PC-ACE Pro32 Network

Installation Instructions

Purpose: This document describes the planning and installation of PC-ACE Pro32 in a networked (multiuser) configuration.

REQUIRED PRE-INSTALLATION WINDOWS CONFIGURATION

Changes in the low-level network data access protocols made by Microsoft over the years have produced a number of undesirable side effects. **It is necessary to disable certain enhancements in order to insure reliable data access in multiuser networked environments.** Specifically, it is necessary to disable the Server Message Block (SMB) version 2 and 3 protocols, as well as the "opportunistic locking" feature of the SMB 1 protocol. Caching techniques in the later SMB versions can create problems for PC-ACE Pro32 in a networked environment. To prevent these problems, modify the Windows registry on the client and server computers according to following instructions.

IMPORTANT: This section contains steps that tell you how to modify the Windows registry. However, serious problems might occur if you modify the registry incorrectly. Therefore, make sure that you follow these steps carefully. For added protection, back up the registry before you modify it. Then, you can restore the registry if a problem occurs. These steps should be performed only by network administrators familiar with Windows registry editing.

STEP #1

Applies to Windows Server 2008 and Windows Server 2012 computers (or any Windows Vista, Windows 7, or Windows 8 computer acting as a server in a peer-to-peer configuration).

Add or update the following registry entries:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanWorkstation\Parameters

Entry name: FileInfoCacheLifetime
Data type: REG_DWORD
Value: 0

Entry name: FileNotFoundCacheLifetime
Data type: REG_DWORD
Value: 0

Entry name: DirectoryCacheLifetime
Data type: REG_DWORD
Value: 0

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters

Entry name: SMB2
Data type: REG_DWORD
Value: 0

Entry name: SMB3
Data type: REG_DWORD
Value: 0

STEP #2

Applies to Windows Vista, Windows 7, and Windows 8 client computers.

Add or update the following registry entries:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanWorkstation\Parameters

Entry name: FileInfoCacheLifetime
Data type: REG_DWORD
Value: 0

Entry name: FileNotFoundCacheLifetime
Data type: REG_DWORD
Value: 0

Entry name: DirectoryCacheLifetime
Data type: REG_DWORD
Value: 0

STEP #3

Applies to Windows Vista, Windows 7, and Windows 8 client computers.

Add or update the following registry entries:

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\MRXSmb\Parameters

Entry name: OplocksDisabled
Data type: REG_DWORD
Value: 1

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters

Entry name: EnableOplocks
Data type: REG_DWORD
Value: 0

IMPORTANT: The server and all client workstations must be restarted after these registry changes have been made to all computers.

Note: As an alternative to making these Windows registry changes manually, you may download the following ZIP archives which contain the corresponding Windows registry import (.REG) files.

Step #1: http://www.system-designs.com/pro32prv/misc/smb2_3_disable_server.zip

Step #2: http://www.system-designs.com/pro32prv/misc/smb2_3_disable_client_cache.zip

Step #3: http://www.system-designs.com/pro32prv/misc/OpLocksDisable.zip

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Once these required pre-installation Windows configuration changes have been completed and all computers restarted, proceed to the next section to perform the PC-ACE Pro32 network installation.

ADDITIONAL IMPORTANT TECHNICAL INFORMATION

Please be aware of the following miscellaneous technical information:

- A difference has been observed in Windows 8 compared to Windows 7 with respect to mapped drive visibility during user elevation. Mapped drives were visible to Windows 7 users with admin privileges (not the built-in administrator) when elevation to the admin token occurred (e.g., when running SETUP.EXE). However, this is not the case with Windows 8 where the mapped drives are only visible when the non-admin token is in use. This results in mapped drives not being available in the drive selection dropdown when running SETUP.EXE from an admin user account (other than the built-in admin account). There are two ways to work around this Windows 8 limitation: (1) Open a DOS command prompt using the "Run As Administrator" option and enter a NET USE command to map the desired drive letter (e.g., "net use L: \\MyServer\Pro32 /persistent:yes"). The mappings for the elevated token will persist only as long as this user is logged into Windows. ; or (2) Add a new DWORD (32-bit) value "EnableLinkedConnections" to the following Windows registry key …

  HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System

  … and set its value to 1. Restart the computer. This will force all mappings for the standard token to also be available to the elevated admin token.

- PC-ACE Pro32 has not been qualified for use on Advanced Format 4K storage devices.

GENERAL NETWORK INSTALLATION INFORMATION

Performing a networked installation of PC-ACE Pro32 is a two-step process. The PC-ACE Pro32 installation program (SETUP.EXE) must first be run to install the product on the server. If the server is running a Windows-based operating system, then it is best to install PC-ACE Pro32 from the server's console. Likewise, all future updates are most efficiently installed from the server's console. If the server is running a non-Windows operating system (e.g., Novell) or the server's console is not accessible, then PC-ACE Pro32 can be installed from a workstation. Once PC-ACE Pro32 has been installed on the server, the system administrator will then need to install the PC-ACE Pro32 "client" onto each workstation requiring access to the program. This step involves locating and executing the client installation program (CLIENT32.EXE) from the server's "winpcace" directory. The client installation will copy specific program and support files into a local "winpcace" folder on the workstation. All shared database and configuration files will remain only on the server. Both the server and client installation processes will be described in more detail later.

IMPORTANT: PC-ACE Pro32 requires that all users have access to the server's "winpcace" folder at **the root of a standard drive letter** (e.g., **"s:\winpcace"**). The PC-ACE Pro32 client installation program will not permit installation from any other folder path configuration (e.g., "s:\My Programs\winpcace"), or from a path which uses Universal Naming Convention (UNC) syntax (e.g., "\\server\…"). As such, the system administrator will likely be required to share a folder on the server and map server/client drive letters in order to complete the networked installation. The examples included in this document comply with this requirement.

Follow these steps to install PC-ACE Pro32 in a networked configuration. **Note:** The folder name, share name and drive letters used in these steps are only examples.

1. **Prepare The Server:** The system administrator must first decide where to install the product on the server, keeping in mind that all users must have full read/write permission to the "winpcace" folder that will be created by the installation program. Assume, for example, that PC-ACE Pro32 will be installed to the server folder "c:\Third Party Programs\PCACE Pro32". Before running SETUP.EXE, the system administrator would first need to use Windows Explorer (or equivalent method) to create and share this folder for network access. Set the permissions such that all client workstations will have full read/write access to this shared server folder. Assume for this example that the share name **"Pro32"** is assigned to this shared folder. The system administrator must then use Windows Explorer (or equivalent method) to map this new share (e.g., **"\\MyServer\Pro32"**) to a local drive letter (e.g., **"S:"**). It is important that both the share and drive mapping are established such that they will be restored automatically when the server restarts.

2. **Install PC-ACE Pro32 On The Server:** Once the share and mapped drive letter have been established, the system administrator should execute SETUP.EXE (preferably from the server's console) and follow the simple wizard steps to install the product. Enter the supplied installation password when prompted. Select the drive letter to which PC-ACE Pro32 will be installed (i.e., the newly mapped drive letter **"S:"** in our example) and follow the simple wizard steps to complete the server installation. After our hypothetical server installation completes, the actual folder "c:\Third Party Programs\PCACE Pro32\winpcace" and mapped folder "s:\winpcace" should both exist. PCACE Pro32 can now be executed from the newly-created desktop icon.

3. **Prepare The Client Workstation:** In order to prepare each workstation to serve as a PC-ACE Pro32 client, the system administrator should use Windows Explorer (or equivalent method) to map the new server share (e.g., **"\\MyServer\Pro32"**) to a local drive letter (e.g., **"S:"**). It is recommended that the same drive letter be used on all client workstations (and preferably the same drive letter

that was used on the server). It is important that the drive mapping is established such that it will be restored automatically when the workstation restarts.

4. **Install PC-ACE Pro32 On The Client Workstation:** The system administrator should now use Windows Explorer to locate and execute the PC-ACE Pro32 client installation program (CLIENT32.EXE) from the server's "winpcace" directory using the mapped drive letter that was just created (e.g., **"s:\winpcace"**). Follow the simple wizard steps to complete the client installation. Select the desired local drive letter when prompted (e.g., typically "C:"). A local "winpcace" directory will be created, and numerous program and support files will be copied to the client workstation to enhance performance. PC-ACE Pro32 can now be executed from the newly-created desktop icon. Repeat the last two steps on each workstation that requires PC-ACE Pro32 access.

Here a few additional comments regarding networked PC-ACE Pro32 installations:

- PC-ACE Pro32 should always be installed (server or client) from the Windows user that requires access to the program. Important Windows registry settings, desktop shortcuts and Start menu program folder entries created during the installation process are defined only for the Windows user installing PC-ACE Pro32. If a need arises to grant another Windows user on the system access to PC-ACE Pro32, then the following steps should be followed:

  a. Log into the server or client system as the Windows user desiring PC-ACE Pro32 access.

  b. Use Windows Explorer to locate and execute the PC-ACE Pro32 client installation program (CLIENT32.EXE) from the server's "winpcace" directory using the mapped drive letter that was created in the installation procedure above (e.g., **"s:\winpcace"**).

  c. In the client installation wizard, click the "Next" button and select the drive letter where the existing local "winpcace" directory resides. For example, this would typically be **"C:"** on a client workstation. Click the **"Next"** button twice to perform the client installation. A message dialog will inform the user that PC-ACE Pro32 has already been installed on this system by another Windows user.

  d. Click the **"Yes"** button to configure the current Windows user for PC-ACE Pro32 access. The file copying that goes on during a true client installation will not take place. Click the **"Finish"** button to exit the client installation program.

The current Windows user should now have PC-ACE Pro32 access via the newly created desktop icon or the Start menu program folder. **REMINDER:** All Windows users accessing PC-ACE Pro32 must have full read/write permission to the server's "winpcace" folder, including all files and subfolders contained therein.

Special Note For Windows Vista And Later Versions: The User Access Control (UAC) feature present in recent Windows releases complicates PC-ACE Pro32 installation from non-administrator Windows user accounts. When the PC-ACE Pro32 installation program (SETUP.EXE) is executed from a non-admin Windows account, the user will be prompted to enter administrator account credentials in order to complete the installation. An "elevation" to the admin account takes place during product installation, which results in the Windows registry settings, desktop shortcuts, and Start menu program folder entries created during installation to be associated with the elevated admin user account instead of the original non-admin user account. When this occurs, it is necessary to also complete the PC-ACE Pro32 client installation procedure described above on the non-admin Windows user account in order to gain access to the product.

- Updates to PC-ACE Pro32 also require a two-step installation process. The PC-ACE Pro32 update program (PCACEUP.EXE) should be run from the server's console (if possible) to update the server installation. When each user subsequently executes PC-ACE Pro32 from their workstation, they will be notified that a program update has been installed. Unless they intentionally cancel at this point, the PC-ACE Pro32 client update program (CLIENTUP.EXE) will be launched automatically. The user can follow the simple wizard steps to update their client installation. Access to PC-ACE Pro32 from a client workstation will not be allowed until this client update has been successfully completed.

- The PC-ACE Pro32 client can be uninstalled from a workstation if needed without risk to the rest of the networked installation. Select the "PC-ACE Pro32 Client" entry in the Windows Control Panel's "Add Remove Programs" utility to uninstall the PC-ACE Pro32 client.

