The Ataman™ TCP Remote Logon Services User's Manual

IMPORTANT:Read the *Security Considerations* section before you install these services.

1. Overview

The Ataman TCP Remote Logon Services contains server implementations of the Internet TCP telnet, rlogin, and rexec protocols. The Ataman Telnetd Service and the Ataman Rlogind Service are distributed as shareware. They are not free! However, they are provided in a form that lets you try them out before paying. If you are not familiar with the concept of shareware, see the **Shareware** section below.

The Ataman Telnetd Service provides an implementation of the telnet protocol specified in the Internet document, RFC 854. The Ataman Rlogind Service provides an implementation of the rlogin protocol defined in the Internet document, RFC 1282. Both of these services allow users with an appropriate client program to remotely logon to Windows NT systems. Users logon using the same password used in normal Windows NT user authentication. User processes started via this remote logon session run in the security context of that user. Additionally, if their client provides support for ANSI terminal escape sequences, users may run full-screen console apps, such as text editors. Telnet and rlogin clients that use ANSI escape sequences include, but are not limited to, those that emulate the following terminal types: VT100, VT220, xterms, xterm.

The Ataman TCP Remote Logon Services also contains the Ataman Rexecd Service. This service implements the "rexec" protocol found on many Unix systems. Also provided is the C programming language source code of an rexec client program suitable for porting to any Unix system you might have that does not have an rexec client. Due to the many possible places and conditions this rexec client program might be used, it is provided without technical support. If you have experience in porting code between Unix systems, you may find the provided source code a convenience.

With an eye towards enhancing the software's compatibility with future versions of Windows NT, Ataman Software programmed these services using **no** undocumented Windows NT calls!

2. Shareware

The Ataman TCP Remote Logon Services are distributed and marketed via a method known as **shareware**. The main characteristic of shareware is that the vendor of software allows a user to try a product before they actually buy it. The amount of time a user is allowed to try the software is known as the evaluation period. At the end of the

evaluation period the user of the software is required either to buy the software or to stop using the software.
A side effect of the shareware method is that shareware vendors actually encourage you to copy and share the software with your friends and associates. In this manner, they too can decide whether or not the software fulfills their needs in a way that justifies its price. The important points here are that you can evaluate the product for free and you can give a free copy to your friends. However, payment must be sent to Ataman Software if they or you decide to continue to use the software after the evaluation period.
Users that have paid are called "registered" users and receive the latest version of the software and a "registration code" that allows them to use the software free of payment reminder screens and other forms of reminders. Ataman Software has designed its registration code with an additional feature. Later, if you acquire a new update of the product through shareware distribution channels (and if the new update is not a major revision of the product) then you will be able to use the same registration code with the new version.
If after trying the Ataman TCP Remote Logon Services you decide they meet your needs, the file `order.txt` provides the information necessary to purchase the product. If the copy of the Ataman TCP Remote Logon Services you have is missing that file, please contact Ataman Software. (See the **`Contacting Ataman Software's Technical Support`** section near the end of this document for contact information.)

3. Security Considerations

Microsoft Windows NT is not currently implemented with full support for remotely logged in users. While the Ataman TCP Remote Logon Services do allow users to remotely logon within their own security context, several security issues remain.

3.1 Potential problems of interaction with the "local" user logged onto the main console.

3.1.1 Shared drive maps.

The remote users and the local user share the same "drive map". In other words the letters assigned to the various local and remote drives are shared between the local and remote users. If one user changes the map with "net use", "subst", etc., the other users are immediately (and without warning) affected by that change.
While the users do access the files through this map using their own security context, security issues still exist. For example, if the local user runs programs from a remote drive, the remote users may be able to redirect that drive to another location. Possibly causing the local user to execute functions they did not intend. This can lead to a potentially serious security hole often referred to as a "Trojan horse" attack.

3.1.2 Random message boxes appearing on the main console.

Windows NT 3.1 does prevent remote users from starting up windowed apps. However, the startup of such apps may cause initialization failure messages boxes. These message boxes pop up on the main console... potentially confusing the locally logged on user. Under Windows NT 3.5, windowed apps are started on a "hidden" desktop, leaving you no easy way of exiting the application.
Along the same lines, a remote user should not use the "start" command as this command will cause a new console window to be created. Worse, under Windows NT 3.1, this console window will be visible... providing the user logged in locally with a command

prompt that is running under the security context of another user.

3.1.3 Random sounding of the system bell.

Remote users running programs may cause an action that requests a bell to ring. Because Windows NT provides no mechanism to redirect this function, the bell sounded will be the system bell normally associated with the main monitor. To locally logged-on users, this bell will seem to ring at random... possibly leading them to believe they have made a mistake.

3.2 The dangers of clear text passwords.

Many users of telnet, rlogin and rexec on Unix systems do not realize it, but the telnet, rlogin and rexec protocols send your account and password over the network wires unencrypted. The Ataman TCP Remote Logon Services suffer from this same limitation. Before using these services you should assess the security risk that someone might monitor your network wires and thereby obtain the accounts and passwords sent by both protocols in "clear" (unencrypted) text.

3.3 No cleanup of child process.

Windows NT provides no way for a parent process to know about the children of its child processes. Further, no method of cleanly killing another process is provided. (There is a kill provided, but that kill does not notify DLL's that are attached to the killed process of the exit. This potentially leaves dead data inside those DLLs.) The net effect is that it is not possible for the telnetd and rlogind services to do cleanup. It is important that remote users be aware that they should always logout by exiting any applications they are running and typing the "exit" command to the command prompt. If the users fail to do this, we do cause the cleanup of the command prompt process (CMD.EXE), but any applications they were running will continue to run.

Over a period of time, these "orphaned" processes from remote users will likely take up an unacceptable amount of system resources. At this time the only known solution to the problem is to reboot the system. For systems that are used heavily by remote users, it may be advisable to schedule reboots on a regular basis.

3.4 Other issues.

The issues above are only the ones thus far discovered. As the current Windows NT implementation does not fully support remotely logged on users, it is quite likely that new security holes will be found. In short, users allowed to remotely logon using the Ataman telnetd, rlogind or rexecd services should be limited to those that are trusted enough that it can be assumed that they can potentially gain privileged access to the system. The installation section below covers the mechanism used to restrict the users allowed to logon.

4. Ataman's Anonymous FTP Site.

Not sure if you have the latest version? Need a text editor that works with the ATRLS? Check out our anonymous FTP site:

```
ftp://rmii.com/pub2/ataman
```

5. Installation

Installation must be performed from an account that has Administrators or Domain Admins privilege levels. You must have installed the TCP/IP Protocol into Windows NT before these services can work.

On the system that you wish to install the Ataman TCP Remote Logon Services, create a

directory that is local to that system. For example:

```
mkdir c:\ataman
```

The directory you create must have its permissions set such that the executable (*.exe) files can be read and executed by the SYSTEM account and all user accounts that will be allowed to remotely logon. All directories in the path to the executables must be searchable by those accounts.
Change your working directory to this new directory and unzip the archive into this directory.
To install the telnetd service type:

```
telnetd install start
```

To install the rlogind service type:

```
rlogind install start
```

To install the rexecd service type:

```
rexecd install start
```

5.1 Granting users permission to logon.

You now need to give those users that you want to allow to remote logon the right to "Log on as a Service". **IMPORTANT:** You must have previously read the **Security Considerations** section before taking the next step!

If you are not running on a Windows NT Advanced Server machine, you can do this by:

- Run the "User Manager" program located in the "Administrative Tools" program group.
- Select the "User Rights" item in the "Policies" Menu.
- Click the "Show Advanced User Rights" check box, then scroll the "Right:" drop-down list until you get to "Log on as a service" entry.
- From here you can then add those users or groups you wish to allow to logon remotely.

If you are running on a Windows NT Advanced Server machine, you can do this by:

- Run the "User Manager for Domains" program located in the "Administrative Tools" program group.
- If the server you are setting these rights for a machine that is a Primary Domain Controller (PDC), skip to the next step. Otherwise, it is necessary to tell "User Manager for Domains" that you want to set rights for the server machine, NOT the domain. To do this, select the "Select Domain" item in the "User" menu. In the dialog box where it says "Domain:", type "\\MachineName" where "MachineName" is the host name of the system for which you wish to edit privileges. Once you push the "OK" button, you will then be able to edit the privileges for that system. **NOTE: If you are running Windows NT 3.51 and the machine you want to authorize is a Backup Domain Controller (BDC), you will hit a bug Microsoft introduced in Windows NT 3.51's "User Manager for Domains". In this version, they left no mechanism that allows a user to set the user rights that are local to a BDC (it will force you back to the domain if you attempt to change this as specified above). The only work-around we have found is to use "Server Manager" to temporarily**

promote the BDC to a PDC, give the users the rights as below, then promote the original primary server back to PDC.

- To clarify the last point: user rights are assigned on a per system basis. Thus on every system to which you wish to allow remote logons, you must edit the user rights for that system. Editing the user rights for the domain affects only the user rights on the primary domain controller for that domain.
- Select the "User Rights" item in the "Policies" Menu.
- Click the "Show Advanced User Rights" check box, then scroll the "Right:" drop-down list until you get to "Log on as a service" entry.
- From here you can then add those users or groups you wish to allow to logon remotely.

6. Removal

Ataman Software is committed to making the use of its software as easy as possible for the end user. Most users prefer software that removes as easily as it installed, thus we provide a procedure to uninstall the software. The uninstall procedure removes the service and all associated registry entries. It does not remove the disk files as you may simply be moving the software to a different machine.

If you need to remove the Ataman Telnetd Service from your system, type:

```
telnetd stop remove
```

If you need to remove the Ataman Rlogind Service from your system, type:

```
rlogind stop remove
```

If you need to remove the Ataman Rexecd Service from your system, type:

```
rexecd stop remove
```

You may also wish to remove the user rights to "Log on as a service" you added when you installed the services. To do this follow the instructions in the Installation section; selecting **remove** instead of **add**.

7. Registration

7.1 What is registration.

If after evaluating the Ataman TCP Remote Logon Services you find that they meet your needs, you need to purchase a license to use the product. Ordering information can be found in the file `order.txt`. If this file is missing, please contact Ataman Software using the information found in the **`Contacting Ataman Software's Technical Support`** section near the end of this document.

Once Ataman Software has processed your order, you will receive a **registration code**. This registration code acts as a key to the software. It instructs the software that you are now a registered user and that it should disable payment reminders and other reminder features designed to insure that evaluating users not use the software beyond the evaluation period.

One nice feature of the registration code is that if you later acquire a newer version of the product through shareware channels (and the newer version of the product is not a major revision), then you will be able to use your registration code with this newer version. (Major revisions to a product add significant new features to the product and thus normally require an upgrade price. Ataman Software will notify all registered users when a new major upgrade is available. Minor upgrades generally contain fixes and minor enhancements.)

Registration codes are tied to the name of the registered user and cause the product to list that user as the proper licensee of a product. You should never share your registration code with another user as it will be your name that must appear as the licensee of that copy for that registration code to work.

7.2 How to register your copy.

Registering the Ataman TCP Remote Logon Services is simple. Install the ATRLS using the **Installation** section above. In the directory where you installed the new version, you will find a program called "`register.exe`". This program allows you to install the registration information so that the servers in the Ataman TCP Remote Logon Services will know that you are a registered user.

To use "`register.exe`", start a command prompt and use the information provided in the letter of registration that arrived with your diskette to issue the following command:

```
register Registration_Code "Registration_Name"
```

The two quotes (") above must be used if the name of the registered user is more than one word. You should replace *`Registration_Name`* with the name listed beside the "Registration Name:" entry in the registration letter and replace *`Registration_Code`* with the code listed beside the "Registration Code:" entry. (Typically *`Registration_Name`* will be either your name or your company's name.) Be sure to list the name spelled as shown in the letter, even if there is a mistake in spelling, because the registration code is tied to that spelling of the name. (If a mistake in spelling has occurred, contact Ataman Software's Technical Support and a new code will be issued.)

The Ataman TCP Remote Logon Services needs to be restarted before the registration become effective, you can either reboot your system or issue the following commands:

```
telnetd stop start      rlogind stop start      rexecd stop start
```

Be sure to save your registration information. You will need it any time you reinstall the software.

8. Using the Ataman Rlogind and Telnetd Services

8.1 Logging On: Simple vs. Advanced.

After connecting to the rlogind or telnetd services and giving your password you will see the following prompt:

```
Use advanced features (requires ANSI terminal emulation)? (y/n) [x]?
```

This prompt lets you select between the simple and advanced modes of telnetd and rlogind services. If you want to use the advanced mode type 'y'; to use simple mode use 'n'. The default value shown as "[x]" will be 'y' if your client program reports a terminal type of "vt100", "vt220", "ansi", "dec-vt100", dec-vt220", "xterm", or "xterms". It will be 'n' otherwise. The default value is selected by typing the <Enter> key.

8.1.1 Advanced Mode.

This mode allows you to run full-screen console programs such as text editors. In order to use this feature your client program must support ANSI terminal escape sequences. ANSI escape sequences are used by most terminal emulation programs. In general if you are running a program emulating a VT100 or VT220 terminal or the "`rlogin`" or "`telnet`" program when running from inside the "`xterm`" program that comes with most Unix systems, you will be able to use the advanced mode.

NOTE: Under Windows NT 3.1, DOS and OS/2 1.x full screen programs often cannot

receive input correctly, see the **Troubleshooting / Technical Support** section below for details. The EDIT.EXE program provided with Windows NT is an example of such a DOS program.
The full range of DOSKEY-style command line editing is available in advanced mode. See the **Sending Special Keys** section below for information about how to send keys such as "Home".
Due to the manner in which Advanced Mode works (and the fact that the Win32 API does not provide good facilities for remote logon) the ^S and Pause keys do not suspend output as they do in a local command prompt window. If you are issuing a command that will have more than one screen of output, piping its output to the Windows NT "`more`" command is advisable.Example:

```
type longfile.txt | more
```

If you are logging in remotely and are coming in over a slow link, such as a modem, you may want to choose simple mode, even if your client program can support advanced mode. Simple mode is much less data intensive and if you are not going to make use of full-screen console programs, it will work much faster over slow links.

8.1.2 Simple Mode.

Simple mode allows you to use most console-mode programs that read from standard input and write to standard output.
Limited command line editing is available in simple mode:

<ESC>, ^U	Erase the current line.
^H, ^?	Erase the last character typed.
^C	Interrupt Process (as in CMD.EXE).
^S	Suspend Output (as in CMD.EXE).
^Z	Send End Of File (as in CMD.EXE).

8.2 Account Naming Issues

Windows NT account names can exist in several name spaces. For example a Windows NT station in an Advanced Server domain has a local "Administrator" account and also has a corresponding "Administrator" account in its default domain. Ataman TCP Remote Logon Services use the following rules to disambiguate account names:

- If the account name is qualified (contains a backslash), the name preceding the backslash is first treated as a domain name, if there is no corresponding domain, then it is treated as a machine name. (Example: "MainDomain\Adminstrator").
- If the account name is not qualified (does not contain a backslash), the name is first looked up on the local machine. If the account name is not found, it is then looked up in the default domain of the machine.

The rlogind and rexecd (but not the telnetd) protocols were defined in a Unix environment where its limitation of 16 characters in an account name was generally not a problem. Unfortunately, this is too weak to accommodate Windows NT account naming. In attempting to overcome this problem, the Ataman Rlogind Service and the Ataman Rexecd Service do not enforce the 16 character limit. And fortunately most rlogin / rexec clients do not enforce this limit either. If you are trying to use an account name that is longer than 16 characters and are getting unexpected failures, try using an account with a shorter account name. This will help you to determine if the problem is caused by your client program truncating the account name to 16 characters.

8.3 User Environment.

When users logon, their environment will contain all system-wide environment variables that are set on the local system. They will not receive their normal user environment settings (the Win32 API does not provide this ability). To circumvent this omission in the Win32 API, the Ataman TCP Remote Logon Services automatically set the following environment variables:

USERDOMAIN	The domain name in which the user account is defined.
USERNAME	The account name of the user.
HOMEPATH	The path name of the home directory of the user. If the user's home directory is a remote path, then this will contain the Universal Naming Convention (UNC) name of the user's home directory.
HOMESHARE	Always set to NULL. See the comments on remote directories below.
HOMEDRIVE	If the user's home directory is local, this contains the drive letter followed by a colon. If the home directory is remote, this is set to NULL.

Because the remote user shares the drive map with all other users, it is not possible to automatically mount a remote user's remotely named directory on its normal drive letter. However many sites may wish to establish conventions whereby remote users are allowed to use certain drive letters remotely. Further, other environment variables may need to be set at logon. Thus the Ataman TCP Remote Logon Services execute the file "`remote.cmd`" if present in the user's home directory. Because the usage of rexec normally needs uncorrupted output, it is advisable to have the first line of "`remote.cmd`" be "`@echo off`".

If a remote user's home directory is specified as a remote directory, the user's initial directory will be "C:\". If desired, this can be overridden in "`remote.cmd`".

8.4 The TERM variable.

When in simple mode, the value passed in by your client program is put into the **TERM** environment variable. Under advanced mode programs work best if they do not use terminal escape sequences but instead use the native Win32 Console API. For this reason the **TERM** variable is <u>not</u> set in advanced mode.

8.5 Sending Special Keys – (Advanced Mode Only).

The rlogin and telnet protocols are defined only over the ASCII character set. However, many DOS, OS/2 and Windows NT applications expect the availability of keys defined outside the ASCII set. Unfortunately, there is no ANSI specification for special keys. In place of such a standard, the sequences below were adopted in the hope that they were reasonably easy to generate manually and as easy as possible to remember.

Check the documentation that came with your client rlogin or telnet program. Many such programs contain the ability to create keymaps.

Character Sequence Typed	Special Character Generated
^A^A	^A
^Aa	The next character sent will be sent as an “Alt” character. Example: to send Alt-F1, type: ^A^a^A1.* This sequence may be combined with the Ctrl and Shift sequences. If you need to simulate the press and immediate release of the Alt key, see the sequence ^Az below.
^Az	Simulate the pressing and immediate release of the Alt key. This sequence is needed in many CUA-compliant programs to activate the program's menu bar.
^Ac	The next character sent will be sent as a control character. Example: to send Ctrl-F1, type: ^A^c^A1.* This sequence may be combined with the Alt and Shift sequences.
^As	The next character sent will be sent shifted. Example: to send Shift-F1, type: ^A^s^A1.* This sequence may be combined with the Alt and Ctrl sequences.
^A^R	Causes the screen to be redrawn.For applications that work in line input mode (for example the Command Prompt itself) ^R alone works too.
^Au	Up Arrow
^Ad	Down Arrow
^Al	Left Arrow
^Ar	Right Arrow
^Ai	Insert
^Ax	Delete
^Ah	Home
^Ae	End
^Ap	PageUp (Previous)
^An	PageDown (Next)
^A1	F1
^A2	F2
^A3	F3
^A4	F4
^A5	F5
^A6	F6
^A7	F7
^A8	F8
^A9	F9
^A0	F10
^A-	F11
^A=	F12

8.6 Screen buffer size limits.

Due to both the method used to copy the console screen buffer to the remote screen and an internal limit in a Win32 API call used to perform the copy, screen buffer sizes are

limited to a maximum of 60 lines and 128 columns. If the Ataman Telnetd Service or the Ataman Rlogind Service is used via slower links (for example over a 14.4K modem), performance will be best when using smaller screen buffer sizes.

8.7 Manual resize necessary when screen buffer size is changed on the server end.

The rlogin and telnet protocols provide no means for a server to communicate a window size change to a client. Thus if you run a DOS or OS/2 character mode application (which can automatically cause screen buffer size changes) or use an application that explicitly changes the size of the screen buffer (for example the “mode con” command), you must manually resize the client to match the change in the screen buffer size. Provided that your rlogin or telnet client program implements the feature, size changes initiated via resizing the client window, will be passed to the rlogind/telnetd service. This will cause the remote screen buffer to be resized to match the client.
To check the size of your remote screen buffer use the “mode con” command with no additional arguments.

9. Customization

NOTE: If you change or create any of the registry entries below, you will need to stop and then restart the services with the new or changed values before those entries will take effect.

9.1 Presenting a banner to the remote user after logon.

This works for telnetd and rlogind only.

Create registry value entries of type REG_SZ:

```
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Telnetd Server\CurrentVersion\
Banner
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Rlogind Server\CurrentVersion\
Banner
```

In the banner string, the sequence "\n" generates an end of line output, to use the '\' characters in the banner string use two '\' characters in a row.

Example: This is a test banner.\nLine 2 containing a \\.\nLine3.\n

9.2 Presenting a banner to the remote user prior to logon.

This works for telnetd only.

Create registry value entries of type REG_SZ:

```
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Telnetd Server\CurrentVersion\
PreBanner
```

In the banner string, the sequence "\n" generates an end of line output, to use the '\' characters in the banner string use two '\' characters in a row.

Example: This is a test pre-banner.\nLine 2 containing a \\.\nLine3.\n

9.3 Changing the logon prompt.

This works for telnetd only.

Create registry value entries of type REG_SZ:

```
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Telnetd Server\CurrentVersion\
LogonPrompt
```

If this registry value is not present, the default logon prompt is “Account Name: ”.

9.4 Changing the password prompt.

This works for telnetd and rlogind only.

Create registry value entries of type REG_SZ:

```
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Telnetd Server\CurrentVersion\
PasswordPrompt
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Rlogind Server\CurrentVersion\
PasswordPrompt
```

If this registry value is not present, the default password prompt is “Password: ”.

9.5 Automatic selection of telnetd/rlogind mode.

This works for telnetd and rlogind only.

Create registry value entries of type REG_SZ:

```
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Telnetd Server\CurrentVersion\
ModeSelection
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Rlogind Server\CurrentVersion\
ModeSelection
```

The registry value must be one of: ask, advanced, simple. Setting the value to “ask” causes the user to be asked which mode they want. The settings “advanced” and “simple” force the selection to the corresponding type -- a user logging on will not be asked to select a mode.
If this registry value is not present , the default mode selection is “ask ”.
If the registry value has an incorrect value, the mode will be forced to “ask”.

9.6 Changing the default command processor.

By default, all services invoke CMD.EXE as the command processor. By adding the registry value below you can override the command processor used by all users. NOTE: if you override the command processor, then the automatic environment setup using the REMOTE.CMD script will no longer be available.

Create registry value entries of type REG_SZ:

```
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Telnetd Server\CurrentVersion\
CommandProcessor
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Rlogind Server\CurrentVersion\
CommandProcessor
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Rexecd Server\CurrentVersion\
CommandProcessor
```

In the case of rlogind and rexecd, the `CommandProcessor` entry should be contain all arguments appropriate to user initialization. In the case of rexecd, the `CommandProcessor` string will be appended with the command the remote client wishes to execute.

9.7 Bump up priority while logging on.

On loaded systems, the logon process can be slow. You can set this registry value to 1 if you want to increase the priority of the logon process AT THE EXPENSE OF THE OTHER PROCESSES ON THE SYSTEM.

Create registry value entries of type REG_DWORD:

```
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Telnetd Server\CurrentVersion\
IncreaseLogonPriority
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Rlogind Server\CurrentVersion\
IncreaseLogonPriority
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Rexecd Server\CurrentVersion\
IncreaseLogonPriority
```

9.8 Changing default exit detection timeout.

Due to a technical issue related to pipes, the rlogind and telnetd servers have to "guess" when a command prompt is about to exit. At those times when it this guess occurs, the rlogind and telnetd servers wait before doing a read of input. If this read timeout is too short, the exit detection doesn't work, and so users need to type an extra input before the telnetd and rlogind exit. (In other words, when the user types "exit" to CMD.EXE, the telnet client will not "hang up" until the type an extra character.) Through internal experimentation we have found that a value of 400 milliseconds works well under most circumstances. However some customers have found this inadequate, so we provide this value. The value should be set to as small a value as provides the desired behavior.

Create registry value entries of type REG_DWORD:

```
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Telnetd Server\CurrentVersion\
ExitDetectionTimeout
HKEY_LOCAL_MACHINE\Software\Ataman Software, Inc.\Ataman Rlogind Server\CurrentVersion\
ExitDetectionTimeout
```

10. Using the Ataman Rexecd Service

The Ataman Rexecd Service is used by invoking an rexec client program of your choosing. The discussion of Account Naming Issues and User Environment for the Ataman Rlogind and Telnetd Services above applies to the Ataman Rexecd Service too.

11. Troubleshooting / Technical Support

11.1 Where to begin.

11.1.1 Event Log

The Ataman TCP Remote Logon Services report error messages to the Application Event Log. This log can be viewed using the Event Viewer application which can usually be launched by double clicking its icon in the Program Manager group: Administrative Tools. Make sure the Application event log is selected. (Its entry in the Log menu should have a check mark beside it... if not, select it.)

All Ataman TCP Remote Logon Services entries begin with the tag "Ataman". Most of the error messages are self explanatory. Any error codes mentioned are standard Windows NT error codes as returned by GetLastError(). Please don't hesitate to sent us technical support electronic mail if you need a message explained.

On rare occasion you may have a service failure. These are logged by the Service Control Manager in the System Log.

11.2 List of known problems.

11.2.1 Keyboard input problems with DOS and OS/2 1.X.

Under Windows NT 3.1, DOS and OS/2 1.X most programs that read from the keyboard fail to function properly. These programs will appear hung, the program will need to be killed with the `pviewer` utility or your system will need to be rebooted.

Under Windows NT 3.5 character-mode DOS and OS/2 1.X programs have only one known problem: `^C` doesn't work as an interrupt character.

11.2.2 Remote users use CPU time even when they are idle.

This occurs only when using rlogind or telnetd in Advanced Mode and is not a problem, but rather an artifact of the method used to provide full-screen support. Windows NT does not have inherent remote full-screen support but does provide a means to read the screen's current contents. In order to provide a remote snapshot of the current screen's content, the screen has to be examined periodically to see what changes (if any) have occurred. If the CPU usage by remote users proves too much of a load, consider having some of your remote users use Simple Mode.

11.2.3 WinQVT keeps reporting that remote logon has failed.

WinQVT version 3.94 does not work properly with the rlogind services of most systems. WinQVT version 3.97 fixes that problem and works fine with the Ataman Rlogind Service. Thus we recommend contacting the makers of WinQVT for an upgrade.

11.2.4 Eventlog says: Ataman Command Starter: CreateProcess: 5

This means that an account with Administrator privileges tried to logon, but that account does not have sufficient rights to execute `transcmd.exe`. The error cannot be caught sooner as Administrator accounts have a large number of privileges that allow all other operations up to this point to succeed.

11.2.5 Service Manager can't find `.exe` or Start failed: 2

Usually this error means that you've moved the software after you installed it. Services cannot be moved after installation as an absolute path name is stored. To correct the problem, remove, then reinstall the software.

11.2.6 Access denied when accessing a drive mounted with `NET USE`.

Because Windows NT wasn't designed with the idea of more than one interactive user logged on at the same time, oddities often occur when accessing remote drives via a drive letter in the shared drive map. Most users seem to have better results when accessing remote drives via the `SUBST` command. Accessing remote drives via UNC names also seems to work.

11.2.7 Miscellaneous problems with Banyan Vines or NetManage NFS.

All users of Banyan Vines and some users of NetManage's NFS product report RPC subsystems hanging or disappearing mounts when used in conjunction with the ATRLS. We believe the problem is related to their products not expecting to see the additional security context of a remote logon. We are willing to work with the technical support staff of any networking provider to help resolve such problems. Due to bad experiences in the past we are not willing to initiate that contact.

11.2.8 "ZZZ Ataman Command Starter..." problems at system startup.

The service named "ZZZ Ataman Command Starter..." is a temporary service that under normal circumstances would automatically be deleted. It is necessary because Microsoft doesn't document APIs for logging on, and this temporary service plays a "trick" in order to provide that function.

The temporary service is harmless, you can just set it's startup in the Services control

panel to disabled it. Or, if you know how to use regedt32, remove the key:

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\ZZZ Ataman ...

The service will then go away at your next reboot. This problem should be very rare: if you are continually getting this same problem, please contact technical support.

11.2.9 Login failure messages in the Event Log every minute.

This is due to a bug in Compaq's Insight Manager program. Compaq has provided a work-around: Upgrade to version 2.60b or newer of the Insight Manager product, then use the Control Panel for the Insight Manager product to disable telnet detection. Compaq is working on a better solution.

11.2.10 Program exits immediately with no output.

The most likely problem is that you have a needed DLL missing from your PATH. Because telnetd/rlogind/rexecd users need to see the error messages in a non-GUI form, we set things so that Windows NT will not let an error pop-up box occur for this error, but rather cause the error code to be returned to the calling program. In most instances this setting has the desired effect of letting a remote error see the error message, however, for reasons unknown to us, Microsoft has made the CMD.EXE suppress the error message for a missing DLL. This is particularly odd because it would be necessary for Microsoft to have written CMD.EXE to explicitly ignore that error.

11.3 Contacting Ataman Software's Technical Support.

Free technical support is provided exclusively via electronic mail. From CompuServe the address is: `70363,1373`. From the Internet use: `support@ataman.com`. (Because the Internet is changing and growing very quickly, mail delivery is not always as stable as one would like. Should a problem arise, please remember that our CompuServe address can also be reached from the Internet as: `70363.1373@compuserve.com`.)

IMPORTANT: Our biggest problem in providing technical via electronic mail is when we receive electronic mail where the return address given to us is invalid. Please be sure to give your standard return address as a part of your message if your local mailing system does not automatically provide it. In all cases, it is also advisable to list your telephone number so that we have an alternate means of reaching you in the event of electronic mail failure.

Ataman Software takes its technical support by electronic mail very seriously. Under normal circumstances, we check for mail at all our mail drops many times each day. While the turnaround time will of course vary due to the speed of your local mailing handling, Ataman's Internet provider is well placed on the Internet. It should be a very rare event that we haven't responded to your mail within 1 business day. If you have not received a response within this time period, please tell us by using one of our alternate e-mail addresses or by calling us at (970) 225-9131.

Technical support can be made available via other mechanisms than electronic mail on a fee basis. However, the electronic mail support will have equal priority to the fee-based support and thus electronic mail should be used if at all possible.

To arrange alternate fee-based technical support contact:

Ataman Software, Inc.749 S. Lemay, Suite A3-411Fort Collins, CO 80524(970) 225-9131FAX: (970) 225-0335

Bug fixes are worked into minor releases that are distributed on the Internet and CompuServe via standard shareware distribution channels. You may also obtain the latest version from Ataman Software for a distribution fee. You only need to obtain one copy to

upgrade all the copies for which you have a license. You may share the upgrade with other registered users. Your registration code will work with all minor version releases that have the same major version number as the software you originally licensed. Only the latest major release version is eligible for full technical support. When a new major version is released, support for the old version will be phased out over a 3 month period.

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* Due to the many different ways DOS programs handle special keys, Windows NT is not always able to send the Alt, Ctrl, and Shift modifiers in the manner the program expects. Experimentation with an application on files containing non-critical data is the only way we have found to know whether or not these keys can be reliably sent.