

Entire Connection

Introducing Entire Connection

Version 4.5.4

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Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Preface

This documentation provides an overview of Entire Connection and outlines the product architecture and concepts. It is organized under the following headings:

What is Entire Connection?

Who will Use Entire Connection?

General Architecture

Entire Connection Concepts

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1 What is Entire Connection?

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Entire Connection allows you to use your PC as a window to your data processing environment. Using Entire Connection, you can communicate with one or more host systems from your PC. The host system can be a mainframe (IBM, Siemens BS2000), VMS and/or UNIX. Various widely-used communication mechanisms are supported, allowing the use of Entire Connection in almost any heterogeneous configuration.

However, Entire Connection turns your PC into more than a conventional “terminal emulator”. The multi-session capability of Entire Connection allows you to run any number of independent host sessions concurrently, where each session occupies one window on your PC screen. This parallel access capability, together with the possibility to cut and paste text using the Windows Clipboard, makes your PC a powerful tool for managing your information processing tasks.

Additionally, Entire Connection allows data exchange operations with Natural (Software AG's 4th generation application language).

Communicating with Host Systems

You can use Entire Connection to establish a communication link between your PC and any number of host computers. Once these connections are established, you can do the following:

- Use the PC as host terminal complete with full-screen editing capabilities and immediate access to all host applications.
- Route host printouts to network printers. Dedicated host printers are no longer required.
- Transfer data between the PC and any connected host running Natural. Entire Connection handles any exchange of information between the PC and the host, making manual transcription of data unnecessary. In addition, an error detection capability ensures the integrity of data being transmitted. If errors are detected in the course of a data transfer, the information is retransmitted automatically.
- Use Entire Connection to gain access to the greater processing power of the appropriate host environment. Data stored on your PC can be uploaded to the host for processing and downloaded to the PC to be stored.
- Perform cross-session cut and paste for fast and easy data transfer between heterogeneous operating environments.

Product Features

Entire Connection offers a number of special features that enhance its basic functionality of enabling multiple parallel sessions with multiple hosts. The major features are listed below:

- Full integration in the Windows environment.
- Independence of third-party software (direct gateway support).
- Secure host connection with SSL for the communication with sessions of type TN3270(E).
- Secure host connection with SSH for the communication with sessions of type Telnet VTxxx.
- Powerful scripting (procedure) language to automate tasks on the host and PC.
- Extended data conversion facilities.
- Easy LAN installation and administration.
- Migration of user-specific definitions from one version to the next.
- Powerful and user-friendly tools to administer a multi-user installation.
- Unattended workstation support.
- API to access terminal emulation functions from within a user program.
- Keyboard redefinition capability, including assigning a single key to invoke a procedure file.
- Selectable fonts for screen display.
- 3270/9750 keypad window.
- Automated creation of procedure files (learn mode).
- Command line recall capability.

Supported PC Software

With Entire Connection, you can download data from the host into a PC application. You can then process your data using a wide variety of PC spreadsheet, editor, graphic, and data management packages.

The table below indicates the file formats supported by Entire Connection along with some of the PC packages that use these file formats:

Extension	File Formats
*.dbf	dBase III
*.dif	Data Interchange Format - used by many popular software packages (e.g. Rbase)
*.prn	Basic
*.wks, *.wk1, *.wkl	Lotus
*.ncc	IBM or IBM compatible, COBOL
*.ncd	ASCII
*.enc	Encryption
*.bin	Binary
*.xls, *.xlsx	Excel (to download data to Excel format or to upload Excel data, Excel must be installed on the PC; the extension depends on the installed Excel version)
*.htm, *.html	HTML (this is a specific HTML format that can also be opened with Excel)
*.xml	XML

Data transfer can be accomplished efficiently because Entire Connection handles conversion automatically as the data is being transferred. This means that data from any of the supported formats can be uploaded directly to the host.

Benefits

You can benefit in many ways from using Entire Connection. The main advantages are:

- One terminal emulation in a heterogeneous host environment saves cost and reduces training needs.
- One terminal emulation product for different host systems is a unique feature.
- Direct gateway support saves the cost of third-party communication software, simplifies installation and frees system resources.
- A good multi-host terminal emulation that is well integrated in the Windows world makes downsizing (rightsizing) easier.

2 Who will Use Entire Connection?

This documentation provides information for all types of user:

- **Administrator**

For the administrator, information is provided on controlling the working environment of each user or user group, as well as on maintaining the various data objects. It is assumed that the administrator is familiar with the corporate host environment, PC software and programming, as well as the interests and skill levels of the users.

- **General User**

For the general user, information on terminal emulation and on controlling the personal working environment is provided.

- **Application Programmer**

For the application programmer, information is included on the supplied API, allowing access to Entire Connection functions from within applications. It is assumed that the application programmer is familiar with ActiveX, C++, C# and/or Visual Basic .NET.

It is assumed that all users are familiar with Microsoft Windows.

3 General Architecture

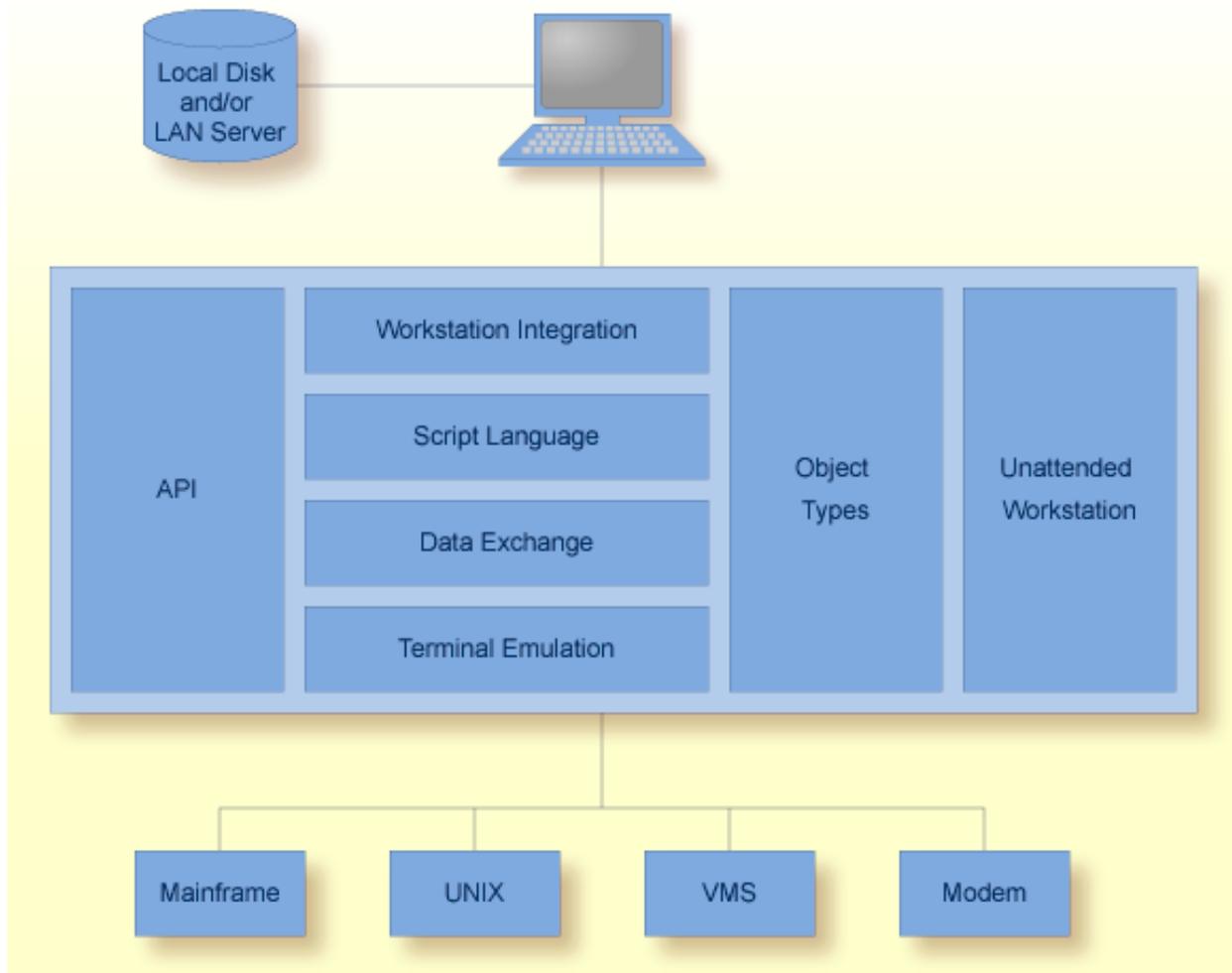
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Components

Entire Connection consists of the following applications:

- Configuration Manager
- Terminal
- Host Printer Manager
- Format Converter

The following figure illustrates the logical components of Entire Connection:



Workstation Integration

Provides the interfaces to Windows applications, as well as a wide range of **PC packages**, thus integrating Entire Connection fully into your workstation environment.

Unattended Workstation (UA)

Provides the unattended workstation support, allowing you to schedule tasks to be processed without user interaction.

API

Allows you to address Entire Connection functions from application programs, thus allowing integrated cooperative processing between the PC and your multi-host environment.

Script Language

Provides command and procedure processing.

Data Exchange

Allows the exchange of data between the PC and connected host applications written in Natural in upload and download operations.

Terminal Emulation

The center piece of Entire Connection is the terminal emulation which connects the PC to the host system.

Object Types

The administrator defines the system preferences and manages users, user groups, tables and printer sessions. All other users can define individual settings for a session.

Configuration

This topic outlines the supported host environments and related communication software.

Adapting Entire Connection to the configuration at your site is simple. Easy-to-follow dialogs prompt you to select predefined settings to set up your host connections, thus allowing quick and easy integration into your computer network.

The following table summarizes the session types available with Entire Connection:

This session type	provides this type of connection
BS2000 TCP/IP	Multi-session
HLLAPI	Single-session
Serial interface	Multi-session, multi-host (one session per serial interface with VTxxx)
Telnet (TN3270 and VTxxx)	Multi-session, multi-host (via TCP/IP, TN3270 and VTxxx using WinSock 2), printer session

The following table summarizes supported host systems and related session types:

Host system	Session type
IBM mainframes	All types, except BS2000 TCP/IP and VTxxx
IBM AS 400	HLLAPI, TN3270
Siemens BS2000	BS2000 TCP/IP
UNIX/VMS	Telnet VTxxx, Serial VTxxx

4 Entire Connection Concepts

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The concepts underlying Entire Connection are aimed at delivering state-of-the-art functionality in a user-friendly manner.

Session Windows

Each host session is shown in a separate terminal application window.

Each session has a unique name and its own session properties. Session properties are all data required to open and run a session. Examples of these properties are: session type (e.g. TN3270), communication parameters (e.g. baud rate), font and color scheme.

For TrueType fonts, the size of the display font is calculated using the size of the current terminal application window.

The size and position of each terminal application window is saved. When a window is closed and then opened again, it shows up in the previous position and size.

Host Printer LU Support

Entire Connection supports the LU1 (SCS) and LU3 protocol. Under Windows host printers can be emulated. It is thus possible to route host printouts to network printers or via FTP to other printers not connected to your network. Dedicated host printers are no longer required.

Host printer LU support is implemented as a Windows service. It can be started and stopped using **Administrative Tools > Services** in the Windows Control Panel. The print LU can be monitored using the Entire Connection Host Printer Manager.

Objects

The Entire Connection data model is based on an object-oriented data concept.

In terms of Entire Connection, an object is a collection of related data or properties. These data appear as one unit stored in the configuration file (known as the “share file”, as it is shared by all Entire Connection users). Examples of objects are:

- Color Schemes
- Key Schemes
- Host Sessions
- Users

There are public and private objects. Public objects are maintained by the administrator and can be used by all users. Private objects are created and maintained by the general user. Private objects can only be used by their owners. However, the administrator can change a private object to a public object, thus making it available for all users.

Each object is uniquely identified in the share file by object name and object type. A public object is further identified by the **user group** it belongs to. A private object is distinguished by the user ID of its owner.

The administrator can display a list of all public objects. A general user can also see his or her private objects, as well as those public objects accessible to the user group of which he or she is a member.



Note: If there is both a public and a private object with the same name, the user can only see the private object.

Group Concept

The group concept is used to control user access to public objects without the need for individual user authorizations. Users can be members of a group, and objects can be made accessible to a group. This means that a user can only access (or see) an object if he or she is a member of a group authorized for the object.

The following rules exist for groups:

- A group has a unique name (or ID).
- There can be up to 32000 groups in one installation (one share file).
- A user can be a member of up to 32 groups.
- An object can be made accessible to up to 32 groups.

To simplify user administration of Entire Connection in a LAN, predefined objects are supplied as part of the package. All these objects belong to the group EVERYONE. For the simplest possible installation, the administrator only has to define the users and assign them to the group EVERYONE. For this group, the following rules apply:

- All system objects belong to the group EVERYONE.
- The group EVERYONE cannot be deleted or renamed.

Administration

Using the Configuration Manager, the administrator can maintain all types of objects. The administrator can easily control what a user is authorized to do. In the extreme case, a user may not even be authorized to create private objects at all.

After Entire Connection has been installed, the administrator normally defines the following object types in the following sequence:

- System Preferences
- Users
- Host Sessions
- User Groups

System Preferences

This object type is available for the administrator to modify the properties that affect all users and to define default values for properties.

System preferences are set once by the administrator. These default values are used as initial values in other object types where they can then be modified. This means: whenever a new object is created, some of its properties receive the default values of the system preferences.

System preferences include (among others):

- Language
- Keyboard table
- Date and time formats
- Maximum host response time
- Procedure directory
- Log/trace directory

Users

This object type is available to maintain user definitions.

User definitions include (among others):

- User ID and password
- whether a password is required at logon
- National language and keyboard table
- Procedure directory

- Log/trace directory
- Startup and shutdown tasks
- Date and time formats

Host Sessions

This object type is used by the administrator to define host sessions for all users.

In the communication-specific dialog boxes, the parameters required for a communication method can be set.

An object of type host session contains all parameters needed to open and run a session. It also uses other objects (color schemes and key schemes). These objects are linked with the host session object.

User Groups

This object type is available for the administrator to maintain user groups.

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Related Literature

The following documentation provides additional information:

- Software AG's Natural documentation
- Software AG's Natural Connection documentation
- Microsoft Windows documentation
