Prinergy Systems
version 1.1

Where to Start ?

Get involved and try not to be intimidated; the problem may not be as difficult as you think. Even if you think you do not have enough expertise, you can ask the right questions and gather the right information and then ask for assistance.

Don't hesitate to call the Customer

It's best to tackle the problem immediately because it's still fresh in the customers' mind. Some information is time sensitive such as blue screen crashes and log files rolling over and if not captured right away can be lost.

Interview the Witness

Get it from the source. The person reporting the problem is not always the person who experienced the problem. This is not always possible due to shift changes etc but it is the best way to get accurate and detailed information.

Clarify terminology and the nature of the problem.

What should be happening? What is happening? What was the customer trying to achieve? Asking the right questions is very important. What does "hung" or "crashed" really mean? What do you mean by slow? Step through the operators actions. Get them to be very descriptive. This is useful information to reproduce the problem.

Setting Expectations

Develop a working relationship with the person reporting the problem. Ask the customer if they have time to work with you to resolve the problem. It's a two way street; he needs your help and you'll need his. For example you will need the customer's help to do some testing or be your hand and eyes and they need your expertise. Work together.

How the Customer can Help

Ask the customer to describe exactly what troubleshooting has already been done. What have they tried? What were the results? Be careful, know your source, take everything with a grain of salt and do not rely on results. Don't be led on a wild goose chase. Confirm and check everything.

Ask the customer to reproduce the problem. If you can reproduce it, you're 50% done. Gather the information to reproduce the problem.

Overview

- *Where to start?*
- *Setting Expectations*
- *How they can help*

Troubleshooting

- *Isolate the problem*
- *Develop a test plan*
- *Tools*
- *Top 10*
- *Still need help?*

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Step by Step troubleshooting

Isolate the Problem.

Develop a logical test plan to localize the problem. Does the problem only affect one particular job? Does it only happen on a certain operation?

Develop a Test Plan

Do it yourself. Not that you don't trust anyone, but doing it yourself may give you some insight into the problem. It may be related to the sequence, certain keystrokes, or mouse clicks.

Tools

Leverage the tools at your disposal. Use the built in NT Utilities like NT diagnostics, Event Viewer, and Performance Monitor. Use the Prinergy built in tools like Prinergy Doctor, PPU, Diagview, and CollectBug. Use the Knowledge Base in the Tech Library.

Top Ten Things Wrong with Prinergy Systems

1. TEMP and TMP environment variables set incorrectly
2. Network Adapter set to "Auto-Detect"
3. No free space on drives
4. SCSI Disk Read/Write cache settings incorrect
5. Size and location of the NT page file
6. Network Adapter binding order
7. DNS server
8. Invalid Host file entries
9. Printer Spool folder set to system drive and not TEMP drive
10. Inconsistent Patch levels

Detailed Descriptions:

(Note: Information on screen captures does not necessary reflect all configurations. They are supplied as samples. Please read instructions carefully and understand the goals before making configuration changes.)

1. TEMP and TMP environment variables set incorrectly.

The user sets these variables during Prinergy installation through the installation wizard. TEMP and TMP variables are typically to E:\Temp. In the standard Prinergy configuration, E drive is a fast, 10k RPM, cheetah drive. Prinergy uses this drive as scratch disk for normalizing and ripping. This scratch disk should not be a partition of a larger drive used for other purposes. It should physically be another drive. *(see figure 1)*

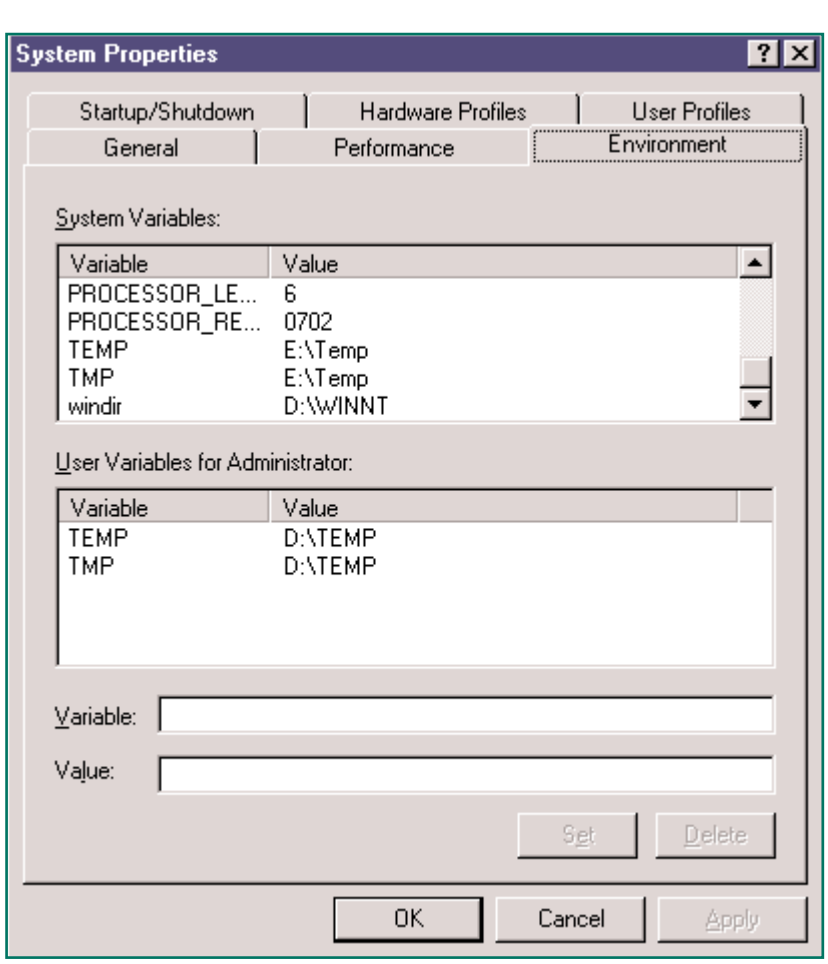


Figure 1

Allegro workstation's disk layout is not the same as the Prinergy standard. The E: drive is the system drive and D: is the spool drive. In a lot of cases, the variable has been set for E: drive which is not correct since this is also the system drive.

- **In the Control Panel / System, go to the Environment tab**
- **Click on the TEMP variable in the System Variables list box.**
- **In the Variable box, type E:\Temp and click SET**
- **Do the same for the TMP variable.**
- **Click Apply to save the changes**
- **Reboot the server**

2. Network Adapter set to "Auto-Detect"

By default, the network adapter is set to "Auto-Detect" the link speed and communication mode. Incorrectly set network cards may result in slow network performance. There is no one correct setting; it depends on how the switch is configured on site. In most cases "Auto-Detect" should be ok but you should confirm transfer rates using the Netperf utility. Change the setting as necessary to get good transfer rates.

- **In Control Panel | Network, go to the Adapters tab and edit the properties of the adapter**
- **Set the Network Speed to match the settings to the port on the hub that the server is connected to. (e.g. 100 Mbps)**
- **Set the Duplex setting be the same as the port on the hub. (e.g. Half-duplex or Full-duplex)** *(see figure 2)*

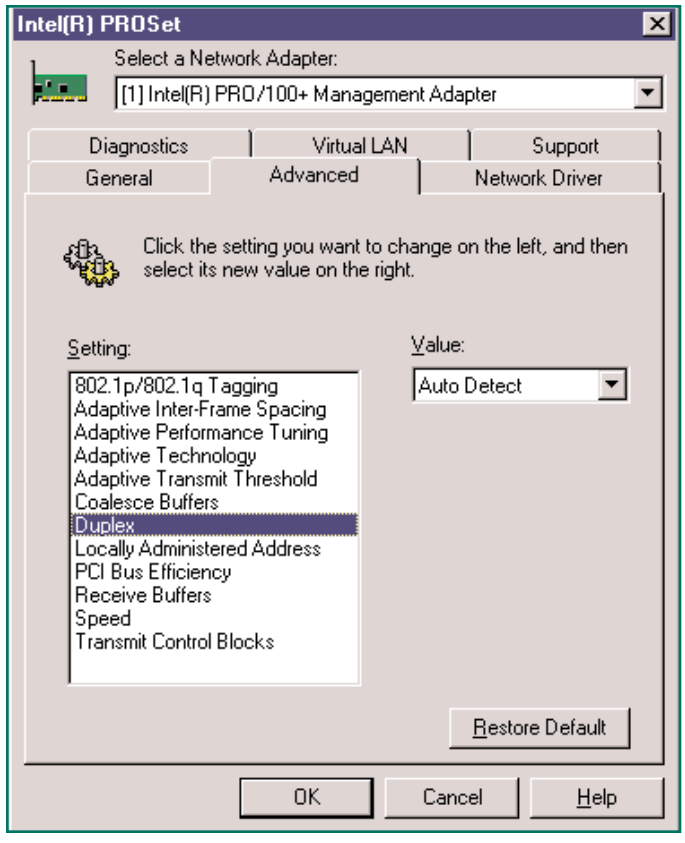


Figure 2

3. No free space on drives

If you don't have enough free space on the D: or E: drive, Prinergy may fail to perform some operations such as normalizing and ripping files, also database backups will fail. Check the free space on the D: and E: drives. You should have 1-2 GB free on the D: drive and 5-6 GB free on the E: drive. We recommend you upgrade older systems like allegro workstation with smaller system drives before installing Prinergy. NT print spooler should be set to the temp drive or to the RAID. Check for a memory dump file, especially after a BSOD. The file is located at **%systemroot%\memory.dmp**. It's safe to delete this file if you don't need it for investigating the BSOD.

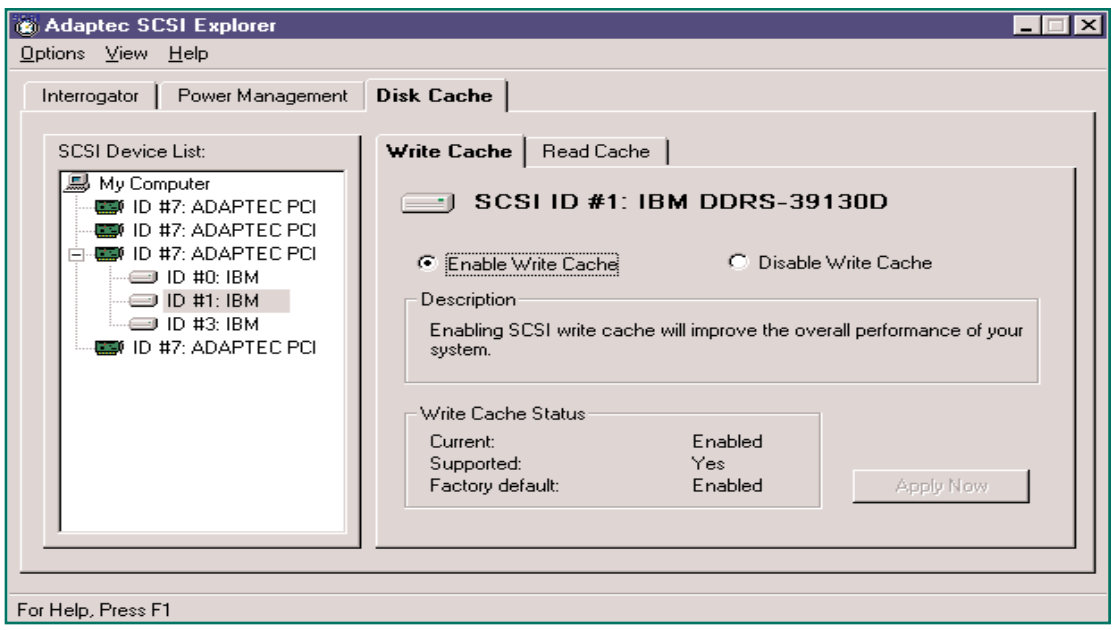


Figure 3

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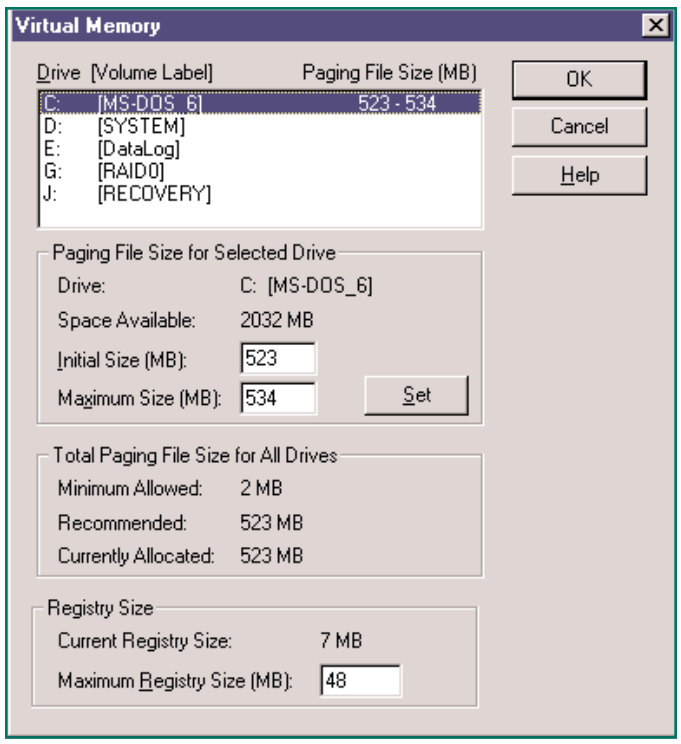


Figure 4

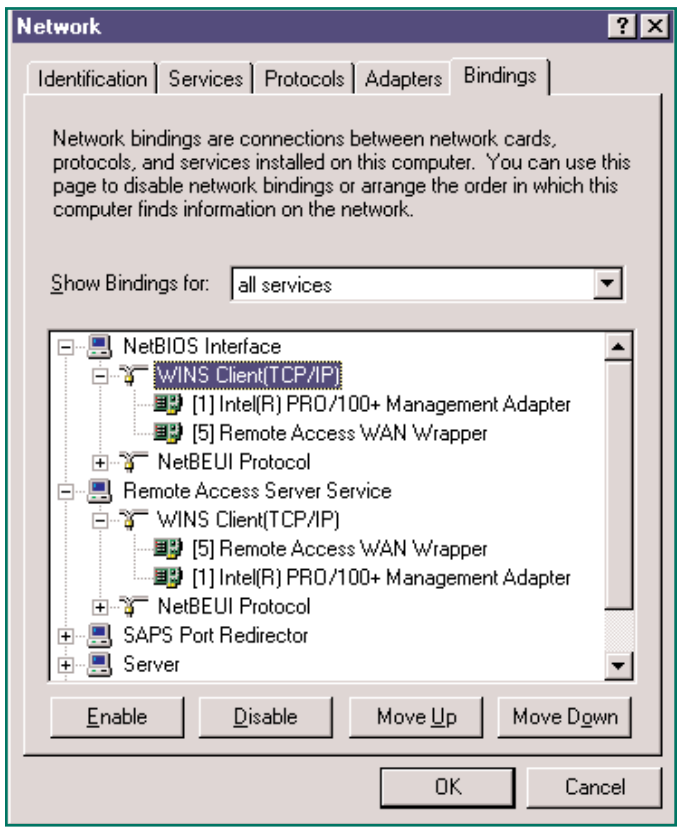


Figure 5

4. SCSI Disk Read/Write cache settings incorrect.

Some hard drives, as factory defaults, have the write cache disabled. To get better performance both read/write caches should be enabled, but only for the Temp (Datalog) drive.

- **Using the Adaptec EZ-SCSI SCSI Explorer utility (is on the NT 4 ghost image, so it will be installed on all systems), go to the Disk Caching tab.** *(see figure 3)*
- **Select the E: drive from the SCSI Device List on the left and click on the Enable Write Cache radio button and click Apply Now.**
- **The write caching should be disabled for the D: drive and its mirror drive.**

5. Size and location of the NT page file

The NT pagefile should be put onto either the system drive D: or the C: drive depending up on disk space availability. For systems with large C: drives, you may want to put the page file there. You can split up the page file over several drives if needed. Avoid using the E: drive for the page file, as this may affect performance.

- **Go to Control Panel/Systems, Performance tab and click on Change for Virtual Memory to change the pagefile settings. For NT 4, set the pagefile Initial size to be the Recommended size and max size to be Recommended size + 11 MB .** *(see figure 4)*
- **For systems with 2 GB memory, set the C: drive to have 1.5 GB and the D: drive to have 500 MB pagefiles.**

6. Network Adapter binding order

The binding order of protocols and adapters is significant because it affects network performance. Binding paths are processed in the order listed. TCP/IP, the primary protocol should be listed first, then NetBEUI. Under each protocol the NIC driver should be listed before the Remote Access Wan Wrapper except for Remote Access Server Service where the WAN should be before the NIC. Disable all other network adapters if they are not used. *(see figure 5)*

- **In Control Panel | Network, go to the Bindings tab and in the Show Bindings For box, select All Services**
- **Expand each service until you see the network card in the list**
- **Make sure the network card is on top for all protocols within each service except Remote Access. (For Remote Access, the network card is at the bottom.) Use the Move up/Move down buttons to change the order.**
- **Also make sure TCP/IP is at the top of the list for each service.**
- **In the Show Bindings For box, select All Protocols**
- **Make sure the network card is first for all the protocols.**

7. DNS server

As a rule of thumb, keep the network configuration as simple as possible. If they do not require a DNS, remove the entries from all servers and Macs. Prinergy does not require it. Removing the DNS remove this dependency and may improve performance. This is more significant especially if the DNS server is external to the site. If they are using DNS make sure it is configured properly with the appropriate reverse lookup zones.

- **For pc's and servers, go to Control Panel / Network and in the Protocols tab edit the TCP/IP properties.**
- **For Macs, go to Control Panels / TCP/IP and remove any entries in the Name Server box.**

8. Invalid Host file entries

The host file is use to translate computer host names to TCP/IP addresses. On each server check that the hosts file does not contain "stale" or conflicting entries. Stale entries are entries that have not been updated to reflect IP address changes. Conflicting entries are duplicate host names mapped to different IP addresses. Prinergy automatically updates the host to optimize orbix performance but if the IP address has changed, whether from a DHCP server or changed manually, there may be conflicting entries.

Any entries that have a comment saying "Added by Araxi, do not delete" can be safely deleted or just commented out, despite what the comment says. This is just meant to ward off people who don't know what they're doing from editing the file and doing bad things. They will get
regenerated over time.

- **Open the D:\WINNT\SYSTEM32\DRIVERS\ETC\Hosts file in Notepad and remove any entries that conflict with the current ip address of the servers.**
- **Make sure you do NOT remove the '127.0.0.1 localhost' entry. If it is missing, re-add the localhost entry.**

9. Printer Spool folder set to system drive and not TEMP drive

This point relates to problem 3, no free space on drive. If the Print Spool is set to the D: drive, you may periodically run out of disk space on the D: drive. You can either set the Print Spool to either the E: drive or the RAID.

- **Go to Control Panel / Printers and select FIle / Server Properties**
- **Go to the Advanced tab and change the Spool Folder directory to the RAID or E: drive (RAID drive is preferable).** *(see figure 6)*

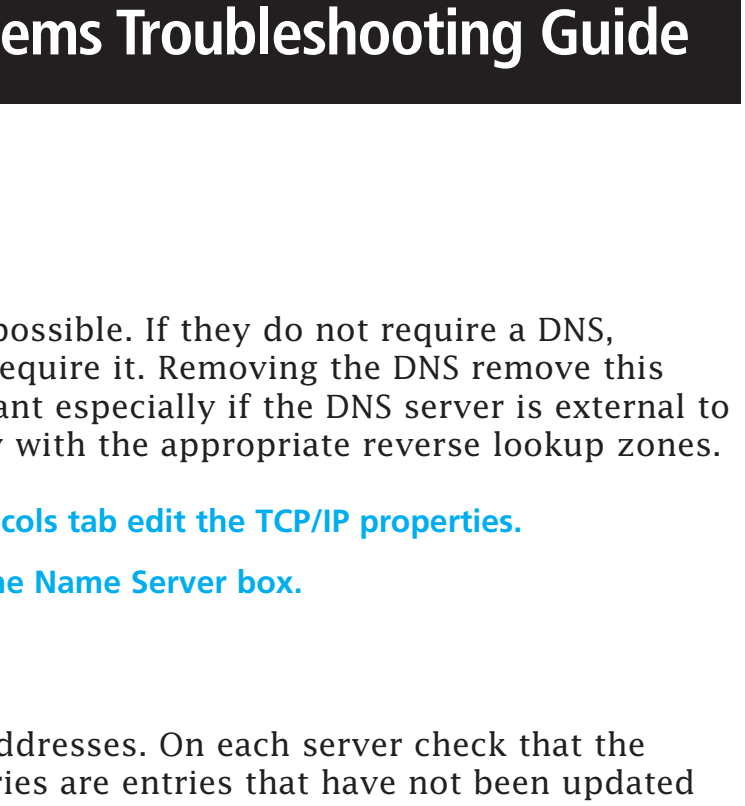


Figure 6

10. Inconsistent Patch levels

Make sure all servers contain the same patches, especially output related patches.

- **Type PPU at the command prompt**
- **Type list at the PPU prompt**
- **Check the list with each server.**

Still Having Problems?

Go over the things you have done and make sure you have been thorough. Take the information you have gathered and organize it in a logical manner. If none of your peers can help, use the RC Escalation path. It is up to date on the web.

At the time this was created, the contacts for Prinergy Systems problems are **Simon Chen (simon_chen@creoscitex.com)**, **Justin Chant (justin_chant@creoscitex.com)** and **Stan Yoshida (stan_yoshida@creoscitex.com)**.