



## CHAPTER

## 26

## Windows: EHLLAPI Access Method

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### SAS Support for EHLLAPI on Windows

*Note:* The EHLLAPI communications access method can be used with the Windows NT, Windows 95, Windows 98, and Windows 32s platforms.

However, beginning with Version 7, the Windows 32s platform is not supported. Information about Windows 32s is included here for Version 6 users. △

### SAS/CONNECT

#### *System Administrator or User*

To use the EHLLAPI access method with a Windows host for SAS/CONNECT, perform these tasks:

- 1 Verify that you have met all your site and software requirements.
- 2 Verify that you know how to set options in SAS software.
- 3 Set the SAS/CONNECT options that you want.

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## System and Software Requirements for SAS/CONNECT

Ensure that the following conditions have been met:

- 1 The EHLLAPI software has been installed at your site.
- 2 SAS has been installed on both the local and remote hosts.

### Windows NT Requirements

To use the EHLLAPI access method with Windows NT, install and configure one of the following emulation packages:

- the Attachmate EXTRA Personal Client, Version 6.1 or subsequent version.
- the Wall Data Rumba 95/NT Version 5.2 or subsequent version.
- any Windows NT 32-bit emulation program that supports the EHLLAPI or WinHLLAPI standards.

### Windows 95 and Windows 98 Requirements

To use the EHLLAPI access method with Windows 95 and Windows 98, install and configure one of the following emulation packages:

- The Attachmate EXTRA Personal Client, Version 6.1 or subsequent version.
- The Wall Data Rumba 95/NT Version 5.2 or a subsequent version.
- The McGill Systems TCP3270, Version 3.0 or subsequent version.
- The eNetwork Communications Server for OS/2 WARP, Version 5.
- any Windows 95 or Windows 98 32-bit emulation program that supports the EHLLAPI or WinHLLAPI standards.

### Windows 32s Requirements

To use the EHLLAPI access method with Windows 32s, install and configure one of the following emulation packages:

- The Attachmate EXTRA for Windows Version 4.3 or subsequent version.
- The Wall Data Rumba Version 3.1 or subsequent version.
- The IBM Personal Communications/3270 Version 4.0 or subsequent version.
- any 16-bit emulation program that supports the EHLLAPI or WinHLLAPI standards.

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## Setting SAS Options and Variables

You may set specific options in SAS to establish the connections that you want with SAS/CONNECT when using the EHLLAPI communications access method.

You may specify an option in any of several forms, as follows:

- in an OPTIONS statement in a SAS session or in an AUTOEXEC file:

OPTIONS SET=*variable-name value*;

Example:

```
options set=vqdllname whlapi32;
```

- in a SAS configuration file or at a SAS invocation:

-SET *variable-name value*

Example:

```
-set vqdllname whlapi32
```

- as a DOS operating system environment variable:

```
SET variable-name=value
```

Example:

```
set vqdllname=whlapi32.dll
```

Values for these options may contain up to eight characters, consisting of alphanumeric characters, the percent sign (%), the dollar sign (\$), the pound sign (#), the at sign (@), and the underscore (\_).

If you set multiple forms of the same option, here is the order of precedence that is followed:

- OPTIONS statement
- AUTOEXEC file
- SAS invocation
- SAS configuration file
- DOS environment variable.

## SAS/CONNECT VQDLLNAME Option

### VQDLLNAME

assigns explicitly the Dynamic Link Library (DLL) name to the VQDLLNAME option if vendor modulenames conflict occur or if your package's DLL is not in the default search list.

Example:

```
options set=vqdllname whlapi32;
```

The WHLAPI32 module is assigned explicitly to the VQDLLNAME option.

## Local Host Tasks

### *Applications Programmer or User*

To connect a Windows local host to a remote host, perform these tasks at the local host:

- 1 Optionally, identify the DLL modules that are supplied with the EHLLAPI emulation package, as necessary.
- 2 Specify the communications access method.
- 3 Specify a remote host.
- 4 Identify the script file to be used for signing on and signing off.
- 5 Sign on to the remote host.

## Identifying the DLL Modules

SAS/CONNECT looks for specific DLL modules that are supplied with the emulation program that you use. Modules vary by platform.

## Windows NT, Windows 95, and Windows 98

SAS/CONNECT looks for WinHLLAPI standard DLL modules for Windows NT, Windows 95, and Windows 98 in this order:

WHLAPI32.DLL  
 WHLLAP32.DLL  
 WHLLAPI.DLL.

If the access method cannot find these modules, it continues looking for the EHLLAPI standard DLL modules in this order:

EHLAPI32.DLL  
 EHLLAP32.DLL  
 PCSHLL32.DLL.

If vendor module naming conflicts occur or if your package's DLL is not in the default search list, assign the DLL name to the VQDLLNAME option in an appropriate form. See "Setting SAS Options and Variables" on page 382 for information about how to set the VQDLLNAME option.

You may look at your search path by using the PATH command. To permanently set the emulation package in your environment, enter the package's path in the AUTOEXEC.BAT file. It is recommended that you list your emulation package in the first location of the search path.

## Windows 32s

SAS/CONNECT looks for the following WinHLLAPI standard module:

WHLLAPI.DLL

If the access method cannot find this module, it continues looking for the EHLLAPI standard DLL module in this order:

ASC3EHAP.DLL  
 PCSHLL.DLL  
 EEHLLAPI.DLL  
 HLLAPI.DLL.

If vendor module naming conflicts occur or if your package's DLL is not in the default search list, assign the DLL name to the VQDLLNAME option. A known naming conflict exists with the Wall Data Rumba emulation package, which does not provide the expected WinHLLAPI module name. See "Setting SAS Options and Variables" on page 382 for information about how to set the VQDLLNAME option.

You may look at your search path by using the PATH command. To permanently set the emulation package in your environment, enter the package's path in the AUTOEXEC.BAT file. It is recommended that you list your emulation package in the first location of the search path.

## Specifying the EHLLAPI Communications Access Method

You must specify the EHLLAPI communications access method to make a remote host connection. Use the following syntax:

```
OPTIONS COMAMID=access-method-id;
```

where COMAMID is an acronym for Communications Access Method Identification. *access-method-id* identifies the method used by the local host to communicate with the remote host. EHLLAPI (an acronym for Extended High-Level Language Applications Programming Interface) is an example of *access-method-id*.

Example:

```
options comamid=EHLAPI;
```

Alternatively, you may set this option at a SAS invocation or in a SAS configuration file.

---

## Specifying the Remote Host Name

To make a connection from a Windows local host to a remote host, use the following syntax:

```
OPTIONS REMOTE=remote-session-id;
```

where *remote-session-id* can be either the short or the long session id of the remote session.

Your system administrator will specify the names of the remote session identifiers when configuring the emulation package to communicate between the Windows host and the remote host. Ask your system administrator for the appropriate session identifier.

For more information about remote session identifiers, see the documentation that accompanies the emulation software.

Example:

```
options remote=a;
```

Alternatively, you may set this option at a SAS invocation or in a SAS configuration file.

---

## Identifying a Script File for Signing On and Signing Off

To use one of the sample script files that is supplied with SAS/CONNECT for signing on and signing off, assign the RLINK fileref to the appropriate script file, based on the remote host that you are connecting to. The sample scripts are installed at *!SASROOT\CONNECT\SASLINK*. You must customize the sample scripts to accurately reflect your site's logon process. Failure to do so will produce errors.

The fileref syntax follows:

```
FILENAME RLINK '!sasroot\connect\saslink\script-name';
```

where *script-name* identifies the script that corresponds to the remote host that you want to connect to.

The following table lists the scripts that are supplied by SAS Institute:

**Table 26.1** Windows EHLAPI SAS/CONNECT Sign-on Scripts

Type of Remote Host	Script File
CMS	CMS.SCR or LOGCMS.SCR
OS/390	TSO.SCR or LOGTSO.SCR
VSE	VSE.SCR or VSECICS.SCR

Each set of scripts for each host basically performs the same process. However, the difference is that the first script assumes that you have already logged in to the remote host; the second script includes code that prompts for the userid and the password.

Ask your system administrator for the locations of the script files on your local host. These sample script files are included with SAS/CONNECT and should be installed when the product is installed.

---

## Signing On to the Remote Host

To complete your sign on to the remote host, enter the SIGNON statement, as follows:

```
signon;
```

---

## Local Host Example

The following example illustrates the statements that you specify in a Windows local host SAS session to connect to a remote host with the EHLLAPI access method:

```
filename rlink '!sasroot\connect\saslink\tso.scr';
options comamid=ehllapi remote=a;
signon;
```

The first line identifies the script file that you use to sign on to an OS/390 remote host. The script file contains a prompt for a userid and a password that are valid on the remote host. The EHLLAPI communications access method is declared with a connection to the remote host A, which is the remote session identifier that was specified when the emulation package was configured on your local host. The SIGNON statement performs the sign-on process.

---

## Remote Host Example

SAS Institute does not provide support for connections to the Windows remote host with the EHLLAPI access method.

---

## Connecting to a CMS or an OS/390 Remote Host

If you use the EHLLAPI access method to connect a Windows local host to either a CMS or an OS/390 remote host, you must also specify the PCLINK access method on the remote host.

An example of specifying PCLINK as the remote host access method is

```
options comamid=pclink;
```

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