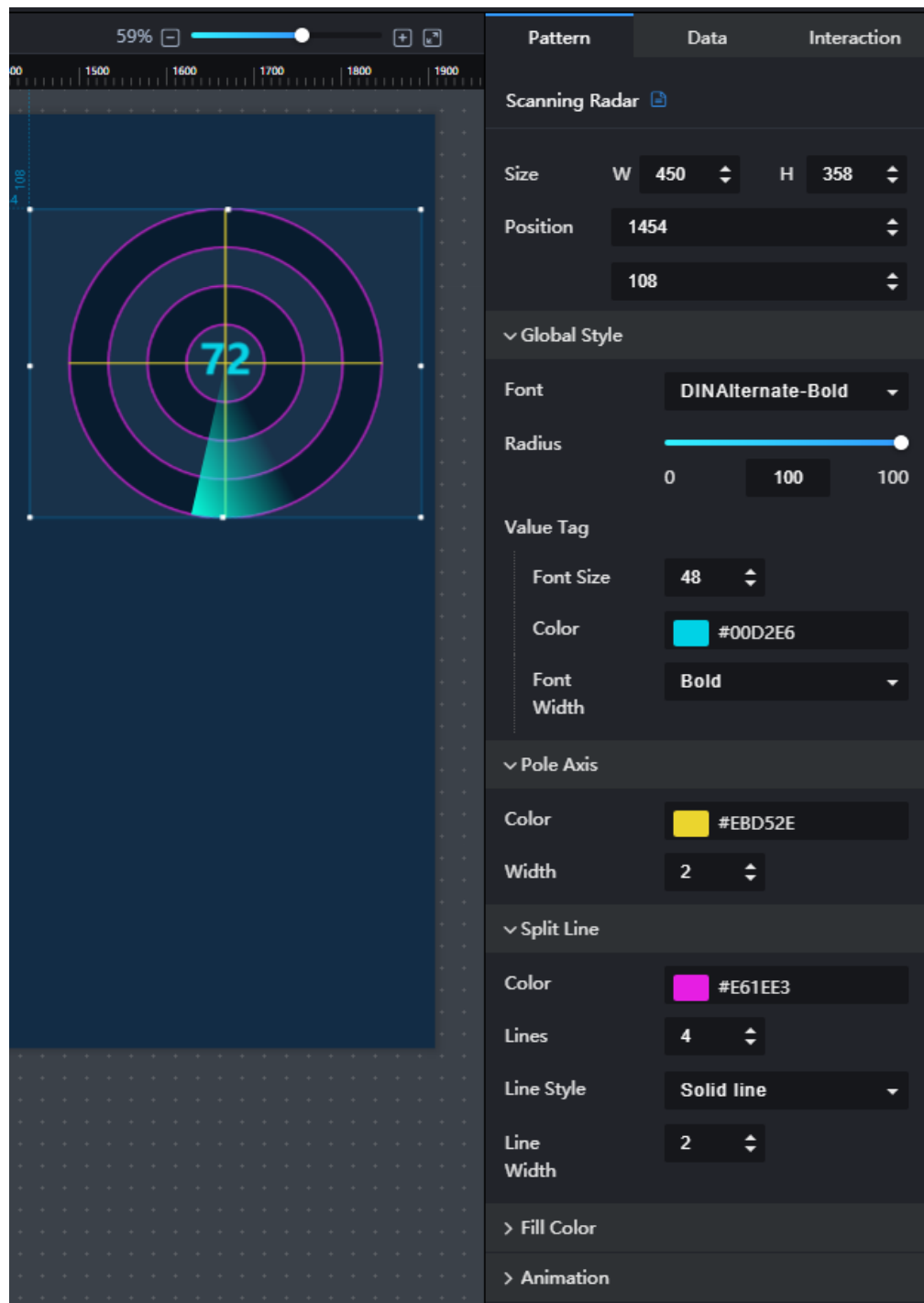
### 13.6.5 Scanning Radar


This section describes parameters of a scanning radar chart.




#### Pattern


- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-108 Size and position of a scanning radar chart



- **Global Style**
  - **Font:** text font.
  - **Radius:** to set the radius size by entering a value or dragging .
  - **Value Tag:** to set the text style, including **Font Size**, **Color**, and **Font Width**.
- **Pole Axis**
  - **Color:** to set the color of the pole axes by clicking the color editor.

- **Width:** to set the width of the pole axes by entering a value or clicking .
- **Split Line**
  - **Color:** to set the color of the split lines by clicking the color editor.
  - **Lines:** to set the number of the split lines by entering a value or clicking .
  - **Line Style:** to select a style for split lines from the drop-down list.
  - **Line Width:** to set the width of the split lines by entering a value or clicking .
- **Fill Color**

**Color:** to set the color of each area by clicking the color editor.
- **Animation**
  - **Color:** to set the color of the scanning area by clicking the color editor.
  - **Play Duration:** to set the play duration by entering a value or clicking .

## Data

For details about how to configure component data, see [Configuring Component Data](#).

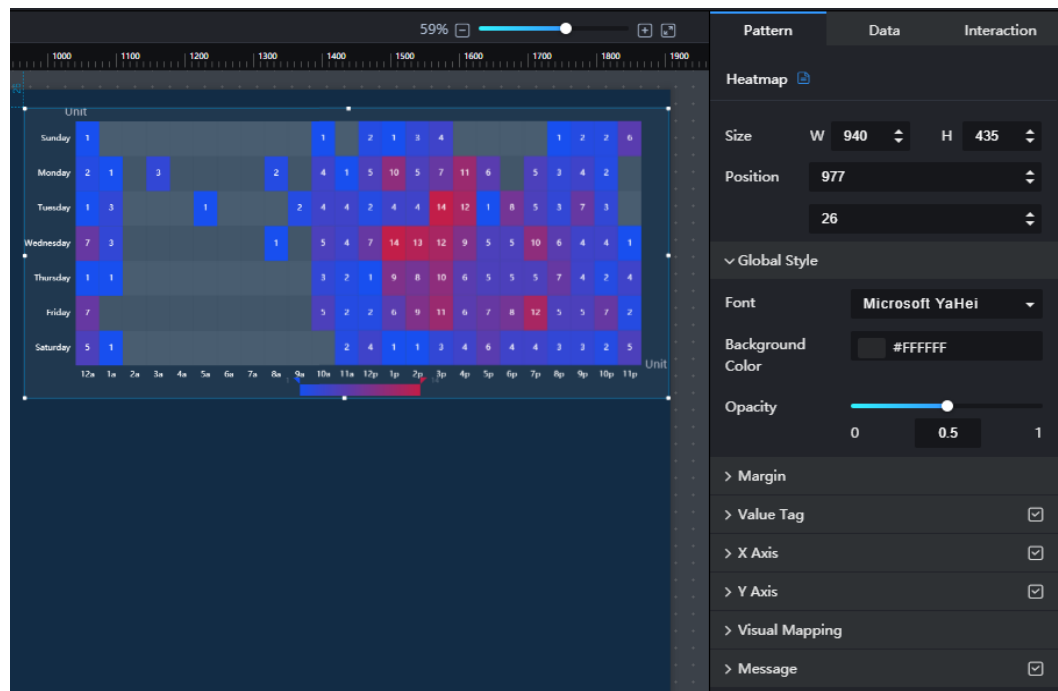
## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).








### 13.6.6 Heatmap

This section describes parameters of a heatmap.

Figure 13-109 Heatmap



## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - **Font:** text font.
  - **Background Color:** to set the background color of the chart by clicking the color editor.
  - **Opacity:** to set the chart opacity by entering a value or dragging .
- **Margin**
  - **Top:** spacing between the top sides of the chart and the component layer. You can enter a value or click  to adjust the spacing.
  - **Bottom:** spacing between the bottom sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Left:** spacing between the left sides of the chart and the component. You can enter a value or click  to adjust the spacing.
  - **Right:** spacing between the right sides of the chart and the component. You can enter a value or click  to adjust the spacing.
- **X Axis**
  - **X Axis:** to show or hide the X axis by clicking  or .



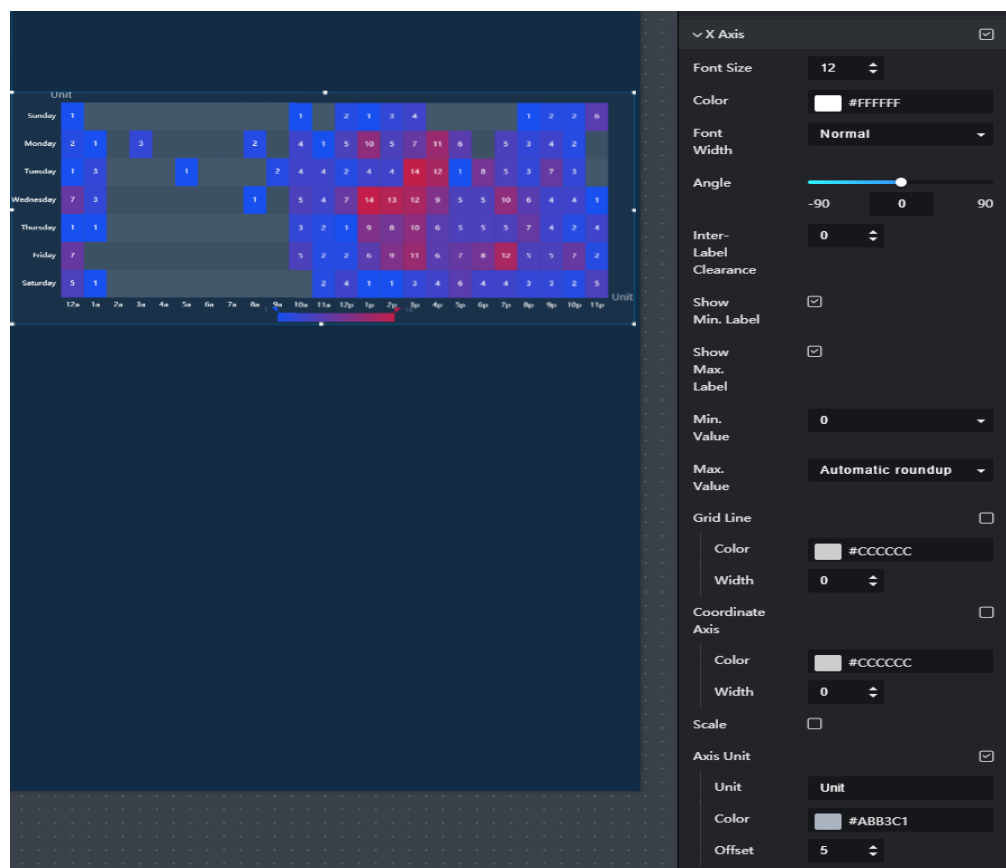










- **Font Size:** font size of the X axis text.
- **Color:** font color of the X axis text.
- **Font Width:** font width of the X axis text.
- **Angle:** to set the offset angle of the X axis text by entering a value or dragging .
- **Inter-Label Clearance:** to set the clearance between X axis texts by entering a value or dragging .
- **Show Min. Label:** to show or hide the minimum label by clicking  or .
- **Show Max. Label:** to show or hide the maximum label by clicking  or .
- **Min. Value:** the minimum value of the X axis.
- **Max. Value:** the maximum value of the X axis.
- **Grid Line:** grid line color and width of the X axis.
- **Coordinate Axis:** color and width of the X axis.
- **Scale:** to show or hide the scales by clicking  or .
- **Axis Unit:** to set the unit, color, and offset of the X axis.

Figure 13-110 X axis of a heatmap



- **Y Axis**

- **Y Axis:** to show or hide the Y axis by clicking  or .
- **Font Size:** font size of the Y axis text.
- **Color:** font color of the Y axis text.
- **Font Width:** font width of the Y axis text.
- **Angle:** to set the offset angle of the Y axis text by entering a value or dragging .
- **Inter-Label Clearance:** to set the clearance between Y axis texts by entering a value or dragging .
- **Show Min. Label:** to show or hide the minimum label by clicking  or .
- **Show Max. Label:** to show or hide the maximum label by clicking  or .
- **Min. Value:** the minimum value of the Y axis.
- **Max. Value:** the maximum value of the Y axis.
- **Grid Line:** grid line color and width of the Y axis.
- **Coordinate Axis:** color and width of the Y axis.
- **Scale:** to show or hide the scales by clicking  or .
- **Axis Unit:** to set the unit, color, and offset of the Y axis.

- **Visual Mapping**









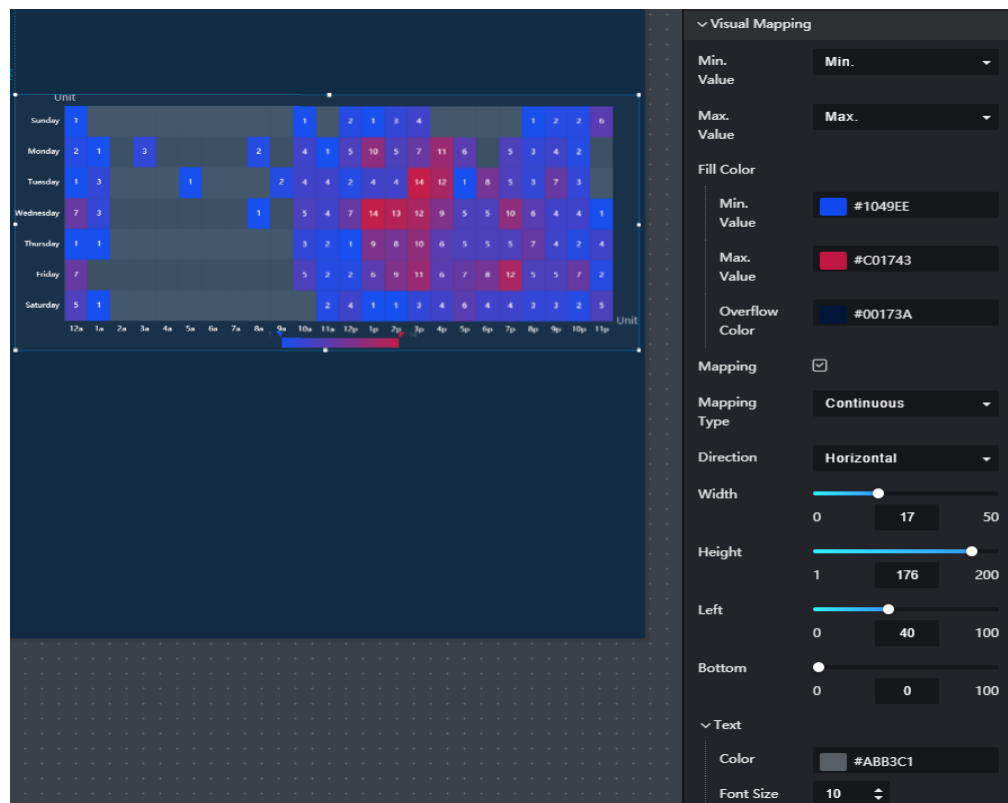

- **Min. Value:** to set the minimum value of visual mapping by clicking .
- **Max. Value:** to set the maximum value of visual mapping by clicking .
- **Fill Color:** to set the color of visual mapping by clicking the color editor.
- **Mapping:** to show or hide the mapping by clicking  or .
- **Mapping Type:** type of the mapping. The options are **Segment-based** and **Continuous**.
- **Direction:** direction of the mapping. The options are **Horizontal** and **Vertical**.
- **Width:** to set the width of the mapping by entering a value or dragging .
- **Height:** to set the height of the mapping by entering a value or dragging .
- **Left:** to set the distance between the mapping and the left side of the component by entering a value or dragging .
- **Bottom:** to set the distance between the mapping and the bottom of the component by entering a value or dragging .
- **Text:** color and font size of the mapping text.

Figure 13-111 Visual mapping of a heatmap



- **Message**
  - **Message:** If you click , a message will pop up when you hover over a previewed or published component.
  - **Triggering Mode:** to set the triggering mode of messages. The options are **Coordinate Axis** and **Data**.
  - **Color:** font color of the message.
  - **Font Size:** font size of the message.
  - **Font Width:** font width of the message.

## Data

For details about how to configure component data, see [Configuring Component Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

# 13.7 Maps

## 13.7.1 Basic 2D Map

This section describes parameters of a basic 2D map.

## Precautions

In the static data of the DLV map component, the longitude and latitude information is only for format demonstration. You need to provide your real-world longitude and latitude information when required.

## Pattern

- **Size/Position**

- **Size:** width and height of the component. Unit: pixel.
- **Position:** position where the component is located in the canvas. Unit: pixel.

- **Subcomponents**

The following subcomponents can be added to a basic 2D map: [Flying Lines](#), [Scatters](#), [Advanced Scatter Layer](#), [Drilldown](#), [Heatmap Layer](#), [Hover Text](#), and [Carousel Video](#).

The following operations can be performed on those subcomponents:


- **Adding subcomponents**

In the **Pattern** panel, click **Add Subcomponent**. In the displayed menu, select a subcomponent. After the subcomponent is added, the name of the added subcomponent is displayed under **Add Subcomponent**, for example, fly line.

- **Editing subcomponents**

After clicking a component, you can edit it.

- **Deleting subcomponents**

To delete a subcomponent, click .



- **Global Style**

- **Map:** to select a country from the drop-down list.
- **Map Center:** location of the map center on the canvas.
- **Zoom Range:** to set zooming ratio of the map center.



- **Filling**

- **Fill Color:** color and transparency.
- **Borderline:** color and width of the borderline.

- **Label**

- **Label:** to show or hide the label by clicking  or .
- **Font:** fill color and transparency.
- **Color:** font color of the label.
- **Font Size:** font size of the label.
- **Font Width:** font width of the label.

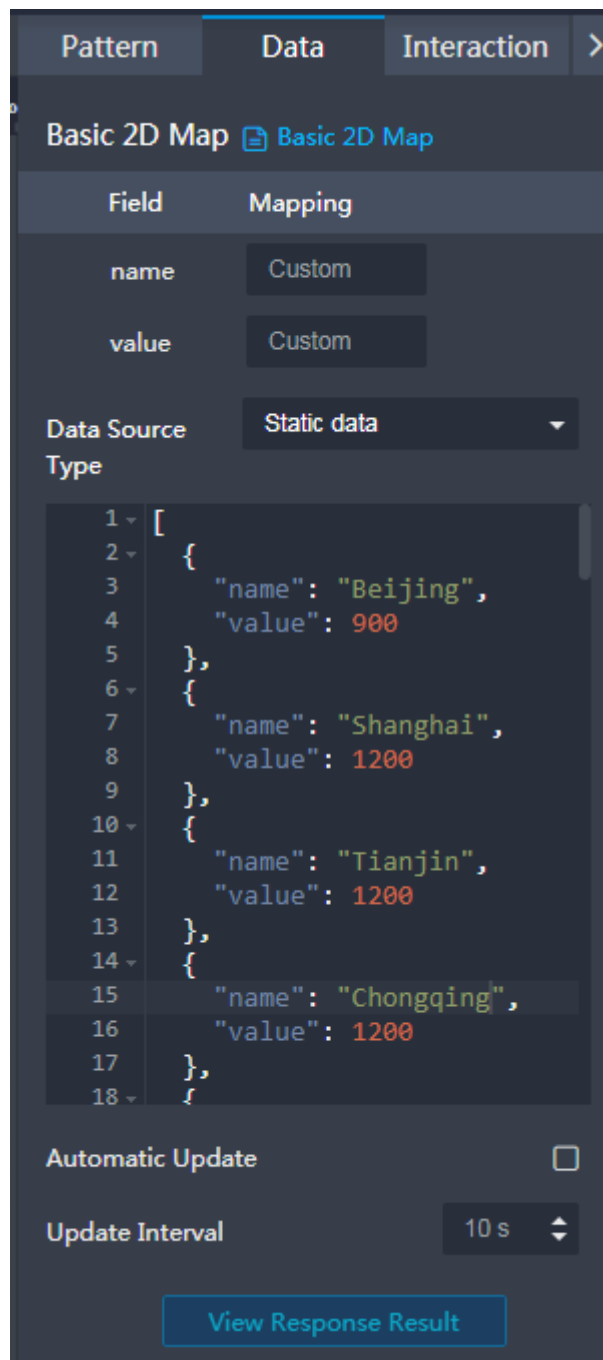
- **Visual Mapping**

- **Visual Mapping:** to show or hide virtual mapping by clicking  or .
- **Mapping Type:** to select a mapping type from the drop-down list. The value can be **Segment-based** or **Continuous**.



- **Direction:** to select a mapping direction from the drop-down list. The value can be **Vertical** or **Horizontal**.
- **Width:** width of the visual mapping.
- **Height:** height of the visual mapping.
- **Left:** distance between the visual mapping and the left side of the map component.
- **Bottom:** distance between the visual mapping and the bottom of the map component.
- **Text:** font color and font size of the text in the visual mapping.
- **Selected Style**
  - **Color:** to set the color by clicking the color editor.
  - **Data Value:** to show or hide the data value by clicking  or .
  - **Data Name:** to show or hide the data name by clicking  or .
  - **Text**
    - **Text Style:** text color, font size, and font width.
    - **Prompt Dialog Box:** You can set **Margin**, **Background Color**, **Customize Size**, **Border Color**, and **Border Width** for a prompt dialog box.
- **Scale:** After this function is enabled, when viewing or previewing the screen, you can zoom in or zoom out the map on the screen.
- **Move:** After this function is enabled, when viewing or previewing the screen, you can move the map on the screen
- **Initial Value:** initial value of the **name** field on the **Interaction** panel.

## Data



The example data in the preceding figure is as follows:

- name: name of the area displayed on the map component.
- value: value of the area. The value matches the **Max. Value**, **Min. Value**, and **No Data** in the **Filling** to determine the area color.

## Interaction

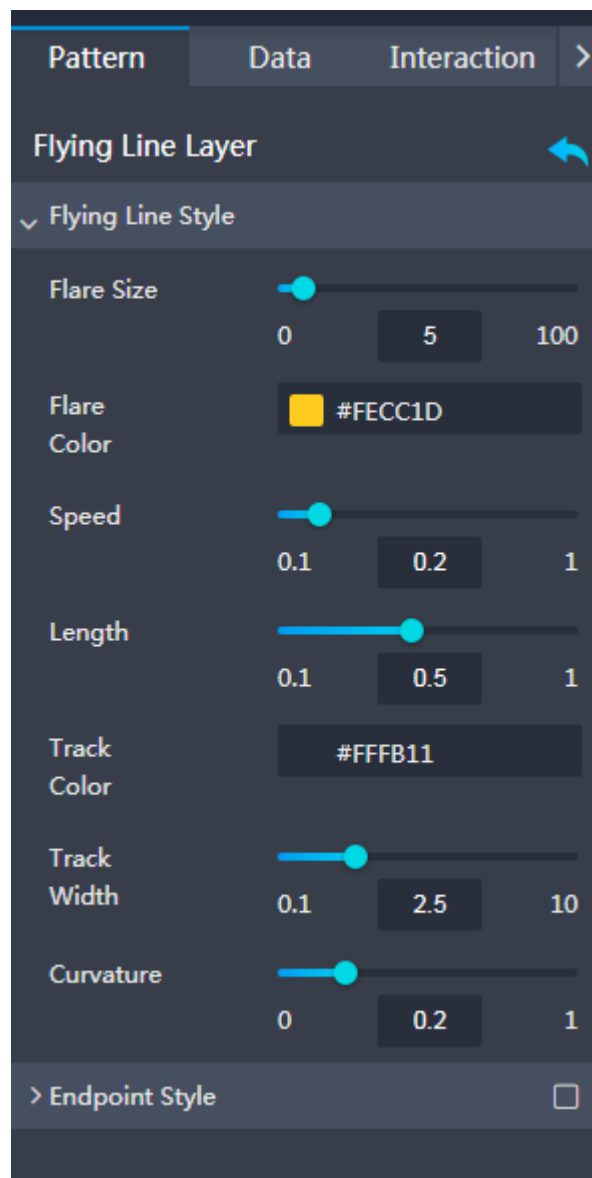
For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## Flying Lines

A flying line dynamically connects two geographical locations on the map.

- **Pattern**
  - **Flying Line Style**
    - **Flare Size:** The unit is pixel.
    - **Speed:** speed at a flare flies.
    - **Length:** length of a flying line. The distance between the start point and the end point is one unit.
    - **Track Color:** color of the flight path.
    - **Track Width:** The unit is pixel.
    - **Curvature:** curvature of a flying line. When the curvature is 0, the flying line is a straight line.

Figure 13-112 Flying line layer



- **Endpoint Style:** to show or hide the start and end points. By default, the start and end points are hidden. After this function is enabled, you can set the start point style and end point style.
  - **Start/End Point Style**
    - **Pattern:** shape of an endpoint. Multiple patterns are available.
    - **Inner Ring Color:** color of the inner ring of the endpoint.
    - **Outer Ring Color:** color of the outer ring of the endpoint.
    - **Animation Effect:** animation effect of the endpoint.
    - **Animation Range:** range of the dynamic animation of an endpoint. This configuration is invalid when **Animation Effect** is set to **No fill**.
    - **Animation Speed:** speed of the animation.
    - **Size:** size of an endpoint.

- **Data**

- **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
  - **from:** longitude and latitude of the start point of a flying line. The longitude and latitude are separated by commas (,).
  - **to:** longitude and latitude of the end point of a flying line. The longitude and latitude are separated by commas (,).

The data source is in JSON format. The following is an example:

```
[
  {
    "from": "116.85059,31.69078",
    "to": "118.69629,36.20882"
  },
  {
    "from": "120.89355,37.09024",
    "to": "116.93848,31.61597"
  }
]
```

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

- **Interaction**

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## Scatters

Data information about geographical locations on the map can be displayed by scatters.

- **Pattern**

- **Pattern:** shape of a scatter. Multiple patterns are available.
- **Animation Effect:** animation effect of scatters.
- **Size:** size of a scatter.
- **Animation Range:** A larger value leads to a wider animation range. This configuration is invalid when **Animation Effect** is set to **No fill**.
- **Animation Speed:** A larger value leads to a faster animation speed. This configuration is invalid when **Animation Effect** is set to **No fill**.
- **Inner Ring Color:** color of the inner ring of a scatter.
- **Outer Ring Color:** color of the outer ring of a scatter.
- **Selected Style:** style displayed when you move over a scatter during screen preview or viewing. After setting the selected style, you can click



in the upper right corner of the page to view the selected style. Expand **Selected Style** and set the following parameters:

**Color:** color of a scatter when you mouse over the scatter.

**Data Value:** to show or hide the value of the **name** field.

**Data Name:** to show or hide the data name.

**Text Style:** color, font size, and font width of the text displayed when you mouse over a scatter.

- **Data**

- **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
  - **lon:** longitude of a scatter.
  - **lat:** latitude of a scatter.
  - **name:** name of the geographical location represented by a scatter.
  - **value:** value of a scatter. The value and the scatter size in the style determine the scatter size together. A larger value leads to a larger scatter.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

- **Interaction**



For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).


## Advanced Scatter Layer

Compared with the scatters on the map, the advanced scatters support the mapping of data values to the scatter size and the customization of scatter icons.

- **Pattern**

- **Pattern:** shape of a scatter. Multiple patterns are available.
- **Data Mapping:** If this option is selected, the scatter color and size vary according to the data volume. A larger scatter indicates a larger data volume. **Min. Value**, **Max. Value**, and **No Data** under **Color** and **Size** are customized. The unit of the scatter size is pixel.
- **Animation Effect:** animation effect of scatters.
- **Animation Range:** A larger value leads to a wider animation range.

- **Animation Speed:** A larger value leads to a faster animation speed.
- **Label:** If this option is selected, the label is displayed at the scatter. Set the label as follows:
  - Mapping Field:** to set this parameter to a field name on the **Data** panel instead of the field name of the source data. When **Label** is selected, the value of the selected field is displayed at the scatter.
  - Font:** label font.
  - Color:** label color.
  - Font Size:** font size of the label.
  - Font Width:** font width of the label.
  - Position:** position of the label relative to a scatter.
  - Horizontal Shift:** horizontal offset to the right of the configured position. The unit is pixel.
  - Vertical Shift:** vertical offset to the bottom of the configured position. The unit is pixel.
- **Selected Style:** style displayed when you move over a scatter during screen preview or viewing. After setting the selected style, you can click  in the upper right corner of the page to view the selected style. Expand **Selected Style** and set the following parameters:
  - Color:** color of a scatter when you mouse over the scatter.
  - Data Value:** to show or hide the value of the **name** field.
  - Data Name:** to show or hide the data name.
  - Text Style:** color, font size, and font width of the text displayed when you mouse over a scatter.
- **Initial Value:** initial value of the **name** field on the **Interaction** panel.
- **Data**
  - **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
    - **lon:** longitude of a scatter.
    - **lat:** latitude of a scatter.
    - **name:** name of the geographical location represented by a scatter.
    - **value:** value of a scatter. The value and the scatter size in the style determine the scatter size together. A larger value leads to a larger scatter.
    - **type:** Click  to add a series value. You can select a value of the **type** field as a series and set the display style of the scatter of the series. If the type field is set to other values, the corresponding scatter is displayed in the default style of the type field.

For example, if the type of a scatter is type:"snack", click  to set the series value to **snack**.

- **img**: path of the custom scatter icon. You can set this parameter to the path of the image stored in OBS or the public network image path. If this parameter is not set, the default icon is used.
- **Data Source Type**: to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result**: Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.
- **Interaction**  
**Click** and **Mouseover** are supported. For details about how to use component interaction, see [Configuring Component Interaction](#).

## Drilldown

Data information about geographical locations on the map can be displayed by drilldown.

- **Pattern**
  - **Color**: color of the target area.
  - **Transparency**: transparency of the target area.
  - **Borderline**
    - **Color**: borderline color of the target area.
    - **Width**: borderline width of the target area.
    - **Line Style**: border line style of the target area.
    - **Shadow Color**: color of the borderline shadow of the target area.
  - **Label**: to show or hide a label. You can set the font, color, font size, and font width of the label text.
  - **Zoom Range**: zooming ratio of the target area.
- **Data**
  - **Field and Mapping**: The data format contains the following field. Set the field name in the data source to which each field is mapped. If the field name is left empty, the field name is the same as that in the data source to which the field is mapped.
    - **name**: name of the target region.
  - **Data Source Type**: to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
  - **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
  - **Preview Result**: Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.



- **Interaction**

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## Heatmap Layer

Data information about geographical locations on the map can be displayed by heatmap.

- **Pattern**

- **Min. transparency:** minimum transparency of heat points.
- **Max. transparency:** maximum transparency of heat points.
- **Fuzzy Radius:** fuzzy radius of a heat point.
- **Radius:** radius of a heat point.
- **Color:** You can set five color bands from color 1 to color 5 for heat points from outside to inside.

- **Data**

- **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
  - **lat:** latitude of an area.
  - **lon:** longitude of an area.
  - **value:** value of the heatmap point corresponding to the region.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

- **Interaction**

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## Hover Text

Data information about geographical locations on the map can be displayed by hover text.

- **Pattern**

- **Borderline**

- **Pattern:** borderline style of the hover text box.
- **Width:** width of the borderline of the hover text box.
- **Text Style:** font, font size, and font width of the hover text. The text displayed in the hover text box is the value of the text field on the **Data** panel.
- **Constant-Speed Play:** After this function is enabled, the hover text will be played at a fixed speed based on the following settings: This function is disabled by default.
  - **Hover Boxes:** number of hover text boxes displayed each time the constant-speed play is enabled.
  - **Appearance Duration:** time spent before the hover text appears. Unit: microsecond.
  - **Stay Duration:** period when the hover text stays on the map. Unit: microsecond.
  - **Disappearance Duration:** time spent before the hover disappears.
- **Data**
  - **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
    - **lat:** latitude of an area.
    - **lon:** longitude of an area.
    - **text:** hover text above an area.
  - **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
  - **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
  - **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.
- **Interaction**

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## Carousel Video

A carousel video subcomponent plays different geographical locations in turn. The video format can be MP4 or FLV.

- **Pattern**
  - **Mute:** to enable or disable the mute mode.

- **Control Bar:** to show or hide the progress bar in the video player.
- **Adjust Volume:** to adjust the video volume.
- **Custom:** to enable or disable the custom playback time.
- **Play Duration:** duration when a video is played. Unit: microsecond.
- **Width:** width of the video player. Unit: pixel.
- **Background Color:** background color of the video player.
- **Dot Color:** color of the dot representing a geographic location on the map.
- **Borderline:** to set the pattern, width, and color of the borderline of the video player.
- **Text Style:** to set the color, font, font size, and font width of the text displayed over the video player. The displayed text is the value of the **text** field on the **Data** panel.
- **Data**
  - **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
    - **lat:** latitude of an area.
    - **lon:** longitude of an area.
    - **video:** video address. Video addresses stored in OBS or public network video addresses are supported. The video format can be MP4 and FLV.
    - **text:** title displayed over the video player.
  - **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
  - **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
  - **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.
- **Interaction**

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

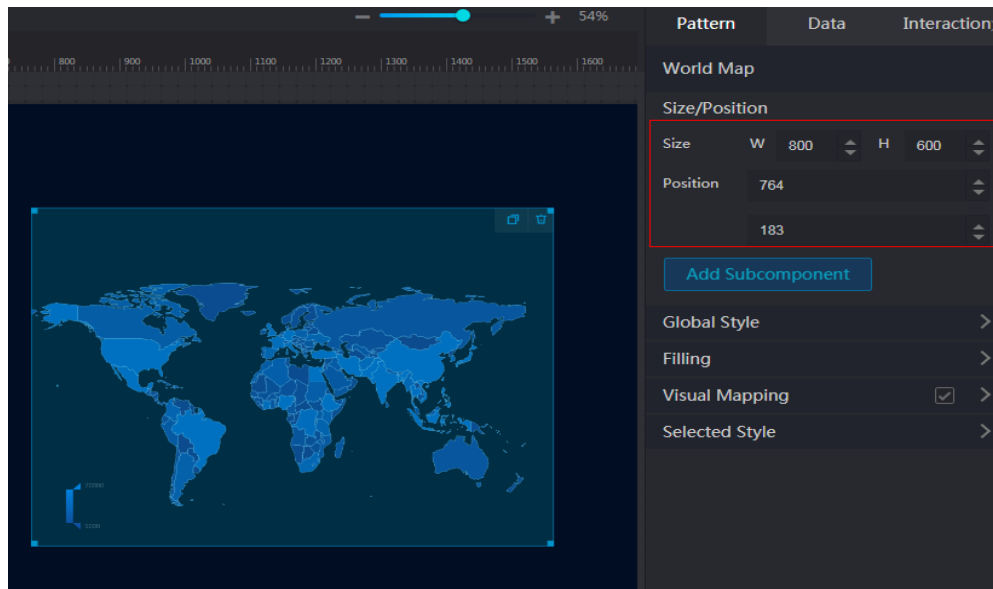
## 13.7.2 World Map

This section describes parameters of a world map.

### Pattern

- **Size/Position**

- **Size:** width and height of the component. Unit: pixel.
- **Position:** position where the component is located in the canvas. Unit: pixel.

**Figure 13-113** Size and position of a world map

- **Add Subcomponent**

The following subcomponents can be added to a world map:

- **Flying line:** The configuration method is similar to that of the flying lines on the basic 2D map. For details, see [Flying Lines](#).
- **Scatter:** The configuration method is similar to that of the scatters on the basic 2D map. For details, see [Scatters](#).
- **Advanced scatter:** The configuration method is similar to that of the advanced scatters on the basic 2D map. For details, see [Advanced Scatter Layer](#).

**NOTE**

The advanced scatter layer on the basic 2D map supports the interaction function, but the advanced scatter layer on the world map does not support the interaction function.

- **Heatmap:** The configuration method is similar to that of the heatmap layer in the basic 2D map. For details, see [Heatmap Layer](#).

The following operations can be performed on those subcomponents:

- **Adding subcomponents**

In the **Pattern** panel, click **Add Subcomponent**. In the displayed menu, select a subcomponent. After the subcomponent is added, the name of the added subcomponent is displayed under **Add Subcomponent**, for example, fly line.

- **Editing subcomponents**

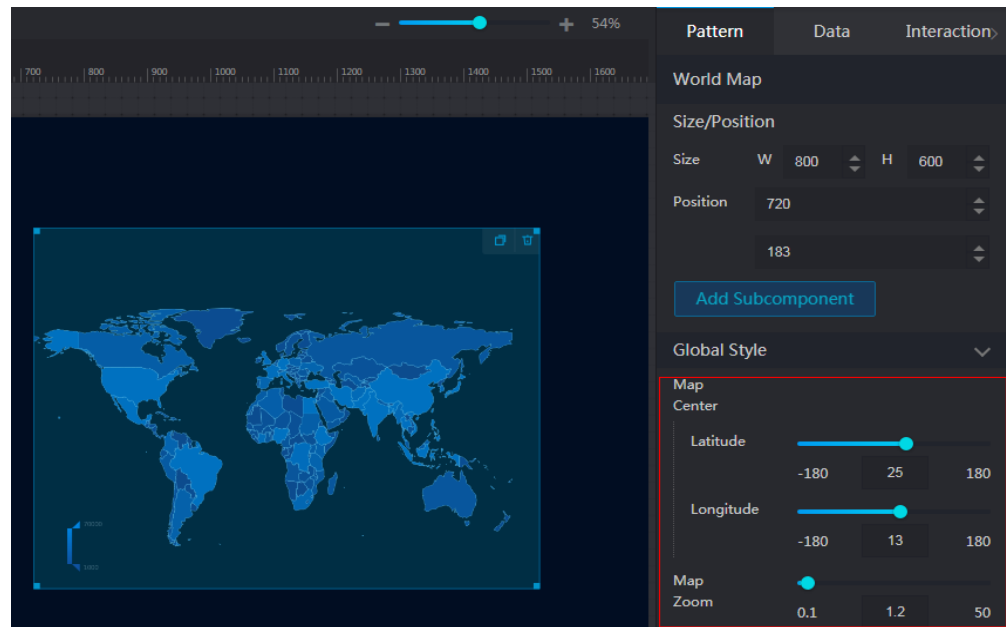
After clicking a component, you can edit it.

- **Deleting subcomponents**

To delete a subcomponent, click .

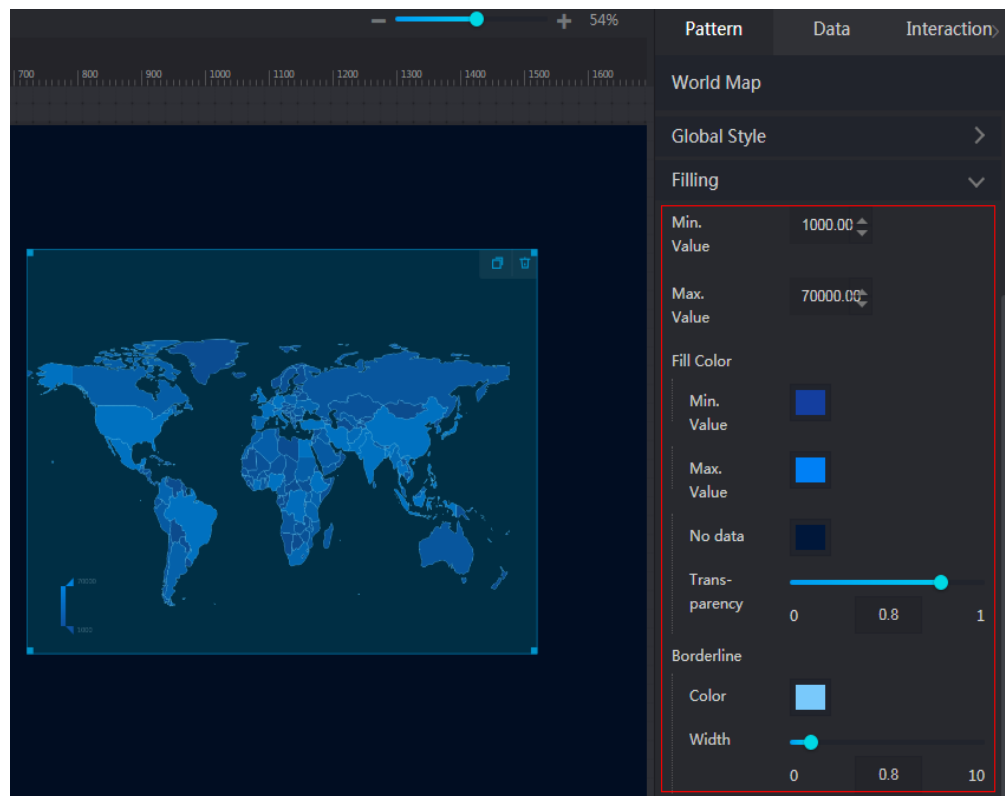
- **Global Style**
  - **Map Center:** location of the map center on the canvas.
  - **Map Zoom:** to set zooming ratio of the map center.

Figure 13-114 Global style of a world map



- **Filling**
  - **Fill Color:** color and transparency.
  - **Borderline:** color and width of the borderline.

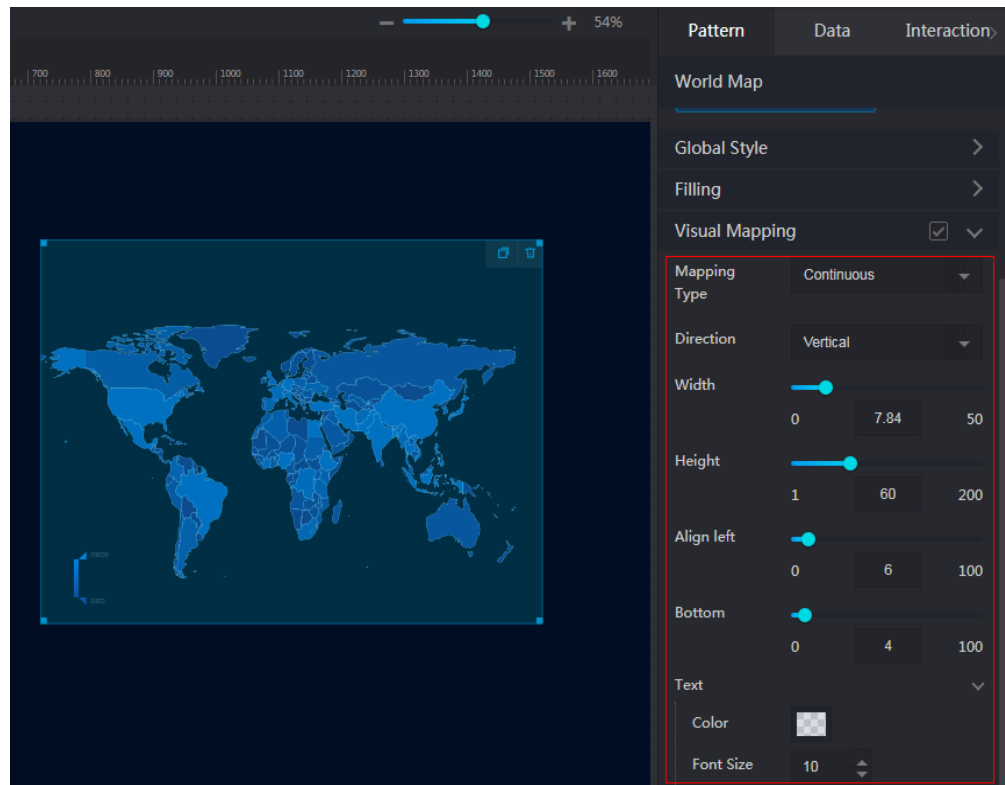
Figure 13-115 Filling settings of a world map



- **Visual Mapping**

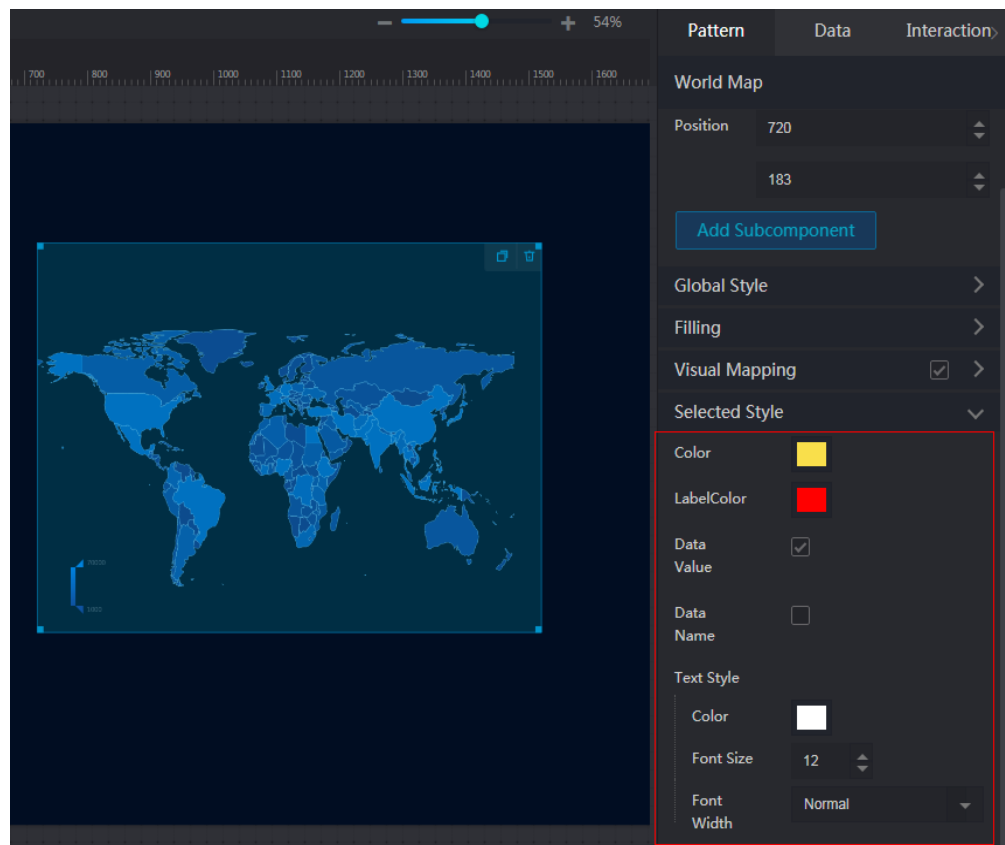
- **Visual Mapping:** to show or hide virtual mapping by clicking  or .
- **Mapping Type:** to select a mapping type from the drop-down list. The value can be **Segment-based** or **Continuous**.
- **Direction:** to select a mapping direction from the drop-down list. The value can be **Vertical** or **Horizontal**.
- **Width:** width of the visual mapping.
- **Height:** height of the visual mapping.
- **Left:** distance between the visual mapping and the left side of the map component.
- **Bottom:** distance between the visual mapping and the bottom of the map component.
- **Text:** font color and font size of the text in the visual mapping.

Figure 13-116 Visual mapping of a world map



- **Selected Style**
  - **Color:** to set the color by clicking the color editor.
  - **Label Color:** to set the label color by clicking the color editor.
  - **Data Value:** to show or hide the data value by clicking  or .
  - **Data Name:** to show or hide the data name by clicking  or .
  - **Text Style:** text color, font size, and font width.

Figure 13-117 Selected style of a world map



## Data

The data configuration of the world map is similar to that of the basic 2D map. For details, see [Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.7.3 3D World Map

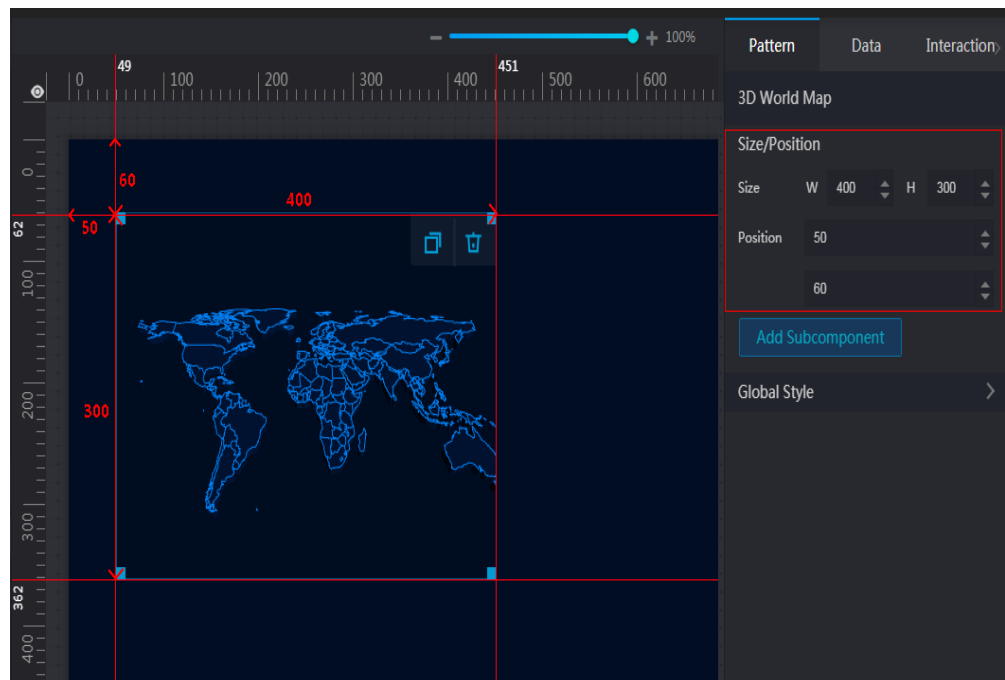
This section describes parameters of a 3D world map.

## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.



**Figure 13-118** Size and position of a 3D world map



- **Add Subcomponent**

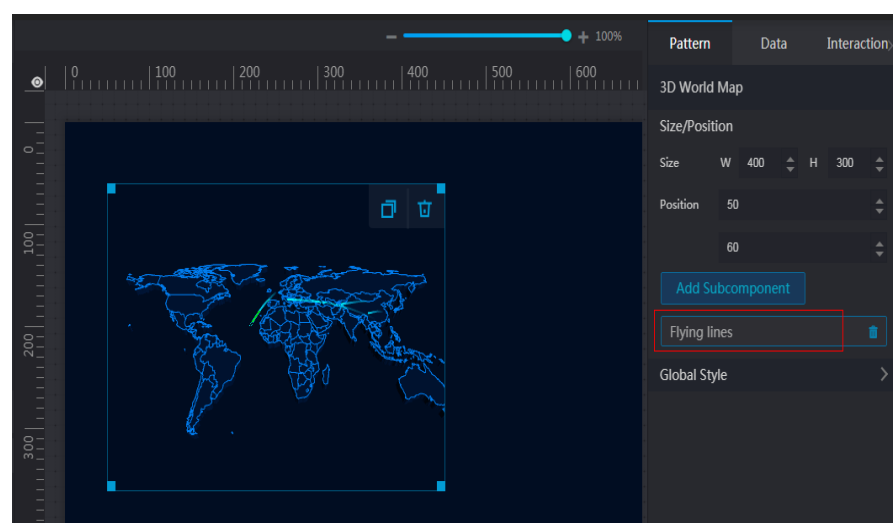
Subcomponents of the component include flying lines, scatters, and columns.

- **Flying Lines**

Two geographic locations on the map can be connected by dynamic flying lines. The following describes how to configure the pattern and data of flying lines.

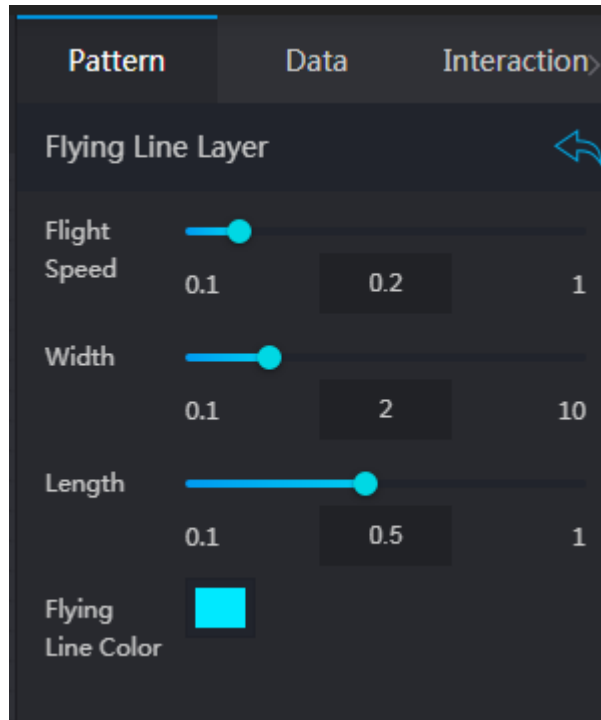
- i. Click **Add Subcomponent** to add flying lines.

**Figure 13-119** Adding flying lines for a 3D world map



- ii. Click **Flying line**. The page for configuring flying lines is displayed. On the **Pattern** tab page, configure the **Speed**, **Width**, **Length**, and **Color** of flying lines.

**Figure 13-120** Configuring the flying line pattern for a 3D world map



On the **Data** tab page, set the longitudes and latitudes of the start and end points of flying lines.

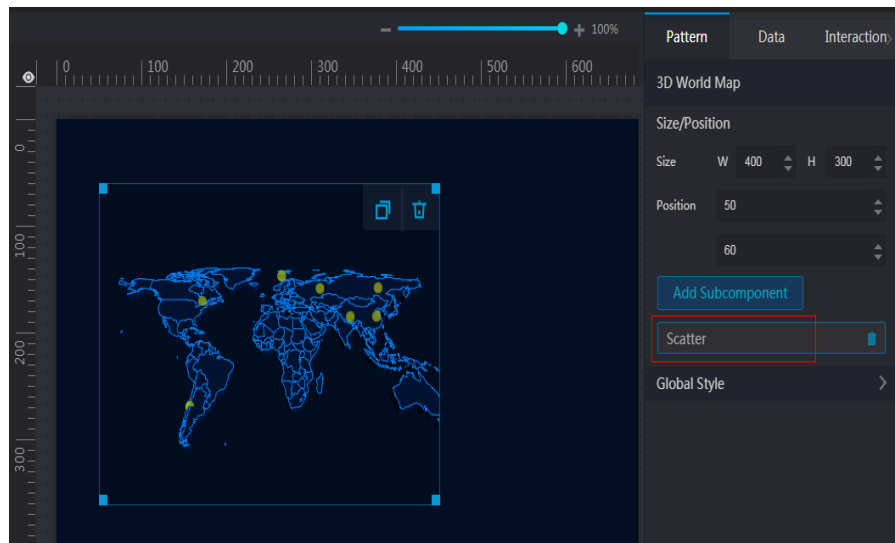
- **Field and Mapping:** **from** specifies the start point of the flying line, and **to** specifies the end point of the flying line.
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the dynamic data is automatically updated based on the interval.

– **Scatters**

Geographical locations on the map can be marked using scatters. The following describes how to configure the pattern and data of scatters.

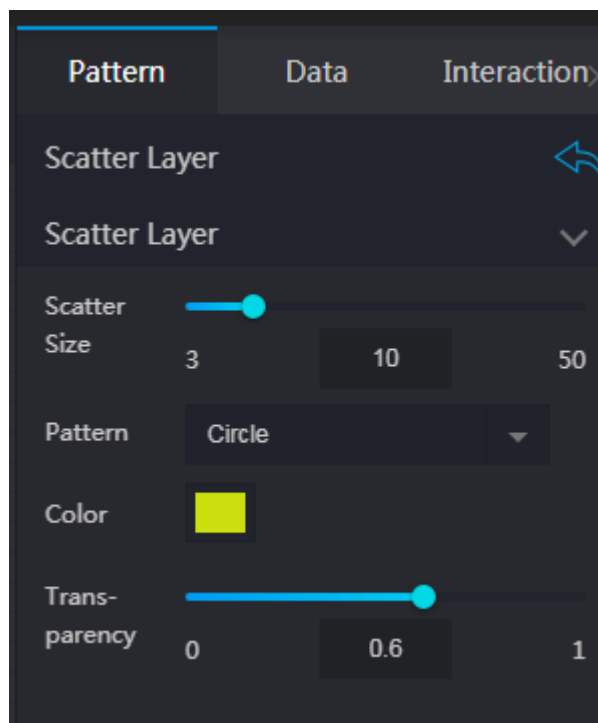
- Click **Add Subcomponent** to add scatters.

**Figure 13-121** Adding scatters for a 3D world map



- ii. Click **Scatter**. The page for configuring scatters is displayed. On the **Pattern** tab page, configure the **Size**, **Style**, **Color**, and **Transparency** of scatters.

**Figure 13-122** Configuring the scatter pattern for a 3D world map

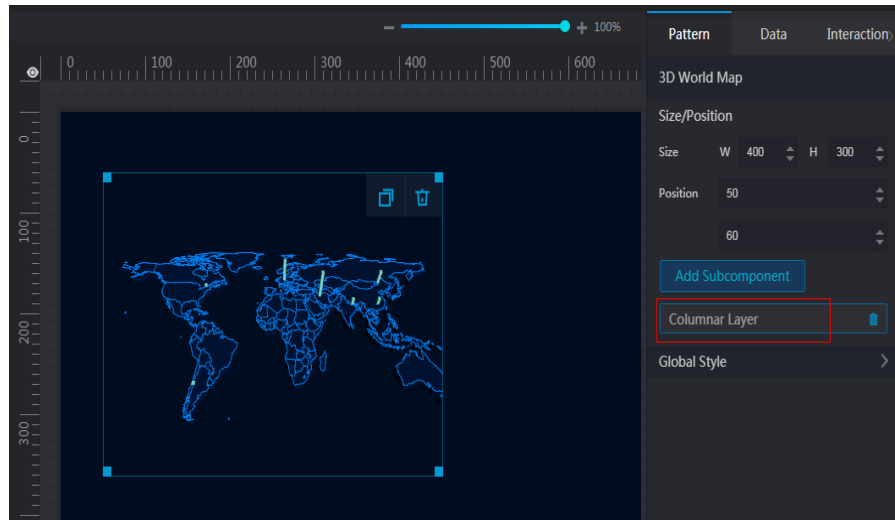


On the **Data** tab page, configure the latitudes, longitudes, and size of scatters.

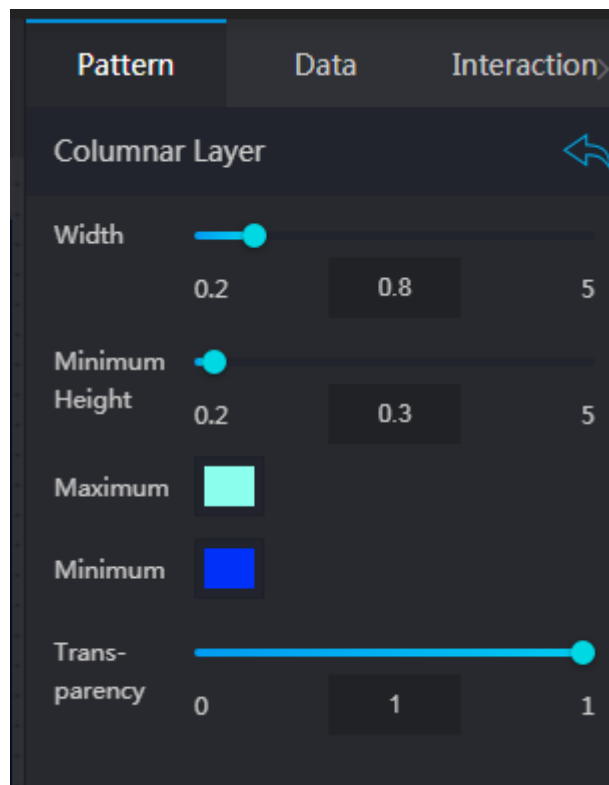
- **lon** specifies the longitude of a scatter. **lat** specifies the latitude of a scatter. **value** specifies a scatter value and determines the scatter size together with **Size** on the **Pattern** tab page. A larger value leads to a larger scatter.

- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the dynamic data is automatically updated based on the interval.
- **Column**  
Geographical locations on the map can be marked using columns. The following describes how to configure the pattern and data of columns.
  - i. Click **Add Subcomponent** to add columns.

**Figure 13-123** Adding columns for a 3D world map



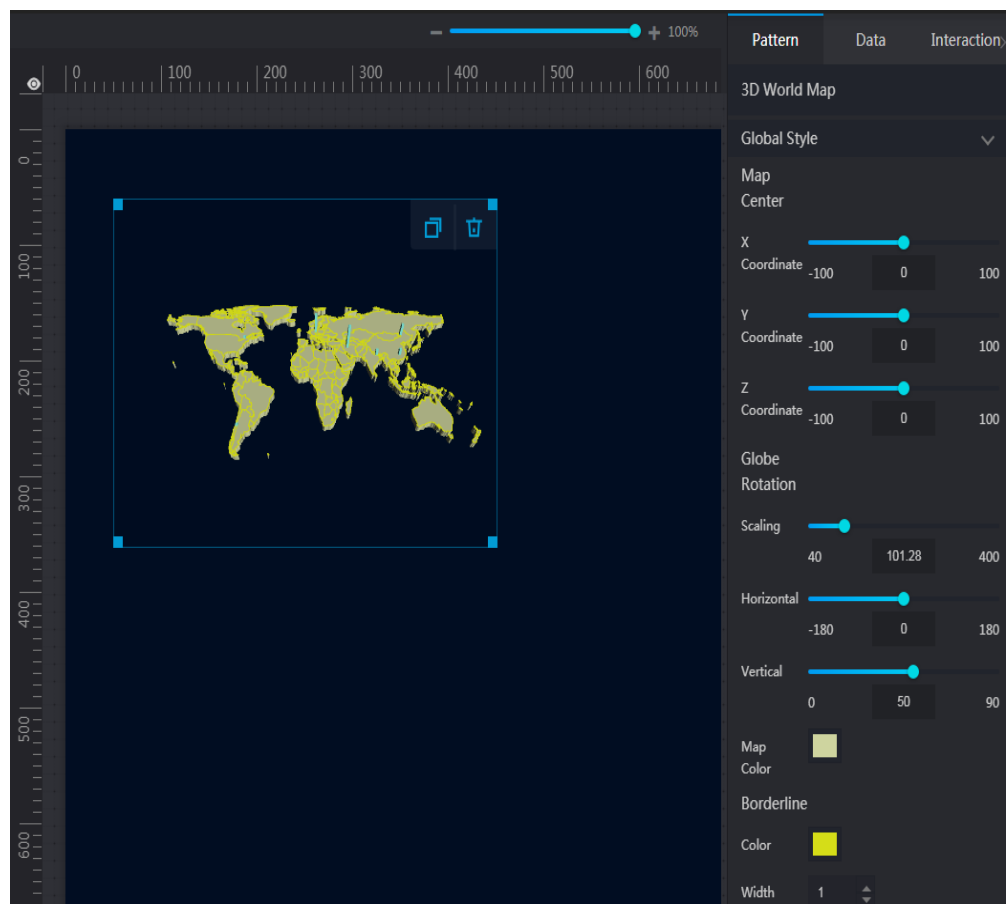
- ii. Click **Column**. The page for configuring columns is displayed. On the **Pattern** tab page, configure the **Width**, **Min Height**, **Max. Color**, **Min. Color**, and **Transparency** of the columns.

**Figure 13-124** Configuring the column pattern for a 3D world map

On the **Data** tab page, configure the latitudes, longitudes, and height of columns.

- **lon** specifies the longitude of a column. **lat** specifies the latitude of a column. **value** specifies a column value. A larger value leads to a higher column.
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the dynamic data is automatically updated based on the interval.
- **Global Style**
  - **Map Center:** location of the map center on the canvas.
  - **Globe Rotation:** to set **Scaling**, **Horizontal**, and **Vertical** of the map.
  - **Map Color:** fill color of the area blocks on the map.
  - **Borderline:** color and width of the borderline on the map.

Figure 13-125 Global style for a 3D world map



## Data

This component does not have data events.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.7.4 3D China Map

This section describes parameters of a 3D China map.

### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Add Subcomponent**

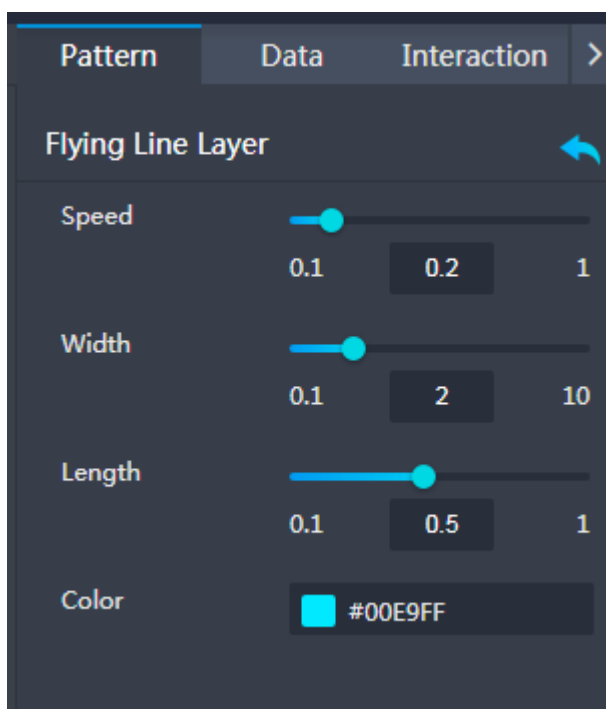
Subcomponents of the component include flying lines, scatters, and columns.

  - **Flying Lines**

Two geographic locations on the map can be connected by dynamic flying lines. The following describes how to configure the pattern and data of flying lines.

- i. Click **Add Subcomponent** to add flying lines.
- ii. Click **Flying line**. The page for configuring flying lines is displayed. On the **Pattern** tab page, configure the **Speed**, **Width**, **Length**, and **Color** of flying lines.

**Figure 13-126** Configuring the flying line pattern for a 3D China map



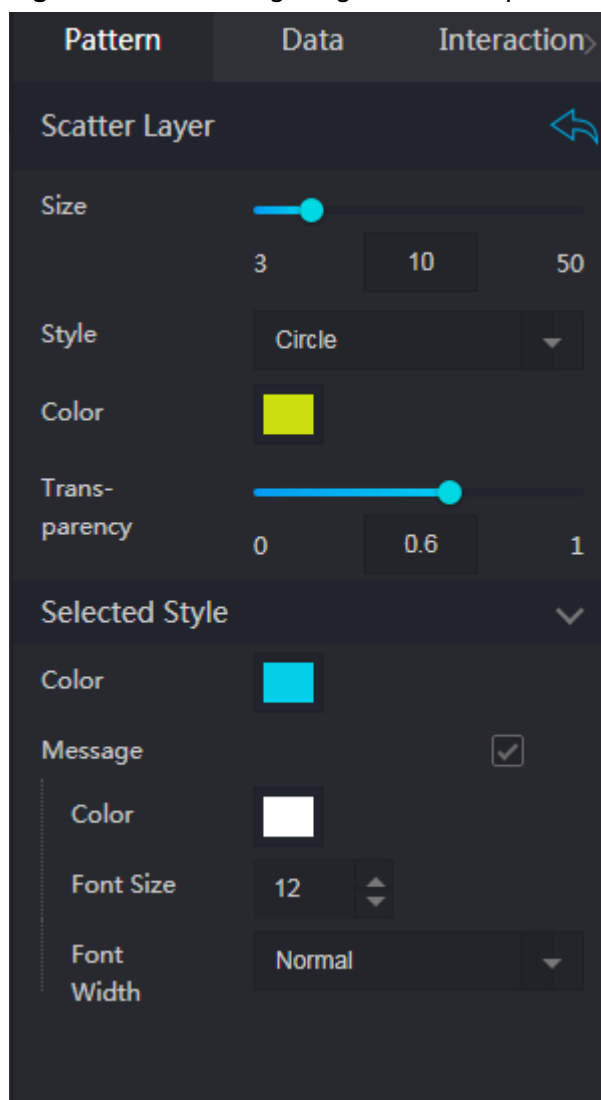
On the **Data** tab page, set the longitudes and latitudes of the start and end points of flying lines.

- **Field and Mapping:** **from** specifies the start point of the flying line, and **to** specifies the end point of the flying line.
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the dynamic data is automatically updated based on the interval.

#### – Scatters

Geographical locations on the map can be marked using scatters. The following describes how to configure the pattern and data of scatters.

- i. Click **Add Subcomponent** to add scatters.
- ii. Click **Scatter**. The page for configuring scatters is displayed. On the **Pattern** tab page, configure the scatter size, style, color, transparency, and color of the selected style, and the color, font size, and font width of the message.

**Figure 13-127** Configuring the scatter pattern for a 3D China map

On the **Data** tab page, configure the latitudes, longitudes, and size of scatters.

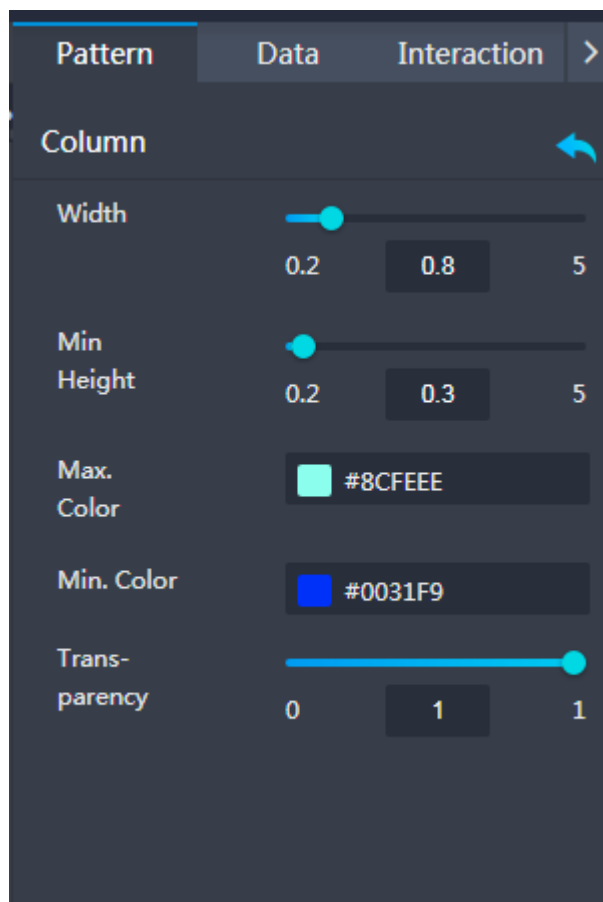
- **lon** specifies the longitude of a scatter. **lat** specifies the latitude of a scatter. **value** specifies a scatter value and determines the scatter size together with **Size** on the **Pattern** tab page. A larger value leads to a larger scatter.
- **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the dynamic data is automatically updated based on the interval.

#### – Column

Geographical locations on the map can be marked using columns. The following describes how to configure the pattern and data of columns.

- Click **Add Subcomponent** to add columns.
- Click **Column**. The page for configuring columns is displayed.  
On the **Pattern** tab page, configure the **Width**, **Min Height**, **Max. Color**, **Min. Color**, and **Transparency** of the columns.



**Figure 13-128** Configuring the column pattern for a 3D China map

On the **Data** tab page, configure the latitudes, longitudes, and height of columns.

- **lon** specifies the longitude of a column. **lat** specifies the latitude of a column. **value** specifies a column value. A larger value leads to a higher column.
- **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the dynamic data is automatically updated based on the interval.
- **Global Style**
  - **Map Center**: location of the map center on the canvas.
  - **Globe Rotation**: to set **Scaling**, **Horizontal**, and **Vertical** of the map.
  - **Map Color**: fill color of the area blocks on the map.
  - **Borderline**: color and width of the borderline on the map.

## Data

This component does not have data events.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.7.5 3D World Map (2019)

This section describes parameters of a 3D world map (2019).

### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**
  - **Map Center:** location of the map center on the canvas.
  - **Globe Rotation:** to set **Scaling**, **Horizontal**, and **Vertical** of the map.
  - **Map Color:** fill color of the area blocks on the map.
  - **Borderline:** color and width of the borderline on the map.

- **Subcomponents**


You can add subcomponents [Flying Lines](#), [Scatters](#), and [Columns](#) to a 3D world map (2019).

The operations can be performed on those subcomponents:

- **Adding subcomponents**

In the **Pattern** panel, click **Add Subcomponent**. In the displayed menu, select a subcomponent. After the subcomponent is added, the name of the added subcomponent is displayed under **Add Subcomponent**, for example, fly line.
- **Editing subcomponents**

After clicking a subcomponent, you can edit it.
- **Deleting subcomponents**

To delete a subcomponent, click .

### Data

The following figure shows the data of the 3D world map (2019):

- **Field and Mapping:** The data format contains two fields by default.
  - **value:** value of the area displayed on the map. It determines the map color together with **Max. Value**, **Min. Value**, and **No Data** in **Map Color** under **Global Style**.
  - **name:** name of the area displayed on the map component.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **View Response Result:** to view the data information of the selected data source.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## Flying Lines

A flying line dynamically connects two geographical locations on the map.

- **Pattern**
  - **Dotted Line:** style of dotted lines.
  - **Height:** curve height of flying lines. When the value is 1, a flying line is approximately a straight line.
  - **Speed:** speed of flying lines
  - **Width:** width of flares.
  - **Color:** color of flying lines.
- **Data**
  - **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
    - **from:** longitude and latitude of the start point of a flying line. The longitude and latitude are separated by commas (,).
    - **to:** longitude and latitude of the end point of a flying line. The longitude and latitude are separated by commas (,).

The data source is in JSON format. The following is an example:

```
[
  {
    "from": "116.85059,31.69078",
    "to": "118.69629,36.20882"
  },
  {
    "from": "120.89355,37.09024",
    "to": "116.93848,31.61597"
  }
]
```

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
  - **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
  - **View Response Result:** to view the data information of the selected data source.
- **Interaction**

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## Scatters

Data information about geographical locations on the map can be displayed by scatters.

- **Pattern**
  - **Size:** size of scatters.
  - **Color:** color of scatters.
- **Data**
  - **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
    - **lat:** latitude of a scatter.
    - **lon:** longitude of a scatter.
    - **value:** value of a scatter. The value and the scatter size in the style determine the scatter size together. A larger value leads to a larger scatter.

The data source is in JSON format. The following is an example:

```
[
  {
    "lat": 62.103883,
    "lon": -106.523438,
    "value": 51
  },
  {
    "lat": 50.064192,
    "lon": -74.179688,
    "value": 94
  }
]
```

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
  - **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
  - **View Response Result:** to view the data information of the selected data source.
- **Interaction**

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## Columns

Data information about geographical locations on the map can be displayed by column.

- **Pattern**
  - Height:** height of columns. Unit: pixel.
  - Color:** color of columns.

- **Data**

- **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.

- **lat:** latitude of a column.
- **lon:** longitude of a column.

The data source is in JSON format. The following is an example:

```
[
  {
    "lat": 6,
    "lon": 159
  },
  {
    "lat": 30,
    "lon": 99
  }
]
```

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **View Response Result:** to view the data information of the selected data source.

- **Interaction**

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.7.6 3D China Map (2019)

This section describes parameters of a 3D China map (2019).

### Pattern

- **Size/Position**

- **Size:** width and height of the component. Unit: pixel.
- **Position:** position where the component is located in the canvas. Unit: pixel.


- **Global Style**

- **Map Center:** location of the map center on the canvas.
- **Globe Rotation:** to set **Scaling**, **Horizontal**, and **Vertical** of the map.
- **Map Color:** fill color of the area blocks on the map.
- **Borderline:** color and width of the borderline on the map.

- **Subcomponents**

You can add subcomponents [Flying Lines](#), [Scatters](#), and [Columns](#) to a 3D China map (2019).

The operations can be performed on those subcomponents:

- **Adding subcomponents**  
In the **Pattern** panel, click **Add Subcomponent**. In the displayed menu, select a subcomponent. After the subcomponent is added, the name of the added subcomponent is displayed under **Add Subcomponent**, for example, fly line.
- **Editing subcomponents**  
After clicking a subcomponent, you can edit it.
- **Deleting subcomponents**  
To delete a subcomponent, click .

## Data

The following figure shows the data of a 3D China map (2019):

- **Field and Mapping:** The data format contains the following fields by default:
  - **adcode:** administrative area code. This is a reserved field.
  - **name:** name of the area displayed on the map component.
  - **value:** value of the area displayed on the map. It determines the map color together with **Max. Value**, **Min. Value**, and **No Data** in **Map Color** under **Global Style**.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **View Response Result:** to view the data information of the selected data source.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## Flying Lines

A flying line dynamically connects two geographical locations on the map.

- **Pattern**
  - **Dotted Line:** style of dotted lines.
  - **Height:** curve height of flying lines. When the value is 1, a flying line is approximately a straight line.
  - **Speed:** speed of flying lines
  - **Width:** width of flares. Unit: pixel.
  - **Color:** color of flying lines.
- **Data**
  - **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the

field names are left empty, the field names are the same as those in the data source to which each field is mapped.

- **from:** longitude and latitude of the start point of a flying line. The longitude and latitude are separated by commas (,).
- **to:** longitude and latitude of the end point of a flying line. The longitude and latitude are separated by commas (,).

The data source is in JSON format. The following is an example:

```
[
  {
    "from": "116.85059,31.69078",
    "to": "118.69629,36.20882"
  },
  {
    "from": "120.89355,37.09024",
    "to": "116.93848,31.61597"
  }
]
```

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **View Response Result:** to view the data information of the selected data source.
- **Interaction**  
For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## Scatters

Data information about geographical locations on the map can be displayed by scatters.

- **Pattern**
  - **Size:** size of scatters.
  - **Color:** color of scatters.
- **Data**
  - **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
    - **lon:** longitude of a scatter.
    - **lat:** latitude of a scatter.
    - **value:** value of a scatter. The value and the scatter size in the style determine the scatter size together. A larger value leads to a larger scatter.

The data source is in JSON format. The following is an example:

```
[
  {
    "lat": 62.103883,
    "lon": -106.523438,
    "value": 51
  },
  {
    "lat": 50.064192,
    "lon": -74.179688,
    "value": 94
  }
]
```

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **View Response Result:** to view the data information of the selected data source.
- **Interaction**  
For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## Columns

Data information about geographical locations on the map can be displayed by column.

- **Pattern**  
**Height:** height of columns. Unit: pixel.  
**Color:** color of columns.
- **Data**
  - **Field and Mapping:** The data format contains the following fields. Set the field names in the data source to which each field is mapped. If the field names are left empty, the field names are the same as those in the data source to which each field is mapped.
    - **lon:** longitude of a column.
    - **lat:** latitude of a column.

The data source is in JSON format. The following is an example:

```
[
  {
    "lat": 31.8998,
    "lon": 102.2212
  },
  {
    "lat": 28.6542,
    "lon": 120.079
  }
]
```

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).

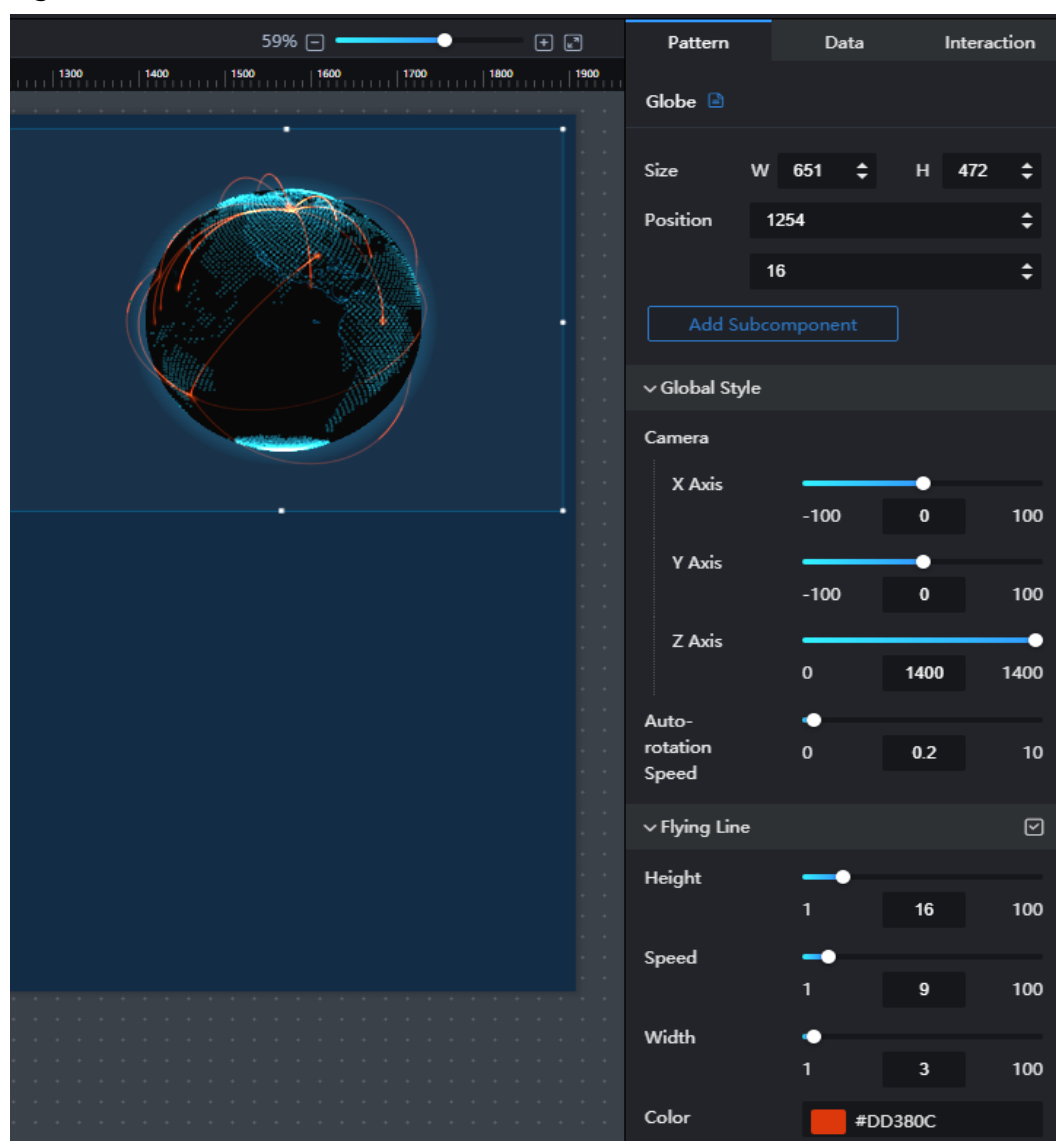


- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **View Response Result:** to view the data information of the selected data source.
- **Interaction**  
For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.7.7 Globe

This section describes parameters of a globe component.

Figure 13-129 Globe

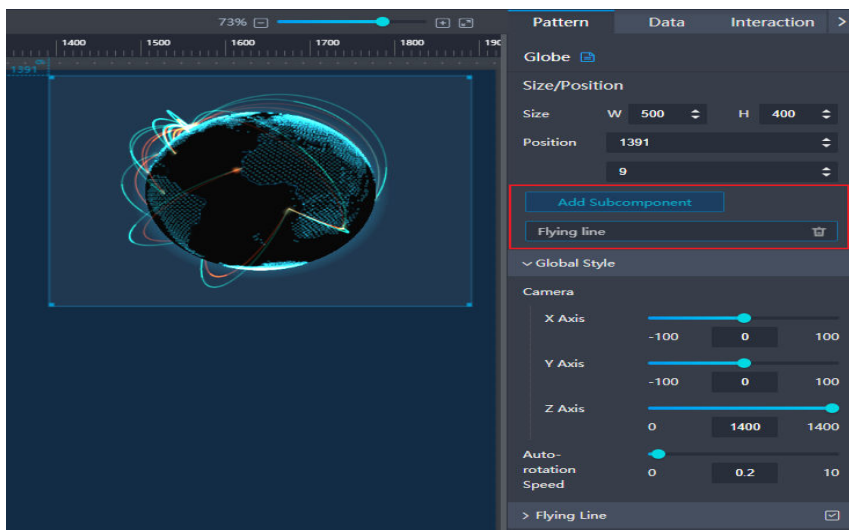


### Pattern

- **Size/Position**

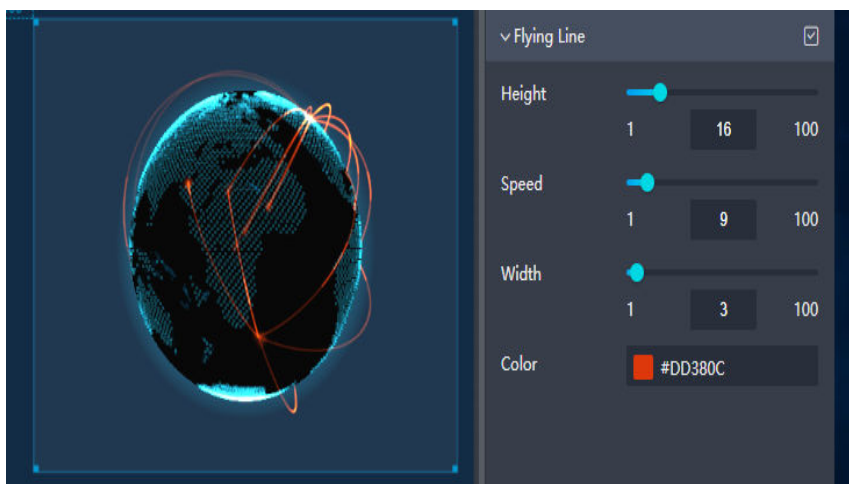
- **Size:** width and height of the component. Unit: pixel.
- **Position:** position where the component is located in the canvas. Unit: pixel.
- **Add Subcomponent**  
The subcomponents of the component include the flying line and heatmap point.
  - **Flying Lines**  
Two geographic locations on the map can be connected by dynamic flying lines. The following describes how to configure the pattern and data of flying lines.
    - i. Click **Add Subcomponent** to add flying lines.

**Figure 13-130** Adding flying lines



- ii. Click **Flying line**. The page for configuring flying lines is displayed. On the **Pattern** tab page, set the height, speed, width, and color of the flying lines.

**Figure 13-131** Configuring flying line pattern of the component



On the **Data** tab page, set the longitudes and latitudes of the start and end points of flying lines.

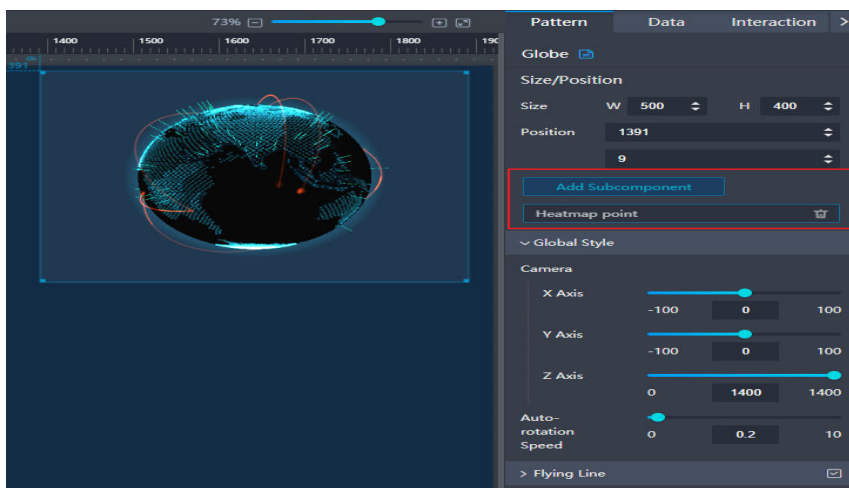
- **Field and Mapping: from** specifies the start point of the flying line, and **to** specifies the end point of the flying line.
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the dynamic data is automatically updated based on the interval.

– **Heatmap point**

Geographical locations on the map can be marked using heatmap points. The following describes how to configure the pattern and data of the heatmap points.

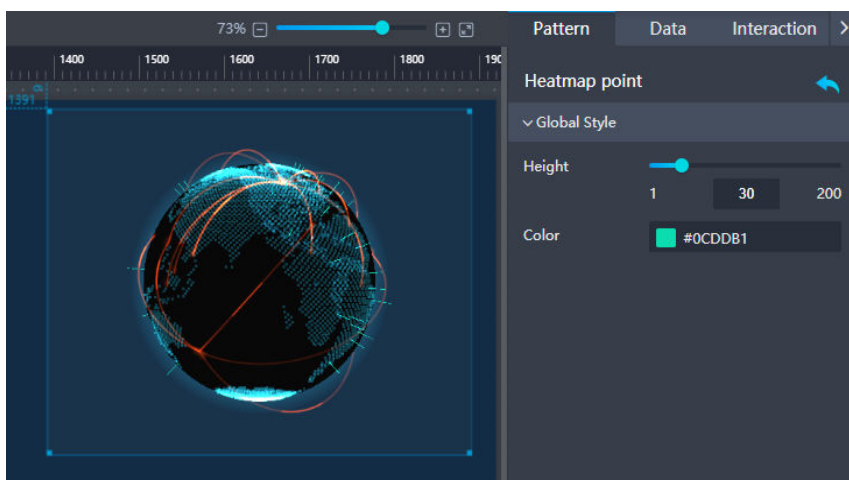
- i. Click **Add Subcomponent** to add heatmap points

**Figure 13-132** Configuring the heatmap points of the component



- ii. Click **Heatmap point** to enter the configuration page.  
On the **Pattern** tab page, configure the height and color of the heatmap points.

**Figure 13-133** Configuring heatmap point style of the component



On the **Data** tab page, configure the latitudes, longitudes, and size of the heatmap points.



- **Field and Mapping:** **lon** specifies the longitude of the heatmap point. **lat** specifies the latitude of the heatmap point. **value** specifies the value of the heatmap point. **Type** specifies the type of the heatmap point.
  - **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the dynamic data is automatically updated based on the interval.
- **Global Style**
    - **Camera:** to set the X axis, Y axis, and Z axis of the camera by dragging .
    - **Auto-Rotation Speed:** to set the auto-rotation speed of the component by dragging .

Figure 13-134 Global style of the component






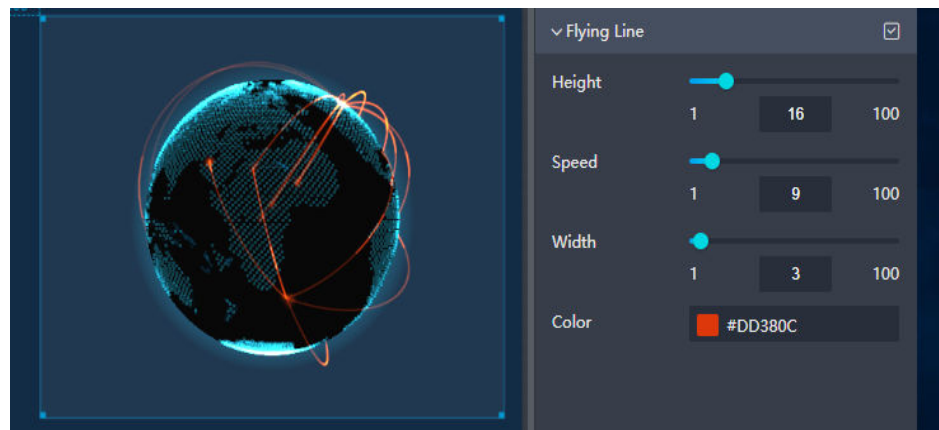
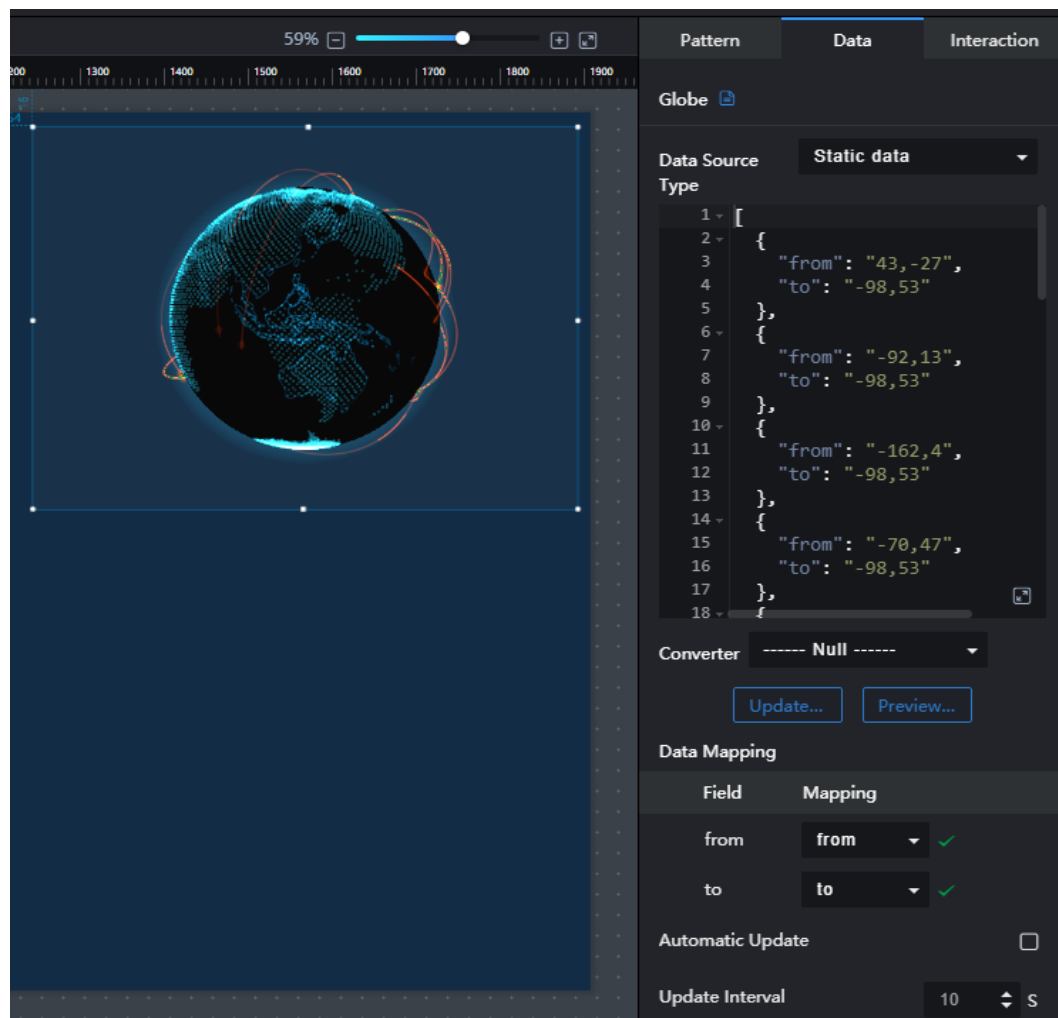
- **Flying Line**
  - **Flying Line:** to show or hide flying lines by clicking  or .
  - **Height:** to set the height of the flying line by entering a value or dragging .
  - **Speed:** to set the speed of the flying line by entering a value or dragging .
  - **Width:** to set the width of the flying line by entering a value or dragging .
  - **Color:** to set the flying line color by clicking the color editor.

Figure 13-135 Flying lines of the component



## Data



- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).

- **from:** the start position of the flying line.
- **to:** the end position of the flying line.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

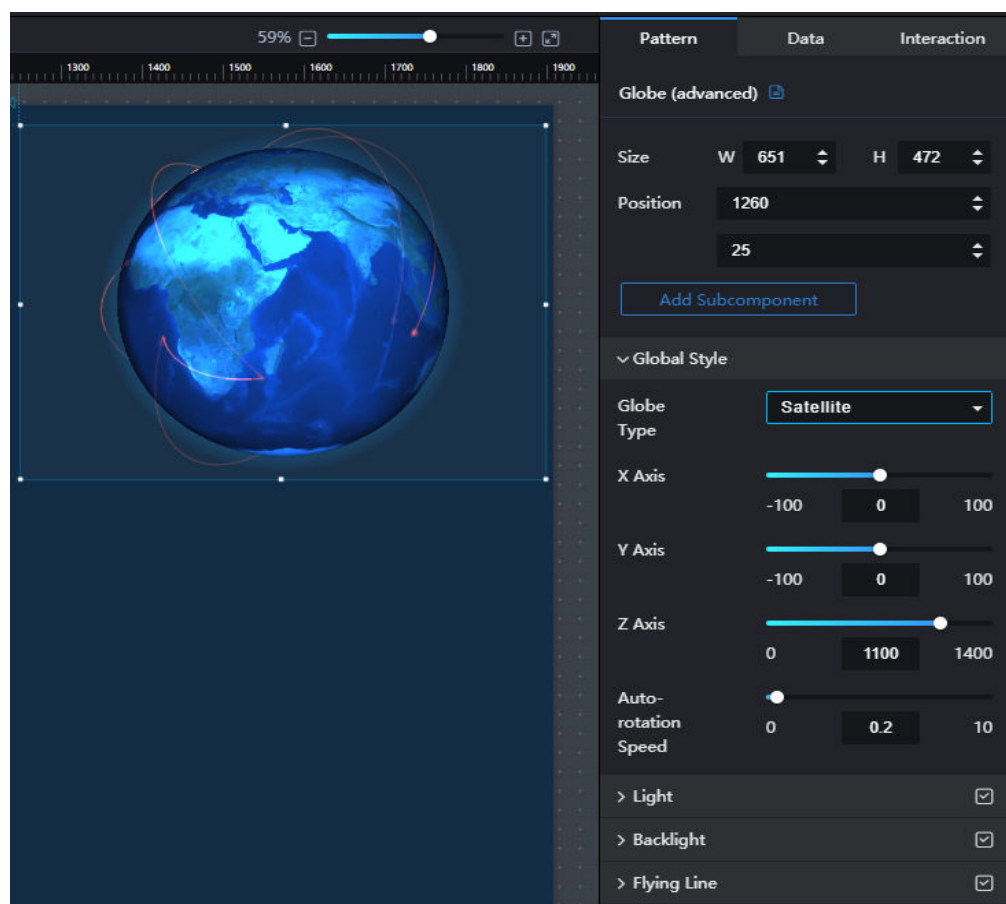
## 13.7.8 Globe (Advanced)

This section describes parameters of a globe (advanced) component.

### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-136 Size and position of the component



- **Add Subcomponent**

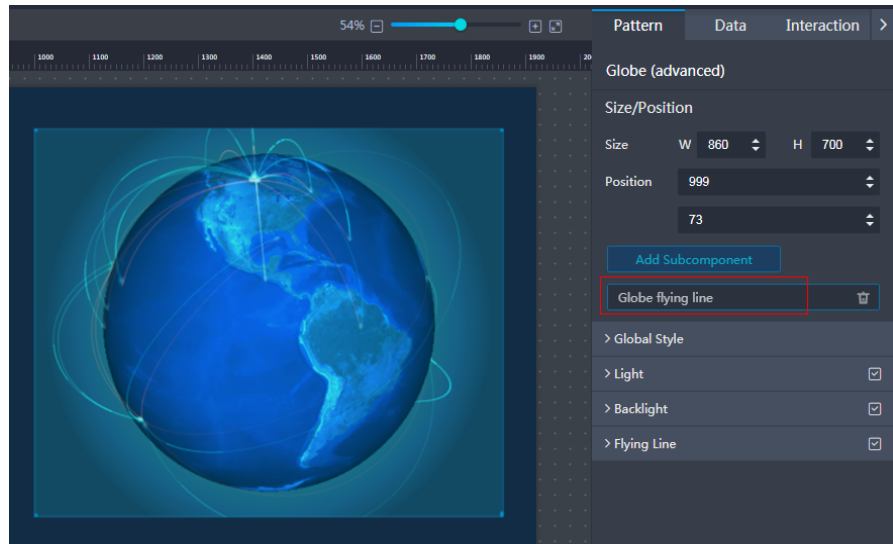
The subcomponents of the component include the flying line and heatmap point.

  - **Flying Lines**

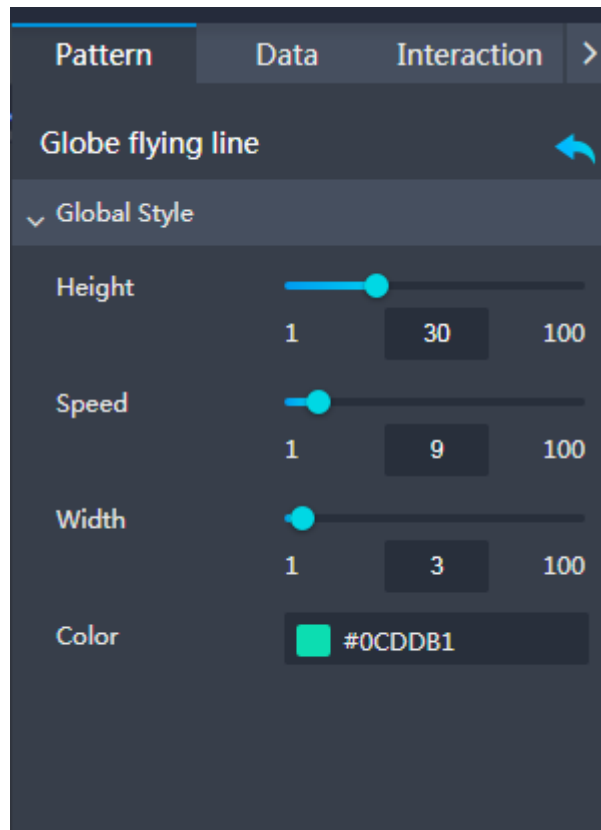
Two geographic locations on the map can be connected by dynamic flying lines. The following describes how to configure the pattern and data of flying lines.

- i. Click **Add Subcomponent** to add flying lines.

**Figure 13-137** Adding flying lines



- ii. Click **Flying line**. The page for configuring flying lines is displayed. On the **Pattern** tab page, set the height, speed, width, and color of the flying lines.

**Figure 13-138** Configuring flying line pattern of the component

On the **Data** tab page, set the longitudes and latitudes of the start and end points of flying lines.

- **Field and Mapping:** **from** specifies the start point of the flying line, and **to** specifies the end point of the flying line.
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the dynamic data is automatically updated based on the interval.

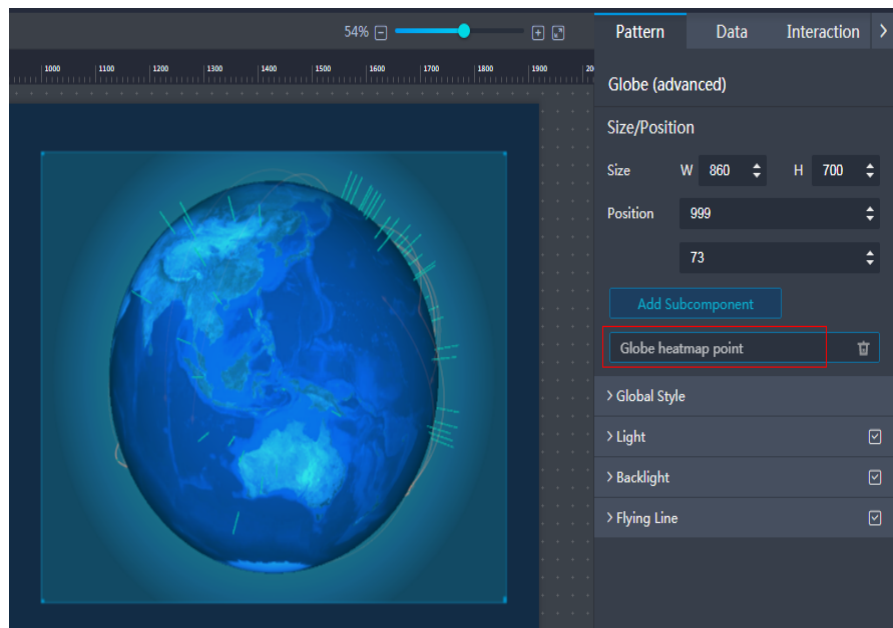
– **Heatmap point**

Geographical locations on the map can be marked using heatmap points. The following describes how to configure the pattern and data of the heatmap points.

- Click **Add Subcomponent** to add heatmap points

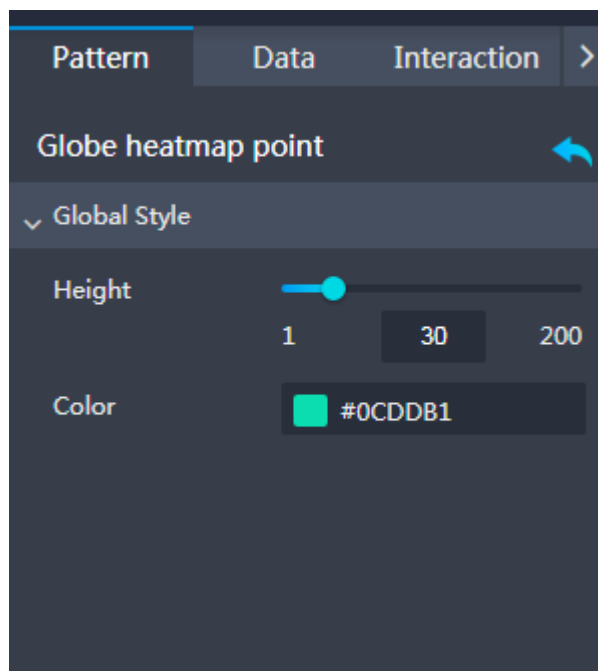


**Figure 13-139** Configuring the heatmap points of the component



















- ii. Click **Heatmap point** to enter the configuration page.  
On the **Pattern** tab page, configure the height and color of the heatmap points.

**Figure 13-140** Configuring heatmap point style of the component



On the **Data** tab page, configure the latitudes, longitudes, and size of the heatmap points.

- **Field and Mapping:** **lon** specifies the longitude of the heatmap point. **lat** specifies the latitude of the heatmap point. **value**

- specifies the value of the heatmap point. **Type** specifies the type of the heatmap point.
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the dynamic data is automatically updated based on the interval.
  - **Global Style**
    - **Globe Type:** to select a globe type from the drop-down list. The value can be **Particle**, **District**, or **Satellite**.
    - **X Axis:** to set the X axis of the globe by entering a value or dragging .
    - **Y Axis:** to set the Y axis of the globe by entering a value or dragging .
    - **Z Axis:** to set the Z axis of the globe by entering a value or dragging .
    - **Auto-Rotation Speed:** to set the auto-rotation speed of the globe by entering a value or dragging . A larger value leads to a faster auto-rotation speed.
  - **Light**
    - **Light:** to show or hide light by clicking  or .
    - **Intensity:** to set the light intensity by entering a value or dragging . A larger value leads to more intense light.
    - **Color:** to set the light color by clicking the color editor.
  - **Backlight**
    - **Backlight:** to show or hide backlight by clicking  or .
    - **Size:** to set the radiation scope of the light by entering a value or dragging . A larger value leads to a larger radiation scope.
    - **Z Axis:** to set the light shadow of the globe by entering a value or dragging . A smaller value leads to a larger light shadow and a larger value leads to a smaller light shadow.
    - **Color:** to set the backlight color by clicking the color editor.
  - **Flying Line**
    - **Flying Line:** to show or hide flying lines by clicking  or .
    - **Height:** to set the height of the flying line by entering a value or dragging . A larger value leads to a higher flying line.
    - **Speed:** to set the speed of the flying line by entering a value or dragging . A larger value leads to a faster flying speed.
    - **Width:** to set the width of the flying line by entering a value or dragging . A larger value leads to a thicker flying line.
    - **Color:** to set the flying line color by clicking the color editor.

## Data

The data configuration of the globe (advanced) map is similar to that of the basic 2D map. For details, see [Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

# 13.8 Media

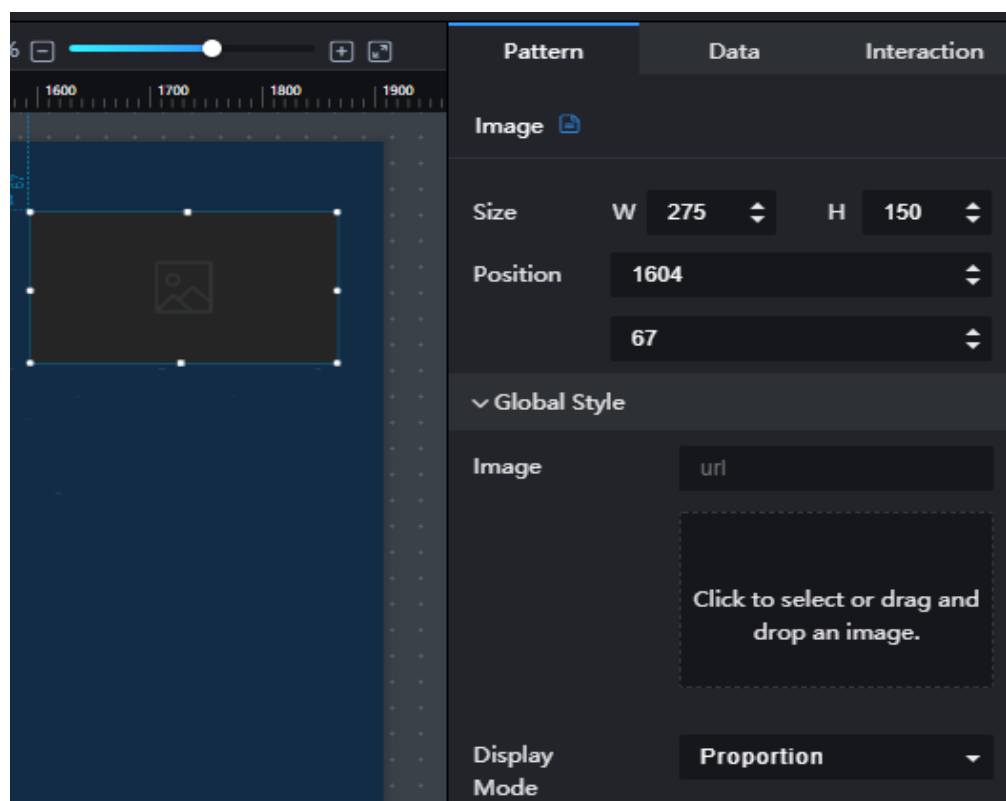
## 13.8.1 Image

This section describes parameters of an image component.

### Pattern



- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

**Figure 13-141** Size and position of an image component



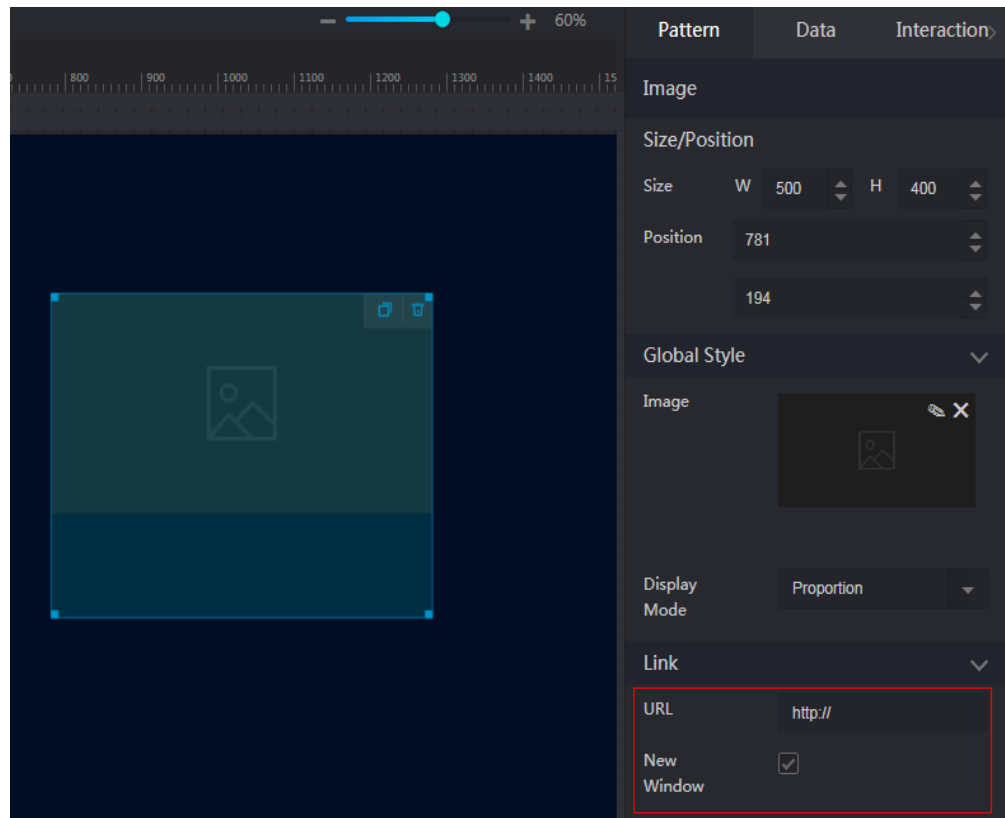
- **Global Style**
  - Image: You can load an image to the screen in one of the following three ways:
    - i. Enter the address of the image in the **url** text box.
    - ii. Click the dotted-line box below **Image** to select an image.

iii. Drag an image to the dotted-line box below **Image**.

After selecting an image, you can edit and delete it. To delete or modify the image by clicking  or  in the upper right corner of the image.

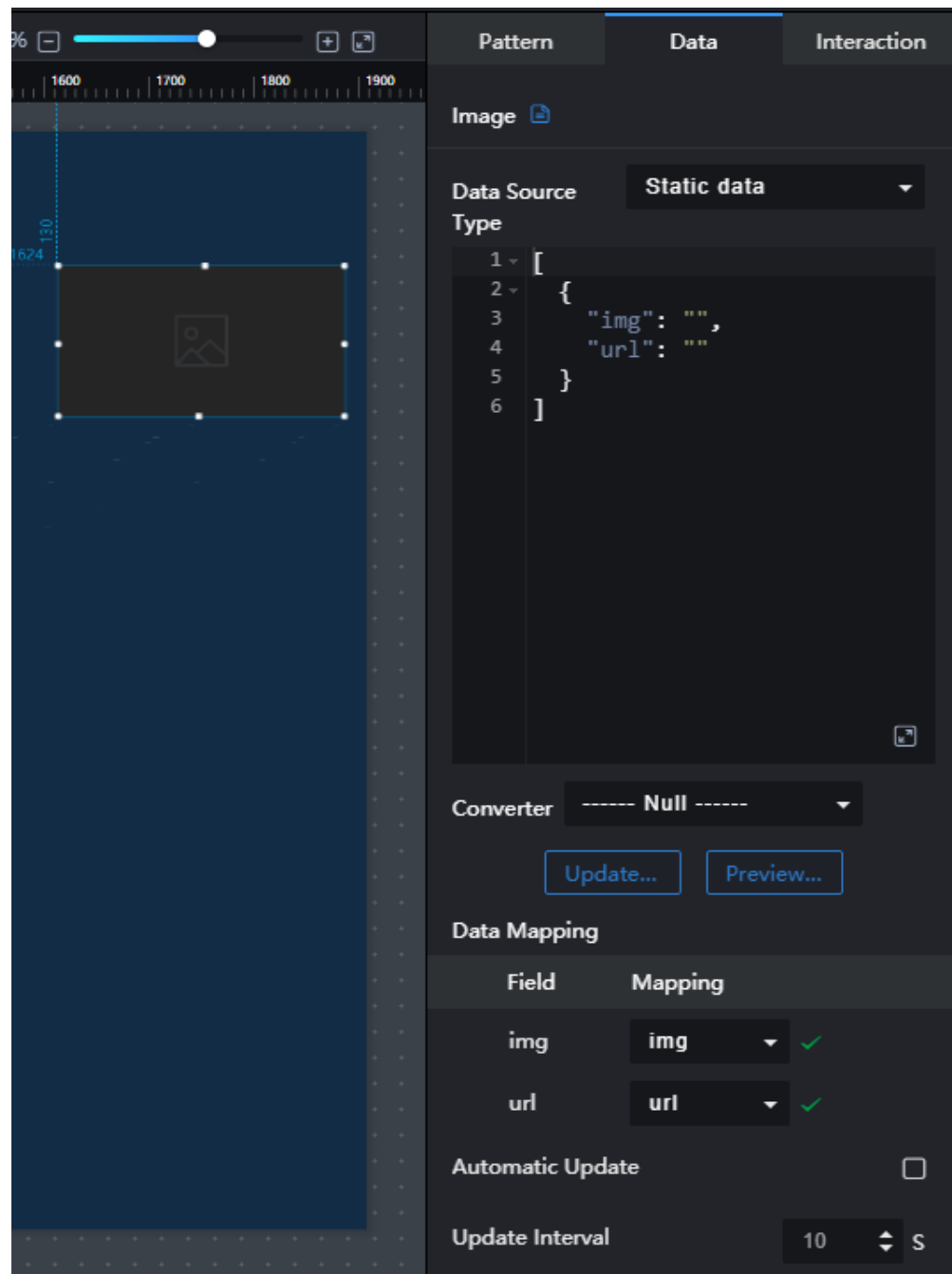
- **Display Mode:** to set the display mode of the image. The value can be **Default**, **Proportion**, **Crop**, or **Stretch**.
- **Link**
  - **URL:** When the URL is set for an image, you can preview or view the image after it is published by clicking on it.
  - **New Window:** to show or hide a new window by clicking  or . If you select **New Window**, you can preview the image or view the published image in a new window.

Figure 13-142 Link of an image component



## Data

Figure 13-143 Image - Data



- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **img:** public network address of the image.
- **url:** URL of the image.

- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

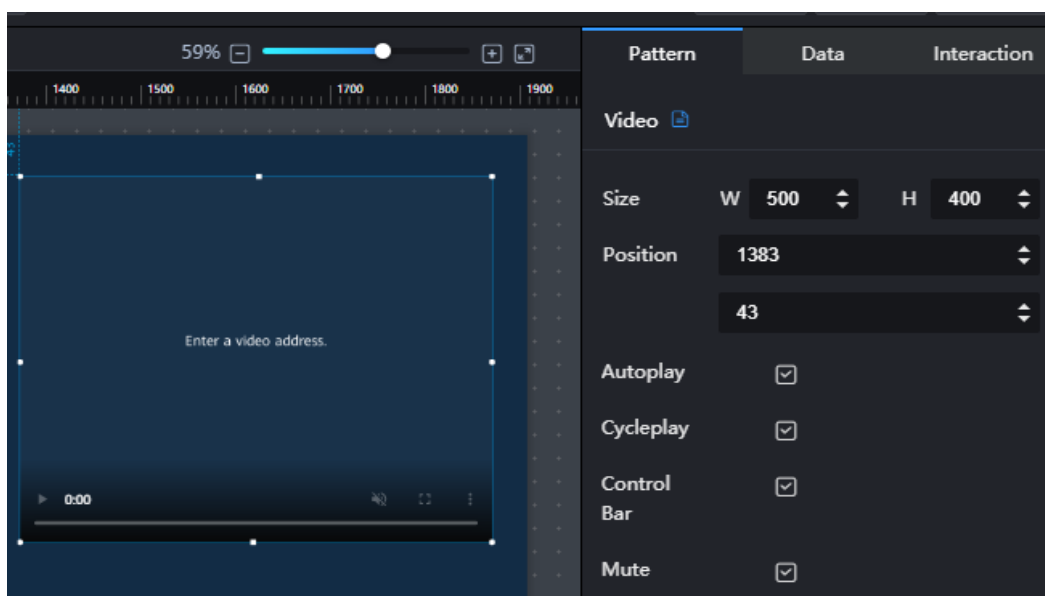
## 13.8.2 Video

This section describes parameters of a video component.

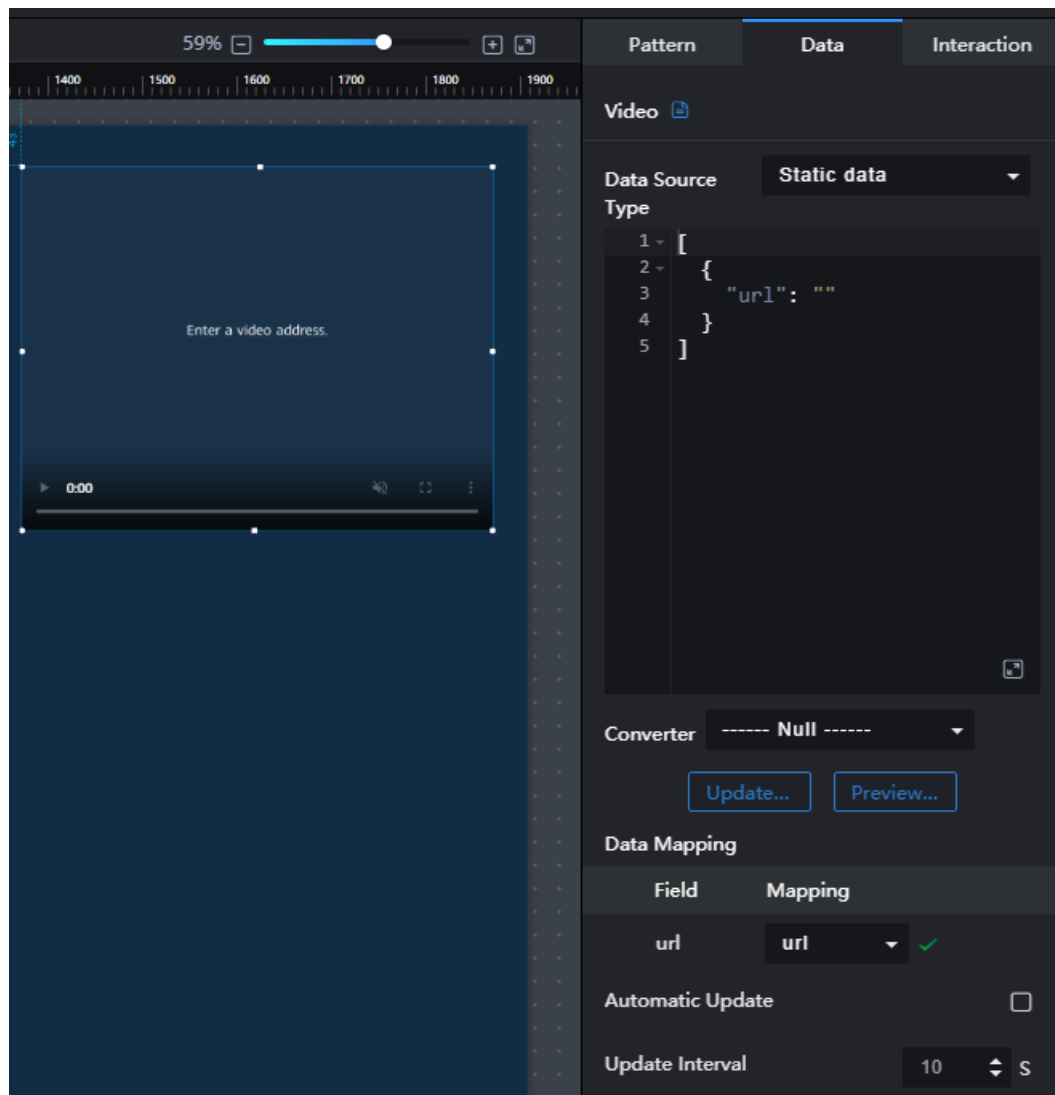
### Pattern

- **Size:** width and height of the component. Unit: pixel.
- **Position:** position where the component is located in the canvas. Unit: pixel.
- **Autoplay:** when **Autoplay** is selected, the video is automatically played.
- **Cycleplay:** when **Cycleplay** is selected, the video is played cyclically.
- **Control Bar:** when **Control Bar** is selected, the control bar is displayed during video playout.
- **Mute:** If this option is selected, the video is muted.

Figure 13-144 Video



## Data



- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **url:** Access address of the video. The value must end with mp4, for example, [http://xxx.mp4](#) (xxx indicates the video URL).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

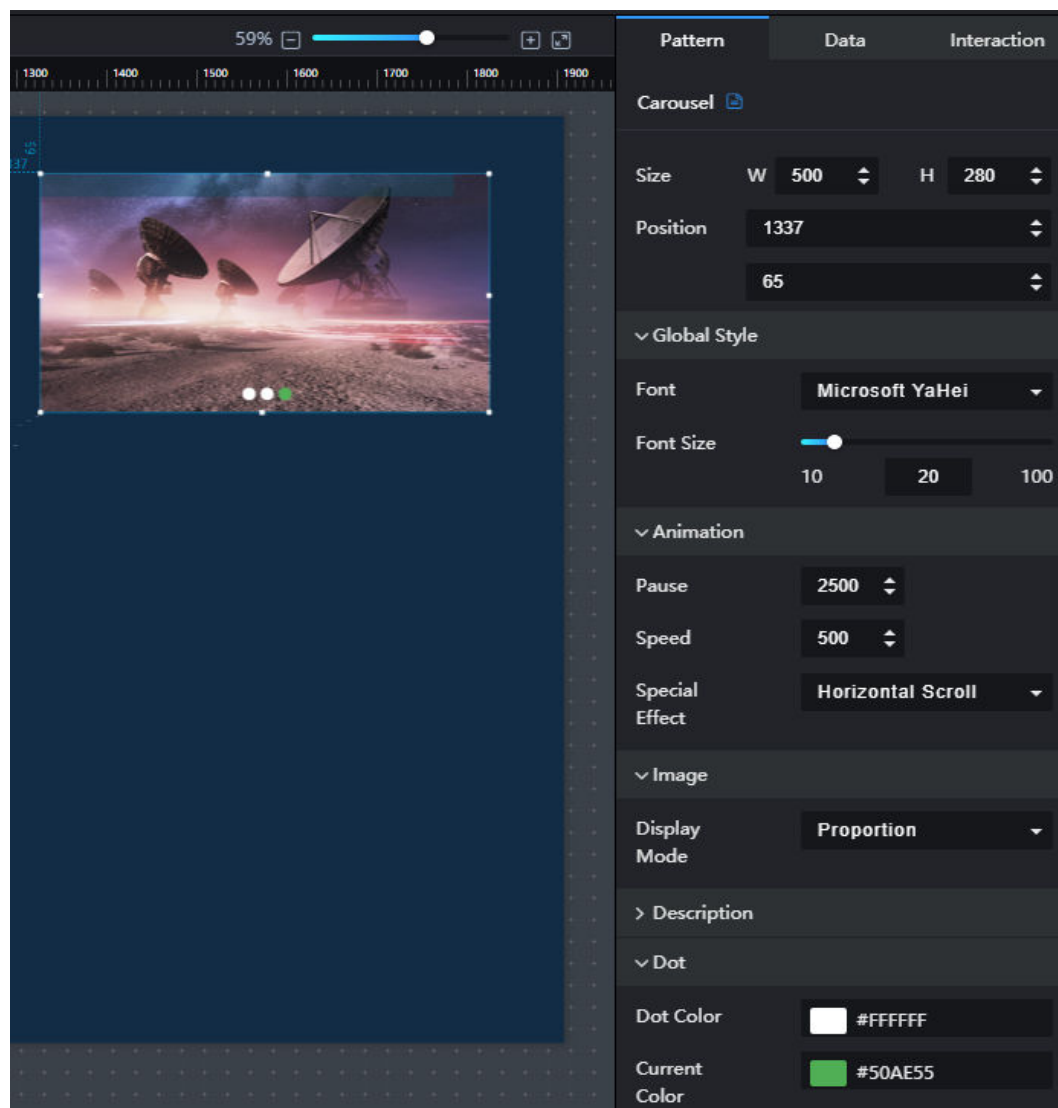
For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.8.3 Carousel Chart

This section describes parameters of a carousel chart.

### Pattern

Figure 13-145 Carousel chart



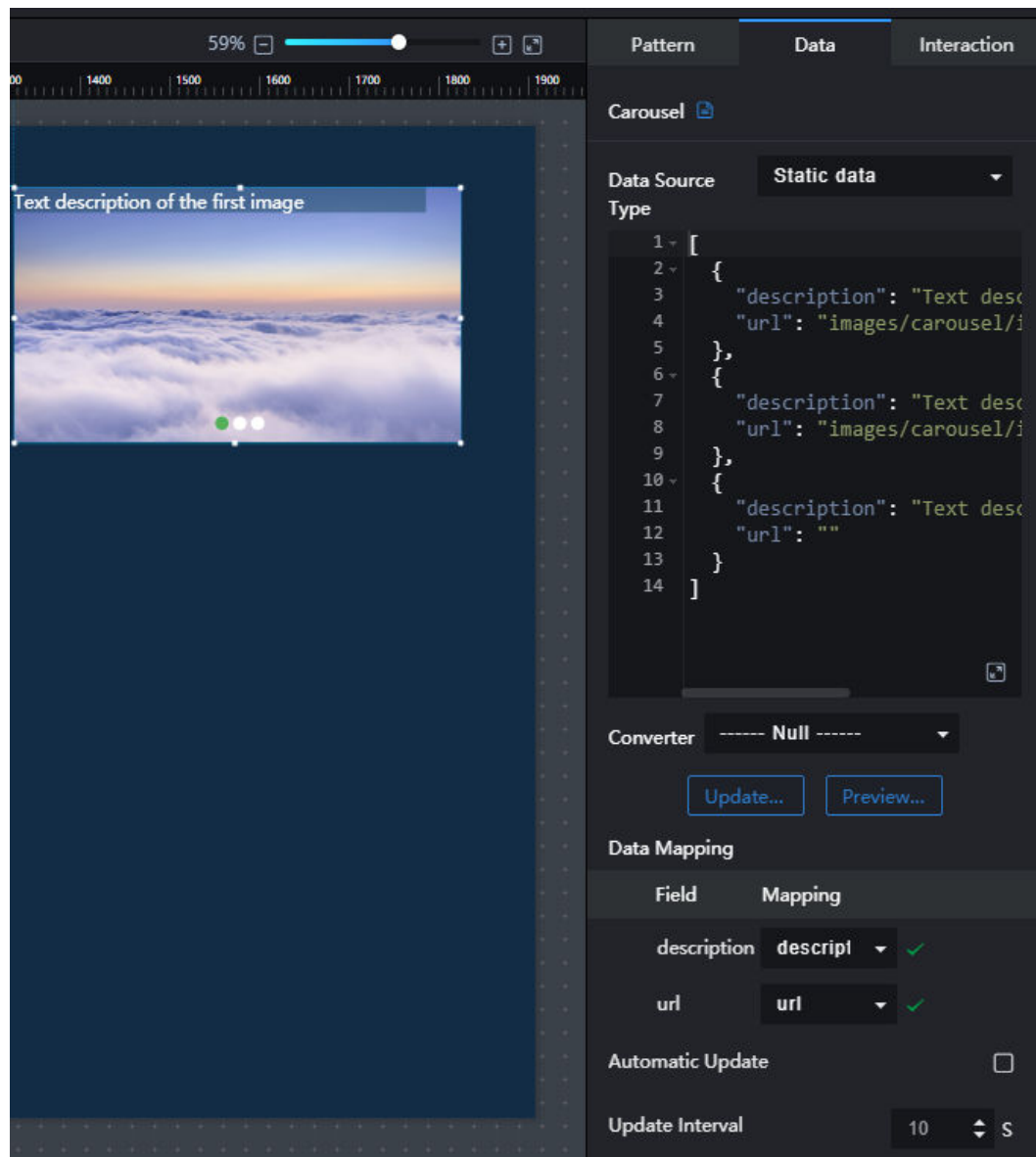
- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Global Style**

In **Global Style**, you can set the font and font size of an image title.
- **Animation**
  - **Pause:** image pause duration.



- **Speed:** image switch speed.
- **Special Effect:** image switch effect. The value can be **Horizontal scrolling** or **Vertical scrolling**.
- **Image**  
You can set **Display Mode** of an image to **Default**, **Proportion**, **Crop**, or **Stretch**.
- **Description**
  - **Background Color:** background color of the image title.
  - **Font Color:** font color of the image title.
  - **Font Width:** font width of the image title.
  - **Length (%):** length of the image title.
  - **Width (%):** width of the image title.
  - **Top Margin (px):** spacing between the image title and the upper edge of the image.
  - **Left Margin (px):** spacing between the image title and the left edge of the image.
  - **Alignment:** alignment mode of the image title. The value can be **Align center**, **Align left**, or **Align right**.
- **Dot**
  - **Dot Color:** color of the dot in the lower part of the image that will be displayed.
  - **Current Color:** color of the dot in the lower part of the image that is currently displayed.

## Data



The example data in the preceding figure is as follows:

```
[
  {
    "description": "Description of the first image",
    "url": "images/carousel/img1.png"
  },
  {
    "description": "Description of the second image",
    "url": "images/carousel/img2.png"
  },
  {
    "description": "Description of the third image",
    "url": ""
  }
]
```

- **description:** description of an image.
- **url:** image URL address. Image addresses in the OBS bucket are supported. The public read policy must be set for images in the OBS bucket.

- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

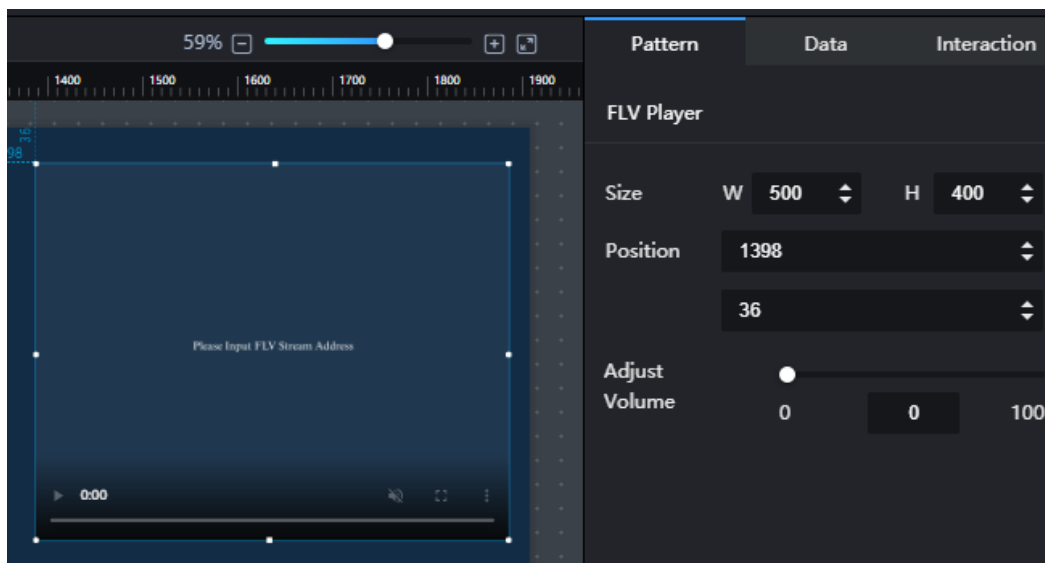
## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.8.4 FLV Stream Player

This section describes parameters of an FLV stream player.

Figure 13-146 FLV stream player

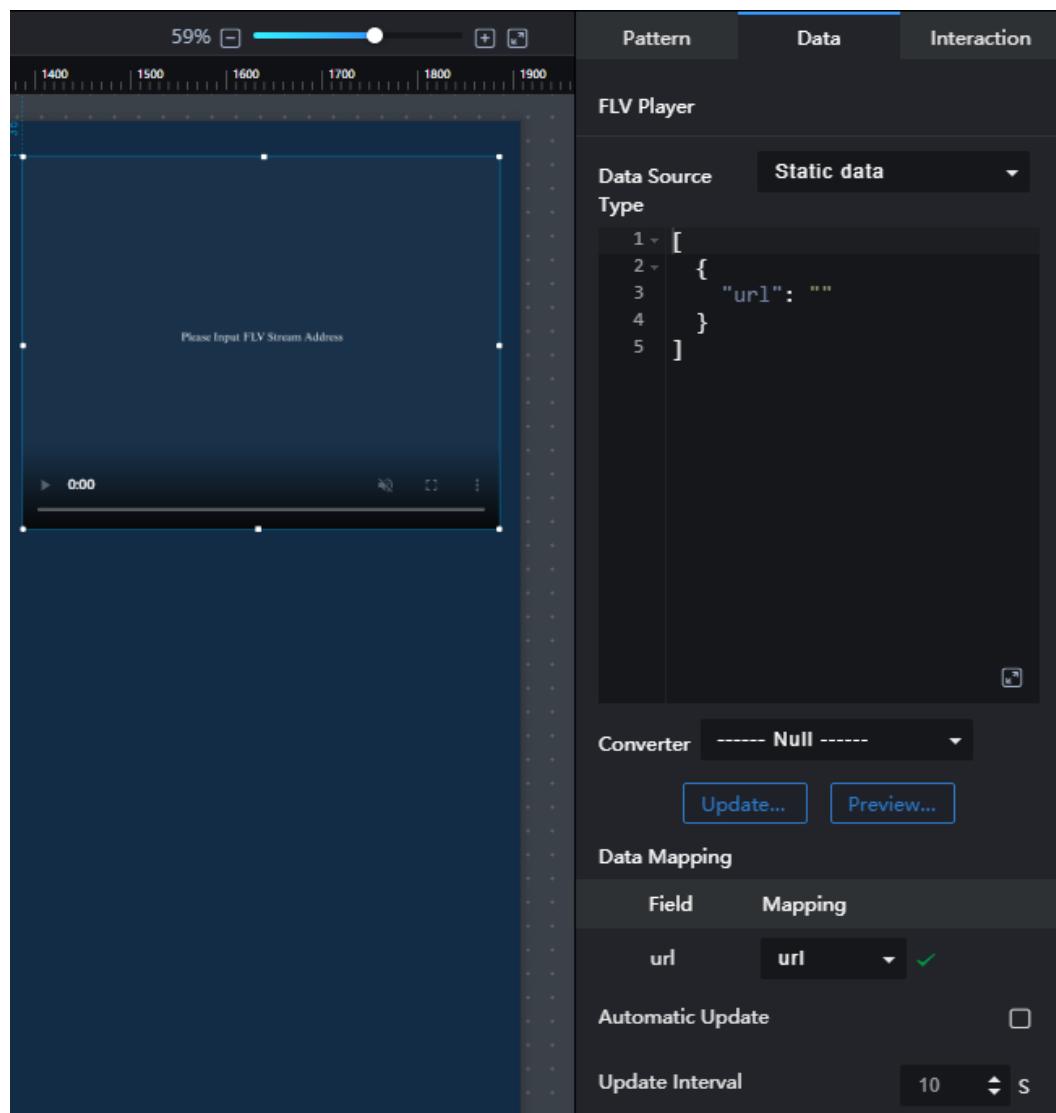


## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Adjust Volume:** to adjust the video volume.

## Data

Figure 13-147 FLV video stream player - Data



- **url:** public network address of the FLV video stream in the format of **https://domain name/directory/file name.flv**.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

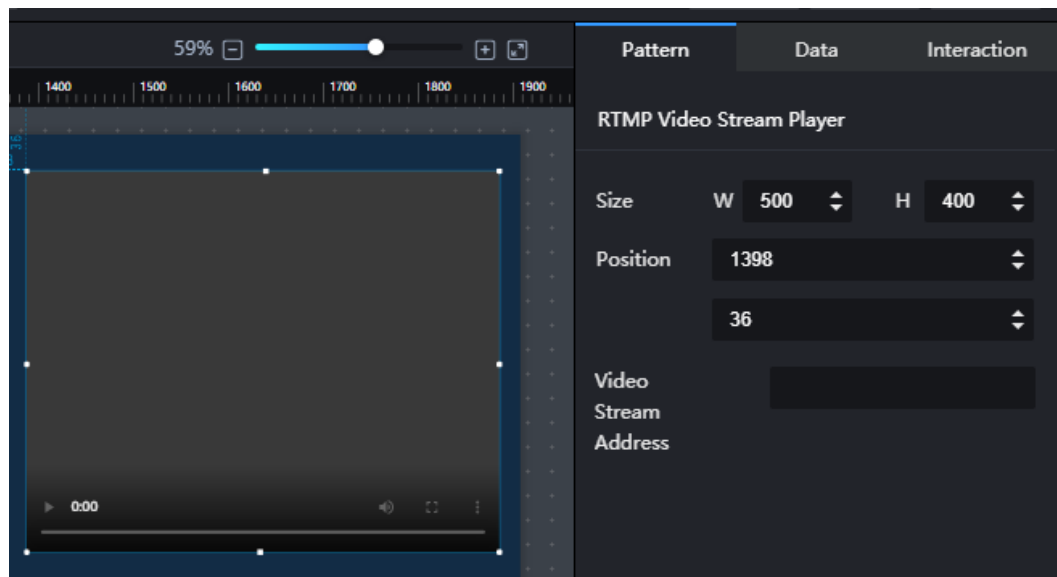
## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.8.5 RTMP Video Stream Player

This section describes the configuration items of the RTMP video stream player component.

Figure 13-148 RTMP video stream player

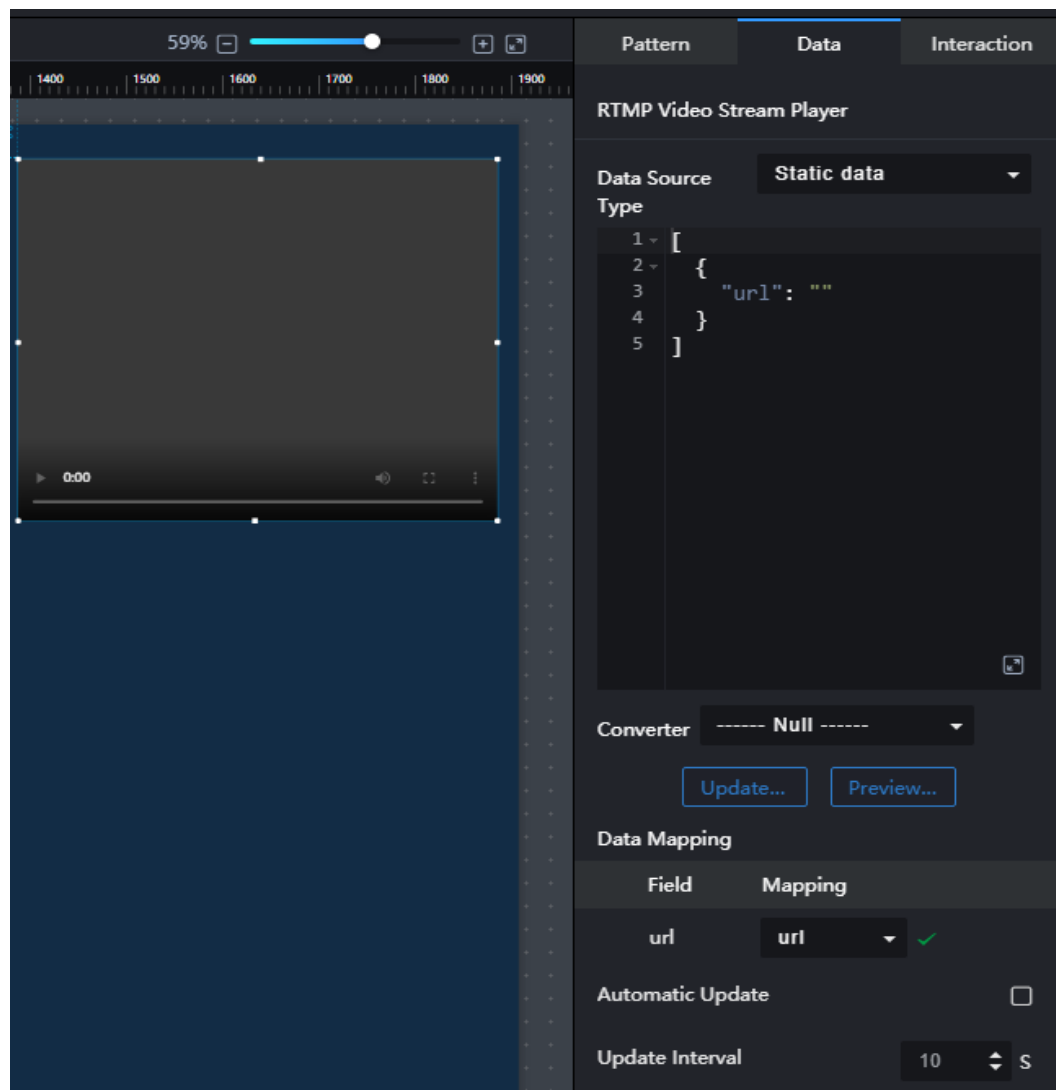


## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.
- **Video Stream Address:** public network address of the video stream.

## Data

Figure 13-149 RTMP video stream player - Data



- **url**: public network address of the video stream.
- **Data Source Type**: to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter**: Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result**: Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

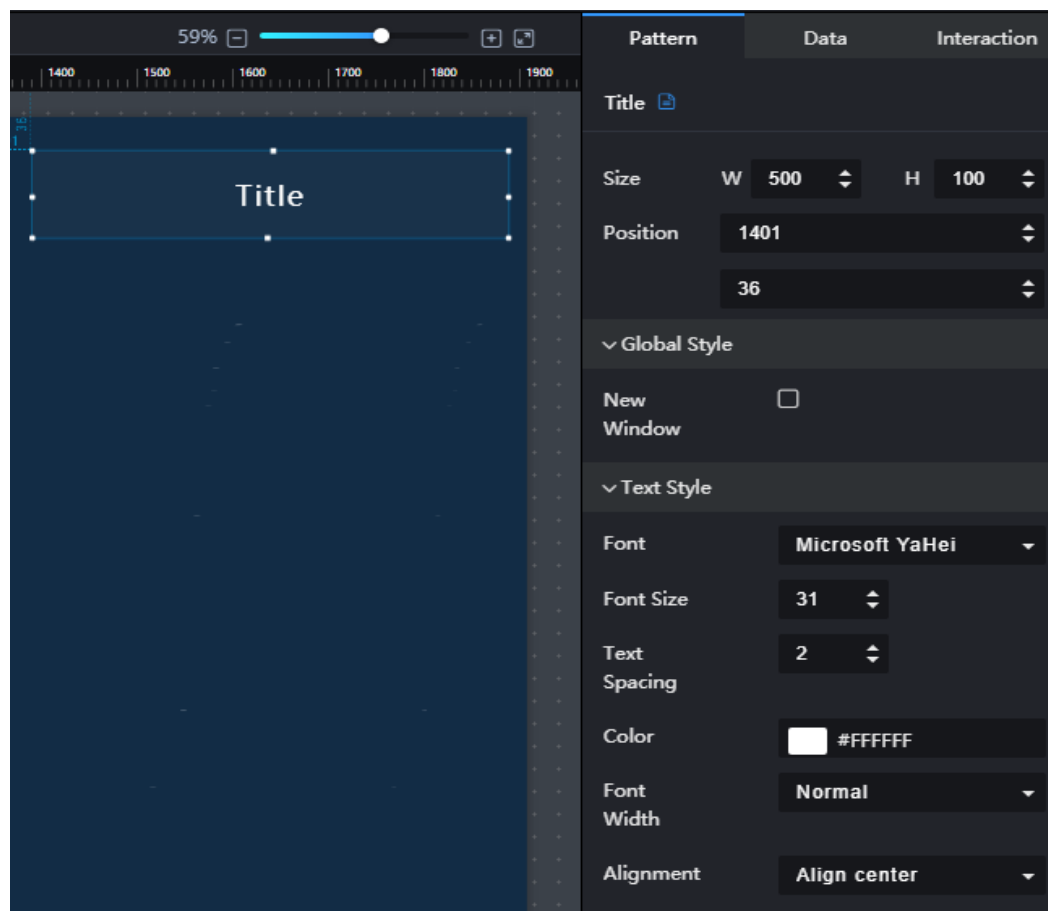
For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

# 13.9 Text

## 13.9.1 Title

This section describes parameters of a title component.

Figure 13-150 Title



### Pattern

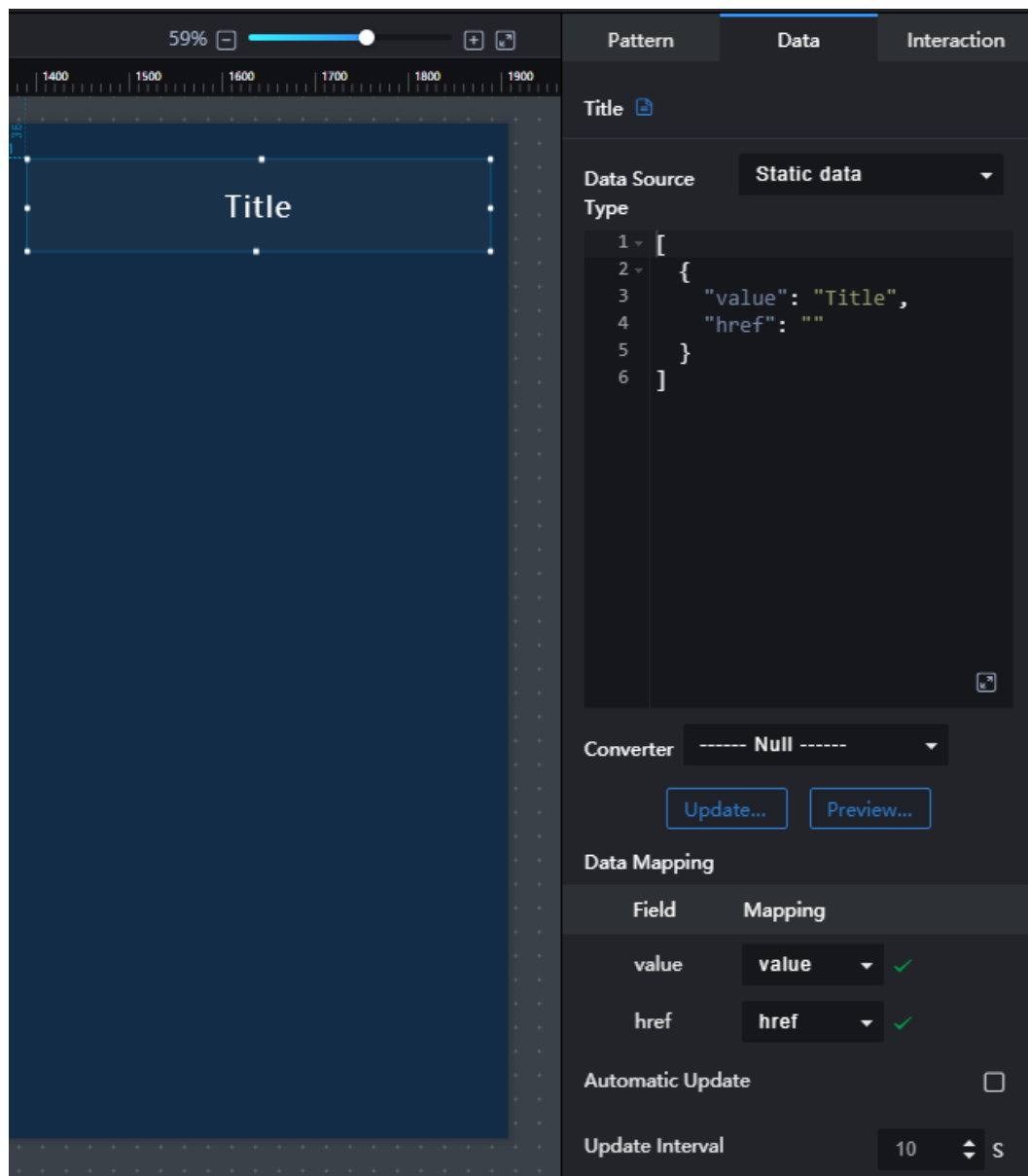
- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

- **Global Style**

**New Window:** to show or hide a new window by clicking  or . When **New Window** is selected and href is configured on the **Data** tab page, you can open a new window by clicking the title component.

- **Text Style**
  - **Font:** font of the title.
  - **Font Size:** font size of the title.
  - **Text Spacing:** spacing of the text in the title.
  - **Color:** font color of the title.
  - **Font Width:** font width of the title.
  - **Alignment:** alignment mode of the title. The value can be **Align center**, **Left**, or **Right**.

## Data



The example data in the preceding figure is as follows:

```
[  
  {  
    "value": "Title",
```



```
"href": ""  
}  
]
```

- **value**: text displayed on the previewed or published screen.
- **href**: text link address. When previewing or publishing a screen, you can click **value** to go to the corresponding link address.
- **Data Source Type**: to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter**: Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result**: Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

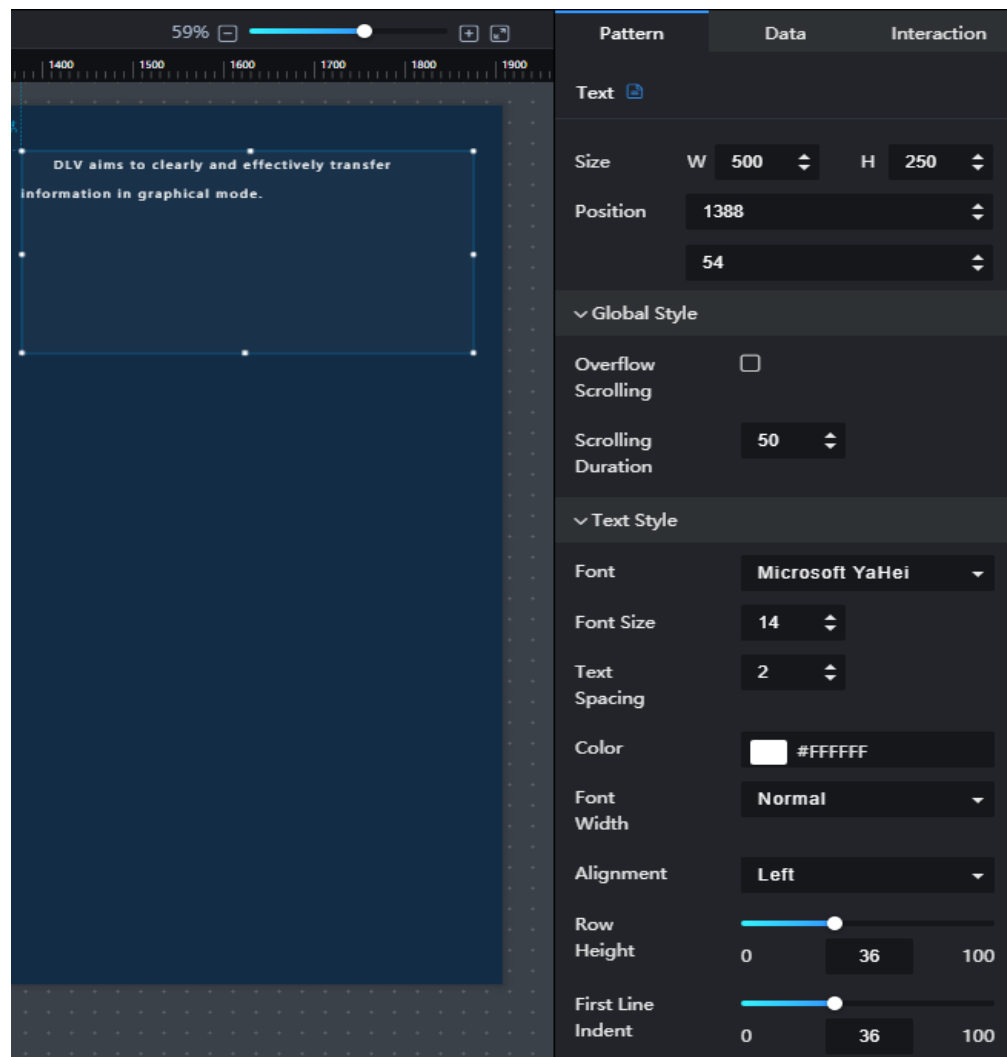
## 13.9.2 Text

This section describes parameters of a text component.


### Pattern

- **Size/Position**
  - **Size**: width and height of the component. Unit: pixel.
  - **Position**: position where the component is located in the canvas. Unit: pixel.

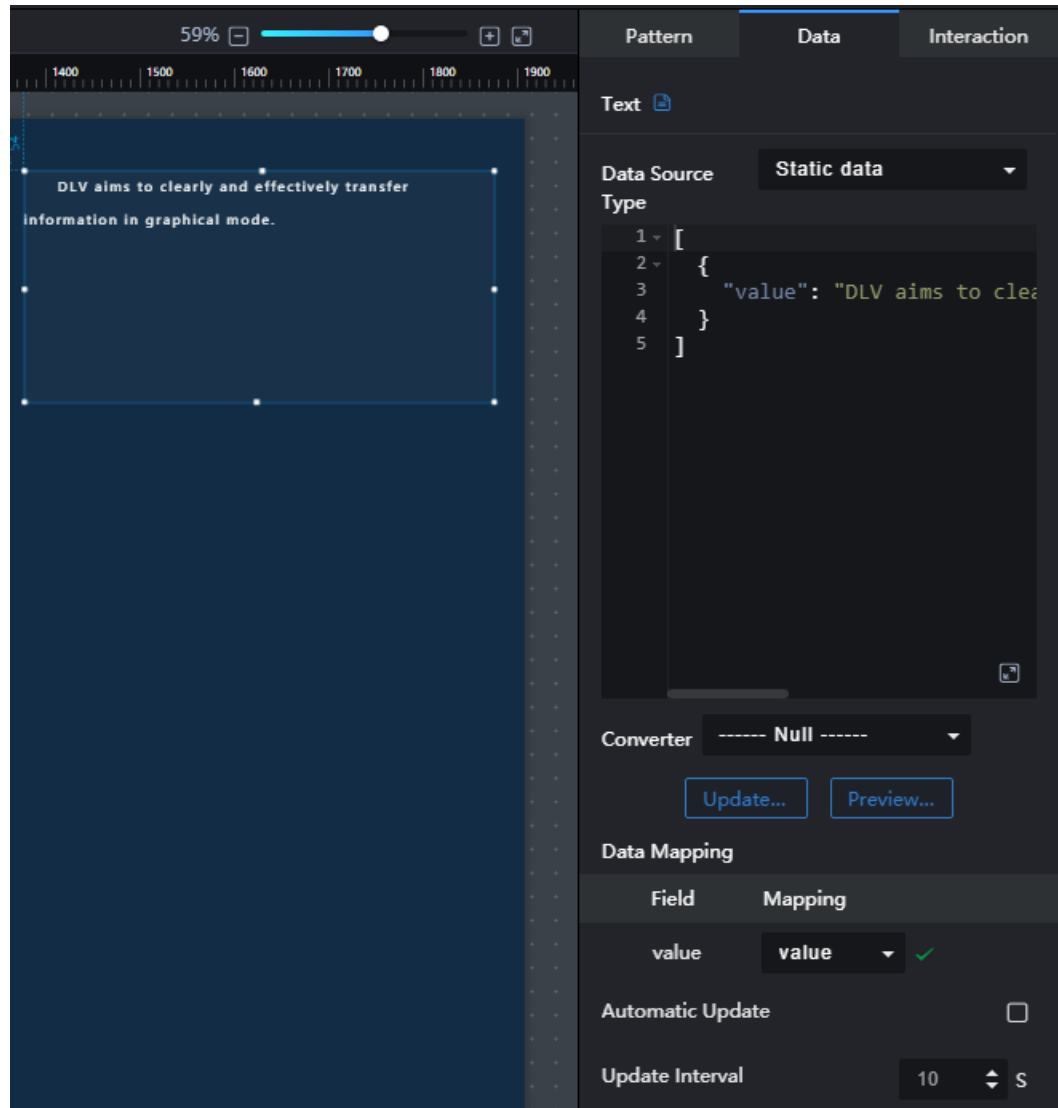
Figure 13-151 Text



- **Global Style**
  - **Overflow Scrolling:** if you select **Overflow Scrolling**, the system plays the text in rotation if the text overflows.
  - **Scrolling Duration:** to set the text scrolling duration by entering a value or clicking . **Scrolling Duration** is valid only when **Overflow Scrolling** is selected.
- **Text Style**
  - **Font:** font of the text.
  - **Font Size:** font size of the text.
  - **Text Spacing:** spacing of the content in the text.
  - **Color:** font color of the text.
  - **Font Width:** font width of the text component.
  - **Alignment:** alignment mode of the text. The value can be **Align center**, **Left**, or **Right**.
  - **Row Height:** to adjust the spacing between lines in the text by entering a value or dragging .

- **First Line Indent:** to adjust the first line indent of the text by entering a value or dragging .

## Data



- **value:** text displayed on the screen.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

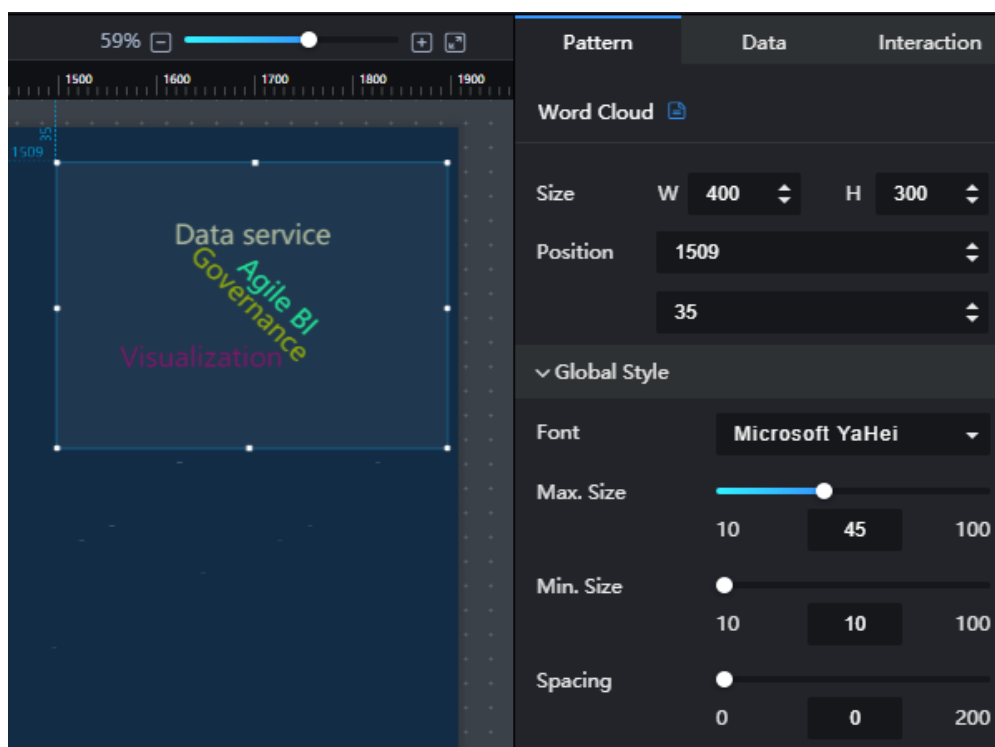
### 13.9.3 Word Cloud

This section describes parameters of a world cloud component.

#### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-152 Word cloud



- **Global Style**
  - **Font:** font of the component text.
  - **Max. Size:** to set the maximum font size of the component text by entering a value or dragging . It defines the maximum text size with the largest value in the data.
  - **Min. Size:** to set the minimum font size of the component text by entering a value or dragging . It defines the text size with the smallest value in the data.
  - **Spacing:** to adjust the spacing between lines in the text by entering a value or dragging .

## Data

- name: text content displayed on the screen.
- value: weight of a component. A larger value indicates a larger font size.
- **Data Source Type**: to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter**: Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result**: Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

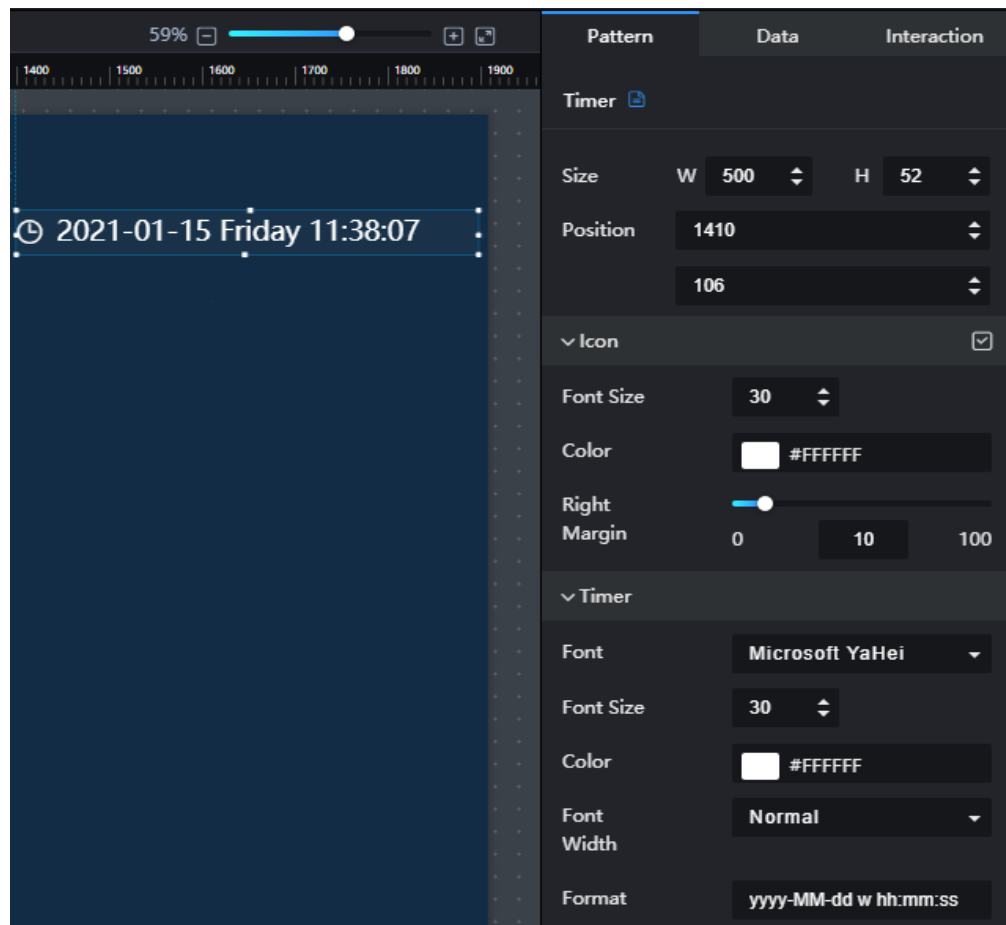
### 13.9.4 Timer

This section describes parameters of a timer component.

## Pattern

- **Size/Position**
  - **Size**: width and height of the component. Unit: pixel.
  - **Position**: position where the component is located in the canvas. Unit: pixel.

Figure 13-153 Timer



- **Icon Style**
  - **Font Size:** Size of the icon.
  - **Color:** color of the icon.
  - **Right Margin:** to adjust the margin between the icon and the left side of the text.
- **Timer**
  - **Font:** font of the component text.
  - **Font Size:** font size of the component text.
  - **Color:** to set the font color of the component text by clicking the color editor.
  - **Font Width:** to select a font width from the drop-down list.
  - **Format:** time display format.

## Data

This component does not have data events.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

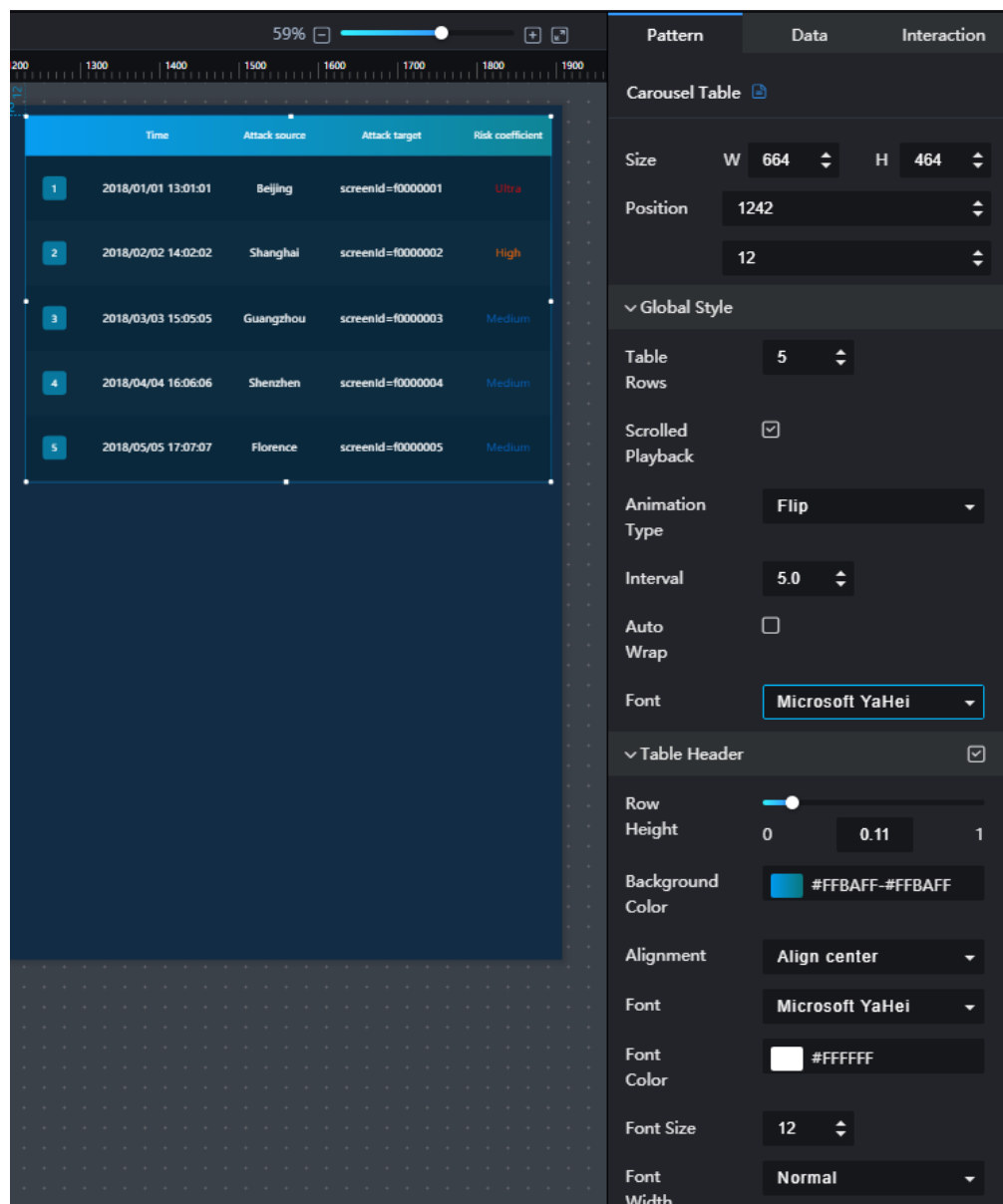
## 13.9.5 Carousel Table


This section describes parameters of a carousel table component.











### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-154 Carousel table



- **Global Style**
  - **Table Rows:** to set the number of rows to be displayed in the table by entering a value or clicking .

- **Rotate:** if **Rotate** is selected, the content in the table is played in rotation. If this parameter is not selected, the table content is not played in rotation. If the number of rows in the table exceeds the specified number, a scroll bar is displayed. You can slide the scroll bar to view the table data.
- **Animation Type:** to select an animation type from the drop-down list. The value can be **Flip**, **Marquee**, or **Beat**.
- **Interval:** to set the interval for rotating the content in the table by entering a value or clicking .
- **Automatic Line Feed:** If this option is selected, the content in the cell is automatically fed. If this parameter is not selected, the cell content is not automatically wrapped. If the content is too long, only part of the content is displayed.
- **Font:** to set the font style of the table text from the drop-down list.
- **Table Header**
  - **Table Header:** to show or hide the table header by clicking  or .
  - **Row Height:** to set the row height of the table header by entering a value or dragging .
  - **Background Color:** to set the background color of the table header by clicking the color editor.
  - **Alignment:** alignment mode of the text in the table header. The value can be **Align center**, **Left**, or **Right**.
  - **Font:** to select a font style from the drop-down list.
  - **Font Color:** to set the font color by clicking the color editor.
  - **Font Size:** to select a font size from the drop-down list.
  - **Font Width:** to select a font width from the drop-down list.
- **Row Settings**
  - **Odd-numbered Row Background:** to set the background color of the odd-numbered rows in the table by clicking the color editor.
  - **Even-numbered Row Background:** to set the background color of the even-numbered rows in the table by clicking the color editor.
- **SN**
  - **SN:** to show or hide the SN by clicking  or .
  - **Background Color:** to set the background color of the SN by clicking the color editor.
  - **Round Corner:** to set the round corner angle of the SN icon by entering a value or clicking .
  - **Column Width Ratio (%):** to set the width of the SN column by entering a value or dragging .
  - **Radius:** to set the radius size of the SN icon by entering a value or dragging .
  - **Font Color:** to set the font color of the SN by clicking the color editor.
  - **Font Size:** to set the font size of the SN by entering a value or clicking .



- **Font Width:** to set the font width of the SN.

## Data

For details about how to configure component data, see [Configuring Component Data](#).

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

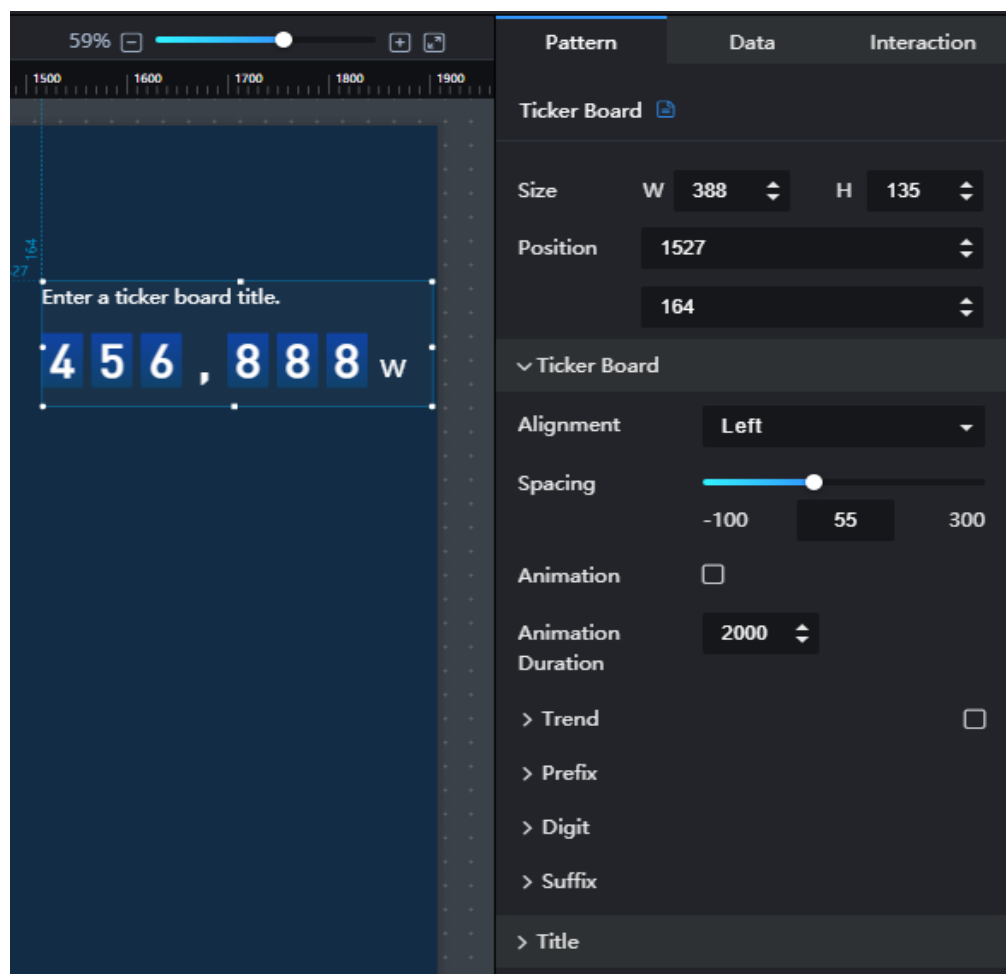
## 13.9.6 Ticker Board




This section describes parameters of a ticker board.

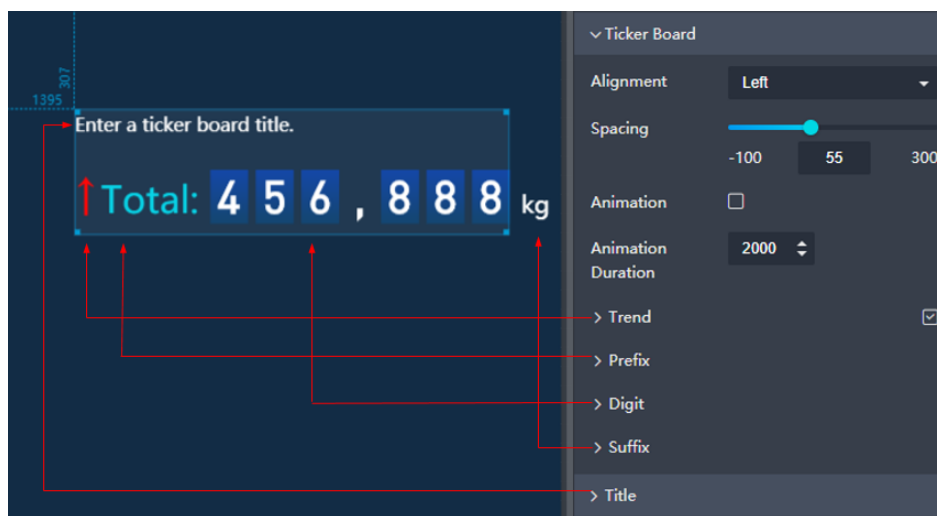
### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-155 Ticker board



- **Ticker Board**
  - **Alignment:** alignment mode of the ticker board. The value can be **Align center**, **Left**, or **Right**.
  - **Spacing:** distance between the digits and the upper edge of the component.
  - **Animation:** After this function is enabled, the number on the ticker board changes dynamically as the data changes.
  - **Animation Duration:** set the duration for playing animation once by entering a value or clicking . The unit is milliseconds.
  - **Trend:** to show or hide **Trend** by clicking  or . The value can be **Up** or **Down**. When the value in the subsequent validator is greater than the current value, the value increases. When the value in the subsequent flier is smaller than the current value, the trend is reduced. The trend icon is customizable.
  - **Prefix:** to set the prefix content, font, font size, font color, and font width.
  - **Digit:** to set the digit style, including the decimal control, font, size, color, width, spacing, horizontal padding, vertical padding, and background color.
  - **Suffix:** to set the suffix content, font, size, color, and width.

**Figure 13-156** Ticker board

- **Title**
  - **Alignment:** title alignment mode of the title. The value can be **Top center**, **Top left**, **Top right**, **Bottom center**, **Bottom left**, or **Bottom right**.
  - **Title Name:** title name.
  - **Font:** font of the title.
  - **Font Size:** font size of the title.
  - **Color:** font color of the title.
  - **Font Width:** font width of the title.

## Data

- name: name of the component title.
  - If you set a **name**, the name that you have set is displayed.
  - If you do not set a **name**, **Title Name** under **Title** on the **Pattern** tab page is displayed.
  - If you do not set **Title Name**, no title is displayed.
- value: value displayed on a component.
- **Data Source Type**: to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter**: Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result**: Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

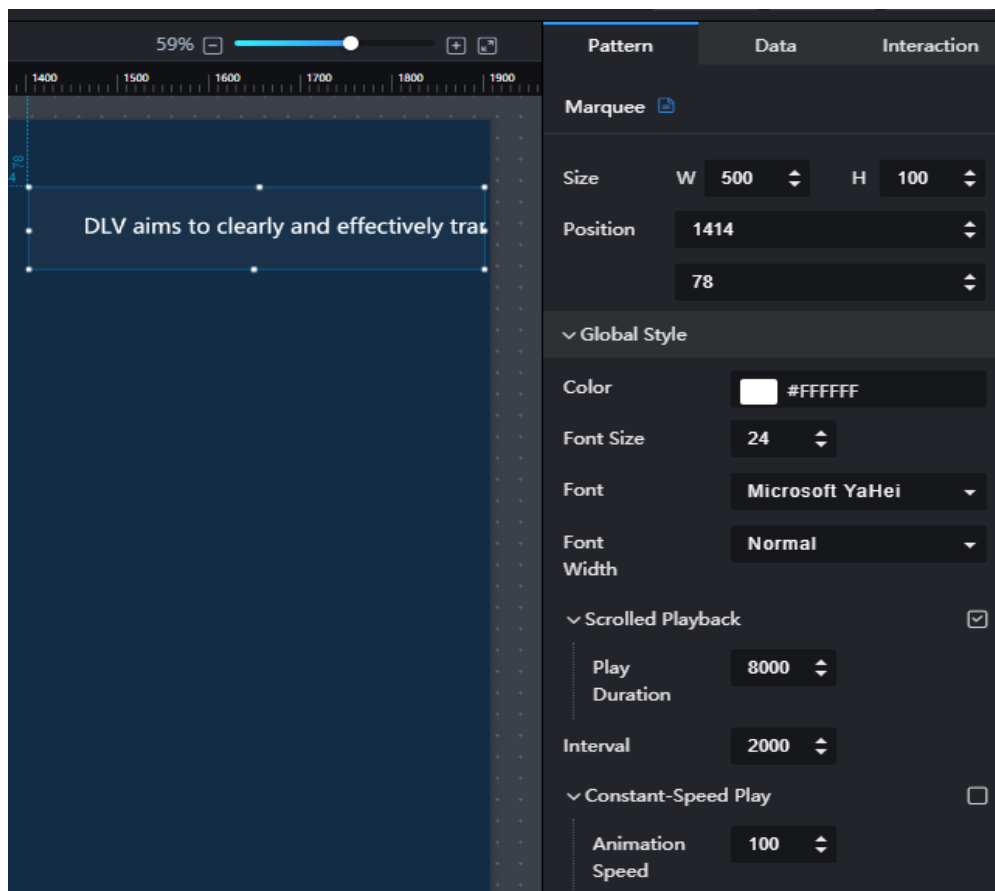
## 13.9.7 Marquee

This section describes components of a marquee component.

### Pattern

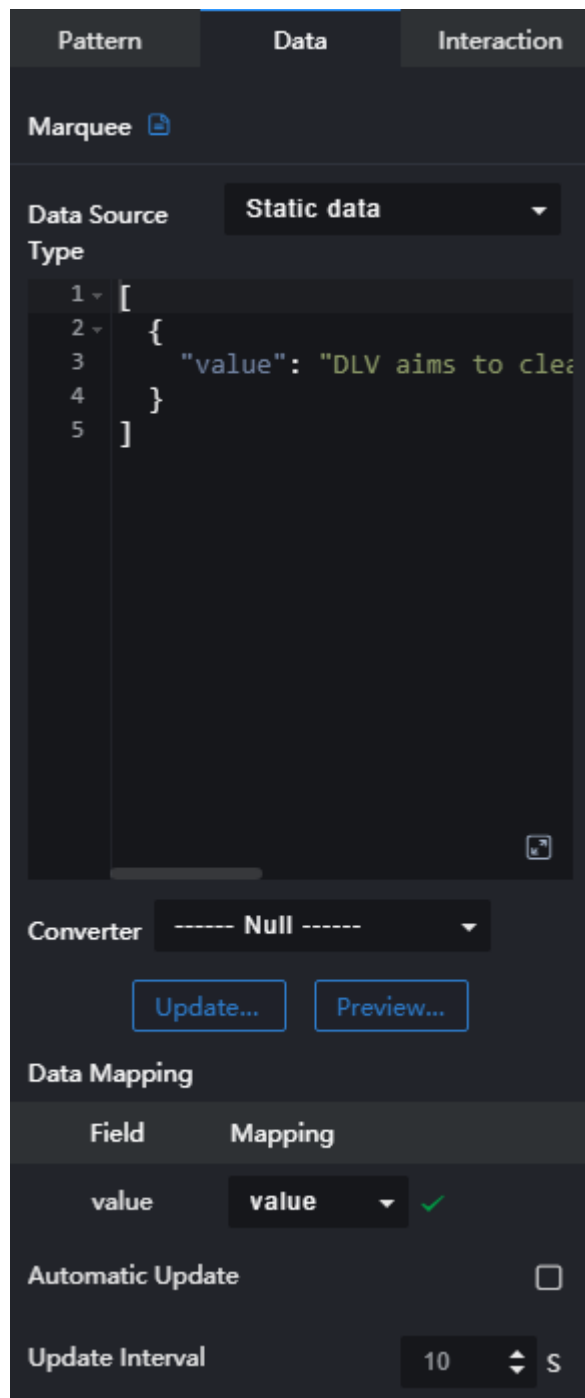
- **Size/Position**
  - **Size**: width and height of the component. Unit: pixel.
  - **Position**: position where the component is located in the canvas. Unit: pixel.

Figure 13-157 Marquee



- **Global Style**
  - **Color:** to set the font color of the component text by clicking the color editor.
  - **Font Size:** font size of the component text.
  - **Font:** font of the component text.
  - **Font Width:** font width of the component text.
  - **Scrolled Playback:** when **Scrolled Playback** is selected, the text will be scrolled. You can set the duration for playing the animation by entering a value or clicking . The unit is milliseconds.
  - **Interval:** to set the interval for scrolling the text by entering a value or clicking . The unit is milliseconds.
  - **Constant-Speed Play:** when **Constant-Speed Play** is selected, the text is played at a specified speed. You can set the playback speed by entering a value or clicking .

## Data



- **value:** text displayed in the component.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.

- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

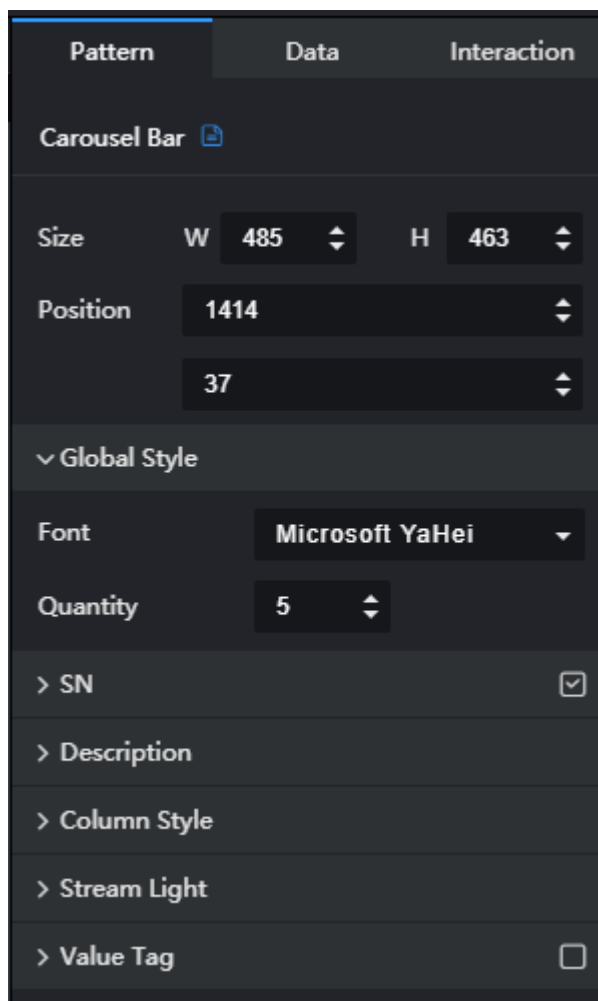
## 13.9.8 Carousel Bar Chart

This section describes parameters of a carousel bar chart.

### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-158 Carousel bar chart



- **Global Style**






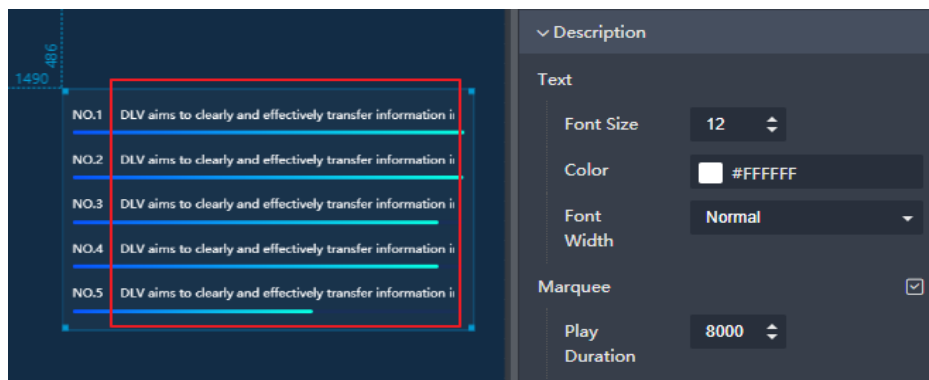

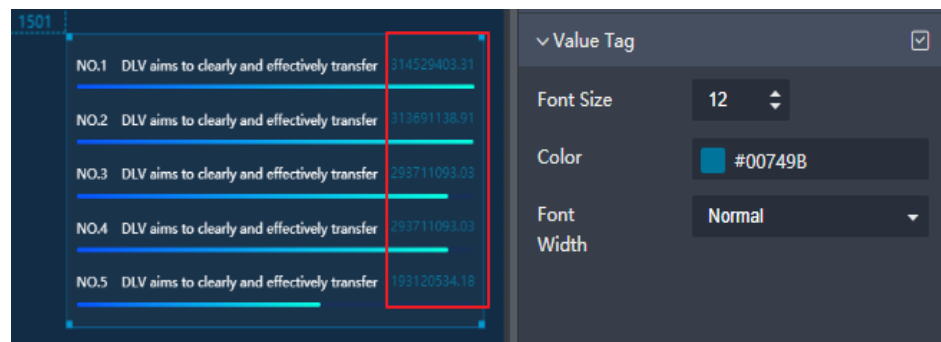
- **Font:** font of the component text.
- **Quantity:** to set the number of rows in the component by entering a value or clicking .
- **SN**
  - **SN:** to show or hide the SN by clicking  or .
  - **Text:** text style of the SN, including the font size, color, and width.
  - **Column Width Ratio (%):** to set the width of the SN column by entering a value or dragging .
- **Content**
  - **Text:** text style of the component, including the font size, color, and width.
  - **Marquee:** When **Marquee** is selected, the text is scrolled in marquee mode. You can set the duration for playing the animation by entering a value or clicking . The unit is milliseconds.

Figure 13-159 Description of a carousel bar chart



- **Column Style**
  - **Background:** background color of the column.
  - **Color:** to set the column color by clicking the color editor.
  - **Height:** to set the column height by entering a value or clicking .
- **Stream Light**
  - **Color:** to set the stream light by clicking the color editor.
  - **Length:** length of the stream light.
  - **Height:** height of the stream light.
- **Value Tag:** to show or hide the value tag. The value of the **value** field in the data is displayed as a tag in the chart.
  - **Font Size:** font size of the value tag.
  - **Color:** font color of the value tag.
  - **Font Width:** font width of the value tag.

**Figure 13-160** Value tag of a carousel bar chart

## Data

- **value:** weight of a column chart. A larger weight leads to a longer column and a larger percentage.
- **content:** description of the text displayed in each bar chart.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

### 13.9.9 Key-Value Table

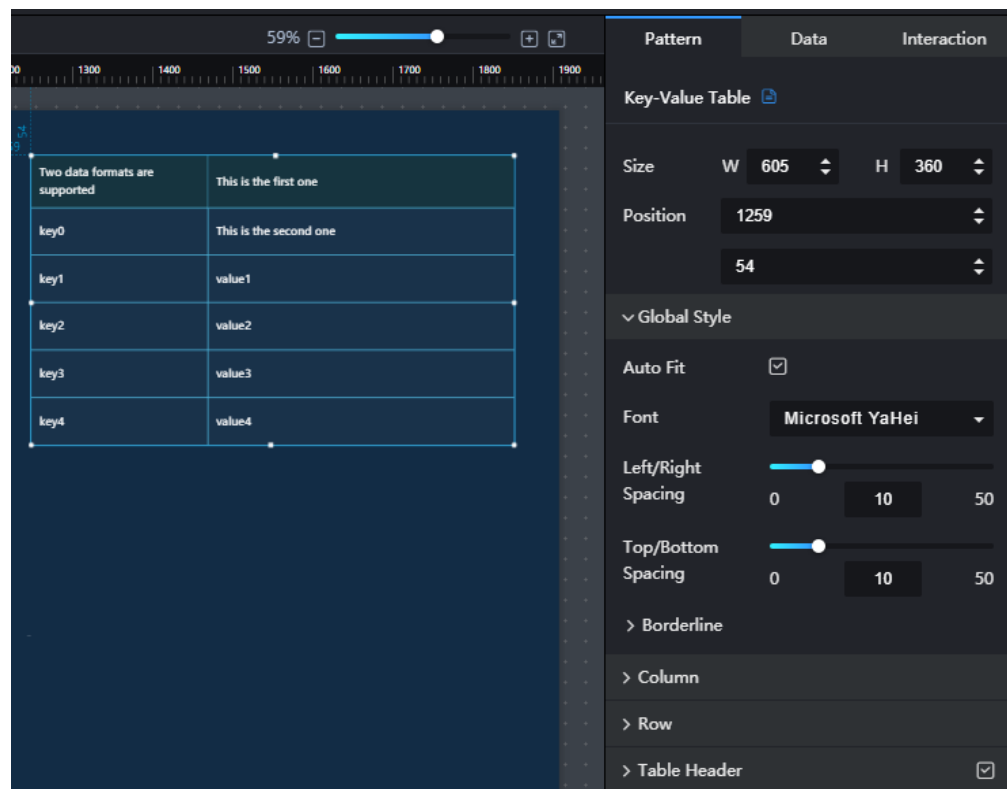
This section describes parameters of a key-value table component.

## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.



Figure 13-161 Key-value table





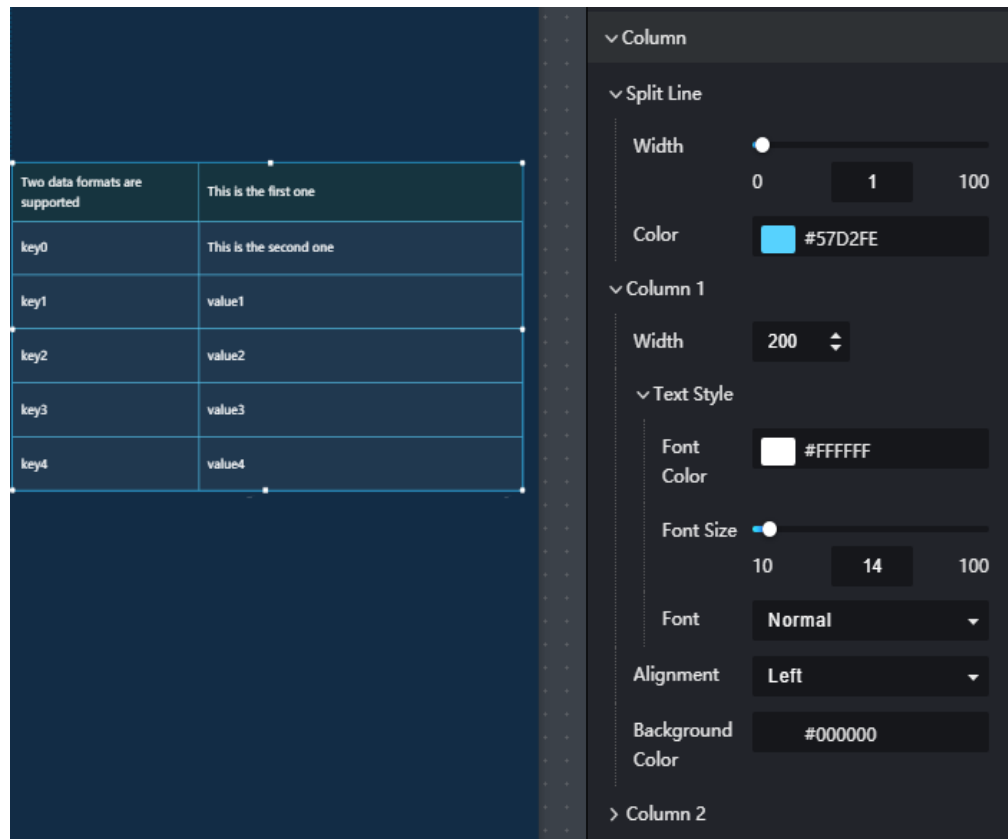
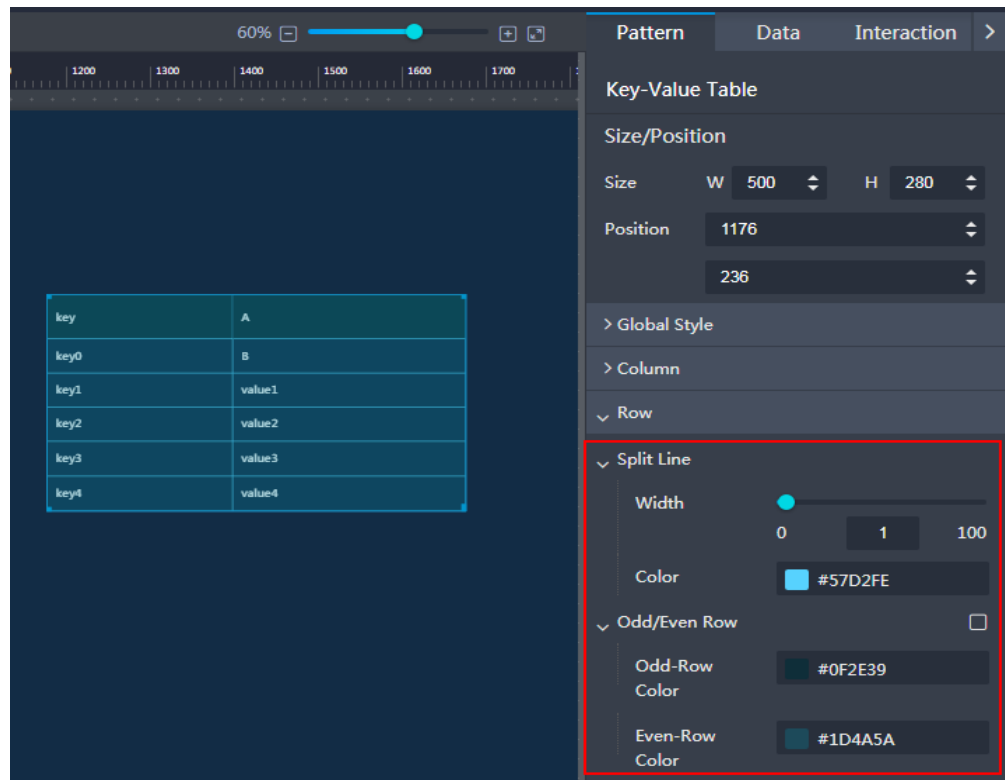
- **Global Style**
  - **Auto Fit:** when **Auto Fit** is selected, the table will automatically adapt to the height of the component.
  - **Font:** font of the component text.
  - **Left/Right Spacing:** to set the left and right spacing of the table by entering a value or dragging .
  - **Top/Bottom Spacing:** to set the top and bottom spacing of the table by entering a value or dragging .
  - **Borderline:** to set the width and color of the borderline.
- **Column**
  - **Split Line:** width and color of the split line.
  - **Column 1:** to set the width of the first column and the font, font color, font size, alignment background color of the text in the column.
  - **Column 2:** to set the font, font color, font size, alignment, and background color of the text in the column.

Figure 13-162 Key-value table



- **Row**
  - **Split Line:** width and color of the split line.
  - **Odd/Even Row:** when **Odd/Even Row** is selected, rows will be divided into odd and even rows. To set the color of odd and even rows, click the color editor.

Figure 13-163 Rows of a key-value table




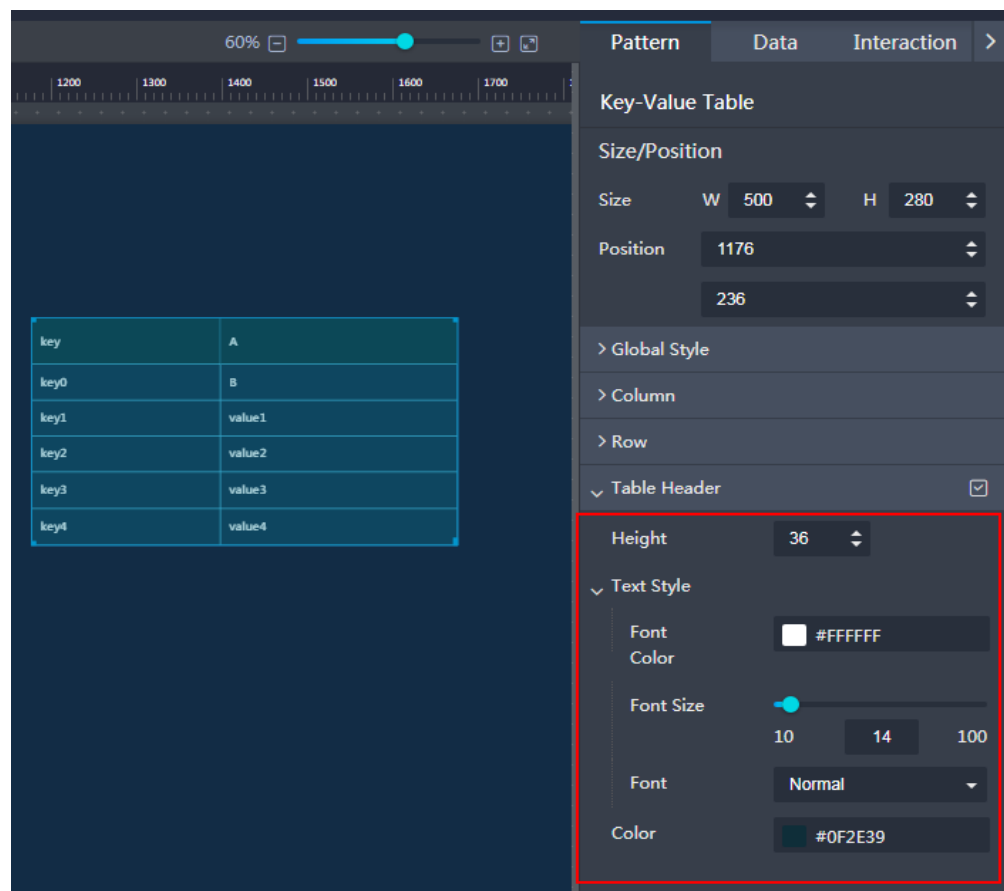
- **Table Header**
  - **Height:** to adjust the height of the table header by entering a value or clicking .
  - **Text Style:** font, font color, and font size of the text in the text header.
  - **Color:** to set the background color of the table header by clicking the color editor.

Figure 13-164 Table header of a key-value table



## Data

- label: content of the first column header.
- value: content of the second column header.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

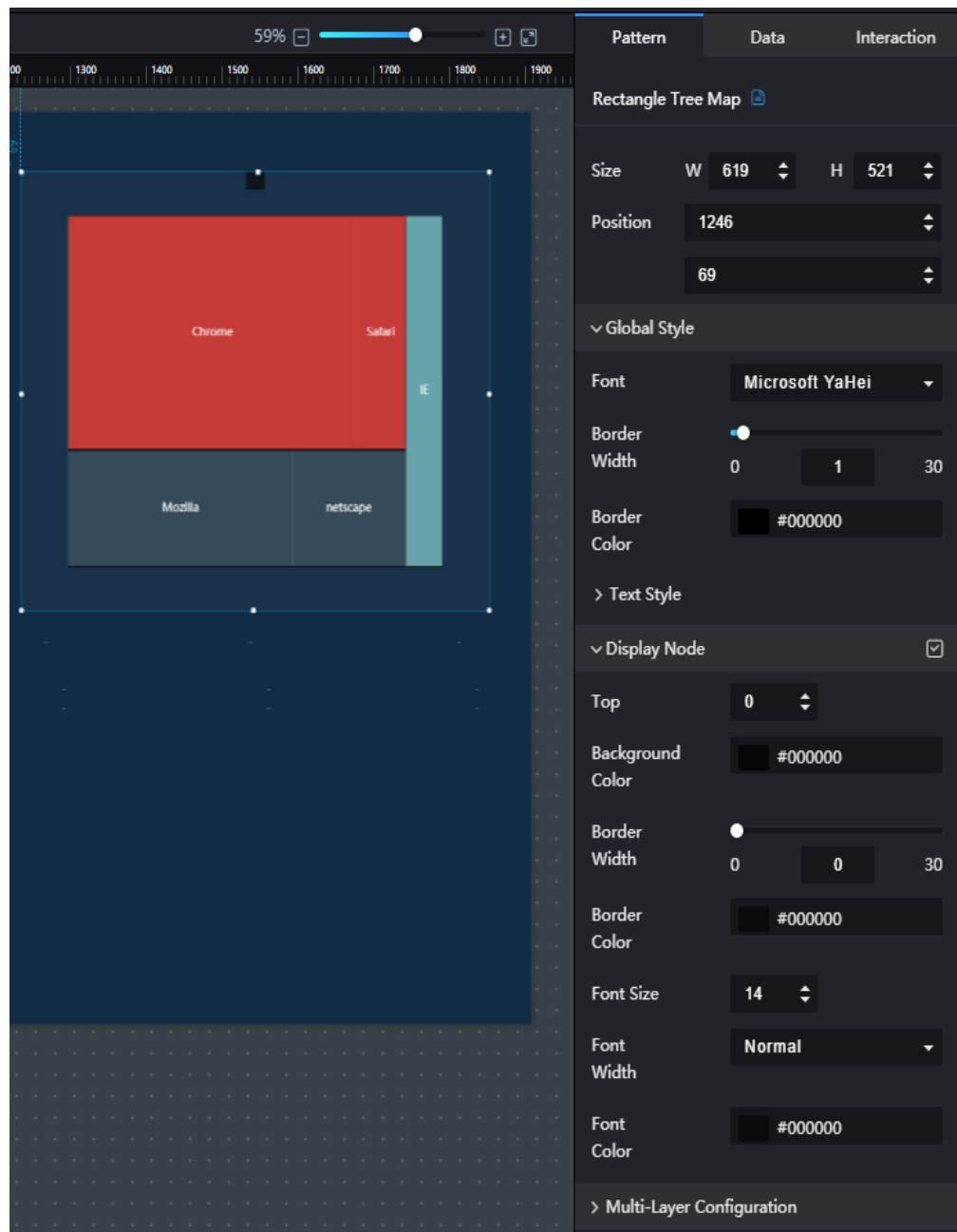
### 13.9.10 Treemap


This section describes parameters of a treemap.






## Pattern

- Size/Position
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-165 Treemap



- Global Style
  - **Font:** font of the component text.
  - **Border Width:** to set the border width of the component by entering a value or dragging .

- **Border Color:** to set the border color of the component by clicking the color editor.
- **Text Style:** to set the font size, font color, and font width of the component.
- **Display Node Path**
  - **Display Node:** to show or hide the node by clicking  or .
  - **Top:** to set the distance between the node and the top of the component.
  - **Background Color:** to set the background color of the node by clicking the color editor.
  - **Border Width:** to set the border width of the node by entering a value or dragging .
  - **Border Color:** to set the border color of the node by clicking the color editor.
  - **Font Size:** font size of the node text.
  - **Font Width:** font width of the node text.
  - **Font Color:** font color of the node text.
- **Multi-Layer Configuration**
  - **Rectangle Border Width:** to set the rectangle border width by entering a value or dragging .
  - **Inter-Subrectangle Clearance:** to set the clearance between sub-rectangles by entering a value or dragging .

## Data

- name: name of a node path.
- value: value of a node path. A larger value leads to a larger area occupied by the rectangle.
- children: child node, which contains **name** and **value** fields.
  - name: name of a child node. A child node name is displayed in the rectangle.
  - value: weight of a subnode. A larger value leads to a larger area occupied by the subnode rectangle.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

# 13.10 Relationship Network

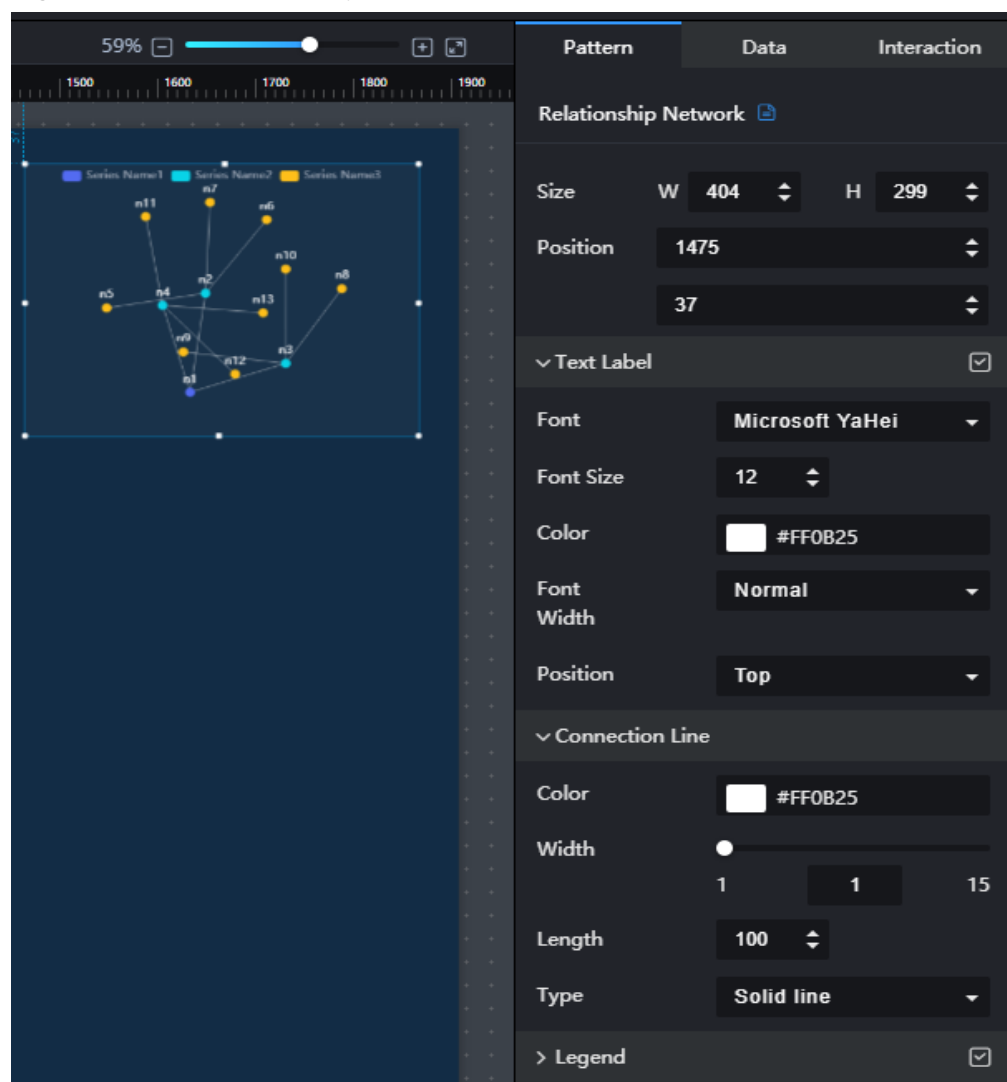
## 13.10.1 Relationship Network

This section describes parameters of a relationship network component.

### Pattern

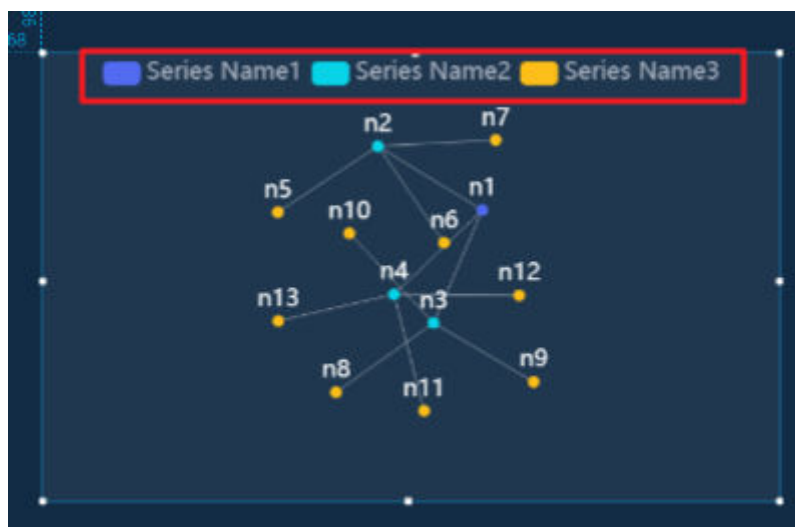
- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-166 Relationship network



- **Text Label**
  - **Text Label:** to show or hide text labels by clicking  or .
  - **Font:** label font.
  - **Font Size:** font size of the label.
  - **Color:** font color of the label.
  - **Font Width:** font width of the label.
  - **Position:** position of the label.
- **Connection Line**
  - **Color:** color of the connection line.
  - **Width:** width of the connection line.
  - **Length:** length of the connection line.
  - **Type:** type of the connection line. The value can be **Solid line**, **Dotted line**, or **Dash-dot line**.
- **Legend**
  - **Legend:** to show or hide legends by clicking  or .
  - **Text:** font size, color, and width of the legend.
  - **Layout:** to set the position, margin, and spacing of the legends.


Figure 13-167 Legends of a relationship network



## Data

- nodes: a node that contains the following fields:
  - name: label name of a node.
  - imgPath: URL of an image. If a node needs to use an image, set this parameter to the link address of the image. If this parameter is left blank, the node is displayed as the default circle.
  - category: data series field of a node. Data is grouped based on the value of the category field.



- Add a data series: Click  next to s to add a data series.
- Configure a data series: Click > in front of the data series, and configure the specified style of the data series on the expanded panel, including the column name, radius, filling color, stroke color, and stroke width.
- links: a link that contains the following two fields:
  - source: the source node of the connection line. The value is the name of the source node.
  - target: the destination node of the connection line. The value is the name value of the target node.
- **Data Source Type**: to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter**: Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result**: Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

# 13.11 Design

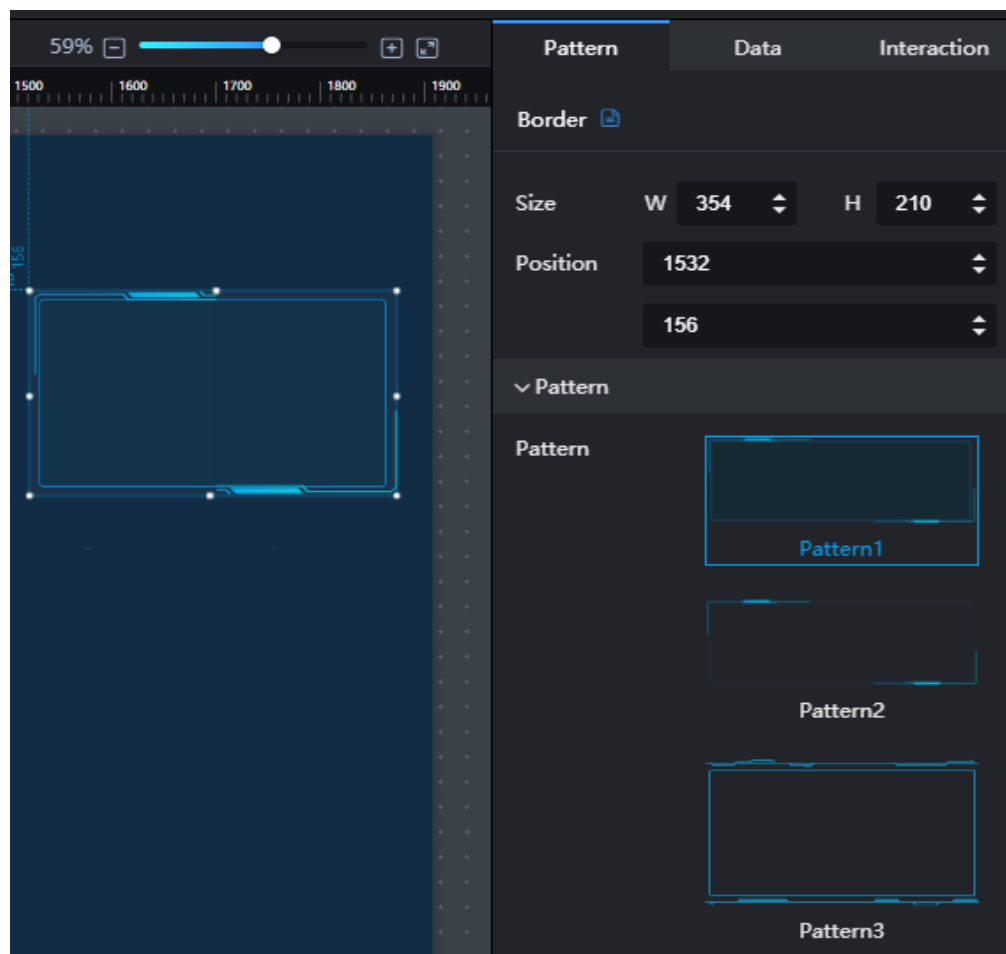
## 13.11.1 Border

This section describes parameters of a border component.

### Pattern

- **Size/Position**
  - **Size**: width and height of the component. Unit: pixel.
  - **Position**: position where the component is located in the canvas. Unit: pixel.

Figure 13-168 Border



- **Pattern**  
DLV provides various preset border patterns for you to select.

## Data

This component does not have data events.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

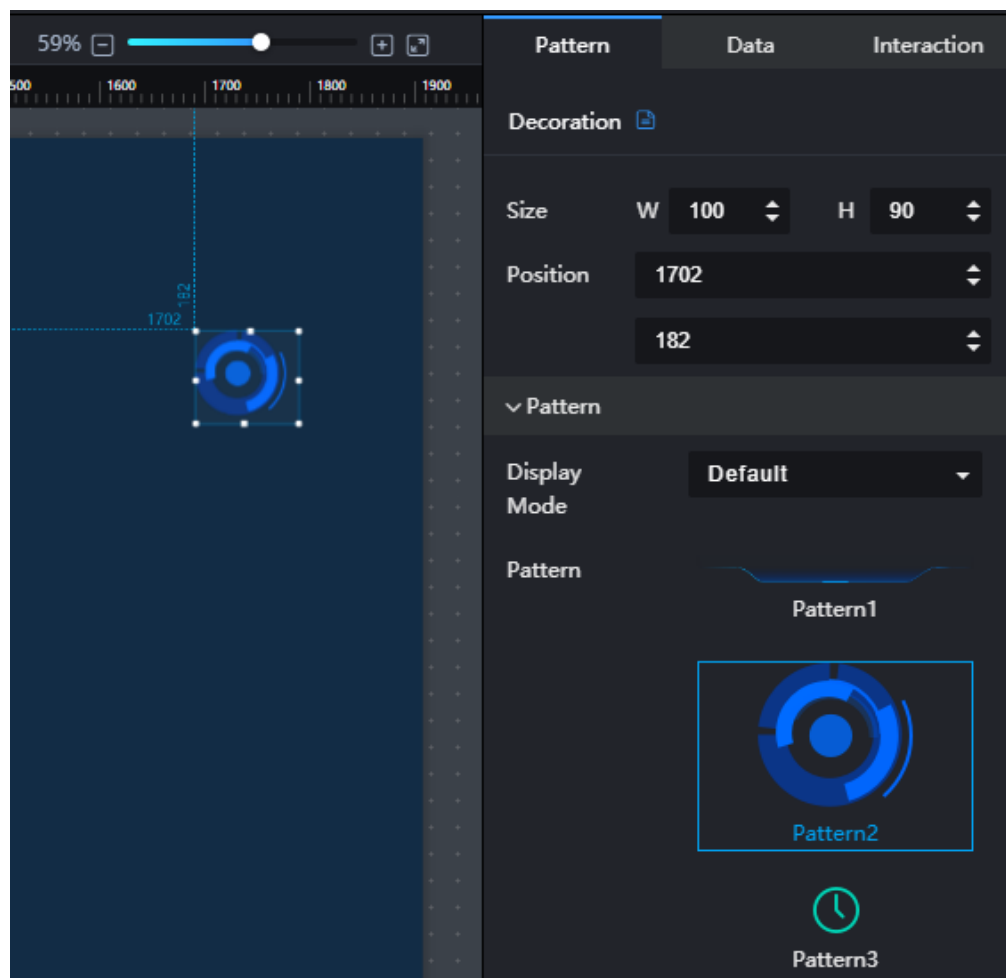
## 13.11.2 Decoration

This section describes parameters of a decoration component.

### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-169 Decoration



- **Pattern**
  - **Display Mode:** to set the display mode of the decoration component. The value can be **Default**, **Proportion**, **Crop**, or **Stretch**.
  - **Pattern:** pattern of the decoration component. DLV provides various preset border patterns for you to select.

## Data

This component does not have data events.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.11.3 Custom Background

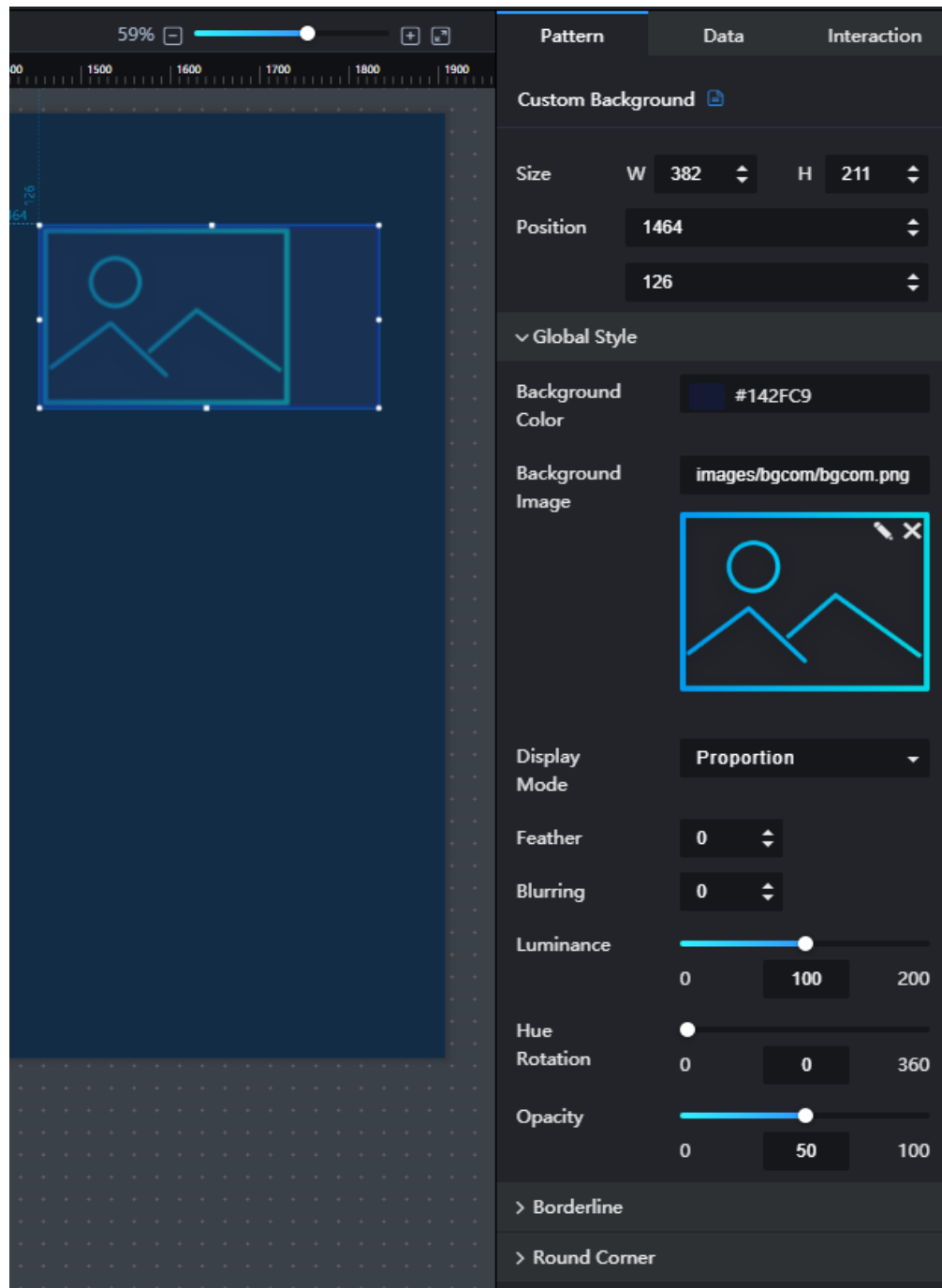
This section describes parameters of a custom background component.

### Pattern






- **Size/Position**

- **Size:** width and height of the component. Unit: pixel.
- **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-170 Custom background



- **Global Style**
  - **Background Color:** to set the background color of the component by clicking the color editor.
  - **Background Image:** to set the background image of the component by clicking to upload an image from the local computer.

- **Display Mode:** to set the display mode of the background image. The value can be **Default**, **Proportion**, **Crop**, or **Stretch**.
- **Feather:** to set the edge blurring degree of the component by entering a value or clicking . When the value is set to **0**, the edge will not be blurred. A larger value leads to a blurrier edge.
- **Blurring:** to set the blurring degree of the component by entering a value or clicking . When the value is set to **0**, the background will not be blurred. A larger value leads to a blurrier background.
- **Luminance:** to set the color brightness of the background component by entering a value or clicking . When the value is set to **0**, the background is dark. A larger value leads to a brighter background component.
- **Hue Rotation:** to set the hue value of the background component by entering a value or dragging . The value range of the hue indicates the angle range of the color wheel. When the value is set to **0**, the color does not change.
- **Opacity:** to set the opacity of the background component by entering a value or dragging . When the value is set to **0**, the background is completely transparent. When the value is set to **100**, the background is opaque.
- **Borderline**
  - **Pattern:** borderline style of the background component. The value can be **Solid line**, **Dotted line**, or **Dash-dot line**.
  - **Width:** borderline width of the background component. When the value is set to **0**, the borderline is hidden. The greater the value is, the thicker the borderline is.
  - **Color:** borderline color of the background component.
- **Round Corner**
  - **Upper-Left Corner:** to set the angle of the upper-left corner of the background component. A larger value leads to a larger round-corner angle. The value ranges from 0% to 50%.
  - **Upper-Right Corner:** to set the angle of the upper-right corner of the background component. A larger value leads to a larger round-corner angle. The value ranges from 0% to 50%.
  - **Lower-Right Corner:** to set the angle of the lower-right corner of the background component. A larger value leads to a larger round-corner angle. The value ranges from 0% to 50%.
  - **Lower-Left Corner:** to set the angle of the lower-left corner of the background component. A larger value leads to a larger round-corner angle. The value ranges from 0% to 50%.

## Data

- **bg:** address of the background image.
  - If you set **bg**, the image configured by **bg** is preferentially displayed on the screen.
  - If you do not set **bg**, the **Background Image** under **Global Style** on the **Pattern** tab page is displayed on the screen.

- If you do not set **Background Image**, only a blue background frame is displayed on the screen.
- **Data Source Type**: to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter**: Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update**: If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result**: Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

# 13.12 Interaction

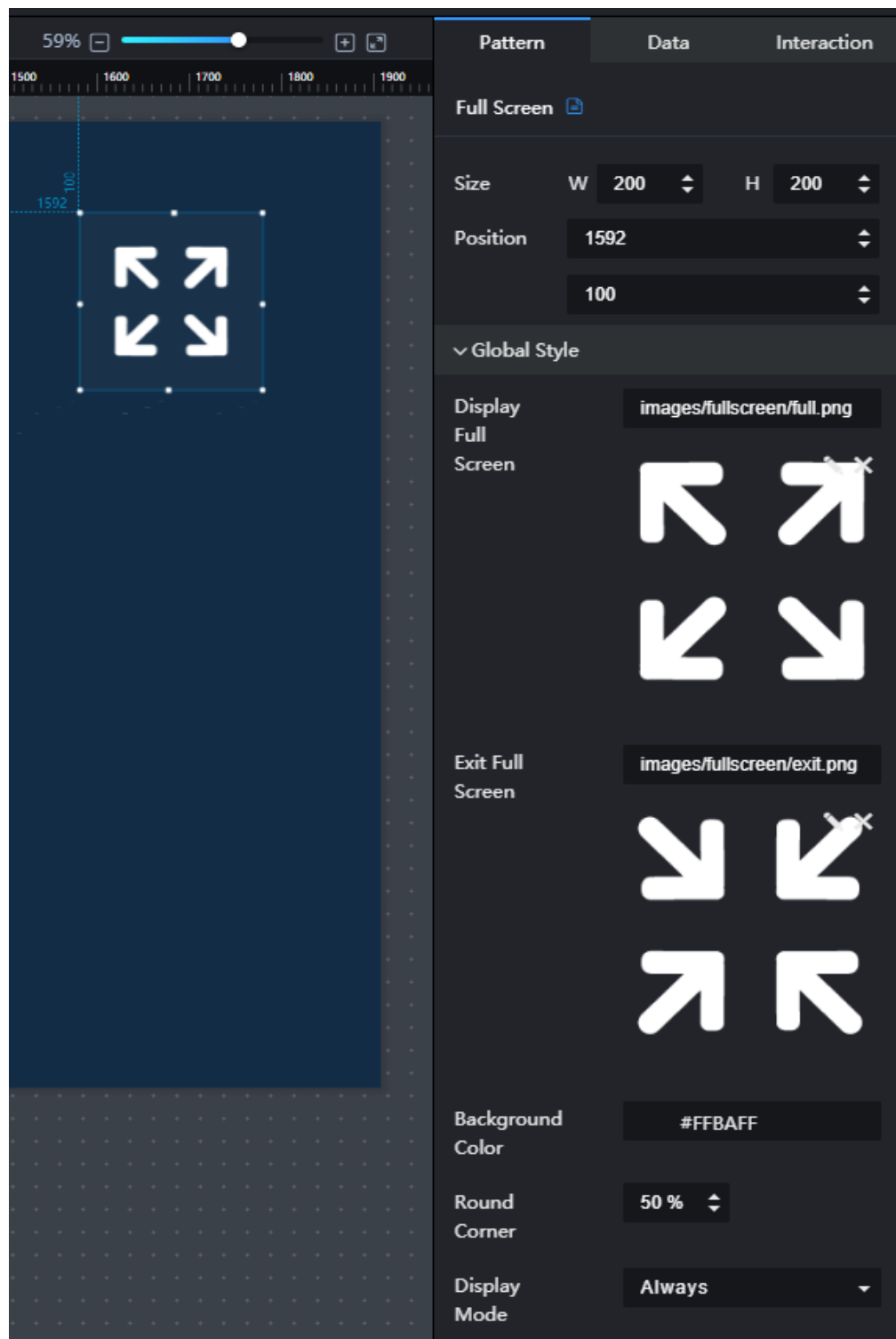
## 13.12.1 Full Screen

This section describes parameters of a full screen component.

### Pattern

- **Size/Position**
  - **Size**: width and height of the component. Unit: pixel.
  - **Position**: position where the component is located in the canvas. Unit: pixel.

Figure 13-171 Full screen



- **Global Style**
  - **Display Full Screen:** full screen display icon that is user-definable.
  - **Exit Full Screen:** full screen exit icon that is user-definable.
  - **Background Color:** background color of the icon.

- **Round Corner:** shape of the icon background. If the round corner value is 50%, a circle is displayed. If the round value is 0%, a square is displayed.
- **Display Mode:** mode of displaying or exiting the full screen when you are browsing a screen. The value can be **Always** or **Hover**. **Always** indicates that the button is always displayed on the screen. **Hover** indicates that the button is hidden by default and is displayed only when you hover over it.

## Data

This component does not have data events.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

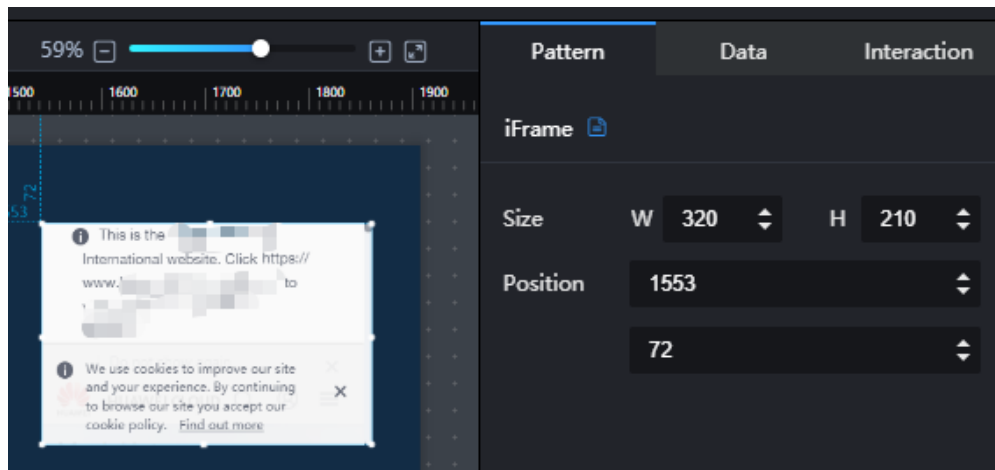
### 13.12.2 iFrame

This section describes parameters of an iFrame component.

## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-172 iFrame



## Data

- **url:** URL of the iFrame component.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).



- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

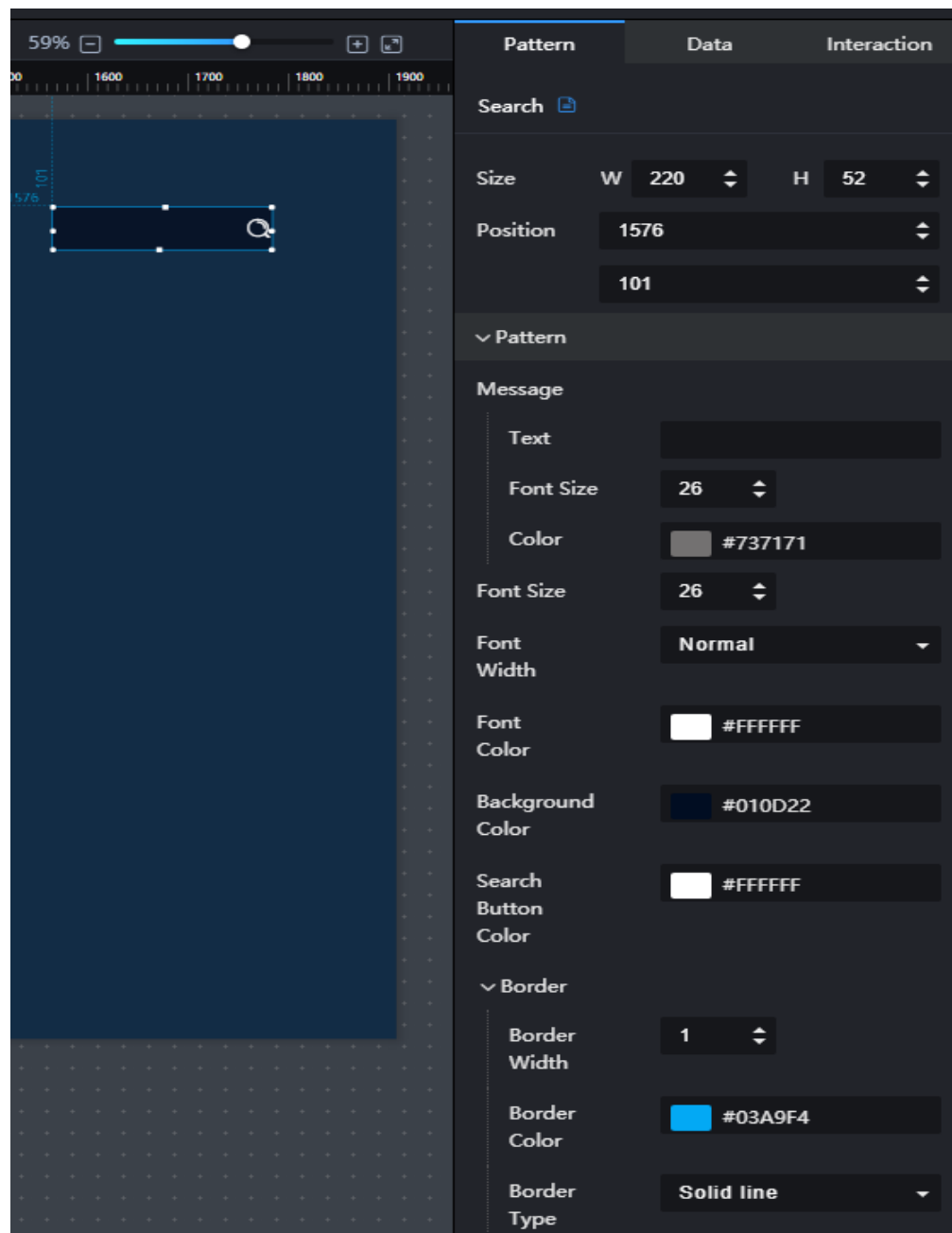
### 13.12.3 Search

This section describes parameters of a search component.

#### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-173 Search



- **Pattern**
  - **Text**: when **value** on the **Data** panel is not configured, the system displays the value in the text box. When **value** is configured, the system displays the value of **value**.
  - **Font Size**: font size of the component text.
  - **Font Width**: font width of the component text.
  - **Color**: to set the font color of the component text by clicking the color editor.
  - **Background Color**: to set the background color of the component by clicking the color editor.

- **Search Button Color:** to set the color of the search button by clicking the color editor.
- **Border:** width, color, and type of the component border. The border type can be **Solid line**, **Dotted line**, or **Dash-dot line**.

## Data

- **value:** text that is displayed by default in the search box.
- **Data Source Type:** to select the data source of the chart. Multiple data sources are provided for you to select. You need to add data sources first. For details, see [Data Connection Overview](#).
- **Converter:** Select a converter to convert data into the data that meets the display requirements. For details, see [Using a Converter](#).
- **Automatic Update:** If you select **Automatic Update** and set **Update Interval**, the data is automatically updated based on the interval.
- **Preview Result:** Click **Preview Result** to view the information about the selected data source. You can click **Update Query** to manually update the component data when the data source changes.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

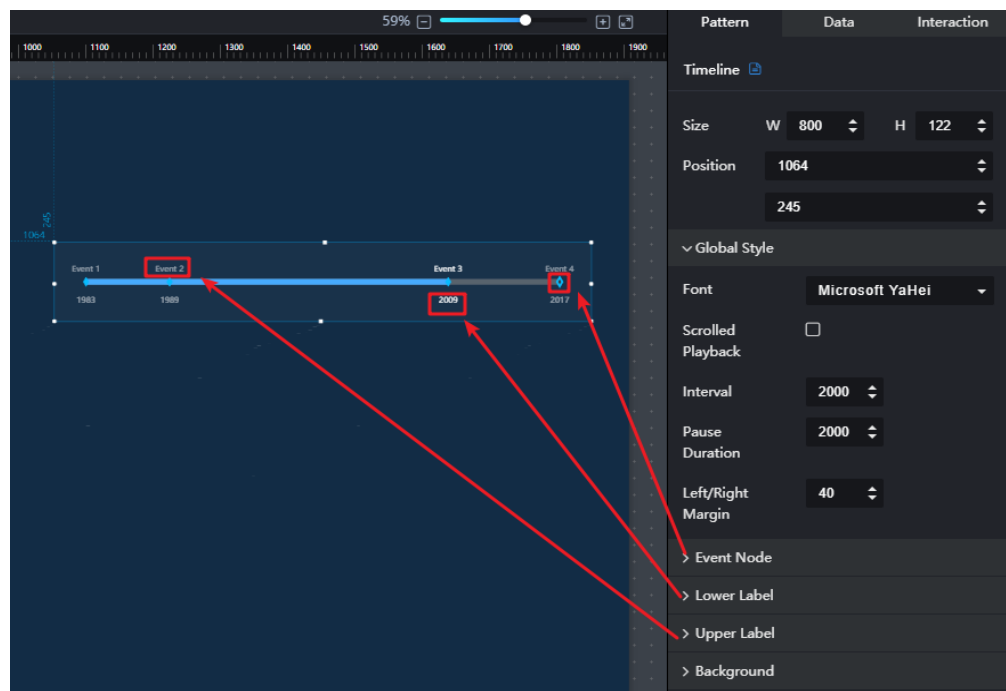
### 13.12.4 Timeline

This section describes parameters of a timeline component.


## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

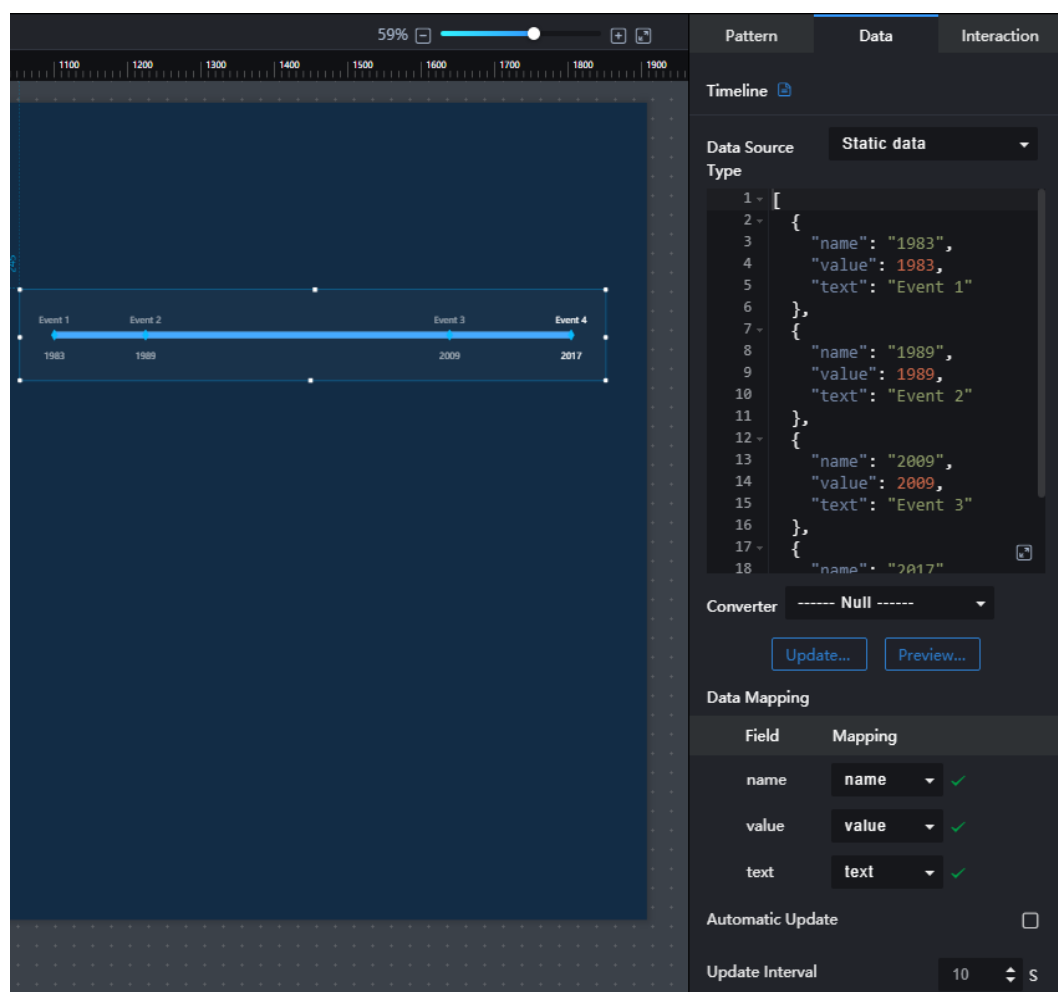
Figure 13-174 Timeline



- **Global Style**
  - **Font:** font type of the component text.
  - **Scrolled Playback:** when **Scrolled Playback** is selected, the text will be scrolled.
  - **Interval:** to set the interval for scrolling the text by entering a value or clicking . **Interval** is valid only when **Scrolled Playback** is selected.
  - **Pause Duration:** to set the play pause duration by entering a value or clicking . **Pause Duration** is valid only when **Scrolled Playback** is selected.
  - **Left/Right Margin:** to set the left and right margins of the component by entering a value or clicking .
- **Event Node**
  - **Type:** event node type, including **Time**, **Category**, and **Value**.
  - **Shape:** shape of the node, including **Rhombus**, **Circle**, **Upright triangle**, **Inverted triangle**, **Square**, and **Cross**.
  - **Size:** to set the node size by entering a value or clicking .
  - **Default Style:** default style of the node, including **Fill Color**, **Border Color**, and **Border Width**.
  - **Selected Style:** style of the selected node, including **Fill Color**, **Border Color**, and **Border Width**.
- **Lower Label**
  - **Offset:** offset of the text below the node label.
  - **Default Style:** default style of the text below the node label, including the font size, color, and font width.

- **Selected Style:** selected style of the text below the node label, including the font size, color, and font width.
- **Upper Label**
  - **Offset:** offset of the text above the node label.
  - **Default Style:** default style of the text above the node label, including the font size, color, and font width.
  - **Selected Style:** selected style of the text below the node label, including the font size, color, and font width.
- **Background**
  - **Width:** to set the width of the background by entering a value or clicking .
  - **Default Style:** to set the default background color by clicking the color editor.
  - **Selected Style:** to set the selected background color by clicking the color editor.

## Data



The screenshot shows a data visualization tool interface. On the left, a timeline is displayed with a scale from 1100 to 1900. Four events are marked: Event 1 (1983), Event 2 (1989), Event 3 (2009), and Event 4 (2017). A blue line connects these events. On the right, a configuration panel is visible with tabs for 'Pattern', 'Data', and 'Interaction'. The 'Data' tab is active, showing 'Static data' as the data source. The data is represented as a JSON array of objects, each with 'name', 'value', and 'text' fields. Below the JSON, there is a 'Converter' dropdown set to 'Null', 'Update...' and 'Preview...' buttons, a 'Data Mapping' table, and an 'Automatic Update' checkbox. The 'Update Interval' is set to 10 seconds.

Field	Mapping	Status
name	name	✓
value	value	✓
text	text	✓

The example data in the preceding figure is as follows:

```
[
{
```

```
"name": "1983",  
  "value": 1983,  
  "text": " Event 1"  
},  
{  
  "name": "1989",  
  "value": 1989,  
  "text": " Event 2"  
},  
{  
  "name": "2009",  
  "value": 2009,  
  "text": " Event 3"  
},  
{  
  "name": "2017",  
  "value": 2017,  
  "text": " Event 4"  
}  
]
```

- name: text displayed below the time axis node label.
- value: value of the event node.
- text: text displayed above the time axis node label.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

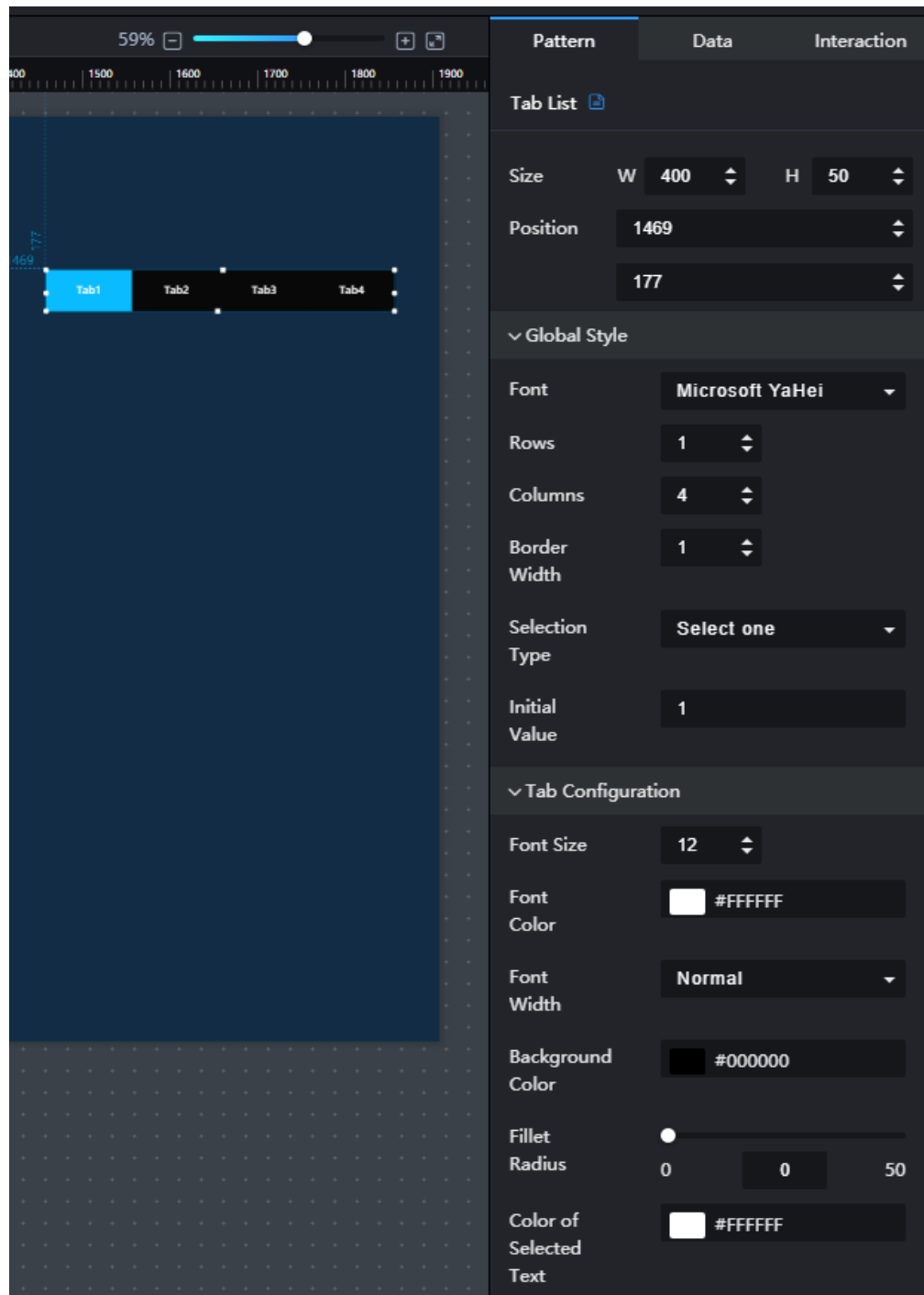
## 13.12.5 Tab List



This section describes parameters of a timeline component.


### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-175 Tab List

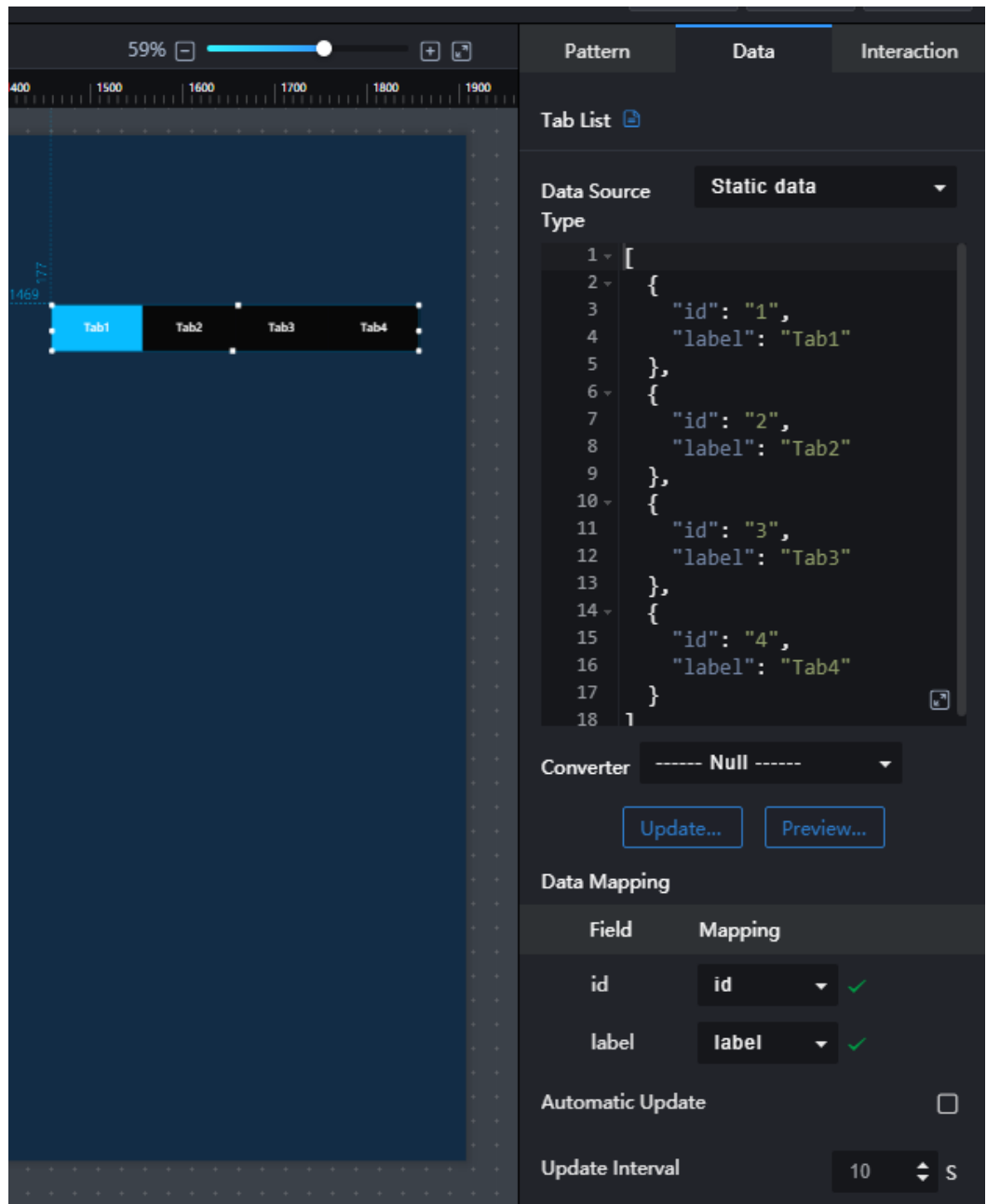


- **Global Style**
  - **Font**: font type of the component text.
  - **Rows**: to set the number of rows to be displayed by entering a value or clicking .
  - **Columns**: to set the number of columns to be displayed by entering a value or clicking .

- **Selection Type:** to set a selection type from the drop-down list. The value can be **Select one** or **Select more**.
- **Initial Value:** to enter an initial value. The initial value is the same as the ID on the **Data** tab.
  - If **Selection Type** is set to **Select one** and **Initial Value** is set to **1**, the **Tab1** column is highlighted.
  - If **Selection Type** is set to **Select more** and **Initial Value** is set to **1;2**, the **Tab1** and **Tab2** columns are both highlighted.
- **Tab Configuration**
  - **Font Size:** font size of the component text.
  - **Font Color:** font color of the component text.
  - **Font Width:** font width of the component text.
  - **Background Color:** to set background color of the tab list by clicking the color editor.
  - **Fillet Radius:** to set the fillet radius of the tab list by entering a value or dragging .
  - **Hover Background Color:** to set the hover background color by clicking the color editor.
  - **Color of Selected Text:** to set the color of the selected text in the tab list by clicking the color editor.
  - **Background Color of Selected Tab:** to set the background color when the tab is highlighted by clicking the color editor.
- **Radio Carousel:** to play the option on the screen based on the carousel interval.



## Data



The example data in the preceding figure is as follows:

```
[
  {
    "id": "1",
    "label": "Tab1"
  },
  {
    "id": "2",
    "label": "Tab2"
  },
  {
    "id": "3",
    "label": "Tab3"
  }
]
```

- **id**: ID of a tab. **Initial Value** requires this parameter value to define a tab.
- **label**: label text displayed on the tab.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

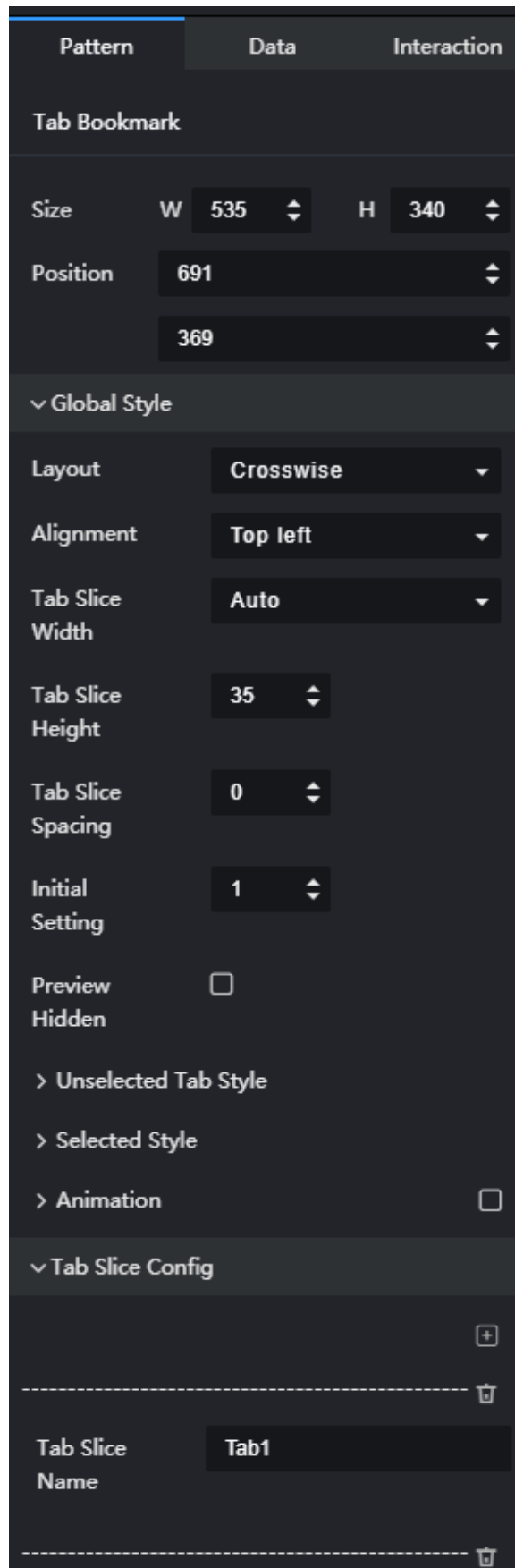
## 13.12.6 Tab Bookmark



This section describes the configuration items of the tab bookmark component.

### Pattern

- **Size/Position**
  - **Size**: width and height of the component. Unit: pixel.
  - **Position**: position where the component is located in the canvas. Unit: pixel.

Figure 13-176 Tab Bookmark



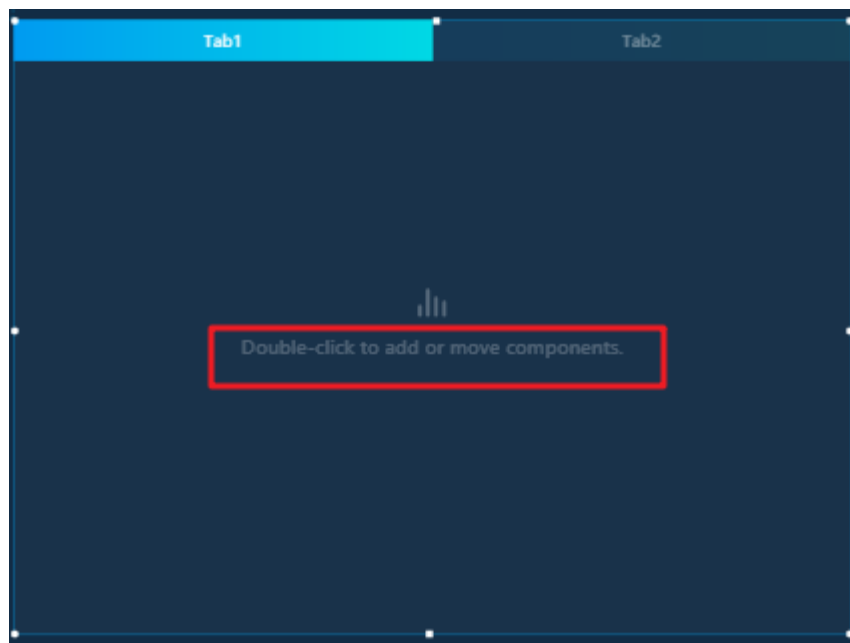
- **Global Style**
  - **Layout:** layout of the tab bookmark. The value can be **Crosswise** or **Lengthways**.
  - **Alignment:** title alignment mode of the tab bookmark. The value can be **Top center**, **Top left**, **Top right**, **Bottom center**, **Bottom left**, or **Bottom right**.
  - **Tab Slice Width:** width of a tab slice.
  - **Tab Slice Height:** height of a tab slice.
  - **Tab Slice Spacing:** distance between tab slices.
  - **Initial Setting:** initial tab slice value. The initial value must be the same as the value of **id** on the **Data** tab. For example, if the initial value is **1**, the **Tab1** column is highlighted.
  - **Font:** font type of the component text.
  - **Preview Hidden:** whether to hide the component during preview.
  - **Unselected Tab Style:** background color, background image, text color, and font size of unselected tabs.
  - **Selected Style:** background color, background image, text color, and font size of the selected tab.
  - **Animation:** After this function is enabled, the tab pane dynamically changes with the specified animation duration.
- **Tab Slice Config:** Set the number and names of tabs. To add a tab, click . To delete a tab, click .

## Data

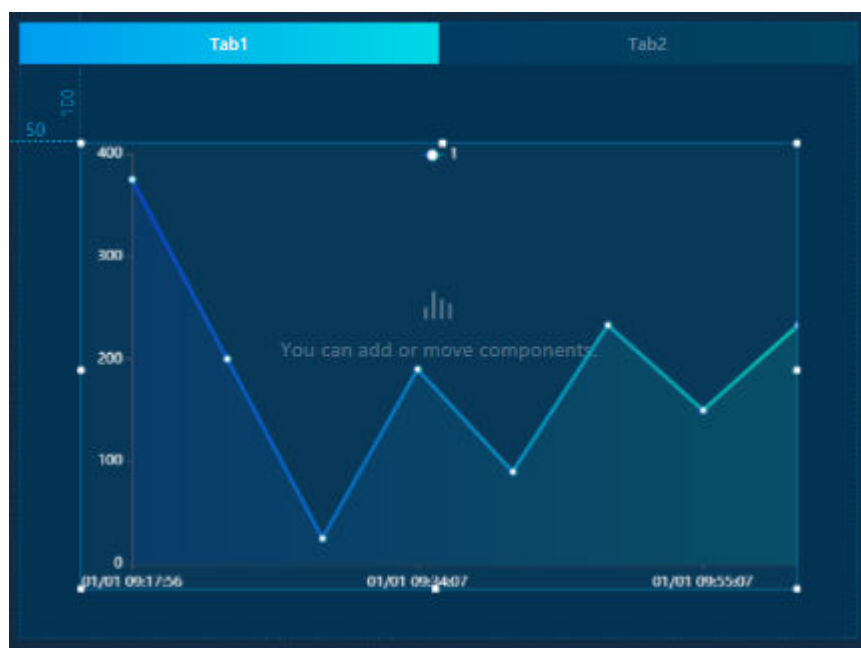
This component does not have data events.

You can double-click the inside of a tab pane to add or remove other components to display different data. For details about how to use the added components, see the operation guide of the corresponding component.

**Figure 13-177** Tab pane without component being added



**Figure 13-178** Tab pane with a component added



## Interaction

This component does not support interaction.

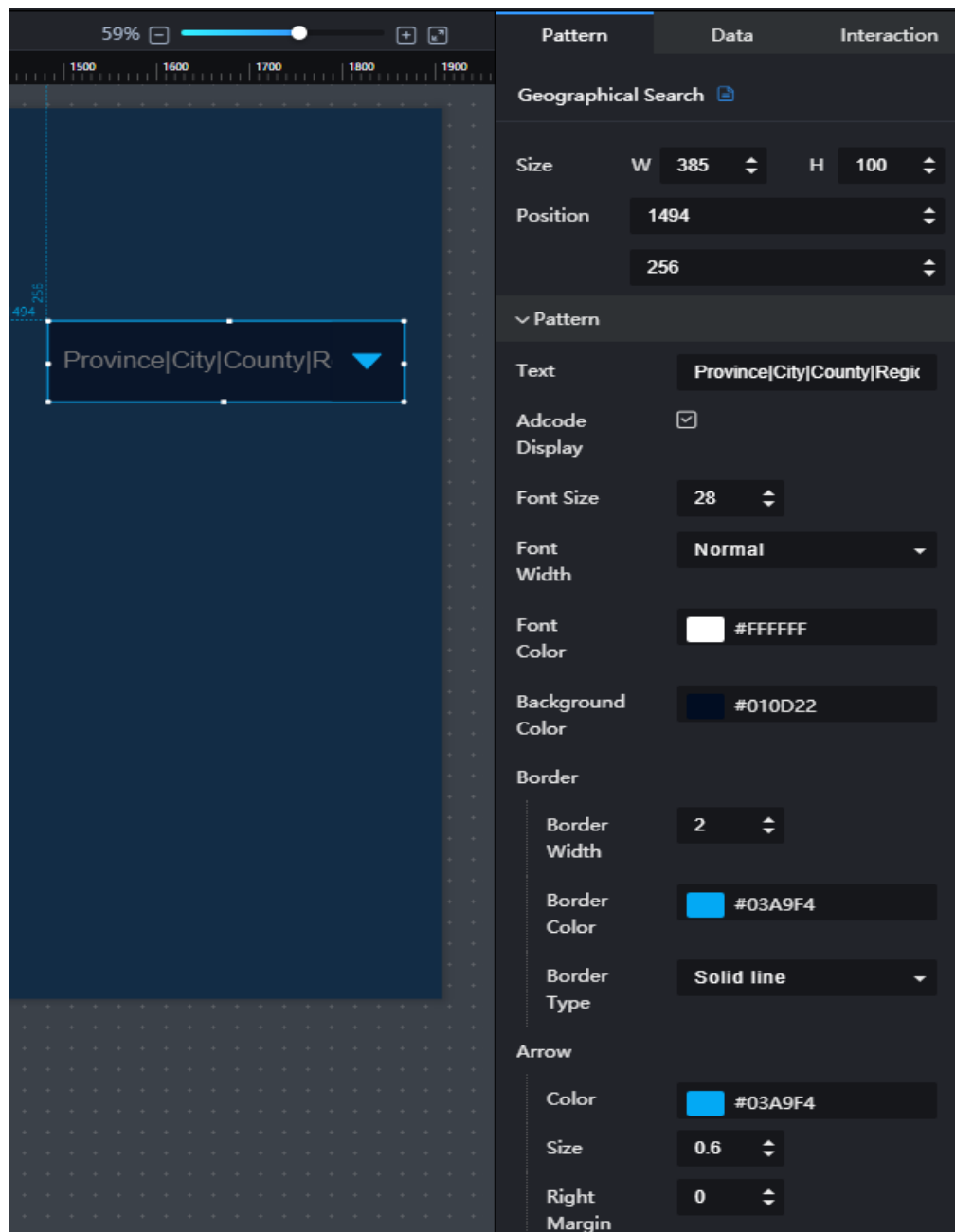
### 13.12.7 Geographical Search

This section describes parameters of a geographical search component.

## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-179 Geographical search



- **Pattern**
  - **Text:** prompt information of the component.
  - **adcode:** If this option is selected, the code of the geographical location is displayed.

- **Font Size:** font size of the component text.
- **Font Width:** font width of the component text.
- **Font Color:** font color of the component text.
- **Background Color:** to set the background color of the component by clicking the editor.
- **Border:** to set the border style of the component, including the border width, border color, and border type.
- **Arrow:** Set **Color**, **Size**, and **Right Margin** of arrows.
- **Drop-Down List Style**
  - **Max. Height:** the maximum height of the drop-down list box when the component is expanded.
  - **Font Color:** font color of the text in the drop-down list when the component is expanded.
  - **Font Size:** font size of the text in the drop-down list box when the component is expanded.
  - **Background Color:** background color of the drop-down list when the component is expanded.
- **Initial Setting**
  - **Initial Setting:** When this function is enabled, the area specified by **Initial Value** is displayed by default during preview or sharing.
  - **Initial Value:** You can enter the name of a province, city, or county, or enter the region code.

## Data

- name: name of the region.
- adcode: code of the region.
- level: level of the region.
- parent: upper-level city of the region.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

# 13.13 Others

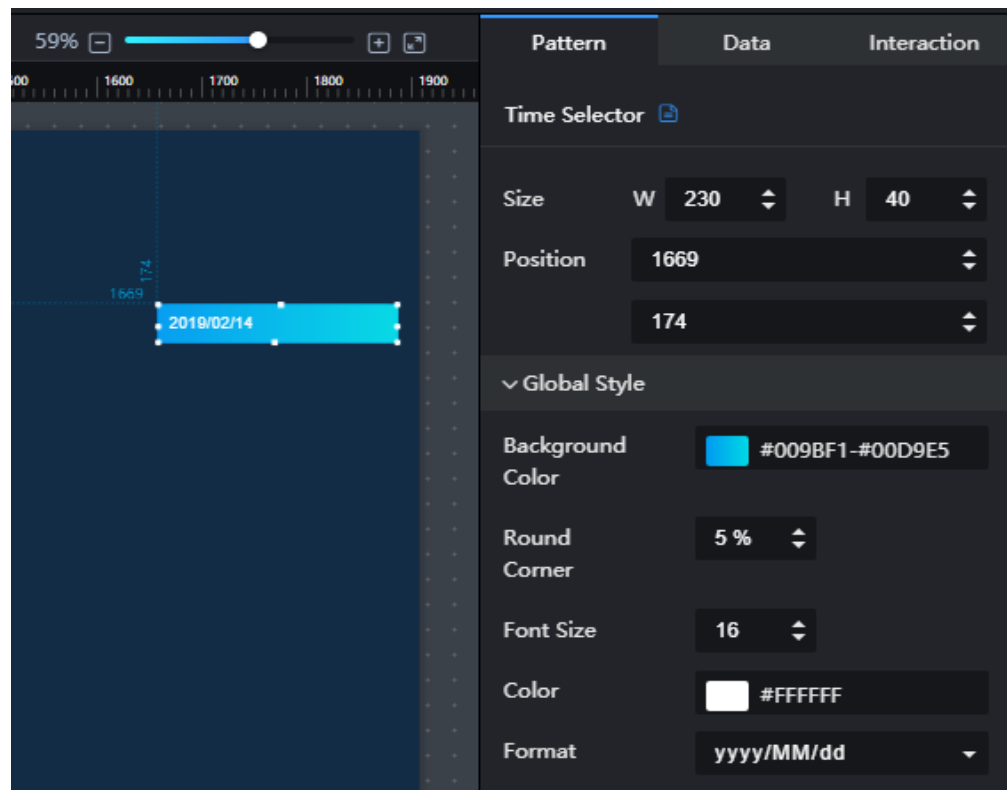
## 13.13.1 Time Selector



This section describes parameters of a time selector.

### Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-180 Time selector



- **Global Style**
  - **Background Color:** to set the background color of the time selector by clicking the editor.
  - **Round Corner:** to set the round corner angle of the component by clicking . A larger value leads to a larger angle. The value ranges from 0% to 50%.
  - **Font Size:** to set the font size of the component text by entering a value or clicking .
  - **Color:** to set the font color of the component text by clicking the color editor.
  - **Format:** to set the time display format.

## Data

date: default time displayed on the component.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

## 13.13.2 Gauge

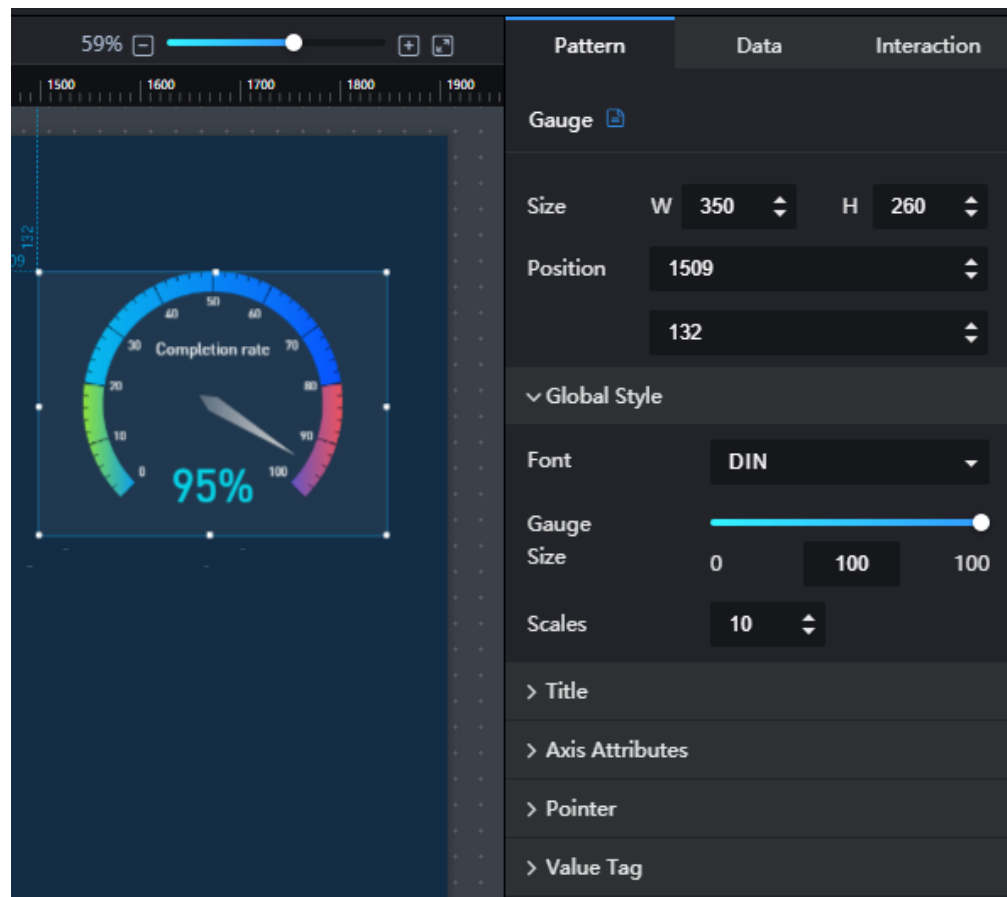
This section describes parameters of a gauge.



## Pattern

- **Size/Position**
  - **Size:** width and height of the component. Unit: pixel.
  - **Position:** position where the component is located in the canvas. Unit: pixel.

Figure 13-181 Gauge



- **Global Style**

In **Global Style**, you can set the font, size, and scales of a gauge.
- **Title**

In **Title**, you can set the font size, width, and color of the title in a gauge.
- **Axis Attributes**
  - **Coordinate Axis:** width of the axis.
  - **Scale:** length, width, and color of the axis.
  - **Split Line:** length, width, and color of the split line.
  - **Axis Label:** the maximum value, minimum value, font size, width, and color of the axis label.
- **Pointer**

In **Pointer**, you can set the length, width, and color of a pointer.
- **Value Tag**

In **Value Tag**, you can set the unit, font size, width, color, and position of a value tag.

## Data

For details about how to configure component data, see [Configuring Component Data](#).

- **value**: value to which the component pointer points.
- **name**: name of the component title.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

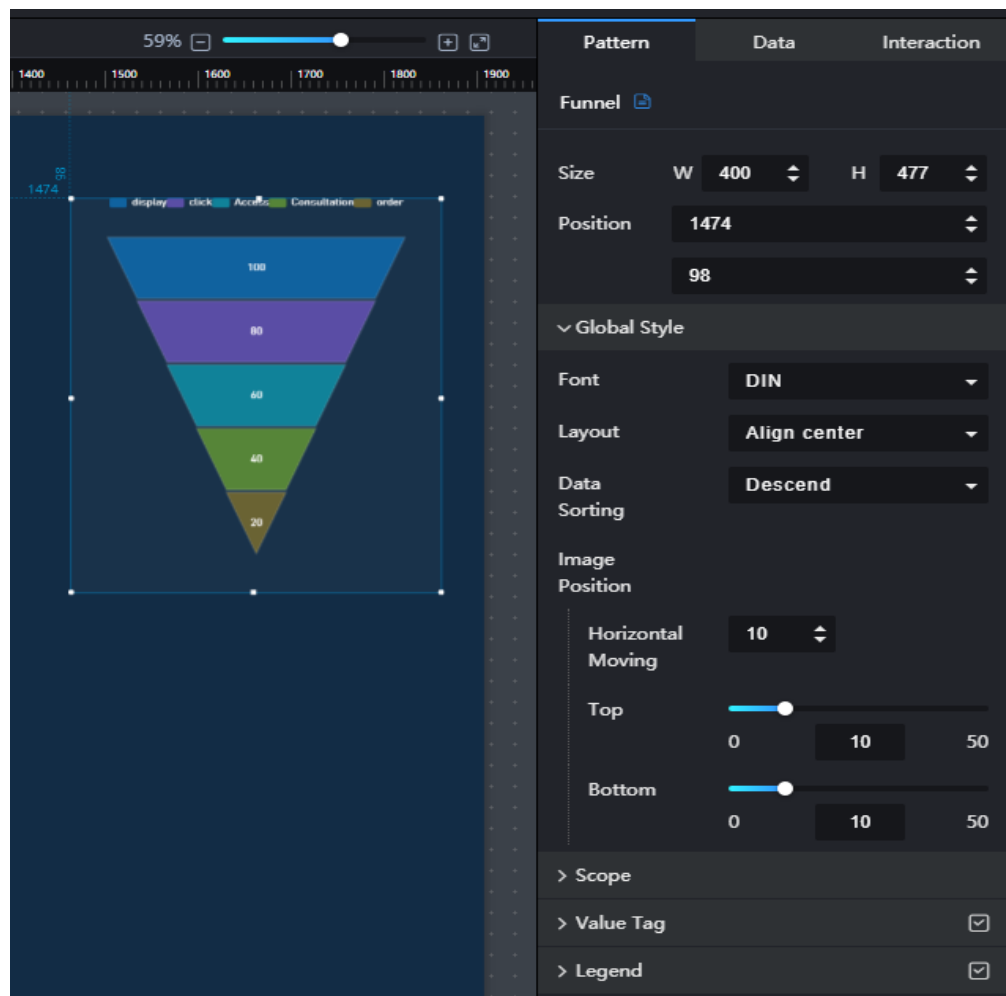
### 13.13.3 Funnel Chart







This section describes parameters of a funnel chart.

## Pattern

- **Size/Position**
  - **Size**: width and height of the component. Unit: pixel.
  - **Position**: position where the component is located in the canvas. Unit: pixel.

Figure 13-182 Funnel chart



- **Global Style**
  - **Font:** font type of the component text.
  - **Layout:** layout of the component. The value can be **Align left**, **Align right**, or **Align center**.
  - **Data Sorting:** data sorting of the component. The value can be **Ascend**, **Descend**, or **Data sequence**.
  - **Image Position:** position of the component. Specific settings include **Horizontal Moving**, **Top**, and **Bottom**.
- **Range**
  - **Min. Value:** to set the minimum value by entering a value or clicking .
  - **Max. Value:** to set the maximum value by entering a value or clicking .
  - **Bottom Width:** to set the bottom width of the component by entering a value or dragging . A smaller value leads to a narrower bottom width.
  - **Top Width:** to set the top width of the component by entering a value or dragging . A smaller value leads to a wider top width.
- **Value Tag**
  - **Value Tag:** to show or hide the value tag by clicking  or .

- **Text Style:** text style of the value tag, including **Font Size, Color, Font Width,** and **Position.**
- **Legend**
  - **Legend:** to show or hide legends by clicking  or .
  - **Text Style:** text style of the legend, including **Font Size, Color,** and **Font Width.**
  - **Layout:** layout style of the legend, including **Position, Left/Right Spacing,** and **Top/Bottom Spacing.**

## Data

For details about how to configure component data, see [Configuring Component Data](#).

- value: value label displayed on each layer in the funnel chart.
- s: The **s** field is a data series field. Data is grouped based on the value of the **s** field.
  - Add a data series: Click  next to **s** to add a data series.
  - Configure a data series: Click > in front of the data series, and then configure the specified style of the series on the expanded panel.

## Interaction

For details about whether the component supports the interaction function and how to use the interaction function, see [Configuring Component Interaction](#).

# 14 Screen Combination

---

You can combine two or more screens into one screen so that you can view multiple screens in one screen at the same time. After creating a combined screen, you can publish it and share its link with other users. Other users can access the combined screen through the screen link in the browser or application. When viewing a combined screen on a browser, you can switch between multiple screens.

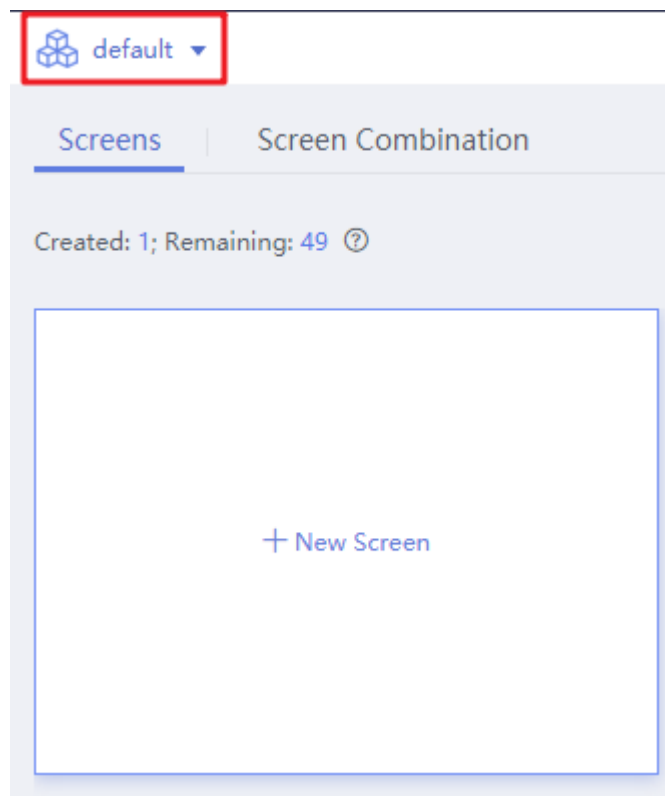
## Prerequisites

At least two screens are prepared for screen combination. For details about how to publish screens, see [Publishing Screens](#).

## Combining Screens



- Step 1** Log in to the DLV console.
- Step 2** Click the workspace drop-down list in the upper left corner of the page. On the displayed workspace panel, click the workspace that you want to switch to.

**Figure 14-1** Switching a workspace



**Step 3** On the **Screen Combination** page, click **Create Screen Combination**.

**Step 4** Select at least two screens and click **Next**.

**Step 5** Click  or  to adjust the screen sequence, and then click **Next**.

**Step 6** Set the name and related parameters of the combined screen and click **Submit**.

- A combined screen name can contain only letters, digits, underscores (\_), and hyphens (-), and cannot exceed 32 characters.
- **Horizontal scrolling:** If this option is selected, you can click the buttons on the left and right sides of the screen to switch between screens.
- **Bottom navigation:** If this option is selected, you can click the navigation button at the bottom of the screen to switch between screens


 **NOTE**

Select at least one of the preceding two options. Otherwise, the screens cannot be switched.

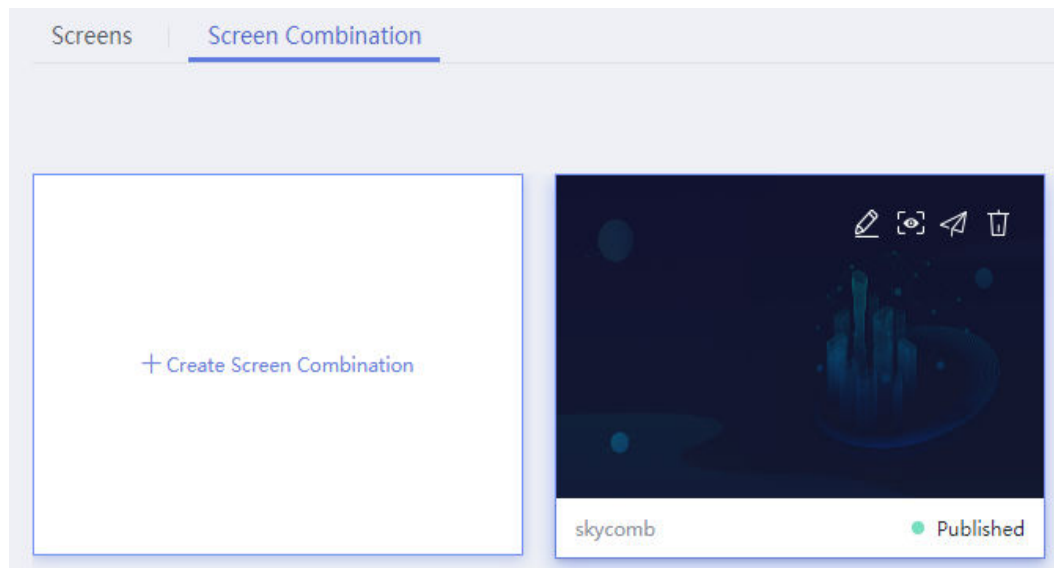
----End

## Publishing Combined Screens

**Step 1** Log in to the DLV console.

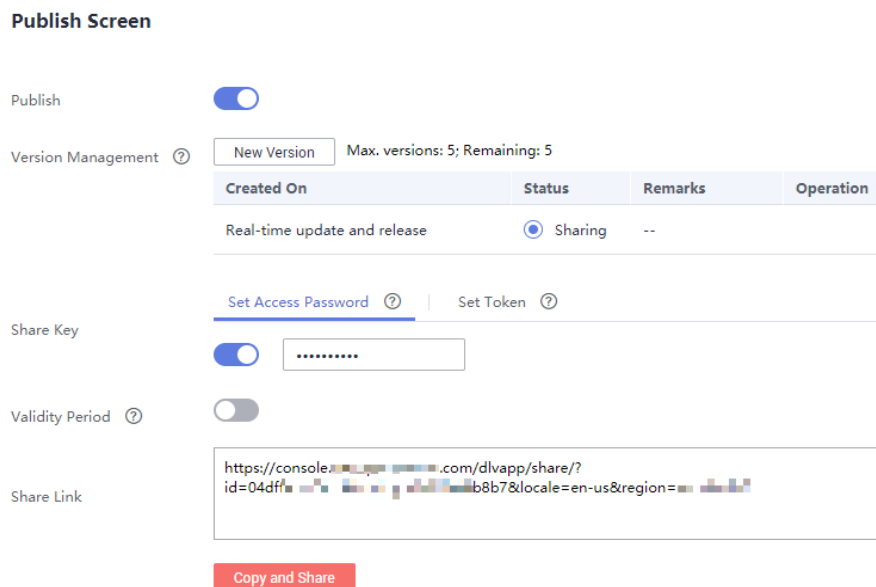
**Step 2** On the **Screen Combination** page, locate the combined screen to be published and click  on the screen.

**Figure 14-2** Publishing a combined screen



**Step 3** On the displayed page, configure publish parameters.

**Figure 14-3** Configuring publish parameters



### Publish

Specifies whether others can share your created screens (see [Figure 14-3](#)). After the screen is published, other users can access the screen without logging in to DLV. They only need to open the browser and enter the shared link in the address box to access the screen.

### Version management

Specifies a sharable version.

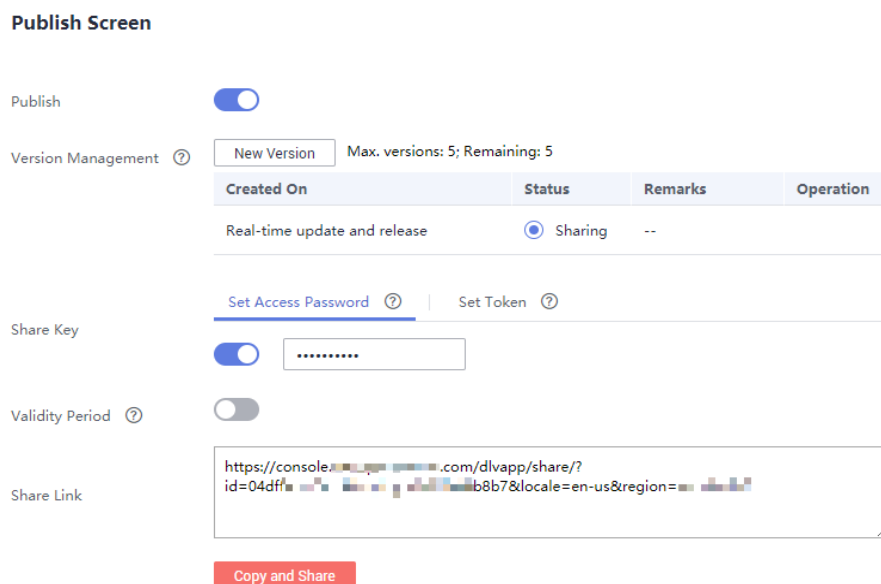
- Real-time version: When the current version of screen is modified, users who are sharing it can synchronously use the latest version of screen. It is the default option and cannot be deleted.
- Historical version: When the current version of screen is modified, users who are sharing it cannot use the latest version of screen but can only use the original one.

### Share Key

Specifies a screen sharing mode.

- Public sharing: If a user does not configure password access or token authentication for a screen, the screen is accessed through the shared link. The basic edition of DLV supports only the public sharing mode.
- Password access: On the **Set Access Password** tab page, enable password access and set a password. After the password is set successfully, other users need to enter the password each time when they want to access the screen through the shared link.

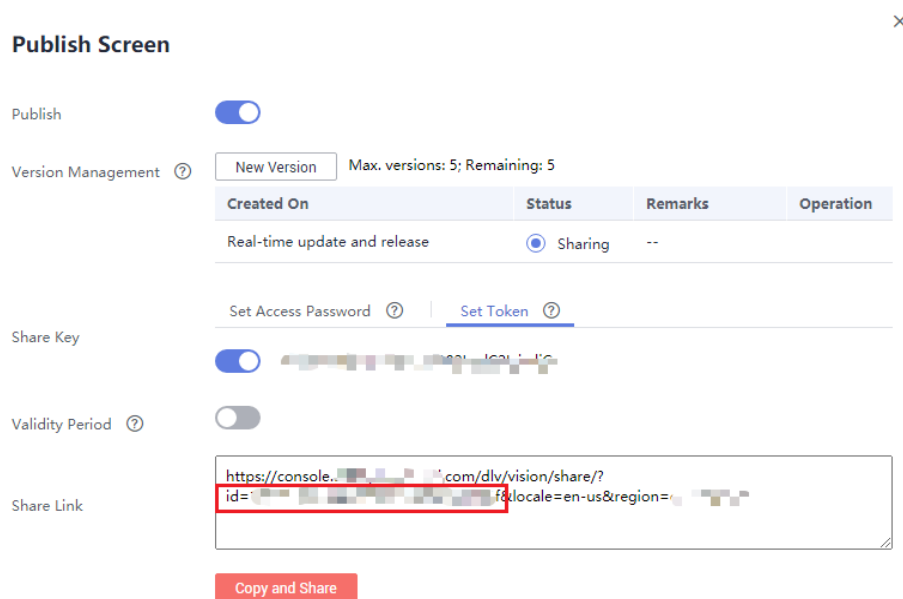
**Figure 14-4** Setting an access password



- Token access: On the **Set Token** tab page, enable token verification. The system randomly generates a token. You need to record it for future use.



Figure 14-5 Setting a token



After the token for the screen is generated, you have to perform the following steps before accessing the screen:

**NOTE**

- Publish the screen and record the shared screen code (a character string behind **share** in the shared link).
- Connect the screen code with the current time (millisecond) and separate them with a vertical bar (|).
- Use the token to encrypt the character string in [Step 3.b](#) through HMAC-SHA256 base64.
- Name the time and the encrypted signature **dlv\_time** and **dlv\_signature**, respectively.
- Add them to **querystring** of the shared link.

An example is provided as follows:

Java:

```
package com.test;
import java.security.*;
import javax.crypto.*;
import javax.crypto.spec.SecretKeySpec;
import org.apache.commons.codec.binary.Base64;
import java.net.URLEncoder;

public class ShareWithTokenTest {

    public static void main(String[] args) throws Exception {
        System.out.println(getShareUrlWithToken("b668e3b44722467a9477b5b888211bca",
"nrU4iher1tyy1C7Jenni3pzJxellPz8P"));
    }

    public static String getShareUrlWithToken(String shareID, String token){
        long time = System.currentTimeMillis();
        String data = shareID + "|" + time;
        String signature = HMACSHA256(data.getBytes(), token.getBytes());
        String url = "https://console.com/dlv/vision/combo/share/?id="+shareID +"&dlv_time="+time
```

```
+"&dlv_signature="+ signature+"&locale=zh-cn&region=";  
    return url;  
    }  
  
    //Use HmacSHA256 for signature.  
    public static String HMACSHA256(byte[] data, byte[] key)  
    {  
        try {  
            SecretKeySpec signingKey = new SecretKeySpec(key, "HmacSHA256");  
            Mac mac = Mac.getInstance("HmacSHA256");  
            mac.init(signingKey);  
            return URLEncoder.encode(Base64.encodeBase64String(mac.doFinal(data)));  
        } catch (NoSuchAlgorithmException e) {  
            e.printStackTrace();  
        } catch (InvalidKeyException e) {  
            e.printStackTrace();  
        }  
        return null;  
    }  
}
```

#### NOTE

Replace the following parameters in the preceding code based on the site requirements:  
**b668e3b44722467a9477b5b888211bca** in  
`System.out.println(getShareUrlWithToken("b668e3b44722467a9477b5b888211bca",  
"nrU4iher1tyy1C7Jenni3pzJxellPz8P"))` is the parameter after **share** in the shared link, and  
**nrU4iher1tyy1C7Jenni3pzJxellPz8P** is the parameter in the shared key.  
In `String url = "https://console.com/dlv/vision/combo/share/?id="+shareID +"&dlv_time="+time  
+"&dlv_signature="+ signature+"&locale=zh-cn&region=, locale=zh-cn indicates the language ID, en-  
us indicates the English language, and region= indicates the area where the service is deployed.`

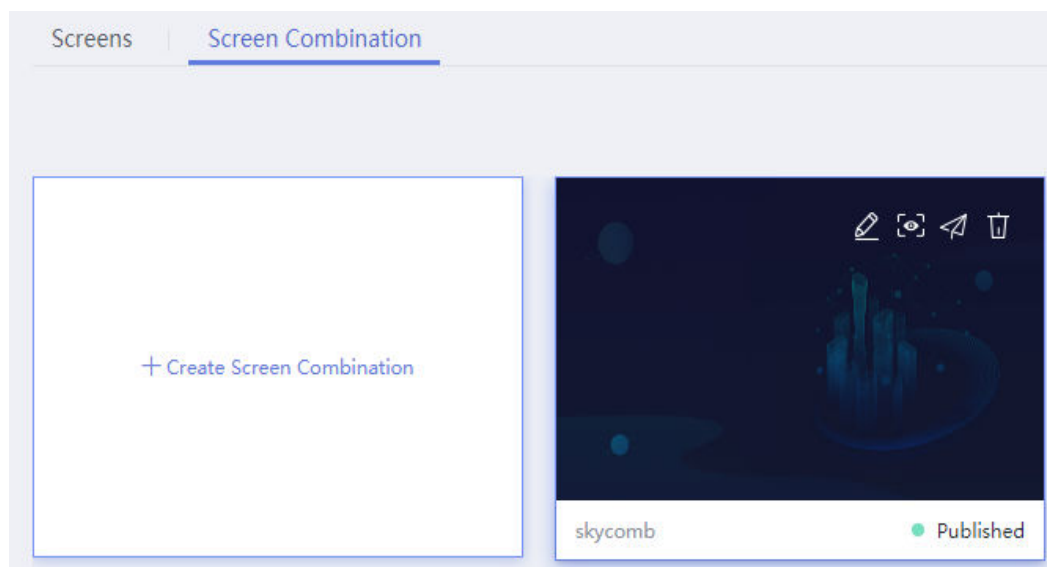
----End


## Editing Screen Combinations

**Step 1** Log in to the DLV console.

**Step 2** On the **Screen Combination** page, mouse over the required screen combination. A row of operation buttons are displayed on the screen.

**Figure 14-6** Managing a combined screen



**Step 3** Click . The page for editing the combined screen is displayed.

**Step 4** The procedure for editing a combined screen is similar to that for creating a combined screen. For details, see [Combining Screens](#).

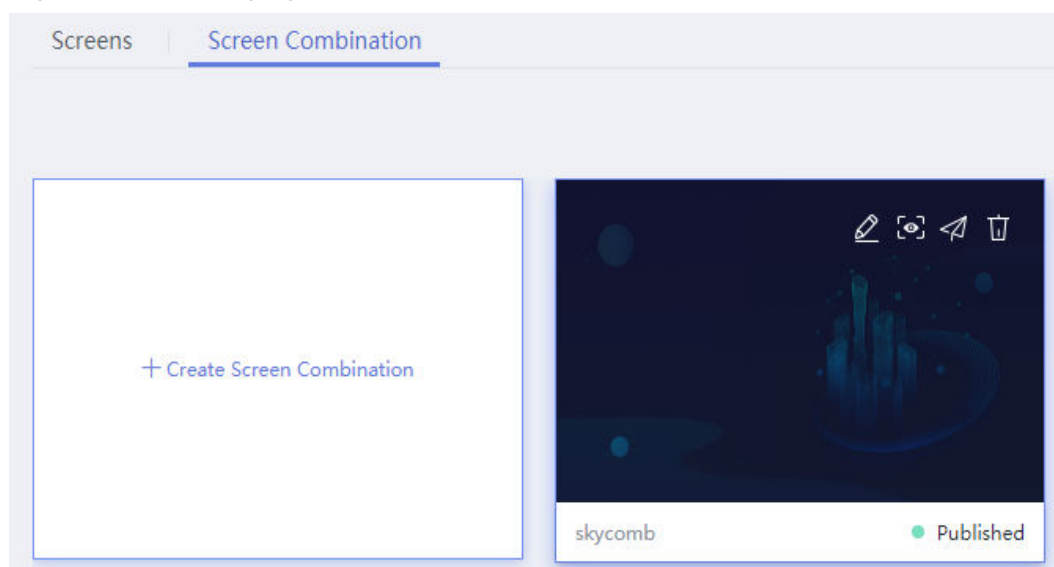
----End

## Previewing Combined Screens

**Step 1** Log in to the DLV console.

**Step 2** On the **Screen Combination** page, mouse over the required screen combination. A row of operation buttons are displayed on the screen.

**Figure 14-7** Managing a combined screen



**Step 3** Click  to preview the combined screen.

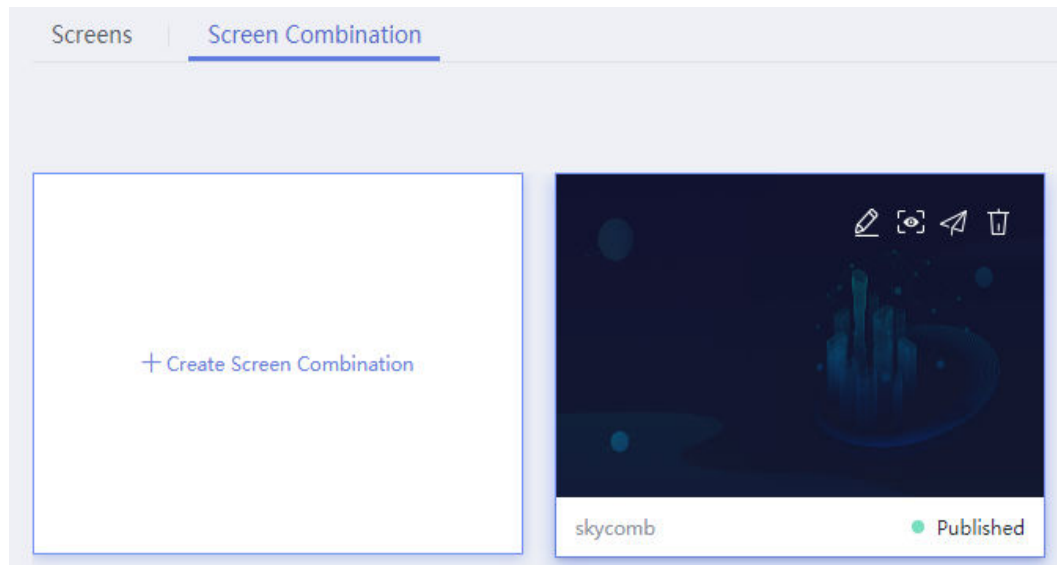
----End

## Deleting Combined Screens

**Step 1** Log in to the DLV console.

**Step 2** On the **Screen Combination** page, mouse over the required screen combination. A row of operation buttons are displayed on the screen.

**Figure 14-8** Managing a combined screen



**Step 3** Click .

**Step 4** In the displayed dialog box, click **Yes**.

----End

# 15 Integrating DLV into Third-Party Systems

Open management provides a unified key for embedding multiple screens into third-party applications, avoiding the need to maintain the mapping between a screen and a key when a user adds or deletes a screen.

## Prerequisites

Before using AppKey to integrate a screen into a third-party application, ensure that the screen is in the published state and token verification has been enabled during screen publishing.

## Creating Applications

- Step 1** Log in to the DLV console.
- Step 2** In the navigation tree on the left, choose **Control Center > Open Management**.
- Step 3** On the **Open Management** page, click **Create Application**.
- Step 4** In the **Create Application** dialog box, set the following parameters and click **OK**.

**Table 15-1** Application parameters

Parameter	Description
Name	An application name can contain only letters, digits, underscores (_), and hyphens (-), and cannot exceed 32 characters.
Authorized Service Type	The default value is <b>screen</b> .
Resource	The default value is <b>All</b> .
Remarks	Enter application description.

Figure 15-1 Creating an application

### Create Application

\* Name

\* Authorized Service Type  screen

\* Resource  All

Remarks

0/200

----End

## Viewing the AppKey and Key of an Application






- Step 1** Log in to the DLV console.
- Step 2** In the navigation tree on the left, choose **Control Center > Open Management**.
- Step 3** In the application list on the **Open Management** page, find the required application and view the AppKey and secret of the application. To copy them, mouse over the AppKey or secret and click .

Figure 15-2 Application list

Name	AppKey	Key	Authorized Service Type	Resource	Remarks	Operation
firstKey1			screen	All	num 1	Edit Delete Reset
sky0628			screen	All	test	Edit Delete Reset

----End

## Generating a URL for Integrating a Screen with a Third-Party System

A screen URL for integrating a third-party system must contain the AppKey and secret of the application. DLV screens and combined screens can be integrated into third-party systems. The following uses a DLV screen as an example to describe how to generate the URL of the screen integrated into a third-party system.

Publish the screen by following the instructions in section [Publishing Screens](#). During the publishing, enable token authentication and obtain the link to the screen. The link format is as follows:

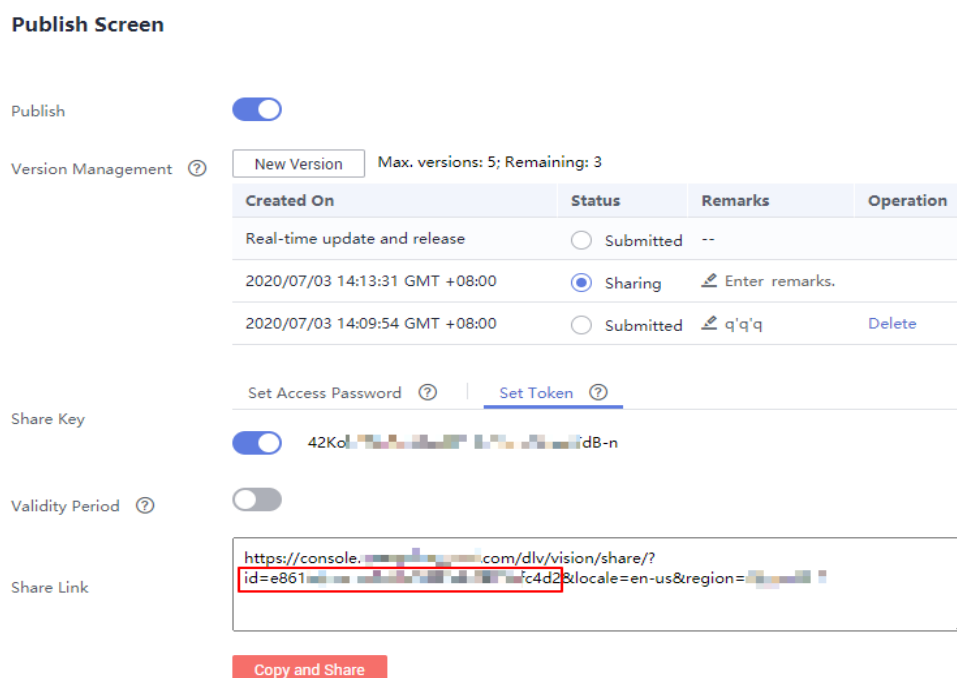
```
https://xxx/dlv/vision/share/?id=*****c5c6343cab*****dfcb4&locale=zh-cn&region=xxx
```

The link address of the screen to be embedded in the third-party system needs to add some extra parameters. The format of the embedded link address is as follows:

```
https://xxx/dlv/vision/share/?id=a33b74ac5c6343cab47ae3386efdfcb4&dlv_time={current system time}&app_id={AppKey on the Open Management page}&dlv_signature={signature}&locale=zh-cn&region=xxx
```

- **id**: indicates the share ID. When publishing a screen, obtain the ID next to share in the screen sharing link, as shown in the red box in [Figure 15-3](#).

**Figure 15-3** Obtaining shareId



- **dlv\_time**: current system time, which can be obtained by calling a system function in the application code.  
`long time = System.currentTimeMillis();`
- **app\_id**: AppKey of the application. For details about how to obtain the AppKey, see [Viewing the AppKey and Key of an Application](#).
- **dlv\_signature**: signature. The signature must be generated through code. The procedure for generating the signature is as follows:

Use the application key to generate a signature using the HMACSHA256 encryption algorithm.

```
String data = shareID + "|" + time + "|" + appld;  
String signature = HMACSHA256(data.getBytes(), token.getBytes());
```

- Use vertical bars (|) to separate **id** (variable shareID), **dlv\_time** (variable time), and **app\_id** (variable appld) as the data for generating the signature.
- On the **Open Management** page, obtain the application key and define it as the variable token in the application code.

For details about how to obtain the AppKey and key, see [Viewing the AppKey and Key of an Application](#).

- **locale**: language identifier. **zh-cn** indicates Chinese and **en-us** indicates English.
- **region**: region where the service is used. Set this parameter based on the region where the screen is located.

If you need to integrate a combined screen into a third-party system, publish the combined screen by referring to the instructions in [Publishing Combined Screens](#). During the publishing, enable token verification and obtain the link to the combined screen. Set **dlv\_time** and **app\_id** parameters to obtain the link address of the combined screen to be integrated with the third-party system.

## Integrating a DLV Screen into a Third-Party System (Using Java Sample Code)

The following is Java sample code for integrating a DLV screen into a third-party system. For details about how to generate a screen URL in the code, see [Generating a URL for Integrating a Screen with a Third-Party System](#).

```
public static void main(String[] args) {
    String token = "*****";
    String shareId = "*****";
    String appld = "*****";
    System.out.println(getShareUrlWithToken(shareId, token, appld));
}

public static String getShareUrlWithToken(String shareId, String token, String appld){
    long time = System.currentTimeMillis();
    String data = shareId + "|" + time + "|" + appld;
    String signature = HMACSHA256(data.getBytes(), token.getBytes());
    String url = "https://xxx/dlv/vision/share/?id="+ shareId +
"&dlv_time="+time+"&dlv_signature="+ signature+"&region=xxx" + "&app_id=" + appld;
    return url;
}

public static String HMACSHA256(byte[] data, byte[] key) {
    try {
        SecretKeySpec signingKey = new SecretKeySpec(key, "HmacSHA256");
        Mac mac = Mac.getInstance("HmacSHA256");
        mac.init(signingKey);
        byte[] var1 = mac.doFinal(data);
        String var2 = byteArrayToHexString(var1);
        return var2;
    } catch (NoSuchAlgorithmException e) {
        e.printStackTrace();
    } catch (InvalidKeyException e) {
        e.printStackTrace();
    }
    return null;
}

public static String byteArrayToHexString(byte[] b) {
    StringBuilder strBuilder = new StringBuilder();
    String tmp;
    for (int n = 0; b!=null && n < b.length; n++) {
        tmp = Integer.toHexString(b[n] & 0xFF);
        if (tmp.length() == 1)
            strBuilder.append('0');
        strBuilder.append(tmp);
    }
    return strBuilder.toString().toUpperCase();
}
```



## DLV SDK Introduction

DLV provides two SDK packages: **dlv.js** and **dlv.min.js**. The two SDK packages implement the same functions in different ways.

- **dlv.js**: modular SDK package, which is imported through **require** and **import**.  
Download address: <https://dlv-dev-tools2.obs.ap-southeast-3.myhuaweicloud.com/cli/dlv.js>
- **dlv.min.js**: non-modular SDK package, which is imported externally, for example, `<script src='dlv.min.js'></script>`.  
Download address: <https://dlv-dev-tools2.obs.ap-southeast-3.myhuaweicloud.com/cli/dlv.min.js>

Currently, the DLV SDK provides only the `embedded(option)` method and does not return any value. [Table 15-2](#) describes the input parameters.

**Table 15-2** option parameter description

Parameter	Mandatory	Type	Description
url	Yes	string	URL of the screen embedded in the third-party system, which is obtained by invoking the API in the preceding steps.
container	Yes	domElement	dom node where the screen is embedded.
parameters	No	object	Pass parameter of the screen. The default value of the variable is set by setting the hash parameter in the URL.
scrolling	No	string	Specifies whether the screen can be scrolled. The options are <b>no</b> , <b>yes</b> , and <b>auto</b> . The default value is <b>no</b> .
height	No	string	Percentage of the screen height (pixel) in the current container. The default value is 100%.
width	No	string	Percentage of the screen width (pixel) in the current container. The default value is 100%.

## Calling the DLV SDK by a Third-Party System to Integrate a Screen (Using Node JS Sample Code)

The following uses the **dlv.js** SDK package as an example to describe how to call the SDK provided by DLV to integrate a DLV screen into a third-party application.

The following is an example of Node JS:

- Step 1** In the server code of the third-party application, create a \*.js file, define an API, and generate a DLV screen URL by referring to the instructions in [Generating a URL for Integrating a Screen with a Third-Party System](#).

The following is an example of the server code `getDlvURL.js`:

```
/* Code of the user server, defining the API /app (taking the koa framework as an example)
Input parameter:
shareId: screen sharing ID
Response:
url: URL for integrating a third-party system with a screen
*/
const router = require('koa-router')();
var CryptoJS = require("crypto-js");

router.get('/app', async (ctx) => {
  var {shareId} = ctx.query; // screen sharing ID, which is transferred as a parameter when the API is called //For example, shareId = '6320803b882b4e2a91d973b3a5d71625';
  var secret = '*****M5huvqcCpXz*****'; // Application secret on the open management page
  var appId = '*****26f94c9a3016f94e7*****'; // AppKey of the application on the open management page
  var time = new Date().getTime(); // Current system time
  var data = shareId + "|" + time + "|" + appId;
  var hash = CryptoJS.HmacSHA256(data, secret);
  var signature = (CryptoJS.enc.Base64.stringify(hash)); // Signature. The signature must be generated using code and the application key through the HMACSHA256 encryption algorithm.
  var url = `https://xxx/dlv/vision/share?id=${shareId}&dlv_time=${time}&app_id=${appId}&dlv_signature=${signature}&locale=zh-cn&region=xxx`;

  ctx.body = { //Result returned by the API
    url
  }
})

module.exports = router;
```

- Step 2** Download a DLV SDK package. For details about the download addresses, see [DLV SDK Introduction](#). Save the downloaded SDK file (for example, `dlv.js`) to the directory where the third-party application client code is located.

For example, `./sdk/dlv.js`.

- Step 3** In the code of the third-party application client, call the API defined in [Step 1](#) to obtain the screen URL, and then call the DLV SDK API to embed and integrate the URL.

Currently, the DLV SDK provides only the `embedded(option)` method. In the API input parameters, the **parameters** parameter can be used to transfer the URL hash parameter of the screen and set the default value of the parameter.

The following is an example of the client code `EmbedDlvScreen.js`:

```
/*
The following is the sample code for using the DLV SDK. The dlv.js SDK package is used as an example.
*/

import DLV from './sdk/dlv.js';

// Use the AJAX of jQuery as an example. Call the API/application for obtaining the screen URL and then call the DLV SDK API to embed the URL into the screen.
$.ajax({
  type: "GET",
  url: "/app",
  data: { shareId: '*****882b4e2a91d9*****81625' },
  dataType: "json",
  success: function(data){
    var url = data.url;
    // options is the parameter of the embed method.
```

```
var options = {
  url: url, //URL for integrating a third-party system with a screen, which is obtained by calling the
API in the preceding step.
  container: document.getElementById("id-test"), // dom node where the screen is embedded
  parameters: { //Input parameter of the screen. The default value of the variable is set by setting the
hash parameter in the URL.
    name: 'admin' // the value of name is 'admin', that is, `https://xxx/dlv/vision/share/?
id=*****99c454882602*****&locale=zh-cn&region=xxx#name=admin`;
  },
  scrolling: "no", //Specifies whether the screen can be scrolled.
  height: "100%", //Height of the screen.
  width: "100%" //Width of the screen.
};

//Call the DLV SDK API to integrate with the screen.
DLV.embed(options);
}
});
```

----End

## Resetting Application Keys

- Step 1** Log in to the DLV console.
- Step 2** In the navigation tree on the left, choose **Control Center > Open Management**.
- Step 3** In the application list on the **Open Management** page, locate the desired application and click **Reset** in the **Operation** column.
- Step 4** In the displayed dialog box, click **Yes**.

----End

## Editing Applications

- Step 1** Log in to the DLV console.
- Step 2** In the navigation tree on the left, choose **Control Center > Open Management**.
- Step 3** In the application list on the **Open Management** page, locate the desired application and click **Edit** in the **Operation** column.
- Step 4** In the displayed dialog box, modify the configuration parameters and click **OK**.

**Figure 15-4** Editing applications

### Edit Application

★ Name	<input type="text" value="dlv_app"/>
★ Authorized Service Type	<input checked="" type="radio"/> screen
★ Resource	<input checked="" type="radio"/> All
Remarks	<input type="text"/> 0/200
	<input type="button" value="OK"/> <input type="button" value="Cancel"/>

----End

## Deleting Applications

- Step 1** Log in to the DLV console.
- Step 2** In the navigation tree on the left, choose **Open Management**.
- Step 3** In the application list on the **Open Management** page, locate the desired application and click **Delete** in the **Operation** column.
- Step 4** In the displayed dialog box, click **Yes** to delete the data.

----End

# 16 FAQs

---

## 16.1 What Is DLV?

Data Lake Visualization (DLV) is a one-stop data visualization platform that adapts to various data sources in the cloud or on-premises. By dragging and dropping 2D and 3D visual components on DLV, you can quickly customize and create a data screen of your own.

## 16.2 What Is DLV Used For?

DLV is specifically designed to surface valuable insights buried inside the constantly changing and complex data in a more intuitive and user-friendly way. It applies to different sectors including retailing, logistics, electric power, water conservancy, environmental protection, and transportation. With real-time data displayed on interactive screens, DLV helps users discover and diagnose service issues whenever they arise. The following lists some benefits that DLV will bring to you:

- DLV provides you various visual components. In addition to the regular charts optimized for service display, DLV provides irregular charts presenting topological relationships. In addition, DLV supports display of flying lines, heatmaps, regions, 3D maps, and 3D globe, and allows layering of geographical data. In addition, there are irregular charts presenting topological relationships available for you.
- DLV seamlessly integrates with cloud services, such as Data Warehouse Service (DWS), Data Lake Insight (DLI), Relational Database Service (RDS), and Object Storage Service (OBS), and supports local CSV files, online APIs, and the private cloud data of enterprises. By fully utilizing big data computing capability, DLV can meet real-time computing and monitoring requirements.
- DLV enables you to build screens only by drag-and-drop without programming and to create screens of different sizes by adapting to unconventional resolutions.
- DLV allows you to release and share your created screens. In this way, your data services can be externally displayed.

## 16.3 Regions and AZs

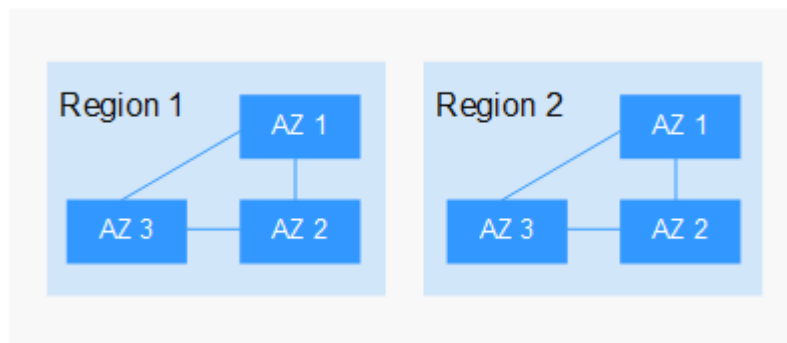
### What Are Regions and AZs?

A region and availability zone (AZ) identify the location of a data center. You can create resources in a specific region and AZ.

- A region is a physical data center, which is completely isolated to improve fault tolerance and stability. After a resource is created, its region cannot be changed.
- An AZ is a physical location where resources use independent power supplies and networks. A region contains one or more AZs that are physically isolated but interconnected through internal networks. Because AZs are isolated from each other, any fault that occurs in an AZ will not affect other AZs.

**Figure 16-1** shows the relationship between regions and AZs.

**Figure 16-1** Regions and AZs



### How Do I Select a Region?

Select a region closest to your target users for low network latency and quick access.

### How Do I Select an AZ?

When determining whether to deploy resources in the same AZ, consider your applications' requirements for disaster recovery (DR) and network latency.

- For high DR capability, deploy resources in different AZs in the same region.
- For low network latency, deploy resources in the same AZ.

### Regions and Endpoints

When using an API to use resources, you must specify its region and endpoint. For details about regions and endpoints, see [Regions and Endpoints](#).

## 16.4 How Many Screens Can I Create in DLV?

By default, in one region, users of the advanced edition can create a maximum of 20 screens, and users of the professional edition can create a maximum of 50 screens.

## 16.5 Can I Quickly Create a DLV Screen Using a Template?

Yes, DLV allows you to quickly create a screen by using a template. Template customization is not supported at present but will be supported soon.

## 16.6 Can DLV Connect to Data Sources Through APIs?

Yes, DLV can connect to external data sources through APIs. Specifically, you need to drag a component to a screen, set **Data Source Type** to **API** on the **Data** tab, and enter a URL by which DLV connects to a data source and obtains data from it. If a cross-region issue occurs, set header information **Access-Control-Allow-Origin** at the peer end to grant a region access permission.

## 16.7 What Types of Data Connections Are Supported in DLV?

DLV supports the following types of data connections:

- Database class: Data Warehouse Service (DWS), Data Lake Insight (DLI), MapReduce Service (MRS) Hive, MRS SparkSQL, Relational Database Service (RDS) for MySQL, RDS for PostgreSQL, and RDS for SQL Server, MySQL, PostgreSQL, SQL Server, and Oracle
- File class: CSV files and static JSON files
- API class: APIs
- Others: Distributed Database Middleware (DDM) and Object Storage Service (OBS)

## 16.8 How Do I Configure a CSV Data Source?

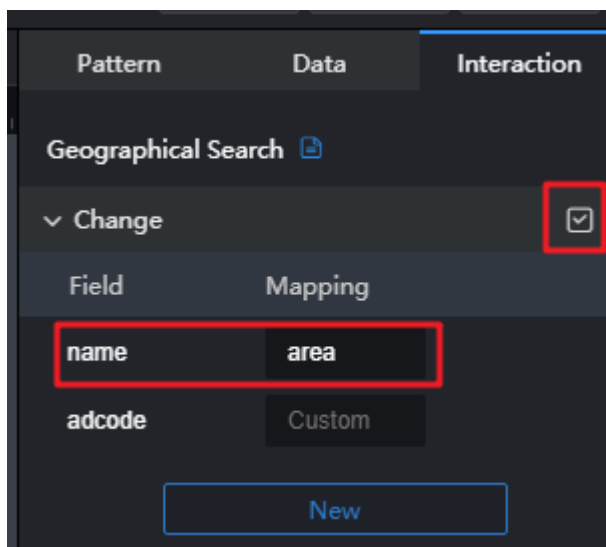
In a CSV file, the first row is the table header and each of the other rows is a data record. Each data record consists of one or more fields. Fields are separated by commas (,). When configuring a data source, retain the first row of the CSV file as the table header, and ensure that the name of each column is consistent with the field name of the data structure required in the corresponding chart.

## 16.9 How Do I Use the Interaction Function?

The interaction function enables parameters set for one component to be useful in other components.

For example, enable the interaction function of a geographical search component and set the mapping of field **name** to **area**, as shown in [Figure 16-2](#).

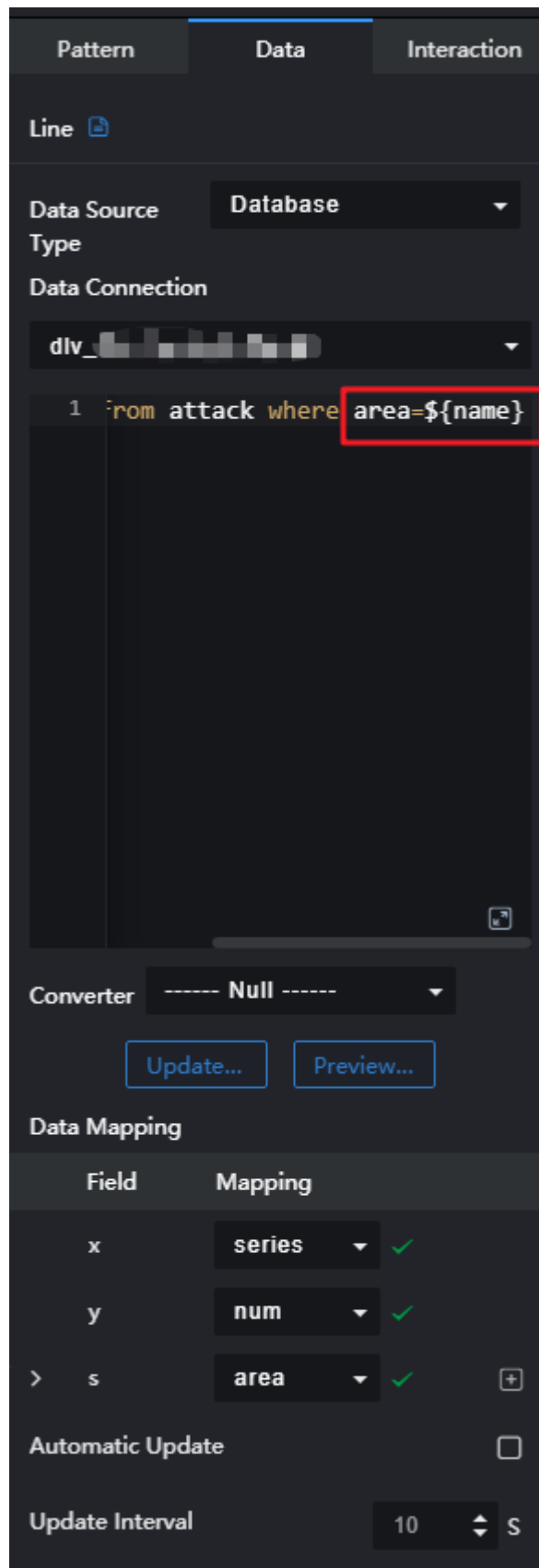
**Figure 16-2** Configuring a mapping for a field



In other components, **name** can be used as a variable in the format of **\${name}**, as shown below:



**Figure 16-3** Referencing the parameter value



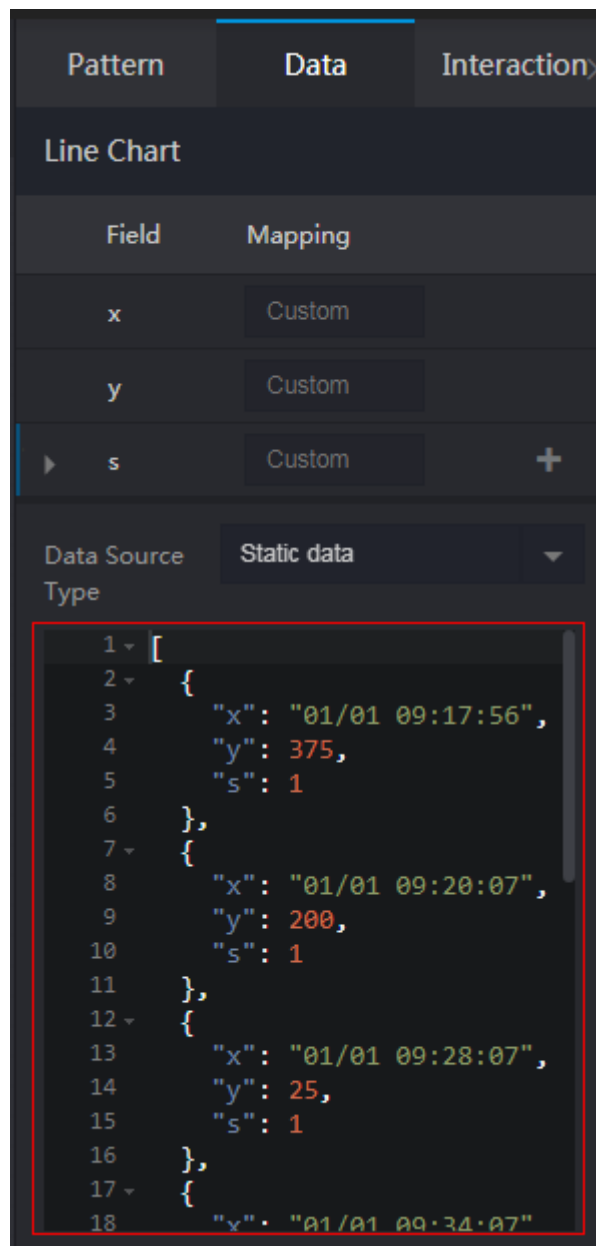
## 16.10 What Can I Do If a Component Cannot Be Completely or Normally Displayed?

Clear your browser cache (especially cookie) and log in again.

## 16.11 How Do I Query Data Formats Supported by Different Components?

On the **Data** page of a component, you can view data fields and formats and configure mapping relationships. For details about data fields and formats, set **Data Source Type** to **Static data** and see the example content, as shown below:

Figure 16-4 Viewing data formats



## 16.12 What Can I Do When the WebGL Component Breaks Down?

WebGL is an API for rendering interactive 3D graphics within web browsers. If the system prompts that the WebGL component breaks down when you are using it, refresh or restart the browser.