

The cover features a composite image. The top half shows a woman and a man working at a computer in a bright, modern office. The bottom half shows two polar bears walking on a snowy, icy landscape. A large, stylized 'Freeze' logo is overlaid on the image. A yellow curved line separates the top and bottom halves of the cover art.

deepFreeze
enterprise

COMPLETE WINDOWS PROTECTION

For Windows 95 | 98 | ME | 2000 | XP

User Guide

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Deep Freeze Security Notice

Deep Freeze does not protect against booting from a floppy drive or CD-ROM drive. The CMOS should be configured to prevent booting from the floppy drive or CD-ROM drive (i.e. set to boot to the hard drive) and the CMOS must be password protected. This is a normal precaution for most public access computers. The Windows Registry, the computer CMOS and the boot sector are protected by Deep Freeze from within Windows.

Technical Support

Every effort has been made to design this software for ease of use and to be problem free. If problems are encountered, contact Technical Support:

Email: support@faronics.com
Phone: 800-943-6422 or 604-540-8199
Hours: 8:30am to 5:00pm (Pacific Time)

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Deep Freeze Overview

About Deep Freeze

With over four million installations, Deep Freeze has a proven track record of non-restrictive, complete Windows protection. Deep Freeze provides network administrators with a simple and 100% successful method of maintaining desktop systems and reduces software technical support to an absolute minimum. Deep Freeze is completely invulnerable to hacking and makes computing environments easier to manage and maintain. Each restart eradicates all changes and resets the workstation to its original state right down to the last byte.

Deep Freeze Enterprise Components

Deep Freeze uses different colored icons to represent the functions of its components.

Files identified by a red icon should generally only be installed on an administrator computer.



The Deep Freeze Enterprise installation file.



The Configuration Administrator application—used to create a customized, pre-configured workstation installation program file, Workstation Seeds, the Enterprise Console, and generate One Time Passwords.



The Enterprise Console application—used to centrally deploy, monitor, manage, and maintain Deep Freeze workstations.

Files identified by a yellow icon should generally only be installed on a workstation computer.



A pre-configured workstation installation program file that is used to install Deep Freeze on workstations.



A pre-configured Workstation Seed used to Target Install Deep Freeze from the Enterprise Console.

Files identified by a computer network icon should generally only be installed on an administrator computer.



A file used to install and manage the Deep Freeze Enterprise Server Service that allows Remote Console operation.

System Requirements

The Deep Freeze Configuration Administrator and the Enterprise Console require Windows 2000 or XP to function properly. Deep Freeze requires Windows 95/98/Me/2000/XP and 10% free hard drive space.

New Features

Deep Freeze Enterprise Version 5 offers several new features and benefits, including:

- Single install for Windows 95/98/Me/2000/XP
- Ability to image Deep Freeze as part of a Windows 2000/XP master image
- NTFS ThawSpace of up to 100GB
- Option to retain existing ThawSpace on Windows 2000/XP
- Disable keys on Windows 2000/XP workstations during Scheduled Maintenance
- Message box on workstation during Scheduled Maintenance when keys are disabled
- Consolidated Deep Freeze Command Line control for Windows 95/98/Me/2000/XP
- Dynamic configuration update using the Enterprise Console
- Support for installing critical updates to Windows 2000/XP automatically during the Maintenance period either via the Internet or an SUS (Microsoft Software Update Services) server

About Faronics

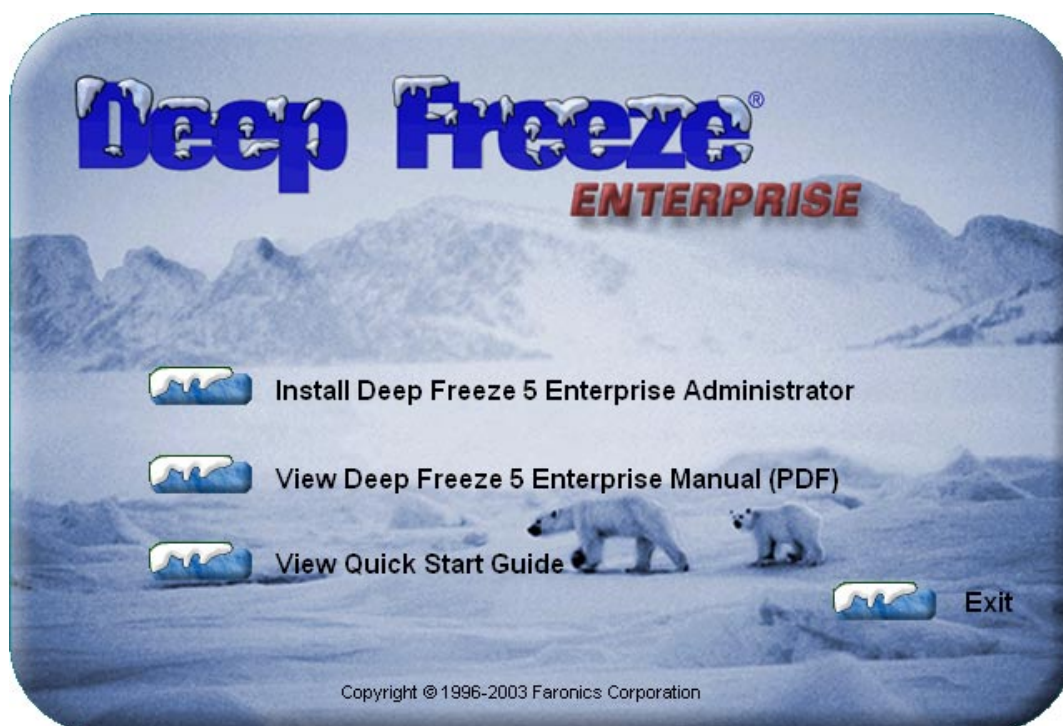
Faronics develops and markets workstation protection management solutions for multi-user computing environments. Since 1989, Faronics' proven solutions have made information technology professionals and computing lab managers more effective by ensuring 100% availability of workstations, dramatically reducing workstation management and maintenance, and increasing user satisfaction. Faronics' flagship solution, Deep Freeze, protects over four million workstations worldwide. Educational institutions, libraries, government organizations, and corporations benefit from Faronics' user driven and powerful technology innovations.

Deep Freeze Configuration Administrator

The *Configuration Administrator* is intended to only be installed on the computer that will be used to administrate Deep Freeze. It is used to create a customized Deep Freeze installation program pre-configured with passwords, schedules, and other options, Workstation Seeds, the Enterprise Console, the Server Service Manager, and generate One Time Passwords.

Installation

Insert the CD-ROM from the media package into the CD-ROM drive. Select *Install Deep Freeze 5 Enterprise Administrator* in the window that appears on the desktop.



If Deep Freeze has been downloaded via the Internet, double-click the file *DF5Ent.exe* to begin the installation process.

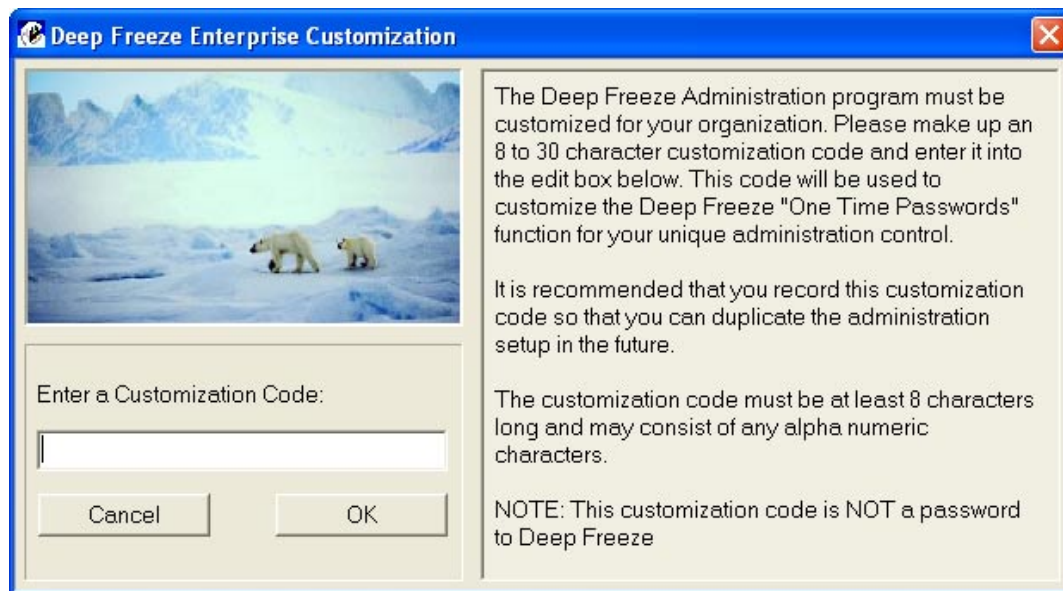
Follow the steps presented, then read and accept the licence agreement. Click *Install* and the Configuration Administrator will be installed on the computer.

Initialization with a Customization Code

Open the Configuration Administrator by selecting the following path from the *Start* menu:

Start → Programs → Faronics → Deep Freeze Enterprise → Deep Freeze Administrator

The *Deep Freeze Enterprise Customization* window will appear the first time the Configuration Administrator is opened.



Deep Freeze requires a *Customization Code* to be created by the administrator. This code is not a password that can be used to access Deep Freeze. It is a unique identifier that completely encrypts the Configuration Administrator, the Enterprise Console, the workstation install program, the *One Time Password Generation System*, and *Deep Freeze Command Line Control*. The Customization Code will ensure that no other administrators can access or control a workstation. Multiple Deep Freeze administrators controlling the same group of workstations should use a matching Customization Code.

Enter a Customization Code to complete the initialization of the Configuration Administrator. The code must be at least eight characters long and may consist of any combination of alpha-numeric characters.



The Customization Code must be recorded and guarded with care. Faronics is unable to recover a lost or forgotten Customization Code!

Re-Initialization

A new Customization Code can be assigned to the administrator computer by running the *DFInit5.exe* program in the Deep Freeze Enterprise folder.



Once a new Customization Code has been assigned, the Configuration Administrator will no longer work with previously configured installations. To work with previous installations, use the DFInit5.exe program to reset the Customization Code back to its original settings.

Using the Configuration Administrator

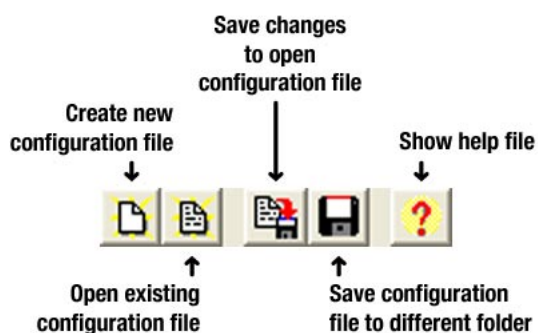
The Configuration Administrator is used to create a customized Deep Freeze installation program pre-configured with passwords, schedules, and other options.

There are five main tabs for accessing the various options available: *Welcome*, *Start Here*, *Configuration*, *One Time Passwords*, and *Create Programs*.



Toolbar

The *Toolbar* is available at the top of every tab in the Configuration Administrator. There are five buttons that provide convenient access to some of the most commonly used functions.



File Menu

The *File Menu* contains similar options to those on the *Toolbar* with the addition of *Password Protection* and shortcuts for *Create Server Console*, *Create Server Manager*, *Create Workstation Seed*, and *Create Workstation Install Program*.



Password Protection offers another layer of security for the administrator. Use this screen to optionally password protect access to the Deep Freeze Configuration Administrator application.



Start Here

The *Start Here* tab provides a brief description of how to perform some common tasks with the Configuration Administrator.

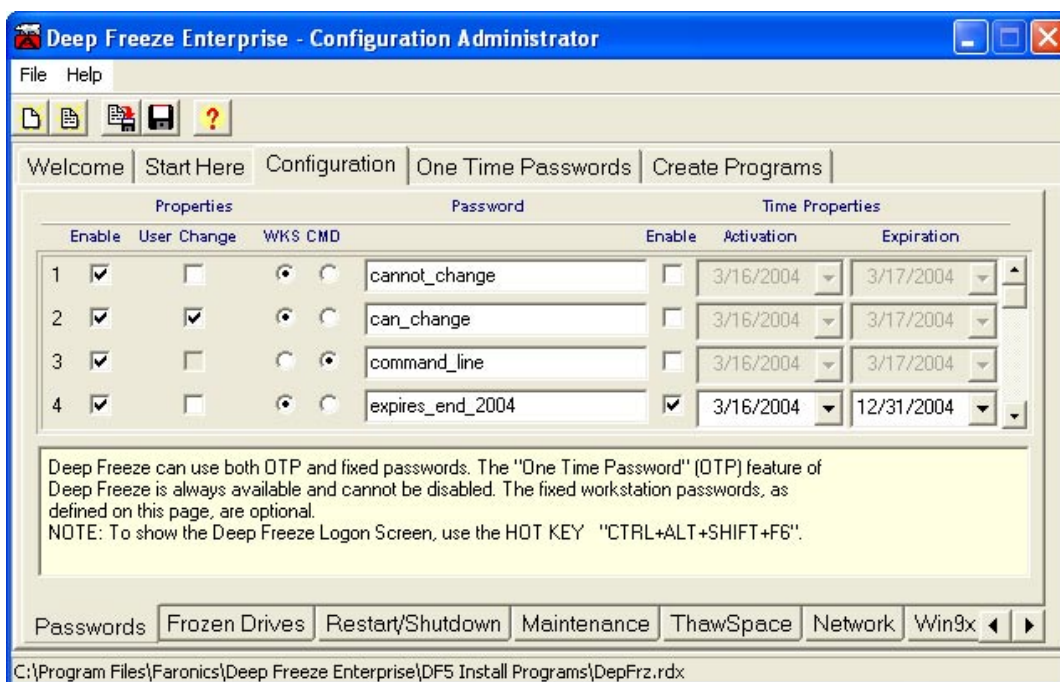
Configuration

The *Configuration* tab has eight sub-tabs along the bottom used to configure various options. A customized workstation installation program file is ready to be created after all of the desired configuration options have been selected. This program file will be used to install a pre-configured version of Deep Freeze on workstation computers.



Passwords

Deep Freeze Enterprise allows the administrator to choose up to 15 passwords that work in addition to the One Time Password Generation System.



Check *Enable* on the appropriate line to create passwords. Enter the password, select the type, and select whether it is user-changeable. Scroll down to add up to 15 passwords.

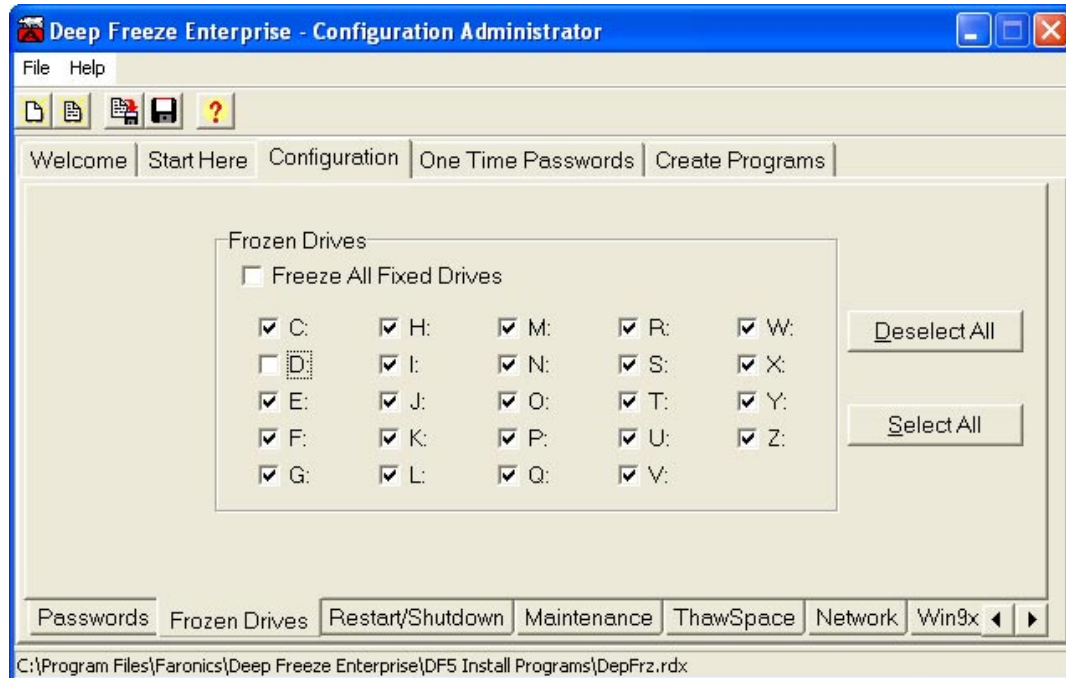
Passwords can be assigned for use at a workstation (WKS) or for use with the Command Line Controls (CMD). The Command Line Controls will not function unless at least one CMD password is defined.

The *User Change* checkbox can only be used with WKS passwords. Selecting this option allows the user to change the password at the workstation.

Passwords can optionally be set to expire at a specified date. Checking *Enable* to the right of a password will cause that password to be activated on the *Activation* date and to expire at midnight on the *Expiration* date.

Frozen Drives

The *Frozen Drives* tab is used to select which drives are to be *Frozen* (protected by Deep Freeze) or *Thawed* (unprotected).



Checked drives will be Frozen by Deep Freeze. Check *Freeze all Fixed Drives* and all the drives will be Frozen.

All of the drive letters are shown because the pre-configured installation may be installed on many workstations with various hardware and software setups. In the example above, the C: drive is checked, but not the D: drive. This will result in all workstations with only a C: drive being Frozen. Workstations with a D: partition or drive will have a Frozen C: drive and a Thawed D: partition or drive.

Only local drives (partitions or physical drives) can be Frozen. Deep Freeze cannot Freeze removable media drives or network drives.

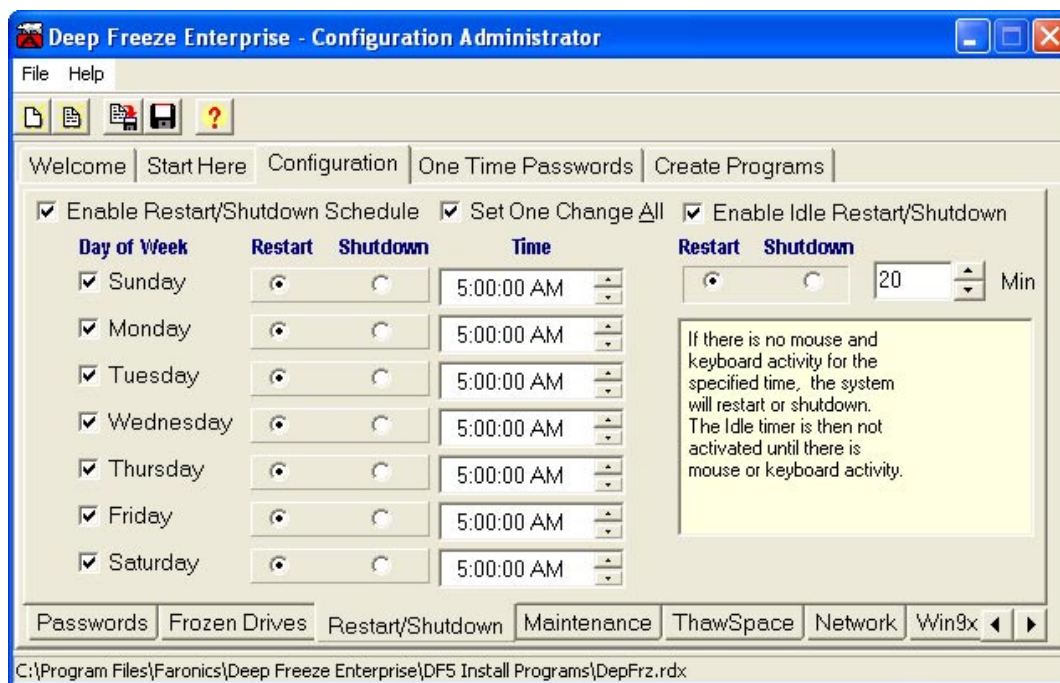


External USB or FireWire hard drives are mounted as local fixed hard drives. If all fixed drives are Frozen, all external hard drives will be Frozen as well.

USB flash drives are treated as removable media drives and cannot be Frozen.

Restart/Shutdown

The *Restart/Shutdown* tab is used to schedule restarts or shutdowns.



Check *Enable Restart/Shutdown Schedule* to enable the schedule and select the appropriate options for each day of the week.

Check *Set One Change All* to apply a change made for one day of the week to all other days.

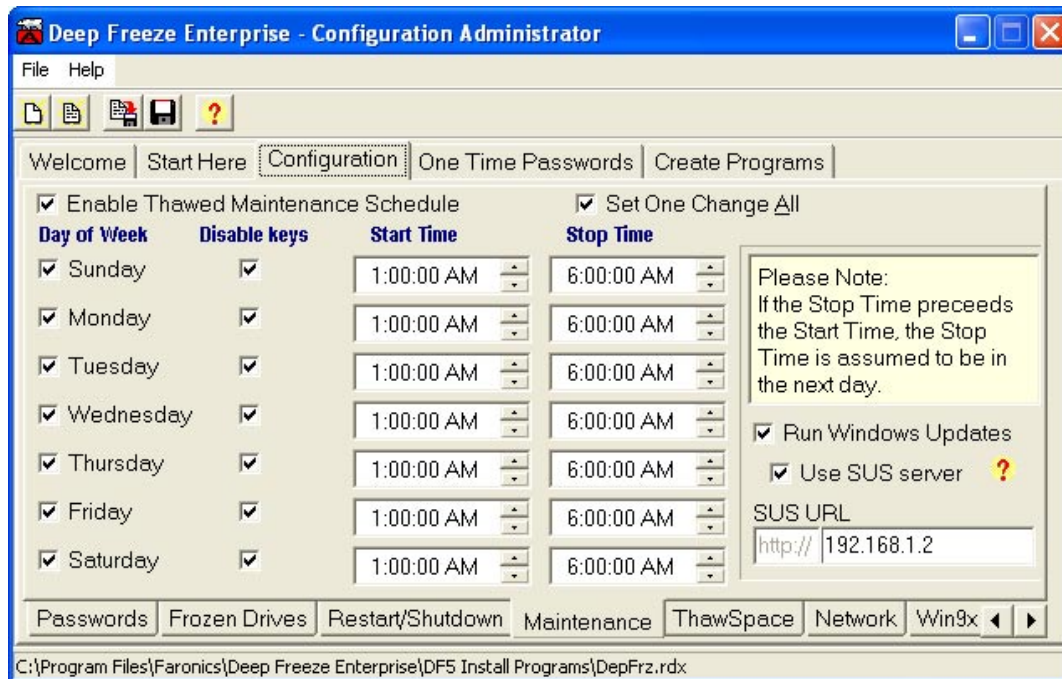
Check *Enable Idle Restart/Shutdown* to configure the number of minutes required before the workstation automatically performs a restart or shutdown during periods when there is no keyboard or mouse activity. The workstation will only restart once after the Idle time has expired. Keyboard or mouse activity is then required to restart the Idle timer.

A dialog box will appear on the workstation indicating that the workstation is about to restart or shutdown. The user has the option the cancel the restart or shutdown and continue working.

Only one Restart/Shutdown per day can be scheduled. If the workstation needs to be restarted on a more frequent basis, the Idle time restart should be used.

Maintenance

The *Maintenance* tab is used to schedule a time when Deep Freeze is Thawed. During this Maintenance period, the workstation will be Thawed and available for upgrades, new installations, maintenance, or any other activity that requires permanent changes.



Check *Enable Thawed Maintenance Schedule* to enable the schedule and select the appropriate options for each day of the week.

- **Start Time** - The time when the workstation will restart into the Thawed state.
- **Stop Time** - The time when the workstation will restart into the Frozen state.

If the Stop Time precedes the Start Time, the Stop Time is assumed to be during the next day.

Check *Set One Change All* to apply a change for one day of the week to all other days.

Check *Run Windows Updates* to allow workstations to install critical updates to Windows 2000/XP automatically during the Maintenance period via the Internet.

Optionally check *Use SUS server* and specify the server's IP address or server name in *SUS URL* to use an SUS (Microsoft Software Update Services) server instead of the Internet.

Microsoft SUS client can be downloaded at:

<http://www.microsoft.com/windows2000/downloads/recommended/susclient/default.asp>.

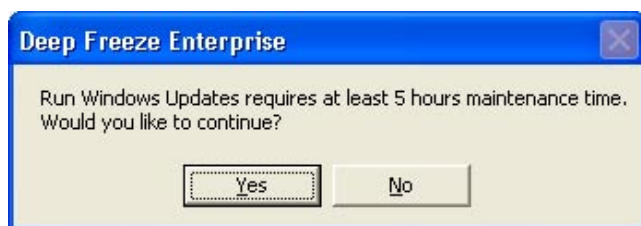
Microsoft SUS server can be downloaded by searching for *SUS server* at:

<http://www.microsoft.com>.



The Run Windows Updates feature will not actually perform updates, but will make the call to have the normal update method take place during the Maintenance period.

The Maintenance period must be at least five hours in duration for the Run Windows Updates feature to function. If a smaller duration has been entered, the following message will be displayed when *Run Windows Updates* is checked:



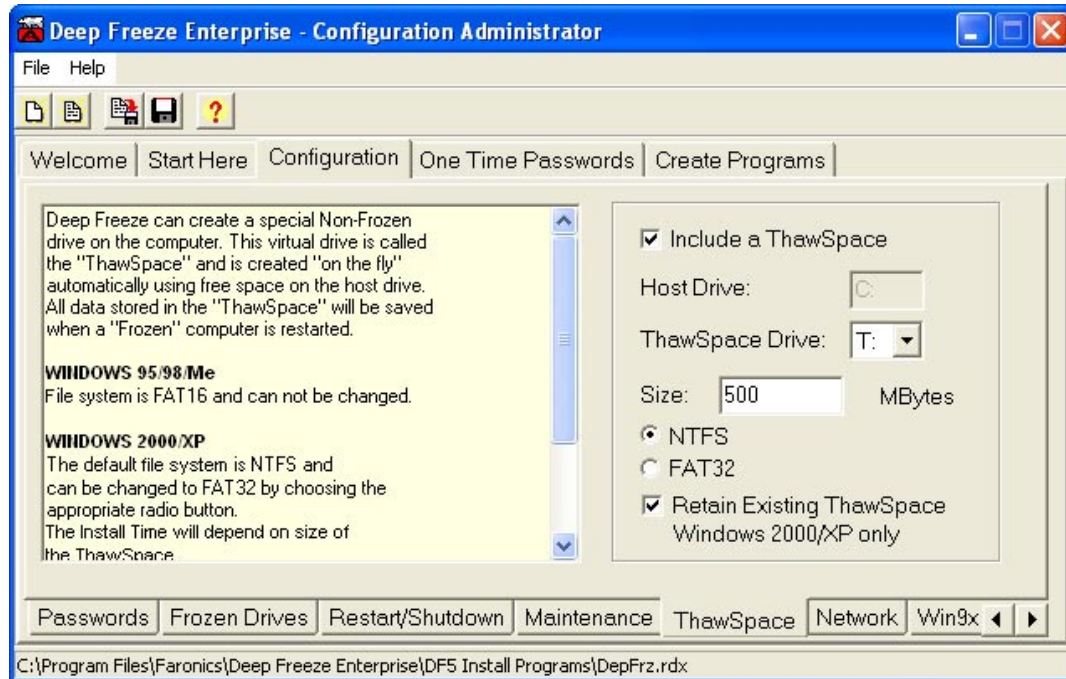
If this message is displayed, click *No* to uncheck *Run Windows Updates* or click *Yes* to automatically change the Maintenance period for each selected day to a five hour duration by adjusting the *Stop Time*.

Check *Disable Keys* to prevent the keyboard and mouse from functioning on the workstation during the Maintenance period. If this option has been checked, the workstation will display the following dialog during the Maintenance period:



ThawSpace

The *ThawSpace* tab is used to create a virtual partition on a workstation that can be used to store programs, save files, or make permanent changes. All files stored in the ThawSpace will be saved after a restart, even if the workstation is Frozen.



Check *Include a ThawSpace* to include the creation of a ThawSpace in the installation program.

The *Host Drive* is the workstation drive that is the source for the ThawSpace virtual partition. It is automatically detected by Deep Freeze and cannot be changed.

The *ThawSpace Drive* option is used to select the drive letter assigned to the ThawSpace. The default letter is T:, but it can be changed to any available letter. The next available letter will be used if the selected drive letter already exists on a workstation when Deep Freeze is installed.

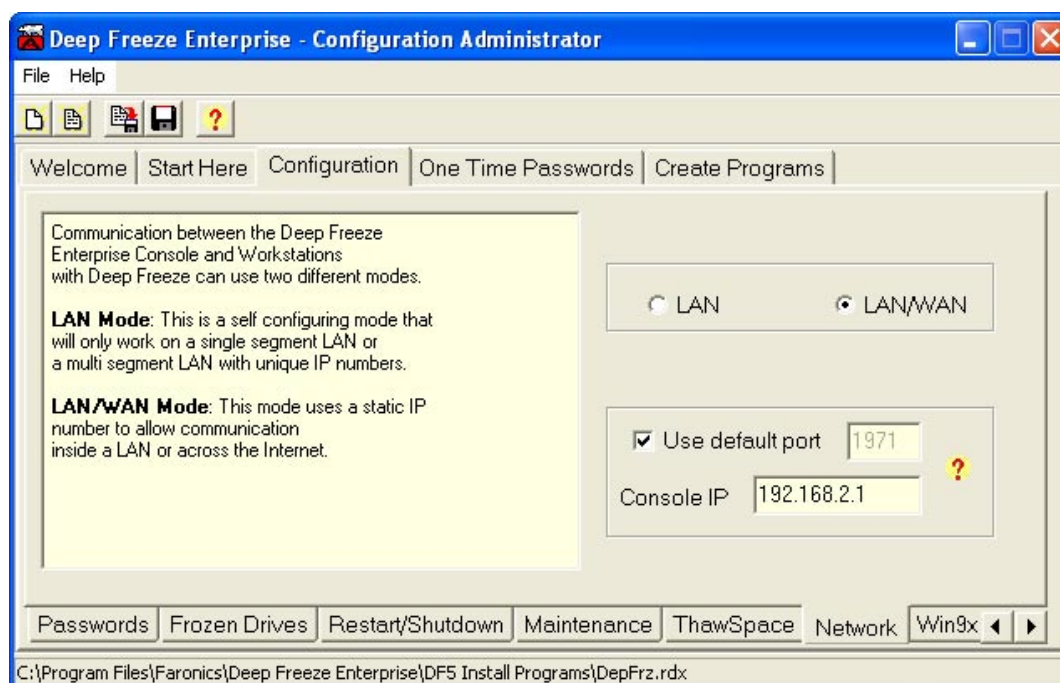
The *Size* option is used to select the size of the ThawSpace. The minimum space allowed is 16MB. Workstations running Windows 95, 98, or Me can host a maximum ThawSpace of 2GB. Workstations running Windows 2000 or XP can host a maximum ThawSpace of 100GB when using the NTFS file system or 4GB when using the FAT32 file system. If the workstation does not have enough free space to accommodate the selected ThawSpace size, the size of the ThawSpace will be adjusted downward to ensure proper operation of the workstation.

Workstations running Windows 95/98/Me must use the FAT16 file system for a ThawSpace. Workstations running Windows 2000/XP use the NTFS file system by default, but this can be changed to FAT32 by selecting the radio button.

Check *Retain Existing ThawSpace* to retain an existing ThawSpace on a Windows 2000/XP workstation when Deep Freeze is uninstalled. If the option to include a ThawSpace has also been checked, workstations with an existing ThawSpace will have the existing ThawSpace retained during re-installation. Deep Freeze will always display a dialog asking if the ThawSpace should be retained or deleted during an Attended Uninstall, regardless of whether *Retain Existing ThawSpace* has been checked.

Network

The *Network* tab is used to configure the communications protocol that the Enterprise Console will use to communicate with a Workstation Seed or a Deep Freeze installation program file.



Check the *LAN* radio button to configure Deep Freeze to communicate within a local area network (LAN). Check the *LAN/WAN* radio button to configure Deep Freeze to communicate in both a LAN and a wide area network (WAN).

LAN is a self-configuring mode that requires only a port number. The default port is 1971. The port number can be changed if it is in conflict with other programs on the LAN. In LAN mode, the Deep Freeze workstations and the Enterprise Console find each other through UDP broadcasts. These broadcasts only occur when workstations or the Enterprise Console are started, ensuring that there is little network traffic associated with workstation and Console communication.

LAN/WAN can be used in either a LAN or WAN environment and over the Internet. An IP and port number must be provided. On a single segment LAN or a multi-segment LAN with unique IP numbers, the static IP of the computer running the Enterprise Console must be entered.

No configuration of the network routers are required in most LAN environments.

When the Enterprise Console is behind a firewall or a NAT (network address translation) router, the firewall or router must be configured to allow traffic to pass through to the Enterprise Console. Depending on the firewall or router, workstations may need to be configured with the IP address of the firewall so that traffic can be forwarded.

These settings can be changed on local workstations using the *Network* tab.

For more information on configuring and using Deep Freeze in a specific network environment, refer to [Appendix A—Network Examples](#) or contact Technical Support.

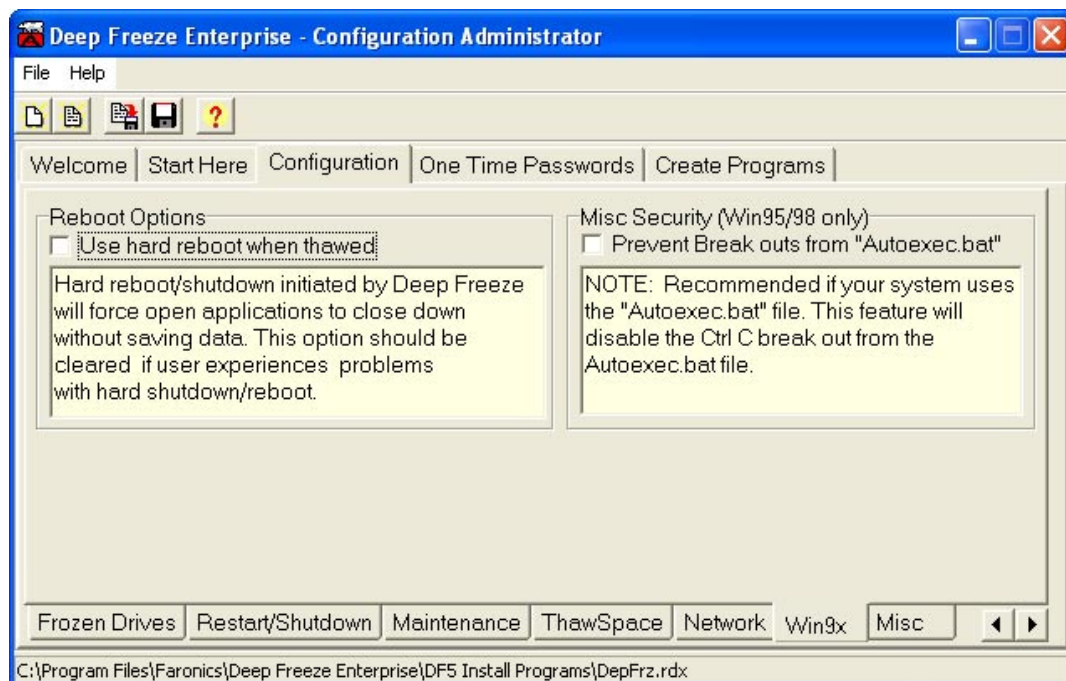


If a port number other than the default of 1971 is used, care should be taken to ensure that there are not conflicts with applications already running on the network. Well Known Ports (0–1023) should be avoided and any Registered Ports (1024–49151) should be checked for conflicts before deployment.

A complete listing of the ports assigned to various applications can be found on the Internet Assigned Numbers Authority web site at <http://www.iana.org/assignments/port-numbers>.

Win9x

The *Win9x* tab is used to configure options applicable only to workstations running Windows 95/98/Me.

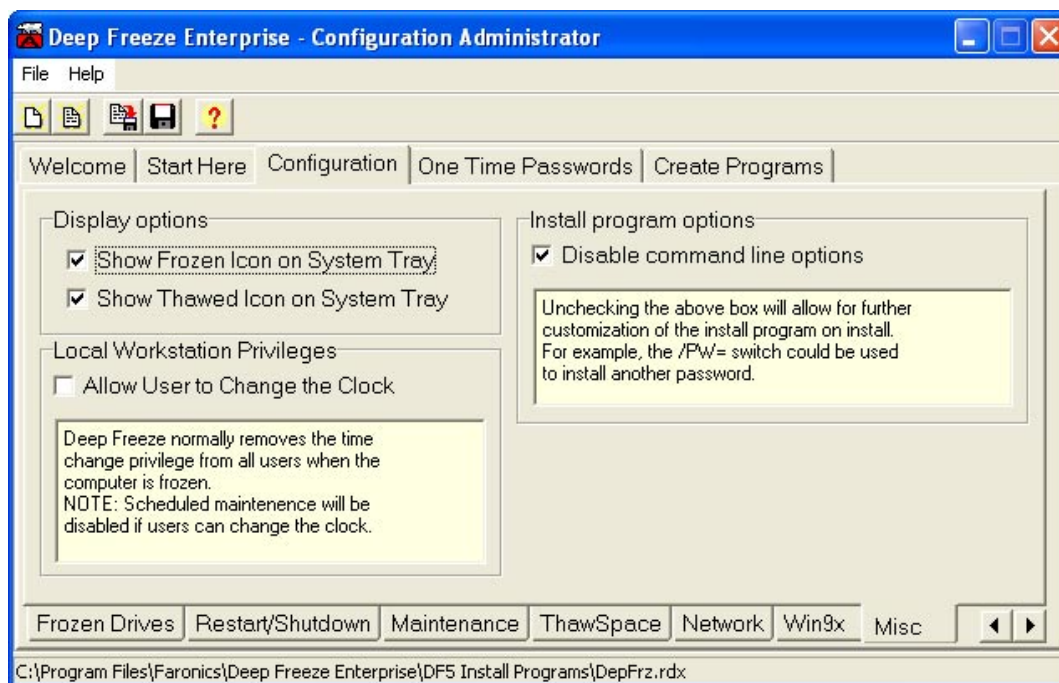


Check *Use Hard Reboot When Thawed* to force workstations to perform an immediate restart when leaving the Thawed state. This option should be selected if the workstations experience problems shutting down when leaving the Scheduled Maintenance period.



Check *Prevent Break Outs from "Autoexec.bat"* if the Windows 9x workstations are using the *autoexec.bat* file to execute programs before Windows starts. This will prevent users from aborting the execution of the *autoexec.bat* file and gaining access to the system in an unprotected state.

Miscellaneous

The *Miscellaneous* tab is used to configure various other options.



The *Display Options* checkboxes are used to select whether the Deep Freeze icon will be shown in the System Tray. The normal Deep Freeze icon indicates that Deep Freeze is installed and the workstation is Frozen. The Deep Freeze icon with a flashing red X indicates that Deep Freeze is installed but the workstation is Thawed.

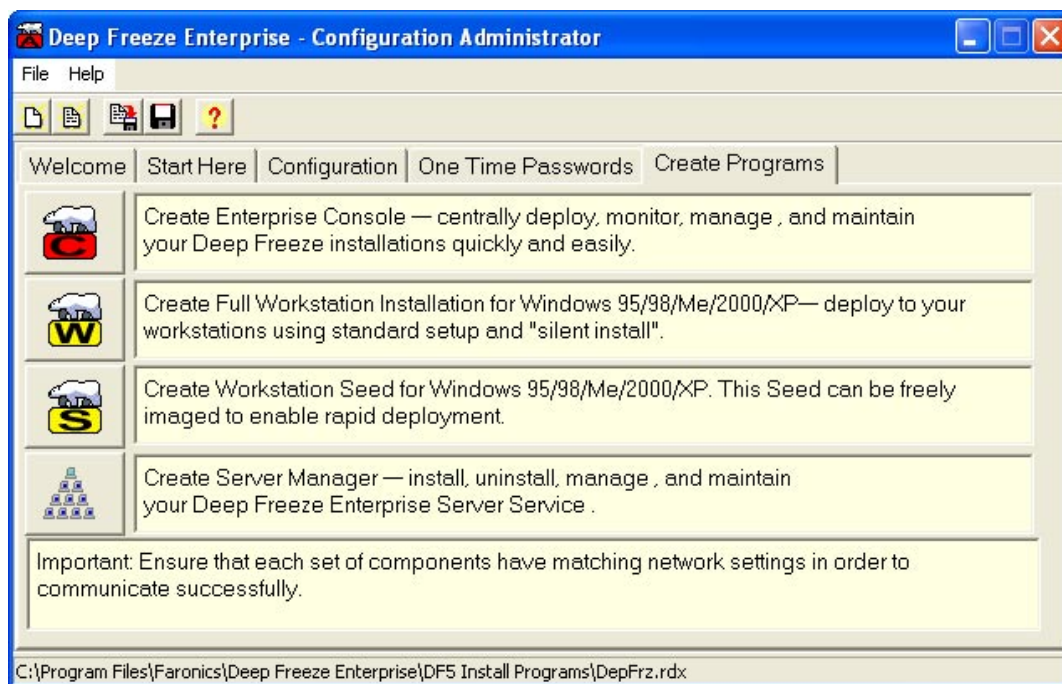
The Frozen  or Thawed  icon is used to access the Deep Freeze logon dialog by holding down the SHIFT key and double-clicking the icon. If the *Show Frozen* or *Show Thawed* icons are unchecked in Display Options, and therefore removed from the System Tray on the workstation, the hot keys CTRL+ALT+SHIFT+F6 must be used to access the logon dialog.


The *Allow User to Change the Clock* checkbox can be used to allow Frozen users to adjust the system clock. This feature can only be used if there is no Maintenance Schedule set. Selecting this option will disable the [Maintenance Schedule](#) if one has been set.


The *Disable Command Line Options* checkbox is checked by default. Unchecking it will allow for further customization of the Deep Freeze installation program during installation using the *Silent Install System*. Checking it will prevent the pre-existing configuration choices from being changed during installation.


Create Programs


The *Create Programs* tab is used to create customized Deep Freeze installation program files with all of the configuration options that were previously selected. It is also used to create the Deep Freeze Enterprise Console.



The Enterprise Console  can be used to centrally deploy, monitor, manage, and maintain Deep Freeze installations quickly and easily. The Console should only be installed on an administrator's computer.

The Workstation Seed  is a small program that allows administrators to remotely install and control workstations from the Enterprise Console. The Workstation Seed can be installed as part of a master image and then deployed via imaging software. All workstations on the LAN with the Workstation Seed installed will be displayed in the Enterprise Console.

The Full Workstation Installation program  is used to install Deep Freeze on workstations using an Attended Install, the Silent Install System, or a Target Install. The Workstation Seed is included in this file; it is not necessary to install the Workstation Seed if the workstation is going to have the Full Workstation Installation program installed on it.

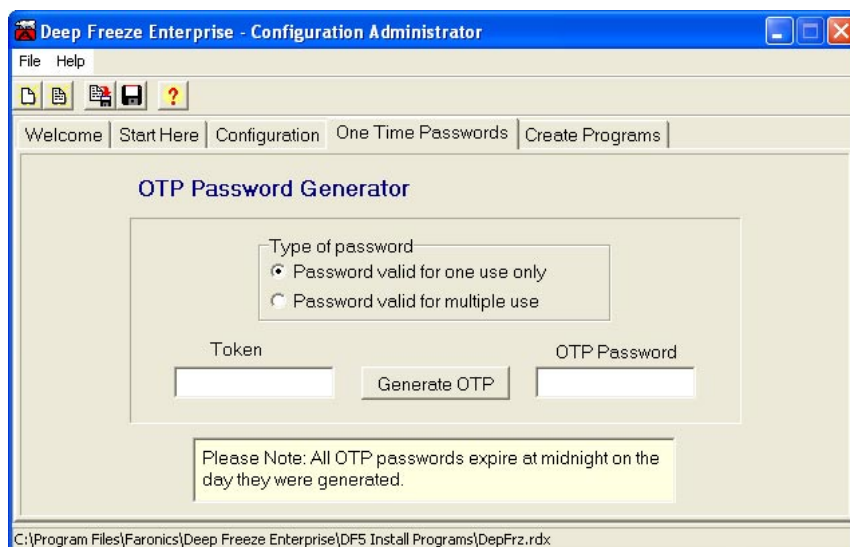
The Server Manager program  is used to install the [Deep Freeze Enterprise Server Service](#).

Click the appropriate icon to create an installation file. All files will be saved to the *DF5 Install Programs* folder within the *Deep Freeze Enterprise* folder by default. Alternate locations can be chosen and the file name can be changed if desired. It is recommended that a naming convention is used if the administrator is creating multiple customized installation files.

One Time Passwords

The *One Time Passwords* tab is used to create a special temporary password to Deep Freeze that will expire at midnight on the day it was generated.

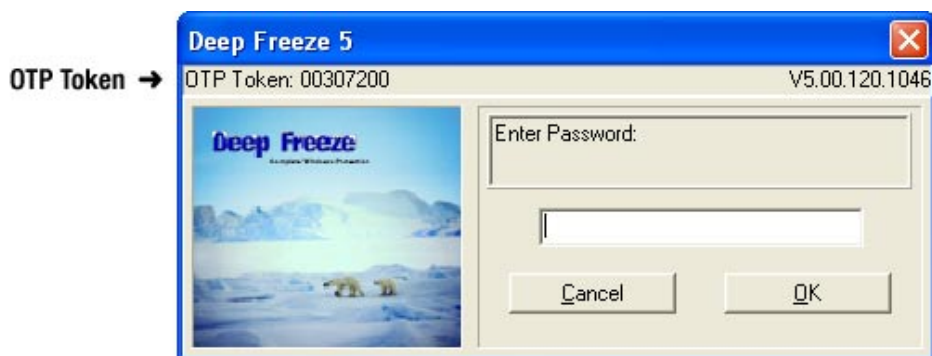
A *One Time Password (OTP)* can be useful if, for example, a Deep Freeze password is forgotten or if a configuration was created without any passwords defined. An OTP could also be used to provide access to a workstation for an individual performing maintenance duties without requiring that individual to know the permanent Deep Freeze password.



Select the *Password valid for multiple uses* radio button to create an OTP that will be valid for multiple uses during the current day. All OTP passwords will expire at midnight on the day they were created, regardless of type.

Enter the *OTP Token* from the workstation that requires the OTP into the *Token* field. Click the *Generate OTP* button to generate the OTP password.

The OTP Token for the workstation is located in the Deep Freeze logon dialog.

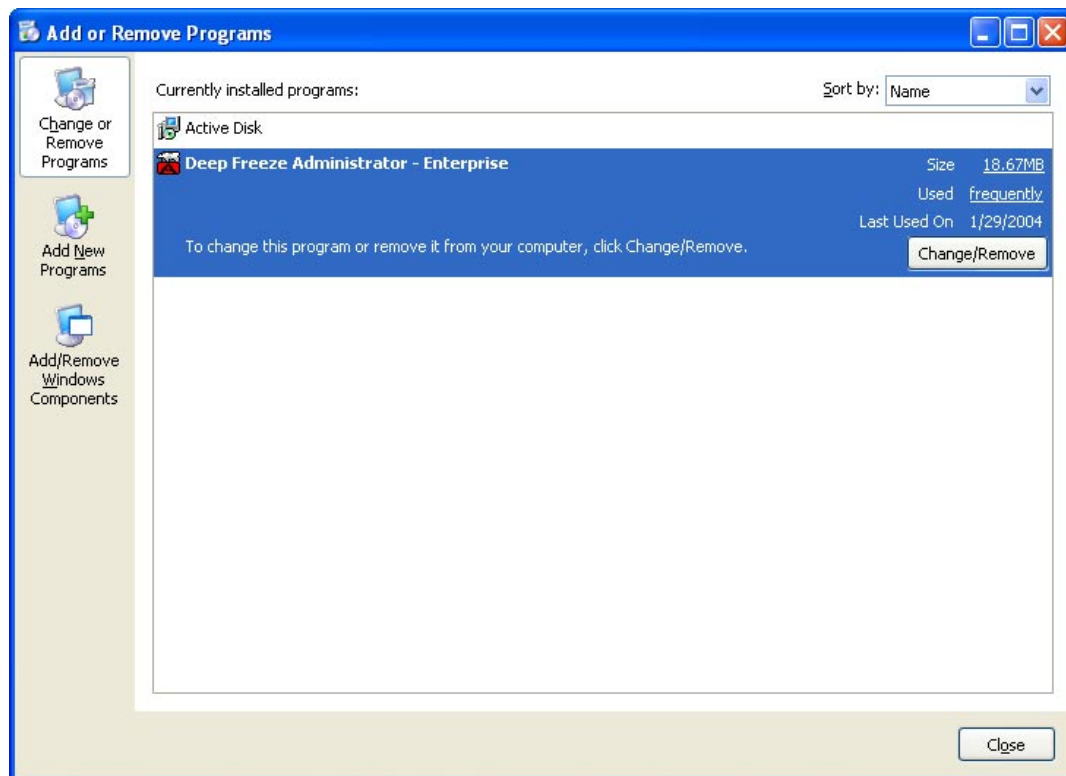


The OTP system is completely secure and encrypted by the Configuration Administrator.

Uninstalling the Configuration Administrator

Open the *Add/Remove Programs* utility in the Windows Control Panel by selecting the following path from the Start menu:

Start → Control Panel → Add or Remove Programs



Select *Deep Freeze Administrator - Enterprise* and click the *Change/Remove* button. Follow the steps presented and the Configuration Administrator will be uninstalled from the computer.

Deep Freeze Enterprise Console

The Deep Freeze Enterprise Console displays the status of all Frozen, Thawed, and Target workstations on the network and allows the administrator to perform specific tasks on those workstations. Detailed status information is available with selective or group reporting.

The Enterprise Console allows administrators to remotely perform the following tasks:

- Immediately Target Install workstations.
- Selectively Thaw one or more workstations.
- Selectively Freeze one or more workstations.
- Change passwords, schedules, and configuration on the fly.
- Restart or shutdown workstations.
- Power on workstations equipped with a Wake on LAN network card.



The Enterprise Console can only wake a workstation from a powered down state if the workstation is properly configured to power on when a Wake on LAN packet is received.

Enterprise Console Activation

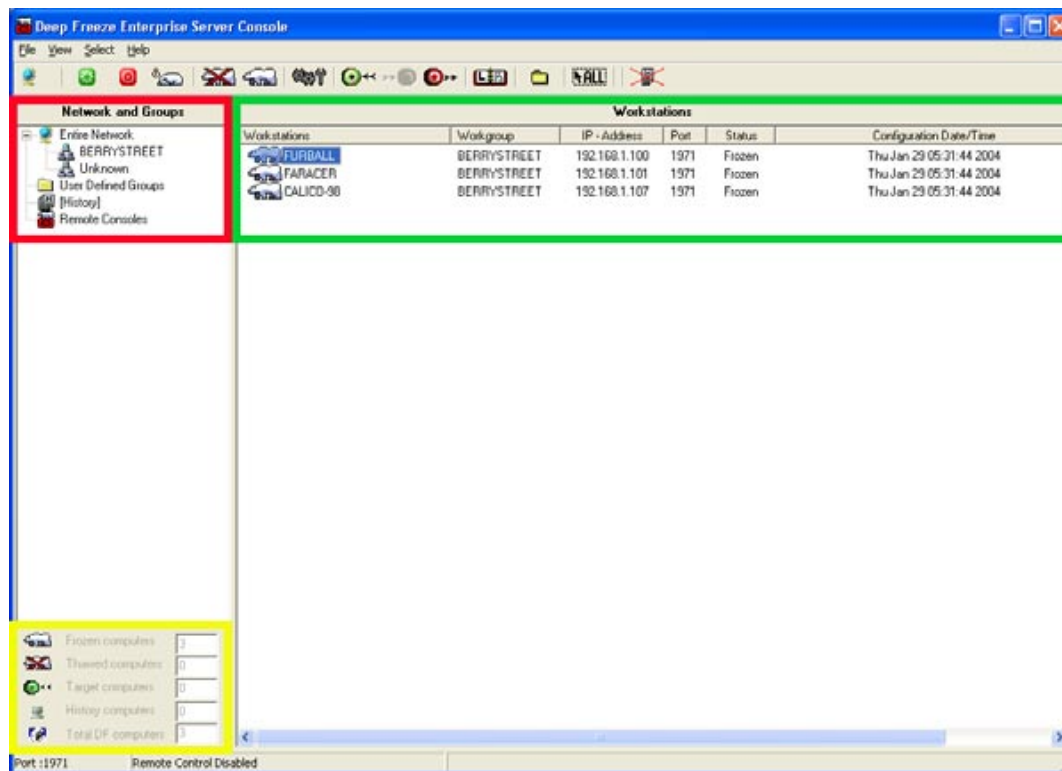
If the *DF5Console.exe* file is copied to a different workstation than the one it was originally created on, it will need to be activated before the Enterprise Console will operate. When the Enterprise Console runs for the first time on a workstation, a One Time Password will need to be generated.



The Enterprise Console will only run on Windows 2000 or XP. The computer on which the Enterprise Console will be installed must not have an installation of the Workstation Seed or a full Deep Freeze installation.

Enterprise Console Operation

Launch the Enterprise Console by double-clicking the *DF5Console.exe* file created by the Configuration Administrator.



In the example shown above, the area outlined in red lists any network domain or workgroup found on the local area network. The area outlined in green lists the workstations in the selected network or group and their status. The area outlined in yellow summarizes the status.

Status Icons

The Enterprise Console displays the status of the workstations on the local area network with the following icons beside or above the workstation name depending on the view selected:



Workstations that have the Deep Freeze Workstation Seed installed but do not have Deep Freeze installed.



Workstations with Deep Freeze installed in a Frozen state.



Workstations with Deep Freeze installed in a Thawed state.



Workstations that are currently powered down.



Any workstation showing a small *i* beside the status icon is no longer communicating with the console.

Deep Freeze can only be remotely installed on workstations that display the Target icon.

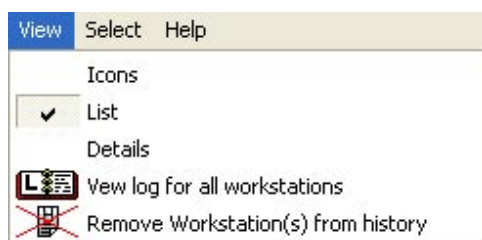
A workstation can lose communication with the Console for a number of reasons:

- The workstation is powered off manually or is shutdown without warning.
- The network is experiencing heavy traffic or outages.
- The workstation's network settings are changed to indicate a new Console.

In most cases, communication with the workstation will be re-established when the workstation is powered on or when the conditions causing the communications breakdown are rectified. It may take several minutes for the workstation to report back to the Console and re-establish communication. If communication cannot be re-established, contact Technical Support for troubleshooting steps.

View Options

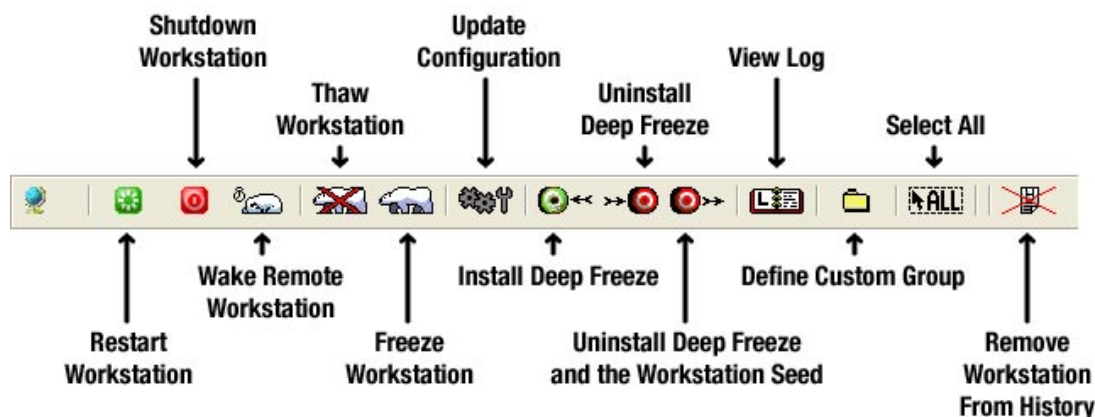
The Enterprise Console has three view options: *Icons*, *Detailed*, and *List*. The current view can be changed using the *View* menu.



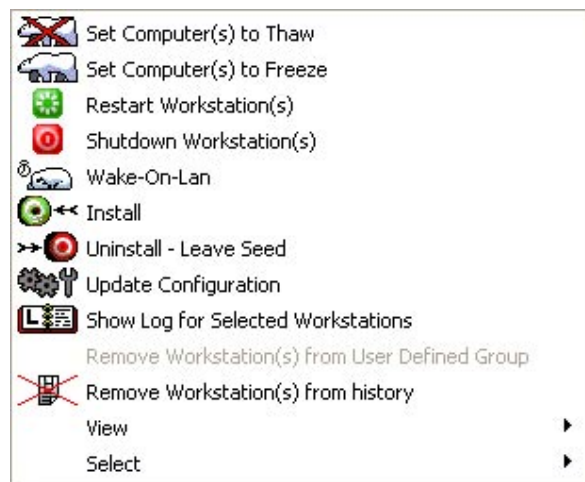
The View menu can also be used to view the log for all workstations or to remove the selected workstation(s) from the log.

Managing Deep Freeze Using the Enterprise Console

The Enterprise Console contains a toolbar at the top of the screen that allows quick access to the functions of the Console.



These commands can also be accessed using the contextual menu by right-clicking on a specific workstation.



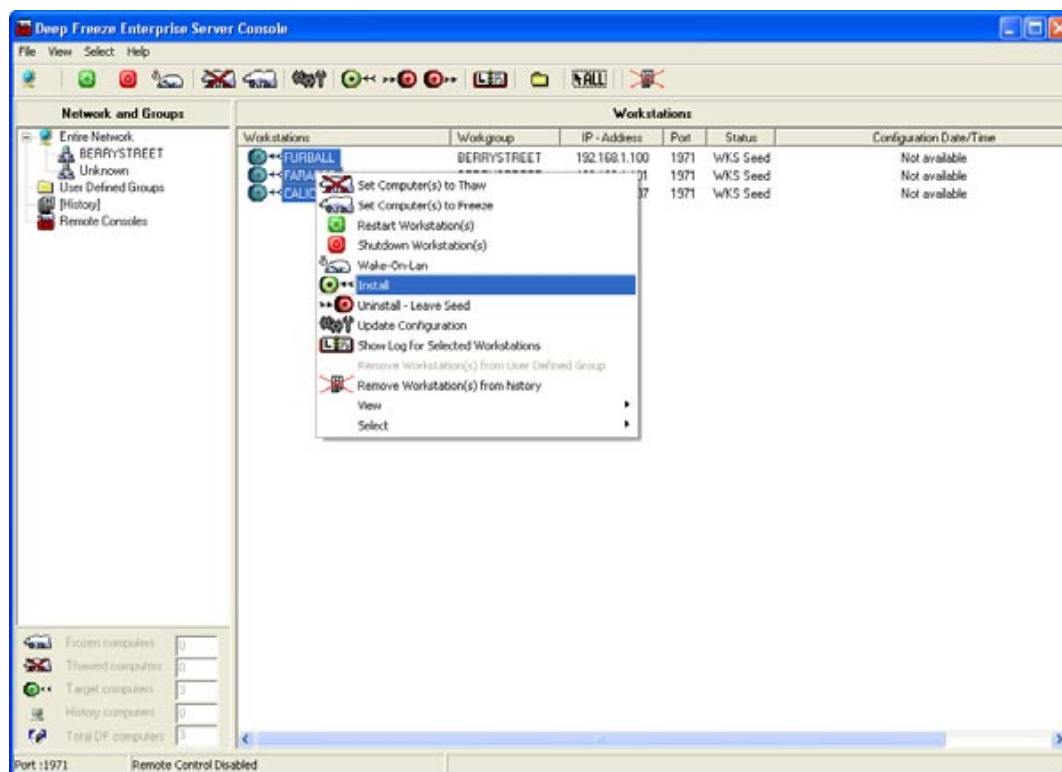
When a particular action is chosen, the selected workstation will perform the action and the status icons will update accordingly.

Specific icons will be disabled if the selected workstation does not support that action.

Target Install Using the Enterprise Console

The Enterprise Console can remotely install a Full Workstation Installation on any workstation that has the Workstation Seed installed.

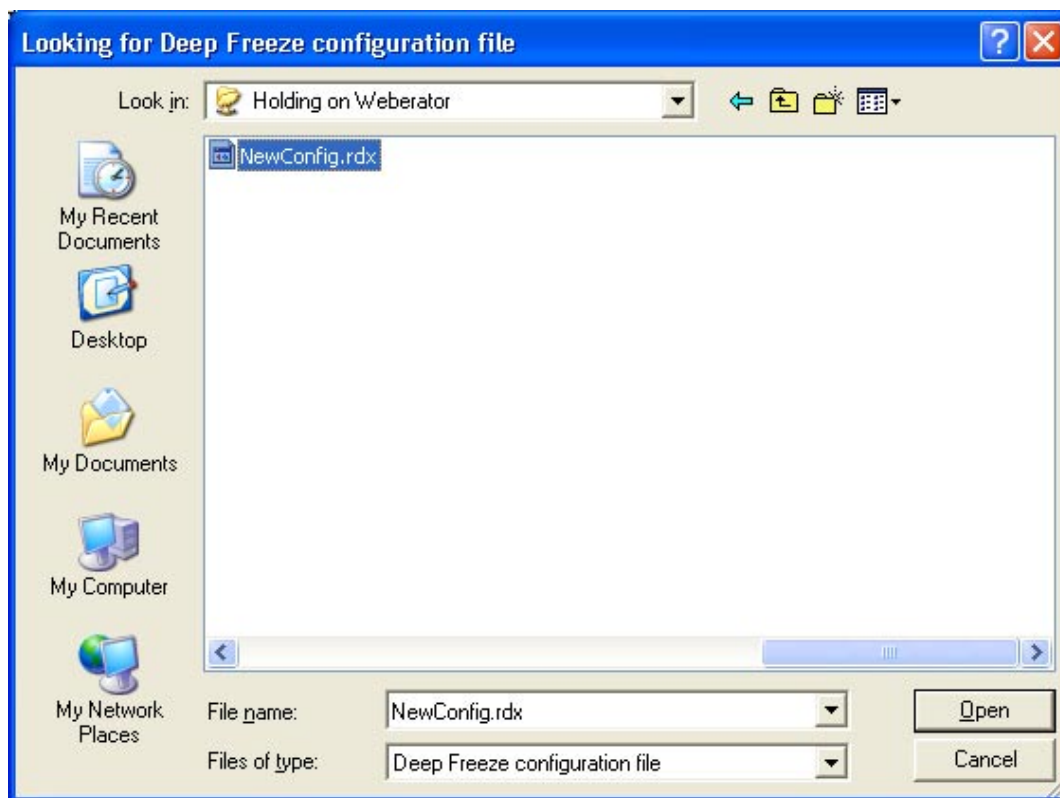
To install Deep Freeze on a workstation using the Enterprise Console, right-click on the workstation and select *Install*. Individual or multiple workstations can be selected.



A dialog box will appear asking if the installation should proceed. Click *OK* to present a dialog box used to select the file to install on the remote workstation.

After selecting the installation program to use, the workstation will install Deep Freeze and restart. Once the installation is complete, the workstation icon in the Enterprise Console will change to the Frozen polar bear icon.

Click *Load from file* to load the settings from an existing .rdx file into the Configuration window. A standard open file dialog will appear that can be used to select a file.



Click *Cancel* to cancel the configuration update.

Click *OK* to update the configuration on the selected workstations.



*When updating the configuration on the workstation, all of the displayed options will be updated using the new settings. **Frozen Drives**, **ThawSpace**, and **Win 9x** options cannot be dynamically updated and will remain as they were prior to the update.*

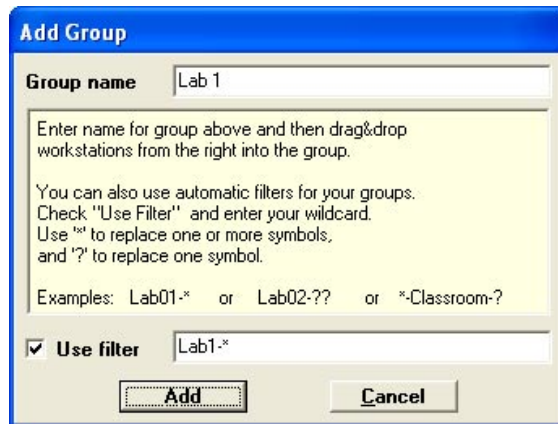
If the Network options in the new configuration have changed, the workstations may lose communication with the existing Enterprise Console. If communication with the workstations is lost, check the Network settings on the updated workstations to ensure that the port numbers and/or IP address of the Console have not been changed.

Changes to passwords take effect immediately. All other changes take effect after the workstation is restarted.

Network and Groups

The Enterprise Console automatically arranges workstations by their workgroup or domain. Click on the appropriate workgroup or domain to view the workstations in that workgroup or domain.

The Enterprise Console can be used to define specific groups to arrange workstations in. Right-click on the *User Defined Groups* folder and select *User Defined Groups* → *Add* or click the *User Defined Groups* icon in the toolbar to setup a group.



Workstations can be added into the group by dragging and dropping them from the *Workstations* pane or by using an automatic filter set during the creation of the groups.

Automatic group filtering allows workstations to be added to user defined groups automatically. The workstations are added based on their workstation (computer) name. Wildcards (*, ?) can be used to include a group of workstations based on a specific segment of the name.

Example: *Lab1-** will include all workstations that have a name starting with *Lab1-* into the user defined group.

Deep Freeze Control Console Log File

The Deep Freeze Enterprise Console keeps a log of the status and activity history of all connected workstations. The log stores information for the previous ten minutes only. Information older than 10 minutes is automatically deleted from the log.

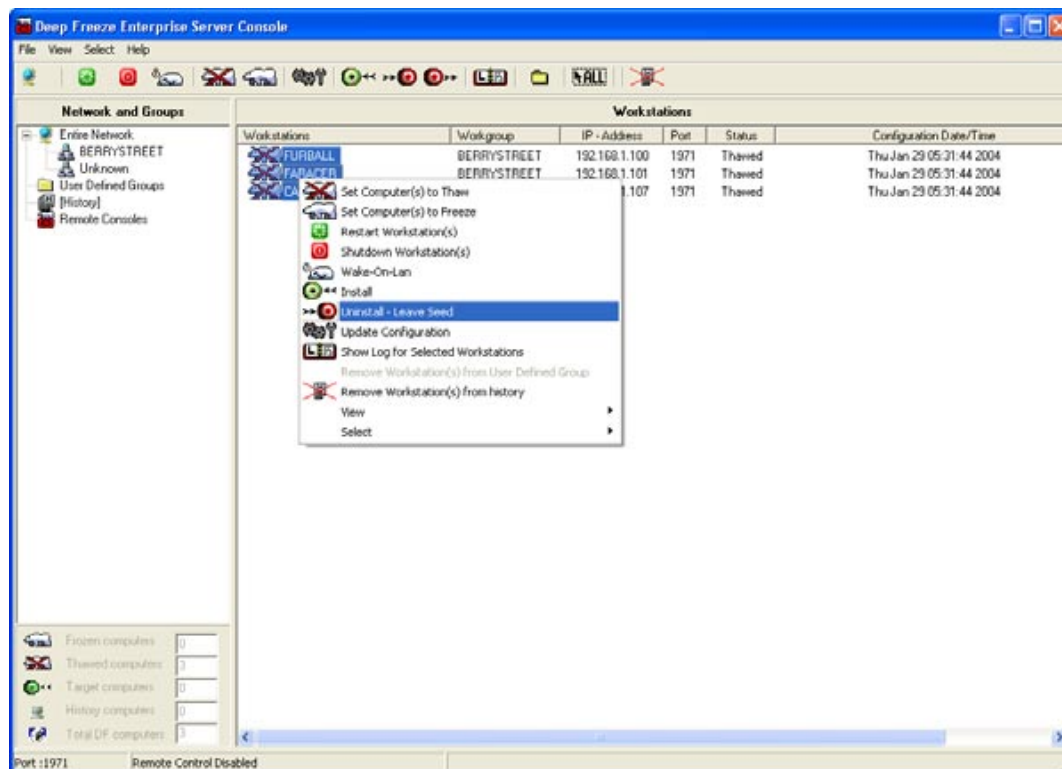
To view the log file for one or many workstation(s), right-click on the workstation(s) and select *Show Log for Selected Workstations*.

Workstation	Domain	Time	Status	IP - address	MAC - address	Action
FURBALL	BERRYSTREET	Sun Mar 14 17:06:43 2004	Frozen	192.168.1.100	0002b34a681c	
FARACER	BERRYSTREET	Sun Mar 14 17:06:37 2004	Ready to install	192.168.1.101	0000e2522389	
CALICO-98	BERRYSTREET	Sun Mar 14 17:06:33 2004	Frozen	192.168.1.107	004005016aa8	
FURBALL	BERRYSTREET	Sun Mar 14 16:57:54 2004	Frozen	192.168.1.100	0002b34a681c	
FURBALL	BERRYSTREET	Sun Mar 14 16:57:54 2004	Unknown	192.168.1.100	0002b34a681c	
FURBALL	BERRYSTREET	Sun Mar 14 16:57:54 2004	Frozen	192.168.1.100	0002b34a681c	Updating configuration
FURBALL	BERRYSTREET	Sun Mar 14 16:57:43 2004	Frozen	192.168.1.100	0002b34a681c	

The log file can be sorted by any of the listed criteria by clicking on the appropriate heading.

Uninstalling Using the Enterprise Console

The Enterprise Console can be used to uninstall Deep Freeze completely or to uninstall Deep Freeze but leave the Workstation Seed.



To uninstall Deep Freeze on a workstation and leave the Workstation Seed, right-click on the Thawed workstation(s) and select *Uninstall - Leave Seed*.



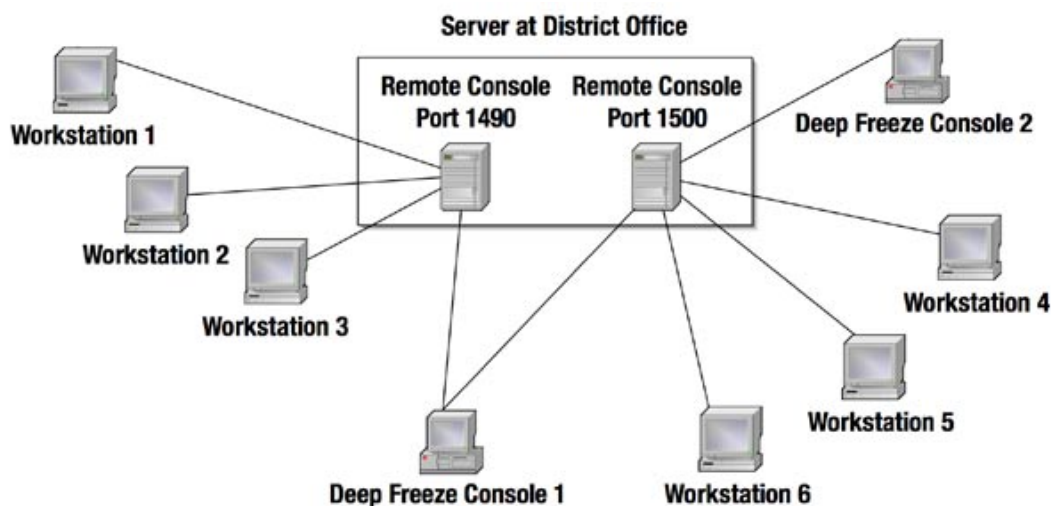
To completely uninstall Deep Freeze and the Workstation Seed, click the *Uninstall* button in the Toolbar.



The workstation must be Thawed before Deep Freeze can be uninstalled. The Enterprise Console will prompt for confirmation. Once the uninstall is confirmed, Deep Freeze will uninstall and the workstation will restart.

Deep Freeze Enterprise Remote Console

Deep Freeze Enterprise incorporates the ability to communicate with workstations via a *Remote Console*. The Remote Console is a small utility that runs on a remote workstation and acts as a communications hub that other Consoles can connect to in order to control and view workstation status.



In the example above, the server at the district office is acting as the host for two Remote Consoles running on different ports (port 1490 and port 1500). Deep Freeze Console 1 can see all workstations reporting into the server because it is connected to both Remote Consoles. Deep Freeze Console 2 is restricted to Workstations 4–6 because it is only connected to the Remote Console on port 1500.

By assigning a unique port number to each Remote Console and each group of workstations, system administrators can control access to the workstations on a particular port using a password. Any authorized individual can connect to the Remote Console provided they know the port number, IP address, and password that the Remote Console is using. This allows administrators to have full access to each workstation in the enterprise while sub-administrators are limited to specific workstations.

Creating the Deep Freeze Server Service Manager

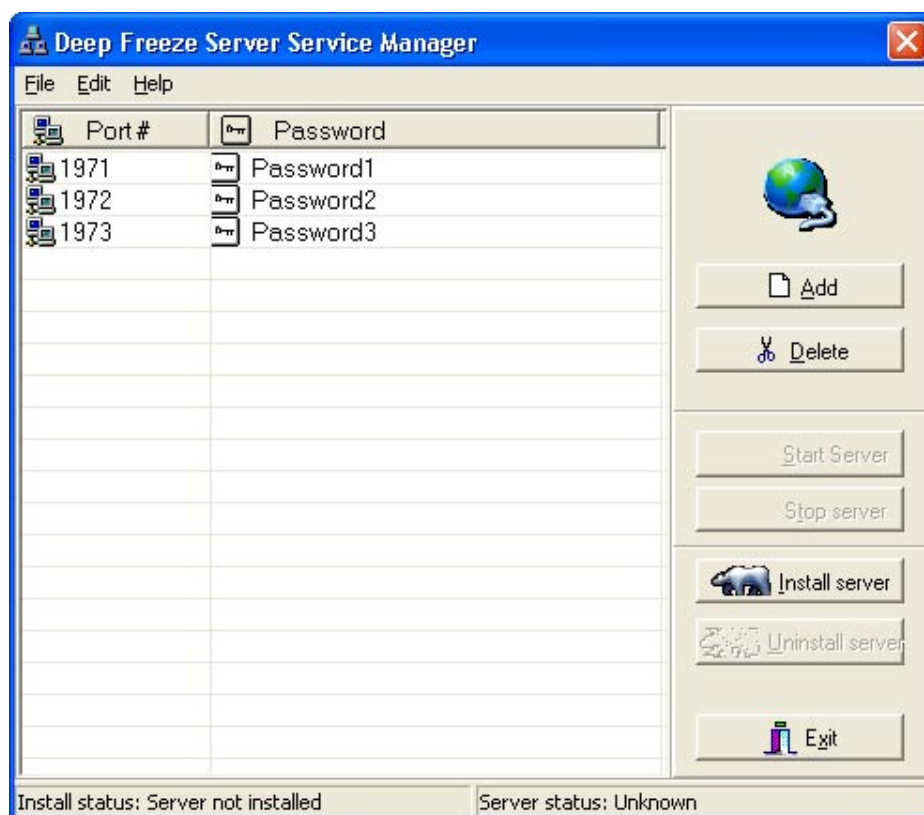
Remote Consoles are created using the *Deep Freeze Server Service Manager*. To create the Server Service Manager, run the Configuration Administrator (*DFAdmin5.exe*). On the Create Programs tab, choose *Create Server Manager*. The *DF5ServerServiceManager.exe* executable will be created.



If two sites are communicating with a lower bandwidth link, it may be advisable to place a Server Service Manager at each site to reduce network traffic during times when the workstations are not being controlled by the Enterprise Console. Having the Server Service Manager limited to the local network will prevent Deep Freeze related network traffic from consuming bandwidth on a continual basis.

Using the Deep Freeze Server Service Manager

Double-click on the *DF5ServerServiceManager.exe* file to launch the Server Service Manager. It is used to setup the Remote Console on the server and configure the ports that it will communicate on.



Click *Add* to create a new entry. Enter a port number and tab over to enter a password. Repeat this process for as many ports as are required. A maximum of approximately 2000 ports can be entered.

Click *Install Server* to install the service. A dialog will display asking if the service should start automatically. Choose *Yes* to start the service now and when the workstation restarts. Otherwise, the service will have to be started manually with the Server Service Manager or the Windows Computer Management Console.

To make a change to the port number settings, stop the service by clicking *Stop Server*. Make the changes and click *Start Server* to restart the service.



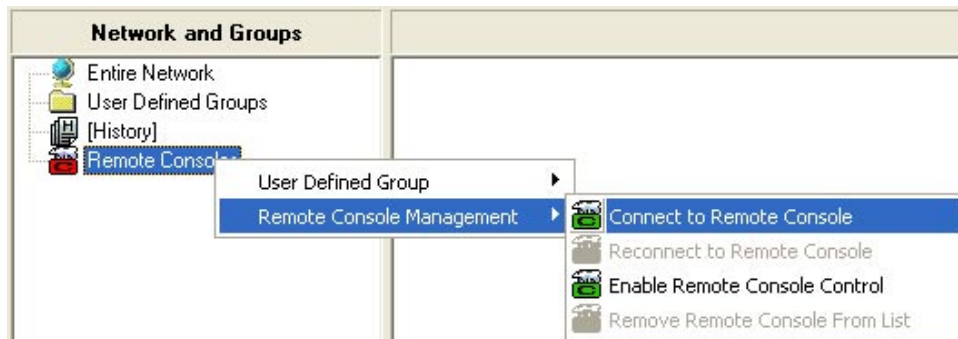
The Deep Freeze Server Service Manager is an interface to administer the Remote Consoles running on the server. The Remote Consoles continue to run even if the server is logged off.

Connecting to a Remote Console

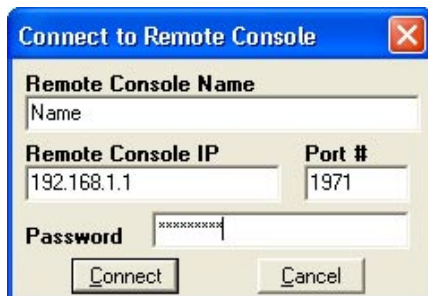
Create a new Enterprise Console with the Configuration Administrator, using a different port than the other servers in the enterprise. Launch this new console.

Previously configured Remote Consoles will automatically be connected if they are available. If the password has changed, right-click on the Remote Console, select *Remote Consoles* → *Remote Console Management* → *Reconnect to Remote Console*, and type in the new password.

To add a new Remote Console, right-click on Remote Consoles in the Network and Groups section of the Enterprise Console and select *Remote Consoles* → *Remote Console Management* → *Connect to Remote Console*.



The *Connect to Remote Console* window will be displayed.



Enter a name in the *Remote Console Name* field. If a name is not entered, the IP address and port number of the Remote Console will be used as the name by default.

Enter the IP address of the Remote Console in the *Remote Console IP* field and the port number that the Server Service Manager is listening on in the *Port #* field. If the Server Service Manager is listening on multiple port numbers, only workstations listening on the specified port number will be shown.

Enter the password that was setup in the Server Service Manager in the *Password* field.

Click *Connect* to connect to the Remote Console.

To remove a Remote Console, right-click on its name and select *Remote Consoles* → *Remote Console Management* → *Remove Remote Console From List*. A Remote Console must be removed and then added again in order to change its name.

Deploying Deep Freeze

After a customized installation program file has been created using the Configuration Administrator, Deep Freeze can be deployed to workstations using an *Attended Install*, *Target Install*, the *Silent Install System*, or as part of an imaging process.

All background utilities and anti-virus software should be disabled and all applications should be closed prior to installation. These programs may interfere with the installation which could result in Deep Freeze not functioning correctly.

The workstation will restart after any type of installation is completed.

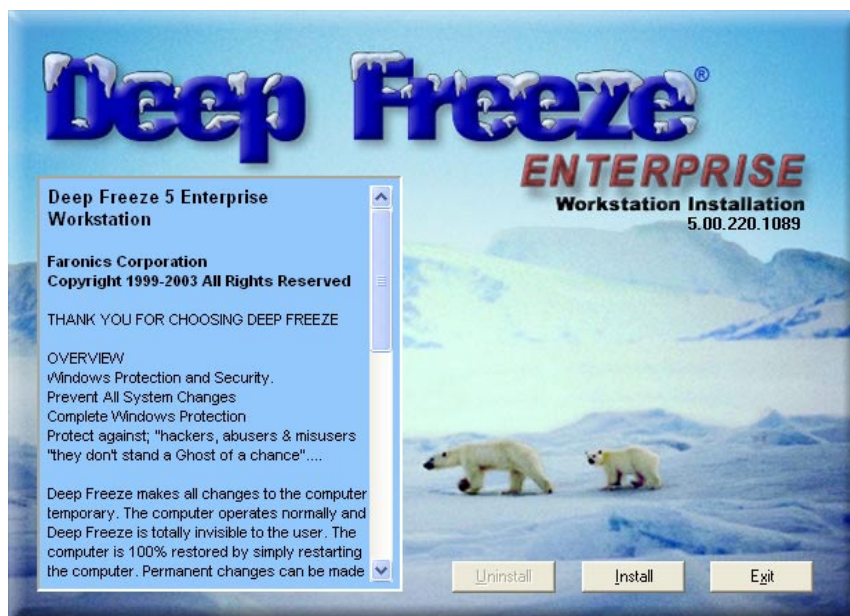
Deep Freeze must be in a Thawed state for any type of uninstall to succeed.



Any existing ThawSpace will be deleted during an uninstall if the option to retain existing ThawSpace was not checked in the Configuration Administrator, if the ThawSpace was not created with Deep Freeze Professional Version 5 or later, or if the ThawSpace is on a Windows 95/98/Me workstation.

Attended Install or Uninstall

Run the installation program file (*DF5Wks.exe*) on the workstation.



Click *Install* to begin the installation. Follow the steps presented, then read and accept the licence agreement. Deep Freeze will be installed and the workstation will restart.

Click *Uninstall* to uninstall Deep Freeze. *Uninstall* can only be clicked if Deep Freeze has previously been installed. If there is an existing ThawSpace, Deep Freeze will display a dialog asking if it should be retained or deleted.

Silent Install or Uninstall

Deep Freeze can be rapidly installed to many workstations over a network using the Silent Install System. Any deployment utility that allows execution of a command line on a remote workstation can implement the Silent Install System. After the Silent Install is complete, the system will immediately restart. The command line has the following options:

Syntax	Description
[/Install]	Install Deep Freeze using installation file
[/Install/Seed]	Install only the specified workstation seed file
[/Uninstall]	Uninstall Deep Freeze
[/Uninstall/Seed]	Uninstall Deep Freeze and leave the workstation seed installed
[/PW=password]	Set a password during installation
[/AllowTimeChange]	Allow system clock to be changed
[/Freeze=C,D,...]	Freeze only drives listed (Thaw all others)
[/Thaw=C,D,...]	Thaw only drives listed (Freeze all others)

Example Command Line: `DF5Wks.exe /Install /Freeze=C /PW=password`

In the example, the Deep Freeze installation program file is named *DF5Wks.exe*. Only the C: drive will be Frozen. Any other drives on the workstation will be Thawed. If the workstation only has a C: drive, the [/Freeze] switch can be omitted. A password (password) will be created. After executing the command, Deep Freeze will install and the workstation will restart Frozen and ready to use.

The Silent Install System will not work without the [/Install] or [/Uninstall] switch.

Deep Freeze must be in a Thawed state before [/Uninstall] can be used.

Silent Install or Uninstall using a Shortcut

Deep Freeze can be installed directly on a workstation without having to use the installation dialog box by using the following steps.

1. Locate the Deep Freeze installation program file (*DF5Wks.exe*) on the target workstation.
2. Right-click on the icon and choose *Create Shortcut*.
3. Right-click on the shortcut and choose *Properties*.
4. Edit the path of the *Target* field by typing /install or /uninstall at the end of the path.

Example Shortcut Target: `"C:\Documents and Settings\DF5Wks.exe" /install`

Double-clicking the new shortcut will result in the immediate installation or uninstallation of Deep Freeze followed by a restart of the workstation.

Deep Freeze must be in a Thawed state before /uninstall can be used.

Network Install on Multiple Workstations

The Silent Install System can also be used to install Deep Freeze on multiple workstations over a network. If the workstations on the network use logon scripts, the scripts can be used to install Deep Freeze on all networked workstations automatically. All workstations will restart Frozen and ready for use after installation has completed.

Use one of the following command line syntaxes to create an install error report log file:

- `\\Server Name\Share Name\DF5Wks.exe /Install > dfinstall.log`
- `\\Server Name\Share Name\DF5Wks.exe /install >> dfinstall.log`

Install Over Existing Deep Freeze Versions

All existing Deep Freeze versions must be uninstalled prior to performing any new Deep Freeze installation.

Install Using Imaging

Deep Freeze Enterprise has been designed to work with all major imaging and desktop management software. Use either an Attended Install or the Silent Install System to install Deep Freeze on a master image.

Deep Freeze must be in a Thawed state before finalizing a master image. The workstation will require an additional restart after imaging for Deep Freeze to correctly detect the changes in disk configuration. If the workstations are imaged in an unattended mode, steps should be taken to ensure the workstations are restarted to allow the configuration to update. To return to the Frozen state after imaging is complete, set Deep Freeze to be Thawed after n number of restarts (in the master image) so that after n number of restarts, the workstation is automatically Frozen. Alternatively, use [Deep Freeze Command Line Control](#) to Freeze selected workstations.

Target Install Using Enterprise Console

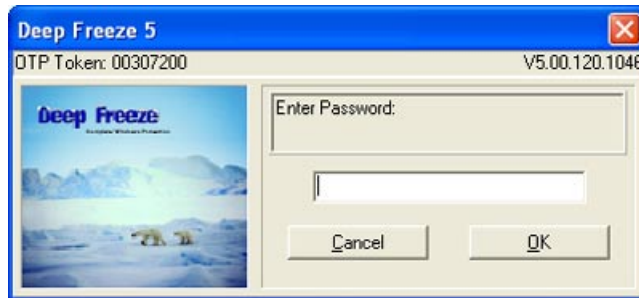
Deep Freeze can also be deployed using a [Target Install from the Enterprise Console](#).

Using Deep Freeze

Workstation Logon

There are two ways to logon to Deep Freeze on a workstation. If the Deep Freeze icon is shown in the System Tray, hold down the SHIFT key and double-click the Deep Freeze icon. Alternatively, use the keyboard shortcut CTRL+SHIFT+ALT+F6.

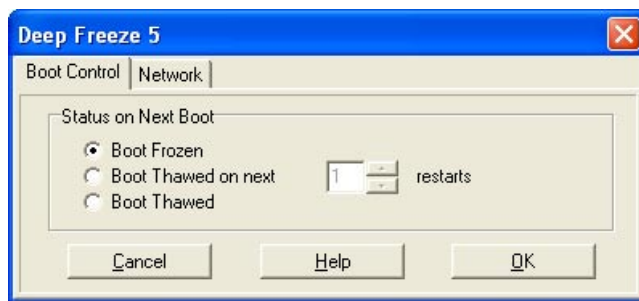
Either method will bring up the logon dialog.



Enter the administrator password and click *OK* to logon to Deep Freeze.

Boot Control

The *Boot Control* tab is used to set the mode Deep Freeze will be in after the next restart.



Boot Frozen will ensure that the workstation is Frozen the next time it is restarted.

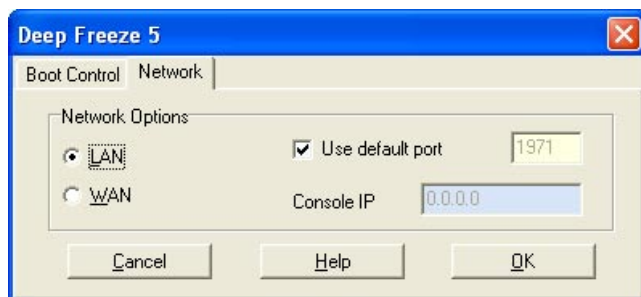
Boot Thawed on next will ensure that the workstation is Thawed each time it is restarted for the next specified number of restarts.

Boot Thawed will ensure that the workstation is Thawed each time it is restarted.

Select the radio button next to the desired choice and click *OK* for the changes to take effect.

Network

The *Network* tab can be used to configure the network options on a workstation.



The *LAN* and *WAN* radio buttons select between the LAN and the LAN/WAN method of communication.

When the *WAN* radio button is selected, a valid IP address for the Enterprise Console must be entered in the *Console IP* field. The default port number can be changed by unchecking *Use Default Port* and entering the desired port number.

For further information on network configuration, refer to the [Enterprise Console Networks and Groups](#) documentation.

One Time Passwords

A *One Time Password* (OTP) can be generated using the Configuration Administrator. The Configuration Administrator requires a token from the workstation in order to generate an OTP. The OTP Token for the workstation is located in the Deep Freeze logon dialog.



Refer to the [Configuration Administrator](#) documentation for more information about the [One Time Password Generation System](#). An OTP can be used one or more times after it has been generated (depending on the options set when it was generated). All OTP passwords will expire at midnight on the day they were created.

An OTP must be used to logon to Deep Freeze if no passwords were created for the Deep Freeze configuration file.

Using ThawSpace

ThawSpace is a virtual partition on a workstation that can be used to store programs, save files, or make permanent changes. All files stored in the ThawSpace will be saved after a restart, even if the workstation is Frozen. ThawSpace is only available if it was set to be created by the Deep Freeze Configuration Administrator.



Any existing ThawSpace will be deleted during an uninstall if the option to retain existing ThawSpace was not checked in the Configuration Administrator, if the ThawSpace was not created with Deep Freeze Professional Version 5 or later, or if the ThawSpace is on a Windows 95/98/Me workstation.

Permanent Software Installations, Changes, or Removals

Workstations must be Thawed for any permanent changes to take effect. Installation of software often requires one or more restarts to complete the installation. It is recommended that the Boot Control tab is used to allow the workstation to restart with Deep Freeze Thawed until installations or changes are finished.

Deep Freeze Command Line Control (DFC.EXE)

The Deep Freeze *Command Line Control* (DFC) offers network administrators increased flexibility in managing Deep Freeze workstations. DFC works in combination with third party enterprise management tools and/or central management solutions. This combination allows administrators to update workstations on the fly and on demand.

It is important to note that DFC is not a standalone application. DFC integrates seamlessly with any solution that can run script files, including standard run-once login scripts.

The DFC executable is installed in same directory as the Configuration Administrator:

C:\Program Files\Faronics\Deep Freeze Enterprise\Dfc.exe

DFC commands require a password with command line rights. OTP passwords cannot be used.

DFC Boot Control

Syntax	Description
DFC password /BOOTTHAWED	Restarts workstation into a Thawed state. Only works on Frozen workstations.
DFC password /THAWNEXTHOOK	Sets up workstation to restart Thawed the next time it restarts. Only works on Frozen workstations. Does not force workstation to restart.
DFC password /BOOTFROZEN	Restarts workstation into a Frozen state. Only works on Thawed workstations.
DFC password /FREEZENEXTHOOK	Sets up workstation to restart Frozen the next time it restarts. Only works on Thawed workstations. Does not force workstation to restart.

DFC Status Query

Syntax	Description
DFC get /ISFROZEN	Queries workstation if it is Frozen. Returns 0 if Thawed. Returns 1 if Frozen.

Configuration Update

Syntax	Description
DFC password /CFG=[path] depfrz.rdx	Replaces Deep Freeze configuration information. Works on Thawed or Frozen workstations. Password changes are effective immediately. Other changes require restart.

DFC Return Values

On completion of any DFC command, the DFC will return the following values:

Value	Description
0	SUCCESS or Boolean FALSE, for commands returning a Boolean result
1	Boolean TRUE
2	ERROR - User does not have administrator rights
3	ERROR - DFC command not valid on this installation
4	ERROR - Invalid command
5 - *	ERROR - Internal error executing command

Batch File Example

The example below shows how to check for a specific error level using a DOS Batch file:

```
@ECHO OFF
DFC.EXE get /isfrozen
IF Errorlevel 5 GOTO Error5
IF Errorlevel 4 GOTO Error4
IF Errorlevel 3 GOTO Error3
IF Errorlevel 2 GOTO Error2
IF Errorlevel 1 GOTO Error1
IF Errorlevel 0 GOTO Error0

:Error5
Echo Errorlevel 5
Goto END

:Error4
Echo Errorlevel 4
Goto END

:Error3
Echo Errorlevel 3
Goto END

:Error2
Echo Errorlevel 2
Goto END

:Error1
Echo Errorlevel 1
Goto END

:Error0
Echo Errorlevel 0
Goto END

:END
```

This section checks the Errorlevel that DFC provides to the operating system.

This section contains the actions that should be performed for each Errorlevel.

Actions can be placed between the `ECHO Errorlevel #` statement and the `Goto END` statement for each of the detected error levels. To use this Batch file to automatically Thaw a Frozen workstation, the following section of the Batch file would have to be changed:

```
:Error1
Echo Errorlevel 1
DFC.EXE password /BOOTTHAWED
Echo
Goto END
```

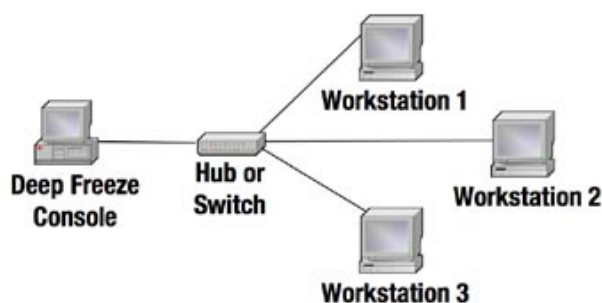
Appendix A—Network Examples

Four examples of different network topologies running Deep Freeze Enterprise are discussed below.

Example 1—LAN with Single Segment

Example 1 shows the simplest network topology. It consists of three workstations running Deep Freeze that are connected together by a hub or switch. A fourth computer is used as an administrative computer to run the Enterprise Console.

To setup the configuration, create a matching set of the programs *DF5Wks.exe* and *DF5Console.exe* using the Configuration Administrator.



Open the Configuration Administrator and create a new configuration file or open an existing file such as *DepFrz.rdx*, *DF5Wks.exe*, or *DF5WksSeed.exe*.

Click on the Network tab and select LAN mode. The default port number is set to 1971 but this can be changed to any appropriate port number. The port number is the listening port for the Enterprise Console. The Console will only see workstations that use the same port number.

Configure other options as required, then click on the Create Programs tab. Click on *Create Enterprise Console* and *Create Full Workstation Installation* to create the two files *DF5Console.exe* and *DF5Wks.exe*.

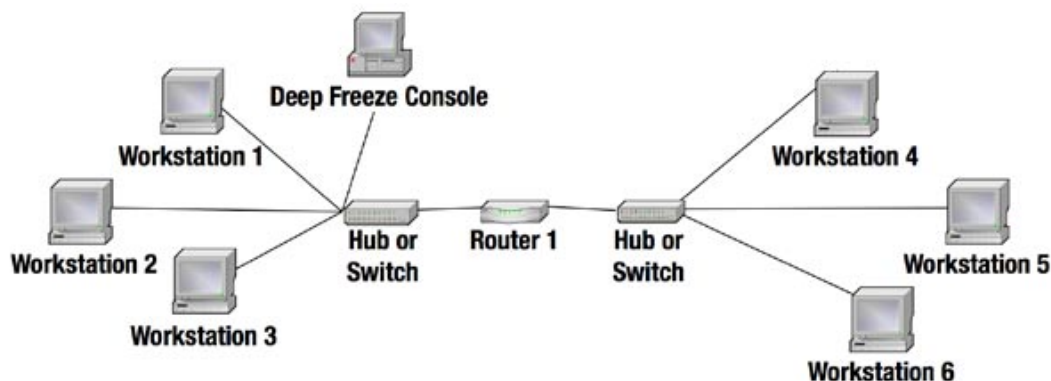
Run *DF5Console.exe* on the Enterprise Console computer. If the *DF5Console.exe* program was not created on the computer being used for the Console, the Console program must be activated the first time it is run using an OTP password generated by the Configuration Administrator.

Run *DF5Wks.exe* on each workstation. As each workstation completes the Deep Freeze installation and is automatically restarted, it will appear on the Console screen. The Console can now be used to control the workstation.

Refer to the [Enterprise Console](#) documentation for further information.

Example 2—LAN with Two Segments Connected by a Router

Example 2 shows a more complex network topology where two segments are connected by a router. The Deep Freeze Console and three workstations (Workstations 1, 2, and 3) are connected together on one segment. Three additional workstations (Workstations 4, 5, and 6) are connected on a second segment.



The Deep Freeze configuration that works on the above topology consists of the same setup as described in [Example 1](#) for the segment shown on the left (Workstations 1, 2, and 3). Workstations 4, 5, and 6 in the segment shown on the right must be installed with a Deep Freeze installation that has a different configuration.

In most cases, no configuration of the router will be necessary. The workstations on the right hand segment need to be configured in the LAN/WAN mode with the IP address of the Enterprise Console specified.

If the router is a NAT (network address translation) router, or there is a firewall between the two segments, the workstations on the right hand segment will need to be configured with the IP address of the router or firewall. The router or firewall will then need to be configured to forward traffic on the specified port to the Enterprise Console.

Open the *DF5Wks.exe* program (used on the left hand segment) in the Configuration Administrator. Click on the Network tab and select LAN/WAN mode. Set the IP number and ensure that the port number is the same as that used in the LAN configuration.

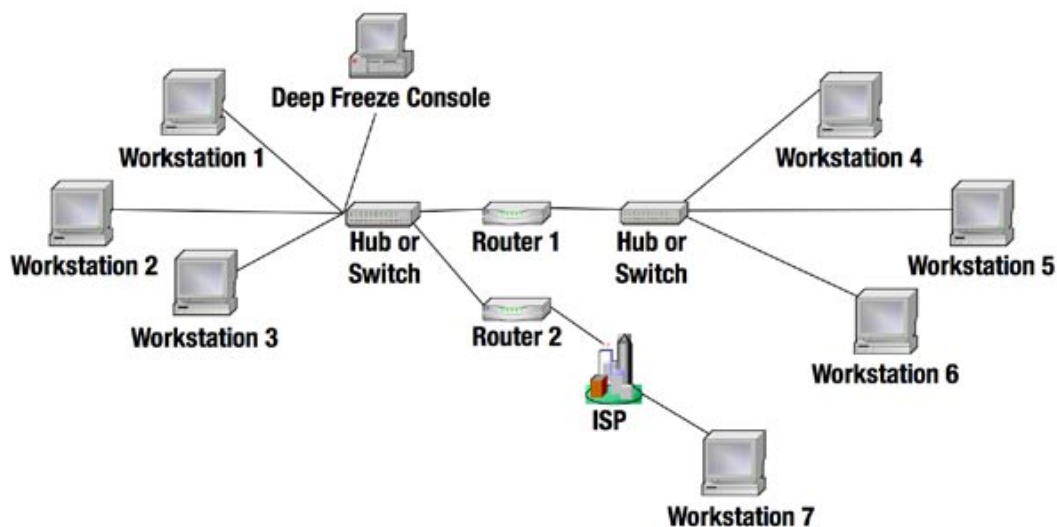
Click the Create Programs tab. Click *Create Full Workstation Installation* and save the program under a different name to identify this configuration (e.g. *DF5WksRouter1.exe*).

Run this new program on Workstations 4, 5, and 6.

The Enterprise Console will display each of the new workstations as they automatically restart after installation.

Example 3—Two Segment LAN with One Segment Connected by the Internet

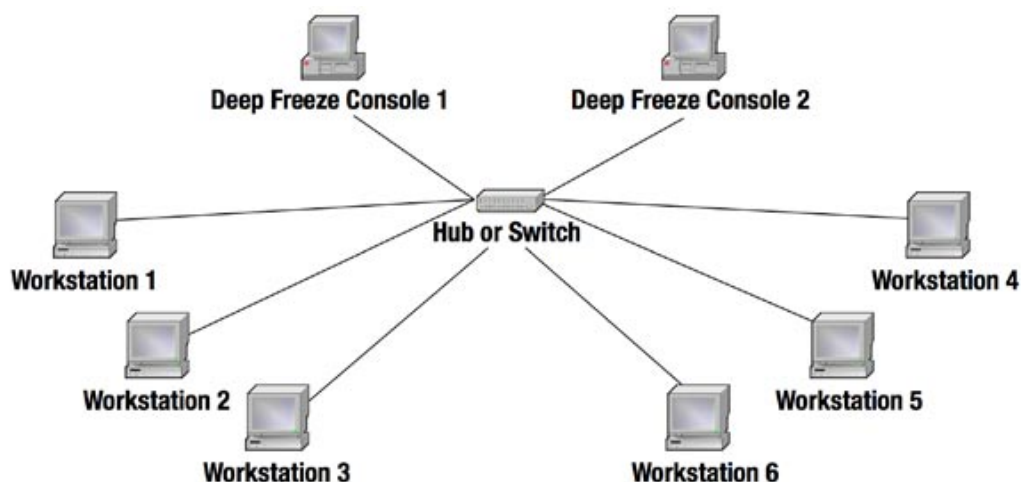
Example 3 shows the same network described in Example 2, with the addition of a second router (Router 2) that connects to the Internet. Workstation 7 is connected to Router 2 via the Internet.



For Workstations 1–6, the same settings as in Example 2 can be used. Workstation 7 will need to be configured with the external IP address of Router 2. Router 2 will need to be configured so that any traffic from Workstation 7 on the selected port will be forwarded to the Enterprise Console. This may require ports to be opened if a firewall is present.

Example 4—Single Segment LAN with Two Enterprise Consoles

Example 4 shows a simple single segment network with two Enterprise Consoles. Console 1 is used to control Workstations 1, 2, and 3. Console 2 is used to control Workstations 4, 5, and 6.



A Console communicates (listens) on a specific port number. Only one Console can monitor any one port. Therefore, in this example, Console 1 and Console 2 must be configured to communicate on different ports. Workstations 1, 2, and 3 must be configured to communicate on the same port as Console 1. Workstations 4, 5, and 6 must be configured to communicate on the same port as Console 2.