FUJITSU

FUJITSU Software Interstage Information Integrator V11.0.0

Operation Guide

Windows/Solaris/Linux

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Preface

This document deals with the following products:

- Interstage Information Integrator Standard Edition V11.0.0

Additionally, the optional products listed below are also included.

- Interstage Information Integrator Agent V11.0.0

Purpose of This Document

This document explains how to operate Interstage Information Integrator (from now on, referred to as "Information Integrator").

Intended Readers

This document is intended for the following readers:

- Users who will operate Information Integrator

The following knowledge is required to read this document:

- General knowledge about operating systems
- General knowledge about the internet
- General knowledge about database functions and how to use them
- General knowledge about public clouds
- General knowledge about forms

Structure of This Document

Chapter 1 Running Process Flow

This chapter explains the flow of the Process Flow operations.

Chapter 2 Executing Process Flow

This chapter explains how to execute Process Flow and monitor errors.

Chapter 3 Error Recovery

This chapter explains the action that should be taken when Process Flow errors occur.

Chapter 4 Maintenance

This chapter explains Information Integrator maintenance.

Appendix A Log File Reference

This appendix describes the content of the various logs that are output to Information Integrator Server.

Positioning of This Document

FUJITSU Software Interstage Information Integrator Structure and Overview of Manuals

This document lists the manual structure for Information Integrator, as well as which manuals should be referred to for different user purposes and objectives.

FUJITSU Software Interstage Information Integrator System Design Guide

This document presents an overview of Information Integrator functions, as well as information about system configurations and design issues.

FUJITSU Software Interstage Information Integrator Setup Guide

This document explains how to create an environment after Information Integrator has been installed.

FUJITSU Software Interstage Information Integrator Operation Guide [this document]

This document explains how to operate Information Integrator.

FUJITSU Software Interstage Information Integrator Command Reference

This document explains the commands provided by Information Integrator.

FUJITSU Software Interstage Information Integrator Transfer Accelerator Setup Guide

This document explains the outline, the environmental construction method, and operation procedure of III Transfer Accelerator.

FUJITSU Software Interstage Information Integrator Message Guide

This document lists the messages output by Information Integrator.

FUJITSU Software Interstage Information Integrator Glossary

This document is a glossary of the terms used in the Information Integrator manuals.

FUJITSU Software Symfoware Server Message Guide

This guide explains lists the messages output by Symfoware Server.

Conventions Used in This Document

Manual titles

The manual titles listed in this document are abbreviated as below.

Information Integrator manual

Abbreviation	Official title
Structure and Overview of Manuals	FUJITSU Software Interstage Information Integrator Structure and Overview of Manuals
System Design Guide	FUJITSU Software Interstage Information Integrator System Design Guide
Setup Guide	FUJITSU Software Interstage Information Integrator Setup Guide
Operation Guide (This document)	FUJITSU Software Interstage Information Integrator Operation Guide
Command Reference	FUJITSU Software Interstage Information Integrator Command Reference
Transfer Accelerator Setup Guide	FUJITSU Software Interstage Information Integrator Transfer Accelerator Setup Guide
Message Guide	FUJITSU Software Interstage Information Integrator Message Guide
Glossary	FUJITSU Software Interstage Information Integrator Glossary

Related manual

Abbreviation	Official title
Symfoware Message Guide	FUJITSU Software Symfoware Server Message Guide

Abbreviations

Product names referred to in this document have been abbreviated as shown in the table below.

Note that system names and product names in this document are not accompanied by trademark symbols such as Ô or Ò.

Abbreviation	Official title
Windows	Microsoft® Windows Server® 2012 Foundation
	Microsoft® Windows Server® 2012 Essentials
	Microsoft® Windows Server® 2012 Standard
	Microsoft® Windows Server® 2012 Datacenter
	Microsoft Windows Server 2008 Foundation
	Microsoft Windows Server 2008 Standard

Abbreviation	Official title
	Microsoft Windows Server 2008 Enterprise
	Microsoft Windows Server 2008 Datacenter
	Microsoft Windows Server 2008 Standard without Hyper-V
	Microsoft Windows Server 2008 Enterprise without Hyper-V
	Microsoft Windows Server 2008 Datacenter without Hyper-V
	Microsoft Windows Server 2008 R2 Foundation
	Microsoft Windows Server 2008 R2 Standard
	Microsoft Windows Server 2008 R2 Enterprise
	Microsoft Windows Server 2008 R2 Datacenter
	Microsoft Windows Server 2003, Standard Edition
	Microsoft Windows Server 2003, Enterprise Edition
	Microsoft Windows Server 2003, Datacenter Edition
	Microsoft Windows Server 2003, Standard x64 Edition
	Microsoft Windows Server 2003, Enterprise x64 Edition
	Microsoft Windows Server 2003, Datacenter x64 Edition
	Microsoft Windows Server 2003 R2, Standard Edition
	Microsoft Windows Server 2003 R2, Enterprise Edition
	Microsoft Windows Server 2003 R2, Datacenter Edition
	Microsoft Windows Server 2003 R2, Standard x64 Edition
	Microsoft Windows Server 2003 R2, Enterprise x64 Edition
	Microsoft Windows Server 2003 R2, Datacenter x64 Edition
	Windows®8
	Windows®8 Pro
	Windows®8 Enterprise
	Windows®7 Home Premium
	Windows®7 Professional
	Windows®7 Enterprise
	Windows®7 Ultimate
	Windows® Vista Home Basic
	Windows® Vista Home Premium
	Windows® Vista Business
	Windows® Vista Ultimate
	Windows® Vista Enterprise
	Windows® XP Home Edition
	Windows® XP Professional
	Windows® XP
Windows XP	Windows® XP Home Edition
	Windows® XP Professional
Windows Vista	Windows® Vista Home Basic

Abbreviation	Official title
	Windows® Vista Home Premium
	Windows® Vista Business
	Windows® Vista Ultimate
	Windows® Vista Enterprise
Windows 7	Windows®7 Home Premium
	Windows®7 Professional
	Windows®7 Enterprise
	Windows®7 Ultimate
Windows 8	Windows®8
	Windows®8 Pro
	Windows®8 Enterprise
Windows Server 2003	Microsoft Windows Server 2003, Standard Edition
	Microsoft Windows Server 2003, Enterprise Edition
	Microsoft Windows Server 2003, Datacenter Edition
	Microsoft Windows Server 2003, Standard x64 Edition
	Microsoft Windows Server 2003, Enterprise x64 Edition
	Microsoft Windows Server 2003, Datacenter x64 Edition
	Microsoft Windows Server 2003 R2, Standard Edition
	Microsoft Windows Server 2003 R2, Enterprise Edition
	Microsoft Windows Server 2003 R2, Datacenter Edition
	Microsoft Windows Server 2003 R2, Standard x64 Edition
	Microsoft Windows Server 2003 R2, Enterprise x64 Edition
	Microsoft Windows Server 2003 R2, Datacenter x64 Edition
Windows Server 2008	Microsoft Windows Server 2008 Foundation
	Microsoft Windows Server 2008 Standard
	Microsoft Windows Server 2008 Enterprise
	Microsoft Windows Server 2008 Datacenter
	Microsoft Windows Server 2008 Standard without Hyper-V
	Microsoft Windows Server 2008 Enterprise without Hyper-V
	Microsoft Windows Server 2008 Datacenter without Hyper-V
	Microsoft Windows Server 2008 R2 Foundation
	Microsoft Windows Server 2008 R2 Standard
	Microsoft Windows Server 2008 R2 Enterprise
	Microsoft Windows Server 2008 R2 Datacenter
Windows Server 2012	Microsoft Windows Server 2012 Foundation
	Microsoft Windows Server 2012 Essentials
	Microsoft Windows Server 2012 Standard
	Microsoft Windows Server 2012 Datacenter
Failover Clusters	Windows Server 2008 Failover Clusters

Abbreviation	Official title
	Microsoft Cluster Service
Excel	Microsoft® Excel
Word	Microsoft® Word
SQL Server	Microsoft® SQL Server™
Oracle	Oracle® Enterprise Edition
	Oracle® Database Standard Edition
	Oracle® Database Standard Edition One
	Oracle® Database Enterprise Edition
Solaris	Oracle Solaris
Linux	Red Hat Enterprise Linux
UNIX	Solaris
	Linux
XL-DATA/MV	XL DATA MOVER
	Softek XL DATA MOVER
	ETERNUS SF XL-DATA/MV
	OSIV MSP XL-DATA/MV
Interstage Application Server	Interstage® Application Server Standard-J Edition
	Interstage® Application Server Enterprise Edition
Shunsaku	Interstage® Shunsaku Data Manager Enterprise Edition
Data Effector	Interstage® Data Effector Standard Edition
Charset Manager	Interstage® Charset Manager
Linkexpress	Linkexpress
	Linkexpress Advanced Edition
	Linkexpress Standard Edition
	Linkexpress Enterprise Edition
Symfoware Server	Symfoware® Server Standard Edition
	Symfoware® Server Enterprise Edition
	Symfoware® Server Enterprise Extended Edition
DB2	IBM® DB2 9.7 for Linux, UNIX and Windows, Express Edition
	IBM® DB2 9.7 for Linux, UNIX and Windows, Workgroup Server Edition
	IBM® DB2 9.7 for Linux, UNIX and Windows, Enterprise Server Edition

Note

In this manual, please read **Start** menu of Windows in a different way as **Start** Window or **All Apps** Window when you use Windows 8 or Windows Server 2012.

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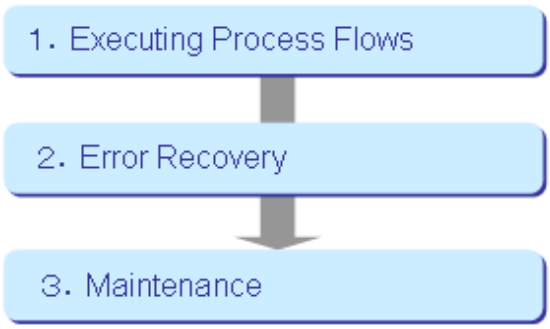
Chapter 1 Running Process Flow

This chapter explains the flow of the Process Flow operations.

1.1 Flow of Process Flow Operations

The flow of the Process Flow operations is shown below.

Figure 1.1 Flow of Process Flow operations



Executing Process Flow

Execute the Process Flow. Refer to "Chapter 2 Executing Process Flows" for information on executing Process Flow.

Point

When the III Agent is used

- When using the Information Integrator Server and the III Agent together, create the Process Flow definition to be used in the III Agent on the Information Integrator Server first, and then deliver the definition to the III Agent. Execute the Process Flows being run after delivery of the definitions is complete. Refer to the *Setup Guide* for details.
- The running of the Process Flows is the same in both the III Agent and the Information Integrator Server. When a Process Flow is to be executed on the III Agent, refer to the procedures (chapters 2 and onward in this manual) for executing the Process Flows on the Information Integrator Server, replacing with III Agent where appropriate.

Error recovery

Refer to "Chapter 3 Error Recovery" for information on the action that should be taken when Process Flow errors occur.

Maintenance

Perform maintenance activities for Information Integrator. Refer to "Chapter 4 Maintenance" for information on maintenance.

Chapter 2 Executing Process Flows

Process Flows for which registration from III Studio is complete are executed as shown below.

- Process Flows are executed according to schedule settings
- Process Flows are executed at the time of collection processing

  The execution of Process Flows that are executed according to schedule settings or at the time of collection processing follows the schedule set in the III Studio.
- Process Flows are executed according to control of the job scheduler product

Alternatively, Process Flow can be executed using the following methods:

- Executing a Process Flow using the Operation Management Client
- Executing a Process Flow using the ifiexeprc operation command

The procedures that are used to execute Process Flows using the Operation Management Client and operation command, and to monitor for errors, are explained below.

Note

Execute the Process Flow while Information Integrator Server is running. Refer to the *Setup Guide* for information on starting/stopping Information Integrator Server.

Point

Process Flows that are displayed in the Operation Management Client

All Process Flows are displayed for privileged users, and privileged users can perform all actions and operations. Operator users can only view those Process Flows for which operator users can perform actions and operations.

2.1 Logging into/Logging out from the Operation Management Client

This section explains how to log into/log out from the Operation Management Client.

Login

1. Start the Operation Management Client.

   Note

   Enable JavaScript and cookies in the browser first.

   Specify the following URL in the Web browser:

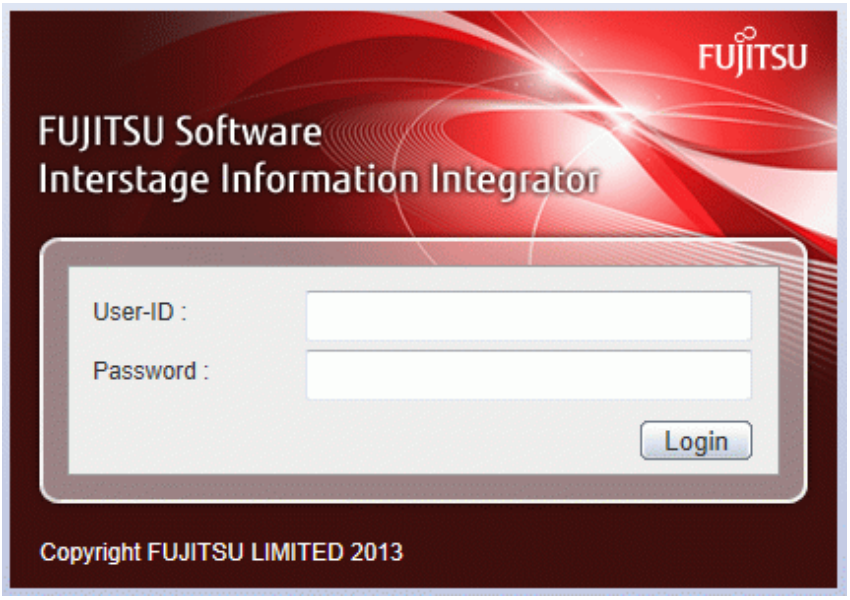
   http://*hostName*:*portNumber*/*WebApplicationName*/index.html

   hostName: Information Integrator server name to be connected

   portNumber: Port number used for the connection. This can be omitted if the port number is '80'.

   WebApplicationName: Name of the Web application to be used to connect to the Information Integrator Server (IIIWEB)

The Operation Management Client login window shown below will be displayed. Refer to the *Operation Guide* for information on using the Operation Management Client.



2. Log in.

   Enter the user ID and password that will be used for the connection, then click the **Login** button.

   If the login fails, take the action indicated by the message that is output.

Logout

1. Click the **LOGOUT** button.

   A message informing you that logout has succeeded will be displayed.

2. Close the browser.

2.2 Executing Process Flows

This section explains how to execute Process Flows.

Note

When storing Salesforce objects or delivering BLOB

Take note of the following points when storing Salesforce objects or delivering BLOB:

- Store Salesforce object
- Before the Process Flow is executed, the data to be stored on Salesforce must be backed up using the Salesforce backup feature.
- This is to protect the Salesforce data in case an error occurs when the objects are stored.
- When delivering BLOB

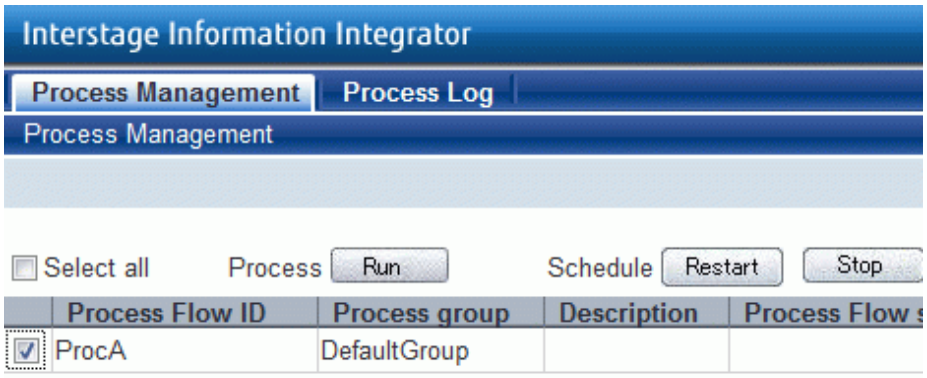
  For data to be delivered that is on Azure Storage, do something to backup the data on Azure Storage before executing the Process Flow. This is to protect the Azure Storage data in case an error occurs when the BLOB is delivered.

  Alternatively, perform operations on Azure Storage so that the rollback feature can be used if there is an error during delivery of the data.

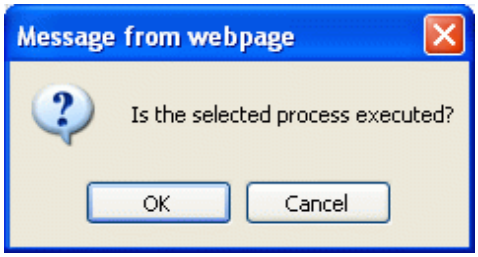
2.2.1 Executing a Process Flow Using the Operation Management Client

This section explains how to execute Process Flows using the Operation Management Client.

1. Select the Process Flow that is to be executed. On the **Process Management** tab, select the checkbox next to the process ID of the Process Flow that is to be executed, then click the **Run** button.
   A maximum of five Process Flows can be executed at the same time.



   The following confirmation window will be displayed.



2. Click the **OK** button.

   The Process Flow will be executed.

2.2.2 Executing a Process Flow Using the Operation Command

Execute the Process Flow using the ifiexeprc (execute Process Flow) command.

```
Ifiexeprc -i processID
```

Refer to the *Command Reference* for information on this command.

2.3 Monitoring Process Flows

This section explains the monitoring of Process Flows.

2.3.1 Monitoring Process Flows

This section explains how to monitor the Process Flow status.

The monitoring methods are as follows:

- Monitoring using the Operation Management Client
- Monitoring using the operation command

2.3.1.1 Monitoring the Status Using the Operation Management Client

The process ID of a Process Flow for which execution has started is displayed on the **Process Log** tab. The monitoring of Process Flows that have been executed is performed on this **Process Log** tab.

Additionally, Process Flows that use the schedule feature are monitored using the list of process IDs that is displayed on the **Process Management** tab.

This section explains how the following statuses are displayed:

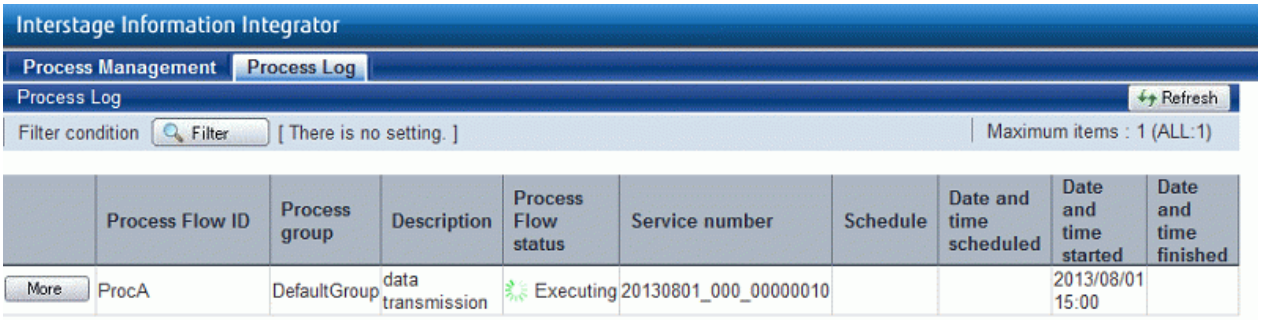
- Status for a Process Flow that is running
- Status for a Process Flow that has ended normally
- Status for a Process Flow that has ended abnormally
- Status for a scheduled Process Flow

Status for a Process Flow that is running

Depending on the processing status of the Process Flow, **Waiting** or **Executing** is displayed for **Process Flow status**.

Example

When the status of the Process Flow (process ID 'ProcA') is Executing

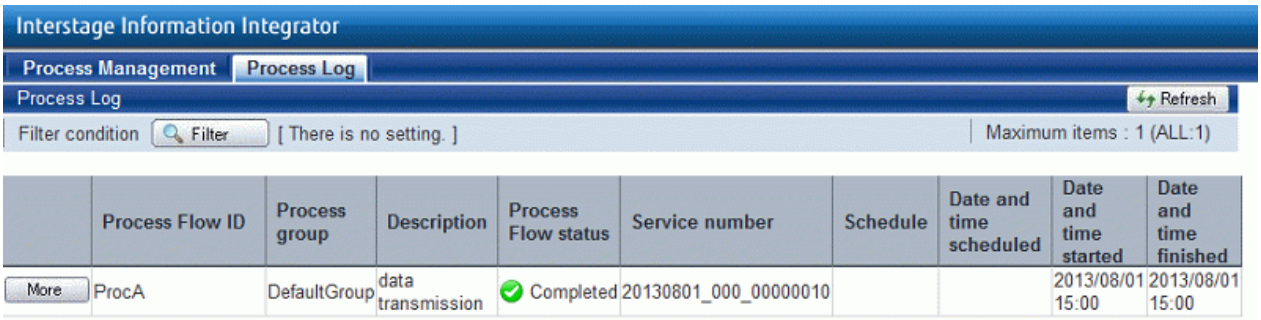


Status for a Process Flow that has ended normally

Completed is displayed for status of the Process Flow.

Example

When the Process Flow (process ID 'ProcA') has ended normally



Status for a Process Flow that has ended abnormally

Aborted is displayed for status of the Process Flow.

Example

When the Process Flow (process ID 'ProcA') has ended abnormally

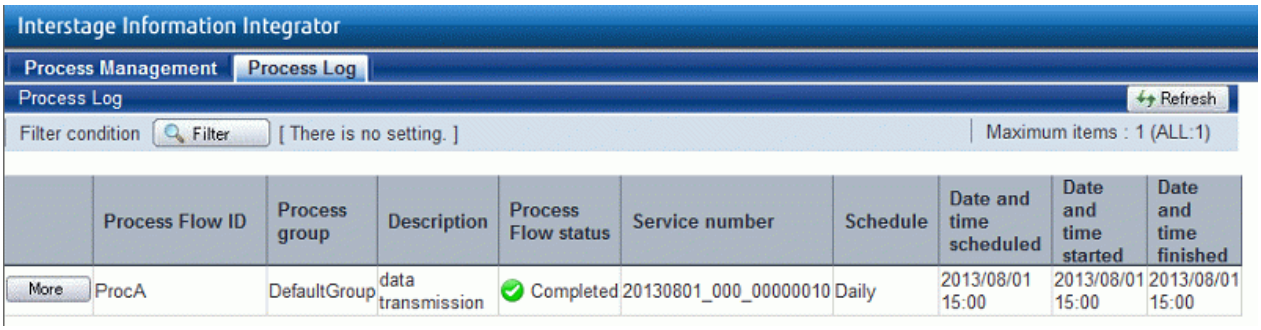
Refer to "Chapter 3 Error Recovery" for information on the action required if a Process Flow has ended abnormally.

Status for a scheduled Process Flow

If the execution of the Process Flow starts according to schedule, the time and date on which the execution started will be displayed in **Date and time started**, as shown below.

Example

When the Process Flow (process ID 'ProcA') is started according to schedule at "15:00 on 1 Aug 2013"



2.3.1.2 Monitoring the Status Using the Operation Command

Monitor the status using the ifidisp (display status) command.

Check the status using one of the methods shown below.

- Checking the execution results from the execution target process service number

  ifidisp -p -ps *serviceNumber*

- Checking the execution results from the execution target process ID

  ifidisp -p -pi *processID* -rs *[YYYYMMDD]hhmm-[YYYYMMDD]hhmm*

  When execution results are checked from the process ID, the results can be displayed by filtering using the process execution start time and date.

In either case, check the **Process Flow status** below.

- Waiting (WAIT)

- Executing (EXEC)

- Completed (CMPN)

- Aborted (CMPE)

Refer to the *Command Reference* for information on this command.

2.4 Pausing/Restarting a Process Flow Schedule

This section explains how to pause a scheduled Process Flow, and restart a paused Process Flow.

Normally, a Process Flow starts when the time that was set in the schedule is reached.

When a Process Flow is paused, starting of the Process Flow according to the schedule will be stopped. On restart, the Process Flow will start in the usual way when the time that was set in the schedule is reached.

2.4.1 Pausing/Restarting a Process Flow Schedule Using the Operation Management Client

This section explains how to pause the execution of a scheduled Process Flow, and restart a paused Process Flow, using the Operation Management Client.

Pause

1. Select the **Process Management** tab.
2. Select the Process Flow that is to be paused. On the **Process Management** tab, select the checkbox next to the process ID of the Process Flow that is to be paused, then click the **Stop** button shown below.

3. A confirmation dialog box will be displayed. The following message will be displayed:

   Is the selected processing number schedule canceled?

4. Click the OK button.

   The Process Flow will be paused. When the Process Flow is paused, **Schedule status** will change from **Ready** to **Pause**.

Restart

1. Select the **Process Management** tab.
2. Select the Process Flow that is to be restarted. On the **Process Management** tab, select the checkbox next to the process ID of the Process Flow that is to be restarted, then click the **Restart** button shown below.

3. A confirmation window will be displayed. The following message will be displayed:

   Is the selected processing number schedule restarted?

4. Click the **OK** button.

   The Process Flow will be restarted. **Schedule status** will change from **Pause** to **Ready**.

2.4.2 Pausing/Restarting a Process Flow Schedule Using the Operation Command

Pause (or restart) the Process Flow schedule using the ificntlsch (pause/restart schedule execution) command.

```
ificntlsch -i processDefinitionID -m {h | r | g}
```

Refer to the *Command Reference* for information on this command.

2.5 Cancelling Execution of Process Function in Process Flow

This section explains how to cancel Process Function for the collection processing, conversion processing, and distribution processing which are executed in a Process Flow.

Process Function cancellation is executed when the status is as shown below.

- For some reason, processing is still running and does not complete (Processing does complete eventually, but this takes a long time)
- For some reason, the Process Function is waiting to be processed or is retrying

2.5.1 Cancelling Execution of a Process Function Using the Operation Management Client

The method for cancelling the execution of a Process Function using the Operation Management Client is shown below.

1. Select the **Process Log** tab.

   A business history list will be displayed.

2. Click the **More** button of the target process.

   A list of Process Functions will be displayed.

3. Check the Process Function status.

   When the Process Function status is as shown below, the Process Function can be cancelled.

   - Waiting
   - Executing
   - Retrying
   - Suspended

4. Select the Process Function to be cancelled, then click the **Cancel** button.

The cancellation of a Process Function will cause the Process Flow status to change to 'ended abnormally'. Refer to "Chapter 3 Error Recovery" for information on the action required when errors occur.

2.5.2 Cancelling Execution of a Process Function Using the Operation Command

Cancel the execution of the Process Function using the ififcncl (cancel Process Function execution) command.

```
ififcncl -sn processingNumber
```

The processing number can be checked by executing the following command:

```
ifidisp -f -st ProcessFunctionStatus
```

When the Process Function status is as shown below, the Process Function can be cancelled.

- WAIT: Waiting to execute
- EXEC: Executing
- TRTY: Retrying
- TWAT: Suspended

Refer to the *Command Reference* for information on the ififcncl (cancel Process Function execution) and ifidisp (display status) commands.

The cancellation of a Process Function will cause the Process Flow status to change to 'ended abnormally'. Refer to "Chapter 3 Error Recovery" for information on the action required when errors occur.

Chapter 3 Error Recovery

This chapter explains the actions to take when there is an error in a Process Flow or when there is no response from a Process Flow.

Note

Using the Information Integrator Server and the III Agent together

Refer to "3.1.4 Using the Information Integrator Server and the III Agent Together" for points to note when taking action when there is an error in a Process Flow executed from the Information Integrator Server.

When a Process Flow has been executed from the III Agent, take the actions described in this chapter for the III Agent and for the Information Integrator Server.

Actions to take when there is an error in a Process Flow

The explanations are in the following order:

- Determining the process where the error occurred
- Determining the causes of the error
- Recovery

Actions to take when there is no response from a Process Flow

The explanations are in the following order:

- Determining the process where the lack of response occurred
- Determining the cause of the lack of response
- Taking action appropriate to the cause

3.1 Actions to Take when There is an Error in a Process Flow

This section describes actions to take when an error occurs in a Process Flow.

3.1.1 Determining the Process where the Error Occurred

Determine the Process Flow and Process Function where the error occurred.

This is performed using either the Operation Management Client or the operation commands. This section explains how to do both of these.

3.1.1.1 When Using the Operation Management Client

This section explains how to determine Process Flows and Process Functions.

Procedure for determining the Process Flow where the error occurred

Refer to "2.3.1.1 Monitoring the Status Using the Operation Management Client" for information on how to determine the Process Flow where the error occurred.

Procedure for determining the Process Function where the error occurred

Use the following procedure:

1. Select the **Process Log** tab.

   A job history will be displayed.

2. Click the **More** button next to the **Process Flow ID** whose **Process Flow status** is **Aborted**.

   A list of Process Functions will be displayed. The Process Function where the error occurred will have **Aborted** or **Suspended** as its **Status**.

3. Click **Processing number**.

   The Process Function properties window is displayed. Check the details of the Process Function.

3.1.1.2 When Using the Operation Commands

This section explains how to determine Process Flows and Process Functions.

Procedure for determining the Process Flow where the error occurred

Refer to "2.3.1.2 Monitoring the Status Using the Operation Command" for information on how to determine the Process Flow where the error occurred.

Point

When isolating the Process Flow, also confirm the service number. The service number is used to determine the Process Function where an error has occurred.

Procedure for determining the Process Function where the error occurred

Execute the following operation command. For the service number, enter the number checked when the Process Flow where the error occurred was isolated.

```
ifidisp -f -ps serviceNumber
```

A list of Process Functions executed in a Process Flow is displayed. The Process Function where the error occurred will have **CMPE** or **TWAT** displayed for **Process Function status**.

3.1.2 Determining the Causes of the Error

Determine the cause of the error. Perform this based on the information for the Process Flow and Process Function where the error occurred.

3.1.2.1 Check Messages

Messages are output when a Process Flow ends with an error. These are output to the event log under Windows and to the syslog under UNIX.

Messages indicating errors are output for associated processes as well as for the single Process Flow where the error was actually detected.

The causes of errors are isolated based on the additional information output with messages starting with IF. Refer to the outline of messages in the *Message Guide* for information on the output format and location of additional information.

The following is an overview of how to isolate the cause of errors.

Search for messages that include the service number for the Process Flow and Process Function where the error occurred, checked as part of the process performed after an error occurs. In this way, the messages that relate to the error can be checked.

The following is an example showing the flow of operations used to isolate errors.

[Example]

1. Search for the error in the process command

   Check the service number (in bold) of the Process Flow where the error occurred.

   ```
   FJSVifisv: ERROR:[0985-VM123,0,*,*,*,*]:
   IF11601:Command was ended abnormally - command(ifiexeprc) process_id(xxxxxxxx)
   service_no(20110226_000_00000006) ・・・
   ```

2. Search for messages with the same service number

   In this example, messages are searched based on the service number checked in step 1 (20110226_000_00000006).

   FJSVifisv: ERROR:[0985-VM123,0,**20110226_000_00000006**,**766,LNK,3**]:
   IF13301:Failed in the execution of the function - func_kind(SEND) func_id(xxxxxxxx) ・・・

   The following information can be checked:

   - Process function processing number

     This is "766" in the above example.

   - Process Function processing outline

     This is "LNK" in the above example.

   - File transfer process transfer ID

     This is "3" in the above example.

3. Search for error message

   It is possible to check messages for each Process Function outline. The following table shows the relationship between Process Function type and the messages.

Process type	Process Function type	Process Function processing outline	Message
- Data collection - Data delivery	- SEND (data send) - RECV (data receive) - STOR (data storage) - RECV (data receive) - DSTOR (DB storage) - DEXCT (DB extract)	LNK	Messages beginning with TR
		HLT/SFDC/IIS/LC/AZR/ FILE/ISI	Messages beginning with IF
		DB	- Messages beginning with IF/DB - Messages for linked products
- Data conversion - Data filter	- DTRN (data conversion/ conversion in a data conversion group) - DIVD (filter)	CNV/DIV	Messages beginning with IF/DB/DE/FL/IQ/FM
Plug-in	PLUG (plug-in)	PLG	Messages output in plug-ins (for example, messages beginning with IF or messages output by the Interstage List Creator when outputting form data to the Interstage List Creator)

   With this example, where the Process Function outline is "LNK" and the file transfer process transfer ID is "3" in step 2, we need to search for messages beginning with "TR" (related to file transfers) and where the file transfer process transfer ID is "3".

   Messages that indicate the cause of the error are found in the search results. The following example shows the message indicated by message ID TR24032.

   FJSVifisv: ERROR:[@_APLK00,**3**] **TR24032** Communication error. ・・・

3.1.2.2 Investigate the Cause of the Error

As the way data is treated and the roles of process depend on the type of Process Function, there are differences in how the errors are caused and how these are investigated. This means that you should investigate and isolate causes according to the Process Function where the error was detected.

This section explains the different ways to investigate causes depending on the Process Function.

3.1.2.2.1 Investigating the cause of errors in data collection Process Functions and data delivery Process Functions

Data collection Process Functions and data delivery Process Functions access the data source (in a linked system or database, for example) and collect or deliver data.

For this reason, the following causes are possible when an error occurs in a data collection Process Function or data delivery Process Function:

- Mismatch in definitions with linked products
- When the operating environment is incomplete
- Error in user authentication settings

Isolate the cause of the error from the messages output and from definition content. The items to check according to plausible causes are as follows:

- There is an error in the content of the data source definition

  Check that there are no errors in the user ID, password, or database name.

- There is an error in the data collection definition

  Check that there are no errors in the schema name, object name, or password.

- There is an error in the data structure definition

  Check that the data structure definition matches the data structure of the location where the data is collected or delivered (column names and attributes, for example).

- There is an error in the format definition

  Check that the content of the format definition (character code of the data, record type (CSV or binary)) matches the data format in the location where the data is collected or delivered.

- There is an error in the delivery data

  If there has been an error in data delivery other than in send files or receive files, there is a chance that there is a problem with the delivery data. Refer to "3.1.2.3 Checking Data Stored in the DataBox" for information on how to check data.

3.1.2.2.2 Investigating the cause of errors in data conversion Process Functions and data filter Process Functions

With data conversion Process Functions and data filter Process Functions, data is input from the output of the preceding Process Function, and data is processed according to the definitions.

For this reason, mismatches between the data and definitions are possible causes when an error occurs in a data conversion Process Function or data filter Process Function.

Isolate the cause from the following information:

- Message that is output
- Definition content

  Check that there is no error in the data filter definition or data conversion definition.

- Data that is stored in the Databox

  Refer to "3.1.2.3 Checking Data Stored in the DataBox" for information on how to check data saved in the DataBox.

- Conversion error log file

  Check errors that occurred during data conversion in the conversion error log file. The following describes how to check:

  Check whether the data that was entered in the conversion is valid, using the III Studio that defines the attribute and length of the input item for the data conversion. At this time, if the data that was entered at the conversion is invalid, information related to the records that contain the invalid input data will be output to a file. This file is called the conversion error log file. Refer to the conversion error log file and check details around the time of the error.

Check the conversion error log

Check whether the data that was entered in the conversion is valid, using III Studio that defines the attribute and length of the input item for the data conversion. At this time, if the data that was entered in the conversion is invalid, information related to the records that contain the invalid input data will be output to a file (referred to as the "conversion error log file").

The conversion error target records can be checked by checking the file that was output. Check errors that occurred during data conversion in the conversion error log file. The following describes how to check:

The conversion error target records can be checked by checking the file that was output.

Details on the conversion error output file that is output are shown below.

- Conversion error log file output location

  The errors that occur during conversion are output to the error data directory that is specified in the data conversion definition. The errors that occur during filtering are output to the error data directory that is specified in the data filter definition. This is output to the error data directory. Specify the error data directory on the data conversion definition of III Studio. Refer to the *III Studio Help* for information about data conversion definitions and data filter definitions.

  Note

  The Process Flow will end with an error if the directory specified does not exist. Specify a directory that exists.

- Conversion error log file output file name

  f3jnCnv.ERR.*ProcessFunctionProcessingNumber*.*processingInformationWithinInformationIntegrator*.txt

  ProcessFunctionProcessingNumber:

  The function processing number that is allocated when each function is executed

  (The function processing number is the number that is displayed using the ifidisp (display status) command. Refer to the *Command Reference* for details.)

  processingInformationWithinInformationIntegrator:

  Information about internal processes in Information Integrator

- Conversion error log output conditions

  The conditions for output are as follows:

  - When a delimiter is missing in a CSV file

    Example: "Taro Fujitsu,"General",34

  - When there are characters outside of the delimiters in a CSV file

    Example: "Taro Fujitsu",..."General",34

  - When there are more fields in the CSV file data than were defined

  - When "Continue" is selected as the treatment when there is an error and when a field defined as receiving a data check (Checkbox is selected in the data conversion definition) and the data contains an error

  - When "Continue" is selected as the treatment when there is an error and the data conversion definition indicates treatment as a simple format binary file and the data contains an error

- Conversion error log output format

  Refer to "A.4 Conversion Error Log" for information on the output format.

Point

- The maximum number of conversion error logs that can be output conforms to the value specified for 'errmax' in the operating environment file (the initial value is 1000).
- Periodically delete the file that is output by the conversion error log.
- When dealing with binary files or when data checks are performed

  The error information for each field may be output as part of the supplementary information for conversion error logs. The file where this supplementary information is output is called the supplementary information for the conversion error log file.

  The information in this file shows the errors that have occurred in each of the fields.

  The following gives details about the supplementary information for the conversion error log file:

  - Output location for the supplementary information for the conversion error log file

    Output to the same location as the conversion error log file described above.

  - Output file name for the supplementary information for the conversion error log file

conversionErrorLogFileName_Log.txt

  - Output format of supplementary information in the conversion error log

    Refer to "A.4.1 Conversion Error Log Supplementary Information" for information on the output format.

  - Output count of supplementary information in the conversion error log

    Information is output for each error type found in the outputs in the conversion error log file.

  Periodically delete the file that is output by the supplementary information for the conversion error log file.

3.1.2.2.3 Plug-in errors

If there has been an error in the plug-in, this may have been caused by the following:

- There is an error in the path for the plug-in
- The user does not have the required permissions to execute the plug-in
- There is an error in the input parameters
- There is an error in the execution environment for the plug-in
- There is an error in the return value for the plug-in
- There is an error in the input data
- There is an error in the plug-in itself

Isolate the cause of the error from the messages output, from definition content, and from the plug-in that was run.

The items to check according to plausible causes are as follows:

- There is an error in the path for the plug-in

  Check if there is an error in the plug-in path in the plug-in definition.

- The user does not have the required permissions to execute the plug-in

  Check the access mode for the file of the plug-in.

- There is an error in the input parameters

  Check that there are no errors in the plug-in definition type, argument type, or data length.

- There is an error in the execution environment for the plug-in

  Check if there is an error in the system settings, such as the environment variables when the Information Integrator is started or the stack size.

- There is an error in the return value for the plug-in

  Check the return value of the plug-in.

- There is an error in the input data

  If a string beginning with "$IFI" is specified in the input parameter in the plug-in definition, there may be a problem with the input data. Check the data. Refer to "3.1.2.3 Checking Data Stored in the DataBox" for information on how to check data.

- There is an error in the plug-in itself

  Messages output when there is an error with a process plug-in are "IF13305" or "IF23305". Messages output with errors in conversion plug-ins are output to such messages as "DE10047".

  - There is an error in the conversion plug-in itself

    Check the conversion error log. Refer to "3.1.2.2.2 Investigating the cause of errors in data conversion Process Functions and data filter Process Functions" for information on conversion error logs.

  - There is an error in the process plug-in itself

    Check the process plug-in log. The following describes how to check the process plug-in log.

    Note

    This log can be output when a Process Flow is executed after waiting for the processing results of a plug-in ("Synchronization" is specified for "Wait for end" in the plug-in definition).

Check the process plug-in log

Check the log output by the processing content of the process plug-in (hereafter called the process plug-in log).

Point

When a plug-in is executed, the strings output to the standard output and standard error output by the application are kept as log information. This means that this log is only output if the application has been made so that it outputs strings to the standard output and standard error output.

Refer to the information about the applications that can be included in the *System Design Guide* for information about outputting strings from the application to the standard output and standard error output.

The process plug-in log file is output to the following destination:

- Output is to the "msgs" parameter in "IF13305" or "IF23305" messages that are output.

  Refer to the *Message Guide* for details.

- This is displayed when the **Processing number** in the properties relating to the job history for the Operation Management Client is clicked. Refer to the *Operation Management Client Help* for details.

  Point

  - When outputting to the message body, up to 512 bytes are output. Up to 32Kbytes can be displayed in the Operation Management Client. For strings exceeding 512 bytes, check in the Operation Management Client.

  - The maximum log size that can be output is 32Kbytes. When information exceeding 32Kbytes is output, the excess is cut off.

- Output of log messages ("IF13305" or "IF23305") is triggered by one of the following. They are not output if the setting is to not output them.
  - When a plug-in ends with an error (default)
  - Output whenever a plug-in is run, whether the result is normal or an error
  - Never output

  These follow the value specified in "plglog_putmsg" in the operating environment file.

3.1.2.3 Checking Data Stored in the DataBox

The **Store status** of the DataBox that will be the input data for the Process Function where the error occurred will be "**Stored(STOR)**". To check the input data, download the data of the DataBox whose status is "**Stored(STOR)**".

Note that the data download can only be performed by a privileged user, or by the user that executed the corresponding Process Flow.

Data download is performed using either the Operation Management Client or the operation commands.

3.1.2.3.1 Check data in the Operation Management Client

Note

- The data download should not be executed while the following processes are running:
  - Automatic deletion of data in the DataBox

    If the retention period in the DataBox store information (specified in the operating environment file 'exctterm') is reached, the data will be deleted after the predetermined time.
  - Information Integrator Server startup (following initialization)

  When the data download is executed, the download target data may not be deleted from Information Integrator Server.
- If the size of the download target data exceeds 10M bytes, data should not be downloaded from the Operation Management Client. Use the ifirexct command to obtain the data. Refer to the *Command Reference* for information on the commands.

1. Select the **Process Log** tab.

   A business history list will be displayed.
2. Click the **More** button of the target process.

   A list of Process Functions will be displayed.
3. Click **Data number** of the Process Function.

   The properties will be displayed.
4. Click the **Download** button of **Data size(Byte)**.

   The **Data Download Authentication** window will be displayed.
5. Enter a user ID and password.

   The data download will start.
6. Store the downloaded data.

If the Process Function **Data number** is not displayed, use the ifidisp and ifirexct commands to obtain the data. The following describes the procedure to use the operation commands when the data number of the Process Function is not displayed. Refer to "3.1.2.3.2 Check data with the operation commands" for information on how to check data using the operation commands.

1. Determine the data number with the ifidisp command.

   ```
   ifidisp -d -da DataBoxName -st STOR
   ```

For the DataBox name, specify the name of the DataBox of the data collection Process Function of the Process Flow isolated in "3.1.1 Determining the Process where the Error Occurred" (Process Functions whose process type is EXCT (extract data), RECV (receive data), or DEXCT (DB extract)).

Determine the relevant data by looking at the date of storage, the distribution and transfer number, and the collection and transfer number.

2. Specify the data number and acquire the data with the ifirexct command.

```
ifirexct -d DataBoxName -of outputFileName -ci dataNumber
```

Specify the data number displayed after performing step 1.

3.1.2.3.2 Check data with the operation commands

1. Determine the data number with the ifidisp command.

Check the status of the DataBox used by the Process Flow where the error occurred.

```
ifidisp -d -ps serviceNumberOfProcessFlowWhereErrorOccurred -st STOR
```

Execute the following command if data is not displayed.

```
ifidisp -d -da DataBoxName -st STOR
```

For the DataBox name, specify the name of the DataBox of the Process Function whose process type is EXCT (extract data), RECV (receive data), or DEXCT (DB extract) in the Process Function information displayed in step 1.

2. Specify the data number and acquire the data with the ifirexct command.

```
ifirexct -d DataBoxName -of outputFileName -ci dataNumber
```

Specify the data number displayed after performing step 1.

3.1.3 Recovery

This section describes the process of recovery performed after removing the data from when the error occurred and the cause of the error. Restoration re-executes the Process Flows that ended in an error.

- Canceling the execution of a Process Function whose status is aborted

  Cancel Process Functions that have 'processing aborted' status.

- Deleting stored data

  Delete a stored data.

- Remove the cause of the error

  Remove the cause of the error (definition or data problems, for example).

- Re-execute the Process Flow

  Re-execute the Process Flow that ended in an error.

Refer to "3.1.3.5 Plug-ins after delivery is complete" if an error occurred in a plug-in after data delivery.

3.1.3.1 Canceling Execution of a Process Function with Status of aborted

If there are Process Functions that have the 'processing aborted' status, cancel execution of the Process Functions. Use the following procedure:

1. Find Process Functions that have 'processing aborted' status

Execute the following command to find Process Functions that have the 'processing aborted' status.

```
ifidisp -f -ps serviceNumberOfProcessFlowWhereErrorOccurred -st TWAT
```

2. Canceling the execution of a Process Function whose status is aborted

   If information is displayed in step 1, execute the following command to cancel execution of the Process Function.

```
ififcncl -dl YES -sn processNumberOfProcessFunctionWithTWATstatus
```

3.1.3.2 Deleting Stored Data

Delete the data that has been stored before re-executing the Process Flow. Use the following procedure.

Point

When "in" is specified in the "proc_rollback" parameter (to specify how data is rolled back) in the operating environment file, then when the data stored in the DataBox of a collection Process Function is restored, it is possible to re-execute the Process Flow using the restored data.

If the data restored in the DataBox of the above collection Process Function is unnecessary or if data in the DataBox of another Process Function is unnecessary, delete it using the following procedure.

1. Check the Process Function information

   Display information about the Process Functions executed in Process Flows where errors occurred.

```
ifidisp -f -ps serviceNumberOfProcessFlowWhereErrorOccurred
```

2. Check the status of the DataBox

   Check the status of the DataBox used by the Process Flow where the error occurred.

```
ifidisp -d -ps serviceNumberOfProcessFlowWhereErrorOccurred -st STOR
```

   Execute the following command if data is not displayed.

```
ifidisp -d -da DataBoxName -st STOR
```

   For the DataBox name, specify the name of the DataBox of the Process Function whose process type is EXCT (extract data), RECV (receive data), or DEXCT (DB extract) in the Process Function information displayed in step 1.

3. Delete DataBox data

   Delete the data from the information displayed in step 2.

```
ifirdelt -tf dataNumber
```

Note

A DataBox whose name starts with "ifi.TempDataBox" is automatically created when a Process Flow is executed. For this DataBox, the data does not need to be deleted.

3.1.3.3 Remove the Cause of the Error

Remove the cause and take action according to the error cause that was identified.

- When there is an error in the definitions

  Obtain the definitions related to Process Flows where errors occurred in the Definition Management Client and modify the definitions.

- When there is an error in the data

  Make sure the data for collection is the correct type of data.

- When there is an error in the operating environment

  Amend the operating environment. It may be necessary in some cases to restart the Information Integrator or operating system.

3.1.3.4 Re-Execute the Process Flow

Re-execute the Process Flow where the error occurred. Take one of the following actions:

- When the operation type of the data collection definition is "initiator"

  Execute the following command to re-execute the Process Flow.

  ```
  ifiexeprc -i processID
  ```

- When the operation type of the data collection definition is "responder"

  Wait for the request from the startup system if the data can be resent from the startup system.

  Take the following actions if the data cannot be resent from the startup system:

  1. Extract the data from the DataBox defined in the data collection definition. Extraction of DataBoxes that have already been extracted should be done by specifying the data number in the "ci" option.
  2. Extracted data is stored in the extract DataBox.
  3. If Monitor collection is **No**, re-execute the Process Flow.

Note

- Recovery method used when Salesforce objects are stored

  Use the recovery procedure shown below when an error occurs on storing an object followed by adding Salesforce data.

  1. Restore the Salesforce data to change the status to the status that existed before the data was stored.
  2. Re-execute the Process Flow.

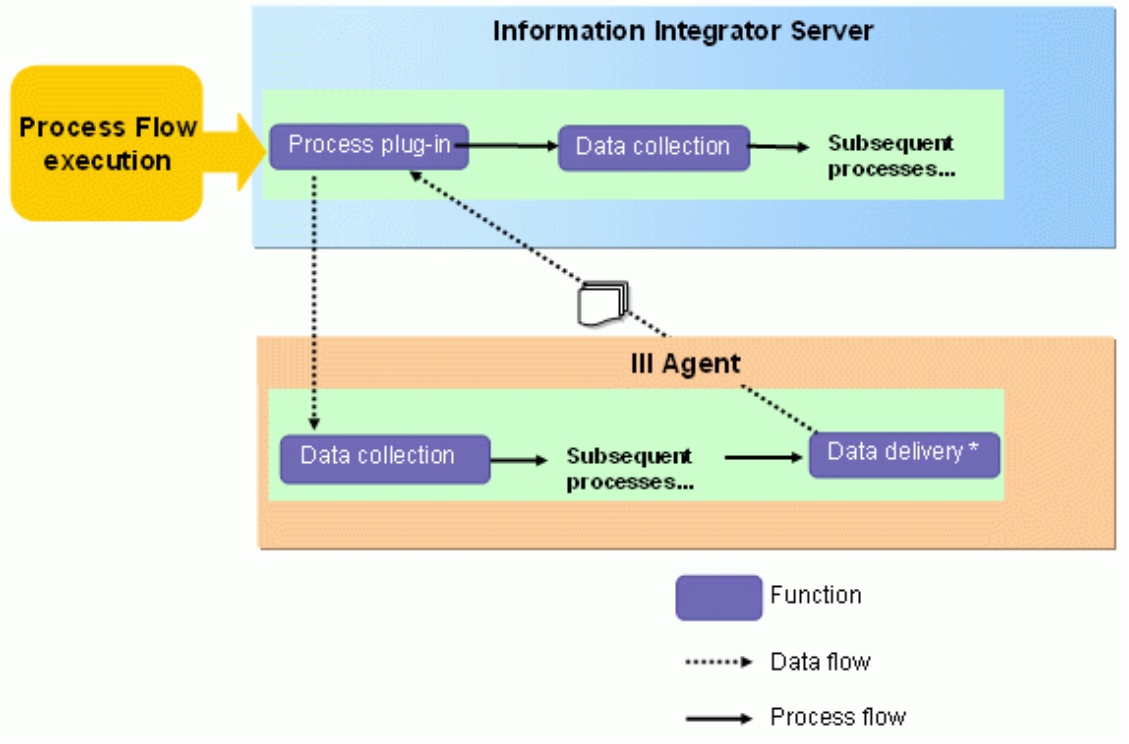
3.1.3.5 Plug-ins after delivery is complete

When an error occurs in a plug-in after the data delivery is complete, re-execute that plug-in only.

3.1.4 Using the Information Integrator Server and the III Agent Together

This section gives supplementary information about actions to take when errors occur when Process Flows are executed from the Information Integrator Server and when using the Information Integrator Server and the III Agent together.

Figure 3.1 Flow when a Process Flow is executed



Note: The data is always stored in a DataBox with data delivery performed by the III Agent.

When using this type of operation, perform actions as described below if an error occurs in the III Agent.

1. Isolate the error in the III Agent and take action.
2. Information Integrator Server Process Flows are re-executed from the beginning.

3.2 Actions to Take when There is No Response from a Process Flow

This section describes actions to take when there is no response from a Process Flow.

3.2.1 Determining the Process where the Lack of Response Occurred

Determine the Process Function where the lack of response occurred.

This is performed using either the Operation Management Client or the operation commands. This section explains how to do both of these.

3.2.1.1 When Using the Operation Management Client

Use the following procedure:

1. Select the **Process Log** tab.

   A job history will be displayed.

2. Click the **More** button next to the **Process Flow ID** whose **Process Flow status** is **Executing**.

   A list of Process Functions will be displayed. Process Functions that continue to have **Executing** displayed as their status can be considered Process Functions that are not responding. If the window is already open, refresh the window. Check again if the **Status** remains **Executing**.

3.2.1.2 When Using the Operation Commands

A list of Process Functions executed in a Process Flow is displayed when the following command is executed.

```
ifidisp -f -st EXEC
```

If the same Process Function continues to be displayed after waiting a while and executing this command, this Process Function may be considered as not responding.

3.2.2 Determining the Cause of the Lack of Response

Determine the cause of the lack of response.

When the cause is found in the execution environment

The lack of response has occurred due to the following execution environment:

- Check the CPU and memory

  When the size of the data is large or when multiple processes are running simultaneously, the burden cause by data transfers and database linking may be too great on the environment (CPU, memory, etc.) of some machines, and thus bring about the lack of response.

- Checking the behavior of other applications

  With resident applications where services may start running in the background, the load may become very great.

Other possible causes

The possible causes depend on the type of Process Function. The following pages explain the different possible causes depending on the type of Process Function.

3.2.2.1 When Data Collection Process Functions and Data Delivery Process Functions are Not Responding

Data collection and data delivery Process Functions access the data source (in a linked system or database, for example) and collect or deliver data.

The cause of the lack of response is probably in the network when communication fails on the network or if there is no response from the remote system due to a high load on the remote system.

3.2.2.2 When Data Conversion Process Functions and Data Filter Process Functions are Not Responding

With data conversion Process Functions and data filter Process Functions, data is input from the output of the preceding Process Function, and data is processed according to the definitions.

A lack of response can occur due to there being multiple values in the data that are duplicated in the combine key field.

With combine processes (INNER JOIN and OUTER JOIN), the value of the key field specified in the merging conditions is referred to for each record, and if the record matches the conditions, it is output to the output side. If there is data duplicated in the key field at this time, then that number of records will be output.

With the above in mind, as the quantity of duplications in the key field and the number of combine increases, there will be a massive increase in the number of combine results, thereby possibly causing a lack of response.

3.2.2.3 When Plug-ins are Not Responding

If the plug-in is unresponsive, this may be caused by internal processing in the plug-in. Check the internal processes of the plug-in.

3.2.3 Taking Action Appropriate to the Cause

Remove the cause that was isolated. The actions appropriate to the causes are as follows:

- The machine where it is running is overloaded due to other applications

  Stop unnecessary resident applications or other applications that are running.

- Overloading due to the running of multiple processes

  1. Cancel the Process Function that is being executed.

     ```
     ififcncl -dl YES -sn processNumberOfProcessFunctionWithEXECstatus ・・・ [1]
     ```

  2. Wait a while and then perform recovery. Refer to "3.1.3 Recovery" for information on the recovery procedure.

  Actions to take in response to overloading due to the running of multiple processes depend on the Process Function. For this reason, the different ways to investigate causes depending on the Process Function are explained in the following pages. Refer to these explanations as well.

Taking action with data collection Process Functions and data delivery Process Functions

Take action according to the following procedure when communication breaks down in a network or when the load on a remote system is high:

1. Cancel the Process Function that is being executed (the above command [1]).
2. Wait a while and then perform recovery.

Actions for data conversion Process Functions and data filter Process Functions

Take action according to the following procedure when there is duplicate data in the combine key data in the combine process:

1. Cancel the Process Function that is being executed (the above command [1]).
2. Use a union or plug-in to ensure there is uniqueness in the key data by modifying the definitions. Also delete duplicated data.
3. Re-register the definition if it was modified.
4. Perform recovery. Refer to "3.1.3 Recovery" for information on the recovery procedure.

Actions for Plug-ins

Take action according to the following procedure:

1. Cancel the Process Function that is being executed (the above command [1]).
2. Modify the plug-in.
3. Perform recovery. Refer to "3.1.3 Recovery" for information on the recovery procedure.

Chapter 4 Maintenance

This chapter explains the maintenance of Information Integrator.

The following sections explain the maintenance tasks that are required once Information Integrator is started:

- Checking the logs that are output while Information Integrator is running

  Check the logs that are output while Information Integrator is running. Refer to "4.1 Checking Logs" for details.

- Backing up the operation resources

  Back up the Information Integrator operation resources in case it is necessary to rebuild the system following the occurrence of an unexpected problem while Information Integrator is running. Refer to "4.3 Backing up Operation Resources" for details.

- Restoring the operation resources

  This section explains the procedure for restoring backed up Information Integrator operation resources. Refer to "4.4 Restoring Operation Resources" for details.

4.1 Checking Logs

If it is necessary to check 'who' has performed 'what' operation 'when' while Information Integrator is running, use the logs shown below.

Refer to "Appendix A Log File Reference" for information on the logs that are output.

- Definition operations log

  This log is output for various Process Flow definition operations, such as the ones shown below.

  This log outputs information such as the IP address of the client that performed the operation, and the time and date of the operation.

  - Registering definitions

    Registering definitions using III Studio

  - Browsing definitions

    Acquire and browse definitions from the III Studio

- Process execution log

  This log is output for the execution of Process Flows and Process Functions. This log outputs information such as the user ID that was used to execute the Process Flow and Process Function, and the time of execution.

- Access log

  An access log is output showing access from the Operation Management Client to a Web application.

- Resource use log

  Resource use is periodically output when the resource use monitoring feature is enabled.

Output directories and file names for each log

Each log is output as follows:

- Windows

  InformationIntegratorServerInstallDirectory\log

  - In a cluster operation

    The log is output as follows in Windows cluster operations only:

    Information Integrator Operation Resources Dir Specified At Installation\log

- UNIX

```
/opt/FJSVifisv/LOG
```

The names of each log file are as follows:

- Definition operations log

  Ifilog_DEF_$No.log

- Process Flow execution log

  Ifilog_PRC_$No.log

- Access log

  access.log.N

- Resource use log

  Ifilog_ALT_$No.log

Note: $No is a number from '01' up to the value that was defined for 'logfilenum' (maximum number of files) in the operating environment file. If 'logfilenum' is omitted, a serial number from 01 to 05 will be used in accordance with the output sequence of the log file.

Note that the log file size per file will be the value that was defined for 'logfilesize' in the operating environment file.

When the maximum number of files is reached, the oldest information file, declared as file number 01, will be overwritten. Refer to the *Setup Guide* for information on operating environment files.

Note: The N in the access log is a number indicating the generation. "N" is not added to the access log currently in use. Past access logs have a number added to them, starting with 1 for the newest generation, continuing up to a number set down in the "accesslog_num" (the maximum number for the generations in access logs) in the operating environment file.

Note that the log file size per file will be the value that was defined for 'accesslog_size' in the operating environment file. Refer to the *Setup Guide* for information on environment definition files.

When the past access logs reach the maximum number for the generations in access logs, the oldest output information is deleted.

The most recent generation's information is always found in the file where "N" is 1, and the oldest information is always in the file where "N" is the maximum number for the generations in access logs.

4.2 Monitoring Resource Use

This feature enables you to automatically monitor resource use as it constantly changes while running the Information Integrator Server. The feature used to automatically monitor resource use is called the resource use monitoring feature.

Monitoring resources enables you to prevent problems occurring due to a deficiency of resources while operating the Information Integrator Server. Note that resources indicate the management area of the Information Integrator Server.

See

The resource use monitoring feature is enabled by specifying "yes" in the "ursc_chk" key in the operating environment file.

Refer to the *Setup Guide* for details.

The resource use of the Information Integrator Server is automatically monitored between the time the Information Integrator Server has completed starting up and the time it is stopped.

Resource use can be checked using the following procedure:

- Check the resource use log

  Resource use is output as a log in CSV format every hour during automatic monitoring.

  Refer to "Appendix A Log File Reference" for information on log files.

- Checking warnings

  If the hourly resource use goes above the value specified by the "ursc_chk_rate" key, a warning is output to the event log (or syslog on UNIX). Refer to the *Message Guide* for information on warnings.

Note

- The first automatic monitoring is performed immediately after the Information Integrator Server ha completed start up.
- During automatic monitoring, Symfoware Server messages (either qdg12074i or qdg12075u) are output repeatedly to the event log (or syslog on UNIX).

4.3 Backing up Operation Resources

Back up the Information Integrator operation resources in case it is necessary to rebuild the system following the occurrence of an unexpected problem while Information Integrator is running:

- At setup, or when the Information Integrator Server setup environment is changed

  Back up the setup environment at the time of Information Integrator Server initialization setup, or when the setup environment is changed, for example when the operating environment or management area is changed.

- When a Process Flow is registered with III Studio, or added/modified/deleted, back up the Process Flow definition information that is registered in the server.

The backup methods are explained below.

4.3.1 Backing up the Setup Environment

Back up the Information Integrator setup environment. The backup procedure is as follows:

1. Check that no Process Flows are being processed then stop Information Integrator Server. Refer to the *Setup Guide* for information on how to stop Information Integrator Server.
2. Create the backup directory for the operation resources.
3. Back up the operation resources.

   - Windows

     Execute ifiresrcbk.bat.

     InformationIntegratorServerInstallDirectory\bin\ifiresrcbk.bat *dataStorageDir backupDir*

   - UNIX

     Execute ifiresrcbk.sh.

     /opt/FJSVifisv/bin/ifiresrcbk.sh *dataStorageDir backupDir*

   'Directory used as data storage area' is the directory specified for 'stk_path' in the operating environment file. Refer to the *Setup Guide* for information on the operating environment file.

4. To restart Information Integrator operations, start Information Integrator Server. Refer to the *Setup Guide* for information on how to start Information Integrator Server.

4.3.2 Backing up the Process Flow Definition Information Registered in the Server

Back up the Process Flow definition information that was registered to the server using III Studio. The backup procedure is as follows:

1. Create a backup directory for the operation resources.
2. Execute the ifidefbk command. Refer to the *Command Reference* for information on this command.

4.4 Restoring Operation Resources

Restore the backed up operation resources if necessary.

- Restoring the setup environment
- Restoring the definition information of Process Flow

  Restoring the definition information of Process Flow that is defined and registered with III Studio.

The methods that are used to restore the setup environment and the definition information are explained below.

4.4.1 Restoring the Setup Environment

Restore the Information Integrator setup environment. The restoration procedure is as follows:

1. Check that no Process Flows are being processed then stop Information Integrator Server. Refer to the *Setup Guide* for information on how to stop Information Integrator Server.
2. Restore the operation resources.

   - Windows

     Execute ifiresrcrt.bat.

InformationIntegratorServerInstallDirectory\bin\ifiresrcrt.bat *dataStorageDir backupDir*

   - UNIX

     Execute ifiresrcrt.sh.

/opt/FJSVifisv/bin/ifiresrcrt.sh *dataStorageDir backupDir*

   'Directory used as data storage area' is the directory specified for 'stk_path' in the operating environment file. Refer to the *Setup Guide* for information on the operating environment file.

   'Backup directory' is the directory that was specified when the operation resources were backed up.
3. To restart Information Integrator operations, start Information Integrator Server. Refer to the *Setup Guide* for information on how to start Information Integrator Server.

4.4.2 Restoring Process Flow Definition Information

This restores information for Process Flows registered in the server that has been defined in the III Studio. Execute the ifidefrt command. Refer to the *Command Reference* for information on commands.

If the Information Integrator Server and III Agent are being used together, deliver the definition to the III Agent from the Information Integrator Server after restoring it to avoid inconsistencies in the definitions on both servers.

Appendix A Log File Reference

A.1 Definition Operations Log

This section describes the output format and content for the definition operations log.

Point

Regarding log output format

Unless configured otherwise, output is in CSV format separated by commas.

Definition operations log output items are as follows. The item numbers in the table correspond to the order that the items are output in CSV format.

Table A.1 Definition operations log output items

Item Number	Data	Attribute	Number of digits	Content
1	Time	Time	14	Output is in the following format: YYYYMMDDhhmmss
2	User ID	String	32	User ID requested from the client
3	Process type	String	10	Refer to "Process types" for information.
4	Output trigger type	String	6	Start or end Start: START End: END
5	Maintenance information	-	-	Maintenance information Note: This may or may not be output. Currently has no meaning.
6	Maintenance information	-	-	Maintenance Information Note: This may or may not be output. Currently has no meaning.
7	Maintenance information	-	-	Maintenance Information Note: This may or may not be output. Currently has no meaning.
8	Execution results	String	6	'NORMAL' or 'ERROR' Note: Output only when the output trigger type is "END".
9	Maintenance information	-	-	Maintenance Information Note: This may or may not be output. Currently no meaning.
10	Maintenance information	-	-	Maintenance Information Note: This may or may not be output. Currently has no meaning.
11	Maintenance information	-	-	Maintenance Information Note: This may or may not be output. Currently has no meaning.
12	Maintenance information	-	-	Maintenance Information

Item Number	Data	Attribute	Number of digits	Content
				Note: This may or may not be output. Currently has no meaning.
13	Client IP address	String	41	Always output as "127.0.0.0".
14	Client host name	String	63	Client host name
15	Definition type	String	63	Refer to "Definition types" for information.
16	Definition ID	String	63	Definition ID for each definition type
17	Definition generation number	Integer	9	Definition generation number for the reflection destination of definition registration/deletion Information Integrator internal management information

Process types

There are following process types:

- Definition registration: CRT
- Get definition: GET
- Cancel get definition: GCNL
- Delete definition: DEL

Definition types

There are following definition types:

- Data source definition: CRTDSRC
- Process definition: CRTPROC
- Data collection definition: CRTPIPT
- Data delivery definition: CRTPOPT
- Data conversion definition: CRTDTRNS
- Data filtering definition: CRTPDVD
- Plug-in definition: CRTPLUG
- Data structure definition: CRTDSTCT
- Format definition: CRTFORMAT

A.2 Process Execution Log

This section describes the output format and content for the process execution log.

Point

Regarding log output format

Output is in CSV format separated by commas.

It will be possible to identify the execution result for process/Process Functions, as following information will be output while executing all Process Functions:

- Process service number
- Process Function process number
- Process Function execution result
- Process Function ID
- DataBox
- Data number
- Remote system ID

There are following types in the process execution log. The output format and content will depend on the operation:

- Execute Process Flow
- Execute Process Function
- Cancel Process Function Execute, cancel, restart Process Function
- Store data
- Extract data
- Delete data
- Reset data status

Log format will be configured as event common items (common part) and different event-specific parts).

Common formats are as follows.

Table A.2 Log common part output items

Item number	Data	Attribute	Number of digits	Content
1	Time	Time	14	Output in this format YYYYMMDDhhmmss
2	Process Type	String	10	Refer to "Table A.3 Event types"
3	Type	String	6	Accept, start or end Accept: ACCEPT Start: START End: END
4	Maintenance information	String	19	Maintenance information Note: This may or may not be output. Currently has no meaning.
5	Service number	String	32	Process service number
6	User ID	String	32	User ID which executed process
7	Error category	Integer	10	Note: 0 is output under normal conditions.
8	Error code	Integer	10	Note: 0 is output under normal conditions.
9	Detail code	Integer	10	Note: 0 is output under normal conditions.
10	Maintenance code	String	8	Note: This may or may not be output.

Event types are as follows.

Table A.3 Event types

Event types	Meaning
PROCEXE	Execute Process Flow

Event types	Meaning
SERVICE	Process Process Function
TRANSFER	Process Process Function
CANCEL	Cancel Process Function
RESTART	Restart Process Function
RESET	Reset status
RDELT	Delete data
RSTOR	Restore data
REXCT	Extract data

Point

When event type is 'Process Process Function'

The Execution Log will be output for every Process Function execution for all Process Functions.

This section describes about contents of specific formats.

A.2.1 Process Flow Execution

This section describes the output format and content for the log that is output at the time of the execution of a Process Flow.

Specific part-output items of Process Flow execution log are as follows. The item numbers in the table correspond to the order that the items are output in CSV format.

Table A.4 Specific part output items of Process Flow execution log

Symbol	Data	Attribute	Number of digits	Content
11	Process ID	String	31	Process definition ID
12	Process execution schedule	String	5	Daily, weekly, monthly, repeat, event Daily: DAY Weekly: WEEK Monthly: MONTH Repeat: LOOP Event: EVENT Note: This may or may not be output.
13	Maintenance information	String	14	Maintenance information Note: This may or may not be output. Currently has no meaning.
14	Sequence control	String	3	Process sequence control Order: YES No order: NO
15	Maintenance information	String	3	Maintenance information Note: This may or may not be output. Currently has no meaning.
16	Maintenance information	String	3	Maintenance information

Symbol	Data	Attribute	Number of digits	Content
				Note: This may or may not be output. Currently has no meaning.

A.2.2 Process Function Execution

This section describes the output format and content for the Process Function execution log.

Specific part-output items of the Process Function execution log are as follows. The item numbers in the table correspond to the order that the items are output in CSV format and will indicate numbering after common part-output items.

Table A.5 Specific part output items of Process Function execution log

Symbol	Data	Attribute	Number of digits	Content
11	Process number	Integer	9	Process Function process number
12	Process Function ID	String	31	For data collection/data delivery Process Functions, refer to "Data collection/data delivery Process Function log display format".
13	DataBox	String	63	Note: This may or may not be output.
14	Data number	Integer	9	Note: This may or may not be output.
15	Remote system ID	String	31	Note: Only the following Process Functions will be output: - File transfer - Store/extract database Note: For file transfer, this may or may not be output.
16	Path ID	String	63	Note: This may or may not be output.
17	Maintenance information	String	63	Maintenance information Note: This may or may not be output. Currently has no meaning.
18	Transfer type	String	4	Send or receive Send: SEND Receive: RECV Note: This may or may not be output. Information "SEND" will be output for all Process Functions excluding data collection/data delivery responder Process Function.
19	Initiator/responder classification	String	3	Request issuer type REQ: Initiator IND: Responder Note: This may or may not be output.

Symbol	Data	Attribute	Number of digits	Content
				Information "INIT" will be output for all Process Functions excluding data collection/data delivery responder Process Function.
20	Local file name	String	255	Note: Only the following Process Functions will be output: - File transfer - Store/extract DataBox Note: For file transfer, this may or may not be output.
21	Remote file name	String	255	Note: Output only for file transfer Process Function. Note: This may or may not be output.
22	Maintenance information	String	3	Maintenance information Note: This may or may not be output. Currently has no meaning.
23	Maintenance information	String	3	Maintenance information Note: This may or may not be output. Currently has no meaning.
24	Maintenance information	String	2	Maintenance information Note: This may or may not be output. Currently has no meaning.
25	Maintenance information	Integer	10	Maintenance information Note: This may or may not be output. Currently has no meaning.
26	Maintenance information	Integer	10	Maintenance information Note: This may or may not be output. Currently has no meaning.
27	Data volume	Integer	19	Transfer data volume or DataBox storage/extraction data volume Note: Only following Process Functions will be output: - File transfer - Database storage/extraction - DataBox storage/extraction
28	Transfer total data volume	Integer	19	Displays total volume of transferred data (unit is byte).
29	Maintenance information	String	19	Maintenance information Note: This may or may not be output. Currently has no meaning.
30	Maintenance information	Integer	10	Maintenance information

Symbol	Data	Attribute	Number of digits	Content
				Note: This may or may not be output. Currently has no meaning.
31	Maintenance information	Integer	10	Maintenance information Note: This may or may not be output. Currently has no meaning.
32	User ID	String	32	Displays User ID which executes Process Function.
33	Remote user ID	String	32	Displays integrated remote user ID when Process Function is file transfer.

A.2.3 Process Function Execution Cancellation

This section describes the output format and content for the log that is output when execution of a Process Function is cancelled

Specific part output items of Process Function cancel log are as follows. The item numbers in the table correspond to the order that the items are output in CSV format and will indicate numbering after common part output items.

Table A.6 Process Function execution cancellation log output items

Symbol	Data	Attribute	Number of digits	Content
11	Process number	Integer	9	Cancellation Process Function process number
12	Process Function ID	String	63	For data collection/data delivery Process Functions, refer to "Data collection/data delivery Process Function log display format".
13	DataBox	String	63	Note: This may or may not be output.
14	Remote system ID	String	31	Note: Only following Process Functions will be output: - File transfer - Database storage/extraction Note: This may or may not be output in case of file transfer.
15	Path ID	String	63	Note: This may or may not be output.
16	Initiator/responder classification 1	String	3	Request issuer type of Process Function that needs to be cancelled REQ: Initiator IND: Responder Note: This may or may not be output.
17	Initiator/responder classification 2	String	3	Cancellation operation issuer type REQ: Initiator IND: Responder Note: This may or may not be output.
18	Pend	String	3	It will output as any of the following: YES NO

A.2.4 Process Function Restart

This section describes output format and contents of the log that is output at the time of Process Function restart.

Specific part output items of Process Function restart log are as follows. The item numbers in the table correspond to the order that the items are output in CSV format and will indicate numbering after common part output items

Table A.7 Specific part output items of Process Function restart log

Item number	Data	Attribute	Number of digits	Content
11	Process number	Integer	9	Process Function process number

Data collection/data delivery Process Function log display format

The logs are displayed in the following format depending on the type of data collection/data delivery Process Function:

- In case of file transfer

  Process Function group ID.FTRN.numbering

- In case of database storage/extraction

  Process Function group ID.DB.numbering

- In case of DataBox storage/extraction

  Process Function group ID.DBOX.numbering

- When Process Function type is data conversion (conversion group)

  Process Function group ID.conversion group ID.numbering

- In case of collection/delivery of Cloud integration (salesforce)

  Process Function group ID.SFDC.numbering

- In case of collection/delivery of Cloud integration (Azure)

  Process Function group ID.AZR.numbering

A.2.5 Data Store

This section describes the output format and content for the log that is output at the time of the data store.

Specific part-output items of data storage log are as follows. The item numbers in the table correspond to the order that the items are output in CSV format and will indicate numbering after common part-output items.

Table A.8 Specific part output items of data storage log

Symbol	Data	Attribute	Number of digits	Content
11	DataBox	String	63	Extraction target DataBox Note: This may or may not be output.
12	Maintenance information	String	64	Note: This may or may not be output.
13	Local file name	String	255	
14	Data number	Integer	9	Data number to be stored

A.2.6 Data Extraction

This section describes the output format and content for the log that is output at the time of the data extraction.

Specific part-output items of data extraction log are as follows. The item numbers in the table correspond to the order that the items are output in CSV format and will indicate numbering after common part-output items.

Table A.9 Specific part output items of data extraction log

Symbol	Data	Attribute	Number of digits	Content
11	DataBox	String	63	Extraction target DataBox
12	Maintenance information 2	String	64	Note: This may or may not be output.
13	Local file name	String	255	
14	Data number		Integer	9
15	Number of extraction file items	String	10	
16	Number of remaining file items	String	10	
17	Store mode	String	3	One of the following will be displayed: Add file: ADD Replace file: REP

A.2.7 Data Deletion

This section describes the output format and content for the log that is output at the time of the data deletion.

Specific part-output items of data deletion log are as follows. The item numbers in the table correspond to the order that the items are output in CSV format and will indicate numbering after common part-output items.

Table A.10 Specific part output items of data deletion log

Symbol	Data	Attribute	Number of digits	Content
11	DataBox	String	63	Deletion target DataBox Note: This may or may not be output.
12	Data number	Integer	9	Deletion target data number Note: This may or may not be output.

A.2.8 Data Status Reset Log

This section describes the output format and content for the log that is output at the time of the data status reset.

Specific part-output items of status reset log are as follows. The item numbers in the table correspond to the order that the items are output in CSV format and will indicate numbering after common part-output items.

Table A.11 Data status reset log output items

Symbol	Data	Attribute	Number of digits	Content
11	Process number	Integer	9	Reset target Process Function process number Note: This may or may not be output.
12	Data number	Integer	9	Reset target data number Note: This may or may not be output.

A.3 Access Log

This section describes output format and contents of the access log.

The configuration by line of log to be output at the time of execution is as follows. Each item is output separated by tab.

```
1 2 3 4 5 6 7 8
```

Table A.12 Output items of access log

Symbol	Data	Attribute	Number of digits	Content
1	Date/time	Date/time	23	Output is in the following format: YYYY/MM/DD HH:MM:SS.mmm
2	Connection source IP address	String	15	IP address of connection source
3	Request type	String	4	GET request or POST request GET request: GET POST request: POST
4	Connection target URL	String	15	URL of connection destination
5	HTTP query	String	8	HTTP query string
6	Receive size (B)	String	10	Size of HTTP request(Unit is byte)
7	HTTP response code	String	3	HTTP response code
8	Execution time (ms)	String	19	Execution time for processing (Unit is milliseconds)

A.4 Conversion Error Log

This section describes the output format and content for the conversion error log.

Note

Information that is not in the output format shown below may also be output. This will be Information Integrator maintenance information.

The structure of one line is as shown below.

```
1,2,3,...
```

Table A.13 Conversion error log output items

Symbol	Data	Attribute	Content
1	Internal input file name	String	Information Integrator internal process information will be output to a maximum of 255 characters.
2	Line number	Integer	Line number on which the error occurred (Starting from Line 1)
3	Error record	String	All error data that exists on the line on which the error occurred will be output. For example, if there are 100 data items on one error line, these data items will all be output.

Line numbers are all undefined.

Note

Output of error records

Data is output as is. For this reason, CSV and binary file data may be output as shown below.

- CSV file format data

  If the Information Integrator character code and the data character code are different, the respective character codes may be output in a mixed state in the log file.

- Binary file format data

  Binary data is output as is, therefore the data may not be recognized by the text editor.

A.4.1 Conversion Error Log Supplementary Information

This section describes output format and contents of conversion error log supplementary information.

Configuration by line as follows.

```
1,2,3,4,5
```

Table A.14 Output items of conversion error log supplementary information

Symbol	Data	Attribute	Content
1	Internal input file name	String	Information Integrator internal process information will be output in maximum 255 characters.
2	Line number	Integer	Line number where error has occurred (1~)
3	Line number in conversion error log file	Integer	Line number corresponding to conversion error log file (1~)
4	Item name	String	Item name where error has occurred

5	Error type	String	Error type occurred
			- Error in NULL value identifier field: NULL_TAG
			- Other errors : attribute type_error contents
			  - Attribute type
			  Character attribute: CHAR
			  Number attribute: NUM
			  Date attribute: DATE
			  Binary attribute: BIN
			  - Error contents
			  Invalid NULL value: NULL
			  Not enough digits : SHORT
			  Too many digits: FLOW
			  Invalid data format: TYPE

In any case line numbers are indefinite.

A.5 Resource Usage Status Log

This section describes output format and contents of resource usage status log.

Output items of resource usage status log are as follows. The item numbers in the table correspond to the order that the items are output in CSV format.

Table A.15 Output items of resource usage condition log

Item number	Data	Attribute	Number of digits	Content
1	Date/Time	Date/Time	14	Output in below format.

Item number	Data	Attribute	Number of digits	Content
				YYYYMMDDhhmmss
2	DSI Name	String	31	DSI (area) names in the database used for III operations are output Refer to "Table A.16 Correspondence of DSI (area) name and tuning parameter file".
3	DSI Structure	String	15	Any of following characters are output: SEQUENTIAL BTREE
4	Usage rate of main area	Integer	3	Usage rate of main area of corresponding DSI (Unit is %) However, value differs as per DSI structure. - In case of SEQUENTIAL structure Displays data part information - In case of BTREE structure Displays base part information
5	Usage rate of secondary area	Integer	3	Usage rate of secondary area of corresponding DSI (Unit is %) However, value differs as per DSI structure. - In case of SEQUENTIAL structure Always 0 (zero) - In case of BTREE structure Displays INDEX part information

Any of the following names are output enclosed in double quotation.

Table A.16 Correspondence of DSI (area) name and tuning parameter file

DIS name	Key name of corresponding tuning parameter	Explanation of key
LINKDB00.ACTSVCTBL_DSI LINKDB00.ACTSVCIDXI_PRIM LINKDB00.ACTSVCIDXI_STAT LINKDB00.ACTSVCIDXI_ACT LINKDB00.ACTSVCIDXI_PROC	ESTIMATE.retent_period	Retention period of process execution information
	ESTIMATE.prc_in_day	Process execution count per day
LINKDB00.DTYTBL_DSI LINKDB00.DTYIDXI_PRIM LINKDB00.DTYIDXI_ID	ESTIMATE.databox	Count of DataBox that manages data
LINKDB00.REQTBL_DSI LINKDB00.REQIDXI_PRIM LINKDB00.REQIDXI_SVCNO LINKDB00.REQIDXI_SVRID LINKDB00.REQIDXI_STAT LINKDB00.REQIDXI_DBOX	ESTIMATE.retent_period	Retention period of process execution information
	ESTIMATE.prc_in_day	Process execution count per day
	ESTIMATE.func_in_day	Process Function execution count per day
	ESTIMATE.indtran_in_day	File send/receive per day

LINKDB00.REQIDXI_TRAN LINKDB00.REQIDXI_BATCH		
LINKDB00.RSMTBL_DSI	ESTIMATE.data_retent_period	Retention period for extracted data
LINKDB00.RSMIDXI_PRIM LINKDB00.RSMIDXI_SVCNO LINKDB00.RSMIDXI_DBOX LINKDB00.RSMIDXI_DATID LINKDB00.RSMIDXI_STRSVC LINKDB00.RSMIDXI_EXTSVC LINKDB00.RSMIDXI_STRBATCH LINKDB00.RSMIDXI_EXTBATCH LINKDB00.RSMIDXI_DATANAME LINKDB00.RSMIDXI_ORGDATAID LINKDB00.RSMIDXI_CMTSVCNO	ESTIMATE.data_in_day	Data count (file count) handled per day