IBM® Sterling Connect:Express® for Microsoft Windows

User Guide

Version 3.1

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This edition applies to the 3.1 Version of IBM® Sterling Connect:Express® for Microsoft Windows and to all subsequent releases and modifications until otherwise indicated in new editions.

Before using this information and the product it supports, read the information in Notices, on page 178.

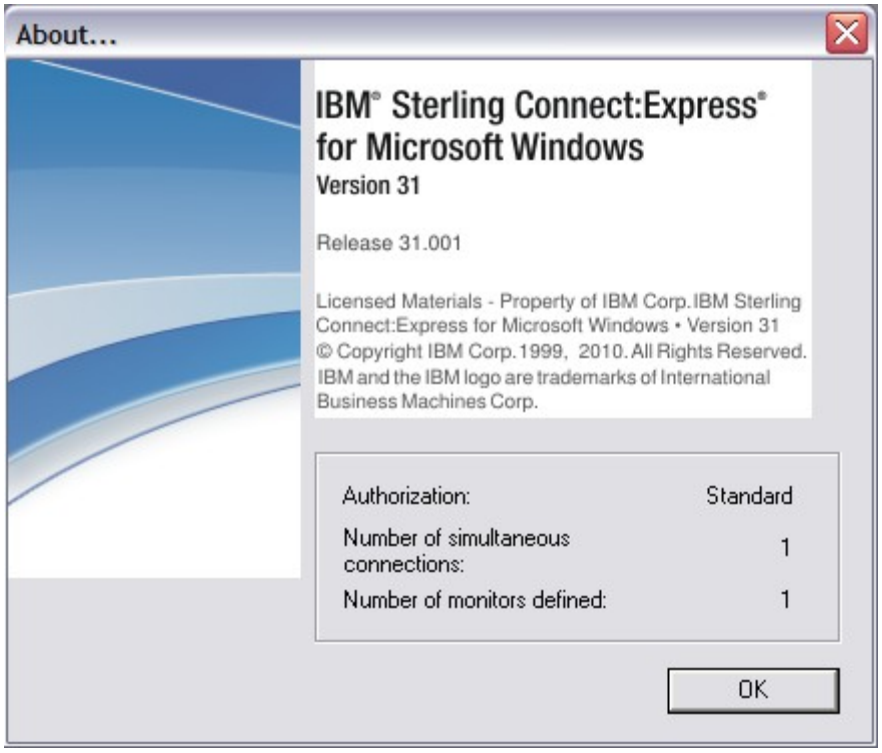
Table of Content

Chapter 1

This chapter descirbes the components of the graphical interface of **Sterling Connect:Express for Microsoft Windows**.

The Graphical Interface

The **Sterling Connect:Express for Microsoft Windows** graphical interface allows the user to implement and manage the Transfer File Monitor either locally or remotely.



The graphical interface - General

Depending on the authorization being used the graphical interface allows the following:

- management and implementation, both locally and remotely, of one or several Sterling Connect:Express monitors
- configuration, either locally and remotely, of one or several Sterling Connect:Express monitors

To access these functions, the monitor(s) must be defined within the relevant resources environment.

This interface is a 32-bit graphics application, operating under Windows using TCP/IP or Named Pipe networks. This interface is based on the API.
The operating method and how to use the API are described in the ***Sterling Connect:Express for Microsoft Windows Programming Guide.***

Managing a monitor

Monitor management consists of the following:

- Setting up a network (TCP/IP or Named Pipe) connection with this monitor from the graphical interface
- Stating a client name and password
- Accessing any authorized function:
    - configuring the monitor
    - initializing transfers
    - tracking transfers

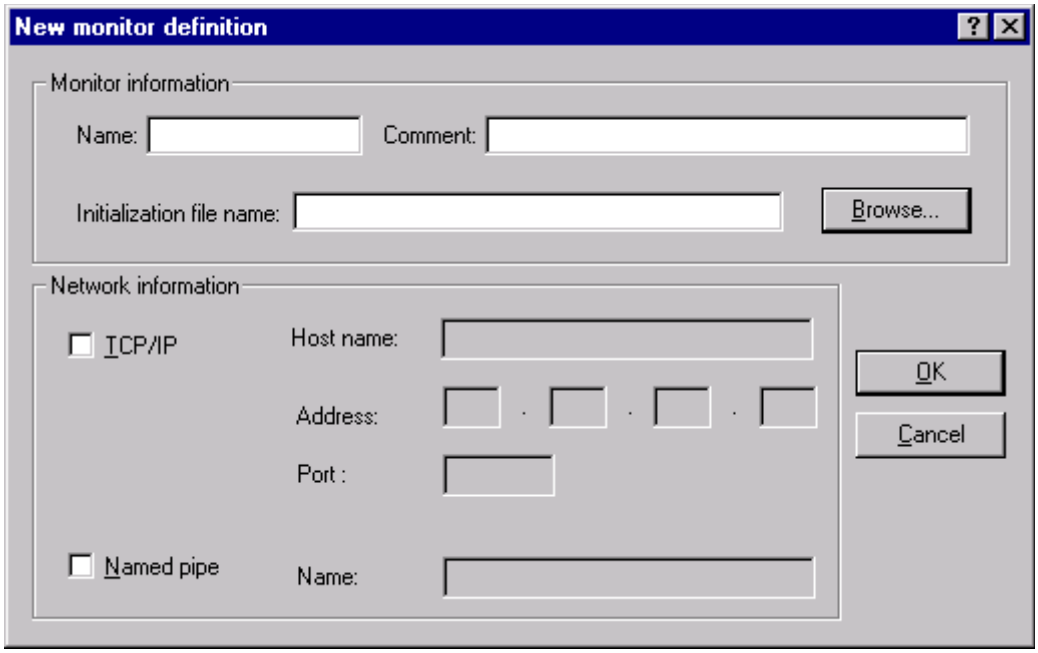
The changes made when managing a monitor are dynamically handled by the Sterling Connect:Express monitor.

Configuring a monitor

Configuring a monitor consists of directly accessing its settings as stored in its initialization file, either locally or through the file-sharing system.

The changes made when configuring a monitor needs to stop and restart the Sterling Connect:Express monitor.

A monitor is identified by a name, which is local and must be unique, defined within the relevant resources environment. The graphical interface enables the user to view, edit, create, or delete a monitor definition.



A monitor definition consists of the following fields:

Name:

This field consists of maximum 8 alphanumeric characters in capitals (A-Z, 0-9).
It enables a monitor to be identified in the resource window.

Comment:

This field consists of maximum 80 characters (the comma character is forbiden).
It is used to enter comments about the monitor.

Initialization file name:

This information will be used to **configure** a monitor.
This field consists of maximum 127 characters.
It gives the full physical name of the monitor initialization file (tomnt.ini) and allows access to the monitor settings for updating.
The **| Browse |** button allows the user to select a file by searching the disks and the view.

Network Information:

This information is used to define the network that will be used to manage a monitor.
The choice of network type depends on the monitor configuration.

TCP/IP network:

Host name:

This is the name of the 'host' enabling connection to the machine on which the Sterling Connect:Express monitor to be managed is running.

Address:

This is the address in 'aaa.bbb.ccc.ddd' format enabling connection to the machine on which the Sterling Connect:Express monitor to be managed is running

Port:

This is the number of the port, configured in the TCP/IP network parameters for the Sterling Connect:Express monitor to be managed.

Named Pipe network:

Named pipe name:

This is the name of the Named Pipe, indicated in the Named Pipe network parameters for the Sterling Connect:Express monitor to be managed, in the following format:

\\<name of server>\PIPE\<name of named pipe>
for a remote named pipe, or:
\\.\PIPE\<Name of named pipe>
for a local named pipe

The graphical interface provides a multi-document area enabling simultaneous access to different management, configuration, and implementation functions for Sterling Connect:Express monitors.

The bars
The following bar types are accessible:

- **the resources bar**
- **the tool bar**
- **the access rights bar**
- **the status bar**

The way they are displayed or hired is determined by the '**View**' menu.

The menu

This is defined dynamically depending on the document that has been selected.
It presents the following options:

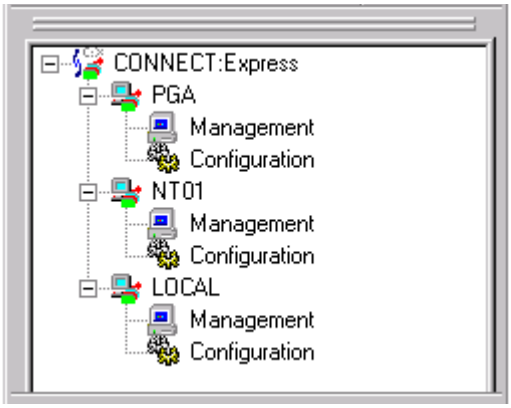
- **Files**
- **Edit**
- **View**
- **Management or Configuration**
- **Window**
- **? (Help)**

The documents
The configuration and management functions are viewed in separate windows, with one of the following documents showing:

- **the configuration document**
- **the management and implementation document**

The interface can display a maximum of eight documents simultaneously.

The Resources Bar



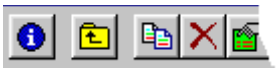
The resources bar is displayed as a window showing the directory (folder) structure for the defined monitors.
The resource information is stored in the initialization file (iutom.ini when using Activity Manager or Client/Server options or tomnt.ini – [ENV] section). It may contain up to 255 monitor definitions, according to the authorization supplied.

The Tool Bar

The tool bar contains icons enabling the user to react to the contents of the resources bar:

- define a new monitor
- edit a monitor definition
- delete a monitor definition
- manage a monitor
- configure a monitor

The Access Rights Bar



The access rights bar is displayed on the left hand side of the Management document window. It gives rapid access to many of the tools used in the graphical interface, using the mouse.

The Status Bar

The status bar provides explanatory text when the mouse is moved or activated.

The File Menu

The File menu offers the following items:

- **New:** to create a new monitor within the resources or a new object within a document
- **Manage:** to connect to a monitor to perform management or implementation services
- **Configure:** to gain direct access to a monitor's settings
- **Disconnect:** to end a connection with a monitor
- **Close:** to end monitor configuration
- **Properties:** to display the details relating to an object within a document
- **Exit:** used to leave the graphical interface

The Edit Menu

The **Edit** menu offers the following options:

- **Duplicate:** to duplicate an object within a document
- **Delete:** to delete a monitor definition within the resources or an object within a document
- **Properties:** to display the details relating to an object within a document

The View Menu

The **View** menu offers the following items:

- **Resources bar:** shows or hides the resource bar
- **Tool bar:** shows or hides the tool bar
- **Status bar:** shows or hides the status bar
- **Large icons:** displays objects in the form of large icons within the current document
- **Small icons:** displays objects in the form of small icons within the current document
- **List:** displays objects in the form of a list within the current document
- **Details:** displays objects in the form of a detailed list within the current document
- **Refresh:** updates the list when monitor messages are viewed
- **Definition:** provides details about the definition of a monitor

The Management Menu

The Management menu offers the following options:

- **Information:** Displays information relating to the connection with the selected monitor
- **Directories**
  - **Partners:** Displays the list of partners defined in the Partners directory
  - **Files:** Displays the list of files defined in the Files directory
  - **Clients:** Displays the list of clients defined in the Clients directory
- **Monitor**
  - **Activity**: Gives access to transfers currently being processed by the monitor for viewing purposes or in order to take action (Interrupt, Cancel, or Resume)
  - **Log:** Displays timed monitor messages
  - **Journal:** Gives access to transfers not currently being processed by the monitor for viewing purposes
  - **Notifications:** Allows access to notifications for both viewing and action purposes (routing or deleting notifications)
- **Settings**
  - **Monitor**
    - **Startup:** Displays the startup settings
    - **Service:** Displays the Windows service settings
    - **Files:** Displays the settings of the files
    - **Notification:** Displays the settings for global notification
    - **Authorization:** Displays the authorization settings
  - **Networks**
    - **LU6.2:** Displays the LU6.2 settings
    - **X.25:** Displays the X.25 settings
    - **TCP-IP:** Displays the TCP/IP settings
    - **NAMED PIPE:** Displays the NAMED PIPE settings
- **Tables**
  - **PeSIT**
    - **Session**: Provides access to the PeSIT protocol session tables
    - **Presentation:** Provides access to the PeSIT protocol presentation tables
  - **ETEBAC-3**
    - **Presentation**: Provides access to the ETEBAC-3 protocol presentation tables

The Configure Menu

The Configuration / Monitor menu offers the following options:

- **Startup:** Provides access to the startup settings
- **Service:** Provides access to the Windows service settings
- **Files:** Provides access to the files settings
- **Notification:** Provides access to the settings for global notification
- **Authorization:** Provides access to the authorization parameters
- **Networks**
    - **TCP-IP**: Provides access to the TCP/IP settings
    - **LU6.2**: Provides access to the LU6.2 settings
    - **X.25**: Provides access to the X.25 settings
    - **NAMED PIPE:** Provides access to the NAMED PIPE settings

The Window Menu

The **Window** menu offers the commands that are necessary to organize the multi-document workspace and to access the list of open documents:

- Cascade: **Arranges open documents windows so that their title bars are visible**
- Tile: **Arranges open documents windows one on top of the other without overlapping**
- Window 1,2…: **Selects and places to the front the window selected from the list**

The ? Menu (Help)

The ? (Help) menu contains the following commands to gain access to help for using this application:

- Contents: **On-line help about the application accessed from the index**
- About…: **Provides technical information about the application**

The Configuration Document

The configuration document is shown in a new window when the Configuration function is called. It contains the various settings relevant to the Sterling Connect:Express monitor shown in the form of icons or a list.

The Management and Implementation Document

The administration and implementation document is shown in a new window when the Management function is called.
It shows, in a tree-like structure, which Sterling Connect:Express monitor functions can be accessed by the user currently connected.

If the client does not use this connection with the monitor for the period shown in the start settings, the connection is terminated.

If the client then tries to access a resource, the graphical interface indicates that the connection was terminated and suggests that it be reconnected.
The name of the client and the initial password are then automatically picked up in order to re-establish this connection.

Chapter 2

This chapter describes the **Sterling Connect:Express for Microsoft Windows** functionality and the configuration interfaces.

The Transfer Monitor

General Information About the Monitor

Overview

Sterling Connect:Express (**Connect:Express**) is made up of various operating modules:

- a transfer monitor
- a graphical interface for configuration purposes
- a Programming Interface (DLL), which is described in ***Sterling Connect:Express for Microsoft Windows Programming Guide***
- Utilities, described in ***Sterling Connect:Express for Microsoft Windows Installation and Utilities***

Sterling Connect:Express enables text or binary files to be transferred by implementing PeSIT Hors SIT (version D or E) or ETEBAC-3 (client) presentation protocols, and TCP/IP, LU6.2 or X25 transport protocols.
The monitor allows parallel transfers to be carried out in request (caller) mode and/or server (called) mode.

Product Options

Using the graphical interface, the '**Client/Server**' option enables the monitor to be implemented from remote Windows 32-bit workstations.
Using the graphical interface, the '**Activity Manager**' enables the monitor to be managed from remote 32-bit Windows workstations.

Requirements

- **Sterling Connect:Express** will run on an Intel PC.
- (please check with us with regard to any other platforms supporting Windows)
- The operating system for the PC should be Windows (2000, XP,Windows Server ....).
- The system should contain one of the following network interfaces:
    - **TCP-IP:** «Windows Sockets version 1.1» interface or higher
    - **LU6.2:** SNA Server
    - **X.25:** Eicon interface

Implementation

The **Monitor** is a multi-transfer program, which carries out transfers according to the settings configured in the initialization file. It can be installed as a Windows service.
The **graphical interface** is used to configure all the information necessary for the monitor to function by updating the initialization file, either locally or remotely. It also implements and tracks transfers. Access to the various functions is carried out under the control of the authorizations for the client currently defined.

The **programming interface**, which is in the form of DLL enables Windows applications to interface with the monitor, either locally or remotely.

The **utilities** are used to carry out and implement the transfers, either locally or remotely, install or uninstall the monitor as well as a Windows service, configure the API on a client workstation

How the Monitor Operates

The monitor is Windows application whose sole purpose is to transfer files as requested and to monitor their activity.
The application can be started from the desktop, via the Windows start group, or by the Windows services manager.
Access to the monitor is exclusively through the API and is controlled by an identified client's access authorizations.
Transfer requests received via the API are controlled in relation to the initialization file and the saved queuing options.
A transfer is carried out by a protocol layer and a network layer managed by the monitor depending on how the initialization file is configured.
Every stage of a transfer process indicated by the monitor is visible on the graphical interface by using the Activity menu, viewing the Journal and Messages and accessing the Notifications.

The Directories function in the management document on the graphical interface gives access to the following definitions:

- **Partners**
- **Files**
- **Clients**

A **partner** is an information system using a file transfer product that is compatible with the protocol implemented.
A **file** is a collection of data stored on an accessible magnetic medium.

A **client** is a workstation containing the API and an application which allows it to initiate a transfer to the monitor via TCP/IP or Named Pipe, either locally or remotely, or to manage a monitor, again either locally or remotely.

The directories are the logical files stored in the Sterling Connect:Express initialization file.

The Partners Directory

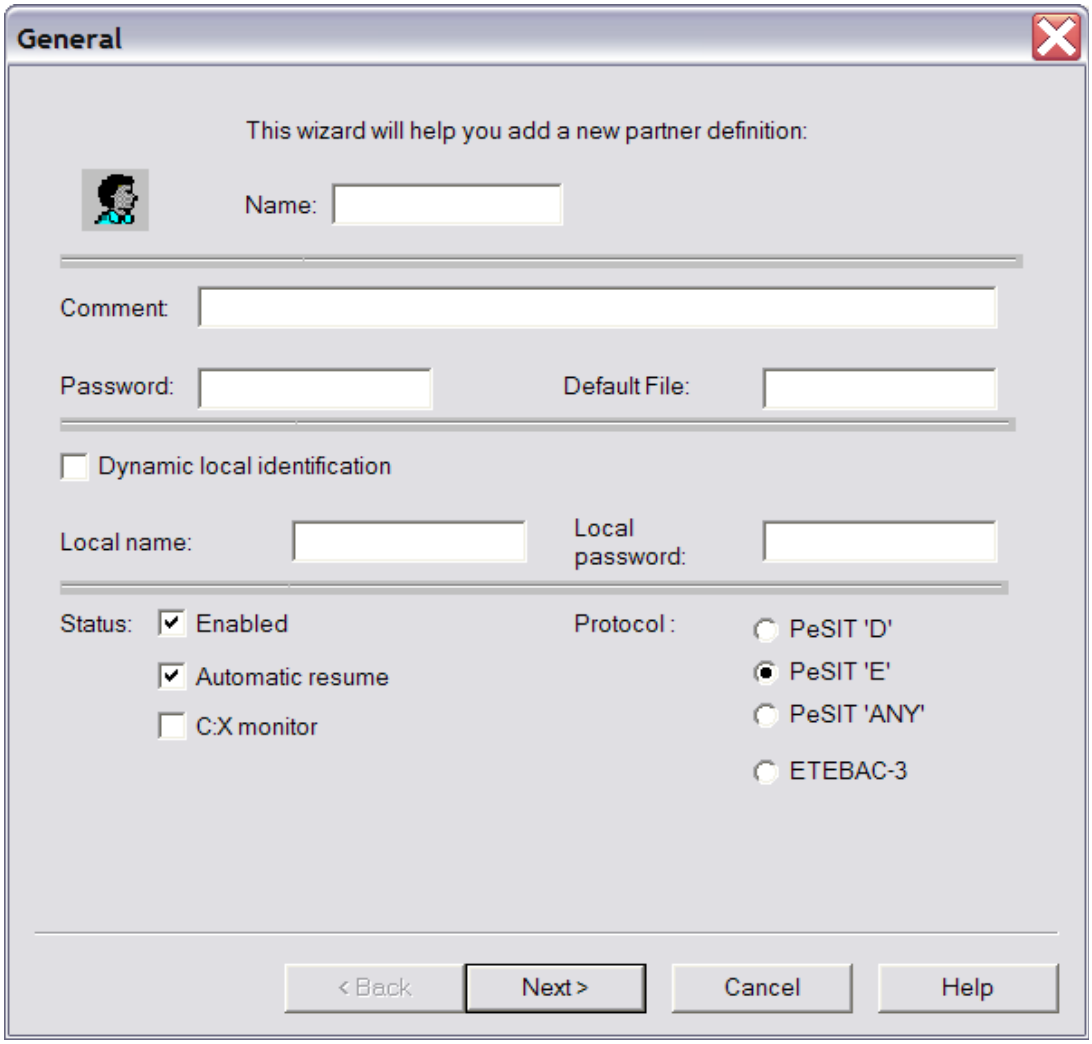
The partners directory enables the user to define all the computer sites with which Sterling Connect:Express needs to communicate in order to implement file transfers.
A partner is identified by a **symbolic name,** which must be unique.

The graphical interface enables the user to view, edit, create, or delete a partner definition controlled by the authorizations granted to the connected client.

A definition for a partner is shown by clicking on the following tabs:

- **General**
- **(SSL)**
- **Session**
- **Networks**

Partners Directory – General Tab



Symbolic name:

This field consists of maximum 8 characters .
You can define a default profile $$PART$$. This profile will be used to manage connections with undefined partners: all properties of the profile will apply to such connection.
$$....$$ syntax is reserved.

Comment:

This field consists of maximum 80 characters. It is used to enter comments about a partner.

Password:

This field consists of maximum 8 characters. Setting this field to $$NONE$$ disables the password control.

Default File:

This field provides the name of a file to use, for this partner, if a transfer request is received for an unknown file name. This file must be defined in the directory. This file name supersedes the $$FILE$$ definition.

When processing a transfer request with a partner, for a file, inbound or outbound, Sterling Connect:Express checks if the file name is defined in the directory. If it is not defined, Sterling Connect:Express looks for a default : the partner's default is used first, $$FILE$$ is used as a general default. If no default is defined, the request is rejected.

Dynamic local identification:

States that the following local name and password are specified dynamically when submitting a file transfer request (checked) or fixed into the partner definition (unchecked).

Local name:

This field consists of maximum 8 alphanumeric characters in capitals (A-Z, 0-9).

It is the identification for the Sterling Connect:Express monitor at the partner end.

Local password:

This field consists of maximum 8 alphanumeric characters in capitals (A-Z, 0-9).

It supplements the identification for the Sterling Connect:Express monitor at the partner end.

Status:

Indicates the status of the partner for the Sterling Connect:Express monitor.

If this is checked, the monitor will accept communication with this partner, if not checked, the monitor refuses communications.

Automatic resume:

This field specifies whether or not the monitor is configured to implement the automatic resume function of failed transfers with this partner.

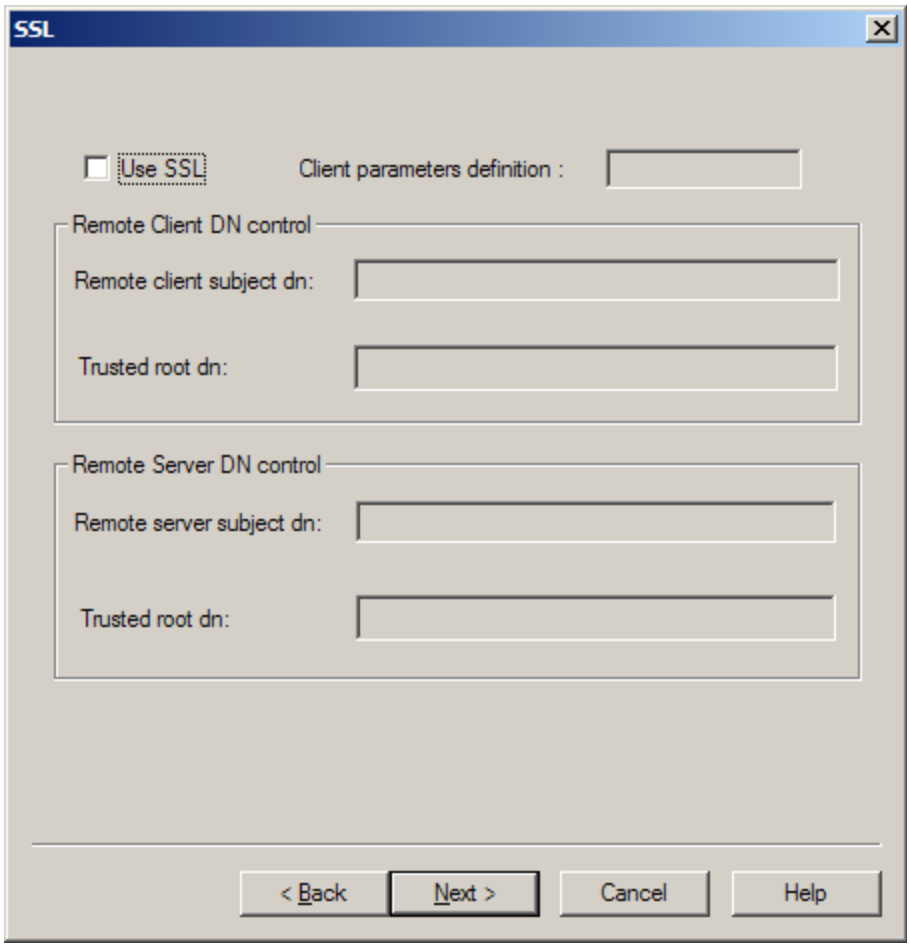
C:X monitor

If checked, this field indicates that the software used by the partner is part of the **CONNECT** family; if it is not checked, the software is not part of the **CONNECT** range.

Protocol:

This field indicates the version of the presentation protocol to be implemented for transfers with this partner and can take the following values: PeSIT-D, PeSIT-E , PeSIT-'ANY', or ETEBAC-3. PeSIT-'ANY' is a version of PeSIT compatible with a specific profile implemented in some PeSIT software.

Partners Directory – SSL Tab



Use SSL:

This field indicates if SSL is used for transfers with this partner.

SSL client parameter definition:

This field indicates the symbolic name of an existing SSL client parameter definition. Use this field for SSL client transfers.

Remote client DN control

Used in SSL server mode in case of remote client authentication (See Sterling Connect:Express SSL guide for more information).

Remote client subject dn:

For SSL transfers, this field enables control of the subject distinguished name (DN) present in the certificate of the remote client.

You can provide a sequence of relative distinguished names (RDNs) separated by commas (‘,’). Each RDN must match a corresponding value in the subject DN of the remote partner. For example "cn=Test*,ou=tlabs01" will authorize an SSL transfer for a partner whose certificate contains the subject dn:
"CN=Test rsa1024,OU=tlabs01,O=tlabs,L=Paris,S=Paris,C=FR".

You can use ‘*’ and ’?’ wild characters.

Trusted root dn:

This field enables additional controls on the trusted root DN of the certificate chain of the remote client certificate. Use the same syntax as for the subject DN control.

Remote server DN control

Used in SSL client mode (See Sterling Connect:Express SSL guide for more information).

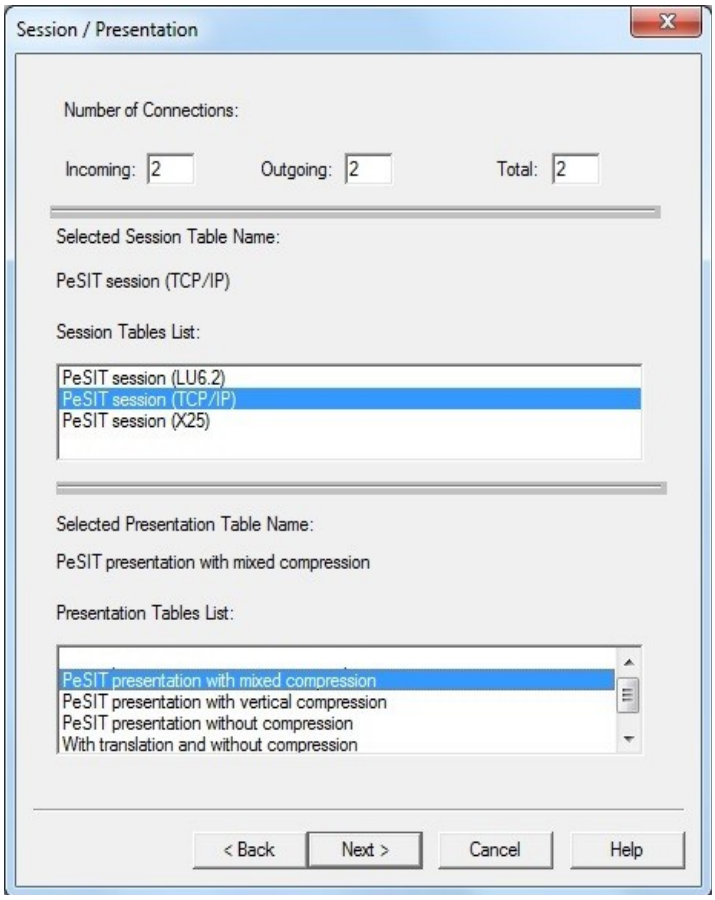
Remote server subject dn:

This field enables control of the subject distinguished name (DN) present in the certificate of the remote server. Use the syntax described above.

Trusted root dn:

This field enables additional controls on the trusted root DN of the certificate chain of the remote server certificate. Use the same syntax as for the subject DN control.

Partners directory – Session / Presentation Tab



Number of Connections:

These fields enable the user to specify the number of simultaneous connections that Sterling Connect:Express can make with this partner.

The **total** number is mandatory and can vary between 1 and 128.

The number of **incoming** sessions varies from 0 to 128. Space indicates an indeterminate number.

The number of **outgoing** sessions varies from 0 to 128. Space indicates an indeterminate number.

If Incoming and Outgoing are fixed numbers, they must add up to the number stated in Total.

Session table:

This field indicates the name of the session table to be used when the communication with this partner is opened using PeSIT presentation protocol.

Note:

Session tables are not used in ETEBAC-3.

Presentation table:

This field indicates the name of the presentation table to be used when transferring files with this partner using PeSIT presentation protocol.

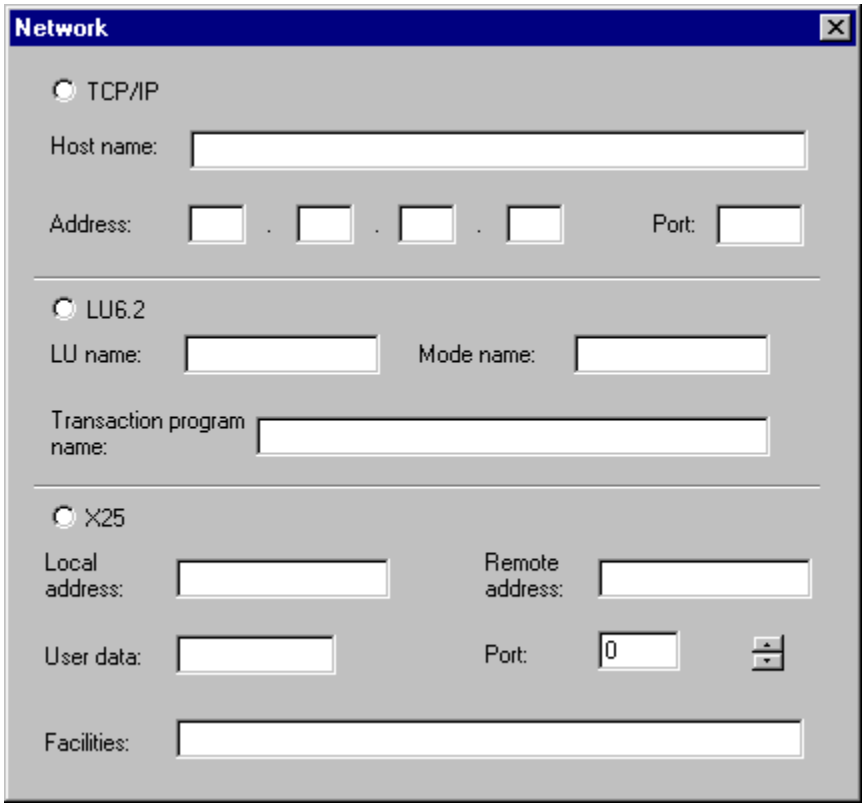
Note:

The Presentation table name can be provided in the Monitor initialization parameters -

tomnt.ini [MONITEUR] TABLE DE PRESENTATION - in the partner parameters, and in the file parameters. Another parameter in the monitor initialization file tomnt.ini, [MONITEUR] PREMIERE PRESENTATION, indicates in which order the information is processed: 'P' indicates that the order is Partner/File/Monitor (The partner's has priority), 'F' indicates that the order is File/Partner/Monitor (The file's has priority). For this parameter the default is 'F' .
Because these parameters are not required, if this information is not provided the presentation parameters are all considered null.

Partners Directory– Network Tab

This section specifies the type of network to use as default when an outgoing session is set up.



TCP/IP Network:

Host name:
This is the IP host name of the partner.

Address:
This is the IP address of the partner in the format of aaa.bbb.ccc.ddd where ‘aaa’, ‘bbb’, ‘ccc’ and ‘ddd’ are numerical values from 0 to 255.
If provided, it takes priority over the host name above.

Port:
This is a numerical field whose value must be between 1 and 65535.
It indicates the number of the port on which to execute the partner’s call.

LU6.2 network:

LU Name:

This field consists of maximum 8 alphanumeric characters.
It gives the LU alias (identity code) for the partner defined on the SNA server.

Mode name:

This field consists of maximum 8 alphanumeric characters.
It indicates the name of the mode used to establish a session with the partner's LU.
Transaction program name:
This field consists of maximum 64 free characters.
For a Connect:Express partner, this name is 'TOMLU6P2'.

X.25 network:

Local address:

This field consists of maximum 15 numeric characters.
It indicates the local address to be shown when the X25 call is made.
For certain networks (TRANSPAC for example) this address does not need to be stated.

Remote address:

This field consists of maximum 15 numeric characters .
It indicates the partner's X25 address.

User data:

This field consists of maximum 8 hexadecimal characters (A to F and 0 to 9).
It states the user data field that Sterling Connect:Express is to present for the X25 call.

Facilities:

This field consists of maximum 32 hexadecimal characters (A to F and 0 to 9).
It states the user data field that Sterling Connect:Express is to present for the X25 call.

Port:

This is a numeric field with a range of 1 through 16.
It indicates the port number for the X25 card, which was specified when the Eicon software was configured.

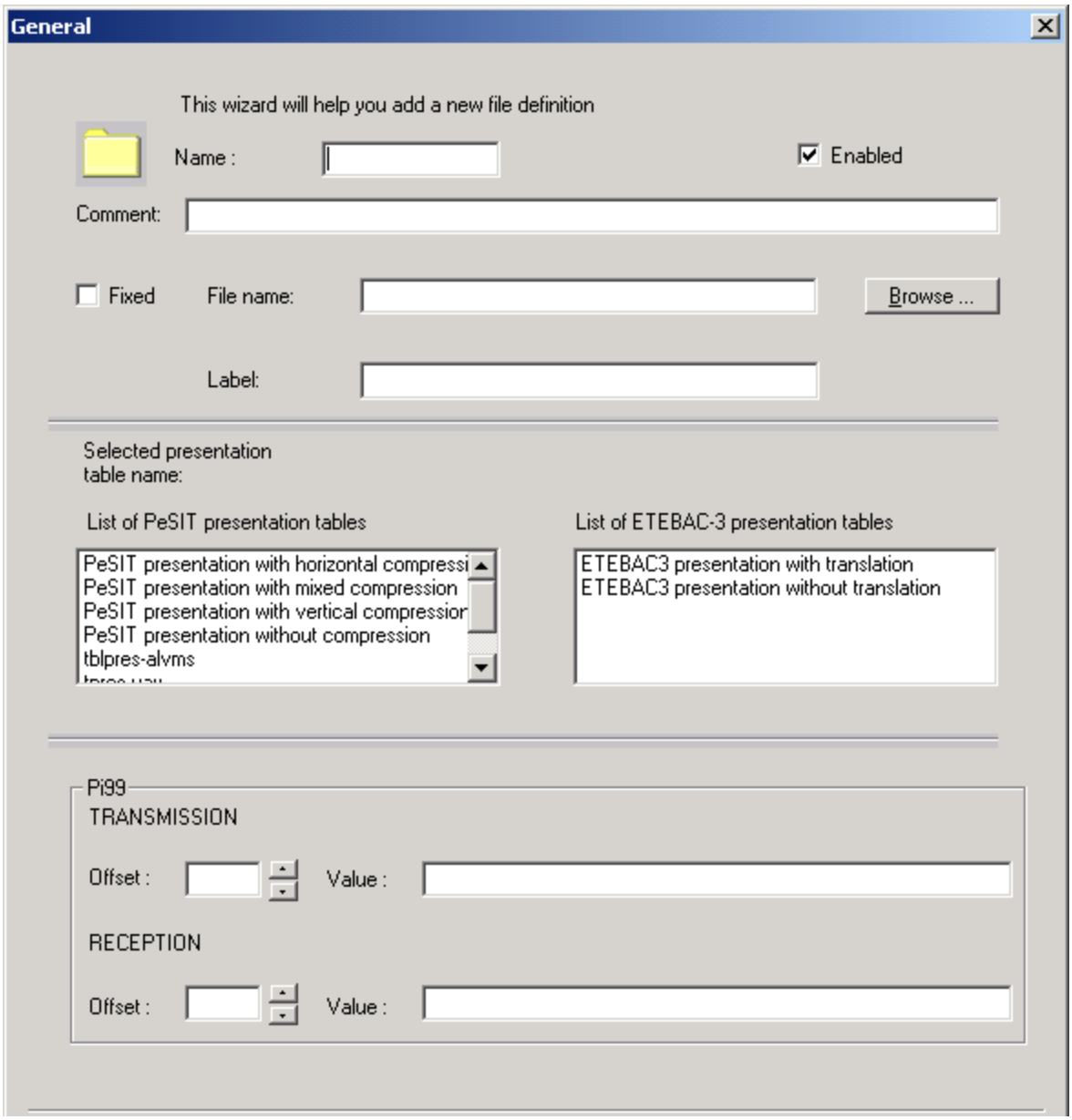
The Files Directory

The files directory is used to define data collection profiles in order to effect transfers with the defined partners.
It is stored in the initialization file for the monitor.
A file is identified by a **symbolic name,** which must be unique.
The graphical interface enables the user to view, edit, create, or delete a file definition controlled by the authorizations granted to the connected client.

A definition for a file is shown by clicking on the following tabs:

- **General**
- **Transfer rules**
- **Notification**
- **Commands**
- **Exits**

Files Directory – General Tab



Symbolic name:

This field consists of maximum 8 alphanumeric characters in capitals (A-Z, 0-9). It enables Sterling Connect:Express to identify a data collection profile when negotiating a transfer.
You can define a default profile $$FILE$$. This profile will be used to manage transfers of undefined files: all properties of the profile will apply to such file transfer.
In the same way, for transferring undefined messages use the default profile $$MSGD$$.
For end to end acknowledgments use default profil $$EERP$$.
Syntax $$....$$ is reserved.

Comment:

This field consists of maximum 80 characters.
It is used to enter comments about a file.

Status:

Indicates the status of the partner for the Sterling Connect:Express monitor.
If it is checked, the monitor will transfer this file; if not checked it refuses.

Fixed:

This field indicates whether Sterling Connect:Express can accept (not checked) or cannot accept (checked) a change to the physical name of this file when the transfer request is submitted.

File name:

This field consists of maximum 127 characters.
It indicates the full physical name of the file about to be transferred.
This name can be changed or not when a transfer request is submitted depending on the indicator stipulated above.
The **|Browse|** button allows the user to select a file by searching the disks and the directories in view.
This name may contain **variables**, and, it can be **generic** in transmission. (See the Appendices for more information)

Label:

This field consists of maximum 80 characters.
It permits to define the content of the pi 37 sent by the sender of the file.
Setting this field to keyword "$$NONE$$" disables sending this parameter. See “PeSIT User Fields Guide”.
Note: Using **&8.3** keyword in this field enables you to transmit automatically the simple name of the file in the pi37 to the remote partner.

List of PeSIT presentation table:

This is the name of the PeSIT presentation table to use when transferring this file.

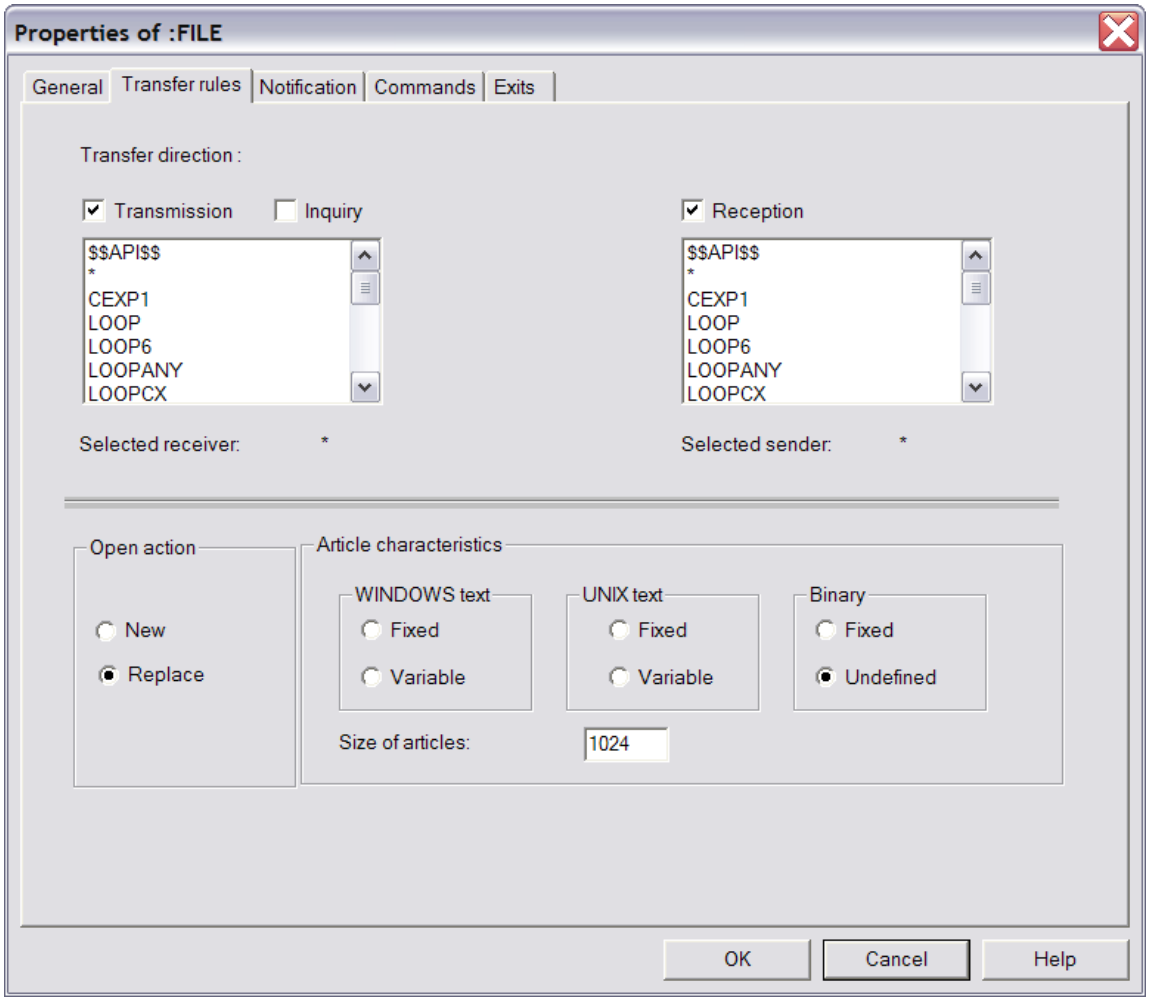
Note:
The Presentation table name can be provided in the Monitor initialization parameters - tomnt.ini [MONITEUR] TABLE DE PRESENTATION - in the partner parameters, and in the file parameters. Another parameter in the monitor initialization file tomnt.ini, [MONITEUR] PREMIERE PRESENTATION, indicates in which order the information is processed: 'P' indicates that the order is Partner/File/Monitor (The partner's has priority), 'F' indicates that the order is File/Partner/Monitor (The file's has priority). For this parameter the default is 'F' .
Because these parameters are not required, if this information is not provided the presentation parameters are all considered null.

List of ETEBAC-3 presentation table:

This is the name of the ETEBAC-3 presentation table to use when transferring this file.

Pi 99 offset and value

These fields defines the content of the pi 99 parameter when transmitting or receiving a file, when the partner is not of type Connect:Express. See ***PeSIT User Fields Guide***.
Note: If the partner type is not Connect:Express monitor (see partner definition), using **&8.3** keyword with offset **0** in this field enables you to transmit automatically the simple name of the file in the pi99 to the remote partner.



Files Directory – Transfer Rules Tab

Transmission:
Indicates that the file can be transmitted by the monitor.

Inquiry:
Indicates that the file can be inquired by a remote partner, without preparing a hold request. If a remote partner inquires this file, Sterling Connect:Express will first look for an hold request. If no request has been held for this file and the current partner, Sterling Connect:Express will check the Inquiry option: if not set the transfer request is rejected (TRC=2054). If this option is set, the transfer is accepted and the physical File Name set in the definition is used.

Receiver:
Indicates which partner is authorized to receive this file.
An asterisk '*****' is used to authorize all defined partners.
'$$API$$' is used to authorize all partners, even undefined ones.

Reception:
Indicates that the file can be received by the monitor.

Sender:
Indicates which partner is authorized to send this file.
An asterisk '*****' is used to authorize all defined partners.
'$$API$$' is used to authorize all partners, even undefined ones.

Open action:
This field indicates the controls and the action to be taken by the monitor when it receives this file:

New:
Indicates that the file must not already exist. If it does exist, the transfer is refused.

Replace:
Indicates that if the file already exists, it is replaced. If it does not exist, a new file is created.

Article characteristics:
This is used to indicate how the file is structured and the data it contains:
Fixed text: this is an ASCII file where the records are of the *same length* and end with '*Carriage Return – CR*' and '*Line Feed – LF*' characters.
Variable text: this is an ASCII file where the records are of *different lengths* and end with '*Carriage Return – CR*' and '*Line Feed – LF*' characters.
Fixed binary: this is a binary file where all the records are of the *same length*.
Undefined binary: this is an unstructured binary file treated as a *variable*.

Size of article:
This field consists of maximum 5 numeric characters.
It is used to indicate the length of the records in a fixed file or the length of the longest record in a variable file.

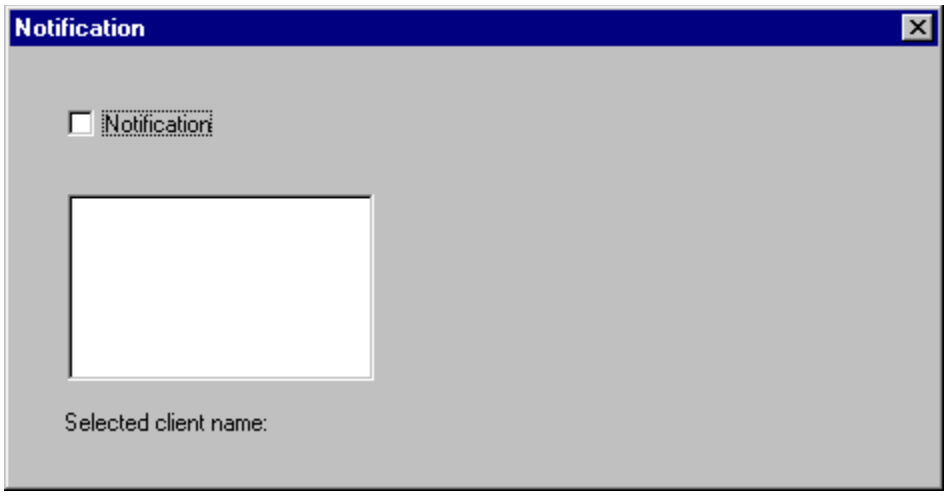
For the PeSIT protocol:

- For a fixed binary file the maximum length is 32767.
- For other files the maximum length is 32765.
- In text files this size does not include the CR-LF characters.
- It can be zero for a file being received only. In this case, the monitor uses the size of the article announced by the partner transmitting the file.

For the ETEBAC-3 protocol:

- The article's maximum length is 4094 whatever the type of file, and may not be zero regardless of the direction of the transfer.

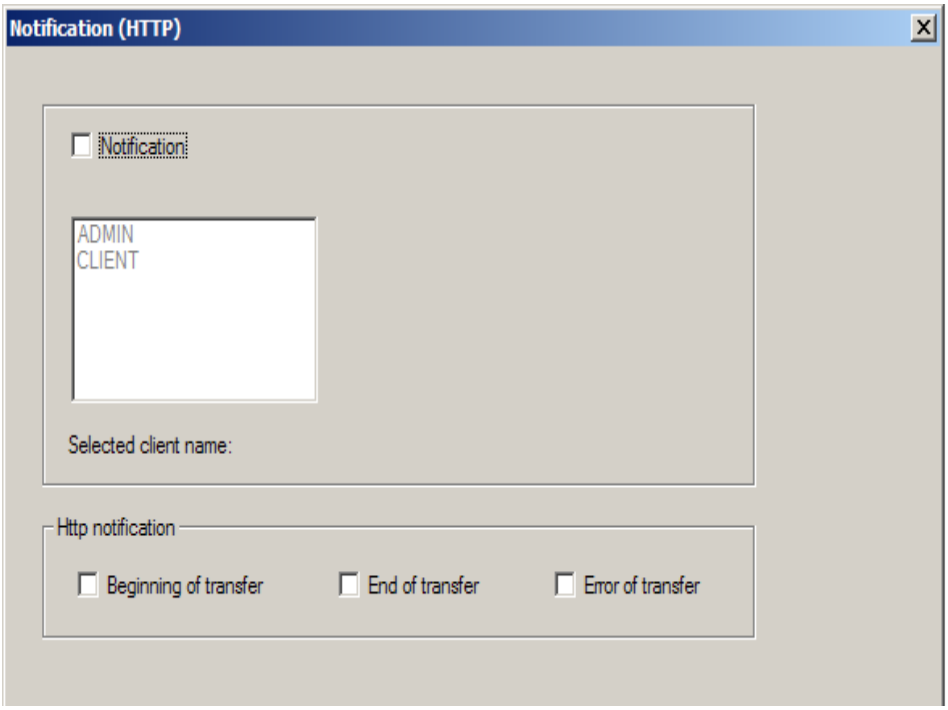
Files Directory – Notification Tab



Notification:
This indicates whether the transfer notification function is to be implemented for this file.
Name of client:
This is the symbolic name of the client to be notified each time this file is transferred.

See appendices for more information on the notification system.

If the HTTP notification component is installed, the following panel is displayed:



HTTP Notification:

Http notifications are created by the monitor and sent by the tom_httpn process.

Beginning of transfer:

If checked, an HTTP notification is created at the beginning of the transfer.

End of transfer:

If checked, an HTTP notification is created at the end of the transfer.

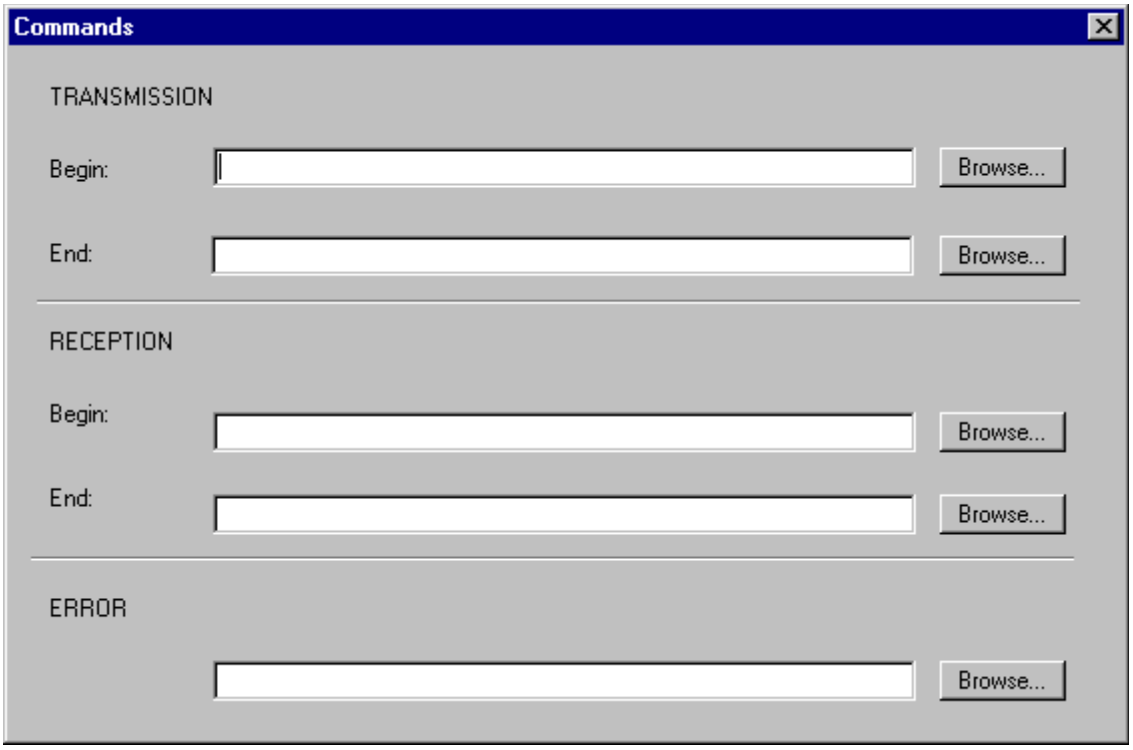
Error of transfer:

If checked, an HTTP notification is created if there is an error during the transfer.

Note

The original notification system and the new HTTP notification system are independent and can be used at the same time.

Files Directory – Command Tab



A command is an MS-DOS (.BAT) or Windows (CMD) command file activated by the monitor:

- Before the file is transferred (begin command)
- After the file has been transferred without error (end command)
- In the event of an error in transferring the file (error command)

A command is executed asynchronously in relation to the transfer.
When it is started, the command receives parameter.

*T*he command must be preceded by one of the following parameters:

/C, indicating that the execution window is closed automatically after the command has been executed
/K, indicating that the execution window is kept and needs to be closed manually
/N, indicating that the command is run without a console window

If neither of these parameters is indicated, the command is not executed.

For commands having a pathname containing spaces, enclose the pathname with double quotes (“). If the file is chosen by using the Browse… button, the double quotes are automatically added by the program.

The following information is indicated:

Transmission:
These fields, containing a maximum of 127 characters, are used to state the full name of the command files activated prior to transmission of the file **(Begin)** or after the file has been transmitted correctly **(End).**
The **|Browse|** button allows the user to select a name by searching the disks and the directories in view.

Reception:
These fields, containing a maximum of 127 characters, are used to state the name of the command files activated prior to receiving the file **(Begin)** or after the file has been received correctly **(End).**
The **|Browse|** button allows the user to select a name by searching the disks and the directories in view.

Error:
This field, consisting of a maximum of 127 characters, is used to state the name of the command file activated in the event of an **error** during transfer.
The **|Browse|** button allows the user to select a name by searching the disks and the directories in view.

Files Directory – Exits Tab

This function is not available in this version.

The Clients Directory

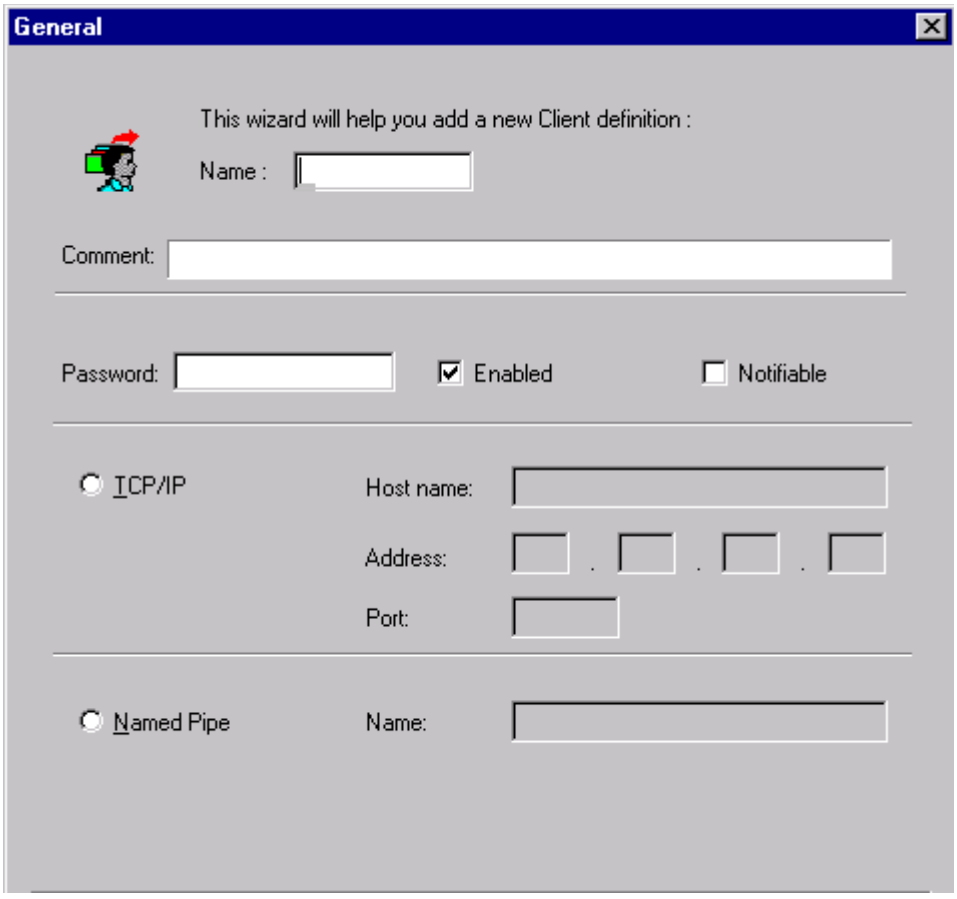
The clients directory is used to define all the users who are authorized to connect to the monitor, either locally or remotely. The connection is made via the API by establishing a client/server dialog and utilising the TCP/IP or Named Pipe network protocols.
A client is identified by a **symbolic name,** which must be unique.

The graphical interface enables the user to view, edit, create or delete a client definition controlled by the authorizations granted to the connected client.

A definition for a client is shown by means of the following tabs:

- **General**
- **Authorizations**
- **Files**

Clients Directory – General Tab



Symbolic name:

This field consists of maximum 8 alphanumeric characters in capitals (A-Z, 0-9).
It is used to identify a client when establishing the client/server dialog with the monitor.

Comment:

This field consists of maximum 80 characters.
It is used to enter comments about a client.

Password:

This field consists of maximum 8 alphanumeric characters in capitals (A-Z, 0-9).
It supplements the client identification.

Status:

Indicates the status of the client for the Sterling Connect:Express monitor.
If this is checked, the monitor will open the dialog; if unchecked, it will not.

Notifiable:

This indicates whether or not the client is participating in the notification system.

See appendices for more information on the notification system.

TCP/IP

This field indicates that the client is using the TCP/IP network.

Host name:

This is the client's IP hostname.

Address:

This is the client's IP address in 'aaa.bbb.ccc.ddd' format where 'aaa', 'bbb', 'ccc' and 'ddd' are numerical values between 0 and 255.
This address is used by the monitor to control the caller's address if such control is operational within the monitor's TCP/IP network parameters.
It is also used by the monitor when sending transfer notifications.
If provided, it takes priority over the host name above.

Port:

This is a numerical field whose value must be between 1 and 65535.
It indicates the number of the port on which to execute the client's call when sending transfer notifications.

Named Pipe:

This field indicates that the client is using the Named Pipe network.

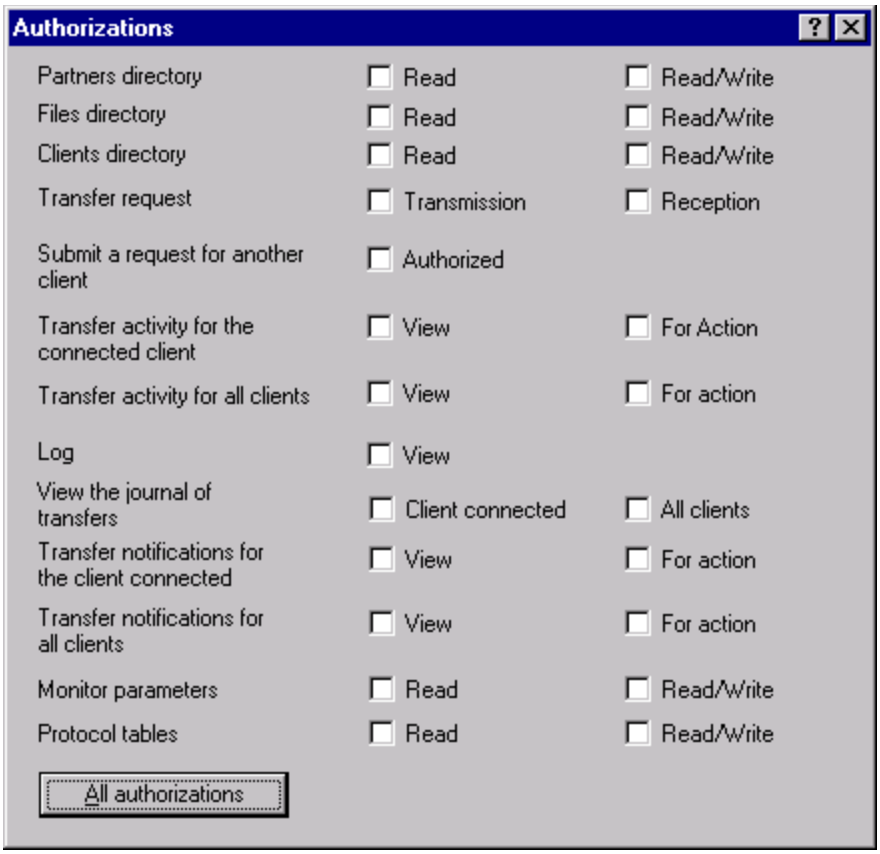
Name:

This is the name of the client's Named Pipe.
It is used when sending notifications

Note:

If the network information is not specified, the monitor will not try to send the transfer notifications to the client directly. It only saves them in the Notifications file.

Client Directory – Authorizations Tab



Client authorizations refer to the monitor to which the client is connecting.

Partners directory:

Read access:

This indicates that the client is authorized to view partner definitions.

Read/Write access:

This indicates that the client is authorized to view, edit, create, or delete partner definitions.

Files directory:

Read access:

This indicates that the client is authorized to view file definitions.

Read/Write access:

This indicates that the client is authorized to view, edit, create, or delete file definitions.

Clients directory:

Read access:

This indicates that the client is authorized to view client definitions.

Read/Write access:

This indicates that the client is authorized to view, edit, create, or delete client definitions.

Transfer request:

Transmission:

This indicates that the client is authorized to submit transfer requests for transmittal.

Reception:

This indicates that the client is authorized to submit transfer requests for receipt.

Submit a request on a client's account:

This indicates that the client is authorized to submit transfer requests on behalf of another client.

Transfers activity for the connected client:

View:

This indicates that the client is authorized to view the transfer requests it has made.

For action:

This indicates that the client is authorized to act upon (interrupt, cancel, resume) the transfer requests it has made.

Transfer activity for all clients':

View:

This indicates that the client is authorized to view the transfer requests made by all clients.

For action:

This indicates that the client is authorized to react to (cancel, interrupt, resume) the transfer requests made by all clients.

Log:

This indicates that the client is authorized to view monitor messages.

View Journal of Transfer

For the connected Client:

This indicates that the client is authorized to view its own transfer journal.

For all Clients:

This indicates that the client is authorized to view the transfer journal for all clients.

Transfer Notifications for the connected Client:

View:

This indicates that the client is authorized to view its transfer notifications.

For action:

This indicates that the client is authorized to act upon (delete, route) its own transfer notifications.

Transfer Notifications for all Clients:

View:

This indicates that the client is authorized to view the transfer notifications for all clients.

For action:

This indicates that the client is authorized to react to (delete, route) the transfer notifications for all clients.

Monitor parameters:

Read:

This indicates that the client is authorized to view the monitor settings.

Read / Write:

This indicates that the client is authorized to view and edit the monitor settings.

Protocol tables:

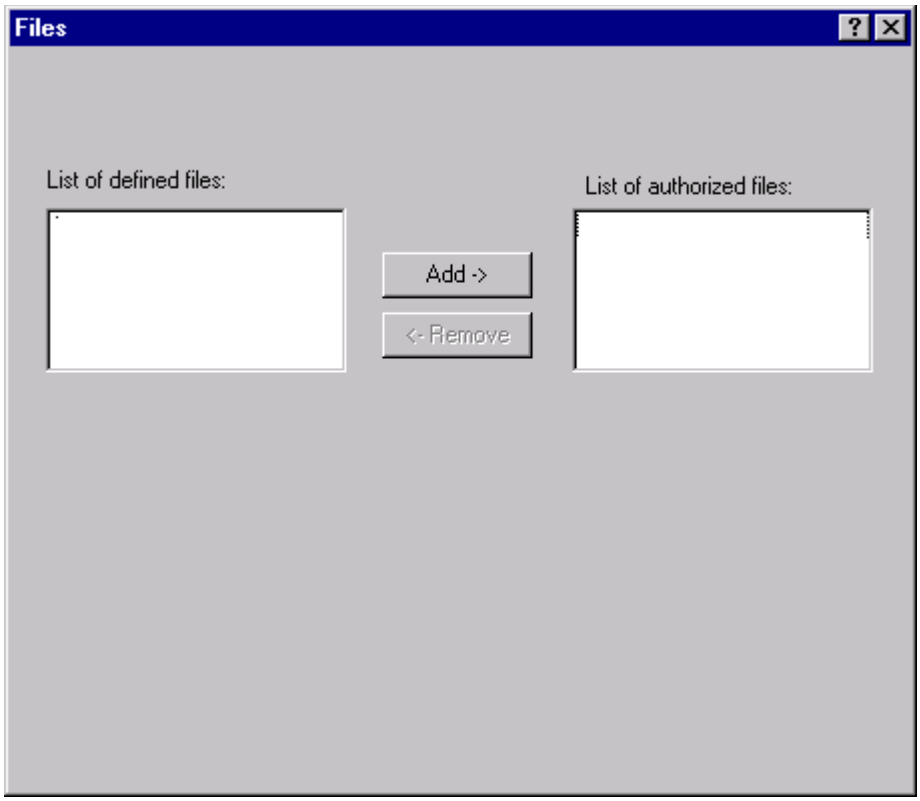
Read:

This indicates that the client is authorized to view the protocol tables.

Read / Write:

This indicates that the client is authorized to view, edit, create, or delete the protocol tables.

Clients Directory – Files Tab



List of files defined:

This is the list of files defined into the files directory.

List of files authorized:

This is the list of files that the client is authorized to transfer.

An asterisk '*****' is used to indicate all defined files.

The |**Add**| button is used to add a file name into the list of authorized files.

The |**Remove**| button is used to remove a file name from the list of authorized files.

The tables are used to define the conditions for implementing the PeSIT and ETEBAC-3 protocols that are supported by the monitor on two levels:

- When the session begins
- When the file data is sent

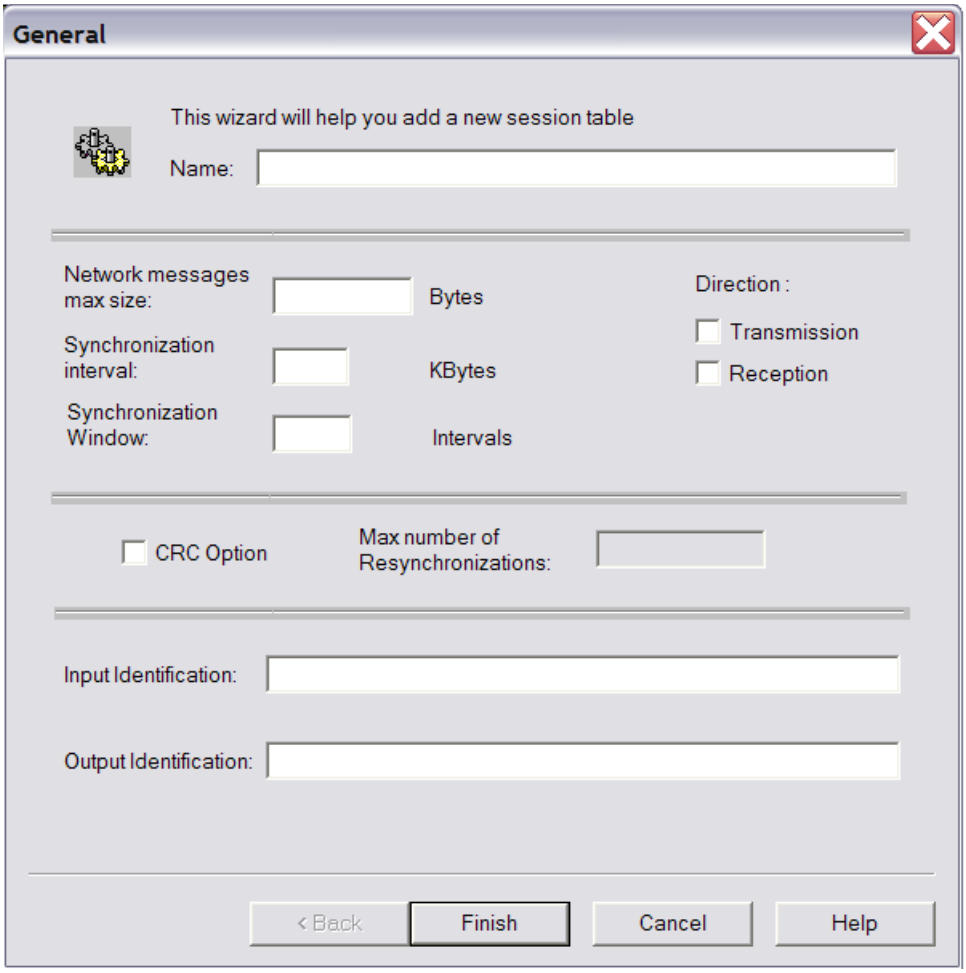
When the session begins, the **session tables** indicate the values used by the monitor as the basis of negotiation with the partner.
The result of the negotiation is used for the duration of this session.
The ETEBAC-3 protocol does not require the use of any particular session table.

When the data is sent, the PeSIT or ETEBAC-3 **presentation tables** state the values used by the monitor to negotiate with the partner and to indicate how the data should be processed (translation, compression, and so on).
The results of the negotiation are used for the duration of this transfer.

The tables are stored in the monitor initialization file.

The Session Tables for the PeSIT Protocol

A Session table is used to define the parameters used when a session with a partner is opened.
A Session table is identified by a unique **name**.



The graphical interface enables the user to view, edit, create, or delete a session table, controlled by the authorizations granted to the connected client.

A session table consists of the following fields:

Name:
This field consists of maximum 50 characters .
It is the identifier for the session table.

Network messages max size:
This is a numerical field whose value must be between 256 and 9999 bytes.
It states the maximum size of the network messages that will be exchanged during a communication with a partner.

Synchronization interval:
This is a numerical field of which the value must be between 0 and 99 kilobytes.

It states the interval for establishing synchronization points enabling transfers that have been interrupted to be resumed without retransmitting the synchronization intervals already completed.

Direction:

This field indicates the direction of transfer during communication with a partner.
It can be set to Transmission, Reception or Both.

CRC Option:

Indicates whether the mechanism for controlling data integrity is implemented.

Max number of resynchronizations:

This is a numerical field whose value must be between 0 and 99.
This file is linked to whether the CRC option is implemented and is used to indicate the maximum number of retransmission requests for changed data when the data is transferred.

Input Identification:

Alphanumerical field , 254 characters.
This field is used to provide the server identification to a PeSIT requestor, during the connection phase, in the Pi99 field of the A_CONNECT command.
Note: you can add manually a default [MONITEUR]IMSG= parameter in the tomnt.ini file that will apply to all partners the session table of which doesn't provide an IMSG field.

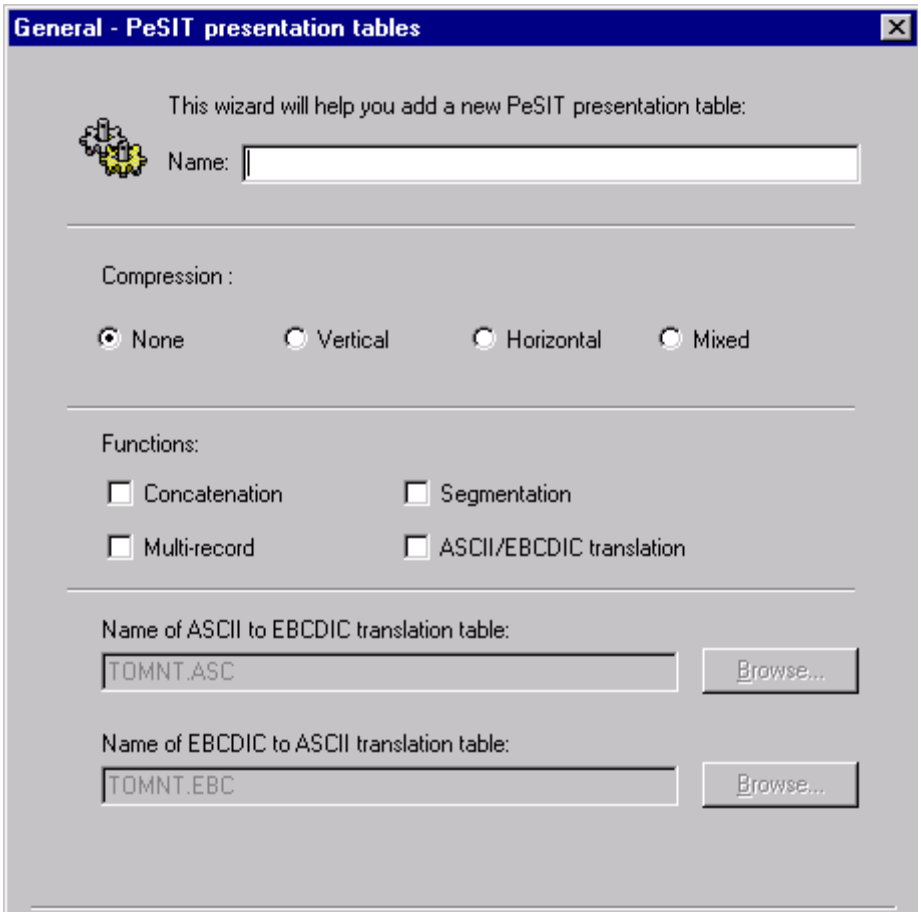
Output Identification:

Alphanumerical field , 254 characters.
This field is used to provide the requestor identification to a PeSIT server, during the connection phase, in the Pi99 field of the CONNECT command.
Note: you can define a default [MONITEUR]OMSG= parameter in the tomnt.ini file that will apply to all partners the session table of which doesn't provide an IMSG field.

The Presentation Tables for the PeSIT Protocol

A Presentation table is used to define the settings used to send or receive data from a file on the network.
A Presentation table is identified by a unique **name.**

The graphical interface enables the user to view, edit, create, or delete a Presentation table,



controlled by the authorizations granted to the connected client.

A Presentation table consists of the following fields:
Name:
This field consists of maximum 50 characters.
It is the identifier for the presentation table.
Compression:
This field determines the type of compression used.
It can be set to none, horizontal, vertical, or mixed (horizontal and vertical).
The PeSIT protocol compression algorithm is used.

Functions

These fields determine whether the PeSIT protocol functions are in operation for transferring data in the network messages.

Concatenation is used to insert several protocol messages into the same network message.

Multi-articles is used to insert several articles of the file into the same network message.

Segmentation allows a file article to be transferred in several network messages.

ASCII/EBCDIC translation:

This field determines whether the data translation mechanism is implemented during transfer. Translation is carried out in the following directions:

- ASCII to EBCDIC for sent data
- EBCDIC to ASCII for received data

This translation mechanism is based on the external **translation tables.**

Name of ASCII-> EBCDIC translation table

This field states the full name of the file used to perform the ASCII to EBCDIC conversion. The |**Browse**| button allows the user to select a file name by searching the disks and the directories in view.

Name of EBCDIC -> ASCII translation table

This field states the name of the file used to perform the EBCDIC to ASCII conversion. The |**Browse**| button allows the user to select a file name by searching the disks and the directories in view.

Note:

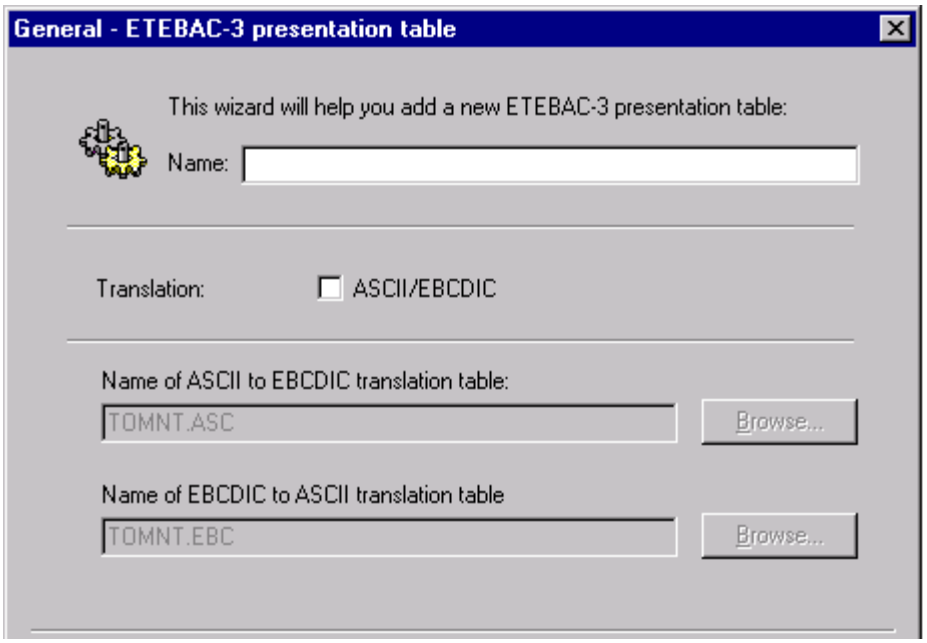
The Presentation table name can be provided in the Monitor initialization parameters - tomnt.ini [MONITEUR] TABLE DE PRESENTATION - in the partner parameters, and in the file parameters. Another parameter in the monitor initialization file tomnt.ini, [MONITEUR] PREMIERE PRESENTATION, indicates in which order the information is processed: 'P' indicates that the order is Partner/File/Monitor (The partner's has priority), 'F' indicates that the order is File/Partner/Monitor (The file's has priority). For this parameter the default is 'F' . Because these parameters are not required, if this information is not provided the presentation parameters are all considered null.

- No compression
- No concatenation
- No segmentation
- No multi-article
- No translation.

The Presentation Tables for the ETEBAC-3 Protocol

A presentation table is used to define the settings used to send or receive data from a file on the network.
A Presentation table is identified by a unique **name**.

The graphical interface enables the user to view, edit, create, or delete a Presentation table, controlled by the authorizations granted to the connected client.



A Presentation table consists of the following fields:

Name:

This field consists of maximum 50 characters .
It is the identifier for the Presentation table.

ASCII/EBCDIC translation:

This field states whether the data translation mechanism is implemented during transfer.
Translation is carried out in the following directions:

- ASCII to EBCDIC for sent data
- EBCDIC to ASCII for received data

This translation mechanism is based on the external **translation tables.**

Name of ASCII-> EBCDIC translation table

This field states the name of the file used to perform the ASCII to EBCDIC conversion.
The |**Browse**| button allows the user to select a file name by searching the disks and the directories in view.

Name of ASCII-> EBCDIC translation table

This field states the name of the file used to perform the EBCDIC to ASCII conversion.
The |**Browse**| button allows the user to select a file name by searching the disks and the directories in view.

The PeSIT Retry Table

You can use the retry table to filter the PRC values for which retries can take place in case of errors in PeSIT transfers. This table contains the following PRC default values, for which retries are performed:

000: Prc not set
201: System resources temporarily insufficient
202: User resources temporarily insufficient
203: Non-priority transfer
207: File occupied
221: End of transmission expiration time
225: Application congested
300: Congested local communication system
303: Congested remote communication system
309: Too many connections already in progress
310: Network incident
317: Time-out failure

If the file PesitPrcRetry.txt doesn't exist in the config sub-directory, the monitor performs systematically the retries in case of error, whatever the PRC value is.
To activate this table, stop the monitor, copy the file PesitPrcRetry_example.txt to PesitPrcRetry.txt in the config sub-directory, and restart the monitor.
To modify the table edit the file and set one PRC value per line. The monitor loads it during initialization: stop and restart Sterling Connect:Express.

Note: The maximum number of retries and the interval between two retries are defined with the graphical interface in the start-up parameters.

The Monitor

The Monitor function within the management document in the graphical interface is used to start and track transfers.

It presents the following options:

- **Request**
- **Activity**
- **Messages**
- **Journal**
- **Notifications**

Requests is used to initiate new transfers to the monitor.

Activity is used to consult the active transfer requests at monitor level and to execute certain operations (interrupt, cancel, resume).

Messages is used to consult the list of monitor messages.

Journal is used to consult the journal of monitor transfers.

Notifications is used to consult the transfer notifications and to execute certain operations on them (delete or route).

Transfer Requests

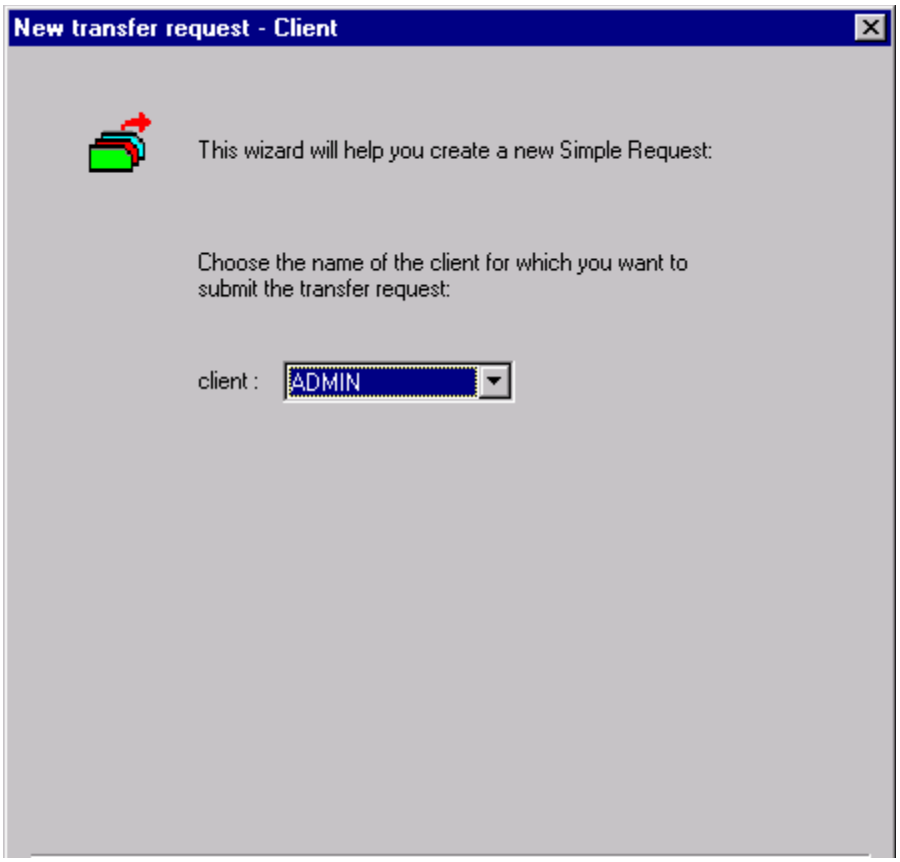
This function, carried out by the graphical interface administration document, is used to initiate new file transfers to the Sterling Connect:Express monitor.
A transfer request is made up mainly by linking up the following components:

- A symbolic file defined in the file directory
- A transfer direction
- A symbolic partner defined in the partner directory
- A physical file name

The function provides three options for submitting requests:

- Simple requests consisting of:
    - **Client** information
    - **File** information
    - **Schedule** information
    - Notification information
- Extended requests consisting of the information in the simple request, plus:
    - **Ad hoc** information
    - **Extension** information
- ETEBAC-3 requests consisting of the information in the simple request, plus:
    - The ETEBAC-3 parameter card

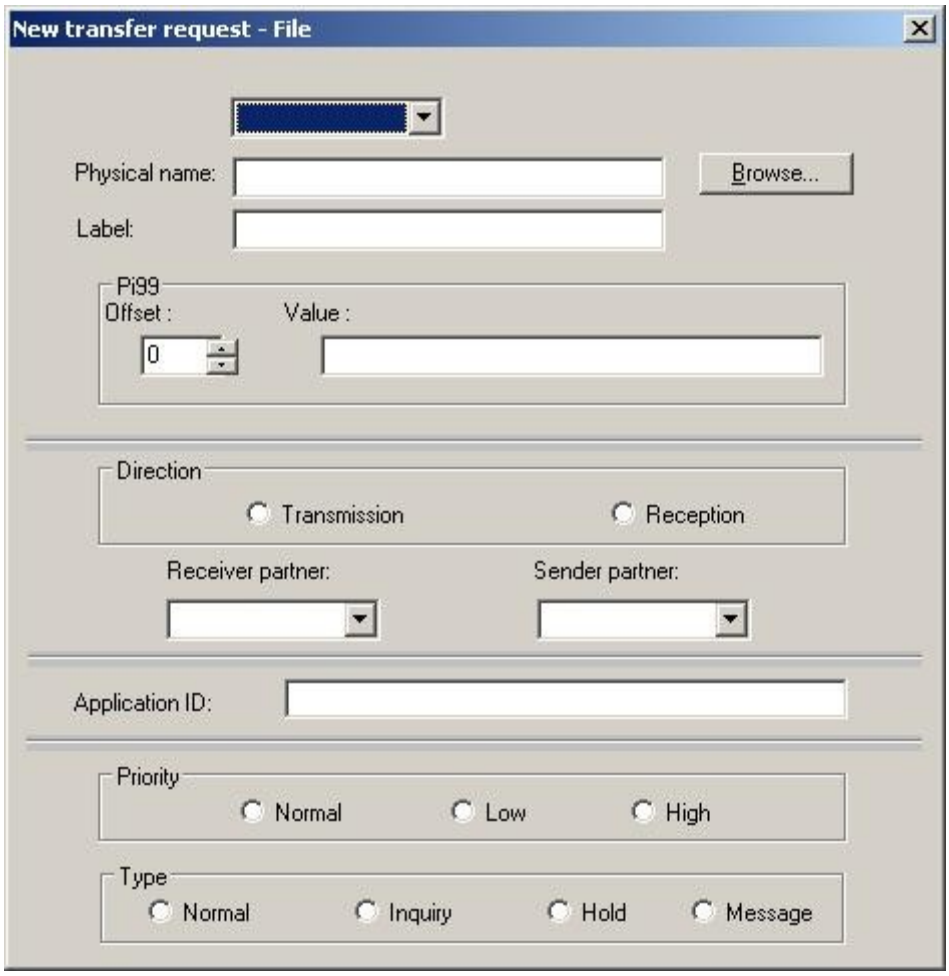
Transfer Request – Client Information



Client

This is the symbolic name of the client initiating the request. The name must be defined in the client directory and this client must be authorized to submit a transfer request.
If the connected client is not authorized to submit a request on behalf of another client, this field cannot be edited. In that case, it suggests a list of defined clients.

Transfer Request – File Information



File name

This is the symbolic name of the file about to be transferred. It must have been defined in the file directory

The list indicated shows the files that are authorized for the initiating client.

Status

This indicates the status of the symbolic file selected.

Physical name

This is the physical name of the file about to be transferred.

This field gives the physical name that is defined in the file directory.

It can be edited if the file definition so permits.

The |**Browse**| button allows the user to select a file by searching the disks and the directories in view.

This name may contain **variables**, and when sent, may be **generic**. See Appendices for more information.

Label

This is the value of the PI=37 at the file selection stage of the PeSIT protocol. Default value is the physical name and it may be changed. Setting this field to keyword "$$NONE$$" disables sending this parameter. See “PeSIT User Fields Guide”.

Note: Using **&8.3** keyword in this field enables you to transmit automatically the simple name of the file in the pi37 to the remote partner.

Pi 99 offset and value

These fields define the content of the pi 99 parameter for file transmission or file reception. See ***PeSIT User Fields Guide***.

Note: If the partner type is not Connect:Express monitor (see partner definition), using **&8.3** keyword with offset **0** in this field enables you to transmit automatically the simple name of the file in the pi99 to the remote partner.

Direction

This is the direction of transfer.

This field gives the direction that is specified in the file directory.

It can be edited if the file definition so permits.

Partner Receiver/Sender

This is the symbolic name of the partner with whom the monitor is to carry out the file transfer.

It must have been defined in the partner directory and be authorized in the file definition.

This field shows the list of authorized partners for the direction indicated.

It can be edited if the file definition so permits.

Application Identifier

This is a 16-character free-form field allowing the user to identify this transfer.

Priority

This is the priority setting for the transfer. It may be Low, Normal or High.

Transfers are handled by the monitor in priority order.

The default setting is Normal.

Type

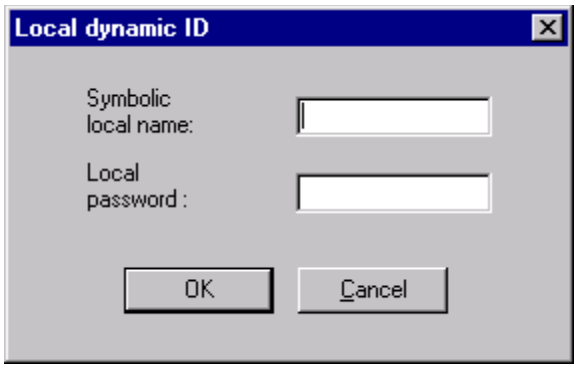
This indicates the type of request. It may be Normal, Inquiry, or Hold.

In *Transmission*, the request is set to Normal for an outgoing call or Hold for an incoming call.

In *Reception*, it can be Normal or Inquiry depending on the parameters set for the remote site (Request on Hold or not).

Requests of type Message, are always normal transmission requests.

Transfer Request – Dynamic Local Identification



This window is displayed when the partner is defined as dynamic local identification.

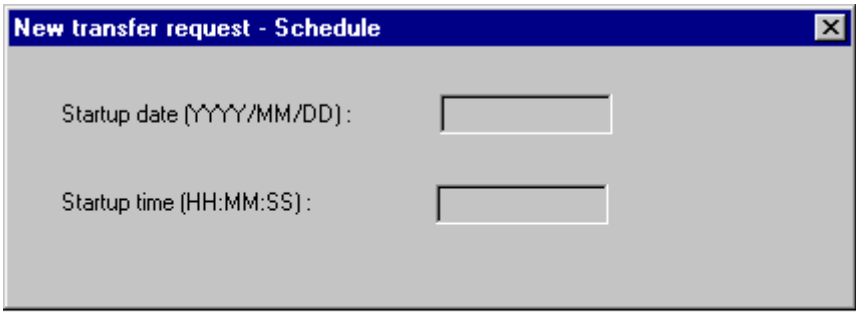
Local name:

This field consists of maximum 8 alphanumeric characters in capitals (A-Z, 0-9).
It is the identification for the Sterling Connect:Express monitor at the partner end.

Local password:

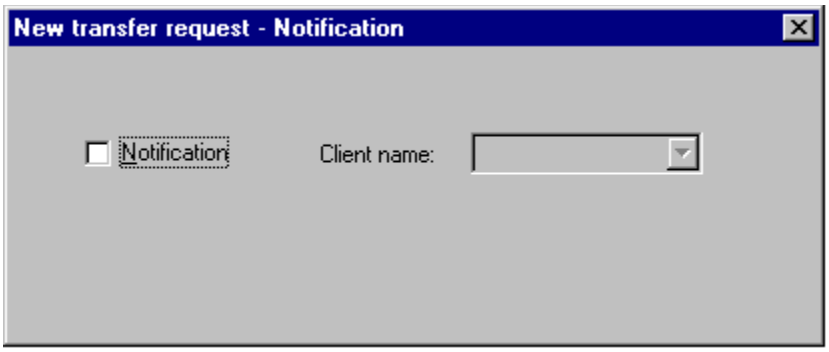
This field consists of maximum 8 alphanumeric characters in capitals (A-Z, 0-9).
It supplements the identification for the Sterling Connect:Express monitor at the partner end.

Transfer Request – Schedule Information



Scheduling mode is not operational in this version.

Transfer Request – Notification Information



Notification

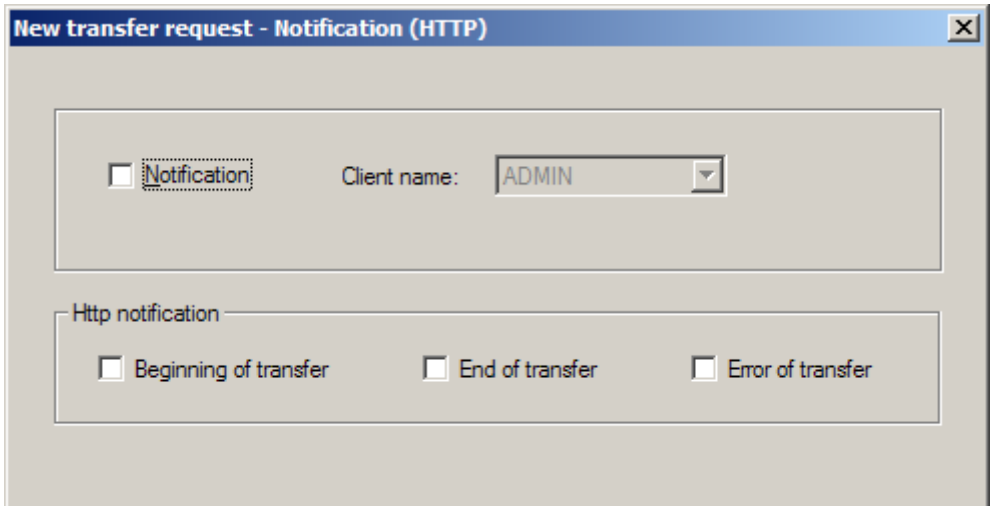
This indicator allows the user to requests to be notified when a transfer ends, either as a matter or course, or following a problem.

Client name

This is the symbolic name of the client who is to receive the notification of transfer. This name must have been defined in the client directory.

See appendices for more information on the notification system.

If the HTTP notification component is installed, the following panel is displayed:



HTTP Notification:

Http notifications are created by the monitor and sent by the tom_httpn process.

Beginning of transfer:

If checked, an HTTP notification is created at the beginning of the transfer.

End of transfer:

If checked, an HTTP notification is created at the end of the transfer.

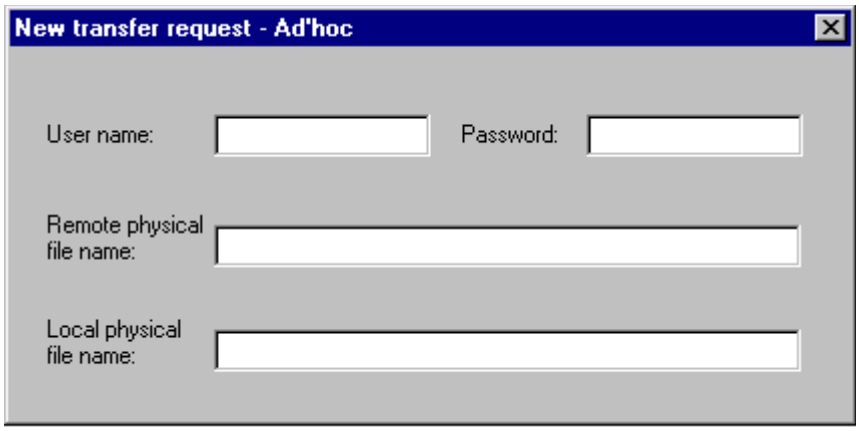
Error of transfer:

If checked, an HTTP notification is created if there is an error during the transfer.

Note

The original notification system and the new HTTP notification system are independent and can be used at the same time.

Transfer Requests – Ad Hoc Information



In Connect:Express type transfers with a partner in PeSIT version E, the **Ad hoc** option is used, to state the physical name of the file on the remote site, as well as the necessary security measures in place to access this file.

User name

This is the name of the user used by the remote security system to control access to the requested file in the direction indicated.

Password:

This is the user password used by the remote security system with the name stated above.

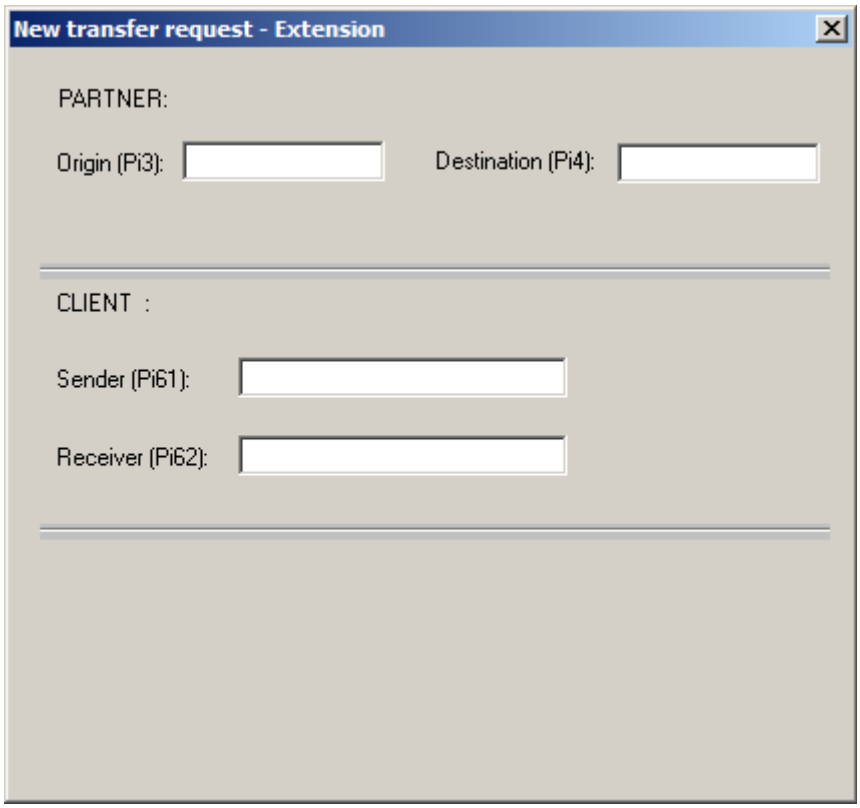
Remote physical file name

This is the physical name of the remote file using the syntax of the remote computer to which the transfer is to be made.

Local physical file name

This is the local physical name of the file, which is to be stated to the partner with whom the transfer is to be made. It allows the user to edit the local physical name that is actually transferred.

Transfer Request – Extension Information



With transfers in PeSIT, the request extension is used to specify directly the values of certain fields in this protocol.

Origin

This is the value of PI=3 at the file selection stage.

Destination

This is the value of PI=4 at the file selection stage.

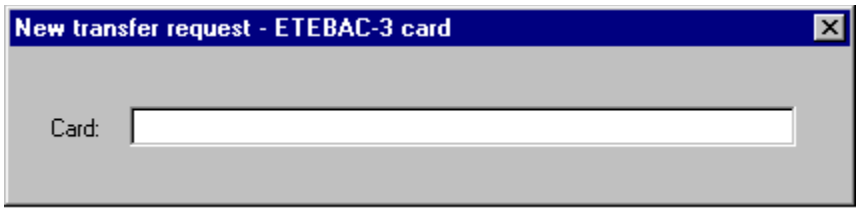
Sender

This is the value of PI=61 at the file selection stage in PeSIT version E only.

Receiver

This is the value of PI=62 at the file selection stage in PeSIT version E only.

Transfer Request – ETEBAC-3 Information



The ETEBAC-3 parameter card provides the information required for presentation to the server to which the monitor will connect to perform the transfer.
This 80-character card is made up of a standard section (the first 8 characters) and a free-form section (the remaining 72 characters).

Card Description

Position 1: contains 'A' for an outgoing transfer [stands for Aller = Go in French] or 'R' for a received transfer.
Positions 2 to 4: not used, should contain spaces
Positions 5 to 8: length of article:
Positions 9 to 80: free-form

By default, Sterling Connect:Express displays a card with the free-form section initialized for transfers with a Sterling Connect:Express server, as follows:

Positions 13 to 20: symbolic name of the file
Positions 21 to 28: local symbolic name of partner
Positions 29 to 35: partner's local password
Position 47: 'I' for received transfer in Inquiry mode.

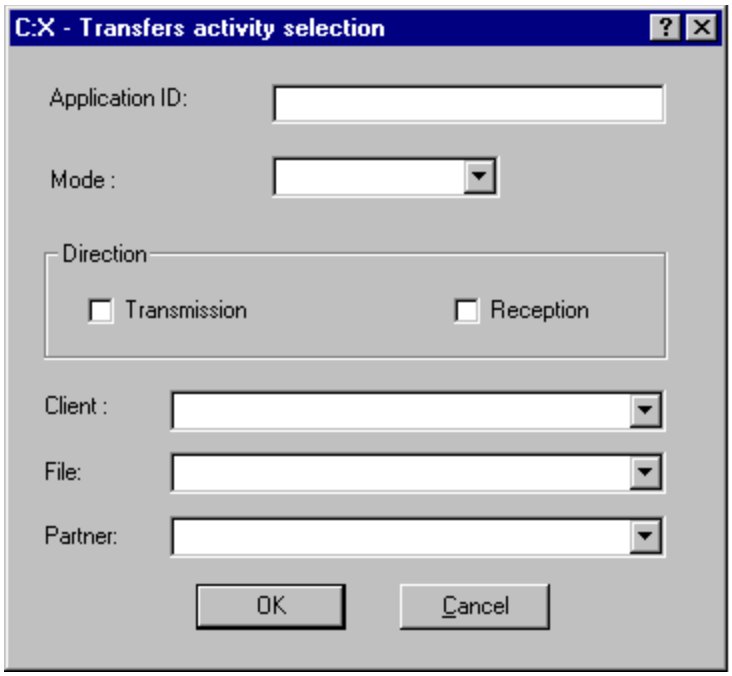
Activity of Transfers

The “activity of transfers” facility on the monitor is used to view and react to the transfers taking place.
Depending on the user’s authorization rights, the user can view his own transfers only, or transfers for all clients.

This is carried out as follows:

- **Indication of selection criteria and list display**
- **View of transfer and action details**

Transfer Activity – Selection Arguments



This window is used to enter the following selection criteria:

Application Identifier

This is the transfer identifier indicated by the user when the request was submitted.
An asterisk '*' can be used to select all identifiers.

Mode

This is the request mode which is Internal if initiated locally or External if created dynamically at the time of an incoming call.
An asterisk '*' can be used to select all modes.

Direction

This is the direction of the transfer. It may be Transmission, Reception or Both.

Client

This is name of the client initiating the request.
The user's authorization rights determine whether this field can be edited.
An asterisk '*' can be used to select all clients.

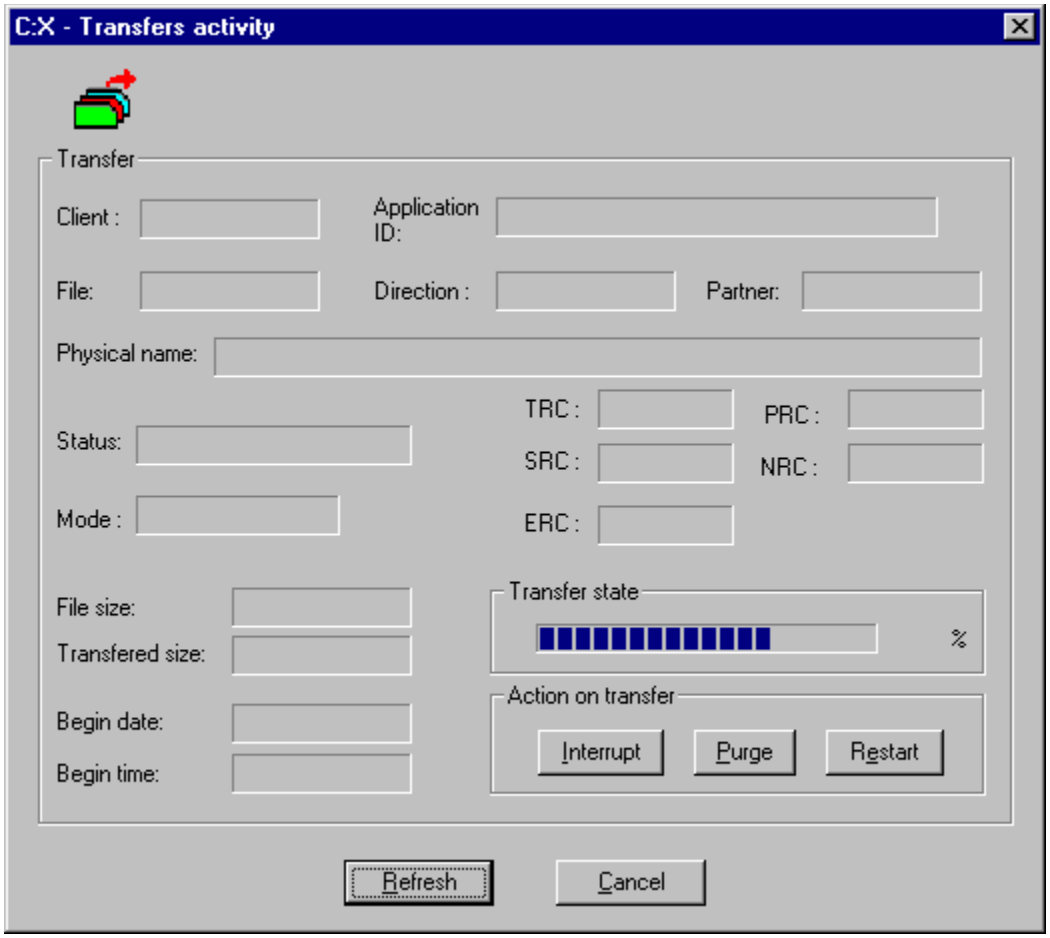
File

This is the symbolic name of the transferred file.
An asterisk '*' can be used to select all files.

Partner

This is the symbolic name of the partner for the transfer.
An asterisk '*' can be used to select all partners.

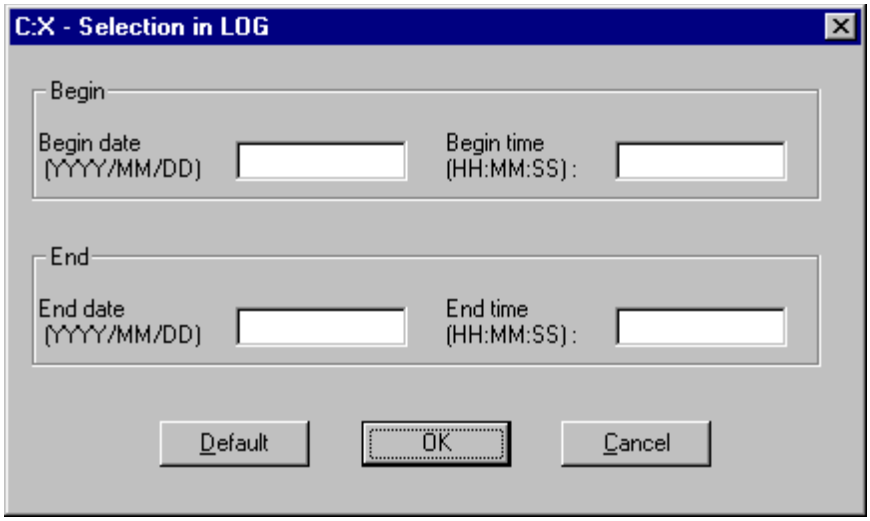
Transfer Activity – Detail and Action



This window is used to view the details of the transfer selected from the list shown, and, depending on the user's authorization rights and the status of the transfer, to take action.
The |**Interrupt**| button is used to ask the monitor to interrupt this transfer. It can be resumed later.
The |**Purge**| button is used to ask the monitor to purge this transfer. It cannot be resumed later.
The |**Restart**| button is used to ask the monitor to try the transfer again.
The |**Refresh**| button will refresh (update) the screen display.

Viewing Messages

This function is used to display messages timed by the Sterling Connect:Express transfer monitor and to view any return codes in the event of an error.
The **messages** and the **return codes** are described in the appendices.



Messages are displayed by entering the following criteria:

Begin date

The date that timed messages started in YYYY/MM/DD format.
The default is today's date.

Begin time

The time that timed messages started in HH:MM:SS format.
The default is that the current time less 10 minutes.

End date

The date that timed messages ended in YYYY/MM/DD format.
The default is today's date.

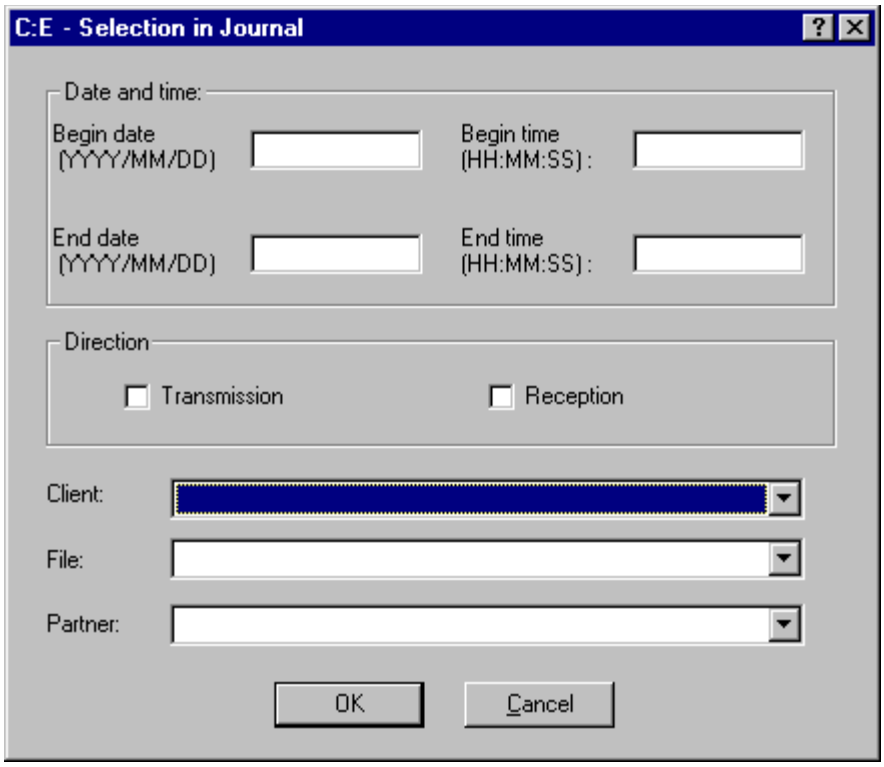
End time

The time that timed messages ended in HH:MM:SS format.
The default is that the current time.

The current document lists messages meeting the indicated criteria.

Consulting the Transfer Journal

This function is used to view the monitor transfer journal.
Depending on the user's authorization rights, either transfers from the connected client or all transfers may be read.



The following criteria are used:

Begin date

The date that the transfer journal starts in YYYY/MM/DD format.
The default is today's date.

Begin time

The time that the transfer journal starts in HH:MM:SS format.
The default setting is '00:00:00'.

End date

The date that the transfer journal ends in YYYY/MM/DD format.
The default is today's date.

End time

The time that the transfer journal ends in HH:MM:SS format.
The default setting is '23:59:59'.

Direction

This is the direction of the transfer. It may be Transmission, Reception or Both.

Client

This is name of the client initiating the request.
The user's authorization rights determine whether this field can be edited.
An asterisk '*' can be used to select all clients.

File

This is the symbolic name of the transferred file.
An asterisk '*' can be used to select all files.

Partner

This is the symbolic name of the partner for the transfer.
An asterisk '*' can be used to select all partners.

Consulting the Transfer Journal – General Tab

This window gives all the general information about the transfer selected from the transfer journal.

The following information is displayed:

- Date recorded on journal
- Time recorded on journal
- Request number:
- Application Identifier
- Symbolic name of the client initiating the request.
- Request number at partner
- PeSIT identifier for the transfer
- Begin date of transfer
- Begin time of transfer
- End date of transfer
- End time of transfer
- Status of transfer (ended, interrupted…)
- Return codes (TRC, PRC, SRC, NRC, ERC)
- File name
- Partner name
- Direction of transfer
- Physical file name

Consulting the Transfer Journal – File Tab

This window gives all the file information about the transfer selected from the transfer journal. The following information is displayed:

- File name
- File size in bytes
- Creation date in YYYY/MM/DD-HH:MM:SS format
- Last update dated in YYYY/MM/DD-HH:MM:SS format
- Physical name
- Origin physical name (Partner of type “C:X monitor”)
- Remote physical name (Partner of type “C:X monitor”)
- Label
- Organization (Sequential, Relative, Indexed)
- Type (Fixed text, Variable text, Fixed binary, Undefined binary)
- Definition (Fixed, Dynamic)
- Data type (ASCII, EBCDIC, binary)
- Article size

Consulting the Journal – Partner Tab

This window gives all the partner information about the transfer selected from the transfer journal. The following information is displayed:

- Name
- Local name
- Type
- Protocol version

And, for a TCP/IP link:

- Host name
- IP Address
- Port number
- Return Code

For a LU6.2 link:

- Name of LU
- Mode name
- Name of transaction program
- Primary return code
- Secondary return code

For an X.25 link:

- Local address
- Remote address
- User data
- Facilities
- X.25 return code
- X.25 cause code
- X.25 diagnostic code

Consulting the Journal – Transfer Tab

This window gives all the information about the transfer selected from the transfer journal.

The following information is displayed:

- Request number
- Application identifier
- Date and time of requested start
- Status
- Purge request indicator
- Mode of request
- Type of request
- Priority
- Origin (Pi3)
- Destination (Pi4)
- Network message size negotiated
- Compression requested
- Compression negotiated
- Window size
- Interval
- CRC
- Sender (Pi 61 PeSIT E)
- Receiver (Pi 62 PeSIT E)

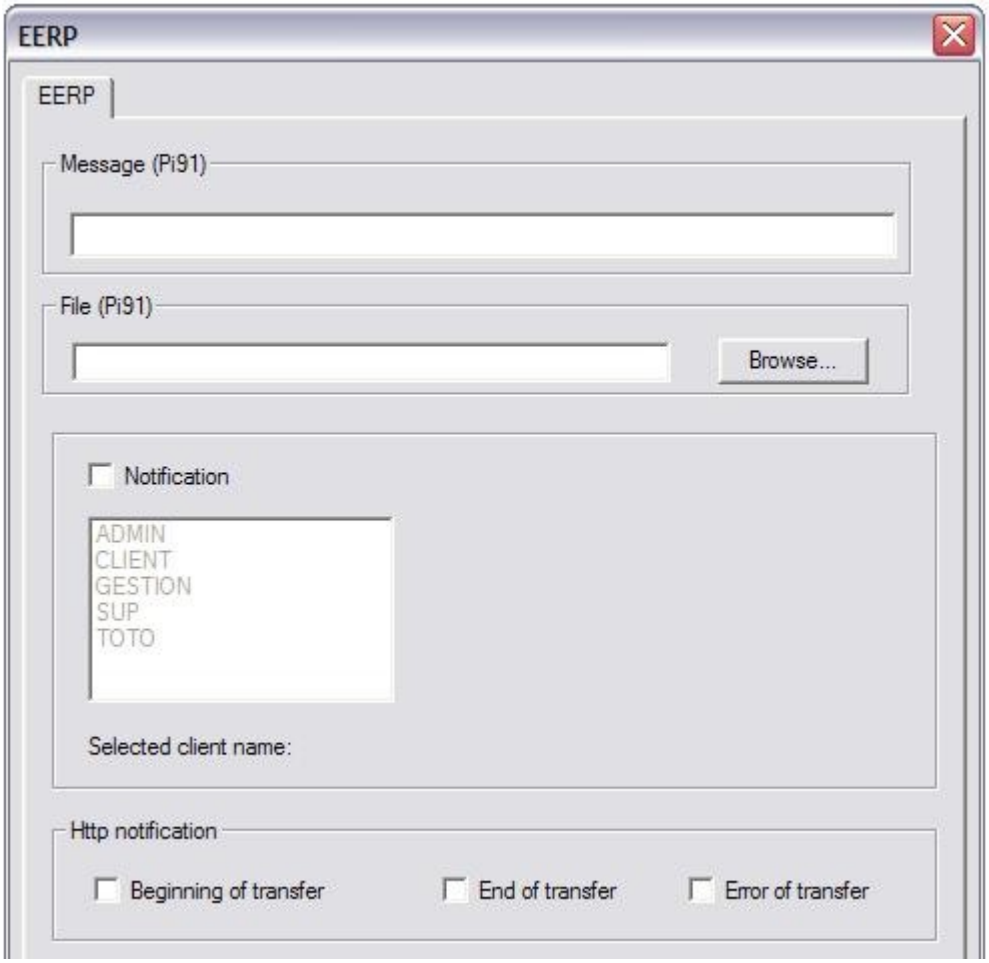
Consulting the Journal – Statistics Tab

This window gives the statistics for the transfer selected from the transfer journal.
The following information is displayed:

- File size
- Transferred byte count
- Number of records
- Network inputs/outputs count
- Retries count
- Resynchronizations count
- Open file action

Consulting the Journal – Sending an EERP

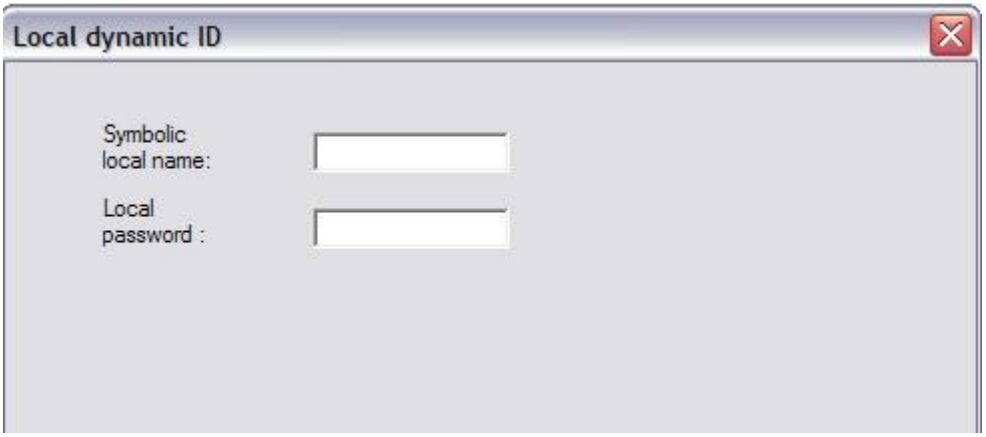
Right-clicking on the request number of a received transfer enables to send an acknowledgement (eerp) for this transfer to the remote partner. The following information can be typed in the eerp dialog boxes:



Message:
This message is at most 254 characters long and is put in the Pi91 of the aknowlegement PeSIT message.
File:
This is the path name of a file whose content will be put in the Pi91 of the aknowlegement PeSIT message.
If both fields (message and file) are set, only the message field will be used.
If none of these fields is set, the eerp acknowledgement is sent without Pi91.
Notification:
Indicates if a notification about this eerp is sent to the selected client.
HTTP Notification:
Indicates if an HTTP notification is sent to an HTTP server at beginning of transmission, when the eerp has been sent successfully or with error.

Consulting the Journal – Dynamic local identification for an EERP

When dynamic local identification is activated in the symbolic partner's definition, the following information should be added:



Local symbolic name and local password:

These fields enable to set the name and the password which will identify ourself at the remote partner when the definition of this partner requires a dynamic local identification.

They must be at most 8 characters long and contain only alphabetic uppercase or numeric characters.

Consulting the Transfer Notifications

This function can be used to consult and take action on transfer notifications.
Depending on the user's authorization rights, it is possible to read the notifications for the connected client only, or for all clients.

An asterisk '*****' can be used to enable display of all notifications for all clients, on the selection criteria window.

Consulting Notifications – Details and Action

This window shows information about the notification selected.

The following information is displayed:

- Transfer request number
- Status of transfer
- Client
- Application identifier
- File name
- Direction of transfer
- Physical name
- Remote physical name (Partner of type "C:X monitor")
- File label
- Origin
- Destination
- Return codes (TRC, PRC, SRC, NRC, ERC)
- Date notification created
- Time notification created

The **|Remove|** button can be used to delete the notification.
The **|Forward|** button can be used to forward the notification to another client.
See appendices for more information on the notification system.

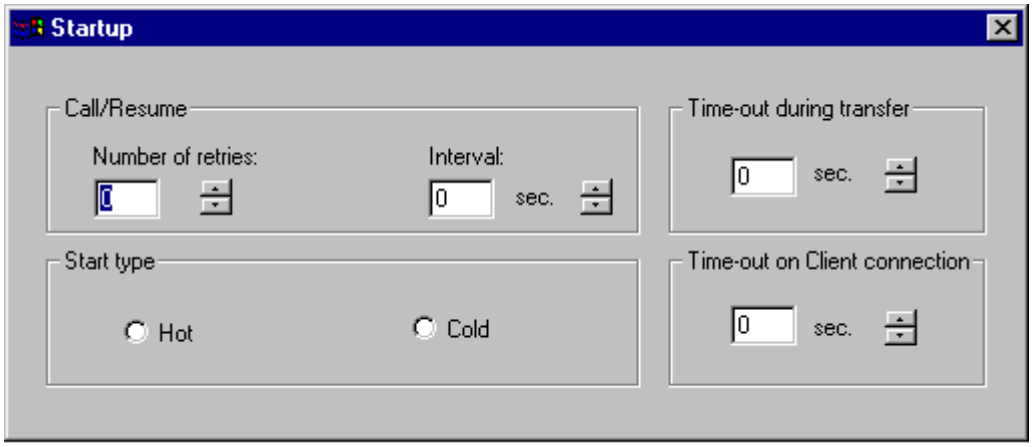
The monitor settings are made up of various items of information used at startup and during Sterling Connect:Express monitor operation.

They can be viewed through the Management function or viewed and updated through the Configure function, except for service parameters. These are updated only by running the Sterling Connect:Express service management utility described in ***Sterling Connect:Express for Microsoft Windows Installation and Utilities.***

These settings are stored in the monitor's initialization file and are broken down as follows:

- Startup
- Service
- Files
- Notification
- Authorization
- Networks
    - TCP/IP
    - LU6.2
    - X25
    - Named Pipe

Startup Parameters



These settings consist of the following:

Number of call/retries

This is a numerical field whose value must be between 1 and 99.
This states the maximum number of automatic attempts the monitor will make to carry out a transfer.

Interval

This is a numerical field whose value must be between 0 and 300 seconds
It determines the time to wait between each attempt.

Time out during transfer

This is a numerical field whose value must be between 30 and 300 seconds
It determines what is considered to be the normal maximum timeout during which there is an absence of traffic on the line and during a transfer. After that time, an error is detected.

Time out on client connection

This is a numerical field whose value must be between 30 and 300 seconds
It determines what is considered to be the normal maximum timeout during which there is an absence of traffic on a network and during a client connection.
After that time, an error is detected.

Start type

Determines the process to be carried out on the control point of the file when the monitor is started.
From **HOT**, the monitor should recover any transfers not performed or incomplete transfers remaining into the control point of the file.
From **COLD**, the monitor completely reinitializes the control point of the file without taking any notice of its contents.

New parameters can be added in the tomnt.ini file:

TIMER STOP
This is a numerical field whose value must be between 1 and 30 seconds
It provides a delay before final termination of the monitor, while system resources are disabled.
TABLE DE PRESENTATION
The name of a PeSIT presentation table that is used as default when no name is provided in both the partne's definition and the file's definition.
PREMIERE PRESENTATION
It indicates in which order presentation the table names provided in the partner's and file's definition are processed. 'P' indicates that the order is : Partner/File/Monitor (Partner's is first), 'F' indicates that the order is : File/Partner/Monitor (File's is first). 'F' is the default.

Service Parameters

Sterling Connect:Express for Microsoft Windows Installation and Utilities guide gives details of how Sterling Connect:Express is installed and uninstalled from the TOM_SRV.EXE utility as a Windows service.

These settings can only therefore be accessed for viewing purposes, and are made up of the following:

Status

This is an identifier stating whether the Connect:Express service is installed or not.

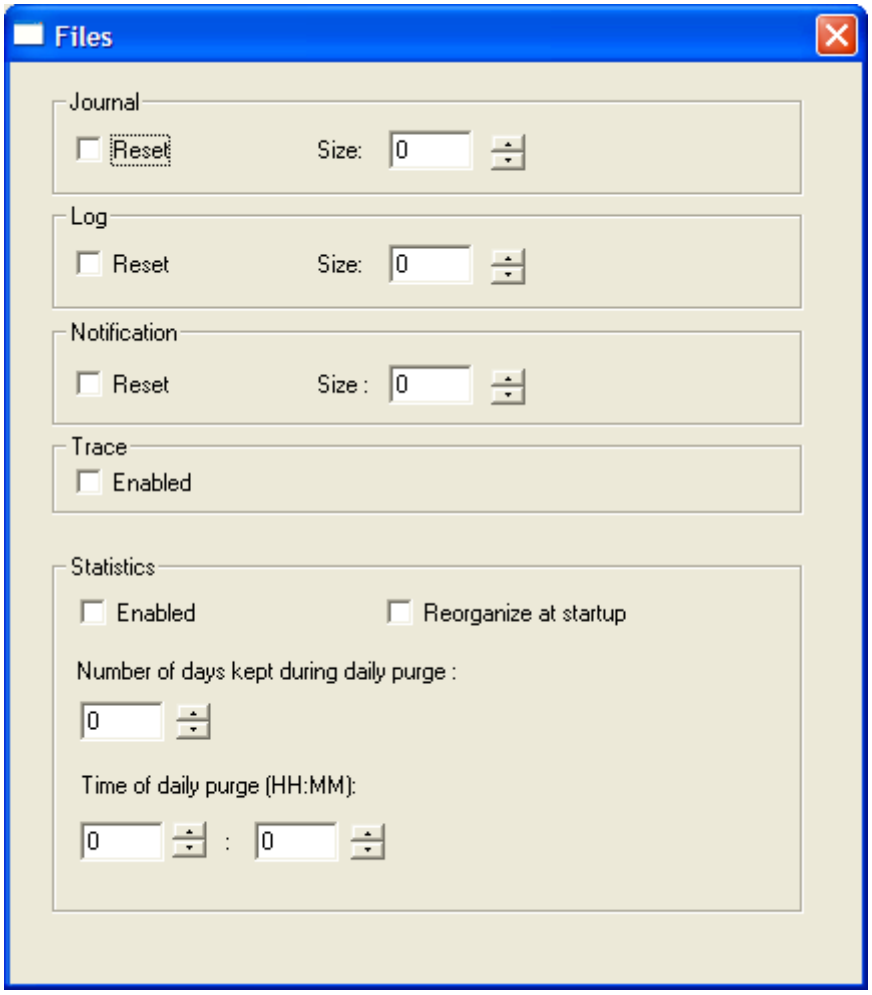
List of dependencies list

This is a list of dependent services when the Connect:Express service is installed.

Notes:

- When the transfer monitor is installed as service it is no longer possible to start it manually from the desktop; instead, it needs to be started from the Windows services manager.
- The Connect:Express service stores messages relating to its start and termination in the NT Event Log that can be viewed using the NT Event Viewer application.
- When the service starts, the monitor window may or may not appear depending on the start settings that are indicated in the services manager.
- If the window appears,
    - the service will terminate if the window is closed
    - the transfer command execution windows appear on the desk-top
- If the window does not appear,
    - the monitor will terminate only when the service is terminated
    - the transfer command execution windows do not appear on the desk-top.

The Files Parameters



These settings consist of the following:

Reset Journal

This indicates whether or not the transfer journal file needs to be reinitialized when the monitor is started.

Size

This is a numerical field whose value must be between 100 and 9999 records.
this is the maximum number of records the monitor allows into the file when it is reinitialized, the oldest records are deleted.

Reset Notifications

This indicates whether or not the transfer notifications file needs to be reinitialized when the monitor is started.

Size

This is a numerical field whose value must be between 100 and 9999 records.

This is the maximum number of records the monitor allows in the file when it is reinitialized. The oldest records are deleted.

Reset Log

This indicates whether or not the messages file needs to be reinitialized when the monitor is started.

Size

This is a numerical field whose value must be between 100 and 9999.
It is the size (in records) of the formatted file when it is reinitialized.

Trace

States whether the monitor's internal trace mechanism is enabled or not.
The trace mechanism should only be activated when requested to aid the analysis of an incident. Its operation can compromize the monitor's performance and disk space and memory space utilization.

Statistics

Enabled

Indicates if the statistics functionality is activated.

Reorganize at startup

Indicates if the statistics files are reorganized during Sterling Connect:Express initialization.

Number of days kept during daily purge

Indicates the maximum number of days activity kept in statistics files during the purge process.

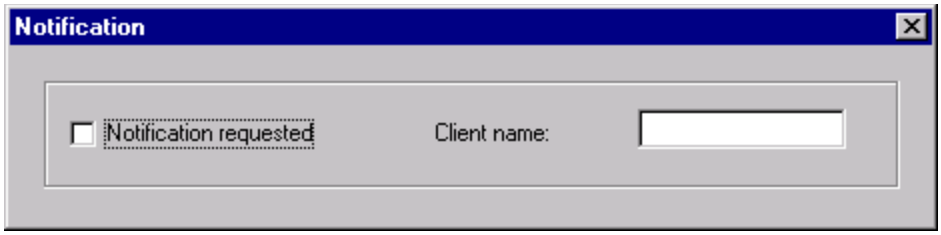
Time of daily purge

Indicates the time when the purge statistics process is daily scheduled.

Remarks

If the monitor is cold started, the statistics files are reinitialized.
The disk space of the statistics files is about 25 Mo for 10 000 transfers.

The notification Parameters



These settings consist of the following:

Notification requested

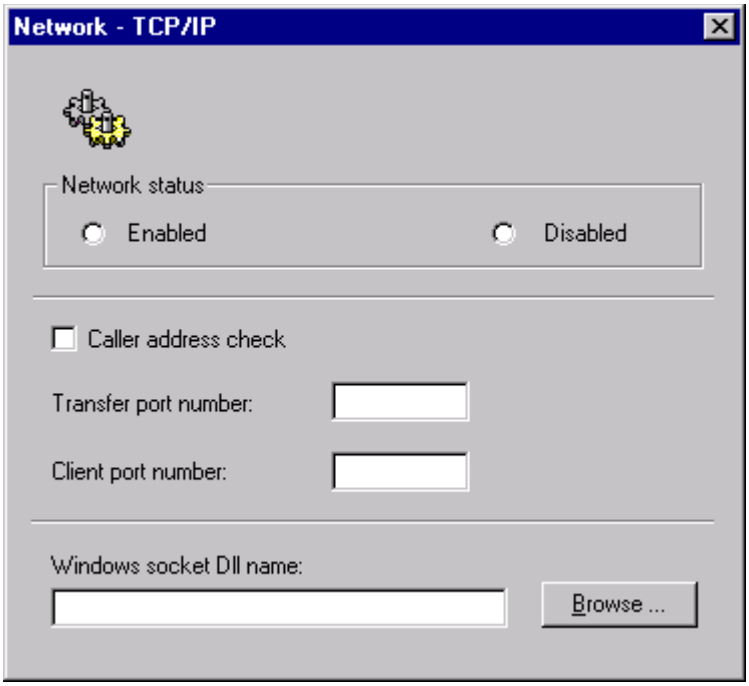
This states whether or not global notification is implemented.

Client name

This is the symbolic name of the client to be notified.

See appendices for more information on the notification system.

The TCP/IP Network Parameters



These settings consist of the following:

Status

This states whether the TCP/IP network is enabled or disabled.

Caller address check

When an incoming call from a partner or client is received via TCP/IP, this states whether the caller's address should be checked against its definition.

Transfer port number

States the port number for receiving incoming calls from partners.

Client port number

States the port number for receiving incoming calls from clients.

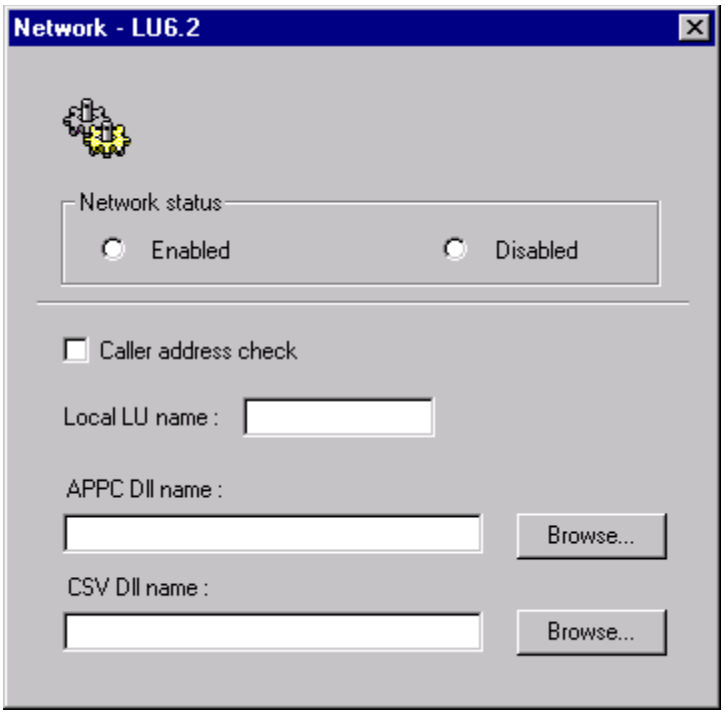
Windows socket DLL name

States the name of the DLL Windows Socket V1.1 that the monitor should use to interface with the system's TCP/IP network.

The standard DLL for Windows 32bits is: WSOCK32.DLL.

The |**Browse**| button allows the user to select a name by searching the disks and the directories in view.

The LU6.2 Network Parameters



These settings consist of the following:

Status

This states whether the LU6.2 network is enabled or disabled.

Caller address check

When an incoming call from a partner is received in LU6.2, this states whether the caller's LU name should be checked against its definition.

Local LU name

This is the name of the local LU the monitor should use to receive incoming calls from partners.

APPC DLL name

States the name of the DLL APPC for SNA SERVER that the monitor should use to interface with the system's LU6.2 network.

The standard DLL for SNA SERVER is: WAPPC32.DLL.

The |**Browse**| button allows the user to select a name by searching the disks and the directories in view.

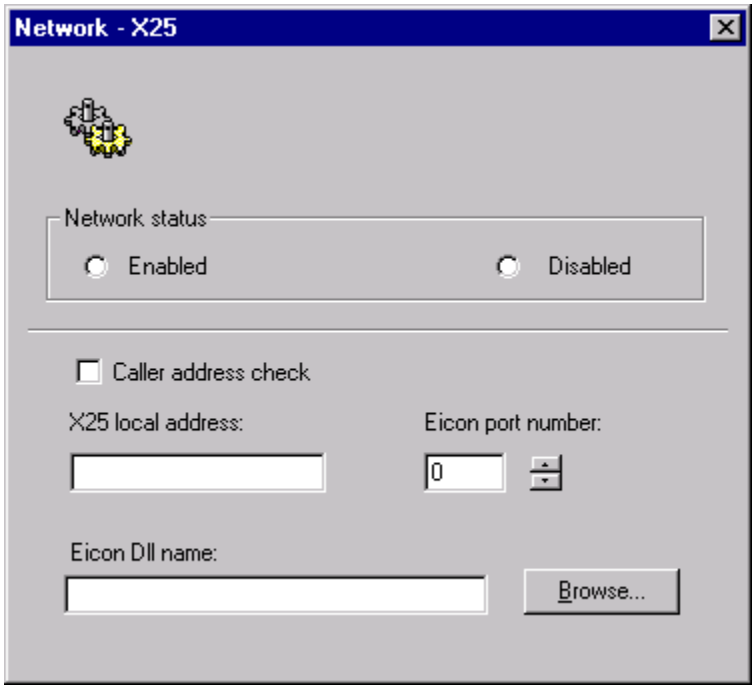
CSV DLL name

States the name of the DLL CSV for SNA SERVER that the monitor should use to interface with the system's LU6.2 network.

The standard DLL for SNA SERVER is: WINCSV32.DLL.

The |**Browse**| button allows the user to select a name by searching the disks and the directories in view.

The X.25 Network Parameters



These settings consist of the following:

Status

This states whether the X.25 network is enabled or disabled.

Caller address check

When an incoming call from a partner is received in X.25, this states whether the caller's address should be checked against its definition.

X.25 local address

States the local address (or sub-address) applied for receiving incoming calls.

EICON port number

States the number of the port used by the monitor for the EICON card.

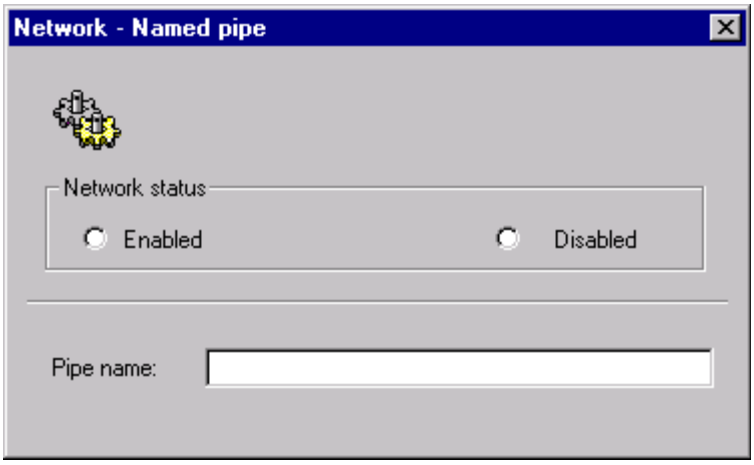
EICON DLL name

States the name of the DLL C.25 for EICON that the monitor should use to interface with the system's X.25 network.

The standard DLL for EICON is: EX25.DLL

The |**Browse**| button allows the user to select a name by searching the disks and the directories in view.

The NAMED PIPE Network Parameters



These settings consist of the following:

Status

This states whether the Named Pipe network is enabled or disabled**.**

Pipe name

This is the name of the Named Pipe for receiving incoming calls from clients. The syntax for the name is '\\ \PIPE\name'

Appendix

The Notification System

The transfer notification system can be used by clients defined in the monitor's client directory to receive a data transfer report.
This system operates on three levels:

- **Globally:** for all transfers handled by the monitor
- **File:** for all transfers of a file specified in the monitor's file directory
- **On request:** when a transfer is submitted

Globally

Global notification is implemented in the monitor's notification parameters. The client indicated receives notifications for all transfers handled by the monitor.

File

File notification is implemented in the definition of the file. The client indicated receives notifications for all transfers of this file.

At request

Notification of the request is implemented when the transfer request is submitted. The client indicated receives notifications for this transfer.

Notifications are generated at the end of every transfer process by the monitor, and state whether or not the transfer was ended correctly or not.

The notification is written to the notification file and can be viewed, deleted, or routed by the destination client.
It can also be sent directly to the destination client provided when the client's specifications contain the network elements that are necessary for the monitor to call it.

In this event, the client should use one of the Receive Notifications utility, which are documented in ***Sterling Connect:Express for Microsoft Windows Installation and Utilities***.

These utilities are used to receive transfer notifications, alert the user by means of a popup message or an audible tone, etc., to start a batch command file (.bat or .cmd) and to generate and acknowledgement file.

Transfer Commands

A transfer command is used, at a specified moment, to execute a batch command file (.BAT or .CMD).
This file is started by Sterling Connect:Express with the following default parameters:

- %1: Transfer request number in AAAAQQQNNNNN format
- %2: Symbolic file name
- %3: Direction of transfer (Transmit or Receive)
- %4: Symbolic name of partner
- %5: Physical file name
- %6: The TRC code of the transfer
- %7: The PRC code of the transfer
- %8: The physical name of the file in 8.3 format (<name>.<extension>)
- %9: The local name
- %10: The transfer origin (Pi3 bis)
- %11: The transfer destination (Pi4 bis)
- %12 The type of file (Pi11)
- %13: The transfer identifier (Pi13)
- %14: The creation date (Pi51)
- %15: The file sender (Pi61)
- %16: The file receiver (Pi62)
- %17: The type of request (N:Normal, H: held, I:Inquiry, M:Message, E:Eerp)

Note : Use the shift command in the batch file to access to parameters 10 to 17.

The following procedure is followed when Sterling Connect:Express monitor starts a command file:

- The command is executed separately from the execution of the monitor
- A message is written to indicate whether or not the transfer command was started
- The command file is executed within the transfer monitor's start directory
- The end transfer commands are executed only if the transfer ended correctly
- The transfer error command is executed only if a transfer error occurs

If the transfer monitor is installed as a Windows service the command execution window is not visible on the desktop.

Note V302 :
The parameters described above are default parameters and don't have to be mentioned after the command. For use of specific parameters, see the appendix « ***Parameters of the commands associated to the transfers*** » in the document « ***Exchanging pi 37 and pi 99 parameters with PeSIT partners*** ».

Changing the Edition

The current edition used by Sterling Connect:Express, which is requested at the installation time, can be changed at any time by using the `ChangeEdition.exe` command. The `ChangeEdition.exe` command can be found in the Sterling Connect:Express installation directory.

To change the current edition open a *Command Prompt* window and, from the Sterling Connect:Express directory, run the following command:

```
ChangeEdition.exe -e <edition>
```

where `<edition>` can be one of the following:

- `p` IBM Sterling Connect:Express Premium Edition
- `pnp` IBM Sterling Connect:Express Premium Edition for Non-Production Environment
- `s` IBM Sterling Connect:Express Standard Edition
- `snp` IBM Sterling Connect:Express Standard Edition for Non-Production Environment.

The current edition can be displayed by running the command without any arguments:

```
ChangeEdition.exe

Current edition is:

IBM Sterling Connect:Express Premium Edition for Non-Production Environment Version 310-012
```

Physical Name Variables

The physical name of the file to be transmitted or received may contain variables, which the monitor will replace dynamically during the transfer operation.
Depending on the direction and the protocol implemented, the possible variables are:

For Transmitting and Receiving

- &PARTNID: For PeSIT and ETEBAC-3
- &FILENAM: For PeSIT and ETEBAC-3
- &ORG: For PeSIT
- &DST: For PeSIT

Receiving only:

- &USRVAR1: For PeSIT
- &REQDATE: For PeSIT and ETEBAC-3
- &REQTIME: For PeSIT and ETEBAC-3
- &REQNUMB: For PeSIT and ETEBAC-3
- &8.3: For PeSIT
- &EXTLAB: For PeSIT

In reference to the explanations below, a physical name is made up of the following:

disk drive: the letter of the drive on which it is stored.
path: the hierarchy of the disk drive broken down in directories and sub-directories.
name: the name of the file.
Extension: the file type.

&PARTNID: Symbolic name of partner

This variable is used to be replaced by the symbolic name of the partner with whom the transfer is taking place.

&FILENAM: Symbolic file name

This variable is used to be replaced by the symbolic name of the file being transferred.

&ORG: Source of transfer request

This variable is used to be replaced by the name of the source partner (PI=3 in the PeSIT selection stage) making the transfer request.

&DST: Destination of transfer request

This variable is used to be replaced by the name of the destination partner (PI=4 in the PeSIT selection stage) receiving the transfer request.

&USRVAR1: Last index in the physical file name at the partner end

This variable is used for the last index in the name of the file at the partner end (usually IBM/MVS sites).

&REQDATE: Date of transfer

This variable is used for the transfer date in YYYYMMDD format.

&REQTIME: Time of transfer

This variable is used for the transfer time in HHMMSS format.

&REQNUMB: Request number:

This variable is used for the transfer request number.

&8.3: Name and extension of file at the partner end

This variable is used for the name and extension of the file at the partner end as indicated in PI=37 in the PeSIT protocol., truncated if necessary to the 8.3 file name format The partner site should show a file name that is compatible with those managed under 32-bit Windows.

&EXTLAB: Full name of file at the partner end

This variable is used for the name as the file sent by the partner and as indicated in PI=37 of the PeSIT protocol. The partner site should show a file name that is compatible with those managed under 32-bit Windows.

Rules for use:

- The &EXTLAB variable may not be combined with any other variable.
- Combinations of the &USRVAR1, &REQDATE, &REQTIME, &REQNUMB and &8.3 variables are not permitted.
- Variables &PARTNID and &FILENAM may be combined with one another, and can be combined with one of the following variables: &USRVAR1, &REQDATE, &REQTIME, &REQDATE, &REQNUMB and &8.3.
- The same variable cannot be used multiple times
- A maximum of three variables is allowed

Please note that Sterling Connect:Express does not create a (sub-)directory when a file is received.

Wildcards in the Physical Name During Transmission (Generic)

This function applies only to **Sending**.

The physical name of the file to be transmitted may contain the following wild characters: '*****' or '**?**'

By making just one transfer request call, this function can be used to generate as many transfer requests as they are files corresponding to the generic name indicated, **with a maximum of 100.**

ASCII / EBCDIC Translation

This function is used to translate the file data during transmission.
The translation process is carried out as follows:

- ASCII to EBCDIC for transmitted transfers
- EBCDIC to ASCII for received transfers

The translation tables used are indicated in the presentation table for the file used.
These tables are stored in external files in text format and can be copied or edited using a text editor.

The tables supplied as standard are:

- TOMNT.ASC for translating from ASCII to EBCDIC
- TOMNT.EBC for translating from EBCDIC to ASCII

The format of the files must be maintained for this function to operate correctly.

Implementing the PeSIT Message Facility

This appendix provides information about sending and receiving messages instead of files and how to acknowledge file reception by using the message functionality.

PeSIT Message

This section describes what PeSIT Message is, how to use it, and how to configure it in Sterling Connect:Express.

Overview

PeSIT Message is a protocol feature that enables to send data in one step :

```
Message = data ↔ AckMessage
```

Instead of the standard PeSIT sequence shown below:

```
Create ↔ AckCreate
Open ↔ AckOpen
Write ↔ AckWrite
…….
N * Data
Sync ↔ Async
…….
DataEnd
TransEnd ↔ AckTransEnd
Close ↔ AckClose
Deselect ↔ AckDeselect
```

You can use this feature to send short messages or files, and also to perform end to end acknowledgement in a standard file transfer. The end to end acknowledgment is described in the next section. The batch utility called tome2e is provided to send end to end acknowledgements. The message functionality is only available for PeSIT Version E sessions, standard profile, as opposed to the specific Connect:Express profile that is no longer used. Standard partner must be defined with the C:X monitor flag unchecked.

This section describes the PeSIT message process used

- To send a message
- To receive a message

Sending a Message - Type of Request M

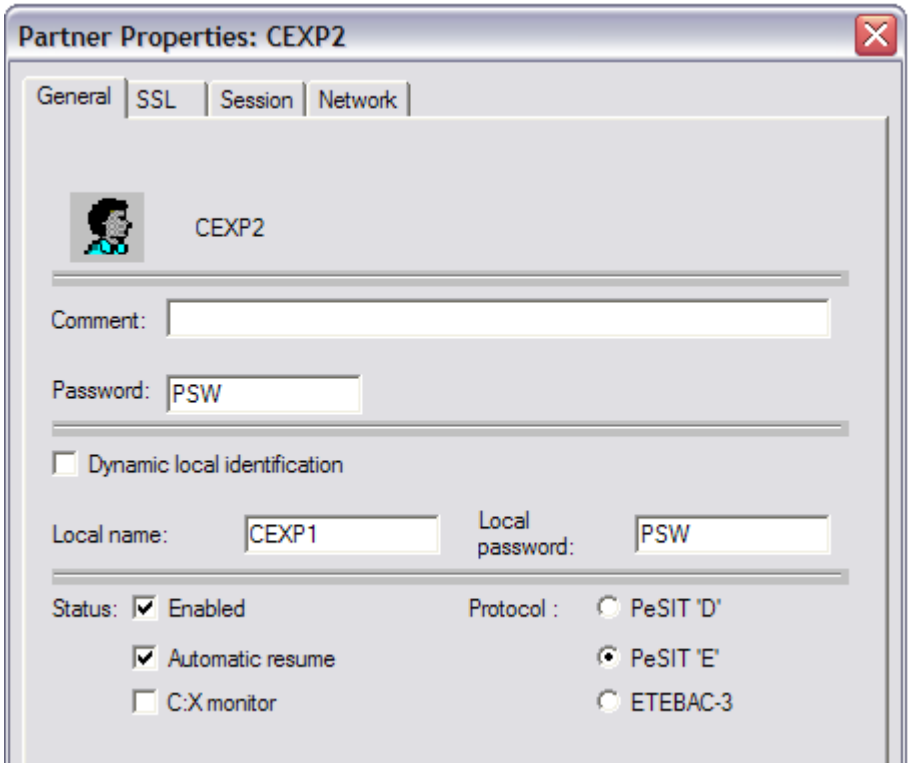
The user can send a message without data or with data, using either the “Pi99/Pi91” field or a file to pass them. The type of request is set to ‘Message’. If the “Pi99/Pi91” field is provided, this is the data to send. If no “Pi99/Pi91” field is provided and a “Physical Name” value is provided, the data is sent from this file. The parameters of the message transfer request indicate a symbolic file name. If this name is defined in the symbolic files directory, the corresponding definition is used. If this name doesn’t exist, a $$MSGD$$ definition is looked for in the directory: if found, and status enabled, it is used. If $$MSGD$$ is not defined, or its status is disabled, the request is rejected. The size of the message unit will be determined by the record length (if provided in the symbolic file definition or in the request parameters), or the session message length, with a maximum of 4096 characters.

Notes:
The size of the Pi99/Pi91 field in a message transfer request being limited to 254 characters, the only way to send a message with a size greater than 254 characters is to send it from a file. When message data are sent from a file, the file content is sent in binary mode and ASCII/EBCDIC translation can be performed, depending on the presentation table for the symbolic file definition. There is no limitation on the size of a file sent as a message.

Graphical Interface Example

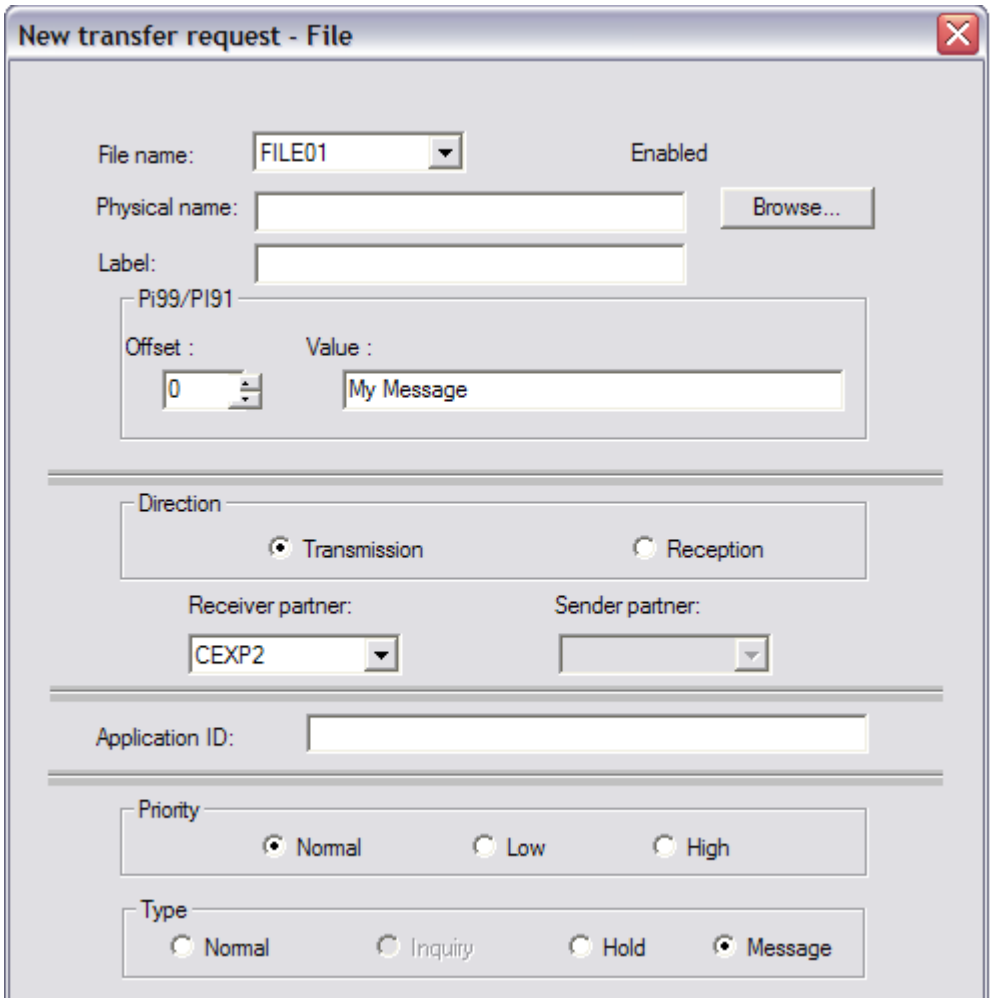
In the following, the various related graphical interfaces are shown:

Partner Definition



Transfer Request

The only parameter to consider is the type of request set to 'Message'. All other parameters are similar to any other type of transfer request except for the physical file name which is not required. The Pi99/Pi91 field has precedence over the physical name field.



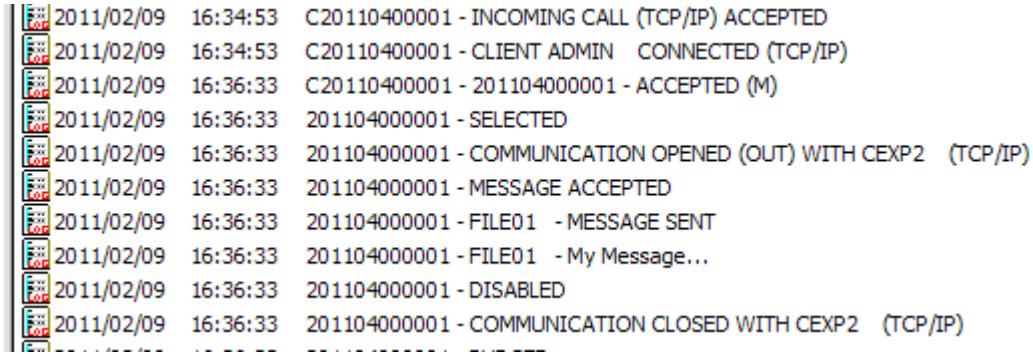
Journal List

The type of the request is set to 'M'.

Request No.	Dir...	Date	Time	Request Type	Status	Partner	File	Client
201104000001	T	2011/02/09	16:36:33	M	Ended	CEXP2	FILE01	ADMIN
Selection								

Message Log

The message log shows the first bytes of the message sent.



Tomreq Batch Utility Example

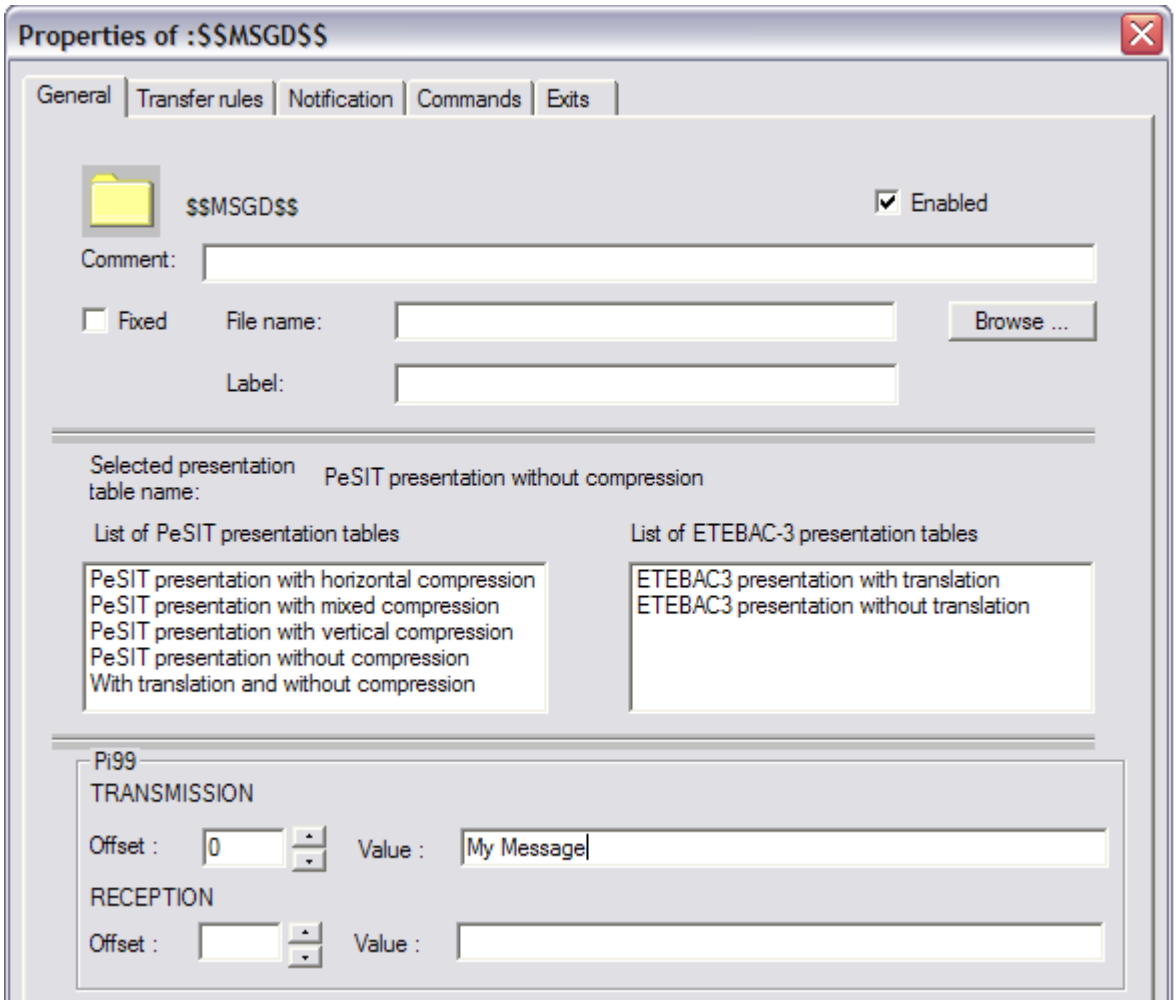
```
"c:\u1\cexpress\Tomreq.exe" /5:PI3BIS /6:PI4BIS /7:PI61 /8:PI62 /L:7 /P:CEXP2 /S:T /T:M
/C:ADMIN /M:ADMIN /K:I /H:localhost /O:7000 /G:"c:\u1\cexpress\Tomnt.ini" /A:CEXP1
/W:PSW /R:0 /V:"My Message"
```

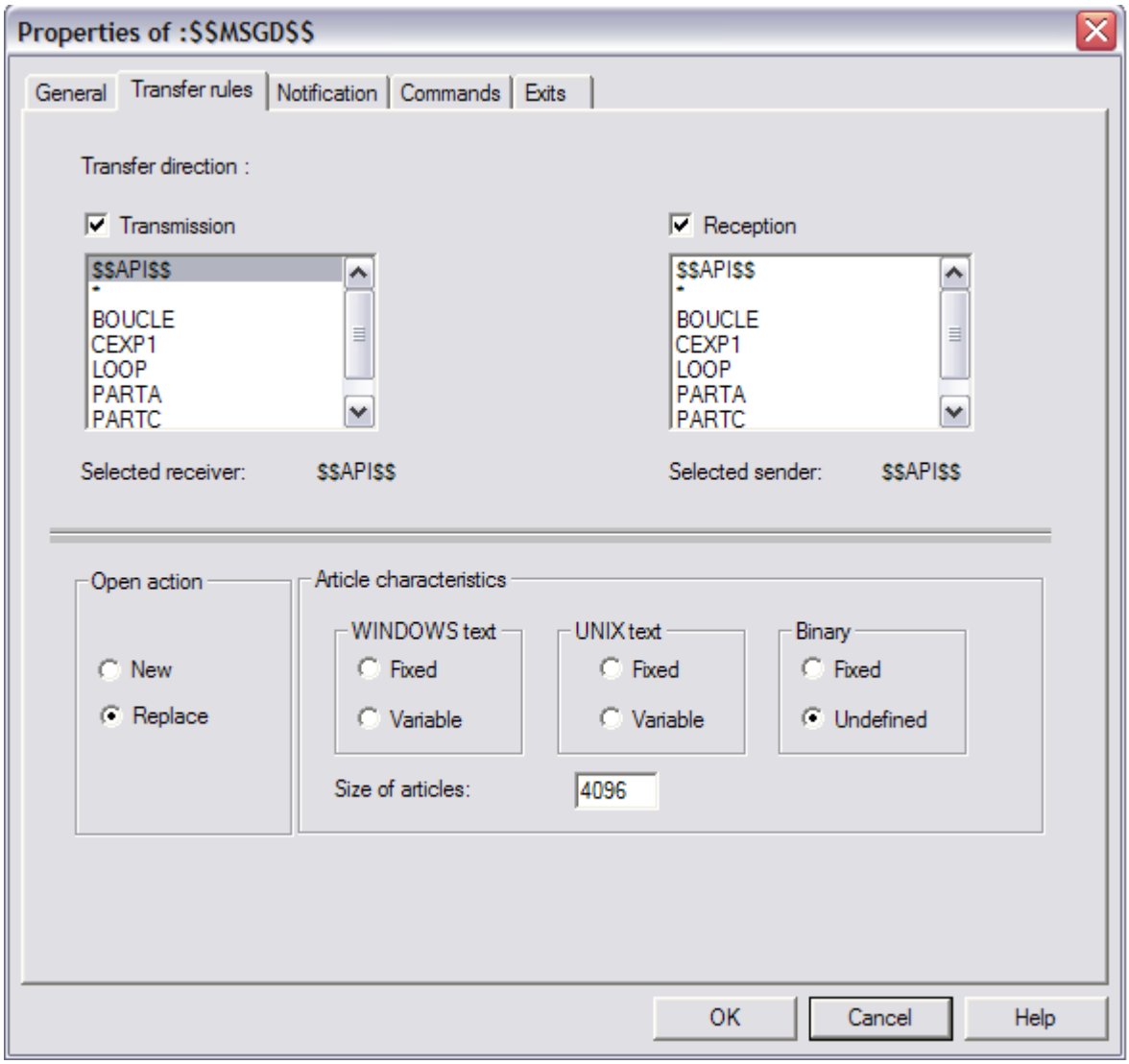
Receiving a Message – Saving Data

When receiving data with the Message service, Sterling Connect:Express uses the symbolic file name from the PeSIT parameter Pi12. If this name is defined in the symbolic files directory, the definition is used. If this name doesn't exist, the $$MSGD$$ definition is looked for. If found and status enabled, it is used, if not found or status disabled, the request is rejected.
A message can carry either data, or an end to end acknowledgment of a previous file transfer. The PeSIT parameter Pi11 indicates if this is a data message (hexadecimal 'FFFF' is for initial message, 'FFFE' is for message acknowledgment) or an end to end acknowledgment message for a file transfer (Pi11 is the same as the original Pi11 contained in the CREATE fpdu).
There are two possibilities for storing the data of the message: writing it into a file or saving it into the journal. Sterling Connect:Express will decide where to store it from the file attributes of the symbolic file definition.
If a physical file name is provided in the file definition, Sterling Connect:Express will store data in a file. In addition, Sterling Connect:Express will place the first 254 characters of the file content in the Pi99/Pi91 field of the journal.
If no physical file name is provided, the data will be considered as user data only and the first 254 characters of the received data will be stored in the Pi99/Pi91 field of the journal.

The size of the Pi99/Pi91 in the journal being limited to 254 characters, the only way to fully store a message with a size greater than 254 characters is to store it into a file.

$$MSGD$$ File Definition Example


Properties of :$$MSGD$$
General
Transfer rules
Notification
Commands
Exits
$$MSGD$$
Enabled
Comment:
Fixed
File name:
Browse ...
Label:
Selected presentation table name:
PeSIT presentation without compression
List of PeSIT presentation tables
PeSIT presentation with horizontal compression
PeSIT presentation with mixed compression
PeSIT presentation with vertical compression
PeSIT presentation without compression
With translation and without compression
List of ETEBAC-3 presentation tables
ETEBAC3 presentation with translation
ETEBAC3 presentation without translation
Pi99
TRANSMISSION
Offset :
0
Value :
My Message
RECEPTION
Offset :
Value :



EERP – End to End Acknowledgement

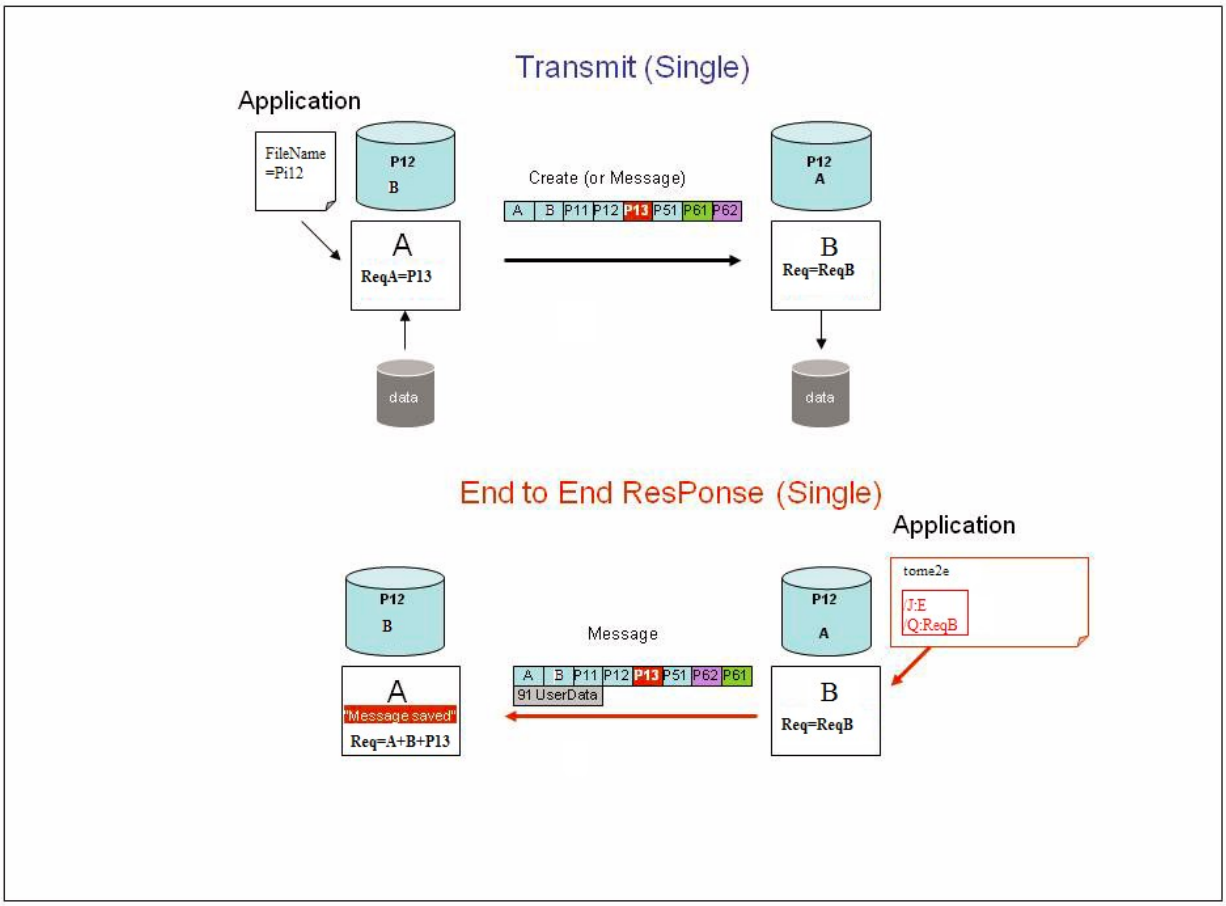
This section provides information on the end to end acknowledgment based on PeSIT Messages, how to use it and how to configure it in Sterling Connect:Express for Microsoft Windows.

Overview

Because the current version of Sterling Connect:Express don't support store and forward capabilities, end to end acknowledgement is limited, in the following, to the interaction between two adjacent partners.
The acronym "EERP" is used for "End to End ResPonse". The end to end response acknowledges that a file (or a message) has been received by the destination application. This is a simple acknowledgment from receiver to sender.

End to End Acknowledgement - EERP

This section describes the different steps of the end to end process.
The figure below shows how EERP works, in the most simple process: A sends a file to B, and B sends back an EERP to acknowledge reception.
A sets a unique transfer identifier number in the Pi13. B receives the file, with a ReqB request number. The local ReqB record is saved. The application acknowledges the file using the ReqB information in which Pi13 has been saved. The end to end response is built from ReqB and sent in a PeSIT message to A. A receives the EERP message and checks in its journal file the request that is being ackowledged from the information A+B+Pi13.
When the EERP is successfully sent, B changes ReqB status from 'Ended' to 'Acknowledged', and A changes ReqA status from 'Ended' to 'Acknowledged'.



Step one	At end of reception, save end to end context, including the transfer id.
Step two	Retrieve end to end context and submit an EERP transmission request with it.
Step three	Receive the end to end acknowledgment and take appropriate action.

When a file or a message has been completely received, an application can decide to send back an acknowledgement to the sending partner. The acknowledgement is a PeSIT message based on all parameters required to identify the transfer at the remote partner (End to end context).

An application will use more often the tome2e utility in a batch file with the end to end context parameters to submit an eerp request to Sterling Connect:Express.
Received transfers can also be manually acknowledged by using the graphical interface iu_tom.

Saving Parameters

Step one is normally done through the journal file, where all end to end parameters are saved. These parameters are also passed to the end of transfer command, enabling you to save them.
The table below shows the relationship between Sterling Connect:Express parameters, PeSIT Pi fields and end of transfer command parameters (implicit or named):

Parameter saved	**PeSIT Pi**	**End of transfer command**	
Partner identification	Pi 3	%4	&PARTNID
Local name	Pi 4	%9	&LNAM

EERP Context

Parameter saved	**PeSIT Pi**	**End of transfer command**	
File identification	Pi 3bis	%10	&ORG
	Pi 4bis	%11	&DST
	Pi 11	%12	&PI11
	Pi 12	%2	&FILENAM
Transfer identification	Pi 13	%13	&TRFID
File date-time	Pi 51	%14	&PI51
Sender identification	Pi 61	%15	&PI61
Receiver identification	Pi 62	%16	&PI62

Retrieving Parameters

Step two must build the EERP transfer request parameter list with information required to retrieve the end to end context, and an optional user message to associate with the context. There are two possibilities: to give the request number or to provide directly all parameters.
The following describes the necessary elements specific to an EERP request in each case.
For a full list of the tome2e parameters see the tome2e description below.

- Giving the request number and an optional user message – if the request is ended and recorded in the journal file. The EERP transfer process reads the journal by using the acknowledged request number to get the eerp context and to build the message data unit.

Information expected	tome2e parameter	Description	PeSIT parameter
Request Number	/Q	The request (local) to acknowledge	N/A
Partner Identification	/P	Where to send it	Pi 3 (Connect)
Local Identification	/A	My name	Pi 4 (Connect)
Null Message offset	/R:0	Use offset 0	N/A
Message value	/V	Message content Provides feedback, lg <= 254 characters	Pi 91

- Giving the end to end parameters and the user message. All context parameters are provided directly to the end to end utility called tome2e or to a program using the C or the Java API.

Information expected	tome2e parameter	Description	PeSIT parameter
Partner Identification	/P	Where to send it	Pi 3 (Connect)
Local Identification	/A	My name	Pi 4 (Connect)
Null Message offset	/R:0	Use offset 0	N/A
Message value	/V	Message content Provides feedback, lg <= 254 characters	Pi 91

EERP Context:

Information expected	tome2e parameter	Description	PeSIT parameter
File Identification	/5	Origin (L<=24	Pi 3bis
	/6	alphanumeric) Destination (L<=24 alphanumeric)	Pi 4 bis
	/Z	Type of file (4 hexadecimal digits)	Pi 11 Pi 12
	/F	File name (L<=14 alphanumeric)	
Transfer Identification	/X	Transfer identification (6 hexadecimal digits)	Pi 13
File date-Time	/U	File creation date (YYMMDDHHMMSS)	Pi 51
Sender identification	/7	(L<=24 alphanumeric)	Pi 61
Receiver identification	/8	(L<=24 alphanumeric)	Pi 62

Sending an End to End Response

To send the acknowledgment, the user must submit an EERP transfer request to Sterling Connect:Express, using the batch utility tome2e, or a program using the C or the java API, or the graphical user interface iu_tom. Sterling Connect:Express builds the EERP message from the EERP context, either from the parameters provided, or by accessing to the journal file.
The initial request must be a reception, a file or a message, with status 'Ended'. A TRC=2050, 2051, 2053 or 2055 is issued, if the request is in the journal file and does not meet the conditions.

The EERP process doesn't require a symbolic file definition to execute:
If no symbolic file name is mentionned in the request and if the symbolic file $$EERP$$ is defined and enabled, the process will be executed according to this profile by default: for example, commands or physical file name attached to this profile are used.
If a symbolic file name is provided in the request, the transfer will be executed according to the corresponding file definition.

Upon submission of an EERP request, Sterling Connect:Express searches for the request to acknowledge. If the request doesn't exist in the journal (this is the case if the monitor has been meanwhile stopped and restarted with journal reinitialization option enabled), the EERP is nevertheless accepted.
If the acknowledged request is found in the journal, his status is changed from 'Ended' to 'Acknowledged' when the corresponding EERP transfer is successfully completed.

Receiving an End to End Response

Receiving an end to end response means that data is received through the PeSIT message service. For an aknowlegement of a file transfer, the Pi13 in the acknowledgement must match the Pi11 of the initial transfer. For an aknowlegement of a PeSIT message, the Pi13 in the inital message is FFFF and the Pi11 in the response must be FFFE.
The file name is provided by Pi12. The EERP process doesn't require a file definition matching the incoming Pi12 value to execute. If no matching definition is found and if the symbolic file $ $EERP$$ is defined and enabled, the process will be executed according to this default profile: for example, commands or physical file name of the default definition are used. If a matching definition is found, the transfer will be executed accordingly.
When receiving an EERP, Sterling Connect:Express searches for the corresponding request in the journal file. The initial request must be a transmission, a file or a message, with status 'Ended'. A TRC=2050 or 2055 is issued if the request does not meet these conditions. If the request doesn't exist in the journal (this is the case if the monitor has been meanwhile stopped and restarted with journal reinitialization option enabled), the EERP is nevertheless accepted. If the acknowledged request is found in the journal, his status is changed from 'Ended' to 'Acknowledged' when the corresponding EERP transfer is successfully completed.

Tome2e Command

This section describes the tome2e console command that can be included in a batch command file. Each parameter is in the form /X:value. Some parameters are the same as those of the tomreq utility.

List of parameters if the acknowledged transfer is identified by a request number:

Parameter	**Value**
/J:	Fixed value E (EERP)
/Q:	Request number of the transfer being acknowledged
/P:	Symbolic partner name
/A:	Dynamic local name
/W:	Dynamic Local name password
/C:	Client symbolic name - Default is 'CLIENT'
/M:	Client password - Default is 'CLIENT'
/Y:	Name of a client to notify
/G:	Initialization file name - Default is 'tomnt.ini'
/K:	Network type (I=TCP/IP or N=Named Pipe) - Default is 'I'
/I:	TCP/IP address of C:X
/H:	TCP/IP host name of C:X
/O:	Named Pipe name of C:X - Default is '\\.\PIPE\IUCEV2_PIPE'
/N:	Named Pipe name of C:X - Default is '\\.\PIPE\IUCEV2_PIPE'
/L:	Type of HTTP notification. 0-7 - Default is 0
/R:	Acknowledgement message: Offset in the field defined by /V (PI 91). Use 0.
/V:	Acknowledgement message: User message (PI 91). (enclose with double quotes if containing spaces)
/D:	Acknowledgement file physical name (PI 91) if the message sent is a file content
/9:	Maximum message size (PI 91)

List of parameters if the transfer is not identified by a request number:

Parameter	**Value**
/J:	Fixed value E (EERP)
/A:	Dynamic local name
/W:	Dynamic Local name password
/C:	Client symbolic name - Default is 'CLIENT'
/M:	Client password - Default is 'CLIENT'
/Y:	Name of a client to notify
/G:	Initialization file name - Default is 'tomnt.ini'
/K:	Network type (I=TCP/IP or N=Named Pipe) -

	Default is 'I'
/I:	TCP/IP address of C:X
/H:	TCP/IP host name of C:X
/O:	TCP/IP client port number of C:X
/N:	: Named Pipe name of C:X - Default is '\\.\PIPE\IUCEV2_PIPE'
/L:	Type of HTTP notification. 0-7 - Default is 0
/R:	Acknowledgement message: Offset in the field defined by /V (PI 91). Use 0.
/V:	Acknowledgement message: User message (PI 91) (enclose with double quotes if containing spaces)
/D:	Acknowledgement file physical name (PI 91) if the message sent is a file content
/9	Maximum message size (PI 91)
Eerp Context	
/5:	Origin (PI 3bis)
/6:	Destination (PI 4bis)
/Z:	Type of file (4 hexadecimal digits) (PI 11)
/F:	Symbolic file name (PI 12)
/X:	Transfer identifier (6 decimal digits) (PI 13)
/U:	Creation date (YYMMDDHHMMSS) (PI 51)

First form example (based on request number):

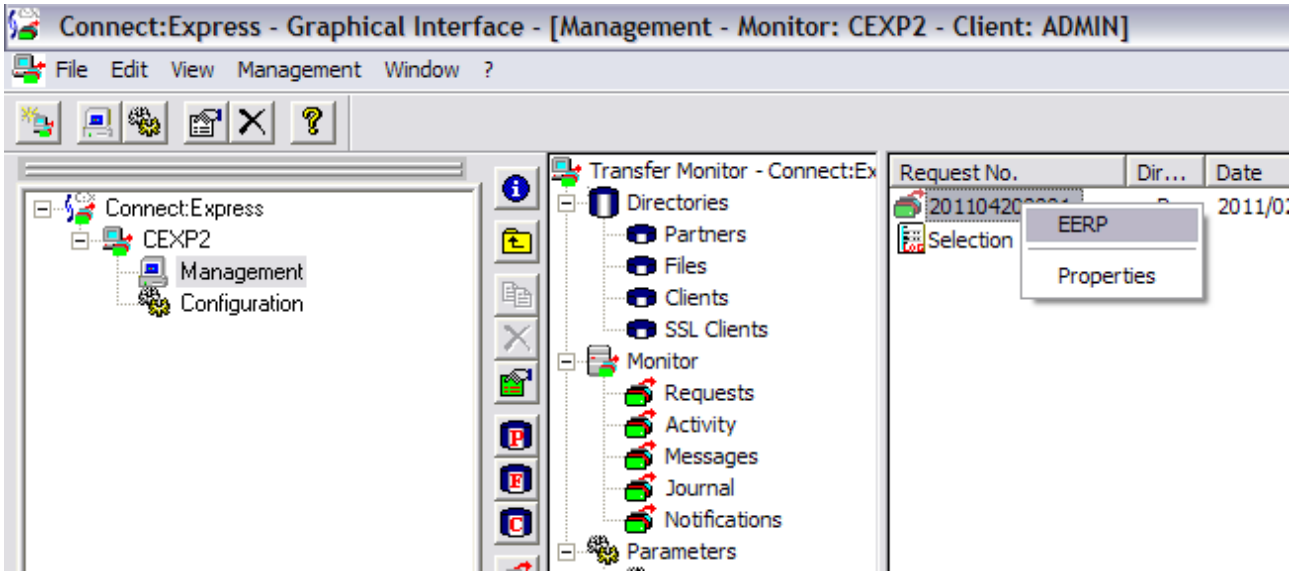
```
"c:\u1\cexpress\tome2e.exe" /L:7 /9:1000 /Q:201103200002 /A:MYNAME /W:MYPWD /P:PART01 /J:E /C:ADMIN
/M:ADMIN /K:I /H:localhost /O:7000 /G:"c:\u1\cexpress\Tomnt.ini" /R:0 /V:"My EERP message"
IF ERRORLEVEL 11 GOTO MON_ERR
IF ERRORLEVEL 10 GOTO API_ERR
IF ERRORLEVEL 1 GOTO  PARM_ERR
ECHO  No error
GOTO END
:MON_ERR
ECHO  C:X monitor error
GOTO END
:API_ERR
ECHO  API error
GOTO END
:PARM_ERR
ECHO  Error in parameters
:END
```

Second form example (based on EERP context):

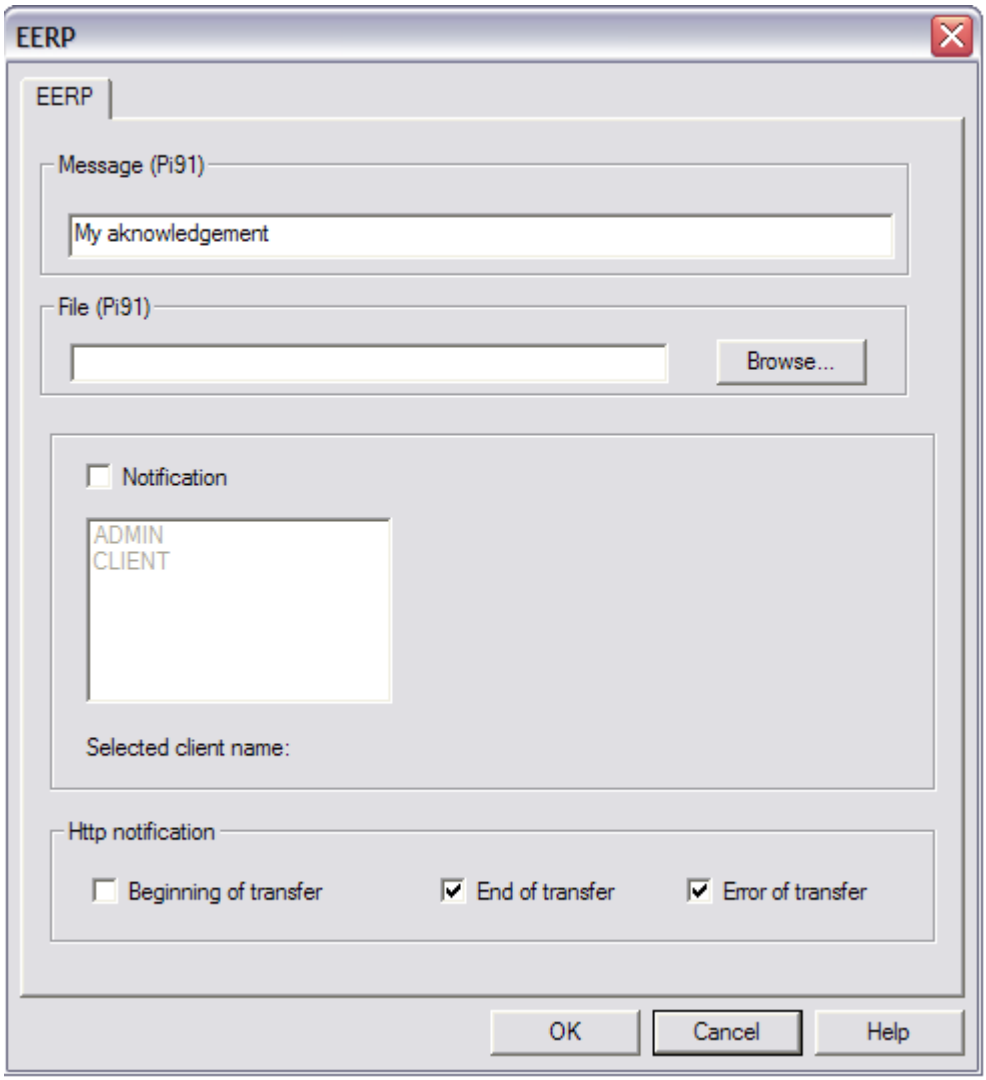
```
"c:\u1\cexpress\tome2e.exe" /J:E /9:100 /F:FILE01 /5:PI3BIS /6:PI4BIS /Z:0000 /X:028788 /U:110104130930 /
7:PI61 /8:PI62 /A:MYNAME /W:MYPWD /L:7 /P:PART01 /C:ADMIN /M:ADMIN /K:I /H:localhost /O:7000
/G:"c:\u1\cexpress\Tomnt.ini" /R:0 /V:" My EERP message "
IF ERRORLEVEL 11 GOTO MON_ERR
IF ERRORLEVEL 10 GOTO API_ERR
IF ERRORLEVEL 1 GOTO  PARM_ERR
ECHO  No error
GOTO END
:MON_ERR
ECHO  C:X monitor error
GOTO END
:API_ERR
ECHO  API error
GOTO END
```

Sending an Eerp from the Graphical Interface

From the graphical interface, you can manually send an EERP by right-clicking on a request number in the journal list.



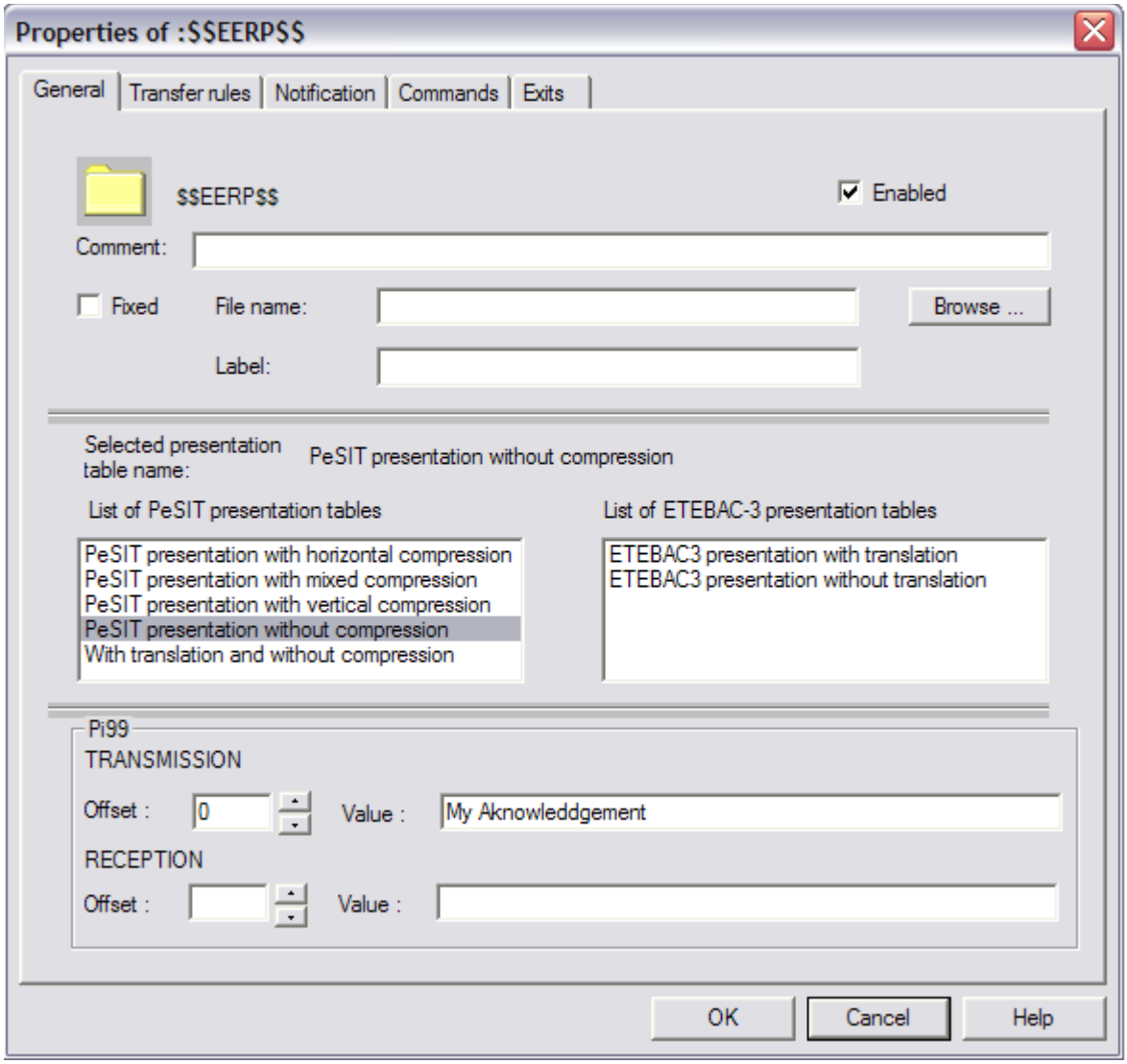
The following dialog box enables you to type a message or to indicate a file to send in the eerp:

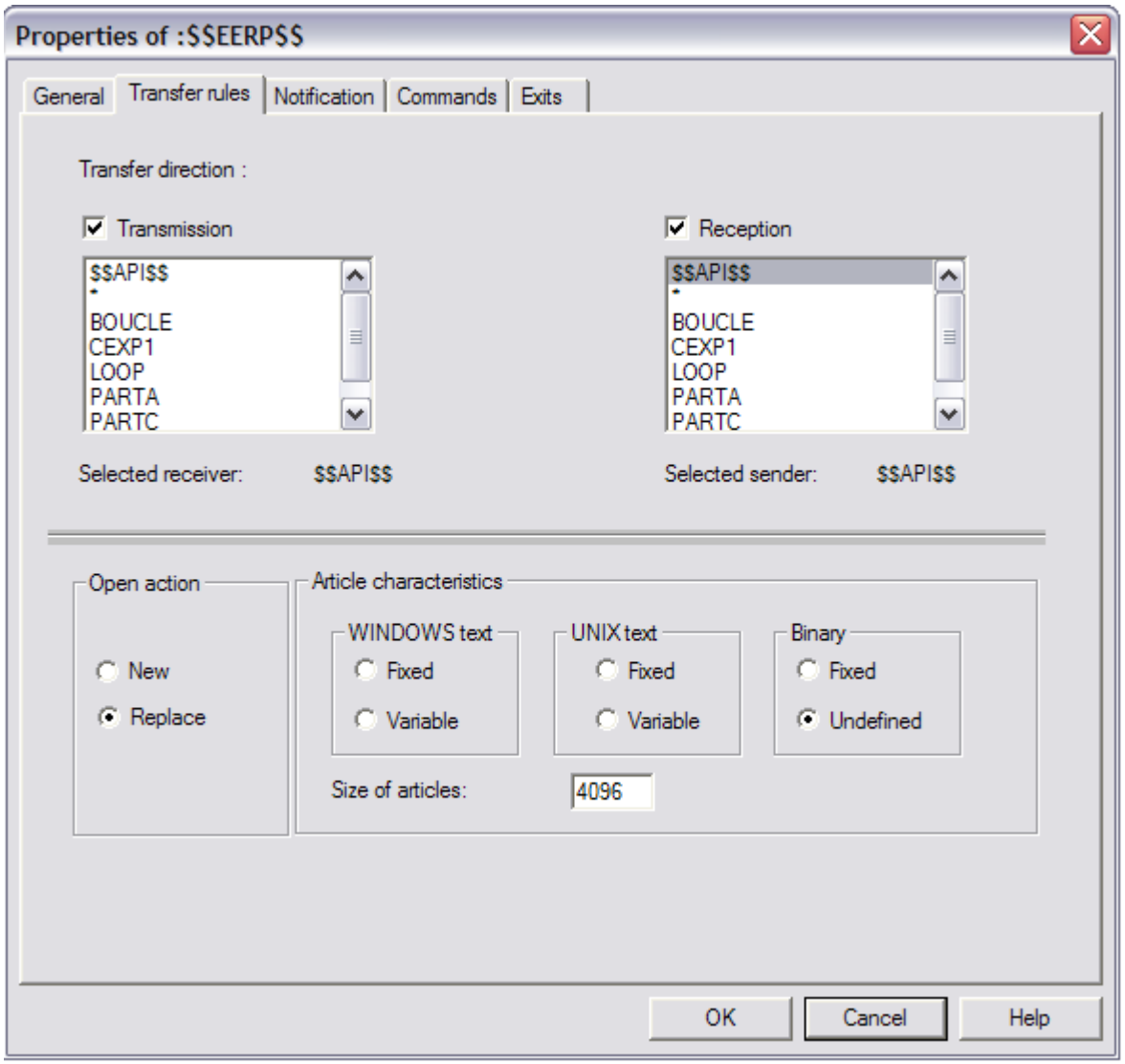


Refreshing the journal list shows that the request status has changed from 'Ended' to 'Acknowledged'.

Request No.	Dir...	Date	Time	Request Type	Status	Partner	File	Client
201104100001	R	2011/02/10	10:13:09	N	Acknowledged	CEXP1	FILE01	
201104100003	T	2011/02/10	10:15:23	E	Ended	CEXP1	FILE01	ADMIN
Selection								

$$EERP$$ File Definition

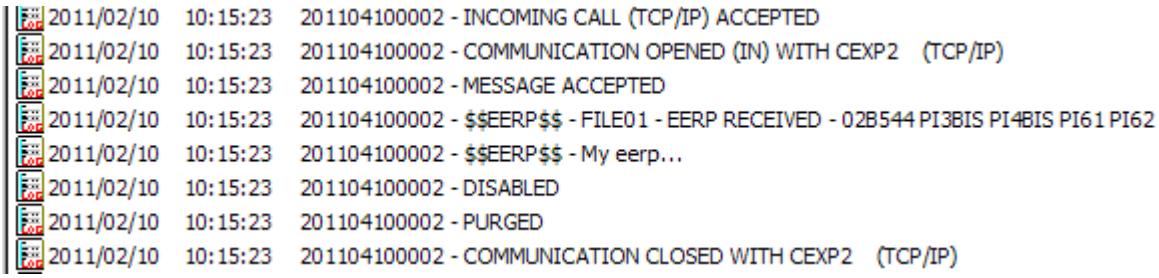

Properties of :$$EERP$$
General
Transfer rules
Notification
Commands
Exits
$$EERP$$
Enabled
Comment:
Fixed
File name:
Browse ...
Label:
Selected presentation table name:
PeSIT presentation without compression
List of PeSIT presentation tables
PeSIT presentation with horizontal compression
PeSIT presentation with mixed compression
PeSIT presentation with vertical compression
PeSIT presentation without compression
With translation and without compression
List of ETEBAC-3 presentation tables
ETEBAC3 presentation with translation
ETEBAC3 presentation without translation
Pi99
TRANSMISSION
Offset :
0
Value :
My Aknowleddgement
RECEPTION
Offset :
Value :
OK
Cancel
Help



Received Acknowledgements in the Graphical Interface

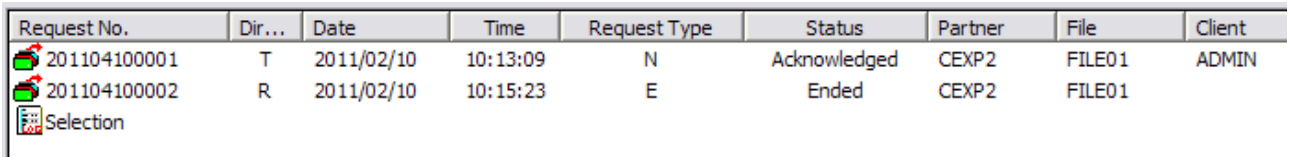
Message Log

Incoming Eerp messages are displayed in the message log.



Journal List

The status of the transfer is changed from 'Ended' to 'Acknowledged'.



Request No.	Dir...	Date	Time	Request Type	Status	Partner	File	Client
201104100001	T	2011/02/10	10:13:09	N	Acknowledged	CEXP2	FILE01	ADMIN
201104100002	R	2011/02/10	10:15:23	E	Ended	CEXP2	FILE01	
Selection								

'tomnt.ini' monitor initialization file.

This file contains all the information required for the monitor and the local API to operate.

'iutom.ini' API initialization file.

This file contains all the information required for the remote API to operate.

'TOMNT.LOG' message file.

This is a sequential file which is managed in rotation, that is, when the monitor has written into the last record in the file, the next message is written over the first record in the file.
In fact this file contains two types of records:

- a header record stating the position of the current line
- 'n' message records

When the monitor starts, this file is formatted if the re-initialization setting is made in the monitor settings, or if it does not already exist.

'TOMJNL.DAT and TOMJNL.IX1' transfer journal files.

This is a C-TREE file containing an index and data.
When the monitor starts, this file is initialized if the re-initialization setting is made in the monitor settings, or if it does not already exist.
The maximum number of records kept when re-initialization takes place is set in the monitor configuration.

'TOMNOT.DAT, TOMNOT.IX1 and TOMNOT.IX2' notification files.

This is a C-TREE file containing two directories and data.
When the monitor starts, this file is initialized if the re-initialization setting is made in the monitor settings, or if it does not already exist.
The maximum number of records kept when re-initialization takes place is set in the monitor configuration.

'TOMCHK.DAT, TOMCHK.IX1 and TOMCHK.IX2' check point files.

This is a C-TREE file containing two directories and data.
This file is initialized when the monitor is 'cold' started.
It contains all the information relating to the transfers.

'TOMSTAT.DAT, TOMSTAT.IX1 and TOMSTAT.IX2' statistics files.

This is a C-TREE file containing two directories and data. This file is used when the statistics functionality is active. This file is initialized when the monitor is 'cold' started.
It contains all the information relating to the statistics of transfers.

nnnnnnnnnnnn - ccccccccccc - ACCEPTED (t)
This message indicates the number of a new requests accepted by the monitor (nnnnnnnnnnn) and the identifier (ccccccccccc) of the connection for the client making the submission.
The letter 't' indicates the type of request (N = Normal, H = Hold, I = Inquiry)

ALIAS= nnnnnnnnnnnnnnnnnnnnnnnnnnn
This message indicates the alias (ID code) from the tomnt.ini file.

nnnnnnnnnnnn - APPC RC= XXXX YYYYYYYY
This message indicates the APPC (PRIMARY and SECONDARY) error codes when a network error is detected.

AUTOMATIC RESUME NOT FOUND
This message indicates an internal error in the automatic resume function.

nnnnnnnnnnnn BEGIN OF TRANSFER COMMAND STARTED
This message indicates that the command to start the transfer for the provided request number has been started.

ccccccccccc - CLIENT nnnnnnnn CONNECTED (t)
This message indicates the client connection (nnnnnnnn)
The connection identifier (ccccccccccc) and the network type (TCP/IP or NAMED PIPE) are also stated.

ccccccccccc - CLIENT nnnnnnnn DISCONNECTED (t)
This message indicates that the client is disconnected (nnnnnnnn).The connection identifier (ccccccccccc) and the network type (TCP/IP or NAMED PIPE) are also stated.

nnnnnnnnnnnn – CLIENT cccccccc NOTIFICATION ERROR – TRC= xxxx
The monitor indicates an error while processing the transfer notification for the stated client (cccccccc). This message also states the request number concerned (nnnnnnnnnnn) and the error code.

ccccccccccc CLIENT nnnnnnnn REJECTED - TRC=xxxx SRC=xxxx
This message indicates that the client (nnnnnnnn), the connection identifier (ccccccccccc) and the corresponding return codes have been rejected.

nnnnnnnnnnnn COMMUNICATION CLOSED WITH pppppppp (t)
The monitor indicates that communication with the stated partner has closed down. The letter (t) indicates the type of link (TCP/IP, LU6.2, X25).

nnnnnnnnnnnn COMMUNICATION OPENED (s) WITH pppppppp (t)
The monitor indicates that communication with the stated partner has opened. The letter (s) gives the direction of communication (OUTGOING or INCOMING) The letter (t) indicates the type of link (TCP/IP, LU6.2, X25).

nnnnnnnnnnnn COMMUNICATION REJECTED - PARTNER pppppppp
The monitor indicates that communication with the stated partner has been rejected.

C-TREE INITIALIZATION ERROR
The monitor indicates an error in the C-TREE database initialization process.

DE-ALLOCATION ERROR nnnnnnnnn – TRC=xxxx SRC= yyyy
The monitor has encountered a system error when freeing up the stated buffer memory

nnnnnnnnnnn DISABLED
This message states the number of the request the monitor has just processed

ccccccccccc - nnnnnnnnnnn – ENABLED
This message states the number of the restart request (nnnnnnnnnnn) and the identifier (ccccccccccc) of the connection for the user carrying out the operation.

nnnnnnnnnnn END OF TRANSFER COMMAND STARTED
This message indicates that the command to end the transfer for which the request number is stated has been started.

ERROR: nnnnnnnnn ALLOCATION – TRC=xxxx SRC= yyyy
The monitor has encountered a system error when allocating the stated buffer memory.

nnnnnnnnnnn ERROR OF TRANSFER COMMAND STARTED
This message indicates that the transfer error command for which the request number is stated has been started.

ERROR MESSAGE nnnnnnnnn – TRC=xxxx SRC= yyyy
The monitor has encountered a system error when sending the stated message

ERROR NOTIFY – TRC= xxxxSRC= xxxx NRC= xxxx
The monitor indicates an error while sending a transfer notification to a client.

ERROR SIGNAL – TRC= xxxx
The monitor encountered an internal communication error in the 'send notification' procedure.

nnnnnnnnnnnn ERROR - TRC= xxxx PRC= xxxx SRC= xxxx ERC=xxxx NRC= xxxx
This message states that the transfer for which the request number is shown or that the client connection for which the identifier is shown is defective.

nnnnnnnnnnnn – ERROR WHILE CLOSING COMMUNICATION WITH pppppppp
The monitor indicates an error while closing communication with the stated partner (pppppppp). This message also states the request number concerned (nnnnnnnnnnnn).

nnnnnnnnnnnn – ERROR WHILE OPENING COMMUNICATION WITH pppppppp
The monitor indicates an error while opening communication with the stated partner.

INCOMING CALL (t) ACCEPTED - nnnnnnnnnnnn
This message indicates that the monitor has accepted an incoming call.
The request number or the identifier for the attributed client connection is indicated, as well as the network type (TCP/IP, LU6.2, X25 or NAMED PIPE).

INCOMING CALL REJECTED – TRC xxxx PRC= xxxxSRC= xxxx NRC= xxxx
This message states that an incoming call has been rejected.

nnnnnnnnnnnn – INTERRUPTED - TRC=xxxx PRC=xxxx SRC=xxxx ERC=xxxx NRC=xxxx
This message states the number of the interrupted transfer request and the corresponding return codes.

ccccccccccc - nnnnnnnnnnnn – INTERRUPTION IN PROGRESS...
This message states the request number of the transfer for which the interruption has been requested (nnnnnnnnnnnn) and the identifier (ccccccccccc) of the connection for the user carrying out the operation.

INVALID START TYPE
This message states that the type of start found in the initialization file is incorrect.

JOURNAL FILE NOT FOUND
This message states that the journal file was not found in the monitor directory.

JOURNAL FILE REINITIALIZED
This message states that the monitor journal file has been reinitialized.

LOG FILE REINITIALIZED
This message states that the monitor message file has been reinitialized.

MONITOR INITIALIZATION IN PROGRESS…
This message states that the monitor is currently initializing.

MONITOR TERMINATING (MAX nn SECONDS)
This message indicates that the monitor is currently terminating and states the maximum amount of time required for the operation.

NETWORK nnnnnn DISABLED
This message states the name of the network that is not operational when the monitor is started. This network is made non operational either by the monitor settings, or due to a failure signalled by an error message during initialization.

NOTIFICATIONS FILE NOT FOUND
This message states that the notification file was not found in the monitor directory.

NOTIFICATIONS FILE REINITIALIZED
This message states that the monitor notifications file has been reinitialized.

NOTIFICATION NOT POSSIBLE – PROCESSES NOT RUNNING
This message indicates that the send notifications procedure is no longer active and therefore it is impossible to send notifications direct.

nnnnnnnn NOTIFY IS STARTED
This message states that the notification send procedure on network nnnnnnnn (TCP/IP or NAMED PIPE) has been started.

nnnnnnnn NOTIFY IS STOPPED
This message states that the notification send procedure on network nnnnnnnn (TCP/IP or NAMED PIPE) has been halted.

NUMBER OF SIMULTANEOUS REMOTE CLIENTS ALLOCATED=nnn
This message states the maximum number of remote clients that can connect simultaneously to the transfer monitor.

NUMBER OF SIMULTANEOUS TRANSFERS ALLOCATED=nnn
This message states the maximum number of simultaneous transfers that the transfer monitor can carry out.
ccccccccccc – nnnnnnnnnnn - PURGED
This message states the number of the request purged by the monitor (nnnnnnnnnnn) and, if such action is requested by a client, the identifier (ccccccccccc) of the connection for the client making the request. This request cannot be resumed.

ccccccccccc - nnnnnnnnnnn – PURGE IN PROGRESS...
This message states the request number of the cancelled/purged transfer (nnnnnnnnnnn) and the identifier (ccccccccccc) of the connection for the user carrying out the operation.

nnnnnnnnnnnn – PURGED - TRC=xxxx PRC=xxxx SRC=xxxx ERC=xxxx NRC=xxxx
This message states the number of the cancelled/purged transfer request and the corresponding return codes.

nnnnnnnnnnnn - RECOVERED
This messages states the number of the request recovered in the check point file when the monitor has been 'hot-started'.

nnnnnnnnnnnn – RESUME IN xx SECONDS
This message indicates the number of a requested awaiting the automatic resume function by the monitor and the waiting time.

nnnnnnnnnnnn - SELECTED
This message states the number of the request the monitor has started to process.

nnnnnnnnnnnn - SELECTION ERROR - TRC= xxxx SRC= xxxx ERC=xxxx NRC= xxxx
This message states the request number for which an error has been detected by the monitor when it was processed.

nnnnnnnn SERVER IS STARTED
This message states that the server component (nnnnnnnn) has started.

nnnnnnnn SERVER IS STOPPED
This message states that the server component (nnnnnnnn) has halted.

nnnnnnnnnnnn - SESSION REJECTED pppppppp - TRC= xxxx PRC= xxxx SRC= xxxx ERC=xxxx NRC= xxxx
This message states that the monitor has rejected an incoming session.
The number of the request of the identifier of the client concerned is stated (nnnnnnnnnnnn) and also the symbolic name of the partner or client (pppppppp).

nnnnnnnn START IN PROGRESS …
This message states the type of start (HOT or COLD) the monitor is carrying out.

nnnnnnnnnnnn – SUSPENDED - TRC=xxxx PRC=xxxx SRC=xxxx ERC=xxxx NRC=xxxx
This message states the number of the suspended transfer request and the corresponding return codes.

nnnnnnnnnnnn TCP/IP RC= XXXX
This message states the TCP/IP error code when a network error is detected.

TERMINATE MONITOR ERROR – TRC=xxxx
This message indicates an error when the monitor terminated, together with the corresponding return code.

THE MONITOR IS STARTED
This message states that the monitor has been initialized.

THE MONITOR IS STOPPED
This message states that the monitor has stopped.

nnnnnnnnnnnn – TRACE ERROR - TRC= xxxx SRC= xxxx
This message indicates the request number or the identifier of the client connection for which the internal audit trail procedure cannot be activated.
The 'SRVTCPIP' descriptor indicates a TCP/IP server network component, the 'SRVLU62' descriptor indicates an LU6.2 server network component, the descriptor 'SRVCLIENT' indicates a TCP/IP CLIENT server network component, 'SRVX25' indicates an X25 server network component, and 'SRVNAMP' indicates a NAMED PIPE server network component.
nnnnnnnnnnnn – TRACE NOT ACTIVATED - TRC= xxxx SRC= xxxx
This message states the network component for which the internal audit trail cannot be activated.
The designator 'SRVTCPIP' indicates the TCP/IP server network component.
The designator 'SRVLU62' indicates the LU6.2 server network component.
The designator 'SRVCLIENT' indicates the TCP/IP CLIENT server network component.
The designator 'SRVX25' indicates the X25 server network component.
The designator 'SRVNAMP' indicates the NAMED PIPE server network component.
The designator 'NOTIFYIP' indicates the TCP/IP notification network component.
The designator 'NOTIFYNP' indicates the NAMED PIPE notification network component.

nnnnnnnnnnnn – TRANSFER ACCEPTED
This message indicates that a new transfer with the partner has been successfully negotiated.
The request number is shown.

nnnnnnnnnnnn - ffffffff – TRANSFER ENDED
This message indicates the end of the transfer for which the request number is stated. It also states the symbolic name of the file

nnnnnnnnnnnn – TRANSFER REJECTED ffffffff
This message indicates that the transfer for which the request number (nnnnnnnnnnnn) and the symbolic name of the file are stated, has been rejected.

nnnnnnnnnnnn – TRANSFER REJECTED - TRC= xxxx
This message states that the monitor has rejected a new request.

nnnnnnnnnnnn – TRANSFER RESTARTING
This message indicates that a resume-transfer operation with the partner has been successfully negotiated.
The request number is shown.

nnnnnnnnnnnn - ffffffff – TRANSFER STARTED (s)
This message indicates the start of the transfer for which the request number is stated (nnnnnnnnnnnn). It also states the symbolic name of the file (ffffffff) and the direction (Transmit or Receive).

nnnnnnnnnnnn - TRC=xxxx PRC=xxxx SRC=xxxx ERC=xxxx NRC=xxxx
This message supplements another message and indicates the corresponding return codes.

UNKNOWN SYSTEM VERSION
This message indicates that the software cannot ascertain the version of the system and is therefore not able to run.

USER INTERFACE IS CLOSED
This message indicates that the monitor's user interface has terminated.

nnnnnnnnnnnn - X25 RC= XXXX CAUSE=YY DIAG=ZZ
This message states the X25 error code when a network error is detected.
The CAUSE and DIAGNOSTIC codes for the X25 network used are also indicated, in hexadecimal.

Service started.
This message indicates that the transfer service is started.

Service stopped.
This message indicates that the transfer service is stopped.

Stopping Service in progress.
This message indicates that the transfer service is being stopped.

Starting Service in progress.
This message indicates that the transfer service is being started.

Successful end of transfer - request number nnnnnnnnnnnn.
This message states the request number of a successful transfer.

Transfer failed - request number nnnnnnnnnnnn.
This message states the request number of a failed transfer.

Service already started.
This message indicates that the transfer service is already started.

System error - <function name> SRC=XXXX.
This message states the system function name that failed and the system return code retrieved at the time of failure.

Return Codes

TRC Return Codes

TRC return codes are specified by the transfer monitor when a local error is detected.

These codes allow you to identify the action the monitor was performing when the local error was detected and, using the others codes, identify the cause of the problem encountered.

A null TRC code indicates that the error was encountered remotely and, therefore, the cause must be found on the partner side.

1000: Outgoing session rejected by the partner
1003: Incoming session rejected – invalid caller password
11xx: Protocol error – invalid length of command ‘xx’
12xx: Protocol error – unknown field ID ‘xx’
15xx: Protocol error – invalid value into the ‘xx’ field
16xx: Protocol error – ‘xx’ command invalid or unknown
17xx: Protocol error – header of ‘xx’ command invalid
18xx: Protocol error – invalid length of ‘xx’ field
19xx: Protocol error – ‘xx’ field invalid or not found
1Axx: Protocol error – ‘xx’ command syntax invalid
2007: API error – invalid data length
2008: API error – unknown resource
2009: API error – unknown command
200A: API error - action not authorized
200B: Transfer rejected – the network is disabled
200C: Transfer rejected – the ETEBAC-3 option is disabled
2010: Transfer rejected – unknown symbolic file name
2011: Transfer rejected – unknown symbolic partner name
2012: Transfer rejected – invalid transfer direction
2013: Transfer rejected – invalid physical file name
2014: Transfer or Command rejected – unknown symbolic client name
2015: Transfer rejected – unknown PeSIT presentation table
2016: Transfer rejected - unknown PeSIT session table
2017: Transfer rejected - unknown ETEBAC-3 presentation table
2018: API error - invalid remote client DN
2019: API error - invalid remote server DN
201A: Outgoing session rejected – invalid local password
201B: Incoming session rejected – invalid local name
201C: Incoming session rejected – invalid partner network address
2020: API error – invalid direction
2021: API error – invalid link type
2022: API error – asked request not found
2024: API error – invalid request type
2025: API error – request type and transfer direction are not compatible

2026: API error – invalid priority
2027: API error – invalid notification option
2028: API error – invalid request type for ETEBAC-3 protocol
2029: API error – Error retrieving certificate
202A: Partner – invalid total number of session
202B: Partner – invalid incoming number of session
202C: Partner – invalid outgoing number of session
2031: File – invalid definition
2032: File – invalid type
2033: File – invalid open action
2034: File – invalid status
2035: File – invalid article length
2036: File – invalid direction
2038: Partner – invalid status
2039: Partner – invalid type
203A: Partner – invalid automatic restart
203B: Partner – invalid protocol
203C: Partner – invalid link type
203D: Partner – invalid dynamic local identification
2040: Transfer rejected – invalid file format
2041: Transfer rejected – invalid article length
2042: EERP: Transfer not ended
2043: EERP: Wrong direction
2044: EERP: Acknowledgement of an eerp not allowed
2045: EERP: Transfer already acknowledged
204A: Transfer rejected – not enough free space on disk to receive the file
204B: Transfer rejected – article length cannot be greater than synchronization interval
204C: Article length cannot be greater than network message size when the 'Segmentation' feature is not enabled
2051: Transfer rejected – sender partner not authorized
2053: Transfer rejected – receiver partner not authorized
2054: Transfer rejected – request not found for an Inquiry or Restart demand
2055: Notification asked not found
2158: Session entrante rejetée: DN du certificat distant non autorisé (SSL)
2159: Session entrante rejetée: Erreur fichier de contrôle du DN distant (SSL)
205A: Protocol error – invalid transfer direction
205C: Incoming session rejected – direction not authorized
2060: Incoming session rejected – partner is disabled
2061: Transfer rejected – File is disabled
2062: Invalid client password
2063: Client is disabled
2064: Invalid client link type
2065: Invalid client network address
2066: File not authorized for this client
2067: Notify not stated into the client definition
2071: Incoming session rejected – invalid PeSIT version
2079: Transfer rejected – Max number of request per day reached

207A: PeSIT not authorized
207B: Etebac3 not authorized
2151: Incoming session rejected – unknown symbolic partner name
2152: Incoming session rejected – invalid partner link type
2153: Incoming session rejected – too many simultaneous transfers
2154: Incoming session rejected – too many requests
2155: Incoming session rejected – too many simultaneous sessions for the partner
2156: Incoming session rejected – too many simultaneous clients sessions
2157: Incoming session rejected – remote client connection not authorized
2158: Incoming session rejected - remote certificate DN not authorized (SSL)
2159: Incoming session rejected - error remote certificate DN control file (SSL)
2200: Session table – invalid network message size
2201: Session table – invalid synchronization interval
2202: Session table – invalid direction
2203: Session table – invalid CRC option
2204: Session table – invalid number of resynchronization
2205: Invalid synchronization window
2210: Presentation table – invalid compression
2211: Presentation table – invalid concatenation
2212: Presentation table – invalid multi-articles
2213: Presentation table – invalid segmentation
2214: Presentation table – invalid translation
2717: Activity Manager session not authorized
2722: Client/Server session not authorized
2729: SSL client parameter not found in partner definition
272F: SSL parameter definition not found
2911: Transfer rejected – request table is full
2F00: Client rejected – invalid protocol version
2F01: Client rejected – invalid data type
2F02: Client rejected – invalid client type
3001: File transfer error - error while retrieving file information for the file being transmitted
3002: File transfer error - invalid article length received
3003: File transfer error - open for read
3004: File transfer error – open for write
3005: File transfer error - read
3006: File transfer error – article cannot be saved – article length too large
3007: File transfer error - seek
3008: File transfer error - write
3013: File transfer error - close
4801: Compression error
4802: Decompression error
5001: Restart negotiation failed
5004: Protocol error – too much data without synchronization
5006: Invalid count of bytes transferred
5007: Invalid count of articles transferred
5008: Resynchronization not possible
5009: Max number of resynchronizations reached

7001: Checkpoint file error - creation
7003: Checkpoint file error – open
7005: Checkpoint file error – sequential read
7006: Checkpoint file error - remove
7008: Checkpoint file error - write
7013: Checkpoint file error - close
7014: Checkpoint file error – seek at beginning
7015: Checkpoint file error – direct read
7016: Checkpoint file error – article deletion
7017: Checkpoint file error – read next
7018: Checkpoint file error - compression
7019: Checkpoint file error - lock
701A: Checkpoint file error - unlock
701B: Checkpoint file error - creation
701C: Checkpoint file error - add
7101: Journal file error - creation
7103: Journal file error – open for write
7104: Journal file error – open for read
7106: Journal file error - remove
7108: Journal file error - write
7113: Journal file error - close
7114: Journal file error – seek at beginning
7115: Journal file error – direct read
7116: Journal file error – article deletion
7117: Journal file error – read next
7118: Journal file error - compress
7119: Journal file error - lock
711A: Journal file error - unlock
711B: Journal file error - creation
711C: Journal file error - add
7205: Initialization file error - read
7206: SSL not enabled for this partner
7208: Initialization file error - write
7301: Trace file error – open
7313: Trace file error – close
7401: Messages file error – open
7405: Messages file error – read
7407: Messages file error – seek
7413: Messages file error – close
7601: Translation file table error – open
7605: Translation file table error – read
7613: Translation file table error – close
7617: Translation file table error – invalid syntax
7701: Notification file error – creation
7703: Notification file error – open for write
7704: Notification file error – open for read
7706: Notification file error – remove

7708: Notification file error – write
7713: Notification file error – close
7714: Notification file error – seek at beginning
7715: Notification file error – direct read
7716: Notification file error – article deletion
7717: Notification file error – read next
7718: Notification file error – compression
7719: Notification file error – lock
771A: Notification file error – unlock
771B: Notification file error – creation
771C: Notification file error – add
8001: Physical file name – unknown variable
8002: Physical file name – EXTLAB variable cannot be combined with another variable
8003: Physical file name – invalid combination of variables
8004: Physical file name – too many variables
8005: Physical file name – invalid variable for the transfer direction stated
8006: Physical file name – variable repeated too many times
8007: Physical file name – invalid generic name
8008: Physical file name – too many files found for the generic name
8009: Physical file name – invalid variables for ETEBAC-3 protocol
9000: Transfer interrupted by a user
9001: Transfer purged by a user
9100: CRC error detected
A000: The network component of monitor has detected an error
F005: Memory allocation error
F006: Lock allocated memory error
F007: Unlock allocated memory error
F008: Free allocated memory error
F009: Unable to free allocated memory
F00A: Request table full – hot start type not possible
F00B: Send message on main window error
F00C: Signal on main window error
F00D: Free post not found into the protocol components table
F00F: Protocol component initialization error
F010: Network component initialization error
F011: Network component termination error
F012: Internal error – request asked not found
F013: User interface initialization error
F014: Server component initialization error
F015: Transfer rejected – free post into request table not found
F016: Transfer rejected – max number of requests per day reached
F018: Error while purging a request
F019: Error while restarting a request
F01A: Session closed – request table full
F01B: Timer error
F01C: Error while starting a client server component
F01D: Free post into connection table not found

F01E: Begin of transfer command error
F01F: End of transfer command error
F020: Windows services manager error
F021: Security descriptor allocation error
F022: Security descriptor initialization error
F023: Error whil adding the security descriptor into the ACL table
F024: Error of transfer command error
F025: Unknown client
F026: Initialization file lock error
F027: Connections table lock error
F028: Internal error into the connections table
F029: C-TREE initialization error
F02A: C-TREE termination error
F02C: Incoming call rejected – monitor stopping
F02D: C-TREE lock error
F02E: Internal communication error
F02F: Error while starting a notify component
F030: Error while starting an ETEBAC-3 component

These codes state the error code at protocol level for PeSIT.

100 Transmission error.

200 Insufficient file characteristics.
201 System resources temporarily insufficient.
202 User resources temporarily insufficient.
203 Non-priority transfer.
204 File exists already.
205 File not found.
206 Disk quota will be exceeded if file received.
207 File occupied.
208 File too old.
209 Message of this type not accepted.
210 Failure of presentation context negotiation.
211 Cannot open file.
212 Cannot routinely close file.
213 Input/output error.
214 Failure of restart point negotiation.
215 System-specific error.
216 Voluntarily premature stop.
217 Too many synchronization points without acknowledgments.
218 Re-synchronization impossible.
219 File space used up.
220 Incorrect record length.
221 End of transmission expiration time.
222 Too much data without synchronization points.
223 Abnormal end-of-transfer.
224 File size larger than expected.
225 Application congested; file deleted.
226 Transfer refused.
299 Miscellaneous.

300 Congested local communication system.
301 Identification of caller Partner unknown.
302 Unauthorized caller Partner.
303 Caller Partner unknown.
304 Identification of called Partner unauthorized.
305 Failure of a SELECT negotiation.
306 Failure of a RESYNC negotiation.
307 Failure of SYNC negotiation.
308 Version number not supported.
309 Too many connections already in progress.
310 Network incident.
311 Remote protocol error code.
312 Closure of service requested by user.
314 Unused connection cut off.
315 Failure of negotiation.
317 Time-out failure.
318 Parameter absent or incorrect value.
319 Number of bytes or records incorrect.
320 Maximum number of re-synchronizations reached.
399 Miscellaneous.

Sterling Connect:Express Connect:Express specific values used by the monitor to specify the cause of an error encountered while reading or writing the initialization file:

10001: partner ID not found
10002: partner variables not found
10003: partner session table not found
10004: partner connection counts not found
10005: partner TCP/IP information not found
10006: partner LU6.2 information not found
10007: partner X.25 information not found
10008: file variables not found
10009: file presentation table not found
10010: file physical name not found
10011: file article length not found
10012: file sender/receiver names not found
10013: client ID not found
10014: client variables not found
10015: client authorizations not found
10016: client TCP/IP information not found
10017: session table not found
10018: presentation table not found
10019: local LU name not found
10020: client files information not found
10021: client Named Pipe information not found
10024: file notifications information not found
10025: SSL client parameter information not found in partner definition
10026: Type information not found in SSL parameter definition
10027: Enabled information not found in SSL parameter definition
10028: Client Auth information not found in SSL parameter definition
10029: Trace information not found in SSL parameter definition
10030: Protocol information not found in SSL parameter definition
10031: SSL parameter definition not found
10032: Use SSL information not found in SSL parameter definition

These codes are from the Microsoft documentation.

```
//  Incorrect function.
#define ERROR_INVALID_FUNCTION          1

//  The system cannot find the file specified.
#define ERROR_FILE_NOT_FOUND            2

//  The system cannot find the path specified.
#define ERROR_PATH_NOT_FOUND            3

//  The system cannot open the file.
#define ERROR_TOO_MANY_OPEN_FILES       4

//  Access is denied.
#define ERROR_ACCESS_DENIED             5

//  The handle is invalid.
#define ERROR_INVALID_HANDLE            6

//  The storage control blocks were destroyed.
#define ERROR_ARENA_TRASHED             7

//  Not enough storage is available to process this command.
#define ERROR_NOT_ENOUGH_MEMORY         8

//  The storage control block address is invalid.
#define ERROR_INVALID_BLOCK             9

//  The environment is incorrect.
#define ERROR_BAD_ENVIRONMENT           10

//  An attempt was made to load a program with an incorrect format.
#define ERROR_BAD_FORMAT                11

//  The access code is invalid.
#define ERROR_INVALID_ACCESS            12

//  The data is invalid.
#define ERROR_INVALID_DATA              13

//  Not enough storage is available to complete this operation.
#define ERROR_OUTOFMEMORY               14

//  The system cannot find the drive specified.
#define ERROR_INVALID_DRIVE             15
```

```
//  The directory cannot be removed.
#define ERROR_CURRENT_DIRECTORY         16

//  The system cannot move the file to a different disk drive.
#define ERROR_NOT_SAME_DEVICE           17

//  There are no more files.
#define ERROR_NO_MORE_FILES             18

//  The media is write protected.
#define ERROR_WRITE_PROTECT             19

//  The system cannot find the device specified.
#define ERROR_BAD_UNIT                  20

//  The device is not ready.
#define ERROR_NOT_READY                 21

//  The device does not recognize the command.
#define ERROR_BAD_COMMAND               22

//  Data error (cyclic redundancy check)
#define ERROR_CRC                       23

//  The program issued a command but the command length is incorrect.
#define ERROR_BAD_LENGTH                24

//  The drive cannot locate a specific area or track on the disk.
#define ERROR_SEEK                      25

//  The specified disk or diskette cannot be accessed.
#define ERROR_NOT_DOS_DISK              26

//  The drive cannot find the sector requested.
#define ERROR_SECTOR_NOT_FOUND          27

//  The printer is out of paper.
#define ERROR_OUT_OF_PAPER              28

//  The system cannot write to the specified device.
#define ERROR_WRITE_FAULT               29

//  The system cannot read from the specified device.
#define ERROR_READ_FAULT                30

//  A device attached to the system is not functioning.
#define ERROR_GEN_FAILURE               31
```

```
//  The process cannot access the file because it is being used by another process.
#define ERROR_SHARING_VIOLATION         32

//  The process cannot access the file because another process has locked a portion of the file.
#define ERROR_LOCK_VIOLATION            33

//  The wrong diskette is in the drive. Insert %2 (Volume Serial Number: %3) into drive %1.
#define ERROR_WRONG_DISK                34

//  Too many files opened for sharing.
#define ERROR_SHARING_BUFFER_EXCEEDED    36

//  Reached end of file.
#define ERROR_HANDLE_EOF                38

//  The disk is full.
#define ERROR_HANDLE_DISK_FULL          39

//  The network request is not supported.
#define ERROR_NOT_SUPPORTED             50

//  The remote computer is not available.
#define ERROR_REM_NOT_LIST              51

//  A duplicate name exists on the network.
#define ERROR_DUP_NAME                  52

//  The network path was not found.
#define ERROR_BAD_NETPATH               53

//  The network is busy.
#define ERROR_NETWORK_BUSY              54

//  The specified network resource or device is no longer available.
#define ERROR_DEV_NOT_EXIST             55

//  The network BIOS command limit has been reached.
#define ERROR_TOO_MANY_CMDS             56

//  A network adapter hardware error occurred.
#define ERROR_ADAP_HDW_ERR              57

//  The specified server cannot perform the requested operation.
#define ERROR_BAD_NET_RESP              58

//  An unexpected network error occurred.
#define ERROR_UNEXP_NET_ERR             59
```

```
//  The remote adapter is not compatible.
#define ERROR_BAD_REM_ADAP              60

//  The printer queue is full.
#define ERROR_PRINTQ_FULL               61

//  Space to store the file waiting to be printed is not available on the server.
#define ERROR_NO_SPOOL_SPACE            62

//  Your file waiting to be printed was deleted.
#define ERROR_PRINT_CANCELLED           63

//  The specified network name is no longer available.
#define ERROR_NETNAME_DELETED           64

//  Network access is denied.
#define ERROR_NETWORK_ACCESS_DENIED     65

//  The network resource type is not correct.
#define ERROR_BAD_DEV_TYPE              66

//  The network name cannot be found.
#define ERROR_BAD_NET_NAME              67

//  The name limit for the local computer network adapter card was exceeded.
#define ERROR_TOO_MANY_NAMES            68

//  The network BIOS session limit was exceeded.
#define ERROR_TOO_MANY_SESS             69

//  The remote server has been paused or is in the process of being started.
#define ERROR_SHARING_PAUSED            70

//  No more connections can be made to this remote computer at this time //  because there are
//  already as many connections as the computer can accept.
#define ERROR_REQ_NOT_ACCEP             71

//  The specified printer or disk device has been paused.
#define ERROR_REDIR_PAUSED              72

//  The file exists.
#define ERROR_FILE_EXISTS               80

//  The directory or file cannot be created.
#define ERROR_CANNOT_MAKE               82
```

```
//  Fail on INT 24
#define ERROR_FAIL_I24                83

//  Storage to process this request is not available.
#define ERROR_OUT_OF_STRUCTURES       84

//  The local device name is already in use.
#define ERROR_ALREADY_ASSIGNED        85

//  The specified network password is not correct.
#define ERROR_INVALID_PASSWORD        86

//  The parameter is incorrect.
#define ERROR_INVALID_PARAMETER       87

//  A write fault occurred on the network.
#define ERROR_NET_WRITE_FAULT         88

//  The system cannot start another process at this time.
#define ERROR_NO_PROC_SLOTS           89

//  Cannot create another system semaphore.
#define ERROR_TOO_MANY_SEMAPHORES     100

//  The exclusive semaphore is owned by another process.
#define ERROR_EXCL_SEM_ALREADY_OWNED  101

//  The semaphore is set and cannot be closed.
#define ERROR_SEM_IS_SET              102

//  The semaphore cannot be set again.
#define ERROR_TOO_MANY_SEM_REQUESTS   103

//  Cannot request exclusive semaphores at interrupt time.
#define ERROR_INVALID_AT_INTERRUPT_TIME  104

//  The previous ownership of this semaphore has ended.
#define ERROR_SEM_OWNER_DIED          105

//  Insert the diskette for drive %1.
#define ERROR_SEM_USER_LIMIT          106

//  Program stopped because alternate diskette was not inserted.
#define ERROR_DISK_CHANGE             107

//  The disk is in use or locked by another process.
#define ERROR_DRIVE_LOCKED            108
```

```
//  The pipe has been ended.
#define ERROR_BROKEN_PIPE             109

//  The system cannot open the device or file specified.
#define ERROR_OPEN_FAILED             110

//  The file name is too long.
#define ERROR_BUFFER_OVERFLOW         111

//  There is not enough space on the disk.
#define ERROR_DISK_FULL               112

//  No more internal file identifiers available.
#define ERROR_NO_MORE_SEARCH_HANDLES  113

//  The target internal file identifier is incorrect.
#define ERROR_INVALID_TARGET_HANDLE   114

//  The IOCTL call made by the application program is not correct.
#define ERROR_INVALID_CATEGORY        117

//  The verify-on-write switch parameter value is not correct.
#define ERROR_INVALID_VERIFY_SWITCH   118

//  The system does not support the command requested.
#define ERROR_BAD_DRIVER_LEVEL        119

//  This function is only valid in Windows NT mode.
#define ERROR_CALL_NOT_IMPLEMENTED    120

//  The semaphore timeout period has expired.
#define ERROR_SEM_TIMEOUT             121

//  The data area passed to a system call is too small.
#define ERROR_INSUFFICIENT_BUFFER     122

//  The filename, directory name, or volume label syntax is incorrect.
#define ERROR_INVALID_NAME            123

//  The system call level is not correct.
#define ERROR_INVALID_LEVEL           124

//  The disk has no volume label.
#define ERROR_NO_VOLUME_LABEL         125

//  The specified module could not be found.
#define ERROR_MOD_NOT_FOUND           126
```

```
//  The specified procedure could not be found.
#define ERROR_PROC_NOT_FOUND            127

//  There are no child processes to wait for.
#define ERROR_WAIT_NO_CHILDREN          128

//  The %1 application cannot be run in Windows NT mode.
#define ERROR_CHILD_NOT_COMPLETE        129

//  Attempt to use a file handle to an open disk partition for an operation other than raw disk I/O.
#define ERROR_DIRECT_ACCESS_HANDLE      130

//  An attempt was made to move the file pointer before the beginning of the file.
#define ERROR_NEGATIVE_SEEK             131

//  The file pointer cannot be set on the specified device or file.
#define ERROR_SEEK_ON_DEVICE            132

//  A JOIN or SUBST command cannot be used for a drive that contains previously joined drives.
#define ERROR_IS_JOIN_TARGET            133

//  An attempt was made to use a JOIN or SUBST command on a drive that has already been joined.
#define ERROR_IS_JOINED                 134

//  An attempt was made to use a JOIN or SUBST command on a drive that has already been
//  substituted.
#define ERROR_IS_SUBSTED                135

//  The system tried to delete the JOIN of a drive that is not joined.
#define ERROR_NOT_JOINED                136

//  The system tried to delete the substitution of a drive that is not substituted.
#define ERROR_NOT_SUBSTED               137

//  The system tried to join a drive to a directory on a joined drive.
#define ERROR_JOIN_TO_JOIN              138

//  The system tried to substitute a drive to a directory on a substituted drive.
#define ERROR_SUBST_TO_SUBST            139

//  The system tried to join a drive to a directory on a substituted drive.
#define ERROR_JOIN_TO_SUBST             140

//  The system tried to SUBST a drive to a directory on a joined drive.
#define ERROR_SUBST_TO_JOIN             141
```

```
//  The system cannot perform a JOIN or SUBST at this time.
#define ERROR_BUSY_DRIVE                142

//  The system cannot join or substitute a drive to or for a directory on the same drive.
#define ERROR_SAME_DRIVE                143

//  The directory is not a subdirectory of the root directory.
#define ERROR_DIR_NOT_ROOT              144

//  The directory is not empty.
#define ERROR_DIR_NOT_EMPTY             145

//  The path specified is being used in a substitute.
#define ERROR_IS_SUBST_PATH             146

//  Not enough resources are available to process this command.
#define ERROR_IS_JOIN_PATH              147

//  The path specified cannot be used at this time.
#define ERROR_PATH_BUSY                 148

//  An attempt was made to join or substitute a drive for which a directory on the drive is the
// target of a previous substitute.
#define ERROR_IS_SUBST_TARGET           149

//  System trace information was not specified in your CONFIG.SYS file, or tracing is disallowed.
#define ERROR_SYSTEM_TRACE              150

//  The number of specified semaphore events for DosMuxSemWait is not correct.
#define ERROR_INVALID_EVENT_COUNT       151

//  DosMuxSemWait did not execute; too many semaphores are already set.
#define ERROR_TOO_MANY_MUXWAITERS       152

//  The DosMuxSemWait list is not correct.
#define ERROR_INVALID_LIST_FORMAT       153

//  The volume label you entered exceeds the label character limit of the target file system.
#define ERROR_LABEL_TOO_LONG            154

//  Cannot create another thread.
#define ERROR_TOO_MANY_TCBS             155

//  The recipient process has refused the signal.
#define ERROR_SIGNAL_REFUSED            156
```

```
//  The segment is already discarded and cannot be locked.
#define ERROR_DISCARDED              157

//  The segment is already unlocked.
#define ERROR_NOT_LOCKED             158

//  The address for the thread ID is not correct.
#define ERROR_BAD_THREADID_ADDR      159

//  The argument string passed to DosExecPgm is not correct.
#define ERROR_BAD_ARGUMENTS          160

//  The specified path is invalid.
#define ERROR_BAD_PATHNAME           161

//  A signal is already pending.
#define ERROR_SIGNAL_PENDING         162

//  No more threads can be created in the system.
#define ERROR_MAX_THRDS_REACHED      164

//  Unable to lock a region of a file.
#define ERROR_LOCK_FAILED            167

//  The requested resource is in use.
#define ERROR_BUSY                   170

//  A lock request was not outstanding for the supplied cancel region.
#define ERROR_CANCEL_VIOLATION       173

//  The file system does not support atomic changes to the lock type.
#define ERROR_ATOMIC_LOCKS_NOT_SUPPORTED 174

//  The system detected a segment number that was not correct.
#define ERROR_INVALID_SEGMENT_NUMBER  180

//  The operating system cannot run %1.
#define ERROR_INVALID_ORDINAL        182

//  Cannot create a file when that file already exists.
#define ERROR_ALREADY_EXISTS         183

//  The flag passed is not correct.
#define ERROR_INVALID_FLAG_NUMBER    186

//  The specified system semaphore name was not found.
#define ERROR_SEM_NOT_FOUND          187
```

```
//  The operating system cannot run %1.
#define ERROR_INVALID_STARTING_CODESEG   188

//  The operating system cannot run %1.
#define ERROR_INVALID_STACKSEG          189

//  The operating system cannot run %1.
#define ERROR_INVALID_MODULETYPE        190

//  Cannot run %1 in Windows NT mode.
#define ERROR_INVALID_EXE_SIGNATURE     191

//  The operating system cannot run %1.
#define ERROR_EXE_MARKED_INVALID        192

//  %1 is not a valid Windows NT application.
#define ERROR_BAD_EXE_FORMAT            193

//  The operating system cannot run %1.
#define ERROR_ITERATED_DATA_EXCEEDS_64k  194

//  The operating system cannot run %1.
#define ERROR_INVALID_MINALLOCSIZE       195

//  The operating system cannot run this application program.
#define ERROR_DYNLINK_FROM_INVALID_RING  196

//  The operating system is not presently configured to run this application.
#define ERROR_IOPL_NOT_ENABLED          197

//  The operating system cannot run %1.
#define ERROR_INVALID_SEGDPL            198

//  The operating system cannot run this application program.
#define ERROR_AUTODATASEG_EXCEEDS_64k    199

//  The code segment cannot be greater than or equal to 64KB.
#define ERROR_RING2SEG_MUST_BE_MOVABLE   200

//  The operating system cannot run %1.
#define ERROR_RELOC_CHAIN_XEEDS_SEGLIM   201

//  The operating system cannot run %1.
#define ERROR_INFLOOP_IN_RELOC_CHAIN     202

//  The system could not find the environment option that was entered.
#define ERROR_ENVVAR_NOT_FOUND          203
```

```
//  No process in the command subtree has a signal handler.
#define ERROR_NO_SIGNAL_SENT            205

//  The filename or extension is too long.
#define ERROR_FILENAME_EXCED_RANGE      206

//  The ring 2 stack is in use.
#define ERROR_RING2_STACK_IN_USE        207

//  The global filename characters, * or ?, are entered incorrectly or too many global filename
// characters are specified.
#define ERROR_META_EXPANSION_TOO_LONG   208

//  The signal being posted is not correct.
#define ERROR_INVALID_SIGNAL_NUMBER     209

//  The signal handler cannot be set.
#define ERROR_THREAD_1_INACTIVE         210

//  The segment is locked and cannot be reallocated.
#define ERROR_LOCKED                    212

//  Too many dynamic link modules are attached to this program or dynamic link module.
#define ERROR_TOO_MANY_MODULES          214

//  Can't nest calls to LoadModule.
#define ERROR_NESTING_NOT_ALLOWED       215

//  The image file %1 is valid, but is for a machine type other than the current machine.
#define ERROR_EXE_MACHINE_TYPE_MISMATCH  216
//  The pipe state is invalid.
#define ERROR_BAD_PIPE                  230

//  All pipe instances are busy.
#define ERROR_PIPE_BUSY                 231

//  The pipe is being closed.
#define ERROR_NO_DATA                   232

//  No process is on the other end of the pipe.
#define ERROR_PIPE_NOT_CONNECTED        233

//  More data is available.
#define ERROR_MORE_DATA                 234
```

```
//  The session was cancelled.
#define ERROR_VC_DISCONNECTED           240

//  The specified extended attribute name was invalid.
#define ERROR_INVALID_EA_NAME           254

//  The extended attributes are inconsistent.
#define ERROR_EA_LIST_INCONSISTENT      255

//  No more data is available.
#define ERROR_NO_MORE_ITEMS             259

//  The Copy API cannot be used.
#define ERROR_CANNOT_COPY               266

//  The directory name is invalid.
#define ERROR_DIRECTORY                 267

//  The extended attributes did not fit in the buffer.
#define ERROR_EAS_DIDNT_FIT             275

//  The extended attribute file on the mounted file system is corrupt.
#define ERROR_EA_FILE_CORRUPT           276

//  The extended attribute table file is full.
#define ERROR_EA_TABLE_FULL             277

//  The specified extended attribute handle is invalid.
#define ERROR_INVALID_EA_HANDLE         278

//  The mounted file system does not support extended attributes.
#define ERROR_EAS_NOT_SUPPORTED         282

//  Attempt to release mutex not owned by caller.
#define ERROR_NOT_OWNER                 288

//  Too many posts were made to a semaphore.
#define ERROR_TOO_MANY_POSTS            298

//  Only part of a Read/WriteProcessMemory request was completed.
#define ERROR_PARTIAL_COPY              299

//  The system cannot find message for message number 0x%1 in message file for %2.
#define ERROR_MR_MID_NOT_FOUND          317

//  Attempt to access invalid address.
#define ERROR_INVALID_ADDRESS           487
```

```
//  Arithmetic result exceeded 32 bits.
#define ERROR_ARITHMETIC_OVERFLOW       534

//  There is a process on other end of the pipe.
#define ERROR_PIPE_CONNECTED            535

//  Waiting for a process to open the other end of the pipe.
#define ERROR_PIPE_LISTENING            536

//  Access to the extended attribute was denied.
#define ERROR_EA_ACCESS_DENIED          994

//  The I/O operation has been aborted because of either a thread exit or an application request.
#define ERROR_OPERATION_ABORTED         995

//  Overlapped I/O event is not in a signalled state.
#define ERROR_IO_INCOMPLETE             996

//  Overlapped I/O operation is in progress.
#define ERROR_IO_PENDING                997

//  Invalid access to memory location.
#define ERROR_NOACCESS                  998

//  Error performing inpage operation.
#define ERROR_SWAPERROR                 999

//  Recursion too deep, stack overflowed.
#define ERROR_STACK_OVERFLOW            1001

//  The window cannot act on the sent message.
#define ERROR_INVALID_MESSAGE           1002

//  Cannot complete this function.
#define ERROR_CAN_NOT_COMPLETE          1003

//  Invalid flags.
#define ERROR_INVALID_FLAGS             1004

//  The volume does not contain a recognized file system. Please make sure that all required file
// system drivers are loaded and that the volume is not corrupt.
#define ERROR_UNRECOGNIZED_VOLUME       1005

//  The volume for a file has been externally altered such that the opened file is no longer valid.
#define ERROR_FILE_INVALID              1006
```

```
//  The requested operation cannot be performed in full-screen mode.
#define ERROR_FULLSCREEN_MODE           1007

//  An attempt was made to reference a token that does not exist.
#define ERROR_NO_TOKEN                  1008

//  The configuration registry database is corrupt.
#define ERROR_BADDB                     1009

//  The configuration registry key is invalid.
#define ERROR_BADKEY                    1010

//  The configuration registry key could not be opened.
#define ERROR_CANTOPEN                  1011

//  The configuration registry key could not be read.
#define ERROR_CANTREAD                  1012

//  The configuration registry key could not be written.
#define ERROR_CANTWRITE                 1013

//  One of the files in the Registry database had to be recovered by use of a log or alternate copy.
//  The recovery was successful.
#define ERROR_REGISTRY_RECOVERED        1014

//  The Registry is corrupt. The structure of one of the files that contains Registry data is corrupt, or
//  the system's image of the file in memory is corrupt, or the file could not be recovered because
//  the alternate copy or log was absent or corrupt.
#define ERROR_REGISTRY_CORRUPT          1015

//  An I/O operation initiated by the Registry failed unrecoverably. The Registry could not read
//  in, or write out, or flush, one of the files that contain the system's image of the Registry.
#define ERROR_REGISTRY_IO_FAILED        1016

//  The system has attempted to load or restore a file into the Registry, but the specified file is not
//  in a Registry file format.
#define ERROR_NOT_REGISTRY_FILE         1017

//  Illegal operation attempted on a Registry key which has been marked for deletion.
#define ERROR_KEY_DELETED               1018

//  System could not allocate the required space in a Registry log.
#define ERROR_NO_LOG_SPACE              1019
```

```
//  Cannot create a symbolic link in a Registry key that already has subkeys or values.
#define ERROR_KEY_HAS_CHILDREN          1020

//  Cannot create a stable subkey under a volatile parent key.
#define ERROR_CHILD_MUST_BE_VOLATILE    1021

//  A notify change request is being completed and the information is not being returned in the
caller's

//  buffer. The caller now needs to enumerate the files to find the changes.
#define ERROR_NOTIFY_ENUM_DIR           1022

//  A stop control has been sent to a service which other running services are dependent on.
#define ERROR_DEPENDENT_SERVICES_RUNNING 1051

//  The requested control is not valid for this service
#define ERROR_INVALID_SERVICE_CONTROL   1052

//  The service did not respond to the start or control request in a timely fashion.
#define ERROR_SERVICE_REQUEST_TIMEOUT   1053

//  A thread could not be created for the service.
#define ERROR_SERVICE_NO_THREAD         1054

//  The service database is locked.
#define ERROR_SERVICE_DATABASE_LOCKED   1055

//  An instance of the service is already running.
#define ERROR_SERVICE_ALREADY_RUNNING   1056

//  The account name is invalid or does not exist.
#define ERROR_INVALID_SERVICE_ACCOUNT   1057

//  The specified service is disabled and cannot be started.
#define ERROR_SERVICE_DISABLED          1058

//  Circular service dependency was specified.
#define ERROR_CIRCULAR_DEPENDENCY       1059

//  The specified service does not exist as an installed service.
#define ERROR_SERVICE_DOES_NOT_EXIST    1060

//  The service cannot accept control messages at this time.
#define ERROR_SERVICE_CANNOT_ACCEPT_CTRL 1061

//  The service has not been started.
#define ERROR_SERVICE_NOT_ACTIVE        1062
```

```
//  The service process could not connect to the service controller.
#define ERROR_FAILED_SERVICE_CONTROLLER_CONNECT 1063

//  An exception occurred in the service when handling the control request.
#define ERROR_EXCEPTION_IN_SERVICE       1064

//  The database specified does not exist.
#define ERROR_DATABASE_DOES_NOT_EXIST    1065

//  The service has returned a service-specific error code.
#define ERROR_SERVICE_SPECIFIC_ERROR     1066

//  The process terminated unexpectedly.
#define ERROR_PROCESS_ABORTED            1067

//  The dependency service or group failed to start.
#define ERROR_SERVICE_DEPENDENCY_FAIL    1068

//  The service did not start due to a logon failure.
#define ERROR_SERVICE_LOGON_FAILED       1069

//  After starting, the service hung in a start-pending state.
#define ERROR_SERVICE_START_HANG         1070

//  The specified service database lock is invalid.
#define ERROR_INVALID_SERVICE_LOCK       1071

//  The specified service has been marked for deletion.
#define ERROR_SERVICE_MARKED_FOR_DELETE  1072

//  The specified service already exists.
#define ERROR_SERVICE_EXISTS             1073

//  The system is currently running with the last-known-good configuration.
#define ERROR_ALREADY_RUNNING_LKG        1074

//  The dependency service does not exist or has been marked for deletion.
#define ERROR_SERVICE_DEPENDENCY_DELETED 1075

//  The current boot has already been accepted for use as the last-known-good control set.
#define ERROR_BOOT_ALREADY_ACCEPTED      1076

//  No attempts to start the service have been made since the last boot.
#define ERROR_SERVICE_NEVER_STARTED      1077

//  The name is already in use as either a service name or a service display name.
#define ERROR_DUPLICATE_SERVICE_NAME     1078
```

```
//  The account specified for this service is different from the account specified for other services
//  running in the same process.
#define ERROR_DIFFERENT_SERVICE_ACCOUNT  1079

//  The physical end of the tape has been reached.
#define ERROR_END_OF_MEDIA              1100

//  A tape access reached a filemark.
#define ERROR_FILEMARK_DETECTED         1101

//  Beginning of tape or partition was encountered.
#define ERROR_BEGINNING_OF_MEDIA        1102

//  A tape access reached the end of a set of files.
#define ERROR_SETMARK_DETECTED          1103

//  No more data is on the tape.
#define ERROR_NO_DATA_DETECTED          1104

//  Tape could not be partitioned.
#define ERROR_PARTITION_FAILURE         1105

//  When accessing a new tape of a multivolume partition, the current blocksize is incorrect.
#define ERROR_INVALID_BLOCK_LENGTH      1106

//  Tape partition information could not be found when loading a tape.
#define ERROR_DEVICE_NOT_PARTITIONED    1107

//  Unable to lock the media eject mechanism.
#define ERROR_UNABLE_TO_LOCK_MEDIA      1108

//  Unable to unload the media.
#define ERROR_UNABLE_TO_UNLOAD_MEDIA    1109

//  Media in drive may have changed.
#define ERROR_MEDIA_CHANGED             1110

//  The I/O bus was reset.
#define ERROR_BUS_RESET                 1111

//  No media in drive.
#define ERROR_NO_MEDIA_IN_DRIVE         1112

//  No mapping for the Unicode character exists in the target multi-byte code page.
#define ERROR_NO_UNICODE_TRANSLATION    1113
```

```
//  A dynamic link library (DLL) initialization routine failed.
#define ERROR_DLL_INIT_FAILED          1114

//  A system shutdown is in progress.
#define ERROR_SHUTDOWN_IN_PROGRESS     1115

//  Unable to abort the system shutdown because no shutdown was in progress.
#define ERROR_NO_SHUTDOWN_IN_PROGRESS  1116

//  The request could not be performed because of an I/O device error.
#define ERROR_IO_DEVICE                1117

//  No serial device was successfully initialized.  The serial driver will unload.
#define ERROR_SERIAL_NO_DEVICE         1118

//  Unable to open a device that was sharing an interrupt request (IRQ) with other devices. At least
//  one other device that uses that IRQ was already opened.
#define ERROR_IRQ_BUSY                 1119

//  A serial I/O operation was completed by another write to the serial port.
//  (The IOCTL_SERIAL_XOFF_COUNTER reached zero.)
#define ERROR_MORE_WRITES              1120

//  A serial I/O operation completed because the time-out period expired.
//  (The IOCTL_SERIAL_XOFF_COUNTER did not reach zero.)
#define ERROR_COUNTER_TIMEOUT          1121

//  No ID address mark was found on the floppy disk.
#define ERROR_FLOPPY_ID_MARK_NOT_FOUND 1122

//  Mismatch between the floppy disk sector ID field and the floppy disk controller track address.
#define ERROR_FLOPPY_WRONG_CYLINDER    1123

//  The floppy disk controller reported an error that is not recognized by the floppy disk driver.
#define ERROR_FLOPPY_UNKNOWN_ERROR     1124

//  The floppy disk controller returned inconsistent results in its registers.
#define ERROR_FLOPPY_BAD_REGISTERS     1125

//  While accessing the hard disk, a recalibrate operation failed, even after retries.
#define ERROR_DISK_RECALIBRATE_FAILED  1126

//  While accessing the hard disk, a disk operation failed even after retries.
#define ERROR_DISK_OPERATION_FAILED    1127
```

```
//  While accessing the hard disk, a disk controller reset was needed, but even that failed.
#define ERROR_DISK_RESET_FAILED         1128

//  Physical end of tape encountered.
#define ERROR_EOM_OVERFLOW              1129

//  Not enough server storage is available to process this command.
#define ERROR_NOT_ENOUGH_SERVER_MEMORY  1130

//  A potential deadlock condition has been detected.
#define ERROR_POSSIBLE_DEADLOCK         1131

//  The base address or the file offset specified does not have the proper alignment.
#define ERROR_MAPPED_ALIGNMENT          1132

//  An attempt to change the system power state was vetoed by another application or driver.
#define ERROR_SET_POWER_STATE_VETOED    1140

//  The system BIOS failed an attempt to change the system power state.
#define ERROR_SET_POWER_STATE_FAILED    1141

//  An attempt was made to create more links on a file than the file system supports.
#define ERROR_TOO_MANY_LINKS            1142

//  The specified program requires a newer version of Windows.
#define ERROR_OLD_WIN_VERSION           1150

//  The specified program is not a Windows or MS-DOS program.
#define ERROR_APP_WRONG_OS              1151

//  Cannot start more than one instance of the specified program.
#define ERROR_SINGLE_INSTANCE_APP       1152

//  The specified program was written for an older version of Windows.
#define ERROR_RMODE_APP                 1153

//  One of the library files needed to run this application is damaged.
#define ERROR_INVALID_DLL               1154

//  No application is associated with the specified file for this operation.
#define ERROR_NO_ASSOCIATION            1155

//  An error occurred in sending the command to the application.
#define ERROR_DDE_FAIL                  1156

//  One of the library files needed to run this application cannot be found.
#define ERROR_DLL_NOT_FOUND             1157
```

These codes indicate a network error encountered by a network component of the monitor.

NRC's For all Network Types:

A000: invalid demand
A001: invalid link type
A002: API version not supported by the stated DLL
A003: memory allocation error
A004: free memory error
A005: unable to free the memory
A006: network component already initialized
A007: network component not successfully initialized previously
A008: API already initialized
A009: API not successfully initialized previously
A00A: no incoming call received
A00B: network message too large
A00C: null length message to send
A00D: API not terminated

NRC's for the SNA LU6.2 Network Type:

A101: APPC dll load error
A102: CSV dll load error
A103: bad 'WinAPPCStartup' function address
A104: bad 'APPC_C' function address
A105: bad 'WinAPPCSCleanup' function address
A106: bad 'WinCSVStartup' function address
A107: bad 'ACSSVC_C' function address
A108: bad 'WinCSVCleanup' function address
A109: 'Startup' APPC error
A10A: 'Startup' CSV error
A10B: 'Cleanup' APPC error
A10C: 'Cleanup' CSV error
A10D: free APPC dll error
A10E: free CSV dll error
A10F: 'convert' error
A110: 'TP_STARTED' error
A111: 'ALLOCATE' error
A112: 'RECEIVE_ALLOCATE' error
A113: 'Sync Level' error
A114: 'Conv Type' error
A115: 'SEND' error
A116: 'PREPARE_TO_RECEIVE' error
A117: 'RECEIVE' error
A118: 'CONFIRMED' error
A119: 'DEALLOCATE' error
A11A: 'TP_ENDED' error

NRC's for the X.25 Network Type:

A201: X.25 dll load error
A202: X.25 dll free error
A203: bad 'x25init' function address
A204: bad 'x25exit' function address
A205: bad 'x25error' function address
A206: bad 'x25alloc' function address
A207: bad 'x25free' function address
A208: bad 'x25xcall' function address
A209: bad 'x25cause' function address
A20A: bad 'x25diag' function address
A20B: bad 'x25done' function address
A20C: bad 'x25cancel' function address
A20D: bad 'x25send' function address
A20E: bad 'x25recv' function address
A20F: bad 'x25hangup' function address
A210: bad 'x25xlisten' function address
A220: 'x25init' error
A221: 'x25exit' error
A222: 'x25xcall' error
A223: 'x25done' error for 'x25xcall' function
A224: 'x25cancel' error for 'x25xcall' function
A225: 'x25xcall' error after 'x25cancel' issued
A226: 'x25done' error for 'x25xcall' function after 'x25cancel' issued
A227: 'x25xlisten' error
A228: '25send' error
A229: 'x25done' error for 'x25send' function
A22A: 'x25cancel' error for 'x25send' function
A22B: 'x25send' error after 'x25cancel' issued
A22C: 'x25done' error for 'x25send' function after 'x25cancel' issued
A22D: 'x25recv' error
A22E: 'x25done' error for 'x25recv' function
A22F: 'x25cancel' error for 'x25recv' function
A230: 'x25recv' error after '25cancel' issued
A231: 'x25done' error for 'x25recv' function after 'x25cancel' issued
A232: 'x25recv clear' error
A233: 'x25done' error for 'x25recv clear' function
A234: 'x25cancel' error for 'x25recv clear' function
A235: 'x25recv' error after 'x25cancel' issued
A236: 'x25done' error for 'x25recv' function after 'x25cancel' issued
A237: 'x25hangup' error
A238: 'x25done' error for 'x25hangup' function
A239: 'x25done' error for 'x25xlisten' function
A23A: 'x25cancel' error for 'x25xlisten' function
A23B: 'x25xlisten' error after 'x25cancel' issued
A23C: 'x25done' error for 'x25xlisten' function after 'x25cancel' issued

NRC's for TCP/IP Network Type:

A301: Windows socket API initialization error
A302: 'socket' function error for an outgoing call
A303: 'socket' function error for an incoming call
A304: 'htons' function error
A305: 'inet_addr' function error
A306: 'connect' function error
A307: 'bind' function error
A308: 'listen' function error
A309: 'accept' function error
A30A: 'asynchronous send' function error
A30D: 'send' function error
A30E: 'shutdown' function error
A30F: 'closesocket' function error
A311: Windows socket termination error
A312: 'recv' function error
A313: 'inet_ntoa' function error
A314: load Windows socket dll error
A315: bad 'wsastartup' function address
A316: bad 'socket' function address
A317: bad 'closesocket' function address
A318: bad 'connect' function address
A319: bad 'htons' function address
A31A: bad 'bind' function address
A31B: bad 'listen' function address
A31C: bad 'accept' function address
A31D: bad 'inet_addr' function address
A31E: bad 'inet_ntoa' function address
A31F: bad 'recv' function address
A320: bad 'send' function address
A321: bad 'shutdown' function address
A322: bad 'wsacancelblockingcall' function address
A323: bad 'wsacleanup' function address
A324: bad 'wsagetlasterror' function address
A325: Free Windows socket dll error
A326: bad 'ioctlsocket' function address
A327: 'ioctlsocket' error
A328: 'select' error
A329: bad 'select' function address
A32A: time out while writing
A32B: time out while reading
A32C: bad 'gethostbyname' function address
A32D: 'gethostbyname' error

NRC's for the Named Pipe Network Type:

A401: Security description initialization error
A402: Security description update error
A403: Named pipe creation error
A404: Connection error
A405: Close error
A406: Disconnection error
A407: Write data error
A408: Write length error
A409: Read error
A40A: Open clients named pipe error

SSL Error Codes of the Monitor:

A501: Error Windows version
A502: Error loading Secur32.dll
A503: Error init security interface
A504: Bad pointer to CertFreeCertificateContext
A505: Bad pointer to CertFinfCertificateInStore
A506: Bad pointer to CertOpenStore
A507: Bad pointer to CertFindChainInStore
A508: Bad pointer to CertNameToStrA
A509: Bad pointer to CertGetIssuerCertificateFromStore
A50A: Bad pointer to CertGetCertificateChain
A50B: Bad pointer to CertVerifyCertificateChainPolicy
A50C: Bad pointer to CertFreeCertificateChain
A50D: Bad pointer to CryptFindOidInfo
A50E: Bad pointer to CerStrToNameA
A520: Internal error
A521: Incomplete message
A522: Error Context expired
A523: Error Renegotiate
A524: Error Init credentials
A525: Error Client handshake
A526: Error Server handshake
A527: Error Server send
A528: Error Server receive
A529: Error Client send
A52A: Error Client receive
A52B: Error Client disconnect
A52C: Error Server disconnect
A52D: Error Subject DN in remote server certificate not authorized
A52E: Error remote DN control file (SSL)
A52F: Error Subject DN in remote certificate not authorized

TCP/IP Return Codes (From Microsoft Documentation)

2714 Interrupted system call
Indicates that an interruptible function's process was interrupted by a signal that the process caught.

2719 Bad file number
Indicates that a socket or file descriptor parameter is invalid.

271D Permission denied
Indicates that the requested operation did not have the proper access permissions. This error may also indicate one or more of the following:

- The named file is not an ordinary file (acct()).
- The operation would cause the parent directory or process's information level to float such that it would no longer be dominated by the directory or process's sensitivity level.
- The requested file is not available for read or write access.
- The process is attempting to mount on a multilevel child directory.
- The value of the process ID argument matches the process ID of a child process of the calling process and the child process has successfully executed one of the exec functions (setpgid()).
- The function is trying to manipulate two files on two different file systems.

271E Bad address
Indicates that the requested address is in some way invalid, for example, out of bounds.

2726 Invalid argument
Indicates that an invalid argument was passed to the function (such as, the requested argument does not exist or is out of bounds or is not a regular file, or that the result would be invalid).
This error may also indicate one or more of the following:

- The requested socket is not accepting connections (accept()) or is already bound (bind()).
- The specified superblock had a bad magic number or a block size that was out of range (mount()).
- The requested parameter is a lock/unlock parameter, but the element to be locked is already locked/unlocked (plock()).
- The kernel has not been compiled with the QUOTA option (quota()).
- An attempt was made to to ignore or supply a handler for the SIGKILL, SIGSTOP, and SIGCONT signals (sigaction()).
- The requested device was not configured as a swap device or does not allow paging (swapon()).
- The requested device is not mounted or local (mount()).

2728 Too many open files
Indicates one or more of the following errors:
Too many file descriptors are open (exceeding OPEN_MAX).
No space remains in the mount table.
The attempt to attach a shared memory region exceeded the maximum number of attached regions allowed for any one process.

2733 Operation would block
Indicates one or more of the following errors:
The socket is marked nonblocking and no connections are waiting to be accepted.
The socket is marked nonblocking and connection cannot be immediately completed.
The file is locked and the function is instructed not to block when locking.
The socket is marked as non-blocking and no space is available for the specified function.

2734 Operation now in progress
Indicates that a lengthy operation on a non-blocking object is now in progress.

2735 Operation already in progress
Indicates that an operation was attempted on a non-blocking object for which an operation was already in progress.

2736 Socket operation on non-socket
Indicates that the specified socket parameter refers to a file, not a socket.

2737 Destination address required
Indicates that a required destination address was omitted from an operation on a socket.

2738 Message too long
Indicates that the message is too large to be sent all at once, as the socket requires.

2739 Protocol wrong type for socket
Indicates that the specified protocol does not support the requested type of socket.

273A Option not supported by protocol
Indicates that the requested socket option is unknown and the protocol is unavailable.

273B Protocol not supported
Indicates that either the socket or the protocol is not supported.

273C Socket type not supported
Indicates that the socket type is not supported.

273D Operation not supported on socket
Indicates either that the socket does not support the requested operation, or that the socket cannot accept the connection.

273E Protocol family not supported
Indicates that the selected protocol family is unconfigured or unimplemented.

273F Address family not supported by protocol family
Indicates that the addresses in the specified address family are not supported by the protocol family.

2740 Address already in use
Indicates that the specified address is already in use.

2741 Can’t assign requested address
Indicates that the specified address is not available from the local machine.

2742 Network is down
Indicates that a socket operation has encountered a network that is down.
This error may be reported at any time if the Windows Sockets implementation detects an underlying failure.

2743 Network is unreachable
Indicates that no route to the network or host exists.

2744 Network dropped connection on reset
Indicates that the network connection dropped when the remote host reset it by rebooting.

2745 Software caused connection abort
Indicates that the software caused a connection abort because there is no space on the socket's queue and the socket cannot receive further connections.

2746 Connection reset by peer
Indicates that a connection was forcibly reset (closed) by a peer. The situation normally results when a timeout or a reboot causes the loss of the connection on the remote socket.

2747 No buffer space available
Indicates insufficient resources, such as buffers, to complete the call. Typically, a call used with sockets has failed due to a shortage of message or send/receive buffer space.

2748 Socket is already connected
Indicates that the socket is already connected.

2749 Socket is not connected
Indicates that the socket is not connected.

274A Can't send after socket shutdown
Indicates that data cannot be sent to a socket because it has been shut down.

274B Too many references; can't splice
Indicates that there are too many references to some kernel-level object. The associated resource has presumably run out.

274C Connection timed out
Indicates one or more of the following errors:
The requested attempt at a connection timed out before a connection was established.
For NFS files that are mounted with the soft option, either the server is down or there is a network problem.

274D Connection refused
Indicates that the connection request was refused.
274E Too many levels of symbolic links
Indicates that too many links were encountered in translating a path-name.

274F File name too long
Indicates that the pathname argument exceeds PATH_MAX (currently 1024), or a pathname component exceeds NAME_MAX (255).

2750 Host is down
Indicates that a socket operation failed because the destination host was down.

2751 Host is unreachable
Indicates that a socket operation failed because no route could be found to the host.

276B Subsystem unusable
Indicates that the network subsystem is unusable.

276C Version not supported
Indicates that the Windows Sockets DLL cannot support this application.

276D Not initialized
Indicates that a successful initialization has not yet been performed.
2AF9 The name you have used is not an official host name or alias; this is not a soft error, another type of name server request may be successful.

2AFA Operation would block
Indicates that the requested resource, such as a lock or a process, is temporarily unavailable. This error may also indicate one or both of the following:
If the O_NONBLOCK flag is set for the requested function, the process would be delayed in a read or write operation.
The specified time has elapsed (pthread_cond_timedwait()).

2AFC No message on stream head read queue.
Indicates that is no message on the stream head read queue.

SNA LU6.2 Return Codes (From Microsoft Documentation)

The LU6.2 error codes are displayed in the following format (XXXX YYYYYYYY) where:

'XXXX' is the PRIMARY RETURN CODE
'YYYYYYYY' is the SECONDARY RETURN CODE.

PRIMARY RETURN CODES

0001 The verb did not execute because of a parameter error.

0002 The verb did not execute because it was issued in an invalid state.

0003 APPC has failed to allocate a conversation. The conversation state is set to RESET. This code may be returned through a verb issued after [MC_]ALLOCATE.

0005 The conversation has been deallocated for one of the following reasons:

- The partner TP issued MC_DEALLOCATE with dealloc_type set to AP_ABEND.
- The partner TP encountered an ABEND, causing the partner LU to send an MC_DEALLOCATE request.

0006 The conversation has been deallocated for one of the following reasons:

- The partner TP has issued DEALLOCATE with dealloc_type set to AP_ABEND_PROG.
- The partner TP has encountered an ABEND, causing the partner LU to send a DEALLOCATE request.

0007 The conversation has been deallocated because the partner TP issued DEALLOCATE with dealloc_type set to AP_ABEND_SVC.

0008 The conversation has been deallocated because the partner TP issued DEALLOCATE with dealloc_type set to AP_ABEND_TIMER.

0009 The partner TP has deallocated the conversation without requesting confirmation.

000C The partner TP has issued one of the following verbs while the conversation was in SEND state:

- SEND_ERROR with err_type set to AP_PROG
- MC_SEND_ERROR
- Data was not truncated.

000F The conversation was terminated because of a temporary error. Restart the TP to see if the problem occurs again. If it does, the system administrator should examine the error log to determine the cause of the error.

0010 The conversation was terminated because of a permanent condition, such as a session protocol error.

The system administrator should examine the system error log to determine the cause of the error.

Do not retry the conversation until the error has been corrected.

0011 While in SEND state, the partner TP (or partner LU) issued SEND_ERROR with err_type set to AP_SVC. Data was not truncated.

0012 In SEND state, after sending an incomplete logical record, the partner TP issued SEND_ERROR. The local TP may have received the first part of the logical record.

0013 The partner TP (or partner LU) issued SEND_ERROR with err_type set to AP_SVC while in RECEIVE, PENDING_POST (Windows NT and OS/2 only), CONFIRM, CONFIRM_SEND, or CONFIRM_DEALLOCATE state. Data sent to the partner TP may have been purged.

0014 No data is immediately available from the partner TP.

0017 APPC is currently processing a CNOS verb issued by a local LU.

0018 The partner LU rejected a CNOS request from the local LU:

0019 The TP has issued both Basic and Mapped conversation verbs. Only one type can be issued in a single conversation.

0021 The local TP issued one of the following verbs, which cancelled [MC_]RECEIVE_AND_POST:

- DEALLOCATE with dealloc_type set to AP_ABEND_PROG, AP_ABEND_SVC, or AP_ABEND_TIMER
- MC_DEALLOCATE with dealloc_type set to AP_ABEND
- [MC_]SEND_ERROR
- TP_ENDED

Issuing one of these verbs causes the semaphore to be cleared.

F002 The local TP has issued a call to APPC while APPC was processing another call for the same TP. This may occur if the local TP has multiple threads, and more than one thread is issuing APPC calls using the same tp_id.

F003 Indicates one of the following conditions:

- The node used by this conversation encountered an ABEND.
- The connection between the TP and the PU 2.1 node has been broken (a LAN error).
- The SnaBase at the TP's computer encountered an ABEND.
- The system administrator should examine the error log to determine the reason for the ABEND.

F004 A required component could not be loaded or has terminated while processing the verb. Thus, communication could not take place. Contact the system administrator for corrective action.

F005 There can only be one outstanding conversation verb at a time on any conversation.
F006 The calling thread is already in a blocking call.
F008 The VCB extended beyond the end of the data segment.
F011 The operating system has returned an error to APPC while processing an APPC call from the local TP. The operating system return code is returned through the secondary_rc. It appears in Intel byte-swapped order. If the problem persists, consult the system administrator.

F015 The stack size of the application is too small to execute the verb. Increase the stack size of your application.

F020 The supplied key was incorrect.

SECONDARY RETURN CODES

00000001 The value of tp_id did not match a TP identifier assigned by APPC.

00000002 The value of conv_id did not match a conversation identifier assigned by APPC.

00000003 Secondary return code; APPC cannot find the specified lu_alias among those defined.

00000004 The conversation cannot be allocated because of a permanent condition, such as a configuration error or session protocol error. To determine the error, the system administrator should examine the error log file. Do not retry the allocation until the error has been corrected.

00000005 The conversation could not be allocated because of a temporary condition, such as a link failure. The reason for the failure is logged in the system error log. Retry the allocation.

00000006 The PIP data was longer than the allocated data segment, or the address of the PIP data buffer was wrong.

00000007 APPC accepts the session limits and responsibility as negotiable by the partner LU.

Values that can be negotiated are:

- plu_mode_session_limit
- min_conwinners_source
- min_conwinners_target
- responsible
- drain_target

00000011 The value specified for conv_type was invalid.

00000012 The value specified for sync_level was invalid.

00000013 The value specified for security was invalid.

00000014 The value specified for rtn_ctl was invalid.

00000016 The value of pip_dlen was greater than 32,767.

00000017 SNASVCMG is not a valid value for mode_name.

00000018 The value specified for mode_name was invalid.

00000031 The local TP attempted to use [MC_]CONFIRM in a conversation with a synchronization level of AP_NONE. The synchronization level, established by [MC_]ALLOCATE, must be AP_CONFIRM_SYNC_LEVEL.

00000032 The conversation was not in SEND state.

00000033 The conversation for the local TP was in SEND state, and the local TP did not finish sending a logical record.

00000051 The dealloc_type parameter was not set to a valid value.

00000053 The conversation was not in SEND state, and the TP attempted to flush the send buffer and send a confirmation request.

00000055 The conversation was in SEND state, and the TP did not finish sending a logical record. The dealloc_type parameter was set to AP_SYNC_LEVEL or AP_FLUSH.

00000057 The LL field of the GDS error log variable did not match the actual length of the log data.

00000061 The conversation was not in SEND state.

000000A1 The ptr_type parameter was not set to a valid value.

000000A2 The local TP did not finish sending a logical record.

000000A3 The conversation was not in SEND state.

000000B1 The conversation was not in RECEIVE or SEND state when the TP issued this verb.

000000B2 The conversation was in SEND state; the TP began but did not finish sending a logical record.

000000B5 The fill parameter was set to an invalid value.

000000C1 The conversation was not in RECEIVE state.

000000C4 The fill parameter was set to an invalid value.

000000D1 The conversation was not in RECEIVE or SEND state when the TP issued this verb.

000000D2 The conversation was in SEND state; the TP began but did not finish sending a logical record.

000000D5 The fill parameter was set to an invalid value.

000000D6 The address of the RAM semaphore or system semaphore handle was invalid.

000000D7 The specified rtn_status value was not recognized by APPC.

000000E1 The conversation is not in an allowed state when the TP issued this verb.

000000F1 The logical record length field of a logical record contained an invalid value—X’0000’, X’0001’, X’8000’, or X’8001’.

000000F2 The local TP issued [MC_]SEND_DATA, but the conversation was not in SEND state.

000000F5 The type CONFIRM is not permitted for a conversation that was allocated with a sync_level of NONE.

000000F6 The TP started but did not finish sending a logical record. This occurs only when type is one of the following:

AP_SEND_DATA_CONFIRM

AP_SEND_DATA_DEALLOC_FLUSH

AP_SEND_DATA_DEALLOC_SYNC_LEVEL

AP_SEND_DATA_P_TO_R_FLUSH

AP_SEND_DATA_P_TO_R_SYNC_LEVEL

00000102 The LL field of the error log GDS variable did not match the actual length of the data.

00000103 The value of err_type was invalid.

00000105 The specified err_dir was not recognized by APPC.

00000150 APPC does not permit a program to change the session limit for a mode other than SNASVCMG mode for the implicit partner template when the template specifies parallel sessions. (The term template is used because many of the actual values are yet to be filled in).

00000151 APPC does not permit setting session limits to a nonzero value unless the limits currently are 0.

00000152 On the CNOS verb, the value for auto_activate is greater than the value for partner_lu_mode_session_limit.

00000153 APPC does not permit a nonzero session limit when mode_name_select indicates ALL.

00000154 Your program specified invalid settings for the partner_lu_mode_session _limit, min_conwinners_source, or min_conwinners_target parameters when mode_name was supplied.

00000155 The sum of min_conwinners_source and min_conwinners_target specifies a number greater than partner_lu_mode_session_limit.

00000156 The local LU cannot negotiate a nonzero session limit because the local maximum session limit at the partner LU is 0.

00000157 The partner LU does not recognize the specified mode name.

00000159 The SNASVCMG mode does not support the drain parameter values.

0000015A For a single-session CNOS verb, APPC permits only the local (source) LU to be responsible for deactivating sessions.

0000015B APPC did not recognize the supplied partner_lu_alias.

0000015C Your program issued a CNOS verb, specifying a partner_lu_mode _session_limit number and set_negotiable (NO).

0000015D APPC does not permit mode_name_select (ONE) and drain_source (YES) when drain_source (NO) is currently in effect for the specified mode.

0000015E A command has reset the definition of the local LU before the CNOS verb tried to specify the LU.

0000015F The local LU is currently processing a CNOS verb issued by the partner LU.

00000167 Your local program attempted to issue the CNOS verbs for the mode named SNASVCMG, specifying a session limit of 0.

000001B4 The returned DISPLAY information did not fit in the buffer.

000001B5 The value supplied for NUM_SECTIONS or INIT_SEC_LEN is invalid.

00000506 Secondary return code; in the configuration file for your application, APPC could not find an invokable TP name matching the value of tp_name.

00000509 APPC did not find an incoming allocate (from the invoking TP) to match the value of tp_name, supplied by RECEIVE_ALLOCATE. RECEIVE_ALLOCATE waited for the incoming allocate and eventually timed out.

00000519 The mode named CPSVCMG cannot be specified as the mode_name on the DEACTIVATE_SESSION verb.

00000525 The process issuing RECEIVE_ALLOCATE was different from the one started by APPC.

080F6051 The user ID or password specified in the allocation request was not accepted by the partner LU.

084B6031 The remote LU rejected the allocation request because it was unable to start the requested partner TP. The condition may be temporary, such as a time-out. The reason for the error may be logged on the remote node. Retry the allocation.

084C0000 The remote LU rejected the allocation request because it was unable to start the requested partner TP. The condition is permanent. The reason for the error may be logged on the remote node. Do not retry the allocation until the error has been corrected.

10086021 The partner LU does not recognize the TP name specified in the allocation request.

10086031 The allocation request specified PIP data, but either the partner TP does not require this data, or the partner LU does not support it.

10086032 The partner TP requires PIP data, but the allocation request specified either no PIP data or an incorrect number of parameters.

10086034 The partner LU or TP does not support the conversation type (Basic or Mapped) specified in the allocation request.

10086041 The partner TP does not support the sync_level (AP_NONE or AP_CONFIRM_SYNC_LEVEL) specified in the allocation request, or the sync_level was not recognized.

X.25 Return Codes (From EICON Documentation)

The X.25 error codes are displayed in the following format (XXXX – CAUSE=YY DIAG=ZZ) where:
'XXXX' is the EICON RETURN CODE
'YY' is the cause code from the X.25 packet switched network used
'ZZ' is the diagnostic code from the X.25 packet switched network used

EICON codes from the EICON documentation

0001 /* Invalid buffer length */
0003 /* Invalid command */
0005 /* Command timeout */
0006 /* Incomplete message */
0008 /* Invalid local session number */
0009 /* No circuit available */
000A /* Call cleared */
000B /* Command cancelled */
000D /* PU name exist */
000E /* PU name table full */
0011 /* Session table full */
0012 /* Unsuccessful call */
0014 /* Protocol name not found */
0016 /* Circuit in use */
0017 /* PU name not found */
0018 /* Session reset */
0019 /* Trace not started */
001A /* Insufficient memory */
0021 /* Too many outstanding commands */
0022 /* Too many outstanding commands */
0023 /* Bad port number */
0025 /* No number to dial */
0040 /* No dial tone */
0050 /* Modem test failed */
0090 /* Modem not ready */
0091 /* Modem not ready (no DSR) */
0092 /* Modem not ready (no CTS) */
0093 /* Modem not ready (no clock) */
0094 /* Remote line busy */
0095 /* Remote not answering */
0096 /* No line available */
0099 /* Modem in use */
009E /* Bad phone number syntax */
009F /* Modem initialized */
00A0 /* Link level not ready */
00B0 /* Packet level not ready */
00B2 /* Restart indication received */

00C0 /* Transport connection cleared remotely */
00C1 /* Transport connection cleared locally */
00C2 /* Timeout occurred on CR or DR */
00C3 /* X.25 network connection cleared */
00C4 /* X.25 network reset */
00C5 /* Transport connection refused by remote */
00C6 /* CR sent by remote site not acceptable */
00CF /* Not enough memory to start transport layer */
00F8 /* Submit request again */
00F9 /* EiconCard snapshot */
00FA /* EiconCard snarked */
00FB /* EiconCard error */
00FC /* EiconCard not loaded */
00FD /* EiconCard halted */
00FE /* EiconCard driver not installed */
00FF /* Command not completed */
0100 /* Library not initialized */
0101 /* Library error */
0102 /* No more memory available or request bigger than MAXSHORT */
0103 /* Bad DTE address */
0104 /* Interrupted operation */
0105 /* Buffer in use */
0106 /* Connection not established */
0107 /* Bad facility length */
0108 /* Done command timed-out */
0109 /* Invalid connection number */
010A /* No pending request */
010B /* Invalid toolkit initialization */
010C /* Invalid gateway name */
010D /* Invalid NULL pointer address */
010E /* Invalid Toolkit User option */

CLEARING CAUSES

00h	DTE originated call
01h	Number busy
03h	Invalid facility request
05h	Network congestion
09h	Out-of-order
0Bh	Access barred
0Dh	Not obtainable
11h	Remote procedure error
13h	Local procedure error
15h	RPOA out of order
19h	Reverse charging not subscribed to
21h	Incompatible destination
29h	Fast Select acceptance not subscribed to
39h	Ship absent (for mobile maritime service)

RESETTING CAUSES

00h	DTE originated call
01h	Out of order (PVC only)
03h	Remote procedure error
05h	Local procedure error
07h	Network congestion
09h	Remote DTE operational (PVC only)
0Fh	Network operational (PVC only)
11h	Incompatible destination
1Dh	Network out of order (PVC only)

RESTARTING CAUSES

00h	DTE originated call
01h	Local procedure error
D7h	Network operational

Cause codes above 80h are network-specific.

DIAGNOSTICS

00h NO ADDITIONAL INFORMATION

01h Invalid P(S)

02h Invalid P®

10h PACKET TYPE INVALID

11h For state r1

12h For state r2

13h For state r3

14h For state p1

15h For state p2

16h For state p3

17h For state p4

18h For state p5

19h For state p6

1Ah For state p7

1Bh For state d1

1Ch For state d2

1Dh For state d3

20h PACKET NOT ALLOWED

21h Unidentifiable packet

22h Call on one way logical channel

23h Invalid packet type on a PVC

24h Packet on unassigned LCN

25h Reject not subscribed to

26h Packet too short

27h Packet too long

28h Invalid GFI (General Format Identifier)

29h Restart with non-zero GFI

2Ah Packet type not compatible with facility

2Bh Unauthorized interrupt confirmation

2Ch Unauthorized interrupt

2Dh Unauthorized reject

30h TIMER EXPIRED

31h For incoming call

32h For clear indication

33h For reset indication

34h For restart indication

40h CALL SET-UP, CALL CLEARING OR REGISTRATION PROBLEM

41h Facility/registration code not allowed

42h Facility parameter not allowed

43h Invalid called address

44h Invalid calling address

45h Invalid facility/registration length

46h Incoming call barred

47h No logical channel available

48h Call collision

49h Duplicate facility requested

4Ah Non-zero address length

4Bh Non-zero facility length

4Ch Facility not provided when expected

4Dh Invalid CCITT-specified DTE facility

50h MISCELLANEOUS

51h Improper cause code from DTE

52h Non-aligned byte (octet)

53h Inconsistent Q-bit setting

70h INTERNATIONAL PROBLEM

71h Remote network problem

72h International protocol problem

73h International link out of order

74h International link busy

75h Transit network facility problem

76h Remote network facility problem

77h International routing problem

78h Temporary routing problem

79h Unknown called DNIC

7Ah Maintenance action

Diagnostic codes above 80h are network-specific.*

C-TREE Return Codes (From FAIRCOM Documentation)

2 /* Key value already exists */
3 /* Could not delete since pntr's don't match */
4 /* Could not find key to delete */
5 /* Cannot call delete w/o verification with duplicate keys */
6 /* c-tree(...) jump table error */
7 /* Terminate user */
8 /* sysiocod value when FNOP_ERR caused by conflicting open requests (server) */
9 /* sysiocod value when FNOP_ERR, DCRAT_ERR or KCRAT_ERR caused by device access error */
10 /* INTREE parameters require too much space */
11 /* Bad INTREE parameters */
12 /* Could not open file: not there or locked */
13 /* Unknown file type */
14 /* File corrupt at open */
15 /* File has been compacted */
16 /* Could not create index file */
17 /* Could not create data file */
18 /* Tried to create existing index file */
19 /* Tried to create existing data file */
20 /* Key length too large for node size */
21 /* Record length too small */
22 /* File number out of range */
23 /* Illegal index member info */
24 /* Could not close file */
25 /* Bad link in deleted node list. REBUILD */
26 /* File number not active */
27 /* drn before beginning of data records */
28 /* Zero drn in ADDKEY */
29 /* Zero drn in data file routine */
30 /* drn exceeds logical end of file */
31 /* Flag not set on record in delete chain */
32 /* Attempt to delete record twice in a row */
33 /* Attempt to use NULL ptr in read/write */
34 /* Predecessor repeat attempts exhausted */
35 /* Seek error: check sysiocod value */
36 /* Read error: check sysiocod error */
37 /* Write error: check sysiocod error */
38 /* Could not convert virtual open to actual */
39 /* No more records availble */
40 /* Index node size too large */

41 /* Could not unlock data record */
42 /* Could not obtain data record lock */
43 /* Version incompatibility */
44 /* Data file serial number overflow */
45 /* Key length exceeds MAXLEN parameter */
46 /* File number already in use */
47 /* c-tree has not been initialized */
48 /* Operation incompatible with type of file */
49 /* Could not save file */
50 /* Could not lock node */
51 /* Could not unlock node */
52 /* Variable length keys disabled OR invalid key type */
53 /* File mode inconsistent with c-tree config */
54 /* Attempt to write a read only file */
55 /* File deletion failed */
56 /* File must be opened exclusive for delete */
57 /* Proper lock is not held (CHECKLOCK/READ) */
58 /* LOADKEY called with incorrect key number. You cannot continue */
59 /* LOADKEY called with key out of order You may skip this key & continue */
60 /* Percent out of range */
61 /* NULL fcb detected during I/O */
62 /* File must be opened exclusively */
63 /* Start file / log file serial number error */
64 /* Checkpoint past end of log file */
65 /* Not enough memory during tran processing */
66 /* Log file entry failed to find checkpoint */
67 /* Could not rename file */
68 /* Could not allocate memory for control list */
69 /* Node does not belong to index */
70 /* Transaction already pending */
71 /* No active transaction */
72 /* No space for shadow buffer */
73 /* LOGFIL encountered during shadow only */
74 /* Recovery: two active tran for user */
75 /* Recovery: bad tran owner */
76 /* Recovery: bad tran type */
77 /* Recovery: file name too long */
78 /* Transaction abandoned: too many log extents or dynamic dump wait exhausted */
79 /* Could not log file opn/cre/cls/del */
80 /* NULL target or bad keyno */
81 /* Transaction allocation error */
82 /* User allocation error */
83 /* ISAM allocation error */
84 /* Maximum users exceeded */
85 /* Reduce lock to read lock after update */
86 /* Dead lock detected */
87 /* System not quiet: files in use */

88 /* Linked list memory allocation error */
89 /* Memory allocation during tran processing */
90 /* Could not create queue */
91 /* Queue write error */
92 /* Queue memory error during write */
93 /* Queue read error */
94 /* Pending error: cannot save or commit tran */
95 /* Could not start task */
96 /* Start-file/log open error */
97 /* Bad user handle */
98 /* Bad transaction mode */
99 /* Transaction type / filmod conflict */
100 /* No current record for isam datno */
101 /* Could not find isam keyno request */
102 /* Could not open ISAM parameter file */
103 /* Could not read first 5 parameters in ISAM parameter file */
104 /* Too many files in ISAM parameter file */
105 /* Could noy undo ISAM update. Rebuild Files */
106 /* Could not read data file record in ISAM parameter file */
107 /* Too many keys for data file in ISAM parameter file */
108 /* Incorrect keyno for index member in parameter file */
109 /* Too many key segments defined in ISAM parameter file */
110 /* Could not read segment record in ISAM parameter file */
111 /* Could not read index file record in ISAM parameter file */
112 /* LKISAM(ENABLE) found pending locks */
113 /* No memory for user lock table */
114 /* 1st byte of data record equals delete flag or bad variable length record mark */
115 /* Key segments do not match key length */
116 /* Bad mode parameter */
117 /* Could not read index member record */
118 /* NXTSET called before FRSSET for keyno */
119 /* FRSSET called for index with wrong keytyp */
120 /* Data record length exceeds rebuild max */
121 /* Tried to update data with ctISAMKBUFhdr on */
122 /* Attempt to change fixed vs variable len */
123 /* Var length header has bad record mark */
124 /* # of indices does not match (OPNIFIL) */
125 /* c-tree already initialized */
126 /* Bad directory path get */
127 /* Could not send request */
128 /* Could not receive answer */
129 /* c-tree not initialized */
130 /* Null file name pointer in OPNFIL */
131 /* File name length exceeds msg size */
132 /* No room for application message buffer */
133 /* Server is not active */
134 /* Could not get servers message id */

```
135     /* Could not allocate application id */
136     /* Could not get application msg status */
137     /* Could not set message appl msg size */
138     /* Could not get rid of application msg */
139     /* Badly formed file name */
140     /* Variable record length too long */
141     /* Required message size exceeds maximum */
142     /* Application MAXLEN > server's MAXLEN */
143     /* Communications handler not installed */
144     /* Application could not id output queue */
145     /* Could not find COMM software */
146     /* Could not update free space info */
147     /* Space to be reused is not marked deleted */
148     /* WRTVREC cannot fit record at recbyt */
149     /* Varlen less than minimum in ADDVREC */
150     /* Server is shutting down */
151     /* Could not shut down. transactions pending */
152     /* Could not extend logfile */
153     /* Buffer too small */
154     /* Zero length record in REDVREC */
155     /* Native system failure */
156     /* timeout error */
158     /* REDVREC record not marked active */
159     /* Zero recbyt value */
160     /* Multi-user interefernce: index information updated by the time user got to actual data
  record */
161     /* User appears inactive */
162     /* Server has gone away */
163     /* No more room in server lock table */
164     /* File number out of range */
165     /* No file control block available */
166     /* No more ct file control blocks in server */
167     /* Could not read request */
168     /* Could not send answer */
169     /* Create file already opened (in recovery) */
170     /* Bad function number */
171     /* Application msg size exceeds server size */
172     /* Could not allocate server msg buffer */
173     /* Could not identify server */
174     /* Could not get server message id */
175     /* Server could not allocate user msg area */
176     /* Could not get server msg status */
177     /* Could not set message server msg size */
178     /* Unexpected file# assigned to [si] in rcv */
179     /* Server is at full user capacity */
180     /* Could not read symbolic key name */
181     /* Could not get mem for key symb name */
```

```
182  /* No room for sort key. increase MAXFIL */
183  /* Could not read file field number values */
184  /* Attempt to reallocate set space */
185  /* Not enough memory for addt'l sets-batches */
186  /* Set number out of range */
187  /* Null buffer in rtread.c */
188  /* Null target buffer in rtread.c */
189  /* Join_to skip */
190  /* Join_to error */
191  /* Join_to null fill */
192  /* Detail_for skip */
193  /* Detail_for error */
194  /* Detail_for null fill */
195  /* Could not get mem for dat symb name */
196  /* Exceeded RETRY_LIMIT in RTREAD.C */
197  /* Could net get memory for ifil block */
198  /* Improper ifil block */
199  /* Schema not defined for data file */
400  /* Resource already enabled */
401  /* Resources not enabled */
402  /* File must be exclusive to enable res*/
403  /* Empty resource id */
404  /* Output buffer to small */
405  /* Resource id already added */
406  /* Bad resource search mode */
407  /* Attempt to get non-resource info */
408  /* Resource not found */
409  /* Not in use: available */
410  /* User not active */
411  /* Not a superfile */
412  /* WRL to WXL commit promote pending(CIL) */
413  /* Superfile host not opened */
414  /* Cannot nest superfiles */
415  /* Illegal ADDKEY to superfile */
416  /* Illegal DELBLD to superfile */
417  /* Cache page size error */
418  /* Max name inconsistency */
419  /* Host superfile does not support recovery */
420  /* Key update with pending transaction */
421  /* Filter not supported yet */
422  /* Other functions not sup */
423  /* Incomplete */
424  /* Add list err */
425  /* Batch in progress */
426  /* No batch active */
427  /* Status info already returned */
428  /* No more info, batch cancelled */
```

429 /* Bufsiz too small for record */
430 /* Request is empty or inconsistent */
431 /* Aggregate/serialization lock denied */
432 /* Fixed length string requires len in DODA */
433 /* Segment def inconsistent with schema */
434 /* Very long def block not supported */
435 /* File def memory error */
436 /* Bad def number */
437 /* defptr NULL during GETDEFBLK */
438 /* Requested def blk is empty */
439 /* No conversion routine for Definition Block */
440 /* Dynamic dump already in progress */
441 /* No memory for dynamic dump file buffer */
442 /* One or more files not available for dump */
443 /* File length discrepancy */
444 /* Could not create file during dump rcv */
445 /* Not enough data to assemble key value */
446 /* Bad key segment mode */
447 /* Only the file's owner can perform op */
448 /* Permission to set file definition denied */
449 /* ADMIN has opened file. Cannot delete file */
450 /* Invalid user id */
451 /* Invalid password */
452 /* Server could not process user/acct info */
453 /* No such server */
454 /* Service not supported */
455 /* User does not belong to group */
456 /* Group access denied */
457 /* File password invalid */
458 /* Write permission not granted */
459 /* File delete permission denied */
460 /* Resource not enabled */
461 /* Bad permission flag */
462 /* No directory found in superfile */
463 /* File id uniqueness error */
464 /* ISAM level logon not performed */
465 /* Incremental Index: dnumidx < 1 */
466 /* Incremental Index: dfilno not a ISAM file */
467 /* Incremental Index: aidxnam NULL for 1st */
468 /* Incremental Index: active tran not allowed */
469 /* Negative I/O request */
470 /* Guest logons disabled */
471 = error deleting sortwork file
472 = error creating unique name
473 = error opening first dummy file
474 = too few handles available min 3
475 = error closing dummy file

476 = error unlinking dummy file
477 = error getting first data area
478 = sinit phase not previously performed-srelease
479 = sreturn phase already started
480 = no records in data buffers
481 = sint phase not previously performed-sreturn
482 = not enough memory
483 = no valid record pointers in merge buffers
484 = error opening sortwork file
485 = error creating sortwork.00x file
486 = no records fit in output buffer
487 = error reading sortwork file
488 = bytes in buf <> merge buf size
489 = error adjusting file pointer
490 = error closing sortwork.00x
491 = error closing sortwork file
492 = error deleting sortwork file
493 = error renaming sortwork.00x
494 = error closing output file
495 = error creating output file
496 = insufficient disk space
498 /* Old log file found during log create */
499 /* Mismatch between recv log & file id */
500 /* Server could not init SQL engine */
501 /* Could not init SQL for a user */
502 /* Could not access SQL master info */
503 /* Could not continue SQL request */
504 /* Server does not support SQL */
505 /* User profile does not enable SQL */
506 /* Could open save-restore file */
507 /* Could not process save-restore file */
508 /* Save restore inconsistency */
509 /* Duplicate server */
510 /* Active chkpnt at start of roll-forward */
511 /* Index nodes form illegal loop: rebuild */
512 /* Data file loop detected */
513 /* FPUTFGET does not support CTSBLDX () */
514 /* Queue has been closed */
515 /* Cannot convert old IFIL structure */
516 /* ctNOGLOBALS not allocated */
517 /* ‘regid’ is not registered */
518 /* ‘regid’ is already registered */
519 /* index logical EOF error */
520 /* Attempt to update index with inconsistent tran# */
521 /* Could not allocate memory for the streettalk login message buffer */
522 /* Userid in INTISAM does not match current login id */
530 /* client does not match server */

531 /* index reorg entry error */
532 /* TRANSAV called with AUTOSAVE on */
533 /* file header high-water-mark overflow*/
534 /* transaction # overflow */
535 /* ctree not registered. Call REGCTREE*/
541 /* transaction log cannot be written */
542 /* could not create mirror file */
543 /* could not open mirror file */
544 /* could not close mirror file */
545 /* could not delete mirror file */
546 /* could not write to mirror file */
547 /* could not save mirror file */
548 /* could not read from mirror */
549 /* mismatch between mirror headers */
550 /* attempt to open primary w/o mirror*/
551 /* file already opened without mirror */
555 /* could not read primary, switching */
556 /* could not write primary, switching */
557 /* could not write mirror,suspend mir */
558 /* could not save primary, switching */
559 /* could not save mirror, suspend mir */
560 /* only one of each monitor at a time */
561 /* SYSMON: dynamic dump begins */
562 /* SYSMON: dynamic dump ends */
563 /* SYSMON: dynamic dump ends (errors) */
570 /* incomplete compression */
571 /* index rebuild required */
572 /* incomplete compression & index re-build required */
573 /* primary\mirror out-of-sync. Copy good file over bad.*/
574 /* incomplete compression & primary\mirror out-of-sync*/
575 /* index rebuild required & primary/mirror out-of-sync*/
576 /* incomplete compression & index rebuild required & primary\mirror out-of-sync */
590 /* could not find ISAM context ID */
591 /* old context ID. Call CLSICON() */
592 /* context ID exists */
595 /* varlen too small in PUTCIDX */
596 /* missing information */
597 /* could not initialize expression */
598 /* could not evalutate condtional exp */
600 /* no more client threads */
601 /* ctVERIFY detected problems with idx*/
602 /* no memory for system lock table */
610 /* CTHIST target==NULL */
611 /* CTHIST could not access log */
612 /* CTHIST must be called with ctHISTfirst*/
613 /* CTHIST can only access data or index */
614 /* CTHIST could not map from indx to data*/

615 /* cannot get index info from data filno */
616 /* CTHIST cannot be called during a tran */
617 /* did not find target */
618 /* log scan terminated: EOF or bad entry */
619 /* CTHIST on data file: recbyt==0 */
620 /* bufsiz too small */
621 /* transaction type not expected */
622 /* must reset CTHIST first */
623 /* not enough memory for CTHIST */
624 /* net change only applies to specific match of key or record position */
625 /* must specify exactly one matching criteria (user & node may be combined)*/
626 /* encountered an UNDTRAN going forward: must completely restart this CTHIST sequence */
627 /* unknown type of request */
628 /* must specify filno */
629 /* could net initialize internal file ID */

0001: API already initialized
0002: Named Pipe I/O error
0003: Invalid message received
0004: Rejected by the monitor
0005: API not initialized
0006: Invalid link type
0007: TCP/IP I/O error
0008: API version unknown
0009: Invalid resource code
000A: Invalid list address
000B: Invalid command
000C: Initialization file I/O error
000D: Invalid password
000E: Client not authorized
000F: Client unknown
0010: Memory allocation error
0011: Memory lock error
0012: Too many simultaneous connections
0013: Bad connection ID
0014: Authorization information not found or invalid
0015: Monitor type not authorized

Fields identifiers

01 CRC USE
02 DIAGNOSTIC
03 REQUESTER ID
04 SERVER ID
05 ACCESS CONTROL
06 VERSION NUMBER
07 SYNCHRONIZATION OPTION
09 FILE ID
11 FILE TYPE
12 FILE NAME
13 TRANSFER ID
14 REQUESTED ATTRIBUTES
15 TRANSFER RETRY FLAG
16 DATA CODE
17 TRANSFER PRIORITY
18 RESTART POINT
19 END OF TRANSFER CODE
20 NUMBER OF SYNCHRONIZATION POINTS
21 COMPRESSION
22 ACCESS TYPE
23 RESYNCHRONIZATION
25 MAXIMUM SIZE OF THE DATA ENTITY
26 MONITORING TIMER
27 NUMBER OF DATA BYTES
28 NUMBER OF ARTICLES
29 DIAGNOSTIC COMPLEMENT
30 LOGICAL ATTRIBUTES
31 RECORD FORMAT
32 RECORD LENGTH
33 FILE ORGANIZATION
34 SIGNATURE INDICATOR
36 SIT DATA DIGEST
37 FILE LABEL
38 KEY LENGTH
39 KEY OFFSET
40 PHYSICAL ATTRIBUTES
41 SPACE ALLOCATION UNIT
42 MAXIMUM VALUE OF SPACE ALLOCATION
50 HISTORICAL ATTRIBUTES
51 CREATION DATE AND TIME
52 LAST EXTRACTION DATE AND TIME
61 CUSTOMER IDENTIFICATION (INITIAL SENDER)

62 BANK IDENTIFICATION (FINAL RECEIVER)
63 FILE ACCESS CONTROL
64 SERVER DATE AND TIME
71 AUTHENTICATION TYPE
72 ELEMENTS OF AUTHENTICATION
73 TYPE OF DATA DIGEST
74 ELEMENTS OF DATA DIGEST
75 TYPE OF ENCRYPTION
77 TYPE OF SIGNATURE
78 DATA DIGEST
79 SIGNATURE
80 ACCREDITATION
81 NOTIFICATION OF SIGNATURE RECEPTION
82 SECOND SIGNATURE
91 MESSAGE
92 FREE FIELD

Command identifiers

00 FPDU.DTF
01 FPDU.READ
02 FPDU.WRITE
03 FPDU.SYN
04 FPDU.DTF.END
05 FPDU.RESYN
06 FPDU.IDT
08 FPDU.TRANS.END
11 FPDU.CREATE
12 FPDU.SELECT
13 FPDU.DESELECT
14 FPDU.ORF
15 FPDU.CRF
16 FPDU.MSG
17 FPDU.MSGDM
18 FPDU.MSGMM
20 FPDU.CONNECT
21 FPDU.ACONNECT
22 FPDU.RCONNECT
23 FPDU.RELEASE
24 FPDU.RELCONF
25 FPDU.ABORT
30 FPDU.ACK(CREATE)
31 FPDU.ACK(SELECT)
32 FPDU.ACK(DESELECT)
33 FPDU.ACK(ORF)
34 FPDU.ACK(CRF)
35 FPDU.ACK(READ)

36 FPDU.ACK(WRITE)
37 FPDU.ACK(TRANS.END)
38 FPDU.ACK(SYN)
39 FPDU.ACK(RESYN)
3A FPDU.ACK(IDT)
3B FPDU.ACK(MSG)
40 FPDU.DTFMA
41 FPDU.DTFDA
42 FPDU.DTFFA

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