

■ GENERAL

InfoWell operates on an FCN/FCJ controller to provide information transmission functions on the Web or via e-mail using a stand-alone FCN/FCJ with no SCADA software. InfoWell allows monitoring and operation in a stand-alone FCN/FCJ of equipment for which constant monitoring by SCADA software is not necessary. InfoWell is comprised of the following two application portfolios:

- **Web Application Portfolio**
An application portfolio which enables Web server on FCN/FCJ to transmit data to a Web browser on a PC in the network.
- **E-mail Application Portfolio**
An application portfolio which enables FCN/FCJ controller to send an e-mail automatically when any message or alarm occurs in the FCN/FCJ controller.

■ FEATURES

- InfoWell allows the addition of information transmission functions to an FCN/FCJ controller.
- Web Application Portfolio uses an FCN/FCJ as a Web server, enabling PCs on the network to monitor or operate equipment.
- If E-mail Application Portfolio is used, e-mail can be sent to PCs in OA equipment areas or mobile phones; messages or data can thus be received from equipment anywhere.
Web Application Portfolio and E-mail Application Portfolio, when used together, allow unattended operation of equipment by an FCN/FCJ controller, transmission of an e-mail upon an equipment failure, and confirmation/operation of equipment in an abnormal state through a Web browser using a PC.
- The application portfolios can easily be set on a Web without regardless of special programming knowledge.

■ WEB APPLICATION PORTFOLIO

● Function Overview

Web server on FCN/FCJ distributes control application data to a network.

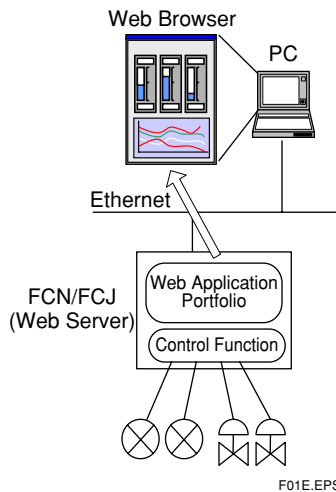


Figure Overview of Web Application Portfolio

● Detailed Functions

Three types of Web page displays supply feature-rich displays as shown in the table below. Display type can be selected.

Table Functions

Type of display	Description
Table display type	Displays data in a table. Data can be displayed and set.
Graphical display type	Graphical data display. Data can be updated periodically.
Real-time update type	Data can be updated in real time and displayed.

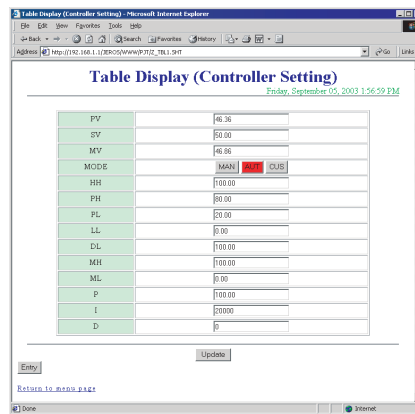
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Table Displays

Type of display	Display	Description
Table display type	Table	Displays multiple data in a table.
Graphical display type	Bar graph	Displays array data in a bar graph.
	Line-segment graph	Displays array data in a line-segment graph.
	Message display	Displays FCN/FCJ system messages and application messages in chronological order.
Real-time update type	Numeric-value display	Displays numeric data in real time.
	Bar display	Displays data in a bar graph in real time.
	Trend display	Displays changes in time-series data in a trend graph.

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Table Display Type



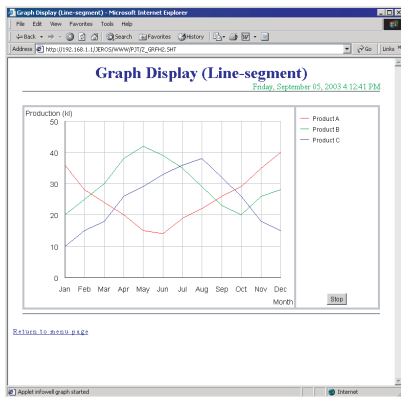
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Figure Table Display Type

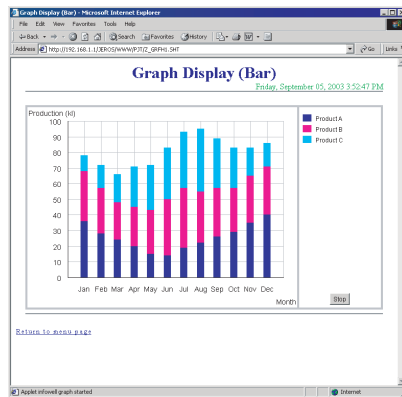
In this type, data are displayed in a table in HTML format.

Data can be set and displayed.

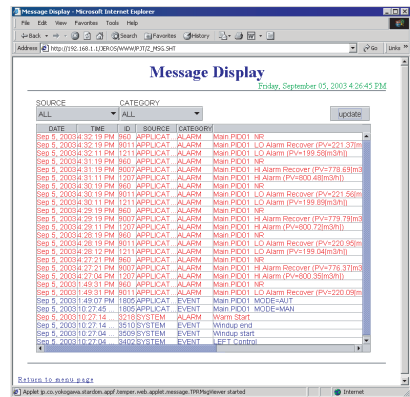
Graphical Display Type



Line-segment graph



Bar graph



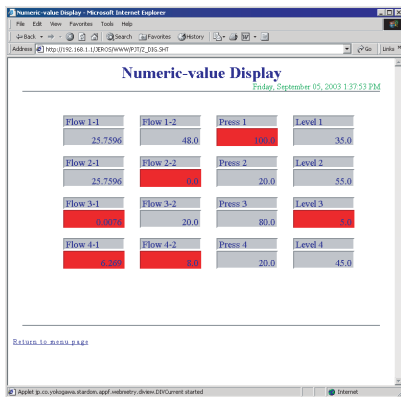
Message display

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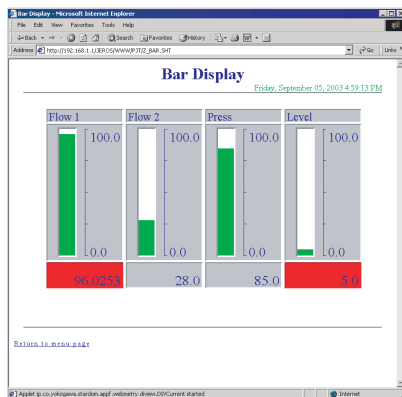
Figure Graphical Display Type

In this type of display, data are displayed via Java applets running in a Web browser. Data can be updated periodically, except message displays. Pull-type data updating is implemented where Java applets periodically request data from an FCN/FCJ controller.

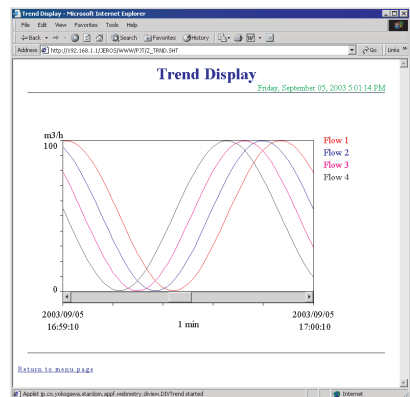
Real-time Update Type



Numeric-value display



Bar display



Trend display

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Figure Real-time Update Type

Real-time update type displays data via Java applets running in a Web browser. With this update, data can be updated in real time. In this type of display, data are acquired periodically with a data gathering and storing program on an FCN/FCJ, and those data are transmitted to a Java applet for push-type automatic data updating.

● **Function Specifications**

Common Specifications

- Number of Web pages: 50 maximum for each FCN/FCJ
- Number of clients: Maximum of five simultaneous accesses
- Screen switching: Screen switching from menu screen via hyperlinks
- Accessible data
 - IEC 61131-3 standard data: REAL, INT, SINT, DINT, UINT, USINT, UDINT, BOOL, WORD, DWORD, TIME, BYTE, STRING
 - FCN/FCJ standard data: CData_REAL, CData_INT
- Security: Access restricted by user name and password when connected to an FCN/FCJ. Security can be managed by users with control privileges and execution privileges.

Specifications on a Display Function Basis

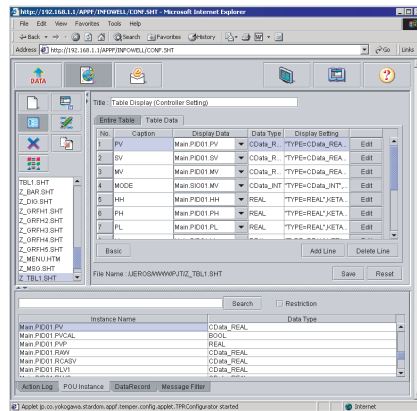
	Table display type	Graphical display type	Real-time update type
Screen	Table display in HTML format (*1)	Line-segment graph (*2) Bar graph (*2) Message display	Numeric-data display Bar display Trend display (*4)
Data display	Data display in HTML format	Display via a Java applet	Display via a Java applet
Data communications	HTTP protocols	HTTP protocols	Dedicated protocols (*5)
Data display	Possible	Possible	Possible
Data set	Possible	Impossible	Impossible
Data update	Manual update	Manual update or Automatic update (*3)	Automatic update (*6)
Maximum data items for each FCN/FCJ	Not limited	Not limited	100 data items (*7)

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- *1: Web pages in table displays can easily be created by modifying templates prepared in the specific application. You can also customize Web pages if you have knowledge of HTML.
- *2: Line-segment graphs and bar graphs are plotted with array data by setting them on X- and Y-axes. One Web page allows one-data set (up to 200 data items) on the X-axis and 16-data set (up to 200 data items for each data set) on the Y-axis. Specifying a line-segment graph and a bar graph per data item on the Y-axis, you can also mix line-segment graphs and bar graphs on one Web page.
- *3: Automatic update periods in graphical displays can be set from 5 seconds and be increment per second (the default is 30 seconds). Message displays, however, are updated manually. Data updating in this display is carried out from a Web browser. So, data may not be updated at fixed intervals depending on the CPU load of the FCN/FCJ.
- *4: Trend data display specifications are as follows:
 - Data gathering starts when display appears.
 - Data displayed on each page: up to 13 data items (scale definitions up to 2 for each page)
 - Data gathering period: Same as automatic data update period in real-time data updating described below. (individual settings are not possible)
 - Display period (time span in X-axis): Specified in minutes for each Web page (more than one minute on a minute basis; the default is two minutes)
- *5: Data communications for a data update are performed by a dedicated protocol, so normally they do not get through security system, or firewall, connecting the Internet and an intranet. If you use this application, display the Web page on a PC on the intranet. For accessing from outside the company, either setting firewall appropriately or connecting the intranet through a remote access data link for data display. In details, contact your network administrator.
- *6: Automatic update period in a real-time update type can be set on a per-second basis (the default is 2 seconds). In this type of display, data can be updated periodically using a specific program running on the FCN/FCJ, which acquires and transmits data periodically. However, the display screens may be delayed depending on the load on the network (amount of data being transferred). The data update period is a single setting for the FCN/FCJ. To set the data update period for either data or screen basis cannot be done. In addition, if E-mail Application Portfolio is also used, this data update period and the data and message monitoring period in E-mail Application Portfolio are the same (individual settings are not possible).
- *7: The maximum number of data items for each FCN/FCJ is the maximum number of data items for all data items used on a Web page in the real-time update type. In this type of data update, the CPU in an FCN/FCJ is always used regardless of whether a Web page is displayed or not. The CPU in an FCN/FCJ requires 4-m seconds for acquiring one data item, so if many data items are used, a prolonged update period should be set. (CPU utilization should be 60% or less, including control applications and this type of portfolio.) Control applications take priority over this type of application, so if a larger number of data items is to be acquired, control execution takes priority, and data acquisition may be delayed. If E-mail Application Portfolio is also used, the above maximum number of data items including the number of data items that are acquired and monitored in E-mail Application Portfolio are applied. (Each data item used in both Web Application and E-mail Application Portfolios is counted as one data item.)

● Configuration

Runs on FCN/FCJ Java functions with no Java programming required. Configuration is done by connecting to the FCN/FCJ from the Web browser of a PC.



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Figure Example of Web Application Configuration Screen

All data used in the control applications are displayed on the configuration screen. You can easily set data to a Web page by using the copy and paste functions (*1). In addition, Web pages and displayed data can be changed without halting FCN/FCJ control.

- *1: Before using this application portfolio, download control applications to the FCN/FCJ. Create control applications with a Logic Designer.

● Operating Environment

Controller

Hardware	Autonomous Controller FCN/FCJ (*1)
FCN/FCJ Basic Software	R1.60.01 or later (*2)

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- *1: This application portfolio cannot be used in an FCN's dual-redundant CPUs. If this application is additionally installed in an existing autonomous controller, check if the controller style is S2 or later. (This application portfolio cannot be used with controller style S1.)

- *2: Select Java functions using the suffix code for the FCN/FCJ Basic Software License (Model: NT711AJ).

Note: This portfolio uses the Webmetry basic library functions, and a license for the Webmetry basic library is included in this application portfolio license, so purchasing a new Webmetry basic library license is not required.

	PC for Configuration	PC for Web client use
PC	IBM PC/AT compatible PC	IBM PC/AT compatible PC
CPU	Pentium III or Celeron 600 MHz or faster	Pentium III or Celeron 600 MHz or faster
Ethernet adapter	Any that can be used in the OS's below.	Any that can be used in the OS's below.
CD-ROM drive	To download this portfolio to the FCN/FCJ	—
OS	Windows2000 Professional SP4 WindowsXP HOME Edition SP1, SP2 WindowsXP Professional SP1, SP2	Windows2000 Professional SP4 WindowsXP HOME Edition SP1, SP2 WindowsXP Professional SP1, SP2
Web browser	Internet Explorer 6.0 (SP1, SP2) + Sun Java Plug-in 1.4.2_09 (*1)	Internet Explorer 6.0 (SP1, SP2) + Sun Java Plug-in 1.3.1_04, 1.4.2_09 (*2)

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- *1: When used in the same PC as a VDS HMI client, check that the Java plug-in version required for the HMI client matches the above Java plug-in version. If it does not match, use a different PC for the HMI client.
- *2: Where only table display type is displayed, no Java plug-in is required. When used in the same PC as a VDS HMI client, check that the Java plug-in version required for the HMI client matches the above Java plug-in version. If it does not match, use a different PC for the HMI client.

E-MAIL APPLICATION PORTFOLIO

● Function Overview

E-mail Application Portfolio enables FCN/FCJ controllers to send e-mail automatically when an event occurs.

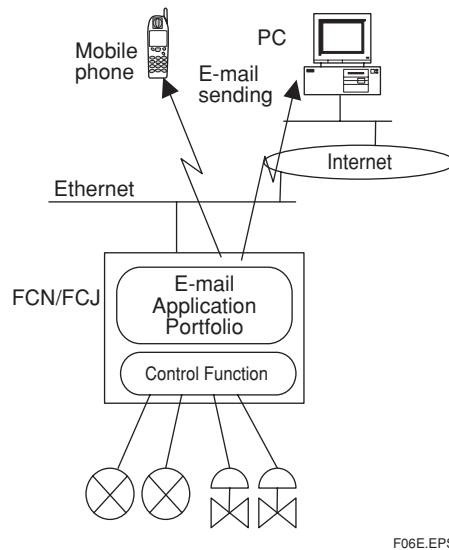


Figure Overview of E-mail Application Portfolio

● Function Overview

This application enables to send two types of e-mail as shown below.

- Message Sending
An e-mail is sent automatically if an FCN/FCJ system message or application message (from control applications) is occurred.
- Alarm Sending
High and low limit set data value and contact status in control applications are detected and sends e-mail. For this alarm detection, E-mail Application Portfolio carries out data gathering and alarm detection independently from those in the control applications.

Message Sending

An example of e-mail sending for a message is shown below.

```

FCX1 192. 168. 1. 1
2003/02/08 0:00:00
Type = application alarm Occur, Application alarm recover
Instance Name = Task1. Loop1
Key Word = HH, LL
2003/02/27 20:19:10 alarm
message. application. Task1. Loop. 2206. HH alarm (PV = 88%)
.
.

```

Figure Example of E-Mail Body for Message Sending

Alarm Sending

An example of e-mail sending for an alarm is shown below.

```

FCX1 192. 168. 1. 1
2003/02/08 0:00:00
Temperature inside the tank is in HIGH_ALARM status. The
current value is 120 °C.
Switch 1 is in BOOL_ALARM status. The current value is true.
.
.
.

```

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Figure Example of E-Mail Body for Alarm Sending

● Detailed Functions

Common Functions

- E-mail sending protocol: SMTP (*1) (*2)
- Data monitoring period: One second or more, in one-second intervals (the default is 2 seconds) (*3)
- Message monitoring period: One second or more, in one-second intervals (the default is 2 seconds)
- Maximum number of acquired and monitored data sets: 100 (*4)
 - *1: Supports the authentication function of SMTP servers (SMTP Authentication/Pop Before SMTP).
 - *2: For e-mail sending, an e-mail server on the intranet on which the FCN/FCJ is located is needed. (Note that normally data communications from an FCN/FCJ to an e-mail server cannot get through a security system or firewall.)
 - *3: Data monitoring period is a single setting in the relevant system. (Note that individual settings on a data-by-data basis cannot be made.) In addition, if Web Application Portfolio is used simultaneously, the data monitoring period and automatic data update period in real-time data updating in Web Application Portfolio are the same (individual settings are not possible).
 - *4: The number of acquired and monitored data sets is the total maximum number per FCN/FCJ for data to be monitored in an alarm sending. For data acquisition and monitoring, the CPU in the FCN/FCJ is always used. It is necessary to use the CPU for 4-m seconds in order to acquire one data item. So, if the number of data items to be acquired is large, extend the monitoring time period. (CPU utilization should be 60% or less, including control applications and this application.) Control applications take priority over this application, so if a larger number of data items is to be acquired and monitored, control execution takes priority, and data acquisition and monitoring may be delayed. If Web Application Portfolio is also used, data including those that are used in a Web page in real-time update type are limited to the above number of data items. (One data item is used in Web Application and E-mail Application, and is counted as one data item.)

Message Sending

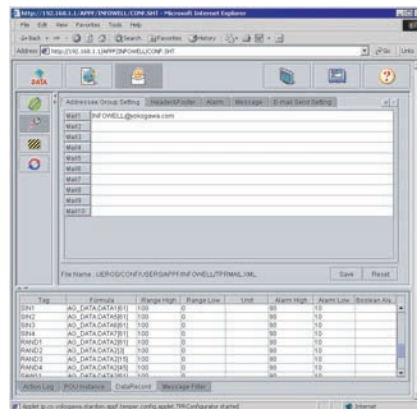
- E-mail sending condition number: 10 maximum
- E-mail sending conditions:
 - E-mails are sent by specifying the following conditions or specifying logical add conditions with OR.
 - Messages:
 - System event messages
 - System alarm messages
 - Application event messages
 - Application alarm messages (occurrence)
 - Application alarm messages (recovery)
 - Instance name: PAS POU instance name
 - Keyword: HH, LL, H, L, alarms, etc.
- E-mail:
 - E-mail body is composed of fixed-length character strings that can be freely set with the following character variables.
 - For message sending, an e-mail body can be set.
 - Instance name
 - Keyword
 - Time when message occurred
 - Type of message
 - Source of message occurrence
 - Message ID
 - Body of message

Alarm Sending

- E-mail sending condition number: 50 maximum
- E-mail sending conditions:
Sends an e-mail showing specified analog data high- and low-limit alarms, and True or False contact data. (These conditions are alarm conditions independently detected within this portfolio.)
- E-mail:
E-mail body is composed of fixed-length character strings that can be freely set with the following character variables.
For alarm sending, fifty different e-mail bodies can be set.
 - Data name (data name set in this application)
 - Alarm statuses (NORMAL, HIGH_ALARM, LOW_ALARM, BOOL_ALARM)
 - Data value
 - Engineering units for data

● Configuration

Runs on FCN/FCJ Java functions with no Java programming required. Configuration is done by connecting to the FCN/FCJ from the Web browser of a PC.



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Figure Example of E-mail Application Portfolio Configuration Screen

All data used in control applications are listed on the configuration screen. Data setting for e-mail sending conditions can easily be done using the copy and paste functions (*1). E-mail sending conditions and e-mail bodies can also be changed without stopping FCN/FCJ controls.

*1: Before using this application portfolio, download the control applications to an FCN/FCJ . Create control applications with a Logic Designer.

● Operating Environment

Controller

Hardware	Autonomous Controller FCN/FCJ (*1)
FCN/FCJ Basic Software	R1.60.01 or later (*2)

- *1: This application portfolio cannot be used in an FCN's dual-redundant CPUs. If this application is additionally installed in an existing autonomous controller, check if the controller style is S2 or later. (This application portfolio cannot be used with controller style S1.)
- *2: Select Java functions using the suffix code for the FCN/FCJ Basic Software License (Model: NT711AJ).
- Note: This portfolio uses the Webmetry basic library functions, and a license for the Webmetry basic library is included in this application portfolio license, so purchasing a new Webmetry basic library license is not required.

PC for Configuration

PC	IBM PC/AT compatible PC
CPU	Pentium III or Celeron 600 MHz or faster
Ethernet adapter	Any that can be used in the OS's below.
CD-ROM drive	To download this application to FCN/FCJ
OS	Windows 2000 Professional SP4 Windows XP Home Edition SP1, SP2 Windows XP Professional SP1, SP2
Web browser	Internet Explorer 6.0 (SP1, SP2) + Sun Java Plug-in 1.4.2_09 (*1)

- *1: When used in the same PC as a VDS HMI client, check that the Java plug-in version required for the HMI client matches the above Java plug-in version. If it does not match, use a different PC for the HMI client.

■ METHOD OF SOFTWARE SUPPLY

● Media

Programs and Help for Web Application Portfolio and E-mail Application Portfolio in InfoWell are supplied with the FCN/FCJ Application Portfolio Media (Model: NT205AJ).

● Web Application Portfolio License

An Order ID Sheet with the order ID and password comes with the Web Application Portfolio License. After purchase, access the specified Yokogawa Web site page and enter the order ID number and password to obtain the license ID number. To use Web Application Portfolio, register the license ID number with the FCN/FCJ system card.

● E-mail Application Portfolio License

An Order ID Sheet with the order ID and password comes with the E-mail Application Portfolio License. After purchase, access the specified Yokogawa Web site page and enter the order ID number and password to obtain the license ID number. To use E-mail Application Portfolio, register the license ID number with the FCN/FCJ system card.

■ MODELS AND SUFFIX CODES

● Web Application Portfolio License

		Description
Model	NT8012J	Web Application Portfolio License (InfoWell)
Suffix Code	-L	License
	W	Issued at Web
	1	Always 1
	1	Always 1
	A	Standard

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● E-mail Application Portfolio License

		Description
Model	NT8013J	E-mail Application Portfolio License (InfoWell)
Suffix Code	-L	License
	W	Issued at Web
	1	Always 1
	1	Always 1
	A	Standard

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■ ORDERING INSTRUCTIONS

Specify the model and suffix codes when ordering.

■ TRADEMARKS

- STARDOM is a trademark of Yokogawa Electric Corporation.
- ASTMAC is a registered trademark of Yokogawa Electric Corporation.
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- Microsoft Windows is a registered trademark of Microsoft Corporation in the United States and other countries.
- Ethernet is a registered trademark of Xerox Corporation in the United States.
- IBM, IBM PC/AT are registered trademarks of the IBM Corporation.
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