



Front Runner of

BI and Reporting Tools

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FineReport(V10.0)Product White Paper

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# Catalogue

1.What is FineReport.....	9
1.1.    For Software Companies.....	<b>Error! Bookmark not defined.</b>
1.2.    For Final Users.....	<b>Error! Bookmark not defined.</b>
2. FineReport System Structure.....	14
2.1.    System Structure.....	<b>Error! Bookmark not defined.</b>
1.1.1 Technology Architecture of FR.....	14
1.1.2 Technology Architecture of FR.....	15
2.2.    Product Composition.....	<b>Error! Bookmark not defined.</b>
2.2.1.    Report Designer.....	<b>Error! Bookmark not defined.</b>
2.2.2.    Report Server.....	<b>Error! Bookmark not defined.</b>
3. FineReport Functional Overview.....	17
3.1.    Data Source Support.....	17
3.2.    Designer Introduction.....	<b>Error! Bookmark not defined.</b>
3.2.1.    0–Code, Drag & Drop.....	<b>Error! Bookmark not defined.</b>
3.2.2.    Remote Design.....	20
3.2.3.    Multiple Working Directories.....	20
3.2.4.    Multiplayer Collaboration.....	21

3.2.5.	Online Update Upgrade.....	<b>Error! Bookmark not defined.</b>
3.2.6.	AlphaFine Smart Assistant.....	23
3.2.7.	Template File Version Management.....	<b>Error! Bookmark not defined.</b>
3.3.	Chinese-style Complex Report.....	<b>Error! Bookmark not defined.</b>
3.3.1.	Multi-source Data Association.....	<b>Error! Bookmark not defined.</b>
3.3.2.	Row and Column Symmetry.....	<b>Error! Bookmark not defined.</b>
3.3.3.	Column, Page and Group Report.....	<b>Error! Bookmark not defined.</b>
3.3.4.	Dynamic Inter-cell Operation.....	<b>Error! Bookmark not defined.</b>
3.3.5.	Function (formula) Support.....	29
3.3.6.	Aggregation Report.....	<b>Error! Bookmark not defined.</b>
3.4.	Decision Making Report (Large Screen).....	310
3.4.1.	Multi-screen Adaptation.....	31
3.4.2.	Rich Visual Elements.....	33
3.4.3.	Multiple Layout Methods.....	33
3.4.4.	Component Sharing and Reuse.....	33
3.4.5.	Component Linkage Analysis.....	34
3.4.6.	Data Monitoring.....	35
3.4.7.	Automatic Rotation.....	36

3.4.8.	Large Screen Combined with Hardware.....	36
3.5.	Report Exporting and Printing.....	37
3.5.1.	File Export.....	<b>Error! Bookmark not defined.</b>
3.5.2.	Scattered Client Printing and Local Software Printing.....	<b>Error! Bookmark not defined.</b>
3.5.3.	Multi-function Printing.....	<b>Error! Bookmark not defined.</b>
3.6.	Data Query and Filtering.....	<b>Error! Bookmark not defined.</b>
3.6.1.	Rich Control Types.....	41
3.6.2.	Flexible Parameter Panel.....	40
3.6.3.	Advanced Parameter Query Function.....	40
3.7.	Chart.....	42
3.7.1.	Advanced Chart Technology.....	42
3.7.2.	Rich Chart Types and Styles.....	42
3.7.3.	Diverse Chart interaction Effects.....	44
3.7.4.	Flexible Personalization items.....	49
3.7.5.	Chart Drilling.....	53
3.7.6.	Chart Linkage.....	54
3.7.7.	Data Map.....	54
3.8.	Interaction Analysis.....	59

3.8.1.	Linkage.....	59
3.8.2.	Drilling.....	60
3.8.3.	Multidimensional Data Analysis.....	61
3.8.4.	Real-time Data Analysis.....	63
3.9.	Data Filling.....	64
3.9.1.	Diverse Reporting Style.....	<b>Error! Bookmark not defined.</b>
3.9.2.	Submission Control of Filling.....	67
3.9.3.	Data Verification.....	68
3.9.4.	Multi-Level Reporting.....	69
3.9.5.	Offline Filling.....	71
3.9.6.	Data Temporary Storage.....	72
3.9.7.	Multi-Sheet Filling.....	73
3.9.8.	Excel Data Import.....	74
3.10.	Decision-making System.....	76
3.10.1.	Directory Management.....	77
3.10.2.	User Management.....	77
3.10.3.	Authority Management.....	78
3.10.4.	Hierarchy Authority Management.....	81

3.10.5.	System Management.....	83
3.10.6.	Intelligent Operation and Maintenance.....	85
3.10.7.	Message Center.....	91
3.10.8.	SMS Platform.....	92
3.10.9.	Safety Management.....	93
3.10.10.	Registration Management.....	97
3.10.11.	Appearance Customization.....	99
3.11.	Time Scheduling.....	101
3.11.1.	Timing Tasks.....	101
3.11.2.	Permission Control of Scheduled Tasks.....	103
3.11.3.	Timed Report.....	104
3.12.	Mobile Apps.....	105
3.12.1.	ReactNative Combined with Native.....	106
3.12.2.	OEM Cloud Packaging & Personalization.....	106
3.12.3.	HTML5 Report.....	108
3.12.4.	WeChat and DingTalk Integration.....	109
3.12.5.	Mobile Adaptive and Zooming.....	110
3.12.6.	Mobile Drilling and Linkage.....	111

3.12.7.	Mobile Terminal Filling.....	111
3.12.8.	Mobile Interactive Experience.....	112
3.12.9.	Adding Devices and Bindings.....	113
3.12.10.	Mobile Message Push.....	114
3.13.	International Language Support.....	115
4.	Application Deployment.....	115
4.1.	System Integration.....	116
4.1.1.	Java Project Integration.....	116
4.1.2.	Non-java Project Integration.....	116
4.1.3.	C/S Project Integration.....	117
4.2.	Webpage Integration.....	117
4.3.	Clustering.....	118
4.4.	Single Sign-On.....	120
5.	Extended Development of FineReport.....	120
5.1.	API Interface.....	121
5.1.1.	Program Data Source.....	121
5.1.2.	Report Format Settings.....	122
5.1.3.	Custom Interaction.....	122

5.1.4.	Custom Filling.....	122
5.1.5.	Report Reprocessing.....	122
5.1.6.	Custom Functions.....	122
5.1.7.	Import and Export.....	123
5.2.	Plugin Development.....	123
6.	FineReport Performance and Optimization.....	125
6.1.	Measured Data.....	125
6.2.	Performance Optimization.....	125
6.2.1.	Report Performance Optimization.....	126
6.2.2.	Server Performance Optimization.....	127
7.	Product Environment Support.....	127
7.1.	Software Environment.....	127
7.2.	Hardware Environment.....	128
8.	Contact Us.....	129
9.	About FanRuan.....	130
	Brand Leadership.....	<b>Error! Bookmark not defined.</b>
	Brand Influence.....	<b>Error! Bookmark not defined.</b>

## 1.What is FineReport?

FineReport is a ‘professional, simple and flexible’ enterprise reporting software developed by FanRuan Software Co., Ltd. With FineReport, users can design complex reports,parameter query report, dashboard and construct data decision–making system through simple drag and drop.

Fanruan Software Co., Ltd. is the front runner of BI and reporting tools, leading its peers in size, service network, brand influence, market share and sales. According to survey results, FineReport is named highly by our users in the following five main aspects:

### (1) Complete functions.

With good knowledge of user behaviors and demands, and a deep study of industry development, FineReport proves to be ‘the most knowledgeable about reports’ and outperforms its peers in complex report processing. For over ten years, FineReport has focused on function research and mainstream innovation with the vision of exploring and meeting the core demands of clients over different industries at the fastest pace.

### (2) Extremely–low learning costs.

FineReport is easy for learning, operating and integrating. It provides users with a variety of learning approaches and data including online and offline training, the FineReport Forum, etc. In

addition, users can reach our services via such channels as on-site support, online services, telephone, e-mail, etc.

### **(3) Extensive experience.**

FineReport possesses a unique understanding of enterprise informatization in various industries and has demonstrated its rich experience in industrial applications. It can provide users with a wealth of practical advice concerning enterprise information-based construction and a series of internal and external solutions as well as implementation plans concerning strategy, operation, organization, finance and marketing.

### **(4) Efficient services.**

By adhering to the 'timely, professional, thoughtful and meticulous' service spirits, FineReport has established its improved after-sales and technical support system and passed the ISO9001 International Quality System Certification.

### **(5) Dedicated culture.**

The culture of FineReport is to 'Devote ourselves to our enduring undertakings with true heart and mature wisdom'. At FineReport, everyone makes great efforts to take on new challenges with a fresh attitude through constant learning, seeking to provide our clients with excellent products and meticulous services.

## **1.1. For software companies**

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For software companies, the value of FineReport is to solve various problems in code development, application of open source software development reports, speed up project progress, and reduce project costs.

Until recently, most projects were developed through custom codes or based on customized development platforms. However, this development mode has many long-standing problems, such

as:

- Long project period and often delays
- Working overtime and big psychological stress
- Hard to expand and slow response to new requirements
- Poor software quality and system performance with lots of bugs;
- Difficult and complicated (e.g., after acceptance) maintenance
- High turnover risk and significant brain–drain consequences

Open source software is now being applied in some projects to save costs. Although the software license cost is eliminated, it is even less effective than code development because the project may be delayed due to such problems as:

- Limited functions and difficulty meeting the new requirements of clients
- Unguaranteed services in the face of technical difficulties or product bugs
- High learning costs, requiring the long–term study of data or documents

The advent of FineReport announces a complete solution to the above problems and makes it possible for the high–efficiency development of reports. FineReport is also easy and simple to use. After project delivery, the final user can make self–maintenance and system upgrades based on FineReport through simple page revision.

## 1.2. For final users

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In the process of informationization, companies generally encounter the following problems:

1. Business data shot up yet few of them are used for operation analysis and business control.

During informatization, enterprises witness an increasing amount of applications and data. Although most companies hold the opinion that data is a huge wealth, they don't know how to make use of it. Most data is merely accumulated together without effective data analysis and display, and very little of it is used for making operation decisions, operation analysis and business control.

## **2. Business data is dispersed and difficult to utilize.**

In general, an enterprise has several business systems (e.g., CRM, ERP, OA) which operate independently from each other. In this way, business data is dispersed in different systems that are inquired separately (if necessary), making it extremely hard to utilize. What's worse, such problems as multi-port collection, repeated entry, out-sync updating and different structures greatly impact the consistency and accuracy of the data.

## **3. Manual data processing results in a heavy workload, low accuracy and poor security.**

When senior management team needs to inquire into comprehensive cross-department and crosssystem data, the business department has to manually summarize and adjust it via excel, leading to a heavy workload, low time-effectiveness and the increased probability of data error. In addition, monthly and daily reports are made by month and by day separately, making it inconvenient to prepare, maintain and view the data. Excel has a simple authorization function and cannot guarantee data security, which may greatly damage enterprise interests.

## **4. Original reports fail to serve new businesses from fast business adjustment.**

When an enterprise adopts custom reports for business analysis, the original reports may not meet the requirements of fast-growing businesses. In this case, secondary development is generally required to adjust the reporting system, causing large burdens on the final users and software companies. Furthermore, the lack of linkage and comparisons among the reports makes it difficult to conduct further comprehensive analysis.

## **5. There is no common reporting management portal.**

Although each business system has its own directory, there is no a common portal in which the

leadership can inquire or manage all reports and allocate authorities.

**6. The report display is too simple and general, failing to give management a holistic view of all the information.**

Generally, the built-in reports in the business system only have basic data summary and display functions, but lack the rich visual display and analysis of data, not to mention business forecasting and pre-warning in support of multibusiness applications. Therefore, it is difficult for the management to grasp global information and make decisions strategically.

**7. People on business trips cannot view reports conveniently.**

Today, the mobile office has become a trend. With mobile terminals, management can make better use of their fragmented time and take real-time control of the enterprise wherever they are. However, due to all sorts of reasons, at least 80% of enterprise reports still depend on PC terminals to be inquired and filled, greatly hindering management team in grasping the enterprise information and making timely business adjustments. Restricted by the above problems, the decision making of management is still dependent on experience due to the absence of accurate and effective information, bringing adverse impacts to the management and operation of the enterprise.

**In general, enterprises may encounter the following problems during data processing. FineReport reporting software provides solutions to tackle all the aforementioned difficulties.**

**In this regard, FineReport provides a complete solution.**

**Data integration :** FineReport delivers multi-data source correlation, cross-data base and crossdata sheet access and the simple application of multi-business system data; it also integrates related businesses data into one report, enabling more data to be applied in operation analysis and business control.

**Data collection and modeling analysis:** The report designer allows the user to design the required reports in a flexible and simple way. The data decision-making system enables the common access and management of reports and achieves the data analysis and filling of various businesses.

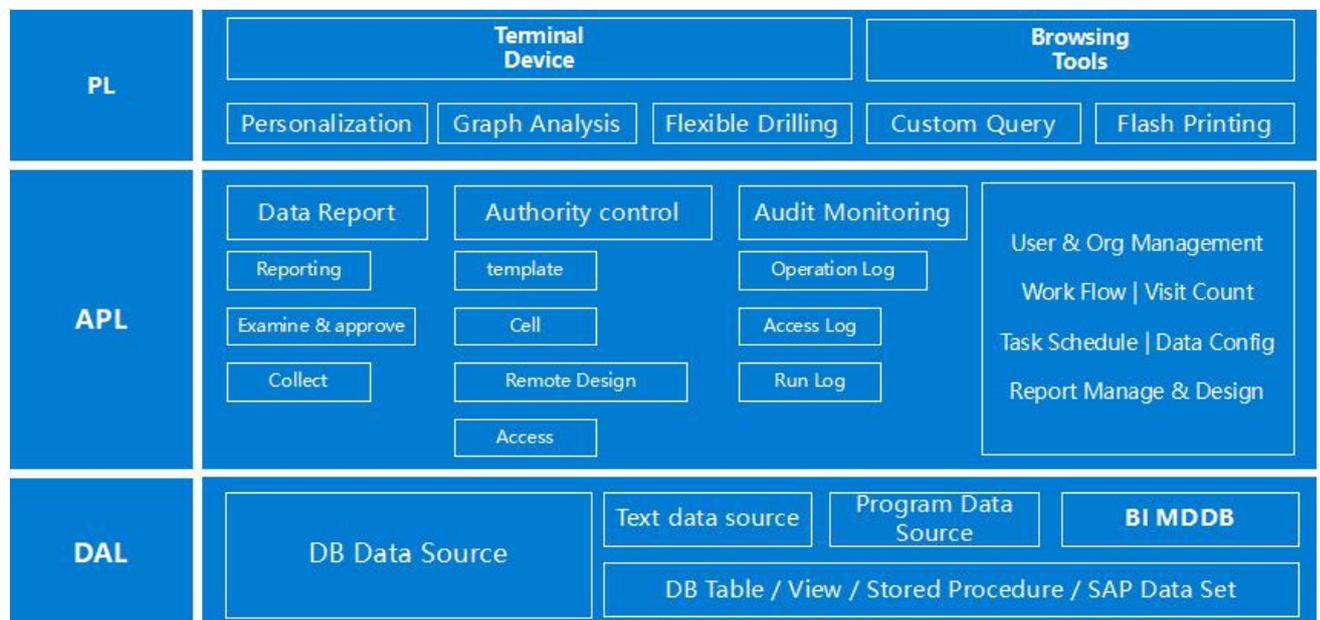
Data Display: Data can be accessed via PC or mobile terminals. To improve the reading of report data and the exploration of data value, FineReport offers such functions as the analysis of a wide variety of charts, drill-through analysis, multi-dimensional analysis, custom analysis and real-time analysis.

## 2. FineReport system structure

### 2.1. System structure

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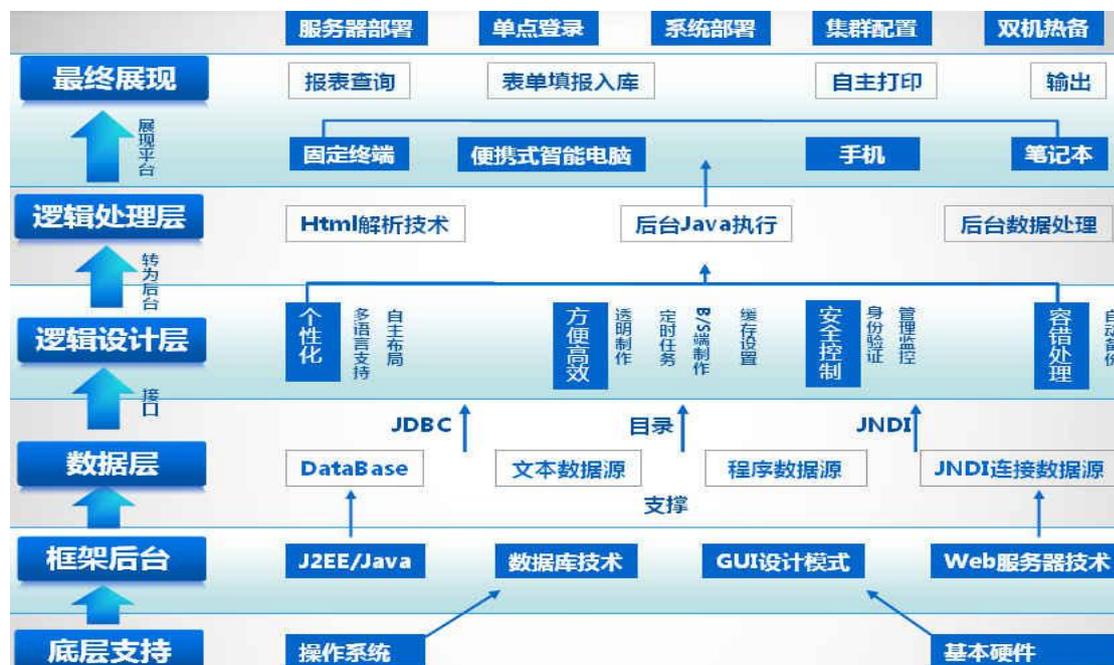
#### 2.1.1 FineReport's functional structure



The designer creates the data source and performs the report design; the administrator configures the user and the authority system; the ordinary user performs the query, analysis, printing, export, and filing of the report at the front end. Support PC / tablet / mobile / large screen devices, compatible with mainstream browsers.

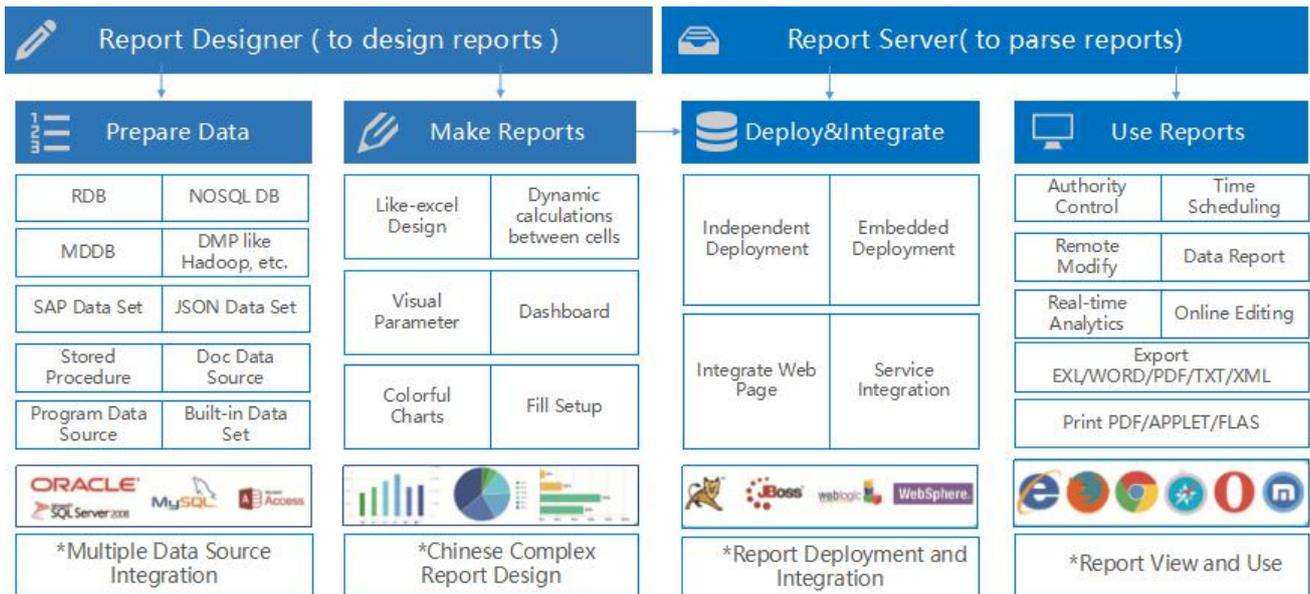
### 2.1.2 FineReport's technology architecture

FineReport is a pure Java software with good cross-platform compatibility, support for integration with various business systems, support for various operating systems, and support for mainstream web application servers. The front desk is pure HTML, no need to install any plugins. Its technical architecture diagram is:



### 2.2. Product composition

FineReport consists of report designer and a report server. With the report designer, users can make a report template available for data display (reports), data inquiry (parameters) and data entry (dashboards) through drag and drop; the report server will parse the template into a zero-client HTML page displayed to the user.



### 2.2.1. Report designer

FineReport Designer can design various functions in reports such as forms, graphs, parameters, controls, report, print, and export. It is an integrated platform for report application development, debugging, and deployment. The composition principle is shown in the following figure.



### 2.2.2. Report server

A report server is a server in the form of a servlet that parses a report in a web environment. The user interacts with the application through a browser and a report server.

- Report parsing: FineReport server is mainly used to read and parse the template created by the designer, and convert the template into an HTML page, which is convenient for users to view, modify and print data through the browser.
- Cache management: In the face of resource waste and inefficiency caused by frequent access, FineReport provides a powerful caching mechanism for data caching, making user access more efficient.
- Connection pool configuration: By establishing a database connection pool and a set of connection usage, allocation, and governance policies, the connections in the connection pool can be efficiently and securely reused, and the overhead of frequently establishing and closing database connections is avoided.
- Performance management: Support distributed clustering and large data volume computing, and support a large number of users concurrent processing.

## 3. FineReport functional overview

### 3.1. Data source support

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FineReport connects to the data source in a variety of ways. It supports direct connection to the database through JDBC, or shares data connections with the application server through JNDI. It also supports connecting to the SAP system through JCO.

The supported data source types are:

- Relational data source: including Oracle, SqlServer, MySql, DB2, Sybase, Informix and other mainstream relational databases; support SQL to take data tables or views, also support stored procedures
- Text data source: Excel file, Txt file, XML file data
- Built-in data source: Support server built-in datasets and report built-in datasets
- BI multidimensional database: Essbase, ssas, sap, hadoop, and FineBI cubes, etc.
- Nosql data source: Support non-relational data such as MongoDB
- Other data sources: Support program data source, json data, SAP data source, etc.

## 3.2. Designer introduction

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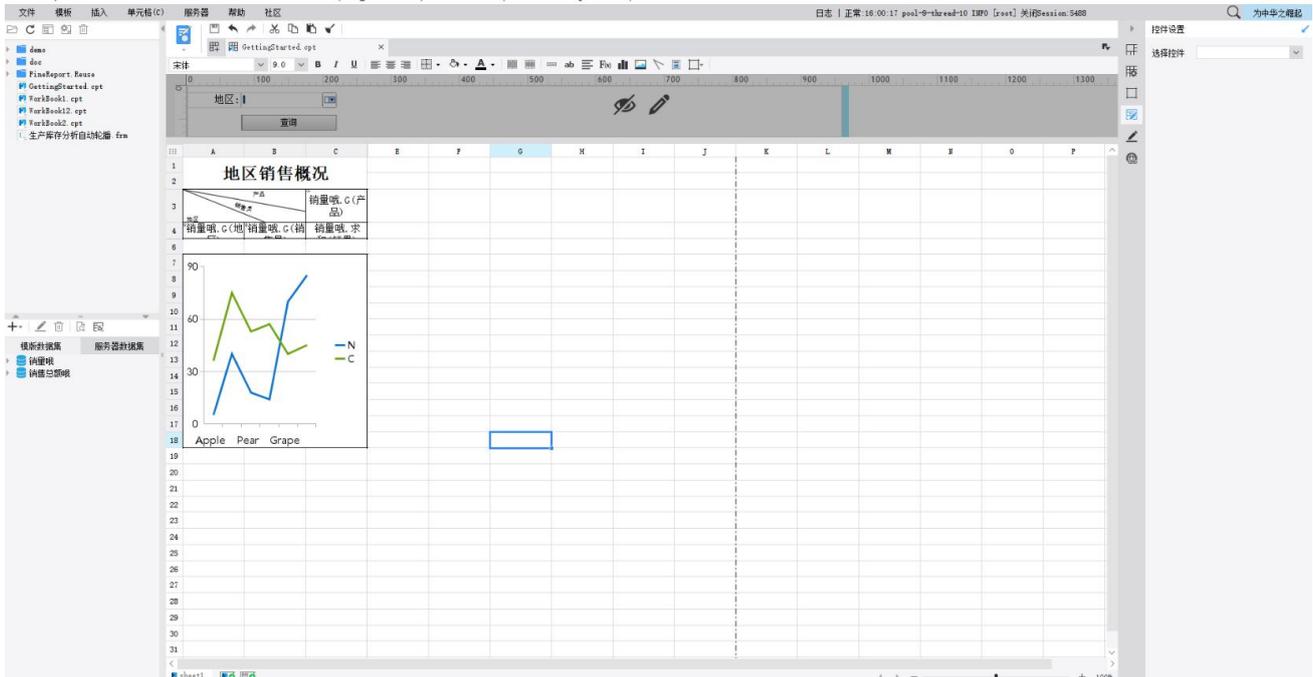
### 3.2.1. 0-Code, drag & drop

FineReport uses a zero-coded design concept, and most operations can be done by dragging and dropping. Designers offer a variety of design approaches for different types of reporting needs, including general reports, aggregated reports, and decision making reports.

The normal report mode uses an Excel-like style to solve Chinese-style complex reports.

Basically, you can use excel to learn most operations. Simultaneous support for multiple SHEET and cross-SHEET calculations, perfect compatibility with EXCEL formulas, fully supports drag-and-drop replication of formulas, numbers and strings. The content of the cell reference is automatically changed when the row and column changes are supported. Users can design complex reports in any

pattern in a WYSIWYG.

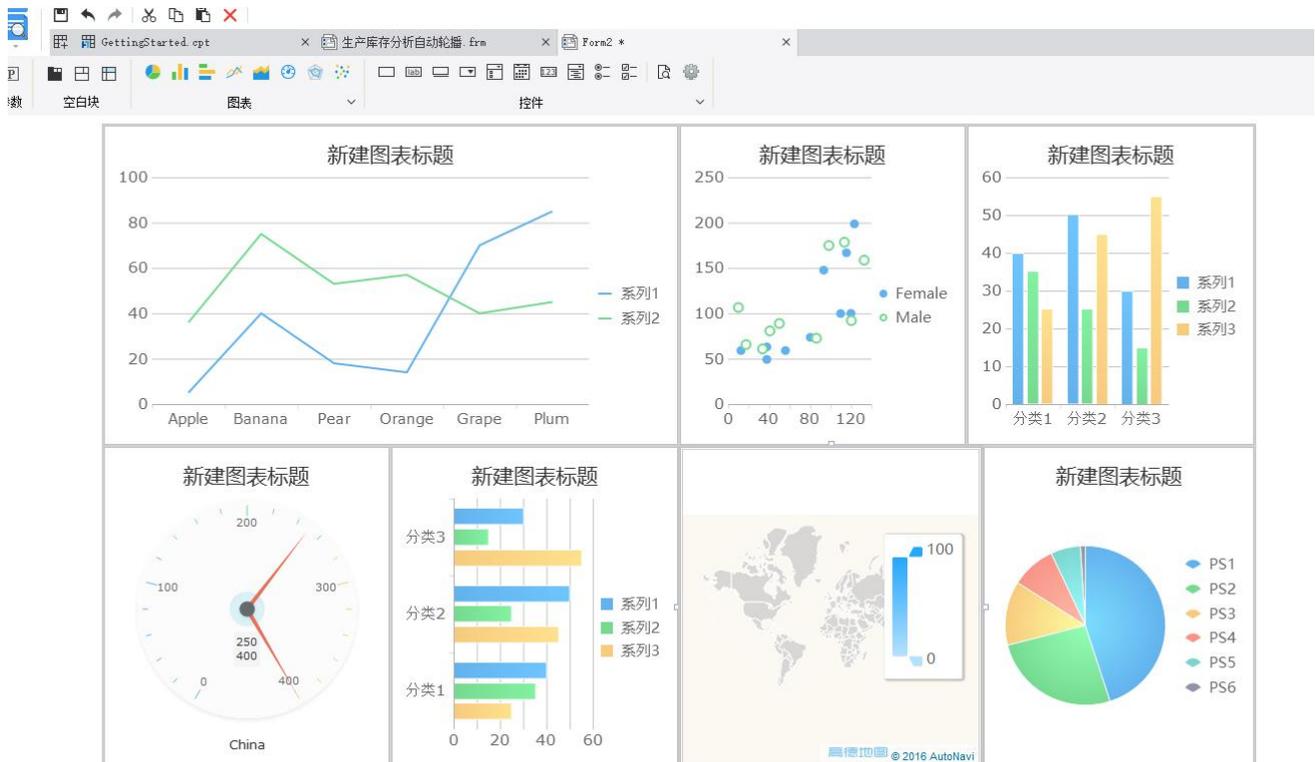


Aggregate report mode for supporting the design of irregular large reports. The traditional Excel grid-like interface requires frequent merging and splitting of cells when processing irregular reports, which is extremely cumbersome. Finereport aggregates report mode to efficiently handle such reporting needs.

质量设计结果一览表		订单编号	客户代码	名称	目标质量	生产质量规格	尺寸	尺寸换算成毫米	公差
标准代号	产品名称代码	调质度	钢种	退火区号	表面状态	冷轧变化程度	用途代码	动态状态	尺寸公差
厚度指定	厚度公差	短边公差	长边公差	余量尺寸	厚度公差	不平度	圆棒	中间层	水平测量
时效硬度试验	硬度试验	金相试验	兰克姆特值(体值)	埃里克森	回弹试验	凸缘率	卷筒	检查率	容许率
拉伸试验1	拉伸试验2	粗糙度试验	涂油	后处理附着量1	后处理附着量2	后处理附着量3	后处理附着量4	后处理附着量5	后处理附着量6
包装重量	小重量	纵切每重量	横切每重量	硬度	拉伸试验1	拉伸试验2	埃里克森	粗糙度	埃里克森
产品重量	产品重量	产品重量	产品重量	产品重量	产品重量	产品重量	产品重量	产品重量	产品重量

Decision making report mode for implementing cool dashboards, management kanbans, etc. It

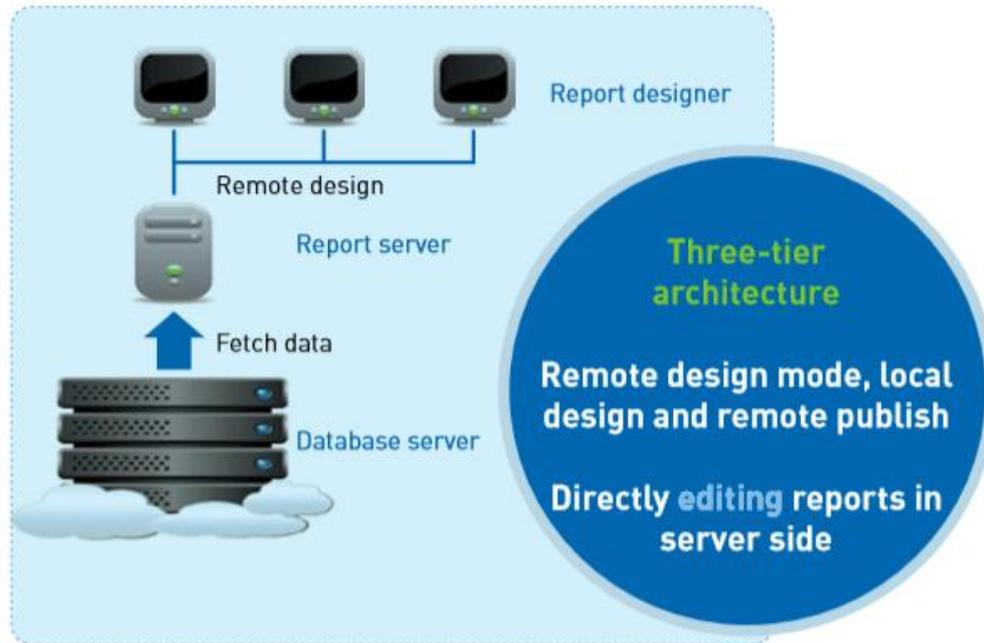
uses a blank canvas interface to freely combine different visualization elements on the interface by dragging components to achieve comprehensive analysis.



### 3.2.2. Remote design

When traditional reporting tools work in the internal network, both the designer and the report engineering need to be deployed to the server. This is often referred to as a two-tier architecture, which will cause many problems as follows. For companies that use the intranet, the security requirements of the server are generally high. Only the corresponding server can connect to the database. Installing the designer on the server not only increases the maintenance difficulty of the server administrator, but also reduces the security of the service period. When the report requirements on the server change, it is necessary to go to the site to operate, which is troublesome and inefficient.

FineReport uses three architecture technologies, which allows users to design, remotely publish templates and edit changes directly to server-side report files through remote design patterns.



### 3.2.3. Multiple working directories

FineReport provides the concept of a report working directory, that is, each report's stand-alone application or integrated environment is a working directory. Each working directory has a corresponding jar file, report template file, resource management file, and so on. When we installed FineReport on this machine, the webroot folder that comes with the local installation directory is used as a separate local working directory.

In practical applications, more demand is to use a remote working directory. That is, the report server is integrated and deployed in the actual system. The report designer connects to the remote environment through the designer, and directly edits and saves the report template file and configuration parameters. Especially if there are multiple environments such as test environment and production environment, FineReport's convenient multi-working directory can provide designers with great convenience.

### 3.2.4. Multiplayer collaboration

A system development team will inevitably require multiple people to work on the development of reports at the same time. Each person may undertake a part of unrelated template tasks, and may also use reports designed by others. Now the general management method is SVN/VSS/CC, etc., but

the implementation is poor, especially if the misoperation can bring more troublesome workloads such as file recovery. With the help of FineReport, multiplayer collaborative tabulation can be easily achieved.

Multiple report producers can connect to the same report runtime environment through the remote designer, and the connection controls the scope of each producer's operation according to the permissions, ensuring data and file security under multi-person work conditions.

In addition, in order to prevent multiple people from editing the same file at the same time, resulting in file conflicts, FineReport provides the function of locking and unlocking the template, that is, when the A producer opens a template for editing, the current template can be locked. Other producers cannot edit this file at the same time, effectively preventing file editing conflicts.

### 3.2.5. Online update upgrade

FineReport is the industry's first report designer to support online update upgrades. No need to re-install, upgrade to the latest version with one click, and experience the latest in time. Support automatic backup before upgrade, users can restore by one button according to the backup node. Support for displaying updates for each issue and support searching for updates.



### 3.2.6. AlphaFine Smart Assistant

AlphaFine is a report production intelligent assistant developed by FanRuan. It is the entrance of FineReport product connection. What are the functions of the product, what demo templates, which components or plug-ins, how to set a certain function, what is the meaning of an error? All of this can be found through this entrance. All in all, users can get all the valid resources through this entrance to assist in report production.



As shown in the figure below, it is the search function of AlphaFine intelligent assistant, which can search for template content, function settings, documents and so on.



The following figure is the AlphaFine intelligent detection function. Based on the cloud problem

library, users can quickly know the cause of the current error and the corresponding solution when accessing the template error.



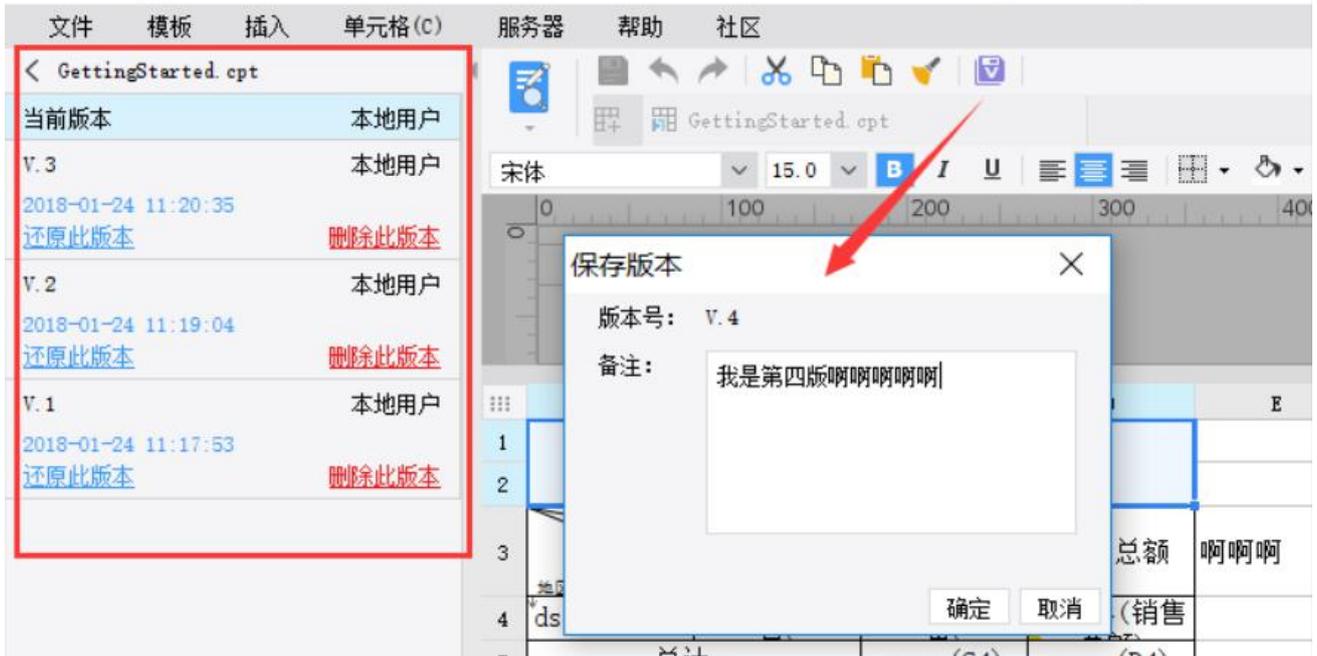
**Oops!! 非常抱歉，出错啦...**

**错误代码:11300003 单元格计算死循环 出错对象:B1**

详细信息	解决方案
<p><b>单元格计算死循环</b> 请根据出错对象做相应的调整</p> <p>该问题一般是因为公式计算时引用单元格的方法不正确，具体情况有下面三种：</p> <ul style="list-style-type: none"> <li>• 如果出错对象只有一个单元格，比如A1，则说明A1所引用的单元格出现了死循环。</li> <li>• 如果出错对象是两个单元格，比如【B1， A1】，则说明A1和B1的左父格或者上父格设置出现了死循环。</li> <li>• 如果出错对象是一个单元格，但用中括号标记出来了，比如【A1】，则说明A1的左父格或者上父格引用了自身。</li> </ul> <p><a href="#">详情可见帮助文档</a></p> <p>方案内容有待完善，仅供参考，如果你获得更多帮助，请咨询<a href="#">帆软技术支持</a>            关于技术问题，您还可以通过<a href="#">帆软论坛</a>获取帮助，论坛上有非常多的大神，有些比帆软工程师还要高哦！</p>	

### 3.2.7. Template file version management

The designer supports version management of the developed report files, supports saving historical versions, restoring historical versions, and deleting historical versions. Great user-friendly control of the development process, reducing project risks due to accidental editing changes or file corruption.



### 3.3. Chinese-style complex report

#### 3.3.1. Multi-source data association

FineReport provides a heterogeneous data source model that enables multi-source data correlation so that the data for the same report can come from multiple different tables in the same database, or multiple different databases.

地区\年份	1996						1997							
	10月		11月		12月		10月		11月		12月			
	10月	11月	10月	11月	10月	11月	10月	11月	10月	11月	10月	11月		
饮料	40.15	67.01	877.76	367.06	2491.97	4643.95	685.46	1162.00	648.89	2496.35	739.91	162.44	1283.34	2185.69
调味品	83.14	58.69	227.06	456.50	345.87	1121.25	128.01	213.80	81.28	423.09	190.40	108.27	271.53	570.20
点心	89.31	310.28	316.21	156.72	1183.20	2359.71	180.88	110.03	753.72	1044.63	335.70	359.20	725.14	1420.04
日用品	72.20	0.00	738.46	824.07	1793.32	4128.06	819.51	449.91	860.74	2130.16	578.53	496.40	760.62	1837.55
谷类/麦片	30.72	77.01	241.01	31.27	887.98	1368.00	81.34	41.16	230.86	353.36	314.72	462.98	348.01	1125.71
肉/荤素	35.80	0.00	1290.84	743.32	1530.10	3800.05	181.61	172.40	464.80	818.82	1069.19	25.20	1916.48	3010.87
特制品	31.54	36.83	392.18	387.55	1323.48	2471.59	117.45	80.64	434.20	832.29	209.98	180.63	1136.68	1527.28
海鲜	63.71	57.69	411.37	531.38	852.37	2206.52	442.10	65.32	277.30	784.72	670.53	415.11	313.26	1398.90
合计1	3010.58	607.51	4494.89	3577.86	10408.30	22099.13	2636.37	2295.28	3751.79	8683.43	4108.96	2212.23	6755.07	13076.28
客户														
三川实业有限公司	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
东南实业	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
坦森行贸易	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
蓝项有限公司	0.00	0.00	0.00	780.98	4987.72	5768.70	0.00	0.00	0.00	0.00	780.98	333.25	0.00	1114.22
惠恒机械	0.00	0.00	2742.75	0.00	2742.75	0.00	0.00	0.00	0.00	0.00	157.50	0.00	0.00	157.50
深通	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
深皓	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
迈多贸易	0.00	0.00	4883.70	0.00	4883.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4883.70	4883.70
祥通	24.20	0.00	0.00	1310.22	31362.50	32886.92	310.22	0.00	0.00	1310.22	0.00	29076.60	0.00	29076.60
合计2	214.20	0.00	7828.45	2091.20	36350.22	46282.07	1310.22	0.00	0.00	1310.22	938.48	29409.85	4883.70	35232.02

数据取自：A数据库的产品表

数据取自：B数据库的客户表

数据取自：C数据库的订单明细表

### 3.3.2. Row and column symmetry

Some traditional reporting tools, due to the flaws in the strip-like presentation, the horizontal display capability of data is far weaker than the vertical. It is often difficult or even impossible to make cross-reports, let alone more complicated Chinese-style reports. FineReport uses the processing model of EXCEL+ bound data column, which naturally supports symmetry of rows and columns, and all vertical operations can be fully reflected in the horizontal direction. Not only does it not need to specifically set up the crosstab model, but it can also support any format irregular display style.

### 3.3.3. Column, page and group report

The column report allows the user to customize the number of columns and rows of the column, copy the title and automatically fill in the blank line. This function is especially suitable for the production of employee information cards and book information cards.

For the purpose of browsing or printing, we often want to display the contents of the report on different pages according to certain rules. This is paging. FineReport supports a variety of paging report settings:

- Specify pagination: Users can decide how to paginate according to the actual situation. For example, you can specify a fixed number of pages, that is, display a fixed number of lines in a page, or press the report into a group page to facilitate browsing data.
- Dynamically repeating headings or ending lines: No need to repeat input, design, and achieve different titles or endings on different pages.
- In-page total: Totals all data for that page at the end of each page.
- Non-paged preview: All data is displayed on a single page, and the user can browse the entire page by dragging the scroll bar on the right.
- Freeze the header: When dragging the scroll bar up and down, left and right, the content of the first row or the first column is fixed at the original position of the page.

There are many irregular grouping reports in complex reports. In order to respond to such reports perfectly, FineReport supports a variety of report grouping settings.

- Custom formula grouping: Data is grouped by a certain field, such as a date field, and each date corresponds to a group. At this time, the grouping is too detailed, and it is desired to group them by year and week.
- Custom condition grouping: Custom condition grouping is also generally called grouping by segment. It is a typical advanced grouping report style. The grouping is divided according to the value segment of the data, such as according to the score segment, age range, time period, etc. Records belonging to a certain value range are displayed in a group.
- Adjacent consecutive grouping: The database table data is entered in time series. When querying, it is hoped that the fields are consecutively the same according to the time sequence. If such fields are consecutively the same, the reports can be realized by adjacent consecutive groups.
- Grouping: In China, the main areas of general enterprises are North China and South China. When reporting, they hope to use the North and South with better sales performance as the main target, while other regions are summarized in the “Other” group. This is the merge grouping.
- Organizational recursive tree: Organization recursive grouping, the general form of expression is the organization of an enterprise or institution, or group or department. FineReport can quickly and automatically process recursive data structures.

### 企业员工考勤一览表

企业名称	部门	员工	基本制度				请假			加班	
			迟到	早退	旷工	总计	事假	病假	总计	加班	总计
恒天科技 (上海分公司)	分公司部门	分公司员工	9	8	1	18	6	5	11	34	34
	人事部	部门员工	3	2	1	6	2	1	3	9	9
		Randy	1	1	0	2	1	0	1	3	3
		Paul	2	0	1	3	1	0	1	2	2
		Lucy	0	1	0	1	0	1	1	4	4
	企划部	部门员工	4	5	0	9	4	0	4	15	15
销售部	部门员工	2	1	0	3	0	4	4	10	10	
恒天科技 (广州分公司)	分公司部门	分公司员工	4	6	0	10	5	0	5	56	56

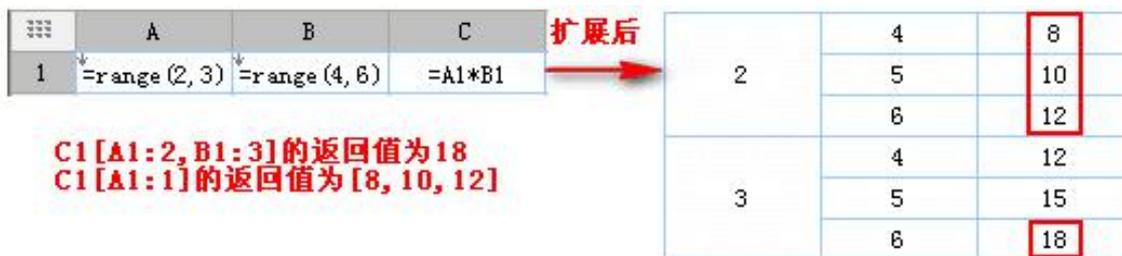
### 3.3.4. Dynamic inter-cell operation

Based on the characteristics of data expansion in the lattice interface, that is, the one-to-many relationship between the design interface and the returned data, FineReport provides a complete set of computing system for the positioning and mutual reference calculation of the extended data. This is the hierarchical coordinates, which is the dynamic inter-frame operation. Its representation method is:



Cellx: refers to the target cell, Lk: refers to the left parent of a target cell Cellx, Tk: refers to the upper parent of a target cell Cellx.

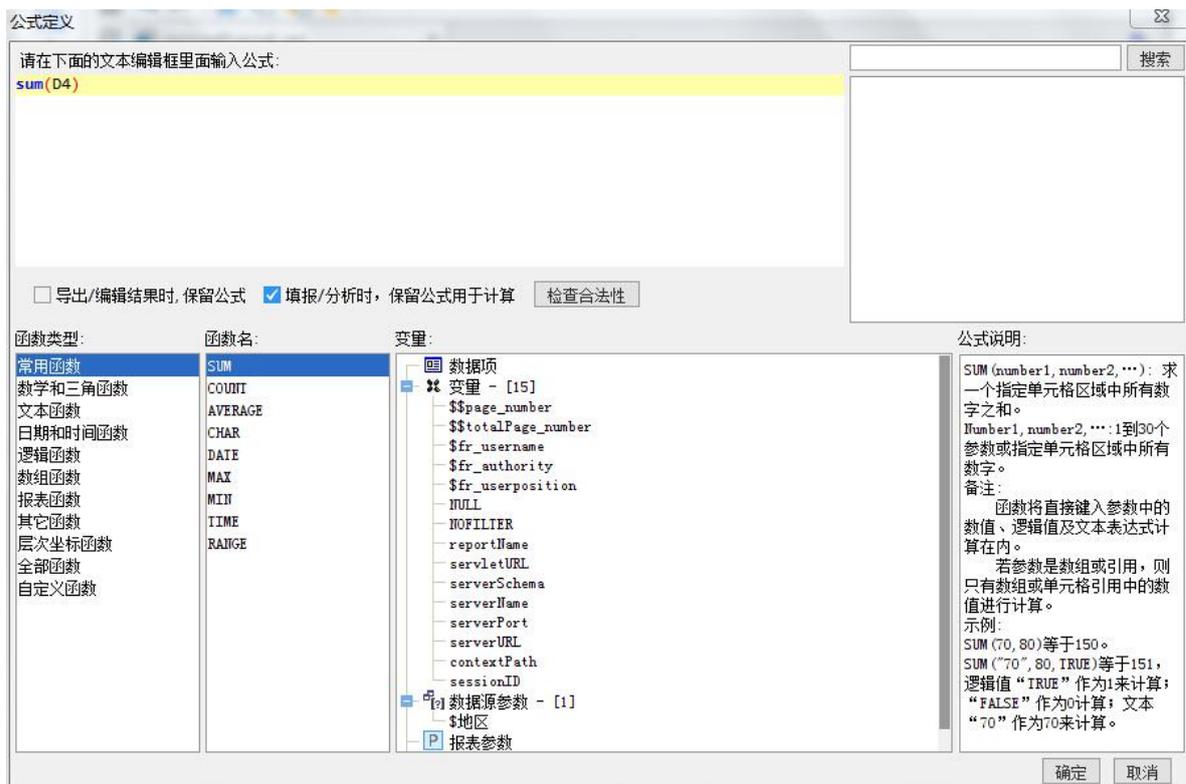
As shown in the following example:



Dynamic compartment arithmetic can be used to easily achieve data ratio, data comparison, synchronization ratio, aspect ratio, ranking, cyclic application, layer-by-layer accumulation, cross-layer accumulation, cross-tab accumulation, row number, group serial number and so on.

### 3.3.5. Function (formula) support

In the process of template making, formulas are used when statistics need to be made. FineReport is fully compatible with Excel's formula writing, and has been extended on this basis, and all the functions that are turned over have corresponding descriptions. Accelerate the speed of the manual, reduce the difficulty of template production, and the skilled use of the formula can improve the efficiency of template production.

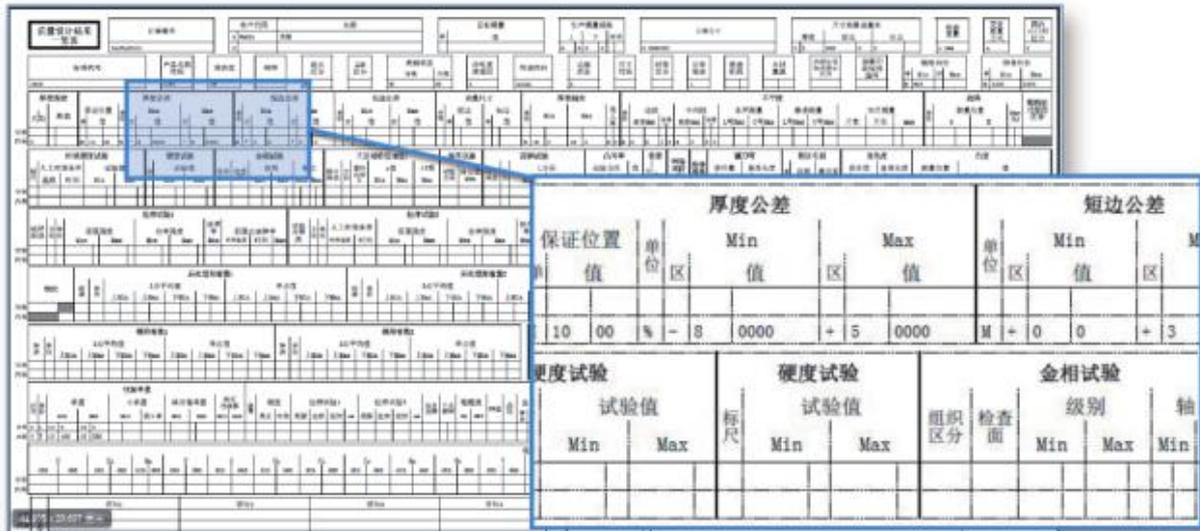


FineReport provides multiple function types: common functions, math and trigonometry, text functions, date and time functions, logic functions, array functions, report functions, hierarchical coordinate functions, and other functions.

In some special areas, some special functions may be needed. For this, FineReport provides a custom function mechanism, which can be defined by the user according to the business needs, but these functions must meet the FineReport function definition rules.

### 3.3.6. Aggregation report

For some very complex large reports, that is, the data has multiple fragmentation areas, involving many statistics and indicators, the conventional method is difficult to produce. The report in the following figure is difficult to solve in the usual way.

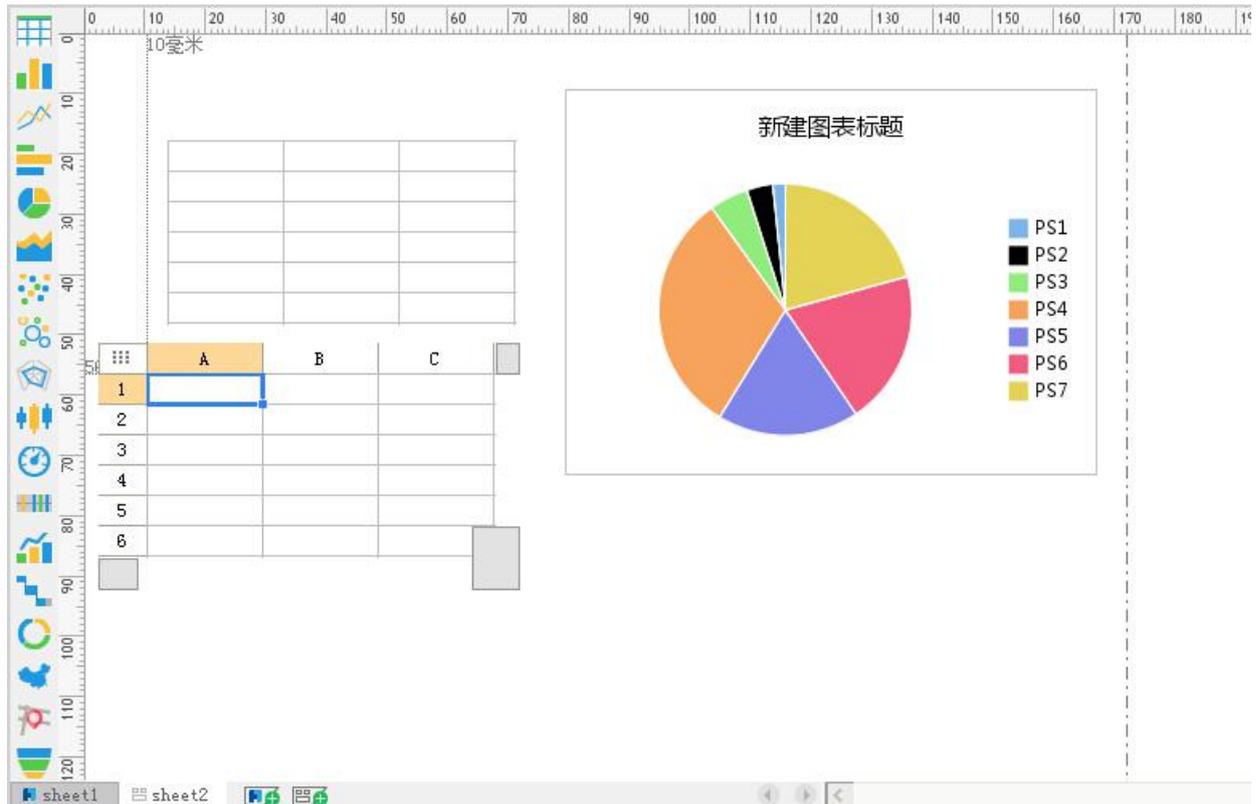


厚度公差				短边公差					
保证位置	单位	Min	Max	单位	Min	Max			
值	区	值	区	值	区	值	区		
10	00	% - 8	0000	+	5	0000	M + 0	0	+ 3

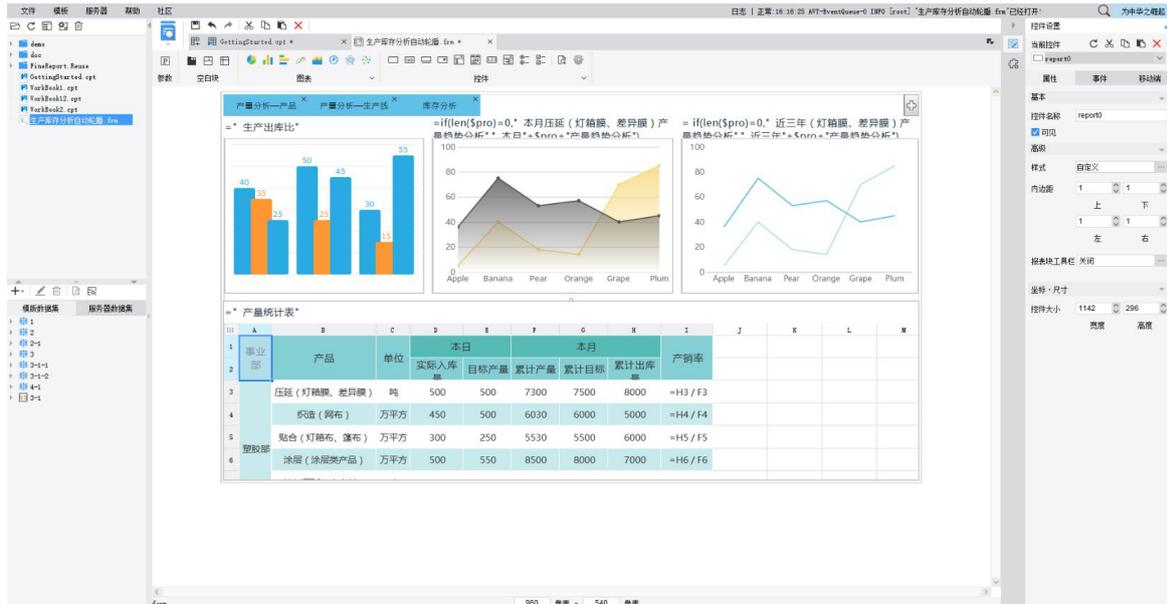
硬度试验		标尺	硬度试验		金相试验		
试验值	Min		Max	试验值	Min	Max	轴
Min	Max		Min	Max	组织区分	检查面	级别

For the characteristics of complex large reports, FineReport has introduced the function of aggregated reports, which divides the original report into rules. Each aggregate has its independence, and there is an organizational relationship between blocks and blocks.



### 3.4. Decision making report (large screen)

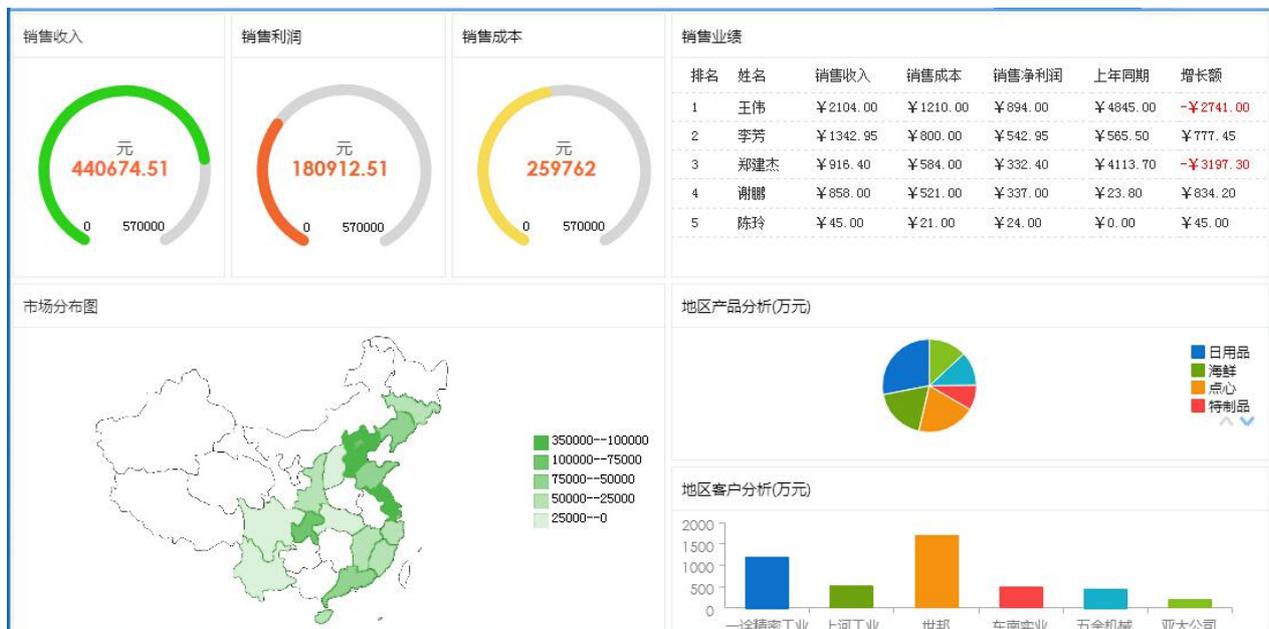
Different from the lattice interface of ordinary reports, FineReport decision making report adopts a canvas-style operation interface, which is designed for large screens and mobile terminals. It can help users to manage the dashboard powerfully and comprehensively through simple drag and drop operation. Integrate different enterprise data on the same page, perfectly display various business indicators of the enterprise, and realize multi-dimensional analysis of data.



The finereport decision making report has the following unique advantages:

### 3.4.1. Multi-screen adaptation

Provide perfect adaptive logic, support horizontal adaptive, two-way adaptive, etc., Only need to design once, can be intelligent adaptive display on PC, tablet, mobile phone, large screen and other types of terminal equipment.





### 3.4.2. Rich visual elements

Provides a wide range of visual components such as tables, graphs, controls, etc., including 50+ chart types, 20+ controls, 100+ extensions, and N multi-style tables. Support the free combination of different visualization components, while opening up a rich API interface, developers can customize more effects.



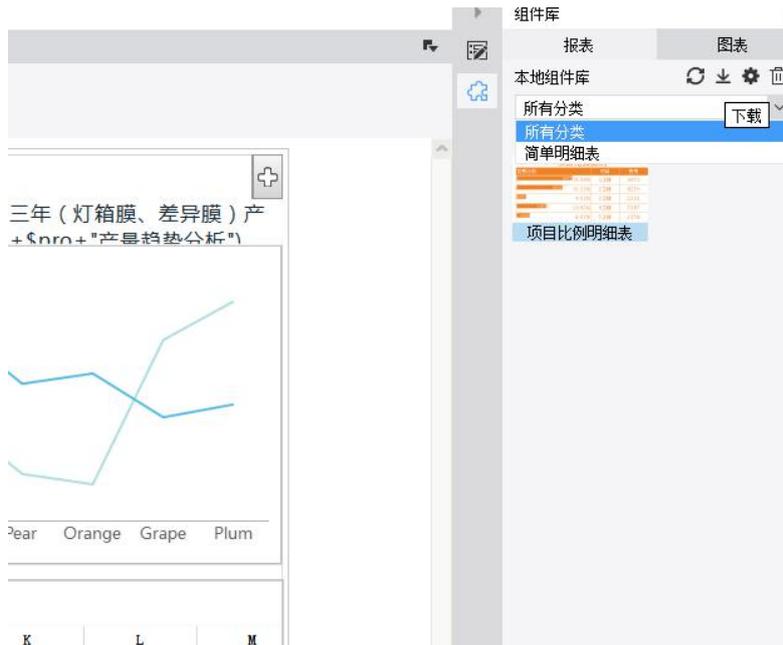
### 3.4.3. Multiple layout methods

Provide a variety of layout methods such as adaptive layout, absolute layout, tab layout, zero-code drag-and-drop design, freely combine different components. Sway your visual creativity. It also supports the display and hiding of the dynamic control component on the browser side. In the absolute layout mode, it also supports the stack display of components, making full use of the screen utilization of the terminal device.

### 3.4.4. Component sharing and reuse

In order to allow users to design a good-looking decision report more quickly, FanRuan provides component cloud sharing and local multiplexing. FanRuan officially uploaded the excellent demos collected to the Cloud Sharing Center (as shown below). Users can download their favorite demos

according to their needs and apply them to their decision reports, saving both manpower and good looks. Report. Moreover, the needs of the same industry are often similar, and through our cloud center, the sharing of customer knowledge can be achieved. In addition, the component also supports local multiplexing. It can copy, cut, and paste any selected component through the keyboard, and support multiplexing in the same report template. It also supports multiplexing among different report templates.



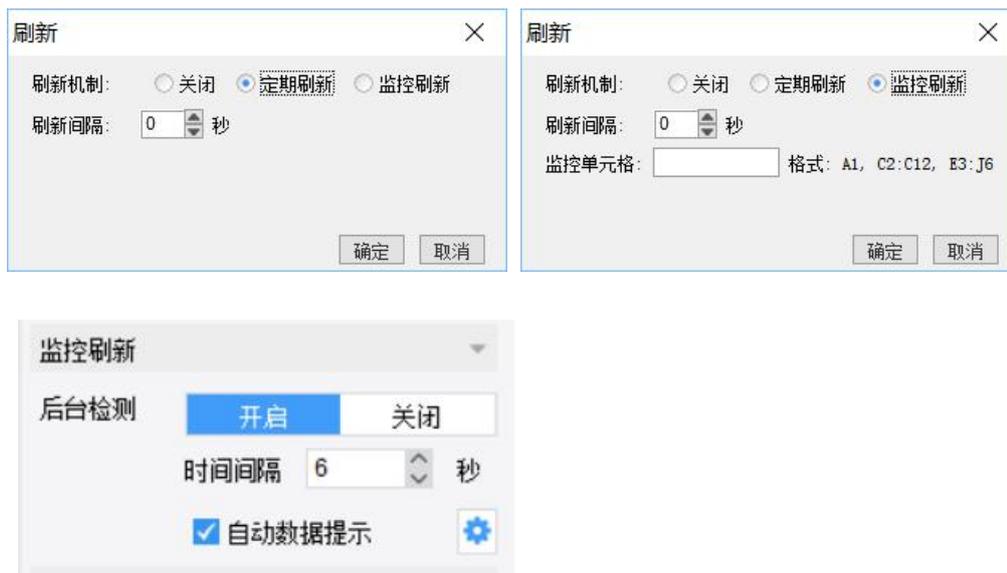
### 3.4.5. Component linkage analysis

Drag and drop to the components in the decision report design interface, you can easily achieve linkage analysis between components, click on a component, the associated component automatically triggers the data loading effect.



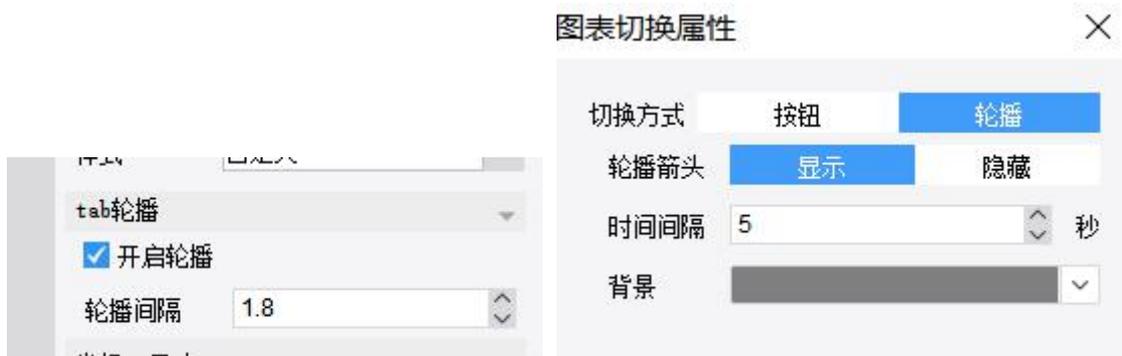
### 3.4.6. Data monitoring

The background data is intelligently monitored and compared, the data is changed, the front desk is updated in time, and the latest data is always available. Different from the global refresh of common reports, the decision making report supports partial refresh of individual components, and each component has independent monitoring settings. Different tables, graphics and other elements can be refreshed independently. The refresh of the chart also supports dynamic prompting of changed data.



### 3.4.7. Automatic rotation

Support the display of multiple different chart styles in the same position (each chart can have different data sources), and support automatic rotation between multiple tab pages. The time interval of the carousel can be set by the user.



### 3.4.8. Large screen combined with hardware

FanRuan cooperates with the industry's top large-screen hardware manufacturers to support the projection report pages produced by finereport to various large-screen terminals for demonstration analysis, such as all-in-one, smart TV, splicing screen, small-pitch LED screen wall and so on.





## 3.5. Report exporting and printing

### 3.5.1. File export

FineReport supports exporting files on the designer side and also supports exporting on browser pages.

- Export format: PDF, WORD, EXCEL (including page export, original export, page split sheet export three export styles), TXT, SVG and image format (PNG, JPG, BMP, etc.)
- Output property control: control hidden rows, hidden column export, support setting open password and edit password.

### 3.5.2. Scattered client printing and local software printing

“Scattered Client Print” can be set to set the print margin when printing (unchecked by default), or you can directly use the settings in the designer. The default margin is set to “Automatic integrated margin setting”, or you can set the margins yourself.

"Local Software Printing" is done by downloading the client locally and calling the local client. Printers, number of copies, page numbers, layout, paper, and margins can be set to save silent printing without previewing and printing.

Overall, the FineReport report printing solution has the advantages of “precise paging, precise alignment, no footer, header interference, self-defined paper orientation and format, continuous

printing, cross-browser printing”.

### 3.5.3. Multi-function printing

FineReport solves different application requirements in actual scenarios by scattered client printing and local software printing. The specific supported functions are as follows.

- **Prt on pre-printed form:** Support absolute positioning of invoice sets, check sets, etc.
- **Pagination Prt:** It can be forced to page according to the number of data or the number of data groups; support duplicate headers, support repeating line headers and endings, and repeat column headers; when there is insufficient content, fill in blank lines to ensure uniform printing format;
- **Zoom Prt:** The zoom print is scaled according to the paper size, and the zoom of the paper is scaled down or enlarged. If the printer uses A4 paper, but the paper size is set to A6, it will be enlarged to A4 in the same proportion, otherwise the content will be reduced. FineReport mainly implements this function through scattered client printing.
- **Silent Prt:** Silent printing means that when you click Print, the option window and printer settings window are not displayed directly. Scattered client printing and local software printing support silent printing.
- **Offset Prt:** Different printers may print differently for the same template on the server. At this time, there is a phenomenon that the current printing effect deviates from the position of the normal printing effect. In order to solve such problems, FineReport has added an offset printing function to set the offset size of the printer to achieve normal printing results, and the function can be used in different preview modes.
- **Automatically select paper and orientation Prt:** The page settings can be passed to the printer, and the adaptive paper size can be used to select the paper, as well as the horizontal and vertical automatic identification printing of the paper.

- **Print the same set of reports for different page sizes:** Support printing different page sizes for each different report in a multi-sheet report.
- **Bulk Prt:** There are a lot of templates to print, and it would be cumbersome to print them one by one, so you can use the batch printing function. For example, there is a performance report for a national salesperson. After I enter the parameters of different sales personnel, I print out the reports in batches.
- **Other Print Controls:** FineReport also supports direct printing without previewing the template.

### 3.6. Data query and filtering

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In many cases, the user needs to enter the condition value, query the data, and flexibly control the displayed data range. FineReport can define a powerful query interface very flexibly through the definition of parameters and parameter interface. The user can control the content and form of the report display by inputting query conditions through the interface.

In addition to the parameters entered by the user, some of the parameters required in the report are determined by the system environment, such as the user name, role, current date and time of the currently logged in user. These can be obtained through design or configuration for flexible data analysis.

The parameters in the FineReport report can be divided into: template parameters and global parameters according to their scope of use. Global parameters: all templates under the current project application can be used; template parameters: only the current template can be used. According to the way they are used, they can be divided into: template parameters and data set parameters. The data set parameter directly extracts the data satisfying the condition, and the report parameter is to obtain the data of the corresponding parameter by setting the filtering condition after taking out all the data, so if the data amount is large, the data set parameter can be used to improve the access efficiency of the report.

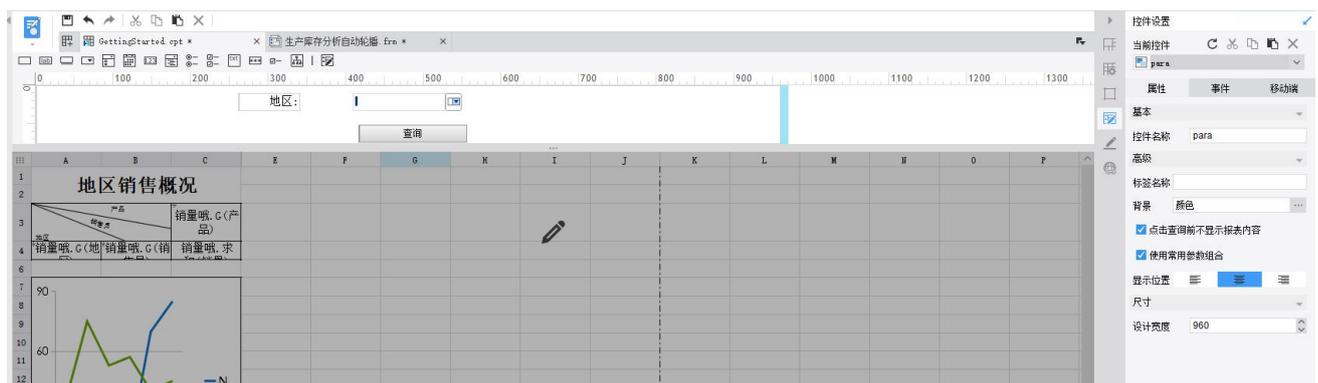
### 3.6.1. Rich control types

FineReport provides a variety of control types, such as text, text fields, numbers, passwords, button checkboxes, checkbox groups, radio button groups, date drop-down boxes, drop-down check boxes, time, multi-file upload list, web page boxes, drop-down trees, table trees, and view trees. And it also support for predefined controls, custom controls.



### 3.6.2. Flexible parameter panel

In order to allow users to quickly implement parameter query data functions, FineReport provides a special parameter panel for placing control related to the query. The user can flexibly layout and visually drag and drop the desired interface effect. Finereport's parameter panel is probably the best visual parameter panel in the industry.



At the same time, the user can perform simple attribute setting on the parameter interface. The settable attributes are: whether to display the parameter interface, display the report content before clicking the query, the background setting of the parameter panel, and the display position of the parameter interface.

### 3.6.3. Advanced parameter query function

- **Para linkage:** It means that the value of the latter parameter will change according to the change of the value of the previous parameter, which is often used for filtering queries with multiple levels to lock data conveniently. For example, if the country “China” is entered, the values in the provinces are “Jiangsu, Shanghai, Anhui, Zhejiang”, etc. If you enter the United States, the value in the province is the US city.
- **Dynamic column query:** In most cases, when we query a report, the fields in the report are fixed. However, we may encounter a situation where a data set needs to be queried, but the fields displayed in the report are not fixed. To allow the user to define which columns need to be displayed when querying the report. Such a report is called a dynamic column report. FineReport can achieve two kinds of implementations of dynamic column reports: one is through the use of functions, and the other is through the definition of data sets.
- **Automatic query:**The user can query the report result directly after inputting the parameter without clicking the query button.
- **Empty para to show all:** The user directly clicks the query if some cells do not input data, and the ordinary reporting tool may directly prompt the SQL spelling error. FineReport can pre-set the parameter value to get all the values.
- **Dynamic display para controls:**Due to the needs of the business, in many cases, certain conditions are required to be displayed when certain conditions are met: select the annual report, display the drop-down box control of the year; select the monthly report, display the year-month drop-down box control; select the daily report, display the date Drop-down box control. When the parameter linkage is displayed in the report, the linkage effect is achieved through the customer's own choice. However, when the linkage content is corresponding, the function can achieve the linkage effect desired by the customer. After selecting the parameter once in the parameter panel, the following data is automatically displayed, which is like the automatic matching of the filling interface. At the same time, the label in front of the linked data is not displayed when the template is opened for the first time.

- Diff para jump to diff reports:When querying data, it generally displays different data according to different parameter values. This function allows the user to choose to jump to different reports according to different parameter values.
- According to the user's common parameter combination: support the user's habits to save the most commonly used parameter query combination, It is convenient to call directly in the next preview. At the same time, it also supports intelligent recommendation of common parameters according to user habits.



## 3.7. Chart

### 3.7.1. Advanced chart technology

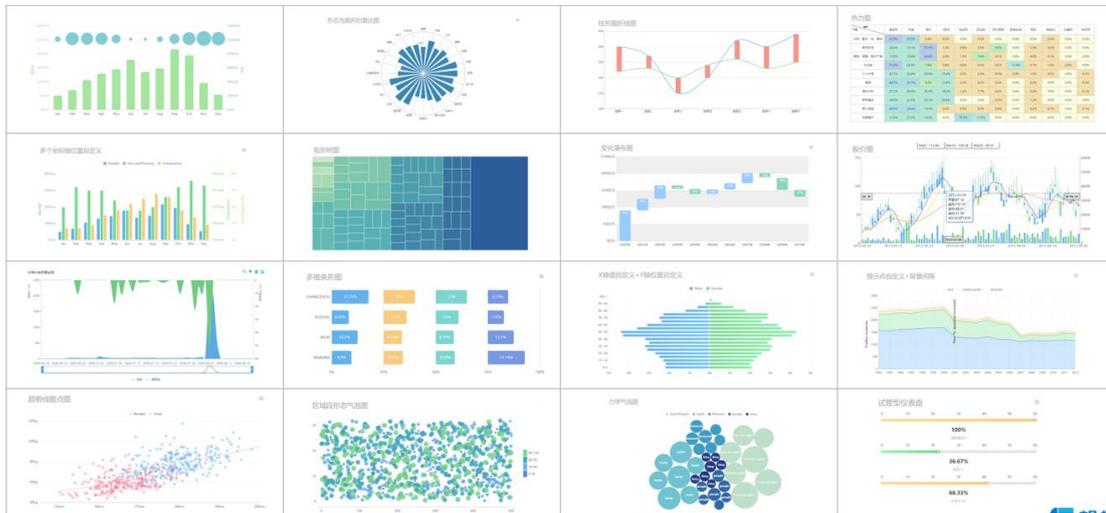
The chart capabilities of domestic reporting and business intelligence products often rely on third-party charting controls, such as fusioncharts and jfreechart, but this approach has natural flaws: weak underlying functionality, additional fees for advanced charts, and weak technical support. The upgrade lacks security and so on.

FanRuan provides users with self-developed HTML5 charts, with flexible parameter transfer and good interactive effects. It perfectly supports Android and IOS mobile operating systems; all chart types support rich animation effects and have super-personalized settings. In addition, FanRuan also provides a complete interface, users can introduce third-party chart control according to their needs.

### 3.7.2. Rich chart types and styles

FineReport supports column, line, bar, pie, area, rose, ring, scatter, bubble, radar, stock chart, dashboard, full-range, combination, map. There are dozens of chart categories such as Gantt chart, gis map, doughnut chart, funnel chart, frame chart, rectangular tree chart, word cloud chart, etc. Each class is subdivided into various forms, such as column chart including stacked column shape. Graphs,

percentage stacked column charts, 3D column charts, 3D column charts (lateral), 3D stacked column charts, 3D percentage stacked column charts, and more.



FineReport added the "Extended Chart" type in 10.0, which supports 3D rotating gis point maps, particle counters, carousel kpi indicator cards, time gears and other 3D cool chart types to meet the display needs of large screens and more scenes.



FineReport supports chart style DIY, users can freely modify the axis, data table, icon layout and style settings, chart title, legend, series settings and other attributes to make the chart more beautiful.

FineReport supports inserting a chart into a cell, and also inserts a floating chart on the report page for arbitrary movement. Charts inserted into cells can inherit the parent and child of the cell and

extend the properties.



There are two kinds of FineReport chart data sources. One is the data set data source. The data comes from the data set table. It is applicable to the report when only the chart is needed without a table. The other is the grid data source. The data comes from a grid data area of the report, which is suitable for both data and charts in the report.

### 3.7.3. Diverse chart interaction effects

Rich chart interactions not only help users read data better, but also greatly enhance the user experience. FineReport supports the following chart interaction effects.

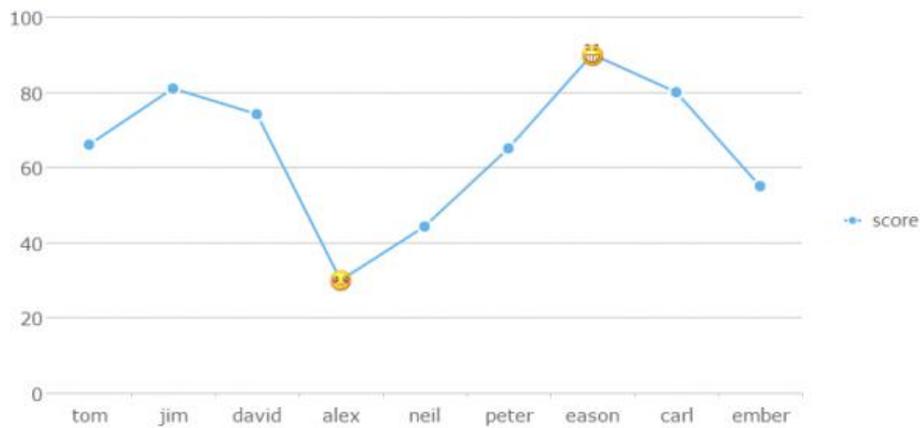
- Data prompt: When the mouse moves to the data point of the chart, the coordinate value of the data point is displayed, or information about the value.

堆积柱形图折线图

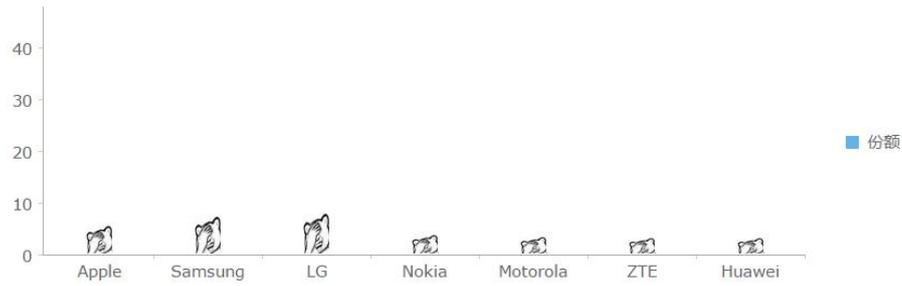


- Interactive highlighting: When the mouse moves to the data point of the chart, the chart line or area highlights the display. Also support highlighting when a certain condition is met in the chart.
- Flexible tag definition and image fill: Support customizing points, allowing you to resize points and even replace points with images. As shown in the figure below, you can fill in some pictures with special meanings, which makes the line chart information more abundant.

成绩比较



手机全球市场份额

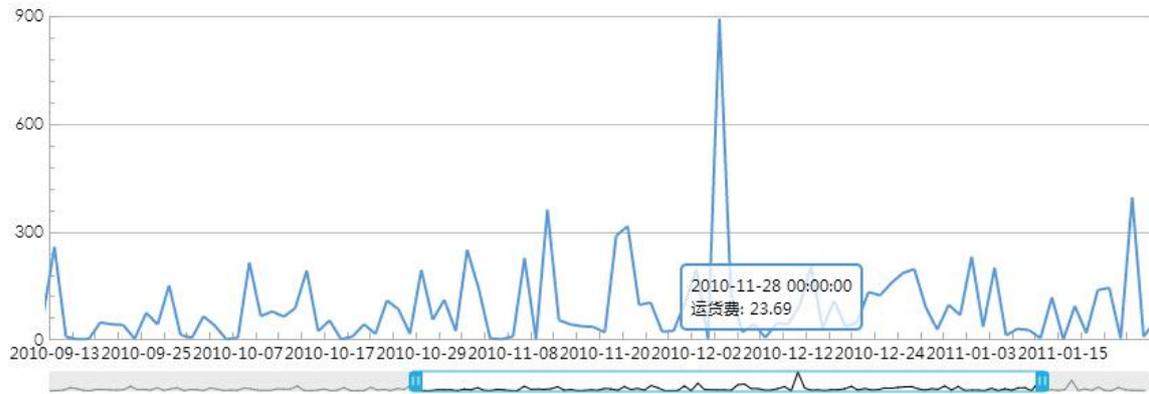


- Series interaction: Click on the series to hide or display the series of graphics to make it easier for users to read the data.



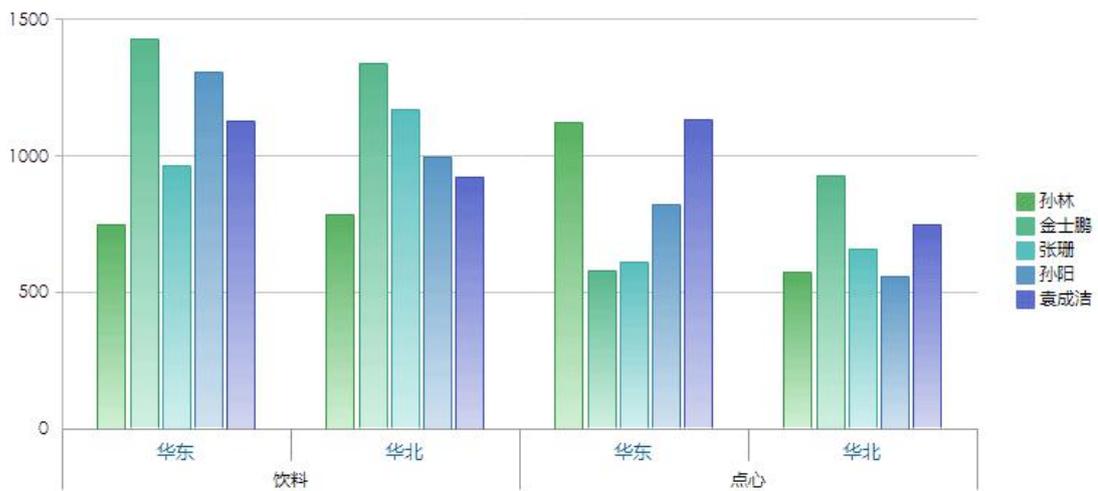
- Chart zoom: The chart can be zoomed in and out. Support mouse gesture zoom and axis zooming.

### 每日运货费支出情况

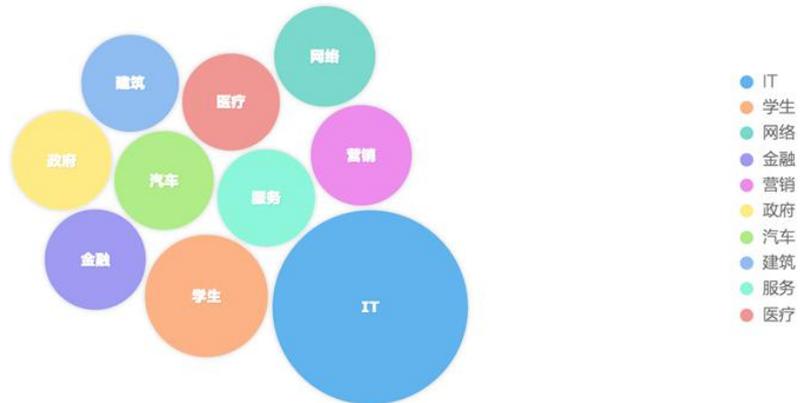


- Multidimensional axis: Display multiple dimensions in a chart, not just 2 dimensions (displaying 2 dimensions can only compare data between one dimension), you can compare 2 or more simultaneously in the same chart Dimensional data.

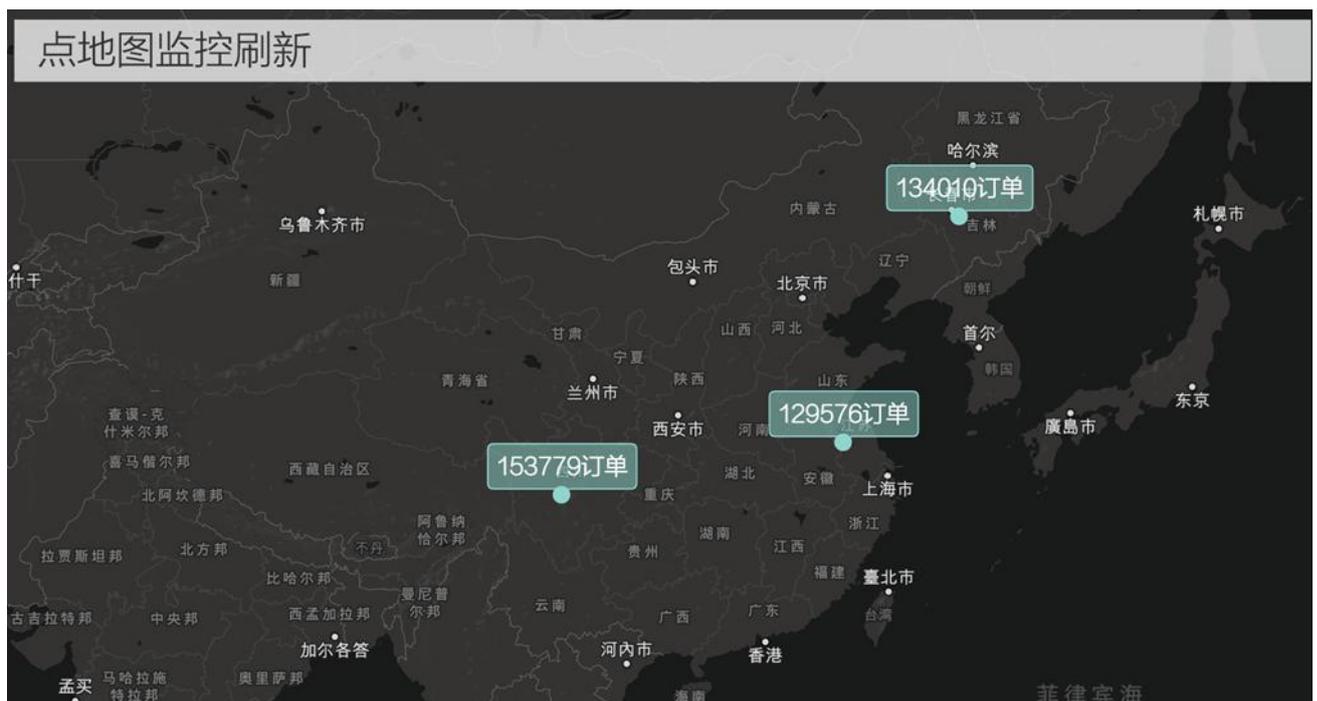
### 地区产品销量情况



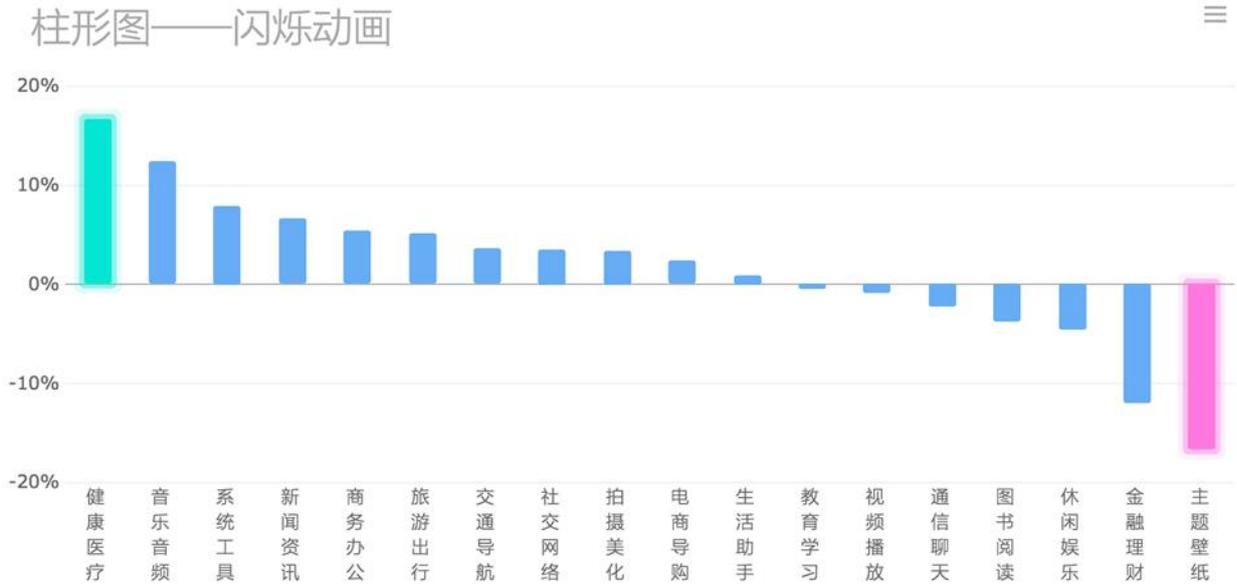
- Online chart switching: Modify the chart type online, support switching the chart type directly on the browser side, and only need to make a template in the template. At the same time, it supports automatic playback switching to meet the needs of large-screen dynamic display.



- Chart monitoring refresh: Real-time monitoring of background data, when the data changes, dynamically display and prompt relevant information in the chart.



- Blinking animation: Highlight certain special points that match the condition in a blinking animation.



- The BS side supports interactive operations such as sorting, saving, and full screen.



### 3.7.4. Flexible personalization items

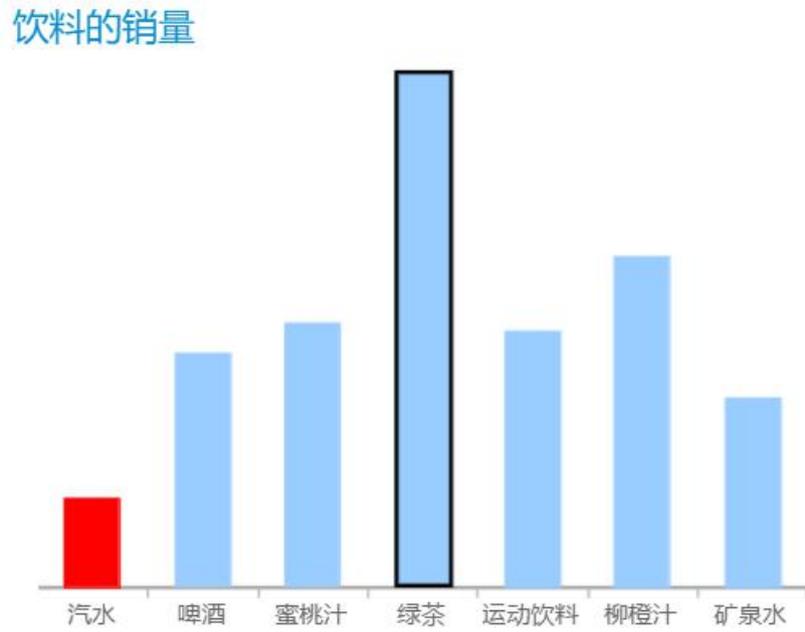
Trendline:



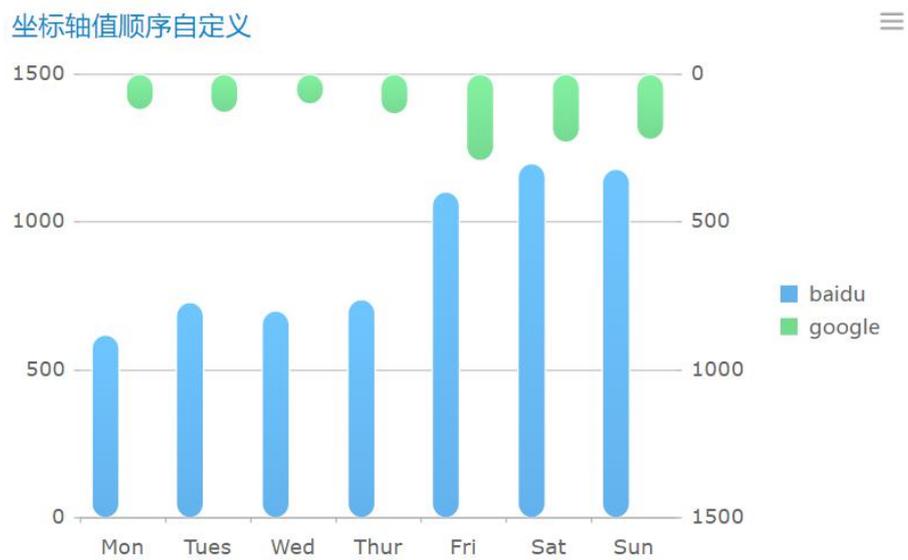
Warning line:



Display column color according to conditions:



Multi-axis order customization:

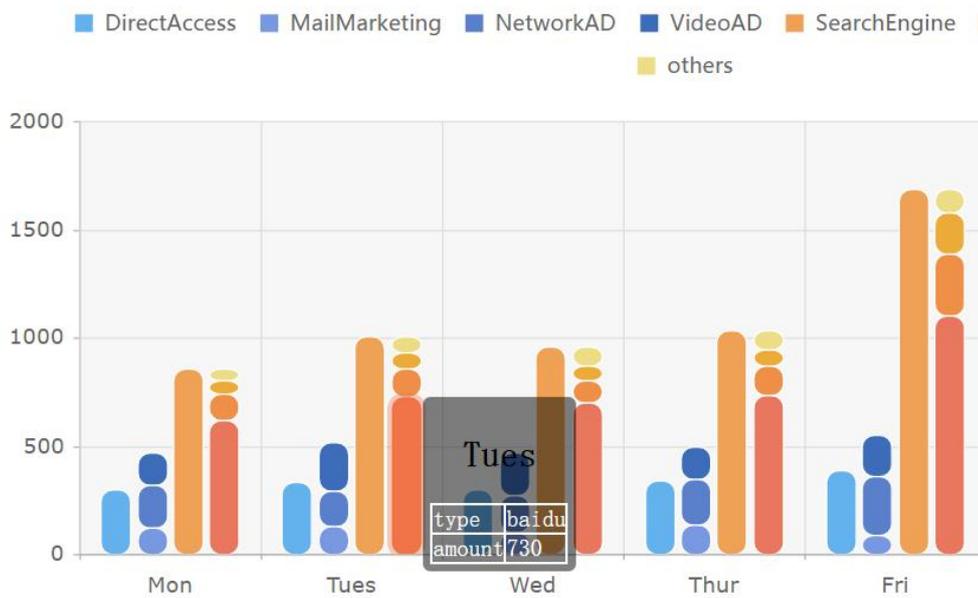


Label customization:

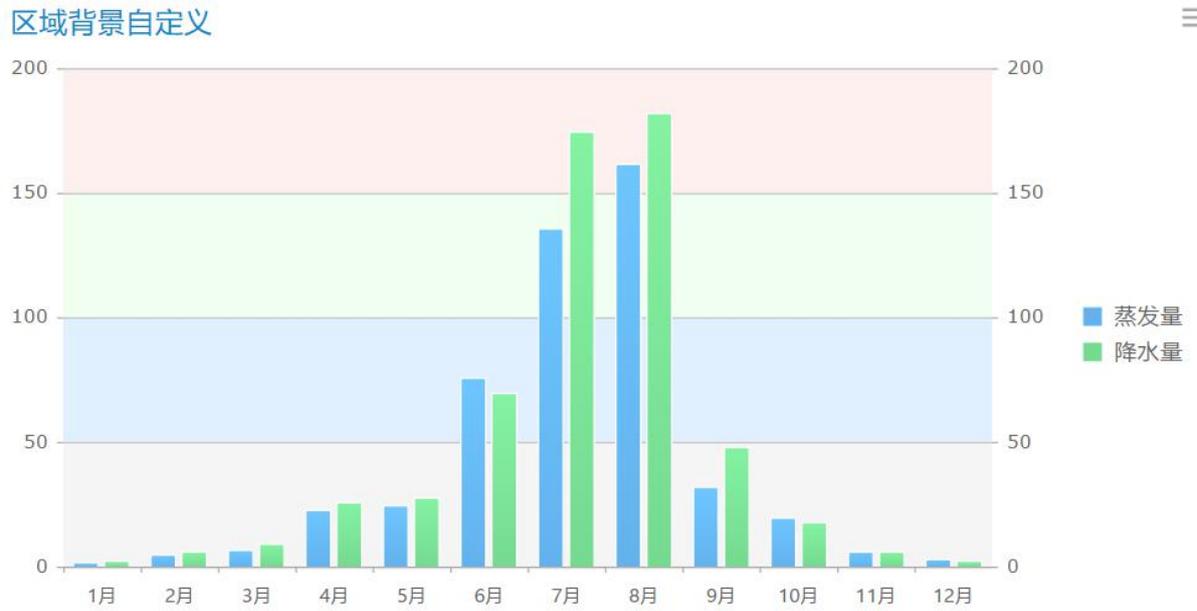


Custom stacking and tips:

自定义堆积+提示自定义



Regional background customization:



Custom image fill:



### 3.7.5. Chart drilling

Chart drill is also a hot link to the chart, that is, clicking on the chart data area can drill down to view the underlying data, which is a common data tracking method.



### 3.7.6. Chart linkage

Click on the parent chart series and all sub-charts will change in linkage. This linkage is automatic and does not require a refresh of the entire page. If you click on the column in the upper left corner of Wang Wei, the other charts will follow the linkage display Wang Wei's orders, remittances, resources and other data.



### 3.7.7. Data Map

In the company's information data, a large amount of data is associated with the geographical location, such as sales and profit of each region. In this case, if the map can be used to reflect the data, it will undoubtedly be more intuitive than a simple form, and the information communication will be more effective and more professional quality and image. Data maps are a form of geographic data representation that solves such problems. Its role is:

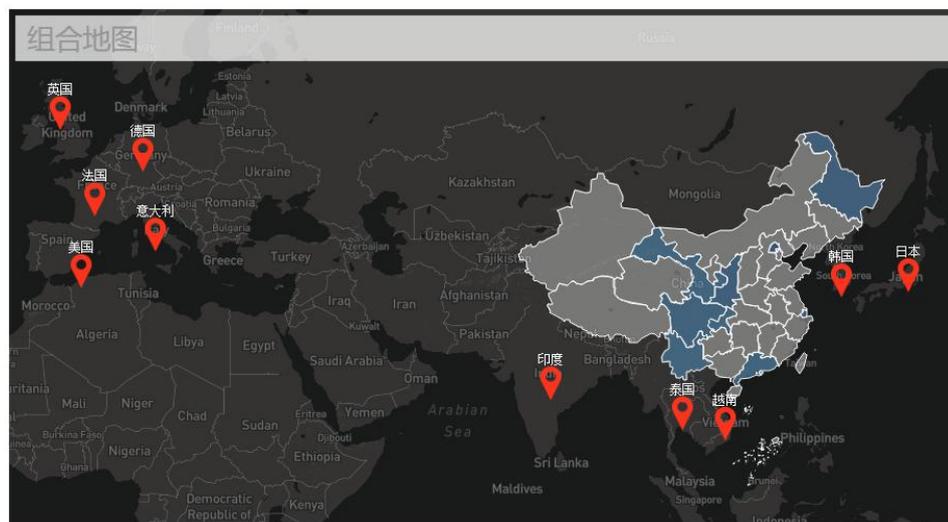
- Create a geographic-based visual view that visualizes the distribution and trends of regional analysis indicators;
- Discover undiscovered data treasures and identify potential market opportunities;
- Enhance the professional quality and image of the company and enhance its competitiveness.

FineReport data map function presents business data in a new and different way than traditional forms. It is an advanced form and means of business analysis that can provide enterprises with a lot of visual information.

Data map of FineReport is powerful, with rich built-in map granularity. It supports for drilling maps, thermal maps, flow maps, bubble maps, pie maps, column maps, custom maps, etc., and can

integrate Baidu, Google and other GIS Maps, map zooming, location positioning, etc., support custom GIS map background, support custom wms service to achieve offline map.

- Rich map granularity: FineReport has built-in latest world maps, national maps, provincial maps, etc., which can be accurate to county-level cities, enough to meet the requirements of most users for statistics and display data.
- Bubble Chart / Pie Chart / Column Chart Map: The data is presented in the form of a bubble chart / pie chart / column chart, and the data display is more intuitive.

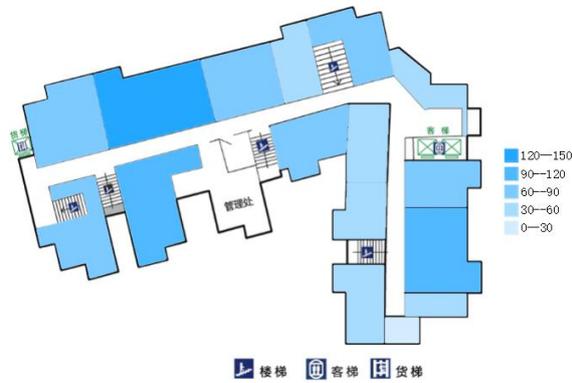


- Custom maps: Different companies have different requirements for map data, and this kind of demand is difficult to meet with a specific map collection. FineReport has built-in common maps, users can also upload map negatives, and then customize the binding data,

perfect solve the problem of custom area maps, custom store distribution, custom place distribution, and custom business areas.



人民商场服装柜台分布



楼层信息

楼层建筑面积	1802m <sup>2</sup>	楼层柜台面积	1054m <sup>2</sup>
楼层经营面积	1594m <sup>2</sup>	楼层品牌总数	16

楼层服装所属业种情况

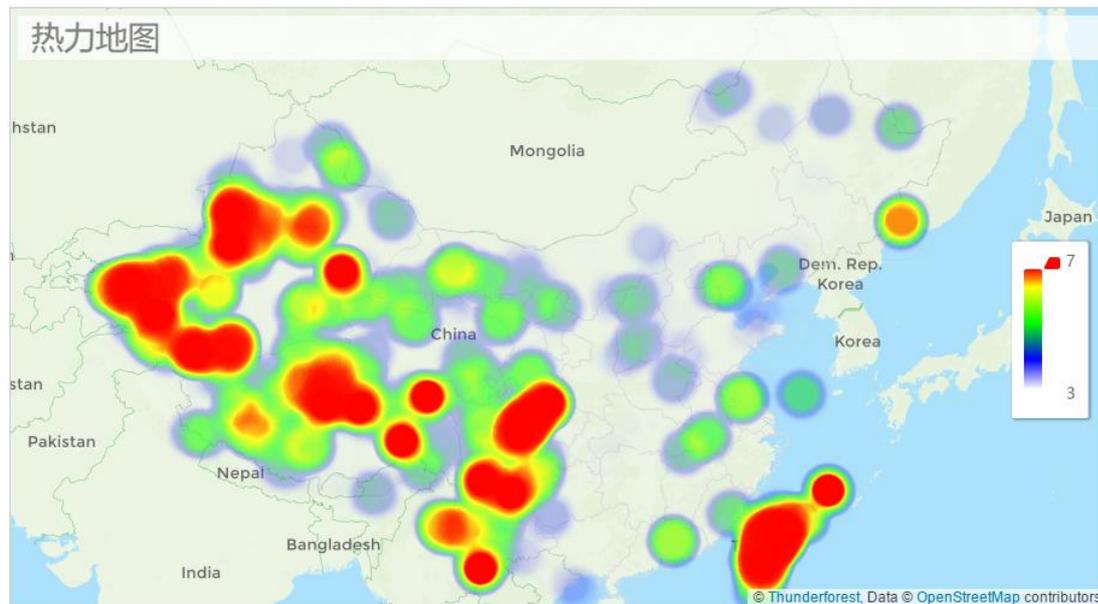
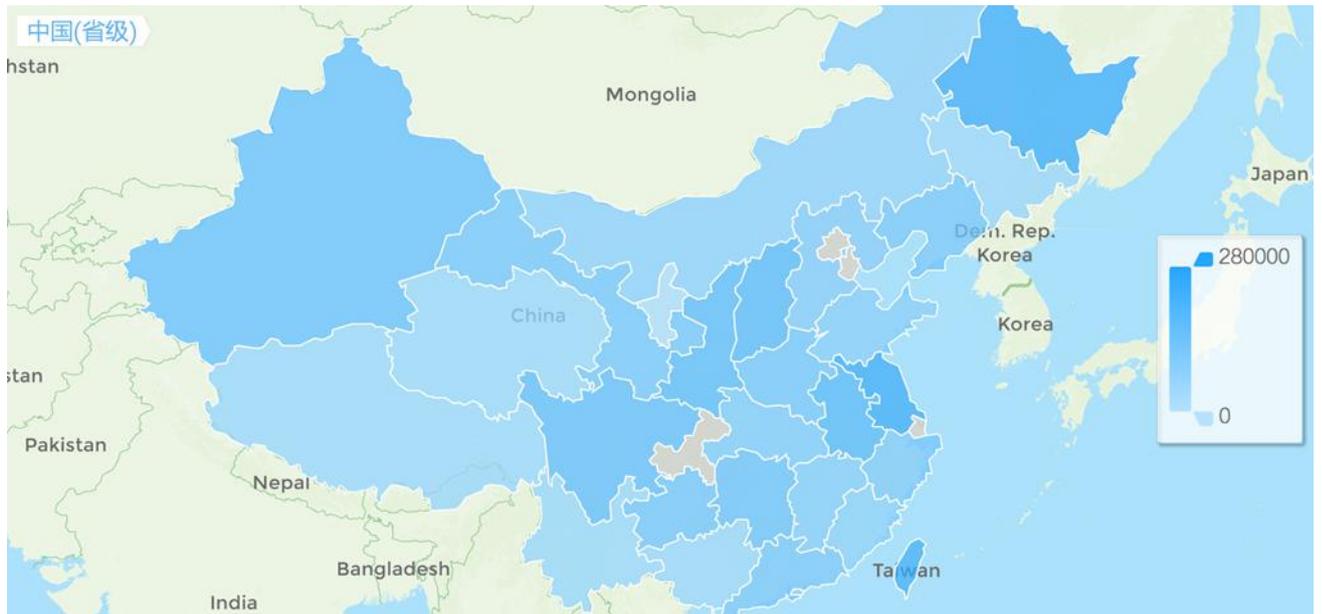
编码	名称	品牌	面积
01010000	少女服饰	VERO NDDA, PRITCH	82m <sup>2</sup>
01020000	上装	CuCCI	12m <sup>2</sup>
01030000	淑女服饰	MISSONI, KENZO, VERRI, LRGERFELD, ME.CITY, BAL LY, CK	515m <sup>2</sup>
01040000	内衣	LACOSTE	52m <sup>2</sup>
01050000	上装	TOMMY, MARLBORO, SELECTED	244m <sup>2</sup>
01060000	男装	ALGENER	87m <sup>2</sup>
01070000	童装	CANALI	62m <sup>2</sup>

各经营方式查看

经销	VERO NDDA, MISSONI, VERRI, SELECTED
联销	CuCCI, LACOSTE, TOMMY, LRGERFELD, ME.CITY, ALGENER, BALLY, CK, PRITCH
代销	
代售	
租赁	KENZO, MARLBORO, CANALI

- Map Drilling and Linkage: FineReport natural support map multi-level drill, users can not only customize the level and granularity of drill, but also customize the drilling and linkage between various graphics such as built-in maps, built-in statistical charts, and user-uploaded maps.
- Thermal map: The color depth is used to represent the data size, and the data difference is

intuitively perceived. This is the biggest advantage of the heat map.



- GIS map: FineReport can integrate GIS maps such as Baidu/google to realize map zooming, position positioning, and drilling.



## 3.8. Interaction analysis

---

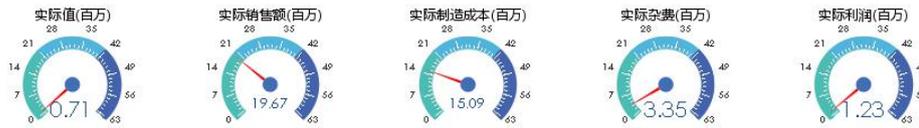
A good interactive analysis experience can help users better read reports and discover the value of data. The chart drill, chart linkage, and parameter query that have been mentioned above are also part of the interactive analysis. Here is a comprehensive introduction to the related functions of FineReport's interactive analysis.

### 3.8.1. Linkage

Linkage, as the name suggests, in the same report, the data of one area changes, and the data of other areas also changes. The linked area (element block) can be defined by itself, and can be linked by two elements or by multiple elements.

Linkage includes two types, one is chart linkage, which has been described above; the second is data linkage, which means that the table is clicked, the data changes, and the data of the chart also changes. See below.

全球销售情况分析					
洲际	实际值(百万)	实际销售额(百万)	实际制造成本(百万)	实际杂费(百万)	实际利润(百万)
北美	0.713669	19.672712	15.088296	3.350364	1.234064
东亚	0.212489	5.727804	4.38355	1.022064	0.322175
美洲	1.361342	38.316163	29.489892	6.57322	2.253012
南亚	2.177399	60.157231	46.213568	10.29266	3.651067
国家	实际值(百万)	实际销售额(百万)	实际制造成本(百万)	实际杂费(百万)	实际利润(百万)
挪威	0.713669	19.672712	15.088296	3.350364	1.234064



全球销售情况分析					
洲际	实际值(百万)	实际销售额(百万)	实际制造成本(百万)	实际杂费(百万)	实际利润(百万)
北美	0.713669	19.672712	15.088296	3.350364	1.234064
东亚	0.212489	5.727804	4.38355	1.022064	0.322175
美洲	1.361342	38.316163	29.489892	6.57322	2.253012
南亚	2.177399	60.157231	46.213568	10.29266	3.651067
国家	实际值(百万)	实际销售额(百万)	实际制造成本(百万)	实际杂费(百万)	实际利润(百万)
美国	1.361342	38.316163	29.489892	6.57322	2.253012



### 3.8.2. Drilling

Drilling is to change the level of the dimension and transform the granularity of the analysis. It includes roll up and drill down.

Roll up is to summarize low-level detail data to high-level summary data in a certain dimension, or to reduce the number of dimensions; it refers to the analysis method of automatically generating summary rows. Drill down, on the other hand, uses the most, and it drills from the summary data to the detail data to observe or add new dimensions. For example, when a user analyzes "sales by region or city", sales in a certain city can be broken down into sales for each year, and sales for a certain year can be further broken down into sales for each quarter.

Through the drill-through function, users can have a deeper understanding of the data, easier to find problems, and make the right decisions.

The drill functions supported by FineReport are as follows: :

- **Multidimensional Data Drilling:** A single cell of data that supports multiple data drillthrough options. As shown in the figure below, the data of the order number can be drilled into the data of “order details” and “logistics information”, that is, the drill is connected to different reports.

订单信息列表			
订单号	订购日期↑↓	客户名称	负责员工
<a href="#">10287</a>	2010-08-22	宇欣实业	孙阳
<a href="#">102</a>	2010-09-03	富泰人寿	17
<a href="#">10297</a>	2010-09-04	国皓	赵军
<a href="#">10300</a>	2010-09-09	阳林	王伟
<a href="#">10308</a>	2010-09-18	东南实业	李丽丽
<a href="#">10319</a>	2010-10-02	协昌妮绒有限公司	金士鹏
<a href="#">10325</a>	2010-10-09	永业房屋	张颖

- **Drilling in any combination:** Charts can be used to drill out charts, tables, and tables can also be drilled out of charts and tables. That is, the drilling effect of chart–chart, chart–table, table–chart, table–table is realized.
- **Infinite level drill:** Users can set the drill relationship of the report indefinitely.

### 3.8.3. Multidimensional data analysis

Multi-dimensional data analysis is a comprehensive application, which is realized by FineReport's decision report, chart, parameter query, drill, linkage and other functions. Take an example to show how companies conduct multi-dimensional data analysis. General overview:

Monthly analysis:



Product analysis:



Analysis by region:



Analysis by institution:



### 3.8.4. Real-time data analysis

The usual data analysis is only based on the data of the logical data layer for screening analysis, but such analysis has the following problems:

- After the ordinary screening analysis, the data of the current page cannot be directly used for in-depth analysis;
- If you control the data through multiple editors at first, it will frequently establish a connection with the database, which is inefficient when the amount of data is large.

In order to achieve deep analysis, FineReport provides the function of re-analysis of the current page data. The `op=view` parameter is added by using the report access address, which avoids the consumption caused by repeated data connections.

页面设置 打印预览 打印客户端 打印 输出 邮件

### 同比环比等财务统计表

年份	月份	销售额	月份环比	年份同比	占比	年内排名	总排名	年内累计	总累计	
2010	1月份	2361.80	--	--	1.14%	11	23	2361.80	2361.80	
	2月份	4015.03	170.00%	↕	1.93%	8	20	6376.83	6376.83	
	3月份	2728.60	67.96%	♥	1.31%	9	21	9105.43	9105.43	
	4月份	1000.62	36.67%	♥	0.48%	12	24	10106.05	10106.05	
	5月份	7134.50	713.01%	↕	3.43%	7	19			
	6月份	2546.00	35.69%	♥	1.22%	10	22			
	7月份	9579.35	376.25%	↕	4.60%	6	18			
	8月份	23981.28	250.34%	↕	11.53%	5	17			
	9月份	26381.40	110.01%	↕	12.68%	4	16	79728.57	79728.57	
	10月份	37515.72	142.21%	↕	18.03%	3	14	117244.29	117244.29	
	11月份	45594.64	121.53%	↕	21.91%	1	9	162838.94	162838.94	
	12月份	45239.63	99.22%	♥	21.74%	2	10	208078.57	208078.57	
2011	1月份	61220.87	--	2592.13%	↕	3	3	61220.87	269299.44	
	2月份	38483.63	62.86%	♥	958.49%	↕	11	13	99704.50	307783.07
	3月份	38547.22	100.17%	↕	1412.71%	↕	10	12	138251.72	346330.29
	4月份	53032.95	137.58%	↕	5300.01%	↕	6	6	191284.68	399363.25
	5月份	53781.29	101.41%	↕	753.82%	↕	5	5	245065.97	453144.54
	6月份	36962.80	67.61%	♥	1428.23%	↕	12	15	281428.77	489507.34
	7月份	51020.86	140.31%	↕	532.61%	↕	7	7	332449.63	540528.20
	8月份	47287.67	92.68%	♥	197.19%	↕	8	8	379737.30	587815.87
	9月份	55629.24	117.64%	↕	210.87%	↕	4	4	435366.54	643445.11
	10月份	66749.23	119.99%	↕	177.92%	↕	2	2	502115.77	710194.34
	11月份	43533.81	65.22%	♥	95.48%	♥	9	11	545649.57	753728.14
	12月份	71398.43	164.01%	↕	157.82%	↕	1	1	617048.00	825126.57

排序(纵向) 升序 降序  
条件筛选  
列表筛选

### 3.9. Data fill

In the traditional sense, the report is responsible for the presentation, solving the problem of data presentation, that is, taking the data out of the database, and then displaying it in various formats, and the results of the display can be exported and printed. CRM, ERP, OA and other basic information systems will contain some pages, which will be provided to business personnel or users to add, modify, delete and other operations on the database. Such a page is called a report.

FineReport is very flexible and has powerful processing power for data and report structures.

- Multi-source filling: The data in one report can point to multiple different databases or data tables.
- Completely independent data : The report can be calculated from the A database. After editing, the data can be filled back to the A database, or submitted to the B database or the C database. The source and destination of the data are completely independent.
- Free-form filling reports: For the financial, service, medical and other industries, there are often data entry interfaces with the following styles and diversified editing styles, which are

used to collect information and save them into the library. Such reports are called free-form filling reports.

数据校验 | 打印 | 打印客户端 | 导入[Excel]

### 员工信息登记表

编号:  填写日期: 2015-05-20

姓名:	<input type="text"/>	性别:	<input type="text"/>	出生年月:	<input type="text"/>
民族:	<input type="text"/>	政治面貌:	<input type="text"/>	籍贯:	<input type="text"/>
身高(cm):	<input type="text"/>	体重(kg):	<input type="text"/>	健康状况:	<input type="text"/>
身份证号:	<input type="text"/>			学历:	<input type="text"/>
毕业学校:	<input type="text"/>			专业:	<input type="text"/>
联系地址:	<input type="text"/>			邮编:	<input type="text"/>
Email:	<input type="text"/>			手机号:	<input type="text"/>
外语语种:	<input type="text"/>	外语水平:	<input type="text"/>	计算机水平:	<input type="text"/>
毕业时间:	<input type="text"/>	到职时间:	<input type="text"/>	职称:	<input type="text"/>

教育经历:

工作经历:

- Line-filling: If you need to add, delete, and modify the data based on the original data of the database, you can use the line to fill in the report. This is also a very common form of report filling.

分公司: 江苏分公司

### IT运维部设备明细填报表

所属分公司:  运维部门:  分公司电话:

供应商:  总成本:  日常维护年支出:  平均使用年限:

设备编号	设备名称	购入数量	购入时间	预计更新时间	使用年限	成本	增	删
1	个人电脑	9	2006/3/9	2009-03-09	3	75000	<input type="button" value="+"/>	<input type="button" value="x"/>
2	电脑桌	9	2006/2/2	2009-02-02	3	1800	<input type="button" value="+"/>	<input type="button" value="x"/>
3	投影仪	1	2006/1/13	2009-01-13	3	3000	<input type="button" value="+"/>	<input type="button" value="x"/>
4	扫描仪	2	2006/1/13	2009-01-13	3	6000	<input type="button" value="+"/>	<input type="button" value="x"/>
5	打印机	2	2006/1/13	2009-01-13	3	2000	<input type="button" value="+"/>	<input type="button" value="x"/>
6	传真机	2	2006/1/13	2009-01-13	3	2500	<input type="button" value="+"/>	<input type="button" value="x"/>
7	IP电话	10	2006/10/2	2009-10-02	3	12300	<input type="button" value="+"/>	<input type="button" value="x"/>

平均每个设备每年成本费: 4,886

制表人:  制表日期:  单位: 人民币

- Cross-filling: Filling report is a cross-report and is more complicated.

XXX钢铁股份有限公司		2010年							
in RMB									
2010年利润		实际发生数							
		1月份	2月份	3月份	4月份	5月份	6月份	7月份	8月份
轴承钢	70284	87,253	85,232	65,412	144,192	106,792	82,943	94,943	
齿轮钢		53,297	55,776	55,953	75,596	52,105	55,137	55,036	113,803
弹簧钢		85,519	66,104	74,863	71,857	69,485	63,097	55,182	59,310
高压锅炉管坯		9,526	26,021	25,888	41,155	39,352	21,285	41,648	17,989
高合金工模具钢		13,487	11,525	20,885	12,975	23,003	16,078	19,016	19,999
合结钢		131,590	175,481	185,962	199,578	155,647	201,380	166,313	162,150
炭结钢		74,332	81,675	94,102	82,540	100,873	82,659	78,659	75,611
管坯(转钢管)		55,571	52,895	57,159	56,913	78,845	78,691	91,601	84,095
其它钢种		1,494	567	2,692	1,211	1,198	912	1,593	1,774
<b>产品销售净额</b>	<b>Net sales</b>	495,790	559,297	602,716	607,237	664,700	626,211	591,991	629,674
轴承钢		59,360	70,389	70,184	54,325	117,223	90,697	74,895	84,561
齿轮钢		45,807	47,093	47,791	64,606	45,190	50,054	50263	104,071
弹簧钢		75,461	51,045	64,128	60,459	59,698	56,782	52,696	56,074
高压锅炉管坯		8,468	24,580	22,952	36,955	35,656	18,385	38,329	16,593
高合金工模具钢		11,621	10,186	18,033	12,178	21,908	15,397	17,833	19,882
合结钢		110,706	150,904	157,626	169,320	132,480	174,769	148,144	144,530
炭结钢		67,419	73,095	84,234	73,239	87,466	73,996	72,515	71,029

- Fill in the paging: If the amount of data is too large when the data is reported, due to the performance limitations of the front-end browser, if the data is fully displayed, the speed will be very slow, affecting the user experience, then the report page will come in handy.

### 3.9.1. Diverse reporting style

In FineReport, the data input on the web side needs to be a cell-bound control, and only the cells with the control bound can be edited. The above mentioned FineReport has a rich parameter query control, and it also provides a rich report control. It is these various controls that have a variety of reporting styles.

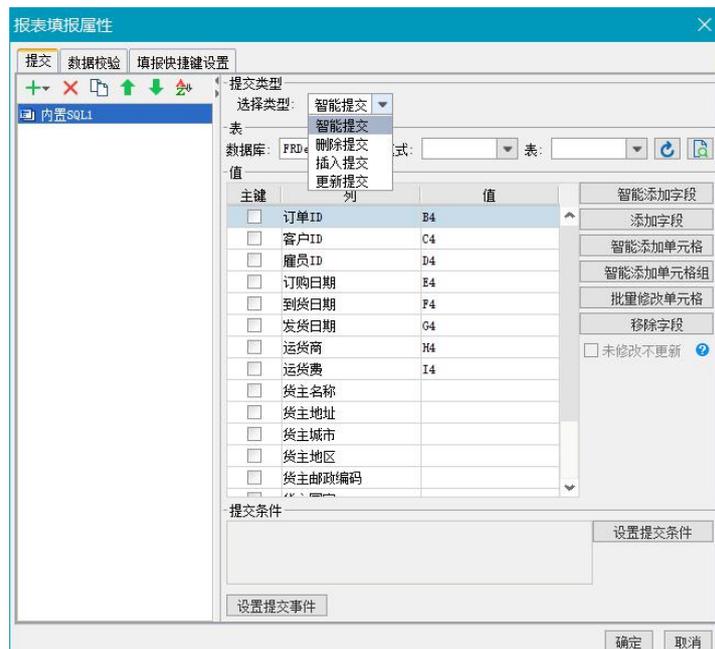
Reporting controls support text, numbers, calendars (date, time), drop-down boxes, drop-down check boxes, drop-down trees, buttons, radio buttons, radio button groups, check boxes, check box groups, passwords, text fields, Lists, view trees, table trees, file uploads, multiple file uploads, and web page boxes.

### 客户资料管理卡

* 客户名称		地址		* 客户编号	邮编
负责人	性别 <input type="radio"/> 男 <input type="radio"/> 女	年龄	职务	电话	
金融情况	往来银行	现金情况	承办人		
	账号	资金周转	付款态度		
	税号		付款日期		
开始交易日期	主营产品		<input type="checkbox"/> 虚拟 <input type="checkbox"/> 数码 <input type="checkbox"/> 美容 <input type="checkbox"/> 服装 <input type="checkbox"/> 配饰 <input type="checkbox"/> 母婴 <input type="checkbox"/> 家居 <input type="checkbox"/> 食品		
营业项目	仓库情况	员工人数及素质	运输方式 <input type="checkbox"/> 铁路 <input type="checkbox"/> 水运		
经营体制	服务车数目	零售商数及覆盖情况	<input type="checkbox"/> 汽运 <input type="checkbox"/> 自提		
批发商数	营业范围	门市面积			
经营方针	<input type="checkbox"/> 销售上量 <input type="checkbox"/> 利润为准 <input type="checkbox"/> 量利兼顾 <input type="checkbox"/> 积极 <input type="checkbox"/> 保守 <input type="checkbox"/> 平常 <input type="checkbox"/> 投机 <input type="checkbox"/> 凌乱				
年度销售潜力	销售	第一品牌	销售		
	存货	0	存货	0	
最高信用额度		客户等级			
总体月均库存数	0	月均库存数	0		
价格/折扣		支持和服务的承诺			
竞品经营情况					

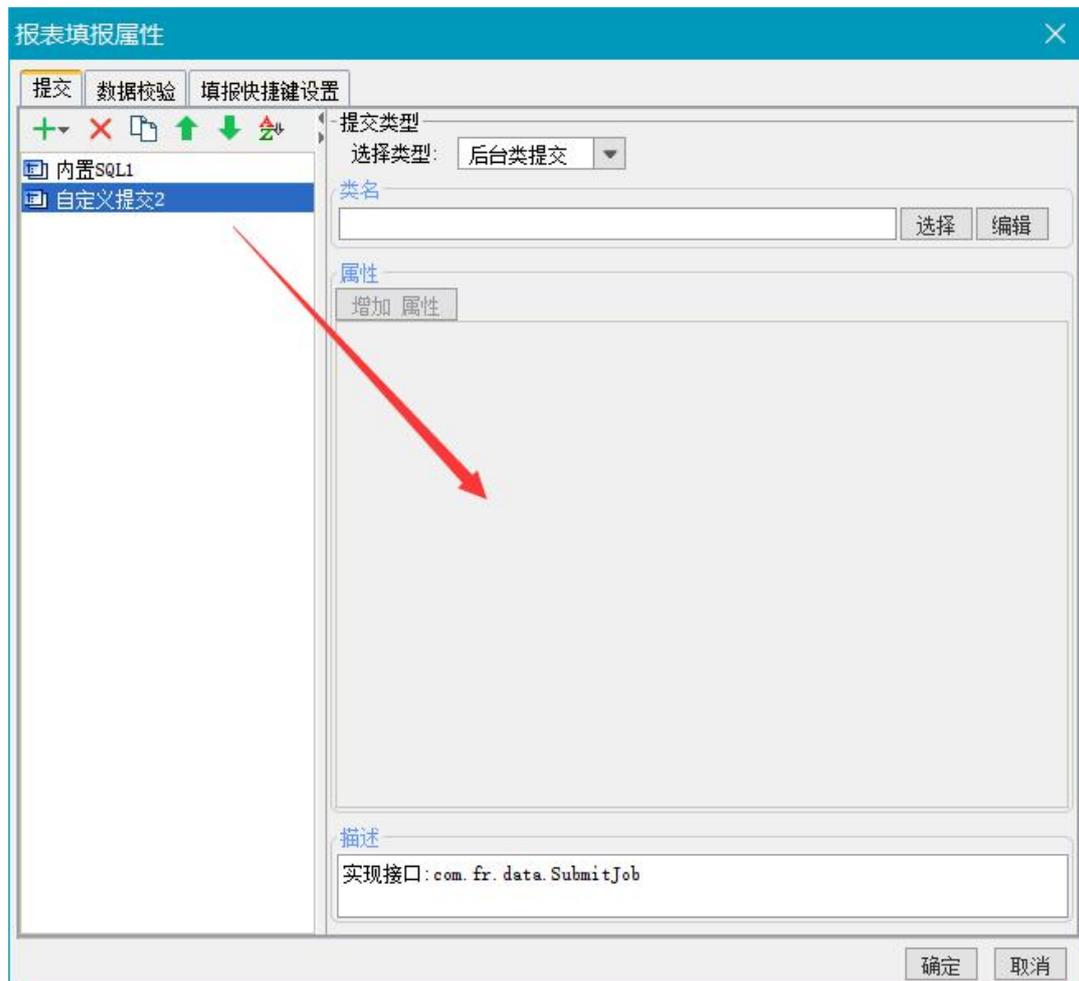
### 3.9.2. Submission control of filling

FineReport supports multiple submission methods such as smart submission, insert submission, update submission, and delete submission. It can also be set to not participate in the submission when the cell is not edited. In order to improve the ease of use of report design, FineReport also provides intelligent add fields, intelligent add cells (groups) and other functions.



By setting the submission conditions, you can also filter the submitted data. When filling in the warehousing, the data of the current sql is judged. If the condition is met, the sql statement is executed normally, and the database data is modified; if not, the current sql is skipped, and the next sequel is executed.

Custom submission control via JS events is also supported.



### 3.9.3. Data verification

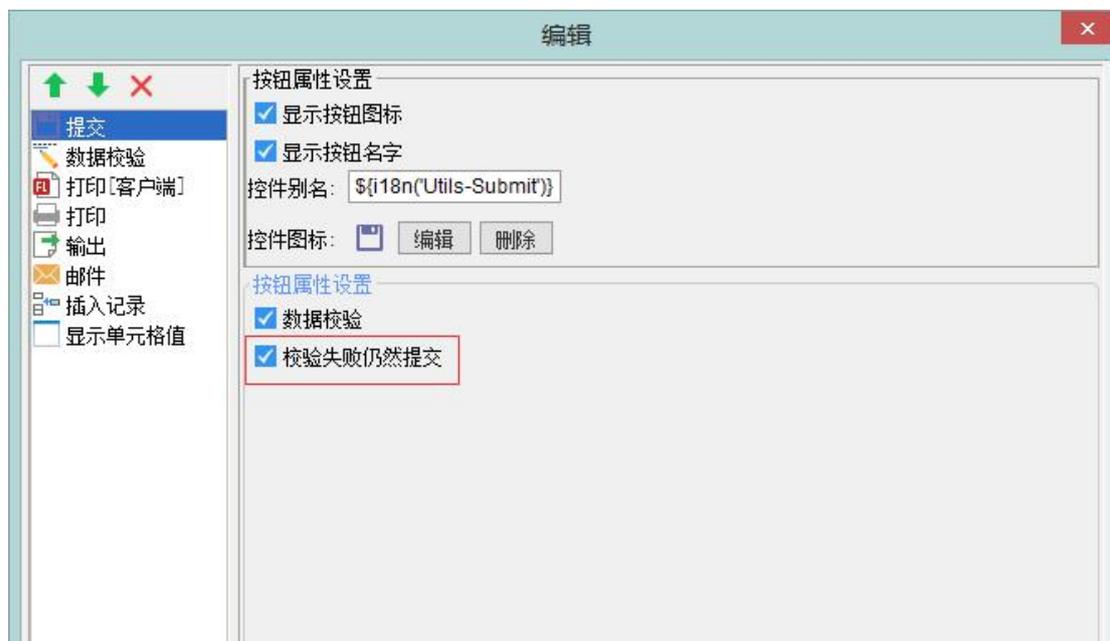
FineReport supports data verification between cells, different cells, and different sheets. It can make data validity and legality through various methods such as instant verification, submission verification, formula verification, and JS verification. Judging and feeding back the verification information to the user, avoiding the warehousing of illegal data, and reducing the error rate of the user entering the data.

提交 | 数据校验 | 打印[客户端] | 打印 | 输出 | 邮件 | 增加记录 | 11

成本价超出范围!  
 成本价超出范围!

供应商	类别	成本价	单价	库存量	订购量	再订购量	中止	相差数量
通合	谷类/麦片	-1	7.0000	38	3	5	<input type="checkbox"/>	30
普三	海鲜	6.0000	9.6500	85	0	10	<input type="checkbox"/>	75
21玉米饼	利利	1000	16.2500	65	0	30	<input type="checkbox"/>	35
25糙米	康美	8.0000	14.0000	26	2	35	<input type="checkbox"/>	-11
20糙米	康美	8.0000	14.0000	26	2	15	<input type="checkbox"/>	9
19糙米	康美	8.0000	14.0000	26	2	15	<input type="checkbox"/>	9
6虾子	普三	6.0000	9.6500	85	0	10	<input type="checkbox"/>	75
4绿茶	成记	200.0000	263.5000	56	22	21	<input type="checkbox"/>	13
3肌肉	正一	56.0000	20.0000	3	2	3	<input checked="" type="checkbox"/>	-2

In the actual filling of the report, in many cases data verification does not necessarily fail to submit data, but only for the purpose of warning the user. And users often need to submit data for some reason, even if it is not legal. In order to solve such problems, FineReport provides mandatory submission.



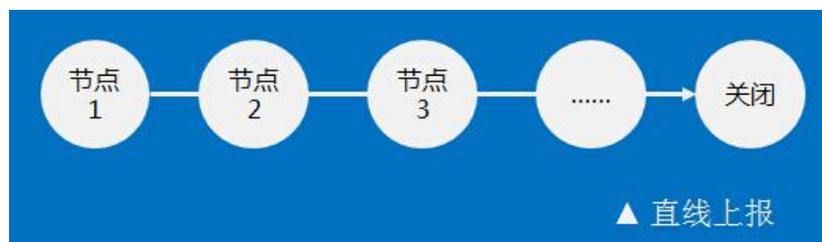
### 3.9.4. Multi-Level Reporting

Most of the time, the user's report is a single report, that is, after the report is submitted, the data directly enters the database, and there is no workflow such as approval. However, in the application of the enterprise, the underlying staff fills in the data into the database. Sometimes it is necessary for the higher-level department to process and verify the data filled in. The data passed for review can be put into the database, and if it fails, it needs to be returned and re-filled. This is a simple workflow,

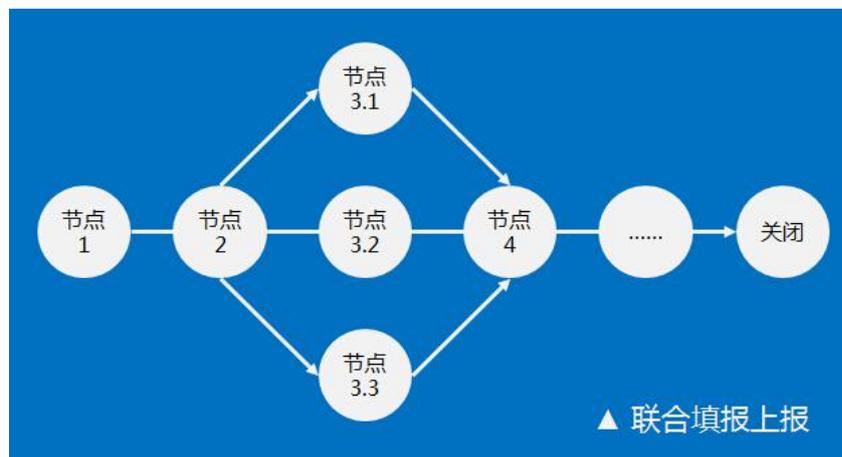
we call it multi-level reporting of data.

FineReport multi-level reporting function supports multiple reporting process styles, supports users to fill in reports through emails, system messages, etc. It also supports fine-grained control such as time-limited reporting and task timing. FineReport's powerful multi-level reporting capabilities, in addition to the use of FineReport's built-in decision-making platform, can also be friendly integration with third-party applications.

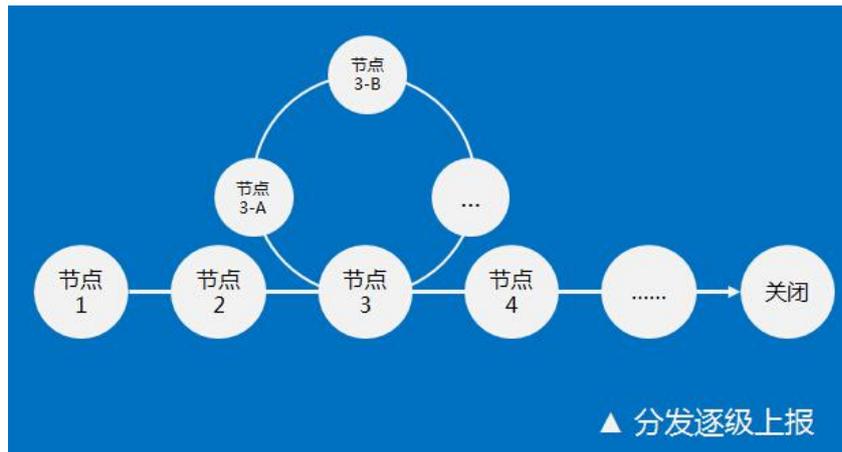
- Simple data filling: It refers to the simple process of the task flow from the lower level to the upper level until the close, a straight line process.



- Joint filling and reporting: It means that during the process of the task flow, some nodes are forked, and one node can be operated by multiple people.



- Distribution level-by-level reporting: It means that during the process of the task flow, when the node reaches a certain node, the node user creates a new sub-task for distribution. When the subtask flow is completed, it returns to the node, and after the node user operates, it continues to flow the main task.



### 3.9.5. Offline Report

Offline reporting refers to the data in the offline offline state, offline reporting is mainly used in the following aspects:

- The user opens the report in the state of networking to report the data. Due to some objective reasons, such as network interruption, the data cannot be directly submitted to the server database;
- Users need to collect data in an environment without a network, such as a workshop and the remote template cannot be accessed. If you use excel to collect data directly, you cannot implement the functions of FineReport, such as control linkage, data verification, and so on.

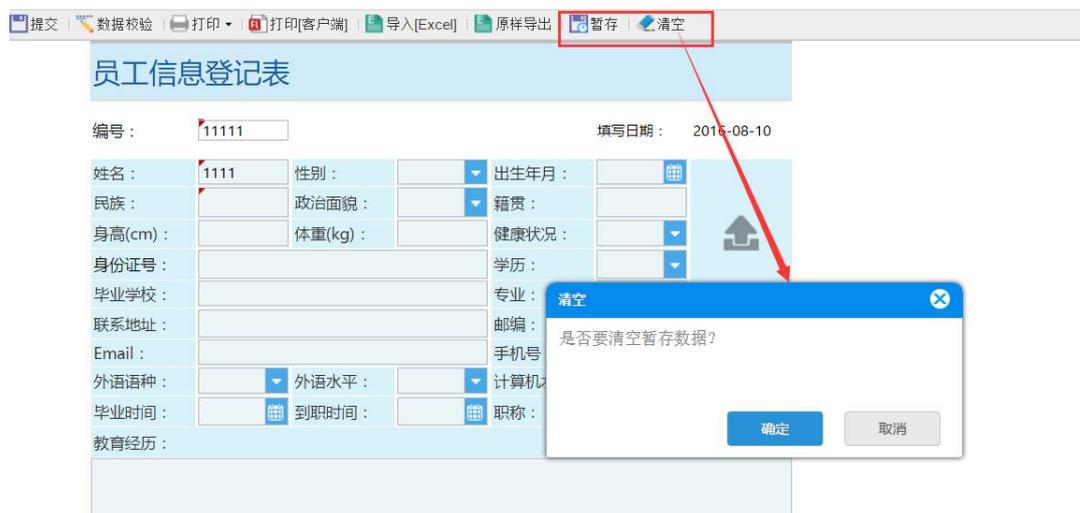
The principle of FineReport offline report is to open the report on the preview server on the web side in the case of networking, and output the report as an offline html report. The export result is a compressed package, and the compressed package has a folder with the same name as the compressed package. After exporting the offline html, the exported compressed package or folder can be transferred to an environment without a network, for example, copying the compressed package to a machine without a network or directly disconnecting the network. After decompressing, directly double-click to open html, enter data in the browser, support the basic functions of the control display, linkage, formula calculation, data verification, etc. After the data entry is completed, the data is temporarily saved in the local browser, and then When you have a network, click the

submit button on the html toolbar to submit the data to the library.

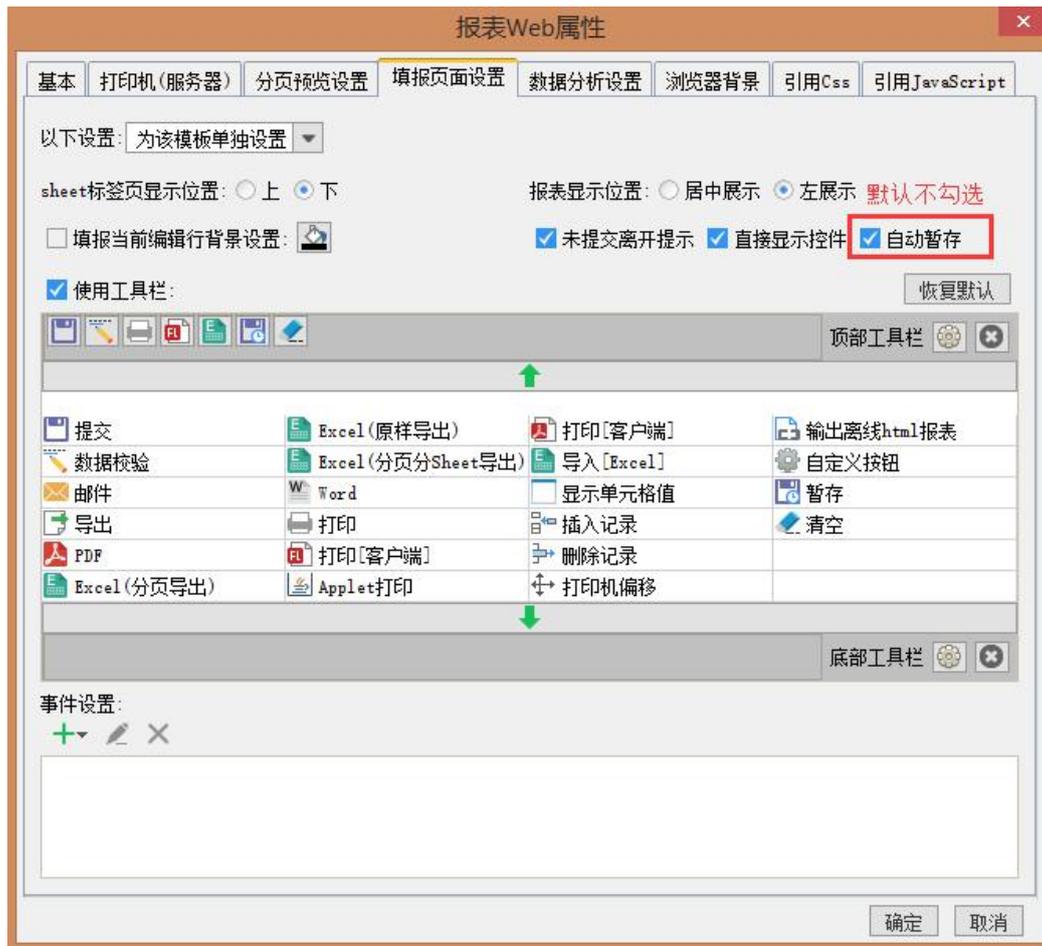
### 3.9.6. Data temporary storage

Partial report form is large, and there is a lot of content to be filled in. It takes a long time to fill in. It may encounter unexpected situations such as misoperation, network interruption, server problems, etc., which may cause users to fill in the data hard, and the data is completely lost when submitted. In addition, there are times when the content is in a pending state, the user may need to modify but does not think about how to modify it. At this time, the data does not need to enter the database, and only hopes that temporary storage can be performed. In the face of these problems that make business people very headaches, FineReport pioneered the intent of filling in the staging function in the industry.

In the report filling web page, the business personnel can temporarily perform data temporary storage and emptying operations. The temporarily stored data is temporarily saved in the built-in hsql database of the sail, and the user can manually clear it. If you don't want to manually empty the temporary data, the data will be automatically cleared after the official submission.



The above is a manual temporary storage by the user. If you are worried about forgetting, you can set up automatic temporary storage. After the automatic temporary storage is turned on, the control will be saved automatically as long as it has been edited; the saved data will be automatically cleared after being submitted. Automatic staging is turned off by default and needs to be turned on manually.



### 3.9.7. Multi-Sheet Filling

Multi-sheet filling refers to the combination of multiple independent reports in tab form, which is convenient for editing multiple sheets of reports, saving data to database or batch printing, exporting, etc. When we need to fill in multiple reports at the same time, and multiple reports are crowded on one page, we can use the multi-sheet method to make it easy to fill in multiple reports, and multiple reports can be saved in batches. Use multi-sheet to fill in the report, each sheet needs to be set separately to fill in the properties, that is, each sheet page design needs to be bound to the built-in sql, and saved to the bound built-in sql when submitted. Also, submit support to choose whether to submit only the current sheet or submit all sheets.

XX集团电子财务报表系统  
 XXX钢铁股份有限公司  
 资产负债表  
 2010年12月  
 人民币(元)

资产负债表  
 每月

会计科目	附注	年初数	上月底数	本月底数	VAR(\$) 差异数	VAR(%) 差异比	EXPLANATION 理由
<b>流动资产:</b>							
货币资金	资1	142,620,487	287,106,216	278,100,632	135,480,145	94.99%	
交易性金融资产	资3				0	0.00%	
应收账款		544,286,087	291,154,927	416,861,826	-127,424,261	-23.41%	
预收账款	资2	147,405,065	211,430,522	206,764,979	59,359,914	40.27%	
减:坏账准备		8,175,510	8,665,510	7,682,039	-493,471	-6.04%	
应收账款净额		139,229,555	202,765,012	199,082,940	59,853,385	42.99%	
预付款项	资14	199,419,794	631,291,049	1,234	-199,418,560	-100.00%	
应收利息					0	0.00%	
应收股利					0	0.00%	
其他应收款	资18	3,494,322	1,603,576	1,353,177	-2,131,145	-61.16%	
存货	资4	636,345,602	951,908,593	1,138,414,121	302,068,519	36.12%	
一年内到期的非流动资产					0	0.00%	
其他流动资产					0	0.00%	
<b>流动资产合计</b>		<b>1,865,385,842</b>	<b>2,365,829,362</b>	<b>2,033,813,932</b>	<b>100,499,083</b>	<b>0.00%</b>	

In a multi-sheet report, one of the sheets references the cell value of the other sheet to participate in the formula calculation. This is the **cross-sheet calculation** that is often used in multi-sheet filling.

FineReport uses the sheetname!cellname to achieve value across the sheet. After the value is taken, the inter-frame operation can be performed like a single sheet. In addition to multi-sheet pass-through value, FineReport supports the checksum comparison of data between multiple sheets. When only one submission is required, all sheets can be verified first. If there is any failure, all of them will be returned, and only if they meet the requirements, they can be put into storage, which is smart and convenient.

### 3.9.8. Excel data import

Most of the final business people are able to use the office proficiently. When the report is filled, the data is already saved in the Excel file of the same format. Therefore, when the report is filled in, the data already stored in Excel is directly imported into the current page and submitted to the online import. The library saves the workload of re-entering data.

FineReport has built-in import logic by title matching, position matching, etc., and supports importing different styles of excel document data, including fixed line reports, irregular line reports, and free format reports.

提交 | 数据校验 | 打印 | 打印[客户端] | **导入[Excel]** | 原样导出 | 暂存 | 清空

### 员工信息登记表

点击后可以弹出excel选择界面，选择需要导入数据的excel文档

编号：  填写日期： 2009-12-23

姓名：	<input type="text" value="陈晨"/>	性别：	<input type="text" value="男"/>	出生年月：	<input type="text" value="1977/10"/>
民族：	<input type="text" value="汉"/>	政治面貌：	<input type="text" value="群众"/>	籍贯：	<input type="text" value="北京"/>
身高：	<input type="text" value="172"/>	体重 ( kg )：	<input type="text" value="63"/>	健康状况：	<input type="text" value="良好"/>
身份证号码：	<input type="text" value="430421197710177894"/>			学历：	<input type="text" value="本科"/>
毕业学校：	<input type="text" value="北京大学"/>			专业：	<input type="text" value="计算机"/>
联系地址：	<input type="text" value="北京市海淀区"/>			邮编：	<input type="text" value="100086"/>
Email：	<input type="text" value="chenchen84@gmail.com"/>			电话：	<input type="text" value="01012345678"/>
外语语种：	<input type="text" value="英语"/>	外语水平：	<input type="text" value="六级"/>	计算机水平：	<input type="text" value="全国三级"/>
毕业时间：	<input type="text" value="2007-..."/>	到职时间：	<input type="text" value="2007-..."/>	职称：	<input type="text" value="二级"/>

教育经历：  
2003年9月-2007年7月 北京大学 计算机

If you want to import more excel, finereport also provides a batch of Excel data import function. Import data from excel into the database in batches through a unified interface.

任务列表 | 任务权限

+ 添加任务 | 删除任务

任务名称	模板名称	创建时间	上次修改时间
<input type="checkbox"/> 批量导入1	固定资产(增量改).cpt	2018-09-26 19:15:06	
<input type="checkbox"/> 批量导入2	地产成本测算.cpt	2018-09-26 19:15:21	

1 / 1

In addition, we also provide a custom import Excel function, users can choose which sheets, ranks, etc. in Excel to import.

Excel自定义导入行列

当前sheet sheet1 编辑导入sheet 选择需要导入的sheet后可分别设置各个sheet所需导入的内容

标题行 第 0 至 0 行是标题行 \*必填，若无标题则都填0

数据行 第 至 行数据执行导入

默认导入除标题行外的所有数据;  
只填起始行,则导入该行及其后所有数据;  
只填结束行,则导入该行及其之前的数据;

数据列

导入  导入  导入  导入  导入  导入  导入

自定义需要导入的列

	产品编号	产品名称	供应商	类别	成本价	单价
	1	苹果汁	1	1	10	18
	2	牛奶	1	1	15	19
	3	番茄酱	1	2	7	10
	4	盐	2	2	22	53
	5	麻油	3	2	22.5	0

共7行数据

### 3.10. Decision-making System

Relying on the FineReport data decision making system, enterprises can build a report center, which facilitates report management, user management, and system personalization, thus supporting various business topic analysis.



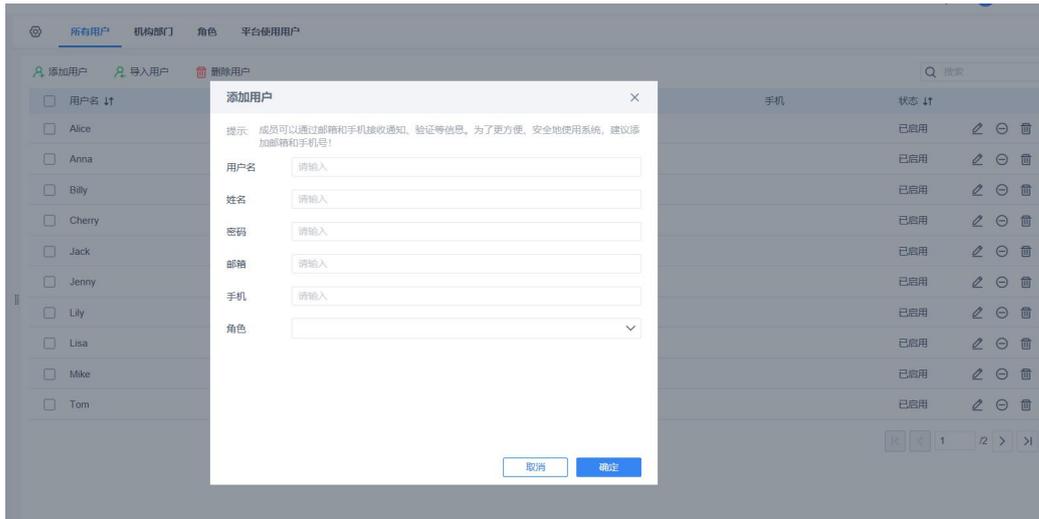
- Common access : A common application access portal is provided that allows users of different roles to view reports and report functions to meet their own requirements via the account and authority control.
- Centralized management : A common system management environment is provided for system resources, accounts, authorities, report templates, logs and scheduled settings in the report decision-making management system, enabling the user to achieve convenient regular management.
- Classified maintenance: On the basis of integrated and regulated report data, corresponding report development tools are provided for different types of reports. A uniform and templated custom and publishing plan is adopted to simplify the report maintenance process and reduce dependence on IT technicians.

#### 3.10.1. Directory Management

- Directory management: Add, delete, modify, etc. the platform tree of the platform, the directory can be freely adjusted.
- Node Management : Administrators or other authorized users can edit the content to be displayed by each directory node, including report templates, URL links, and multi-level reporting processes. Support setting the view mode of the report, displaying the terminal and parameters, and support the cross-node adjustment of the report template.
- Support the mixing of directories and nodes, and support sorting directories and nodes by simple dragging.

#### 3.10.2. User Management

- User Add: Support manual addition, importing users, or synchronizing user data sets to add users and their roles in batches. Support user list displaying in ascending and descending order by user name/name. Support disabling and enabling users. Support adding users, automatically notifying the user after resetting the password for the user.



- Institutional department: Users can be classified and managed according to organizational structure.
- Role: Users can be classified and managed by role.
- User authentication: Provide three user authentication methods: built-in authentication, LDAP authentication, and HTTP authentication, which can be perfectly combined with any system platform. Built-in authentication on the platform refers to the use of user information inside the platform for authentication. If the user name and password are the same, the authentication is passed, and the inconsistency does not pass. LDAP authentication: When the user logs in, the platform takes the user name and password to the set LDAP system for authentication. If the authentication succeeds, the login succeeds. If the authentication fails, the login fails. Http authentication: When the user logs in, the platform takes the user name and password to the set verification page for verification. If the authentication succeeds, the login succeeds. If the authentication fails, the login fails. Platform built-in authentication is used by default.

### 3.10.3. Authority Management

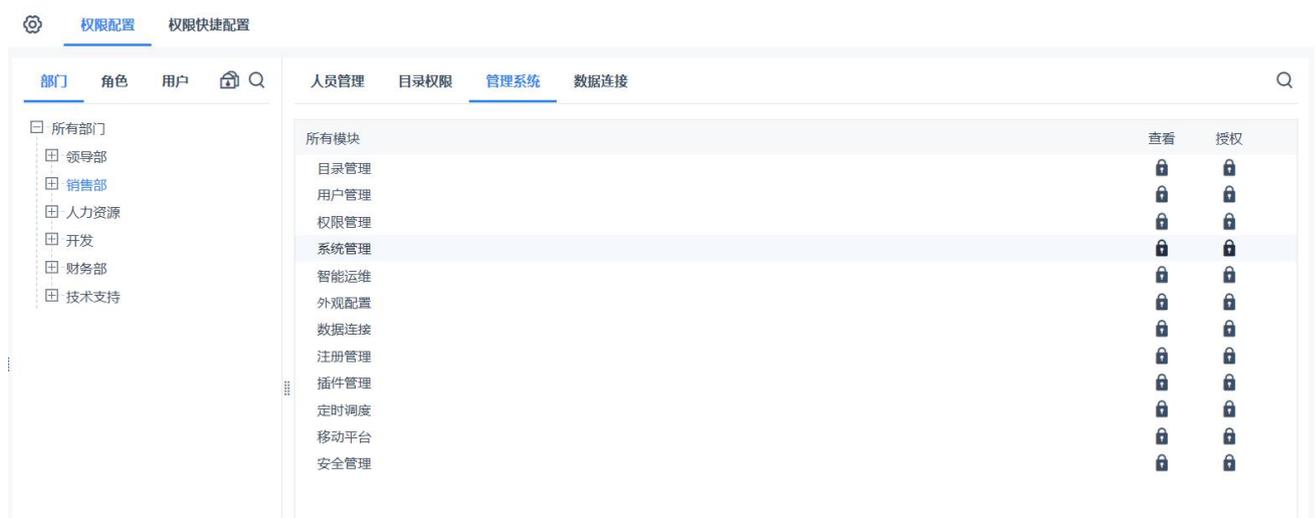
Privilege management refers to the security rules or security policies set by the system. Users can access and only access their own authorized resources. The rights management in FineReport

decision system is divided into two aspects: permission item and permission receptor:

- The permission item refers to the object to be assigned. The permissions items of the FineReport decision system include reports, platform management, templates, and data connections. Templates and data connections are used during remote design.
- The permission recipient refers to who assigns the right to the person. The FineReport decision-making platform is a role-based authority allocation system. The recipients are mainly department positions/roles, but in addition to this, a single user-based permission setting function is provided specifically for special permission allocation requirements.



The decision making system provides a special rights management interface for authority assignment and viewing, as shown in the following diagram.



- Permission configuration: Permission configuration allows you to assign permissions based on department positions, assign permissions based on roles, and assign permissions based on users.

- Privilege quick configuration: Privilege quick configuration allows you to assign permissions based on the directory.
- Permission reuse: This feature can help administrators to clone the permissions of a department/position/role, which can greatly improve the efficiency of permission allocation.

**权限复用**
×

复用来源 —  生效对象

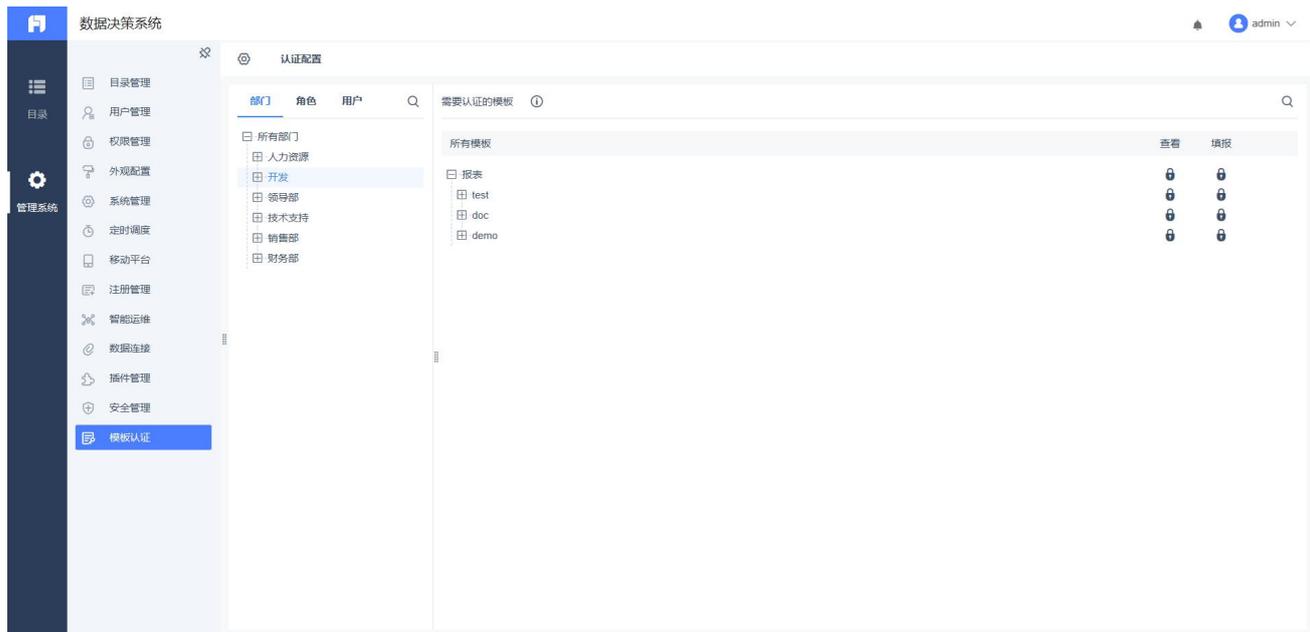
复用模块  人员管理  目录权限  管理系统  数据连接

复用来源  部门  角色

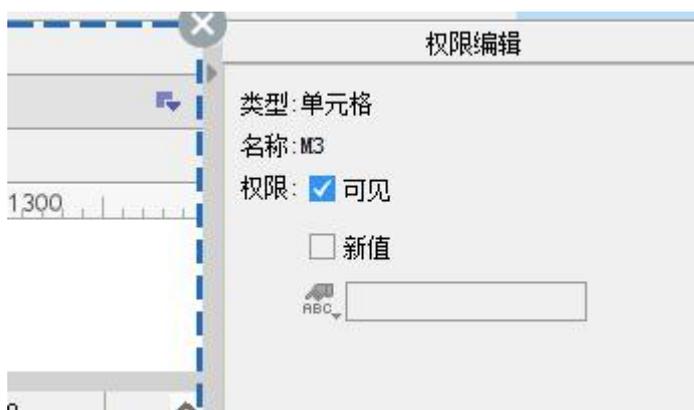
- 所有部门
- 销售部
- 开发
- 领导部
- 财务部
- 人力资源
- 技术支持

取消
下一步

- Template authentication: Used to control permissions when a third-party business system mounts a report link.



- **Permission granularity:** In addition to the report resource permission control described above, finereport also supports permission granularity configuration. Through the permissions configuration interface of the designer or calling system functions, you can precisely control the content of different people accessing the same report. The control toolbar can be used to specify whether the user is visible (such as print and export), control whether the user can fill in the data, etc., and the permission granularity can be refined to the cell.

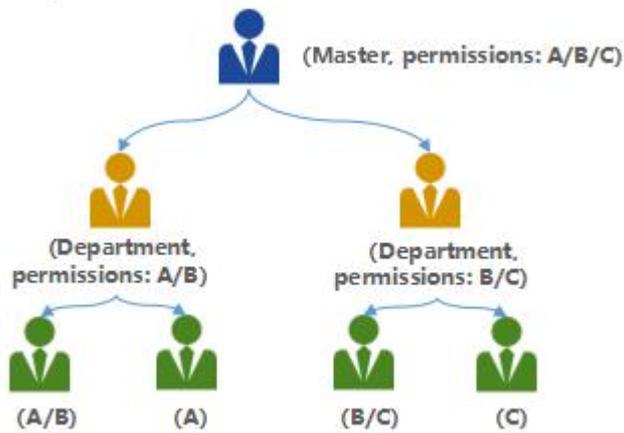


### 3.10.4. Hierarchy Authority Management

For group management and control needs, different molecular companies/departments can be shared. Each company/department has its own administrator and assigns permissions to its subordinate employees. That is, the super administrator controls all permissions, and the subordinate

administrator can only manage users and report templates within their own scope of responsibility. See the detailed introduction of the next section for details.

### Example



- Hierarchical authorization: Assign the authorization authority to the role of the lower-level administrator, and configure the role (object) to which the role can be assigned. At this time, when the role of the subordinate administrator logs in to the system, the authority that he or she has authorized can be assigned to the corresponding role. Template permissions include viewing, authorization, and editing.
- Report editing: Report editing includes adding, editing, and deleting directories, and adding, editing, and deleting reports. If a user has editing rights to a report directory, the user has all the report management permissions.

- Data connection control: Assign and authorize data permissions through role permission control, including viewing, filing, and design permissions. Users with design permissions can design and edit reports remotely. When a non-administrator remote design, all the places involved in selecting a data connection can only select the data connection that the role has the viewing permission, such as "database query" and "storage procedure" and data dictionary when adding the data set. There are no restrictions on program data sets, file data sets, and built-in data sets. Some data in the server dataset does not see this server dataset if it comes from a data connection that the role does not have permission to use.

### 3.10.5. System Management

Provide functions such as login settings, password settings, print settings, SMS platform, mail server, cache, and more. Among them, the login setting supports single login, last login information reminder, password policy, login verification, and login lock.

- Single login: Some customers want to log in only one place for security reasons. Single login settings are available in the platform.



- Last login information reminder: After logging in, the login decision platform will prompt the last login information.



- Password policy: Including forgotten password, password update regularly, password strength limit, and password verification method.

### 密码策略设置

---

**忘记密码**

提示: 1.服务器设置邮箱, 且用户绑定邮箱后, 可使用邮箱验证  
2.服务器开启短信服务, 且用户绑定手机后, 可使用短信认证

**密码定期更新**

更新周期  个月

提前  天提醒更新

**密码强度限制**

长度不低于  位

包含数字

包含小写字母

包含大写字母

包含符号

**修改密码验证方式**

短信验证  [开启短信功能](#)

邮件验证  [配置邮箱服务](#)

- Login verification: three verification methods: slider, SMS, and email.

### 登录验证设置

---

**滑块验证**  提示: 开启后, 输错2次密码则会出现滑块验证

**短信验证**  [开启短信功能](#)

**邮件验证**  [配置邮箱服务](#)

- Login lock: If you enter the wrong password more than a certain number of times, the

account will be locked to prevent brute force cracking of the user password.

登录锁定设置

登录锁定

错误次数限定 密码错误  次, 锁定  分钟

锁定对象  账号  IP

锁定管理员账号

管理员解锁  解锁对象

<input type="checkbox"/>	锁定对象	锁定时间	自动解锁时间

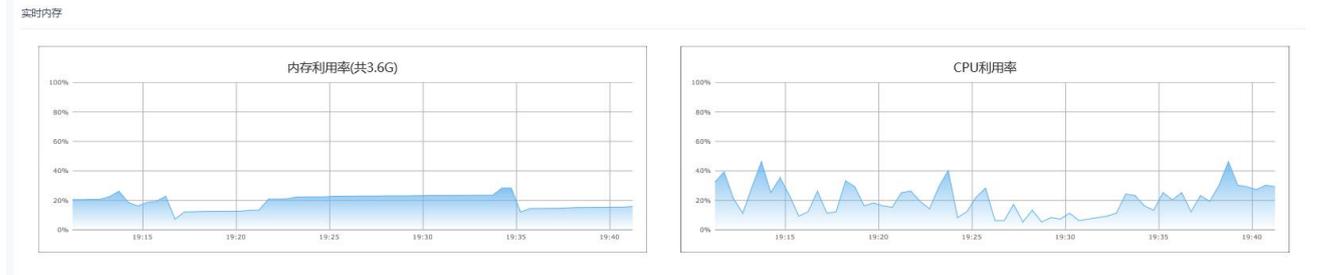
< < 1 / 1 > >

### 3.10.6. Intelligent Operation and Maintenance

Intelligent operation and maintenance consists of six modules: memory management, cluster configuration, backup and restore, intelligent detection, cloud operation and maintenance, and platform log.

- **Memory Management:** Real-time monitoring and alerting including memory and CPU utilization. Support intelligently clear sessions and free up memory. By limiting the maximum number of rows in the template dataset, the maximum number of cells, and the maximum sql execution time, the system is prevented from being jammed by excessive templates. Support setting the life cycle of the session to ensure stable operation of the server.

内存预警 内存会话 智能释放 模板限制 生命周期



智能推送

名称	平均内存	近一个月操作次数	操作	用户
----	------	----------	----	----

< < 1 / 1 > >

智能预警 保存

智能预警

触发条件 内存高于 95 %，持续 5 分钟

预警方式

- 短信提醒  开启短信功能
- 平台消息
- 邮件提醒

内存预警 内存会话 智能释放 模板限制 生命周期

2

存活会话数

15.7%

内存占用比例

0

近10分钟内新增会话数

0

近10分钟内结束会话数

结束会话 Q 搜索

<input type="checkbox"/> 模板名称	开始时间 ↓↑	内存大小 ↓↑	操作 ↓↑	用户 ↓↑
<input type="checkbox"/> GettingStarted.cpt	2018-07-25 19:13:32	35.2KB	分页浏览	admin(admin)
<input type="checkbox"/> doc/frm/js实现鼠标滑过单元格的样式.frm	2018-07-25 19:14:18	9.6KB	表单浏览	admin(admin)

< < 1 / 1 > >

内存预警 内存会话 **智能释放** 模板限制 生命周期

智能释放

排队等待 当内存占用达到  %时，会话进入排队等待

同时:  清空  分钟前的会话

清除单元格个数超过  的模板会话

警报提示 服务器压力过大，触发保护机制，请重新操作

内存预警
内存会话
智能释放
模板限制
生命周期

**单数据集行数限制**

单数据集最大行数

超出提示

**单模板单元格限制**

单模板最大单元格个数

超出提示

**sql执行时长限制**

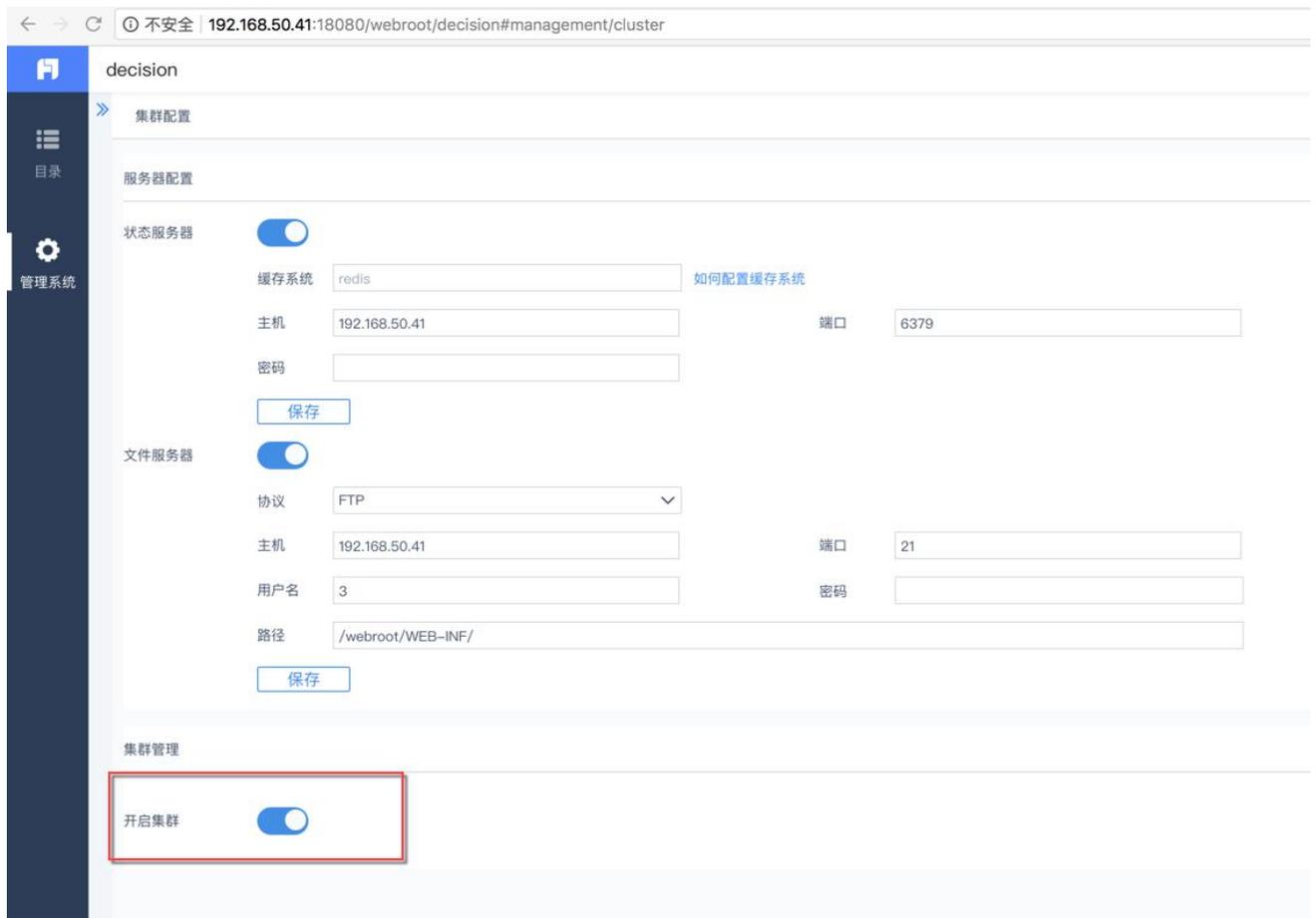
sql最大执行时长(s)

超出提示

内存预警
内存会话
智能释放
模板限制
生命周期

清除过期会话    清除超过  分钟无操作的会话

- Cluster Configuration: Quickly configure the cluster environment with a simple operation. Support configuration of state servers and file servers in the platform, and support hot deployment of add/drop nodes.



- Backup and restore: Support backup and restore of platform configuration information, templates, jars, plug-ins, etc., and can set the frequency of backup, the maximum number of copies, and the backup capacity. It also supports online update and upgrade of server

engineering.

⚙️
全局设置

---

备份路径

自动备份

备份频率

每  备份频率

份数上限

各模块可自动备份  份

备份容量

各模块自动备份可占内存  M

⚙️ 平台配置
报表模板
jar包
插件
更新升级

jar包更新

---

FineReport版本	10.0.0
jar版本	2018.07.25.15.48.43.156
最新jar	当前已是最新版本

jar包还原

---

🗑️
删除

- Intelligent Detection: It is divided into three categories: server configuration detection, report management detection, and global attribute detection. For problems such as preview template error, or server memory overflow, or loss of predefined styles, the data decision making system uses the smart detection function to identify problems and provide

suggestions.



- Cloud O&M: After this function is enabled, the cloud generates a test report after the system automatically or the user manually uploads the data packet (no business data is involved), and gives the user operation and maintenance proposal, which is combined with the local operation and maintenance function and better protects the stability of the system.

Cloud advantage:

Big calculations – giving more accurate, smarter, and more comprehensive operational recommendations through a large number of complex computational models, big data–based statistics, comparisons, and fittings

Zero cost – no need to consume local computing resources, large calculations are done in the cloud center provided by FanRuan

Low threshold – no need to maintain the operation and maintenance tool itself (Operation and maintenance tools are deployed in the cloud, maintained by Fanuan's professionals)

High growth – the operation and maintenance platform continuously updates and grows. The function update does not require additional processing by the user, and does not impose any burden on the user.

Data Security:

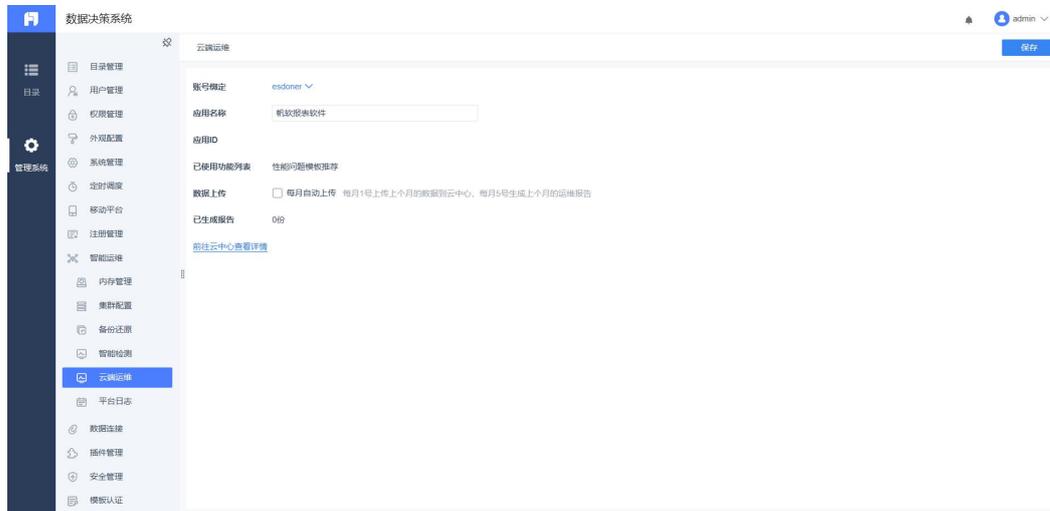
Data desensitization – only involves data for product improvement and application operation and maintenance, and never involves business data

Data disclosure – users can see which data was uploaded at any time

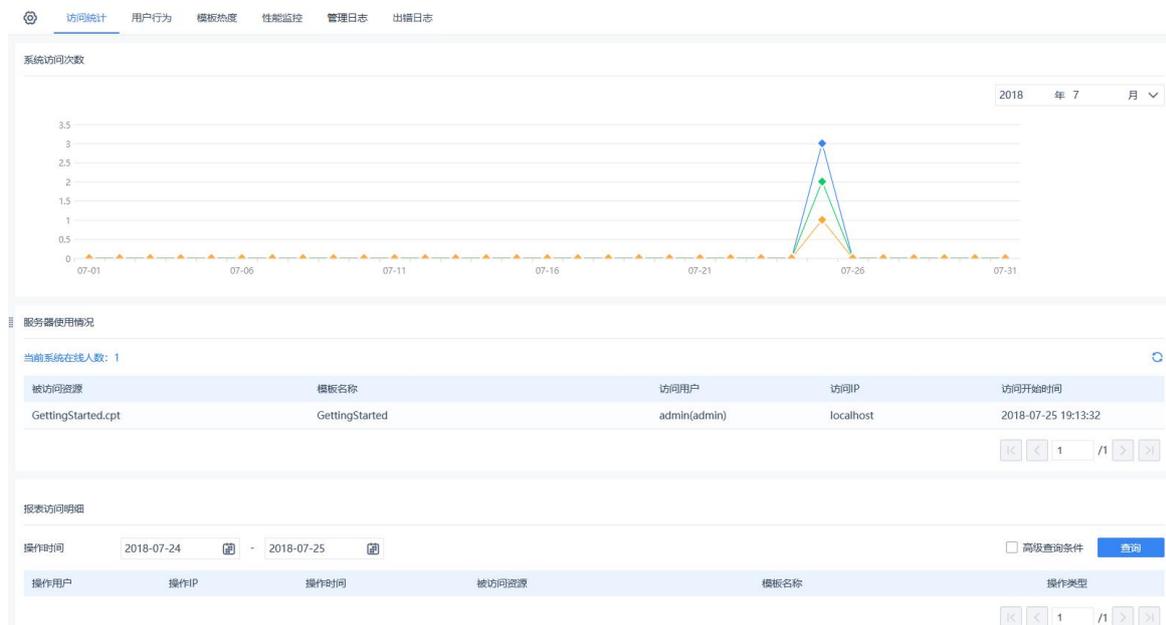
Confidentiality agreement – may sign a confidentiality agreement if required

Supported features:

Performance Problem Template Recommendations – based on system usage, recommend a template with performance issues



- Platform Log: Monitors and analyzes the running status of the system. This function allows you to view various indicators of the system running status, including access statistics, user behavior, template heat, performance monitoring, management logs, and error logs.



### 3.10.7. Message Center

The platform has a built-in message center that supports system message reminders, escalation messages, and template messages. The system message refers to the message notification inside

the platform, which can be used for timing scheduling failure reminder, timed scheduling task notification, memory threshold notification, etc; the report message is a reminder message in the multi-level report task, and when the specified streaming operation is completed, a system message reminder is given to a specific user; the template message is triggered by the template event. For example, after the report is successfully completed, the previously edited message is sent to the specific user. Newly received messages, the system will be notified in the upper right and lower right corners.

For example, the system message notification in the following figure:



In addition to message notifications, FineReport also supports SMS, email, app notifications, WeChat notifications and DingTalk notifications. Users can choose the appropriate notification route according to their usage scenarios.

### 3.10.8. SMS Platform

SMS is a kind of [strong reminder] method in the office process, which has unique advantages for task communication, transaction reminder and identity authentication. FineReport has built-in SMS function on the platform, which can be used for template SMS event, identity verification, timing scheduling failure reminder, scheduled task notification, and memory threshold notification. Users can selectively open as needed. After the administrator logs in to the platform, switch to the SMS tab page in the system management directory to apply for the opening of the SMS function.



To open a text message, you need to go to the fanRuan App Store to apply. After the application is approved, you can see the specific usage information, including the balance and running monitoring records, under the SMS tab page.



### 3.10.9. Safety Management

In order to ensure the security of enterprise applications, FineReport10.0 focuses on security, and improves application security from both patching and active defense.

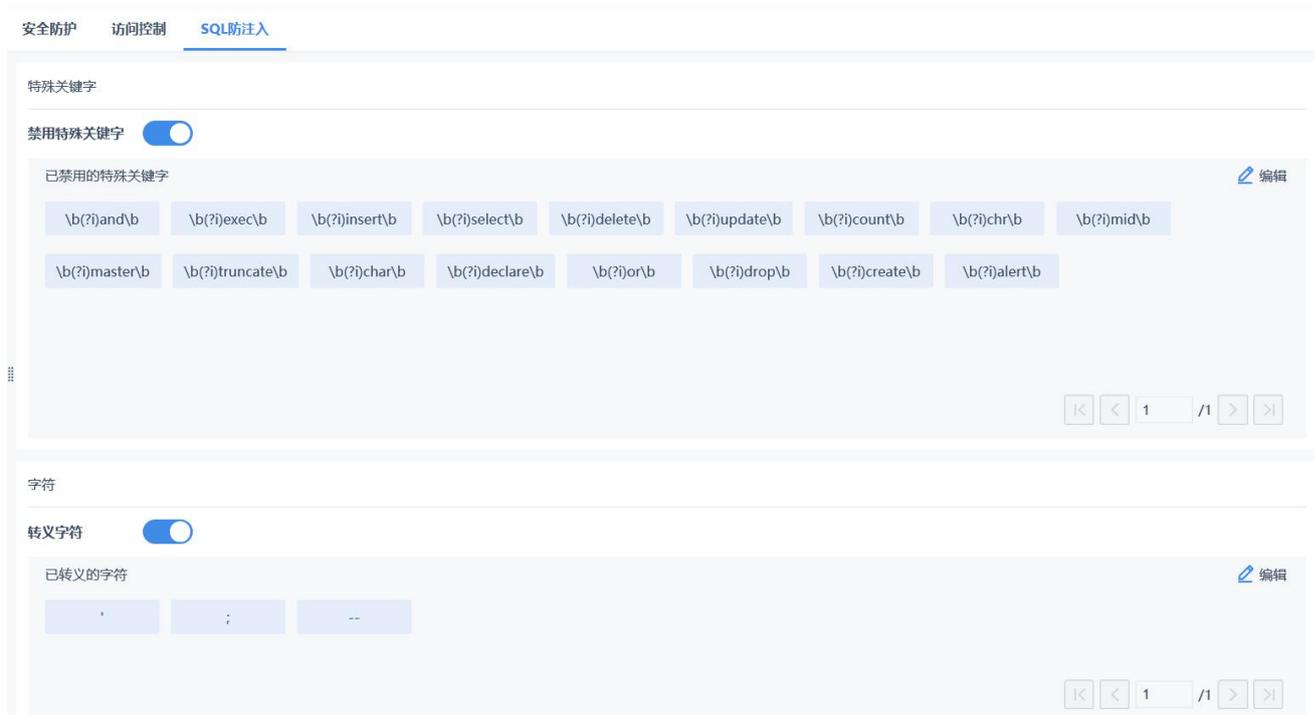
- Security protection: including cookie enhancement, file upload verification, and Security Headers. After the file upload verification is enabled, the suffix and size of the long-distance file in the report and the appearance configuration of the platform are verified. After the Security Headers are turned on, the HTTP Security Header attribute will be attached to the request, and the vulnerability attack will be blocked.



- Access control: divided into two parts: the access frequency limit and the current interception list. After the access frequency limit is enabled, the specific limit frequency can be set, and the access request of the report is limited in frequency. If the limit frequency is exceeded, the interception list is pulled. The interception list provides IP information that exceeds the access frequency limit and joins the interception. The administrator can remove the IP in the list.



- SQL Anti-Injection: You can prevent the injection of malicious parameters by disabling special keywords and changing the meaning of characters.



- Last login information reminder: After logging in, the login decision platform will prompt the last login information.



- Password policy: including forgotten password, password update regularly, password strength limit, and password verification method.

### 密码策略设置

---

**忘记密码**

提示: 1.服务器设置邮箱,且用户绑定邮箱后,可使用邮箱验证  
2.服务器开启短信服务,且用户绑定手机后,可使用短信认证

**密码定期更新**

更新周期  个月

提前  天提醒更新

**密码强度限制**

长度不低于  位

包含数字

包含小写字母

包含大写字母

包含符号

**修改密码验证方式**

短信验证  [开启短信功能](#)

邮件验证  [配置邮箱服务](#)

- Login verification: three verification methods: slider, SMS, and email.

### 登录验证设置

---

**滑块验证**  提示: 开启后, 输错2次密码则会出现滑块验证

**短信验证**  [开启短信功能](#)

**邮件验证**  [配置邮箱服务](#)

- Login lock: If you enter the wrong password more than a certain number of times, the account will be locked to prevent brute force cracking of the user password.

登录锁定设置

登录锁定

错误次数限定 密码错误  次, 锁定  分钟

锁定对象  账号  IP

锁定管理员账号

管理员解锁  解锁对象

<input type="checkbox"/> 锁定对象	锁定时间	自动解锁时间

/ 1

- Management log: Records all operations related to management settings in the platform.

访问统计 用户行为 模板热度 性能监控 管理日志 出错日志

操作时间  -   高级查询条件

模块	设置项	操作用户	操作IP	操作时间	被访问资源	操作类型
系统管理	登录	admin(admin)	localhost	2018-08-13 06:56:46	单一登录	打开

/ 1

### 3.10.10. Registration Management

Users can choose a registration method in local machine information authentication, private cloud authentication, and public cloud authentication according to their own usage environment.

- Local Machine Information Authentication: The physical information of the report server needs to be bound.

注册信息

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**版本注册** 未注册 未注册版本同时可访问模板IP个数限制为2个! [如何注册?](#)

**认证方式**

本地机器信息认证

私有云认证

公有云认证

**机器信息**

mac地址: F4:8E:38:F1:34:1A

3C:F8:62:8F:F6:52

3E:F8:62:8F:F6:51

00:50:56:C0:00:08

00:50:56:C0:00:01

3C:F8:62:8F:F6:51

机器码: Dx+Ozhy0RfsFVfhqV8Mob6wUVC54/bw1ZOpC+XEWKN7qxbaoNViSDA==

[导出注册信息](#)

- Private Cloud Authentication: Applicable to deploying a system to a cloud platform (such as Alibaba Cloud's ACE) or a machine without fixed physical information.

注册信息

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**版本注册** 未注册 未注册版本同时可访问模板IP个数限制为2个! [如何注册?](#)

**认证方式**

本地机器信息认证

私有云认证

公有云认证

**服务器地址**

例:

- Public Cloud Authentication: Users do not need to provide machine physical information, they can go directly to the FanRuan authentication server for online authentication, which is convenient, fast, safe and reliable.

注册信息

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**版本注册**      未注册 未注册版本同时可访问模板IP个数限制为2个! [如何注册?](#)

**认证方式**

本地机器信息认证

私有云认证

公有云认证

**认证信息**

账号

密码

### 3.10.11. Appearance customization

Each enterprise does not have a single system, and it is hoped that each system can have a unified UI specification, such as platform style, login interface, home page, and so on. In this regard, FineReport is the first in the industry, completely open the API of the system appearance, users can customize the decision system theme.

The aesthetics of a system is determined by the login interface style + large background + overall color + logo icon + theme package. The login interface style can be changed by the official plug-in; the overall color matching is mainly determined by the background and color matching, which can be visually configured in the decision making platform-management system-platform appearance, as shown in the following figure.

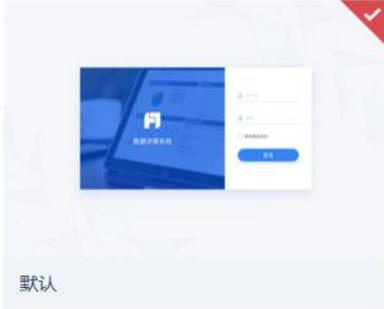
登录页 平台主题 平台样式

**登录方式**  登录页插件  设置登录网页

**登录标题** 数据决策系统

**登录Logo** 未上传 提示：为使显示效果更佳，请选择尺寸不小于[]的图片，支持PNG、JPG等格式

**登录风格**



默认

**背景图片** 提示：为使显示效果更佳，请选择尺寸不小于[]的图片，支持PNG、JPG等格式



**平台标题** 数据决策系统

**平台Logo** 未上传 提示：为使显示效果更佳，请选择尺寸不小于[]的图片，支持PNG、JPG等格式

**配色**



浅色



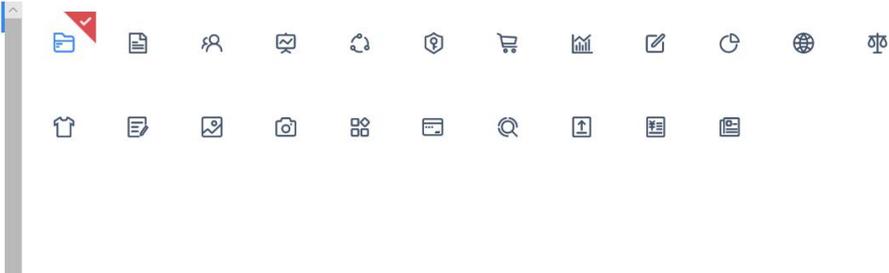
深色

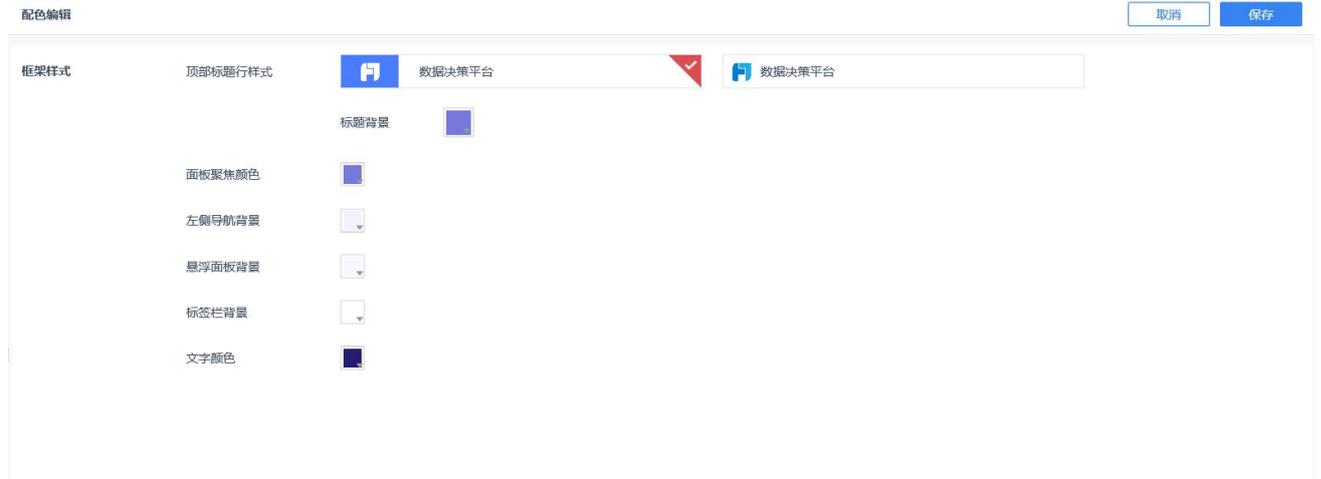


自定义 [编辑](#)

**目录图标**

- 主题分析
- 驾驶舱
- 行业化
- 报表展示
- 统计图表
- 参数查询
- 填报录入
- 权限使用
- 多级上报





The interactive effects and menu layout are mainly done by the theme package. The more code is written, the more things can be changed. Of course, the background image and the theme color can also be used in the theme package code through the open API. Modifications are not limited to configuration in the platform appearance options.

### 3.11. Time Scheduling

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#### 3.11.1. Timing tasks

Business users may face such a situation that reports need to be generated regularly and they have to do the same thing regularly to get the reports they want. FineReport's timed scheduling function allows users to free themselves from the troublesome repetitive operations. It can conveniently and quickly set up daily, monthly, quarterly, annual reports and other tasks without additional work. After the scheduled tasks are set, the server will automatically complete at the specified time. Set the tasks, generate the required files, and even notify you of the generated results by email, SMS, and platform message notifications, allowing you to analyze and make decisions in a timely manner.

- Regular daily report: The daily report function is to generate data for a fixed period of time every day, for example, to generate all the data of 00:00:00 to 23:59:59 yesterday, which can be pdf, word, cpt, xls, etc. The format is saved in the directory you have set up. This kind of

function is quite practical and popular in some enterprises.

- Regular monthly or annual report: The sales performance of each branch is counted at a fixed time each month. The sales performance of each branch can also be counted at the end of the year. These data can be saved in pdf, word, cpt, xls and other formats. In the set directory, and then back up the data, you need to set multiple timer tasks for a template.
- Timed task file processing: After the timed task is completed, the result file can be saved in the specified directory, FTP or as an attachment to send email reminders, SMS notifications, platform message notifications, and push to mobile terminals.



- Conditional timing task: Perform a conditional check judgment before executing the timed task. If the condition is not met, it will not be executed or the test will be verified again after the delay (Only when the task restart is checked, the delay will be verified again after a delay). Conditional judgments consist of three types of choices: always execution, formula judgment, and custom class judgment.

基本设置     调度周期     本地文件     文件处理

开始时间     配置结束立即执行     设置开始时间

执行频率     只执行一次     简单重复执行     明细频率设置     表达式设置

结束时间     任务执行一次后即结束

执行条件     始终执行     公式判断     自定义类判断

任务重启     如果任务中断按以下频率重新启动

重启频率: 每隔  分钟一次

最多尝试重启次数:  次

基本设置     调度周期     本地文件     文件处理

选择模板: GettingStarted.cpt

类型     预览     填报     分析     新填报

参数设置     除通用结果外, 根据默认用户组内的用户单独生成结果

名称	输入方式	类型	值
地区	默认	字符串	华东

文件名称:

附件存档     结果报表     excel03     excel07     word     pdf

文件处理     任务结束即清理     仅留最近1次     仅留最近5次     不清理     自定义

- Task management: For the scheduled tasks that have been set, you can perform centralized management, including task running status viewing, pause, edit, copy, and so on.

任务名称	使用模板	上次运行时间 ↓↑	下次运行时间 ↓↑	运行状态 ↓↑
<input type="checkbox"/> test	GettingStarted.cpt	2018-07-26 19:31:00		已结束 <input type="button" value="▶"/> <input type="button" value="✎"/> <input type="button" value="📄"/> <input type="button" value="🔍"/> <input type="button" value="🗑️"/>

任务名称	使用模板	上次运行时间 ↓↑	下次运行时间 ↓↑
<input type="checkbox"/> test	GettingStarted.cpt	2018-07-26 19:31:00	

上次运行时间  ~

下次运行时间  ~

### 3.11.2. Permission control of scheduled tasks

Through the permission control function of the timed task, the implementation can generate

different results for different users.

- Timed task content permission control: Generally, there will be salary options in the company's system. At the end of the month, you can click to view the salary information of the current month. With the FineReport timing function, you can mount the salary information of the current user's current month at the specified salary node at the end of each month.
- Timed task mail delivery enables different people to send different content: In the general sales industry, there will be many distributors under one manufacturer, the distributors need to purchase from the manufacturers, remittances, etc., and the manufacturers will also have regular operations. Send an email to these distributors to inform them about the remaining condition of the goods, the remittance, etc., and when the company pays the salary, it will also send a salary email to the employee about the employee. Then, the need to send different content emails to different people on a regular basis can be easily achieved with the FineReport timing function.



The screenshot shows a configuration window for a timed task. At the top, there are four tabs: "基本设置" (Basic Settings), "调度周期" (Scheduling Cycle), "本地文件" (Local File), and "文件处理" (File Processing). The "基本设置" tab is selected. Below the tabs, there are several fields and buttons:

- "任务名称" (Task Name): A text box containing "test".
- "默认用户组" (Default User Group): A button labeled "编辑" (Edit) with a question mark icon.
- "平台" (Platform): A text box containing "韩文(hanwen)".

Two red annotations are present in the center of the window:

- 1、通过用户组快捷设置通知对象
- 2、通过用户组生成不同结果文件

< 上一步       基本设置     调度周期     本地文件     文件处理      下一步 >

选择模板: GettingStarted.cpt

类型:  预览     填报     分析     新填报

参数设置:  除通用结果外, 根据默认用户组内的用户单独生成结果

名称	输入方式	类型	值	刷新	添加
地区	默认	字符串	华东		

文件名称: 支持公式输入

附件存档:  结果报表     excel03     excel07     word     pdf

文件处理:  任务结束即清理     仅留最近1次     仅留最近5次     不清理     自定义

### 3.11.3. Timing filling

FineReport also supports timing filling, and through the use of report templates, the data is loaded, summarized, and filled into the library at regular intervals. For example, monthly statistical statistics of each company's sales performance, these data are stored in the database of the branch, using the timed reporting function, the total performance of each division of the company can be stored in the head office database.

< 上一步       基本设置     调度周期     本地文件     文件处理      下一步 >

选择模板: GettingStarted.cpt

类型:  预览     填报     分析     新填报

参数设置:  除通用结果外, 根据默认用户组内的用户单独生成结果

名称	输入方式	类型	值	刷新	添加
month	默认	公式	month(today())		

文件名称: 支持公式输入

附件存档:  结果报表     excel03     excel07     word     pdf

文件处理:  任务结束即清理     仅留最近1次     仅留最近5次     不清理     自定义

### 3.12. Mobile apps

In the era of mobile Internet, information is everywhere. By making full use of mobile applications, people can get rid of the limitations of office space and make full use of the fragmentation time, which in turn can be “managing between the thumbs, making decisions thousands of miles away”.



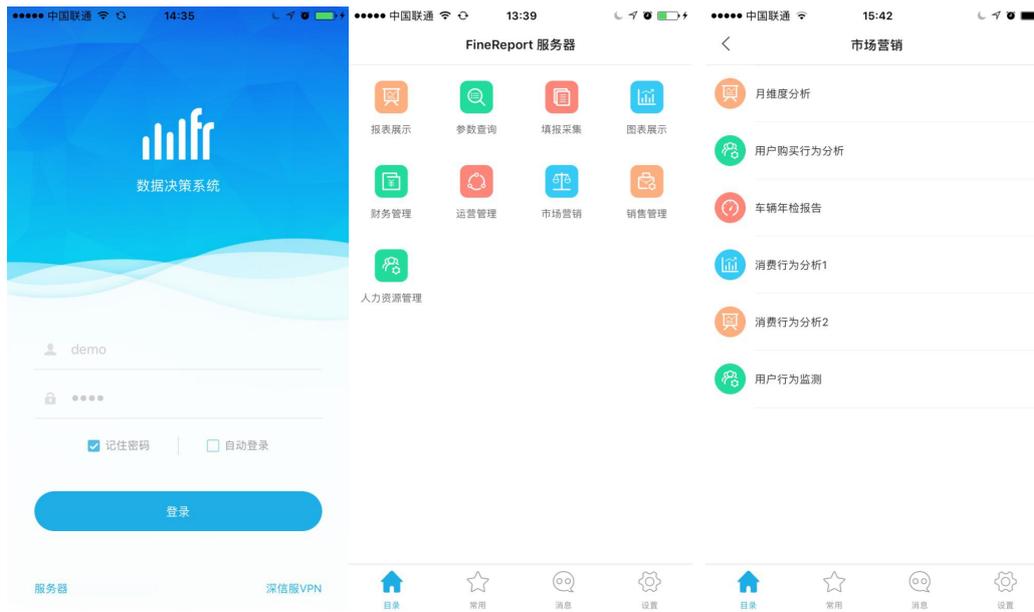
FineReport supports the integration of reports into mobile applications, and can display reports according to the operating characteristics of mobile devices, such as support for page enlargement and reduction. It supports offline viewing, supports mobile terminal for online filing and offline reporting, supports sharing templates with PCs, and reduces development.

The native app developed by FineReport (app name: data analysis), supports IOS, Android system, has a comfortable experience, supports chart gesture operations, various drill linkage and other interactive features. It supports mobile device hardware address binding, supports VPN, supports multiple logins, password protection and other security settings to ensure user information security.

### 3.12.1. ReactNative combined with native

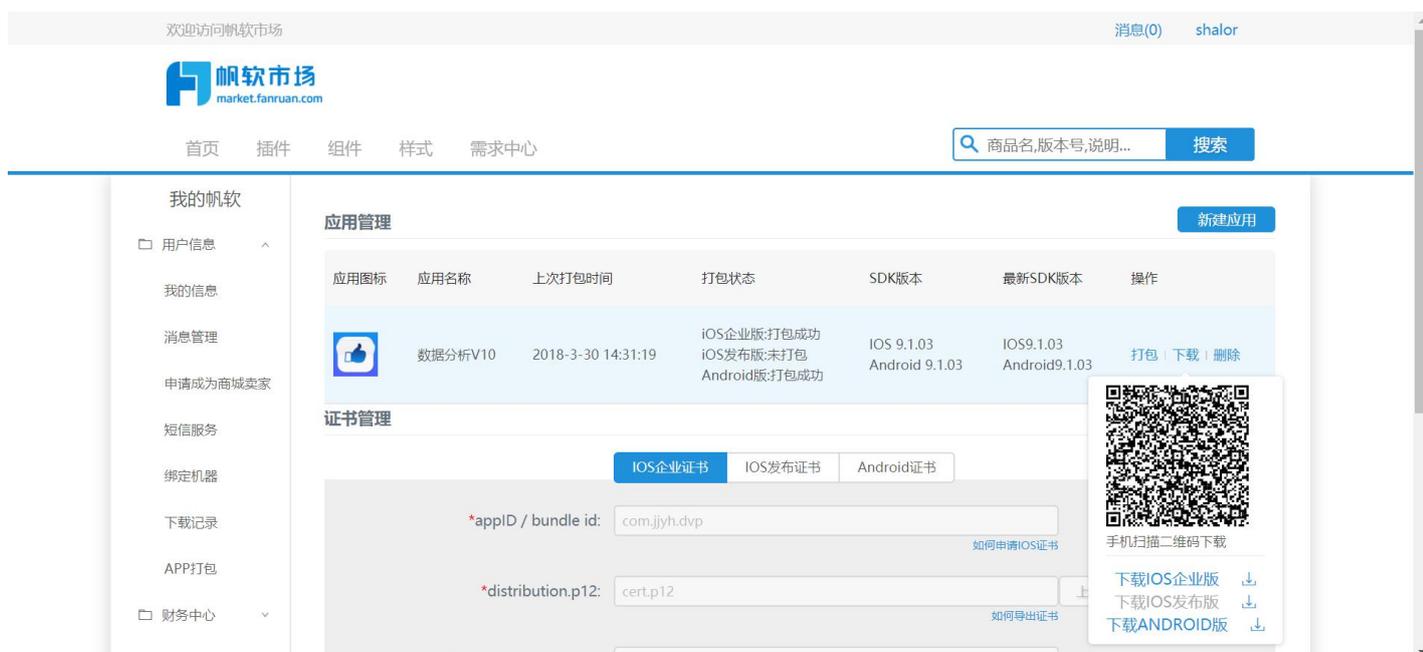
The core framework of the native APP application system adopts ReactNative technology, designed and implemented according to the MVC idea, and the view and model are separated to maintain the scalability of the view and the reusability of the model. The entire system has good stability and scalability.

At the same time, the table display in the APP adopts the native rendering technology, which is optimized for the mobile processor. Compared with the traditional HTML report, the rendering speed and the smoothness of the interactive operation are greatly improved.



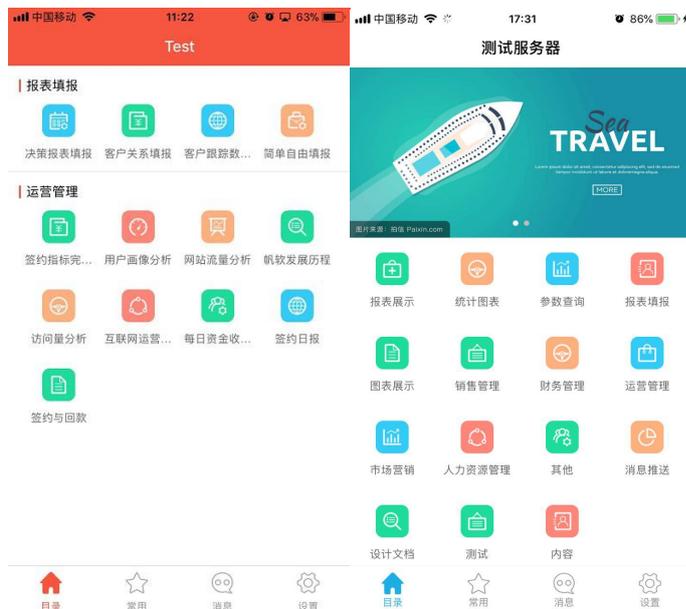
### 3.12.2. OEM Cloud Packaging & Personalization

In addition to providing official apps, it also supports customizing enterprise personalization applications through the OEM cloud packaging platform, which can replace application names, icons, startup pages, copyright information; built-in enterprise-specific servers, VPN configurations, and so on. At the same time, the enterprise can control its version iteration independently, and improve the personalization and stability of mobile applications.



The mobile side also supports a variety of personalized customization solutions such as custom

theme plugins, directory style plugins, adding directory banners, and modifying directory icons.



### 3.12.3. HTML5 report

In addition to native parsing, FineReport also supports HTML5 parsing, which can be easily

integrated with third-party applications. At the same time, HTML5 reports use the same set of underlying code architecture as APP, and the interaction, experience, and functionality are highly consistent with APP.



### 3.12.4. WeChat and DingTalk integration

FineReport provides WeChat and DingTalk integration plug-ins, combined with HTML5 technology to achieve integration with enterprise WeChat and DingTalk. Support single login to the report server for WeChat and DingTalk accounts, and performs permission docking. In addition, push messages are also supported for WeChat and DingTalk applications.

用户匹配方式 保存

匹配方式

---

微信通讯录

[立即更新](#)   [设置自动更新](#)  

组织架构	标签	微信成员名	姓名	微信部门	微信成员手机号
企业微信CorpId(wxae62313e1fe)		fl2945	方磊	AA部门	1731
A部门		Starryi	关昆	AA部门	1585
AA部门		Fiona	朱鸣洋111@@	AA部门,AA2部门	1585
AA2部门					
企业微信CorpId(ww72f16a474d)					
shalor公司					

/ 1



### 3.12.5. Mobile Adaptive and Zooming

Whether it is APP native or HTML5 report, it can adapt to different resolution screens, zoom the report page to achieve the best effect, and on the mobile side, the decision report will be converted into stream layout adaptive display according to the component order. Users can also analyze individual components by component magnification, while supporting two-finger zoom for partial magnification for a clearer view of some detail data.



### 3.12.6. Mobile Drilling and Linkage

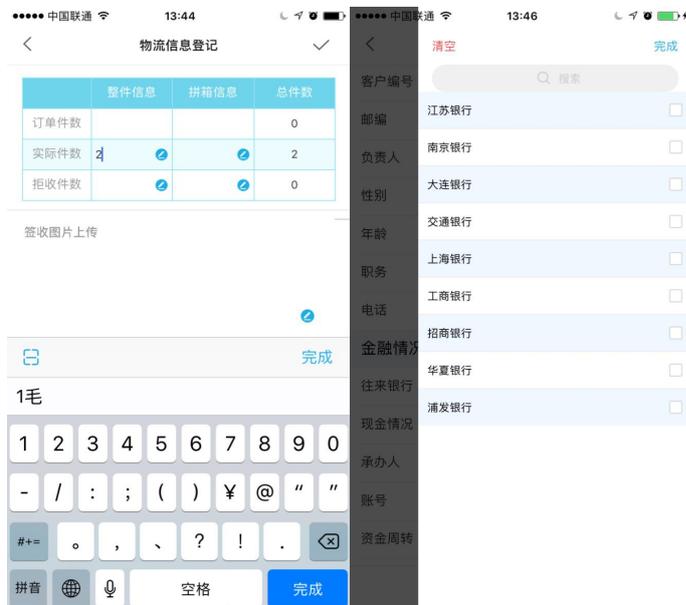
- The mobile terminal is the same as the PC end, supports data drilling, chart drilling, and supports multi-dimensional (multi-target) drilling, and the drilling effect is in line with the characteristics of the mobile terminal. With the linkage operation, the effect of the mobile terminal is basically the same as that of the PC.



### 3.12.7. Mobile terminal filling

On the PC side, FineReport has a complete filling function. In the mobile APP, the FineReport

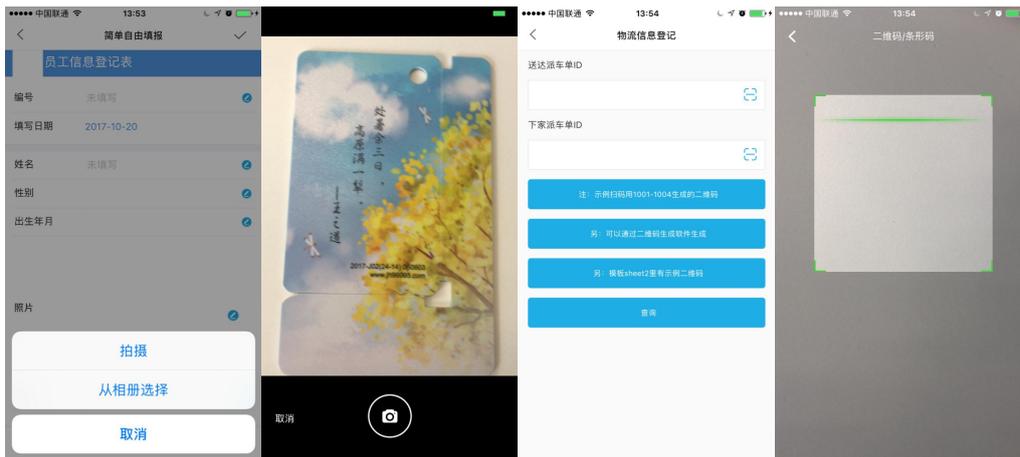
filling function is still powerful, supports various control inputs, and supports data filling and verification, and the effects are also mobile UI. On this basis, it also incorporates the unique features of the mobile terminal, such as: scan code input, get current location information, photo upload and so on.



### 3.12.8. Mobile interactive experience

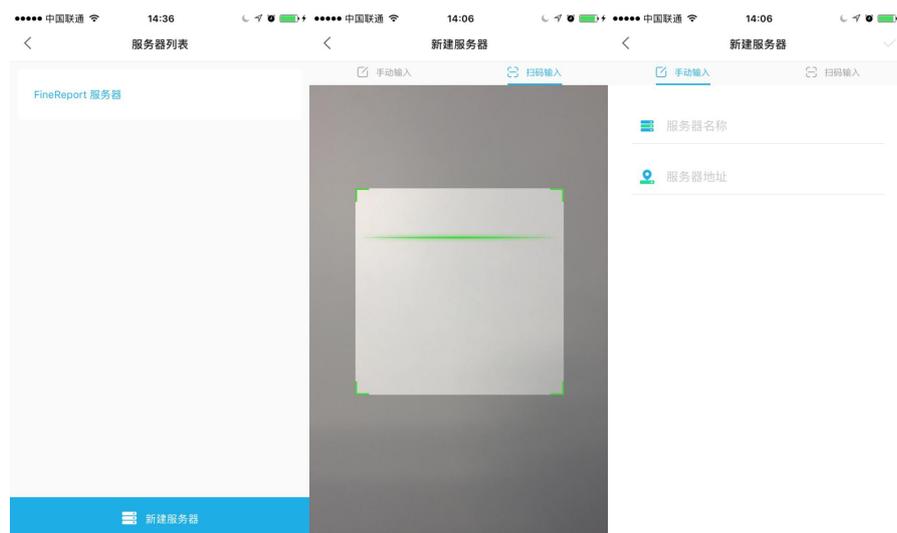
FineReport has a good mobile experience, and all controls and parameter queries have been moved. Some small functions such as page turning, collection, annotation sharing, scanning barcodes, and calling camera photos to upload files also show good mobile experience.



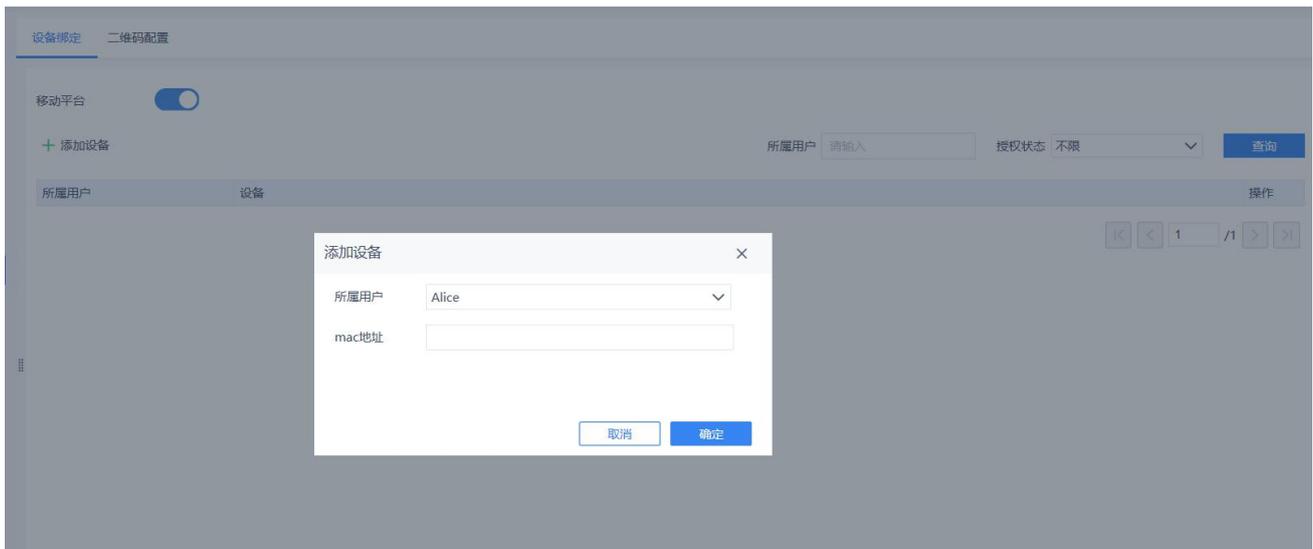


### 3.12.9. Adding devices and bindings

FineReport supports manual input of URLs and QR code scanning to add servers, which is convenient and quick.



FineReport supports the device binding function. After the device is bound, only authorized devices can connect to the server to view reports, and the security is greatly improved. If the loss of the mobile phone occurs, as long as the authorization of the device is released on the server in time, the device cannot connect to the server to view the report.



### 3.12.10. Mobile message push

The mobile Internet has made office beyond the limits of space, and the needs of enterprise management to grasp the core business data of enterprises at any time and place have been met. FineReport supports message push to mobile APP, WeChat, DingTalk. The push message can set the timing frequency, trigger condition, etc., and can realize the timed push of the daily/monthly report data; it can also be used to monitor whether the indicator is within the specified range. If the threshold is exceeded, it will be sent to the relevant responsible person's mobile APP or WeChat for reminding.





### 3.13. International language support

As the leading brand of Chinese reporting software, FineReport has stepped out of China and marched into the world. Currently there are designers (software installation packages) in multiple languages such as Simplified Chinese, Traditional Chinese, English, Korean, and Japanese.

In addition, FineReport also supports the international reporting function, which achieves the effect of "displayed in Chinese in China and displayed in English in the United States", by switching the designer language, switching browser language and other simple operations.

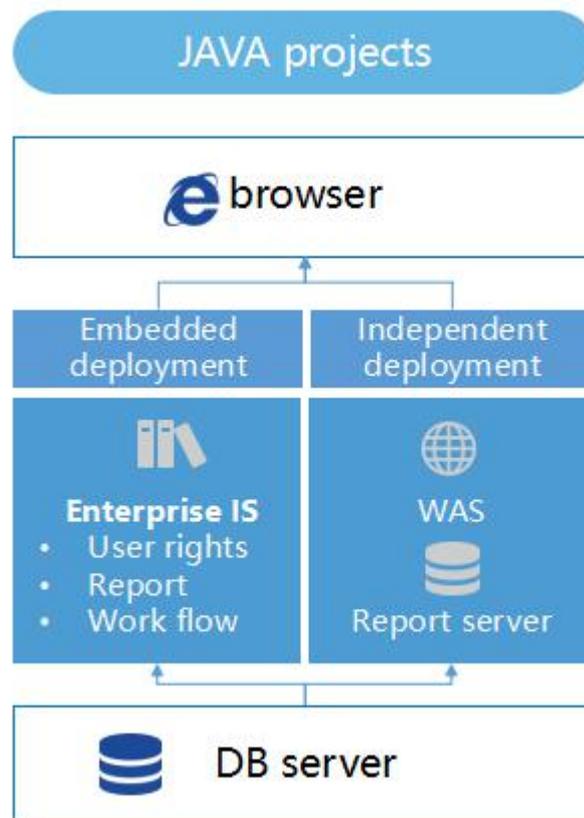
## 4. Application Deployment

Application Deployment is divided into two parts: report engineering deployment and web page integration. FineReport is perfect for page integration. For engineering purposes, report engineering can be deployed as a stand-alone project or integrated into existing projects.

## 4.1. System Integration

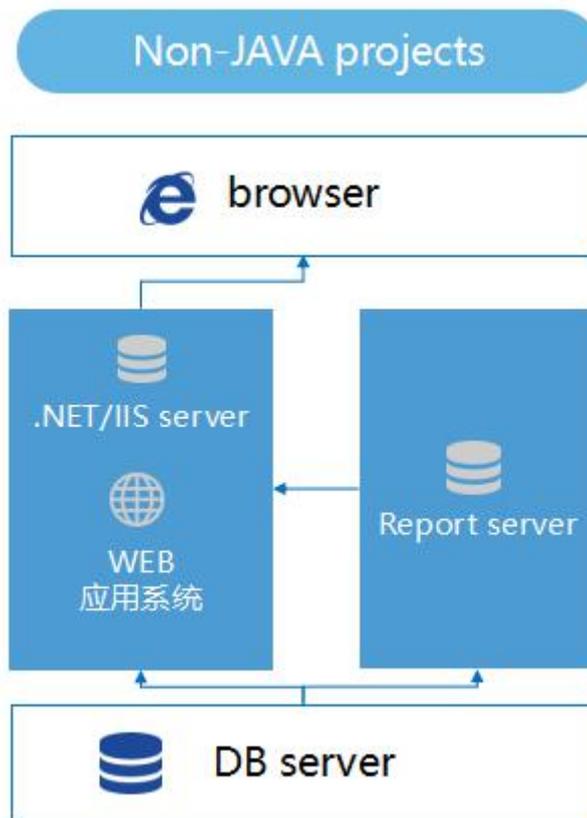
### 4.1.1. Java project integration

FineReport is a pure Java software, so for J2EE projects, seamless integration is possible. The integration principle is as follows:



### 4.1.2. Non-java project integration

For non-J2EE projects, FineReport requires a separate web application server to support it. Independently running a report server and WeB/Service independently of the application system, the main application accesses the report through the url mode, and can also perform parameter assignment and other control. Finally, it is displayed to the user through the browser, and the user can also view, edit, submit, and output (PDF, EXCEL, WORD, etc.). Especially for Windows IIS server, FineReport provides a connector between Tomcat and IIS, which facilitates the integration of FineReport report server and IIS server.



#### 4.1.3. C/S project integration

Today's mainstream reports are based on browsers, which is convenient for off-site office and statistics. However, for companies with strong confidentiality such as government and military, or companies that only have internal management and do not want to communicate with the external network, the C/S system is more in line with the actual needs of enterprises and units.

FineReport uses a strategy of embedding a browser in a program to call a report to integrate with a C/S project.

In this way, the background operation is the same as that of the ordinary B/S system, but the report can only be displayed in the browser, so it is impossible to directly call the url like the ordinary B/S system when the report is connected in the foreground.

## 4.2. Web page integration

Reports present data through various styles such as tables, charts, etc. for statistical analysis. Such a data table or chart can be implemented by the user when developing the system, but the workload is large and the maintenance is difficult. Users often use off-the-shelf report software to develop reports, and finally embed the prepared reports into their own systems to save the project development cycle.

Now the user-developed system basically tends to the browser/server mode of the BS architecture. These systems may be developed by different languages, such as HTML, ASP, JSP, PHP, etc., so the prepared reports need to be embedded in these pages as part of the page.

FineReport integrates reports into web pages through the Frame framework. The principle of web page integration is shown in the figure below.

### ▲ 集成原理



### ▼ 通过Frame框架实现

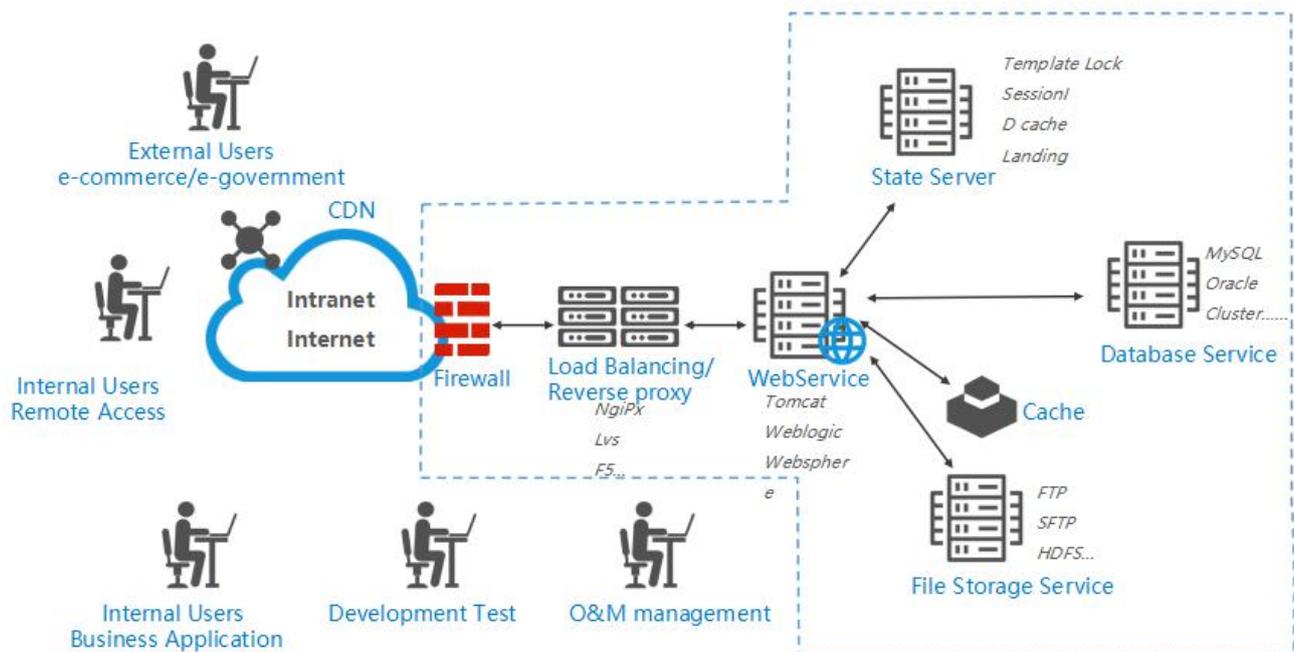
```

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<html>
<head>
<title>FineReport Demo</title>
<meta http-equiv="Content-Type" content="text/html; charset=GBK" />
</head>
<body>
<iframe id="reportFrame" width="900" height="400" src="/WebReport/ReportServer?reportlet=/doc/Primary/Parameter/Parameter.opt"></iframe>
</body>
</html>
  
```

## 4.3. Clustering

FineReport has introduced a new cluster in the 10.0 version. The cluster adopts a hostless mode. After the node is down, the system can be used normally. The load of each node is more balanced,

and the nodes increase the concurrency linearly. Simple operation, high consistency, configuration and resource modification can be synchronized at any time. At the same time, it has the functions of memory monitoring and dynamic sensing node joining, adapting to various network environments, systems and web servers.



The advantages of the 10.0 cluster are:

- **High Consistency:** All configurations and files made through the FineReport can be synchronized to each node of the cluster at any time.
- **High Availability:** All stand-alone features are supported. After a single node is down, the system can still access normally.
- **Powerful Features:** As the number of nodes increases, the concurrency supported by the system grows almost linearly. And the load of each node is more balanced.

- **Simple to Use:** The cluster environment can be quickly configured through simple operations in the platform, where the addition and deletion of nodes supports hot deployment. In addition, you can monitor the health and logs of each node in the platform.

#### 4.4. Single Sign-On

---

FineReport offers a variety of single sign-on methods to meet the needs of different applications.

##### 1 AJAX

Supports cross-domain, asynchronous identity authentication and authentication timeout processing

##### 2 Iframe

Supports cross-domain, but does not support asynchronous authentication, does not support timeout processing

##### 3 Action submission

When the report authority is verified, the url in the form can be used to trigger the url verification, which is convenient and quick.

##### 4 CAS single sign-on

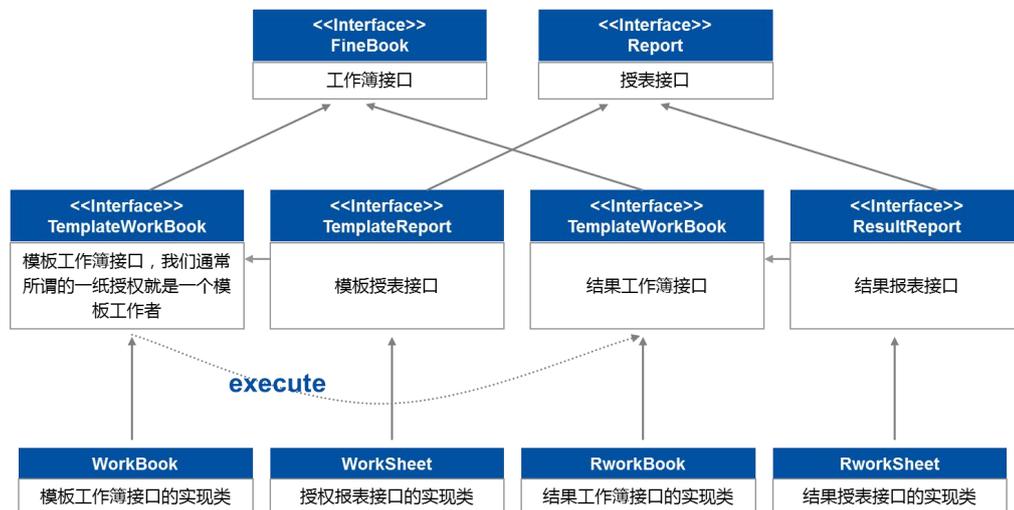
Supports CAS Central Authentication Service

## 5. Extended development of FineReport

With the development of FineReport, it provides designers and servers to meet most of the needs of users, fully realize zero-coded software development, revolutionize software development speed and improve software stability. But the demand is ever-changing, and the functions included in FineReport are typical in the reporting industry. Maybe some personalized functions can't be realized

by FineReport. To this end, FineReport supports application developers to use in-depth development and control of FineReport using web scripts and API interfaces to meet their individual needs.

The FineReport kernel is designed as shown below: :



The template of FineReport is separated from the result. The workbook or report that has not been executed is the template, and the result is executed.

## 5.1. API interface

FineReport provides a rich, open, well-structured API interface. The application system can flexibly call the built-in functions of various reports according to system requirements to achieve deeper integration and control.

### 5.1.1. Program data source

The main problem with the production of reports is the problem of the data source. When a general customer makes a report, it uses some data sources such as a database data source, a text data source, and an xml data source. However, a considerable number of industries cannot directly connect to the data source. They can only call related data through some interfaces. .

FineReport reads data sources through the AbstractTableData abstract class, enabling customers

to meet complex and variable data sources when reporting.

### 5.1.2. Report format settings

The user can control multiple properties of the report object's cell properties, web properties, parameters, page settings, etc., and can freely control the display style of the cell, the buttons of the toolbar, the display of the parameter panel, the assignment of parameters, and the like.

### 5.1.3. Custom interaction

In actual report production, there are many times when trigger events are needed to make report creation more convenient and friendly. FineReport reports use the jquery v1.5.2 framework, which makes it easier for users to process HTML documents, events, animation effects, and easily provide AJAX interaction for websites, and it is compatible with various browsers (IE 6.0+, FF 1.5+, Safari2.0+, Opera 9.0+). After the FineReport report is parsed, it will eventually become an html page, so you can use js to process the report. Users can use the jQuery framework to manipulate the report. On this basis, FineReport also encapsulates many built-in js methods.

### 5.1.4. Custom filling

The user can define the filling method according to his own needs, and fill in the interface to save the user operation log to the database, and perform various processing when the report succeeds and fails.

### 5.1.5. Report reprocessing

FineReport Designer can basically design most reports with zero code. However, the requirements are ever-changing. Maybe some personalized functions can't be realized by the designer. Therefore, the template can be read into the program, modified and then exported. Access the report in a browser. Obviously, this is cumbersome. For this case, you can also directly save the read template as a program network report and directly access the defined program network report on the web side.

### 5.1.6. Custom Functions

FineReport has provided a large number of built-in functions, which are enough to meet the user's report production requirements under normal circumstances, but in some special fields, some special functions may be needed. In this case, FineReport provides a custom function mechanism. The user defines some functions according to the business needs, but these functions must meet the FineReport function definition rules: `Functionname(Para,Para,...)`, where `Functionname` is the function name and `Para` is the parameter.

In FineReport, each function is defined as a class. This class must implement the `Function` interface. In the operation, the class is first retrieved by function name reflection, and then its `run(Object[] args)` method is called.

### 5.1.7. Import and export

FineReport provides powerful input and output functions, all of which are in the `com.fr.report.io` package. The input of the report refers to the creation of a `WorkBook` object from the template file (in XML format) of the report. The output refers to saving the report as various format files. FineReport supports saving the report as `cpt`, built-in data `cpt`, `Pdf`, `Excel`, `Word`, `Svg`, `Csv` and other file formats to release the export process.

## 5.2. Plugin development

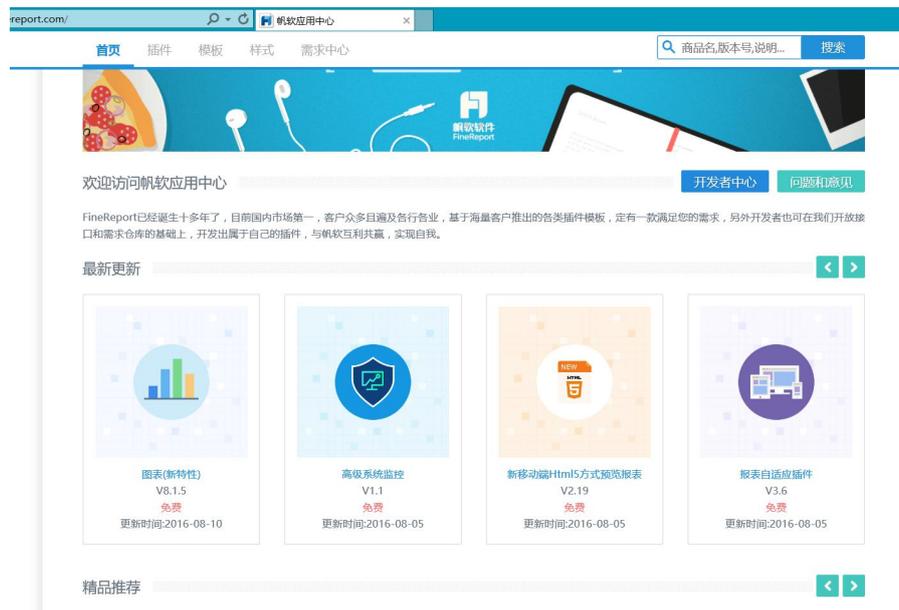
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A plugin is a program written in accordance with a certain specification of the application interface. Many softwares have plugins, and there are countless plugins. For example, in IE, after installing the relevant plug-ins, the WEB browser can directly call the plug-in to implement a specific function.

FineReport has opened a lot of API interfaces for users to customize their personalization needs, and provides a complete set of plug-in development, installation, use, and management solutions. In this way, the user can implement a certain function by FanRuan official, or by himself, or other technical personnel.

For the plug-ins that have been developed, FanRuan provides a plug-in mall for users to choose,

as shown below.



At the same time, FanRuan is working hard to build the FineReport ecosystem, allowing more technicians to benefit from the development of FineReport plug-ins. FanRuan officially publishes various types of paid plug-in development bidding from time to time. Interested developers can carry out the bidding, and the plug-in developed can obtain the official cash reward as long as it is qualified. In addition, developers can also develop various types of plug-ins based on their own

understanding of the industry, and sell them to the FanRuan Plug-in Mall for continuous profit. Corporate customers, if they have individualized needs, cannot meet the existing functions, or they can publish their own bidding plans to attract developers to help you meet your needs.

## 6. FineReport performance and optimization

In addition to the functions of the finished software, users are more concerned about the stability, number of concurrent, data volume and other performance. This section introduces you to this aspect.

### 6.1. Measured data

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The measured data shows that the common details or grouped reports, after opening FanRuan's line engine, 500,000 rows and 5 columns of data, that is, 2.5 million grids, memory consumption between 100–150M, response time is about 1.5S; Million lines, 5 columns of data, that is, 5 million grids, memory consumption is around 130–200M, response time is about 2.5S.

For concurrency, FineReport on the Intel(R) Core(TM) i7-2600 CPU @3.4GHz 3.39GHz/16G memory machine, 500,000 data reports of about 2.5 million cells, 100 users concurrent access, the average response time is 28s; and 1 million data reports of about 5 million cells, 100 users concurrent access, the average response time is 32S.

### 6.2. Performance optimization

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In the actual system, various performance problems are often encountered. For example, the system access time is too long; frequent access to large data reports consumes too much server memory and causes memory overflow; excessive user concurrent access causes the server to crash;

accessing a complex report for a few minutes and then accessing again, still have to wait the same time to see the result; the web page frequently appears request timeouts, etc., which greatly affects work efficiency and experience.

Based on more than ten years of experience, FineReport has summarized a set of practical performance optimization solutions. From the data source acquisition, report production ideas, control usage to server configuration, there is a complete set of solutions.

### 6.2.1. Report performance optimization

- Optimize report fetch: The designer spells out the final SQL, passes the SQL statement to the database, executes the database, and returns the data to the designer. So we can improve the performance of the report by controlling the amount of data and pre-processing the data, such as using SQL statements to take specific fields, direct grouping in SQL instead of grouping in reports, direct sorting in SQL instead of sorting in reports, use Views, stored procedures, and more.
- Optimize the calculation time of the report: After completing the report fetch, the designer will expand, group, list, summarize and other data returned by the database. Good template making habits can often optimize the calculation time of the report, such as using blank cells, use hidden rows and columns carefully, use merged cells with caution, use parent chart, and so on.
- Using parameter injection: For multi-dataset related reports, the report will be slow to display when the data is large, or complicated by writing sql statements. At this point, using the dynamic parameter injection function can not only speed up the presentation of the report, but also eliminate the need to write complex SQL statements.
- Data set cache and sharing: For large data volume reports, if you query the data directly from the database each time, it not only increases the pressure of the database server, but also greatly affects the speed of fetching and reduces the execution speed of the report. For this purpose, FineReport provides data set caching and sharing. FineReport can first cache the

results of its data set query. For the cached data, when you use the same data set again, you don't need to connect to the database again to re-query the data, and directly use the cached result, that is to use FineReport's data set sharing mechanism , to achieve resource reuse, reduce the access time and thus improve the presentation speed of the report.

- Enable row engine execution layered report: Very simple for report form, just a simple single data source detail report, but the amount of data is very large, millions, millions or even more. Report fetching and calculation time is quite long. At this point, you can enable the line engine to improve the display speed of the report. For the user, the query report will not feel lagging.

### 6.2.2. Server performance optimization

- Memory: JVM stack memory is a key indicator to determine the performance of the application server. The default memory configuration of the server is relatively small. In larger applications, this memory is not enough, so you can improve performance by viewing and modifying the web server memory size.
- Concurrency: Concurrent means that multiple clients access the application system at the same time. The number of connections is the maximum number of simultaneous accesses to the server. The number of control connections can optimize the performance of the server and ensure the efficiency of the server. FineReport provides two methods: static concurrency and priority access concurrency control.
- Server cluster: The cluster can use multiple computers for parallel computing to achieve high computing speed. It can also be backed up by multiple computers, so that any one machine breaks, the whole system still works normally. FineReport fully supports server clusters. It must be clear that the servers in the cluster need to have intranet communication support. Reporting applications on different servers must be consistent.

## 7. Product environment support

### 7.1. Software environment

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The specific software environment requirements are as follows:

**Operating system:** Solaris, Aix, Windows, Linux, Unix, IRIX;

**Database:** Oracle, SqlSever, Mysql, Access, Sybase, DB2, Postgre, Derby (mainly some relational databases and multidimensional databases);

**Server:** web application server such as Tomcat, JBoss, Weblogic, WeB/Sphere, Tongweb, resin, etc.

**Browser:** Main browsers such as IE, FireFox, and Chrome.

### 7.2. Hardware environment

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The specific hardware environment requirements are as follows:

Number of registered users	System online number	Mean concurrency	Recommended configuration	Minimum configuration
2000~5000	400~1000	0~100	Stand-alone (JVM memory 8G)	Stand-alone (JVMmemory8G)
4000~10000	800~2000	0~200	Stand-alone (JVMmemory12G)	Stand-alone (JVMmemory8G)

6000~15000	1200~3000	200~300	Stand-alone (JVMmemory16G)	Stand-alone (JVMmemory12G)
8000~20000	1600~4000	300~400	Two-node(JVMmemory12G )	Two-node(JVMmemory8G)
10000~25000	2000~5000	400~500	Two-node(JVMmemory16G )	Two-node(JVMmemory12G)
12000~30000	2400~6000	500~600	Three-node(JVMmemory16 G)	Three-node(JVMmemory12G )
30000 以上	6000 以上	600~900	Three-node(JVMmemory16 G)	Three-node(JVMmemory16G )

**Description:**

Number of registered users: Users registered by the system

Number of online users: The number of online users at the same time in a certain period of time (between 5% and 20% of the total number of registered users, 20%)

Number of concurrent users: The number of users who send requests to the server at the same time (usually about 10–25% of the number of online users)

Recommended configuration: 90% of users have access time less than 2s

Minimum configuration: 90% of users have access times below 4s

JVMmemory: The memory assigned to the FineReport container Tomcat.

Physical memory: The hardware's memory is recommended to be at least 1.25 times that of jvmmemory.

CPU: The test server cpu has two pieces, the model is Intel Xeon E5–2620 V4.

Note: Network and database sql processing affect the experience duration. This report only deals with the length of FineReport processing, intranet, non-complex sql, and can ignore network speed and database factors.

## 8. Contact us

Learn more about FineReport, you can –

- Product official website: <http://www.finereport.com/en/>
- FanRuan Forum: [bbs.fanruan.com](http://bbs.fanruan.com)
- Business consultation number: 4008-5050-48
- Business consultation mail: [international@finereport.com](mailto:international@finereport.com)

Looking for technical help with FineReport, you can –

- QQ: 800049425
- Technical support number: 4008-5050-48
- Technical support mail: [support@fanruan.com](mailto:support@fanruan.com)
- Complaint feedback number: 186-0252-2339
- Complaint feedback mail: [complain@fanruan.com](mailto:complain@fanruan.com)
- Online documentation: [help.finereport.com](http://help.finereport.com)
- QQ group: 370362224、166295690、165887890、305156612

## 9. About FanRuan

Fanruan Software Co., Ltd. is the front runner of BI and reporting tools, leading its peers in size, service network, brand influence, market share and sales. FanRuan focuses on business intelligence and data analysis for 12 years. In 2017, sales of soft sales exceeded 278 million yuan, and it has been the leader in domestic big data/business intelligence (BI) for many years.

After 12 years of development, FanRuan has cooperated with over 7,000 world and China Top 500 customers and organizations, including CITIC Bank, Industrial Securities, Tianhong Fund, 58 City, Greentown Group, Shanghai Pharmaceutical, Geely Automobile, Taier Heavy Industry, SF Express, Xiamen Airlines, Yonghui Supermarket, Uniform Starbucks, Mengniu Dairy, TCL, Xinhua Bookstore, Deloitte Consulting, Peking University, Datang Telecom, Yuntianhua Group, China Railway, State Taxation Bureau, New Hope Liuhe Group, Fu Star Group and so on.

FanRuan has business intelligence and data analysis products with independent intellectual property rights, and is the only domestic manufacturer to be selected as Gartner Global Market Guide. Empowering over 2 million end users with big data analysis by providing efficient, easy-to-use, simple and intelligent big data analytics tools. Its products include: enterprise-level WEB reporting software – FineReport, the global market guide for Gartner reporting platform; BI tools for self-service big data analysis – business intelligence FineBI, selected for CEIA China Enterprise IT Award – Best BI solution; platform dedicated to mobile data analysis – FineMobile; large-screen data visualization solutions focused on large-screen smart decision-making; and powerful and easy-to-use cloud application building tools – Jian Daoyun; these products are in a leading position in their fields.

FanRuan has been involved in the data analysis industry for more than ten years. We firmly believe that data is an important asset for enterprises, organizations and even individuals. We are committed to helping companies understand and use their data, so that business intelligence and data analysis can enhance the ability to create wealth for enterprises. Make data truly productive!

### Brand Leadership

#### 1. Organization size:

FanRuan believes in doing excellent things with outstanding people. At present, the company has over

700 employees, more than 90% of which are from domestic famous schools, and have absorbed outstanding graduates from overseas Ivy League universities. “High quality, high academic qualifications and strong ability” is a common feature of FanRuan employees.

## 2.Scope of services

At present, FineReport has 11 branch offices and 37 offline service outlets in America, Thailand, Korea, Japan, Taiwan and other places across the Mainland China,delivering exquisite, professional, timely and highly efficient local services to all large and medium–sized cities and regions.We also provide various services to handle your problems in time.

## 3. Sales performance

Since its establishment, FanRuan has maintained rapid growth. In 2017, its sales amounted to nearly 278 million yuan, ranking first in the business intelligence software field in China.

## 4. Total customer

Since its development, FanRuan has developed more than 7,000 partners, such as Starbucks, Nike, IBM, HITACHI, Huawei, Alibaba, and so on. FanRuan has been widely recognized and praised by users.

## **Brand influence**

In the past ten years, FanRuan has accumulated a large number of loyal users and good reputation with high–quality products, and the brand influence has increased year by year.

## 1.Typical clients

62 of "Fortune" Top 100 Chinese enterprisest choose Fanruan; 52 of Forbes China's most potential

100 listed companies cooperated with FanRuan.

69 of China's top 100 software companies are our partners;142 of China's 244 primary system integrators cooperate with FanRuan

Among the top 100 enterprises in China's pharmaceutical industry, real estate industry, manufacturing industry and chemical industry, FanRuan's customer coverage rate is above 36%, ranking first in the industry.

## 2. Industry coverage

FanRuan users are spread across all 233 sub-sectors covered by the National Bureau of Statistics (GB/T 4754-2011) statistical standards, including finance, real estate, construction, health care, vehicles, machinery manufacturing, transportation, trade circulation, and consumer spending. Cultural media, service consulting, education and research, government organizations, public services, the Internet, electronics, communications, software services, petrochemicals, environmental agriculture.

## 3. User scale

FanRuan products have been successfully used in information projects of 20,000 companies or organizations. User developers with more than 30W, more than 200W users every day, use FanRuan products for data analysis, query, and filling.

## 4.Brand attention

FanRuan and its products ranked first in the industry in terms of comprehensive attention to search engines, social media and vertical websites, with an increase of 81% in 2017. FanRuan has received dozens of awards and honors from a number of professional IT consulting organizations and vertical media including Gartner.

## 5.Product System

The product system covers all the data analysis application scenarios of the enterprise, and provides the large business intelligence solution from big data collection, processing, analysis to big data visualization based on the advantages of natural integration of original products.

FineBI, a new generation of BI tools for self-service big data analytics, is designed to help business users in their business departments fully understand and leverage their data. With a powerful big data engine and automatic modeling, FineBI can create a wide variety of data visualization information by simply dragging and dropping operations in the dashboard panel, and can perform data drilling, linkage and filtering operations. The data generated during the business operation process is analyzed and explored, and business decision adjustments are made in a timely manner, so that big data releases more unknown potential.

FineReport, enterprise-level web reporting tool, front runner of Chinese reporting software. FineReport is easy to learn and use, powerful, and simple drag-and-drop operation can produce Chinese-style complex reports, easily realize the diverse display of presentations, interactive analysis, data entry, rights management, timing scheduling, printout, portal management and mobile applications. With the non-encoding concept of FineReport, implementers can easily build flexible data analysis, network direct reporting and other application systems, greatly shortening the project cycle and reducing implementation costs. For the final enterprise user, FineReport can solve the problem of enterprise information islands perfectly, and let the enterprise completely out of the weird circle of software industry—"The new software that needs to spend money every year to buy new software, but the new software bought can not meet the changing needs of the year".

FineMoblie, a mobile data analysis platform, provides mobile-side data analysis and display solutions for all products of FanRuan. It adopts two parsing methods of HTML5 and native APP, has a good interactive experience, multiple security protections, and functions comparable to PC: support mobile data entry, data query, data linkage and drill, support mobile scanning code input, annotation Share, take photos and more. At the same time, it can support the integration with WeChat and DingTalk to meet the needs of multi-scenario mobile data analysis.

FanRuan also provides digital large–screen solutions for enterprises. Through the data analysis products, users can build a powerful and comprehensive “management dashboard”. Without special design, the data management information of the enterprise can be perfectly placed on any Screens, such as trading halls, control centers, production workshops, exhibition centers and other places on the LED large screen. It can achieve perfect adaptive effect. For large–screen real–time monitoring information, such as stock price and real–time trading status of double 11 activities, the database data can be synchronized in real time through the automatic refresh function of chart attributes. It also supports users to design DIY for large–screen display content. It holds nearly 20 chart types and extended chart styles, and supports adding text, images, and web information to realize various DIY layout styles.

At the same time, based on the years of accumulation of enterprise–level data analysis software services and the continuous deepening of the industry in the field of productization, FanRuan also provides industry–oriented consulting services for industry customers with more valuable enterprise information and data management. At present, consulting services have been successfully carried out in many industries and government organizations, such as banking, communications, medical and health, chemical metals, retail e–commerce, real estate, securities futures, textile and footwear, and taxation. FanRuan expects to continue to provide the application value of FanRuan products and the overall data and information level of the industry through continuous precipitation and sharing.

–END–