Alibaba Cloud DataWorks

Quick Start

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Generic conventions

Table -1: Style conventions

Style	Description	Example
•	This warning information 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.
	This warning information 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 restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	Note: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructio ns, best practices, tips, and other content that is good to know for the user.	Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus, page names, and other UI elements.	Click OK .
Courier font	It is used for commands.	Run the cd /d C:/windows command to enter the Windows system folder.
Italics	It is used for parameters and variables.	bae log listinstanceid Instance_ID
[] or [a b]	It indicates that it is a optional value, and only one item can be selected.	ipconfig [-all/-t]
{} or {a b}	It indicates that it is a required value, and only one item can be selected.	<pre>swich {stand slave }</pre>

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1 Instructions

This module will guide you through a complete data development and operations operation.

Note:

If you are using DataWorks for the first time, make sure that you have already done the work based on the *preparation* module, prepare accounts, project roles, project space, and so on, then enter the DataWorks Management Console, start the data development operation by clicking **enter workspace** after the corresponding project.

Typically, data development and operations through the project space of DataWorks include the following actions:

- Step 1: Create a table and upload data
- Step 2: Create a Business Flow
- Step 3: Create a synchronization task
- Step 4: Scheduling and dependence settings
- Step 5: O&M and view log troubleshooting results

A general process is shown in the following figure:



2 Step 1: Create a table and upload data

In this article, we use creation of the tables bank_data and result_table as an example to describe how to create a table and upload data. The table of bank_data stores the business data, while the result_table stores the results after data analysis.

Procedure

Create a table called bank_data

- 1. After Create a project, click Enter workspace in the corresponding project.
- 2. Go to the Data Studio (original data development) page and select new > table.



3. Fill in the name of the table in the **new table** dialog box.

Create Table				×
Database Type :	• ODPS			
Table Name :	bank_data			
		Su	bmit	Cancel

- 4. Click Submit.
- 5. Enter the new table page, and select the DDL mode.
- Enter the table creation statement in the DDL schema dialog box, and click build table structure.

For more SQL syntax for creating tables, see creating/viewing/deleting tables.

🌐 bank_data 🗙		
DDL Mode		
	Table Name bank_data	
Resice	DDL Mode	×
Dasics		
	1 CREATE TABLE IF NOT EXISTS bank_data 2 (
	 age BIGINT COMMENT '年龄', job STRING COMMENT '工作类型', 	
	6 education STRING COMMENT '教育程度', 7 default STRING COMMENT '是否有信用卡',	
	8 housing STRING COMMENT '房贷', 9 loan STRING COMMENT '贷款',	
	10 contact STRING COMMENT '联系途径',	
Physical Model	11 day_of_week STRING COMMENT '星期几', 13 dupation STRING COMMENT '挂续时间'	
	Generate Table Structure	

The statements used for table creation in this example are as follows:

CREATE	TABLE	ΙF	NOT	EXIS	STS ba	nk_	data		
(
age			BIG	SINT	COMME	NT	'age',		
job			STF	RING	COMME	\mathbf{NT}	'job type	e',	
marita	l		STF	RING	COMME	\mathbf{NT}	'marital	status',	

education	STRING	COMMENT	'educational level',
default	STRING	COMMENT	'credit card ownership',
housing	STRING	COMMENT	'mortgage',
loan	STRING	COMMENT	'loan',
contact	STRING	COMMENT	'contact information',
month	STRING	COMMENT	'month',
day_of_week	STRING	COMMENT	'day of the week',
duration	STRING	COMMENT	'Duration',
campaign	BIGINT	COMMENT	'contact times during the campaign',
pdays	DOUBLE	COMMENT	'time interval from the last contact
',			
previous	DOUBLE	COMMENT	'previous contact times with the
customer',			
poutcome	STRING	COMMENT	'marketing result',
emp_var_rate	DOUBLE	COMMENT	'employment change rate',
cons_price_idx	DOUBLE	COMMENT	'consumer price index',
cons_conf_idx	DOUBLE	COMMENT	'consumer confidence index',
euribor3m	DOUBLE	COMMENT	'euro deposit rate',
nr_employed	DOUBLE	COMMENT	'number of employees',
У	BIGINT	COMMENT	'has time deposit or not'
);			

 After the table structure is generated, enter the Chinese name of the table and click Submit to development environment.

🛗 bank_data 🗙								
DDL Mode			Submi	it to Production Enviror	nment			
		Table Name	bank_date	8				
Besics								
	Table Alias :	user_information						
L	evel 1 Topic :	Select			Level 2 Topic :	Select	Create Topic	C
	Description :							

8. After the creation is successful, you can search it by entering the table name in the left-hand navigation **table management**, view table information.



Create result_table

1. Go to the **DataStudio** page and select **new** > **table**.



- 2. Fill in the name of the table in the **new table** dialog box and click **Submit**.
- 3. Enter the new table page, and select the DDL mode.
- 4. Enter the build TABLE statement in the DDL schema dialog box, and click build table

structure. An example of table creation is as follows:

CREATE TABLE IF NOT EXISTS result_table (education STRING COMMENT 'educational level', num BIGINT COMMENT 'number of people');

5. After the creation is successful, you can search it by entering the table name in the left-hand navigation **table management**, view table information.

Upload local data to bank_data

Dataworks supports the following actions:

- Uploading the data in locally stored text files to the table in the workspace.
- Using the data integration module to import business data from various data sources to the workspace.



Note:

In this section, local files are used as the data source. Local text file uploads have the following restrictions:

- File type: Only .txt and .csv files are supported.
- File Size: Not exceeding 10 M.
- Operation objects: Partition and non-partition tables can be imported, but Chinese partition values are not supported.

For example, import local file *banking.txt*to DataWorks, the operation is as follows:

1. Click Import to select import local data.



2. Select a local data file, configure the import information, and click Next,

Import Loca	l Data									×
Selected Fi	Selected Files : banking.txt Only.txt, .csv, and .log files are supported.									
Separa	itor: 💿 運行	3 v	0							
Original Chara	acter (GBK									
Import First L	ine: 1									
In the first line	e are t <mark>v</mark> s. :									
由于数据量										
44	blue-c ollar	marrie d	basic.4 y	unkno wn	yes	no	cellular	aug	thu	210
53	techni cian	marrie d	unkno wn	no	no	no	cellular	nov	fri	138
28	manag ement	single	univers ity.deg ree	no	yes	no	cellular	jun	thu	339
									Next	Cancel

 Enter at least two letters to search for the table by name. Select the table to which the data is to be imported, for example, bank_data.

Import Local Data		×
Import to Table : ban Field Mapping : bank_data1		
Destination Field	Source Field	
	No data	
	Previo	us Import Cancel

 Select the field matching method ("Match by Position" is used in this example), and click Import ,

Import Local Data		×
Import to Table : bank_data		
Destination Field	Source Field	
age		
job		
merital		
education		
	Previous Import Cancel	

After the file is imported, the system returns the number of lines that were successful in your data import or an exception that failed.

Other data import methods

Create a Data Synchronization task

This method applies to saving RDS, MySQL, SQL Server, PostgreSQL, MaxCompute, OSS , DRDs, OSS data from a variety of data sources such as, Oracle, FTP, DM, HDFS, and MongoDB.

For details on creating a data synchronization task with Dataworks, see *creating a data synchronization task*.

· Local file uploads

Ci fang shi yong yu wen jian great&small bu chao guo 10m、 wen jian lei xing wei .txt he .csv data, the target supports partition tables and non-partition tables, but does not support Chinese as a partition.

For local file upload via DataWorks, see local data upload to bank_data above for details.

Upload files using tunnel command

This method applies to local files and other resource files more than 10 m in size.

Upload and download the data through tunnel commands provided by the *MaxCompute client*, when local data files need to be uploaded to the partition table, they can be uploaded using the client tunnel command. See *Tunnel command actions* for details.

Next steps

You have learned know how to create a table and upload data now. You can go to the next tutorial which will show you how to create a flow for further data analysis and computing in the project space. For more information, see *creating a business process*.

3 Step 2: Create a Business Flow

This article will take the creation of business flows as an example, describes how to create nodes and configure dependencies in your business flow, to facilitate the design and presentation of the steps and sequences of data analysis. This article briefly explains how to use the data development function to further analyze and calculate the workspace data.

DataWorks data development features support visual drag-and-drop in the business flow to complete inter-node dependency settings. The flowing and interdependencies of data are implemented in the form of operational business flows. Multiple Task types such as ODPS SQL, data synchronization, open_mr, shell, machine learning, and virtual nodes are currently supported, for specific usage methods for each task type, see*Introduction of Node Type*.

Prerequisites

Make sure that you have *built the table and uploaded the data*, prepare the business data table bank_data and the data in it in the workspace, as well as the result table.

Procedure

Create a Business Flow

- 1. After Create a project, click Enter workspace in the corresponding project.
- 2. Go to the **DataStudio** page and select **create** > **business flow**.



3. Enter the name and description of the business flow.

Create Business Flo	w		×
Business Name :	works		
Description :	quick start		
		Create	Cancel

Create a node and dependency on the flow canvas

This section shows how to create a virtual node "start" and an ODPS SQL node "insert_data", and to configure "insert_data" to depend on "start".



Note:

- As a control-type node, the virtual node does not affect the data during flow operation and is only used for O&M control of downstream nodes..
- When a virtual node depends on the other nodes and its status is manually set to failure by the O&M personnel, its downstream nodes that have not run yet, cannot be triggered. This prevents further propagation of erroneous upstream data during the O&M flow. For more information, see the section on virtual nodes in *Introduction of Node Type*.
- The upstream task of a virtual node in a business flow is typically set as the root node of the project, the format of the Project root node is: Project name _ root.

We recommend that you create a virtual node as the root node to control the whole flow when designing a flow.

Create Node			×
Node Type :	Virtual Node	~	
Node Name :	start		
Destination Folder :	Business Flow/works	*	
		Submit	Cancel

1. Double-click the virtual node and enter the node name start.

- 2. Double-click ODPS SQL to enter the node name "insert_data".
- Click the start note, and draw a line between start and insert_data to make insert_data dependent on start, as shown in the following figure:



Editing code in the ODPS SQL Node

This section describes how to use SQL code in the ODPS SQL node **insert_data** to query the quantity of mortgages available for individuals having different educational background and save results for analysis or display by the following nodes.

The SQL statements are as follows. For more information about the syntax, see *MaxCompute SQL*.

```
INSERT OVERWRITE TABLE result_table --Insert data to result_table
SELECT education
, COUNT(marital) AS num
FROM bank_data
WHERE housing = 'yes'
    AND marital = 'single'
GROUP BY education
```

Run and debug ODPS SQL

- 1. After editing the SQL statements in the insert_data node, click **Save** to prevent code loss.
- 2. Click Run to view the operations logs and results,

🗰 result_table 🗙 🔄 insert_data 🌰 🛃 works 🛛 🗙
1odps sql 2***********************************
3author: T.L.
4create time:2018-08-27 17:31:58
5***********************************
6 INSERT OVERWRITE TABLE result table
7 ⊡SELECT education
8 , COUNT(marital) AS num
9 FROM bank data
10 ⊡WHERE housing = 'yes'
11 AND marital = 'single'
12 GROUP BY education;
Runting Log
min: 1.000, max: 1.000, avg: 1.000
input records:
StreamLineRead_REL9121: 8 (min: 8, max: 8, avg: 8)
output records:
TableSink_REL9124: 8 (min: 8, max: 8, avg: 8)
UK 2018-08-27 17:38:00 TNEO
2018-08-27 17:38:00 INFO Exit code of the Shell command 0
2018-08-27 17:38:00 INFO Invocation of Shell command completed
2018-08-27 17:38:00 INFO Shell run successfully!
2018-08-27 17:38:00 INFO Current task status: FINISH
2018-08-27 17:38:00 INFO Cost time is: 6.288s
/home/admin/alisatasknode/taskinfo//20180827/datastudio/17/37/52/ug9hj5iqus4zbjx6s4imo8qi/T3_0520116078.log-END-EOF

Save and submit business flows

After running and debugging the ODPS SQL node "insert_data", return to the flow page. Click **Save** and **Submit** the whole flow.



Subsequent steps

Now you have learned how to create, save, and submit the flow. You can proceed with the next tutorial which shows how to create a synchronization task to export data to the diffrent types of the data sources. For more information, see *creating synchronization task export results*.

4 Step 3: Create a synchronization task

This article will take MySQL Data sources as an example, showing how to export data from DataWorks to a MySQL data source through the data integration feature.

In DataWorks, data integration is typically used to periodically import the business data generated in your system into the workspace, after the calculation of the SQL task, the calculation results are periodically exported to the data source that you specify, for further presentation or running usage.



Currently, data from the following data sources can be imported to or exported from the workspace through the data integration function: RDS, MySQL, SQL Server, PostgreSQL, MaxCompute, ApsaraDB for Memcache, DRDS, OSS, Oracle, FTP, DM, Hdfs, MongoDB, and so on. For more information, see *Supported data sources*.

Prerequisites

- If you are using a self-built database on ECS, you need to add security groups to your ECS.
- If you are using data sources such as RDS/MongoDB, you need to add a white list to a console such as RDS/MongoDB.



Note:

If you use a custom resource group to schedule the RDS data synchronization task, you must add the IP address of the computer hosting the custom resource group to the RDS whitelist.

Procedure

Add a data source



Only the Project Administrator role can create new data sources, and members of other roles can view data sources only.

- 1. Log on to the *DataWorks management console* as the Project Administrator.
- 2. Select enter workspace in the corresponding item actions column under the list of items.
- 3. Click data integration in the top menu bar.
- 4. Click data sources in the left-hand navigation bar.
- 5. Click Add data source in the upper-right corner.

Det	Data Integrati	ON DataWorks_DOC	~					Pro	oject Space	许爱琳	English
-	≓ Overview Tasks	Data Source	Data Source Type	All	Data Source : Name					Add Deta	Source
	Resource Consumptio	Data Source Name		Data Source Type	Link Information		Description	Created At		4	Actions
-	Synchronization Reso	odps_first		ODPS	ODPS Energy ODPS Pro Access Ic	na algu dina nan hai Mara José M	connection from odps calc engin e 61155	2018-08-27 13:32:26			
	Resource Group										
•	Client Data Collection										

6. Fill in each configuration item in the Add Data Source dialog box.

Add Data Source MyS0	JL	×
* Data Source Type :	Has Public Network IP ~	
* Data Source Name :	clone_database	
Description :	add data source	
* JDBC URL :	jdbc:mysql	
* Username :	adequesis	
* Password :		
Test Connectivity :	Test Connectivity	
0	Ensure that the database is available.	
	Ensure that the firewall allows the data sent from or to the database to pass by.	
	Ensure that the database domain name can be resolved.	
	Ensure that the database has been started.	
	Previous	Finish

• Data Source Type: With a public IP address.

- Data source name: The name must contain letters, numbers, and underlines, but cannot begin with a number or underline, For example, abc_1123.
- Data source description: The description cannot exceed 80 characters.
- JDBC URL: jdbc:mysql://host:port/database.
- User name/Password: The user name and password used to connect to the database.

For configuration instructions for different data source types, see *Data source configuration*.

- **7.** (Optional).Click **Test Connectivity** after entering all the required information in the relevant fields.
- 8. If the test connectivity is successful, click Finish.



Make sure that the target MySQL database contains tables.

Create the table odps_result in the MySQL database. The statements used for table creation are as follows:

```
CREATE TABLE `ODPS_RESULT` (
`education` varchar(255) NULL ,
`num` int(10) NULL
)
```

After the table has been built, you can execute the desc odps_result; to view the table details.

Creating and configuring synchronization node

This section shows how to create and configure the synchronization node **write_result**, and write data from result_table to the MySQL database. The specific steps are as follows.

1. Create the node write_result, as shown in the following figure.

Create Node			×
Node Type :	Data Sync	~	
	5 B		
Node Name :	write_result		
Destination Folder :	Business Flow/works	~	
		Submit	Cancel

 Sets the dependencies between nodes so that the write_result node is dependent on the insert_data node.

vi start x i res	ult_table ×	Sq insert_data	× 🕂	works ×	
r • • »					
 Data Integration 	Developr	ment 血缘			
Di Data Sync					
 Data Development 					
Sq ODPS SQL					
sh Shell				Vi start	
Mr ODPS MR					,
Vi Virtual Node			<		
Py PyODPS		• Sq insert_c	data		
SQL Component Node			ノ		
Mr OPEN MR	• Di v	write_result			

3. Select the source.

Select the MaxCompute data source and the source table result_table and click Next.

Di write_r	result 🌖 [👖 resul	table ×	insert,	_dete	× 🛃 works	×								
(•	ſ	6		\$										
01 Dat	a Source				So							Destination			
				The	data s	ources can be de	fault data so	ources or	data sources (created by you. Clic	k here to	check the supported dø	ta sourc	e types.	
	* Data Sou	rce: 0	DPS			odps_first		· 0		* Deta	Source :				0
	• To	ible: re	sult_table												
	Partit	tion : No	ne												
	Compress	iion : 🧧	Disable (Enable											
Consid	der Empty Str as №	ring : 🖸 Null :	Yes 🔿 I	No											
					Prev	iew									

4. Select a Target.

Select the MySQL data source and target table ODPS _result, and click Next.

O write_resu	k 🔸	Sq insert_da	ita ×	×	orks															
≞ ⊙	Þ	5] [7]			6															
 01) 选择数: 	摇滚			裁	据来源							数据去向								调度的
			在这里	配置数	局的来源湖	和写入論	; नाः	に見ません	的数据源	夏,也可以	人是您创建的	自有数据题	這看支持	中的数组	民来源美型					Ē
																				版本
•	数据源:	ODPS			odps_first			?			• 数据源:	MySQL			works		_`)	0		
	•表:	result_table	•								•表:	odps_res	ult				ÿ			
9	区傧息:	无分区偏息								导入前	前生新语句:	请输入4	∋入数据					?		
	压缩:	不压缩	○ E \$	8																
空字符串作	€为null:	〇 是〇日	杳							导入后	完成语句:	请输入!	∋入数据					?		
			数据预览																	
											主搬冲突:	insert into	り(当主編	▶/约束	冲突报脏数	底)				

5. Map the fields.

Select the mapping between fields. You need to configure the field mapping relationships. The "Source Table Fields" on the left correspond one to one with the "Target Table Fields" on the right.



6. Control the channel.

Click **Next** to configure the maximum job rate and dirty data check rules.

03	Channel		Hide
	You can control the data sy	inchronization process through the transmission rate and the number of all	wed dirty data records. See data synchronization documents.
	* DMU :	1 ~	0
	* Number of Concurrent Jobs :	2 ~ ⑦	
	* Transmission Rate :	● Unlimited) Limited	
	If there are more than :	Maximum r@ber of dirty data records. Dirty data is allowed by default.	dirty data records, the
		task ends.	
	Task's Resource Group :	Default resource group V	

7. Preview and store.

After completing the above configuration, scroll the mouse up and down to view the task configuration, and if it is not, click **Save**.

🛛 write_result 🌑 🚦	bank_data ×	🔲 Table	× 奶 Data Deve	opment ×	🔁 Data Integration 🗙	Sq select_01) 🗟 t			
	া 🔊 🗉) 🔒 🖾								
Severation (1) Data Source		Source				Destination				
The data sources can be default data sources or data sources created by you. Click here to check the supported										
* Data Source :	ODPS	✓ odps_	first 🗸	0	* Data Source :	MySQL				
* Table :	result_table				* Table	Please select				
Partition :	None				Statements Run	Enter SQL stater	nents to b			

Submit a data synchronization task

Once you save a synchronization task click **Submit**, and the synchronization task is submitted to the scheduling system. The scheduling system automatically and periodically runs the task from the second day according to the configuration attributes.

🚣 works 🗙	
FI 💿 🗉 🖬	
 Deta Integration 	Development Blood
D Data Sync	
 Data Development 	
Ba ODPS SQL	
Sh Shell	
M ODPS MR	
VI Virtual Node	• VI start
Py Py00PS	
SQL Component Node	● Sq inser_data
PEN MR	

Subsequent steps

Now, you know how to create a synchronization task and export data to data sources of different types. Continue to the next tutorial for further study. This tutorial shows you how to set the scheduling attribute and dependency for a synchronization task. For more information, see *setting schedule properties and dependencies* for tasks.

5 Step 4: Scheduling and dependence settings

This article takes the "write_result" created in *creating synchronization tasks* as an example, configure its scheduling cycle as weekly scheduling, introduces the scheduling configuration and task operations features of dataworks.

DataWorks provides powerful scheduling capabilities including time-based or dependency-based task trigger functions to perform **tens of millions** of tasks accurately and timely each day, based on DAG relationships. It supports scheduling by minute, hour, day, week, and month. For more information, see *Create a synchronization task*.

Procedure

Configure the scheduling attribute of a synchronization task

- 1. Select the data development > task Development page.
- 2. Double-click the synchronization task (write_result) that you want to configure).
- 3. Click schedule configuration on the right to configure scheduling properties for the task.

Di write_result 🕒	🗈 write_result 🗙 🚠 works 🛛 🗙	
Ľ • E	1 1 1 0 1 1	
01 Data Sourc	×	
	Schedule (2)	
	Schedule :	Normal O Zero-load
* Date Sourc	Error Rate this product :	0
• Tab	Validity Period :	1970-01-01 9999-01-01
Bustick		
P at Link		
Compressic	Dause Schedulina :	
Consider Emp		
Scring as INC	Schedule Interval :	Week ~
	Plan Time :	
	Specified Time	Tuesday × ×
	Planned Time	0200 0
	CRON Expression :	60 00 02 ?* 2
02 Mapping	Depend on Last Interval :	

Parameters:

- Scheduling status: When this parameter is selected, the task is paused.
- Error retry: When this parameter is selected, error retry is enabled.
- Start date: The date on which the task takes effect, which can be set based on actual needs

- Scheduling period: The operating period of the task, which can be set by month, week, day, hour, and minute. For example, a task can be scheduled weekly.
- Specific time: The specific operating time of the task. For example, you can set up the task to run at 02:00 every Tuesday.

Configure dependency properties for a synchronization task

After the schedule properties configuration for the synchronization task is completed, you can configure its deployment dependency properties.

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	DataWorks_DOC.500012	2405_out - C				Added by Default	

You can configure an upstream dependency for a task. In this way, even if the scheduled time of an instance of the current task is reached, the task can run only after the instance of its upstream task is completed.

The configuration in the preceding figure indicates that instances of the current task are triggered only after the instance of the upstream task write_result is finished. You can enter **work** in the upstream task to configure an upstream task for write_result.

If no upstream task is configured then, by default the current task is triggered by the project . Therefore, by default, the upstream task of the current task is project_start in the scheduling system. By default, a project_start task is created as a root task for each project.

Submit a data synchronization task

Save the synchronization task **write_result** and click **Submit** to submit it to the scheduling system.

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The system will automatically generate an instance for the task at each time point according to the scheduling attribute configuration and periodically run the task from the second day only after a task is submitted to a scheduling system.



Note:

If the task is submitted after 23: 30, the scheduling system will automatically cycle-generate instances from the third day and run on time.

Subsequent steps

Now you know how to set the scheduling attribute and dependency of a synchronization task. Continue to the next tutorial. This tutorial will tell you how to perform periodic O&M for submitted tasks and view the log troubleshooting results. For more information, see *cycle care operations and check for log ranking errors*.

6 Step 5: O&M and view log troubleshooting results

This article will show you how to implement operations for tasks.

In the previous operations, you have set a synchronization task to run at 02:00 every Tuesday. After the task is submitted, you can view the automatic operation results in the scheduling system from the next day.

Now, how can we check whether the instance schedule and dependency are as expected? To work this out, DataWorks provides three triggering methods: test run, data population, and periodic running, which are described as follows:

- Test run: The task is triggered manually. If you need to check the timing and operation of a single task, test run is recommended.
- Data population: The task is triggered manually. This method applies if you need to check the timing and dependencies of multiple tasks or re-execute data analysis and computing from a root task.
- Periodic running: The task is triggered automatically. After successful submission, the scheduling system automatically generates task instances at different time points starting from 00:00 of the next day. It checks whether upstream instances of each instance have run successfully according to the scheduled time. If all the upstream instances have run successful ly at the scheduled time, the current instance runs automatically without manual intervention.

Note:

The scheduling system periodically generates instances based on the same rules that apply to both manual and automatic triggering modes.

- The period can be set to monthly, weekly, daily, hourly, or even by minute. The scheduling system always generates an instance for the task on a specified day or at a specified time.
- The scheduling system regularly runs the instance on a specified date and generates operation logs.
- Instances rather than on a specified date does not run, and their statuses are directly changed to "Successful" if the running conditions are met. Therefore, no running logs are generated.

For more operational and functional instructions, see Task operations.

Test

Manually trigger a test

1. On the Cycle Task page, locate the task that you want to run, and click Test.

🛫 Task List	Baseline: Please select	✓ My Nodes	Modified Today Pau	sed (Frozen) Node Reser	Clear		
Cycle Task							C Refresh Hide Search
(g) Manual Task	Name:	Node ID	Modified At J1	Task Type	Owner	Schedule Type	Actions
🕳 Task 08M	ftp_sync	700000461345	2018-08-31 12:26:00	Data Integration	wangdan	Day Schedule	DAG Test Retroactive Insertion
Cycle Instance	rpt_user_info_d	700000461555	2018-08-31 10:21:22	ODPS_SQL	wangdan	Day Schedule	DAG 1 Test 1 Retroactive Insertion
R Menual Instance	dw_user_info_all_d	700000461554	2018-08-31 10:21:19	ODPS_SQL	wangdan	Day Schedule	DAG Test Retroactive Insertion
	ods_log_info_d	700000461553	2018-08-31 10:21:15	ODPS_SQL	wangdan	Day Schedule	DAG Test Retroactive Insertion
Egg Testing instance	create_table_ddl	700000461344	2018-08-31 10:21:12	ODPS_SQL	wangdan	Day Schedule	DAG Test Retroactive Insertion
PetchData	rds_sync	700000461346	2018-08-30 10:32:08	Data Integration	wangdan	Day Schedule	DAG Test Retroactive Insertion

2. Enter the business Date and click OK.

f the business date is se	lected before yesterday, the task is executed	immediately.
f the business date is se	lected yesterday, you will need to wait until th	e scheduled time to execute the
ask.		
* Stress Test name:	P_write_result_20180723_220032	
Select Business Date:	2018-08-30	

3. Go to the **Basic information** page to view the task run status.



View the information and operation logs of the test instance

You can see the instance DAG graph by selecting the appropriate task instance in the **test instance** page and clicking.

• Right-click an instance, you can view the dependencies and details of this instance and perform specific actions such as stopping, rerunning, and so on..



• Double-click an instance to pop up task properties, run log, operation log, code, and so on.

Note:

- In test run mode, the task is triggered manually. The task runs immediately as long as the set time is reached, regardless of the instance's upstream dependencies.
- The task write_result, Which is configured to run every Tuesday morning, is based on the
 instance generation rules described earlier in the article, the business date selected by the
 test Runtime is Monday (business date = run date-1), the instance will actually run at 2. If it
 is not Monday, the instance is converted to a successful state at 2 points, and there is no log
 generation.

replenishment data operation

Manually trigger data population

If you need to confirm the timing and interdependencies of multiple tasks, or you need to reperform the data analysis calculation from a root task, you can select the **O&M center** > **task list** > **cycle task** page and click the **replenishment data** after the task, to fill multiple tasks for a certain period of time.

- 1. Select the **O¢er** > **cycle task** page and enter the task name.
- 2. Click replenishment dataafter the query results.

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-	任务运用						
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- **3.** Set the business date for the replenishment data as "to", select the write_result node task, and click **OK**.
- 4. Click to view the replenishment data results.

View the information and operation logs of the data population instance

You can see the instance DAG graph by selecting the appropriate task instance.

- Right-click an instance, you can view the dependencies and details of this instance and perform specific actions such as stopping, rerunning, and so on..
- Double-click an instance to pop up task properties, run log, operation log, code, and so on.



- 2017-09-18 15:56:30. 919 [job-51109647] In the figure above is the job ID.
- The task in the figure above failed because the source does not have this partition value in the synchronized table, so the read failed.
- The instance of a replenishment data task is day-to-day, for example, the task from 2017-09-15 to 2017-09-18 during this period, if the instance of number 15 fails, an instance of number 16 also does not run.
- The task write_result, which is configured to run every Tuesday morning, is based on the instance generation rules described earlier in the article. The business date selected by the replenishment data Runtime is Monday (business date = run date-1). The instance will actually run at 2 AM. If it is not Monday, the instance is converted to a successful state at 2 AM, and there is no log generation.

Periodic automatic run

In periodic automatic run mode, the scheduling system automatically triggers tasks according to all task scheduling configurations. Therefore, no operation portal is provided. You can view the instance information and operation logs by using either of the following methods.

Select the parameters such as the business date or the running date on the O&M center
 > cycle instance page, search for the instance that corresponds to the write_result task, and then right-click on the instance information and the run log.

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6	周期任务	实例名称	状态 🖓	任务类型	责任人	定时时间小	业务时间小	操作
ß	手动任务	write_result	⊖未运行	数据同步	18730902102jp140.mm	2017-08-29 02:00:00	2017-08-28 00:00:00	终止运行 重寫 更多 🔻
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18	周期实例	write_result	⊖味這行	数据同步	18720902102@180.com	2017-08-27 00:00:00	2017-08-26 00:00:00	终止运行 重點 更多 🔻
R	ai shekel	write_result	◎未运行	数据同步	18730832102(0163.000)	2017-08-26 00:00:00	2017-08-25 00:00:00	终止运行 重発 更多 🔻
	测试实例	write_result	◎未运行	数据同步	18730902102p163.com	2017-08-25 00:00:00	2017-08-24 00:00:00	终止运行 重約 更多 🔻

- You can see the instance DAG graph by selecting the appropriate task instance in the **cycle instance** page and clicking.
 - Right-click an instance, you can view the dependencies and details of this instance and perform specific actions such as stopping, rerunning, and so on..
 - Double-click an instance to pop up task properties, run log, operation log, code, and so on.

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Note:

- The task is not running because the upstream task is not running.
- If the initial state of an instance of a task is "Not Run", when the scheduled time arrives
 , the scheduling system checks that all upstream instances of this instance are running
 successfully.
- The instance will be triggered only when all of its upstream instances are successful and its scheduled time is reached.
- For an instance in Not Run status, check that all its upstream instances are successful and its scheduled time has been reached.