RELIABLE FILE TRANSFER

HULFT7e

Functions Manual

Note

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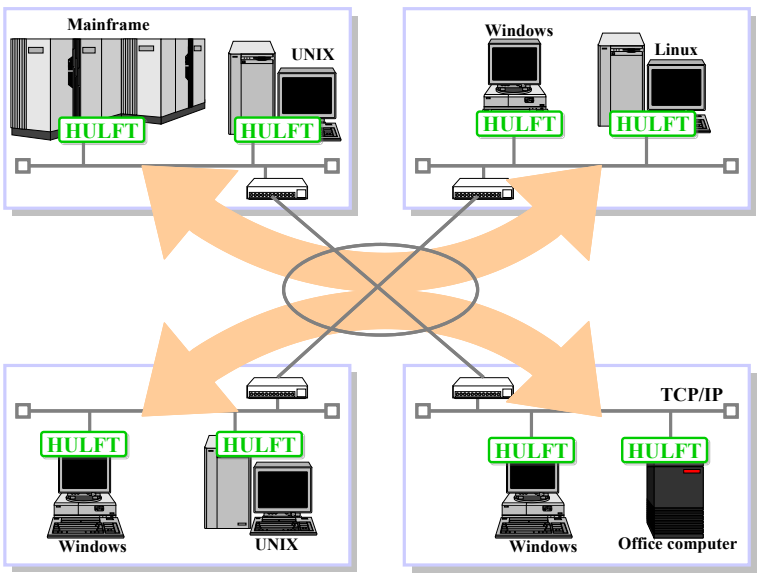
Preface

HULFT is a middleware that executes various functions such as file transfer among networked platforms according to TCP/IP protocol.

It can also be used as an EAI tool for interfacing between systems.
In HULFT, data exchange can be perfomed easily between machines with different code systems and different file system such as Mainframe, UNIX, Window and office computers.
HULFT functionality makes it possible to carry out the execution from a command as well as execution from a user application.
HULFT has numerous management functions that reduce the load on the system architecture by using the set management information, such as automatic execution of jobs with file transfer as the trigger, message notification between machines, job startup of the connected host and so on.

Distribution to open systems from a centralized process of Mainframes, or exchange of data between networks can be carried out smoothly using HULFT.
It also enables reduction of system architecture man-hours required for confirmation of delivery and code conversion during file transfer.
HULFT strongly supports the architecture of information systems of the networking age.



HULFT Concept Image

This manual explains the functionality of HULFT. This information is intended for first time users of HULFT, and users in charge of the installation of HULFT.

This document is composed of the following chapters:

Chapter 1 Overview of HULFT

Chapter 2 Functionality of HULFT

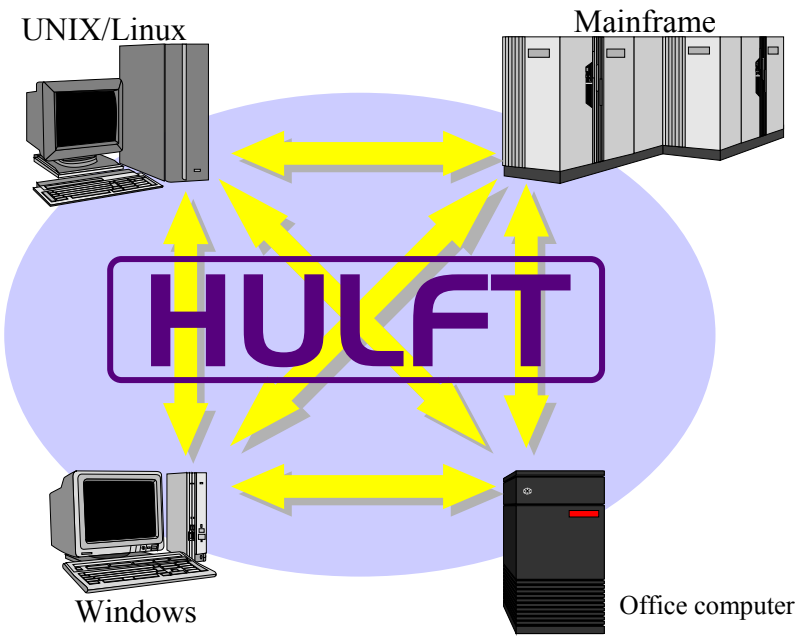
For more details on each function of HULFT, refer to relevant HULFT manuals.

Table of Contents

Chapter 1

Overview of HULFT

This chapter gives an overview of HULFT.



1.1 Overview of HULFT

As shown in the figure below, HULFT comprises the send, receive, request acknowledge, and send and receive management systems. The send, receive and request acknowledge systems execute the send and receive processes of files as well as deal with the requests from other hosts. The send and receive management system updates the settings to carry out the send and receive process, and manages HULFT environment.

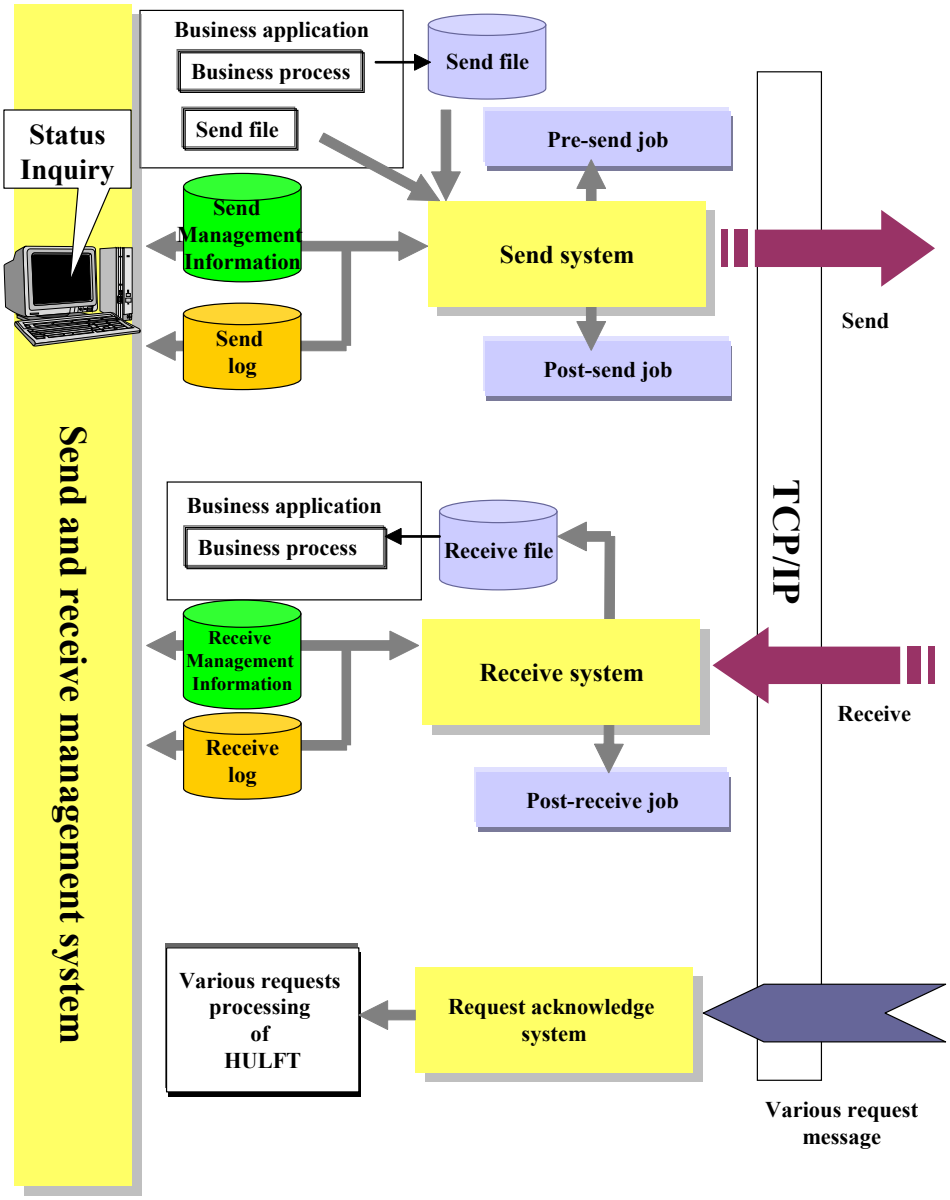


Figure 1.1 HULFT Structure

1.2 Management Information of HULFT

HULFT manages the setup information in file units that will be transferred.

An arbitrary File ID is given to the transferred file unit, and the information required for the transfer is registered beforehand against this ID.

Any File ID can be specified, but the same File ID must be registered in both the sending and receiving sides.

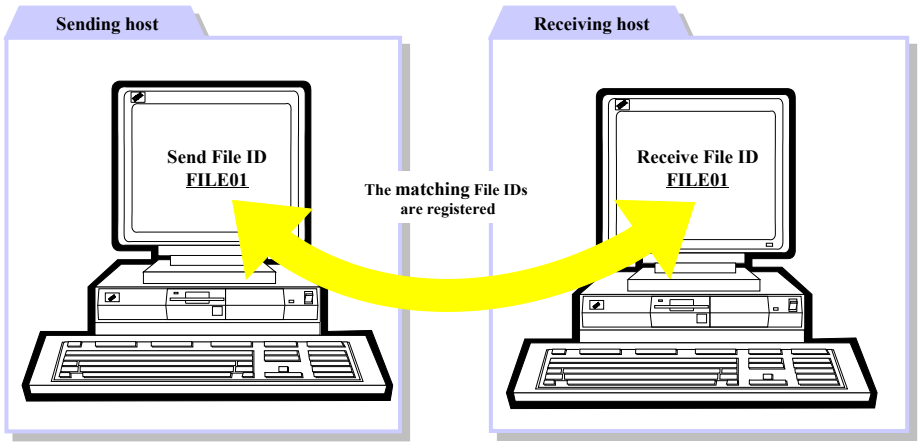


Figure 1.2 Relationship between File IDs

In each file ID, the actual file name and its storage location, the information of the job, which is executed with a file transfer trigger etc., are registered.

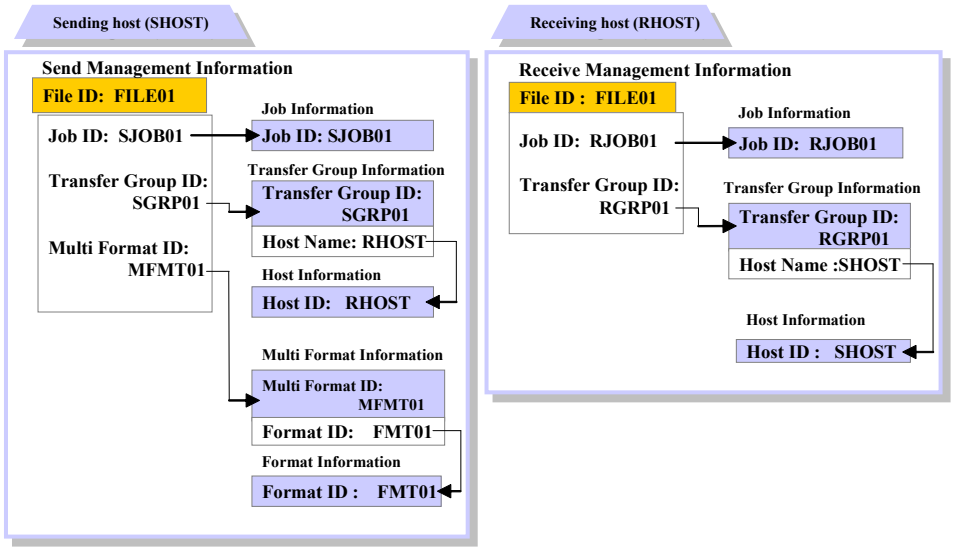


Figure 1.3 HULFT Management Information

1.3 Features of HULFT

Implementing this system as part of the business process can reduce human intervention significantly.

(1) Reliable and High Speed Send/Receive process

- The data can be reduced over the network with the compression function, which makes it possible to transfer data at higher speeds.
- Since it can be used in the LAN environment, it is possible to send and receive data at high speeds.
- If an error occurs during the file transfer, it is possible to resend the file from the point when the error occurred (checkpoint resend function), and restore the file in which error occurred when the file was being received etc.
- If the receive function of the receiving host is not active when the send request is issued, it is possible that the data might be lost. However, it is ensured that the request for the data will be issued at the time of receiving host reboot (through receive ready notification function). Hence there will be no loss of data.
- It can manage the operations to ensure that file transfers (send and receive operations) and interface jobs are executed successfully, and can check the job results.
- When a transfer request is issued, it can check the completion status of the send/receive process and then carry out the next process (synchronous transfer).
- It is also compatible with IPv6 (next generation internet protocol).

(2) Easy Operation

- HULFT can be installed to automate daily operations.
- Receive and send requests can be issued from business applications (jobs or processes).
- HULFT can carry out automatic code conversion according to the settings.
- Daily business tasks can be simplified by registering the management information beforehand.
- Management information can be registered easily by using HULFT Management screen.
- Send status and transfer status can be managed easily by using HULFT Management screen.
- The centralized management function (HULFT Manager) enables the batch management of management information on multiple machines.
- Unlawful computer access or operational mistakes can be easily identified by examining the corresponding operation logs.

(3) Automation of Series of Processes

- Pre-send and Post-receive jobs can be executed.
- Email can be sent following the send and receive process, and the files can be transferred as attachment to the messages (Windows only).
- The schedule function enables you to start up HULFT according to schedule and control job flow. (The job flow control function is available only on UNIX/Linux.) The schedule function is offered by HULFT Scheduler concerning UNIX/Linux, while it is provided by certain types of HULFT for Windows that are equipped with the Scheduler function.

(4) Enhancement of User Interface

- Besides the code conversion tables provided by HULFT, it is also possible to create user-defined code conversion tables easily.
- It is possible to convert to CSV format or XML format files.
- It is possible to convert format, multi format and CSV format to the format required for the output data and this can be output to multiple files (data conversion function).
- It is possible to join and transfer multiple files. The joined files are broken at the recipient side (multiple file join).
- It is possible to execute remote host jobs.

(5) Ensuring Security

- Data can be encrypted when files are transferred.
- Data consistency can be verified by comparing it with the data received through file transferring.
- Regarding request from remote hosts, connection permission can be granted on a host or a service basis.

1.4 Benefits of HULFT

(1) Reduction of TCO

- Network load is reduced through data compression, intermittent transfer and so on.
- Operational cost is reduced by automating routine file transfers.
- Development and operational costs that accompany file transfer processes, such as simultaneous send and receive operations involving multiple locations, file resend/recovery in the event of an error, and automatic operation in distributed environments through the execution of follow-up applications, can be reduced through effective file transfer that is fine tuned better than with FTP.
- Converting information supply systems with higher CPU use rates into distributed environments enables users to cut back on the large investments required for Mainframe resources.

(2) Automation of operations and centralized monitoring

- Programming the daily send and receive tasks (file transfer) into business processes enables operations to be automated, therefore reducing the amount of work significantly.
- Data interface between Mainframes connected by FDDI can be automated.
- Job control in distributed environments is made possible by the automatic execution of jobs, triggered by the file transfer and job execution functions in distributed environments.
- The alert notification function enables the centralized monitoring of operation system errors.
- Using the centralized monitoring function, the job information and management information accompanying file transfers can be centrally managed and monitored.

(3) Data interfacing between operation systems

- The code conversion function simplifies the operation data interfacing in Mainframe/NSK/Unix/Linux/office computer/Windows and other multivendor environments.
- The format transfer function promotes data interfacing between business applications.
- It is also possible to achieve data interfacing with ERP packages from the existing operation systems.
- Using the multiple files batch transfer function, it is possible to preserve data by backing up important data in remote locations and backing up the distributed environment data using Mainframes. When joined files are split, the attributes etc. can also be restored to the original state.
- Using encryption function makes it possible to safely execute file transfers through the Internet(VPN).

Chapter 2

Functionality of HULFT

This chapter explains the functionality of HULFT

2.1 Send and Receive Functions

HULFT supports the following functions for file transfer.

2.1.1 Intermittent Transfer

Transfer interval per block of the transferred data can be specified in the Send Management Information. Therefore file transfers can be carried out without using up network bandwidth.

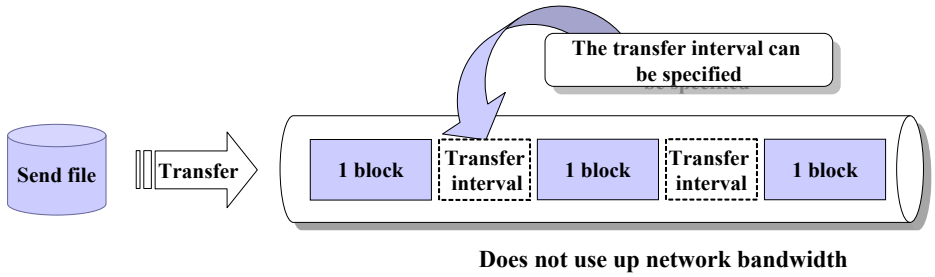


Figure 2.1 Intermittent Transfer

2.1.2 Compressed Transfer

Data is transferred after compressing it in a unique HULFT method that makes the file transfer more efficient. The compress option can be set in the Send Management Information for each File ID. The compression method can be selected from two types: conversion within records (horizontal compression) and compression between records (vertical compression). When the compression transfer is carried out, the compression ratio can be checked in the sending host.

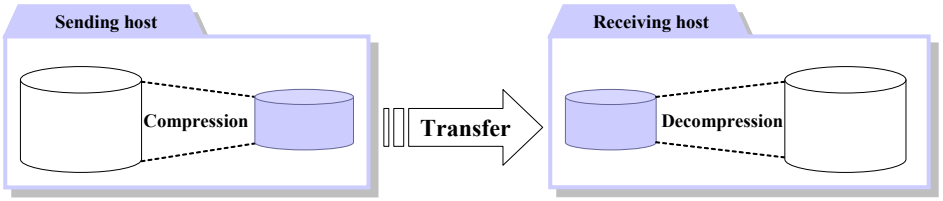


Figure 2.2 Data Compression Transfer

2.1.3 Multicasting

A file can be sent to multiple hosts by issuing a single request. This can be done by registering multiple hosts in the Transfer Group Information. A maximum of 1000 hosts can be registered (up to 48 hosts can be registered in i5OS).

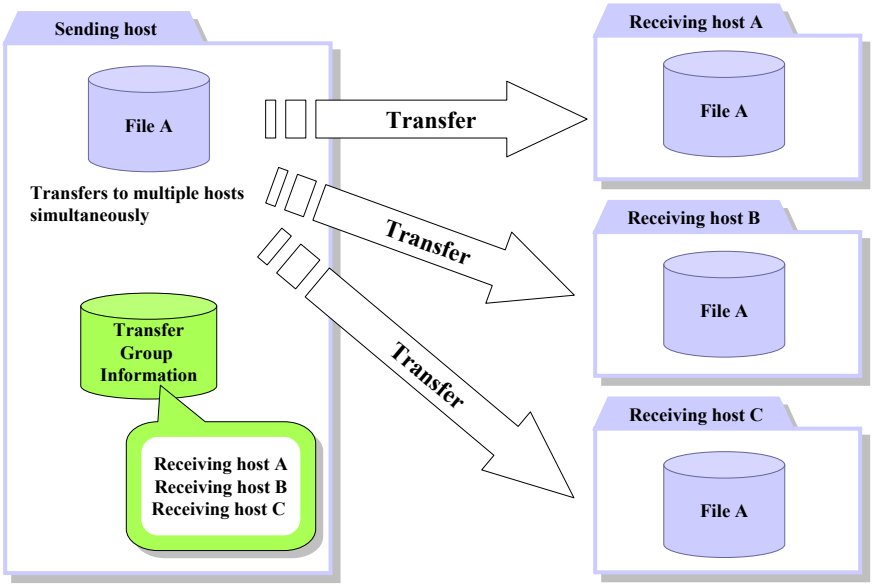


Figure 2.3 Multicasting

2.1.4 Synchronous and Asynchronous Transfer Function

- When a send and receive operation is carried out in a synchronous transfer, the send file and the send request will not end until the send and receive process is completed. Hence, only after confirming the results of the send and receive operation, next process is carried out.
- When a send and receive operation is carried out in an asynchronous transfer, the send file and the send request ends when the send and receive instructions are issued. The actual send and receive process is carried out asynchronously as the send file and send request. Their status code will not be notified to the send file and send request.

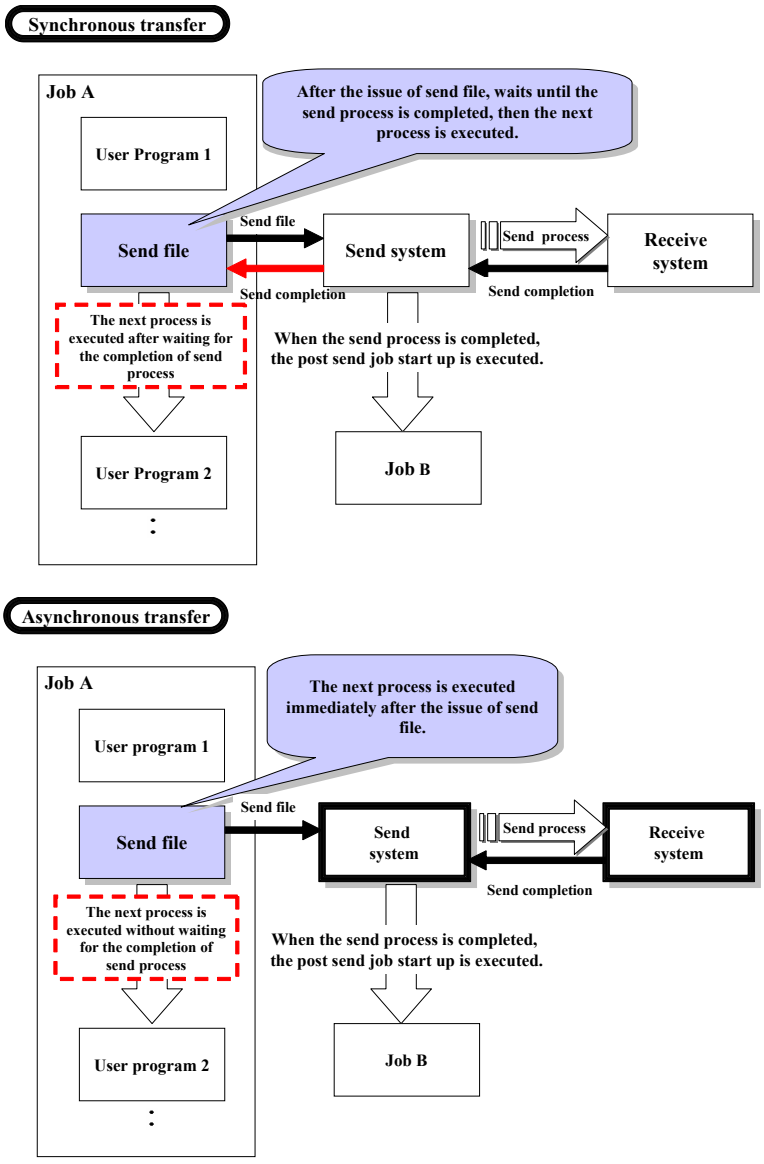


Figure 2.4 Synchronous Transfer and Asynchronous Transfer

2.1.5 Multiple File Join Function

It is possible to transfer multiple files at one time. Uses of this function include the block transfer of the related files and backup of other hosts. Forward or backward matching of the transfer file names is possible. For example, if 'HULFT.*' is specified, all files starting with a 6-byte string 'HULFT.' will be targeted. In addition, it is also possible to designate the type of transfer (binary transfer/ text transfer/ format transfer/ multi format transfer) for each file. Refer to "2.1.16 Data Format" for more details.

This function is composed of three batch programs: join, break (extract) and details display. It is possible to execute a series of processes by combining this function with Pre-send job or Post-receive job execution function. Refer to "2.1.15 Job Startup" for more details.

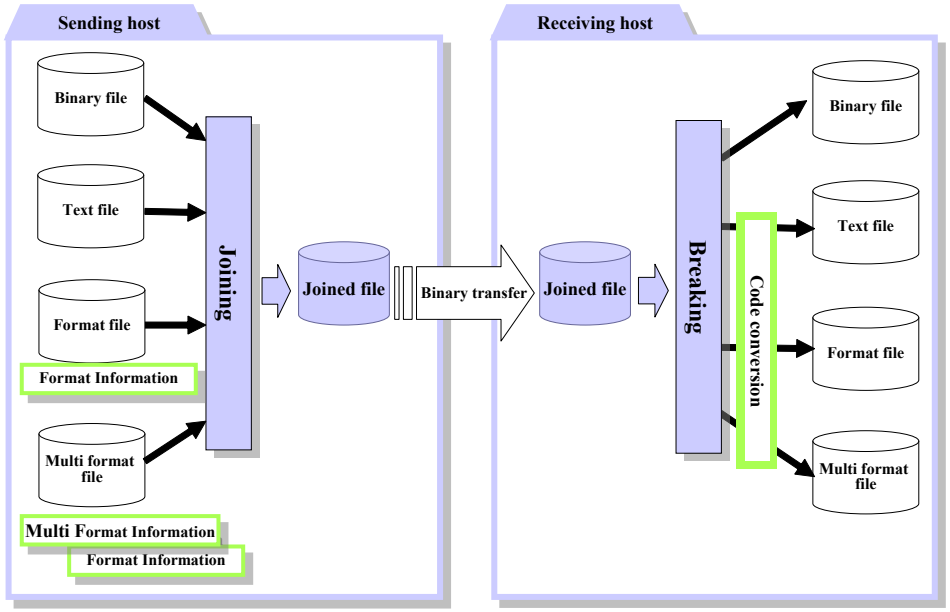


Figure 2.5 Multiple File Join Function

2.1.6 Single Receive and Multiple Receive

With regard to the single receive operation that is carried out with one pair of send and receive operations, the data from multiple remote hosts can be received in the same File ID, and can be added and written in one file. Since the Detail of the location within the file of the data for a particular remote host is managed in the receive information file, the required data can also be extracted.

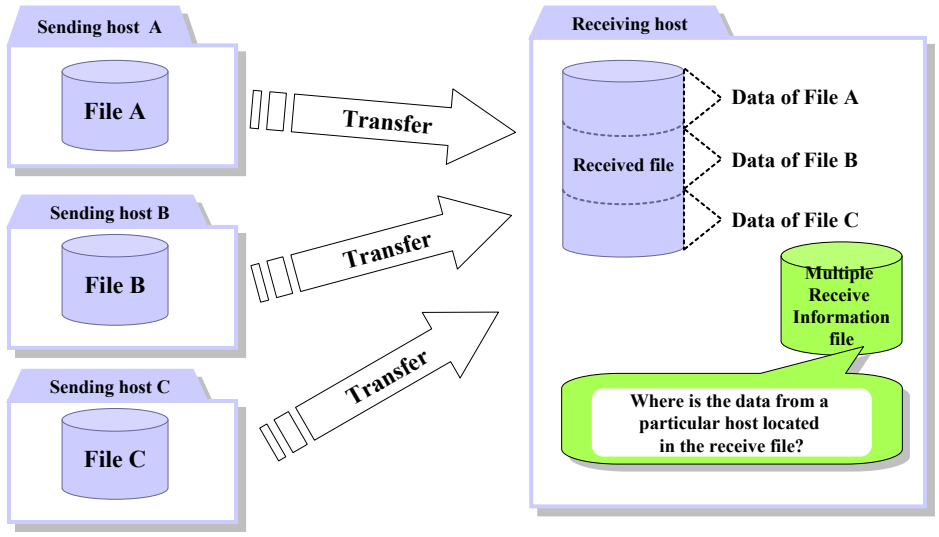


Figure 2.6 Multiple Receive

2.1.7 Generation File

If you wish to keep previously received files, the data can be received in generation files. This feature is effective when the same file will be received at irregular intervals throughout the course of a day.

In Mainframes, the generation catalog is used.

UNIX, Linux, Windows, and i5OS carry out the specified number of cycles for managing generation files. The generation file count can be specified up to 9999.

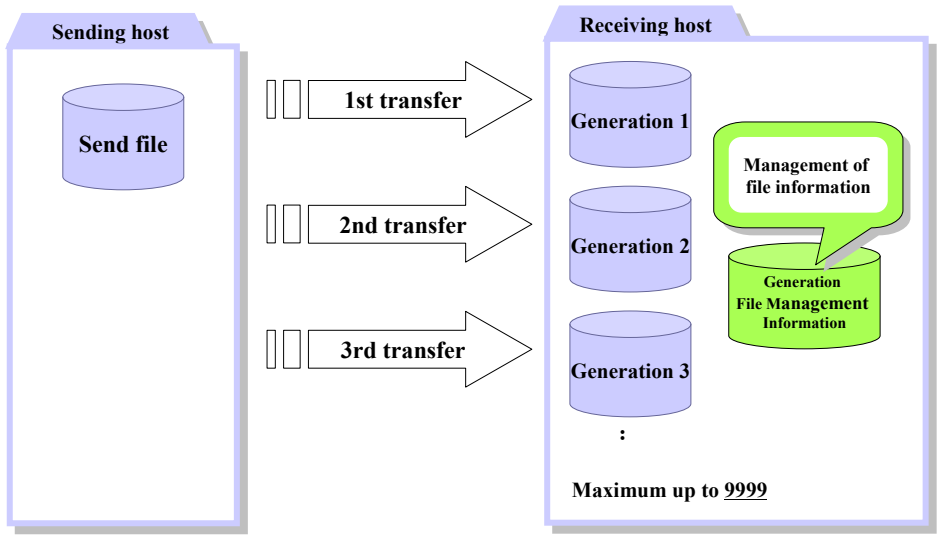


Figure 2.7 Generation File

2.1.8 Checkpoint Resend Function

If an error occurs during data transfer, it is possible to resend from the point when the error occurred using the checkpoint resend function.

When there is an error while sending the file, the place where the error occurred is registered as the checkpoint. When resending, the transfer will start from the checkpoint. It is also possible to resend from the top of the file.

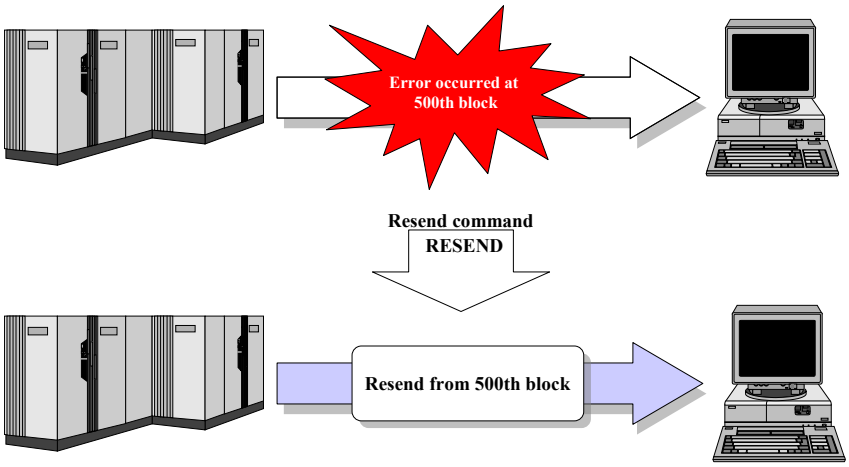


Figure 2.8 Checkpoint Resend Function

2.1.9 Cancellation Function

Send and receive processes can be stopped. By specifying the IDs of the file under send/send queue/receive process or through specification of host name, any of the above process can be stopped. Cancellation is carried out from the Management screen or by a command.

2.1.10 Transfer Status Display

The processing state of the sending and receiving processing can be confirmed on the Management screen or by commands.

2.1.11 Receive Completion Notification

The timing when the sending host is notified of receive completion results can be changed. There are two methods of notifying the results.

(1) Receive Completion

When the data transfer process is complete, it is notified to the sending side. Even if post-receive successful job is specified (refer to "2.1.15 Job Startup"), completion will be notified to the sending side before executing the Post-receive job.

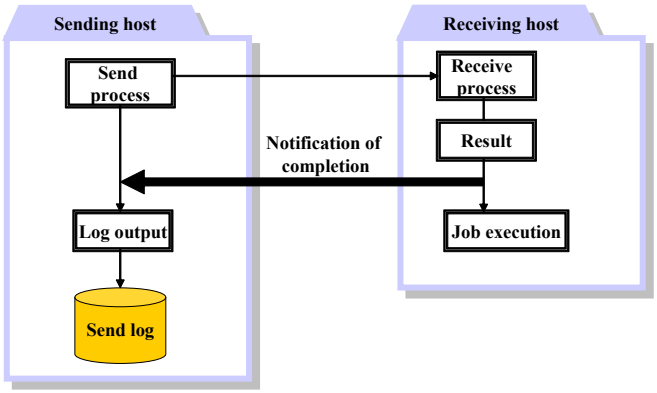


Figure 2.9 Receive Completion Notification (Receive Completion)

(2) Successful Job Completion

In the Receive process, if successful job has been set for the Post-receive job, the result will be notified to the sending side on successful job completion

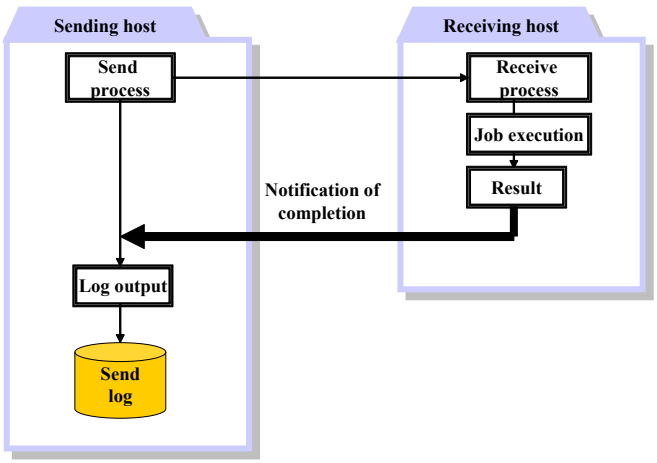


Figure 2.10 Receive Completion Notification (Successful Job Completion)

2.1.12 Receive Ready Notification Function

This function informs all related hosts about a 'ready to receive' state. Its primary purpose is to notify the Source and Target hosts, which for whatever reason may have been temporarily disabled, that the system has now successfully recovered and is able to receive a transmission.

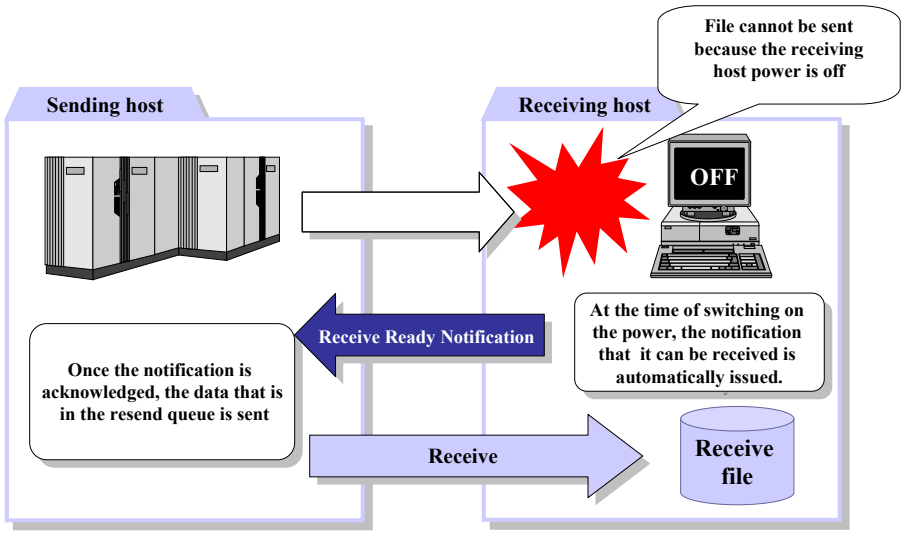


Figure 2.11 Receive Ready Notification Function

2.1.13 Mail Interface

Email can be issued after the send process or the receive process. The subject of the mail, Address (To), CC (CC) etc can be set as required, and files can be attached to the mail (Windows only).

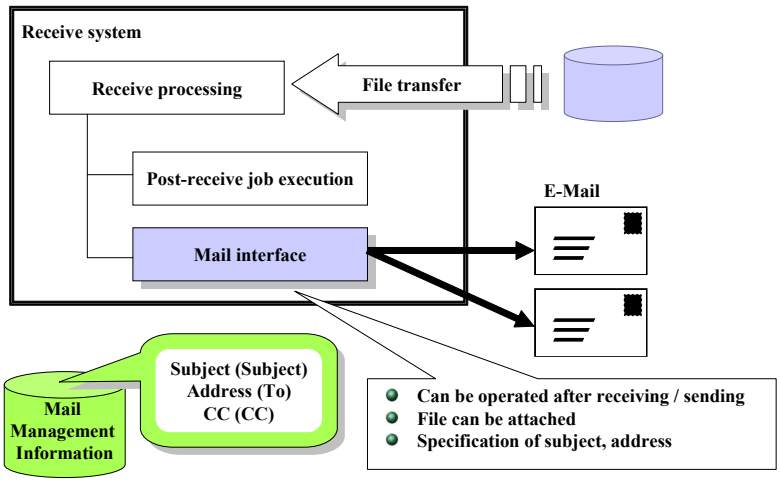


Figure 2.12 Mail Interface

2.1.14 Message Transmission

In file transfer process, during the send file operation, users can separately attach messages apart from the file details. The message can be assigned with a value (number) that can be used as a file name reference while sending and receiving files or it can be used in the job execution.

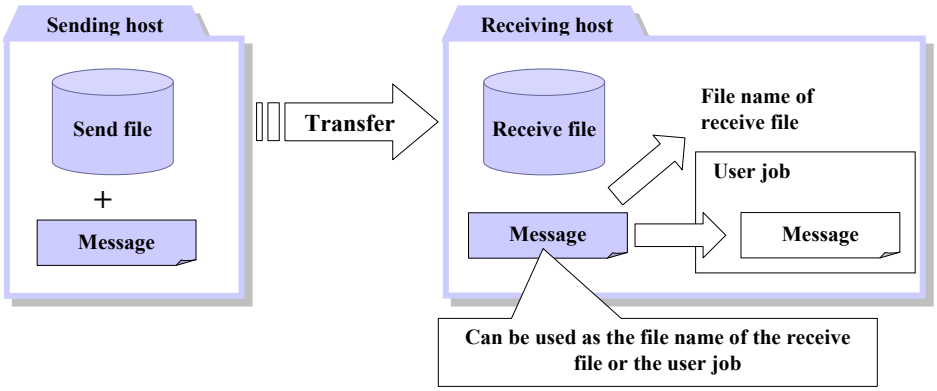


Figure 2.13 Message Transmission

2.1.15 Job Startup

Job can be activated by interfacing with the send and receive process. Using this function, business processing interfacing can be carried out seamlessly.

(1) Pre-send Job Startup

It is possible to execute a job before the send processing. If the Pre-send job ends in error, the data will not be sent. In the case of multicasting, the job will be executed only once. When there are errors in the registration of the Send Management Information, the send process will end in error, but the Pre-send job will be executed.

Further, in the job that is activated, the environment variables can be used.

(2) Post-send Job Startup

After the send processing is complete, the registered business operation (job or program) can be executed. Different jobs can be specified for cases when the send process ends normally and when the send process ends abnormally. In the job that is activated, environment variables can be used.

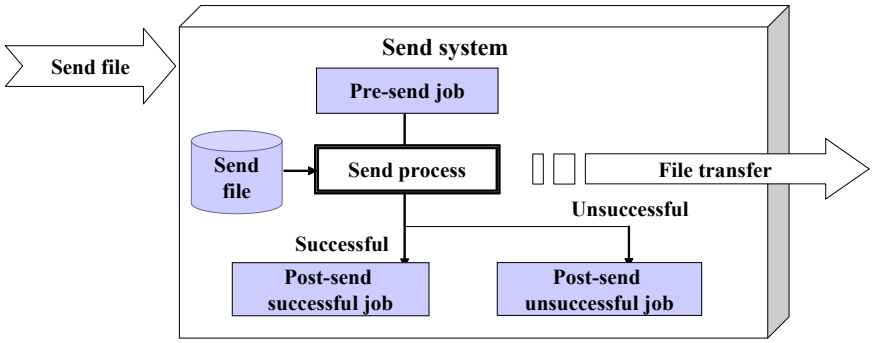


Figure 2.14 Pre-send Job Startup/Post-send Job Startup

(3) Post-receive Job Startup

The registered business process (job or program) can be executed after the data is received. Different jobs can be started for successful and unsuccessful file transfers. In the job that is activated, environment variables can be used.

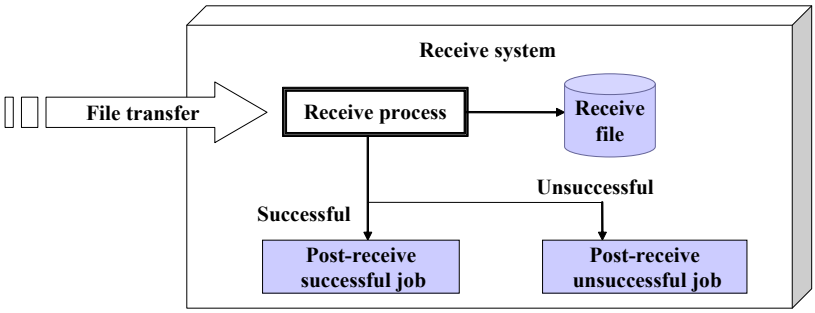


Figure 2.15 Post-receive Job Startup

(4) Pre-receive Job Startup (NSK only)

The registered business processing (job or program) can be executed prior to the startup of the receiving processing. Upon the end of pre-receive job, the data receiving is carried out regardless of job result—successful or unsuccessful.

2.1.16 Data Format

HULFT data transfer format has the following 6 transfer types.

(1) Binary Data Transfer

Data is transferred without code conversion. The concept of a record is not applicable for this transfer.

(2) Text Data Transfer

These are files consisting of a combination of alphanumeric and Kanji characters. In UNIX, Linux, Windows, and NSK, these are converted to code and transferred with each record, separated by a carriage return. Refer to "2.1.17 Code Conversion Function."

(3) Format Transfer

Each record is fixed format data that is transferred with the defined format. It is also possible to define conversion rules to packed decimals and zoned decimals. Further, it is possible to convert the symbols during the transfer from ASCII type to EBCDIC type, and to convert decimal to binary, floating point format during the transfer from EBCDIC type to ASCII type.

(4) Multi Format Transfer

By defining the record key (for example : data type etc) and the format, the records with multiple formats within a file are converted to a matching format, and then transferred.

The rules for converting to packed decimal and zoned decimal can be defined. It is also possible to convert the symbols during the transfer from ASCII type to EBCDIC type, and to convert decimal to binary, floating point format during the transfer from EBCDIC type to ASCII type.

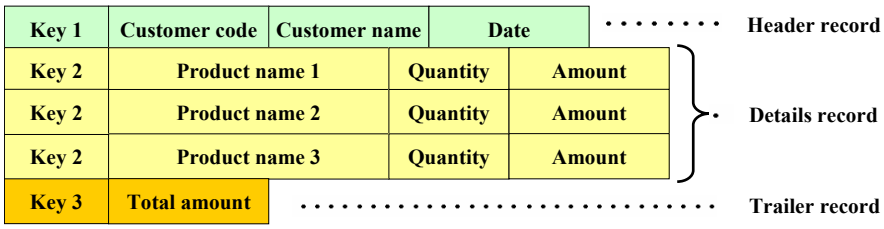


Figure 2.16 Multi Format Data

(5) CSV Format

Files can automatically be received in CSV format. During the startup of post receive job, the CSV files are loaded using DB loader, and stored into the database so that it can be used by other applications effectively. (applicable for UNIX, Linux, Windows, and NSK only).

* To receive files in CSV format, carry out the format transfer or multi format transfer.

- The format item names can be output as the title line of the files in CSV format.
- The delimiter and enclosing character can be specified.

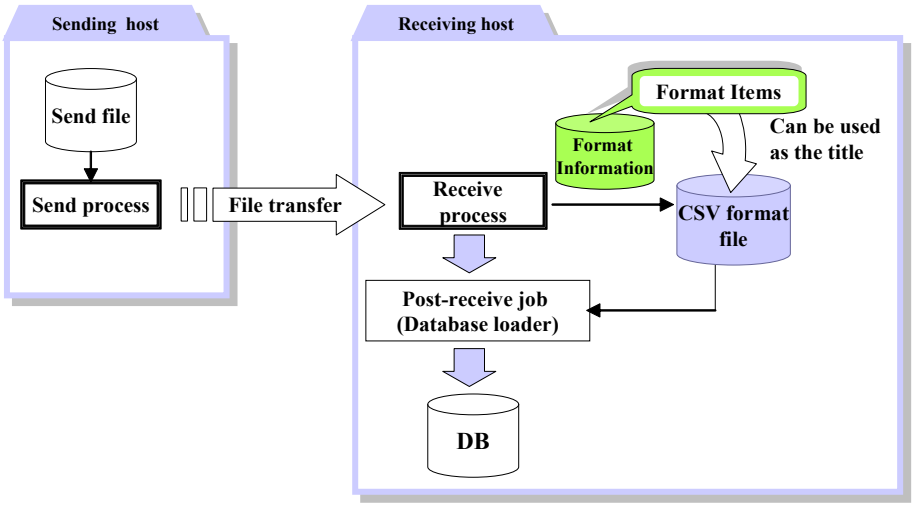


Figure 2.17 CSV Format

(6) XML Format

When receiving in UNIX, Linux, Windows, or NSK, the received files are converted to XML format according to the user definition.

* To receive files in XML format, carry out the format transfer or multi format transfer.

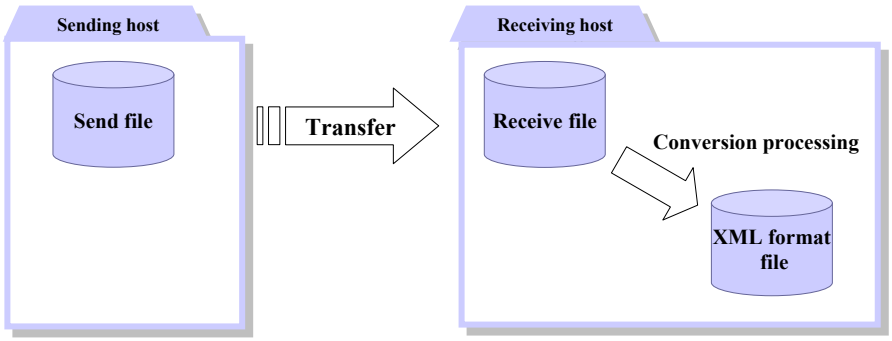


Figure 2.18 XML Format

2.1.17 Code Conversion Function

HULFT can convert a variety of codes such as EBCDIC, ASCII, UTF-8, and so on to a different code.

During a text transfer, format transfer or multi format transfer takes place between EBCDIC type and ASCII type. The EBCDIC type code will be converted to ASCII code type. Especially in format transfer, multi format transfer, it is converted according to the field attributes. Further, EBCDIC code can be converted to different types of EBCDIC codes as well.

The option to convert the code on the sending (receiving) side can be set.

[Note] **Only JIS levels 1 and 2 support Kanji code conversion. Besides, it can be selected to convert as '□' after conversion, or to make it a transfer error. The characters of the JIS Level 1 and 2 can also be converted to optional code in the order of priority in the external character table.**

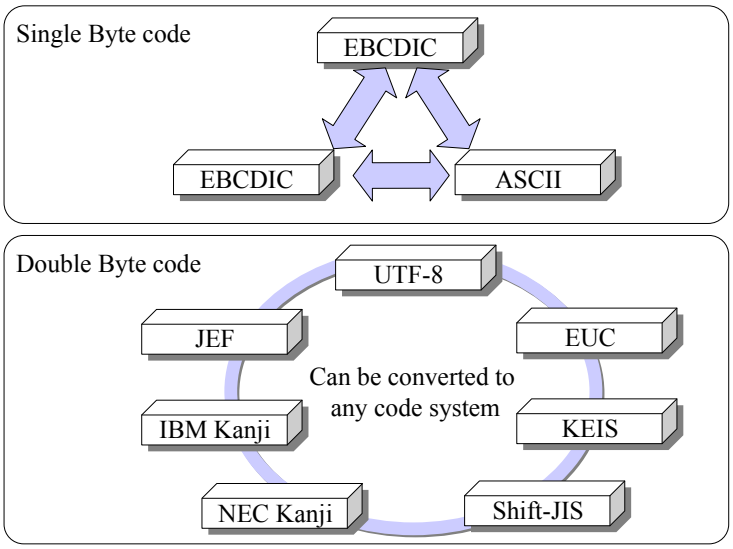


Figure 2.19 Code Conversion

[Remarks] Code conversion to and from UTF-8 is unavailable on the side of Mainframe.

(1) Single Byte Code EBCDIC User Table

There are multiple code systems of the EBCDIC code that vary according to the manufacturers. Other than the 7 types of code systems, namely Kana characters, Lower case characters, ASCII, ASPEN, IBM Lower case characters, IBM Lower case characters extension, and NEC Kana, up to 3 types of user-defined conversion tables can be created.

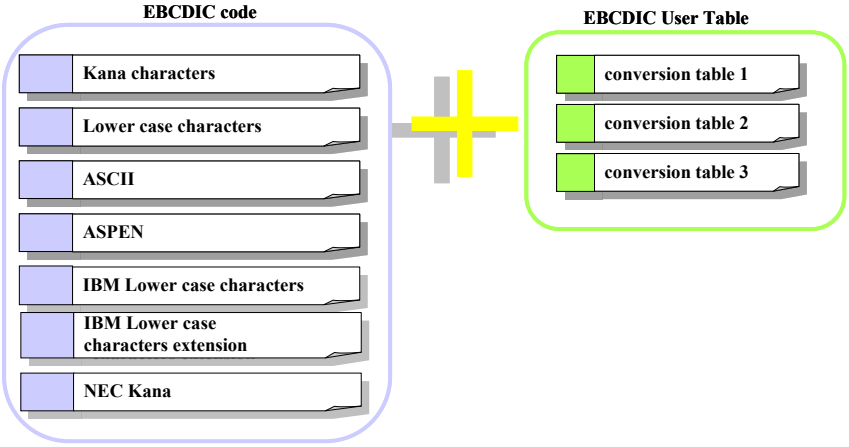


Figure 2.20 EBCDIC User Table

[Remarks] EBCDIC User Table is unavailable for the code conversion to and from UTF-8.

(2) Double Byte Code External Character Table

The Kanji code conversion that is supported by HULFT as a standard is JIS level 1 and 2. Other than the Kanji code that is supported as standard, the external character data that can convert NEC special characters is also offered as a sample. Besides this, Kanji characters can be converted to JIS code of 0x2222 ('□') in the default value set up, and in addition the user can also convert to optional code by creating an external character table.

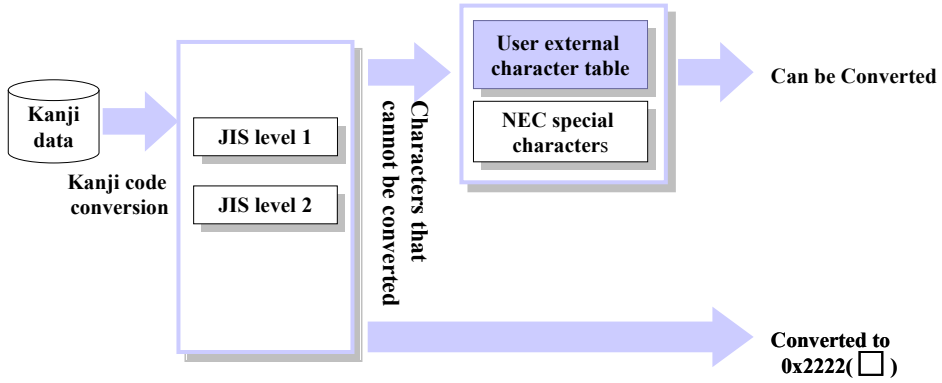


Figure 2.21 External Character Table

(3) Shift Code

In EBCDIC code, there are instances where the shift code exists before and after the double byte code. Through selection, this shift code can be converted to a space or cut, or added or excluded altogether.

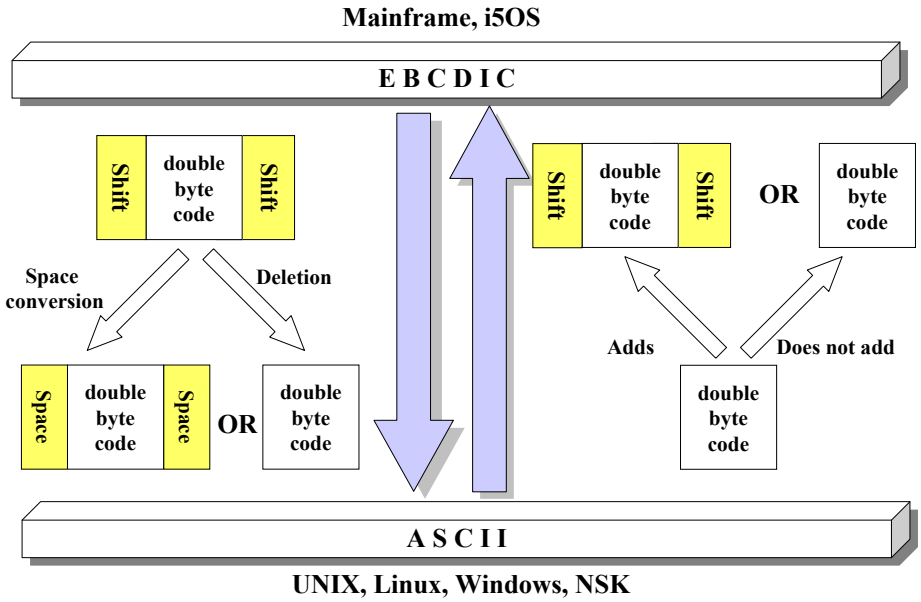


Figure 2.22 Shift Code Selection

(4) Space Code

When the send and receive process takes place between EBCDIC code type and ASCII code type, the conversion rules of the space code that is included in the Kanji code can be selected.

2.1.18 File Record Editing Function

With utility program, this function edits the files converted to CSV and files received in HULFT by adding or deleting linefeeds on a record basis (UNIX, Linux, Windows, and NSK only).

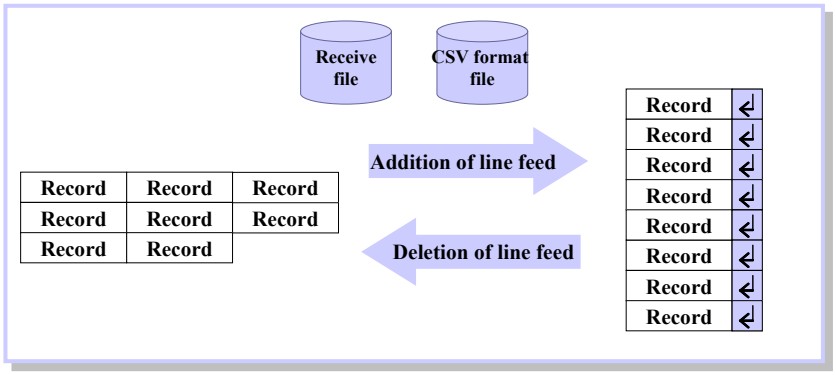


Figure 2.23 File Record Edit Function

2.1.19 HULFT API

HULFT offers API as the function that supports the interface with the user application.

(1) Send and Receive Request

In Windows, send file/resend file/send request/resend request can be issued.

In Mainframe, send file/send request can be issued.

In the other types, the same function can be performed with a command.

(2) Job Execution Result Notification

In Windows, the remote host can be notified of the execution results of the job after receipt. In the other types, the same function can be performed with a command.

(3) Log Search

In UNIX, Linux, Windows, and Mainframe, information search can be carried out from the search conditions in the send log/receive log/request acknowledge log of HULFT.

(4) Remote Job Execution

In Mainframe, job of the remote host can be executed.

2.2 Sending Side Functions

2.2.1 Send File and Resend File

The send process can be started by issuing the send file from HULFT Management screen, or by a command. When there is an abnormal termination of the transfer process, the send process can be managed as a resend queue process. The file in the resend queue can be resent by issuing the resend file from HULFT Management screen or by a command.

(1) Send File

- By combining the send file command with the business process, the file transfer can be automated.
- The file name and the transfer group/remote host name can be specified dynamically.

(2) Resend File

- This is limited to the instances when there is a problem in the transfer (network trouble etc). The resend process is executed automatically.
- The resend file can be issued once for all the files that are in the resend queue.

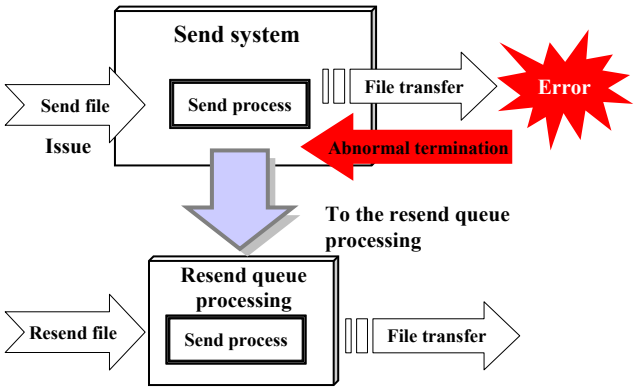


Figure 2.24 Send File and Resend File

2.2.2 Send Multiplex Level and Priority

Multiple send processes can be started simultaneously and by setting the send multiplex level, the number of simultaneous operating processes can be controlled. The process that exceeds the send multiplex level will be handled as the send queue process. The send queue will hold the transfer. The send queue processing can change the sequence of the start of transfer by setting the order of priority.

The upper limit of the send multiplex level setting that can be sent is 50 for Mainframe, 99999 for i5OS, 9999 for UNIX, Linux, and NSK, and 999 for Windows.

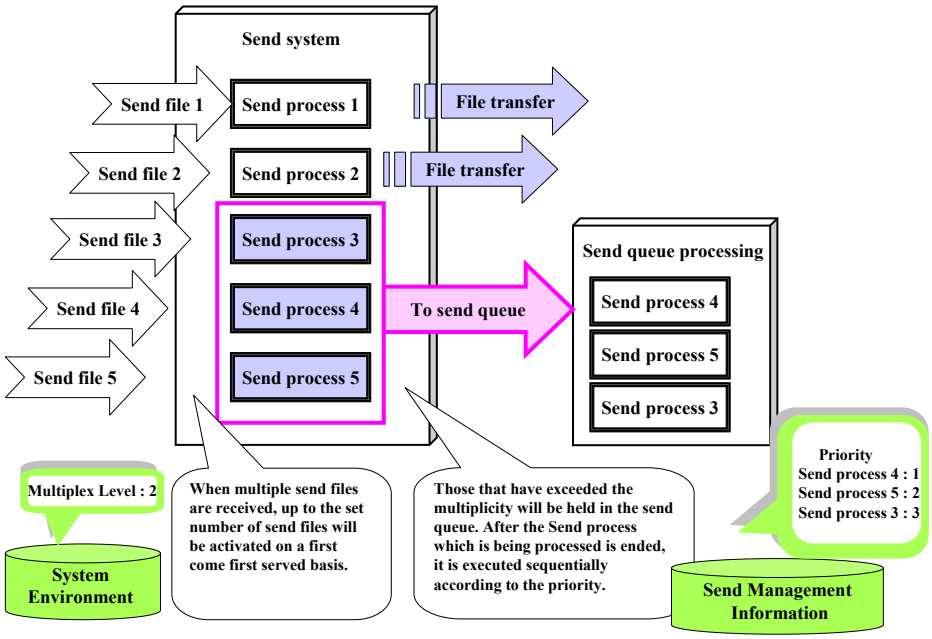


Figure 2.25 Send Process Multiplex Level and Priority

2.2.3 Send File Mode

- Can delete or clear the send files automatically after the send process.
- During send processing, an exclusive lock can be placed on the send files.
- Files of multi volume can be sent (only Mainframe).
- Subsequent space after files of a fixed length can be cut automatically (Mainframe, i5OS only).

2.2.4 Changing the Settings in the Unsent Status Queue

For the queue in the send queue status, the settings value of the transfer block size and order of priority can be changed.

2.3 Receiving Side Functions

2.3.1 Receive Multiplex Level

When activating the multiple receive option, the number of the activated receive processes can be set. Although the receive process multiplex level can be set as no limit (in Windows, up to 999), an appropriate number should be specified because it depends on the hardware resource.

When the degree of the multiplex level exceeds the set value, the reconnection process takes place automatically after an interval.

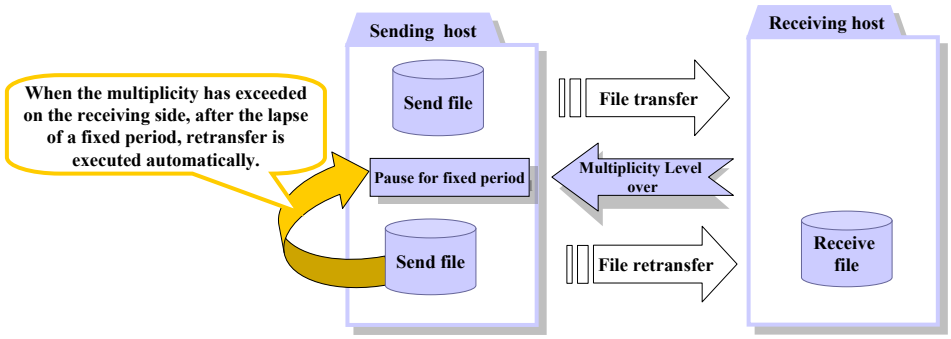


Figure 2.26 Automatic Reconnection of Receive Multiplex Level

2.3.2 Send Request and Resend Request

The send request of the remote host can be issued from the receiving host. The send request and the resend request can be issued from HULFT Management screen or by a command.

(1) Send request

By issuing the send request command, the send process of the remote host can be activated.

- In order to stop the receive process, the receive cancellation command can be issued to cancel the receive process.

(2) Resend request

When the file must not be received by the transfer process due to an error, the resend request can be issued, and the send process of the remote host can be activated again.

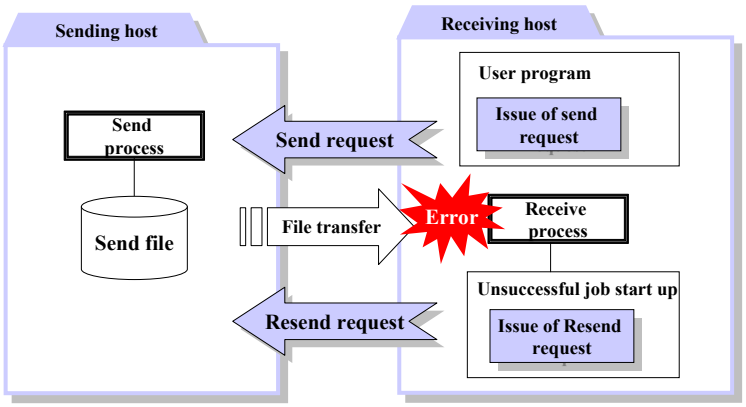


Figure 2.27 Send Request and Resend Request

2.3.3 Receive File Mode

(1) Save Method

- Specify how the receive files must be saved (New Creation/Replace/Append).
- The sent file name can be used as the received file name.
- Regarding the handling of unsuccessful termination of receiving processing, whether to delete or keep the file that has been received partway, otherwise to restore the file to the state before receiving can be specified.
- The receive file can be registered as a catalog (Mainframe only).
- Multi volume files can be received (Mainframe only).
- Generation file management is available for the received file. Refer to "2.1.7 Generation File."

(2) Open Retry

When the receive file is accessed by business processes etc. when the receive process is started, you can select whether to wait for release of the file or render the receive file process as an error.

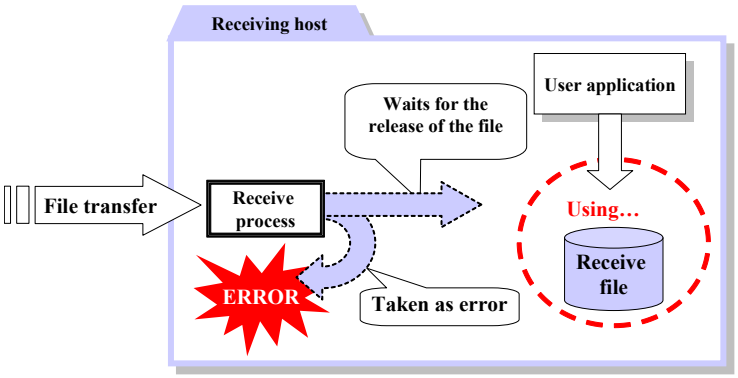


Figure 2.28 Open Retry

(3) Access Control

The permission or ownership can be set for each receive file (only UNIX and Linux). In NSK, the permission or ownership can be set only for OSS files.

2.4 Request Acknowledge

2.4.1 Job Execution Result Notification Function

HULFT can notify the transmitting source whether the Post-send or Post-receive job has terminated successfully or unsuccessfully at the transmission destination.

This will be possible when the user incorporates the utility program provided by HULFT.

The notified information can be displayed as a console message or output to a file.

Using this as a trigger for automatic drive tool etc., the job control of the distributed environment will be possible.

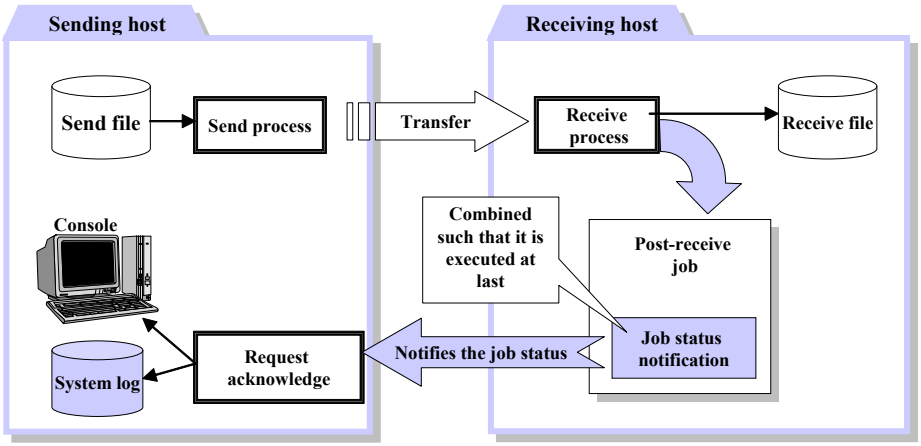


Figure 2.29 Job Execution Results Notification

2.4.2 Job Monitoring

From the Send Detail Information Inquiry screen of HULFT Management screen of the sending side, the job execution log of the receiving side can be referred.

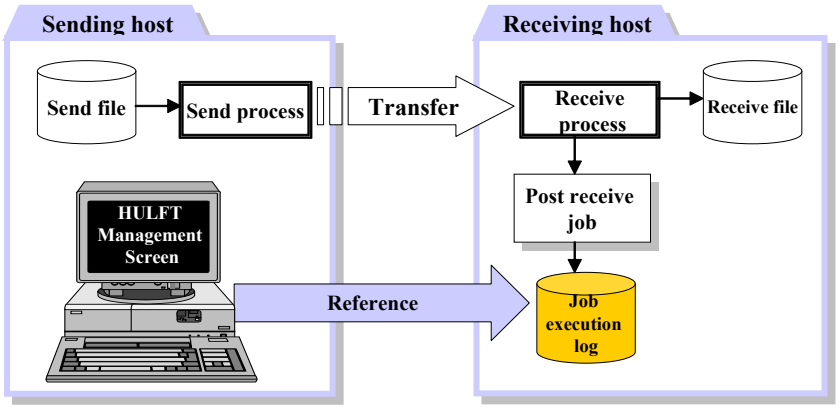


Figure 2.30 Job Monitoring

2.4.3 Remote Job Execution

It is possible to execute jobs of the other host from the local host (remote job execution). It is possible to select whether or not to wait for the completion of the job; therefore user applications can be synchronized. This function enables the centralized control of routine jobs in distributed environments.

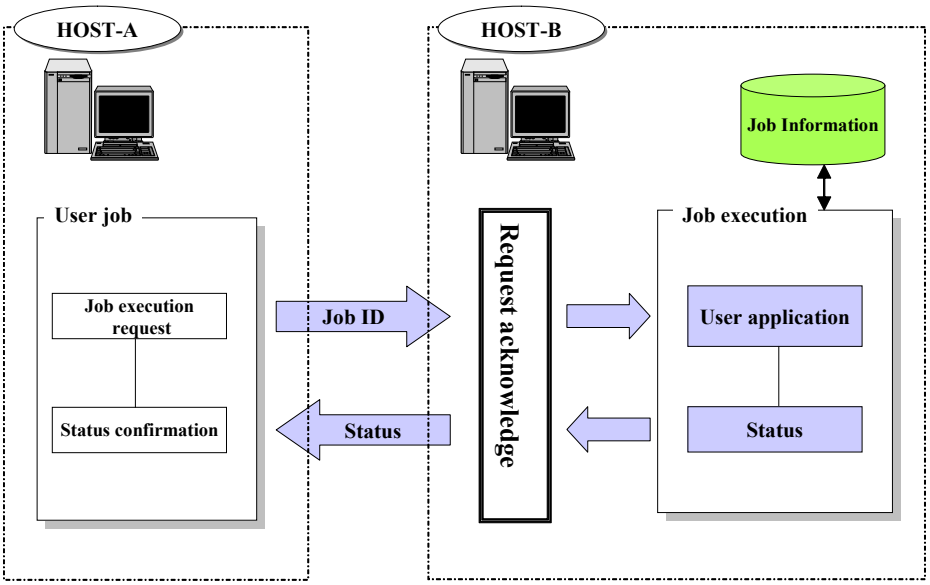


Figure 2.31 Job Execution of the Remote Host

2.4.4 Manager Connection

Here the process with regard to the connection from HULFT Manager is executed. HULFT Manager is run from a remote computer, and when a registration update, request for send and receive process, confirmation of send and receive log etc. is done, the Manager Connection program will process the requests. For more details, refer to *HULFT Manager Online Help*.

2.5 Operation Log Output Function

When executing a command or accessing to a file, HULFT can keep the records (operation log) that indicate what have been done by whom. When suspicious Send Log and Receive Log are found, or an improper value is set to management information, you can identify unlawful computer access or the operational mistakes and the like by examining the correcponding operation logs.

When a system file is accessed, the information on host and user that performed the operation, the accessed file, the details on the access, and the like are output to the File Access Log.

In the case of request issuance or command execution, the information on host and user that performed the operation, types of commands, parameters and the like are output to the Command Execution Log.

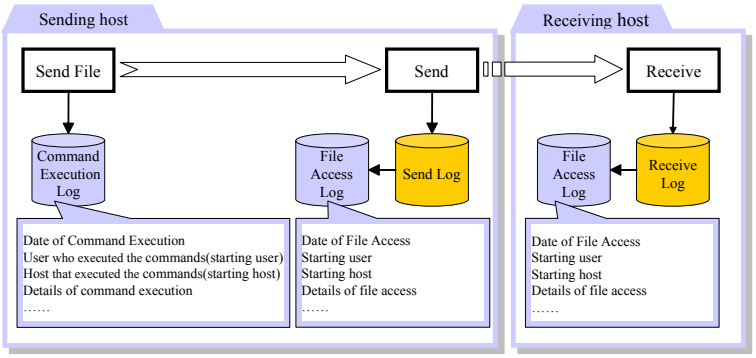


Figure 2.32 Operation Logs in Send and Receive Processing

2.5.1 Notify User Details

In line with the operating environment, you can select whether to notify the user ID to the connection destination host. You can apply the operation such as notifying the User ID to the host in the same office, while withholding the User ID from the host in a different office, because it is possible to set this field host by host. Even with the user ID is not notified to the connection destination host, user ID is output to the operation log of local host.

[Remarks] The term "user" in this subsection means the user ID used in HULFT or the user ID used at the time when you log in to your computer.

2.5.2 Automatic Switching of Operation Log

This function automatically saves the output contents as a backup file when the File Access Log or the Command Execution Log reaches a certain size. As a result, you can suppress the disk utilization of the operation log by deleting unnecessary backup files so as not to exceed a certain amount. Moreover, with the operation logs that are backed up, you can examine the logs without affecting the operation of HULFT.

Manual switching of the operation log can be carried out at your own convenience.

2.6 Security

2.6.1 Encryption

HULFT can encrypt the data of file to transfer them. With encryption, you can ensure security for data to be transferred.

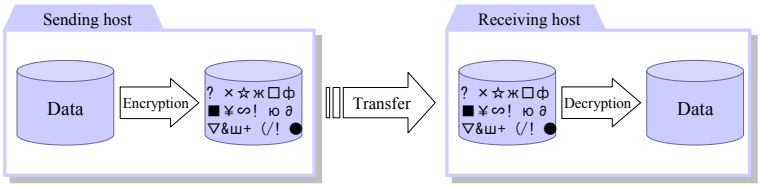


Figure 2.33 Data Encryption

2.6.2 Consistency Verification of Transfer Data

HULFT can verify the consistency of the data received by the host on the receiving side and the data transferred from the host on the sending side, and you can confirm that the changelessness in the data throughout the transfer. (Data verification function)

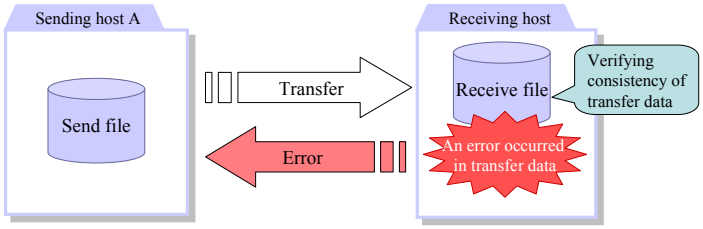


Figure 2.34 Data Verification Function

2.6.3 Request Acknowledge Host Check Function When Acknowledging Service Request

Depending on the settings on the request acknowledge side, HULFT refuses to acknowledge the requests from the requestor hosts that are not allowed to connect, and handles the requests as errors. (Requestor host check function)

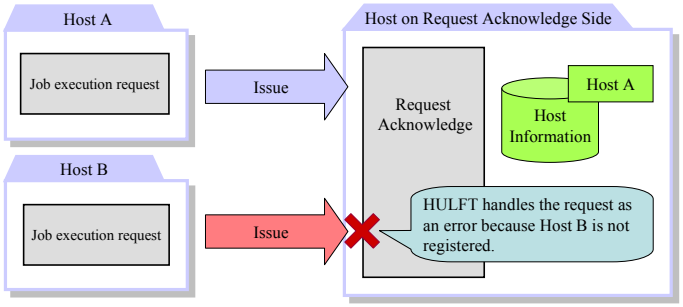


Figure 2.35 Requestor Host Check Function

2.6.4 Request Acknowledge Setting by Service Request

Depending on the setting of the host on the request acknowledge side, HULFT can acknowledge only particular requests that are specified beforehand. (Request acknowledge setting function)

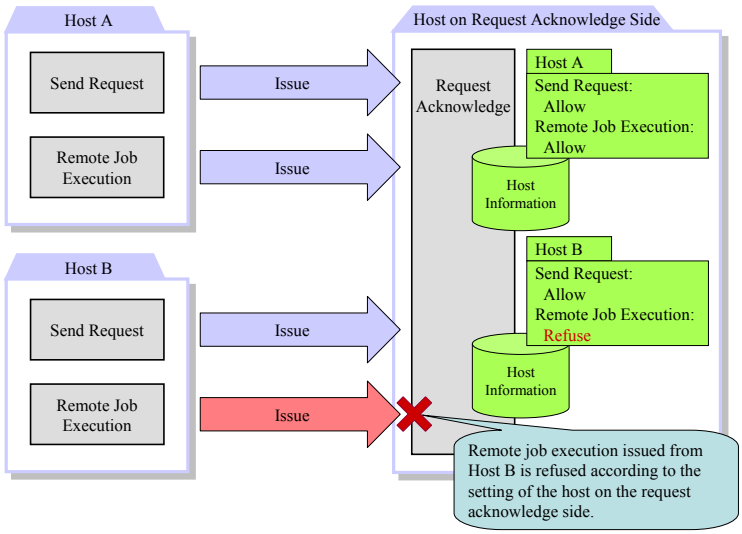


Figure 2.36 Request Acknowledge Setting Function

2.6.5 Confirmation of Sending Host

HULFT can block the file transfer from unauthorized hosts and handles the file transfer from such hosts as errors according to the setting of the host on the receiving side. (Transfer Group Check function)

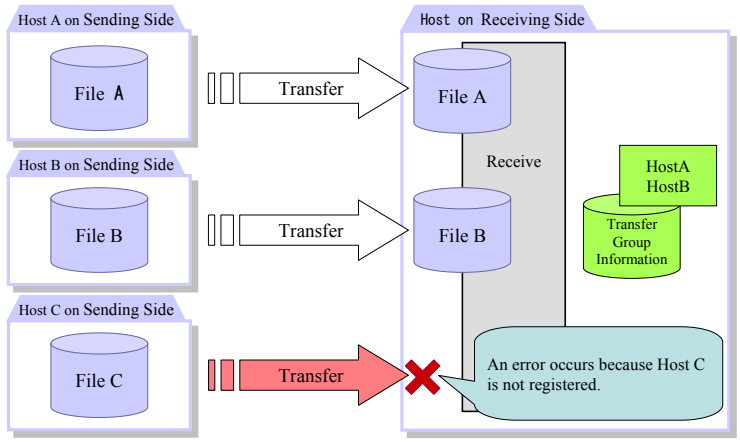


Figure 2.37 Transfer Group Check Function

2.7 System Management Function

HULFT has various management functions related to the system environment and the send and receive processing.

2.7.1 System Management Information

There are nine System Management information types and these mainly manage the information necessary for send and receive processing. The setup details can be registered using the Management screen, or as a batch process through parameter files. The required parameter files in the batch processing can also be generated from the management information that is already registered. Further, the ID list and the related ID list of the System management information in the batch processing, and the list table of the registered details can also be generated.

(1) Send Management Information

Manages the attributes and the transfer conditions of the send file. The compression transfer and intermittent transfer can also be set.

(2) Receive Management Information

Manages the attributes of the receive file. Multiple receive and generation file management etc. can be set.

(3) Job Information

Manages the Pre-send, Post-send, and Post-receive job or the job used for remote job execution.

(4) Host Information

Manages the remote host information.

(5) Transfer Group Information

Manages the group information of remote host. The number of host names that can be specified in one group is 48 hosts for i5OS, and up to 1000 hosts for other host types.

(6) Format Information

Manages the record format information of the file that is used during the format transfer. The fields that can be registered are up to 1000 fields. In the case of i5OS, it can be opened from DDS.

(7) Multi Format Information

Manages the record format information of the files used at the time of multi format transfer. Registration is necessary when sending the file containing multiple differing record formats. Keys and format ID of up to 20 can be specified.

(8) Mail Interface Information

Manages the information that is used to carry out the mail interface (only Windows).

(9) Schedule Information

Manages the information that is required when using the Scheduler (UNIX/Linux and Windows only).

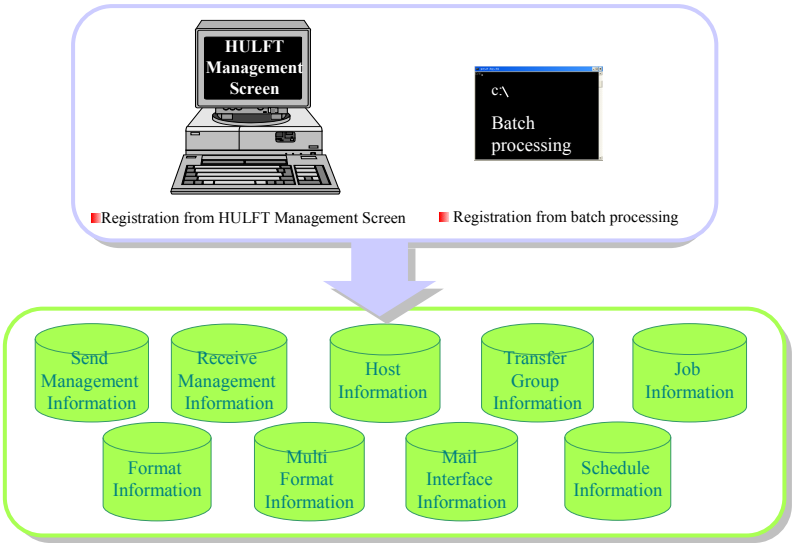


Figure 2.38 Registration of System Management Information

2.7.2 System Environment Settings

Sets the information necessary to operate HULFT.

The information relating to the transmission and the process information etc. can be set.

The set details can either be edited directly in the system environment file with the editor, or it can be edited from HULFT Management screen.

2.7.3 List Output of System Management Information

The details that are registered in the system management information can be generated as a list.

- The ID list of each management information can be generated.
- Related chart of the ID of the management information can be generated as a list.
- The details that are registered in the Format Information can be generated.

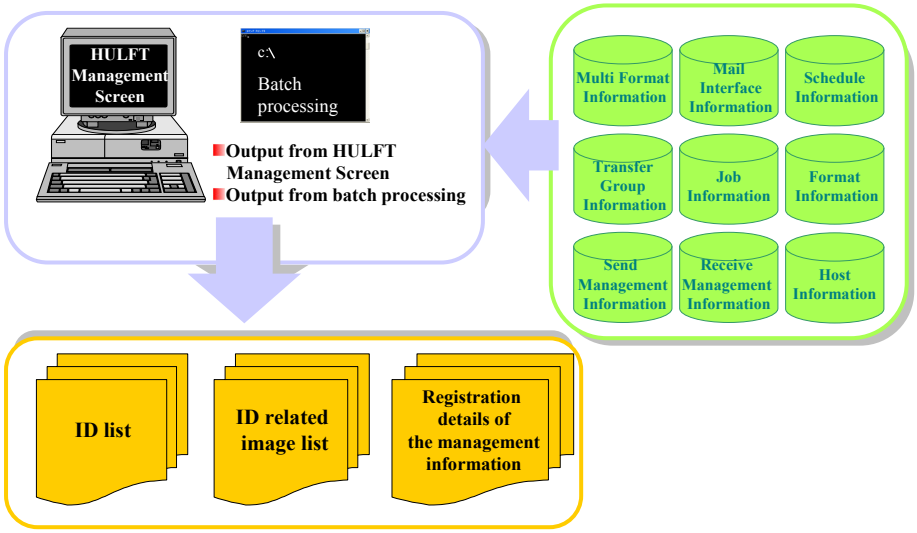


Figure 2.39 List Output of the System Management Information

2.7.4 Log Reference / Status Display

HULFT manages the job execution log, send and receive logs and request acknowledge log by writing them to files, and supports the management and use of the send and receive operations.

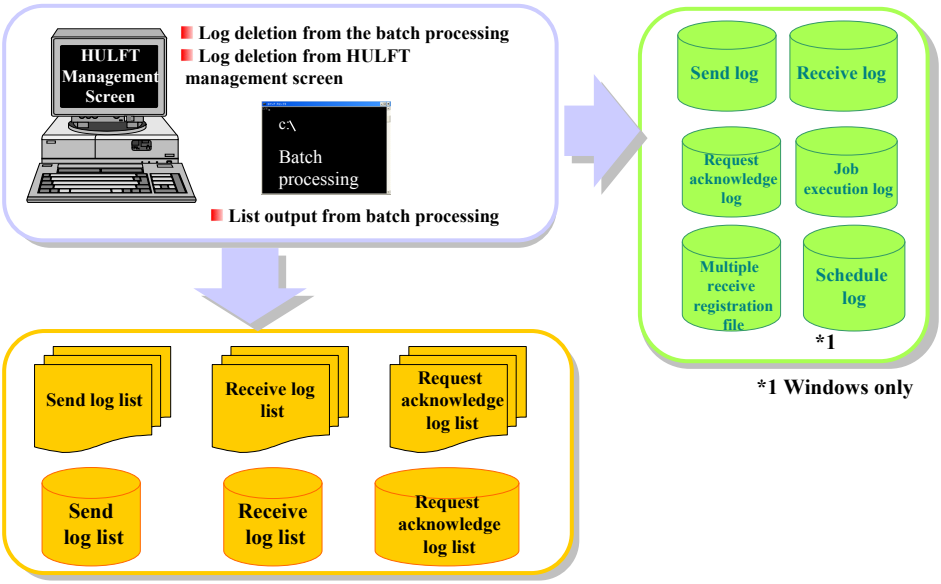


Figure 2.40 Deletion of Log and List Output

(1) Send and Receive Status Management Function

This enables to manage send and receive logs as send and receive log files, and whether the files have been correctly transferred or not can be confirmed.

- The send and receive status can be managed from HULFT Management screen.
- Each management report can be created by batch processing.
- The unnecessary send and receive log data can be deleted.

(2) Request Status Confirmation

This enables to check the log of send request from the receiving host at the sending host. In addition, it allows to view the log of the request acknowledge such as the connection request from HULFT Manager etc.

- The request status can be managed from HULFT Management screen.
- The request status log list can be created by batch processing.
- The unnecessary request status log data can be deleted.

(3) Transfer Status List

This enables to view the queue status of the send and receive status.

- The transfer status can be managed from HULFT Management screen.
- The transfer status queue that is to be canceled, can be deleted.

(4) Resend Queue Status List

This enables to check the queuing status of process that could not be transferred when the send file process has abnormally terminated.

- The resend queue status can be managed from HULFT Management screen.
- The unnecessary resend queue can be deleted.

(5) Automatic Deletion of Log Files

When the volume of log file has exceeded the value (threshold value) specified by the user, the log file will be automatically replaced. Thus, when the threshold value is exceeded, the log will be automatically reduced to half the size.

In Mainframe and i5OS, when the log count has reached the threshold value, the oldest log will be deleted and a new log will be written. Thus when the threshold value is reached, the log file volume will not increase beyond that capacity.

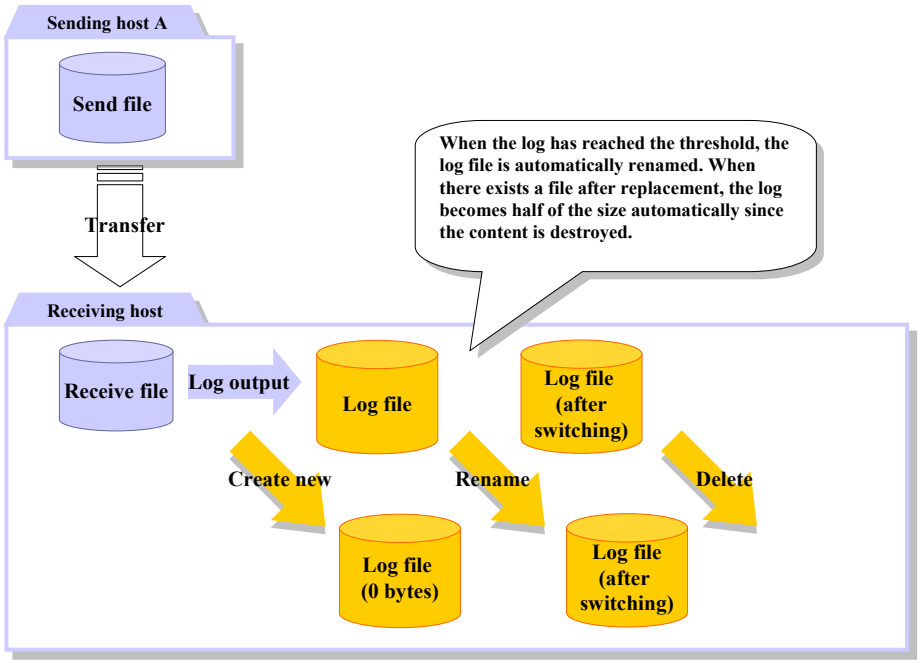


Figure 2.41 Automatic Deletion of Log Files

2.8 Option Product and Related Product

HULFT has a number of option products and related products for using HULFT more efficiently.

2.8.1 Schedule Function

The schedule function schedules the job (commands, shell scripts, send startup of HULFT, etc) flow. The date, time and frequency of execution can be setup with the help of the calendar function. Further, the execution status of the scheduled job and the execution log can be confirmed on the Management screen (Related products for UNIX/Linux, and standard equipment for Windows-M and Windows-ENT).

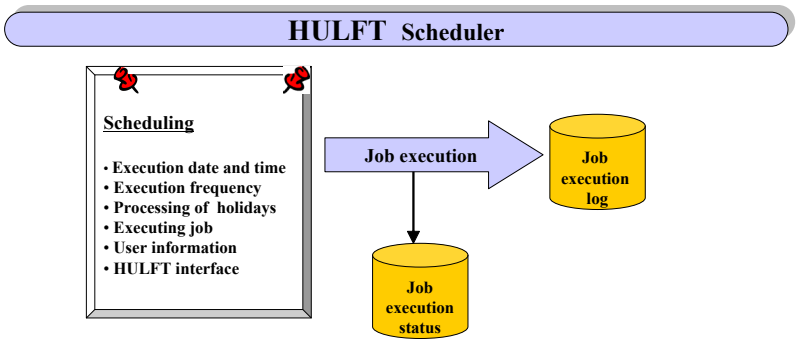


Figure 2.42 Schedule Function

2.8.2 Data Conversion Function

HULFT-DataMagic can convert the data that is in format, multi format, or CSV format to the specified data format of the file. The input data that is made up of multiple record formats can be generated as multiple files for each format. The converted results can be confirmed in the results files, error files (Related product for UNIX/Linux and Windows).

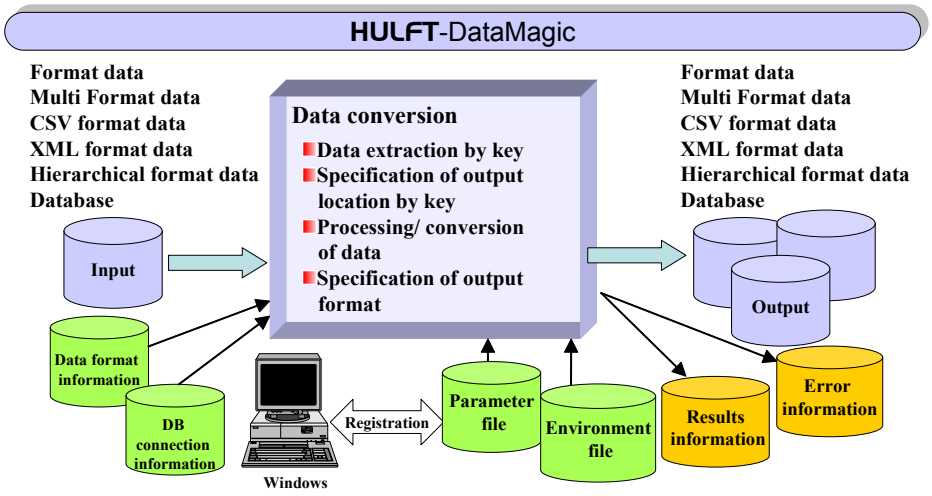


Figure 2.43 Data Conversion Function

2.8.3 Encryption Function

HULFT7 Cipher Option is an option for encrypting transfer data and employs the encryption product of Focus Systems Corporation, which differs from the encryption function for data transfer in the existing HULFT. With this, the data transfer can be reliable.

The function can be used as it is without changing the use of the encryption function of the existing HULFT at all. Data transfer is carried out by the conventional encryption function of HULFT when sending or receiving encrypted data to or from the platform type, the product version, or the host type that do not support HULFT7 Cipher Option.

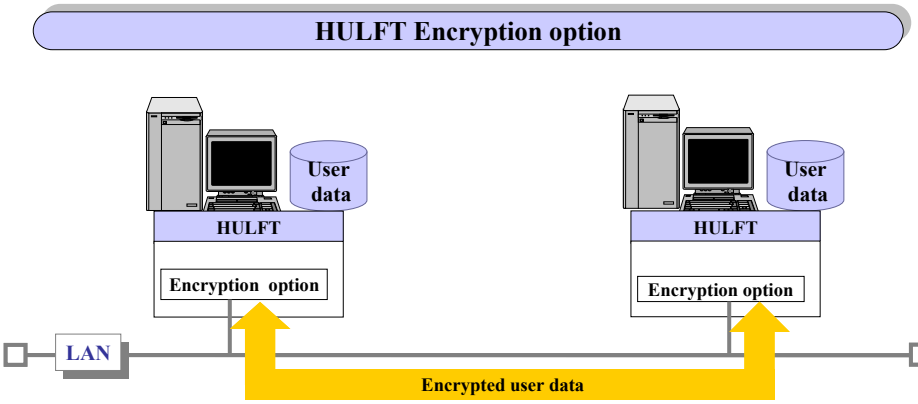


Figure 2.44 Encryption Function

2.8.4 SIGNAlert

SIGNAlert operates on the LAN, which is connected by TCP/IP. It is distributed system error monitoring software. The SIGNAlert Manager can centrally monitor/batch manage the execution status of the business processes and operation status of the network devices on multiple monitored machines through SIGNAlert Agent. The errors of various clients on the distributed network can be notified to the administrator using a variety of functions such as display of message box, producing the beep sound, output to the event log, issue of email, execution of job and so on.

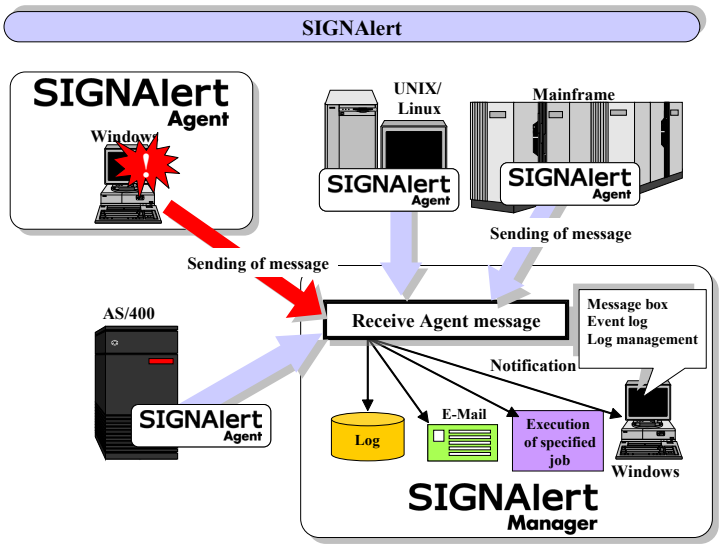


Figure 2.45 SIGNAlert

2.8.5 HDC-EDI Manager

HDC-EDI Manager links HULFT and HDC-EDI Base(ACMS) via the server on the browser. The application enables you to see logs of both HULFT and HDC-EDI Base at once, as well as to configure the transfer settings for both HULFT and HDC-EDI Base seamlessly at the same time. HDC-EDI Manager can display the logs related business information generated by HULFT and HDC-EDI Base on the same screen, in addition to interface separate registration information set for HULFT and HDC-EDI Base.

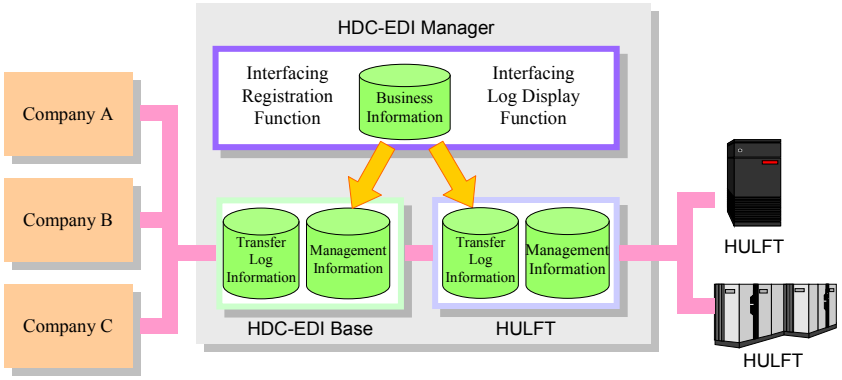


Figure 2.46 HDC-EDI Manager

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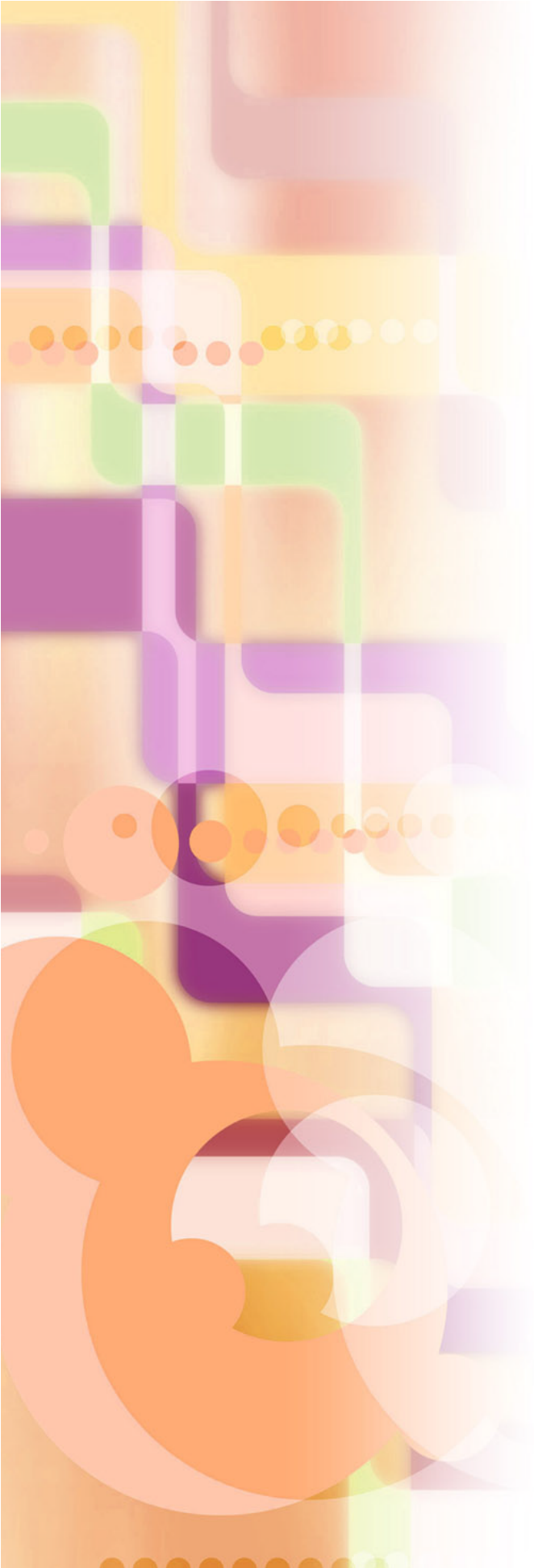

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