Alibaba Cloud

DataV Best Practices

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C-J Alibaba Cloud

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Document conventions

Style	Description	Example
▲ Danger	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	Danger: Resetting will result in the loss of user configuration data.
O Warning	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	Warning: Restarting will cause business interruption. About 10 minutes are required to restart an instance.
C) Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	Notice: If the weight is set to 0, the server no longer receives new requests.
? Note	A note indicates supplemental instructions, best practices, tips, and other content.	Note: You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click Settings> Network> Set network type.
Bold	Bold formatting is used for buttons , menus, page names, and other UI elements.	Click OK.
Courier font	Courier font is used for commands	Run the cd /d C:/window command to enter the Windows system folder.
Italic	Italic formatting is used for parameters and variables.	bae log listinstanceid Instance_ID
[] or [a b]	This format is used for an optional value, where only one item can be selected.	ipconfig [-all -t]
{} or {a b}	This format is used for a required value, where only one item can be selected.	switch {active stand}

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1.Render Log Service data in DataV

The following sections describe how to configure DataV to render data from Log Service.

The following sections describe how to:

- Create and configure Log Service to work with DataV (set indexes).
- Create a sample dashboard.
- Share the dashboard publicly.

Prerequisites

- You must have completed Configure Log4JAppender with Kubernetes and Log Service and the service is currently running.
- You must have purchased DataV Enterprise Edition.

Configure Log Service

1. Visit the Logstore List page within your project.

ogstore List						Endpoint Lis	st Create
earching by logstore n	name Sea	rch					
	Data Wizard	Monitor	Los Collection Mode	Lo	og Consumption M	ode	Actio
ogstore name	Data Wizaru	WORLD	itor Log Collection mode	LogHub	LogShipper	LogSearch	Actio
8s-logstore	9	⊭	Logtail Config (Manage) Diagnose More Data -	Preview	OSS	Search	Modify Delet

2. Click Search next to the name of your project. The following page is displayed:

<	k8s-logstore (Belong to ka	8s-logs)		Share	Index Attributes	Saved to Savedsearch	Saved	to alarm			
Tab List	* and bruce		0	1min	∨ 2018-0	2-18 12:57:02 ~ 2018-02-18	Se	arch			
k8s-logstore	0 12:57:02	12:57:13	12:57:24	12:57:	35	12:57:46					
New Tab		Total Count:14 Status:The results are accurate.									
	Raw Data Graph										
	Quick Analysis	< Time 🛋 🕶	Content 👻					©			
	You haven't specified a field query yet. Add it quickly (Help Docs)	1	_source_: _topic_: level: INFO location: com.aliyun.log4jappenderden mesage: User login successfully. req thread: http-nio-8080-exec-10 time: 2016-02-18112:57-0000	no.UserCont uestID=	troller.login(UserCo	ntroller.java : 17)					
		2 Q 02-18 12:57:44	_source_: _topic_: level: INFO location: com.aliyun.log4jappenderden mesagae: User login successfully. req thread: http-nio-8080-exec-10 time: 2016-02-18112:57-0000	no.UserCont uestID=	troller.login(UserCo	ntroller.java: 17)					
		3 Q 02-18 12:57:43	source: topic: level: INFO location: com.aliyun.log4jappenderden message: User login successfully. req thread: https://sRR0.evers.8	no.UserCont uestID=	troller.login(UserCo	ntroller.java:17)		Þ			

3. Create indices for all required fields. The following example creates an index for each item. Click

Index Attributes from the upper menu of the page and click Modify.

4. Verify the data from the Search & Analysis page:

arch & Analysis						
dedifications (such as changing the delimitar analysis statistics, and	d opabling oppo populitivi	tu) oply take affect for pour s	lata			
I costore Name k8s-lostore	d enabling case-sensitivi	ty) only take ellect for new c	Jata			
Full Text Index						
Case Sensitive						
Token , '";=0]]{}?@&<>/:\n\t						
Field Search						
custom Nginx template MNS template						
		Enable	Search			
Key			Case		Enable Analytics Dele	ete
	Туре	alias	Sensitive	Token		
level	text \checkmark	level		, '";=0[]{}?@&<>/:\n\t\r	() ×	
location	text \checkmark	location		, '";=0]]{}?@&<>/:\n\t\r	() ×	
message	text \checkmark	message		, '";=0[]{}?@&<>/:\n\t\r	() ×	
thread	text 🗸	thread		, '";=()[]{}?@&<>/:\n\t\r	() ×	
time	text 🗸	time		, '";=0[]{}?@&<>/:\n\t\r	() ×	

5. Once the data has been imported properly, switch to **Graph** view (in the following graph, the axis is 'time'):



Configure DataV

1. Visit the DataV product page to create your first project.

WELCC Empowering Int	DME telligent & Da	TO DATAV City Na Sources						
■ Project Folders	+	All Projects 156 New Project(s) Avai	lable 곗					
All Projects	44							
Ungrouped							232,425 11 11	arta atta
TEST		+ Create Project						
			test001	Unpublished	abby test	Published	test13	Published
		q 🛛 Unpublished	test12	Published	test coms_cop	Unpublished	test-yaxis	Unpublished

- 2. Click Create Project, select a blank template, and click Create.
- 3. Add a widget to the dashboard.



The widget displays some sample static dataset.



4. Click the widget and, select the *Log Service (SLS)* from Data Source Type from the **Data** tab on the right side.



5. Click **Create** in the Select Data Source. The **New data** dialog is displayed, fill in the relevant information, and click **OK**.

Onte Make sure you add http:// or https:// in the Endpoint field.

6. Once completed, select the newly created Source. The following example uses a simple example query:

```
{
    "projectName": "k8s-logs",
    "logStoreName": "k8s-logstore",
    "topic": "",
    "from": "1518883200",
    "to": "1518969600",
    "query": "* | select count(1) as pv, date_format(from_unixtime(__time__ - __time__%3600) ,'%Y/%m/%
    d %H:%i:%s') as time group by time order by time limit 1000",
    "line": 100,
    "offset": 0
  }
    Onte from and to are the timest amps you can use to examine raw data in the Search
```

- console.
- 7. Preview the data by clicking **View Data Response** button at the lower-side of the window. The following response result window is displayed:



8. Click **Select Filter** and apply the following filter to make sure the **pv** is an integer, and click **OK**.

```
return Object.keys(data).map((key) => {
  let d= data[key];
  d["pv"] = parseInt(d["pv"]);
  return d;
}
)
```

+ Select Filter	
Name: * PV to Int	
<pre>function filter(data) {</pre>	
<pre>1 • return Object.keys(data).map((key) => { 2 let d= data[key]; i 3 d["pv"] = parseInt(d["pv"]); 4 return d; 5 } i 6)</pre>	
}	
Preview	Cancel

9. Set the axes and verify the settings are set correctly.

PV to Int	+ Select Filter	
Data Response Result		
<pre>[{</pre>	"", 518883200", 02/18 10:00:00", 18 10:00:00", "", 518883200", 02/18 22:00:00", 18 22:00:00",	

10. Click Preview.



You can see that x and y use the correct data type, and pv is an integer.

11. To share this dashboard publicly, click **Publish** in the upper-right corner of the page.

An example of a completed and published DataV dashboard, using a dataset from a Log Service data, is as follows:



Conclusion

You have successfully configured DataV and Log Service together on Alibaba Cloud and used Log Service to perform real-time monitoring by means of a custom dashboard.

References

For more information on Log Service and containers, see

- Log Service
- Container Service

2.Use DataV to view air quality changes before and after the Spring Festival 2.1. Overview

This topic describes how to create a project in DataV to view air quality changes before and after the Spring Festival.

Procedure

- 1. Make preparations.
 - i. Obtain data
 - ii. Process dat a
 - iii. Process the APIs
- 2. Create a project.
 - i. Create a project
 - ii. Add widgets
 - iii. Add data
- 3. Publish the project.

For more information, see Publish a project.

Description

You need to use the following feature or widgets when creating a project:

- Spatial interpolation
- Isosurface layer
- Timeline

Spatial interpolation

Spatial interpolation is generally used to convert scattered data into consecutive data on a curve to compare the data with data in other distribution modes.

That is, the data obtained from existing monitoring sites can be used to estimate data of other locations. Then, colors are mapped according to the value range and an isothermal map is generated.

By creating an isothermal map using DataV, you will start the process of spatial interpolation, in which scattered data obtained from monitoring sites is used to create consecutive data on a curve.



Isosurface layer

DataV provides an isosurface layer map widget featuring lightweight analysis, which can help you create a grid area map using data of known vector points. You can use this widget to create a real-time air quality map, as shown in the following figure.



Timeline

The timeline widget is necessary to display air quality changes during a period of time.



This widget supports callback IDs, which can be used to connect this widget to other widgets. Data of connected widgets will be automatically updated when the time on the timeline changes.

If a correct callback ID is set, the system will trigger a data request when time changes and automatically adds the callback ID and the value of the callback ID to the parameter list of the corresponding APIs of other widgets.

- IP address of the initial API: http://127.0.0.1:8888/aqi
- IP address of the API after callback is triggered: http://127.0.0.1:8888/aqi?date=2017012722

The callback ID is date,2017012722 .

The callback ID supports SQL statements. To use the callback ID, you need to use a colon (:) and the callback ID name in your SQL statements.

- Initial SQL statement: select :date as value;
- SQL statement after callback is triggered: select '2017022722' as value;

2.2. Preparations

2.2.1. Feature introduction

This topic describes the features that you need to know about before you configure a project.

You need to use the following features when you create a project:

- Spatial interpolation.
- Isosurface layer widget.

• Timeline widget.

Spatial interpolation

Spatial interpolation is used to convert scattered measurement data into a continuous statistical surface to assess the distribution patterns of spatial information.

Spatial interpolation allows you to calculate the data of any other locations based on the data from known monitoring stations. Then, you can fill in the colors based on the temperature ranges to generate an isothermal map.

In this example, DataV interpolates the known measurement data of scattered points into a continuous statistical surface to produce an isothermal map.



Isosurface layer widget

DataV provides an isosurface layer widget that is used for lightweight analysis. This widget helps you create a raster map based on known vectors. For example, you can use the isosurface layer widget to generate a real-time nationwide air quality map.



Timeline widget

DataV

The timeline widget allows you to view air quality changes over a period of time.



You can configure a callback ID in the timeline widget, so it can interact with other widgets. Specifically, the data of other widgets is automatically updated when the time on the timeline is changed. After you add the callback ID to other widgets, DataV automatically triggers a data request whenever the time changes and adds the callback ID and its value to the API parameter lists of these widgets. Example:

- Original API address: http://127.0.0.1:8888/aqi
- API address after a callback is triggered: http://127.0.0.1:8888/aqi? date=2017012722

In the preceding example, the callback ID is date,2017012722 .

Note You can also use the callback ID in a SQL statement in the format of :Callback ID .

- Initial SQL statement: select :date as value;
- SQL statement after a callback is triggered: select '2017022722' as value

2.2.2. Obtain data

This topic describes how to obtain air quality data before and after the Spring Festival. You need to obtain the data first before you can process the data.

You can download dat a from historical air quality data.

Onte We recommend that you download the files in CSV format.

In this example, the data is obtained from 1,497 monitoring sites from the dates of January 1, 2017 to February 2, 2017.

Monitoring site code	Monitoring site	City	Latitude	Longitude						
1001A	Wanshouxigong	Beijing	116.366	39.8673						
1002A	Dingling	Beijing	116.17	40.2866						
1003A	Dongsi	Beijing	116.434	39.9522						
1004A	Temple of Heaven	Beijing	116.434	39.8745						
1005A	Beijing National Agriculture Exhibition Center	Beijing	116.473	39.9716						
1006A	Guanyuan	Beijing	116.361	39.9425						
1007A	Haidian Wanliu	Beijing	116.315	39.9934						
1008A	Shunyi District	Beijing	116.72	40.1438						
1009A	Huairou District	Beijing	116.644	40.3937						
1010A	Changping District	Beijing	116.23	40.1952						
1011A	Olympic Sports Centre	Beijing	116.407	40.0031						
1012A	Gucheng	Beijing	116.225	39.9279						
1013A	Municipal Environmental Monitoring Center	Tianjin	117.151	39.097						
1014A	Nankou Road	Tianjin	117.193	39.173						
1015A	Qinjian Road	Tianjin	117.145	39.1654						
1016A	Nanjing Road	Tianjin	117.184	39.1205						
1017A	Dazhigu No.8 Road	Tianjin	117.237	39.1082						
1018A	Qianjin Road	Tianjin	117.202	39.0927						
1019A	Beichen Technology Park	Tianjin	117.1837	39.2133						
1020A	Tianshan Road	Tianjin	117.269	39.1337						
1021A	Yuejin Road	Tianjin	117.307	39.0877						
1023A	Forth Avenue	Tianjin	117.707	39.0343						
1024A	Yongming Road	Tianjin	117.457	38.8394						
1025A	Hangtian Road	Tianjin	117.401	39.124						
1026A	Hanbei Road	Tianjin	117.764	39.1587						
1027A	Tuanbowa	Tianjin	117.157	38.9149		ou nood to	ounniomon	t or filtor the	data that	
1028A	School of Chemical Engineering	Shijiazhuang			< .'	ontains no	Iongitude a	i or niter the nd latitude in	formation	
1029A	Hospital for Workers and Staff	Shijiazhuang	114.4548	38.0513	, i		iongitude u		normation.	-
1030A	Gaoxin District	Shijiazhuang	114.6046	38.0398						
1031A	Northwest Water Source Base	Shijiazhuang	114.5019	38.1398						
1032A	High Education area in Southwest Shijiazhuang	Shijiazhuang	114.4586	38.00583						
1033A	Centennial Park	Shijiazhuang	114.5331	38.01778						
1034A	Great Hall of the People	Shijiazhuang	114.5214	38.0524						
1035A	Fenglong Mountain	Shijiazhuang	114.3541	37.9097						
1036A	Supply and Marketing Cooperative	Tangshan	118.1662	39.6308						
1037A	Radar Station	Tangshan	118,144	39.643						

Open the downloaded files and check whether the data needs to be supplemented or filtered.

2.2.3. Process data

In this example, the CSV files are converted into JSON files.

The following is an example of the data format required by the isosurface layer widget. You need to process the data to better meet the requirements.



• Clip GeoJSON data: boundary data of the research area. Here the research area covers the whole of China, and the data is in GeoJSON format.

GeoJSON is an open standard format designed for representing simple geographical features. For more information, see GeoJSON standards.

• Interpolation Points Data: an array that includes the longitude, latitude, and value of a monitoring site.

To create an isosurface map for a period of time in a day, for example, an air quality index (AQI) map at 12:00 on January 20, 2017, you need to obtain the position data (longitude and latitude) and the corresponding AQI of each monitoring site. To process data, follow these steps:

1. Use the following node scripts to process the CSV files:

```
var csv = require("fast-csv");
var fs = require('fs');
var map = {};
csv
.fromPath(". /Site list (including the longitudes and latitudes)-new-1497.csv", { headers: true, objectMo
de: true })
.on("data", function (data) {
map[data['code']] = data;
})
.on("end", function () {
fs.writeFile('. /Longitude and latitude mapping in the site list.json', JSON.stringify(map));
console.log("done");
});
```

A dictionary is obtained. In the dictionary, the monitoring site No. is the key and the site information is the value.

```
{
"1001A":{
  "code": "1001A",
  "name": "Wanshouxigong",
  "city": "Beijing",
  "lng": "116.366",
  "lat": "39.8673"
},
"1002A":{
  "code": "1002A",
  "name": "Dingling",
  "city": "Beijing",
  "lng": "116.17",
  "lat": "40.2865"
},
"1003A": {
  "code": "1003A",
  "name": "Dongsi",
  "city": "Beijing",
  "lng": "116.434",
  "lat": "39.9522"
},
•••
}
```

2. Process data obtained from 1,497 monitoring sites on January 20, 2017.

Use the following scripts to process the AQI data obtained within 24 hours from each monitoring site. Extract the data and add the longitudes and latitudes to the sites according to the longitude and latitude mapping list.

```
var fs = require('fs');
var csv = require("fast-csv");
var mapdata = require('. /Longitude and latitude mapping in the site list.json');
var file = '. /Site_20170101-20170202/china_sites_20170120.csv';
var filename = file.replace(/^. *[\\\/]/, '').split('.')[0] .split('_')[2];
var datas = {};
csv
.fromPath(file, { headers: true, objectMode: true })
.on("data", function (data) {
if (data.type === 'AQI') {
 datas[data.hour] = [];
 for (var key in data) {
  if (mapdata[key]) {
   datas[data.hour].push({
    name: mapdata[key].name,
    value: +data[key],
    code: mapdata[key].code,
    city: mapdata[key].city,
    lng: +mapdata[key].lng,
    lat: +mapdata[key].lat
   })
  }
 }
}
})
.on("end", function () {
fs.writeFile('./data/' + filename + '.json', JSON.stringify(datas));
console.log("done");
});
```

Use the period of time for each day as the key, and the array as the value. The array contains the AQI information and position of each monitoring site of the corresponding periods. Then the data of each period of time for each day can be used in the **isosurface layer** widget.

{

"0": [{ "name": "Wanshouxigong", "value": 18, "code": "1001A", "city": "Beijing", "lng": 116.366, "lat": 39.
8673 }, { "name": "Dingling", "value": 25, "code": "1002A", "city": "Beijing", "lng": 116.17, "lat": 40.2865 },
...],
"1": [{ "name": "Wanshouxigong", "value": 28, "code": "1001A", "city": "Beijing", "lng": 116.366, "lat": 39.
8673 }, { "name": "Dingling", "value": 65, "code": "1002A", "city": "Beijing", "lng": 116.17, "lat": 40.2865 },
...],
"2": [{ "name": "Wanshouxigong", "value": 88, "code": "1001A", "city": "Beijing", "lng": 116.366, "lat": 39.
8673 }, { "name": "Dingling", "value": 65, "code": "1002A", "city": "Beijing", "lng": 116.17, "lat": 40.2865 },
...],
"2": [{ "name": "Wanshouxigong", "value": 88, "code": "1001A", "city": "Beijing", "lng": 116.366, "lat": 39.
8673 }, { "name": "Dingling", "value": 95, "code": "1002A", "city": "Beijing", "lng": 116.17, "lat": 40.2865 },
...],

}

2.2.4. Process the APIs

This topic describes how to change data on the isosurface layer with the timeline. An API or a database is needed to obtain data from different monitoring sites during different periods of time.

We recommend that you write an API.

- Request address: /aqi
- Request method: GET
- Request parameter:
 - Parameter: date
 - Parameter type: string, for example, 2017012722. The format is YYYYmmDDHH.
 - 1. Process all the downloaded data. Node.js provides a glob module to process all data in the directory in batches.

```
var fs = require('fs');
var csv = require("fast-csv");
var glob = require('glob');
var mapdata = require('. /Longitude and latitude mapping in the site list.json');
glob("./Site_20170101-20170202/*.csv", function (err, files) {
files.forEach(function (file) {
var filename = file.replace(/^. *[\\\/]/, '').split('.')[0] .split('_')[2];
var datas = {};
csv
 .fromPath(file, { headers: true, objectMode: true })
 .on("data", function (data) {
  if (data.type === 'AQI') {
   datas[data.hour] = [];
   for (var key in data) {
    if (mapdata[key]) {
     datas[data.hour].push({
      name: mapdata[key].name,
      value: +data[key],
      code: mapdata[key].code,
      city: mapdata[key].city,
      lng: +mapdata[key].lng,
      lat: +mapdata[key].lat
     })
   }
   }
  }
 })
 .on("end", function () {
  fs.writeFile('./data/' + filename + '.json', JSON.stringify(datas));
  console.log("done");
 });
});
});
```

a 20170101.json	2017913845 1121	1.2 MB	JSON
a 20170102.json	2012/01/01 410 11:22	1.3 MB	JSON
🛛 20170103.json	2017年3月4日 1121	1.5 MB	JSON
a 20170104.json	2012/01/01/01/01 11:21	1.5 MB	JSON
a 20170105.json	2017年1月4日 1121	1.5 MB	JSON
a 20170106.json	2012年1月4日 1121	1.5 MB	JSON
🛛 20170107.json	2017年1月4日 1121	1.5 MB	JSON
对 20170108.json	2012年3月4日 1125	1.5 MB	JSON
🐋 20170109.json	2012年1月4日 1121	1.4 MB	JSON
对 20170110.json	2017年3月×33 11-21	1.5 MB	JSON
🛛 20170111.json	221241.5 + 2 1121	1.5 MB	JSON
对 20170112.json	2017/03/84/2 11/21	1.5 MB	JSON
🙀 20170113.json	2012年1月4日 1121	1.4 MB	JSON
对 20170114.json	2017年3月4日 11:21	1.5 MB	JSON
🛛 20170115.json	2012/01/01 01:01	1.5 MB	JSON
材 20170116.json	2012年1月4日 1121	1.5 MB	JSON
a 20170117.json	2017年1月1日 1121	1.5 MB	JSON
🛛 20170118.json	2010年11月4日 11-25	1.5 MB	JSON
🛛 20170119.json	2017年3月4日 1121	1.5 MB	JSON
🛛 20170120.json	2012年1月4日 1125	1.5 MB	JSON
a 20170121.json	2017年1月4日 1121	1.5 MB	JSON
🛛 20170122.json	2012年1月1日 1121	1.5 MB	JSON
a 20170123.json	2010年1月4日 1121	1.5 MB	JSON
a 20170124.json	2010/02/02 02:00	1.5 MB	JSON
va 20170125.json	2010/03/84/8 11/25	1.5 MB	JSON
a 20170126.json	201793.848 1121	1.5 MB	JSON
a 20170127.json	2012/01/01/01 11:21	1.5 MB	JSON
🛛 20170128.json	2017913.8 × 8 1121	1.5 MB	JSON
🛛 20170129.json	2012/04/2,8 4/2 11/21	1.4 MB	JSON
a 20170130.json	2017913443 1121	1.5 MB	JSON
a 20170131.json	201793,64(5.112)	1.5 MB	JSON
a 20170201.json	2012/03/84/8 11:21	1.5 MB	JSON
🛯 20170202.json	2017年1月×18 11-21	1.5 MB	JSON

2. Use the glob module to integrate the data. Use the file name (which is a date) as the key, and the corresponding content as the value. Then, you will obtain an integration file named *all.json*.

```
//The following method is not suitable to process data in large scale.
var fs = require('fs');
var csv = require("fast-csv");
var glob = require('glob');
glob("./data/*.json", function (err, files) {
var datas = {};
files.forEach(function (file) {
var filename = file.replace(/^. *[\\\/]/, ").split('.')[0];
datas[filename] = require(file);
});
fs.writeFile('./data/all.json', JSON.stringify(datas));
console.log('done');
});
```

3. Use the express framework of Node.js to initialize an express project, and add an API according to the preceding API requirements.



? Note To avoid cross-domain requests, you can add a cors module to the *app.js* file.



4. After processing the API, run the npm start command to test the API.

				_
	< ⇒	C 🕜 🛈 127.0.0.1:8888/a	qi?date=2017012722	
1				-
	[
	- {			
		value: 371,		
		lng: 116.366,		
		lat: 39.8673		
	},			
	- {			
		value: 109,		
		lng: 116.17,		
		lat: 40.2865		
	÷,			
	- (
		value: 340,		
		ing: 110.434,		
	1	1at: 39.9522		
	1			
	- (value: 283		
		Ing: 116.434		
		lat: 39.8745		
	3.			
	•	value: 299,		
		lng: 116.473,		
		lat: 39.9716		
	},			
	- {			
		value: 307,		
		lng: 116.361,		
		lat: 39.9425		
	},			
	- {			
		value: 310,		
		ing: 116.315,		
	,	lat: 39.9934		
	3,			
	- (walue: 449		
		lng: 116 72		
		1a++ 40 1439		
	1	Aut. 40.1430		

2.3. Create a project2.3.1. Create a project

Note The data source used in this example is a local API file. Therefore, you do not need to add a data source. You can directly call the API from the widgets of the project. To use another data source, you must add the data source to DataV before you can create a project.

- 1. Log on to the DataV console.
- 2. Choose Projects > Create Project.
- 3. Select the blank template and click **Create**.

	Choose a Template
Blank Carvas > カスタム	
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DevOps Monitor 現積15.5 19日初本128月	Create
2016 11/11 Glob Зборріпр Ге На Каз на 2017 10 Glob На Кранска на 2018 11/11 Glob	
Internet Finance Werview 規模 15-9 明白20x1080gx	
E-Commerce Plat	

4. Enter a name for the project and click **Create**.

After your project is successfully created, the project editor page is displayed.

2.3.2. Add widgets

Add a map widget and child widgets

1. On the project editor page, choose Maps > Basic Flat Map.



2. On the **Configuration** pane, delete all the child widgets except the **basemap layer** widget.



3. Add the isosurface layer widget.

You can click + next to Child Management, select Isosurface Layer, and click Add Child Widget.



4. Click **Global Options** and adjust the size of the map.

You can drag the slider or enter a value to adjust the map size and display area.

🛩 Global Options			
Background	RGB	A(0,0,0,0)	9
Zoom Level			
	0	4.3	20
	Min		Max
Map Center			
♦ Scale Ruler			
Draggable	\checkmark		
Zoomable	\checkmark		
Interactive	\checkmark		

Add a timeline

0	☆ ♡	0	
ALL			
		<iframe></iframe>	Feb 1st Feb 2st Feb 3st
	Full Screen Switch	iframe	Timeline
	TI T2 T3		
	Tab		

Choose Interact > Timeline to add a timeline to the map.

Add a title for the map

Choose **Text** > **Title** to add a title to the map.

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Ī	2 Type 3 Type 4 Type			КЕУ		тіт	LE
⊞	Carousel L	ist II	Table		Т	itle	
		SOMETI	wo V Worl	RLD WOR VORLD	RLD .D	TITLE1 TITLE2	-
	Marquee		Word C	Cloud	c	arousel List	I
	Title ¥ 1,6 8	38,888		ТХТ ТХТ			80.
	Ticker Boa	rd	Text Bo	ж	P	ercentage B	ar Chart
	• S • S	ΤΛΤΕΙ ΤΛΤΕ2		B C D F G H		2017:1	2:24
	Status Car	d	Label B	oard	т	imer	

Adjust the layers and position

After adding the widgets, you can:

• Adjust the sequence of the layers, select a layer, and change the title of a layer on the Layers pane.



• Adjust the size and position of the widgets on the **Configuration** pane.

ŧ	{/}	Q
Title v1.3.8 Title		
Basic Attribute	s	
Size	300 + Width	56 + Height
Position	810 + Abscissa	512 + Ordinate
Others	0 + Rotation An	1 + Opacity
Title Name ⑦ ← Text Style		
Font Family (Microsoft Ya	Hei 🗘
Font Size	32 +	
Font Color	#FFF	•
Font Weight	normal	\$
Text Align	Center Alignm	ient 🗘
> Hyperlink ⑦		

You can also select a widget and drag the widget on the canvas to adjust its position.

2.3.3. Add data

Add data for the map

- 1. On the project, click the map widget.
- 2. Click the **Data** pane.
- 3. On the Child Management tab page, click Isosurface Layer.

The data used in this example is obtained from all across China. You can use the data directly or modify the data as needed.

- 4. Click Interpolation Points Data.
- 5. Configure the data.
 - **Data Source Type:** The APIs have been specified in Process the APIs and the data has been tested. Therefore, set the data source type to API.
 - URL: Enter the API test URL (http://127.0.0.1:8888/aqi?date=2017012722).
- 6. Click View Data Response. The data response is displayed and the data has been successfully matched.
- 7. Set the style of the isosurface layer widget.
 - i. Click the Configuration pane.
 - ii. Set the **Pixel Size**. The recommended value is **3**.

Setting larger values for the pixel size allows interpolation to work faster, but also reduces the precision of interpolation results.

K Isosurface Layer v0.2.1 Isosurface Layer			
Opacity			-
	0	0.85	1
	Min		Max
Pixel Size	3	+	
Weight		_	
	0.5	2	3
	Min		Max

iii. Set the Render Type. The recommended type is Linear.

Render Type	Linear	\$
From Color	#58F613	0
Middle Color	#FF4800	0
End Color	#FF0000	0

iv. Set the Classify Color Count. The recommended value is 35.



Add data for the timeline

- 1. On the project, click the timeline widget.
- 2. Click the Data pane.

- 3. Set Data Source Type to Static Data.
- 4. Create the required data according to the examples and replace the static data on the data pane of the timeline widget.

For example, you can use the data obtained each day at 22:00 from January 22, 2017 to February 2, 2017 as the timeline data.

```
[
{
"name": "22:00, January 22, 2017",
"date": 2017012222,
"value": 2017012222
},
{
"name": "22:00, January 23, 2017",
"date": 2017012322,
"value": 2017012322
},
{
"name": "22:00, January 24, 2017",
"date": 2017012422,
"value": 2017012422
},
{
"name": "22:00, January 25, 2017",
"date": 2017012522,
"value": 2017012522
},
{
"name": "22:00, January 26, 2017",
"date": 2017012622,
"value": 2017012622
},
{
"name": "22:00, January 27, 2017",
"date": 2017012722,
"value": 2017012722
},
{
"name": "22:00, January 28, 2017",
"date": 2017012822,
"value": 2017012822
```

},

```
{
"name": "22:00, January 29, 2017",
"date": 2017012922,
"value": 2017012922
},
{
"name": "22:00, January 30, 2017",
"date": 2017013022,
"value": 2017013022
},
{
"name": "22:00, January 31, 2017",
"date": 2017013122,
"value": 2017013122
},
{
"name": "22:00, February 1, 2017",
"date": 2017020122,
"value": 2017020122
},
{
"name": "22:00, February 1, 2017",
"date": 2017020222,
"value": 2017020222
}
]
```

• name: displayed content in a node of the timeline

- date: date in the timeline, which can be used as a callback ID
- $\circ\;$ value: date in the timeline

5. Set the timeline style.

i. Click the **Configuration** pane.

ii. Click Node and set Data Format to %Y%m%d%H.

∽ Node				
Category	Time		\$	
Data Format ⑦	%Y%m%d%H			
Shape	Diamond		\$	
Node Size	64 + -			
▶ Default Style				
> Selected Style				

iii. Click Interaction and set the value of the callback ID to *date*.



Set the map title

- 1. On the project, click the title widget.
- 2. Click the Data pane.
- 3. Set Data Source Type to Database.

₽	{/}	Q.			
Title v1.3.8 Title					
Common Title I ptional, Get from	Common Title Interface (O ptional, Get from the Con				
Field Mappi	ng St	atus			
value Custo	omizable	 Optional 			
Data Source T	уре				
Database		-			
Select Data Sc	ource :				
Select Data	Source •	Create			
SQL :					
1 SELEC	CT * FROM				

4. In the Select Data Source list, select a database.

If no database is available, you can click **Create** to create a database as promoted. For more information about how to create a database, see **Configure data sources**.

5. Enter the following command in the SQL area:

select to_char(to_timestamp(:date,'YYYYMMDDHH24'),'YYYY (year) mm (month) DD (day) HH (24-hour fo rmat)')||'air quality' as value;

:date : actual value corresponding to the callback ID

You can also add legends as needed. The following figure shows the display effect of the project.



2.4. View a project

You can view a project after you publish it according to Publish a project. The following figure shows the display effect a project.

