

# Zoo Troubleshooting

20090831

## Overview

The Zoo uses a simple, protocol-independent messaging technology called **Mailslots** to communicate with Rhino. Microsoft networks use mailslots messages in a variety of areas, including domain logon service. Mailslot messaging works on all modern Microsoft operating systems. Mailslot messaging works on both Workgroup networks and on Domain networks.

In terms of configuring the Zoo, there really is nothing to do. As long as all machines involved belong to the same Windows Domain or Workgroup and are installed on the same subnet, then the Zoo should be able to allocate licenses upon request. A couple of things to keep in mind when working with the Zoo.

- Make sure you are running the latest version of the Zoo.
- Make sure you are logged in as the Administrator or as a member of the Administrators group when running the Zoo console application.
- Make sure you are running the latest service release of Rhino and other Zoo-supporting plugins, such as Brazil, Bongo, Flamingo and Penguin.

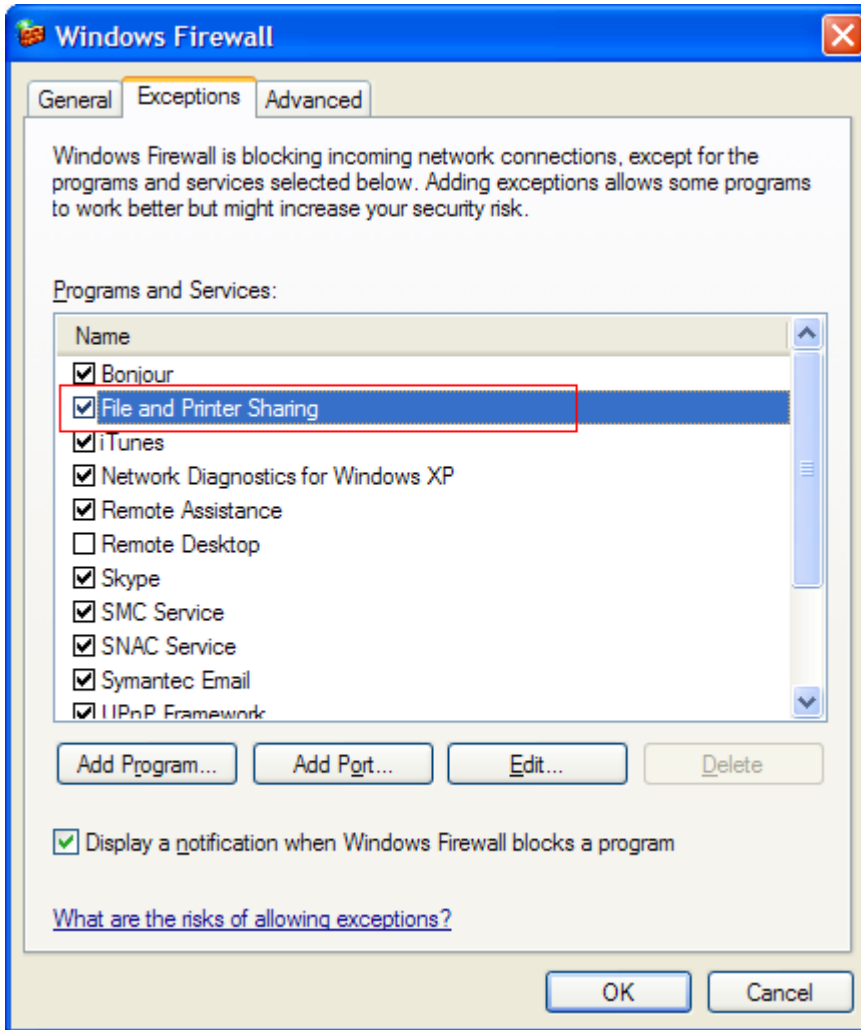
## Application Notes

- The Zoo will run on Windows 2000, Windows XP, Windows Vista, Windows Server 2000 and Windows Server 2003 systems.
- The Zoo requires that the [Microsoft C++ 2005 SP1 Redistributable Package \(x86\)](#) be installed on the system.
- The Zoo will not work with Rhino 2.0 or 3.0 Educational or Educational Lab licenses (CD-Keys).
- The Zoo will not work with Rhino 2.0 or 3.0 running on Asian versions of Windows.
- Not all products are capable of acquiring licenses across a routed network. See the [Zoo Product Compatibility](#) page for a list of what works and what does not.
- You should be logged in as the Administrator or as a member of the Administrators group when running the Zoo console application.

## Networking Notes

- All systems must belong to the same **Windows Domain or Workgroup**.
- Make sure the network connection that you are using has the **Client for Microsoft Networks** installed and enabled. Otherwise, you will get *Failed to write to client mailslot* errors written to the Zoo log file.
- If you using TCP/IP, make sure to **Enable [NetBIOS](#) over TCP/IP** in the advanced TCP/IP options. Otherwise, you will get *Failed to write to client mailslot* errors written to the Zoo log file.
- If the computer running either Rhino or the Zoo is using a firewall, be sure that the following ports are open:

- **UDP Ports 137 and 138**
- **TCP Port 139**
- Note, these are ports that Windows uses for NetBIOS communications. If you are using the built-in **Windows Firewall**, you will want to enable **File and Printer Sharing** as an allowed exception.



- If you have not configured your Rhino systems for either DNS or Registry Key lookup, then all Rhino workstations and the system running the Zoo must be installed on the same network subnet. This is because both Rhino and the Zoo will broadcast messages. Broadcast mailslot messages will not cross network routers and some switches. Wireless routers will also not forward broadcast messages.

### **Ensure Name Resolution works between Zoo and Client:**

The **nbstat** is designed to help troubleshoot NetBIOS name resolution problems. When a network is functioning normally, NetBIOS over TCP/IP resolves NetBIOS names to IP addresses. It does this through several options for NetBIOS name resolution, including local cache lookup, WINS server query, broadcast, LMHOSTS lookup, Hosts lookup, and DNS server query.

To test name resolution using **nbtstat**:

1. On the Zoo server, open a Command Prompt.
2. Type **nbtstat -a <ClientComputerName>**
3. One of the network adapters should resolve the client computer name.
4. On the Client computer, open a Command Prompt.
5. Type **nbtstat -a <ZooServerName>**
6. One of the network adapters should resolve the Zoo computer name.

If **nbtstat** fails to return information for either the Zoo or the Client, then the Zoo will not work with this network configuration. It is beyond the scope of this document and the scope of McNeel Support to help you ensure that your network supports proper NetBIOS name resolution.

## Ensure Connectivity works between Zoo and Client:

The **net view** command displays a list of domains, computers, or resources that are being shared by the specified computer. Used without parameters, **net view** displays a list of computers in your current domain.

To test connectivity by using the **net view** command:

1. On the Zoo server, open a Command Prompt.
2. Type **net view \\<ClientComputerName>**.
3. On the Client computer, open a Command Prompt.
4. Type **net view \\<ZooServerName>**.

The **net view** command lists the file and print shares by establishing a temporary connection.

- If there are no file or print shares on the specified computer, the **net view** command displays a "There are no entries in the list" message.
- If the **net view** command fails with a *System error 53 has occurred* message, verify that the specified computer name is correct, that the computer is operational, and that all of the gateways (routers) between this computer and the computer are operational.
- If the **net view** command fails with a *System error 5 has occurred. Access is denied.* message, verify that you are logged on using an account that has permission to view the shares on the remote computer.

To further troubleshoot this connectivity problem, do the following:

- Use the **net view** command and the IP address of the computer, as follows: **net view \\<IPAddress>**.
- If the **net view** command succeeds, then the specified computer name is being resolved to the wrong IP address.
- If the **net view** command fails with a *System error 53 has occurred* message, the remote computer might not be running the File and Printer Sharing for Microsoft Networks service.

## Zoo Notes

- The Zoo can maintain a log file, **ZOO.LOG**, of conversations with Rhino clients. The log file can be useful in diagnosing some communication problems. If you do not see a log file in the

same folder as ZOO.EXE, then you can turn on logging by selecting Tools->Options from within the Zoo application. Check the log file, using NOTEPAD.EXE, to see if Rhino messages are making it to the Zoo, and that the Zoo is responding to these messages.

## Zoo Bonus Tools:

If you are using the Zoo on routed networks and Rhino is unable to find the Zoo, then the Zoo lookup, either Registry Key or DNS, may not be configured correctly. You might see if one of the Zoo Bonus Tools can assist in resolving the problem. The Zoo Bonus Tools include the following utilities:

1. **SetZooServer.exe** - Assists in configuring workstations for Registry Key lookup.
2. **ZooDnsResolver.exe** - Assists in testing the DNS Lookup feature.

## Frequently Asked Questions

**Question 1:** To use the Zoo, does the user need to install Rhino as a workgroup node? Meaning, if he uses Rhino already as a Standalone node and changes to using the Zoo, does he need to completely reinstall Rhino?

**Answer:** If the user is already running Rhino in standalone mode and then somebody installs a Zoo, then they can do one of two things.

1. From within Rhino, select Tools->License Manager->Workgroup Node. This will switch Rhino's operating mode from standalone to workgroup (and vice versa). The change will take effect the next time they start Rhino.
2. From within Rhino, run the **CheckInLicense** command. If the standalone CD-Key is not in the Zoo, then it will be added and the operating mode switched from standalone to workgroup.

**Question 2:** I am running Rhino 4.0 on an x64-based version of Windows, and I cannot get Rhino to find a Zoo using Registry Key Lookup. What gives?

**Answer:** Computers that are running an x64-based version of Windows use a different registry layout to handle both 32-bit and 64-bit programs.

- Native mode 64-bit programs run in Native mode and access keys and values that are stored in the following registry sub key:

HKEY\_LOCAL\_MACHINE\Software

- 32-bit programs run in WOW64 mode and access keys and values that are stored in the following registry sub key:

HKEY\_LOCAL\_MACHINE\Software\WOW6432node

Rhino 4.0 is a 32-bit application. Thus, if Rhino 4.0 is running on an x64-based version of Windows, you will want to add the Zoo Registry Key Lookup entry in this location:

HKEY\_LOCAL\_MACHINE\Software\WOW6432node\McNeel\RhinoLM

**Question 3:** The Zoo application running on my server seems to be running slowly. When I check the Zoo's log file, I see a number of *Failed to write to client mailslot* errors. What could cause this?

**Answer:** This is a known bug that occurs when a Rhino client has checked out a license and then the client has gone offline (the computer has been removed from the network). This bug has been fixed in the currently available Zoo.