RELIABLE FILE TRANSFER

HULFT7e

Windows

Operation Manual

Note

* Reproduction of this document by any means, in whole or in part, without the prior written consent of the manufacturer, is strictly prohibited by copyright regulations.

* The contents of this document and its corresponding product are subject to change without prior notice.

Preface

This document describes operational environment and system outline. In addition, it explains the environment settings required for the operation of HULFT on Windows. The document is for the individuals who are involved in designing and establishing applications or systems as well as for those who engage in the installation of HULFT.

The screen shots and operational procedure in this document are based on assumption that Microsoft Windows XP Professional is used. The image and explanation may differ from your environment depending on the type or setting of OS in use.

Structure of This Document

This document is composed of the following chapters:

Symbols and Notations

<Description of Product Name>

- In this document, HULFT7e for Windows is generally named as ‘HULFT.’
- This document generically names following products as ‘Nonstop’:

  HULFT for Himalaya Ver.5

  HULFT7 for NSKJ

  HULFT7 for NSKH

  NonStop Kernel

  NonStop Server
- In the case the document indicates each product, relevant product name is provided.

<Version, Level, and Revision of HULFT>

Version information is displayed under following format:

Example: 7. 0. 0

a) b) c)

a): Version

b): Level

c): Revision

Upgrade of the number appeared in a)—Version Upgrade

Upgrade of the number appeared in b)—Level Upgrade

Upgrade of the number appeared in c)—Revision Upgrade

<Command or Control Card Explanation>

[ ]: Brackets indicate that the enclosed items are optional.

{}: Braces indicate that enclosed items are multiple options, from which one option must be selected.

.....: Repeat symbol indicates options, which should be repeated if necessary. The symbol may follow single word or a group of options enclosed within either brackets or braces.The part enclosed within either brackets or braces in a format is regarded as one unit. Repeat the whole part in between the symbols on a unit basis.

| : Vertical bar is used to set off options.

Italics: Italics indicate a variable. (a value that varies depending on the target or state)

Example: *yyyymmdd*

Type in comma (,) and equal sign (=) in the exact location as they are represented.

<Command or Management Information Settings>

Uppercase characters:	Uppercase characters indicate that uppercase alphabets (A-Z) can be used.
Lowercase characters:	Lowercase characters indicate that lowercase alphabets (a-z) can be used.
Alphabets:	Alphabets indicate that both uppercase (A-Z) and lowercase (a-z) alphabets can be used.
Alphanumeric characters:	Alphanumeric characters indicate uppercase and lowercase alphabets (A-Z, a-z) as well as numeral (0-9) can be used.

Where to Look up

Depending on the users and the purpose of usage, HULFT manuals are classified as follows. For file names and stored locations and so on, refer to the 'readme' file included in the installation CD.

HULFT7e Functions Manual

The manual describes the functions of HULFT. The explanation is for the first-time users of HULFT as well as those who are in charge of the introduction of HULFT.

HULFT7e New Functions and Incompatibility Manual

The manual explains the functions of new product and describes incompatibility with old versions. It is for the individuals who are involved in introduction of HULFT, upgrade of version, level, and revision, and product transition.

HULFT7e Windows Installation Manual

The manual explains all the procedures from product installation, environment settings, to file transfer (File Transfer Test). It is for new users of HULFT for Windows and for system administrators who implement version and/or revision upgrade.

HULFT7e Windows Administration Manual

The manual describes environment settings required for the operation of HULFT on Windows. The explanation is for the individuals who are involved in designing and establishing application system and for those who are in charge of the introduction of HULFT.

HULFT7e Windows Operation Manual

The manual describes the environment settings required for the operation of HULFT on Windows. The explanation is for the individuals who are involved in designing and establishing application systems and for those who engage in daily operation of the system.

HULFT7e Windows Error Codes and Messages

The manual describes the error codes and message contents of HULFT. It is for the individuals who are involved in designing and establishing application systems and for those who engage in daily operation of the system.

HULFT

Table of Contents

Chapter 1

HULFT Startup and Termination

This chapter describes how to start and terminate HULFT.

1.1 HULFT Startup and Termination

This chapter describes startup and termination methods of HULFT.

For more information on how to operate the Management screen, refer to "Chapter 3 HULFT Management Screen Operation Methods."

1.1.1 HULFT Startup Method

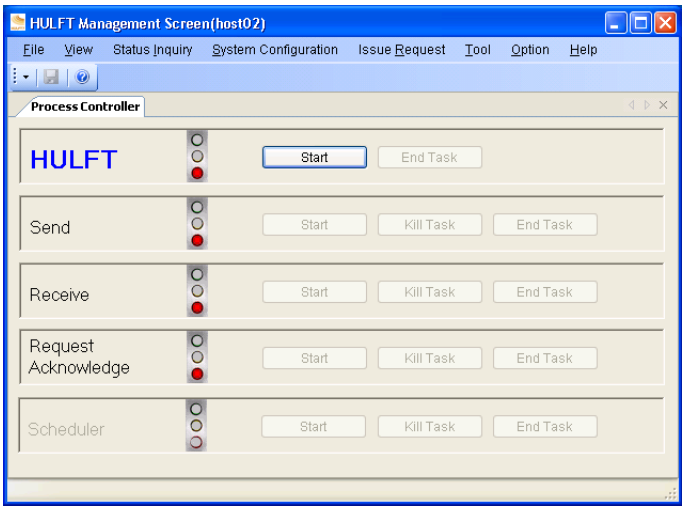
To use HULFT, make sure to start HULFT service in advance.

HULFT service cannot be started if the System Environment Settings file (hulenv.cnf) is not recognized.

Refer to *Administration Manual* for more information on the System Environment Settings file.

(1) Startup of HULFT with the Process Controller on HULFT Management screen

a) From the [Tool] menu on the Management screen, click the [Process Controller] to start the Process Controller. Shown below is the screen of the Process Controller.



'HULFT' shows the startup or stop status of HULFT service. The green indicates that the startup is in progress, yellow indicates that the termination processing is in progress, and red indicates that the termination of HULFT is in progress, respectively.

b) Click the [Start] next to HULFT to start HULFT service. The signal turns to green, which indicates that startup of the service is in progress.

[Note] When you use the Process Controller, invoke it on the Management screen activated by administrative privilege.

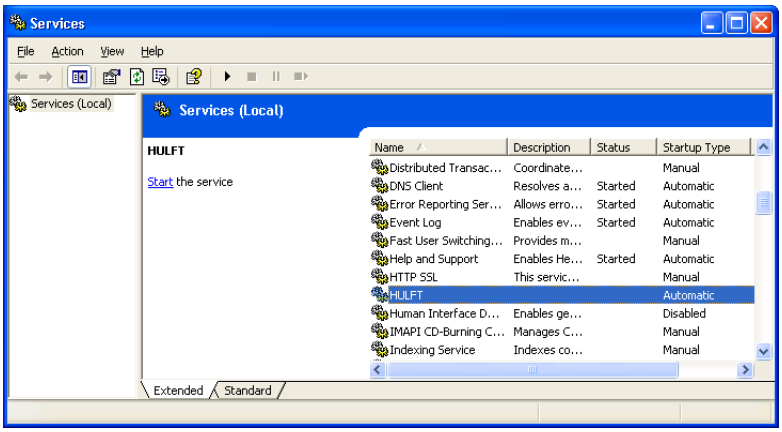
(2) Startup of HULFT with Services of Control Panel

The method of startup is explained as below, giving the example of Microsoft Windows XP Professional.

[Remarks] Confirm how to display Service with the manual of your OS, because the manner differs from OS to OS.

a) Select [Start] > [Settings] > [Control Panel] then double-click [Services], or select [Start] > [Settings] > [Control Panel] > [Administrative Tools] then double-click [Services].

b) Select the intended service name from the list of the registered services and click Start the service to begin.



(3) Startup of HULFT using command

Start the command prompt. Move to the binnt folder in HULFT installation directory and execute the 'utlsvcctl.exe.'

• HULFT Startup command

```
utlsvcctl -c start [-q]
```

Explanation of parameters

`-c start`

HULFT startup request issued to HULFT (Mandatory)

`-q`

Asynchronous request (Optional)

This request does not wait for the stop of HULFT completely and it returns the control as soon as the request is issued.

[Note] When you execute utlsvcctl command, execute it on the command prompt activated by administrative privilege.

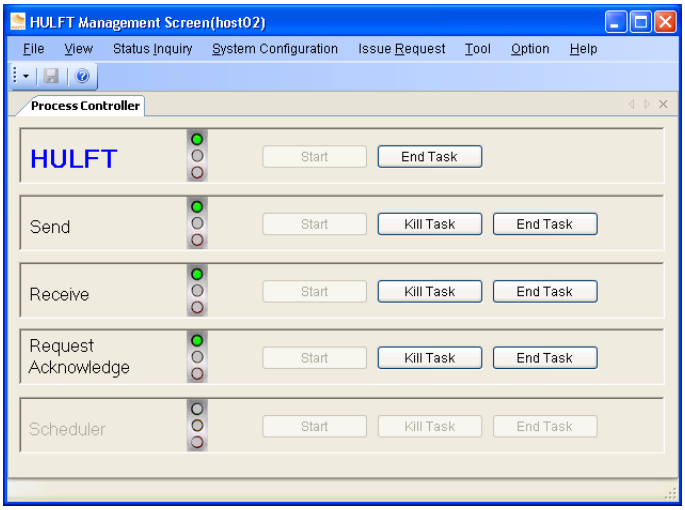
1.1.2 HULFT Termination Method

This section explains how to terminate active HULFT service

There are three methods to terminate HULFT service, which are explained below.

(1) Termination of HULFT with the Process Controller on HULFT Management screen

a) From the [Tool] menu on the Management screen, click the [Process Controller] to start the Process Controller. The screen of the Process Controller is displayed as shown below:



'HULFT' shows the startup or stop status of HULFT service.

The green indicates that the startup is in progress, yellow indicates that the termination processing is in progress, and red indicates that the termination of HULFT is in progress, respectively.

b) Click the [End Task] next to HULFT to terminate the service. The signal turns to red, which indicates the termination of the service is in progress.

[Note] When you use the Process Controller, invoke it on the Management screen activated by administrative privilege.

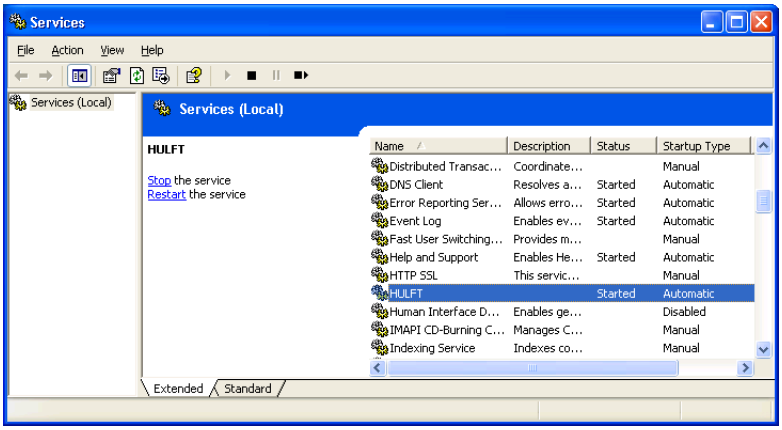
(2) Termination of HULFT with Services of Control Panel

The method of termination is explained as below, giving the example of Microsoft Windows XP Professional.

[Remarks] Confirm how to display Service with the manual of your OS, because the manner differs from OS to OS.

a) Select [Start] > [Settings] > [Control Panel] then double-click [Services], or select [Start] > [Settings] > [Control Panel] > [Administrative Tools] then double-click [Services].

b) Select the intended service name from the list of the registered services and click Stop the service to terminate.



(3) Termination of HULFT using command

Start the command prompt. Move to the binnt folder in HULFT installation directory and execute 'utlsvcctl.exe.'

• HULFT Termination command

```
utlsvcctl -c stop [-q]
```

Explanation of parameters

`-c stop`

HULFT termination request issued to HULFT (Mandatory)

`-q`

Asynchronous request (Optional)

Return the control after the request is issued, without waiting for the HULFT termination to be executed completely.

[Note] When you execute utlsvcctl command, execute it on the command prompt activated by administrative privilege.

1.2 Startup and Termination Methods of Each Process

This section describes the startup and termination methods of each processing.

[Note] To start each processing, it is necessary to start HULFT service in advance.

1.2.1 Startup Method of Each Process

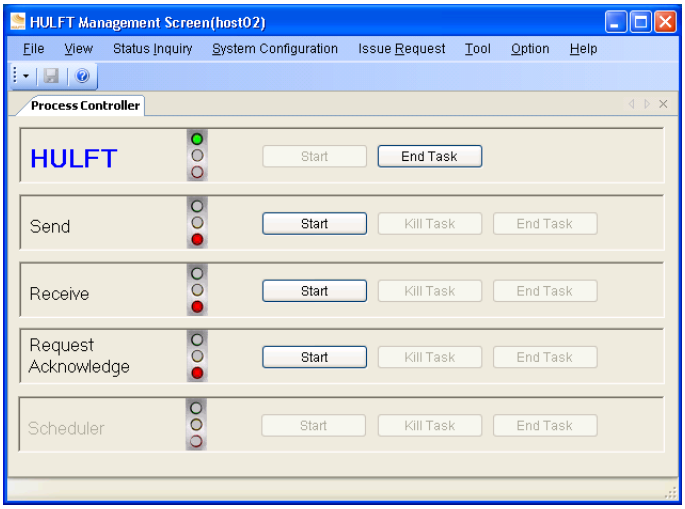
Start HULFT first, and then activate each of the Send process, the Receive process, and the Request Acknowledge process. There are two methods to start each processing, which are explained below.

Each processing cannot be started if the System Environment Settings file (hulenv.cnf) is not recognized.

Refer to *Administration Manual* for more information on the System Environment Settings file.

(1) Starting Each Process Individually

a) From the [Tool] menu on the Management screen, click the [Process Controller] to start the Process Controller. The screen of the Process Controller is displayed as shown below:



The green indicates that the startup is in progress, yellow indicates that the termination processing is in progress, and red indicates that the termination of the process is in progress, respectively.

b) Click the [Start] next to the intended process to start processing. The signal turns to green, which indicates that startup is in progress.

[Note] When you use the Process Controller, invoke it on the Management screen activated by administrative privilege.

(2) Starting Each Process at The Time of Service Startup

You can use the Management screen to start all the processes along with the startup of the service.

a) From the [System Configuration] menu on the Management screen, click the [System Environment Settings]. The System Environment Settings screen is displayed.

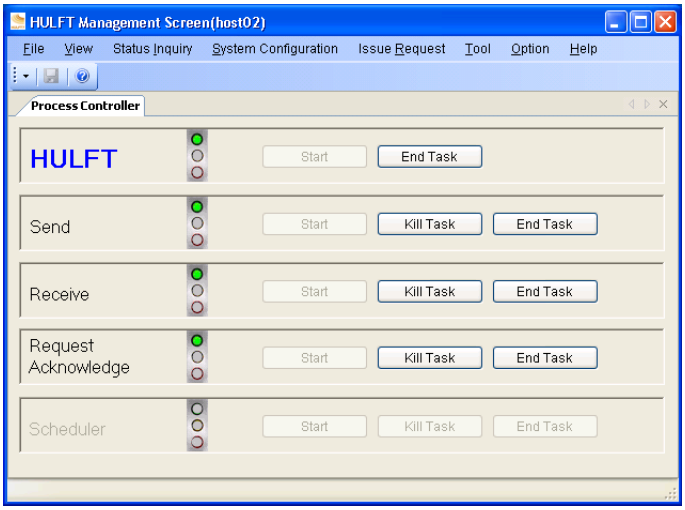
b) Mark the check box of the Automatic Process Startup of the process you intend to start automatically.

[Remarks] The setup is done so that all the processes can be automatically started at the time of HULFT installation.

1.2.2 Exit Method of Each Process

This section explains how to terminate each of the Send process, the Receive process, and the Request Acknowledge process.

a) From the [Tool] menu on the Management screen, click the [Process Controller] to start the Process Controller. The screen of the Process Controller is displayed as shown below:



The green indicates that the startup is in progress, yellow indicates that the termination processing is in progress, and red indicates that the termination of the process is in progress, respectively.

b) Click the [End Task] of the intended process to terminate. The system executes termination processing and signal turns to yellow. When the process comes to a complete end the signal turns to red.

[Note]

- **If termination is executed during send and receive, then these processes (Send and Receive) cannot be terminated, until the current Send and Receive processes are terminated. However, if the Request Acknowledge process is in idle status, the connection will be forcibly terminated, even if HULFT Manager is connected.**
- **When you use the Process Controller, invoke it on the Management screen activated by administrative privilege.**

1.2.3 Forced Termination Method of Each Process

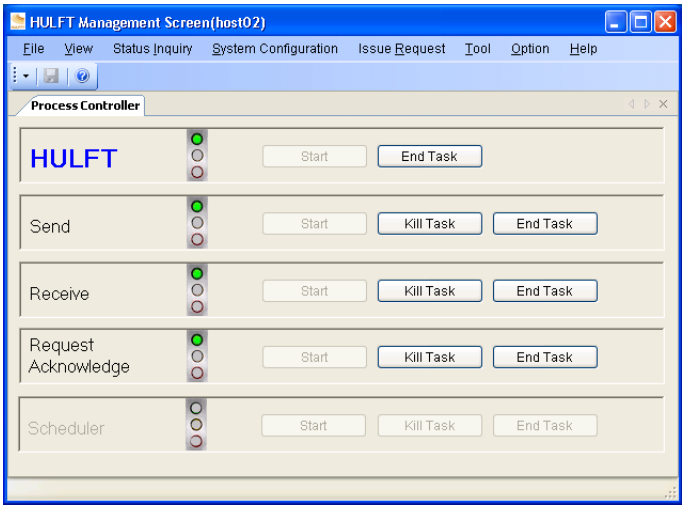
If each processing should not be terminated due to unstable operating system (OS), it is possible to terminate each processing forcibly. However, the forced termination of processes may cause damage to the management information files, or resources may fail to open or objects may remain in the OS.

Therefore, forced termination should be avoided by all means.

[Note] Killing the task of a process forcibly terminates sending or receiving processing, even if it is in progress.

This section explains how to forcibly terminate each processing.

a) From the [Tool] menu on the Management screen, click the [Process Controller] to start the Process Controller. The screen of the Process Controller is displayed as shown below:



The green indicates that the startup is in progress, yellow indicates that the termination processing is in progress, and red indicates that the termination of the process is in progress, respectively.

b) Click the [Kill Task] of the process you intend to terminate forcibly. The system forcibly terminate the process and the signal turns to red.

[Note] When you use the Process Controller, invoke it on the Management screen activated by administrative privilege.

~ Memo ~

Chapter 2

HULFT System Management Information

This chapter describes HULFT system management information.

2.1 System Management Information

The file information of files to be sent is registered. There are two ways to register the information.

- Send Management Information
- Receive Management Information
- Job Information
- Host Information
- Transfer Group Information
- Format Information
- Multi format Information
- Mail Interface Information

The registration, updating and deletion of each information type in the system management information can be executed by using HULFT Management screen. Refer to "Chapter 3 HULFT Management Screen Operation Methods" for more information on the operation method of HULFT Management screen.

The system management information can be registered, modified, or deleted using the system management commands.

For the methods to register, modify, or delete the management information using system management commands, refer to "4.4.1 Registration or Modification of Management Information" and "4.4.2 Deletion of Management Information."

2.1.1 Send Management Information

The file information of files to be sent is registered. There are two ways to register the information.

- Registration using the Management screen
  ⇨ Refer to "3.5.2 Send Management Information List and Update."
- Command registration by specifying the parameter file
  ⇨ Refer to "4.4.1 Registration or Modification of Management Information" for more information.

(1) Field List

Table 2.1 List of Send Management Information Fields

Field Name		Default Value	Setting Value	Optional	Remarks
Screen	File				
Basic Settings					
File ID	SNDFILE		Uppercase Alphanumeric Characters		within 8 bytes
File Name	FILENAME		Characters		within 200 bytes
Transfer Type	TRANSTYPE	TEXT(T)	F,B,T,M		* 1
Compression Level	COMP	None(N)	N,1,2		* 1
Code Conversion	KJCHNGE	Sending Side(S)	S,R,N		* 1
Compression Unit	COMPSIZE	0	0, from 1 to 32760	✓	Unit: byte
Pre-send Job ID	PREJOBID		Alphanumeric Characters	✓	within 8 bytes
Successful Job ID	JOBID		Alphanumeric Characters	✓	within 8 bytes
Unsuccessful Job ID	EJOBID		Alphanumeric Characters	✓	within 8 bytes
Interface DBID	DBID		Alphanumeric Characters	✓	within 8 bytes * 2
Format/Multi Format ID	FMTID		Uppercase Alphanumeric Characters	✓	within 8 bytes
Transfer Group ID	GRPID		Alphanumeric Characters		within 8 bytes
Comment	COMMENT		Characters	✓	within 60 bytes
Extension Settings					
Transfer Interval	INTERVAL	0	from 0 to 32760		Unit: millisecond
Send File Mode	CLEAR	Keep(K)	K,C,D,L	✓	* 1
Transfer Block Length	BLOCKLEN	4096	from 128 to 65520		Unit: byte
Transfer Block Count	BLOCKCNT	3	from 1 to 99		
Transfer Priority	TRANSPRTY	50	from 1 to 256		
EBCDIC Code Set	CODESET	Standard(E)	from A to G, from V to X	✓	* 1
Mail Interface ID	MAILID		Uppercase Alphanumeric Characters	✓	within 16 bytes
Encryption Key	PASSWORD		Alphanumeric Characters	✓	8 to 20 bytes
Shiftcode Mode	SHIFTTRANSACT	Add(Y)	Add(Y), Do not add (N)	✓	* 1

* 1: On screen, select an option.

* 2: Available only when the Transfer Type is set to 'Format' or 'Multiformat.'

(2) Explanation of Each Field

Each field to be set in Send Management Information is explained. Those within brackets() are the strings to be specified while using the parameter file.

File ID (SNDFILE)

The ID in order to identify the Send file.

File Name (FILENAME)

The Sent file that is stored in Windows.

This is specified by the absolute path.

The file names that use the network drive and UNC names cannot be specified.

Transfer Type (TRANSTYPE)

The data type of file to be sent:

- FORMAT (F): Format data
- BINARY (B): Binary data
- TEXT (T): Text data
- MULTIFORMAT (M): Multi format data

Compression Level (COMP)

The compression level at the time of file transfer:

- None (N)
- Horizontal (1): Compression within records
- Vertical (2): Compression across records

Code Conversion (KJCHNGE)

The code conversion destination of the files to be sent

- Sending Side (S)
- Receiving Side (R)
- No Conversion (N)

Compression Unit (COMPSIZE)

The record processing unit at the time of compressing the binary files.

This field is mandatory if the Compression Level field is specified with a value other than 'None' and also with 'BINARY' as the Transfer Type value.

If the value is high, the rate at which the process is executed is faster (This operation, however, requires more memory).

Defaulting this field sets '0.'

Pre-send Job ID (PREJOBID)

The ID of the job that is started before performing the Send process.

Refer to "2.1.3 Job Information" for more information on the Job ID details.

This job cannot be started, when this is omitted.

Successful Job ID (JOBID)

The ID of the job to be executed when sending file is completed successfully

Refer to "2.1.3 Job Information" for more information on the Job ID details.

This job cannot be started, when this is omitted.

Unsuccessful Job ID (EJOBID)

The ID of the job to be executed when sending file is completed unsuccessfully

Refer to "2.1.3 Job Information" for more information on the Job ID details.

This job cannot be started, when this is omitted.

Interface DBID (DBID)

This is the interface at the receiving side of the sent data:

- CSV: CSV format conversion of the Receive file at the receiving side
- XML: XML format conversion of the Receive file at the receiving side

When the Receive file received on the receiving side is in CSV format (UNIX, Linux, Nonstop, and Windows) or in XML format (UNIX, Linux, and Windows), specify the above fixed characters.

When the field is defaulted, the receiving in CSV format or XML format is not carried out.

To establish interface, specify 'FORMAT' or 'MULTIFORMAT' for the Transfer Type.

Format/Multi Format ID (FMTID)

The ID where the Format or Multi Format of the Send file is registered

Refer to "2.1.6 Format Information," for information on the Format ID details.

Refer to "2.1.7 Multi Format Information" for more information on the Multi Format ID details.

When the Transfer Type is 'FORMAT,' the Format ID is mandatory, and when the Transfer Type is 'MULTIFORMAT,' the Multi format ID is mandatory.

Transfer Group ID (GRPID)

The ID where send destination of the Send file is registered.

Refer to "2.1.5 Transfer Group Information" for more information on the Transfer Group ID details.

Comment (COMMENT)

This is the comment related to the Send file.

Transfer Interval (INTERVAL)

This specifies the interval per sending unit (Transfer Block Length x Transfer Block Count)

Send File Mode (CLEAR)

Exclusive access control while sending the file and the mode when it ends successfully:

- Keep (K): Do not lock while sending the file. Keep the file after it ends successfully.
- Clear (C): Lock while sending the file. It will be a 0 byte file after it ends successfully.
- Delete (D): Lock while sending the file and delete the file after it ends successfully
- Lock (L): Lock while sending the file and keep the file after it ends successfully.

Defaulting this field sets 'Keep.'

Transfer Block Length (BLOCKLEN)

The length of a block at the time of transferring.

You cannot specify the values for the Transfer Block Length and the Transfer Block Count of which product exceeds 65520. (See below)

Transfer Block Count (BLOCKCNT)

This refers to the block count that is transferred at one time.

Transfer Priority (TRANSPRTY)

The priority order of the queue at the time of starting the file transfer.

The priority increases as the setting value is decreased.

EBCDIC Code Set (CODESET)

The EBCDIC code system that is used at the time of conversion from ASCII code to EBCDIC code:

- Kana (A)
- Lower Case (B)
- ASCII (C)
- ASPEN (D)
- Standard (E)
- Standard Extension (F)
- NEC Kana (G)
- User Table 1 (V)
- User Table 2 (W)
- User Table 3 (X)

Defaulting this field sets 'Standard (E).'

Mail Interface ID (MAILID)

The Mail Interface ID at the time of issuing the mail after sending the file.

When you default this field, mail interfacing is not carried out.

Encryption Key (PASSWORD)

The key for encrypting the data.

You can apply security to the file to be sent. Specify the same encryption key as the one specified in Receive Management Information of the remote host.

When you default this field, encryption of the file is not carried out.

Shiftcode Mode (SHIFTTRANSACT)

The shift code mode at the time of code conversion to Mainframe or to office computers

- Add (Y): Add shift codes
- Do not add (N): Does not add shift codes

Defaulting this field sets 'Add (Y).'

(3) Points to be Noted When Setting

a) Send File Mode

- When options other than 'Keep (K)' are set, the multicasting cannot be executed.
- When the specified Send file is used by HULFT and other user applications simultaneously, and when 'Delete (D)' is specified in the Send File Mode, the file may get unlocked for a moment because the deletion will be executed after closing the post transfer file. Refer to *Administration Manual* for more information on the exclusive lock across the user applications.

b) Message Replacement

The fields that can execute the message substitution are as follows.

The message that has been specified at the time of the Send File and the message that has been specified at the time of the Send Request on the receiving side can be substituted, by specifying '$MSG0' to '$MSG5' in the following fields:

- Send File Name
- Transfer Group ID
- Pre-send Job ID
- Successful Job ID
- Format ID
- Multi Format ID
- Interface DBID
- Mail Interface ID

2.1.2 Receive Management Information

The file information of files to be received is registered. There are two ways to register the information.

- Registration using the Management screen
  ⇨ Refer to "3.5.3 Receive Management Information List and Update."
- Command registration by specifying the parameter file
  ⇨ Refer to "4.4.1 Registration or Modification of Management Information" for more information.

(1) Field List

Table 2.2 List of Receive Management Information Fields

Field Name		Default Value	Setting Value	Optional	Remarks
Screen	FILENAME				
Basic Settings					
File ID	RCVFILE		Uppercase Alphanumeric Characters		within 8 bytes
File Name	FILENAME		Characters		within 200 bytes
Registration Mode	TRANSMODE	New Creation(N)	N,R,M		*1
Receive Mode	RCVTYPE	Single Receive(S)	S,M		*1
Error Recovery	ABNORMAL	Delete (D)	D,K,R		*1
Genetarion File	GENCTL	Disabled(N)	Y,N		*1
Genetarion File Count	GENMNGNO		0, from 2 to 9999	✓	
Successful Job ID	JOBID		Alphanumeric Characters	✓	within 8 bytes
Unsuccessful Job ID	EJOBID		Alphanumeric Characters	✓	within 8 bytes
Comment	COMMENT		Characters	✓	within 60 bytes
Extension Settings					
Transfer Group ID	GRPID		Alphanumeric Characters	✓	within 8 bytes
EBCDIC Code Set	CODESET	Standard(E)	from A to G, from V to X	✓	*1
Notification	JOBWAIT	Receiving Completion(T)	J,T	✓	*1
Mail Interface ID	MAILID		Uppercase Alphanumeric Characters	✓	within 16 bytes
Encryption Key	PASSWORD		Alphanumeric Characters	✓	from 8 to 20 bytes
Verify Data	DATAVERIFY	No(0)	0,1	✓	*1

*1: On screen, select an option.

(2) Explanation of Each Field

This section explains the fields that are to be set in Receive Management Information. Those within brackets () are the strings to be specified while using the parameter file.

File ID (RCVFILE)

The ID in order to identify the Receive file.

File Name (FILENAME)

The name of the Receive file.

The absolute path is specified.

The file names that use the network drive and UNC names cannot be specified.

Registration Mode (TRANSMODE)

The registration method of the Receive file.

- New Creation (N): Create new Receive files. Using an existing file name displays an error.
- Replace (R): Replace the content of an existing file with received data. A new file is created if the file does not exist.
- Append (M): Appends the received data to the end of the existing files. A new file is created if the file does not exist.

If 'Append' is specified when 'Single Receive' is set as Receive Mode, if a problem occurs while receiving, the receive data will be appended to the file before the error occurs.

Receive Mode (RCVTYPE)

The receive mode for Receive files:

- Single Receive (S): File is received from a single host.
- Multiple Receive (M): File is received from multiple hosts and one file is created.

If 'Multiple Receive' is selected, 'Append' must be set as the Registration Mode and 'Keep' as Error Recovery.

Error Recovery (ABNORMAL)

The Receive file recovery when the Receive operation fails.

- Delete (D)
- Keep (K)
- Restore (R)

Generation File (GENCTL)

The Receive file generation management mode.

- Disabled (N): Generation file management does not exist.
- Enabled (Y): Generation file management exists

When 'Enabled' is selected, the Registration Mode must be set to 'New Creation' or 'Replace' and Error Recovery to 'Delete.'

Generation File Count (GENMNGNO)

The generation file management count of the Receive file.

Only when Generation File is set to 'Enabled,' the setting value is valid.

Successful Job ID (JOBID)

The ID of the job to be started when receiving file is completed successfully

Refer to "2.1.3 Job Information" for more information on the Job ID details.

This job cannot be executed, when this is omitted.

Unsuccessful Job ID (EJOBID)

The ID of the job to be started when receiving file is completed unsuccessfully

Refer to "2.1.3. Job Information" for more information on the Job ID details.

When you default this field, the job is not started.

Comment (COMMENT)

The comment related to the Receive file.

Transfer Group ID (GRPID)

The Transfer Group ID of the Receive file.

Refer to "2.1.5 Transfer Group Information" for more information on the Transfer Group ID details.

EBCDIC Code Set (CODESET)

The EBCDIC code used when converting from EBCDIC code to ASCII code:

- Kana (A)
- Lower Case (B)
- ASCII (C)
- ASPEN (D)
- Standard (E)
- Standard Extension (F)
- NEC Kana (G)
- User Table 1 (V)
- User Table 2 (W)
- User Table 3 (X)

The setting is valid if the Code Conversion of Send Management Information at the sending side is 'Receiving Side.'

Defaulting this field sets 'Standard (E).'

Notification (JOBWAIT)

The receive completion notification to be sent to the sending side host:

- Receive Completion (T): Notification after completion of receive.
- Successful Job Completion (J): Notification after successful job completion after the Receive process.

When 'Successful Job Completion' is specified, as the remote host does not receive the completion notification until the Post-receive Job ends, Timeout may occur in the remote host. Pay attention while setting the Timeout period.

Defaulting this field sets 'Receive Completion (T).'

Mail Interface ID (MAILID)

The Mail Interface ID when mail is issued after file receive.

The Mail Interface is not executed, when this is omitted.

When you default this field, mail interfacing is not carried out.

Encryption Key (PASSWORD)

The key to execute the decryption of the data.

This is specified when the encrypted data is decrypted. Specify the same key as the encryption key specified in Send Management Information of the remote host.

When you default this field, decryption of the data is not carried out.

Verify Data (DATAVERIFY)

This field specifies whether to verify data of the file to receive.

- No (0): Does not verify data
- Yes (1): Verify data

Defaulting this field sets 'No (0).'

(3) Points to be Noted When Setting

a) Specification of Registration Mode, Receive Mode, and Generation File

The combinations that can be specified in Receive Management Information are as follows.

Table 2.3 Combinations of Receive Management Information

	Receive Mode	Single Receive		Multiple Receive	
	Generation File	Enabled	Disabled	Enabled	Disabled
Registration Mode	Error recovery				
New Creation	Delete	✓	✓		
	Keep		✓		
	Restore		✓		
Replace	Delete	✓	✓		
	Keep		✓		
	Restore		✓		
Append	Delete		✓		
	Keep		✓		✓
	Restore		✓		

b) Receive Mode

- Specification of 'Multiple Receive' file.

  It is necessary to take enough care because during receive, the data is stored in a temporary file and is copied to the Receive file after the Receive operation is completed.

c) Error Recovery

(1) Point to note at the time of specifying 'Delete'

Delete is not executed if the Receive file already exists and error occurs when 'New Creation' is selected as the Registration Mode.

(2) Point to be noted at the time of specifying 'Keep'

When 'Multiple Receive' is selected as the Receive Mode, if error occurs while receiving in a temporary file, the data received prior to the occurrence of the error is not written to the Receive file. In addition, if any error occurs when the temporary file is being copied to the Receive file, the receive data up to that point is added. Therefore, the duplication of data can be checked with the application program.

d) Message Replacement

The fields that can execute the message replacement are as mentioned below.

By specifying '$MSG0' to '$MSG5,' to the following fields, messages are replaced for the messages that are sent from the sending side.

- Receive File Name
- Transfer Group ID
- Successful Job ID
- Mail Interface ID

e) Receive File Name

- By specifying '$SNDFILE,' the Send file name of the sending side is set to the Receive file name. When the sending side is Windows, the path name of the sending side is set to the path name of the Receive file by specifying '$SNDPATH.' When the Send file name is set to the Receive file name, follow the naming conventions as shown below.
- When specifying '$SNDFILE,' specify 'Single Receive (S)' as the Receive Mode.
- By specifying '$SNDFILE' and '$SNDPATH,' when the size of the Receive file name exceeds the size that is specified by the management information, error occurs before receiving.

Table 2.4 File Naming Conventions

Host Type	Receive File Name(Windows)		
Send File Name	$SNDPATH$SNDFILE	$SNDFILE	c:\usr\$SNDFILE
Mainframe			
Sequential Organization File HULFT.DAT.SND.F01	HULFT.DAT.SND.F01	HULFT.DAT.SND.F01	c:\usr\HULFT.DAT.SND.F01
Partition Organization File HULFT.DAT.F02(SND)	HULFT.DAT.SND.F02	HULFT.DAT.SND.F02	c:\usr\HULFT.DAT.SND.F02
UNIX/Linux /hulft/dat/snd.f03	snd.f03	snd.f03	c:\usr\snd.f03
Windows c:\hulft\dat\snd.f04	c:\hulft\dat\snd.f04	snd.f04	c:\usr\snd.f04
i5OS hulft/f05(snd)	snd.f05	snd.f05	c:\usr\snd.f05

2.1.3 Job Information

Commands to start a job before sending or after sending and receiving are registered. A maximum of 13 jobs can be registered per Job ID. There are two ways to register the information.

- Registration using the Management screen
  ⇨ Refer to "3.5.4 Job Information List and Update."
- Command registration by the specification of parameter files
  ⇨ Refer to "4.4.1 Registration or Modification of Management Information" for more information.

(1) Field List

Table 2.5 List of Job Information Fields

Field Name		Default Value	Setting Value	Optional	Remarks
Screen	File				
Job ID	JOB		Alphanumeric Characters		within 8 bytes
Startup Job	JOB DEF to DEFEND		Characters		within 60 bytes
Comment	COMMENT		Characters	✓	within 60 bytes

(2) Explanation of Each Field

Each field that is set in Job Information is explained. Field names within ( ) are those specified at the time of use of the parameter files.

Job ID (JOB)

The ID of the job used to identify the job to be executed.

This Job ID is related to the Send and Receive Management Information Job ID.

Startup Job (JOB DEF to DEFEND)

The batch file or the program name.

This is specified by the absolute path.

When parameters are specified, they are separated by spaces.

Comment (COMMENT)

The comment related to the startup job.

(3) Points to be Noted When Setting

a) Startup Job

If spaces are included in the Startup Job path or execution file name, specify with MS-DOS name. Refer to 'Windows Help' for more information on MS-DOS names.

b) If multiple jobs are specified

If multiple jobs are specified, they are executed in the order of registration. It is not executed concurrently. The subsequent jobs are not executed if a job ends unsuccessfully.

c) Messages Replacement

By specifying '$MSG0' to '$MSG5' in the Startup Job, the messages are replaced with the sent message.

2.1.4 Host Information

Detail Information on host on the sending side or the receiving side is registered. There are two ways to register the information.

- Registration using the Management screen

  ⇨ Refer to "3.5.5 Host Information List and Update."

- Command registration by specifying the parameter file

  ⇨ Refer to "4.4.1 Registration or Modification of Management Information" for more information.

(1) Field List

Table 2.6 List of Host Information Fields

Field Name		Default Value	Setting Value	Optional	Remarks
Screen	File				
Basic Settings					
Host Name	HOST		Alphanumeric Characters		within 68 bytes
Host Type	HOSTTYPE	WindowsNT(N)	H,U,N,W,K,A		*1
Kanji Code Type	KCODETYPE	SHIFT-JIS(S)	S,J,E,I,K,N,8		*1
Receive Port No.	RCVPORT	30000	from 1 to 65535		
Request Acknowledge Port No.	REQPORT	31000	from 1 to 65535		
JIS Year	JISYEAR	83JIS(1)	0,1		*1
Connection Type	CONNECTTYPE	LAN(L)	L	✓	*1
Send Process Multiplex Level by Host	HOSTSPSNUM	0	from 0 to 999	✓	
Comment	COMMENT		Characters	✓	within 60 bytes
Internet					
Local Net Proxy Server Name	MYPROXYNAME				*2
Local Net Proxy Port No.	MYPROXYPORT				*2
Global Net Proxy Server Name	YOURPROXYNAME				*2
Global Net Proxy Port No.	YOURPROXYPORT				*2
Security					
Allow Send Request/Resend Request	SENDPERMIT	Yes(Y)	Y,N	✓	*1
Allow to View Post-receive Job Result	HULJOBPERMIT	Yes(Y)	Y,N	✓	*1
Allow to Notify Job Result	HULSNDRCPERMIT	Yes(Y)	Y,N	✓	*1
Allow to Execute Remote Job	HULRJOBPERMIT	Yes(Y)	Y,N	✓	*1
Notify User Details	USRNOTIFY	No(N)	Y,N	✓	*1

* 1: On screen, select an option.

* 2: Do not modify the setting of this field, because the value is set by HULFT-HUB.

(2) Explanation of Each Field

Each field that is set in Host Information is explained. Field names within ( ) are specified at the time of use of the parameter files.

Host Name (HOST)

The host name of the sending and receive side.

At the time of sending, this host name is linked with the host name of the Transfer Group Information. At the time of receiving, this host name is linked with the sending side local host name.

[Note] Specify the Host Name in alphanumeric characters only. Certain symbols can be used due to compatibility with lower versions, yet the operation under such setting is not guaranteed.

Host Type (HOSTTYPE)

The host type of the host name mentioned above:

- Mainframe (H): Mainframe
- UNIX (U): UNIX/Linux/Nonstop
- WindowsNT (N): WindowsNT OS
- Windows (W): Windows9x OS
- AS/400 (A): i5/OS
- K (K): Fujitsu K series

Kanji Code Type (KCODETYPE)

The Kanji code types of the host names mentioned above:

- SHIFT-JIS (S)
- JEF (J)
- EUC (E)
- IBM (I)
- KEIS (K)
- NEC (N)
- UTF-8(8)

Receive Port No. (RCVPORT)

The port number used by the Receive process.

Request Acknowledge Port No. (REQPORT)

The port number used by the Request Acknowledge process.

JIS Year (JISYEAR)

The JIS Year of the Kanji code mentioned above:

- 78JIS (0)
- 83JIS (1)

Connection Type (CONNECTTYPE)

Connection type of the above-mentioned host

- LAN (L)

In English edition, the setting is fixed to 'L.'

Send Process Multiplex Level by Host (HOSTSPSNUM)

This field specifies the multiplex level of sending by host.

When you set '0' to this field, HULFT does not check the multiplex level of sending by host. Defaulting this field sets '0.'

Set the value that is equal or lower than the setting value of the Send Process Multiplex Level in the System Environment Settings to this tag.

Comment (COMMENT)

The comment related to the host.

Local Net Proxy Server Name (MYPROXYNAME)

Local Net Proxy Port No. (MYPROXYPORT)

Global Net Proxy Server Name (YOURPROXYNAME)

Global Net Proxy Port No. (YOURPROXYPORT)

Do not modify the setting of this field, because the value is set by HULFT-HUB.

Allow Send Request/Resend Request (SENDPERMIT)

This field specifies whether to accept the services of the Send Request (SEND) and the Resend Request (RESEND).

- Yes (Y): Allow the service to be accepted
- No (N): Refuse the acceptance of the service

Defaulting this field sets 'Yes(Y).'

Allow to View Post-receive Job Result (HULJOBPERMIT)

This field specifies whether to accept the service of the Post-receive Job Result Inquiry Request (HULJOB).

- Yes (Y): Allow the service to be accepted
- No (N): Refuse the acceptance of the service

Defaulting this field sets 'Yes(Y).'

Allow to Notify Job Result (HULSNDRCPERMIT)

This field specifies whether to accept the service of the Job Execution Result Notification (HULSNDRC).

- Yes (Y): Allow the service to be accepted
- No (N): Refuse the acceptance of the service

Defaulting this field sets 'Yes(Y).'

Allow to Execute Remote Job (HULRJOBPERMIT)

This field specifies whether to accept the service of the Remote Job Execution (HULRJOB).

- Yes (Y): Allow the service to be accepted
- No (N): Refuse the acceptance of the service

Defaulting this field sets 'Yes(Y).'

Notify User Details (USRNOTIFY)

This field specifies whether to notify the User ID (OS) and the User ID (Management Screen) to the host at connection destination.

- Yes (Y): Notify
- No (N): Do not notify

For the details on the User ID, refer to *Administration Manual*.

Defaulting this field sets 'No(N).'

(3) Points to be Noted When Setting

a) Host Name

Specify a valid host name, which is registered in the remote host. Also, host name is case-sensitive.

2.1.5 Transfer Group Information

The transfer destinations (remote host) are grouped and registered. The number of the Host Name that can be specified per Transfer Group is 1000. There are two ways to register the information.

- Registration using the Management screen
  ⇨ Refer to "3.5.6 Transfer Group Information List and Update."
- Command registration by specifying the parameter file
  ⇨ Refer to "4.4.1 Registration or Modification of Management Information" for more information.

(1) Field List

Table 2.7 List of Transfer Group Information Fields

Field Name		Default Value	Setting Value	Optional	Remarks
Screen	File				
Transfer Group ID	GRP		Alphanumeric Characters		within 8 bytes
Host Name	SERVER DEF to DEFEND		Alphanumeric Characters		within 68 bytes
Comment	COMMENT		Characters	✓	within 60 bytes

(2) Explanation of Each Field

Each field to be set in the Transfer Group Information is explained. Field names within ( ) are specified when using parameter files.

Transfer Group ID (GRP)

The ID is used to identify the registered sending or receiving destination host.

The Transfer Group ID is linked with Transfer Group ID in the Send Management Information and Receive Management Information.

Host Name (SERVER DEF to DEFEND)

The destination host name in the transfer of the file to be sent or received.

Comment (COMMENT)

The comment with respect to the Transfer Group.

(3) Points to be Noted When Setting

a) Host Name

The same host name cannot be registered more than once in one Transfer Group.

2.1.6 Format Information

The Format Information of the file to send is registered. The number of fields you can register is 1000, while the number of bytes you can register is up to 19997 bytes in total. One field consists of several elements, from the Field Name to the Field Type. There are two ways to register the information.

- Registration using the Management screen
  ⇨ Refer to "3.5.7 Format Information List and Update Screens."
- Command registration by specifying the parameter file
  ⇨ Refer to "4.4.1 Registration or Modification of Management Information" for more information.

(1) Field List

Table 2.8 List of Format Information Fields

Field Name		Default Value	Setting Value	Optional	Remarks
Screen	File				
Format ID	FMT		Uppercase Alphanumeric Characters		within 8 bytes
Field Name	FORMAT DEF to DEFEND		Characters		within 16 bytes
Start Position			from 1 to 9999	✓	
Byte Count			from 1 to 9999		
Decimal Places			from 0 to 9	✓	
Field Type			9,B,F,I,M,N,P,S,X		
Comment	COMMENT		Characters	✓	within 60 bytes

(2) Explanation of Each Field

Each field to be set in the Format Information is explained. Field names within ( ) are specified at the time of using the parameter files.

Format ID (FMT)

The ID is used to identify the registered format.

The Format ID is linked with the Format ID in the Send Management Information and the Multi Format Information.

Field Name (FORMAT DEF to DEFEND)

The name that identifies the fields.

Start Position

The start position of the relevant field.

The starting position of the field (Byte count from the top of the record) is specified.

If omitted, the sum value of the Byte Count to the Start Position of the preceding field is specified (automatically calculated).

Byte Count

The byte count of the relevant field.

Decimal Places

The decimal places of the relevant field

Specify the Decimal Places when the field carries data in numeral and, if any, there is decimal position.

Field Type

The type of data of the relevant field.

X: Character
B: Binary
P: Signed Internal Decimal
N: Kanji
M: Mixing of Kanji and Characters
9: Unsigned External Decimal
F: Floating Point
I: Image
S: Signed External Decimal

Comment (COMMENT)

The comment relevant to the format.

(3) Field Type

The details of the field type are shown below.

Table 2.9 Details of Field Type

Field Type		Size (Bytes)	Field Explanation
X	Character	From 1 to 9999	Character data format that contains only ASCII code The field type should not include Shift-JIS codes
M	Mixing of Kanji and Characters	From 1 to 9999	Character data format that ASCII code and double byte code coexist
N	Kanji	From 2 to 9998	Character data format that contains only double byte code ASCII code should not be included Only even numbered bytes can be handled
9	Unsigned External Decimal	From 1 to 18	Decimal data format of zoned numeric without sign
B	Binary	2,4,8	Numeric data format of signed integer
P	Signed Internal Decimal	From 1 to 10	Packed decimal data format with sign Only up to 18 digits can be handled
S	Signed External Decimal	From 1 to 18	Decimal data format of zoned numeric with sign
F	Floating point	4,8	Floating point data format with sign Supports the floating decimal format of IEEE
I	Image	From 1 to 9999	Data format that indicates no conversion

Further, the values that can be handled as the sign part of the Signed External Decimal (S) or the Signed Internal Decimal (P) are as follows:

3, 4, 5, 7

[Remarks] For the details of Code Conversion, refer to the *Administration Manual*.

(4) Points to be Noted When Setting

a) Field Name

Within the same Format ID, you cannot specify the same field name more than once.

2.1.7 Multi Format Information

When there are different record formats in the file to send, multi format is registered. You can register up to 20 keys at maximum, the Format ID, and the Default Format ID in the information. There are two ways to register the settings.

- Registration using the Management screen
  ⇨ For more information, refer to "3.5.8 Multi Format Information List and Update."
- Command registration by specifying the parameter file
  ⇨ Refer to "4.4.1 Registration or Modification of Management Information" for more information.

(1) Field List

Table 2.10 List of Multi Format Information Fields

Field Name		Default Value	Setting Value	Optional	Remarks
Screen	File				
Multi Format ID	MFMT		Uppercase Alphanumeric Characters		within 8 bytes
Key Start Position	KEYSTART		from 1 to 19997		
Key Length	KEYLEN		from 1 to 20		
Default Format ID	DFMTID		Uppercase Alphanumeric Characters	✓	within 8 bytes
Key Value	MFORMAT DEF to DEFEND		Alphanumeric Characters		Key Length
Format ID			Uppercase Alphanumeric Characters		within 8 bytes
Coment	COMMENT		Characters	✓	within 60 bytes

(2) Explanation of Each Field

The fields to be set in the Multi Format Information are explained. Field names within ( ) are specified at the time of using the parameter files.

Multi Format ID (MFMT)

The ID is to identify the registered multi format.

This Multi Format ID is linked with the Multi Format ID of the Send Management Information.

Key Start Position (KEYSTART)

Starting Position of the Key, which is specified for each record.

The sum of Key Start Position and Key Length cannot exceed '19998.'

When the Key Start Positions is greater than the length of Format Information, the Key Value is not correctly applied.

Key Length (KEYLEN)

The length of the key value, which is specified for each record.

Default Format ID (DFMTID)

This field specifies the default Format ID when the registered key is inconsistent with the key in the data.

If the Default Format ID is specified beforehand, HULFT applies the format specified by the Default Format ID where the key in the data does not agree with the key registered in the Multi Format Information. If you do not specify this tag, inconsistency with the key is treated as a conversion error.

Key Value (MFORMAT DEF to DEFEND)

The key which is specified for each record. Specify X (Type of Characters) or M (Coexistence of Kanji and Single Byte Characters type) for the field type in the area where you set the Key Value.

Format ID

The Format ID used when the keys match. The Format ID that is registered in Format Information is specified. It is necessary to register the same count as the Key Value. The Format ID is distinguished from the Key Value and applied to the data.

Comment (COMMENT)

The comment related to Multi Format Information

(3) Points to be Noted When Setting

a) When the Key Value is not correctly applied

Correct Key Value might not be applied when you place P (Signed Internal Decimal) or S (Signed External Decimal) before the Key Start Position. This is because such setting causes misalignment of the Key Start position.

b) Starting position of format

When you adopt the Format Information which agrees to the Key Value, HULFT starts applying the information from the first byte in the record, regardless of the Key Start Position.

2.1.8 Mail Interface Information

The destination information of the mail that is sent after file Send or Receive process. It can be registered only from the Management screen. (Refer to "3.5.9 Mail Interface Information List and Update.")

The number of mail addresses that can be specified in each Address or CC is 50.

(1) Field List

Table 2.11 List of Mail Interface Fields

Field Name		Default Value	Setting Value	Optional	Remarks
Screen	File				
Mail Interface ID			Uppercase Alphanumeric Characters		within 16 bytes
Title			Characters		within 60 bytes
Address			Characters		within 85 bytes per mail address within 4300 bytes in total
CC			Characters	✓	within 85 bytes per mail address within 4300 bytes in total
Text		*1	Characters		within 512 bytes
Attachment File				✓	

* 1: Example is displayed

(2) Explanation of Each Field

The fields set in the Mail Interface Information are explained.

Mail Interface ID

The ID that identifies the mail sent after Send or Receive operations.

Title

The title of the mail.

Address

The mail address for sending the mail. Use commas ',' to separate addresses. Addresses are automatically separated by 'commas' when specifying from the Address Book.

CC

The mail address for sending mail message copies. Use commas ',' to separate addresses. Addresses are automatically separated by 'commas' when specifying from the Address Book.

Text

The main text of mail messages that are sent. If the environment variable name is included in the text, it is converted according to conversion rules.

Attachment File

The attachment files are specified. Specification for attaching the files that are sent or received by HULFT or the optional files is done here. The size of attached files can be a maximum of 20KB.

- Transfer File
- Fixed File: File names with a maximum of 256 bytes are specified.

[Note]

- **The mail software may not display the file name appropriately if the attached file name includes Japanese or other characters. However, there will be no impact on file content.**
- **Regarding the attached file, you cannot specify the file name in which the name of network drive and/or the UNC is used.**

2.2 Settings of Receiving in CSV Format

During the conversion of the received file to CSV format, register the delimiter and enclosed characters on the receiving side. This is registered from the Management screen.

The content can be set for each File ID that needs to be converted. The value - "(3) User Default Value" is used, when the File ID is not set. The value mentioned in "(4) Default Value of Each Field" is used when the CSV Environment Settings file does not exist or when the value mentioned in "(3) User Default Value" is not set.

For more information on the CSV Conversion Information Registration screen. refer to "3.8.2 CSV Conversion Information Registration."

(1) File Name

The name of the CSV Environment Settings file is 'hulcsv.inf.' This file name cannot be changed.

The CSV Environment Settings file is stored in the path where the system file of HULFT (HULPATH) exists.

(2) Explanation of Each Field

The explanation of each field is given below. Refer to "(4) Default Value of Each Field" for more information on the default value of each field.

Receive File ID

This field specifies the ID of the file that has been converted to CSV format. All the alphabets are specified in uppercase.

Delimiter

This field specifies delimiter characters between fields.

One single byte character:	The specified character is used as a delimiter. Select from the following characters: ' ! # $ % & ( ) , ^ | ~ \ /
TAB:	Tab code (0x09).
SPACE:	Space code (0x20).
NONE:	No delimiter character.

Enclosed Characters

When the Field Type of the Format Information is 'X', 'M' or 'N', specify the character that encloses the value of the field. Only a single byte character other than space and tab (' ! # $ % & ( ) , ^ | ~ \ /) is valid. When the character is not enclosed, 'N' is specified. The value 'N' and spaces cannot be enclosed.

Trailing Space Cut

If the Field Type of Format Information is 'X', 'M' or 'N' and there is a trailing space after the value of that field (Includes double-byte spaces), specification for deleting the space or deleting the trailing space, if the actual data size is shorter than the Format Information size through Kanji code conversion, is done here.

Enabled:	Delete the trailing space after the field
Disabled:	Do not delete the trailing space after the field

Compress Spaces

If the Field Type of the Format Information is 'X', 'M' or 'N', the process when the fields are found to be all spaces (includes double-byte spaces), is described.

Enabled: Delete all spaces
Disabled: Set one half width space as field value

This specification is valid only when the Trailing Space Cut is specified as 'Enabled.'

The space codes to be omitted are as follows.

In the case of Shift-JIS

- 0x20 (half width space)
- 0x8140 (full width space)

Suppress Leading Zero

If the Field Type of the Format Information is 'B', 'S', 'P', 'F' or '9' and the field values are less than the stipulated number of display digits (See below), specification for embedding a '0' before the numerical value, is done here. The setting is done with the File ID units.

Enabled: Cut the '0' before the numerical value.
Disabled: Fill '0' before the numerical value.

Table 2.12 Conversion Rules for CSV Format Conversion

Receive file (after conversion)			CSV Data
Item type		Number of bytes	Specified display digits
F	Floating point type	4	30
		8	30
P	Signed internal decimal	1 to 2	12
		3 to 5	12
		6 to 10	21
B	Binary type	2	12
		4	12
		8	21
S	Signed external decimal	1 to 4	12
		5 to 9	12
		10 to 18	21

* When the Field Type is 'F (Floating point),' the number of digits below decimal point is fixed as 9 digits. In case the data exceeds the stipulated display digit count, it will be dependent on the data.
* In the attribute conversion function, when it is converted from 'P (Signed Internal Decimal)' type, 'S (Signed External Decimal)' type to '9 (Unsigned External Decimal)' type, the stipulated display digit count depends on the data digit count. When it is not converted, it depends on the byte count of the field.
* The stipulated display digit count includes the sign (only '-') and the decimal point.
* The data of binary type is processed as a signed data format.

Title Output

The field name of the Format Information is used as the title line and specification for outputting the first line, is described here. However, the display of the title line is valid only when the Transfer Type is 'FORMAT.'

Enabled: Output the title line
Disabled: Do not output the title line

(3) User Default Value

When the multiple File IDs with the same setup details are present in the CSV Format Conversion Environment File, the same settings can be done with one File ID by setting the File ID mentioned below 'DEFAULTF' to the default value. When the File ID to be converted does not exist in CSV Format Conversion Environment File, the value 'DEFAULTF' is set.

When 'DEFAULTF' is not set in the CSV Format Conversion Environment file, the Default value of each field is set. Refer to "(4) Default Value of Each Field" for more information.

File ID : DEFAULTF

(4) Default Value of Each Field

The default value of each setting value is given below. When there is no relevant File ID or when the file does not exist, the default value is set as the settings value.

Table 2.13 Default Values

Item name	Default value
Delimiter	, (Comma)
Trailing Space Cut	Enabled
Compress Spaces	Enabled
Enclosed Character	" (Double quotes)
Suppress Leading Zero	Enabled
Title Output	Disabled

(5) CSV Format File

When the CSV format receive is executed, the CSV format file is created in the same directory as the Receive file name. The file name of CSV format will be '<receive file name>.csv'.

(6) Points to be Noted

Do not set 'I' to the field type of Format Information since error occurs in CSV Format Conversion processing.

Since 'I' indicates image (not converted at the time of transfer), it may contain the enclosed characters or delimiter characters in the data mentioned above.

2.3 Settings to Receive in XML Format

During the conversion of the Receive files to XML format, it is required to set the XML Environment

Settings such as XML tree structure or output encoding etc.

[Note] To execute XML Environment Settings, it is required to use HULFT Manager.

(1) XML Environment Settings File

One XML Environment Settings File is created for each XML Environment Settings on the receiving side. The file name is 'Sending Side Host Name.Segment.Multi Format or Format ID.inf'. Even if the sending side host name is in uppercase letters, it is converted to lowercase letters and the file name is created. The XML Environment Settings File is created in the 'xml' directory under the HULPATH) path where HULFT system file exists.

(2) XML Environment Settings Method

XML Environment Settings are executed using the related product 'HULFT Manager'. It is necessary to set for each Format ID or the Multi Format ID of the sending side host. However, it is possible to set multiple IDs for the Format ID or the Multi Format ID, with one definition by specifying the wild card. For the details and method of settings, refer to *Online Help* of HULFT Manager.

(3) XML Format File

When the XML format receive is executed, the XML format file is created in the same directory as the Receive file. The file name of the XML format is '<receive file name>.xml'.

(4) Points to be Noted

a) Do not specify 'I' in the Field Type of the Format Information since error occurs in XML format conversion processing. Since 'I' indicates image (not converted at the time of transfer), enclosed characters may be included in the data.

b) The following characters are not specified in the Format ID, Multi Format ID and the Format ID within the Multi Format Information.

- Dot '.'
- Characters that cannot be used in file names
- %DATE, %YYYY, %YY, %MM, %M, %DD, %D, %TIME, %HH, %H, %12HH, %12H, %MI,%N, %SS, %S, %AP

c) When the following input characters are included in the data for which Send and Receive processes are executed, it is converted to the following output characters by the XML conversion process.

Table 2.14 XML Replacement Characters

Input characters	Output characters
<	<
>	>
"	"
'	'
&	&

Chapter 3

HULFT Management Screen Operation Methods

HULFT Management screen allows you to update the environment of sending and receiving in dialog format, as well as to issue requests and to confirm the status of sending and receiving.

This chapter describes how to operate HULFT Management screen.

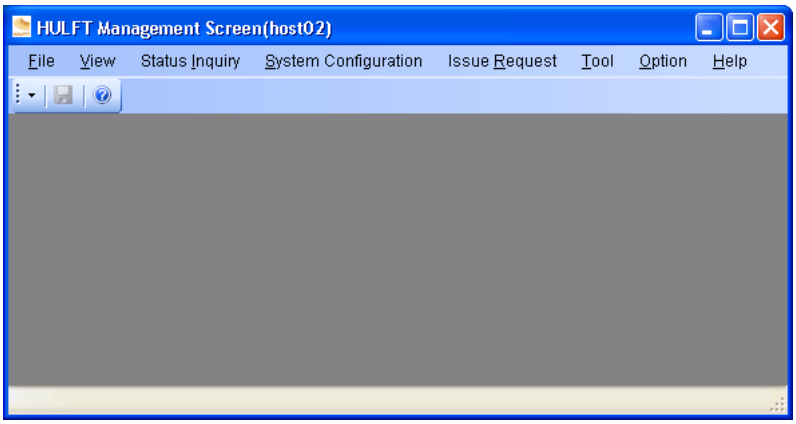
3.1 Basic Operation of Management Screen

This section explains basic matters to use the Management screen, such as how to start and terminate the Management screen, required settings which should be done before you start using the Management screen, as well as the screen structure that you should know.

3.1.1 Method of Starting up Management Screen

From the Start Menu, Select [All Programs] >[HULFT Family] and point the [HULFT Management screen] of HULFT7e you intend to start.

The Management screen is started and the initial screen is displayed as shown below:



3.1.2 Method of Terminating Management Screen

From the [File] menu on the Management screen, Click the [Exit]. The Management screen is terminated.

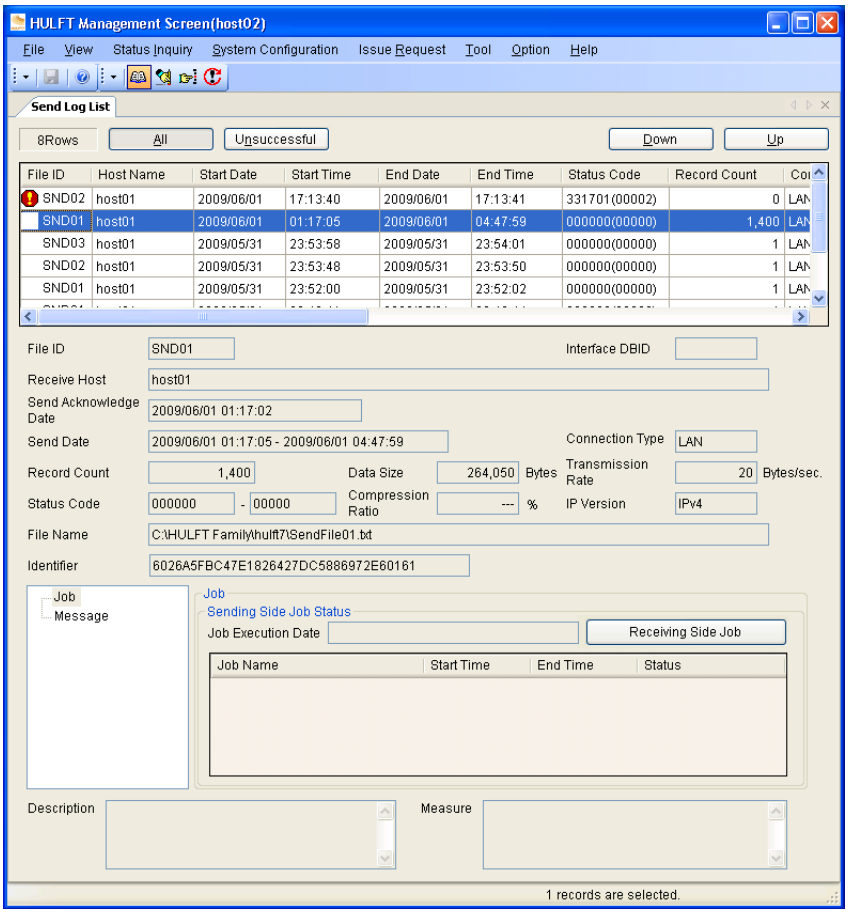
3.1.3 Before You Use Management Screen

On the Management screen, you can modify the maximum number of records displayed on each status inquiry screen and management information list screen. Moreover, you can update on-screen contents by refreshing the Management screen automatically while having two or more kinds of log information displayed on the Management screen.

You can configure such setting before you start using the Management screen, if required. For details, refer to "3.9 Option Menu."

3.1.4 Structure of Management Screen

The Management screen consists of menu that provides various functions, panels on which the status of sending and receiving as well as system management information screens are displayed, and a toolbar. On the toolbar, the buttons are displayed, depending upon the intended operation. Shown below is an example of how the Management screen is displayed:



You can modify the layout of the panel as you like. For details, refer to *the Online Help*.

[Remarks] From the [Help] menu, clicking the [Contents] or the [Search by Keyword] displays *the Online Help*. Meanwhile, pressing the F1 key while using the function of the Management screen allows you to view the relevant explanation on *the Online Help*.

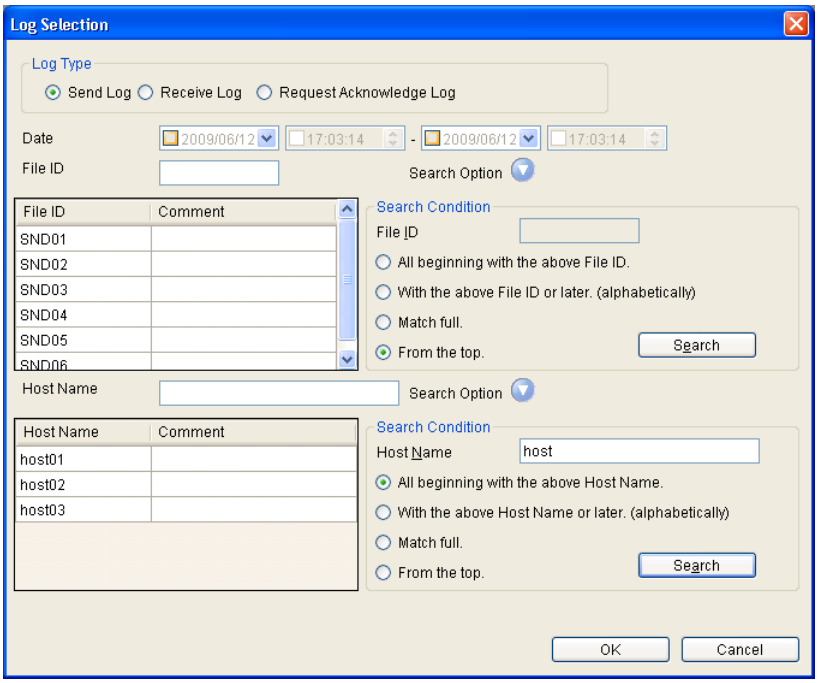
3.1.5 Common Operation of Dialog Boxes

This section explains how to operate dialog boxes which are commonly used for searching for the target log records or management information on the Management screen.

(1) Selection of ID or the Host Name from a list

You can specify the File ID or the Host Name you intend to search from a list, when you confirm the log of the Send process or the Receive process.

Clicking the [Search Option] on the dialog box displays a list of the ID or the Host Names that are registered on each management information. Shown below is an example when you use the [Search Option] on the Log Selection dialog box:



File ID

This field displays the File ID selected from the list of the File ID.

Host Name

This field displays the Host Name selected from the list of the Host Name.

Search Condition

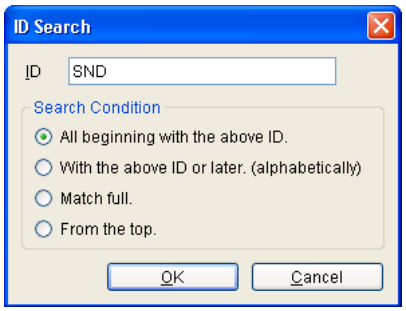
This section specifies search condition to narrow down the ID or the Host Name to be displayed in the list.

For the method of setting the condition, refer to "(2) Specification of the Search Condition to narrow down the ID or the Host Name to be displayed."

(2) Specification of the Search Condition to narrow down the ID or the Host Name to be displayed.

This subsection explains the method of specifying the Search Condition in the ID Search dialog box that is displayed when searching with the [Search Option] or on each management information.

Shown below is an example of specifying the Search Condition on the ID Search dialog box.



ID

This field specifies the ID or the Host Name to be searched.

Search Condition

Select condition for searching from the following 4 options:

a) All beginning with the above File ID

The option allows you to search for all the ID or the Host Name that begin with the character you specified in the ID field.

b) With the above ID or later (alphabetically)

This option allows you to search the data that corresponds to or comes after the specified ID or the Host Name in alphabetical order.

c) Match full

This option allows you to search for the ID or the Host Name that agrees to the character you specified in the ID field.

d) From the top

This option allows you to search the data that is arranged in ascending order.

[Note] **When the number of the ID or the Host Name that fulfills the Search Condition in a), b), or d) exceeds the value of the MAX. Retrieval Cases, the data that corresponds to or comes after the MAX. Retrieval Cases is not displayed. In that case, increase the value of the Max. Retrieval Cases or change the Search Condition to search the ID or the Host Name again. For the method of setting the Max Retrieval Cases, refer to "3.9 Option Menu."**

[OK]

Clicking this button starts searching in accordance with the specified condition and a search result is displayed in the form of list.

[Cancel]

Clicking this button cancels searching.

3.2 File Menu

With the [File] menu on the Management screen, you can create new system management information, display various logs and system management information, and save and load the screen layout that is currently displayed. The [File] menu is composed of the following elements:

• [New Creation]

• [Open]

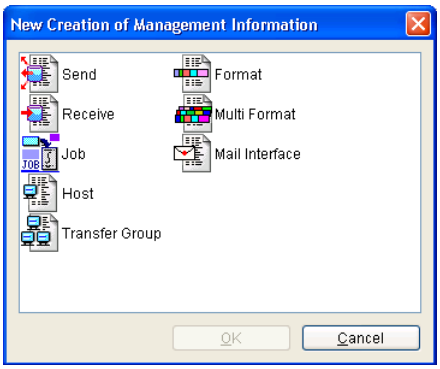
• [Screen Layout]

• [Exit]

Following subsection explains how to operate each menu.

New Creation:

1. From the [File] menu, click the [New Creation].
2. The New Creation of Management Information dialog box is displayed.



Send: Send Management Information

Registers the information of the Send file. For the registration method of the Send Management Information, refer to "3.5.2 Send Management Information List and Update."

Receive: Receive Management Information

Registers the information of the Receive file. For the registration method of the Receive Management Information. refer to "3.5.3 Receive Management Information List and Update."

Job: Job Information

Registers the information of the job that is started before sending or registering the job that is started after sending or receiving. For the registration method of the Job Information. refer to "3.5.4 Job Information List and Update."

Host: Host Information

Registers the host information of the sending or receiving side. For the registration method of the Host Information. refer to "3.5.5 Host Information List and Update."

Transfer Group: Transfer Group Information

Registers the remote host that issues the Send Request, Resend Request and the send destination host of the Send file. For the registration method of the Transfr Group Information. refer to "3.5.6 Transfer Group Information List and Update."

Format: Format Information

Registers the format of the Send file. For the registration method of the Format Information. refer to "3.5.7 Format Information List and Update."

Multi Format: Multi Format Information

Registers the multi format of Send file. For the registration method of the Multi Format Information. refer to "3.5.8 Multi Format Information List and Update."

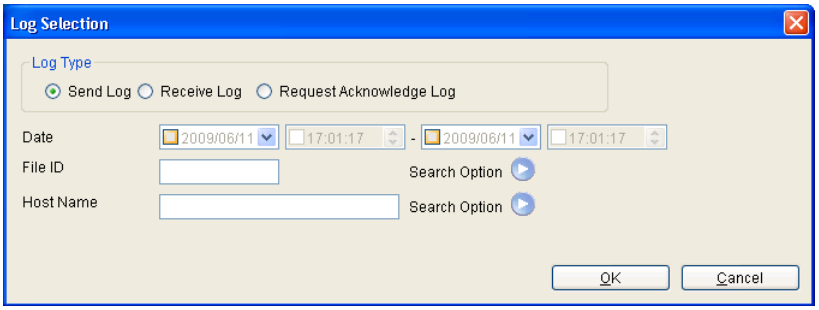
Mail Interface: Mail Interface Information

Registers information used at the time of issuing e-mail after the Send or the Receive process. For the registration method of the Mail Interface Information. refer to "3.5.9 Mail Interface Information List and Update."

3. Select the management information that needs to be created and click the [OK].
4. The new window for the selected management information is displayed.

Open: Open 'Log'

1. From the [File] menu, select the [Open] and click the [Log].
2. The Log Selection dialog box is displayed.



Date

Mark the check box if you specify the range of date to start and end searching.

Date: Range of date to start and end searching (YYYY/MM/DD)

Time: Range of time to start and end searching (HH:MM:SS)

File ID

Specify the File ID to be searched. Clicking the [Search Option] displays the list of the File ID, and you can search for the File ID by specifying conditions.

Host Name

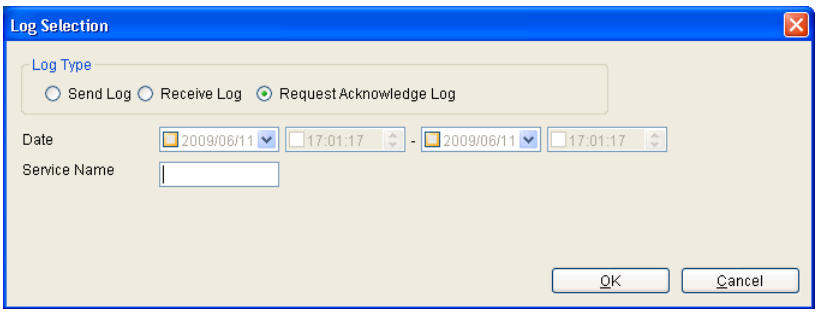
Specify the Host Name to be searched. Clicking the [Search Option] displays the list of the Host Name, and you can search for the Host Name by specifying conditions.

Log Type

Select the log to be displayed. How the Log Selection dialog box is displayed and what items should be entered vary depending on the Log Type you select.

Service Name

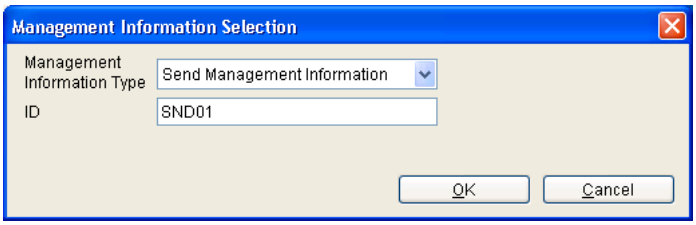
Specify the Service Name to be searched if you select the Request Acknowledge Log for the Log Type.



3. Select the log to be displayed from the Log Type, enter the Search Condition, and click the [OK].
   The searched log records are displayed. For the details of each log, refer to "3.4 Status Inquiry Menu." Besides, refer to "3.1.5 Common Operation of Dialog Boxes" for the use of the [Search Option].

Open: Open the Management Information

1. From the [File] menu, select the [Open] and click the [Management Information].
2. The Management Information Selection dialog box is displayed. Select an option from the Management Information Type, enter ID, and then click the [OK]. The update screen of the selected system management information is displayed. Refer to "3.5 System Configuration (System Management Information) " for the details of each screen.



Management Information Type

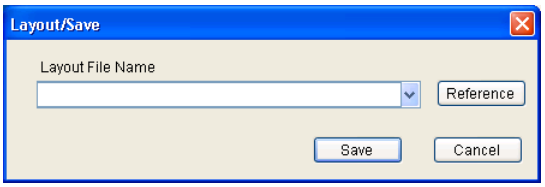
Select the Management Information to be updated.

ID

Enter the ID to be updated.

Screen Layout: Export

1. From the [File] menu, select the [Screen Layout] and click the [Export].
2. The Layout/Save dialog box is displayed. Specify the file name in which the Screen Layout is stored for the Layout File Name. Clicking the [Save] stores the Screen Layout that is currently displayed in the specified file.

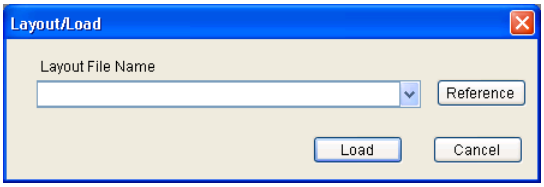


[Note] The work states of the following screens are not saved:

- **System Environment Settings**
- **CSV Conversion Information Registration**
- **User Information Registration**
- **External Character Table Registration**
- **EBCDIC User Table Registration**

Screen Layout: Import

1. From the [File] menu, select the [Screen Layout] and click the [Import].
2. The Layout/Load dialog box is displayed. Specify the file name in which the layout to be displayed is stored. Clicking the [Load] displays the Screen Layout you specified.



End:

1. From the [File] menu, select the [Exit] to click.
2. The Management screen is terminated.

3.3 View Menu

With the [View] menu of the Management screen, you can update the information that is currently displayed or you can discontinue the communication on the screen that is currently displayed.

The [View] menu is composed of the following submenu:

• [Refresh]

• [Cancel]

• [Toolbar]

Following subsection explains the operation of each menu.

[Refresh]:

1. From the [View] menu, click the [Refresh].
2. Information on all the displayed screens is updated to the latest one.

[Note] The Send Log List and/or the Receive Log List are not updated while the Send Detail Information and/or the Receive Detail Information are displayed.

[Cancel]:

1. From the [View] menu, click the [Cancel] while each list screen is displayed.
2. The communication on the screen that is currently displayed is discontinued. (Only the log records covered by the completed communication are displayed.)

[Note] The [Cancel] is available only while each list screen is displayed.

[Toolbar]:

1. From the [View] menu, click the [Toolbar].
2. With this submenu, you can specify whether to display the toolbar or not.

3.4 Status Inquiry Menu

With the [Status Inquiry] menu of the Management screen, you can confirm the result of the sending, receiving, and request acknowledge processing; the transfer status; and resend queue status.
Following subsection explains each submenu that composes the [Status Inquiry] menu and its function.

[Send Log Inquiry]

You can confirm the processing result (log information) when the sending processing is executed. In addition, you can delete the Send Log.

[Receive Log Inquiry]

You can confirm the processing result (log information) when the receiving processing is executed. In addition, you can delete the Receive Log.

[Request Status Confirmation]

You can confirm the status when the Request Acknowledge process accepts requests (SEND, RESEND, HULADMIN and the like). In addition, you can delete the Request Acknowledge Log.

[Transfer Status List]

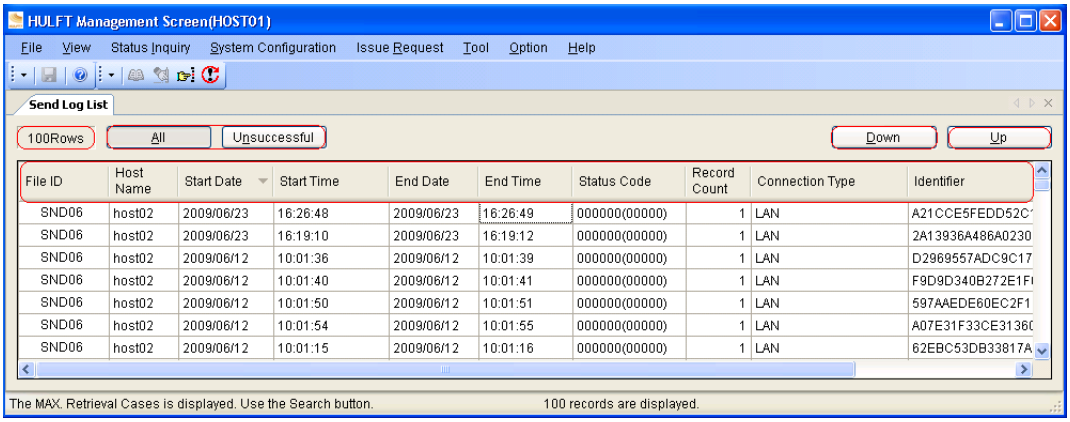
You can confirm the transfer status of sending and receiving. In addition, you can cancel the files in the course of sending or receiving as well as delete the files placed on the Send Queue.

[Resend Queue Status List]

You can confirm the log list of the Resend Queue Status (the status of the Resend Queue file when sending processing has failed). In addition, you can delete the files placed on the Resend Queue.

3.4.1 Common Operation of Status Inquiry

This section explains common operation in each status inquiry screen. Shown below is an example of the Send Log List.



Number

The number of log records currently displayed is indicated at the upper left of the screen. When the list is displayed according to the search condition, the number of log records (Rows) is indicated in blue.

[All]

All log records are displayed on the list screen.

[Unsuccessful]

Only the log records that terminated unsuccessfully are displayed on the list screen.

Unsuccessful Sign

This is displayed at the left of a log record that ended unsuccessfully.

[Up]

[Up] executes upward search, using the uppermost log record that is currently displayed as a key. The log record used as a key is also displayed on the list screen after the button is clicked.

[Down]

[Down] executes downward search, using the downmost log record that is currently displayed as a key. The log record used as a key is also displayed on the list screen after the button is clicked.

Title

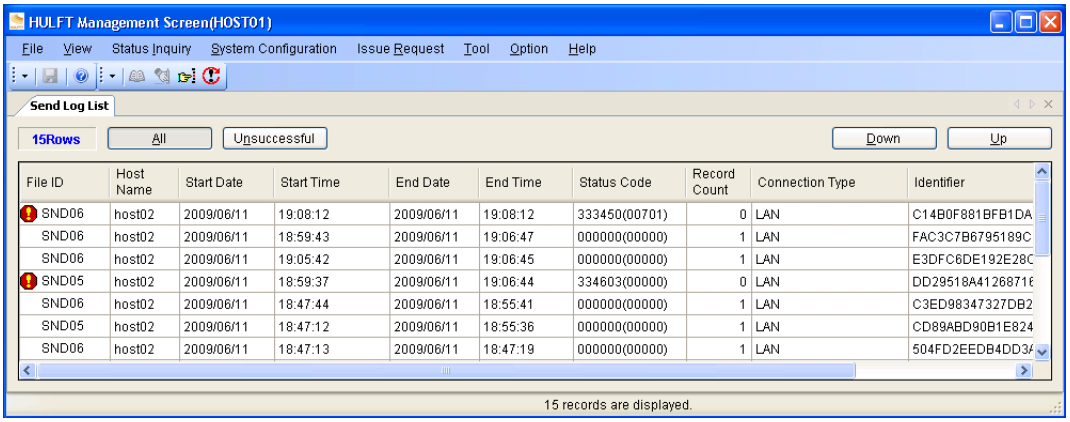
By clicking the Title, you can sort the data.

3.4.2 Send Log Inquiry

This section explains how to inquire about the Send Log.

(1) Display of Send Log List

From the [Status Inquiry] menu, click the [Send Log Inquiry]. The Send Log List by the File ID is displayed on the Send Log List screen.



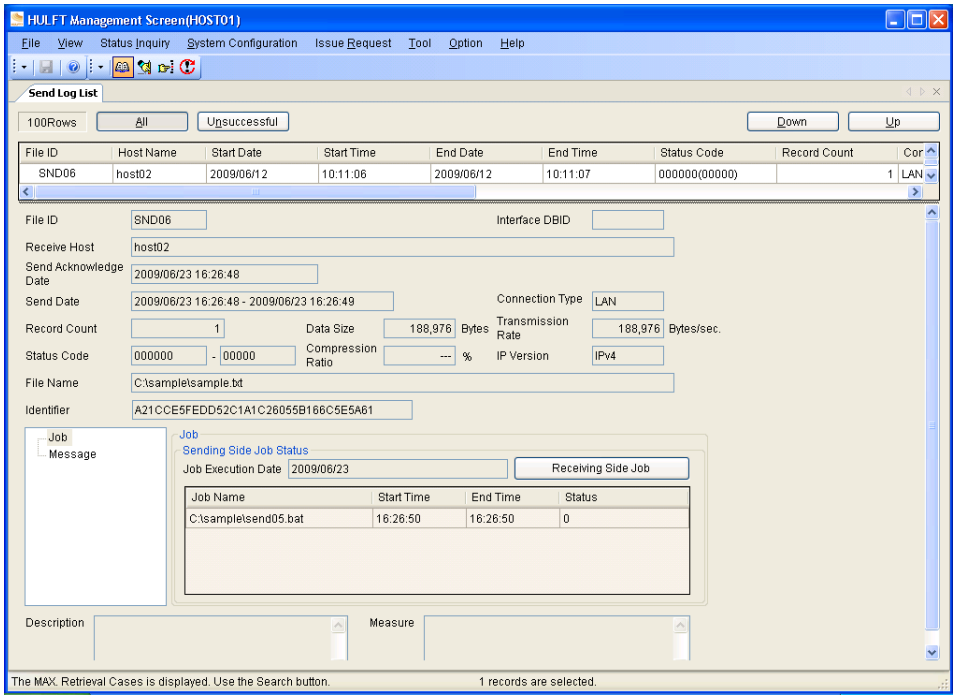
<Explanation of each field>

File ID:	File ID that is registered in the Send Management Information.
Host Name:	Name of the receiving host.
Start Date:	Date on which the Send process starts.
Start Time:	Time when Send process starts.
End Date:	Date on which the Send process ends.
End Time:	Time when the Send process ends.
Status Code:	Post-send status code (error code is on the left, detailed error code is within brackets). Refer to the *Error Codes and Messages* for more information on error codes and error messages.
Record Count:	Number of records of sent files.
Connection Type:	Mode of connection to the receiving host. The value 'LAN' is displayed, as the English edition is connected only through LAN.
Identifier:	The identifier that links the Send Log and the Operation Log

(2) Confirmation of Send Detail Information

On the Send Log List screen, double-click the log record that you intend to view the detail information. Otherwise, select the log record you intend to view and click the [Details] of the toolbar.

The Send Detail Information is displayed on the Send Log List screen.



<Explanation of each field>

File ID:	File ID registered in the Send Management Information.
Receive Host:	Receiving host name.
Send Acknowledge Date:	Time and date that Send File is acknowledged.
Send Date:	Date on which the Send process starts. Start time of sending - End time of sending.
Interface DBID:	Interface DBID registered in the Send Management Information.
Record Count:	Number of records of the sent files.
Data Size:	Data size of the sent file (bytes).
File Name:	File name of the sent file.
Status Code:	Post-send status code (error code is on the left, detailed error code is within brackets). Refer to the *Error Codes and Messages* for more information on error codes and error messages.
Transmission Rate:	Transfer data length (byte) per second.
IP Version:	Version of IP that is transmitted. IPv4: Connected at IPv4. IPv6: Connected at IPv6.
Connection Type:	Mode of connection to the receiving host. The value 'LAN' is displayed, as the English edition is connected only through LAN.
Compression Ratio:	Compression ratio at the time of carrying out compression.
Identifier:	The identifier that links the Send Log and the Operation Log

Description:	The description of the error
Measure:	The measure of the error

[Remarks]

- If there is differential between Send Acknowledge Date and Send Date, following causes are suspected:
  a) Send File is issued more than specified in Send Process Multiplex Level or Send Process Multiplex Level by Host, which leads HULFT to send-waiting status.
  b) Auto Resend is executed several times.
- You can view the date of request acknowledgement of the transfer of which transfer status is Standby or Transferring on the Transfer Status List screen.

When the Post-send Job is executed, the job execution log is displayed on the Sending Side Job Status.

<Explanation of each field>

Sending Side Job Status

Job Execution Date:	Date of the job that was last executed.
Job Name:	Job name that is activated after completion of Send process.
Start Time:	Time when the job starts
End Time:	Time when the job ends
Status:	Completion status of the job 0: Successful completion of the job Other than 0: Abnormal termination (exit status of the startup job)

[Note]

- **For Sending Side Job Status, if the status code is '0,' successful job execution is displayed and, if the status code is other than '0,' unsuccessful job execution information is displayed.**
- **The Pre-send Job is not displayed on the Sending Side Job Status.**

[Remarks] The job execution information end time is '9' in the following cases:

- When the sending side job is not executed as, there is no entry of the Job ID in the Job Information or due to the definition error of the Job Information.
- When the job ends unsuccessfully.

When the message is used, the content is displayed in [Message]. When no value is specified, it is displayed as blank.

<Explanation of each field>

Message 0 to 5:	Message, which is specified by the Send File or is received at the time of accepting the Send Request.

(3) Confirmation of Receiving Side Job

The Receiving Side Job Status can be confirmed from the Send Detail Information (job monitoring function).

Clicking the [Receiving Side Job] on the Send Detail Information displays the Receiving Side Job Status.

The Receiving Side Job Status is displayed on the Sending Side Job Status section of the Send Detail Information.

The Sending Side Job Status is displayed while the [Receiving Side Job] is not clicked, and the Receiving Side Job Status is displayed while the [Receiving Side Job] is clicked.

<Explanation of each field>

Receiving Side Job Status

Job Execution Date:	Date of the job that was last executed
Job Name:	Name of the job that is activated after completion of Receive process
Start Time:	Time when the job starts
End Time:	Time when the job ends
Status:	Completion status of the job 0: Successful completion of the job Other than 0: Abnormal termination (exit status of the activated job)

[Note] You may not be able to view the Receiving Side Job Status correctly in the following cases:

- **When there is a difference in the system time of the target host and the source host**
- **When the Job Monitor Request (HULJOB) is not supported on the receiving side**
- **When the Request Acknowledge process of the receiving side host is not activated**

[Remarks] In the following cases, the job execution information end time is all '9':

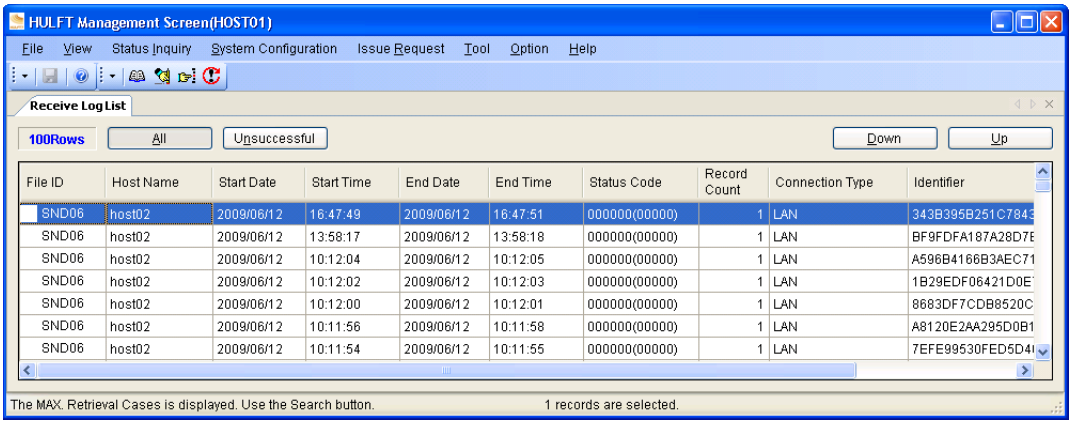
- When the send job is not executed as there is no entry of the Job ID in the Job Information or due to the definition failure of the Job Information
- When the job ends unsuccessfully
- When the job ends in 'time out' state

3.4.3 Receive Log Inquiry

This section explains how to inquire about the Receive Log.

(1) Display of Receive Log List

From the [Status Inquiry] menu, click the [Receive Log Inquiry]. The Receive Log List by the File ID is displayed on the Receive Log List screen.



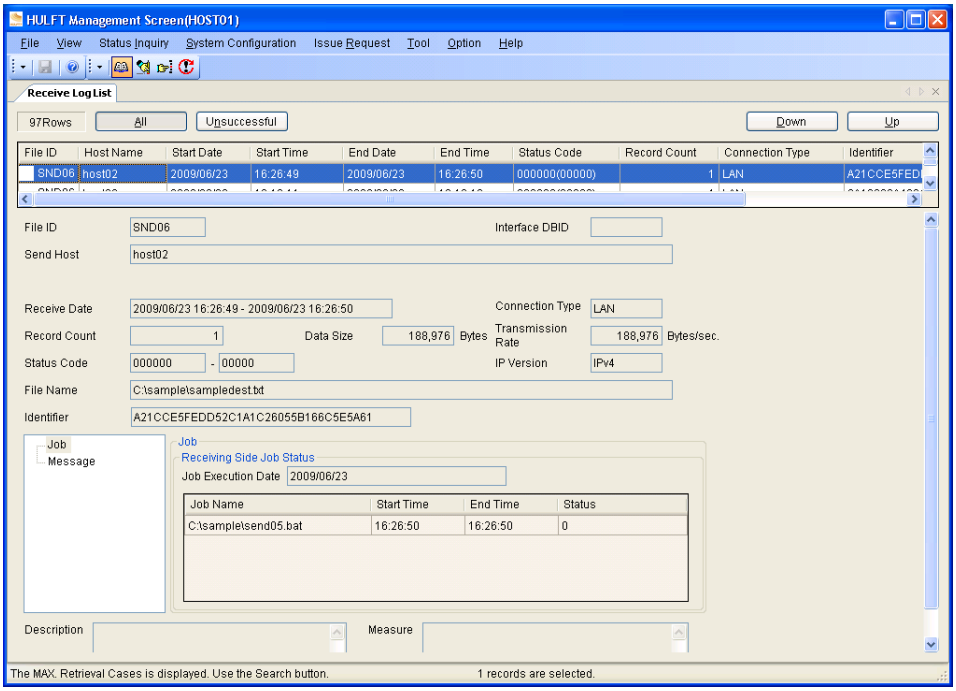
<Explanation of each field>

File ID:	File ID registered in the Receive Management Information
Host Name:	Name of the source host
Start Date:	Date when the receive starts
Start Time:	Time when the receive starts
End Date:	Date when the receive ends
End Time:	Time when the receive ends
Status Code:	Post-receive status code (error code is on the left, detailed error code is within brackets). Refer to the *Error Codes and Messages* for more information on error codes and error messages.
Record Count:	Number of records of Received files
Connection Type:	Mode of connection to the receiving host The value 'LAN' is displayed, as the English edition is connected only through LAN.
Identifier:	The identifier that links the Receive Log and the Operation Log

(2) Confirmation of Receive Detail Information

On the Receive Log List screen, double-click the log record that you intend to view the detail information. Otherwise, select the log record you intend to view and click the [Details] of the toolbar.

The Receive Detail Information is displayed on the Receive Log List screen.



<Explanation of each field>

File ID:	File ID registered in the Receive Management Information
Send Host:	Sending host name
Receive Date:	Date on which the Receive process starts Start time of receiving - End time of receiving
Interface DBID:	Interface DBID that is registered in the Receive Management Information
Record Count:	Number of records of the received files
Data Size:	Data size of the received file (bytes)
File Name:	File name of the received file
Status Code:	Post-receive status code (error code is on the left, detailed error code is within brackets). Refer to the *Error Codes and Messages* for more information on error codes and error messages.
Transmission Rate:	Transfer data length (byte) per second
IP Version:	IP version that is transmitted IPv4: Connected at IPv4 IPv6: Connected at IPv6
Connection Type:	Mode of connection to the receiving host The value 'LAN' is displayed, as the English edition is connected only through LAN.
Identifier:	The identifier that links the Receive Log and the Operation Log
Description:	The description of the error
Measure:	The measure of the error

When the Post-receive Job is executed, the job execution log is displayed in the [Receiving Side Job Status].

<Explanation of each field>

Job Execution Date:	Date on which the job that was last executed
Job Name:	Name of the job that is activated after completion of Receive process
Start Time:	Time when the job starts
End Time:	Time when the job ends
Status:	Completion status of the job 0: Successfully ends Other than 0: Abnormal termination (exit status of the activated job)

[Note] **The Receiving Side Job Status, at the time of successful job execution, displays the status code as '0,' and if the status code is a value other than '0,' it indicates that the job is not executed.**

[Remarks] When the send job is not executed as there is no entry of the Job ID in the Job Information or due to a definition error in the Job Information, the Start Time and End Time of the Job Status are '9.'

When the message is used, the contents are displayed in the [Message]. When no value is specified, it is displayed as blank.

<Explanation of each field>

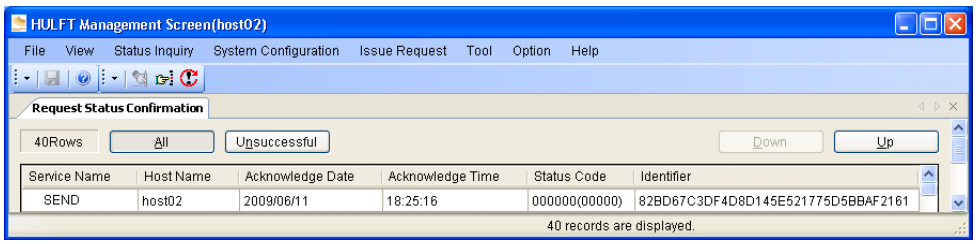
Message 0 to 5:	Message that is received from the source.

3.4.4 Request Status Confirmation

This section explains how to confirm the status of requests.

(1) Request Status Confirmation

From the [Status Inquiry] menu, click the [Request Status Confirmation]. The status list of the acknowledged requests is displayed on the Request Status Confirmation screen.



<Explanation of each field>

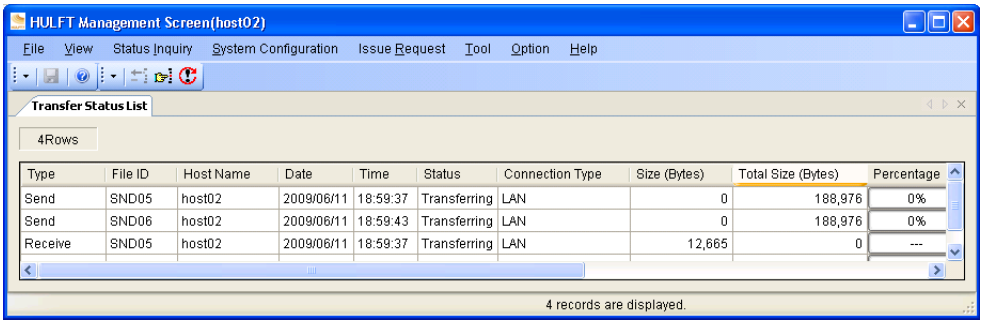
Service Name:	Acknowledged requests SEND: Send Request from receive RESEND: Resend Request from receive HULJOB: Receive Job Monitor Request from sending side HULSNDRC: Job status notification HULRJOB: Remote job execution HULADMIN: HULFT Manager Connection Request
Host Name:	Request source host name
Acknowledge Date:	Date of request acknowledge
Acknowledge Time:	Time of request acknowledge
Status Code:	Request process status code (error code is on the left, detailed error code is within brackets)
Identifier:	The identifier that links the Request Confirmation Status and the Operation Log

[Remarks] 'Host Name' shows the TCP/IP host name of the remote host or the local host name that is set in HULFT.

3.4.5 Transfer Status List

This section explains how to confirm the status of transfer.

From the [Status Inquiry] menu, click the [Transfer Status List]. The status list of the transfer is displayed on the Transfer Status List screen.



<Explanation of each field>

Type: Type of status (Send or Receive)

File ID:	File ID
Host Name:	Host name that is communicating or being communicated through above File ID
Date:	Date of request acknowledgment
Time:	Time of request acknowledgment
Status:	Status
Transferring:	State of carrying out transfer
Connecting (Number of times):	State of carrying out connection to receive (Connection retry count)
Send Queue:	Send queue status due to the excess of send multiplex level
Standby:	Wait state until carrying out the reconnection to receive
Auto Resend Queue:	Wait state until carrying out auto resending
Executing a Job:	State of executing job
Outputting CSV:	State of carrying out CSV conversion
Outputting XML:	State of carrying out XML conversion
Disconnecting:	State of carrying out the interruption processing
Connection Type:	Connection mode. The value 'LAN' is displayed, as the English edition is connected only through LAN.
Size:	Transferred data size (Unit is bytes)
Total Size:	Data size of Send files (Unit is byte) When the Type is 'Receive,' it is displayed as '0' since the entire size is unknown until the transfer is completed.
Percentage:	Percentage of the transferred data size

[Remarks] Clicking the [Update] of the toolbar refreshes the transfer status to the latest.

[Note]

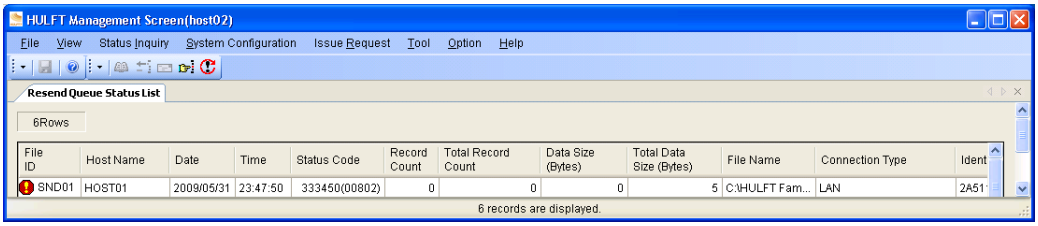
- **When the Send process is not activated, the content of the 'Send Control File (sddreqcp.dat)' is displayed.**
- **When the Receive process is not activated, 'No Data' is displayed.**

3.4.6 Resend Queue Status List

This section explains how to confirm the status of resend queue.

(1) Display of Resend Queue Status List

From the [Status Inquiry] menu, click the [Resend Queue Status List]. The information list of the transfer placed on resend queue is displayed on the Resend Queue Status List screen.



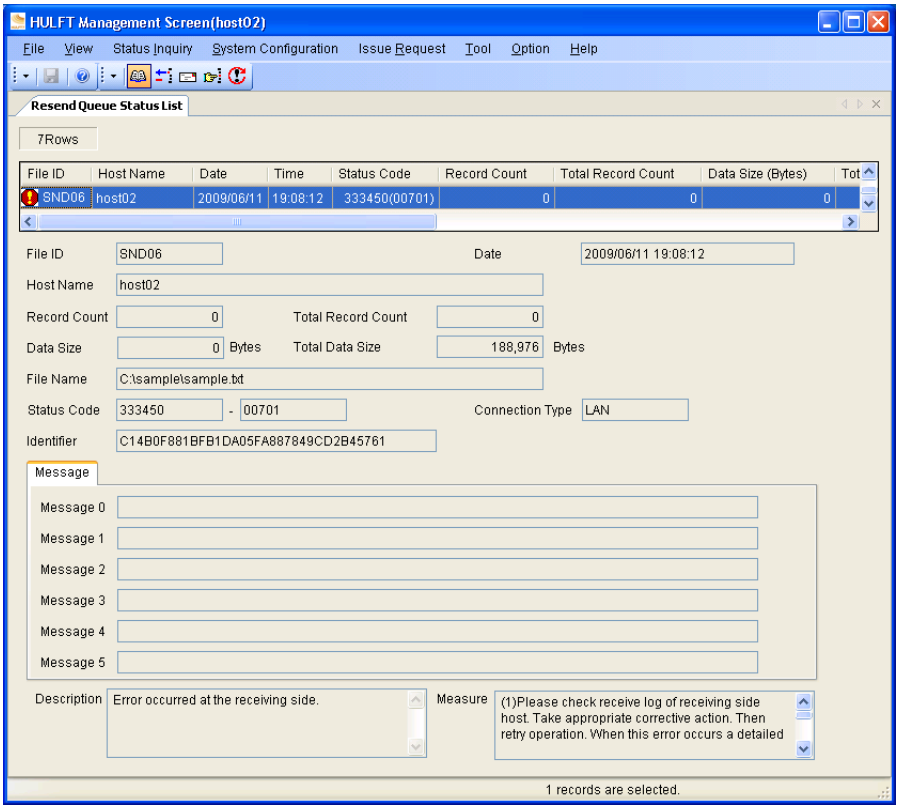
<Explanation of each field>

File ID:	File ID that is in Resend Queue
Host Name:	Send destination host name
Date:	Date when send error occurs
Time:	Time when send error occurs
Status Code:	Status code at the time of error (Error code is on the left, detailed error code is within brackets). Refer to the *Error Codes and Messages* for more information on Error codes and Detail codes.
Record Count:	Number of transferred records
Total Record Count:	Number of records of Send file
Data Size:	Size of the transferred data
Total Data Size:	Data size of the Send files
File Name:	File name of the Send files
Connection Type:	Mode of connecting to the receiving host The value 'LAN' is displayed, as the English edition is connected only through LAN.
Identifier:	The identifier that links the Resend Queue Status and the Operation Log

(2) Confirmation of Resend Queue Detail Information

On the Resend Queue Status List screen, double-click the log record that you intend to view the detail information. Otherwise, select the log record you intend to view and click the [Details] of the toolbar.

The Resend Queue Detail Information is displayed on the Resend Queue Status List screen.



<Explanation of each field>

File ID:	File ID that is in Resend Queue
Host Name:	Send destination host name
Date:	Time and Date when send error occurs
Record Count:	Number of transferred records
Total Record Count:	Number of records of Send file
Data Size:	Size of the transferred data
Total Data Size:	Data size of the Send files
File Name:	File name of the Send file
Status Code:	Status code at the time of error (Error code is on the left, detailed error code is within brackets) Refer to the *Error Codes and Messages* for more information on error codes and error messages.
Connection Type:	Mode of connecting to the send destination host LAN: LAN Connection host
Message 0 to 5:	Messages that are specified at the time of Send File
Identifier:	The identifier that links the Resend Queue Status and the Operation Log

3.4.7 Deletion of Logs

This section explains following operation that can be executed on each log inquiry list screen:

- Deletion of Send Log
- Deletion of Receive Log
- Deletion of Request Acknowledge Log
- Deletion of Resend Queue file

a) Select a log record or the File ID. You can select more than one record. The log record you selected is highlighted.

b) Click the [Delete] of the toolbar. Otherwise right-click the mouse to select the [Delete] from the pulldown menu.

c) The message box to confirm the deletion is displayed. If you intend to proceed deletion, select the [Yes] , or click the [No] when you intend cancel the deletion. Clicking the [Yes] deletes the selected log records or files.

3.4.8 Issue of Cancellation Request

(1) Cancellation of send processing

When the file that is currently being sent needs to be cancelled, you can cancel it on the Transfer Status List screen.

a) Select an ID of which status is 'Transferring' from the File ID to be cancelled. The File ID you selected is highlighted.

b) Click the [Delete] of the toolbar.

c) The message box to confirm the deletion is displayed. If you intend to proceed deletion, select the [Yes] , or click the [No] when you intend cancel the deletion. Clicking the [Yes] deletes the selected File ID.

[Note]

- **All the files will be deleted if the selected File ID and the remote host are same among sending, receiving and sending queue.**
- **During the execution of the job though status is shown as 'Transferring' (Depends on the Send Unit Selection of the System Environment Settings), it is not possible to cancel.**

3.4.9 Update of List Display

While displaying each screen of the status inquiry, the contents of the list can be refreshed by clicking the [Update] of the toolbar.

[Note] **Clicking the [Update] displays the search results according to the search conditions you specified. Therefore, there may be some information that is not displayed unless you clear the search conditions, when you directly specify the search conditions, or when you click the [Up] or the [Down].**

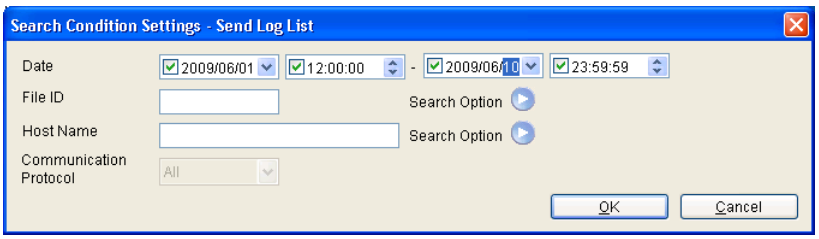
3.4.10 Searching of List Display

When Status Inquiry information increases in volume, it is possible to search for only the required information and display it in a list.

[Note] **The details about the time needs to be specified with the date. When the date and time are specified, the log is displayed within the range of the start time and date - end time and date. If the time is not specified, all logs on the relevant day will be displayed.**

(1) Send Log List and Receive Log List

When the [Search] on the Toolbar is clicked, the following dialog box is displayed:



Date

Mark the check box when you specify the range of date and time of the search.

Date: Starting and ending date of the search (YYYY/MM/DD) in the range
Time: Starting and ending time of the search (HH:MM:SS) in the range

[Note] **The object of the search is the starting date of sending or receiving.**

File ID

Specify the File ID to be searched. Clicking the [Search Option] displays a list of the File ID, which you can search for the File ID that fulfills your condition.

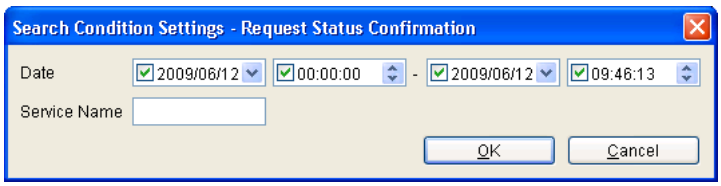
Host Name

Specify the Host Name to be searched. Clicking the [Search Option] displays a list of the Host Name, which you can search for the Host Name that fulfills your condition.

For the usage of the [Search Option], refer to "3.1.5 Common Operation of Dialog Boxes."

(2) Request Status Confirmation

When the [Search] on the Toolbar is clicked, the following dialog box is displayed:



Date

Mark the check box when you specify the range of date and time of the search.

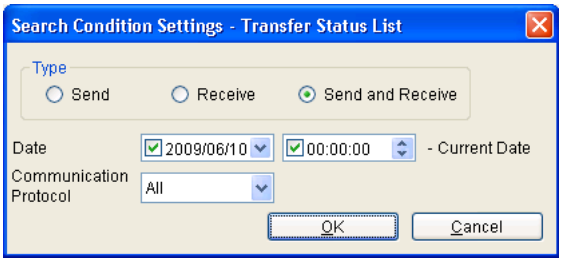
Date: Starting and ending date of the search (YYYY/MM/DD) in the range
Time: Starting and ending time of the search (HH:MM:SS) in the range

Service Name

Specify the Service Name to be searched.

(3) Transfer Status List

When the [Search] on the Toolbar is clicked, the following dialog box is displayed:



Type

Send: Specify the Transfer Status of sending
Receive: Specify the Transfer Status of receiving
Send and Receive: Specify the Transfer Status of sending and receiving

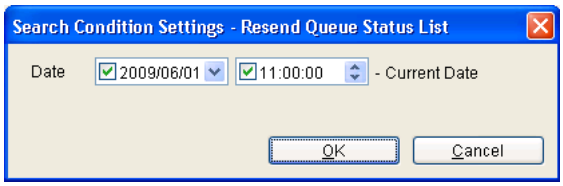
Date

Mark the check box when you specify the starting date of the search upto current date.

Date: Starting date of the search (YYYY/MM/DD) in the range
Time: Starting time of the search (HH:MM:SS) in the range

(4) Resend Queue Status List

When the [Search] on the Toolbar is clicked, the Search Condition Settings - Resend Queue Status List screen is displayed while the Resend Queue Status List screen is displayed



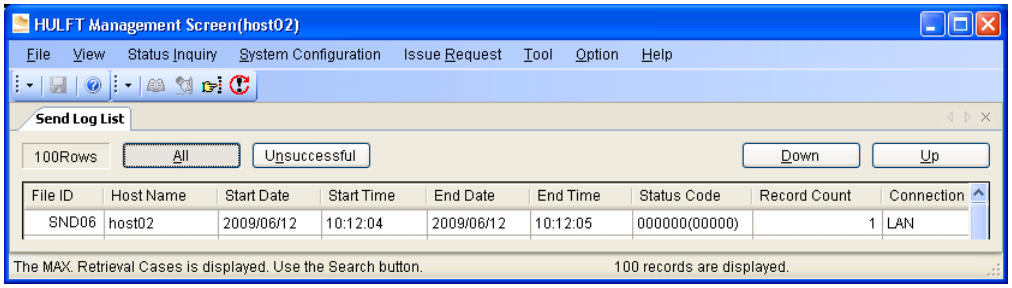
Date

Mark the check box when you specify the starting date of the search upto current date.

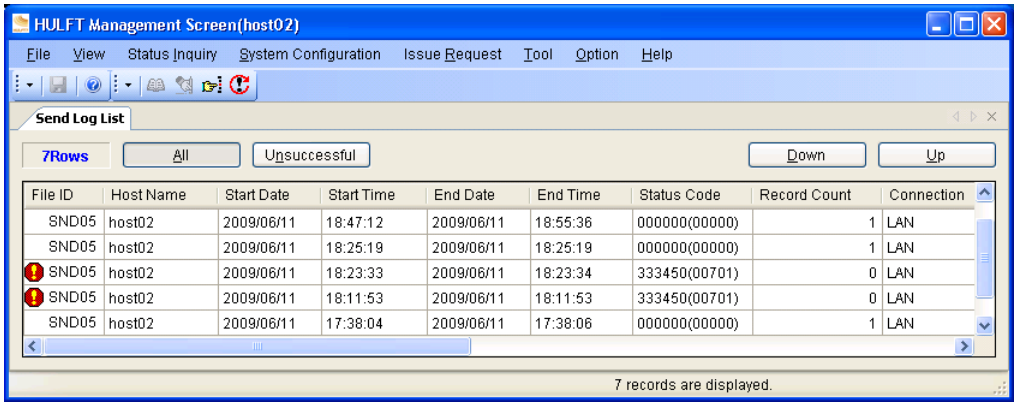
Date: Starting date of the search (YYYY/MM/DD) in the range
Time: Starting time of the search (HH:MM:SS) in the range

(5) Max. Retrieval Cases

If the display information exceeds the Max. Retrieval Cases that have been set, the message, 'The MAX. Retrieval Cases is displayed. Use the Search button.' is displayed.in the status bar. If search conditions are set, the display will indicate 'Cond.' as those described below have been set. In addition, the characters of the [Search] will be displayed in blue.



Besides, when you specify the Search Condition, the number of log records is indicated in blue.



3.5 System Configuration Menu (System Management Information)

With the [System Configuration] menu on the Management screen, you can register, modify, or delete each management information file. The [System Configuration] menu is composed of the following submenus:

- Send Management Information
- Receive Management Information
- Job Information
- Host Information
- Transfer Group Information
- Format Information
- Multi Format Information
- Mail Interface Information
- System Environment Settings

This section explains the operation of system management information using the [System Configuration] menu. For the operation on the System Environment Settings, refer to "3.6 System Configuration Menu (System Environment Settings). "

For the details on the registration of each system management information, refer to "2.1 System Management Information."

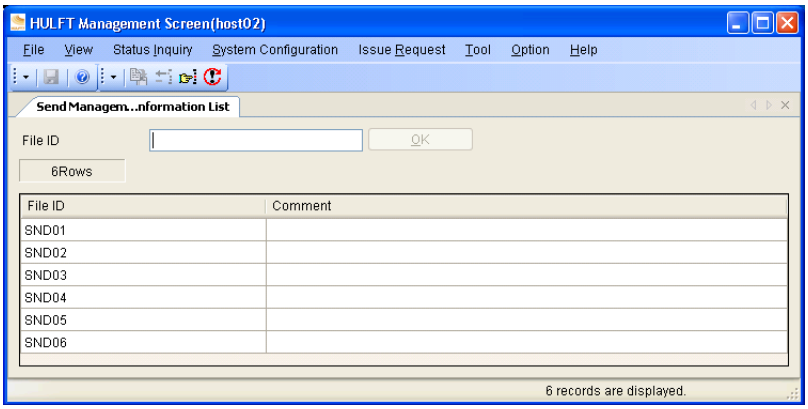
3.5.1 Common Operation of System Management Information

This section explains how to update or delete each system management information.

Here, the term 'management information ID' indicates the ID or the Host Name of the relevant system management information, respectively.

a) Send Management Information: File ID
b) Receive Management Information: File ID
c) Job Information: Job ID
d) Host Information: Host Name
e) Transfer Group Information: Transfer Group ID
f) Format Information: Format ID
g) Multi Format Information: Multi Format ID
h) Mail Interface Information: Mail Interface ID

From the [System Configuration] menu on the Management screen, select a submenu of the management information that you intend to update or delete. The management information list screen that you selected is displayed on the screen. The list displays the management information IDs that are currently registered.



(1) To register new system management information:

Enter the new management information ID to be registered and click the [OK].

For the registration fields, refer to "2.1 System Management Information."

(2) To update registered system management information:

Enter the management information ID to be modified and click the [OK] or, double-click the relevant ID displayed in the list.

(3) To delete registered management information ID:

There are three methods to delete registered management information IDs:

a) Select the management information ID to be deleted and click the [Delete] on the toolbar.

b) Double-clicking the relevant ID in the list displays update screen. Click the [Delete] on the toolbar.

c) Select the management information ID to be deleted and right-click the mouse to select the [Delete] from the pulldown menu.

Each of the above procedure a), b), and c) displays the dialog box to confirm the deletion, respectively. Select either the [Yes] or the [No].

(4) To copy system management information:

There are two methods of copying management information:

a) It is convenient to use the copying function of management information when you register new management information based on the information that has already been registered. Select the source management information from the list. Clicking the [Copy] on the toolbar displays ID Copy dialog box.

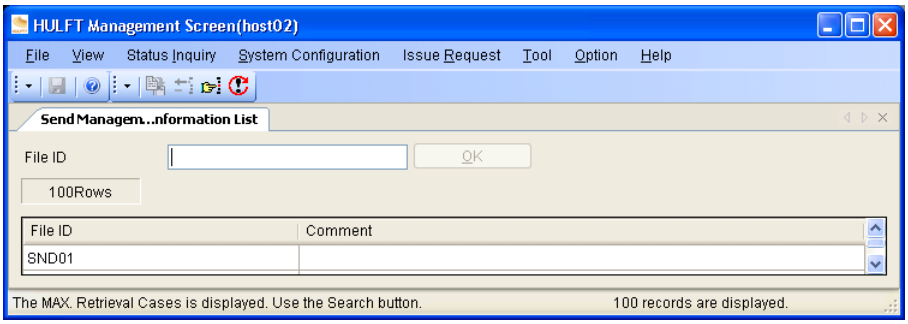
b) Enter the new management information ID you intend to create and click the [Save] on the toolbar.

(5) To search management information for ID:

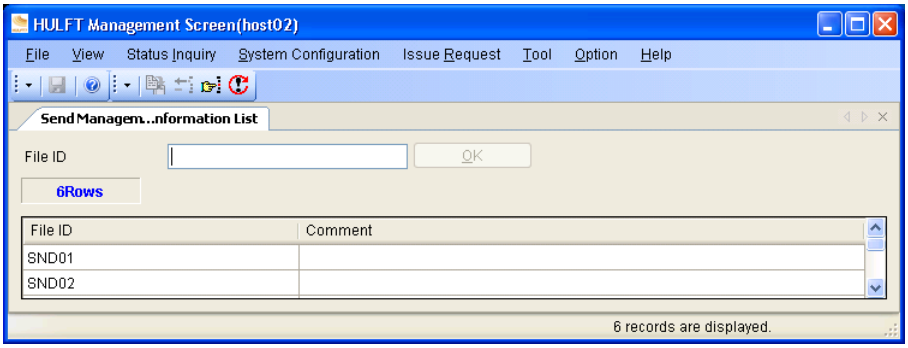
If the number of registered ID is greater than the value of the MAX Retrieval Cases, HULFT displays a number of ID that are within the range of value of the MAX Retrieval Cases. In such case, click the [Search] on the toolbar, or right-click the list and select the [Search] on the pop-up menu to display the ID Search dialog box.

For the details on the ID Search dialog box, refer to "3.1.5 Common Operation of Dialog Boxes."

[Remarks] If the number of data to be displayed exceeds the value of the MAX Retrieval Cases, following message is displayed on the Status bar: 'The MAX. Retrieval Cases is displayed. Use the Search button.'



If search conditions are set, number of ID (Rows) is displayed in blue.

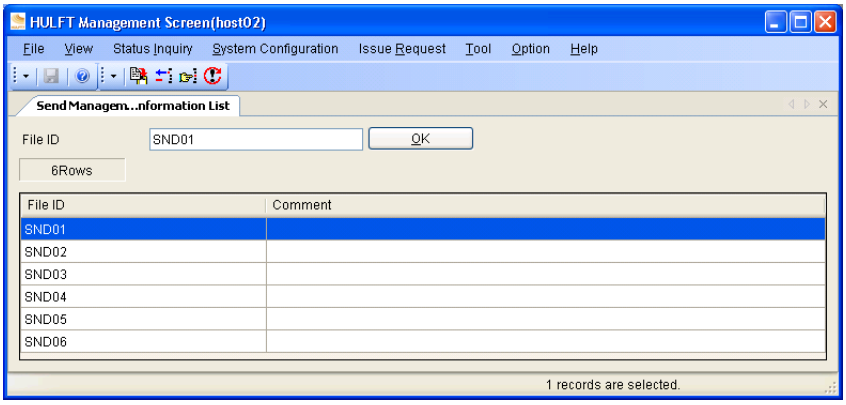


3.5.2 Send Management Information List and Update

This section explains how to operate the Send Management Information.

(1) Display of Send Management Information List

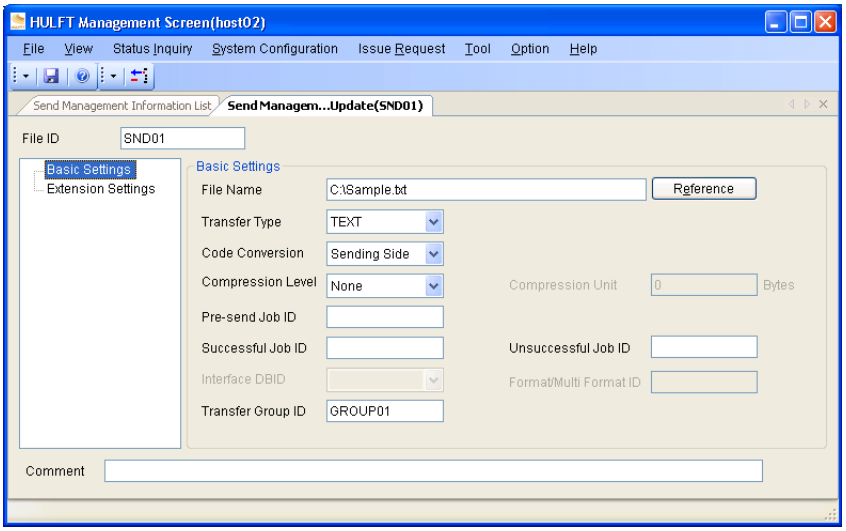
From the [System Configuration] menu, click the [Send Management Information]. A list of the registered Send Management Information is displayed on the Send Management List screen.



(2) Update of Send Management Information

Entering ID on the Send Management Information List screen or double-clicking the target ID on the list displays the Send Management Information Update screen. On this screen, you can register, change, delete, or copy the Send Management Information.
The fields in the Send Management Information are classified into the Basic Settings and the Extension Settings. For the details of each field, refer to "2.1.1 Send Management Information."

a) Basic Settings

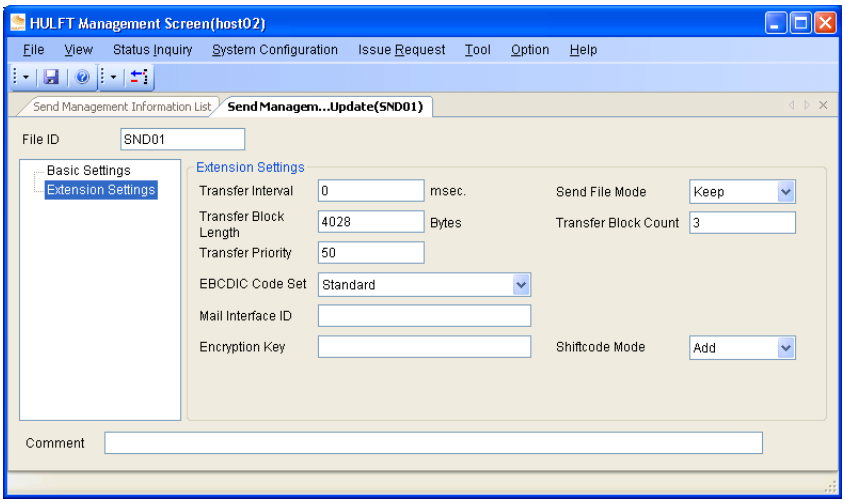


The fields that can be set on the Basic Settings are as follows:

- File ID
- File Name

  When you click the [Reference], Open dialog box is displayed.
- Transfer Type
- Code Conversion
- Compression Level
- Compression Unit
- Pre-send Job ID
- Successful Job ID
- Unsuccessful Job ID
- Interface DBID
- Format/Multi Format ID
- Transfer Group ID
- Comment

b) Extension Settings



The fields that can be set on the Extension Settings are as follows:

- Transfer Interval
- Send File Mode
- Transfer Block Length
- Transfer Block Count
- Transfer Priority
- EBCDIC Code Set
- Mail Interface ID

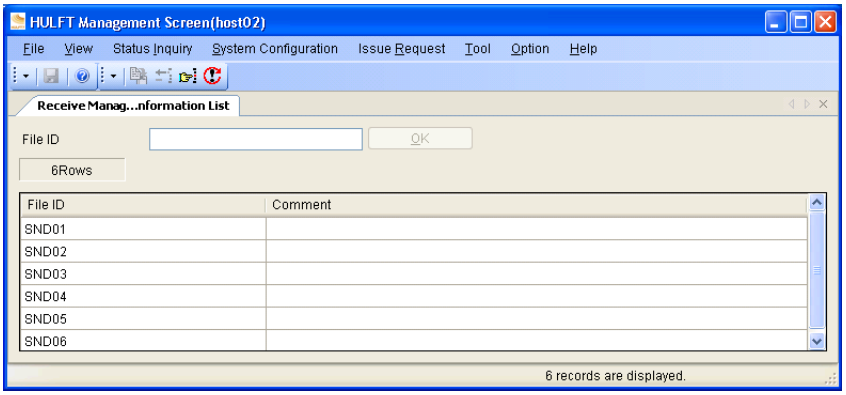
  The Mail Interface ID can be specified by the drag and drop operation from the Mail Interface Information List screen.
- Encryption Key
- Shiftcode Mode

3.5.3 Receive Management Information List and Update

This section explains how to operate the Receive Management Information.

(1) Display of Receive Management Information List

From the [System Configuration] menu, click the [Receive Management Information]. A list of the registered Receive Management Information is displayed on the Receive Management List screen.

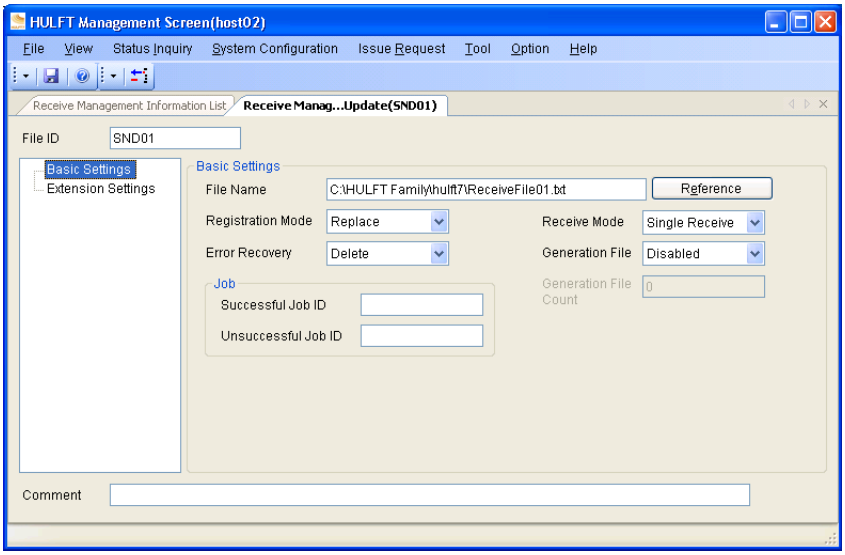


(2) Update of Receive Management Information

Entering ID on the Receive Management Information List screen or double-clicking the target ID on the list displays the Receive Management Information Update screen. On this screen, you can register, change, delete, or copy the Receive Management Information.

The fields in the Receive Management Information are classified into the Basic Settings and the Extension Settings. For the details of each field, refer to "2.1.2 Receive Management Informations."

a) Basic Settings

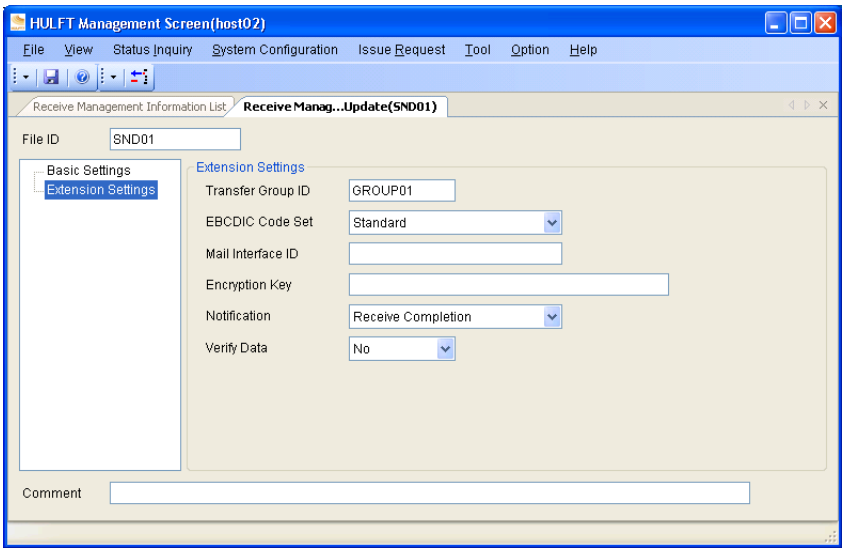


The fields that can be set on the Basic Settings are as follows:

- File ID
- File Name

  When you click the [Reference], Open dialog box is displayed.
- Registration Mode
- Receive Mode
- Error Recovery
- Generation File
- Generation File Count
- Successful Job ID
- Unsuccessful Job ID
- Comment

b) Extension Settings



The fields that can be set on the Extension Settings are as follows:

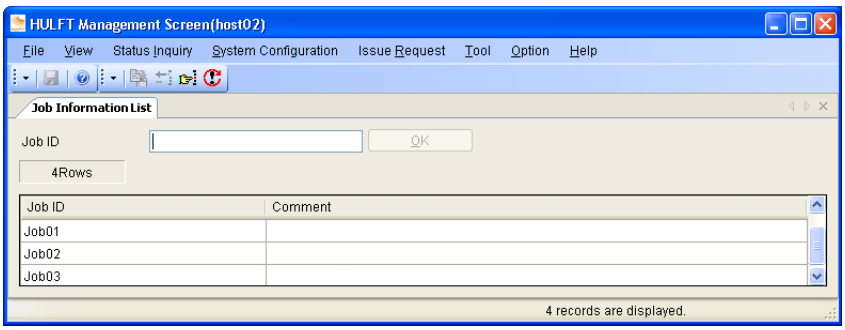
- Transfer Group ID
- EBCDIC Code Set
- Mail Interface ID
- Notification
- Encryption Key
- Verify Data

3.5.4 Job Information List and Update

This section explains how to operate the Job Information.

(1) Display of Job Information List

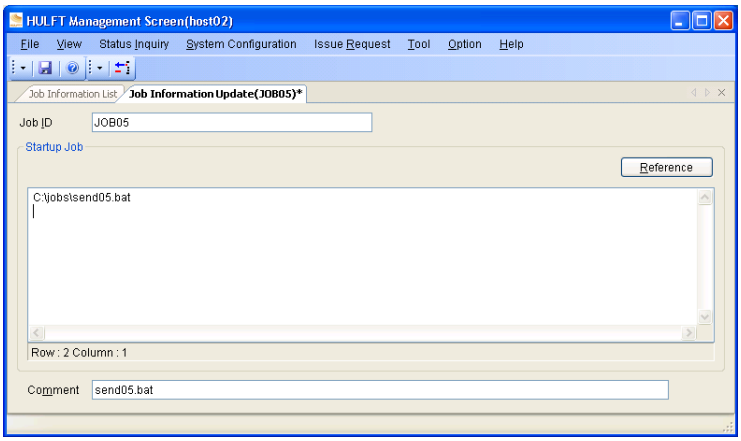
From the [System Configuration] menu, click the [Job Information]. A list of the registered Job Information is displayed on the Job Information List screen.



(2) Update of Job Information

Entering ID on the Job Information List screen or double-clicking the target ID on the list displays the Job Information Update screen. On this screen, you can register, change, delete, or copy the Job Information.

For the details of each field, refer to "2.1.3 Job Information."



The fields that can be set are as follows:

- Job ID
- Startup Job

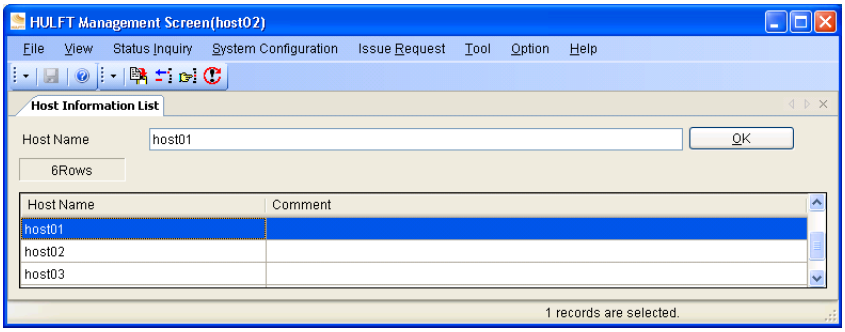
  When you click the [Reference], Open dialog box is displayed.
- Comment

3.5.5 Host Information List and Update

This section explains how to operate the Host Information.

(1) Display of Host Information List

From the [System Configuration] menu, click the [Host Information]. A list of the registered Host Information is displayed on the Host Information List screen.

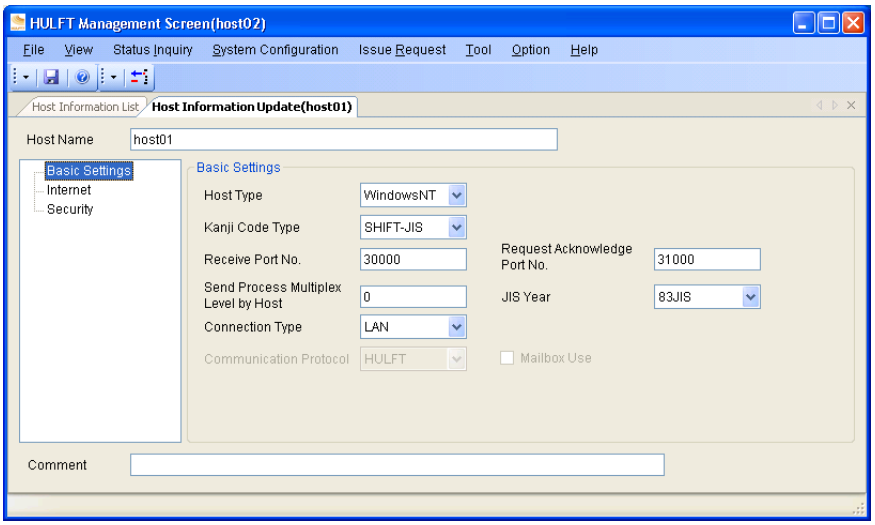


(2) Update of Host Information

Entering ID on the Host Information List screen or double-clicking the target ID on the list displays the Host Information Update screen. On this screen, you can register, change, delete, or copy the Host Information.

The fields in the Host Information are classified into the Basic Settings, the Internet, and the Security. For the details of each field, refer to "2.1.1 Host Information."

a) Basic Settings

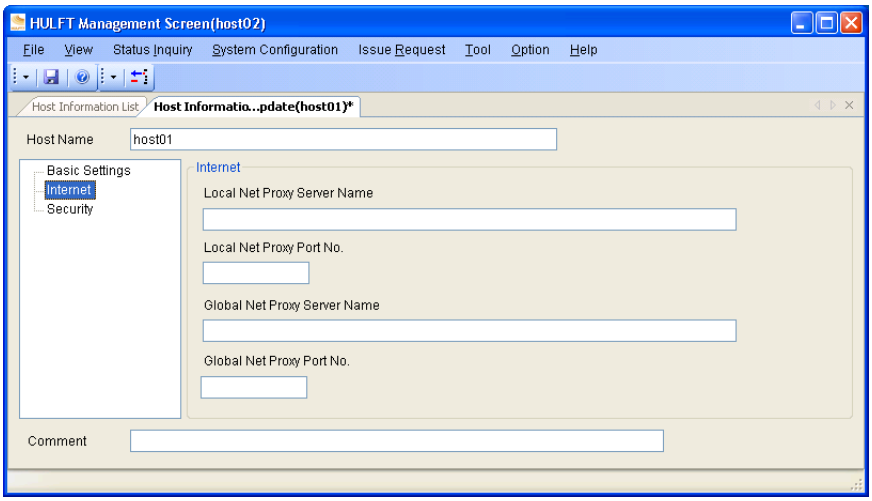


The fields that can be set on the Basic Settings are as follows:

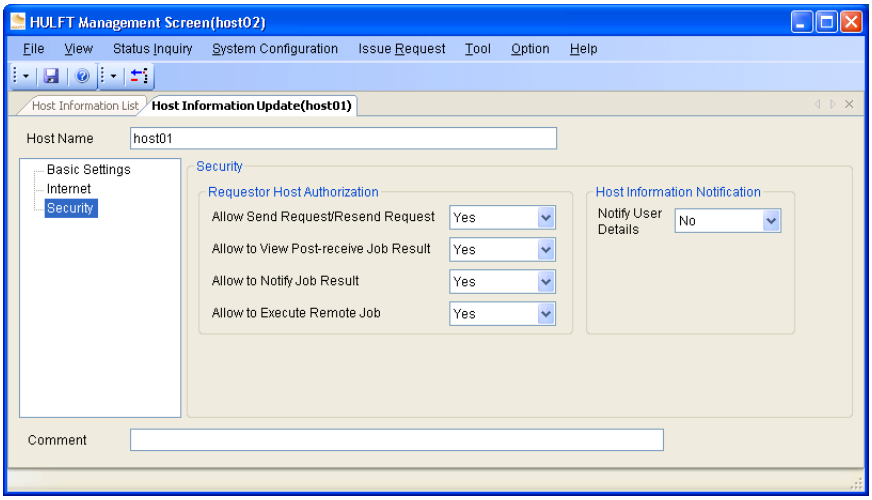
- Host Name
- Host Type
- Kanji Code Type
- Receive Port No.
- Request Acknowledge Port No.
- Send Process Multiplex Level by Host
- JIS Year
- Connection Type ('LAN')
- Communication Protocol ('HULFT')
- Mailbox Use ('Unmarked')
- Comment

b) Internet

[Note] **The fields on the Internet are used by HULFT-HUB. Do not modify the setting values of the fields.**



c) Security



The fields that can be set on the Security are as follows:

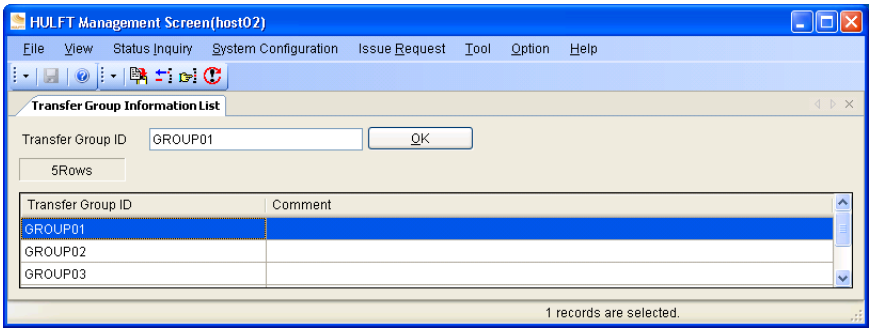
- Allow Send Request/Resend Request
- Allow to View Post-receive Job Result
- Allow to Notify Job Result
- Allow to Execute Remote Job
- Notify User Details

3.5.6 Transfer Group Information List and Update

This section explains how to operate the Transfer Group Information.

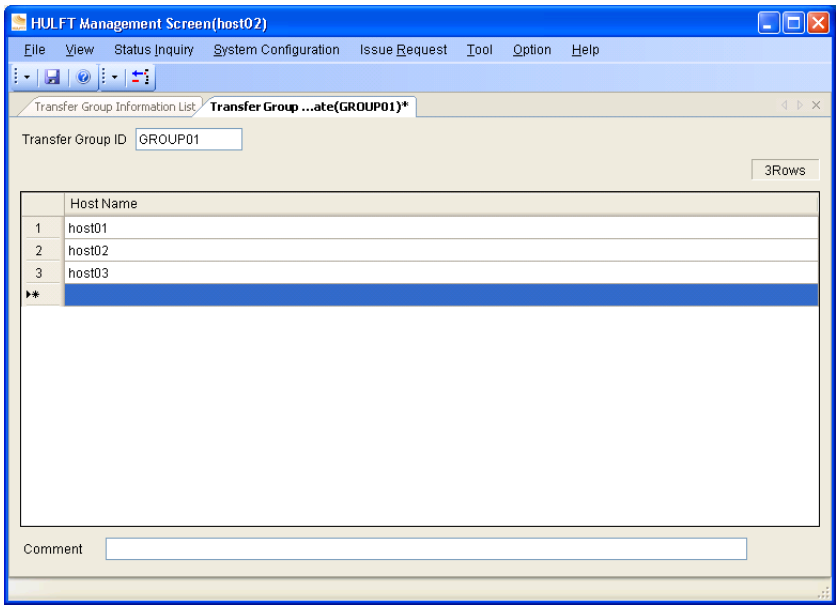
(1) Display of Transfer Group Information List

From the [System Configuration] menu, click the [Transfer Group Information]. A list of the registered Transfer Group Information is displayed on the Transfer Group Information List screen.



(2) Update of Transfer Group Information

Entering ID on the Transfer Group Information List screen or double-clicking the target ID on the list displays the Transfer Group Information Update screen. On this screen, you can register, change, delete, or copy the Transfer Group Information. For the details of each field, refer to "2.1.5 Transfer Group Information."



The fields that can be set are as follows:

- Transfer Group ID
- Host Name

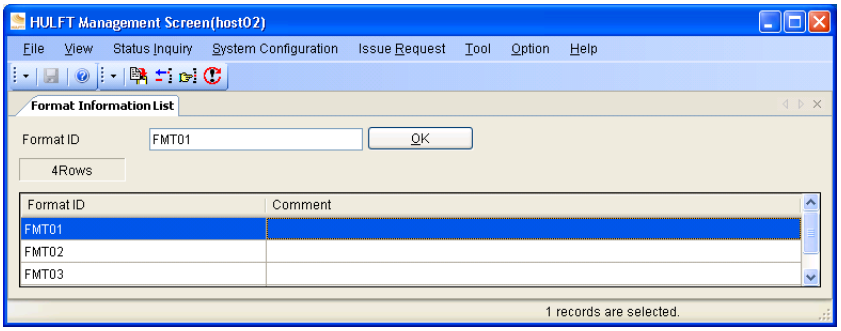
  It can be specified by using the drag and drop operation from the Host Information List.
- Comment

3.5.7 Format Information List and Update

This section explains how to operate the Format Information.

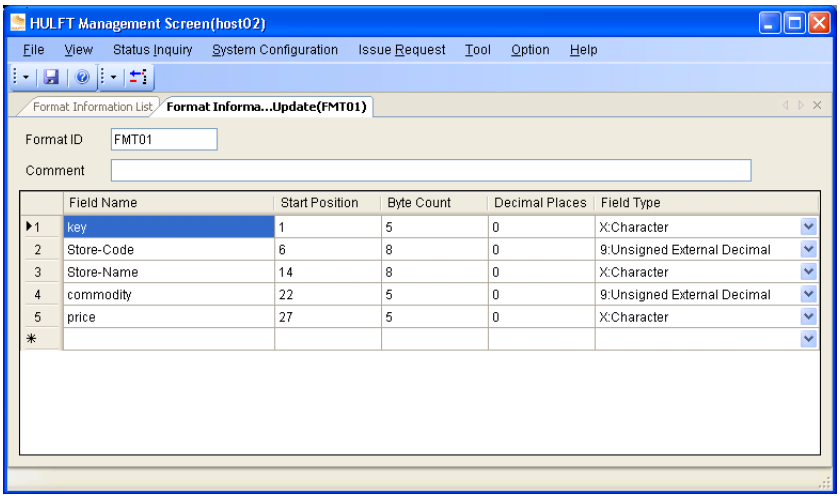
(1) Display of Format Information List

From the [System Configuration] menu, click the [Format Information]. A list of the registered Format Information is displayed on the Format Information List screen.



(2) Update of Format Information

Entering ID on the Format Information List screen or double-clicking the target ID on the list displays the Format Information Update screen. On this screen, you can register, change, delete, or copy the Format Information. For the details of each field, refer to "2.1.6 Format Information."



The fields that can be set are as follows:

- Format ID
- Comment
- Field Name
- Start Position
- Byte Count
- Decimal Places
- Field Type

When you right-click the mouse over the cell of the Format Information, submenus for editing are displayed in the pop-up menu. The functions of each submenu are explained below:

[Insert]

A new row is inserted on the top of the row of the selected cell.

The selected row is shifted to the next row of the newly inserted row.

[Delete]

This submenu deletes the row of the selected cell.

[Auto Calculation]

The start position of each field is automatically calculated.

When automatic calculation is carried out, the Start Position of each field becomes the position of the added byte count of each field in the order from the top field that is to be automatically calculated.

[Final Row]

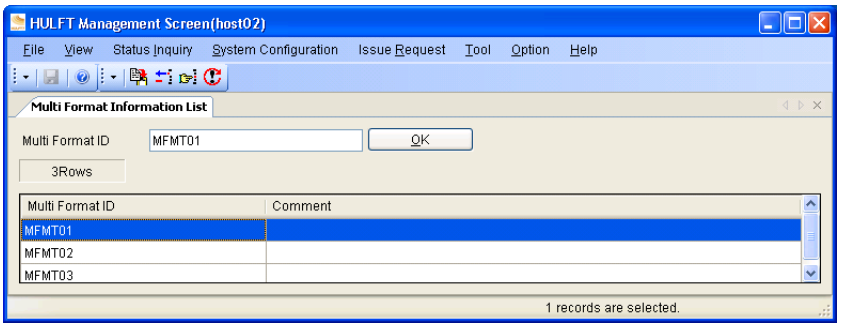
This submenu moves the control to the last row from the selected cell.

3.5.8 Multi Format Information List and Update

This section explains how to operate the Multi Format Information.

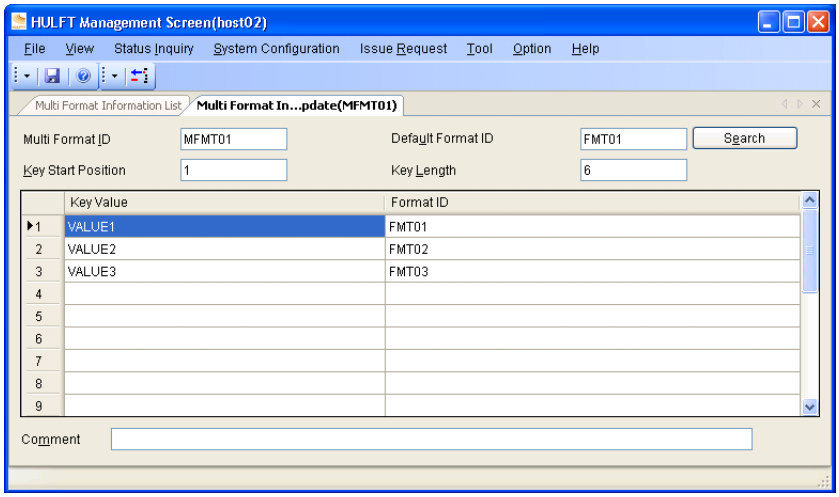
(1) Display of Multi Format Information List

From the [System Configuration] menu, click the [Multi Format Information]. A list of the registered Multi Format Information is displayed on the Multi Format Information List screen.



(2) Update of Multi Format Information

Entering ID on the Multi Format Information List screen or double-clicking the target ID on the list displays the Multi Format Information Update screen. On this screen, you can register, change, delete, or copy the Multi Format Information. For the details of each field, refer to "2.1.7 Multi Format Information."



The fields that can be set are as follows:

- Multi Format ID
- Key Start Position
- Default Format ID

  When you click the [Search], the Format ID Selection dialog box is displayed.
- Key Length
- Key Value
- Format ID
- Comment

When you right-click the mouse over the cell of the Multi Format Information, submenus for editing are displayed in the pop-up menu. The functions of each submenu are explained below:

[Insert]

A new row is inserted on the top of the row of the selected cell.

The selected row is shifted to the next row of the newly inserted row.

[Delete]

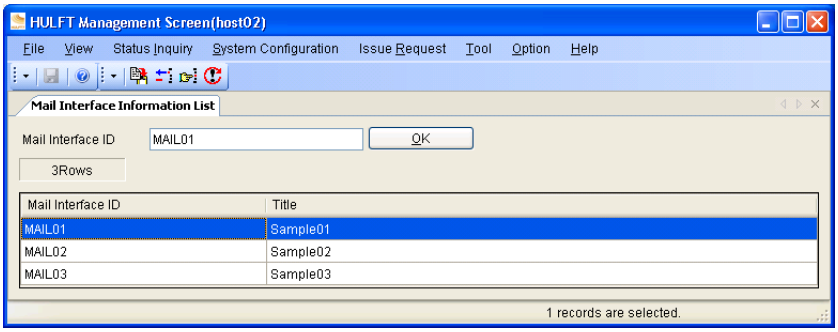
This submenu deletes the row of the selected cell.

3.5.9 Mail Interface Information List and Update

This section explains how to operate the Mail Interface Information.

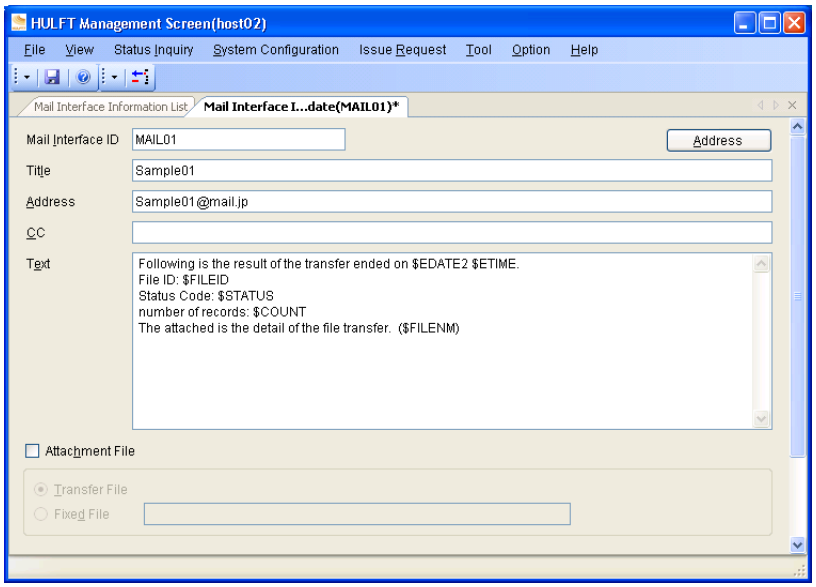
(1) Display of Mail Interface Information List

From the [System Configuration] menu, click the [Mail Interface Information]. A list of the registered Mail Interface Information is displayed on the Mail Interface Information List screen.



(2) Update of Mail Interface Information

Entering ID on the Mail Interface Information List screen or double-clicking the target ID on the list displays the Mail Interface Information Update screen. On this screen, you can register, change, delete, or copy the Mail Interface Information. For the details of each field, refer to "2.1.8 Mail Interface Information."



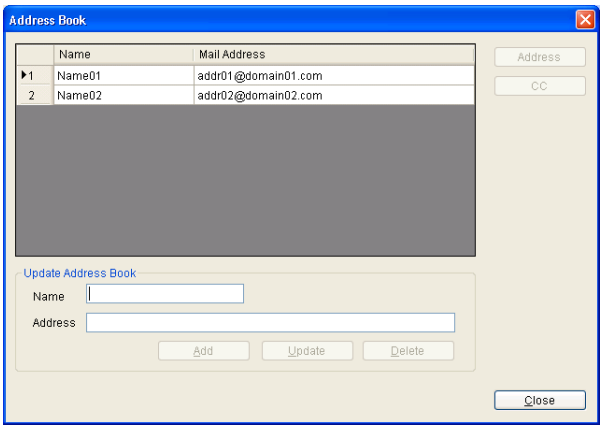
The fields that can be set are as follows:

- Mail Interface ID
- Title
- Address
- CC
- Text
- Attachment File

(3) Edit of the Address Book

When you click the [Address] on the Mail Interface Update screen, the Address Book dialog box is displayed, which show you a list of registered e-mail addresses.

The addresses of e-mail are added, updated or deleted. In addition, you can add e-mail addresses to the Address or the CC on the Mail Interface Information List.



The fields that can be set are as follows:

- Name

  Name of the owner of the e-mail address

  Enter the field in character within 20 bytes.

- Mail Address

  e-mail address

  Enter the field in alphanumeric character within 85 bytes.

The explanation of each button is as follows:

[Address]

The button adds the e-mail address selected from the list to the Address in the Mail Interface Information.

[CC]

The button adds the e-mail address selected from the list to the CC in the Mail Interface Information List.

[Add]

The button adds the entered name and e-mail addresses to the Address Book.

[Update]

The button overwrites the entered name and the e- mail address over the contents of the Address Book.

[Delete]

The button deletes the e-mail address selected from the list from the Address Book.

3.6 System Configuration Menu (System Environment Settings)

This section explains the operation of the System Environment Settings using the [System Configuration] menu of the management screen. For the details of the System Environment Settings, refer to *Administration Manual*.

3.6.1 Update Procedure of System Environment Settings

This section explains the procedure for updating the System Environment Settings. You can start or terminate .HULFT service using the Process Controller of the Management screen. For the method of start and termination of HULFT service, refer to "1.1 HULFT Startup and Termination."

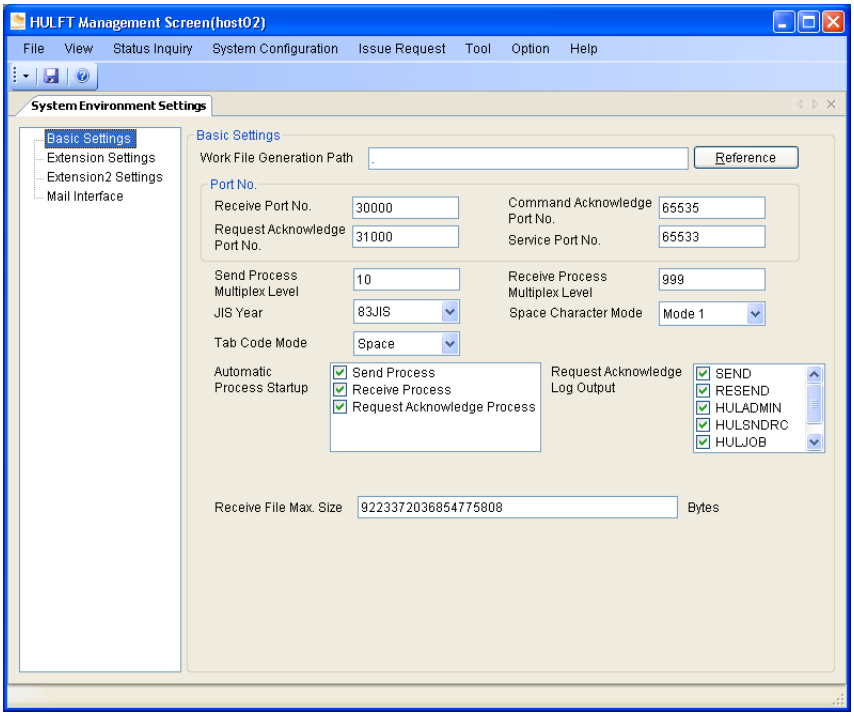
1. Stop HULFT service.
2. From the [System Configuration] menu on the Management screen, click the [System Environment Settings] submenu to display the System Environment Settings. Update the settings on this screen first, and click the [Save] of the toolbar. The set values of the System Environment Settings are saved.
3. After you complete the settings, restart the Management screen to activate HULFT service.

3.6.2 System Environment Settings and Update

The fields of the System Environment Settings displayed on the System Environment Settings screen are classified as follows:
For the detail of each field, refer to *Administration Manual*.

- Basic Settings
- Extension Settings
- Extension2 Settings
- Mail Interface

(1) Basic Settings



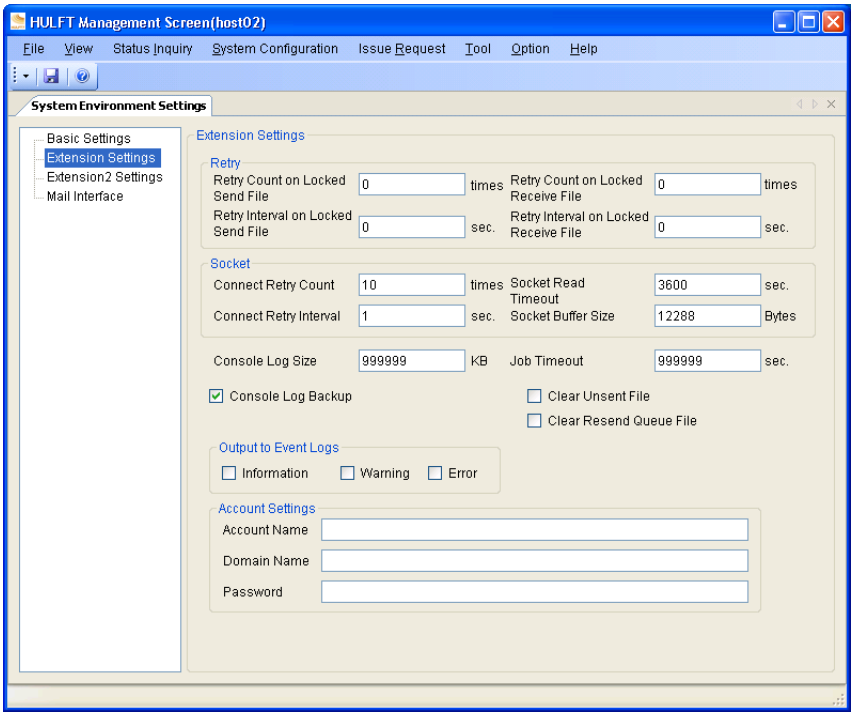
The fields that can be set using the Basic Settings tab are as follows:

- Work File Generation Path

When you click the [Reference], Browse For Folder dialog box is displayed.

- Receive Port No.
- Request Acknowledge Port No.
- Command Acknowledge Port No.
- Service Port No.
- Send Process Multiplex Level
- Receive Process Multiplex Level
- JIS Year
- Space Character Mode
- Tab Code Mode
- Automatic Process Startup
- Receive File Max. Size
- Request Acknowledge Log Output

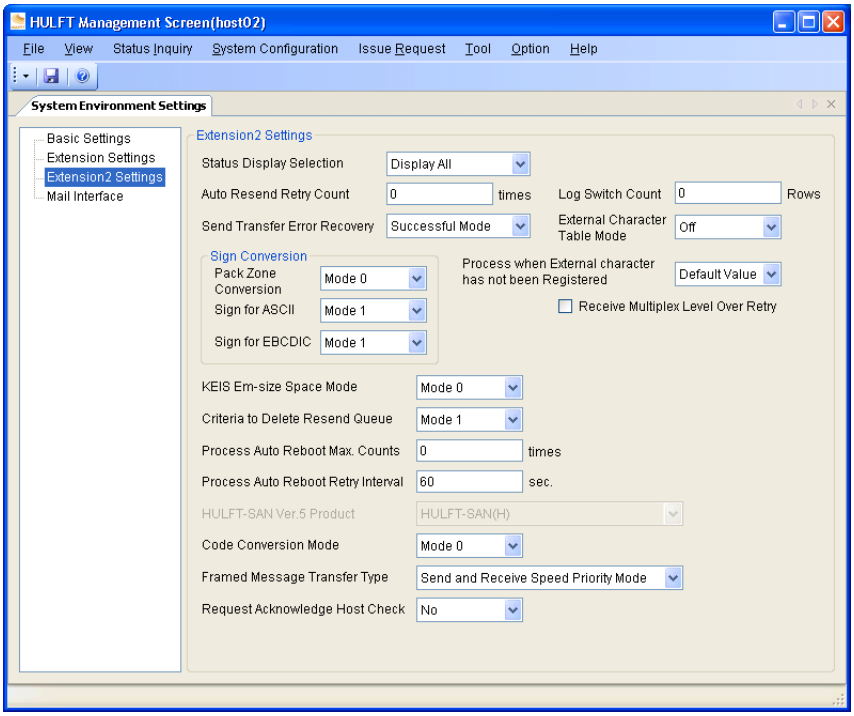
(2) Extension Settings



The fields that can be set using in the Extension Settings tab are as follows:

- Retry Count on Locked Send File
- Retry Interval on Locked Send File
- Retry Count on Locked Receive File
- Retry Interval on Locked Receive File
- Connect Retry Count
- Connect Retry Interval
- Socket Read Timeout
- Socket Buffer Size
- Console Log Size
- Console Log Backup
- Job Timeout
- Clear Unsent File
- Clear Resend Queue File
- Output to Event Log
- Account Name
- Domain Name
- Password

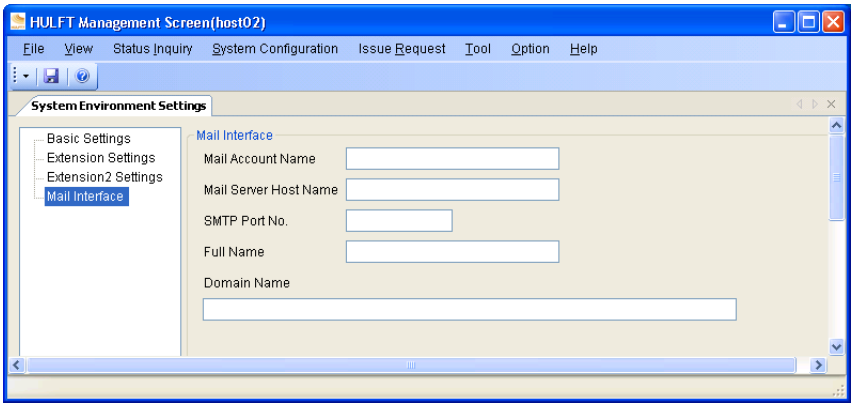
(3) Extension2 Settings



The fields that can be set on the Extension2 Settings are as follows:

- Status Display Selection
- Auto Resend Retry Count
- Log Switch Count
- Send Transfer Error Recovery
- External Character Table Mode
- Pack Zone Conversion
- Process when External Character has not been Registered
- Sign for ASCII
- Sign for EBCDIC
- Receive Multiplex Level Over Retry
- KEIS Em-size Space Mode
- Criteria to Delete Resend Queue
- Process Auto Reboot Max. Counts
- Process Auto Reboot Retry Interval
- Code Conversion Mode
- Framed Message Transfer Type
- Request Acknowledge Host Check

(4) Mail Interface



The fields that can be set on the Mail Interface are as follows:

- Mail Account Name
- Mail Server Host Name
- SMTP Port No.
- Full Name
- Domain Name

3.7 Issue Request Menu

The [Issue Request] menu on the management screen is composed of the following submenu:

• [Send File]

• [Send Request]

From the [Send File] menu, you can issue the Send File and the Resend File. Meanwhile, from the [Send Request] menu, you can issue the Send Request and the Resend Request.

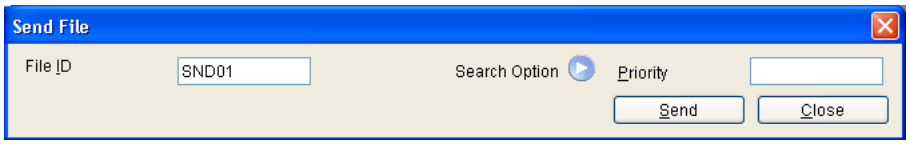
3.7.1 Issue of Send File

On the Management screen, the Send File can be issued easily.

The Send File can be issued from the [Issue Request] menu, on the Send Management Information List screen, or on the Send Log List screen.

(1) Issuance of Send File from menu

From the [Issue Request] menu on the Management screen, point the [Send File] and click the [Send File]. The Send File dialog box is displayed.



1. Enter the File ID to be sent on the Send File dialog box.
2. The Priority is optional. It can be specified within a range of '1' to '256' alphanumeric characters. When omitted, the Transfer Priority set in the Send Management Information is used.
3. When the [Send] is clicked, the Send File is issued.

How to use [Search Option]

You can use the [Search Option] to specify the File ID. For the usage of the [Search Option], refer to "3.1.5 Common Operation of Dialog Boxes."

(2) Issuance of Send File on Send Management Information List screen or Send Log List screen

There are two ways to issue the Send File on the Send Management Information List screen or the Send Log List screen. For the details on each screen, refer to "3.5.2 Send Management Information List and Update" or "3.4.2 Send Log Inquiry."

a) Issuing the Send File from pop-up menu

1. Click on the File ID to which you intend to issue the Send File.
2. Right-click to display pop-up menu and select the [Send] from the menu. The Send File dialog box that is set the selected File ID is displayed.

b) Issuing the Send File using shortcut Key

1. Click on the File ID to which you intend to issue the Send File.
2. Pressing the 'Ctrl+U' issues the Send File to the selected ID.

[Note]

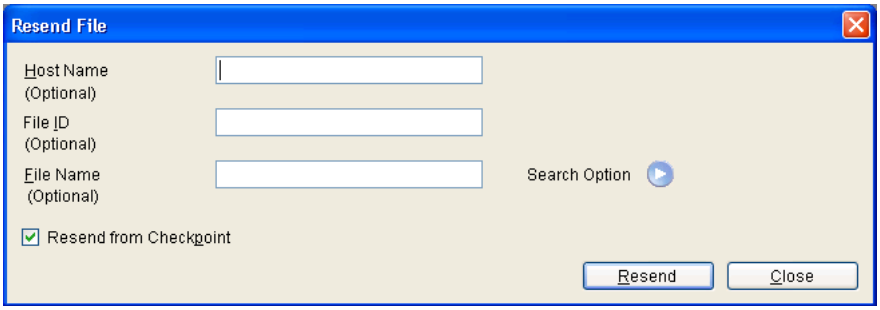
- **In the issuance of the Send File on the HULFT Management screen, the Synchronous Transfer, the dynamic specification of Send file, the Transfer Group, or the Host Name and the message transmission cannot be carried out.**
- **When the Pre-send Job is specified, it may take a while to display the request results.**

3.7.2 Issue of Resend File

On the Management screen, the Resend File can be issued easily. The Resend File can be issued from the [Issue Request] menu or on the Resend Queue Status List screen.

(1) Issuance of Resend File from menu

From the [Issue Request] menu on the Management screen, point the [Send File] and click the [Resend File]. The Resend File dialog box is displayed.

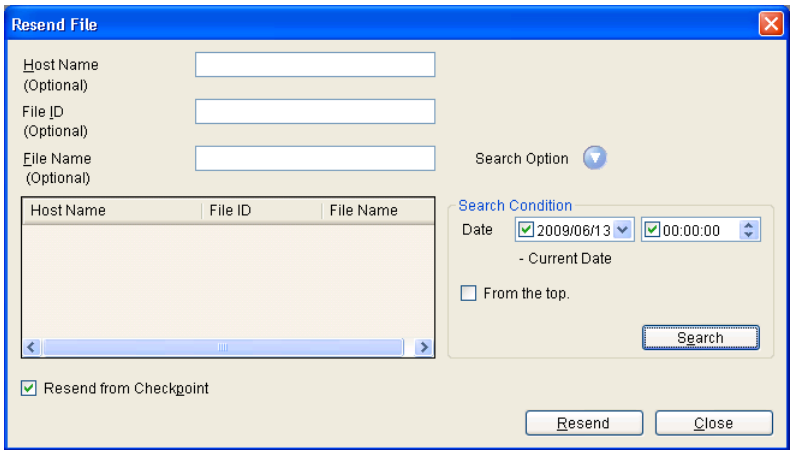


1. You can specify the conditions of resending by entering the Host name, the File ID, and the File Name on the Resend File dialog box. All fields are optional. When you default all the fields, HULFT resends all the files placed on the Resend Queue.
2. Specify whether to carry out the Checkpoint Resend File or not. When you intend to carry out the Checkpoint Resend File, mark the check box of the Resend from Checkpoint. (The Resend from Checkpoint is enabled by default.)
3. When the [Resend] is clicked, the Resend File is issued.

How to use [Search Option]

You can use the [Search Option] to specify the File ID. For the usage of the [Search Option], refer to "3.1.5 Common Operation of Dialog Boxes."

When the number of the Host Name, the File ID, or the File Name that fulfills the Search Condition exceeds the value of the MAX. Retrieval Cases, only the data up to the value of the MAX. Retrieval Cases are displayed in the list on the dialog box. In that case, you can search date of the Resend Queue to display the intended list. Specifying the Search Condition and clicking the [Search] displays the search result in the list.



Date (Mandatory)

Mark the check box if you intend to search the File Name of which date ranges from the specified time and date up to the current time and date.

Date: Date to start searching (YYYY/MM/DD)
Time: Time to start searching (HH:MM:SS)

(2) Issuance of Resend File on Resend Queue Status List screen

Described below is how to issue the Resend File on the Resend Queue Status List screen.

For the details on the Resend Queue Status List screen, refer to "3.4.6 Resend Queue Status List."

1. Select a log record on the Resend Queue Status List and click the [Resend] on the toolbar.
2. The File ID and the Host Name that you have selected is already set on the Resend File dialog box as default values. Entering the Host Name, the File ID, and/or the File Name enables you to specify the condition of resending. All fields are optional. When you default all the fields, HULFT sends all the files placed on the Resend Queue.
3. Specify whether to carry out the Checkpoint Resend File or not. When you intend to carry out the Checkpoint Resend File, mark the check box of the Resend from Checkpoint. (The Resend from Checkpoint is enabled by default.)
4. When the [Resend] is clicked, the Resend File is issued.

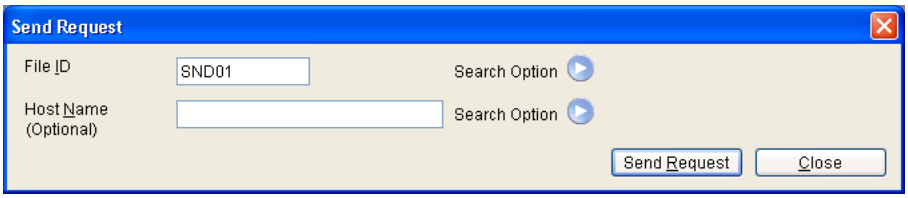
The [Search Option] helps you specify the Host Name, the File ID, and/or the File Name. For details, Refer to the explanation on how to use the [Search Option] in "(1) Issuance of Resend File from menu."

3.7.3 Issue of Send Request

On the Management screen, the Send Request can be issued easily. The Send Request can be issued from the [Issue Request] menu, on the Receive Management Information List screen, or on the Receive Log List screen.

(1) Issuance of Send Request from menu

From the [Issue Request] menu on the Management screen, point the [Send Request] and click the [Send Request]. The Send Request dialog box is displayed.



1. Enter the File ID and the Host Name to which the request is issued on the Send Request dialog box. The Host Name is optional. When you default the Host Name, HULFT acquires the Transfer Group ID registered in the specified File ID (the relevant File ID in the Receive Management Information) and issues the request to all the host registered in the Transfer Group ID.
2. When the [Send Request] is clicked, the Send Request is issued.

How to use [Search Option]

You can use the [Search Option] to specify the File ID. For the usage of the [Search Option], refer to "3.1.5 Common Operation of Dialog Boxes."

(2) Issuance of Send Request on the Receive Management Information List screen or the Receive Log List screen

There are two ways to issue the Send Request on the Receive Management Information List screen or the Receive Log List screen. For the details on each screen, refer to "3.5.3 Receive Management Information List and Update" and "3.4.3 Receive Log Inquiry."

a) Issuing the Send Request from pop-up menu

1. Click on the File ID to which you intend to issue the Send Request.
2. Right-click to display pop-up menu and select the [Send Request] from the menu. The Send Request dialog box that is set the selected File ID (In the case of the Receive Log List, the Host Name is set as well) is displayed.

b) Issuing the Send Request using shortcut Key

1. Click on the File ID to which you intend to issue the Send Request.
2. Pressing the 'Ctrl+U' issues the Send Request to the selected ID.

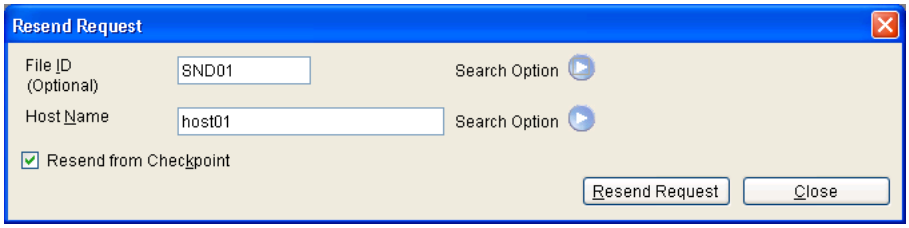
[Note] In the Send Request on the HULFT Management screen, the Synchronous Transfer and the specification of the message sending cannot be specified.

3.7.4 Issue of Resend Request

On the Management screen, Resend Request can be issued easily.

(1) Resend Request from the Menu

From the [Issue Request] menu on the Management screen, point the [Send Request] and click the [Resend Request]. The Resend Request dialog box is displayed.



1. Enter the File ID and the Host Name to which the request is issued on the Resend Request dialog box. You cannot specify only the File ID, though the Host Name and the File ID are optional. When you default the File ID, HULFT sends all the files placed on the Resend Queue of the specified host. When you default both File ID and Host Name, HULFT resends to all the hosts registered in the Host Information.
2. Specify whether to carry out the Checkpoint Resend Request or not. When you intend to carry out the Checkpoint Resend Request, mark the check box of the Resend from Checkpoint. (The Resend from Checkpoint is enabled by default.)
3. When the [Resend Request] is clicked, the Resend Request is issued.

How to use [Search Option]

You can use the [Search Option] to specify the Host Name and the File ID. For the usage of the [Search Option], refer to "3.1.5 Common Operation of Dialog Boxes."

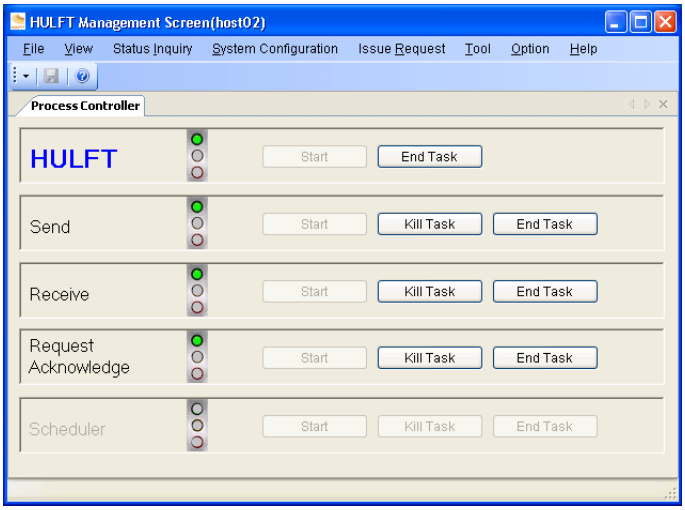
3.8 Tool Menu

The [Tool] menu of the Management screen is composed of the following submenus:

- [Process Controller]
- [Console]
- [CSV Conversion Information Registration]
- [User Information Registration]
- [External Character Table Registration]
- [EBCDIC User Table Registration]

3.8.1 Process Controller

From the [Tool] menu, clicking the [Process Controller] displays the Process Controller. On the Process Controller, you can start or terminate HULFT main module or each process, as well as terminate each process forcibly.



For the details on the method of starting or terminating HULFT, refer to "1.1 HULFT Startup and Termination."

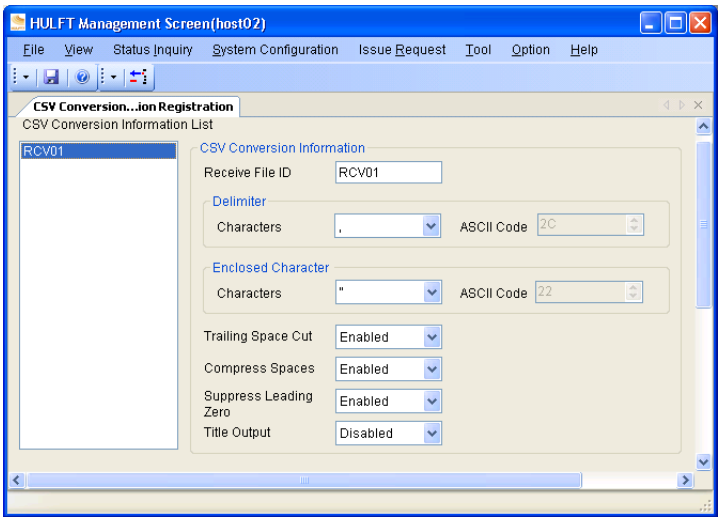
For the details on the method of starting or terminating each process, refer to "1.2 Startup and Termination Methods of Each Process."

[Note] When you use the Process Controller, execute the Management screen with the privilege of administrator.

3.8.2 CSV Conversion Information Registration

From the [Tool] menu, clicking the [CSV Conversion Information Registration] displays the CSV Conversion Information Registration screen.

On the CSV Conversion Information Registration screen, you can register the CSV Environment Settings file. For the details of each field, refer to "2.2 Settings of Receiving in CSV Format."



(1) Registration, Update and Deletion Method

In the case of new creation

When you intend to register new information, enter the File ID to be registered in the Receive File ID, and set the values of each field. After you complete the settings, click the [Save] on the toolbar.

In the case of update

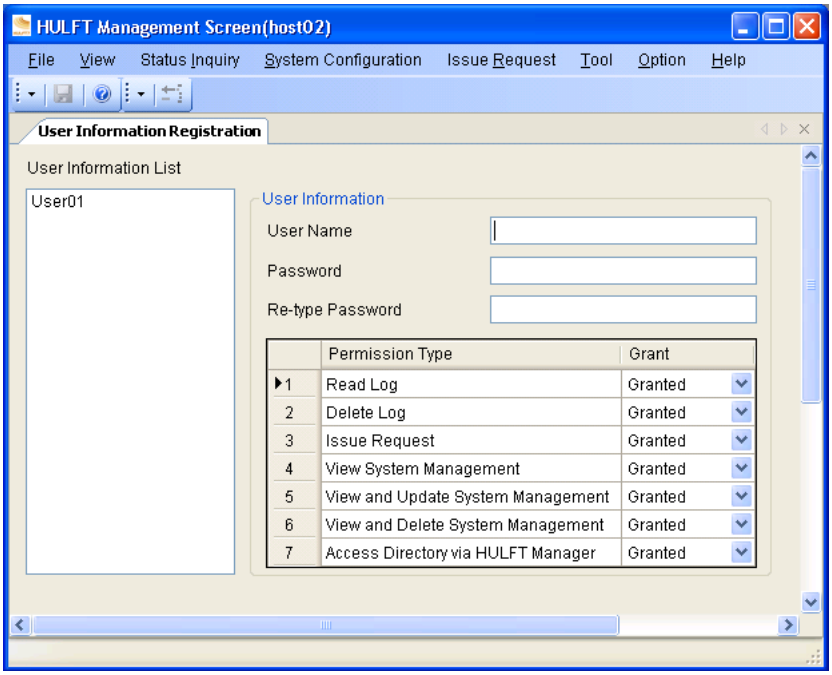
When you intend to update the registered information, select the relevant File ID from the list of the Receive File ID. The fields turn to display the setting values of each field. Change the values of the field to be modified and click the [Save] on the toolbar.

In the case of delete

When you intend to delete the registered information, select the relevant File ID from the list of the Receive File ID. When you click the [Delete] on the toolbar, a confirmation message is displayed. If you intend to delete the information, click the [Yes].

3.8.3 User Information Registration

From the [Tool] menu, clicking the [User Information Registration] displays the User Information Registration screen. On the User Information Registration screen, you can register the User Information where you use the Management Screen Security and Password Check function. For the details of each field, refer to *Administration Manual*.



(1) Registration, Update, Deletion Methods

In case of new creation

When you intend to register new information, enter the User Name to be registered in the User Name, and set the values of each field. After you complete the settings, click the [Save] on the toolbar.

In case of update

When you intend to update the registered information, select the relevant User Name from the list of the User Name. The fields turn to display the setting values of each field. Change the values of the field to be modified and click the [Save] on the toolbar.

In case of delete

When you intend to delete the registered information, select the relevant User Name from the list of the User Name. When you click the [Delete] on the toolbar, a confirmation message is displayed. If you intend to delete the information, click the [Yes].

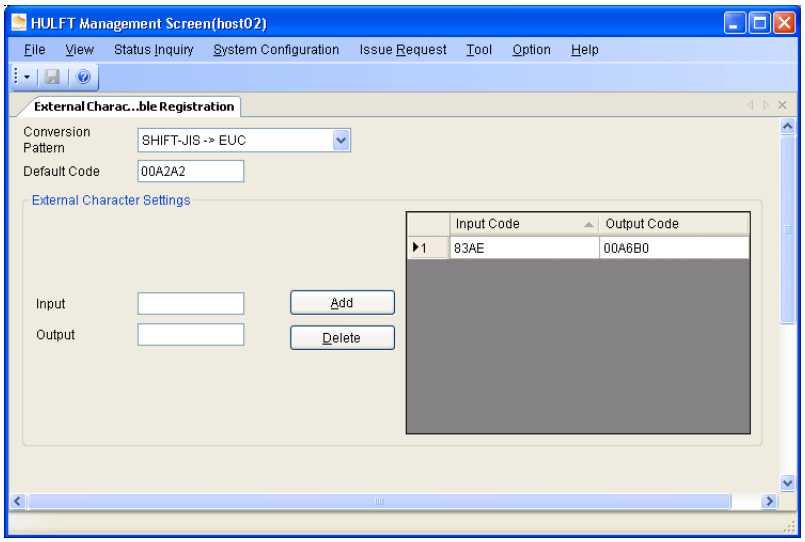
(2) Confirmation Method of User Permission

From the [Help] menu on the Management screen, select the [Version Information] to confirm the permission of users. The granted permission are displayed in the Version Information dialog box. Where no security is applied, information on security is not displayed.

3.8.4 External Character Table Registration

From the [Tool] menu, clicking the [External Character Table Registration] displays the External Character Table Registration screen.

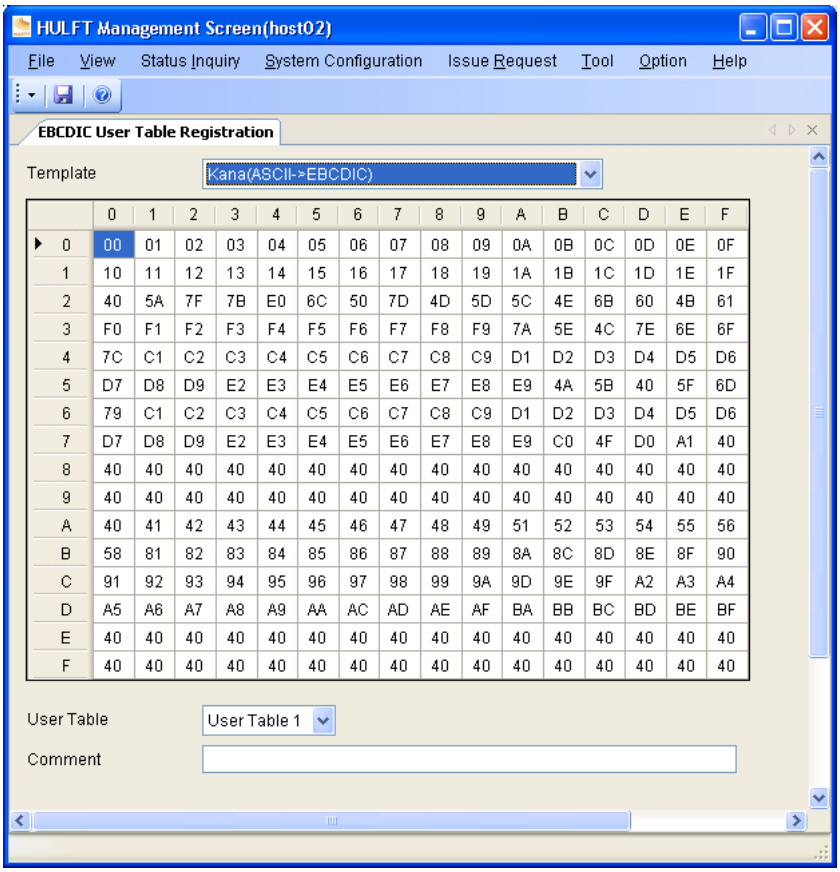
On the External Character Table Registration screen, you can register the External Character Table that is used during the code conversion in sending or receiving. For the details of the External Character Table, refer to *Administration Manual*.



3.8.5 EBCDIC User Table Registration

From the [Tool] menu, clicking the [EBCDIC User Table Registration] displays the EBCDIC User Table Registration screen.

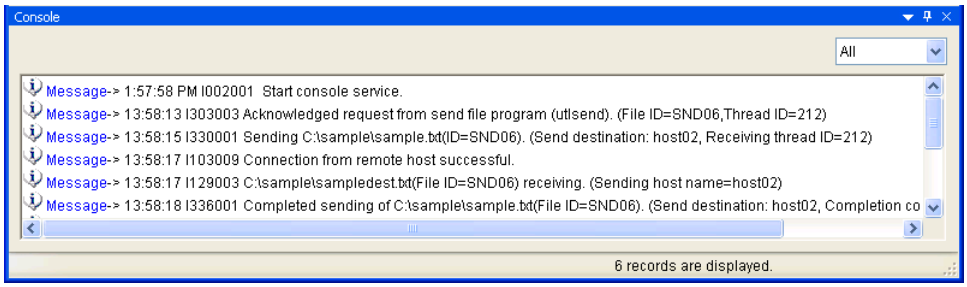
On the EBCDIC User Table Registration screen, you can register the EBCDIC User Table that is used during the sending or receiving from/to the host of EBCDIC type. For the details of the EBCDIC User Table, refer to *Administration Manual*.



	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
1	10	11	12	13	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F
2	40	5A	7F	7B	E0	6C	50	7D	4D	5D	5C	4E	6B	60	4B	61
3	F0	F1	F2	F3	F4	F5	F6	F7	F8	F9	7A	5E	4C	7E	6E	6F
4	7C	C1	C2	C3	C4	C5	C6	C7	C8	C9	D1	D2	D3	D4	D5	D6
5	D7	D8	D9	E2	E3	E4	E5	E6	E7	E8	E9	4A	5B	40	5F	6D
6	79	C1	C2	C3	C4	C5	C6	C7	C8	C9	D1	D2	D3	D4	D5	D6
7	D7	D8	D9	E2	E3	E4	E5	E6	E7	E8	E9	C0	4F	D0	A1	40
8	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
9	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
A	40	41	42	43	44	45	46	47	48	49	51	52	53	54	55	56
B	58	81	82	83	84	85	86	87	88	89	8A	8C	8D	8E	8F	90
C	91	92	93	94	95	96	97	98	99	9A	9D	9E	9F	A2	A3	A4
D	A5	A6	A7	A8	A9	AA	AC	AD	AE	AF	BA	BB	BC	BD	BE	BF
E	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
F	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40

3.8.6 Console

From the [Tool] menu, clicking the [Console] displays the Console screen. On the Console screen, the behaviors of HULFT are displayed point by point. With the Console screen, you can confirm the state of sending and receiving in real time.



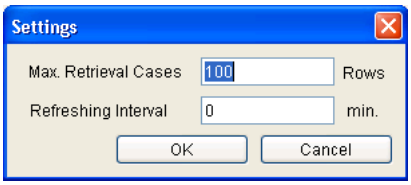
The information from the point you start the Console screen is displayed on the screen. HULFT cannot display the Console screen while its service is stopped.

3.9 Option Menu

With the [Option] menu, you can specify initial settings of the Management screen.

3.9.1 Max. Retrieval Caseses and Refreshing Intervals

From the [Option] menu, clicking the [Setting] displays the Settings dialog box. It is necessary to set the Max. Retrieval Cases and the Refreshing Interval on the Settings dialog box before you start using the Management screen.



<Explanation of each field>

Max. Retrieval Cases

This field specifies the maximum number of rows displayed on each screen that can be accssed from the [Status Inquiry] menu as well as each screen of management information list. If there is a large volume of data, it may take time to complete displaying it. In such case, decrease the value of this field. If the actual data is greater than the specified value of the Max. Retrieval Cases, display the target data using the [Search].

Otherwise, scroll through each screen with [Up] and [Down] to display the rows specified in the Max. Retrieval Cases screen by screen. The value can be specified within the range from '1' to '999.' The default value of this field is '100.'

Refreshing Interval

This field specifies the refreshing interval for automatic update of each screen that can be accssed from the [Status Inquiry] menu as well as each screen of management information list.

The unit for this field is minute. The value can be specified within the range from '0' to '999.' If you specify '0' for this field, HULFT does not refresh the screen. The default value of this field is '0.'

3.10 Help Menu

With the [Help] menu of the Management screen, you can view *the Online Help* of HULFT, the Version Information of HULFT installed on the local host, and the information on the User Permission.

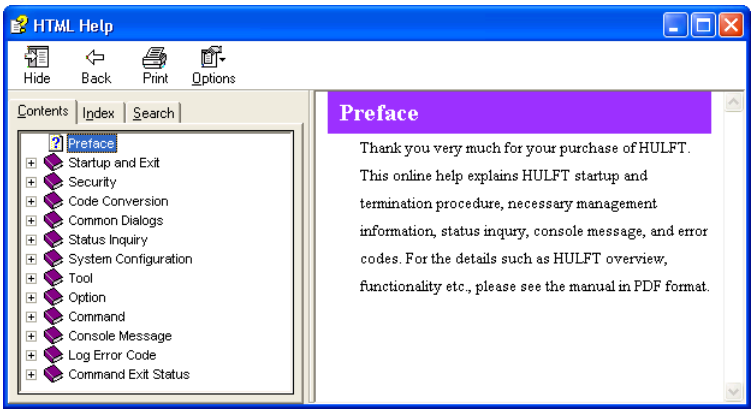
The [Help] menu is composed of the following submenus:

- [Contents]
- [Search By Keyword]
- [Version Information]

[Remarks] You can view the topic of *the Online Help* concerning the displayed screen by pressing the [F1] while a screen of the [Status Inquiry] menu or the [System Configuration] menu is displayed.

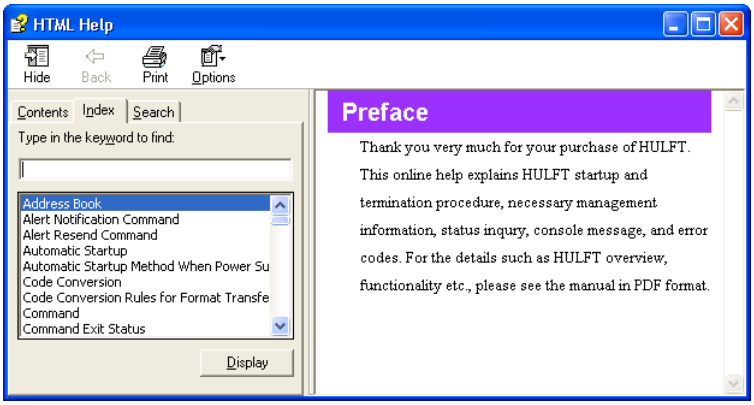
Contents:

1. From the [Help] menu, click the [Contents].
2. The contents of *the Online Help* are displayed.



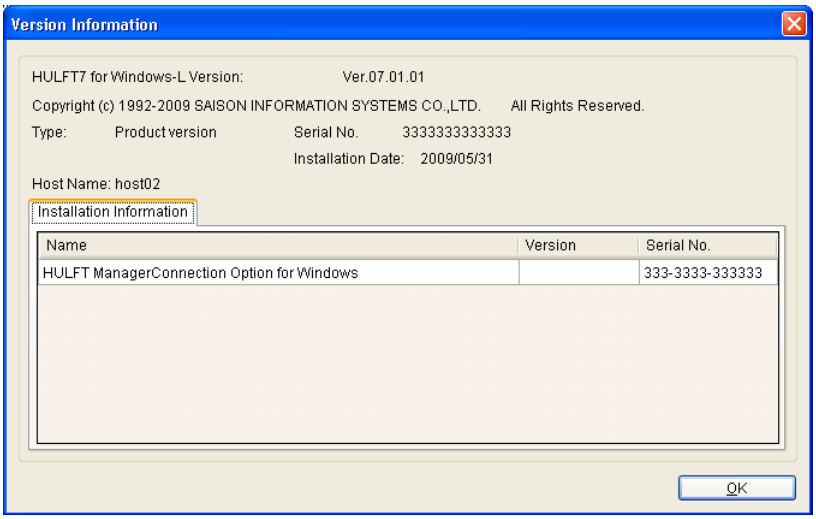
Search by Keyword:

1. From the [Help] menu, click the [Search by Keyword].
2. The keywords of *the Online Help* are displayed. Enter the word to be searched for, and search *the Online Help* for the word.



Version Information:

1. From the [Help] menu, click the [Version Information].
2. The Version Information dialog box is displayed. On the Version Information dialog box, information on the installed products and user permissions are displayed.



<Explanation of each field>

Installation Information

Name

Product names which have been installed are displayed.

Version

Version of the products which have been installed are displayed.

Serial No.

Serial number of the products which have been installed are displayed.

Permission

The field is displayed where the Permission is set for each user. For the details of the Management Screen Security and Password Check function, refer to *Administration Manual*.

[Note] If permission is not set, only the Installation Information is displayed.

Chapter 4

HULFT Operation Commands

This chapter describes the use of HULFT operation commands.

4.1 Send and Receive Commands

4.1.1 Send File

Sending files requires the Send File command. The operation consists of the process of creating the Send file and a batch file that contains the Send File command.

• The syntax for the Send File command is as follows:

```
utlsend -f fileid [-p priority] [-file filename] {[-t tgrp] | [-h hostname]}
      [-msg0 message] [-msg1 message] [-msg2 message]
      [-msg3 message] [-msg4 message] [-msg5 message]
      [-sync [-w time]]
```

Explanation of parameters

`-f fileid`

File ID to be sent (Mandatory)

Specify within 8 byte alphanumeric characters.

`-p priority`

Priority of the Send File (Optional)

Specify within the range of '1' to '256' alphanumeric characters. A relatively small value is given priority. If you default this tag, the priority registered in Send Management Information is set.

`-file filename`

File name to be sent (Optional)

Specify within 200 byte characters. If you default this tag, the File Name registered in Send Management Information is set.

In order to specify the '-file' parameter, you should set the Dynamic Parameter Specification (dynparam) in the System Environment Settings file as 'Enable dynamic specification.' For the details of Dynamic Parameter Specification, refer to the *Administration Manual*.

`-t tgrp`

Transfer Group ID to be sent (Optional)

Specify in alphanumeric characters within 8 bytes. If you default this tag, the Transfer Group ID registered in Send Management Information is set.

In order to specify the '-t' parameter, you should set the Dynamic Parameter Specification (dynparam) in the System Environment Settings file as 'Enable dynamic specification.' For the details of Dynamic Parameter Specification, refer to the *Administration Manual*.

`-h hostname`

Receiving host name (Optional)

Specify within 68 byte alphanumeric characters. If you default this tag, the Transfer Group ID registered in Send Management Information is set.

In order to specify the '-h' parameter, you should set the Dynamic Parameter Specification (dynparam) in the System Environment Settings file as 'Enable dynamic specification.' For the details of Dynamic Parameter Specification, refer to the *Administration Manual*.

`-msg0 message to -msg5 message`

Message to be sent to the receiving host (Optional)

Specify a character string within 50 bytes. If you default this tag, the message is not sent to the receiving host.

It is possible to specify up to 6 messages. For example, when message 0 is sent, it is specified at

[-msg0] parameter. When space or meta character is to be specified in the message, the entire message is placed within double quotes. (")

`-sync`

The parameter to execute Synchronous Transfer. (Optional)

If defaulted, the transfer becomes asynchronous Send File.

`-w time`

Synchronous Transfer Timeout (Seconds) (Optional)

The time for the synchronization to receive the processing results at the time of Synchronous Transfer is specified in the range of '10' to '259200.' When it reaches this time, it reverts the processing even during file sending. In that case, note that the transfer results are not reverted to the command.

When this parameter is specified, it is necessary to specify '-sync.'

If defaulted, the value which is set in the Socket Read Timeout of the System Environment Settings file is set.

[Remarks] [-t], [-h] cannot be specified at the same time.

[Note]

- **When the Pre-send Job is registered in the Send Management Information.**

a) When the Pre-send Job ends unsuccessfully, the Send File is not executed and the command ends unsuccessfully.

b) Even in case of multicasting (sending to multiple hosts), the Pre-send Job is executed only once.

c) Even when there is an error in the content of Send Management Information, the Pre-send Job is executed (Non-registration of Transfer Group or Host Information.)

4.1.2 Resend File

If a problem occurs during the Send process and the process is interrupted, the information of the file that ended unsuccessfully is written into Resent Queue file. Resend File shouldd be issued to the files written into the Resend Queue file.

If the File ID is defaulted, all the data in Resend Queue are sent to the specified send destination host. Resend usually starts from the point (data) where the error occurred. (Checkpoint Resend File) To resend file from the beginning, specify parameter [-np].

• The syntax for the Resend File command is as follows:

```
utlsend -r [hostname] [-f fileid] [-file filename] [-np]
```

Explanation of parameters

`-r hostname`

Resend File (Mandatory)

When the host name is specified, HULFT executes Resend File to the specified host name. When only '-r' is specified, all the host names will become target of Resend File. The host name should be specified in alphanumeric characters within 68 bytes.

`-f fileid`

File ID to be resent (Optional)

Specify in alphanumeric characters within 8 bytes. If defaulted, HULFT executes Resend File to all the File ID.

`-file filename`

The file name of the file to resend (Optional)

Specify the name in the characters not more than 200 bytes. When you do not specify this tag, HULFT resends all the files that correspond to the Host Name or File ID specified by the parameter. Specify the File Names that have already been in the Resend Queue. This is not a parameter that dynamically specifies Resend files.

`-np`

Resend from the beginning of the file (Optional)

If the tag is defaulted, HULFT executes Checkpoint Resend File.

[Note] The Checkpoint Resend File should fully satisfy the following conditions. Should any of them be not met, HULFT executes file transfer from the beginning.

- **The Registration Mode of the Receive Management Information is set to 'New Creation' or 'Replace'**
- **The Error Recovery of the Receive Management Information is set to 'Keep'**
- **The Receive Mode of the Receive Management Information is set to 'Single Receive'**

[Remarks] At the time of the Resend File, HULFT does not execute Pre-send Job even though the Job ID has been registered. Further, Synchronous Transfer function and Message Transmission function are not available. However, the messages and the dynamic file names specified at the time of Send File/Send Request are taken over.

4.1.3 Send Request

The receiving host sends a request to the remote host to send information. A Send Request command is executed. The remote host is requested to send the information.

To execute a Send Request command, it is necessary to activate the Receive process as well as the Send and Request Acknowledge processes in the remote host in advance. To execute the Send process it is also necessary for the management information required by the requested host to be registered appropriately.

• The syntax for the Send Request command is as follows:

```
utlrecv -f fileid [-h hostname]
       [-msg0 message] [-msg1 message] [-msg2 message]
       [-msg3 message] [-msg4 message] [-msg5 message]
       [-sync [-w time]]
```

Explanation of parameters

`-f  fileid`

File ID to be received (Mandatory)

Specify in alphanumeric characters within 8 bytes.

`-h  hostname`

Remote host being requested to send (Optional)

Specify in alphanumeric characters within 68 bytes. If defaulted, requests are sent to all the hosts registered in the Transfer Group of the Receive Management Information.

`-msg0 message to -msg5 message`

Message to be sent to the sending side (Optional)

Specify within 50 bytes. If defaulted, the message is not sent to the sending side.

End users can specify up to 6 messages. For example, when message '0' is sent, it is specified with [-msg0] parameter. When space or meta character is to be specified in the message, the entire message is to be placed within double quotes. (")

`-sync`

Synchronous Transfer request (Optional)

If defaulted, asynchronous Send Request is issued.

Specify Synchronous Transfer Timeout (-w) when you set this parameter.

`-w time`

Synchronous Transfer Timeout (Seconds) (Optional)

The time for the synchronization to receive the processing results at the time of synchronous transfer is specified in the range of '10' to '259200.' When it reaches this time, it reverts the processing even during file receiving. In that case, note that the transfer results are not reverted to the command.

When this parameter is specified, it is necessary to specify '-sync.'

If this tag is defaulted, HULFT employs the value of Socket Read Timeout in the System Environment Settings file.

[Note] **When '-h hostname' is specified and '-f fileID' is defaulted, HULFT executes Resend Request. The purpose of this behavior is to maintain compatibility with lower versions.**

4.1.4 Resend Request

The Resend Requests are executed when it is not possible to receive a file. To execute the Resend Request command, it is necessary to activate the Receive process and the Send and Request Acknowledge processes in the source host in advance.

The Resend Requests are for the purpose of receiving data from the point (data) where reception is terminated (Checkpoint Resend Request). To receive information from the beginning, [-np] parameter is specified.

• The syntax for the Resend Request command is as follows:

```
utlrecv -h hostname -r [-f fileid] [-np]
```

Explanation of parameters

`-h` *`hostname`*

The name of the remote host that is requested to resend (Mandatory)

Specify in alphanumeric characters within 68 bytes.

`-r`

Resend Request (Mandatory)

`-f` *`fileid`*

The File ID for which resend is requested (Optional)

Specify in alphanumeric characters within 8 bytes. If defaulted, all files in the Resend Queue of the specified remote host are sent.

`-np`

Resent from the beginning of the file (Optional)

If defaulted, the Checkpoint Resend Request is issued.

[Note] **The Checkpoint Resend Request should fully satisfy the following conditions. Should any of them be not met, HULFT executes file transfer from the beginning.**

- **The Registration Mode of the Receive Management Information is set to 'New Creation' or 'Replace'**
- **The Error Recovery of the Receive Management Information is set to 'Keep'**
- **The Receive Mode of the Receive Management Information is set to 'Single Receive'**

[Remarks]

- At the time of the Resend Request, HULFT does not execute Pre-send Job even though the Job ID has been registered. Further, Synchronous Transfer function and Message Transmission function are not available. However, the messages and the dynamic file names specified at the time of Send File/Send Request are taken over.
- When you specify '-h hostname' yet do not specify '-f fileid,' Hulft treats the request as Resend Request, even though there is no '-r.' The purpose of this behavior is to maintain compatibility with lower versions. Usually, specify '-r.'

4.1.5 Receive Ready Notification

The Receive Ready Notification is sent to all hosts registered in Host Information each time the Receive process is activated.

For more information, refer to *Administration Manual*.

To use the Receive Ready Notification command, it is necessary to activate the Receive, Send, and Request Acknowledge processes of the remote host in advance.

• The syntax for the Receive Ready Notification command is as follows:

```
utlrecv -a
```

Explanation of parameters

`-a`

Resend Request to all the hosts registered in the Host Information (Mandatory)

4.2 Send and Receive Control Commands

4.2.1 Send Process Status Display

When the details of the processing status of the Send process are to be confirmed, execute the send status display command. The status of the Send process is shown as standard output.

• The syntax for the Send Status Display command is as follows:

```
utlsdisp
```

<Display example>

```
HOSTNAME  :HOST1
FILEID    :FILEID01    RECORDS:100000    BYTE:5000000
```

<Explanation of each field>

HOSTNAME:	eceiving side host name
FILEID:	File ID being sent
RECORDS:	Number of records that have been sent up to now
BYTE:	Data size that has been sent up to now

4.2.2 Receive Process Status Display

When the details of the processing state of the Receive process are to be confirmed, execute the receive status display command. The status of the Receive process is shown as standard output.

• The syntax for the Receive Status Display command is as follows:

```
utlrdisp
```

<Display Example>

```
HOSTNAME  : HOST1
FILEID    : FILEID02    RECORDS :100000    BYTE :5000000
```

<Explanation of Each Field>

HOSTNAME:	Sending side host name
FILEID:	File ID being received
RECORDS:	Number of records that have been received up to now
BYTE:	Received data size up to now

4.2.3 Unsent Status Queue Modification

The setting of the Send Queue can be changed.

• The syntax for the Unsent Status Queue Change command is as follows:

```
utlschange -h hostname -f fileid {[-p priority] [-i time]
      [-bl blocklen] [-bc blocks]}
```

Explanation of parameters

`-h hostname`

Receiving host name of Send Queue for which setting is to be changed (Mandatory)

Specify in alphanumeric characters within 68 bytes.

`-f fileid`

File ID on Send Queue, of which setting to be modified (Mandatory)

Specify in alphanumeric characters within 8 bytes.

`-p priority`

Priority (Optional)

Specify in numeral within a range of '1' to '256.'

A relatively small value takes priority.

`-i time`

Transfer Interval (milli seconds) (Optional)

Specify within a range of '0' to '32760.'

`-bl blocklen`

Transfer Block Length (Optional)

Specify in alphanumeric characters within a range of '128' to '65520.'

However, the product of Transfer Block Length and Transfer Block Count cannot exceed 65520.

`-bc blocks`

Transfer Block Count (Optional)

Specify in alphanumeric characters within a range of '1' to '99.'

However, the product of Transfer Block Length and Transfer Block Count cannot exceed 65520.

[Note]

- **When the same host name or the File ID exists in the Send Queue, the host name or the File ID specified from the top queue is searched and only the first queue is changed.**
- **[-p] [-i] [-bl] [-bc] cannot be defaulted all at the same time. However, one amongst these should be specified.**

4.2.4 Send Cancellation

This enables the cancellation of files currently being sent and the Send Queue process.

• The syntax for the Send Cancellation command is as follows:

```
utlscan {[-f fileid] [-h hostname]|-a}
```

Explanation of parameters

`-f fileid`

File ID which is under Send process or placed on Send Queue, to be cancelled (Optional)

Specify the tag in alphanumeric characters within 8 bytes. If you default this tag, the send processing for all the relevant File IDs are cancelled.

Specification is not possible when -a is specified.

`-h hostname`

Remote Host Name which is under Send process or placed on Send Queue, to be cancelled (Optional)

Specify the tag in alphanumeric characters within 68 bytes. If you default this tag, the send processing for all the relevant host names are cancelled.

Specification is not possible when -a is specified.

`-a`

The tag to cancel all the processing under Send process or placed on Send Queue

Specification is not possible when either -f fileid or -h hostname is specified.

Cannot be defaulted when both -f fileid and -h hostname are not specified.

[Note]

- **When the same host name or the File ID exists, all the relevant send processing is cancelled.**
- **When cancelled, the below processing is not carried out:**
  a) Post-send Job startup
  b) Resend Queue file output
  c) Mail Interface
- **In the following cases, it may take awhile until the cancellation takes place:**
  a) When long transfer interval is set
  b) When waiting for a response from a remote host
- **When the following Send process is being executed, it cannot be cancelled:**
  a) When the Post-send Job execution has started

4.2.5 Receive Cancellation

The Receive processing can be cancelled.

• The syntax for the Receive Cancellation command is as follows:

```
utlrcan {[-f fileid] [-h hostname]|-a}
```

Parameter description

`-f fileid`

File ID which is under Receive process, to be cancelled (Optional)

Specify the tag in a character string within 8 bytes. When you default the tag, the Receive process for all the relevant File IDs will be cancelled.

Specification is not allowed when -a is specified.

`-h hostname`

Remote Host Name which is under Receive process, to be cancelled (Optional)

Specify the tag in a character string within 68 bytes. When you default this tag, the Receive process for all the relevant host names will be cancelled.

Specification is not allowed when -a is specified.

`-a`

The tag to cancel all the processing under Receive process

Specification is not allowed when either -f fileid or -h hostname is specified.

Mandatory when both-f fileid and -h hostname are defaulted.

[Note]

- **When the same host name and File ID exists, all the relevant Receive process is cancelled.**
- **When cancelled, the following process is not carried out:**
  - **a) Activation of Post-receive Job**
  - **b) Mail Interface**
- **In the following cases, it may take awhile until the cancellation actually takes place:**
  - **a) When the setting of the Transfer Interval is large in the Send Management Information of the sending side host**
  - **b) When waiting for data received status from remote host**
- **When the Receive processing has carried out the following process, the Receive process cannot be cancelled:**
  - **a) When the Post-receive Job has started**
  - **b) When the close process of the Receive file has started**

4.2.6 Resend Queue Status List Deletion

You can delete the record from the Resend Queue Status List.

• The syntax for the Resend Queue Status List Deletion Command is as follows:

```
utlrsdrm -f fileid -h hostname [-file filename]
```

Parameter description

`-f fileid`

File ID that is in the Resend Queue Status List and is to be deleted (Mandatory)

Specify within 8-byte alphanumeric characters.

`-h hostname`

Remote host name that is in the Resend Queue Status List and is to be deleted (Mandatory)

Specify within 68-byte alphanumeric characters.

`-file filename`

Name of the file in Resend Queue to delete (Optional)

Specify the name in the characters not greater than 200 bytes. If you do not specify this tag, all the files that correspond to the Host Name or the File ID specified by the parameter will be treated as target.

4.3 Request Acknowledge Commands

4.3.1 Job Execution Result Notification

The execution results of the activated job can be notified to the remote host. The service name is 'HULSNDRC.' The execution result of jobs is output to job execution log files.

The job execution result notification is issued by including Job Execution Result Notification command (hulsndrc) at the end of the activated job.

• The syntax for the Job Execution Result Notification command is as follows:

```
hulsndrc [-h hostname] {[-j jobname] [-r returncode] [-m message]}
       [-i retrytime] [-c retrycount]
```

Explanation of parameters

`-h hostname`

Name of the notified host (Optional)

Specify the character string within 68 bytes. When defaulted, if the job after send and receive is executed, it is notified to the remote host.

You cannot default this tag if you execute this command except for the subsequent job after sending and receiving.

`-j jobname`

Name of job that is to be notified (Optional)

Specify the tag in a character string within 60 bytes. When you default this tag, it is notified by an empty space.

`-r returncode`

Status code that is notified (Optional)

Specify in a character string within 4 bytes. When you default this tag, '0' is notified.

`-m message`

Message that notifies (Optional)

Specify the tag within 128 bytes. When you would like to specify space or meta character in the message, place the entire message within double quotes. (") When you default this tag, a blank space is sent as a notification.

`-i retrytime`

Retry interval at the time of connection failure.(seconds) (Optional)

Specify the tag in alphanumeric characters within a range from '0' to '99999.' When you default this tag, the retry interval becomes '0' seconds.

`-c retrycount`

Retry count at the time of connection failure (Optional)

Specify the tag in alphanumeric characters within a range from '0' to '99999.' When you default this tag, the retry is not carried out.

[Note] [-j] [-r] [-m] cannot be defaulted at the same time. At least one parameter should be specified.

4.3.2 Remote Job Execution

When Remote Job Execution Request is issued, the jobs of other hosts can be executed. The Remote Job Execution Request acknowledge side executes the job specified by the issue side. The job that is executed should be registered in the Job Information before hand. The service name is 'HULRJOB.'

• The syntax for the Remote Job Execution command is as follows:

```
utlrjob -h hostname -j jobid [-o [filename]] [-sync [-w time]]
```

Explanation of parameters

`-h hostname`

The host name that carries out the job execution. (Mandatory)

Specify a character string within 68 bytes.

`-j jobid`

Job ID that is executed.(Mandatory)

Specify a character string 8 bytes. This Job ID should be registered in the Job Information of the remote host.

`-o filename`

Job execution request result output file name (Optional)

Specify a file name within 256 bytes with the full path. When there is no specification of the file name (only [-o]), it is displayed as a standard output. When you default this tag, the job execution results are not displayed. Further, when there is a failure in the connection to the remote host, the results are not displayed.

`-sync`

Synchronous execution request (Optional)

The tag is to synchronize up to the end of the job execution of the remote host.

When you default this tag, the synchronization ends at the time when the request was issued.

Specify Synchronous Transfer Timeout (-w) when you set this parameter.

`-w time`

Synchronous Transfer Timeout (Second) (Optional)

The time that is synchronized in order to obtain the processing results at the time of Synchronous Transfer is specified in the range of '10' to '259200.'

When you default this tag, the value that set in the Job Timeout in the System Environment Settings file is applied.

When this parameter is specified, it is necessary to specify '-sync.'

[Note]

- **In synchronous execution request, HULFT waits exiting from the job until the waiting time of the synchronous execution elapses at the request destination host. Therefore, even if the value of the Socket Read Timeout set in the System Environment Settings file is shorter than the waiting time, socket read timeout does not occur.**
- **On Mainframe, the timer of Synchronous Transfer Timeout carries out processing by minute. Therefore, specify the value of Synchronous Transfer Timeout in a multiple of 60 seconds, when you request Remote Job Execution to Mainframe. When the value is not the multiple of 60, HULFT automatically rounds up the figure to the multiple of 60 to carry out processing.**

<Output examples of Job execution request results>

JOBID=JOB00001 DATE=2003/05/25 STIME=20:15:22 ETIME=20:20:12 RC=00000-000000000
HOST=HOST01

<Explanation of the Message>

JOBID:	Job ID (8 bytes)
DATE:	Request issue start date (yyyy/mm/dd)
STIME:	Request issue start time (hh:mm:ss)
ETIME:	Request issue end time (hh:mm:ss)
RC:	Status code (5 bytes) - Detailed code (9 bytes)
HOST:	Remote job execution requested host name (68 bytes)

4.4 System Management Commands

By using the system management commands, registration, change and deletion of the system management information can be carried out.

The system management information is of the following 7 types.

- Send Management Information
- Receive Management Information
- Job Information
- Host Information
- Transfer Group Information
- Format Information
- Multi Format Information

[Remarks] You can register Mail Interface Information only from Management screen. You cannot register this field by command.

4.4.1 Registration or Modification of Management Information

The registration and changes of each management information specify the text files created by editors such as memo pad, as parameter files (definition cards) and the registration, change is carried out according to the details of the text file.

- The syntax for the Management Information Registration command is as follows:

```
utliupdt -f filename [-r]
```

Explanation of parameters

`-f filename`

Parameter file name (Mandatory)

The file name where the registered definition card is entered, is specified.

`-r`

Specification when making change (Optional)

When the same ID already exists, the registration is changed. When the same ID does not exist, it becomes a new registration. Because defaulting this tag is always regarded as new registration, existence of the same ID yields an error message. In such case, HULFT does not carry out registration yet it proceeds to the registration of the next ID.

(1) Description Format of Parameter Files

The entry method of the parameter files is as follows:

- A Line starting with '#' is comment.
- The 'END' line shows the end of one management information.
- Specify each field in the format of 'Field=set value.' Space or tab cannot be put before and after an 'equal sign (=).'
- The fields are not case-sensitive.
- Specify one field in one line.
- The field that is enclosed in [] can be defaulted. When you do not specify this tag, the default value is applied. Refer to "2.1 System Management Information" for default value.
- Select one of the values enclosed in {}.
- Specification only by the underlined character (not by full spell) is also possible.

a) Format of Send Management Information Parameter

The parameter file format for registration, change of Send Management Information are as follows.
For details of each field, refer to "2.1.1 Send Management Information."

```
SNDFILE=File ID
FILENAME=File Name
[INTERVAL=Transfer Interval]
[BLOCKLEN=Transfer Block Length]
[BLOCKCNT=Transfer Block Count]
COMP={NO|1|2} ..............................  Compression Level
[COMPSIZE=Compression Unit]
[TRANSPRTY=Transfer Priority]
TRANSTYPE={FORMAT|BINARY|TEXT|MFORMAT}.......  Transfer Type
[CODESET={A|B|C|D|E|F|G|V|W|X}] .............  EBCDIC Code Set
KJCHNGE={S|R|N} .............................  Code Conversion
[SHIFTTRANSACT={Y|N}] .......................  Shiftcode Mode
[CLEAR={K|C|D|L}] ...........................  Send File Mode
[PREJOBID=Pre-send Job ID]
[JOBID=Successful Job ID]
[EJOBID=Unsuccessful Job ID]
[DBID=Interface DBID]
[MAILID=Mail Interface ID]
GRPID=Transfer Group ID
[FMTID=Format ID| Multi Format ID]
[PASSWORD=Encryption Key]
[COMMENT=Comment]
END
```

[Note] **If the Transfer Block Length is set to the value ranging from '6' to '127,' the system automatically registers '128' for the field in the Send Management Information instead, as a lower limit value of HULFT Ver.7.**

b) Format of Receive Management Information Parameter

The parameter file format for registration, change of Receive Management Information are as follows:

For details of each field, refer to "2.1.2 Receive Management Information."

```
RCVFILE=File ID
FILENAME=File name
[CODESET={A|B|C|D|E|F|G|V|W|X}]..... EBCDIC Code Set
TRANSMODE={NEW|REP|MOD}................ Registration Mode
ABNORMAL{DELETE|KEEP|RESTORE}........... Error Recovery
RCVTYPE={S|M}........................... Receive Mode
GENCTL={YES|NO}......................... Generation File
[GENMNGNO=Generation File Count]
[JOBID=Successful Job ID]
[EJOBID=Unsuccessful Job ID]
[GRPID=Transfer Group ID]
[PASSWORD=Encryption Key]
[MAILID=Mail Interface ID]
[JOBWAIT={J|T}]......................... Notification
[DATAVERIFY={0|1}]...................... Verify Data
[COMMENT=Comment]
END
```

c) Format of Job Information Parameters

The parameter file format for registration, change of Job Information is as mentioned below.

For details of each field, refer to "2.1.3 Job Information."

```
JOB=Job ID
JOB DEF
Job name 1
  :
  : (Up to 13 job names can be specified)
  :
Job name 13
DEFEND
[COMMENT=Comment]
END
```

d) Format of Host Information Parameters

The parameter file format for registration, change of Host Information is as follows:

For details of each field, refer to "2.1.4 Host Information."

```
HOST=Host Name
HOSTTYPE={HOST|UNIX|NT|WIN|K|AS400} ..........  Host Type
KCODETYPE={SHIFT-JIS|JEF|EUC|IBM|KEIS|NEC} ...  Kanji Code Type
JISYEAR={0|1}..................................  JIS Year
[CONNECTTYPE=L]................................  Connection Type
[RCVPORT=Receive Port No.]
[REQPORT=Request Acknowledge Port No.]
[TRANSFERPROTOCOL=H]......................       Communication Protocol
[HOSTSPSNUM=Send Process Multiplex Level by Host]
[MBOXUSE=N]....................................  Mailbox Use flag
[MYPROXYNAME=Local Net Proxy Server Name]
[MYPROXYPORT=Local Net Proxy Port No.]
[YOURPROXYNAME=Global Net Proxy Server Name]
[YOURPROXYPORT=Global Net Proxy Port No.]
[SENDPERMIT={Y|N}]..................... Allow Send Request/Resend Request
[HULJOBPERMIT={Y|N}]................... Allow to View Post-receive Job Result
[HULSNDRCPERMIT={Y|N}]................. Allow to Notify Job Result
[HULRJOBPERMIT={Y|N}]................... Allow to Execute Remote Job
[USRNOTIFY={Y|N}]...................... Notify User Details
[COMMENT=Comment]
END
```

e) Format of Transfer Group Information Parameters

The parameter file format for registration, change of Transfer Group Information is as follows:

For details of each field, refer to "2.1.5 Transfer Group Information."

```
GRP=Transfer Group ID
SERVER DEF
Host Name 1
  :
  : (Up to 1000 host names can be specified)
  :
Host Name 1000
DEFEND
[COMMENT=Comment]
END
```

f) Format of Format Information Parameters

The parameter file format for registration, change of Format Information is as follows:

For details of each field, refer to "2.1.6 Format Information."

```
FMT=Format ID
FORMAT DEF
Field Name1    Start Position1    Byte Count1    Field Type1    Decimal Places1
  :
  : (Up to 1000 field names can be specified)
  :
Field Name1000 Start Position1000 Byte Count1000 Field Type1000 Decimal Places1000
DEFEND
[COMMENT=Comment]
END
```

- When you default the Start Position, enter '*.' When you do not specify the field, the value of the Byte Count is added to the Start Position of the previous field.
- The delimiter of each field of one format is tab or space of more than one character.
- For Field Type, 'X' 'I' 'F' 'N' 'M' specify the decimal digit number as '0.'

g) Format of Multi Format Information Parameters

The parameter file format for Multi Format Information, change of the Multi Format Information is as follows:

For the details of each field, refer to "2.1.7 Multi Format Information."

```
MFMT=Multi Format ID
KEYSTART=Key Start Position
KEYLEN=Key Length
[DFMTID=Default Format ID]
MFORMAT DEF
Key Value1  Format ID1
  :
  : (Can be specified up to 20)
  :
Key Value20         Format ID20
DEFEND
[COMMENT=Comment]
END
```

- An error occurs when at least more than one group of key and Format Information is not specified.
- The delimiter of each Key Value and Format ID is a space or tab.

(2) Description Example

```
# Send Management Information
SNDFILE=F0000001
FILENAME=D:\users\home\p999\hulft\jinji.txt
INTERVAL=0
BLOCKLEN=4096
BLOCKCNT=3
COMP=N
#COMPSIZE=0
TRANSPRTY=50
TRANSTYPE=M
CODESET=E
KJCHNGE=S
SHIFTTRANSACT=N
CLEAR=K
#PREJOBID=
JOBID=j0000001
#EJOBID=
DBID=CSV
GRPID=grp1
FMTID=MFORMAT1
PASSWORD=RPC45231
COMMENT=Personnel information file
END

# Receive Management Information
RCVFILE=F0000001
FILENAME=D:\hulft\rcv\file1.rcv
CODESET=E
TRANSMODE=R
ABNORMAL=K
RCVTYPE=S
GENCTL=N
JOBID=j0000002
#EJOBID=
GRPID=grp1
PASSWORD=RPC45231
JOBWAIT=T
DATAVERIFY=0
COMMENT=Personnel information file
END

# Job Information
JOB=j0000001
COMMENT=Personnel information file Post-send Job
JOB DEF
  D:\hulft\job\job_0001.exe
DEFEND
END

# Host Information
HOST=host01
HOSTTYPE=N
KCODETYPE=S
JISYEAR=1
CONNECTTYPE=L
RCVPORT=30000
REQPORT=31000
TRANSFERPROTOCOL=H
HOSTSPSNUM=50
SENDPERMIT=Y
HULJOBPERMIT=Y
HULSNDRCPERMIT=Y
HULRJOBPERMIT=Y
USRNOTIFY=N
```

```
COMMENT=Headquarters host Windows
END

# Transfer Group Information
GRP=grp1
COMMENT=Headquarters host
SERVER DEF
  host01
DEFEND
END

# Format Information
FMT=FORMAT01
COMMENT=Personnel information file Key 0001 format
FORMAT DEF
  CODE             *       4       9       0
  NAME             *       20      X       0
  AGE              *       2       9       0
  SEIBETU  *       2       9       0
  ADDRESS  *       30      X       0
  TEL              *       11      X       0
  SYOZOKU  *       16      X       0
  NAISEN   *       10      X       0
DEFEND
END

# Multi Format Information
MFMT=MFORMAT1
KEYSTART=1
KEYLEN=4
DFMTID=DEFAULT
COMMENT=Personnel information file
MFORMAT DEF
  0001  FORMAT01
  0002  FORMAT02
  0003  FORMAT03
  0004  FORMAT04
  0005  FORMAT05
  0006  FORMAT06
  0007  FORMAT07
DEFEND
END
```

4.4.2 Deletion of Management Information

For deletion of each management information the command given below is used.

• The syntax for the Management Information Deletion command is as follows:

```
utlirm -i {snd|rcv|job|hst|tgrp|fmt|mfmt} -id ID
```

Explanation of parameters

`-i {snd|rcv|job|hst|tgrp|fmt|mfmt}`

Selection of management information to be deleted (Mandatory)

snd:	Send Management Information
rcv:	Receive Management Information
job:	Job Information
hst:	Host Information
tgrp:	Transfer Group Information
fmt:	Format Information
mfmt:	Multi Format Information

`-id ID`

ID to be deleted (Mandatory)

For IDs other than the Host Information, specify an alphanumeric string within 8 bytes. For Host Information specify an alphanumeric string within 68 bytes. The IDs of the Send Management Information, Receive Management Information, Format Information, Multi Format Information are not case-sensitive.

[Remarks] By repeating '-i {snd|rcv|job|hst|tgrp|fmt|mfmt} -id *ID*,' multiple management information can be deleted.

<Examples>

```
utlirm -i snd -id F0000001 -i rcv -id F0000002 -i fmt -id FMT03
```

If entered as mentioned above, the registered F0000001 in the Send Management Information, the registered F0000002 in the Receive Management Information and the registered FMT03 in the Format Information are deleted.

4.4.3 Deletion of Management Information Record

Even when deletion of each management information is carried out through Management screen, Management Information Deletion command and batch processing, the actual record of each management information is not deleted. Further, when the change of the management information is carried out, the data after the change creates new records, and the data before the change remains as it is. Since the records of each management information that have become unnecessary will be the cause for compression of the disk, delete it regularly. Use the following commands for deletion of unnecessary records.

• The syntax for Management Information Record Deletion command is as follows:

```
utlcomp {snd|rcv|job|hst|tgrp|fmt|mfmt|a}
```

Explanation of parameters

```
{snd|rcv|job|hst|tgrp|fmt|mfmt|a}
```

Selects the management information to delete the unnecessary records (Mandatory)

snd:	Send Management Information
rcv:	Receive Management Information
job:	Job Information
hst:	Host Information
tgrp:	Transfer Group Information
fmt:	Format Information
mfmt:	Multi Format Information
a:	All Information

[Note] When using this command, execute after confirming that there is sufficient disk space.

4.4.4 Management Information Parameter File Generation

The parameter file (definition card) that is used in the batch (utliupdt.exe) registration command from the already registered management information can be generated.

• The syntax for the Management Information Parameter File Generation command is as follows:

```
utligen -f filename -i {snd|rcv|job|hst|tgrp|fmt|mfmt} [-id ID]
```

Explanation of parameters

`-f filename`

Parameter file name (Mandatory)

Specify a character string within 256 bytes by the absolute path.

`-i {snd|rcv|job|hst|tgrp|fmt|mfmt}`

Selects the management information that generates the parameter file. (Mandatory)

snd:	Send Management Information
rcv:	Receive Management Information
job:	Job Information
hst:	Host Information
tgrp:	Transfer Group Information
fmt:	Format Information
mfmt:	Multi Format Information

`-id ID`

ID targeted for generation (Optional)

For IDs other than the Host Information, specify an alphanumeric string within 8 bytes. For Host Information specify alpha numeric characters within 68 bytes. The IDs of Send Management Information , Receive Management Information, Format Information and Multi Format Information are not case-sensitive.

The asterisk (*) is used and multiple IDs can be specified. Specification of matching with the former and matching with the latter is possible with '*.' (Example ABC*)

[Remarks] By repeating '-i {snd|rcv|job|hst|tgrp|fmt|mfmt} -id *ID*,' an ID list of multiple parameters can be generated.

<Example>

```
utligen -f D:\tmp\file01.prm -i snd -id s* -i rcv -id rcv00001
utligen -f D:\tmp\fmtfile.prm -i fmt -id *r
```

4.4.5 Display of Format Information Contents

From the Format Information that is already registered, the contents can be displayed as a list.

• The syntax for the Format Information Display command is as follows:

```
utlilist -i fmt -f formatID
```

Explanation of parameters

`-i fmt`

Displays the Format Information. (Mandatory)

`-f formatID`

Format ID that is displayed (Mandatory)

Specify an alphanumeric string within 8 bytes.

<Display example>

FMT=FMTID

ITEM	START	LENGTH	POINT	TYPE
FMT_KEY	1	5	0	X
FMT_DATA1	6	10	0	X
FMT_DATA2	16	10	0	9

4.4.6 Management Information Related Display

The related images of the registered management information can be displayed as a list with the help of commands.

The syntax for the Management Information Related Display command is as follows:

```
utlidlist -i {snd|rcv|job|hst|tgrp|fmt|mfmt} -id ID [-list] [-l]
```

Explanation of parameters

`-i {snd|rcv|job|hst|tgrp|fmt|mfmt}`

Selects the management information for list display. (Mandatory)

snd:	Send Management Information
rcv:	Receive Management Information
job:	Job Information
hst:	Host Information
tgrp:	Transfer Group Information
fmt:	Format Information
mfmt:	Multi Format Information

`-id ID`

ID of list display (Mandatory)

ID other than the Host Information is specified in an alphanumeric string within 8 bytes. The ID of Host Information is specified in an alphanumeric string within 68 bytes. The ID of Send Management Information, Receive Management Information, Format Information and Multi Format Information are not case-sensitive.

Multiple IDs can be specified by using asterisk. Specification of matching with the former and matching with the latter is possible with '*.' (Example ABC*)

`-list`

Displays ID list. (Optional)

When specified, the related image of each management information will be displayed.

`-l`

Displays all comments. (Optional)

When not specified, it will be displayed in one line of 80 bytes.

[Remarks] By repeating '-i {snd|rcv|job|hst|tgrp|fmt|mfmt} -id *ID*,' ID list of multiple management information can be displayed.

<Examples>

a) Displayed as a list, the ID list starting from F which is registered in Send Management Information

```
utlidlist -i snd -id F* -list
```

b) Displayed as a list, the related image of the ID that is registered in Receive Management Information.

```
utlidlist -i rcv -id F000001
```

c) Displayed as a list, the related image of the ID starting from f that is registered in the Format Information and the related image of the ID that starts from m which is registered in the Multi Format Information.

```
utlidlist -i fmt -id f* -i mfmt -id m*
```

<Display examples>

a) List Display of Management Information

Sending Management Information Summary
[SendID]
F000001 Personnel information file
F000002
F000003

Receiving Management Information Summary
[RcvID]
F000001 Personnel information file

Job Startup Information Summary
[JobID]
JOB1
Prejob Pre-send Job

Host Information Summary
[HostName]
as1
host01
Head quarters host Windows
host02
Sapporo office Host (Windows)

Transfer Group Information Summary
[TgrpID]
GRP01 Headquarters server group
TESTGRP For test use

Format Information Summary
[FMTID]
FMT011 Personnel information format
TESTFMT For test use

Multi Format Information Summary
[MFMTID]
MLT_FMT1 Multi format

b) Relationship image of Send Management Information

Sending Management Information Summary

```
[SendID]  [TgrpID]  [JobID]    [ErrJobID] [PreJobID] [FMTID]   [MFMTID]
F0000001  grp1      j0000001                                   mformat1
F0000002  grp2      j0000001               *pre00001
F0000003  grp3                 ejob0001
F0000004 *grp4                                       format01
```

The IDs that are displayed with '*' at the start are not registered as Management Information.

SendID: File ID of the Send Management Information specified in parameter
TgrpID: Transfer Group ID that is registered in the above mentioned File ID
JobID: Successful Job ID that is registered in the above mentioned File ID
ErrJobID: Unsuccessful Job ID that is registered in the above mentioned File ID
PreJobID: Pre-send Job ID that is registered in the above mentioned File ID
FMTID: Format ID that is registered in the above mentioned File ID
MFMTID: Multi Format ID that is registered in the above mentioned File ID

c) Relationship image of Receive Management Information

Receiving Management Information Summary

```
[RcvID]   [TgrpID]  [JobID]    [ErrJobID]
F00000001 grp1
F00000002 grp2                 *ejob0001
F00000003 grp3      j0000001
F00000004 *grp4
```

The IDs that are displayed with '*' at the start are not registered as Management Information.

RcvID: File ID of the Receive Management Information specified in parameter
TgrpID: Transfer Group ID that is registered in the above mentioned File ID
JobID: Successful Job ID that is registered in the above mentioned File ID
ErrJobID: Unsuccessful Job ID that is registered in the above mentioned File ID

d) Relationship image of Job Information

Job Startup Information Summary

```
job00001  [SendID]  F00000001  Personnel information file
                    F00000002
                    F00000003
          [RcvID]   F00000001  Personnel information file
                    F00000002
                    F00000003
```

SendID: File ID and comments of the Send Management Information where the above mentioned Job ID is registered.
RcvID: File ID and comments of the Receive Management Information where the above mentioned Job ID is registered.

e) Relationship image of Host Information

Host Information Summary

```
host01
          [TgrpID]  grp1       Headquarters host
```

Those that do not have 'TgrpID' notation are not registered in the Transfer Group Information.

TgrpID: Transfer Group ID and comment of the Transfer Group Information registered in the above mentioned host name.

f) Relationship image of Transfer Group Registration

Transfer Group Information Summary

```
grp0001    [SendID]   F0000001    Personnel information file
                      F0000002
           [RcvID]    F0000001    Personnel information file
           [HostName]host1grp0002
                      host02
                      *sun03
```

The IDs that are displayed with '*' at the start are not registered as Management Information.

Those that do not have notation in 'SendID' and 'RcvID,' are not registered in Send Management Information and Receive Management Information.

SendID: File ID and comments of Send Management Information where the above mentioned Transfer Group ID is registered.

RcvID: File ID and comments of Receive Management Information where the above mentioned Transfer Group ID is registered.

HostName: Host name that is registered in the above mentioned Transfer Group ID.

g) Relationship image of Format Information

Format Information Summary

```
format01   [MFMTID]   mformat1
format02   [MFMTID]   mformat1
format03   [MFMTID]   mformat1
format04   [MFMTID]   mformat1
format05   [MFMTID]   mformat1
format06   [MFMTID]   mformat1
format07   [MFMTID]   mformat1
format08   [SendID]   FILEID01    For use in format transfer text 1
                      FILEID02    For use in format transfer text 2
```

SendID: File ID and comments of Send Management Information where the above mentioned Format ID is registered.

MFMTID: Multi Format ID of the Multi Format Information that is registered in the above mentioned Format ID.

h) Relationship image of Multi Format Information

Multi Format Information Summary

```
mformat1   [FMTID]    default
                      format01
                      format02
                      format03
                      format04
                      format05
                      format06
                      format07
mformat2   [FMTID]    *MULTIID1
mformat3   [SendID]   mfmt0001
```

The IDs that are displayed with '*' at the start are not registered as management information.

SendID: Format ID and comment of Send Management Information where the above mentioned Multi Format ID is registered.

FMTID: Format ID of the Format Information that is registered in the above mentioned Multi Format ID.

4.5 Log Control Commands

4.5.1 Display of Send and Receive Log List

The Send and Receive Logs can be displayed as a list.

• The syntax for the Send and Receive Log List Display command is as follows:

```
utllist {-s|-r} [-f fileid] [-h hostname]
     [-from yyyymmdd1] [-to yyyymmdd2] [-l|-c|-v5]
```

Explanation of parameters

`{-s|-r}`

Type of log that displays as list (Mandatory)

-s: Send Log

-r: Receive Log

`-f fileid`

File ID that is targeted as list display (Optional)

Specify in an alphanumeric character string within 8 bytes. When you default this tag, all File IDs will be displayed.

`-h hostname`

Host name that is targeted as list display (Optional)

Specify in an alphanumeric string within 68 bytes. When you default this tag, all host names will be displayed.

`-from yyyymmdd1 -to yyyymmdd2`

Date of the targeted list display (Optional)

Specify a numeric string within 8 bytes.

When '-from' is defaulted, all the dates up to the date specified in '-to' will be displayed.

When '-to' is defaulted, all the dates from the date that is specified in '-from' will be displayed. When both are not specified, all the dates will be displayed. The date should be specified in 'yyyymmdd' format and in the range of 'yyyymmdd1 <=yyyymmdd2.' The specified 'yyyymmdd1' and 'yyyymmdd2' will also be included in the list display.

The target of Search is Start Date of sending and receiving.

`-l`

The tag to display Host name in 68 bytes (Optional)

When defaulted, the host name displays only the initial 8 bytes.

`-c`

Each machine HULFT V4 common format (Optional)

`-v5`

Each machine HULFT V5 common format (Optional)

Table 4.1 Contents of HULFT V4 Common Format

Field name	Number of digits	Start position	Display format
File ID	8	0	Left-aligned (Space aligned if it does not satisfy 8 bytes)
	2	8	Space
Host Name	8	10	Left-aligned (Space aligned if it does not satisfy 8 bytes)
	2	18	Space
Start Date	10	20	YYYY/MM/DD
	2	30	Space
Start Time	8	32	HH:MM:SS
	2	40	Space
End Time	8	42	HH:MM:SS
	2	50	Space
Record Count	10	52	Right-aligned (Previous zero added if it does not satisfy 10 bytes)
	2	62	Space
Data Size	10	64	Right-aligned (Previous zero added if it does not satisfy 10 bytes)
	2	74	Space
Status	12	76	999999-99999
	2	88	Space
Host Name	68	90	Left-aligned (Space aligned if it does not satisfy 68 bytes)

Table 4.2 Contents of HULFT V5 Common Format

Field name	Number of digits	Start position	Display format
File ID	8	0	Left-aligned (Space aligned if it does not satisfy 8 bytes)
	2	8	Space
Host Name	8	10	Left-aligned (Space aligned if it does not satisfy 8 bytes)
	2	18	Space
Start Date	10	20	YYYY/MM/DD
	2	30	Space
Start Time	8	32	HH:MM:SS
	2	40	Space
End Time	8	42	HH:MM:SS
	2	50	Space
Record Count	18	52	Right-aligned (Previous zero added if it does not satisfy 18 bytes)
	2	70	Space
Data Size	18	72	Right-aligned (Previous zero added if it does not satisfy 18 bytes)
	2	90	Space
Status	12	92	999999-99999
	2	104	Space
Connection Type	3	106	LAN
	2	109	Space
Host Name	68	111	Left-aligned (Space aligned if it does not satisfy 68 bytes)

<Display Examples>

a) Output of Send Log (utllist -s)

```
FILEID     HOST NAME START DAY  START TIME END TIME   RECORDS  STATUS
TEST1      SUN01.HO  2003/08/10 17:23:52   17:23:52         0  331701-000030
TEST2      SUN01.HO  003/08/11  17:52:17   17:52:18      1200  000000-000000
```

b) Output of Receive Log (utllist -r)

```
HOST NAME FILEID    START DAY  START TIME END TIME   RECORDS  STATUS
SUN01.HO  TEST1     2003/08/10 17:23:52   17:23:52         0  121514-00000
SUN01.HO  TEST2     2003/08/11 17:52:17   17:52:18      1200  000000-00000
```

c) 68 bytes output host name of Send Log (utllist -s -l)

```
FILEID     HOST NAME START DAY  START TIME END TIME   RECORDS  STATUS
TEST1      SUN01.HONSYO.CO.JP
                     2003/08/10 17:23:52   17:23:52         0  331701-00003
TEST2      SUN01.HONSYO.CO.JP
                     2003/08/11 17:52:17   17:52:18      1200  000000-00000
```

d) 68 bytes output host name of Receive Log (utllist -r -l)

```
HOST NAME FILEID    START DAY  START TIME END TIME   RECORDS  STATUS
SUN01.HONSYO.CO.JP
          TEST1     2003/08/10 17:23:52   17:23:52         0  121514-00000
SUN01.HONSYO.CO.JP
          TEST2     2003/08/11 17:52:17   17:52:18      1200  000000-00000
```

e) V4 common format output of Send Log (utllist -s -c)

```
TEST1      SUN01.HO  2003/08/10 17:23:52   17:23:52 0000000000  0000000000
331701-00003         SUN01.HONSYO.CO.JP
TEST2      SUN01.HO  2003/08/11 17:23:52   17:23:52 0000001200  0000120000
000000-00000         SUN01.HONSYO.CO.JP
```

f) V5 common format output of Receive Log (utllist -r -v5)

```
TEST1      SUN01.HO  2003/08/10 17:23:52   17:23:52000000000000000000
000000000000000000  121514-00000           LANSUN01.HONSYO.CO.JP
TEST2      SUN01.HO  2003/08/11 17:23:52   17:23:52000000000000001200
000000000000120000  000000-00000           LANSUN01.HONSYO.CO.JP
```

[Note] When the parameters of [-c], [-v5] are specified, the header is not displayed.

4.5.2 Display of Request Acknowledge Log List

The Request Acknowledge Log list can be displayed.

The syntax for the Request Acknowledge Log List Display command is as follows:

```
utlobslist [-s service] [-h hostname] [-from yyyymmdd1] [-to yyyymmdd2] [-l]
```

Explanation of parameters

`-s service`

Service name to be displayed in a list (Optional)

Specify in an alphanumeric string within 8 bytes. When you default this tag, all the services will be displayed.

[Remarks] Refer to *Administration Manual* for details on the service name.

`-h hostname`

The host name to be displayed in a list (Optional)

Specify in an alphanumeric string within 68 bytes. When you default this tag, all the services will be displayed.

`-from yyyymmdd1 -to yyyymmdd2`

Date of list display (Optional)

Specify a numeric string within 8 bytes.

When '-from' is defaulted, all the dates up to the date specified in '-to' will be displayed.

When '-to' is not specified, all the dates from the date that is specified in '-from' will be displayed. When both are defaulted, all the dates will be displayed. The date ishould be specified in 'yyyymmdd' format and in the range of 'yyyymmdd1 <=yyyymmdd2.' The specified 'yyyymmdd1' and 'yyyymmdd2' will also be included in the list display.

`-l`

The tag to display Host name in 68 bytes (Optional)

When you default this tag, the host name will display only the initial 8 bytes.

<Display examples>

a) When the parameter [-l] is specified

```
SERVICE   HOSTNAME  DATE       TIME       STATUS
HULADMIN  SUN01.HONSYA.CO
                    2003/05/25 10:15:10   000000-00000
HULSNDRC  SUN01.HONSYA.CO
                    2003/05/25 11:25:00   000000-00000
```

b) When the specification of parameter [-l] is defaulted

```
SERVICE   HOSTNAME  DATE       TIME       STATUS
HULADMIN  SUN01.HO  2003/05/25 10:15:10   000000-00000
HULSNDRC  SUN01.HO  2003/05/25 11:25:00   000000-00000
```

4.5.3 Deletion of Send and Receive Log

The Send and Receive Log files store one data for each send/receive of one file. The unnecessary data should be regularly deleted.

• The syntax for the Send and Receive Log Deletion command is as follows:

```
utllog {-s|-r|-a} [-id fileid] [-h hostname]
     {[-from yyyymmdd1] [-to yyyymmdd2]
     [-i]|[-day n]|[-lastweek]|[-lastmonth]}
```

Explanation of parameters

`-s|-r|-a`

Type of log file to be deleted (Mandatory)

-s: Send Log
-r: Receive Log
-a: Send Log and Receive Log

It can be defaulted only when [-i] is specified.

`-id fileid`

File ID to be deleted (Optional)

Specify the tag in an alphanumeric string within 8 bytes. When you default this tag, all the File IDs will be deleted.

`-h hostname`

Host name to be deleted (Optional)

Specify an alphanumeric string within 68 bytes. When you default this tag, all the host names will be deleted.

`-from yyyymmdd1 -to yyyymmdd2`

Date of deletion (Optional)

Specify a numeric string within 8 bytes.

When '-from' is defaulted, all the dates up to the date specified in '-to' will be displayed.

When '-to' is not specified, all the dates from the date that is specified in '-from' will be displayed. When both are defaulted, all the dates will be displayed. The date should be specified in 'yyyymmdd' format and in the range of 'yyyymmdd1< =yyyymmdd2.' The specified 'yyyymmdd1' and 'yyyymmdd2' will also be included in the list display.

The target of Search is Start Date of sending and receiving.

`-i`

Interactive format (Optional)

Enter the range of the File ID, host name and date according to the message that is displayed.

`-day n`

Number of days that are not targeted for deletion (Optional)

Specify the value within a range from '1' to '366.' The log of the specified number of days from the current day will be left and the others will be deleted.

`-lastweek`

Log deletion up to last week (Optional)

The log up to Saturday of last week is deleted (the log of Saturday is included in deletion).

`-lastmonth`

Log deletion up to last month (Optional)

The log up to the end of the month of the last month is deleted (the log of last month day is included in deletion).

[Remarks]

- Multiple specification of date related parameters (-from/-to,-day,-lastweek, lastmonth) is not possible.
- Interactive process specification can only be used for specification -from/-to in date related parameters.

<Input example of Interactive mode>

a) Specification of Send and Receive Segments

When the command is activated after defaulting the parameters ({-s|-r|-a}) of the send and receive segments, the following message is displayed:

```
Select number
1:Delete receive log.
2:Delete send log.
3:Delete receive and send log.
9:Close
>
```

When the receive log is to be deleted, enter '1.'

When the send log is to be deleted, enter '2.'

When the receive log and the send log are to be deleted at the same time, enter '3.'

When the deletion process is stopped, enter '9.'

b) Input of File ID

When you activate the command with having the parameters ({-s|-r|-a}) of Send and Teceive segments specified, HULFT starts the processing from the entry of the next File ID. When you activate the command while having File ID of the deletion target defaulted, enter the File ID of the deletion target as the following messages are displayed:

```
File ID
>
```

When you would like to default the tag, press the 'Return key.'

When the tag is not specified, all the File IDs will be targeted for deletion.

c) Input of Host Name

When you activate the command with having the host name of the deletion target defaulted, enter the host name of the deletion target as the following messages are displayed:

```
Host name
>
```

When you would like to default this tag, press the 'Return key.'

When the tag is not specified, all the host names become deletion target.

d) Input of Date Range

When you activate the command with having date range of the deletion target defaulted, enter the date range of the deletion target as the following messages are displayed:

```
Start dates to be deleted. ( YYYYMMDD )
>
Close dates to be deleted. ( YYYYMMDD )
>
```

When you would like to default the tag, press the 'Return' key.

When the tag is not specified, all the dates become deletion target.

If the File ID, host name, date range are correctly entered, the following confirmation messages are displayed:

```
Is this correct? (y/n)
>
```

When it can be deleted, enter 'Y' or 'y.'

When the deletion is to be stopped, enter 'N' or 'n.'

When the specified data is not present in the send and receive log file, the following message is displayed.

utllog: No target data.

4.5.4 Deletion of Request Acknowledge Log

A record of data is stored in the Request Acknowledge Log, each time the request of the Send Request, the Resend Request and the like is acknowledged. Delete unnecessary data at regular intervals.

• The syntax for the Request Acknowledge Log Deletion command is as follows:

```
utlobsrm {-s service|-a} {[-from yyyymmdd1] [-to yyyymmdd2] [-i]|
     [-day n]|[-lastweek]|[-lastmonth]}
```

Explanation of parameters

`-s service|-a`

Service name of deletion target (Mandatory)

Specify a character string within 8 bytes

-s service: The logs of the specified service name are deleted

-a: The logs of all service names are deleted

[Remarks] Refer to *Administration Manual* for details on the service names.

`-from yyyymmdd1 -to yyyymmdd2`

Date of deletion target (Optional)

Specify the tag in a numeric string within 8 bytes.

When '-from' is defaulted, all the dates up to the date specified in '-to' become targets. When '-to' is not specified, all the dates from the date that is specified in '-from' become targets. When both are defaulted, all the dates become targets. The date should be specified in the format of 'yyyymmdd' and in the range of 'yyyymmdd1 <=yyyymmdd2.' The specified 'yyyymmdd1' and 'yyyymmdd2' also become the target for deletion.

`-i`

Interactive format (Optional)

Enter the range of the service name and date according to the message displayed.

`-day n`

Number of days that are not targeted for deletion (Optional)

Specify the value within a range from '1' to '366.' The log of the specified number of days from the past to the current date is left and the rest is deleted.

`-lastweek`

Log deletion up to last week (Optional)

The log up to Saturday of last week is deleted. (The log of Saturday is included in deletion)

`-lastmonth`

Log deletion up to last month (Optional)

The log up to the end of the month of the last month is deleted. (The log of last month day is included in deletion)

[Remarks]

- Multiple specification of date related parameters (-from/-to,-day,-lastweek, -lastmonth) is not possible.
- The interactive processing specification can be used only in the specification of date related parameters -from/-to.

<Input example of Interactive mode>

a) Input of the Service Name

When you default the target service name to be deleted to start, enter the service name to be deleted as the following message is displayed:

```
Enter service name.
>
```

When you default the setting, press the 'Return key.'

When the tag is defaulted, all the service names become the target of deletion.

b) Input of the Date Range

When you default the date unit to be deleted to start, enter the date range to be deleted as the following messages are displayed:

```
Start dates to be deleted (YYYYMMDD)
>
Close dates to be deleted (YYYYMMDD)
>
```

When you default the setting, press the 'Return key.'

When the tag is defaulted, all the dates become the target of deletion.

If the service name and date range are correctly entered, the following confirmation message is displayed:

```
Is this correct? ( Y or N )
>
```

When you would like to delete the dates, enter 'Y' or 'y.'

When you would like to stop the deletion, enter 'N' or 'n.'

When the specified data is not present in the Request Acknowledge Log file, the following message is displayed:

utllobsrm: No target data.

4.5.5 Transfer Summary Command

The size, time, and counts of transfer can be totalized on a host basis at regular intervals.

[Note] There are times when the total amount of data transferred cannot be correctly calculated when data is being transferred from the Checkpoint.

• Transfer Summary command

```
utllogcnt {{{[-h hostname] [-f fileid]}|-a} [-s|-r]}
     [-fd yyyymmdd1 [-ft hhmm1]|-td yyyymmdd2 [-tt hhmm2]]
     [-between hhmmss1-hhmmss2] [-ok] [-csv filename [-nt][-o n|r|a]]
     [-d] [-p]
```

Explanation of parameters

`-h hostname`

Name of the targeted host that carries out the calculation.

Specify using alpha numeric characters within 68 bytes.

Multiple hosts can be specified by using the asterisk symbol (*). Further, '*' specification enables matching of preceding or succeeding host name. (example: ABC*)

`-f fileid`

Targeted File ID that carries out the Receive operation.

Specified using alpha numeric characters within 8 bytes.

Multiple hosts can be specified by using the asterisk symbol (*). Further, '*' specification enables matching of preceding or succeeding file name. (example: ABC*)

[Remarks] When '-f' is specified, and '-h' is not specified, the results are output in the sequence: File ID and host name. For other combinations, the results are output in the sequence: host name and File ID.

`-a`

All the hosts, File IDs are calculation targets.

`-s|-r`

Type of transfer that carries out a calculation (Optional)

-s: Transfer information of Send file.

-r: Transfer information of Receive file.

When not specified, all the send and receive information will become calculation targets.

`-fd yyyymmdd1 [-ft hhmm1]|-td yyyymmdd2 [-tt hhmm2]`

Targeted date to carry out the calculation (Optional)

The range of date that is specified from 'yyyymmdd1' 'hhmm1' to 'yyyymmdd2' 'hhmm2' becomes the target.

When you specify time, '-ft' '-tt', the dates '-fd' '-td' are mandatory. Either the date '-fd' or '-td' has to be specified.

When the time '-ft' '-tt' is not specified, the date range specified by the respective '-fd' '-td' will become the target.

When '-fd' is not specified, all the dates up to the date specified in '-td' will become the target. The date is specified in the format of 'yyyymmdd.' It is necessary to specify the date in the range of 'yyyymmdd1<= yymmdd2' and to set time in the format 'hhmm,' respectively. When 'yyyymmdd1' and 'yyyymmdd2' are the same date, it is necessary to specify the date in the range of 'hhmm1<=hhmm2.'

The specified 'yyyymmdd1,' 'yyyymmdd2,' 'hhmm1,' and 'hhmm2' are also targeted.

The target of retrieval dates are Send Start Date amd Receive Start Date.

`-between hhmmss1-hhmmss2`

Targeted time period to carry out the calculation (Optional)

Specifies the time frame that is targeted for the calculation of the date and time that is specified in the conditions.

The time is specified in the format of 'hhmmss.' It is necessary to specify the date in the range of 'hhmmss1 <= hhmmss2.'

The specified 'hhmm1'and 'hhmm2' are also targeted.

`-ok`

Targeted status code that carries out the calculation (Optional)

When specified, the normal end of transfer will become the target. When you default the tag, the transfer of both normal end and abnormal end will become the target.

`-csv filename`

Output format (Optional)

Output is done in CSV format with the specified file name.

When not specified, there will be no output in the CSV format.

The fields (csv format) to be output in the file are as follows:

Note that the target log to be output varies depending on conditions.

Host Name:	Host name to be totalized
File ID:	File ID to be totalized
Size:	Transfer size to be totalized
Cnt:	Transfer count to be totalized
Time:	Transfer time to be totalized

`-nt`

Title (Optional)

When the tag is specified, the title will not be output at the time of output in csv format.

Can be specified only when -csv is specified.

`-o n|r|a`

The tag to specify the output file mode (Optional)

n (New Creation):	Error if file exists
r (Replace):	If file exists, it is replaced.
a (Append):	If file exists, it is added to the end of the contents.

When there is no file, a file is created using New Creation

When the tag is defaulted, it becomes New Creation.

Can be specified only when -csv is specified.

-d

The tag to output in detail display (Optional)

When the tag is specified, it will be output as detail display format.

When the tag is defaulted, it will be output as simple display format.

-p

The tag to calculate data that carries out the end instruction (Optional)

When the tag is defaulted, the data is not included in the calculation at the time of carrying out the end instruction.

[Remarks]

- When the csv output is carried out in simple display format, the specified conditions, the transfer size, transfer count, and transfer time will be output.
- Milliseconds are not included in calculation of transfer time. (truncated)

<Display example> (When -csv is not specified)

a) When specified as utllogcnt -h HOST_A (Simple display format)

```
Host Name/File ID       Type      Commu     Conn      MboxUse        Size/Cnt/Time
HOST_A
                                                                        TolSum
                                                                     377777774
                                                                          5416
                                                                    990:02:56
```

b) When specified as utllogcnt -h HOST_* (Simple display format)

```
Host Name/File ID       Type      Commu     Conn      MboxUse        Size/Cnt/Time
HOST_*
                                                                        TolSum
                                                                     377777774
                                                                          5416
                                                                    990:02:56
```

[Remarks] In the simple display format, the total transfer size, count and time for all File IDs and all hosts in the condition can be displayed if preceding match is specified. The host name and File ID will be displayed with the attached '*' format specified in the parameter.

a) When specified as utllogcnt -h HOST_A -d (Detailed display format)

```
Host Name/File ID       Type      Commu     Conn      MboxUse        Size/Cnt/Time
HOST_A
           TEST
                        Send      HULFT     LAN                       26547900
                                                                           677
                                                                    123:45:22
                                            PPP       Off                   0
                                                                            0
                                                                      0:00:00
                                                      On                565240
                                                                         1250
                                                                     82:25:02
                                  Zen       PPP                       32450
                                                                           523
                                                                     23:14:10
                                  HTTP      PPP       Off              1256870
                                                                        82450
                                                                    235:58:24
                                                      On                    0
                                                                            0
                                                                      0:00:00
                                  Sum                                 28402460
                                                                       116827
                                                                    465:22:58

                        Recv      HULFT     LAN                       68547950
                                                                         11284
                                                                    251:15:05
                                            PPP       Off                 123
                                                                           28
                                                                      0:52:25
                                                      On                1247150
                                                                         2154
                                                                    102:27:11
                                  Zen       PPP                           0
                                                                            0
                                                                      0:00:00
                                  HTTP      PPP       Off                45870
                                                                           562
```

```
                                                                  15:25:45
                                                On                       0
                                                                         0
                                                                   0:00:00
                                  Sum                             98243553
                                                                     14123
                                                                  370:00:26

                        TransSum  HULFT    LAN                   95095850
                                                                     11961
                                                                  375:00:27
                                            PPP       Off             123
                                                                        28
                                                                   0:52:25
                                            PPP       On            1812390
                                                                      3404
                                                                  184:52:13
                                  Zen       PPP                     32450
                                                                       523
                                                                  23:14:10
                                  HTTP      PPP       Off           1302740
                                                                     83012
                                                                  251:24:09
                                                On                       0
                                                                         0
                                                                   0:00:00
                                  Sum                            126646013
                                                                    130950
                                                                  735:23:24
HOST_A TolSum                                                     126646013
                                                                    130950
                                                                  735:23:24
```

4.6 Operation Log Control Commands

4.6.1 Display of Operation Log List

(1) Display of File Access Log List

The File Access Log can be displayed in a list. Displayed contents are output to standard output. You can write the contents to a file and output them to a printer by using the symbols for redirection (Greater than, >) and pipeline (Vertical bar, |).

[Remarks] The File Access Logs backed up by automatic or manual switching become the object of this command as well.

• File Access Log List Display command

```
utloplist -fl
   [-list|-csv] [-h hostname] [-usr userID|-admusr userID]
   [-op operation] [-file systemfile] [-prcid processingID]
   [-from yyyymmdd [-ftime hhmmss]] [-to yyyymmdd [-ttime hhmmss]]
```

Explanation of parameters

`-fl`

Specification of the File Access Log (Mandatory)

`-list|-csv`

Output format (Optional)

-list Main fields are output in fixed length format. For the fields to be displayed, refer to Table 4.3.

-csv All fields are output in CSV format. For the format of the operation logs, refer to Appendix in *Administration Manual*.

If defaulted, the fields are rearranged so that single main field per line is output.

`-h hostname`

Target Starting Host Name to be displayed in a list (Optional)

Specify this tag in alphanumeric characters within 68 bytes.

When defaulted, all the host names become the targets of this command.

`-usr userID`

The User ID (OS) on the starting host which is the target to be displayed in a list (Optional)

When defaulted, all the User ID become the targets of this command.

You cannot specify this tag and -admusr at the same time.

[Remarks] The user ID of OS is subject to the convention of the OS on the starting host. For details, refer to the explanation of the Operation Log in *Administration Manual*.

`-admusr userID`

User ID of the Management Screen Security on target starting host to be displayed in a list (Optional)

Specify this tag in alphanumeric characters within 32 bytes.

When defaulted, all the User ID become the targets of this command.

You cannot specify this tag and -usr at the same time.

[Remarks] For the details on the User ID of the Management Screen Security of each host type, refer to the explanation of the Operation Log in *Administration Manual*.

`-op operation`

Target File Access Type to be displayed in a list (Optional)

When defaulted, all the File Access Types become the targets of this command.

[Remarks] For the details on the operation type you can specify, refer to the explanation of the Operation Log in *Administration Manual*.

`-file systemfile`

Target System File Type to be displayed in a list (Optional)

When defaulted, all the System File Types become the targets of this command.

[Remarks] For the details on the System File Type you can specify, refer to the explanation of the Operation Log in *Administration Manual*.

`-prcid processingID`

Target Latest Identifier to be displayed in a list (Optional)

Specify this tag in alphanumeric characters in 34 bytes.

When defaulted, all the Latest Identifiers become the targets of this command.

[Remarks] For the details on the Identifier, refer to the explanation of the Operation Log in *Administration Manual*.

`-from yyyymmdd [-ftime hhmmss] -to yyyymmdd [-ttime hhmmss]`

Target Start date (Time) and end date (Time) to be displayed in a list (Optional)

When -ftime is specified, -from is mandatory.

When -ttime is specified, -to is mandatory.

When -from is omitted, the system displays the log records from the beginning till the date before the one specified in -to.

When -to is omitted, the system displays the log records from the date specified in -from till the latest one.

When both are omitted, all the dates become the target of this command.

[Remarks] The target covered by this tag is the Execution Date and the Execution Time.

Table 4.3 File Access Log Fields Displayed in List

Field Name	Field Explanation	Display Size	
		When Output Format is Defaulted	When -list is Specified
DATE	Execution Time and Execution Date (in the form of YYYY/MM/DD HH:MM:SS.mmm)	23 bytes	23 bytes
PROC-ID	Latest Identifier	34 bytes	34 bytes
OS-USERID	User ID (OS)	Variable	32 bytes
ADM-USERID	User ID (Management Screen)	Variable	32 bytes
HOSTNAME	Starting Host Name	Variable	68 bytes
OPERATION	File Access Type + single-byte space + System File Type	Variable	10 bytes + 1 byte + 25+ bytes
OPERATION-DETAIL	File Key Information	Variable	40 bytes

[Remarks]

- The item that doesn't come up to the display size is indicated in left justification.
- When the size of a filed to be displayed is larger than that of the display size, the part that exceeded the display size is cut off.

<Output Examples>

a) When output format is defaulted

```
DATE=2008/07/25 12:12:21.005
PROC-ID=99999999999999999999999999999999
OS-USERID=USER1
ADM-USERID=ADMUSER1
HOSTNAME=as30
OPERATION=DELETE HULSNDLOG
OPERATION-DETAIL=""SND01"","as30"","20071024","121212""

DATE=2008/07/26 22:15:21.748
……
```

b) When -list is specified

```
2008/07/25 12:12:21.005 99999999999999999999999999999999 USER1
ADMUSER1                          as30
          DELETE     HULSNDLOG                  """SND01"","as30"","20071024","121212"""
2008/07/26 22:15:21.748 9999999999999999999999999999999A USER2
ADMUSER2                          ux10 ……
……
```

c) When -csv is specified

```
"2008/07/25","12:12:21.005","2008/07/25  12:12:20.086","USER1","ADMUSER1","as30","9999999999
99999999999999999999999","99999999999999999999999999999999","as30","","DELETE","HULSENDL
OG","""SND01"","as30"","20071024","121212"""
"2008/07/25","12:12:21.748","2008/07/25  12:12:21.123","USER2","ADMUSER2","ux10","9999999999
9999999999999999999999A","99999999999999999999999999999999A","as30","",……
……
```

(2) Display of Command Execution Log List

The Command Execution Log can be displayed in a list. Displayed contents are output to standard output. You can write the contents to a file and output them to a printer by using the symbols for redirection (Greater than, >) and pipeline (Vertical bar, |).

[Remarks] The Command Execution Logs backed up by automatic or manual switching become the object of this command as well.

• Command Execution Log List Display Command

```
utloplist -cl
   [-list|-csv] [-h hostname] [-usr userID|-admusr userID]
   [-op operation] [-prcid processingID]
   [-from yyyymmdd [-ftime hhmmss]] [-to yyyymmdd [-ttime hhmmss]]
```

Explanation of parameters

`-cl`

Specification of Command Execution Log (Mandatory)

`-list|-csv`

Output format (Optional)

-list Main fields are output in fixed length format. For the fields to be displayed, refer to Table 4.4.

-csv All fields are output in CSV format. For the format of the operation logs, refer to Appendix in *Administration Manual*.

If defaulted, the contents of the log are rearranged to be output single content per line.

`-h hostname`

Target Starting Host Name to be displayed in a list (Optional)

Specify this tag in alphanumeric characters within 68 bytes.

When defaulted, all the host names become the targets of this command.

`-usr userID`

The User ID (OS) on the starting host which is the target to be displayed in a list (Optional)

When defaulted, all the User ID become the targets of this command.

You cannot specify this tag and -admusr at the same time.

[Remarks] The user ID of OS is subject to the convention of the OS on the starting host. For details, refer to the explanation of the Operation Log in *Administration Manual*.

`-admusr userID`

User ID of the Management Screen Security on target starting host to be displayed in a list (Optional)

Specify this tag in alphanumeric characters within 32 bytes.

When defaulted, all the User ID become the targets of this command.

You cannot specify this tag and -usr at the same time.

[Remarks] For the details on the User ID of the Management Screen Security of each host type, refer to the explanation of the Operation Log in *Administration Manual*.

`-op operation`

Target request/command/Command Execution Key names to be displayed in a list (Optional)

When defaulted, all the requests/commands/Command Execution Keys become the targets of this command.

[Remarks] For the details on the request/command/Command Execution Key names you can specify, refer to the explanation of the Operation Log in *Administration Manual*.

`-prcid` *`processingID`*

Target Latest Identifier to be displayed in a list (Optional)

Specify this tag in alphanumeric characters in 34 bytes.

When defaulted, all the Latest Identifiers become the targets of this command.

[Remarks] For the details on the Identifier, refer to the explanation of the Operation Log in *Administration Manual*.

`-from yyyymmdd [-ftime hhmmss] -to yyyymmdd [-ttime hhmmss]`

Target Start date (Time) and end date (Time) to be displayed in a list (Optional)

When -ftime is specified, -from is mandatory.

When -ttime is specified, -to is mandatory.

When -from is omitted, the system displays the log records from the beginning till the date before the one specified in -to.

When -to is omitted, the system displays the log records from the date specified in -from till the latest one.

When both are omitted, all the dates become the target of this command.

[Remarks] The target covered by this tag is the Execution Date and the Execution Time.

Table 4.4 Command Execution Log Fields Displayed in List

Field Name	Field Explanation	Display Size	
		When Output Format is Defaulted	When -list is Specified
DATE	Execution Time and Execution Date (in the form of YYYY/MM/DD HH:MM:SS.mmm)	23 bytes	23 bytes
PROC-ID	Latest Identifier	34 bytes	34 bytes
OS-USERID	User ID (OS)	Variable	32 bytes
ADM-USERID	User ID (Management Screen)	Variable	32 bytes
HOSTNAME	Starting Host Name	Variable	68 bytes
OPERATION	Command Execution Key	Variable	36 bytes
OPERATION-DETAIL	File Key Information	Variable	40 bytes

[Remarks]

- The item that doesn't come up to the display size is indicated in left justification.
- When the size of a filed to be displayed is larger than that of the display size, the part that exceeded the display size is cut off.

<Output Examples>

a) When output format is defaulted

```
DATE=2008/07/25 12:12:21.005
PROC-ID=99999999999999999999999999999999
OS-USERID=USER1
ADM-USERID=ADMUSER1
HOSTNAME=as30
OPERATION=SEND_REQUEST
OPERATION-DETAIL=-f SND01 -msg0 xxx

DATE=2008/07/26 22:15:21.748
……
```

b) When -list is specified

```
2008/07/25 12:12:21.005 99999999999999999999999999999999 USER1
ADMUSER1                        as30
          SEND_REQUEST                          -f SND01 -msg0 xxx
2008/07/26 22:15:21.748 9999999999999999999999999999999A USER2
ADMUSER2                        ux10 ……
……
```

c) When -csv is specified

```
"2008/07/25","12:12:21.005","2008/07/25  12:12:20.086","USER1","ADMUSER1","as30","9999999999
99999999999999999999999","99999999999999999999999999999999","as30","","SEND_REQUEST","HU
LFT_MANAGEMENT_SCREEN","""SND01"","""as30""","""20071024""","""121212"""
"2008/07/25","12:12:21.748","2008/07/25  12:12:21.123","USER2","ADMUSER2","ux10","9999999999
99999999999999999999A","9999999999999999999999999999999A","as30","",……
……
```

(3) Notes

- When you specify -from, the system searches for times or dates from the top of the File Access Log or the Command Execution Log, and it displays the first log record and onward, of which Execution Time or Execution Date corresponds to the specification of -from or after.
- When you specify -to, the system searches for times or dates from the top of the File Access Log or the Command Execution Log, or from the times or dates on and after specification as -from, and it displays the log records up to the first one that exceeds the Execution Time or the Execution Date.
- The record that may corrupt the format of the output log is skipped.

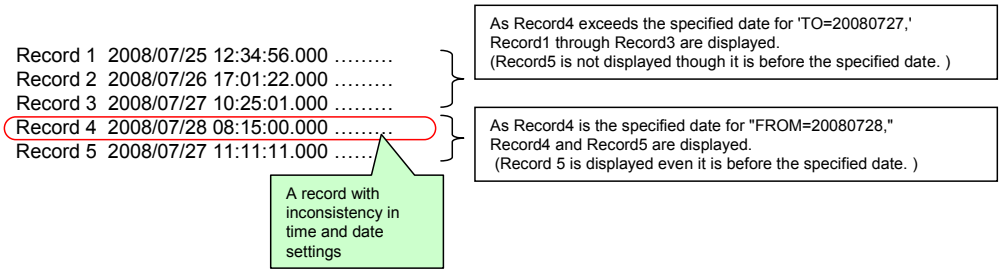


Figure 4.1 Display Range of Operation Log

4.6.2 Manual Switching of Operation Log

You can back up an existing operation log (namely, the File Access Log or the Command Execution Log), and switch the log to a new file. The file to which the backup file is output, naming convention, and regulation of generation file are the same as the case of automatic switching.

For details, refer to the explanation of the Operation Log in *Administration Manual*.

• Operation Log Manual Switch command

```
utloplchg {-fl|-cl|-a}
```

Explanation of parameters

`-fl|-cl|-a`

Operation log to be switched (Mandatory)

Specify any one of -fl, -cl, or -a.

You cannot specify more than one option at the same time.

-fl : Switch only the File Access Log
-cl : Switch only the Command Execution Log
-a : Switch both File Access Log and Command Execution Log

Chapter 5

HULFT Utilities

This chapter explains how to use the HULFT utilities.

5.1 File Joining Function

Normally, HULFT transfers one file per File ID. By merging several files into one at the sending side, HULFT carries out binary transfer. The receiving side then divides the joined file, which enables the transfer of several files at a time.

[Note] Up to 9999 files can be joined into 1 file.

5.1.1 Joining of Multiple Files

HULFT merges several files into one. It is possible to add data to existing joined files or the joined files created by other type of machine.

• Multiple File Join command

```
utljoin -infile filename {b|t|f formatID |m multiformatID}
        -outfile filename {-n|-r|-m}
```

Explanation of parameters:

`-infile filename`

Tag to specify input file name (Mandatory)

Specify the file name within 256 bytes. Specification can be done either as relative path, or as an absolute path.

Using asterisk (*) enables specification of the file name by prefix or suffix match.

`b|t|f|m`

File type (Mandatory)

b:	Binary data
t:	Text data
f:	Format data
m:	Multi Format data

`formatID | multiformatID`

Tag to specify Format ID of the Format Information, Multi Format ID of the Multi Format Information (Optional)

Specify the ID in alphanumeric character within 8 bytes.

When 'f,' 'm' is specified in the file type, it is mandatory.

`-outfile filename`

Tag to specify output file name (Mandatory)

Specify the output file name (Joined file name) within 256 bytes.

`-n|-r|-m`

Creation mode (Mandatory)

Tag to specify the creation mode of the joined file.

n (New Creation):	Error if the specified file already exists.
r (Replace):	If the specified file already exists, it is replaced. When it does not exist, it is created as new.
m (Append):	If the specified file already exists, it is added. When it does not exist, it is created as new.

Where Append 'm' is specified, an error occurs if the existing files are not joined.

[Remarks] You can repeat the specification of '-infile *filename* {b|t|f *formatID* |m *multi formatID*}' 10 times at maximum. Refer to the given examples for the specification method.

[Note]

- **Where you join a file that contains Japanese in its file name, you can not use the file name as they are, if you divide the file on non-Windows machines.**
- **Refer to *Administration Manual* for the details on the constraint of record size in the respective file types while specifying '-infile,' or the constraint of the file size while specifying '-outfile.'**
- **Do not specify the same path for '-infile' and '-outfile.' Although it doesnot cause an error even if you specify the same path, we donot guarantee such operation.**

<Examples>

a) With Format Information of file file01.dat as format01,and Format Information of file file02.dat as format02, join these files to create a new file named join01.dat.

```
utljoin -infile file01.dat f format01 -infile file02.dat f format02
-outfile join01.dat -n
```

b) Merge the all files of which names end with '.txt' and located in D:\home\hulft directory into a text type to create a file named join02.dat in Replace mode.

```
utljoin -infile "D:\home\hulft\*.txt" t -outfile join02.dat -r
```

c) Join all the Multi Format Information located in D: \home\hulft\data into mformat01, and create a file named join03.dat in Append mode.

```
utljoin -infile "D:\home\hulft\data\*" m mformat01 -outfile join03.dat -m
```

5.1.2 Breaking of Joined Files

The files that are joined and then transferred can be split and output into separate files. When the command outputs the files, it divides the files while carrying out code conversion based on the information at the time of joining and the specified parameter.

• Joined File Break command

```
utlbreak -infile filename [-codeset{A-G|V-X}][-shift{c|s}][-r][-b]
      {[-seqnbr number [-outfile filename]...]
      |[-tgtfile filename [-outfile filename]...]
      |[-from number] [-to number] [-dir directory]}
```

Explanation of parameters:

`-infile filename`

Tag to specify joined file name (Mandatory)

Specify the file name within 256 bytes.

Regarding the specification of path name, both relative path and absolute path are acceptable.

`-codeset`

Tag to specify EBCDIC code set (Optional)

A:	Kana Characters (EBCDIC Kana Characters)
B:	Lower Case (EBCDIC Lower Case)
C:	ASCII (EBCDIC-ASCII)
D:	ASPEN (EBCDIC-ASPEN)
E:	Standard (EBCDIC-IBM)
F:	Standard Extension
G:	NEC Kana
V:	User Table 1
W:	User Table 2
X:	User Table 3

When you skip setting this tag, HULFT applies 'E.'

`-shift`

Tag to specify the code name when handling shift code at the time of code conversion (Optional)

c:	Delete the shift code
s:	The shift code is converted to spaces (ASCII:0x20)

When you skip setting this tag, HULFT applies 'C.'

`-r`

Tag to specify replacement of the output file (Optional)

When you skip this tag, an error occurs if there is a file which bears identical name to the divided file.

`-b`

Tag to specify to disable message output at the time of splitting (Optional)

When you skip setting this tag, message will be displayed each time a split is completed.

`-seqnbr number -outfile filename`

Tag to specify split according to the sequence number within the joined file (Optional)

In '-seqnbr,' specify a number within the range from '1' to '9999.'

Specify output file name in the '-outfile' within 256 bytes.

When you default '-outfile,' HULFT automatically generates an output file name, based on the joined file name. (Refer to "Output file naming conventions.") You can repeat the specification 10 times at maximum.

`-tgtfile` *`filename`* `-outfile` *`filename`*

Tag to specify split according to the file name within the joined file (Optional)

Specify the file name within 256 bytes in '-tgtfile.'

Specify output file name within 256 bytes in '-outfile.'

When you default '-outfile,' HULFT automatically generates an output file name, based on the joined file name. (Refer to "Output file naming conventions.")

You can repeat the specification 10 times at maximum.

Regarding '-tgt file,' specify the file name that is appeared at the time of joined file contents display (Refer to "5.1.3 Display of Joined Files Contents.")

`-from` *`number`* `-to` *`number`*

Tag to specify split according to range specification of the sequence number within the joined file (Optional)

Specify the value within the range of '1' to '9999.'

When you specify '-from,' all the numbers up to the number specified in '-to' are targeted.

When you default '-to,' all the numbers from the number specified in '-from' are targeted. HULFT automatically generates an output file name, based on the joined file name. (Refer to "Output file naming conventions.")

`-dir` *`directory`*

Tag to specify directory to generate split files (Optional)

When you default this tag, HULFT splits the file in the directory where the joined file is located.

[Remarks]

- When you specify '-dir,' HULFT creates output files in the specified directory. When you donot specify '-dir,' HULFT creates the files in a directory where the the input file is located.
- You can repeat the specification of '-seqnbr' or '-tgtfile' up to 10 times in total.

[Note]

- **You cannot specify '-seqnbr,' '-tgtfile' and '-from -to' at the same time.**
- **Use '-outfile' in combining with either '-seqnbr' or '-tgtfile.' When you specify '-from -to,' you cannot use '-outfile.'**
- **Specify any of the following tags, namely '-seqnbr,' '-tgtfile,' '-from -to,' without fail.**

<Output file naming conventions>

When you skip the specification of the output file name at the time of splitting, depending upon the machine type that creates the joined file, HULFT automatically generates a file according to the naming conventions given below:

• When the machine type that creates the joined file is UNIX;

/test1/test2/test3.txt → test3.txt

../test1/test2/TEST3.txt → TEST3.txt

test1.txt → test1.txt

• When the machine type that creates the joined file is Windows;

c:\test1\test2\test3.txt → test3.txt

.. \test1\test2\TEST3.txt → TEST3.txt

test1.txt → test1.txt

• When the machine type that creates the joined file is i5OS;

MYLIB/TXT(TEST) → TEST.TXT

• When the machine type that creates the joined file is Mainframe;

Sequential file : TEST1.TEST2.TEST3.TXT → TEST1.TEST2.TEST3.TXT

Partitioned file : TEST1.TEST2.TXT(TEST3) → TEST1.TEST2.TEST3.TXT

[Note] HULFT applies the above-mentioned conversion rules, where the part used in file names or extensions satisfies following criteria:

- **Where the machine type that creates the joined file is i5OS;**
  The part should be in the library name/file (member name) format and each of them is specified within 10 bytes
- **When the machine type that creates the joined file is Mainframe;**
  The part should be specified within 44 bytes for sequential file, 54 bytes for partitioned file, respectively. In addition, the dataset name should be in the format that sets off the character strings by period every eight bytes, namely <within eight bytes>.<within eight bytes>.<within eight bytes>...

When the naming does not conform to the above mentioned conventions, a 4-digit sequential number is added to the input file name.

<input file name>.<sequential number>

Example:

In the case that input file name is 'test.join' and the naming does not conform to the conventions while you are splitting the fifth file;

test.join.0005

<Examples>

- Specifying with Sequence Numbers

```
utlbreak -infile D:\hulft\data\join01.dat -seqnbr 1
         -outfile break01.dat -seqnbr 3 -outfile break03.dat
utlbreak -infile D:\hulft\data\join01.dat -r -seqnbr 1 -seqnbr 3
         -dir D:\hulft\data\out
```

- Specifying with File Name

```
utlbreak -infile D:\hulft\data\join01.dat -tgtfile
         D:\home\hulft\test1.txt -outfile break01.dat
utlbreak -infile D:\hulft\data\join01.dat -r -tgtfile test1.txt
         -tgtfile test2.txt -dir D:\hulft\data\out
```

- Specifying with the Range of Sequence Numbers

```
utlbreak -infile D:\hulft\data\join01.dat -r -from 1 -to 10
         -dir D:\hulft\data\out
```

5.1.3 Display of Joined File Contents

The file information within the joined file can be displayed by using the Joined File Display command.

• Joined File Display command:

```
utldspfil -f filename [-d] [-l]
```

Explanation of parameters:

`-f filename`

Tag to specify joined file name (Mandatory)

Specify the file name within 256 bytes.

`-d`

Tag to specify whether to display the contents of the Format Information and the Multi Format Information (Optional)

When you default this parameter, HULFT does not display the Format Information and the Multi Format Information.

`-l`

Displaying file name information without formatting (Optional)

Tag to specify whether to display file name information without formatting.

If you default this parameter, HULFT displays the file name information in line with the width of command prompt (80 bytes).

<Display example>

```
VERSION  V05L00
NO FILE NAME
   DATE       TIME                                                CODE TYPE
     DATA SIZE     REC CNT    REC LEN FILE TYPE                BLOCK SIZE
1 /test1/test2/test3.txt
   2003/08/25 12:08:59                                             EUC
         28012        454           91 TEXT                         0
2 c:\test1\test2\test3.txt
   2003/08/25 13:08:00                                          SHIFT-JIS
         25000        250          100 TEXT                         0
3 MYLIB/TXT(TEST)
   2003/08/26 10:11:40                                           IBM
          2000         20          100 TEXT                         0
4 TEST1.TEST2.TEST3.TXT
   2003/08/26 12:15:20                                           JEF
          1000         20           50 TEXT                         0
5 ../data/format.dat
   2003/09/01 12:18:03                                          SHIFT-JIS
         15000        150          150 FORMAT                       0
  START   LENGTH   POINT  TYPE
      1       50       0     X
     51       20       0     N
     71       10       0     9
     81       70       0     X
6 ../data/mformat.dat
   2003/09/01 13:20:00                                          SHIFT-JIS
          9800        150           80 MULTI FORMAT                 0
  KEY START:1          KEY LENGTH:5
  KEY INFORMATION:
  KEY                     START  LENGTH  POINT  TYPE
  KEY01
                           1      5      0    X
                           6     10      0    X
  KEY02
                           1     50      0    X
                          51     20      0    N
                          71     10      0    9
```

5.2 File Edit Function

5.2.1 Editing of File Record

The files that have been converted to CSV format and the files that have been received in HULFT are edited by adding a line feed per record or, by contraries, deleting the line feed per record. HULFT outputs the edited files either in the standard output or in the specified file.

• File Record Edit command

```
utllf{-a|-d}{[-s separator-name]|[-sx separator-code]|[-l record-len]}
     [-i filename][-o filename][-r]
```

Explanation of parameters:

`-a|-d`

Tag to specify whether a line feed should be added or deleted (Mandatory)

-a: Adds line feed codes.

-d: Deletes line feed codes.

`-s separator-name``|-sx` *`separator-code`*`|-l` *`record-len`*

Tag to specify the location where the line feed codes are added or deleted (Optional)

-s: Adds a feed code next to the specified separator (trailer) character

-sx: Adds a feed code next to the specified separator (trailer) code. The separator can be specified in hexadecimals. The code is specified in the format of '0xXX.' (XX specifies the code in hexadecimal.)

-l: In combination with -a, adds a line feed code next to the specified record length. In combination with -d, deletes a line feed code next to the specified record length The maximum assignable value is 32767 bytes.

These 3 types of specification methods have to be specified without fail when '-a' is set. When '-d' is specified, only 'l' can be set. (Optional)

`-i` *`filename`*

Tag to specify input file name (Optional)

Specify the file name in characters within 256 bytes.

When defaulting this parameter, HULFT applies standard output.

`-o` *`filename`*

Tag to specify output file name (Optional)

Specify the file name in characters within 256 bytes.

When defaulting this parameter, HULFT applies standard output.

`-r`

Overwriting the output file (Optional)

Defaulting this parameter causes an error, if the output file already exists.

[Note] '-l' specification

- **The line feed code (0x0D0A) should exist in the next byte position to the record length specified by '-l.'**
- **In case of sending format data where the line feed code (0x0D0A) exists in the record delimiter, '-l' should be specified for deleting the line feed code. It is because the data '0x0D0A' has no meaning in the send destination host of which host type is other than Windows. '-l' should be specified because HULFT cannot tell whether the line feed code (0x0D0A) is binary data within format data or line feed data. When you delete the line feed code from normal text data, it is not necessary to specify '-l.'**

<**Setting examples**>

a) When you would like to delete a line feed code;

```
utllf -d -i D:\tmp\test.dat -o D:\tmp\test2.dat
```

b) When youd would like to delete a line feed code every 100 bytes;

```
utllf -d -l 100 -i D:\tmp\test.dat -o D:\tmp\test2.dat
```

c) When you would like to add a line feed code after double quotation (");

```
utllf -a -s \" -i D:\tmp\test.dat -o D:\tmp\test2.dat
```

d) When you would like to add a line feed code after hexadecimal code 0x1f ;

```
utllf -a -sx 0x1f -i D:\tmp\test.dat -o D:\tmp\test2.dat
```

e) When you would like to delete a line feed code every 200 bytes;

```
utllf -a -l 200 -i D:\tmp\test.dat -o D:\tmp\test2.dat
```

5.2.2 Editing of Multiple Receive File

The Multiple Receive File operation ends the transaction while it leaves a temporary data in Multiple Receive Information files, when HULFT cannot store further data in the Receive file due to insufficient disk volume. In such a case, it is necessary to ensure consistency between the Multiple Receive Information files and the Receive file. In addition, if you receive the data from the top once again for some reasons, you should delete the data obtained from the previous transaction before you receive new data. This is because HULFT appends new data to the previously received one.

In the cases like this, you can easily delete or extract the data in Multiple Receive Information files by using the commands shown below. Moreover, you can configure HULFT to display the contents of Multiple Receive Information file as well as to extract or to delete the data sorted by hosts or data for a certain period from the Multiple Receive Information file.

• Multiple Receive File Data Delete command

```
utlstore -f fileid -d [-c count]
```

Explanation of parameters:

`-f fileid`

Tag to specify Receive File ID of the data to be deleted (Mandatory)

Specify the the ID in alphanumeric characters within 8 bytes

`-d`

Tag to specify deletion of target data (Mandatory)

`-c count`

Tag to specify the number of received data to be deleted (Optional)

HULFT deletes the specified number of latest data from the list. (Because the contents are displayed in ascending order, HULFT deletes the specified number of records from the top.)

When you skip setting the tag, HULFT deletes only inconsistent data.

[Remarks] Where you default '-c' and the Receive file size is greater than the size described in the Multiple Receive Information file, HULFT reduces the received data in the Receive file down to the file size described in the Multiple Receive Information file.

• Multiple Receive File Data Extract command

```
utlstore -f fileid {-fd yyyymmdd1 [-ft hhmm1]|
      -td yyyymmdd2 [-tt hhmm2]} [-h hostname] -o out [-m]
```

Explanation of parameters:

`-f fileid`

Tag to specify Receive File ID from which data is to be extracted (Mandatory)

Specify the ID in alphanumeric characters within 8 bytes.

`-fd yyyymmdd1 [-ft hhmm1]|-td yyyymmdd2 [-tt hhmm2]`

Tag to specify the range of data to be extracted (Date is mandatory, time is optional)

When the entire period is specified, HULFT targets all the data within the range of 'yyyymmdd1' and 'hhmm1' to 'yyyymmdd2' and 'hhmm2.'

When time '-ft' and '-tt' are specified, you should specify the date, '-fd' and '-td,' respectively.. Specify either one of the dates '-fd' or '-td' without fail.

When time '-ft' and '-tt' are not specified, HULFT targests the dates you specify in '-fd' or '-td,' respectively.

When '-fd' is not specified, all the dates up to the date which is specified in '-td' will become the target.

When '-td' is not specified, all the dates from the date specified in '-fd' will become the target.

You should specify Date within the range of 'yyyymmdd1<=yyyymmdd2' in the form of 'yyyymmdd.' If 'yyyymmdd1' is same as 'yyyymmdd2,' you should specify Time within the range of 'hhmm1<=hhmm2' in the form of 'hhmm.'

The specified 'yyyymmdd1,' 'yyyymmdd2', 'hhmm1' and 'hhmm2' will also be included.

`-h hostname`

Tag to specify host name from which data is to be extracted (Optional)

Specify the host name in alphanumeric characters within 68 bytes.

When you skip the setting, HULFT targets all the host names.

`-o out`

Tag to specify output file name of the extracted data (Mandatory)

Specify the file name in characters within 256 bytes. When there is an identical file name, the file is overwritten.

`-m`

This tag configures HULFT to add the extracted data to the output file (Optional)

• Multiple Receive Information File List Display command

```
utlstore -f fileid -l
```

Explanation of parameters:

`-f fileid`

Tag to specify Receive File ID of the list information (Mandatory)

Specify the ID in alphanumeric characters within 8 bytes

`-l`

Tag to specify List display of Multiple Receive Information file (Mandatory)

<Display examples>

```
DATE        TIME      START                END
HOSTNAME
2003/11/01  10:20:30   00000000000000000001-0000000000000001000
sun01.honsya.co.jp
2003/11/01  11:12:02   00000000000000001001-0000000000000002500
sun02.honsya.co.jp
2003/11/02  10:32:10   00000000000000002501-0000000000000003500
sun01.honsya.co.jp
```

5.3 API

HULFT function can be used from the user application. By using API, the application and HULFT can closely cooperate. There are 6 types of APIs that you can use as mentioned below.

The API is explained by using the syntax of C language. The explanation for Visual Basic or Microsoft ACCESS has only the Declare statements. The fields enclosed by the () is IN/OUT of the parameter.

- Send File function: utlsend
- Send File Extension function: utlsendex
- Send Request function: utlrecv
- Send Request Extension function: utlrecvex
- Job Execution Result Notification function: hulsndrc
- Log search function: hulrlog

To use API, load following DLL in explicit manner.

Table 5.1 DLLs to be loaded

User Application	DLL to be loaded
32bit	hulapi.dll hulftrt.dll
64bit	hulapi64.dll hulftrt64.dll

[Note] The stored location of the hulapi.dll of HULFT Ver.7 is different from that of HULFT Ver.6. If you use user applications of HULFT Ver.6 or lower, either of the following measures should be taken:

- **Load hulftrt.dll in full path first, and modify the user application to load hulapi.dll in full path.**
- **Set the environment variable named Path to installation folder, before you execute the user applications.**

5.3.1 Send File API

Send File or Resend File

Syntax

```
INT __stdcall utlsend( LPCSTR lpszFileID , LPCSTR lpszHostName ,
              BOOL bResend , SHORT nPriority , BOOL bSync , INT nWait ,
              LPCSTR lpszFileName , LPCSTR lpszGroup , BOOL bNp );
```

Explanation of parameters:

LPCSTR lpszFileID (IN)

This parameter specifies the File ID that carries out the Send File.

Specify the ID in a character string within 8 bytes. When you donot wish to specify any particular value for this parameter, input '0.'

LPCSTR lpszHostName (IN)

This parameter specifies the dynamic receiving host name when sending the file or the host name when resending file.

Specify the host name in a character string within 68 bytes.

To use this parameter, you should set the Dynamic Parameter Specification (dynparam) in the System Environment Settings file as 'Enable dynamic specification. For the details of Dynamic Parameter Specification, refer to the *Administration Manual*.

BOOL bResend (IN)

This parameter specifies resend flag

TRUE: Specifies Resend File

FALSE: Specifies Send File

SHORT nPriority (IN)

This parameter specifies Transfer Priority

The range that you can specify is from '1' to '256.' When you donot wish to specify any particular value for this parameter, input '0.'

BOOL bSync (IN)

This parameter specifies the Synchronous Transfer flag.

For Resend File (bResend = TRUE), you cannot specify Synchronous Transfer.

TRUE: Carries out Synchronous Transfer

FALSE: Does not carry out Synchronous Transfer

INT nWait (IN)

This parameter specifies the wait time to receive processing results of Synchronous Transfer (seconds)

The time to synchronize to obtain the processing result in Synchronous Transfer is specified within the range of '10' to '259200.' When HULFT reaches the specified time, it resumes processing even if it was in the middle of sending. In such case, note that HULFT does not return the transfer results.

It is mandatory when you specify Synchronous Transfer (bSync=TRUE). It becomes effective only when Synchronous Transfer is specified. When it is not (bSync=FALSE), specify '0.' When you donot wish to specify any particular value for this parameter, HULFT applies the value specified in Socket Read Timeout of System Environment Settings file.

LPCSTR lpszFileName (IN)

This parameter specifies the File ID to be sent

This is specified by a full path within 200 bytes.

When you donot wish to specify any particular file names for this parameter, input NULL. In such case, HULFT applies the Send file name registered in the Send Management Information at the time of Send File. To use this parameter, you should set the Dynamic Parameter Specification (dynparam) in the System Environment Settings file as 'Enable dynamic specification.' For the details of Dynamic Parameter Specification, refer to the *Administration Manual*.

At the time of Resend File, specify the file names that have already been placed in the Resend Queue. This is not a parameter that dynamically specifies Resend files. When do not specify any particular file name for this parameter, HULFT resends all the files that correspond to the Host Name or File ID specified by the parameter.

LPCSTR lpszGroup (IN)

This parameter specifies the Transfer Group ID to be sent

This is specified within 8 bytes. When you donot wish to specify any particular Transfer Group ID for this parameter, input NULL. In such case, HULFT applies the Transfer Group ID registered in Send Management Information to this parameter to execute the processing. To use this parameter, you should set the Dynamic Parameter Specification (dynparam) in the System Environment Settings file as 'Enable dynamic specification.'For the details of Dynamic Parameter Specification, refer to the *Administration Manual*.

BOOL bNp (IN)

This parameter specifies the Checkpoint flag

For Send File (bResend=FALSE), you should specify 'FALSE' without fail.

TRUE: Carries out the Resend File from the top of the file

FALSE: Carries out the Checkpoint Resend File

Returned Value

During normal operation, the returned value is '0.' The status at the time of error is the same as the error code of utlsend.exe. Refer to *Error Codes and Messages*.

<Usage example> When Used from Visual C++

```
#include <windows.h>
#include <stdio.h>

typedef INT (__stdcall *LPUTLSEND)(
    LPCSTR lpszFileID, LPCSTR lpszHostName, BOOL bResend,
    SHORT nPriority, BOOL bSync, INT nWait, LPCSTR lpszFileName,
    LPCSTR lpszGroup, BOOL bNp);

int main()
{
    CHAR szFileID[8+1];
    CHAR szHostName[68+1];
    SHORT nPriority;
    BOOL bResend;
    BOOL bSync;
    INT nWait;
    CHAR szFileName[200+1];
    CHAR szGroup[8+1];
    BOOL bNp;
    HMODULE hHulDll;
    HMODULE hApiDll;
    LPUTLSEND lpUtlsend;
    INT nStatus;

    strcpy(szFileID, "TEST0001");
    strcpy(szHostName, "");
    bResend = FALSE;
    nPriority = 50;
    bSync = TRUE;
    nWait = 300;
    strcpy(szFileName, "");
    strcpy(szGroup, "");
    bNp = FALSE;

    hHulDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulftrt.dll");
    if (hHulDll == NULL)
    {
        printf("Unable to load hulftrt.dll."
            "(Error code=%lu)\n", GetLastError());
        return 1;
    }
    hApiDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulapi.dll");
    if (hApiDll == NULL)
    {
        printf("Unable to load hulapi.dll."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hHulDll);
        return 2;
    }
    lpUtlsend = (LPUTLSEND)GetProcAddress(hApiDll, "utlsend");
    if (lpUtlsend == NULL)
    {
        printf("Unable to retrieves the address of HULFT API."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hApiDll);
        FreeLibrary(hHulDll);
        return 3;
    }
    nStatus = lpUtlsend(szFileID, szHostName, bResend, nPriority, bSync,
                        nWait, szFileName, szGroup, bNp);
```

```
    if (nStatus == 0)
    {
        printf("Terminated normally.\n");
    }
    else
    {
        printf("Error occurred when calling HULFT API."
            "(Returned value=%d)\n", nStatus);
    }
    FreeLibrary(hApiDll);
    FreeLibrary(hHulDll);
    return 0;
}
```

5.3.2 Send File Extension API

Send File extension, or Resend File extension:

Syntax

```
INT __stdcall utlsendex( LPCSTR lpszFileID , LPCSTR lpszHostName ,
              BOOL bResend , SHORT nPriority , BOOL bSync , INT nWait ,
              LPCSTR lpszFileName , LPCSTR lpszGroup , BOOL bNp ,
              HULMSGS* lpMsg , INT nTransMode );
```

Explanation of parameters:

LPCSTR lpszFileID (IN)

This parameter specifies the File ID of Send File

Specify the ID in a character string within 8 bytes. When you donot wish to specify any particular file names for this parameter, input NULL.

LPCSTR lpszHostName (IN)

This parameter specifies the dynamic receiving host name when sending file or the host name when resending file.

Specify the host name in a character string within 68 bytes.

To use this parameter at the time of Send File, you should set the Dynamic Parameter Specification (dynparam) in the System Environment Settings file as 'Enable dynamic specification.' For the details of Dynamic Parameter Specification, refer to the *Administration Manual*.

BOOL bResend (IN)

This parameter specifies the resend flag

TRUE: Specifies the Resend File

FALSE: Specifies the Send File

SHORT nPriority (IN)

This parameter specifies the Transfer Priority

The range that can be specified is from '1' to '256.' When you donot wish to specify any particular value for this parameter, input NULL.

BOOL bSync (IN)

This parameter specifies the synchronous transfer flag

In case of Resend File (bResend = TRUE), the Synchronous Transfer cannot be specified.

TRUE: Carries out Synchronous Transfer

FALSE: Does not carry out Synchronous Transfer

INT nWait (IN)

This parameter specifies the processing results receive wait time of Synchronous Transfer (seconds)

The time to synchronize to obtain the processing result in Synchronous Transfer is specified within the range of '10' to '259200.' When HULFT reaches the specified time, it resumes processing even if it was in the middle of sending. In such case, note that HULFT does not return the transfer results.

It is mandatory when specifying the Synchronous Transfer (bSync=TRUE). It becomes effective only when Synchronous Transfer is specified. When it is not (bSync=FALSE), specify '0.' When you donot wish to specify any particular value for this parameter, HULFT applies the value specified in Socket Read Timeout of System Environment Settings file.

LPCSTR lpszFileName (IN)

This parameter specifies file name of the file to send or resend

Specify the parameter in a full path within 200 bytes.

When it is defaulted specifies NULL.

When you donot wish to specify any particular file names for this parameter, input NULL. In such a case, HULFT applies the Send File Name registered in the Send Management Information at the time of Send File. To use this parameter, you should set the Dynamic Parameter Specification (dynparam) in the System Environment Settings file as 'Enable dynamic specification.' For the details of Dynamic Parameter Specification, refer to the *Administration Manual*. At the time of Resend File, specify the file names that have already been placed in the Resend Queue. This is not a parameter that dynamically specifies Resend files. When do not specify any particular file names for this parameter, HULFT resends all the files that correspond to the Host Name or File ID specified by the parameter.

LPCSTR lpszGroup (IN)

This parameter specifies the Transfer Group ID that is sent.

When you donot wish to specify any particular Transfer Group ID for this parameter, input NULL. In such a case, HULFT applies the Transfer Group ID registered in Send Management Information to this parameter to execute the processing. To use this parameter, you should set the Dynamic Parameter Specification (dynparam) in the System Environment Settings file as 'Enable dynamic specification.' For the details of Dynamic Parameter Specification, refer to the *Administration Manual*.

BOOL bNp (IN)

This parameter specifies the Checkpoint flag

For Send File, (bResend=FALSE), specify 'FALSE' without fail.

TRUE:	Carries out the Resend File from the beginning of the file
FALSE:	Carries out the Checkpoint Resend File

HULMSGS* lpMsg (IN)

This parameter specifies the message structure.

For Resend File (bResend=TRUE), specify NULL without fail.

When you donot wish to specify any particular value for this parameter, input NULL.

The details of the structure are as mentioned below:

```
typedef struct _tagHULMSGS {
  DWORD          msgcnt; //Number of messages that are stored
  CHAR** msginfo;       //Message table ($MSG0 to $MSG5)
} HULMSGS;
DWORD    msgcnt
```

Number of messages that are stored

Specify '6.'

```
CHAR**   msginfo
```

Specifies the message

Each message can be specified up to a maximum of 50 bytes. Ensure by fixing the domain of 'Number of messages x (maximum length 50 bytes +1)' that is specified above. Specify each message as 51 bytes from the top. When function ends, please free the memory.

INT nTransMode (IN)

Specifies the transfer mode.

Specify '0' as a fixed value.

Returned Value

During normal operation, the return value is '0.' The status at the time of error is the same as the error code of utlsend.exe. For details, refer to *Error Codes and Messages*.

<Usage example> When Used from Visual C++

```
#include <windows.h>
#include <stdio.h>

#pragma pack(push,8)
typedef struct {
    DWORD msgcnt;
    CHAR** msginfo;
} HULMSGS;
#pragma pack(pop)

typedef INT (__stdcall *LPUTLSENDEX)(
    LPCSTR lpszFileID, LPCSTR lpszHostName, BOOL bResend,
    SHORT nPriority, BOOL bSync, INT nWait, LPCSTR lpszFileName,
    LPCSTR lpszGroup, BOOL bNp,
    HULMSGS* lpMsg, INT nTransMode);

int main()
{
    CHAR szFileID[8+1];
    CHAR szHostName[68+1];
    BOOL bResend;
    SHORT nPriority;
    BOOL bSync;
    INT nWait;
    CHAR szFileName[200+1];
    CHAR szGroup[8+1];
    BOOL bNp;
    HULMSGS sMsgInfo;
    CHAR* msgbodyptr[6];
    CHAR msgbody[(50+1)*6];
    INT nTransMode;
    INT i;
    HMODULE hHulDll;
    HMODULE hApiDll;
    LPUTLSENDEX lpUtlsendex;
    INT nStatus;

    strcpy(szFileID, "TEST0001");
    strcpy(szHostName, "");
    bResend = FALSE;
    nPriority = 50;
    bSync = TRUE;
    nWait = 300;
    strcpy(szFileName, "");
    strcpy(szGroup, "");
    bNp = FALSE;
    nTransMode = 0;

    sMsgInfo.msgcnt = 6;
    sMsgInfo.msginfo = msgbodyptr;
    for (i = 0; i < 6; i++)
    {
        sMsgInfo.msginfo[i] = &msgbody[51*i];
    }
    strcpy(sMsgInfo.msginfo[0], "C:\\hulft\\");
    strcpy(sMsgInfo.msginfo[1], "");
    strcpy(sMsgInfo.msginfo[2], "");
    strcpy(sMsgInfo.msginfo[3], "Data1.dat");
    strcpy(sMsgInfo.msginfo[4], "");
    strcpy(sMsgInfo.msginfo[5], "");

    hHulDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulftrt.dll");
```

```
    if (hHulDll == NULL)
    {
        printf("Unable to load hulftrt.dll."
            "(Error code=%lu)\n", GetLastError());
        return 1;
    }
    hApiDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulapi.dll");
    if (hApiDll == NULL)
    {
        printf("Unable to load hulapi.dll."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hHulDll);
        return 2;
    }
    lpUtlsendex = (LPUTLSENDEX)GetProcAddress(hApiDll, "utlsendex");
    if (lpUtlsendex == NULL)
    {
        printf("Unable to retrieves the address of HULFT API."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hApiDll);
        FreeLibrary(hHulDll);
        return 3;
    }
    nStatus = lpUtlsendex(szFileID, szHostName, bResend, nPriority,
                        bSync, nWait, szFileName, szGroup, bNp,
                        &sMsgInfo, nTransMode);
    if (nStatus == 0)
    {
        printf("Terminated normally.\n");
    }
    else
    {
        printf("Error occurred when calling HULFT API."
            "(Returned value=%d)\n", nStatus);
    }
    FreeLibrary(hApiDll);
    FreeLibrary(hHulDll);
    return 0;
}
```

5.3.3 Send Request API

Send Request and Resend Request:

Syntax

```
INT __stdcall utlrecv( LPCSTR lpszFileID , LPCSTR lpszHostName ,
              BOOL bResend , BOOL bNp , BOOL bSync , INT nWait );
```

Explanation of parameters:

LPCSTR lpszFileID (IN)

This parameter specifies the File ID that is to be received

Specify the ID in a character string within 8 bytes. When you donot wish to specify any particular value for this parameter, input NULL.

LPCSTR lpszHostName (IN)

This parameter specifies the remote host name that requests the send

Specify the host name in a character string within 68 bytes. When you donot wish to specify any particular names for this parameter, input NULL.

In the case of Resend Request (bResend=TRUE), it has to be specified.

BOOL bResend (IN)

This parameter specifies the Resend Request flag.

TRUE: Specifies the Resend Request

FALSE: Specifies the Send Request

BOOL bNp (IN)

This parameter specifies the Checkpoint flag

In the case of Send Request (bResend=FALSE), specify 'FALSE' without fail.

TRUE: Carries out the Resend Request from top of the file.

FALSE: Carries out the Checkpoint Resend Request

BOOL bSync (IN)

This parameter specifies the Synchronous Transfer flag

In the case of Resend Request (bResend = TRUE), you cannot specify Synchronous Transfer.

TRUE: Carries out Synchronous Transfer

FALSE: Does not carry out Synchronous Transfer

INT nWait (IN)

This parameter specifies the wait time of Synchronous Transfer (seconds)

The time that is synchronized in order to obtain the processing results at the time of Synchronous Transfer is specified in the range from '10' to '259200.'

When it reaches this time, processing is reverted to even if it is in the middle of sending a file. In such a case, Note that the transfer result is not returned.

It is mandatory when specifying time transfer (bSync=TRUE).

It becomes effective only when Synchronous Transfer is specified.

When it is not Synchronous Transfer (bSync=FALSE), specify '0.'

When you donot wish to specify any particular value for this parameter, HULFT applies the value specified in Socket Read Timeout of System Environment Settings file.

[Note] When both 'lpszFileID' and 'lpszHostName' are NULL, the Resend Request to all hosts is carried out.

Returned Value

During normal operation, the return value is '0.' The status at the time of error is the same as the error code of utlrecv.exe. For more details, refer to *Error Codes and Messages*.

<Usage example> When Used From Visual C++

```
#include <windows.h>
#include <stdio.h>

typedef INT (__stdcall *LPUTLRECV)(
    LPCSTR lpszFileID, LPCSTR lpszHostName, BOOL bResend,
    BOOL bNp, BOOL bSync, INT nWait);

int main()
{
    CHAR szFileID[8+1];
    CHAR szHostName[68+1];
    BOOL bResend;
    BOOL bNp;
    BOOL bSync;
    INT nWait;
    HMODULE hHulDll;
    HMODULE hApiDll;
    LPUTLRECV lpUtlrecv;
    INT nStatus;

    strcpy(szFileID, "TEST0001");
    strcpy(szHostName, "host0001");
    bResend = FALSE;
    bNp = FALSE;
    bSync = TRUE;
    nWait = 300;

    hHulDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulftrt.dll");
    if (hHulDll == NULL)
    {
        printf("Unable to load hulftrt.dll."
            "(Error code=%lu)\n", GetLastError());
        return 1;
    }
    hApiDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulapi.dll");
    if (hApiDll == NULL)
    {
        printf("Unable to load hulapi.dll."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hHulDll);
        return 2;
    }
    lpUtlrecv = (LPUTLRECV)GetProcAddress(hApiDll, "utlrecv");
    if (lpUtlrecv == NULL)
    {
        printf("Unable to retrieves the address of HULFT API."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hApiDll);
        FreeLibrary(hHulDll);
        return 3;
    }
    nStatus = lpUtlrecv(szFileID, szHostName, bResend, bNp,
                        bSync, nWait);
    if (nStatus == 0)
    {
        printf("Terminated normally.\n");
    }
    else
    {
        printf("Error occurred when calling HULFT API."
            "(Returned value=%d)\n", nStatus);
    }
    FreeLibrary(hApiDll);
```

```
        FreeLibrary(hHulDll);
        return 0;
}
```

5.3.4 Send Request Extension API

Send Request extension and Resend Request extension:

Syntax

```
INT __stdcall utlrecvex( LPCSTR lpszFileID , LPCSTR lpszHostName ,
              BOOL bResend , BOOL bNp , BOOL bSync , INT nWait ,
              HULMSGS* lpMsg , INT nTransMode , SHORT nPriority );
```

Explanation of parameters:

LPCSTR lpszFileID(IN)

This parameter specifies the File ID that is to be received

Specify the ID in the character string within 8 bytes. When you donot wish to specify any particular file ID for this parameter, input NULL.

LPCSTR lpszHostName (IN)

This parameter specifies the remote host name that requests the send

Specify the remote host name in the character string within 68 bytes. When you donot wish to specify any particular names for this parameter, input NULL. In the case of Resend Request (bResend=TRUE), this tag is Mandatory.

BOOL bResend (IN)

This parameter specifies the Resend Request flag.

TRUE: Specifies the Resend Request

FALSE: Specifies the Send Request

BOOL bNp (IN)

This parameter specifies the Checkpoint flag.

In the case of Send Request (bResend=FALSE), specify 'FALSE' without fail.

TRUE: Carries out the Resend Request from the top of the file

FALSE: Carries out the Checkpoint Resend Request

BOOL bSync (IN)

This parameter specifies the Synchronous Transfer flag.

In the case of Resend Request (bResend = TRUE), you cannot specify Synchronous Transfer.

TRUE: Carries out Synchronous Transfer

FALSE: Does not carry out Synchronous Transfer

INT nWait (IN)

This parameter specifies the wait time of Synchronous Transfer (seconds)

The time to synchronize to obtain the processing result at the time of Synchronous Transfer is specified in the range of '10' to '259200.' When HULFT reaches the specified time, it resumes processing even if it was in the middle of sending. In such a case, Note that the transfer result is not returned.

It is mandatory while specifying time transfer (bSync=TRUE).

It becomes effective only when Synchronous Transfer is specified. When it is not (bSync=FALSE), specify '0.' When you donot wish to specify any particular value for this parameter, HULFT applies the value specified in Socket Read Timeout of System Environment Settings file.

HULMSGS*　　lpMsg (IN)

This parameter specifies the message structure.

In the case of Resend Request (bResend=TRUE), specify NULL without fail. When you donot wish to specify any particular value for this parameter, input NULL.

The details of the structure are as mentioned below.

```
typedef struct _tagHULMSGS {
  DWORD          msgcnt; //Number of messages that are stored
  CHAR** msginfo;       //Message table ($MSG0 to $MSG5)
} HULMSGS;
DWORD    msgcnt
```

Number of messages that are stored

Specify '6.'

```
CHAR**   msginfo
```

Specifies the message

For each message, you can specify up to 50 bytes at maximum. Secure the fixed domain of 'The number of messages x maximum length of 50 bytes + 1.' Specify each message every 51 bytes from the top. When the function finishes, free the memory.

INT　　nTransMode (IN)

This parameter specifies the transfer mode.

Specify '0.'

SHORT　nPriority (IN)

This parameter specifies transfer priority at the telephone connection.

Specify '0' as a fixed value.

[Note]　　When both 'lpszFileID' 'lpszHostName' are NULL, HULFT carries out Resend Request to all hosts.

Returned Value

At the time of normal operation, the return value is '0.' The status at the time of error is the same as the error code of utlrecv.exe. For more details, refer to *Error Codes and Messages*.

<Usage Example> When Used From Visual C++

```
#include <windows.h>
#include <stdio.h>

#pragma pack(push,8)
typedef struct {
    DWORD msgcnt;
    CHAR** msginfo;
} HULMSGS;
#pragma pack(pop)

typedef INT (__stdcall *LPUTLRECVEX)(
    LPCSTR lpszFileID, LPCSTR lpszHostName, BOOL bResend,
    BOOL bNp, BOOL bSync, INT nWait,
    HULMSGS* lpMsg, INT nTransMode, SHORT nPriority);

int main()
{
    CHAR szFileID[8+1];
    CHAR szHostName[68+1];
    BOOL bResend;
    BOOL bNp;
    BOOL bSync;
    INT nWait;
    HULMSGS sMsgInfo;
    CHAR* msgbodyptr[6];
    CHAR msgbody[(50+1)*6];
    INT nTransMode;
    SHORT nPriority;
    INT i;
    HMODULE hHulDll;
    HMODULE hApiDll;
    LPUTLRECVEX lpUtlrecvex;
    INT nStatus;

    strcpy(szFileID, "TEST0001");
    strcpy(szHostName, "host0001");
    bResend = FALSE;
    bNp = FALSE;
    bSync = TRUE;
    nWait = 300;
    nTransMode = 0;
    nPriority = 0;

    sMsgInfo.msgcnt = 6;
    sMsgInfo.msginfo = msgbodyptr;
    for (i = 0; i < 6; i++)
    {
        sMsgInfo.msginfo[i] = &msgbody[51*i];
    }
    strcpy(sMsgInfo.msginfo[0], "host0001");
    strcpy(sMsgInfo.msginfo[1], "");
    strcpy(sMsgInfo.msginfo[2], "");
    strcpy(sMsgInfo.msginfo[3], "");
    strcpy(sMsgInfo.msginfo[4], "");
    strcpy(sMsgInfo.msginfo[5], "");

    hHulDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulftrt.dll");
    if (hHulDll == NULL)
    {
        printf("Unable to load hulftrt.dll."
            "(Error code=%lu)\n", GetLastError());
        return 1;
    }
```

```
    hApiDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulapi.dll");
    if (hApiDll == NULL)
    {
        printf("Unable to load hulapi.dll."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hHulDll);
        return 2;
    }
    lpUtlrecvex = (LPUTLRECVEX)GetProcAddress(hApiDll, "utlrecvex");
    if (lpUtlrecvex == NULL)
    {
        printf("Unable to retrieves the address of HULFT API."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hApiDll);
        FreeLibrary(hHulDll);
        return 3;
    }
    nStatus = lpUtlrecvex(szFileID, szHostName, bResend, bNp, bSync,
                        nWait, &sMsgInfo, nTransMode, nPriority);
    if (nStatus == 0)
    {
        printf("Terminated normally.\n");
    }
    else
    {
        printf("Error occurred when calling HULFT API."
            "(Returned value=%d)\n", nStatus);
    }
    FreeLibrary(hApiDll);
    FreeLibrary(hHulDll);
    return 0;
}
```

5.3.5 Job Execution Result Notification API

This API notifies the execution result of job to remote hosts.

Syntax

```
int __stdcall hulsndrc( LPCSTR lpszJobName , LPCSTR lpszHostName ,
                        LPCSTR lpszMsg , SHORT nRc , INT nRetryCnt , INT nRetryTime );
```

Explanation of parameters:

LPCSTR lpszJobName (IN)

The parameter specifies the notification job name.

Specify the job name in a character string within 60 bytes. When you donot wish to specify any particular value for this parameter, specify '0.'

LPCSTR lpszHostName (IN)

The parameter specifies the connection host name.

Specify the host name in a character string within 68 bytes.

LPCSTR lpszMsg (IN)

The parameter specifies the sent message.

Specify the message in a character string within 128 bytes. When you donot wish to specify any particular value for this parameter, specify '0.'

SHORT nRc (IN)

This parameter specifies the send status.

The assignable value is in the range from '0' to '9999.'

INT nRetryCnt (IN)

This parameter specifies the connection retry number to the remote host.

The assignable value is in the range from '0' to '99999.'

INT nRetryTime (IN)

This specifies the connection retry interval (seconds) to the remote host.

The assignable value is in the range from '0' to '99999.'

Returned Value

During normal operation, the returned value is '0.' The status at the time of error is the same as the error code of hulsndrc.exe. For more details, refer to *Error Codes and Messages*.

<Usage example> When Used from Visual C++

```
#include <windows.h>
#include <stdio.h>

typedef INT (__stdcall *LPHULSNDRC)(
    LPCSTR lpszJobName, LPCSTR lpszHostName,
    LPCSTR lpszMsg, SHORT nRc, INT nRetryCnt,
    INT nRetryTime);

int main()
{
    CHAR szJobName[60+1];
    CHAR szHostName[68+1];
    CHAR szMsg[128+1];
    SHORT nRC;
    INT nRetryCnt;
    INT nRetryTime;
    HMODULE hHulDll;
    HMODULE hApiDll;
    LPHULSNDRC lpHulsndrc;
    INT nStatus;

    strcpy(szJobName, "Job_0001");
    strcpy(szHostName, "host0001");
    strcpy(szMsg, "Message");
    nRC = 0;
    nRetryCnt = 10;
    nRetryTime = 1;

    hHulDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulftrt.dll");
    if (hHulDll == NULL)
    {
        printf("Unable to load hulftrt.dll."
            "(Error code=%lu)\n", GetLastError());
        return 1;
    }
    hApiDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulapi.dll");
    if (hApiDll == NULL)
    {
        printf("Unable to load hulapi.dll."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hHulDll);
        return 2;
    }
    lpHulsndrc = (LPHULSNDRC)GetProcAddress(hApiDll, "hulsndrc");
    if (lpHulsndrc == NULL)
    {
        printf("Unable to retrieves the address of HULFT API."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hApiDll);
        FreeLibrary(hHulDll);
        return 3;
    }
    nStatus = lpHulsndrc(szJobName, szHostName, szMsg, nRC,
                         nRetryCnt, nRetryTime);
    if (nStatus == 0)
```

```
    {
        printf("Terminated normally.\n");
    }
    else
    {
        printf("Error occurred when calling HULFT API."
            "(Returned value=%d)\n", nStatus);
    }
    FreeLibrary(hApiDll);
    FreeLibrary(hHulDll);
    return 0;
}
```

5.3.6 Log Search API

Retrieves information by searching candidate log records that satisfy search criteria from HULFT Send Log, Receive Log, Request Acknowledge Logs

Syntax

```
INT __stdcall hulrlog( CHAR cLogType, CHAR cStatus, CHAR cReadMode,
              LPCSTR lpszVersion, LPCSTR pszFileID, LPCSTR lpszHostName,
              CHAR cSearch, LPCSTR lpStartDate, LPCSTR lpStartTime,
              LPCSTR lpEndDate, LPCSTR lpEndTime, LPSTR lpData,
              INT nMaxNum, INT* lpMatchNum);
```

Explanation of parameters:

CHAR cLogType(IN)

This parameter specifies the type of searched log.

S:	Send Log.
R:	Receive Log.
O:	Request Acknowledge Log.

CHAR cStatus (IN)

This parameter specifies the status classification.

A:	All the logs are targeted and searched
N:	Only the normally terminated log is targeted
E:	Only the log where an error has occurred is targeted.

CHAR cReadMode (IN)

This parameter specifies the search order

N:	Searches in old log order
R:	Searches in new log order

LPCSTR lpszVersion (IN)

This parameter specifies the version information of HULFT in the log format to be output

Specify any of the following; "V07L00", "V06L03," "V06L01," "V06L00" or "V05L00."

LPCSTR lpszFileID (IN)

This parameter specifies the File ID to be searched, or the service name.

Specify the ID in a character string within 8 bytes. When you donot wish to specify any particular value for this parameter, set the value of the first single byte as 0x00 or specify NULL for the pointer.

LPCSTR lpszHostName (IN)

This parameter specifies the host name to be searched

Specify the host name in a character string within 68 bytes. When you donot wish to specify any particular value for this parameter, set the value of the first single byte as 0x00 or specify NULL for the pointer.

CHAR cSearch (IN)

Reserved for future use.

Specify 'E' without fail.

LPCSTR lpStartDate (IN)

This parameter specifies the start date of the search target

Specify the date in a character string of 8 bytes. The format is YYYYMMDD. When you donot wish to specify any particular value for this parameter, set the value of the first single byte as 0x00 or specify NULL for the pointer. The date, which is the key of the search target, is the end date in case of the Send Log or the Receive Log, and is the request acknowledge date in case of the Request Acknowledge Log.

LPCSTR lpStartTime (IN)

This parameter specifies the start time of the search target.

Specify the time in a character string of 6 bytes. The format is HHMMSS. It cannot be specified if start date is not specified. When you donot wish to specify any particular value for this parameter, set the value of the first single byte as 0x00 or specify NULL for the pointer.

The time, which is the key of the search target, is the end time in case of the Send Log or the Receive Log, and is the request acknowledge time in case of the Request Acknowledge Log.

LPCSTR lpEndDate (IN)

This parameter specifies the end date of the search target

Specify the date in a character string of 8 bytes. The format is YYYYMMDD. When you donot wish to specify any particular value for this parameter, set the value of the first single byte as 0x00 or specify NULL for the pointer.

The date, which is the key of the search target, is the end date in case of the Send Log or the Receive Log, and is the request acknowledge date in case of the Request Acknowledge Log.

LPCSTR lpEndTime (IN)

This parameter specifies the end time of the search target.

Specify the time in a character string of 6 bytes. The format is HHMMSS. Cannot be specified if end date is not specified. When you donot wish to specify any particular value for this parameter, set the value of the first single byte as 0x00 or specify NULL for the pointer.

The time, which is the key of the search target, is the end time in case of Send Log or the Receive Log, and is the request acknowledge time in case of the Request Acknowledge Log.

LPSTRlpData (OUT)

This parameter specifies a pointer that indicates the search results stored buffer.

Before the buffer calls hulrlog(), secure the domain for MAX Retrieval Cases * (record length + 1) The information acquired is stored in the buffer as the image of the file format. When several log records are obtained, they are separated by a delimiter (0x0a).

The output format of the log record is different according to the version information specified for 'lpszVersion.' For the file format and the record length of each version, refer to the "Appendix 1 Log File Format."

INT* nMaxNum (IN)

This parameter specifies the MAX Retrieval Cases

Specify one or more value.

INT* lpMatchNum (OUT)

Specifies the pointer that shows the buffer where the number of searched records is stored.

Returned Values

0:	Search normal termination
1:	Search normal remainder present
2:	No relevant information
3:	Parameter error
4:	Log file access error
5:	Memory error
99:	System error

<Usage example> When Used from Visual C++

```
#include <windows.h>
#include <stdio.h>

typedef INT (__stdcall *LPHULRLOG)(
    CHAR cLogType, CHAR cStatus, CHAR cReadMode,
    LPCSTR lpszVersion, LPCSTR lpszFileID,
    LPCSTR lpszHostName, CHAR cSearch, LPCSTR lpStartDate,
    LPCSTR lpStartTime, LPCSTR lpEndDate, LPCSTR lpEndTime,
    LPVOID lpData, INT nMaxNum, INT* lpMatchNum);

int main()
{
    CHAR cLogType;
    CHAR cStatus;
    CHAR cReadMode;
    CHAR szVersion[6+1];
    CHAR szFileID[8+1];
    CHAR szHostName[68+1];
    CHAR cSearch;
    CHAR szStartDate[8+1];
    CHAR szStartTime[8+1];
    CHAR szEndDate[8+1];
    CHAR szEndTime[8+1];
    BYTE szData[(1279+1)*10];
    INT nMaxNum;
    INT nMatchNum;
    HMODULE hHulDll;
    HMODULE hApiDll;
    LPHULRLOG lpHulrlog;
    INT nStatus;

    cLogType = 'S';
    cStatus = 'E';
    cReadMode = 'R';
    strcpy(szVersion, "V07L00");
    strcpy(szFileID, "TEST0001");
    strcpy(szHostName, "");
    cSearch = 'E';
    strcpy(szStartDate, "20080417");
    strcpy(szStartTime, "120000");
    strcpy(szEndDate, "20080418");
    strcpy(szEndTime, "120000");
    memset(szData, 0x00, sizeof(szData));
    nMaxNum = 10;
    nMatchNum = 0;

    hHulDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulftrt.dll");
    if (hHulDll == NULL)
    {
        printf("Unable to load hulftrt.dll."
            "(Error code=%lu)\n", GetLastError());
        return 1;
    }
    hApiDll = LoadLibrary("C:\\HULFT Family\\hulft7\\binnt\\hulapi.dll");
    if (hApiDll == NULL)
    {
        printf("Unable to load hulapi.dll."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hHulDll);
        return 2;
    }
    lpHulrlog = (LPHULRLOG)GetProcAddress(hApiDll, "hulrlog");
```

```
    if (lpHulrlog == NULL)
    {
        printf("Unable to retrieves the address of HULFT API."
            "(Error code=%lu)\n", GetLastError());
        FreeLibrary(hApiDll);
        FreeLibrary(hHulDll);
        return 3;
    }
    nStatus = lpHulrlog(cLogType, cStatus, cReadMode, szVersion,
                    szFileID, szHostName, cSearch, szStartDate,
                    szStartTime, szEndDate, szEndTime,
                    szData, nMaxNum, &nMatchNum);
    if (0 <= nStatus && nStatus <= 2)
    {
        printf("%d number were searched.\n", nMatchNum);
    }
    else
    {
        printf("Error occurred when calling HULFT API."
            "(Returned value=%d)\n", nStatus);
    }
    FreeLibrary(hApiDll);
    FreeLibrary(hHulDll);
    return 0;
}
```

5.4 Interface Function

5.4.1 Alert Notification Utility

The message can be notified with respect to SIGNAlert Manager. On SIGNAlert Manager, the notification status is managed centrally with the message from the client. For details on SIGNAlert Manager, refer to manual of SIGNAlert Manager.

• Alert Notification command

```
utlalert -h hostname [-p no] {-id alertID|-m message} [-sts status]
      [-d yyyymmdd] [-t hhmmss] [-sync [-w time]] [-rc count] [-rt time]
      [-rfile filename] [-l [logname]] [-el i|w|e|x] [-myhost myhostname]
```

Explanation of parameters:

`-h hostname`

This parameter specifies the Host name of SIGNAlert Manager or IP address (Mandatory)

Specify the host name in alphanumeric characters within 68 bytes.

`-p no`

This paramter specifies the Port number of the connection destination (Optional)

Specifiy the port number in the range of '1' to '65535.' When not specified , HULFT connects to '35000.'

`-id alertID |-m message`

This parameter specifies Alert ID or message (Mandatory)

Alert ID is specified within 16 bytes. It is case-sensitive. The alert ID that is specified here, is the detail registered in the SIGNAlert Manager. The message can be setup to a maximum of 256 bytes. When space or meta character is to be specified within the message, the entire message is enclosed in double quotes. (")

`-sts status`

This paramter specifies Status (Optional)

A numeric value containing a maximum of 8 digits can be specified. When not specified, HULFT set s the value as '0.'

`-d yyyymmdd`

This parameter specifies the Date of notifying the message to SIGNAlert Manager (Optional)

Specify the Date in the form of 'yyyymmdd.' When not specified, HULFT sets the value as '0.'

`-t hhmmss`

Time of notifying the message to SIGNAlert Manager (Optional)

Specify the Time in the form of 'hhmmss.' When not specified, HULFT sets the value to '0.'

`-sync`

This parameter specifies Synchronous Transfer (Optional)

'SIGNAlert Manager' waits till the message is entered. When you specify an alert ID by using a parameter and SIGNAlert Manager registers an execution Job for the ID, the command waits until the job is completed.

`-w time`

This parameter specifies time to Timeout (in terms of seconds) (Optional)

Specify the value within the range from '10' to '259200.' When not specified, HULFT sets the value as '3600.' The value is effective when you specify '-sync.'

`-rc count`

This parameter specifies number of retries (reattempts) at the time of connection failure (Optional)

Specify the value in the range from '0' to '99999.' When not specified, HULFT sets the value as '3.'

`-rt time`

This parameter specifies Interval of retries (reattempts) at the time of connection failure (Optional)

Specify the value in the range from '0' to '99999.' When not specified, HULFT sets the value as '10.'

`-rfile filename`

This parameter specifies Resend message file name (Optional)

Specify the file name within 256 characters. When there is a failure in sending the message, the details that are to be sent are entered.

`-l logname`

This parameter specifies the name of the file that outputs the alert notification results (Optional)

Specified the name within 256 characters. Specify the full path to the file name.

`-el i|w|e|x`

Error level of the application (Optional)

i:	Information
w:	Warning
e:	Error
x:	Critical error

`-myhost myhostname`

This parameter specifies the host name of sending source that notifies the SIGNAlert Manager (Optional)

Specify the name within 256 characters. When not specified, HULFT specifies local host name for this parameter.

[Note] At the time of specifying '-rfile filename,' only the latest message is saved in the Resend file message. Further, when there is a failure in writing to the specified file, the Resend message file is not created.

• Alert Resend command

```
utlalert -rfile filename [-l [logname]]
```

Explanation of parameters:

`-rfile filename`

This parameter specifies Resend file message file name (Mandatory)

Specify the file name within 256 characters. The ID, message, host to be notified are read and the message is resent, and when this is a successful, the record is deleted.

`-l logname`

This parameter specifies file name that outputs the alert notification results (Optional)

Specify the file name within 256 characters. Specify the full path to the file name.

5.5 Code Conversion Function

5.5.1 Unicode Conversion

Code conversion is carried out between SHIFT-JIS, ASCII code and Unicode(UTF16).

• Unicode Conversion (Conversion to Unicode) commands

```
utlchgunicode -infile filename -outfile filename [-r] [-o]
              {-u [-c][-g]}
```

Explanation of parameters:

`-infile filename`

This parameter specifies the name of the file before conversion (Mandatory)

Specify the infile name in full path to the file within 256 bytes.

`-outfile filename`

This parameter specifies the name of file after conversion. (Mandatory)

Specify the outfile name in full path to the file within 256 bytes.

`-r`

This parameter specifies whether to overwrite the file (Optional)

When there is an outfile that hasalready been specified , HULFT overwrites the file.

When this is not specified, a new file is created, because an error occurs when an identical file exists.

`-o`

This parameter specifies whether to use OEM code page (Optional)

When specified, HULFT uses the OEM code page.

`-u`

This parameter specifies the conversion from SHIFT-JIS to Unicode (Mandatory)

Specify this parameter where you would like to convert the file from SHIFT-JIS to Unicode.

`-c`

This parameter specifies whether to execute Combined Character Conversion (Optional)

At the time of conversion to Unicode, HULFT converts the data to combined characters.

`-g`

The parameter specifies whether to use Glyph character. (Optional)

Use Glyph characters instead of control characters.

• Unicode Conversion (Conversion from Unicode) commands

```
utlchgunicode -infile filename -outfile filename [-r] [-o]
              {-s [-co[-d][-dc defaultchar]]}
```

Explanation of parameters:

`-infile filename`

This parameter specifies the name of the file before conversion (Mandatory)

Specify the infile name in full path to the file within 256 bytes.

`-outfile filename`

This parameter specifies the name of file after conversion. (Mandatory)

Specify the outfile name in full path to the file within 256 bytes.

`-r`

This parameter specifies whether to overwrite the file (Optional)

When there is an outfile that hasalready been specified , HULFT overwrites the file.

When this is not specified, a new file is created, because an error occurs when an identical file exists.

`-o`

This parameter specifies whether to use OEM code page (Optional)

When specified, HULFT uses the OEM code page.

`-s`

This parameter specifies the conversion from Unicode to SHIFT-JIS (Mandatory)

Specify this parameter where you would like to convert the file from SHIFT-JIS to Unicode.

`-co`

This parameter specifies whether to execute conversion to pre-composed character (Optional)

This parameter converts a composite character to a pre-composed character.

`-d`

Specification of discarding non-spacing character (Optional)

This parameter specifies to discard a non-spacing character which follows after a base character without non-spacing character at the time of conversion to SHIFT-JIS.

`-dc defaultchar`

Default character specified (Optional)

At the time of conversion from Unicode to SHIFT-JIS, the parameter specifies one substitute character for the character that cannot be converted.

~ Memo ~

Appendix 1

Log File Format

App.1.1 Log File Format

The Appendix 1 shows the format in the log file for Send File, Receive, Request Acknowledge, and Job Execution, respectively. You can acquire logs in the format of HULFT Ver.7, Ver.6.3, Ver.6.1, Ver.6.0, and Ver.5.0 by using Log Search API described in "5.3 API." The tables in this section carry the formats of each version.

The value of the size of each table is as follows:

- bin: binary
- char: character

Further, as the delimiter of each log record, one byte (0x0A) is inserted.

App.1.1.1 Send Log File(hulsndlog.dat) Format

Table App.1.1 Send Log File in Ver.7.0

Field Name	Size	Note
File ID	char 8	File ID that is sent
Host Name	char 68	Send destination host name
Send File Name(*3)	char 50	The name of Send file
Send Start Date	char 8	Send start date (YYYYMMDD)
Send Start Time	char 6	Send start time (HHMMSS)
Send End Time	char 6	Send end time (HHMMSS)
With or Without DB Interface	char 1	Y: with Interface, N: without Interface (including CSV, XML)
Transfer Type	char 1	T:Text, B: Binary, F:Format, M: Multi Format
Record Count (*1)	bin 4	Record count actually sent
Data Size (*1)	bin 4	Size of the sent data
Transmission Rate (*1)	bin 4	Data size/Sending time (bytes/sec.)
Status Code	bin 4	Completion code of the send processing
Detail Code	bin 2	Detail code of send processing
Comment	char 60	Comment
Interface DBID	char 8	DB interface ID
Job ID	char 8	Post-send Job ID
Send Record Count (*1)	bin 4	Total record count that has to be sent
Area Allocated to System	char 1	The area that HULFT uses internally
Connection Type	char 1	L:LAN
Record Count (*2)	bin 8	Record count actually sent
Data Size (*2)	bin 8	Size of the sent data
Transmission Rate (*2)	bin 8	Data size/Sending time (bytes/sec.)
Send Record Count (*2)	bin 8	Total record count that HULFT has to send
Send End Date	char 8	Send end date (YYYYMMDD)
Compression Ratio	bin 2	Compression ratio
IP Version	bin 2	IP protocol version that is used
Transfer Classification	char 1	N: Normal transfer
Area Allocated to System	bin 4	The area that HULFT uses internally
Message 0	char 50	Details of Message 0
Message 1	char 50	Details of Message 1
Message 2	char 50	Details of Message 2
Message 3	char 50	Details of Message 3
Message 4	char 50	Details of Message 4
Message 5	char 50	Details of Message 5
Area Allocated to System	char 159	The area that HULFT uses internally
Send Acknowledge Date	char 8	Date when Send File is acknowledged (YYYYMMDD)
Send Acknowledge Time	char 9	Time when Send File is acknowledged (hhmmssppp)
Area Allocated to System	bin 166	The area that HULFT uses internally
Send File Name (*4)	char 256	The name of Send file
Latest Identifier	char 34	Latest Identifier
Starting Identifier	char 34	Starting Identifier
Reserved	char 16	Reserved area

• Length per record: 1279 bytes

[Remarks] The following are the hints on the Record Count, the Data Size, the Transmission Rate, and the Send file name:

- Because the assigned area for binary (*1) is four bytes, we cannot guarantee the value of 2GB or more. Refer to the value of (*2).
- Because the maximum value for (*3) is 50 bytes, refer to the Send File Name in (*4) for the name of the Send file of which size is 50 bytes or more. (*4) stores data of which size is up to 200 bytes at maximum.

[Note] As for a field which is not in use, NULL is padded.

Table App.1.2 Send Log File in Ver.6.3

Field Name	Size	Note
File ID	char 8	File ID that is sent
Host Name	char 68	Send destination host name
Send File Name(*3)	char 50	The name of Send file
Send Start Date	char 8	Send start date (YYYYMMDD)
Send Start Time	char 6	Send start time (HHMMSS)
Send End Time	char 6	Send end time (HHMMSS)
With or Without DB Interface	char 1	Y: with Interface, N: without Interface (including CSV, XML)
Transfer Type	char 1	T:Text, B: Binary, F:Format, M: Multi Format
Record Count (*1)	bin 4	Record count actually sent
Data Size (*1)	bin 4	Size of the sent data
Transmission Rate (*1)	bin 4	Data size/Sending time (bytes/sec.)
Status Code	bin 4	Completion code of the send processing
Detail Code	bin 2	Detail code of send processing
Comment	char 60	Comment
Interface DBID	char 8	DB interface ID
Job ID	char 8	Post-send Job ID
Send Record Count (*1)	bin 4	Total record count that has to be sent
Area Allocated to System	char 1	The area that HULFT uses internally
Connection Type	char 1	L:LAN
Record Count (*2)	bin 8	Record count actually sent
Data Size (*2)	bin 8	Size of the sent data
Transmission Rate (*2)	bin 8	Data size/Sending time (bytes/sec.)
Send Record Count (*2)	bin 8	Total record count that HULFT has to send
Send End Date	char 8	Send end date (YYYYMMDD)
Compression Ratio	bin 2	Compression ratio
IP Version	bin 2	IP protocol version that is used
Transfer Classification	char 1	N: Normal transfer
Area Allocated to System	bin 4	The area that HULFT uses internally
Message 0	char 50	Details of Message 0
Message 1	char 50	Details of Message 1
Message 2	char 50	Details of Message 2
Message 3	char 50	Details of Message 3
Message 4	char 50	Details of Message 4
Message 5	char 50	Details of Message 5
Area Allocated to System	char 159	The area that HULFT uses internally
Send Acknowledge Date	char 8	Date when Send File is acknowledged (YYYYMMDD)
Send Acknowledge Time	char 9	Time when Send File is acknowledged (hhmmssppp)
Area Allocated to System	bin 166	The area that HULFT uses internally
Send File Name (*4)	char 256	The name of Send file
Reserved	char 84	Reserved area

• Length per record: 1279 bytes

[Remarks] The following are the hints on the Record Count, the Data Size, the Transmission Rate, and the Send file name:

- Because the assigned area for binary (*1) is four bytes, we cannot guarantee the value of 2GB or more. Refer to the value of (*2).
- Because the maximum value for (*3) is 50 bytes, refer to the Send File Name in (*4) for the name of the Send file of which size is 50 bytes or more. (*4) stores data of which size is up to 200 bytes at maximum.

[Note] As for a field which not in use, NULL is padded.

Table App.1.3 Send Log File in Ver.6.1

Field Name	Size	Note
File ID	char 8	File ID that is sent
Host Name	char 68	Send destination host name
Send File Name	char 50	The name of Send file
Send Start Date	char 8	Send start date (YYYYMMDD)
Send Start Time	char 6	Send start time (HHMMSS)
Send End Time	char 6	Send end time (HHMMSS)
With or Without DB Interface	char 1	Y: with Interface, N: without Interface (including CSV, XML)
Transfer Type	char 1	T:Text, B: Binary, F:Format, M: Multi Format
Record Count (*1)	bin 4	Record count actually sent
Data Size (*1)	bin 4	Size of the sent data
Transmission Rate (*1)	bin 4	Data size/Sending time (bytes/sec.)
Status Code	bin 4	Completion code of the send processing
Detail Code	bin 2	Detail code of send processing
Comment	char 60	Comment
Interface DBID	char 8	DB interface ID
Job ID	char 8	Post-send Job ID
Send Record Count (*1)	bin 4	Total record count that has to be sent
Area Allocated to System	char 1	The area that HULFT uses internally
Connection Type	char 1	L:LAN
Record Count (*2)	bin 8	Record count actually sent
Data Size (*2)	bin 8	Size of the sent data
Transmission Rate (*2)	bin 8	Data size/Sending time (bytes/sec.)
Send Record Count (*2)	bin 8	Total record count that FT has to be sent
Send End Date	char 8	Send end date (YYYYMMDD)
Compression Ratio	bin 2	Compression ratio
IP Version	bin 2	IP protocol version that is used
Transfer Classification	char 1	N: Normal transfer
Area Allocated to System	bin 4	The area that HULFT uses internally
Message 0	char 50	Details of Message 0
Message 1	char 50	Details of Message 1
Message 2	char 50	Details of Message 2
Message 3	char 50	Details of Message 3
Message 4	char 50	Details of Message 4
Message 5	char 50	Details of Message 5
Area Allocated to System	char 127	The area that HULFT uses internally
Reserved	char 43	Reserved Area

• Length per record: 767 bytes

[Remarks] The following is the hint on the Record Count, the Data Size, and the Transmission Rate:

• Because the assigned area for binary (*1) is four bytes, we cannot guarantee the value of 2GB or more. Refer to the value of (*2).

[Note] As for a field which not in use, NULL is padded.

Table App.1.4 Send Log File in Ver.6.0

Field Name	Size	Note
File ID	char 8	File ID that is sent
Host Name	char 68	Send destination host name
Send File Name	char 50	The name of Send file
Send Start Date	char 8	Send start date (YYYYMMDD)
Send Start Time	char 6	Send start time (HHMMSS)
Send End Time	char 6	Send end time (HHMMSS)
With or Without DB Interface	char 1	Y: with Interface, N: without Interface (including CSV, XML)
Transfer Type	char 1	T:Text, B: Binary, F:Format, M: Multi Format
Record Count (*1)	bin 4	Record count actually sent
Data Size (*1)	bin 4	Size of the sent data
Transmission Rate (*1)	bin 4	Data size/Sending time (bytes/sec.)
Status Code	bin 4	Completion code of the send processing
Detail Code	bin 2	Detail code of send processing
Comment	char 60	Comment
Interface DBID	char 8	DB interface ID
Job ID	char 8	Post-send Job ID
Send Record Count (*1)	bin 4	Total record count that has to be sent
Area Allocated to System	char 1	The area that HULFT uses internally
Connection Type	char 1	L:LAN
Record Count (*2)	bin 8	Record count actually sent
Data Size (*2)	bin 8	Size of the sent data
Transmission Rate (*2)	bin 8	Data size/Sending time (bytes/sec.)
Send Record Count (*2)	bin 8	Total record count that has to be sent
Send End Date	char 8	Send end date (YYYYMMDD)
Compression Ratio	bin 2	Compression ratio
IP Version	bin 2	IP protocol version that is used
Transfer Classification	char 1	N: Normal transfer
Area Allocated to System	bin 4	The area that HULFT uses internally
Message 0	char 50	Details of Message 0
Message 1	char 50	Details of Message 1
Message 2	char 50	Details of Message 2
Message 3	char 50	Details of Message 3
Message 4	char 50	Details of Message 4
Message 5	char 50	Details of Message 5
Reserved	char 12	Reserved area

• Length per record: 609 bytes

[Remarks] The following is the hint on the Record Count, the Data Size, and the Transmission Rate:

- Because the assigned area for binary (*1) is four bytes, we cannot guarantee the value of 2GB or more. Refer to the value of (*2).

Table App.1.5 Send Log File in Ver.5.0

Field Name	Size	Note
File ID	char 8	File ID that is sent
Host Name	char 68	Send destination host name
Send File Name	char 50	The name of Send file
Send Start Date	char 8	Send start date (YYYYMMDD)
Send Start Time	char 6	Send start time (HHMMSS)
Send End Time	char 6	Send end time (HHMMSS)
With or Without DB Interface	char 1	Y: with Interface, N: without Interface (including CSV, XML)
Transfer Type	char 1	T:Text, B: Binary, F:Format, M: Multi Format
Record Count(*1)	bin 4	Record count actually sent
Data Size (*1)	bin 4	Size of the sent data
Transmission Rate(*1)	bin 4	Data size/Sending time (bytes/sec.)
Status Code	bin 4	Completion code of the send processing
Detail Code	bin 2	Detail code of send processing
Comment	char 60	Comment
Interface DBID	char 8	DB interface ID
Job ID	char 8	Post-send Job ID
Send Record Count(*1)	bin 4	Record count that has to be sent
Area Allocated to System	char 1	The area that HULFT uses internally
Connection Type	char 1	L:LAN
Record Count(*2)	bin 8	Record count that HULFT actually sent
Data Size(*2)	bin 8	Size of the sent data
Transmission Rate(*2)	bin 8	Data size/Sending time (bytes/sec.)
Send Record Count(*2)	bin 8	Total record count that HULFT has to send
Send End Date	char 8	Send end date (YYYYMMDD)
Reserved	char 12	Reserved area

• Length per record: 300 bytes

[Remarks] The following is the hint on the Record Count, the Data Size, and the Transmission Rate:

• Because the assigned area for binary (*1) is four bytes, we cannot guarantee the value of 2GB or more. Refer to the value of (*2).

App.1.1.2 Receive Log File(hulrcvlog.dat) Format

Table App.1.6 Receive Log File in Ver.7.0

Field Name	Size	Note
File ID	char 8	File ID that is received
Host Name	char 68	Source host name of sending
Receive Start Date	char 8	Receive start date (YYYYMMDD)
Receive Start Time	char 6	Receive start time (HHMMSS)
Receive End Time	char 6	Receive end time (HHMMSS)
With or Without DB Interface	char 1	Y: with Interface, N: without Interface (including CSV, XML)
Receive File Name (*3)	char 50	The name of Receive file
Transfer Type	char 1	T:Text, B: Binary, F:Format, M: Multi Format
Record Count (*1)	bin 4	Record count actually received
Data Size (*1)	bin 4	Size of the received data
Transmission Rate (*1)	bin 4	Data size/Receiving time (bytes/sec.)
Status Code	bin 4	Completion code of the receive processing
Detail Code	bin 2	Detail code of receive processing
Comment	char 60	Comment
Interface DBID	char 8	DB interface ID
Code Conversion	char 1	Implementation of code conversion S: Sending Side, No Conversion, R: Receiving Side
Job ID	char 1	Post-receive Job ID
Send Record Count (*1)	char 8	Total record count that has to be received
Connection Type	char 1	L:LAN
Record Count (*2)	bin 8	Record count actually received
Data Size (*2)	bin 8	Size of the received data
Transmission Rate (*2)	bin 8	Data size/Receiving time (bytes/sec.)
Receive End Date	char 8	Receive end date (YYYYMMDD)
IP Version	bin 2	IP protocol version that is used
Transfer Classification	char 1	N: Normal transfer
Area Allocated to System	bin 4	The area that HULFT uses internally
Message 0	char 50	Details of Message 0
Message 1	char 50	Details of Message 1
Message 2	char 50	Details of Message 2
Message 3	char 50	Details of Message 3
Message 4	char 50	Details of Message 4
Message 5	char 50	Details of Message 5
Area Allocated to System	bin 272	The area that HULFT uses internally
Receive file name (*4)	char 256	The name of Receive file
Latest Identifier	char 34	Latest Identifier
Starting Identifier	char 34	Starting Identifier
Reserved	char 96	Reserved area

• Length per record: 1279 bytes

[Remarks] The following are the hints on the Record Count, the Data Size, the Transmission Rate, and the Receive file name:

- Because the assigned area for binary (*1) is four bytes, we cannot guarantee the value of 2GB or more. Refer to the value of (*2).
- Because the maximum value for (*3) is 50 bytes, use the Receive file name in (*4) for the name of the Receive file of which size is 50 bytes or more. (*4) stores data of which size is up to 200 bytes at maximum.

[Note] As for a field which is not in use, NULL is padded.

Table App.1.7 Receive Log File in Ver.6.3

Field Name	Size	Note
File ID	char 8	File ID that is received
Host Name	char 68	Source host name of sending
Receive Start Date	char 8	Receive start date (YYYYMMDD)
Receive Start Time	char 6	Receive start time (HHMMSS)
Receive End Time	char 6	Receive end time (HHMMSS)
With or Without DB Interface	char 1	Y: with Interface, N: without Interface (including CSV, XML)
Receive File Name (*3)	char 50	The name of Receive file
Transfer Type	char 1	T:Text, B: Binary, F:Format, M: Multi Format
Record Count (*1)	bin 4	Record count actually received
Data Size (*1)	bin 4	Size of the received data
Transmission Rate (*1)	bin 4	Data size/Receiving time (bytes/sec.)
Status Code	bin 4	Completion code of the receive processing
Detail Code	bin 2	Detail code of receive processing
Comment	char 60	Comment
Interface DBID	char 8	DB interface ID
Code Conversion	char 1	Implementation of code conversion S: Sending Side, No Conversion, R: Receiving Side
Job ID	char 1	Post-receive Job ID
Send Record Count (*1)	char 8	Total record count that has to be received
Connection Type	char 1	L:LAN
Record Count (*2)	bin 8	Record count actually received
Data Size (*2)	bin 8	Size of the received data
Transmission Rate (*2)	bin 8	Data size/Receiving time (bytes/sec.)
Receive End Date	char 8	Receive end date (YYYYMMDD)
IP Version	bin 2	IP protocol version that is used
Transfer Classification	char 1	N: Normal transfer
Area Allocated to System	bin 4	The area that HULFT uses internally
Message 0	char 50	Details of Message 0
Message 1	char 50	Details of Message 1
Message 2	char 50	Details of Message 2
Message 3	char 50	Details of Message 3
Message 4	char 50	Details of Message 4
Message 5	char 50	Details of Message 5
Area Allocated to System	bin 272	The area that HULFT uses internally
Receive File Name (*4)	char 256	The name of Receive file
Reserved	char 164	Reserved area

• Length per record: 1279 bytes

[Remarks] The following are the hints on the Record Count, the Data Size, the Transmission Rate, and the Receive file name:

- Because the assigned area for binary (*1) is four bytes, we cannot guarantee the value of 2GB or more. Refer to the value of (*2).
- Because the maximum value for (*3) is 50 bytes, refer to the Receive file name in (*4) for the name of the Receive file of which size is 50 bytes or more. (*4) stores data of which size is up to 200 bytes at maximum.

[Note] As for a field which not in use, NULL is padded.

Table App.1.8 Receive Log File of Ver.6.1

Field Name	Size	Note
File ID	char 8	File ID that is received
Host Name	char 68	Source host name of sending
Receive Start Date	char 8	Receive start date (YYYYMMDD)
Receive Start Time	char 6	Receive start time (HHMMSS)
Receive End Time	char 6	Receive end time (HHMMSS)
With or Without DB Interface	char 1	Y: with Interface, N: without Interface (including CSV, XML)
Receive File Name	char 50	The name of Receive file
Transfer Type	char 1	T:Text, B:Binary, F: Format, M: Multi Format
Record Count (*1)	bin 4	Record count actually received
Data Size (*1)	bin 4	Size of the received data
Transmission Rate (*1)	bin 4	Data size/Received time (bytes/sec.)
Status Code	bin 4	Completion code of the receive processing
Detail Code	bin 2	Detail code of receive processing
Comment	char 60	Comment
Interface DBID	char 8	DB interface ID
Code Conversion	char 1	Implementation of code conversion S: Sending Side, No Conversion, R: Receiving Side
Job ID	char 8	Post-receive Job ID
Send Record Count	bin 4	Total record count that has to be received
Connection Type	char 1	L:LAN
Record Count (*2)	bin 8	Record count actually received
Data Size (*2)	bin 8	Size of the received data
Transmission Rate (*2)	bin 8	Data size/Receiving Time (bytes/sec.)
Receive End Date	char 8	Receive end date (YYYYMMDD)
IP Version	bin 2	IP protocol version that is used
Transfer Classification	char 1	N:Normal transfer
Area Allocated to System	bin 4	The area that HULFT uses internally
Message 0	char 50	Details of Message 0
Message 1	char 50	Details of Message 1
Message 2	char 50	Details of Message 2
Message 3	char 50	Details of Message 3
Message 4	char 50	Details of Message 4
Message 5	char 50	Details of Message 5
Area Allocated to System	char 127	The area that HULFT uses internally
Reserved	char 53	Reserved area

• Length per record: 767 bytes

[Remarks] The following is the hint on the Record Count, the Data Size, and the Transmission Rate:

- Because the assigned area for binary (*1) is four bytes, we cannot guarantee the value of 2GB or more. Refer to the value of (*2).

[Note] As for a field which not in use, NULL is padded.

Table App.1.9 Receive Log File in Ver.6.0

Field Name	Size	Note
File ID	char 8	File ID that is received
Host Name	char 68	Source host name of sending
Receive Start Date	char 8	Receive start date (YYYYMMDD)
Receive Start Time	char 6	Receive start time (HHMMSS)
Receive End Time	char 6	Receive end time (HHMMSS)
With or Without DB Interface	char 1	Y: with Interface, N: without Interface (including CSV, XML)
Receive File Name	char 50	The name of Receive file
Transfer Type	char 1	T:Text, B:Binary, F: Format, M: Multi Format
Record Count (*1)	bin 4	Record count actually received
Data Size (*1)	bin 4	Size of the received data
Transmission Rate (*1)	bin 4	Data size/Receiving time (bytes/sec.)
Status Code	bin 4	Completion code of the receive processing
Detail Code	bin 2	Detail code of receive processing
Comment	char 60	Comment
Interface DBID	char 8	DB interface ID
Code Conversion	char 1	Implementation of code conversion S: Sending Side, No Conversion, R: Receiving Side
Job ID	char 8	Post-receive Job ID
Send Record Count	bin 4	Total record count that has to be received
Connection Type	char 1	L:LAN
Record Count (*2)	bin 8	Record count actually received
Data Size (*2)	bin 8	Size of the received data
Transmission Rate (*2)	bin 8	Data size/Receiving Time (bytes/sec.)
Receive End Date	char 8	Receive end date (YYYYMMDD)
IP Version	bin 2	IP protocol version that is used
Transfer Classification	char 1	N:Normal transfer
Area Allocated to System	bin 4	The area that HULFT uses internally
Message 0	char 50	Details of Message 0
Message 1	char 50	Details of Message 1
Message 2	char 50	Details of Message 2
Message 3	char 50	Details of Message 3
Message 4	char 50	Details of Message 4
Message 5	char 50	Details of Message 5
Reserved	char 20	Reserved area

• Length per record: 607 bytes

[Remarks] The following is the hint on the Record Count, the Data Size, and the Transmission Rate:

- Because the assigned area for binary (*1) is four bytes, we cannot guarantee the value of 2GB or more. Refer to the value of (*2).

Table App.1.10 Receive Log File in Ver.5.0

Field Name	Size	Note
File ID	char 8	File ID that is received
Host Name	char 68	Source host name of sending
Receive Start Date	char 8	Receive start date (YYYYMMDD)
Receive Start Time	char 6	Receive start time (HHMMSS)
Receive End Time	char 6	Receive end time (HHMMSS)
With or Without DB Interface (*1)	char 1	Y: with Interface, N: without Interface (including CSV, XML)
Receive File Name	char 50	The name of Receive file
Transfer Type	char 1	T:Text, B:Binary, F: Format, M: Multi Format
Record Count	bin 4	Record count actually received
Data Size	bin 4	Size of the received data
Transmission Rate	bin 4	Data size/Receiving time (8 bytes/sec.)
Status Code	bin 4	Completion code of the receive processing
Detail Code	bin 2	Detail code of receive processing
Comment	char 60	Comment
Interface DBID	char 8	DB interface ID
Code Conversion	char 1	Implementation of code conversion S: Sending Side, No Conversion, R: Receiving Side
Job ID	char 8	Post-receive Job ID
Send Record Count	bin 4	Total record count that has to be received
Connection Type	char 1	L:LAN
Record Count (*2)	bin 8	Record count actually received
Data Size (*2)	bin 8	Size of the received data
Transmission Rate (*2)	bin 8	Data size/Receiving time (bytes/sec.)
Receive End Date	char 8	Receive end date (YYYYMMDD)
Reserved	char 20	Reserved area

• Length per record: 300 bytes

[Remarks] The following is the hint on the Record Count, the Data Size, and the Transmission Rate:

- Because the assigned area for binary (*1) is four bytes, we cannot guarantee the value of 2GB or more. Refer to the value of (*2).

App.1.1.3 Request Acknowledge Log File(hulaccreqlog.dat) Format

Table App.1.11 Request Acknowledge Log file in Ver.7.0

Field Name	Size	Note
Service Name	char 8	Request Acknowledge service name
Host Name	char 68	Request source host name
Acknowledge Date	char 8	Date of Request Acknowledge (YYYYMMDD)
Acknowledge Time	char 6	Time of Request Acknowledge (HHMMSS)
Status Code	bin 4	Status code of service
Detail Code	bin 2	Detailed error code
Area Allocated to System	bin 32	The area that HULFT uses internally
Latest Identifier	char 34	Latest Identifier
Starting Identifier	char 34	Starting Identifier
Reserved	char 315	Reserved area

• Length per record: 511 bytes

Table App.1.12 Request Acknowledge Log file in Ver.6.3

Field Name	Size	Note
Service Name	char 8	Request Acknowledge service name
Host Name	char 68	Request source host name
Acknowledge Date	char 8	Date of Request Acknowledge (YYYYMMDD)
Acknowledge Time	char 6	Time of Request Acknowledge (HHMMSS)
Status Code	bin 4	Status code of service
Detail Code	bin 2	Detailed error code
Area Allocated to System	bin 32	The area that HULFT uses internally
Reserved	char 22	Reserved area

• Length per record: 150 bytes

Table App.1.13 Request Acknowledge Log file in Ver.6.1, Ver.6.0, and Ver.5.0

Field Name	Size	Note
Service Name	char 8	Request Acknowledge service name
Host Name	char 68	Request source host name
Acknowledge Date	char 8	Date of Request Acknowledge (YYYYMMDD)
Acknowledge Time	char 6	Time of Request Acknowledge (HHMMSS)
Status Code	bin 4	Status code of service
Detail Code	bin 2	Detailed error code
Reserved	char 54	Reserved area

•Length per record: 150 bytes

App.1.1.4 Job Execution Log File(hulexeclog*.dat) Format

[Remarks]

- In the '*' of file name, in the case of job log after send 's' is entered, and in the case of job log after receive 'r' is entered.
- When multiple jobs are registered with 1 Job ID, multiple records are output.

Table App.1.14 Job Execution Log file in Ver.7.0, Ver.6.3

Field Name	Size	Note
File ID	char 8	File ID
Host Name	char 68	Send destination (Send source) host name
Send and Receive Start Date	char 8	Send and receive start date (YYYYMMDD)
Send and Receive Start Time	char 6	Send and receive start time (HHMMSS)
Send and Receive End Time	char 6	Send and receive end time (HHMMSS)
Job Name	char 60	Name of the job to be executed
Job Start Date	char 8	Job start date (YYYYMMDD)
Job Start Time	char 6	Job start time (HHMMSS)
Job End Time	char 6	Job end time (HHMMSS)
Status Code	bin 2	Job completion status
Area Allocated to System	bin 4	The area that HULFT uses internally
Communication Protocol	char 1	H:HULFT
Area Allocated to System	bin 320	The area that HULFT uses internally
Reserved	char 8	Reserved area

- Length per record: 511 bytes

Table App.1.15 Job Execution Log file in Ver.6.1

Field Name	Size	Note
File ID	char 8	File ID
Host Name	char 68	Send destination (Send source) host name
Send and Receive Start Date	char 8	Send and receive start date (YYYYMMDD)
Send and Receive Start Time	char 6	Send and receive start time (HHMMSS)
Send and Receive End Time	char 6	Send and receive end time (HHMMSS)
Job Name	char 60	Name of the job to be executed
Job Start Date	char 8	Job start date (YYYYMMDD)
Job Start Time	char 6	Job start time (HHMMSS)
Job End Time	char 6	Job end time (HHMMSS)
Status Code	bin 2	Job completion status
Transfer Number	bin 4	Reserved area
Communication Protocol	char 1	H:HULFT
Reserved	char 72	Reserved area

- Length per record: 255 bytes

Table App.1.16 Job Execution Log file in Ver.6.0

Field Name	Size	Note
File ID	char 8	File ID
Host Name	char 68	Send destination (Send source) host name
Send and Receive Start Date	char 8	Send and receive start date (YYYYMMDD)
Send and Receive Start Time	char 6	Send and receive start time (HHMMSS)
Send and Receive End Time	char 6	Send and receive end time (HHMMSS)
Job Name	char 60	Name of executed job
Job Start Date	char 8	Job start date (YYYYMMDD)
Job Start Time	char 6	Job start time (HHMMSS)
Job End Time	char 6	Job end time (HHMMSS)
Status Code	bin 2	Job completion status
Transfer Number	bin 4	Reserved area

• Length per record: 182 bytes

Table App.1.17 Job Execution Log file in Ver.5.0

Field Name	Size	Note
File ID	char 8	File ID
Host Name	char 68	Send destination (Send source) host name
Send and Receive Start Date	char 8	Send and receive start date (YYYYMMDD)
Send and Receive Start Time	char 6	Send and receive start time (HHMMSS)
Send and Receive End Time	char 6	Send and receive end time (HHMMSS)
Job Name	char 60	Name of executed job
Job Start Date	bin 8	Job start date (YYYYMMDD)
Job Start Time	char 6	Job start time (HHMMSS)
Job End Time	char 6	Job end time (HHMMSS)
Status Code	bin 2	Job completion status

• Length per record: 178 bytes

App.1.2 Multiple Receive Information File Format

The units of the Size in the table are as follows:

- bin: binary
- char: character

A file consists of the following fields. The data length is fixed.
There is no delimiter for 1 field (Does not include line feed code).

Table App.1.18 Contents of Multiple Receive Information File (<file ID>.str)

Field Name	Size	Note
Host Name	char 68	Send destination (sender) host name
Receive Date	char 8	Receive start date (YYYYMMDD)
Receive Time	char 6	Receive start time (HHMMSS)
Data Start Position	bin 4	Data start position within the Receive file
Data End Position	bin 4	Data end position within the Receive file
Data Start Position	bin 8	Data start position within the Receive file
Data End Position	bin 8	Data end position within the Receive file

• Length per record: 106 bytes

[Remarks] When 0-byte data is received, the data start position and the data end position becomes the same value.

[Created path of multiple receive information files]
Created in the same path as the receive file.

[Timing of the multiple receive information file creation]
The Multiple Receive Information file is automatically created by HULFT.
When the Receive file does not exist, the Multiple Receive Information file is newly created.

Appendix 2

Code Conversion List

App.2.1 Conversion from EBCDIC

App.2.1.1 Conversion from EBCDIC Kana

EBCDIC Kana		EBCDIC												ASCII		UTF-8	
		Lowercase		ASCII		ASPEN		IBM Standard		IBM Standard Extension		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x20	SP	0x20
｡	0x41		0x40		0x40	｡	0x41		0x40	｡	0x42		0x41	｡	0xA1	｡	0xEFBDA1
｢	0x42		0x40		0x40	｢	0x42		0x40	｢	0x43	｢	0x42	｢	0xA2	｢	0xEFBDA2
｣	0x43		0x40		0x40	｣	0x43		0x40	｣	0x44	｣	0x43	｣	0xA3	｣	0xEFBDA3
、	0x44		0x40		0x40	、	0x44		0x40	、	0x45	、	0x44	、	0xA4	、	0xEFBDA4
・	0x45		0x40		0x40	・	0x45		0x40	・	0x46	・	0x45	・	0xA5	・	0xEFBDA5
ヲ	0x46		0x40		0x40	ヲ	0x46		0x40	ヲ	0x47	ヲ	0x46	ヲ	0xA6	ヲ	0xEFBDA6
ァ	0x47		0x40		0x40	ァ	0x47		0x40	ァ	0x48	ァ	0x47	ァ	0xA7	ァ	0xEFBDA7
ィ	0x48		0x40		0x40	ィ	0x48		0x40	ィ	0x49	ィ	0x48	ィ	0xA8	ィ	0xEFBDA8
ゥ	0x49		0x40		0x40	ゥ	0x49		0x40	ゥ	0x51	ゥ	0x49	ゥ	0xA9	ゥ	0xEFBDA9
£	0x4A	£	0x4A	[	0x4A	[	0x4A	[	0xBA	£	0xB1	[	0x4A	[	0x5B	[	0x5B
.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x2E	.	0x2E
<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x3C	<	0x3C
(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x28	(	0x28
+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x2B	+	0x2B
|	0x4F	|	0x4F	|	0x6A	|	0x6A	|	0x4F	|	0x4F	|	0x6A	|	0x7C	|	0x7C
&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x26	&	0x26
ｪ	0x51		0x40		0x40	ｪ	0x51		0x40	ｪ	0x52	ｪ	0x51	ｪ	0xAA	ｪ	0xEFBDAA
ｫ	0x52		0x40		0x40	ｫ	0x52		0x40	ｫ	0x53	ｫ	0x52	ｫ	0xAB	ｫ	0xEFBDAB
ｬ	0x53		0x40		0x40	ｬ	0x53		0x40	ｬ	0x54	ｬ	0x53	ｬ	0xAC	ｬ	0xEFBDAC
ｭ	0x54		0x40		0x40	ｭ	0x54		0x40	ｭ	0x55	ｭ	0x54	ｭ	0xAD	ｭ	0xEFBDAD
ｮ	0x55		0x40		0x40	ｮ	0x55		0x40	ｮ	0x56	ｮ	0x55	ｮ	0xAE	ｮ	0xEFBDAE
ｯ	0x56		0x40		0x40	ｯ	0x56		0x40	ｯ	0x57	ｯ	0x56	ｯ	0xAF	ｯ	0xEFBDAF
ｰ	0x58		0x40		0x40	ｰ	0x58		0x40	ｰ	0x58	ｰ	0x58	ｰ	0xB0	ｰ	0xEFBDB0
!	0x5A	!	0x5A	!	0x4F	!	0x4F	!	0x5A	!	0x5A	!	0x4F	!	0x21	!	0x21
¥	0x5B	¥	0x5B	\	0xE0	¥	0x5B	\	0xE0	¥	0xB2	¥	0x5B	¥	0x5C	¥	0x5C
*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x2A	*	0x2A
)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x29	)	0x29
;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x3B	;	0x3B
￢	0x5F	￢	0x5F	^	0x5F	^	0x5F	^	0xB0	^	0xB0	^	0x5F	^	0x5E	^	0x5E
-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x2D	-	0x2D
/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x2F	/	0x2F
｜	0x6A	｜	0x6A	｜	0x6A	｜	0x6A	｜	0x6A	｜	0x6A	｜	0x6A	｜	0x7C	｜	0x7C
,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x2C	,	0x2C
%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x25	%	0x25
_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x5F	_	0x5F
>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x3E	>	0x3E
?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x3F	?	0x3F
	0x79		0x79		0x79		0x79		0x79		0x79		0x79		0x60		0x60
:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x3A	:	0x3A
#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x23	#	0x23
@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x40	@	0x40
'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x27	'	0x27
=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x3D	=	0x3D
″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x22	″	0x22
ｱ	0x81		0x40		0x40	ｱ	0x81		0x40	ｱ	0x59	ｱ	0x81	ｱ	0xB1	ｱ	0xEFBDB1
ｲ	0x82		0x40		0x40	ｲ	0x82		0x40	ｲ	0x62	ｲ	0x82	ｲ	0xB2	ｲ	0xEFBDB2
ｳ	0x83		0x40		0x40	ｳ	0x83		0x40	ｳ	0x63	ｳ	0x83	ｳ	0xB3	ｳ	0xEFBDB3
ｴ	0x84		0x40		0x40	ｴ	0x84		0x40	ｴ	0x64	ｴ	0x84	ｴ	0xB4	ｴ	0xEFBDB4
ｵ	0x85		0x40		0x40	ｵ	0x85		0x40	ｵ	0x65	ｵ	0x85	ｵ	0xB5	ｵ	0xEFBDB5
ｶ	0x86		0x40		0x40	ｶ	0x86		0x40	ｶ	0x66	ｶ	0x86	ｶ	0xB6	ｶ	0xEFBDB6
ｷ	0x87		0x40		0x40	ｷ	0x87		0x40	ｷ	0x67	ｷ	0x87	ｷ	0xB7	ｷ	0xEFBDB7
ｸ	0x88		0x40		0x40	ｸ	0x88		0x40	ｸ	0x68	ｸ	0x88	ｸ	0xB8	ｸ	0xEFBDB8
ｹ	0x89		0x40		0x40	ｹ	0x89		0x40	ｹ	0x69	ｹ	0x89	ｹ	0xB9	ｹ	0xEFBDB9
ｺ	0x8A		0x40		0x40	ｺ	0x8A		0x40	ｺ	0x70	ｺ	0x8A	ｺ	0xBA	ｺ	0xEFBDBA
ｻ	0x8C		0x40		0x40	ｻ	0x8C		0x40	ｻ	0x71	ｻ	0x8C	ｻ	0xBB	ｻ	0xEFBDBB
ｼ	0x8D		0x40		0x40	ｼ	0x8D		0x40	ｼ	0x72	ｼ	0x8D	ｼ	0xBC	ｼ	0xEFBDBC
ｽ	0x8E		0x40		0x40	ｽ	0x8E		0x40	ｽ	0x73	ｽ	0x8E	ｽ	0xBD	ｽ	0xEFBDBD
ｾ	0x8F		0x40		0x40	ｾ	0x8F		0x40	ｾ	0x74	ｾ	0x8F	ｾ	0xBE	ｾ	0xEFBDBE
ｿ	0x90		0x40		0x40	ｿ	0x90		0x40	ｿ	0x75	ｿ	0x90	ｿ	0xBF	ｿ	0xEFBDBF
ﾀ	0x91		0x40		0x40	ﾀ	0x91		0x40	ﾀ	0x76	ﾀ	0x91	ﾀ	0xC0	ﾀ	0xEFBE80
ﾁ	0x92		0x40		0x40	ﾁ	0x92		0x40	ﾁ	0x77	ﾁ	0x92	ﾁ	0xC1	ﾁ	0xEFBE81
ﾂ	0x93		0x40		0x40	ﾂ	0x93		0x40	ﾂ	0x78	ﾂ	0x93	ﾂ	0xC2	ﾂ	0xEFBE82
ﾃ	0x94		0x40		0x40	ﾃ	0x94		0x40	ﾃ	0x8A	ﾃ	0x94	ﾃ	0xC3	ﾃ	0xEFBE83
ﾄ	0x95		0x40		0x40	ﾄ	0x95		0x40	ﾄ	0x8B	ﾄ	0x95	ﾄ	0xC4	ﾄ	0xEFBE84
ﾅ	0x96		0x40		0x40	ﾅ	0x96		0x40	ﾅ	0x8C	ﾅ	0x96	ﾅ	0xC5	ﾅ	0xEFBE85
ﾆ	0x97		0x40		0x40	ﾆ	0x97		0x40	ﾆ	0x8D	ﾆ	0x97	ﾆ	0xC6	ﾆ	0xEFBE86
ﾇ	0x98		0x40		0x40	ﾇ	0x98		0x40	ﾇ	0x8E	ﾇ	0x98	ﾇ	0xC7	ﾇ	0xEFBE87
ﾈ	0x99		0x40		0x40	ﾈ	0x99		0x40	ﾈ	0x8F	ﾈ	0x99	ﾈ	0xC8	ﾈ	0xEFBE88
ﾉ	0x9A		0x40		0x40	ﾉ	0x9A		0x40	ﾉ	0x9A	ﾉ	0x9A	ﾉ	0xC9	ﾉ	0xEFBE89
ﾊ	0x9D		0x40		0x40	ﾊ	0x9D		0x40	ﾊ	0x9B	ﾊ	0x9D	ﾊ	0xCA	ﾊ	0xEFBE8A

EBCDIC Kana		EBCDIC												ASCII		UTF-8	
		Lowercase		ASCII		ASPEN		IBM Standard		IBM Standard Extension		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
ヒ	0x9E		0x40		0x40	ヒ	0x9E		0x40	ヒ	0x9C	ヒ	0x9E	ヒ	0xCB	ヒ	0xEFBE8B
フ	0x9F		0x40		0x40	フ	0x9F		0x40	フ	0x9D	フ	0x9F	フ	0xCC	フ	0xEFBE8C
~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0x7E	~	0x7E
ヘ	0xA2		0x40		0x40	ヘ	0xA2		0x40	ヘ	0x9E	ヘ	0xA2	ヘ	0xCD	ヘ	0xEFBE8D
ホ	0xA3		0x40		0x40	ホ	0xA3		0x40	ホ	0x9F	ホ	0xA3	ホ	0xCE	ホ	0xEFBE8E
マ	0xA4		0x40		0x40	マ	0xA4		0x40	マ	0xAA	マ	0xA4	マ	0xCF	マ	0xEFBE8F
ミ	0xA5		0x40		0x40	ミ	0xA5		0x40	ミ	0xAB	ミ	0xA5	ミ	0xD0	ミ	0xEFBE90
ム	0xA6		0x40		0x40	ム	0xA6		0x40	ム	0xAC	ム	0xA6	ム	0xD1	ム	0xEFBE91
メ	0xA7		0x40		0x40	メ	0xA7		0x40	メ	0xAE	メ	0xA7	メ	0xD2	メ	0xEFBE92
モ	0xA8		0x40		0x40	モ	0xA8		0x40	モ	0xAF	モ	0xA8	モ	0xD3	モ	0xEFBE93
ヤ	0xA9		0x40		0x40	ヤ	0xA9		0x40	ヤ	0xB3	ヤ	0xA9	ヤ	0xD4	ヤ	0xEFBE94
ユ	0xAA		0x40		0x40	ユ	0xAA		0x40	ユ	0xB4	ユ	0xAA	ユ	0xD5	ユ	0xEFBE95
ヨ	0xAC		0x40		0x40	ヨ	0xAC		0x40	ヨ	0xB5	ヨ	0xAC	ヨ	0xD6	ヨ	0xEFBE96
ラ	0xAD		0x40		0x40	ラ	0xAD		0x40	ラ	0xB6	ラ	0xAD	ラ	0xD7	ラ	0xEFBE97
リ	0xAE		0x40		0x40	リ	0xAE		0x40	リ	0xB7	リ	0xAE	リ	0xD8	リ	0xEFBE98
ル	0xAF		0x40		0x40	ル	0xAF		0x40	ル	0xB8	ル	0xAF	ル	0xD9	ル	0xEFBE99
レ	0xBA		0x40		0x40	レ	0xBA		0x40	レ	0xB9	レ	0xBA	レ	0xDA	レ	0xEFBE9A
ロ	0xBB		0x40		0x40	ロ	0xBB		0x40	ロ	0xBA	ロ	0xBB	ロ	0xDB	ロ	0xEFBE9B
ワ	0xBC		0x40		0x40	ワ	0xBC		0x40	ワ	0xBB	ワ	0xBC	ワ	0xDC	ワ	0xEFBE9C
ン	0xBD		0x40		0x40	ン	0xBD		0x40	ン	0xBC	ン	0xBD	ン	0xDD	ン	0xEFBE9D
ﾞ	0xBE		0x40		0x40	ﾞ	0xBE		0x40	ﾞ	0xBE	ﾞ	0xBE	ﾞ	0xDE	ﾞ	0xEFBE9E
ﾟ	0xBF		0x40		0x40	ﾟ	0xBF		0x40	ﾟ	0xBF	ﾟ	0xBF	ﾟ	0xDF	ﾟ	0xEFBE9F
{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0x7B	{	0x7B
A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0x41	A	0x41
B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0x42	B	0x42
C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0x43	C	0x43
D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0x44	D	0x44
E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0x45	E	0x45
F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0x46	F	0x46
G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0x47	G	0x47
H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0x48	H	0x48
I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0x49	I	0x49
}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0x7D	}	0x7D
J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0x4A	J	0x4A
K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0x4B	K	0x4B
L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0x4C	L	0x4C
M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0x4D	M	0x4D
N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0x4E	N	0x4E
O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0x4F	O	0x4F
P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0x50	P	0x50
Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0x51	Q	0x51
R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0x52	R	0x52
$	0xE0	$	0xE0	$	0x5B	$	0xE0	$	0x5B	$	0x5B	$	0xE0	$	0x24	$	0x24
S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0x53	S	0x53
T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0x54	T	0x54
U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0x55	U	0x55
V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0x56	V	0x56
W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0x57	W	0x57
X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0x58	X	0x58
Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0x59	Y	0x59
Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0x5A	Z	0x5A
0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0x30	0	0x30
1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0x31	1	0x31
2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0x32	2	0x32
3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0x33	3	0x33
4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0x34	4	0x34
5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0x35	5	0x35
6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0x36	6	0x36
7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0x37	7	0x37
8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0x38	8	0x38
9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0x39	9	0x39

App.2.1.2 Conversion from EBCDIC Lowercase

EBCDIC Lowarcase		EBCDIC												ASCII		UTF-8	
		Kana		ASCII		ASPEN		IBM Standard		IBM Standard Extension		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x20	SP	0x20
£	0x4A	£	0x4A	[	0x4A	[	0x4A	[	0xBA	£	0xB1	[	0x4A	[	0x5B	[	0x5B
.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x2E	.	0x2E
<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x3C	<	0x3C
(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x28	(	0x28
+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x2B	+	0x2B
|	0x4F	|	0x4F	|	0x6A	|	0x6A	|	0x4F	|	0x4F	|	0x6A	|	0x7C	|	0x7C
&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x26	&	0x26
!	0x5A	!	0x5A	!	0x4F	!	0x4F	!	0x5A	!	0x5A	!	0x4F	!	0x21	!	0x21
¥	0x5B	¥	0x5B	\	0xE0	¥	0x5B	\	0xE0	¥	0xB2	¥	0x5B	¥	0x5C	¥	0x5C
*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x2A	*	0x2A
)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x29	)	0x29
;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x3B	;	0x3B
¬	0x5F	¬	0x5F	^	0x5F	^	0x5F	^	0xB0	^	0xB0	^	0x5F	^	0x5E	^	0x5E
-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x2D	-	0x2D
/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x2F	/	0x2F
|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x7C	|	0x7C
,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x2C	,	0x2C
%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x25	%	0x25
_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x5F	_	0x5F
>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x3E	>	0x3E
?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x3F	?	0x3F
`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x60	`	0x60
:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x3A	:	0x3A
#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x23	#	0x23
@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x40	@	0x40
'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x27	'	0x27
=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x3D	=	0x3D
"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x22	"	0x22
a	0x81	A	0xC1	a	0x81	a	0x59	a	0x81	a	0x81	a	0x57	a	0x61	a	0x61
b	0x82	B	0xC2	b	0x82	b	0x62	b	0x82	b	0x82	b	0x59	b	0x62	b	0x62
c	0x83	C	0xC3	c	0x83	c	0x63	c	0x83	c	0x83	c	0x62	c	0x63	c	0x63
d	0x84	D	0xC4	d	0x84	d	0x64	d	0x84	d	0x84	d	0x63	d	0x64	d	0x64
e	0x85	E	0xC5	e	0x85	e	0x65	e	0x85	e	0x85	e	0x64	e	0x65	e	0x65
f	0x86	F	0xC6	f	0x86	f	0x66	f	0x86	f	0x86	f	0x65	f	0x66	f	0x66
g	0x87	G	0xC7	g	0x87	g	0x67	g	0x87	g	0x87	g	0x66	g	0x67	g	0x67
h	0x88	H	0xC8	h	0x88	h	0x68	h	0x88	h	0x88	h	0x67	h	0x68	h	0x68
i	0x89	I	0xC9	i	0x89	i	0x69	i	0x89	i	0x89	i	0x68	i	0x69	i	0x69
j	0x91	J	0xD1	j	0x91	j	0x70	j	0x91	j	0x91	j	0x69	j	0x6A	j	0x6A
k	0x92	K	0xD2	k	0x92	k	0x71	k	0x92	k	0x92	k	0x70	k	0x6B	k	0x6B
l	0x93	L	0xD3	l	0x93	l	0x72	l	0x93	l	0x93	l	0x71	l	0x6C	l	0x6C
m	0x94	M	0xD4	m	0x94	m	0x73	m	0x94	m	0x94	m	0x72	m	0x6D	m	0x6D
n	0x95	N	0xD5	n	0x95	n	0x74	n	0x95	n	0x95	n	0x73	n	0x6E	n	0x6E
o	0x96	O	0xD6	o	0x96	o	0x75	o	0x96	o	0x96	o	0x74	o	0x6F	o	0x6F
p	0x97	P	0xD7	p	0x97	p	0x76	p	0x97	p	0x97	p	0x75	p	0x70	p	0x70
q	0x98	Q	0xD8	q	0x98	q	0x77	q	0x98	q	0x98	q	0x76	q	0x71	q	0x71
r	0x99	R	0xD9	r	0x99	r	0x78	r	0x99	r	0x99	r	0x77	r	0x72	r	0x72
~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0x7E	~	0x7E
s	0xA2	S	0xE2	s	0xA2	s	0x80	s	0xA2	s	0xA2	s	0x78	s	0x73	s	0x73
t	0xA3	T	0xE3	t	0xA3	t	0x8B	t	0xA3	t	0xA3	t	0x80	t	0x74	t	0x74
u	0xA4	U	0xE4	u	0xA4	u	0x9B	u	0xA4	u	0xA4	u	0x8B	u	0x75	u	0x75
v	0xA5	V	0xE5	v	0xA5	v	0x9C	v	0xA5	v	0xA5	v	0x9B	v	0x76	v	0x76
w	0xA6	W	0xE6	w	0xA6	w	0xA0	w	0xA6	w	0xA6	w	0x9C	w	0x77	w	0x77
x	0xA7	X	0xE7	x	0xA7	x	0xAB	x	0xA7	x	0xA7	x	0xA0	x	0x78	x	0x78
y	0xA8	Y	0xE8	y	0xA8	y	0xB0	y	0xA8	y	0xA8	y	0xAB	y	0x79	y	0x79
z	0xA9	Z	0xE9	z	0xA9	z	0xB1	z	0xA9	z	0xA9	z	0xB0	z	0x7A	z	0x7A
{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0x7B	{	0x7B
A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0x41	A	0x41
B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0x42	B	0x42
C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0x43	C	0x43
D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0x44	D	0x44
E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0x45	E	0x45
F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0x46	F	0x46
G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0x47	G	0x47
H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0x48	H	0x48
I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0x49	I	0x49
}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0x7D	}	0x7D
J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0x4A	J	0x4A
K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0x4B	K	0x4B
L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0x4C	L	0x4C
M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0x4D	M	0x4D
N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0x4E	N	0x4E
O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0x4F	O	0x4F
P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0x50	P	0x50
Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0x51	Q	0x51

EBCDIC Lowarcase		EBCDIC												ASCII		UTF-8	
		Kana		ASCII		ASPEN		IBM Standard		IBM Standard Extension		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0x52	R	0x52
$	0xE0	$	0xE0	$	0x5B	$	0xE0	$	0x5B	$	0x5B	$	0xE0	$	0x24	$	0x24
S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0x53	S	0x53
T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0x54	T	0x54
U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0x55	U	0x55
V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0x56	V	0x56
W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0x57	W	0x57
X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0x58	X	0x58
Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0x59	Y	0x59
Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0x5A	Z	0x5A
0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0x30	0	0x30
1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0x31	1	0x31
2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0x32	2	0x32
3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0x33	3	0x33
4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0x34	4	0x34
5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0x35	5	0x35
6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0x36	6	0x36
7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0x37	7	0x37
8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0x38	8	0x38
9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0x39	9	0x39

App.2.1.3 Conversion from EBCDIC ASCII

EBCDIC ASCII		EBCDIC												ASCII		UTF-8	
		Lowercase		Kana		ASPEN		IBM Standard		IBM Standard Extension		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x20	SP	0x20
[	0x4A	£	0x4A	£	0x4A	[	0x4A	[	0xBA	[	0xAD	[	0x4A	[	0x5B	[	0x5B
.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x2E	.	0x2E
<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x3C	<	0x3C
(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x28	(	0x28
+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x2B	+	0x2B
!	0x4F	!	0x5A	!	0x5A	!	0x4F	!	0x5A	!	0x5A	!	0x4F	!	0x21	!	0x21
&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x26	&	0x26
]	0x5A		0x40		0x40	]	0x5A	]	0xBB	]	0xBD	]	0x5A	]	0x5D	]	0x5D
$	0x5B	$	0xE0	$	0xE0	$	0xE0	$	0x5B	$	0x5B	$	0xE0	$	0x24	$	0x24
*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x2A	*	0x2A
)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x29	)	0x29
;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x3B	;	0x3B
~	0x5F	¬	0x5F	¬	0x5F	~	0x5F	~	0xB0	~	0xB0	~	0x5F	~	0x5E	~	0x5E
-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x2D	-	0x2D
/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x2F	/	0x2F
|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x7C	|	0x7C
,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x2C	,	0x2C
%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x25	%	0x25
_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x5F	_	0x5F
>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x3E	>	0x3E
?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x3F	?	0x3F
`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x60	`	0x60
:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x3A	:	0x3A
#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x23	#	0x23
@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x40	@	0x40
'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x27	'	0x27
=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x3D	=	0x3D
"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x22	"	0x22
a	0x81	a	0x81	A	0xC1	a	0x59	a	0x81	a	0x81	a	0x57	a	0x61	a	0x61
b	0x82	b	0x82	B	0xC2	b	0x62	b	0x82	b	0x82	b	0x59	b	0x62	b	0x62
c	0x83	c	0x83	C	0xC3	c	0x63	c	0x83	c	0x83	c	0x62	c	0x63	c	0x63
d	0x84	d	0x84	D	0xC4	d	0x64	d	0x84	d	0x84	d	0x63	d	0x64	d	0x64
e	0x85	e	0x85	E	0xC5	e	0x65	e	0x85	e	0x85	e	0x64	e	0x65	e	0x65
f	0x86	f	0x86	F	0xC6	f	0x66	f	0x86	f	0x86	f	0x65	f	0x66	f	0x66
g	0x87	g	0x87	G	0xC7	g	0x67	g	0x87	g	0x87	g	0x66	g	0x67	g	0x67
h	0x88	h	0x88	H	0xC8	h	0x68	h	0x88	h	0x88	h	0x67	h	0x68	h	0x68
i	0x89	i	0x89	I	0xC9	i	0x69	i	0x89	i	0x89	i	0x68	i	0x69	i	0x69
j	0x91	j	0x91	J	0xD1	j	0x70	j	0x91	j	0x91	j	0x69	j	0x6A	j	0x6A
k	0x92	k	0x92	K	0xD2	k	0x71	k	0x92	k	0x92	k	0x70	k	0x6B	k	0x6B
l	0x93	l	0x93	L	0xD3	l	0x72	l	0x93	l	0x93	l	0x71	l	0x6C	l	0x6C
m	0x94	m	0x94	M	0xD4	m	0x73	m	0x94	m	0x94	m	0x72	m	0x6D	m	0x6D
n	0x95	n	0x95	N	0xD5	n	0x74	n	0x95	n	0x95	n	0x73	n	0x6E	n	0x6E
o	0x96	o	0x96	O	0xD6	o	0x75	o	0x96	o	0x96	o	0x74	o	0x6F	o	0x6F
p	0x97	p	0x97	P	0xD7	p	0x76	p	0x97	p	0x97	p	0x75	p	0x70	p	0x70
q	0x98	q	0x98	Q	0xD8	q	0x77	q	0x98	q	0x98	q	0x76	q	0x71	q	0x71
r	0x99	r	0x99	R	0xD9	r	0x78	r	0x99	r	0x99	r	0x77	r	0x72	r	0x72
~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0x7E	~	0x7E
s	0xA2	s	0xA2	S	0xE2	s	0x80	s	0xA2	s	0xA2	s	0x78	s	0x73	s	0x73
t	0xA3	t	0xA3	T	0xE3	t	0x8B	t	0xA3	t	0xA3	t	0x80	t	0x74	t	0x74
u	0xA4	u	0xA4	U	0xE4	u	0x9B	u	0xA4	u	0xA4	u	0x8B	u	0x75	u	0x75
v	0xA5	v	0xA5	V	0xE5	v	0x9C	v	0xA5	v	0xA5	v	0x9B	v	0x76	v	0x76
w	0xA6	w	0xA6	W	0xE6	w	0xA0	w	0xA6	w	0xA6	w	0x9C	w	0x77	w	0x77
x	0xA7	x	0xA7	X	0xE7	x	0xAB	x	0xA7	x	0xA7	x	0xA0	x	0x78	x	0x78
y	0xA8	y	0xA8	Y	0xE8	y	0xB0	y	0xA8	y	0xA8	y	0xAB	y	0x79	y	0x79
z	0xA9	z	0xA9	Z	0xE9	z	0xB1	z	0xA9	z	0xA9	z	0xB0	z	0x7A	z	0x7A
{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0x7B	{	0x7B
A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0x41	A	0x41
B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0x42	B	0x42
C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0x43	C	0x43
D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0x44	D	0x44
E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0x45	E	0x45
F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0x46	F	0x46
G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0x47	G	0x47
H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0x48	H	0x48
I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0x49	I	0x49
}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0x7D	}	0x7D
J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0x4A	J	0x4A
K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0x4B	K	0x4B
L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0x4C	L	0x4C
M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0x4D	M	0x4D
N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0x4E	N	0x4E
O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0x4F	O	0x4F
P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0x50	P	0x50
Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0x51	Q	0x51

EBCDIC ASCII		EBCDIC												ASCII		UTF-8	
		Lowercase		Kana		ASPEN		IBM Standard		IBM Standard Extension		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0x52	R	0x52
\	0xE0	¥	0x5B	¥	0x5B	¥	0x5B	¥	0xE0	¥	0xE0	¥	0x5B	¥	0x5C	¥	0x5C
S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0x53	S	0x53
T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0x54	T	0x54
U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0x55	U	0x55
V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0x56	V	0x56
W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0x57	W	0x57
X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0x58	X	0x58
Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0x59	Y	0x59
Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0x5A	Z	0x5A
0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0x30	0	0x30
1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0x31	1	0x31
2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0x32	2	0x32
3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0x33	3	0x33
4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0x34	4	0x34
5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0x35	5	0x35
6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0x36	6	0x36
7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0x37	7	0x37
8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0x38	8	0x38
9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0x39	9	0x39

App.2.1.4 Conversion from EBCDIC ASPEN

EBCDIC ASPEN		EBCDIC												ASCII		UTF-8	
		Kana		Lowercase		ASCII		IBM Standard		IBM Standard Extension		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x20	SP	0x20
｡	0x41	｡	0x41		0x40		0x40		0x40	｡	0x42		0x41	｡	0xA1	｡	0xEFBDA1
｢	0x42	｢	0x42		0x40		0x40		0x40	｢	0x43	｢	0x42	｢	0xA2	｢	0xEFBDA2
｣	0x43	｣	0x43		0x40		0x40		0x40	｣	0x44	｣	0x43	｣	0xA3	｣	0xEFBDA3
、	0x44	、	0x44		0x40		0x40		0x40	、	0x45	、	0x44	、	0xA4	、	0xEFBDA4
・	0x45	・	0x45		0x40		0x40		0x40	・	0x46	・	0x45	・	0xA5	・	0xEFBDA5
ｦ	0x46	ｦ	0x46		0x40		0x40		0x40	ｦ	0x47	ｦ	0x46	ｦ	0xA6	ｦ	0xEFBDA6
ｧ	0x47	ｧ	0x47		0x40		0x40		0x40	ｧ	0x48	ｧ	0x47	ｧ	0xA7	ｧ	0xEFBDA7
ｨ	0x48	ｨ	0x48		0x40		0x40		0x40	ｨ	0x49	ｨ	0x48	ｨ	0xA8	ｨ	0xEFBDA8
ｩ	0x49	ｩ	0x49		0x40		0x40		0x40	ｩ	0x51	ｩ	0x49	ｩ	0xA9	ｩ	0xEFBDA9
｢	0x4A	£	0x4A	£	0x4A	｢	0x4A	｢	0xBA	｢	0xAD	｢	0x4A	｢	0x5B	｢	0x5B
.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x2E	.	0x2E
<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x3C	<	0x3C
(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x28	(	0x28
+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x2B	+	0x2B
!	0x4F	!	0x5A	!	0x5A	!	0x4F	!	0x5A	!	0x5A	!	0x4F	!	0x21	!	0x21
&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x26	&	0x26
ｪ	0x51	ｪ	0x51		0x40		0x40		0x40	ｪ	0x52	ｪ	0x51	ｪ	0xAA	ｪ	0xEFBDAA
ｫ	0x52	ｫ	0x52		0x40		0x40		0x40	ｫ	0x53	ｫ	0x52	ｫ	0xAB	ｫ	0xEFBDAB
ｬ	0x53	ｬ	0x53		0x40		0x40		0x40	ｬ	0x54	ｬ	0x53	ｬ	0xAC	ｬ	0xEFBDAC
ｭ	0x54	ｭ	0x54		0x40		0x40		0x40	ｭ	0x55	ｭ	0x54	ｭ	0xAD	ｭ	0xEFBDAD
ｮ	0x55	ｮ	0x55		0x40		0x40		0x40	ｮ	0x56	ｮ	0x55	ｮ	0xAE	ｮ	0xEFBDAE
ｯ	0x56	ｯ	0x56		0x40		0x40		0x40	ｯ	0x57	ｯ	0x56	ｯ	0xAF	ｯ	0xEFBDAF
	0x57		0x40		0x40		0x40		0x40		0x40		0x40		0xA0		0x20
ｰ	0x58	ｰ	0x58		0x40		0x40		0x40	ｰ	0x58	ｰ	0x58	ｰ	0xB0	ｰ	0xEFBDB0
a	0x59	A	0xC1	a	0x81	a	0x81	a	0x81	a	0x81	a	0x81	a	0x57	a	0x61	a	0x61
｣	0x5A		0x40		0x40	｣	0x5A	｣	0xBB	｣	0xBD	｣	0x5A	｣	0x5D	｣	0x5D
¥	0x5B	¥	0x5B	¥	0x5B	¥	0xE0	¥	0xE0	¥	0xB2	¥	0x5B	¥	0x5C	¥	0x5C
*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x2A	*	0x2A
)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x29	)	0x29
;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x3B	;	0x3B
^	0x5F	¬	0x5F	¬	0x5F	^	0x5F	^	0xB0	^	0xB0	^	0x5F	^	0x5E	^	0x5E
-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x2D	-	0x2D
/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x2F	/	0x2F
b	0x62	B	0xC2	b	0x82	b	0x82	b	0x82	b	0x82	b	0x59	b	0x62	b	0x62
c	0x63	C	0xC3	c	0x83	c	0x83	c	0x83	c	0x83	c	0x62	c	0x63	c	0x63
d	0x64	D	0xC4	d	0x84	d	0x84	d	0x84	d	0x84	d	0x63	d	0x64	d	0x64
e	0x65	E	0xC5	e	0x85	e	0x85	e	0x85	e	0x85	e	0x64	e	0x65	e	0x65
f	0x66	F	0xC6	f	0x86	f	0x86	f	0x86	f	0x86	f	0x65	f	0x66	f	0x66
g	0x67	G	0xC7	g	0x87	g	0x87	g	0x87	g	0x87	g	0x66	g	0x67	g	0x67
h	0x68	H	0xC8	h	0x88	h	0x88	h	0x88	h	0x88	h	0x67	h	0x68	h	0x68
i	0x69	I	0xC9	i	0x89	i	0x89	i	0x89	i	0x89	i	0x68	i	0x69	i	0x69
|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x6A	|	0x7C	|	0x7C
,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x2C	,	0x2C
%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x25	%	0x25
_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x5F	_	0x5F
>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x3E	>	0x3E
?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x3F	?	0x3F
j	0x70	J	0xD1	j	0x91	j	0x91	j	0x91	j	0x91	j	0x69	j	0x6A	j	0x6A
k	0x71	K	0xD2	k	0x92	k	0x92	k	0x92	k	0x92	k	0x70	k	0x6B	k	0x6B
l	0x72	L	0xD3	l	0x93	l	0x93	l	0x93	l	0x93	l	0x71	l	0x6C	l	0x6C
m	0x73	M	0xD4	m	0x94	m	0x94	m	0x94	m	0x94	m	0x72	m	0x6D	m	0x6D
n	0x74	N	0xD5	n	0x95	n	0x95	n	0x95	n	0x95	n	0x73	n	0x6E	n	0x6E
o	0x75	O	0xD6	o	0x96	o	0x96	o	0x96	o	0x96	o	0x74	o	0x6F	o	0x6F
p	0x76	P	0xD7	p	0x97	p	0x97	p	0x97	p	0x97	p	0x75	p	0x70	p	0x70
q	0x77	Q	0xD8	q	0x98	q	0x98	q	0x98	q	0x98	q	0x76	q	0x71	q	0x71
r	0x78	R	0xD9	r	0x99	r	0x99	r	0x99	r	0x99	r	0x77	r	0x72	r	0x72
~	0x79	~	0x79	~	0x79	~	0x79	~	0x79	~	0x79	~	0x79	~	0x60	~	0x60
:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x3A	:	0x3A
#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x23	#	0x23
@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x40	@	0x40
'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x27	'	0x27
=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x3D	=	0x3D
″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x22	″	0x22
s	0x80	S	0xE2	s	0xA2	s	0xA2	s	0xA2	s	0xA2	s	0xA2	s	0x78	s	0x73	s	0x73
ｱ	0x81	ｱ	0x81		0x40		0x40		0x40	ｱ	0x59	ｱ	0x81	ｱ	0xB1	ｱ	0xEFBDB1
ｲ	0x82	ｲ	0x82		0x40		0x40		0x40	ｲ	0x62	ｲ	0x82	ｲ	0xB2	ｲ	0xEFBDB2
ｳ	0x83	ｳ	0x83		0x40		0x40		0x40	ｳ	0x63	ｳ	0x83	ｳ	0xB3	ｳ	0xEFBDB3
ｴ	0x84	ｴ	0x84		0x40		0x40		0x40	ｴ	0x64	ｴ	0x84	ｴ	0xB4	ｴ	0xEFBDB4
ｵ	0x85	ｵ	0x85		0x40		0x40		0x40	ｵ	0x65	ｵ	0x85	ｵ	0xB5	ｵ	0xEFBDB5
ｶ	0x86	ｶ	0x86		0x40		0x40		0x40	ｶ	0x66	ｶ	0x86	ｶ	0xB6	ｶ	0xEFBDB6
ｷ	0x87	ｷ	0x87		0x40		0x40		0x40	ｷ	0x67	ｷ	0x87	ｷ	0xB7	ｷ	0xEFBDB7
ｸ	0x88	ｸ	0x88		0x40		0x40		0x40	ｸ	0x68	ｸ	0x88	ｸ	0xB8	ｸ	0xEFBDB8
ｹ	0x89	ｹ	0x89		0x40		0x40		0x40	ｹ	0x69	ｹ	0x89	ｹ	0xB9	ｹ	0xEFBDB9
ｺ	0x8A	ｺ	0x8A		0x40		0x40		0x40	ｺ	0x70	ｺ	0x8A	ｺ	0xBA	ｺ	0xEFBDBA
t	0x8B	T	0xE3	t	0xA3	t	0xA3	t	0xA3	t	0xA3	t	0x80	t	0x74	t	0x74
ｻ	0x8C	ｻ	0x8C		0x40		0x40		0x40	ｻ	0x71	ｻ	0x8C	ｻ	0xBB	ｻ	0xEFBDBB
ｼ	0x8D	ｼ	0x8D		0x40		0x40		0x40	ｼ	0x72	ｼ	0x8D	ｼ	0xBC	ｼ	0xEFBDBC
ｽ	0x8E	ｽ	0x8E		0x40		0x40		0x40	ｽ	0x73	ｽ	0x8E	ｽ	0xBD	ｽ	0xEFBDBD

EBCDIC ASPEN		EBCDIC												ASCII		UTF-8	
		Kana		Lowercase		ASCII		IBM Standard		IBM Standard Extension		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
セ	0x8F	セ	0x8F		0x40		0x40		0x40	セ	0x74	セ	0x8F	セ	0xBE	セ	0xEFBDBE
ソ	0x90	ソ	0x90		0x40		0x40		0x40	ソ	0x75	ソ	0x90	ソ	0xBF	ソ	0xEFBDBF
タ	0x91	タ	0x91		0x40		0x40		0x40	タ	0x76	タ	0x91	タ	0xC0	タ	0xEFBE80
チ	0x92	チ	0x92		0x40		0x40		0x40	チ	0x77	チ	0x92	チ	0xC1	チ	0xEFBE81
ツ	0x93	ツ	0x93		0x40		0x40		0x40	ツ	0x78	ツ	0x93	ツ	0xC2	ツ	0xEFBE82
テ	0x94	テ	0x94		0x40		0x40		0x40	テ	0x8A	テ	0x94	テ	0xC3	テ	0xEFBE83
ト	0x95	ト	0x95		0x40		0x40		0x40	ト	0x8B	ト	0x95	ト	0xC4	ト	0xEFBE84
ナ	0x96	ナ	0x96		0x40		0x40		0x40	ナ	0x8C	ナ	0x96	ナ	0xC5	ナ	0xEFBE85
ニ	0x97	ニ	0x97		0x40		0x40		0x40	ニ	0x8D	ニ	0x97	ニ	0xC6	ニ	0xEFBE86
ヌ	0x98	ヌ	0x98		0x40		0x40		0x40	ヌ	0x8E	ヌ	0x98	ヌ	0xC7	ヌ	0xEFBE87
ネ	0x99	ネ	0x99		0x40		0x40		0x40	ネ	0x8F	ネ	0x99	ネ	0xC8	ネ	0xEFBE88
ノ	0x9A	ノ	0x9A		0x40		0x40		0x40	ノ	0x9A	ノ	0x9A	ノ	0xC9	ノ	0xEFBE89
u	0x9B	U	0xE4	u	0xA4	u	0xA4	u	0xA4	u	0xA4	u	0x8B	u	0x75	u	0x75
v	0x9C	V	0xE5	v	0xA5	v	0xA5	v	0xA5	v	0xA5	v	0x9B	v	0x76	v	0x76
ハ	0x9D	ハ	0x9D		0x40		0x40		0x40	ハ	0x9B	ハ	0x9D	ハ	0xCA	ハ	0xEFBE8A
ヒ	0x9E	ヒ	0x9E		0x40		0x40		0x40	ヒ	0x9C	ヒ	0x9E	ヒ	0xCB	ヒ	0xEFBE8B
フ	0x9F	フ	0x9F		0x40		0x40		0x40	フ	0x9D	フ	0x9F	フ	0xCC	フ	0xEFBE8C
w	0xA0	W	0xE6	w	0xA6	w	0xA6	w	0xA6	w	0xA6	w	0x9C	w	0x77	w	0x77
~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0x7E	~	0x7E
ヘ	0xA2	ヘ	0xA2		0x40		0x40		0x40	ヘ	0x9E	ヘ	0xA2	ヘ	0xCD	ヘ	0xEFBE8D
ホ	0xA3	ホ	0xA3		0x40		0x40		0x40	ホ	0x9F	ホ	0xA3	ホ	0xCE	ホ	0xEFBE8E
マ	0xA4	マ	0xA4		0x40		0x40		0x40	マ	0xAA	マ	0xA4	マ	0xCF	マ	0xEFBE8F
ミ	0xA5	ミ	0xA5		0x40		0x40		0x40	ミ	0xAB	ミ	0xA5	ミ	0xD0	ミ	0xEFBE90
ム	0xA6	ム	0xA6		0x40		0x40		0x40	ム	0xAC	ム	0xA6	ム	0xD1	ム	0xEFBE91
メ	0xA7	メ	0xA7		0x40		0x40		0x40	メ	0xAE	メ	0xA7	メ	0xD2	メ	0xEFBE92
モ	0xA8	モ	0xA8		0x40		0x40		0x40	モ	0xAF	モ	0xA8	モ	0xD3	モ	0xEFBE93
ヤ	0xA9	ヤ	0xA9		0x40		0x40		0x40	ヤ	0xB3	ヤ	0xA9	ヤ	0xD4	ヤ	0xEFBE94
ユ	0xAA	ユ	0xAA		0x40		0x40		0x40	ユ	0xB4	ユ	0xAA	ユ	0xD5	ユ	0xEFBE95
x	0xAB	X	0xE7	x	0xA7	x	0xA7	x	0xA7	x	0xA7	x	0xA0	x	0x78	x	0x78
ヨ	0xAC	ヨ	0xAC		0x40		0x40		0x40	ヨ	0xB5	ヨ	0xAC	ヨ	0xD6	ヨ	0xEFBE96
ラ	0xAD	ラ	0xAD		0x40		0x40		0x40	ラ	0xB6	ラ	0xAD	ラ	0xD7	ラ	0xEFBE97
リ	0xAE	リ	0xAE		0x40		0x40		0x40	リ	0xB7	リ	0xAE	リ	0xD8	リ	0xEFBE98
ル	0xAF	ル	0xAF		0x40		0x40		0x40	ル	0xB8	ル	0xAF	ル	0xD9	ル	0xEFBE99
y	0xB0	Y	0xE8	y	0xA8	y	0xA8	y	0xA8	y	0xA8	y	0xAB	y	0x79	y	0x79
z	0xB1	Z	0xE9	z	0xA9	z	0xA9	z	0xA9	z	0xA9	z	0xB0	z	0x7A	z	0x7A
レ	0xBA	レ	0xBA		0x40		0x40		0x40	レ	0xB9	レ	0xBA	レ	0xDA	レ	0xEFBE9A
ロ	0xBB	ロ	0xBB		0x40		0x40		0x40	ロ	0xBA	ロ	0xBB	ロ	0xDB	ロ	0xEFBE9B
ワ	0xBC	ワ	0xBC		0x40		0x40		0x40	ワ	0xBB	ワ	0xBC	ワ	0xDC	ワ	0xEFBE9C
ン	0xBD	ン	0xBD		0x40		0x40		0x40	ン	0xBC	ン	0xBD	ン	0xDD	ン	0xEFBE9D
゛	0xBE	゛	0xBE		0x40		0x40		0x40	゛	0xBE	゛	0xBE	゛	0xDE	゛	0xEFBE9E
゜	0xBF	゜	0xBF		0x40		0x40		0x40	゜	0xBF	゜	0xBF	゜	0xDF	゜	0xEFBE9F
{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0x7B	{	0x7B
A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0x41	A	0x41
B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0x42	B	0x42
C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0x43	C	0x43
D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0x44	D	0x44
E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0x45	E	0x45
F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0x46	F	0x46
G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0x47	G	0x47
H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0x48	H	0x48
I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0x49	I	0x49
}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0x7D	}	0x7D
J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0x4A	J	0x4A
K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0x4B	K	0x4B
L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0x4C	L	0x4C
M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0x4D	M	0x4D
N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0x4E	N	0x4E
O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0x4F	O	0x4F
P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0x50	P	0x50
Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0x51	Q	0x51
R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0x52	R	0x52
$	0xE0	$	0xE0	$	0xE0	$	0x5B	$	0x5B	$	0x5B	$	0xE0	$	0x24	$	0x24
S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0x53	S	0x53
T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0x54	T	0x54
U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0x55	U	0x55
V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0x56	V	0x56
W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0x57	W	0x57
X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0x58	X	0x58
Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0x59	Y	0x59
Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0x5A	Z	0x5A
0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0x30	0	0x30
1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0x31	1	0x31
2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0x32	2	0x32
3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0x33	3	0x33
4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0x34	4	0x34
5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0x35	5	0x35
6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0x36	6	0x36
7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0x37	7	0x37
8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0x38	8	0x38
9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0x39	9	0x39

App.2.1.5 Conversion from IBM Standard

EBCDIC IBM Standard		EBCDIC												ASCII		UTF-8	
		Kana		Lowercase		ASCII		ASPEN		IBM Standard Extension		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x20	SP	0x20
.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x2E	.	0x2E
<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x3C	<	0x3C
(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x28	(	0x28
+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x2B	+	0x2B
|	0x4F	|	0x4F	|	0x4F	|	0x6A	|	0x4F	|	0x6A	|	0x7C	|	0x7C
&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x26	&	0x26
!	0x5A	!	0x5A	!	0x5A	!	0x4F	!	0x4F	!	0x5A	!	0x4F	!	0x21	!	0x21
$	0x5B	$	0xE0	$	0xE0	$	0x5B	$	0xE0	$	0x5B	$	0xE0	$	0x24	$	0x24
*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x2A	*	0x2A
)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x29	)	0x29
;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x3B	;	0x3B
-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x2D	-	0x2D
/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x2F	/	0x2F
¦	0x6A	¦	0x6A	¦	0x6A	¦	0x6A	¦	0x6A	¦	0x6A	¦	0x6A	¦	0x7C	¦	0x7C
,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x2C	,	0x2C
%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x25	%	0x25
_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x5F	_	0x5F
>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x3E	>	0x3E
?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x3F	?	0x3F
`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x60	`	0x60
:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x3A	:	0x3A
#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x23	#	0x23
@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x40	@	0x40
'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x27	'	0x27
=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x3D	=	0x3D
"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x22	"	0x22
a	0x81	A	0xC1	a	0x81	a	0x81	a	0x59	a	0x81	a	0x57	a	0x61	a	0x61
b	0x82	B	0xC2	b	0x82	b	0x82	b	0x62	b	0x82	b	0x59	b	0x62	b	0x62
c	0x83	C	0xC3	c	0x83	c	0x83	c	0x63	c	0x83	c	0x62	c	0x63	c	0x63
d	0x84	D	0xC4	d	0x84	d	0x84	d	0x64	d	0x84	d	0x63	d	0x64	d	0x64
e	0x85	E	0xC5	e	0x85	e	0x85	e	0x65	e	0x85	e	0x64	e	0x65	e	0x65
f	0x86	F	0xC6	f	0x86	f	0x86	f	0x66	f	0x86	f	0x65	f	0x66	f	0x66
g	0x87	G	0xC7	g	0x87	g	0x87	g	0x67	g	0x87	g	0x66	g	0x67	g	0x67
h	0x88	H	0xC8	h	0x88	h	0x88	h	0x68	h	0x88	h	0x67	h	0x68	h	0x68
i	0x89	I	0xC9	i	0x89	i	0x89	i	0x69	i	0x89	i	0x68	i	0x69	i	0x69
j	0x91	J	0xD1	j	0x91	j	0x91	j	0x70	j	0x91	j	0x69	j	0x6A	j	0x6A
k	0x92	K	0xD2	k	0x92	k	0x92	k	0x71	k	0x92	k	0x70	k	0x6B	k	0x6B
l	0x93	L	0xD3	l	0x93	l	0x93	l	0x72	l	0x93	l	0x71	l	0x6C	l	0x6C
m	0x94	M	0xD4	m	0x94	m	0x94	m	0x73	m	0x94	m	0x72	m	0x6D	m	0x6D
n	0x95	N	0xD5	n	0x95	n	0x95	n	0x74	n	0x95	n	0x73	n	0x6E	n	0x6E
o	0x96	O	0xD6	o	0x96	o	0x96	o	0x75	o	0x96	o	0x74	o	0x6F	o	0x6F
p	0x97	P	0xD7	p	0x97	p	0x97	p	0x76	p	0x97	p	0x75	p	0x70	p	0x70
q	0x98	Q	0xD8	q	0x98	q	0x98	q	0x77	q	0x98	q	0x76	q	0x71	q	0x71
r	0x99	R	0xD9	r	0x99	r	0x99	r	0x78	r	0x99	r	0x77	r	0x72	r	0x72
~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0x7E	~	0x7E
s	0xA2	S	0xE2	s	0xA2	s	0xA2	s	0x80	s	0xA2	s	0x78	s	0x73	s	0x73
t	0xA3	T	0xE3	t	0xA3	t	0xA3	t	0x8B	t	0xA3	t	0x80	t	0x74	t	0x74
u	0xA4	U	0xE4	u	0xA4	u	0xA4	u	0x9B	u	0xA4	u	0x8B	u	0x75	u	0x75
v	0xA5	V	0xE5	v	0xA5	v	0xA5	v	0x9C	v	0xA5	v	0x9B	v	0x76	v	0x76
w	0xA6	W	0xE6	w	0xA6	w	0xA6	w	0xA0	w	0xA6	w	0x9C	w	0x77	w	0x77
x	0xA7	X	0xE7	x	0xA7	x	0xA7	x	0xAB	x	0xA7	x	0xA0	x	0x78	x	0x78
y	0xA8	Y	0xE8	y	0xA8	y	0xA8	y	0xB0	y	0xA8	y	0xAB	y	0x79	y	0x79
z	0xA9	Z	0xE9	z	0xA9	z	0xA9	z	0xB1	z	0xA9	z	0xB0	z	0x7A	z	0x7A
^	0xB0	¬	0x5F	¬	0x5F	^	0x5F	^	0x5F	^	0xB0	^	0x5F	^	0x5E	^	0x5E
[	0xBA	£	0x4A	£	0x4A	[	0x4A	[	0x4A	[	0xAD	[	0x4A	[	0x5B	[	0x5B
]	0xBB		0x40		0x40	]	0x5A	]	0x5A	]	0xBD	]	0x5A	]	0x5D	]	0x5D
{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0x7B	{	0x7B
A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0x41	A	0x41
B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0x42	B	0x42
C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0x43	C	0x43
D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0x44	D	0x44
E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0x45	E	0x45
F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0x46	F	0x46
G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0x47	G	0x47
H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0x48	H	0x48
I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0x49	I	0x49
}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0x7D	}	0x7D
J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0x4A	J	0x4A
K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0x4B	K	0x4B
L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0x4C	L	0x4C
M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0x4D	M	0x4D
N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0x4E	N	0x4E
O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0x4F	O	0x4F
P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0x50	P	0x50

EBCDIC IBM Standard		EBCDIC												ASCII		UTF-8	
		Kana		Lowercase		ASCII		ASPEN		IBM Standard Extension		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0x51	Q	0x51
R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0x52	R	0x52
\	0xE0	¥	0x5B	¥	0x5B	\	0xE0	¥	0x5B	\	0xE0	¥	0x5B	¥	0x5C	¥	0x5C
S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0x53	S	0x53
T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0x54	T	0x54
U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0x55	U	0x55
V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0x56	V	0x56
W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	X	0x57	W	0x57
X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0x58	X	0x58
Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0x59	Y	0x59
Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0x5A	Z	0x5A
0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0x30	0	0x30
1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0x31	1	0x31
2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0x32	2	0x32
3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0x33	3	0x33
4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0x34	4	0x34
5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0x35	5	0x35
6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0x36	6	0x36
7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0x37	7	0x37
8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0x38	8	0x38
9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0x39	9	0x39

App.2.1.6 Conversion from IBM Standard Extension

EBCDIC IBM Standard Extension		EBCDIC												ASCII		UTF-8	
		Kana		Lowercase		ASCII		ASPEN		IBM Standard		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x20	SP	0x20
｡	0x42	｡	0x41		0x40		0x40	｡	0x41		0x40	｡	0x41	｡	0xA1	｡	0xEFBDA1
「	0x43	「	0x42		0x40		0x40	「	0x42		0x40	「	0x42	「	0xA2	「	0xEFBDA2
」	0x44	」	0x43		0x40		0x40	」	0x43		0x40	」	0x43	」	0xA3	」	0xEFBDA3
、	0x45	、	0x44		0x40		0x40	、	0x44		0x40	、	0x44	、	0xA4	、	0xEFBDA4
・	0x46	・	0x45		0x40		0x40	・	0x45		0x40	・	0x45	・	0xA5	・	0xEFBDA5
ヲ	0x47	ヲ	0x46		0x40		0x40	ヲ	0x46		0x40	ヲ	0x46	ヲ	0xA6	ヲ	0xEFBDA6
ァ	0x48	ァ	0x47		0x40		0x40	ァ	0x47		0x40	ァ	0x47	ァ	0xA7	ァ	0xEFBDA7
ィ	0x49	ィ	0x48		0x40		0x40	ィ	0x48		0x40	ィ	0x48	ィ	0xA8	ィ	0xEFBDA8
.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x2E	.	0x2E
<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x3C	<	0x3C
(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x28	(	0x28
+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x2B	+	0x2B
|	0x4F	|	0x4F	|	0x4F	|	0x6A	|	0x6A	|	0x4F	|	0x6A	|	0x7C	|	0x7C
&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x26	&	0x26
ｳ	0x51	ｳ	0x49		0x40		0x40	ｳ	0x49		0x40	ｳ	0x49	ｳ	0xA9	ｳ	0xEFBDA9
ｴ	0x52	ｴ	0x51		0x40		0x40	ｴ	0x51		0x40	ｴ	0x51	ｴ	0xAA	ｴ	0xEFBDAA
ｵ	0x53	ｵ	0x52		0x40		0x40	ｵ	0x52		0x40	ｵ	0x52	ｵ	0xAB	ｵ	0xEFBDAB
ｶ	0x54	ｶ	0x53		0x40		0x40	ｶ	0x53		0x40	ｶ	0x53	ｶ	0xAC	ｶ	0xEFBDAC
ｭ	0x55	ｭ	0x54		0x40		0x40	ｭ	0x54		0x40	ｭ	0x54	ｭ	0xAD	ｭ	0xEFBDAD
ｷ	0x56	ｷ	0x55		0x40		0x40	ｷ	0x55		0x40	ｷ	0x55	ｷ	0xAE	ｷ	0xEFBDAE
ｸ	0x57	ｸ	0x56		0x40		0x40	ｸ	0x56		0x40	ｸ	0x56	ｸ	0xAF	ｸ	0xEFBDAF
ｰ	0x58	ｰ	0x58		0x40		0x40	ｰ	0x58		0x40	ｰ	0x58	ｰ	0xB0	ｰ	0xEFBDB0
ｱ	0x59	ｱ	0x81		0x40		0x40	ｱ	0x81		0x40	ｱ	0x81	ｱ	0xB1	ｱ	0xEFBDB1
!	0x5A	!	0x5A	!	0x5A	!	0x4F	!	0x4F	!	0x5A	!	0x4F	!	0x21	!	0x21
$	0x5B	$	0xE0	$	0xE0	$	0x5B	$	0xE0	$	0x5B	$	0xE0	$	0x24	$	0x24
*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x2A	*	0x2A
)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x29	)	0x29
;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x3B	;	0x3B
−	0x60	−	0x60	−	0x60	−	0x60	−	0x60	−	0x60	−	0x60	−	0x2D	−	0x2D
/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x2F	/	0x2F
ｲ	0x62	ｲ	0x82		0x40		0x40	ｲ	0x82		0x40	ｲ	0x82	ｲ	0xB2	ｲ	0xEFBDB2
ｳ	0x63	ｳ	0x83		0x40		0x40	ｳ	0x83		0x40	ｳ	0x83	ｳ	0xB3	ｳ	0xEFBDB3
ｴ	0x64	ｴ	0x84		0x40		0x40	ｴ	0x84		0x40	ｴ	0x84	ｴ	0xB4	ｴ	0xEFBDB4
ｵ	0x65	ｵ	0x85		0x40		0x40	ｵ	0x85		0x40	ｵ	0x85	ｵ	0xB5	ｵ	0xEFBDB5
ｶ	0x66	ｶ	0x86		0x40		0x40	ｶ	0x86		0x40	ｶ	0x86	ｶ	0xB6	ｶ	0xEFBDB6
ｷ	0x67	ｷ	0x87		0x40		0x40	ｷ	0x87		0x40	ｷ	0x87	ｷ	0xB7	ｷ	0xEFBDB7
ｸ	0x68	ｸ	0x88		0x40		0x40	ｸ	0x88		0x40	ｸ	0x88	ｸ	0xB8	ｸ	0xEFBDB8
ｹ	0x69	ｹ	0x89		0x40		0x40	ｹ	0x89		0x40	ｹ	0x89	ｹ	0xB9	ｹ	0xEFBDB9
¦	0x6A	¦	0x6A	¦	0x6A	¦	0x6A	¦	0x6A	¦	0x6A	¦	0x6A				
,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x2C	,	0x2C
%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x25	%	0x25
_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x5F	_	0x5F
>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x3E	>	0x3E
?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x3F	?	0x3F
ｺ	0x70	ｺ	0x8A		0x40		0x40	ｺ	0x8A		0x40	ｺ	0x8A	ｺ	0xBA	ｺ	0xEFBDBA
ｻ	0x71	ｻ	0x8C		0x40		0x40	ｻ	0x8C		0x40	ｻ	0x8C	ｻ	0xBB	ｻ	0xEFBDBB
ｼ	0x72	ｼ	0x8D		0x40		0x40	ｼ	0x8D		0x40	ｼ	0x8D	ｼ	0xBC	ｼ	0xEFBDBC
ｽ	0x73	ｽ	0x8E		0x40		0x40	ｽ	0x8E		0x40	ｽ	0x8E	ｽ	0xBD	ｽ	0xEFBDBD
ｾ	0x74	ｾ	0x8F		0x40		0x40	ｾ	0x8F		0x40	ｾ	0x8F	ｾ	0xBE	ｾ	0xEFBDBE
ｿ	0x75	ｿ	0x90		0x40		0x40	ｿ	0x90		0x40	ｿ	0x90	ｿ	0xBF	ｿ	0xEFBDBF
ﾀ	0x76	ﾀ	0x91		0x40		0x40	ﾀ	0x91		0x40	ﾀ	0x91	ﾀ	0xC0	ﾀ	0xEFBE80
ﾁ	0x77	ﾁ	0x92		0x40		0x40	ﾁ	0x92		0x40	ﾁ	0x92	ﾁ	0xC1	ﾁ	0xEFBE81
ﾂ	0x78	ﾂ	0x93		0x40		0x40	ﾂ	0x93		0x40	ﾂ	0x93	ﾂ	0xC2	ﾂ	0xEFBE82
`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x60	`	0x60
:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x3A	:	0x3A
#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x23	#	0x23
@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x40	@	0x40
'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x27	'	0x27
=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x3D	=	0x3D
″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x22	″	0x22
a	0x81	A	0xC1	a	0x81	a	0x81	a	0x59	a	0x81	a	0x57	a	0x61	a	0x61
b	0x82	B	0xC2	b	0x82	b	0x82	b	0x62	b	0x82	b	0x59	b	0x62	b	0x62
c	0x83	C	0xC3	c	0x83	c	0x83	c	0x63	c	0x83	c	0x62	c	0x63	c	0x63
d	0x84	D	0xC4	d	0x84	d	0x84	d	0x64	d	0x84	d	0x63	d	0x64	d	0x64
e	0x85	E	0xC5	e	0x85	e	0x85	e	0x65	e	0x85	e	0x64	e	0x65	e	0x65
f	0x86	F	0xC6	f	0x86	f	0x86	f	0x66	f	0x86	f	0x65	f	0x66	f	0x66
g	0x87	G	0xC7	g	0x87	g	0x87	g	0x67	g	0x87	g	0x66	g	0x67	g	0x67
h	0x88	H	0xC8	h	0x88	h	0x88	h	0x68	h	0x88	h	0x67	h	0x68	h	0x68
i	0x89	I	0xC9	i	0x89	i	0x89	i	0x69	i	0x89	i	0x68	i	0x69	i	0x69
ﾃ	0x8A	ﾃ	0x94		0x40		0x40	ﾃ	0x94		0x40	ﾃ	0x94	ﾃ	0xC3	ﾃ	0xEFBE83
ﾄ	0x8B	ﾄ	0x95		0x40		0x40	ﾄ	0x95		0x40	ﾄ	0x95	ﾄ	0xC4	ﾄ	0xEFBE84
ﾅ	0x8C	ﾅ	0x96		0x40		0x40	ﾅ	0x96		0x40	ﾅ	0x96	ﾅ	0xC5	ﾅ	0xEFBE85
ﾆ	0x8D	ﾆ	0x97		0x40		0x40	ﾆ	0x97		0x40	ﾆ	0x97	ﾆ	0xC6	ﾆ	0xEFBE86
ﾇ	0x8E	ﾇ	0x98		0x40		0x40	ﾇ	0x98		0x40	ﾇ	0x98	ﾇ	0xC7	ﾇ	0xEFBE87
ﾈ	0x8F	ﾈ	0x99		0x40		0x40	ﾈ	0x99		0x40	ﾈ	0x99	ﾈ	0xC8	ﾈ	0xEFBE88
j	0x91	J	0xD1	j	0x91	j	0x91	j	0x70	j	0x91	j	0x69	j	0x6A	j	0x6A
k	0x92	K	0xD2	k	0x92	k	0x92	k	0x71	k	0x92	k	0x70	k	0x6B	k	0x6B
l	0x93	L	0xD3	l	0x93	l	0x93	l	0x72	l	0x93	l	0x71	l	0x6C	l	0x6C
m	0x94	M	0xD4	m	0x94	m	0x94	m	0x73	m	0x94	m	0x72	m	0x6D	m	0x6D

EBCDIC IBM Standard Extension		EBCDIC												ASCII		UTF-8	
		Kana		Lowercase		ASCII		ASPEN		IBM Standard		NEC Kana					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
n	0x95	N	0xD5	n	0x95	n	0x95	n	0x74	n	0x95	n	0x73	n	0x6E	n	0x6E
o	0x96	O	0xD6	o	0x96	o	0x96	o	0x75	o	0x96	o	0x74	o	0x6F	o	0x6F
p	0x97	P	0xD7	p	0x97	p	0x97	p	0x76	p	0x97	p	0x75	p	0x70	p	0x70
q	0x98	Q	0xD8	q	0x98	q	0x98	q	0x77	q	0x98	q	0x76	q	0x71	q	0x71
r	0x99	R	0xD9	r	0x99	r	0x99	r	0x78	r	0x99	r	0x77	r	0x72	r	0x72
ﾉ	0x9A	ﾉ	0x9A		0x40		0x40	ﾉ	0x9A		0x40	ﾉ	0x9A	ﾉ	0xC9	ﾉ	0xEFBE89
ﾊ	0x9B	ﾊ	0x9D		0x40		0x40	ﾊ	0x9D		0x40	ﾊ	0x9D	ﾊ	0xCA	ﾊ	0xEFBE8A
ﾋ	0x9C	ﾋ	0x9E		0x40		0x40	ﾋ	0x9E		0x40	ﾋ	0x9E	ﾋ	0xCB	ﾋ	0xEFBE8B
ﾌ	0x9D	ﾌ	0x9F		0x40		0x40	ﾌ	0x9F		0x40	ﾌ	0x9F	ﾌ	0xCC	ﾌ	0xEFBE8C
ﾍ	0x9E	ﾍ	0xA2		0x40		0x40	ﾍ	0xA2		0x40	ﾍ	0xA2	ﾍ	0xCD	ﾍ	0xEFBE8D
ﾎ	0x9F	ﾎ	0xA3		0x40		0x40	ﾎ	0xA3		0x40	ﾎ	0xA3	ﾎ	0xCE	ﾎ	0xEFBE8E
~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0x7E	~	0x7E
s	0xA2	S	0xE2	s	0xA2	s	0xA2	s	0x80	s	0xA2	s	0x78	s	0x73	s	0x73
t	0xA3	T	0xE3	t	0xA3	t	0xA3	t	0x8B	t	0xA3	t	0x80	t	0x74	t	0x74
u	0xA4	U	0xE4	u	0xA4	u	0xA4	u	0x9B	u	0xA4	u	0x8B	u	0x75	u	0x75
v	0xA5	V	0xE5	v	0xA5	v	0xA5	v	0x9C	v	0xA5	v	0x9B	v	0x76	v	0x76
w	0xA6	W	0xE6	w	0xA6	w	0xA6	w	0xA0	w	0xA6	w	0x9C	w	0x77	w	0x77
x	0xA7	X	0xE7	x	0xA7	x	0xA7	x	0xAB	x	0xA7	x	0xA0	x	0x78	x	0x78
y	0xA8	Y	0xE8	y	0xA8	y	0xA8	y	0xB0	y	0xA8	y	0xAB	y	0x79	y	0x79
z	0xA9	Z	0xE9	z	0xA9	z	0xA9	z	0xB1	z	0xA9	z	0xB0	z	0x7A	z	0x7A
ﾏ	0xAA	ﾏ	0xA4		0x40		0x40	ﾏ	0xA4		0x40	ﾏ	0xA4	ﾏ	0xCF	ﾏ	0xEFBE8F
ﾐ	0xAB	ﾐ	0xA5		0x40		0x40	ﾐ	0xA5		0x40	ﾐ	0xA5	ﾐ	0xD0	ﾐ	0xEFBE90
ﾑ	0xAC	ﾑ	0xA6		0x40		0x40	ﾑ	0xA6		0x40	ﾑ	0xA6	ﾑ	0xD1	ﾑ	0xEFBE91
[	0xAD	£	0x4A	£	0x4A	[	0x4A	[	0x4A	[	0xBA	[	0x4A	[	0x5B	[	0x5B
ﾒ	0xAE	ﾒ	0xA7		0x40		0x40	ﾒ	0xA7		0x40	ﾒ	0xA7	ﾒ	0xD2	ﾒ	0xEFBE92
ﾓ	0xAF	ﾓ	0xA8		0x40		0x40	ﾓ	0xA8		0x40	ﾓ	0xA8	ﾓ	0xD3	ﾓ	0xEFBE93
^	0xB0	￢	0x5F	￢	0x5F	^	0x5F	^	0x5F	^	0xB0	^	0x5F	^	0x5E	^	0x5E
£	0xB1	£	0x4A	£	0x4A		0x40		0x40		0x40	£	0x4A	[	0x5B	[	0x5B
¥	0xB2	¥	0x5B	¥	0x5B	\	0xE0	¥	0x5B	\	0xE0	¥	0x5B	¥	0x5C	¥	0x5C
ﾔ	0xB3	ﾔ	0xA9		0x40		0x40	ﾔ	0xA9		0x40	ﾔ	0xA9	ﾔ	0xD4	ﾔ	0xEFBE94
ﾕ	0xB4	ﾕ	0xAA		0x40		0x40	ﾕ	0xAA		0x40	ﾕ	0xAA	ﾕ	0xD5	ﾕ	0xEFBE95
ﾖ	0xB5	ﾖ	0xAC		0x40		0x40	ﾖ	0xAC		0x40	ﾖ	0xAC	ﾖ	0xD6	ﾖ	0xEFBE96
ﾗ	0xB6	ﾗ	0xAD		0x40		0x40	ﾗ	0xAD		0x40	ﾗ	0xAD	ﾗ	0xD7	ﾗ	0xEFBE97
ﾘ	0xB7	ﾘ	0xAE		0x40		0x40	ﾘ	0xAE		0x40	ﾘ	0xAE	ﾘ	0xD8	ﾘ	0xEFBE98
ﾙ	0xB8	ﾙ	0xAF		0x40		0x40	ﾙ	0xAF		0x40	ﾙ	0xAF	ﾙ	0xD9	ﾙ	0xEFBE99
ﾚ	0xB9	ﾚ	0xBA		0x40		0x40	ﾚ	0xBA		0x40	ﾚ	0xBA	ﾚ	0xDA	ﾚ	0xEFBE9A
｡	0xBA	｡	0xBB		0x40		0x40	｡	0xBB		0x40	｡	0xBB	｡	0xDB	｡	0xEFBE9B
ﾜ	0xBB	ﾜ	0xBC		0x40		0x40	ﾜ	0xBC		0x40	ﾜ	0xBC	ﾜ	0xDC	ﾜ	0xEFBE9C
ﾝ	0xBC	ﾝ	0xBD		0x40		0x40	ﾝ	0xBD		0x40	ﾝ	0xBD	ﾝ	0xDD	ﾝ	0xEFBE9D
]	0xBD		0x40		0x40	]	0x5A	]	0x5A	]	0xBB	]	0x5A	]	0x5D	]	0x5D
ﾞ	0xBE	ﾞ	0xBE		0x40		0x40	ﾞ	0xBE		0x40	ﾞ	0xBE	ﾞ	0xDE	ﾞ	0xEFBE9E
ﾟ	0xBF	ﾟ	0xBF		0x40		0x40	ﾟ	0xBF		0x40	ﾟ	0xBF	ﾟ	0xDF	ﾟ	0xEFBE9F
{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0x7B	{	0x7B
A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0x41	A	0x41
B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0x42	B	0x42
C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0x43	C	0x43
D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0x44	D	0x44
E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0x45	E	0x45
F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0x46	F	0x46
G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0x47	G	0x47
H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0x48	H	0x48
I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0x49	I	0x49
}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0x7D	}	0x7D
J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0x4A	J	0x4A
K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0x4B	K	0x4B
L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0x4C	L	0x4C
M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0x4D	M	0x4D
N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0x4E	N	0x4E
O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0x4F	O	0x4F
P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0x50	P	0x50
Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0x51	Q	0x51
R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0x52	R	0x52
\	0xE0		0x40		0x40	\	0xE0		0x40	\	0xE0	¥	0x5B	¥	0x5C	¥	0x5C
S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0x53	S	0x53
T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0x54	T	0x54
U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0x55	U	0x55
V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0x56	V	0x56
W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0x57	W	0x57
X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0x58	X	0x58
Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0x59	Y	0x59
Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0x5A	Z	0x5A
0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0x30	0	0x30
1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0x31	1	0x31
2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0x32	2	0x32
3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0x33	3	0x33
4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0x34	4	0x34
5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0x35	5	0x35
6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0x36	6	0x36
7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0x37	7	0x37
8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0x38	8	0x38
9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0x39	9	0x39

App.2.1.7 Conversion from NEC Kana

NEC Kana		EBCDIC												ASCII		UTF-8	
		Kana		Lowercase		ASCII		ASPEN		IBM Standard		IBM Standard Extension					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x20	SP	0x20
｡	0x41	｡	0x41		0x40		0x40	｡	0x41		0x40	｡	0x42	｡	0xA1	｡	0xEFBDA1
｢	0x42	｢	0x42		0x40		0x40	｢	0x42		0x40	｢	0x43	｢	0xA2	｢	0xEFBDA2
｣	0x43	｣	0x43		0x40		0x40	｣	0x43		0x40	｣	0x44	｣	0xA3	｣	0xEFBDA3
､	0x44	､	0x44		0x40		0x40	､	0x44		0x40	､	0x45	､	0xA4	､	0xEFBDA4
･	0x45	･	0x45		0x40		0x40	･	0x45		0x40	･	0x46	･	0xA5	･	0xEFBDA5
ｦ	0x46	ｦ	0x46		0x40		0x40	ｦ	0x46		0x40	ｦ	0x47	ｦ	0xA6	ｦ	0xEFBDA6
ｧ	0x47	ｧ	0x47		0x40		0x40	ｧ	0x47		0x40	ｧ	0x48	ｧ	0xA7	ｧ	0xEFBDA7
ｨ	0x48	ｨ	0x48		0x40		0x40	ｨ	0x48		0x40	ｨ	0x49	ｨ	0xA8	ｨ	0xEFBDA8
ｩ	0x49	ｩ	0x49		0x40		0x40	ｩ	0x49		0x40	ｩ	0x51	ｩ	0xA9	ｩ	0xEFBDA9
｢	0x4A	£	0x4A	£	0x4A	｢	0x4A	｢	0x4A	｢	0xBA	｢	0xAD	｢	0x5B	｢	0x5B
.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x2E	.	0x2E
<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x3C	<	0x3C
(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x28	(	0x28
+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x2B	+	0x2B
!	0x4F	!	0x5A	!	0x5A	!	0x4F	!	0x4F	!	0x5A	!	0x5A	!	0x21	!	0x21
&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x26	&	0x26
ｪ	0x51	ｪ	0x51		0x40		0x40	ｪ	0x51		0x40	ｪ	0x52	ｪ	0xAA	ｪ	0xEFBDAA
ｫ	0x52	ｫ	0x52		0x40		0x40	ｫ	0x52		0x40	ｫ	0x53	ｫ	0xAB	ｫ	0xEFBDAB
ｬ	0x53	ｬ	0x53		0x40		0x40	ｬ	0x53		0x40	ｬ	0x54	ｬ	0xAC	ｬ	0xEFBDAC
ｭ	0x54	ｭ	0x54		0x40		0x40	ｭ	0x54		0x40	ｭ	0x55	ｭ	0xAD	ｭ	0xEFBDAD
ｮ	0x55	ｮ	0x55		0x40		0x40	ｮ	0x55		0x40	ｮ	0x56	ｮ	0xAE	ｮ	0xEFBDAE
ｯ	0x56	ｯ	0x56		0x40		0x40	ｯ	0x56		0x40	ｯ	0x57	ｯ	0xAF	ｯ	0xEFBDAF
a	0x57	A	0xC1	a	0x81	a	0x81	a	0x59	a	0x81	a	0x81	a	0x61	a	0x61
ｰ	0x58	ｰ	0x58		0x40		0x40	ｰ	0x58		0x40	ｰ	0x58	ｰ	0xB0	ｰ	0xEFBDB0
b	0x59	B	0xC2	b	0x82	b	0x82	b	0x62	b	0x82	b	0x82	b	0x62	b	0x62
｣	0x5A		0x40		0x40	｣	0x5A	｣	0x5A	｣	0xBB	｣	0xBD	｣	0x5D	｣	0x5D
¥	0x5B	¥	0x5B	¥	0x5B	¥	0xE0	¥	0x5B	¥	0xE0	¥	0xB2	¥	0x5C	¥	0x5C
*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x2A	*	0x2A
)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x29	)	0x29
;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x3B	;	0x3B
~	0x5F	¬	0x5F	¬	0x5F	~	0x5F	~	0x5F	~	0xB0	~	0xB0	~	0x5E	~	0x5E
-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x2D	-	0x2D
/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x2F	/	0x2F
c	0x62	C	0xC3	c	0x83	c	0x83	c	0x63	c	0x83	c	0x83	c	0x63	c	0x63
d	0x63	D	0xC4	d	0x84	d	0x84	d	0x64	d	0x84	d	0x84	d	0x64	d	0x64
e	0x64	E	0xC5	e	0x85	e	0x85	e	0x65	e	0x85	e	0x85	e	0x65	e	0x65
f	0x65	F	0xC6	f	0x86	f	0x86	f	0x66	f	0x86	f	0x86	f	0x66	f	0x66
g	0x66	G	0xC7	g	0x87	g	0x87	g	0x67	g	0x87	g	0x87	g	0x67	g	0x67
h	0x67	H	0xC8	h	0x88	h	0x88	h	0x68	h	0x88	h	0x88	h	0x68	h	0x68
i	0x68	I	0xC9	i	0x89	i	0x89	i	0x69	i	0x89	i	0x89	i	0x69	i	0x69
j	0x69	J	0xD1	j	0x91	j	0x91	j	0x70	j	0x91	j	0x91	j	0x6A	j	0x6A
｢	0x6A	｢	0x6A	｢	0x6A	｢	0x6A	｢	0x6A	｢	0x6A	｢	0x6A	｢	0x7C	｢	0x7C
,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x2C	,	0x2C
%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x25	%	0x25
_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x5F	_	0x5F
>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x3E	>	0x3E
?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x3F	?	0x3F
k	0x70	K	0xD2	k	0x92	k	0x92	k	0x71	k	0x92	k	0x92	k	0x6B	k	0x6B
l	0x71	L	0xD3	l	0x93	l	0x93	l	0x72	l	0x93	l	0x93	l	0x6C	l	0x6C
m	0x72	M	0xD4	m	0x94	m	0x94	m	0x73	m	0x94	m	0x94	m	0x6D	m	0x6D
n	0x73	N	0xD5	n	0x95	n	0x95	n	0x74	n	0x95	n	0x95	n	0x6E	n	0x6E
o	0x74	O	0xD6	o	0x96	o	0x96	o	0x75	o	0x96	o	0x96	o	0x6F	o	0x6F
p	0x75	P	0xD7	p	0x97	p	0x97	p	0x76	p	0x97	p	0x97	p	0x70	p	0x70
q	0x76	Q	0xD8	q	0x98	q	0x98	q	0x77	q	0x98	q	0x98	q	0x71	q	0x71
r	0x77	R	0xD9	r	0x99	r	0x99	r	0x78	r	0x99	r	0x99	r	0x72	r	0x72
s	0x78	S	0xE2	s	0xA2	s	0xA2	s	0x80	s	0xA2	s	0xA2	s	0x73	s	0x73
`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x79	`	0x60	`	0x60
:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x3A	:	0x3A
#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x23	#	0x23
@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x40	@	0x40
'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x27	'	0x27
=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x3D	=	0x3D
″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x22	″	0x22
t	0x80	T	0xE3	t	0xA3	t	0xA3	t	0x8B	t	0xA3	t	0xA3	t	0x74	t	0x74
ｱ	0x81	ｱ	0x81		0x40		0x40	ｱ	0x81		0x40	ｱ	0x59	ｱ	0xB1	ｱ	0xEFBDB1
ｲ	0x82	ｲ	0x82		0x40		0x40	ｲ	0x82		0x40	ｲ	0x62	ｲ	0xB2	ｲ	0xEFBDB2
ｳ	0x83	ｳ	0x83		0x40		0x40	ｳ	0x83		0x40	ｳ	0x63	ｳ	0xB3	ｳ	0xEFBDB3
ｴ	0x84	ｴ	0x84		0x40		0x40	ｴ	0x84		0x40	ｴ	0x64	ｴ	0xB4	ｴ	0xEFBDB4
ｵ	0x85	ｵ	0x85		0x40		0x40	ｵ	0x85		0x40	ｵ	0x65	ｵ	0xB5	ｵ	0xEFBDB5
ｶ	0x86	ｶ	0x86		0x40		0x40	ｶ	0x86		0x40	ｶ	0x66	ｶ	0xB6	ｶ	0xEFBDB6
ｷ	0x87	ｷ	0x87		0x40		0x40	ｷ	0x87		0x40	ｷ	0x67	ｷ	0xB7	ｷ	0xEFBDB7
ｸ	0x88	ｸ	0x88		0x40		0x40	ｸ	0x88		0x40	ｸ	0x68	ｸ	0xB8	ｸ	0xEFBDB8
ｹ	0x89	ｹ	0x89		0x40		0x40	ｹ	0x89		0x40	ｹ	0x69	ｹ	0xB9	ｹ	0xEFBDB9
ｺ	0x8A	ｺ	0x8A		0x40		0x40	ｺ	0x8A		0x40	ｺ	0x70	ｺ	0xBA	ｺ	0xEFBDBA
u	0x8B	U	0xE4	u	0xA4	u	0xA4	u	0x9B	u	0xA4	u	0xA4	u	0x75	u	0x75
ｻ	0x8C	ｻ	0x8C		0x40		0x40	ｻ	0x8C		0x40	ｻ	0x71	ｻ	0xBB	ｻ	0xEFBDBB
ｼ	0x8D	ｼ	0x8D		0x40		0x40	ｼ	0x8D		0x40	ｼ	0x72	ｼ	0xBC	ｼ	0xEFBDBC

NEC Kana		EBCDIC												ASCII		UTF-8	
		Kana		Lowercase		ASCII		ASPEN		IBM Standard		IBM Standard Extension					
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
ｽ	0x8E	ｽ	0x8E		0x40		0x40	ｽ	0x8E		0x40	ｽ	0x73	ｽ	0xBD	ｽ	0xEFBDBD
ｾ	0x8F	ｾ	0x8F		0x40		0x40	ｾ	0x8F		0x40	ｾ	0x74	ｾ	0xBE	ｾ	0xEFBDBE
ｿ	0x90	ｿ	0x90		0x40		0x40	ｿ	0x90		0x40	ｿ	0x75	ｿ	0xBF	ｿ	0xEFBDBF
ﾀ	0x91	ﾀ	0x91		0x40		0x40	ﾀ	0x91		0x40	ﾀ	0x76	ﾀ	0xC0	ﾀ	0xEFBE80
ﾁ	0x92	ﾁ	0x92		0x40		0x40	ﾁ	0x92		0x40	ﾁ	0x77	ﾁ	0xC1	ﾁ	0xEFBE81
ﾂ	0x93	ﾂ	0x93		0x40		0x40	ﾂ	0x93		0x40	ﾂ	0x78	ﾂ	0xC2	ﾂ	0xEFBE82
ﾃ	0x94	ﾃ	0x94		0x40		0x40	ﾃ	0x94		0x40	ﾃ	0x8A	ﾃ	0xC3	ﾃ	0xEFBE83
ﾄ	0x95	ﾄ	0x95		0x40		0x40	ﾄ	0x95		0x40	ﾄ	0x8B	ﾄ	0xC4	ﾄ	0xEFBE84
ﾅ	0x96	ﾅ	0x96		0x40		0x40	ﾅ	0x96		0x40	ﾅ	0x8C	ﾅ	0xC5	ﾅ	0xEFBE85
ﾆ	0x97	ﾆ	0x97		0x40		0x40	ﾆ	0x97		0x40	ﾆ	0x8D	ﾆ	0xC6	ﾆ	0xEFBE86
ﾇ	0x98	ﾇ	0x98		0x40		0x40	ﾇ	0x98		0x40	ﾇ	0x8E	ﾇ	0xC7	ﾇ	0xEFBE87
ﾈ	0x99	ﾈ	0x99		0x40		0x40	ﾈ	0x99		0x40	ﾈ	0x8F	ﾈ	0xC8	ﾈ	0xEFBE88
ﾉ	0x9A	ﾉ	0x9A		0x40		0x40	ﾉ	0x9A		0x40	ﾉ	0x9A	ﾉ	0xC9	ﾉ	0xEFBE89
v	0x9B	V	0xE5	v	0xA5	v	0xA5	v	0x9C	v	0xA5	v	0xA5	v	0x76	v	0x76
w	0x9C	W	0xE6	w	0xA6	w	0xA6	w	0xA0	w	0xA6	w	0xA6	w	0x77	w	0x77
ﾊ	0x9D	ﾊ	0x9D		0x40		0x40	ﾊ	0x9D		0x40	ﾊ	0x9B	ﾊ	0xCA	ﾊ	0xEFBE8A
ﾋ	0x9E	ﾋ	0x9E		0x40		0x40	ﾋ	0x9E		0x40	ﾋ	0x9C	ﾋ	0xCB	ﾋ	0xEFBE8B
ﾌ	0x9F	ﾌ	0x9F		0x40		0x40	ﾌ	0x9F		0x40	ﾌ	0x9D	ﾌ	0xCC	ﾌ	0xEFBE8C
x	0xA0	X	0xE7	x	0xA7	x	0xA7	x	0xAB	x	0xA7	x	0xA7	x	0x78	x	0x78
~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0x7E	~	0x7E
ﾍ	0xA2	ﾍ	0xA2		0x40		0x40	ﾍ	0xA2		0x40	ﾍ	0x9E	ﾍ	0xCD	ﾍ	0xEFBE8D
ﾎ	0xA3	ﾎ	0xA3		0x40		0x40	ﾎ	0xA3		0x40	ﾎ	0x9F	ﾎ	0xCE	ﾎ	0xEFBE8E
ﾏ	0xA4	ﾏ	0xA4		0x40		0x40	ﾏ	0xA4		0x40	ﾏ	0xAA	ﾏ	0xCF	ﾏ	0xEFBE8F
ﾐ	0xA5	ﾐ	0xA5		0x40		0x40	ﾐ	0xA5		0x40	ﾐ	0xAB	ﾐ	0xD0	ﾐ	0xEFBE90
ﾑ	0xA6	ﾑ	0xA6		0x40		0x40	ﾑ	0xA6		0x40	ﾑ	0xAC	ﾑ	0xD1	ﾑ	0xEFBE91
ﾒ	0xA7	ﾒ	0xA7		0x40		0x40	ﾒ	0xA7		0x40	ﾒ	0xAE	ﾒ	0xD2	ﾒ	0xEFBE92
ﾓ	0xA8	ﾓ	0xA8		0x40		0x40	ﾓ	0xA8		0x40	ﾓ	0xAF	ﾓ	0xD3	ﾓ	0xEFBE93
ﾔ	0xA9	ﾔ	0xA9		0x40		0x40	ﾔ	0xA9		0x40	ﾔ	0xB3	ﾔ	0xD4	ﾔ	0xEFBE94
ｭ	0xAA	ｭ	0xAA		0x40		0x40	ｭ	0xAA		0x40	ｭ	0xB4	ｭ	0xD5	ｭ	0xEFBE95
y	0xAB	Y	0xE8	y	0xA8	y	0xA8	y	0xB0	y	0xA8	y	0xA8	y	0x79	y	0x79
ﾖ	0xAC	ﾖ	0xAC		0x40		0x40	ﾖ	0xAC		0x40	ﾖ	0xB5	ﾖ	0xD6	ﾖ	0xEFBE96
ﾗ	0xAD	ﾗ	0xAD		0x40		0x40	ﾗ	0xAD		0x40	ﾗ	0xB6	ﾗ	0xD7	ﾗ	0xEFBE97
ﾘ	0xAE	ﾘ	0xAE		0x40		0x40	ﾘ	0xAE		0x40	ﾘ	0xB7	ﾘ	0xD8	ﾘ	0xEFBE98
ﾙ	0xAF	ﾙ	0xAF		0x40		0x40	ﾙ	0xAF		0x40	ﾙ	0xB8	ﾙ	0xD9	ﾙ	0xEFBE99
z	0xB0	Z	0xE9	z	0xA9	z	0xA9	z	0xB1	z	0xA9	z	0xA9	z	0x7A	z	0x7A
ﾚ	0xBA	ﾚ	0xBA		0x40		0x40	ﾚ	0xBA		0x40	ﾚ	0xB9	ﾚ	0xDA	ﾚ	0xEFBE9A
ﾛ	0xBB	ﾛ	0xBB		0x40		0x40	ﾛ	0xBB		0x40	ﾛ	0xBA	ﾛ	0xDB	ﾛ	0xEFBE9B
ﾜ	0xBC	ﾜ	0xBC		0x40		0x40	ﾜ	0xBC		0x40	ﾜ	0xBB	ﾜ	0xDC	ﾜ	0xEFBE9C
ﾝ	0xBD	ﾝ	0xBD		0x40		0x40	ﾝ	0xBD		0x40	ﾝ	0xBC	ﾝ	0xDD	ﾝ	0xEFBE9D
ﾞ	0xBE	ﾞ	0xBE		0x40		0x40	ﾞ	0xBE		0x40	ﾞ	0xBE	ﾞ	0xDE	ﾞ	0xEFBE9E
ﾟ	0xBF	ﾟ	0xBF		0x40		0x40	ﾟ	0xBF		0x40	ﾟ	0xBF	ﾟ	0xDF	ﾟ	0xEFBE9F
{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0x7B	{	0x7B
A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0x41	A	0x41
B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0x42	B	0x42
C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0x43	C	0x43
D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0x44	D	0x44
E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0x45	E	0x45
F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0x46	F	0x46
G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0x47	G	0x47
H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0x48	H	0x48
I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0x49	I	0x49
}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0x7D	}	0x7D
J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0x4A	J	0x4A
K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0x4B	K	0x4B
L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0x4C	L	0x4C
M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0x4D	M	0x4D
N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0x4E	N	0x4E
O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0x4F	O	0x4F
P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0x50	P	0x50
Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0x51	Q	0x51
R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0x52	R	0x52
$	0xE0	$	0xE0	$	0xE0	$	0x5B	$	0xE0	$	0x5B	$	0x5B	$	0x24	$	0x24
S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0x53	S	0x53
T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0x54	T	0x54
U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0x55	U	0x55
V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0x56	V	0x56
W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0x57	W	0x57
X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0x58	X	0x58
Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0x59	Y	0x59
Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0x5A	Z	0x5A
0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0x30	0	0x30
1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0x31	1	0x31
2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0x32	2	0x32
3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0x33	3	0x33
4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0x34	4	0x34
5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0x35	5	0x35
6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0x36	6	0x36
7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0x37	7	0x37
8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0x38	8	0x38
9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0x39	9	0x39

App.2.1.8 Other Code Conversion

The codes that are not carried in the tables of code conversion from EBCDIC are converted in accordance with the following table:

EBCDIC	EBCDIC	ASCII		UTF-8
		Conversin on Mainframe Side	Other	
0x00	—	0x20	0x00	—
From 0x01 to 0x3F	Not Converted	—	—	—
From 0x01 to 0x1F	—	0x2D	Not Converted	Not Converted
From 0x20 to 0x3F	—	0x2D	0x20	0x20
Other	0x40	0x2D	0x20	0x20

App.2.2 Conversion from ASCII

ASCII		EBCDIC														UTF-8	
		Kana		Lowercase		ASCII		ASPEN		IBM Standard		IBM Standard Extension		NEC Kana			
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
SP	0x20	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x20
!	0x21	!	0x5A	!	0x5A	!	0x4F	!	0x4F	!	0x5A	!	0x5A	!	0x4F	!	0x21
"	0x22	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x7F	"	0x22
#	0x23	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x23
$	0x24	$	0xE0	$	0xE0	$	0x5B	$	0xE0	$	0x5B	$	0x5B	$	0xE0	$	0x24
%	0x25	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x25
&	0x26	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x26
'	0x27	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x7D	'	0x27
(	0x28	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x28
)	0x29	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x29
*	0x2A	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x2A
+	0x2B	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x2B
,	0x2C	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x2C
-	0x2D	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x60	-	0x2D
.	0x2E	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x2E
/	0x2F	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x2F
0	0x30	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0x30
1	0x31	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0x31
2	0x32	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0x32
3	0x33	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0x33
4	0x34	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0x34
5	0x35	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0x35
6	0x36	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0x36
7	0x37	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0x37
8	0x38	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0x38
9	0x39	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0x39
:	0x3A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x3A
;	0x3B	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x3B
<	0x3C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x3C
=	0x3D	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x3D
>	0x3E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x3E
?	0x3F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x3F
@	0x40	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x40
A	0x41	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0x41
B	0x42	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0x42
C	0x43	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0x43
D	0x44	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0x44
E	0x45	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0x45
F	0x46	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0x46
G	0x47	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0x47
H	0x48	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0x48
I	0x49	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0x49
J	0x4A	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0x4A
K	0x4B	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0x4B
L	0x4C	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0x4C
M	0x4D	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0x4D
N	0x4E	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0x4E
O	0x4F	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0x4F
P	0x50	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0x50
Q	0x51	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0x51
R	0x52	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0x52
S	0x53	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0x53
T	0x54	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0x54
U	0x55	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0x55
V	0x56	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0x56
W	0x57	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0x57
X	0x58	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0x58
Y	0x59	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0x59
Z	0x5A	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0x5A
[	0x5B	£	0x4A	£	0x4A	[	0x4A	[	0x4A	[	0xBA	[	0xAD	[	0x4A	[	0x5B
¥	0x5C	¥	0x5B	¥	0x5B	¥	0xE0	¥	0x5B	¥	0xE0	¥	0xB2	¥	0x5B	¥	0x5C
]	0x5D		0x40		0x40	]	0x5A	]	0x5A	]	0xBB	]	0xBD	]	0x5A	]	0x5D
^	0x5E	¬	0x5F	¬	0x5F	^	0x5F	^	0x5F	^	0xB0	^	0xB0	^	0x5F	^	0x5E
_	0x5F	‾	0x6D	‾	0x6D	‾	0x6D	‾	0x6D	‾	0x6D	‾	0x6D	‾	0x6D	‾	0x5F
`	0x60	‾	0x79	‾	0x79	‾	0x79	‾	0x79	‾	0x79	‾	0x79	‾	0x79	‾	0x60
a	0x61	A	0xC1	a	0x81	a	0x81	a	0x59	a	0x81	a	0x81	a	0x57	a	0x61
b	0x62	B	0xC2	b	0x82	b	0x82	b	0x62	b	0x82	b	0x82	b	0x59	b	0x62
c	0x63	C	0xC3	c	0x83	c	0x83	c	0x63	c	0x83	c	0x83	c	0x62	c	0x63
d	0x64	D	0xC4	d	0x84	d	0x84	d	0x64	d	0x84	d	0x84	d	0x63	d	0x64
e	0x65	E	0xC5	e	0x85	e	0x85	e	0x65	e	0x85	e	0x85	e	0x64	e	0x65
f	0x66	F	0xC6	f	0x86	f	0x86	f	0x66	f	0x86	f	0x86	f	0x65	f	0x66
g	0x67	G	0xC7	g	0x87	g	0x87	g	0x67	g	0x87	g	0x87	g	0x66	g	0x67
h	0x68	H	0xC8	h	0x88	h	0x88	h	0x68	h	0x88	h	0x88	h	0x67	h	0x68
i	0x69	I	0xC9	i	0x89	i	0x89	i	0x69	i	0x89	i	0x89	i	0x68	i	0x69
j	0x6A	J	0xD1	j	0x91	j	0x91	j	0x70	j	0x91	j	0x91	j	0x69	j	0x6A
k	0x6B	K	0xD2	k	0x92	k	0x92	k	0x71	k	0x92	k	0x92	k	0x70	k	0x6B
l	0x6C	L	0xD3	l	0x93	l	0x93	l	0x72	l	0x93	l	0x93	l	0x71	l	0x6C
m	0x6D	M	0xD4	m	0x94	m	0x94	m	0x73	m	0x94	m	0x94	m	0x72	m	0x6D

ASCII		EBCDIC														UTF-8	
		Kana		Lowercase		ASCII		ASPEN		IBM Standard		IBM Standard Extension		NEC Kana			
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
n	0x6E	N	0xD5	n	0x95	n	0x95	n	0x74	n	0x95	n	0x95	n	0x73	n	0x6E
o	0x6F	O	0xD6	o	0x96	o	0x96	o	0x75	o	0x96	o	0x96	o	0x74	o	0x6F
p	0x70	P	0xD7	p	0x97	p	0x97	p	0x76	p	0x97	p	0x97	p	0x75	p	0x70
q	0x71	Q	0xD8	q	0x98	q	0x98	q	0x77	q	0x98	q	0x98	q	0x76	q	0x71
r	0x72	R	0xD9	r	0x99	r	0x99	r	0x78	r	0x99	r	0x99	r	0x77	r	0x72
s	0x73	S	0xE2	s	0xA2	s	0xA2	s	0x80	s	0xA2	s	0xA2	s	0x78	s	0x73
t	0x74	T	0xE3	t	0xA3	t	0xA3	t	0x8B	t	0xA3	t	0xA3	t	0x80	t	0x74
u	0x75	U	0xE4	u	0xA4	u	0xA4	u	0x9B	u	0xA4	u	0xA4	u	0x8B	u	0x75
v	0x76	V	0xE5	v	0xA5	v	0xA5	v	0x9C	v	0xA5	v	0xA5	v	0x9B	v	0x76
w	0x77	W	0xE6	w	0xA6	w	0xA6	w	0xA0	w	0xA6	w	0xA6	w	0x9C	w	0x77
x	0x78	X	0xE7	x	0xA7	x	0xA7	x	0xAB	x	0xA7	x	0xA7	x	0xA0	x	0x78
y	0x79	Y	0xE8	y	0xA8	y	0xA8	y	0xB0	y	0xA8	y	0xA8	y	0xAB	y	0x79
z	0x7A	Z	0xE9	z	0xA9	z	0xA9	z	0xB1	z	0xA9	z	0xA9	z	0xB0	z	0x7A
{	0x7B	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0x7B
|	0x7C	|	0x4F	|	0x4F	|	0x6A	|	0x6A	|	0x4F	|	0x4F	|	0x6A	|	0x7C
}	0x7D	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0x7D
~	0x7E	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0x7E
	0xA0		0x40		0x40		0x40		0x57		0x40		0x40		0x40		0xA0
｡	0xA1	｡	0x41		0x40		0x40	｡	0x41		0x40	｡	0x42	｡	0x41	｡	0xEFBDA1
｢	0xA2	｢	0x42		0x40		0x40	｢	0x42		0x40	｢	0x43	｢	0x42	｢	0xEFBDA2
｣	0xA3	｣	0x43		0x40		0x40	｣	0x43		0x40	｣	0x44	｣	0x43	｣	0xEFBDA3
､	0xA4	､	0x44		0x40		0x40	､	0x44		0x40	､	0x45	､	0x44	､	0xEFBDA4
･	0xA5	･	0x45		0x40		0x40	･	0x45		0x40	･	0x46	･	0x45	･	0xEFBDA5
ｦ	0xA6	ｦ	0x46		0x40		0x40	ｦ	0x46		0x40	ｦ	0x47	ｦ	0x46	ｦ	0xEFBDA6
ｧ	0xA7	ｧ	0x47		0x40		0x40	ｧ	0x47		0x40	ｧ	0x48	ｧ	0x47	ｧ	0xEFBDA7
ｨ	0xA8	ｨ	0x48		0x40		0x40	ｨ	0x48		0x40	ｨ	0x49	ｨ	0x48	ｨ	0xEFBDA8
ｩ	0xA9	ｩ	0x49		0x40		0x40	ｩ	0x49		0x40	ｩ	0x51	ｩ	0x49	ｩ	0xEFBDA9
ｪ	0xAA	ｪ	0x51		0x40		0x40	ｪ	0x51		0x40	ｪ	0x52	ｪ	0x51	ｪ	0xEFBDAA
ｫ	0xAB	ｫ	0x52		0x40		0x40	ｫ	0x52		0x40	ｫ	0x53	ｫ	0x52	ｫ	0xEFBDAB
ｬ	0xAC	ｬ	0x53		0x40		0x40	ｬ	0x53		0x40	ｬ	0x54	ｬ	0x53	ｬ	0xEFBDAC
ｭ	0xAD	ｭ	0x54		0x40		0x40	ｭ	0x54		0x40	ｭ	0x55	ｭ	0x54	ｭ	0xEFBDAD
ｮ	0xAE	ｮ	0x55		0x40		0x40	ｮ	0x55		0x40	ｮ	0x56	ｮ	0x55	ｮ	0xEFBDAE
ｯ	0xAF	ｯ	0x56		0x40		0x40	ｯ	0x56		0x40	ｯ	0x57	ｯ	0x56	ｯ	0xEFBDAF
ｰ	0xB0	ｰ	0x58		0x40		0x40	ｰ	0x58		0x40	ｰ	0x58	ｰ	0x58	ｰ	0xEFBDB0
ｱ	0xB1	ｱ	0x81		0x40		0x40	ｱ	0x81		0x40	ｱ	0x59	ｱ	0x81	ｱ	0xEFBDB1
ｲ	0xB2	ｲ	0x82		0x40		0x40	ｲ	0x82		0x40	ｲ	0x62	ｲ	0x82	ｲ	0xEFBDB2
ｳ	0xB3	ｳ	0x83		0x40		0x40	ｳ	0x83		0x40	ｳ	0x63	ｳ	0x83	ｳ	0xEFBDB3
ｴ	0xB4	ｴ	0x84		0x40		0x40	ｴ	0x84		0x40	ｴ	0x64	ｴ	0x84	ｴ	0xEFBDB4
ｵ	0xB5	ｵ	0x85		0x40		0x40	ｵ	0x85		0x40	ｵ	0x65	ｵ	0x85	ｵ	0xEFBDB5
ｶ	0xB6	ｶ	0x86		0x40		0x40	ｶ	0x86		0x40	ｶ	0x66	ｶ	0x86	ｶ	0xEFBDB6
ｷ	0xB7	ｷ	0x87		0x40		0x40	ｷ	0x87		0x40	ｷ	0x67	ｷ	0x87	ｷ	0xEFBDB7
ｸ	0xB8	ｸ	0x88		0x40		0x40	ｸ	0x88		0x40	ｸ	0x68	ｸ	0x88	ｸ	0xEFBDB8
ｹ	0xB9	ｹ	0x89		0x40		0x40	ｹ	0x89		0x40	ｹ	0x69	ｹ	0x89	ｹ	0xEFBDB9
ｺ	0xBA	ｺ	0x8A		0x40		0x40	ｺ	0x8A		0x40	ｺ	0x70	ｺ	0x8A	ｺ	0xEFBDBA
ｻ	0xBB	ｻ	0x8C		0x40		0x40	ｻ	0x8C		0x40	ｻ	0x71	ｻ	0x8C	ｻ	0xEFBDBB
ｼ	0xBC	ｼ	0x8D		0x40		0x40	ｼ	0x8D		0x40	ｼ	0x72	ｼ	0x8D	ｼ	0xEFBDBC
ｽ	0xBD	ｽ	0x8E		0x40		0x40	ｽ	0x8E		0x40	ｽ	0x73	ｽ	0x8E	ｽ	0xEFBDBD
ｾ	0xBE	ｾ	0x8F		0x40		0x40	ｾ	0x8F		0x40	ｾ	0x74	ｾ	0x8F	ｾ	0xEFBDBE
ｿ	0xBF	ｿ	0x90		0x40		0x40	ｿ	0x90		0x40	ｿ	0x75	ｿ	0x90	ｿ	0xEFBDBF
ﾀ	0xC0	ﾀ	0x91		0x40		0x40	ﾀ	0x91		0x40	ﾀ	0x76	ﾀ	0x91	ﾀ	0xEFBE80
ﾁ	0xC1	ﾁ	0x92		0x40		0x40	ﾁ	0x92		0x40	ﾁ	0x77	ﾁ	0x92	ﾁ	0xEFBE81
ﾂ	0xC2	ﾂ	0x93		0x40		0x40	ﾂ	0x93		0x40	ﾂ	0x78	ﾂ	0x93	ﾂ	0xEFBE82
ﾃ	0xC3	ﾃ	0x94		0x40		0x40	ﾃ	0x94		0x40	ﾃ	0x8A	ﾃ	0x94	ﾃ	0xEFBE83
ﾄ	0xC4	ﾄ	0x95		0x40		0x40	ﾄ	0x95		0x40	ﾄ	0x8B	ﾄ	0x95	ﾄ	0xEFBE84
ﾅ	0xC5	ﾅ	0x96		0x40		0x40	ﾅ	0x96		0x40	ﾅ	0x8C	ﾅ	0x96	ﾅ	0xEFBE85
ﾆ	0xC6	ﾆ	0x97		0x40		0x40	ﾆ	0x97		0x40	ﾆ	0x8D	ﾆ	0x97	ﾆ	0xEFBE86
ﾇ	0xC7	ﾇ	0x98		0x40		0x40	ﾇ	0x98		0x40	ﾇ	0x8E	ﾇ	0x98	ﾇ	0xEFBE87
ﾈ	0xC8	ﾈ	0x99		0x40		0x40	ﾈ	0x99		0x40	ﾈ	0x8F	ﾈ	0x99	ﾈ	0xEFBE88
ﾉ	0xC9	ﾉ	0x9A		0x40		0x40	ﾉ	0x9A		0x40	ﾉ	0x9A	ﾉ	0x9A	ﾉ	0xEFBE89
ﾊ	0xCA	ﾊ	0x9D		0x40		0x40	ﾊ	0x9D		0x40	ﾊ	0x9B	ﾊ	0x9D	ﾊ	0xEFBE8A
ﾋ	0xCB	ﾋ	0x9E		0x40		0x40	ﾋ	0x9E		0x40	ﾋ	0x9C	ﾋ	0x9E	ﾋ	0xEFBE8B
ﾌ	0xCC	ﾌ	0x9F		0x40		0x40	ﾌ	0x9F		0x40	ﾌ	0x9D	ﾌ	0x9F	ﾌ	0xEFBE8C
ﾍ	0xCD	ﾍ	0xA2		0x40		0x40	ﾍ	0xA2		0x40	ﾍ	0x9E	ﾍ	0xA2	ﾍ	0xEFBE8D
ﾎ	0xCE	ﾎ	0xA3		0x40		0x40	ﾎ	0xA3		0x40	ﾎ	0x9F	ﾎ	0xA3	ﾎ	0xEFBE8E
ﾏ	0xCF	ﾏ	0xA4		0x40		0x40	ﾏ	0xA4		0x40	ﾏ	0xAA	ﾏ	0xA4	ﾏ	0xEFBE8F
ﾐ	0xD0	ﾐ	0xA5		0x40		0x40	ﾐ	0xA5		0x40	ﾐ	0xAB	ﾐ	0xA5	ﾐ	0xEFBE90
ﾑ	0xD1	ﾑ	0xA6		0x40		0x40	ﾑ	0xA6		0x40	ﾑ	0xAC	ﾑ	0xA6	ﾑ	0xEFBE91
ﾒ	0xD2	ﾒ	0xA7		0x40		0x40	ﾒ	0xA7		0x40	ﾒ	0xAE	ﾒ	0xA7	ﾒ	0xEFBE92
ﾓ	0xD3	ﾓ	0xA8		0x40		0x40	ﾓ	0xA8		0x40	ﾓ	0xAF	ﾓ	0xA8	ﾓ	0xEFBE93
ﾔ	0xD4	ﾔ	0xA9		0x40		0x40	ﾔ	0xA9		0x40	ﾔ	0xB3	ﾔ	0xA9	ﾔ	0xEFBE94
ﾕ	0xD5	ﾕ	0xAA		0x40		0x40	ﾕ	0xAA		0x40	ﾕ	0xB4	ﾕ	0xAA	ﾕ	0xEFBE95
ﾖ	0xD6	ﾖ	0xAC		0x40		0x40	ﾖ	0xAC		0x40	ﾖ	0xB5	ﾖ	0xAC	ﾖ	0xEFBE96
ﾗ	0xD7	ﾗ	0xAD		0x40		0x40	ﾗ	0xAD		0x40	ﾗ	0xB6	ﾗ	0xAD	ﾗ	0xEFBE97
ﾘ	0xD8	ﾘ	0xAE		0x40		0x40	ﾘ	0xAE		0x40	ﾘ	0xB7	ﾘ	0xAE	ﾘ	0xEFBE98
ﾙ	0xD9	ﾙ	0xAF		0x40		0x40	ﾙ	0xAF		0x40	ﾙ	0xB8	ﾙ	0xAF	ﾙ	0xEFBE99
ﾚ	0xDA	ﾚ	0xBA		0x40		0x40	ﾚ	0xBA		0x40	ﾚ	0xB9	ﾚ	0xBA	ﾚ	0xEFBE9A
ﾛ	0xDB	ﾛ	0xBB		0x40		0x40	ﾛ	0xBB		0x40	ﾛ	0xBA	ﾛ	0xBB	ﾛ	0xEFBE9B
ﾜ	0xDC	ﾜ	0xBC		0x40		0x40	ﾜ	0xBC		0x40	ﾜ	0xBB	ﾜ	0xBC	ﾜ	0xEFBE9C
ﾝ	0xDD	ﾝ	0xBD		0x40		0x40	ﾝ	0xBD		0x40	ﾝ	0xBC	ﾝ	0xBD	ﾝ	0xEFBE9D
ﾞ	0xDE	ﾞ	0xBE		0x40		0x40	ﾞ	0xBE		0x40	ﾞ	0xBE	ﾞ	0xBE	ﾞ	0xEFBE9E
ﾟ	0xDF	ﾟ	0xBF		0x40		0x40	ﾟ	0xBF		0x40	ﾟ	0xBF	ﾟ	0xBF	ﾟ	0xEFBE9F

The following is the table that shows conversion patterns of the codes that are not carried in preceding conversion tables.

ASCII	EBCDIC			UTF-8
	Conversion on Mainframe Side	Conversion on Fujitsu K side	Other	
0x00	0x40	0x00	0x00	Not Converted
From 0x01 to 0x1F	0x60	0x40	Not Converted	Not Converted
From 0x01 to 0x7E	—	—	—	Not Converted
0x7F	0x69	0x40	0x40	Not Converted
Other	0x60	0x40	0x40	Not Converted

However, in the Text Transfer, specifying '0' for the Tab Code Mode(tabchange) in the System Environment Settings converts above codes into space codes(0x40).

App.2.3 Conversion from UTF-8

UTF-8		EBCDIC														ASCII	
		Kana		Lowercase		ASCII		ASPEN		IBM Standard		IBM Standard Extension		NEC Kana			
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
SP	0x20	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x40	SP	0x20
!	0x21	!	0x5A	!	0x5A	!	0x4F	!	0x4F	!	0x5A	!	0x5A	!	0x4F	!	0x21
″	0x22	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x7F	″	0x22
#	0x23	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x7B	#	0x23
$	0x24	$	0xE0	$	0xE0	$	0x5B	$	0xE0	$	0x5B	$	0x5B	$	0xE0	$	0x24
%	0x25	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x6C	%	0x25
&	0x26	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x50	&	0x26
’	0x27	’	0x7D	’	0x7D	’	0x7D	’	0x7D	’	0x7D	’	0x7D	’	0x7D	’	0x27
(	0x28	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x4D	(	0x28
)	0x29	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x5D	)	0x29
*	0x2A	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x5C	*	0x2A
+	0x2B	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x4E	+	0x2B
,	0x2C	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x6B	,	0x2C
−	0x2D	−	0x60	−	0x60	−	0x60	−	0x60	−	0x60	−	0x60	−	0x60	−	0x2D
.	0x2E	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x4B	.	0x2E
/	0x2F	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x61	/	0x2F
0	0x30	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0xF0	0	0x30
1	0x31	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0xF1	1	0x31
2	0x32	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0xF2	2	0x32
3	0x33	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0xF3	3	0x33
4	0x34	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0xF4	4	0x34
5	0x35	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0xF5	5	0x35
6	0x36	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0xF6	6	0x36
7	0x37	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0xF7	7	0x37
8	0x38	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0xF8	8	0x38
9	0x39	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0xF9	9	0x39
:	0x3A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x7A	:	0x3A
;	0x3B	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x5E	;	0x3B
<	0x3C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x4C	<	0x3C
=	0x3D	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x7E	=	0x3D
>	0x3E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x6E	>	0x3E
?	0x3F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x6F	?	0x3F
@	0x40	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x7C	@	0x40
A	0x41	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0xC1	A	0x41
B	0x42	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0xC2	B	0x42
C	0x43	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0xC3	C	0x43
D	0x44	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0xC4	D	0x44
E	0x45	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0xC5	E	0x45
F	0x46	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0xC6	F	0x46
G	0x47	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0xC7	G	0x47
H	0x48	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0xC8	H	0x48
I	0x49	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0xC9	I	0x49
J	0x4A	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0xD1	J	0x4A
K	0x4B	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0xD2	K	0x4B
L	0x4C	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0xD3	L	0x4C
M	0x4D	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0xD4	M	0x4D
N	0x4E	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0xD5	N	0x4E
O	0x4F	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0xD6	O	0x4F
P	0x50	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0xD7	P	0x50
Q	0x51	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0xD8	Q	0x51
R	0x52	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0xD9	R	0x52
S	0x53	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0xE2	S	0x53
T	0x54	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0xE3	T	0x54
U	0x55	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0xE4	U	0x55
V	0x56	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0xE5	V	0x56
W	0x57	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0xE6	W	0x57
X	0x58	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0xE7	X	0x58
Y	0x59	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0xE8	Y	0x59
Z	0x5A	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0xE9	Z	0x5A
[	0x5B	£	0x4A	£	0x4A	[	0x4A	[	0x4A	[	0xBA	[	0xAD	[	0x4A	[	0x5B
¥	0x5C	¥	0x5B	¥	0x5B	¥	0xE0	¥	0x5B	¥	0xE0	¥	0xB2	¥	0x5B	¥	0x5C
]	0x5D					]	0x5A	]	0x5A	]	0xBB	]	0xBD	]	0x5A	]	0x5D
^	0x5E	¬	0x5F	¬	0x5F	^	0x5F	^	0x5F	^	0xB0	^	0xB0	^	0x5F	^	0x5E
_	0x5F		0x6D		0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x6D	_	0x5F
‾	0x60	‾	0x79	‾	0x79	‾	0x79	‾	0x79	‾	0x79	‾	0x79	‾	0x79	‾	0x60
a	0x61	A	0xC1	a	0x81	a	0x81	a	0x59	a	0x81	a	0x81	a	0x57	a	0x61
b	0x62	B	0xC2	b	0x82	b	0x82	b	0x62	b	0x82	b	0x82	b	0x59	b	0x62
c	0x63	C	0xC3	c	0x83	c	0x83	c	0x63	c	0x83	c	0x83	c	0x62	c	0x63
d	0x64	D	0xC4	d	0x84	d	0x84	d	0x64	d	0x84	d	0x84	d	0x63	d	0x64
e	0x65	E	0xC5	e	0x85	e	0x85	e	0x65	e	0x85	e	0x85	e	0x64	e	0x65
f	0x66	F	0xC6	f	0x86	f	0x86	f	0x66	f	0x86	f	0x86	f	0x65	f	0x66
g	0x67	G	0xC7	g	0x87	g	0x87	g	0x67	g	0x87	g	0x87	g	0x66	g	0x67
h	0x68	H	0xC8	h	0x88	h	0x88	h	0x68	h	0x88	h	0x88	h	0x67	h	0x68
i	0x69	I	0xC9	i	0x89	i	0x89	i	0x69	i	0x89	i	0x89	i	0x68	i	0x69
j	0x6A	J	0xD1	j	0x91	j	0x91	j	0x70	j	0x91	j	0x91	j	0x69	j	0x6A
k	0x6B	K	0xD2	k	0x92	k	0x92	k	0x71	k	0x92	k	0x92	k	0x70	k	0x6B
l	0x6C	L	0xD3	l	0x93	l	0x93	l	0x72	l	0x93	l	0x93	l	0x71	l	0x6C
m	0x6D	M	0xD4	m	0x94	m	0x94	m	0x73	m	0x94	m	0x94	m	0x72	m	0x6D

UTF-8		EBCDIC														ASCII	
		Kana		Lowercase		ASCII		ASPEN		IBM Standard		IBM Standard Extension		NEC Kana			
Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex	Char	Hex
n	0x6E	N	0xD5	n	0x95	n	0x95	n	0x74	n	0x95	n	0x95	n	0x73	n	0x6E
o	0x6F	O	0xD6	o	0x96	o	0x96	o	0x75	o	0x96	o	0x96	o	0x74	o	0x6F
p	0x70	P	0xD7	p	0x97	p	0x97	p	0x76	p	0x97	p	0x97	p	0x75	p	0x70
q	0x71	Q	0xD8	q	0x98	q	0x98	q	0x77	q	0x98	q	0x98	q	0x76	q	0x71
r	0x72	R	0xD9	r	0x99	r	0x99	r	0x78	r	0x99	r	0x99	r	0x77	r	0x72
s	0x73	S	0xE2	s	0xA2	s	0xA2	s	0x80	s	0xA2	s	0xA2	s	0x78	s	0x73
t	0x74	T	0xE3	t	0xA3	t	0xA3	t	0x8B	t	0xA3	t	0xA3	t	0x80	t	0x74
u	0x75	U	0xE4	u	0xA4	u	0xA4	u	0x9B	u	0xA4	u	0xA4	u	0x8B	u	0x75
v	0x76	V	0xE5	v	0xA5	v	0xA5	v	0x9C	v	0xA5	v	0xA5	v	0x9B	v	0x76
w	0x77	W	0xE6	w	0xA6	w	0xA6	w	0xA0	w	0xA6	w	0xA6	w	0x9C	w	0x77
x	0x78	X	0xE7	x	0xA7	x	0xA7	x	0xAB	x	0xA7	x	0xA7	x	0xA0	x	0x78
y	0x79	Y	0xE8	y	0xA8	y	0xA8	y	0xB0	y	0xA8	y	0xA8	y	0xAB	y	0x79
z	0x7A	Z	0xE9	z	0xA9	z	0xA9	z	0xB1	z	0xA9	z	0xA9	z	0xB0	z	0x7A
{	0x7B	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0xC0	{	0x7B
|	0x7C	|	0x4F	|	0x4F	|	0x6A	|	0x6A	|	0x4F	|	0x4F	|	0x6A	|	0x7C
}	0x7D	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0xD0	}	0x7D
~	0x7E	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0xA1	~	0x7E
	0xA0								0x57								0xA0
｡	0xEFBDA1	｡	0x41					｡	0x41			｡	0x42	｡	0x41	｡	0xA1
｢	0xEFBDA2	｢	0x42					｢	0x42			｢	0x43	｢	0x42	｢	0xA2
｣	0xEFBDA3	｣	0x43					｣	0x43			｣	0x44	｣	0x43	｣	0xA3
、	0xEFBDA4	、	0x44					、	0x44			、	0x45	、	0x44	、	0xA4
・	0xEFBDA5	・	0x45					・	0x45			・	0x46	・	0x45	・	0xA5
ヲ	0xEFBDA6	ヲ	0x46					ヲ	0x46			ヲ	0x47	ヲ	0x46	ヲ	0xA6
ァ	0xEFBDA7	ァ	0x47					ァ	0x47			ァ	0x48	ァ	0x47	ァ	0xA7
ィ	0xEFBDA8	ィ	0x48					ィ	0x48			ィ	0x49	ィ	0x48	ィ	0xA8
ゥ	0xEFBDA9	ゥ	0x49					ゥ	0x49			ゥ	0x51	ゥ	0x49	ゥ	0xA9
ェ	0xEFBDAA	ェ	0x51					ェ	0x51			ェ	0x52	ェ	0x51	ェ	0xAA
ォ	0xEFBDAB	ォ	0x52					ォ	0x52			ォ	0x53	ォ	0x52	ォ	0xAB
ャ	0xEFBDAC	ャ	0x53					ャ	0x53			ャ	0x54	ャ	0x53	ャ	0xAC
ュ	0xEFBDAD	ュ	0x54					ュ	0x54			ュ	0x55	ュ	0x54	ュ	0xAD
ョ	0xEFBDAE	ョ	0x55					ョ	0x55			ョ	0x56	ョ	0x55	ョ	0xAE
ッ	0xEFBDAF	ッ	0x56					ッ	0x56			ッ	0x57	ッ	0x56	ッ	0xAF
ー	0xEFBDB0	ー	0x58					ー	0x58			ー	0x58	ー	0x58	ー	0xB0
ア	0xEFBDB1	ア	0x81					ア	0x81			ア	0x59	ア	0x81	ア	0xB1
イ	0xEFBDB2	イ	0x82					イ	0x82			イ	0x62	イ	0x82	イ	0xB2
ウ	0xEFBDB3	ウ	0x83					ウ	0x83			ウ	0x63	ウ	0x83	ウ	0xB3
エ	0xEFBDB4	エ	0x84					エ	0x84			エ	0x64	エ	0x84	エ	0xB4
オ	0xEFBDB5	オ	0x85					オ	0x85			オ	0x65	オ	0x85	オ	0xB5
カ	0xEFBDB6	カ	0x86					カ	0x86			カ	0x66	カ	0x86	カ	0xB6
キ	0xEFBDB7	キ	0x87					キ	0x87			キ	0x67	キ	0x87	キ	0xB7
ク	0xEFBDB8	ク	0x88					ク	0x88			ク	0x68	ク	0x88	ク	0xB8
ケ	0xEFBDB9	ケ	0x89					ケ	0x89			ケ	0x69	ケ	0x89	ケ	0xB9
コ	0xEFBDBA	コ	0x8A					コ	0x8A			コ	0x70	コ	0x8A	コ	0xBA
サ	0xEFBDBB	サ	0x8C					サ	0x8C			サ	0x71	サ	0x8C	サ	0xBB
シ	0xEFBDBC	シ	0x8D					シ	0x8D			シ	0x72	シ	0x8D	シ	0xBC
ス	0xEFBDBD	ス	0x8E					ス	0x8E			ス	0x73	ス	0x8E	ス	0xBD
セ	0xEFBDBE	セ	0x8F					セ	0x8F			セ	0x74	セ	0x8F	セ	0xBE
ソ	0xEFBDBF	ソ	0x90					ソ	0x90			ソ	0x75	ソ	0x90	ソ	0xBF
タ	0xEFBE80	タ	0x91					タ	0x91			タ	0x76	タ	0x91	タ	0xC0
チ	0xEFBE81	チ	0x92					チ	0x92			チ	0x77	チ	0x92	チ	0xC1
ツ	0xEFBE82	ツ	0x93					ツ	0x93			ツ	0x78	ツ	0x93	ツ	0xC2
テ	0xEFBE83	テ	0x94					テ	0x94			テ	0x8A	テ	0x94	テ	0xC3
ト	0xEFBE84	ト	0x95					ト	0x95			ト	0x8B	ト	0x95	ト	0xC4
ナ	0xEFBE85	ナ	0x96					ナ	0x96			ナ	0x8C	ナ	0x96	ナ	0xC5
ニ	0xEFBE86	ニ	0x97					ニ	0x97			ニ	0x8D	ニ	0x97	ニ	0xC6
ヌ	0xEFBE87	ヌ	0x98					ヌ	0x98			ヌ	0x8E	ヌ	0x98	ヌ	0xC7
ネ	0xEFBE88	ネ	0x99					ネ	0x99			ネ	0x8F	ネ	0x99	ネ	0xC8
ノ	0xEFBE89	ノ	0x9A					ノ	0x9A			ノ	0x9A	ノ	0x9A	ノ	0xC9
ハ	0xEFBE8A	ハ	0x9D					ハ	0x9D			ハ	0x9B	ハ	0x9D	ハ	0xCA
ヒ	0xEFBE8B	ヒ	0x9E					ヒ	0x9E			ヒ	0x9C	ヒ	0x9E	ヒ	0xCB
フ	0xEFBE8C	フ	0x9F					フ	0x9F			フ	0x9D	フ	0x9F	フ	0xCC
ヘ	0xEFBE8D	ヘ	0xA2					ヘ	0xA2			ヘ	0x9E	ヘ	0xA2	ヘ	0xCD
ホ	0xEFBE8E	ホ	0xA3					ホ	0xA3			ホ	0x9F	ホ	0xA3	ホ	0xCE
マ	0xEFBE8F	マ	0xA4					マ	0xA4			マ	0xAA	マ	0xA4	マ	0xCF
ミ	0xEFBE90	ミ	0xA5					ミ	0xA5			ミ	0xAB	ミ	0xA5	ミ	0xD0
ム	0xEFBE91	ム	0xA6					ム	0xA6			ム	0xAC	ム	0xA6	ム	0xD1
メ	0xEFBE92	メ	0xA7					メ	0xA7			メ	0xAE	メ	0xA7	メ	0xD2
モ	0xEFBE93	モ	0xA8					モ	0xA8			モ	0xAF	モ	0xA8	モ	0xD3
ヤ	0xEFBE94	ヤ	0xA9					ヤ	0xA9			ヤ	0xB3	ヤ	0xA9	ヤ	0xD4
ユ	0xEFBE95	ユ	0xAA					ユ	0xAA			ユ	0xB4	ユ	0xAA	ユ	0xD5
ヨ	0xEFBE96	ヨ	0xAC					ヨ	0xAC			ヨ	0xB5	ヨ	0xAC	ヨ	0xD6
ラ	0xEFBE97	ラ	0xAD					ラ	0xAD			ラ	0xB6	ラ	0xAD	ラ	0xD7
リ	0xEFBE98	リ	0xAE					リ	0xAE			リ	0xB7	リ	0xAE	リ	0xD8
ル	0xEFBE99	ル	0xAF					ル	0xAF			ル	0xB8	ル	0xAF	ル	0xD9
レ	0xEFBE9A	レ	0xBA					レ	0xBA			レ	0xB9	レ	0xBA	レ	0xDA
ロ	0xEFBE9B	ロ	0xBB					ロ	0xBB			ロ	0xBA	ロ	0xBB	ロ	0xDB
ワ	0xEFBE9C	ワ	0xBC					ワ	0xBC			ワ	0xBB	ワ	0xBC	ワ	0xDC
ン	0xEFBE9D	ン	0xBD					ン	0xBD			ン	0xBC	ン	0xBD	ン	0xDD
ﾞ	0xEFBE9E	ﾞ	0xBE					ﾞ	0xBE			ﾞ	0xBE	ﾞ	0xBE	ﾞ	0xDE
ﾟ	0xEFBE9F	ﾟ	0xBF					ﾟ	0xBF			ﾟ	0xBF	ﾟ	0xBF	ﾟ	0xDF

The following is the table that shows conversion patterns of the codes that are not carried in preceding conversion tables.

Other Codes of UTF-8

UTF-8	EBCDIC	ASCII
From 0x01 to 0x1F	No Conversion	No Conversion
Others	Code Conversion Error	Code Conversion Error

App.2.4 Conversion to/from EUC

App.2.4.1 Conversion to EUC

The conversion of the codes other than half width Kana is similar to the one from ASCII code.

When converting a half width Kana character, the system converts a code into a double-byte code, which is created by prepending '0x8E' onto ASCII code. (from 0xA1 to 0xFF)

App.2.4.2 Conversion from EUC

The conversion of the codes other than half width Kana is similar to the one from ASCII code.

When converting a half width Kana character, the system deletes '0x8E' from a code, because doing so turns it to be the same code as ASCII. (from 0xA1 to 0xFF) Then the system converts the code in the same manner as the conversion table of ASCII code.

For the details on ASCII code, refer to "2.2 Conversion from ASCII."

~~~~~~~~~~~~~~~~~~~~~~~~ Memo ~~~~~~~~~~~~~~~~~~~~~~~~
~~~~~~~~~~~~~~~~~~~~~~~~

Appendix 3

Troubleshooting

App.3.1 Installation

Table App.3.1

Trouble	Measure
Unable to install HULFT	About40MB is necessary for the installation of HULFT. Confirm if there is sufficient memory in the hard disk.
	It is necessrary to register HULFT in Windows services. IT should be installed by a user with the authority to register services.
Unable to upgrade HULFT	If HULFT is currently running, close HULFT first before installing the new version.

App.3.2 Startup/Exit

Table App.3.2

Trouble	Measure
Unable to start HULFT	HULFT should be started by the user with the proper permission.
	Confirm that it is not the trial version. Trial version can only be used for 60 days.
Unable to stop HULFT	If data transfer is in progress, HULFT cannot be closed during a data transfer until the transfer has completed. **[Note]** Forcible termination of the process will also force to terminate all the processes including data transfer.
	HULFT should be stoped by the user with the proper permission.
Unable to activate any of processes	Confirm whether your account has been registered in System Environment Settings. If so, check the followings. a) The specified account, domain name and password are correct. b) The specified account has the permission to activate processes.

App.3.3 Management Screen

Table App.3.3

Trouble	Measure
Unable to use the Management Screen; A message apprers to prompt to enter my password when the screen is activated	Password check or the security function of the Management Screen has been set. Consult with the system manager in order to use the Management Screen.
Unable to use some of the Management Screen functions	Has the Management Screen security function been set? If it has been set, consult with the system manager regarding the functions that you want to use.
An error occurs when the Send or Resend File command is issued	Confirm that the send process is activated.
	Error code is displayed together along with the error message. Check the error code of Send File command (utlsend.exe) based on the displayed code.
An error occurs when a Send or Resend Request is issued	Confirm that the request acknowledge program in the requested host is activated.
	Error code is displayed together along with the error message. Refer to the error code of Receive Request command (utlrecv.exe) based on the displayed code.
The Status Inquiry Screen is not displayed	Confirm that a log file exists. The window will not be displayed if there is no data to be displayed along with the message 'Applicable information does not exist' in the status bar.
Unable to register Management Information	Management Information is saved as a file under HULPATH. Confirm that you have written authority under HULPATH.
The Console is not activated in the Management Screen	Is the HUULFT Service activated? If not, activate the Service.

App.3.4 Send

Table App.3.4

Trouble	Measure
Unable to connect to the remote host.	Confirm that 'ping' is completed normally. Execut the following command line in the command (MS-DOS): > ping *remote host name* If it is not completed normally, confirm the followings. - Local machine IP address, subnet mask setting - Default gateway setting - Definition of the remote host name in the 'hosts' file - Inclusion of '#' or other invalid characters in the remote host name - Whether the remote host is active
	Confirm that the Receive Port No. of the remote host matches the port number defined in the Host Information of the local host.
Unable to open send files.	Confirm the specification of the send file in Send Management Information.
	Confirm that the send file is not being used by another process.
A communication error occurs.	Confirm if the receiving host has forced the termination of processing.
	Confirm if the socket read time out has occurred in the receiving host.
	Confirm that the settings of the routers, LAN environment, etc are correct.
Send operation was canceled and the request was executed successfully, but it takes a long time for the cancellation to occur.	When cancelling a send operation, even if the request is accepted successfully, it may take a long time for the cancellation to actually occur under the following circumstances: a) When making a connection to the remote host when not yet established. b) When a long transfer interval is used. c) When the remote host is on response stand- by. d) When a Post-send Job is being executed.

App.3.5 Receive

Table App.3.5

Trouble	Measure
Unable to open a receive file	Confirm the designation of the receive file in Receive Management Information.
	Confirm that the receive file is not being used by other processes.
	If the Registration Mode is 'New Creation', confirm that a receive file does not exist.
Unable to write to a file	Confirm that available free space on the hard disk. If 'Multiple Receive' or 'Restore' is selected, or when receiving data in CSV foramat, more free space is required than the size of the data actually being received.
Unable to acquire the name of the sending host	Confirm that the sending host has been registered in the 'hosts' file.
	Confirm that there is a carriage return after the final record of the sending host in the 'hosts' file.
Code conversion fails	Confirm that the Format and Multi Format Information defined in the sending host coincides with the received data.
A communication error occurs	Confirm if the sending host has forced the termination of the processing.
	Confirm if the socket read time out has occurred in the sending host.
	Confirm that the settings of the routers, LAN environment, etc are correct.
Received data is garbled	If an Encryption Key is set in the Receive Management Information, confirm that it matches the Encryption Key at the sending host.
	In the case of conversion by the sending host, confirm that the Kanji Code Type of the local host is correctly registered in the Host Information of the sending host.
	In the case of conversion by the receiving host, confirm that the Kanji Code Type of the local host is correctly registered in the Host Information of the receiving host.

App.3.6 Request Acknowledge

Table App.3.6

Trouble	Measure
Failure occurred with error code 721	Though a request was received, an error occurred when the request was executed. Compare it with the command error code of each service while referring to the detailed error code. Service Name SEND, RESEND ..... utlsend.exe HULSNDRC ..... hulsndrc.exe HULRJOB ..... hulrjob.exe
A communication error occurs	Confirm if socket read time out has occurred in the requesting host.
	Confirm that the settings of the routers, LAN environment, etc are correct.

App.3.7 Send/Resend File

Table App.3.7

Trouble	Measure
Unable to execute and 'USAGE' is displayed	There is an mistake in parameters. Reconfirm the entered data.
An error occurs upon request issue	Error code is displayed together along with the error message. Refer to utlsend.exe based on the displayed code.

App.3.8 Send/Resend Requests

Table App.3.8

Trouble	Measure
Unable to connect to the remote host	Refer to the detailed error code tables based on the error code displayed within the message.
Unable to issue a request	Refer to the request status log of the requested host. Deal with the problem based on the error code of the log.

App.3.9 Other

Table App.3.9

Trouble	Measure
Receiving host Job Information is not displayed in the receiving host job monitoring	Confirm that the request acknowledge program of the receive side host is activated.
	The send completion time of the send log is used when searching the receiving host job log. It is therefore not possible to search the log property if there is a time difference between the receiving host and the sending host. Confirm that there is not significant difference between the system time of the sending and receiving hosts. (As a general rule, the send completion time of the send log is about 2 minutes)
	Confirm that there is not difference between the Host Name registered in the receive log of the receiving host and the Host Name registered in the request status log. With receive processing, if the sending Host Name is not registered correctly in Host Information, it is retrieved from the 'hosts' file. In this case, if sending side host name does not match the send source host name registered in the 'hosts' file of the receiving host, host name inconsistency is detected when job monitoring is executed, therefore job monitoring will terminate with the message 'data does not exist.'
The application screen executed by Post-send Job or Post-receive Job is not displayed	The following two conditions must be satisfied in order to display the application screen activated by a susequent job. a) You must be logged on b) 'Allow Service to interact with Desktop' must be set in Windows service settings. In addition, a random account is set in System Environment Settings. [Note] In the case of Windows Vista or Windows Server 2008, the screen of application is displayed on the desktop of session 0, not on the desktop of an end user.
Applications executed by post transfer jobs do not operate correctly	Confirm that the path of the startup job is specified correctly. Confirm that the short name (MS-DOS) is specified if there are any spaces included in the startup job path or execution file name.
	Subsequent jobs are executed in the BINNT directory in the HULFT installation directory. When executing a job that is dependent on the execution directory, it is necessary to move it to a different directory.
	If accounts at the time of service execution are not assigned, subsequent jobs will activate as a system-owned process. Keep in mind that the setting of access authority may be required.

Table App.3.10

Trouble	Measure
Unable to add account (user) information when executing post-receive job; Message code (W121023,W337013,W806041) is displayed.	The account has perhaps not been set in System Environment Settings. Users entered with the account settings must satisfy the following conditions. a) It is necessary to be affiliated with the 'administrators' group of the local machine. b) The user permissions indicated below must be assigned in the local machine. - Function as part of the operating system - Increase the memory quota of the process (In the case of Windows2000, increase quota) - Replace a process level token - Restore files and directories - Back up files and directories
* Setting method of user rights	Select 'Local Security Policy' in Management Tools of the Control Panel. Rights are assigned by selecting 'Local Policy' > 'Assign User Rights' in the local security setting screen. [Note] A job may not be activated successfully due to the absence of the function to grant user right on WindowsXP Home Edition,WindowsVista Home Basic,and WindowsVista Home Premium
The subject of received mail messages and appended files are garbled	With Mail Interface, the followings are automatically encoded in Base64 format - Title (Subject:) - Sender's full name (From:) - Attachment file [Remarks] When logging in with an appropriate mail account and attempting to read a message with the mail command using a UNIX machine as a mail server, the subject and the sender portions oft he message may become garbled or it may not be possible to open appended files. This is because the UNIX In order to receive mail messages correctly, receive them with POP3-resident, MIME-compatible mail software.
The service information remained even after HULFT uninstallation	Be sure to delete HULFT services by using 'utlservice.exe' before uninstalling. If you have already uninstalled HULFT, install it again and then uninstall again after first deleting the services. [Note] When you execute utlservice command, execute it on the command prompt activated by administrative privilege.

*How to assign user rights

On Control Panel, select Administrative Tools and then Local Security Settings. Select the folder named Local Policies and choose User Rights Assignment to grant the rights.

Index

Symbol

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

R

S

T

U

V

X

Y

HULFT7e Windows

Operation Manual

First Edition: September 1, 2009

SAISON INFORMATION SYSTEMS CO., LTD.

SAISON
INFORMATION
SYSTEMS
CO., LTD.