

Samba

Troubleshooting Samba with Prinergy

Document Number
72-3717A-A-PR01

2002-05-28

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Revision History

Revision	Date	Author	Comments
1.0	23 May 2002	David Bradshaw / Richard Simms	First issue

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1. INTRODUCTION

This document is intended to assist Creo support personnel with troubleshooting Samba UNIX connectivity problems in a Prinergy environment

Creo's customers are requesting support for Prinergy job homing on their NAS (Network Attached Storage) devices and on UNIX attached storage devices (for example, a Solaris server with an attached RAID).

NAS devices typically support the NFS (Network File System) and CIFS (Common Internet File System) protocols, but AFP (Apple File Protocol) is not commonly supported. Because the operating system on NAS devices does not usually allow third-party applications to be installed, and if the device does not support the required protocols (CIFS and AFP), you may need an intermediate UNIX server to be able to use a NAS device with Prinergy.

In a Prinergy system, where the Creo customer wants to home their jobs on NAS device, or a UNIX server with a NAS device attached, you need to be aware of two file system connections in the Prinergy system, the connection between the UNIX server/NAS device and the:

- Windows Prinergy server.
- Prinergy Workshop machine (Macintosh or Windows).

1.1 Background on File System Protocols

The following file system protocols are supported natively (that is, without any additional software) on Windows, UNIX, and Macintosh operating systems:

- Windows (any currently released version) supports only CIFS.
- UNIX (most common flavors) supports only NFS.

  Note: Customer's UNIX machines frequently have Helios Ethershare installed, which allows the UNIX machine to support AFP, and is normally used for OPI (Open Prepress Interface).
- Macintosh OS 9.x or less supports AFP. Macintosh OSX.x supports NFS, CIFS, and AFP.

Samba is an application that provides CIFS/SMB protocol support for UNIX systems. By adding support for Samba on UNIX systems, and as OSX becomes more prevalent, Prinergy will eventually use a common file system protocol for Windows, UNIX and Macintosh operating systems.

1.2 UNIX Connectivity Solutions

1.2.1 Current Solution

Creo's current solution for allowing Prinergy systems to see input files located on a UNIX attached storage device is to use the Hummingbird NFS Maestro Client.

NFS is not usually considered a good solution for bandwidth intensive connections, thus job homing on UNIX is not supported nor recommended using this configuration. Also, if the customer wants to have their UNIX workflow drive the Prinergy system by dropping files into a Hotfolder the Hummingbird NFS Maestro Server was required. This is due to a defect in Prinergy that does not allow the Prinergy server to properly interact with input files located on an NFS share using Hotfolders. The workaround is to use NFS server software to allow the UNIX workflow to drop the file onto the Prinergy server.

1.2.2 Recommended Solution

Creo is now recommending that customers install Samba on UNIX servers. Samba allows Prinergy servers to see file systems on the UNIX server in the same way as on a Windows machine. Samba, in combination with Helios Ethershare (or Xinets KAShare) for AFP support for Mac Clients, allows all Windows machines and Macintosh machines on the network to potentially access files on a UNIX server.

2. VERIFYING UNIX CONNECTIVITY WITH SAMBA

This section describes the tests that you can perform to verify that Samba is installed correctly and will work with Prinergy.

Note: These tests are intended for verifying Samba. However, if the customer is using some other software to provide CIFS support for Prinergy, these tests can also help verify that other CIFS software works with Prinergy. For example, some customers already have Helios PCShare installed. If tests below (except test three) can be performed successfully, then the UNIX machine can be used as a Tertiary Prinergy server. If Helios PCShare is installed on the UNIX server, SAMBA cannot be installed as well.

2.1.1 Check to see if the Prinergy Server(s) can ping the UNIX machine.

From the Prinergy server, ping the UNIX machine using both the IP address and the Hostname of the UNIX machine. This test ensures that there is a network connection to the UNIX machine from the Prinergy server. In the case of Samba:

1. If you can ping using the IP address but not the Hostname:

    - Ensure that **nmbd** (NetBios name server) is running on the UNIX machine (see Figure 1 and 2 below for details).

- Ensure that the **smb.conf** file is properly configured (See Appendix A: Samba Configuration Settings for Prinergy on page 7 for details on how to use SWAT (Samba Web Administration Tool) to check the Samba configuration).

2. If you cannot ping the UNIX machine using either the IP address or Hostname:
   - Ensure that it is turned on and that the network cables are plugged in.
   - Check to see if you can ping other machines that are on the network.
   - Ensure that both the Prinergy machine's IP address and the UNIX machine's IP address are in the same subnet. To check a UNIX machines IP address, type **ifconfig –a** (**Note:** some versions of UNIX use an upper case A.).

2.1.2 Check Visibility of UNIX Machine

Check to see if you can "see" the UNIX machine in Windows Explorer under Network Neighborhood. You will need to know the name of the UNIX machine (as specified in SAMBA), and the Workgroup that the UNIX machine is member of. It is recommended that the UNIX machine's Workgroup is the same as the Prinergy server.

2.1.3 Check the SAMBA Configuration

Ensure that both **smbd** (SMB/CIFS server) and **nmbd** (NetBIOS name server) are running, and that the **smb.conf** file is properly configured.

1. To verify that **smbd** and **nmbd** are running, go to any machine with a web browser and type in the following URL http://<*IP address of UNIX machine*>:901. This opens a page similar to the one in Figure 1. SWAT (Samba Web Administration Tool) on page 3.

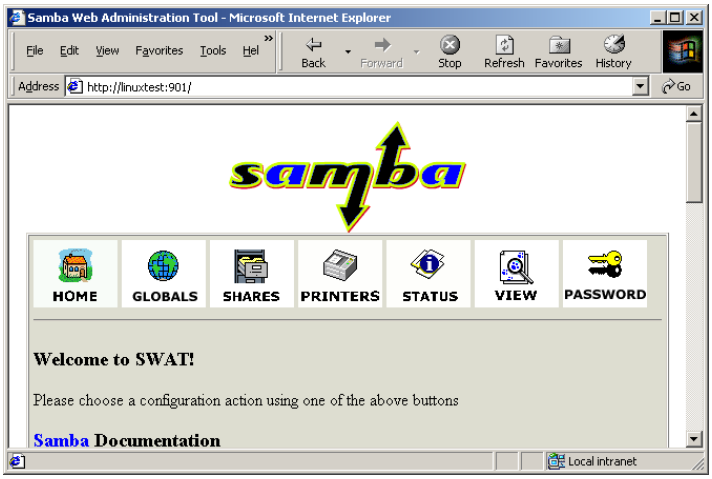


Figure 1. SWAT (Samba Web Administration Tool)

2. Click on **STATUS**. A page similar to Figure 2. appears.

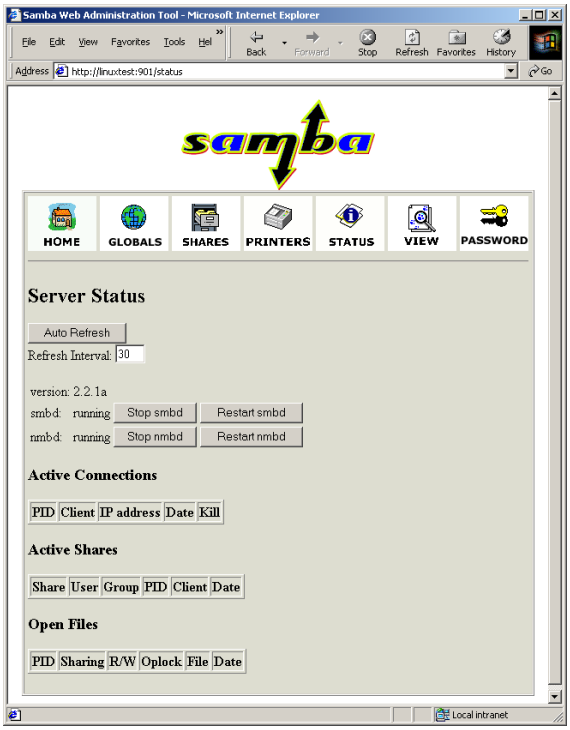


Figure 2. Server Status

3. Ensure that both **smbd** and **nmbd** are running. If they are not click the **Start smbd** or **Start nmbd** button. (In the screen shot above, both servers are running)

4. Compare the IP addresses of the UNIX machine to that of the Prinergy server. Ensure they are on the same Subnet. If they are not, name resolution will not work unless you use an alternative method such as an entry in the **etc/hosts** file or WINS or NIS, which are beyond the scope of this document.

2.1.4 Log In to the Prinergy Server

1. Log into the Prinergy server as the same user that the Araxi service uses. This is usually the **Araxi** user.

2. Using Windows Explorer, verify that you are able to create a directory on the UNIX machine's share, add file to this new directory, delete the file, and then delete the directory.

3. Check the Permissions both at the UNIX level and at the SAMBA level.

   Ensure that SAMBA is sharing the directory as a public directory and it is not set to read only. Refer to Figure 5. Share in Appendix A: Samba Configuration Settings for Prinergy on page 7. To determine if the Samba share is properly configured. Ensure that **Read Only** is set to **No**, and that **Browseable** and **Available** are set to **Yes**.

   Ensure the shared directory on the UNIX machine has full permissions for everyone. To check the UNIX level file permissions, go to the share directory, and type `ls -l`. A directory listing similar to the following appears:

```
drwxrwxrwx  65 araxi   araxi      2048 May 07 10:47 Brisque32.1.0
```

In the above example:

- `d` means the listing is a directory.
- The first `rwx` means that the user who owns the file (in this case, 1st araxi) has read, write, and execute permissions.
- The second `rwx` means that users who belong to the same group as the directory (in this case, 2nd araxi) have read, write, and execute permissions.
- The third `rwx` means that everyone has read write and execute permissions.

The preferred scenario is that the user, group and everyone have `rwx` access. If they do not, ask the UNIX administrator to change the permissions.

3. TROUBLESHOOTING SAMBA

1. I am asked for a password over and over again. I know that I am typing in the correct password. What is wrong?
   - Check that SAMBA is configured to use Encrypted passwords. Check the **samba.conf** file using SWAT or a text editor. Windows will refuse to authenticate any network resource using clear text passwords. On the UNIX machine, type `find / -name smb.conf`, and note the location of the smb.conf file, change to that directory, and then type cat **samba.conf**. Ensure that in the `[global]` section of the file, you see **use encrypted = Yes**. For a complete example of the **samba.conf** file, see Sample smb.conf File on page 11.
   - Check that the server that Samba is set up to Authenticate against can be pinged by the Samba UNIX machine.

Note: See also, the TechPlanet troubleshooting item: "Cannot access a UNIX network share that is being shared using SAMBA"

2. After installing SAMBA, the customer cannot browse the network with some machines. The customer is repeatedly asked for a username and password.
   - If SAMBA is set up for USER security, and not all of the users have been entered into the **smbpasswd** file, browsing will fail if the SAMBA machine becomes the Browse Master for your workgroup. Make sure SAMBA is set up so that it never becomes a Browse Master. Refer to Appendix A: Samba Configuration Settings for Prinergyfor information on how to properly configure Samba.
3. You get an error message when trying to home a job on the SAMBA machine.
   - You must have a share called **araxivolume** to home a job. This is hard-coded in Prinergy. Check Appendix A: Samba Configuration Settings for Prinergy, Figure 4. Share Selection and Figure 5. Share Parameters, and accompanying text to determine how to check a share.

4. Double-clicking on Thumbnails using a Macintosh does not open them. Instead it returns an error message that Workshop could not find the file.

   - Check the **otherhosts** file. Ensure that the mappings of Workgroup to Zone, and the mappings of Share to Share are correct. See the **otherhosts** file for a more detailed description of how to configure this file.
   - Ensure that the Samba machine has AFP support. During normal use of Prinergy, there are two different ways of accessing the files on the Samba server. For job related issues, adding input, running jobs, adding impositions etc., the system accesses the Samba volume using the Araxi service on the Prinergy server as a gateway. For direct file manipulation, that is, viewing a thumbnail or editing a trap, the Macintosh needs to access the file directly. If the Samba machine does not have AFP support this cannot happen.

4. APPENDIX A: SAMBA CONFIGURATION SETTINGS FOR PRINERGY

This appendix describes the correct Samba configuration settings for Prinergy. For more information about Samba Installation, see the technical bulletin *Samba Installation with Prinergy* (78-0156A-A-TM01).

Note: All configuration and administration of Samba can be done using the SWAT (Samba Web Administration Tool).

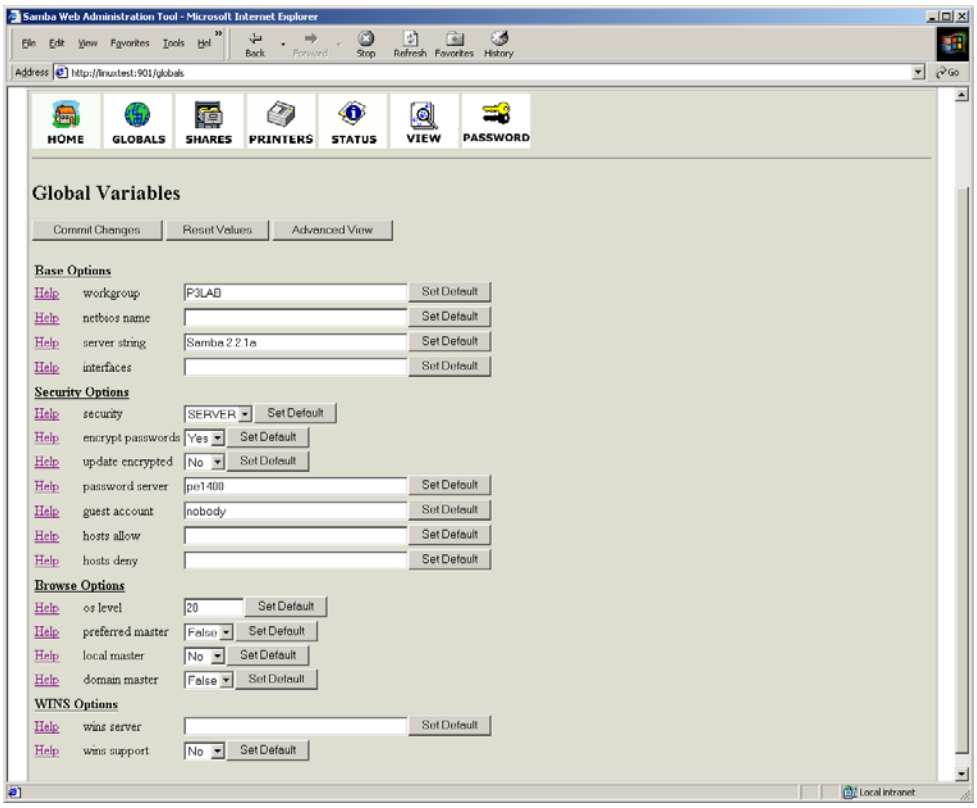


Figure 3. Global Variables

4.1 Globals

4.1.1 Base Options:

- **workgroup**—is the name of the workgroup that this machine appears under in the Windows Network Neighborhood.
- **netbios name**—if this is blank the machine name is used. You can type the command **hostname** to find out the machine name.

- **interfaces**—if the UNIX machine has multiple network cards you must specify which card Samba will use here.

4.1.2 Security Options

- **security**—has three possible options:
  - **USER**—with this option the machine itself manages security based on entries in a file called **smbpasswd** (this file must be created if it does not exist). This option is limited in that each user must be manually added to the file using a command line utility.
  - **SERVER**—this is the recommended option. This means that the Samba server will use a Windows NT machine to authenticate against. You MUST have encrypt passwords = Yes for this to work. This causes the Samba server to authenticate against the value of Password Server for username/password authentication.
  - **DOMAIN**—this will cause the Samba machine to use the PDC (Primary Domain Controller) to authenticate against. The Samba machine must first be added to the domain just as any other server would be added to the domain..

    Note: We have not tested the DOMAIN option because most Prinergy systems are not domain-based. If you choose to use this option, you must manually create the machine account on the NT domain controller, and then run a command line utility to add the Samba server to the domain. The benefit of using this setting is that connections are not maintained after authentication is achieved, whereas under the SERVER model the authentication connection is maintained until the **smbd** daemon is killed. This means fewer connections between the SAMBA machine and the Windows machine, and therefore, less overhead.
- **encrypt passwords**—This option determines whether Samba encrypts passwords before it sends them over the network. If you wish to communicate with a Windows-based machine you must set this field to **Yes**.
- **update encrypted**—This option is not used in Prinergy implementations. Click **Help** beside it for a description of what it does.
- **password server**—This option is used in conjunction with the security option. If security option is set to SERVER or DOMAIN, then this option determines the name of the machine that Samba authenticates against. Remember, you must add an entry into **/etc/hosts** because UNIX is not capable of resolving names using NetBios.
- **preferred master**—This option determines whether the Samba machine forces an election on the workgroup. Set this option to **False**.

4.1.3 Browse Options

- **local master**—This option allows Samba to try and become a local master browser on a subnet. If this option is set to **NO,** Samba will not attempt to become a local master browser on a subnet, and will also lose in all browsing elections. By default this value is set to **YES**. Setting this value to **YES** does not mean that Samba will become the local master browser on a subnet, just that Samba will participate in elections for local master browser.

  Setting this value to **NO** means that Samba will never become a local master browser.

  For Prinergy, this should be set to **No.**

- **domain master**—Unless the machine is configured to be part of a domain this setting is not relevant. However, if it is part of a domain, set this option to **False**

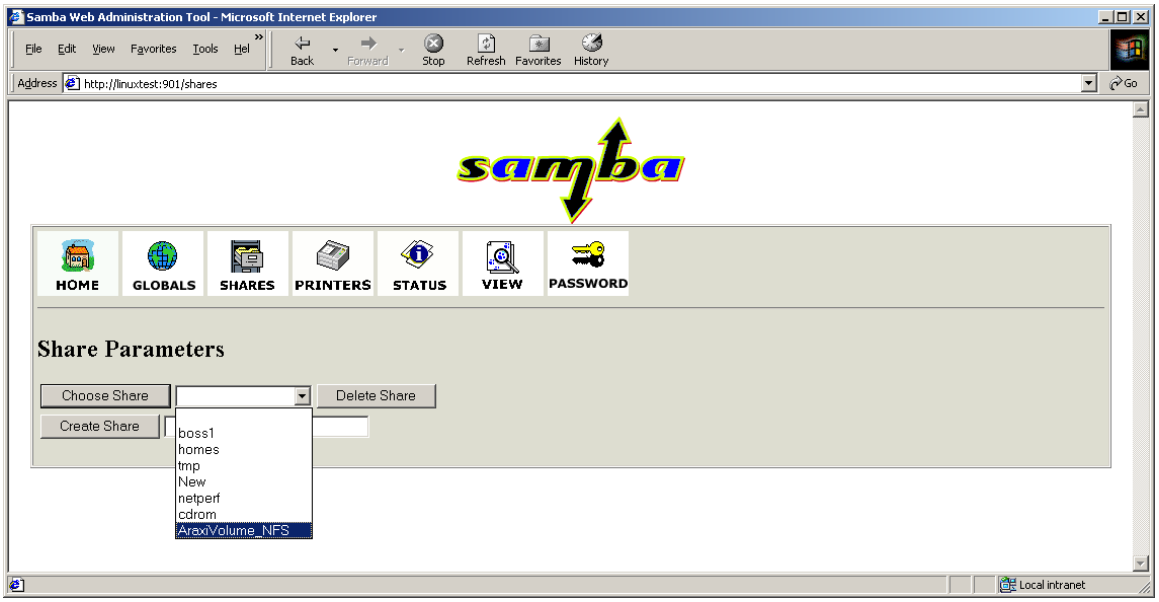


Figure 4. Share Selection

4.2 Shares

To configure a share:

1. Click on **SHARES**.
2. Click on the **Choose Share** button, and select a share.

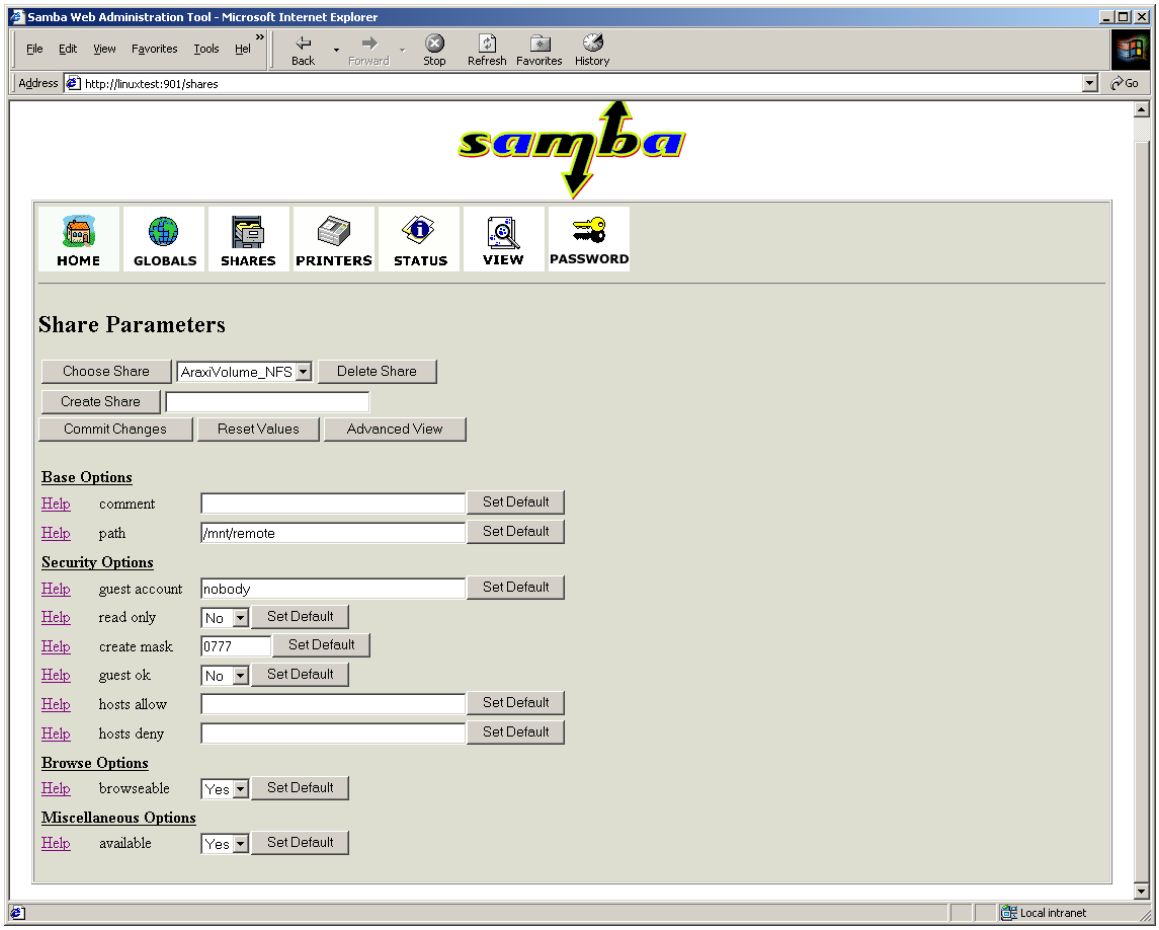


Figure 5. Share Parameters

4.2.1 Base Options:

- **Comment**—This is a comment that will appear next to the share in Windows Explorer.
- **Path**—this is the UNIX folder that Samba will share.

The rest of the settings are self-explanatory.

4.3 Sample smb.conf File

The following example **smb.conf** file is the actual text file generated by the above SWAT configuration settings. I have removed information about the **homes** share and the **boss1** share because they included information that was not relevant to Prinergy.

```
# SAMBA CONFIG FILE CREATED USING SWAT
# FROM DBRADSHAW (10.1.67.35)
# DATE: 2002/04/25 11:33:23
# GLOBAL PARAMETERS
[GLOBAL]
    WORKGROUP = P3LAB
    SECURITY = SERVER
    ENCRYPT PASSWORDS = YES
    PASSWORD SERVER = PE1400
    PREFERRED MASTER = FALSE
    LOCAL MASTER = NO
    DOMAIN MASTER = FALSE
[TMP]
    COMMENT = TESTING A PUBLIC SHARE
    PATH = /TMP
    READ ONLY = NO
    GUEST OK = YES
[NEW]
    PATH = /TMP
[NETPERF]
    PATH = /ROOT/SRC
[CDROM]
    PATH = /MNT/CDROM
[ARAXIVOLUME_NFS]
    PATH = /MNT/REMOTE
    READ ONLY = NO
    CREATE MASK = 0777
```