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*The Definitive Guide™ To*

# Windows Desktop Administration

**SCRIPTLOGIC**

*Bob Kelly*

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## Chapter 6: Desktop Support

In the last chapter, we explored implementing security in an effort to help users from inadvertently damaging their systems, to enforce the saving of data to network shares, and to prevent the installation of unauthorized software. However, even with these restrictions in place, you will certainly have desktop problems to contend with. Some of these issues might simply involve a lack of user knowledge or understanding, other problems will be legitimate issues that will require investigation and troubleshooting.

### Adopting and Implementing Best Practices

Adopting industry best practices can help you to avoid learning certain aspects of desktop support the hard way. Guidelines provided by published best practices—which we’ll explore in this chapter—can help you to identify issues that may not be clear to you in the early stages of implementing your desktop support processes. Investigating these best practices and how you can apply them to your environment can help you to avoid mistakes.

The most recognized source of best practices for IT can be found in the IT Infrastructure Library (ITIL), which is published by the United Kingdom’s Office of Government Commerce (OGC). The ITIL defines overall service management as 10 core processes separated into two groups: IT service delivery and IT service support (see Table 6.1).

Process	Category
Capacity management	IT Service Delivery
Financial management	IT Service Delivery
Availability management	IT Service Delivery
Service level management	IT Service Delivery
Continuity management	IT Service Delivery
Service desk	IT Service Support
Incident management	IT Service Support
Problem management	IT Service Support
Change management	IT Service Support
Configuration management	IT Service Support

**Table 6.1:** *ITIL service management processes.*

When leveraging how others have done something (for example, implementing a best practice), you might feel that doing it exactly their way is a requirement. However, every situation is different and should be adjusted as necessary. Don’t think of best practices as hard and fast rules; rather, consider them a way that others have found to solve a problem that works well in typical environments. One of the reasons that ITIL has been so widely implemented is that it does not provide specific standards and processes, but a flexible framework that you can adjust as needed.

 To learn more about the ITIL service management processes, visit <http://www.ogc.gov.uk>.

Regardless of which processes you implement, it is important that you use them consistently. You might have heard of International Organization of Standardization (ISO) 9001, which helps companies establish and consistently use processes. Even if your intention is not to become certified, the practice of establishing and consistently using a process is no less valuable. However, processes can (and should) be enhanced and updated as you discover worthwhile changes. (For information about a method of reviewing and improving processes, see the sidebar “The Continuous Process Improvement Model.”) But to constantly improve processes, they must be defined in the first place. Regularly deviating from a set process can undermine the benefits of establishing such a process.

### The Continuous Process Improvement Model

Continuous Process Improvement (CPI) is a systematic approach for improving performance and customer satisfaction through the enhancement of an organization's processes. The model is designed to help document processes, assess their current status and functionality, and utilize a variety of tools to increase process efficiency and effectiveness. Figure 6.1 illustrates the CPI method model:

- Design—Creating a process and determining which metrics are important to establish the success and performance of the process
- Execute—Automating, deploying, and training staff on the process
- Measure—Determining how the process is performing and what can be learned from this data to further improve the process
- Manage—Modifying the process to improve it as well as considering changes that have affected the process

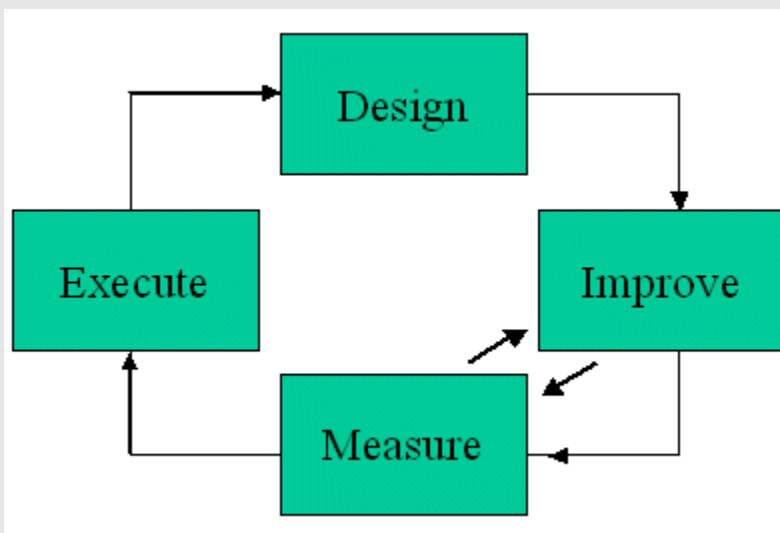


Figure 6.1: The CPI model.

## Desktop Support Best Practices

One area in which implemented best practices and established processes can greatly improve the life of a desktop administrator is desktop support. Hopefully, you have done so much testing and research during the development of your baseline and in the deployment of updates and applications that the number of Help desk calls you receive is minimal. However, it is the nature of desktop support that there will always be at least a few users who will require your assistance.


When a user calls in a problem, it is very important that the issue be seen through to the end, which is very difficult without a tracking system in place. Particularly if several support staff are involved in solving a single problem, the need for a tracking system becomes clear.

### *Tracking Trouble Tickets*

Tracking tickets through completion provides many benefits: they allow you to easily identify trends and widespread problems and to ensure that problems are followed through to resolution. When your time is consumed by many tasks, as is always the case for desktop support staff, documenting your work can become a challenge. To ease this burden, tickets can be generated from several sources—as we'll explore in the following sections—all of which should end up in your tracking database.

### **Web**

Most Help desk software vendors such as Remedy, Altiris, and WebGroup Media provide a browser-based interface for tickets. The notion of running a client application to collect such information is quickly becoming an antiquated concept. A browser-based interface for recording a trouble ticket (and even managing them) is increasingly popular, as it requires no deployment and generates a ticket automatically in your database.

 For a list of browser-based Help desk tools, check out [http://dmoz.org/Computers/Software/Help\\_Desk/Browser\\_Based](http://dmoz.org/Computers/Software/Help_Desk/Browser_Based).


### **Telephone**

A telephone call is another common way to receive trouble calls. This sort of ticket initiation is typically handled by having the caller provide the necessary information to support personnel for manual entry. This method of reporting is obviously less efficient than having the user enter data via a Web page. However, given the choice, many users are more comfortable speaking with someone so that they are better assured that someone is aware of their problems (rather than sitting in a queue that nobody has looked at yet).

Many organizations affix stickers to monitors to ensure that users know the right person to contact when they have a problem. This practice is a good idea—when users are already frustrated with problems, you do not want them to have to track down information to obtain assistance.


## Email

A problem reported by email is one step behind that of a telephone-initiated ticket. Odds are against you that all the necessary information will be contained within the email, which means that you will have to track down the user by telephone to manually complete a ticket. However, if implemented properly, email can be as effective as a Web interface for the collection of information. To create an efficient solution, an email form is used and sent to an automated process for populating the necessary data into your support system database.

 See Outlook Forms later in this chapter for additional discussion about email support requests.

## Walk Ups

Walk-up requests and complaints are the worst of the ways to initiate a trouble ticket. Unfortunately, to the user, this method is often perceived as the best way. After all, they told Joe about the problem, and Joe always helps them out. Chances are pretty good that these problems will be handled without a ticket being created—or might end up forgotten altogether.

 Without best practices in place, telephone, email, and especially walk-up support requests might go unrecorded in your ticket-tracking database. This lack of record would be an injustice, as you will not get credit for the problem you have solved. Most Help desk teams record data about the number of tickets they receive and how fast they are resolved as an important metric in judging the effectiveness and success of the team. Without a tracking system in place, you can easily answer questions and solve support problems throughout the day, but it will look to management like you did nothing.


## Using a Knowledge Base

Knowledge sharing is essential to providing an increased level of support and, when made available to users, a decreased number of support calls. A knowledge base is a repository for recording solutions to problems identified on your systems, specific to your organization.

There are several benefits of a mature knowledge base. Containing the past experience of those that are either more knowledgeable or have spent several hours or days discovering a solution, a knowledge base can help you avoid having to determine a solution for the same problem twice, and might even help to reduce the volume of trouble calls:

- **Faster resolution times**—When a user calls in with a problem, a quick search of your knowledge base might provide the fastest answer. Most enterprise support departments utilize a knowledge base as an early step in the process of managing reported problems. In addition to speeding answers to users, this resource benefits less-experienced personnel, giving them the assistance of knowledge shared by those more knowledgeable in dealing with a specific problem.

- Problem call reduction—Making a knowledge base available to users via an intranet Web site will benefit some organizations more than others; in the end, it should reduce the number of trouble tickets by some degree. A more technology-based organization is more likely to have users that would prefer to help themselves. Many problems may indeed require administrative privileges to solve, and some users will always pick up the phone before trying anything themselves. But an available knowledge base lets you take advantage of the population of users that will do whatever they can before they pick up the phone.

 Properly naming and categorizing a knowledge base entry can be critical to the usefulness of this resource. Failure to do so effectively can result in situations in which support staff and users cannot find what they are looking for even when the answer they seek has been provided. For some guidance in this area, you can obtain a draft of the Distributed Management Task Force (DMTF) paper “Using CIM for Support Activities” at [http://www.dmtf.org/standards/cim\\_schema\\_v25.php](http://www.dmtf.org/standards/cim_schema_v25.php) as + CIM\_Support25.

A knowledge base can certainly be an excellent asset, but if it is not managed and maintained, it will be worthless. Ensure that recording resolutions to problems in the knowledge base is an integral part of your process. Further, it is important that those entries be reviewed before becoming available to the rest of the support staff and user population:

- Entering solutions—If the answer to your question is in the knowledge base already, use the available information to close your ticket. If it is not or you need to perform additional actions or checks not present in the solution article, it is important that the knowledge base information be updated. If the solution to the problem you are addressing is not contained within the knowledge base at all, you need to create a new entry. Either way, new and modified entries should go through an approval process of some kind.
- Entry approvals—A manager with a good background in troubleshooting (writing skills would be a definite plus) should be positioned to approve all knowledge base entries and modifications before they are made available. A poor practice or potentially damaging resolution is certainly not something you want in print for future encounters.

### ***Employing Remote Control***

Remote control tools are among the most widely used desktop troubleshooting tools. Whether the system you are supporting is down the hall or across the world, remote control is a direct and convenient way to help a user through a problem or perform small-scale checks or changes.

If you don't mind a lack of support and a reduced set of features, you can find a freeware solution to just about any software requirement—remote control is no exception. Microsoft has begun including built-in support for such functionality and offers NetMeeting free of charge. Additional solutions include the very popular Virtual Network Computing (VNC) remote control software from AT&T. However, if you're looking for a more complete feature set, consider a third-party tool such as ScriptLogic's Web-based remote control tool called Desktop Authority or Symantec's pcAnywhere.



## Microsoft

Microsoft provides several remote control solutions. Remote Desktop and Remote Assistance are available only for Windows XP and later systems. NetMeeting is available for a much wider range of Windows systems and, although not free, Systems Management Server (SMS) provides a commonly used remote control solution as well.

Remote Desktop is designed to provide remote desktop access to a Windows XP system. It is not a remote control tool, but I mention it in this context because it is a very helpful tool in desktop administration. Use of Remote Desktop will log off any user on the remote system. Further, someone sitting at the remote system will not see the desktop environment in which you are working. Thus, it is a useful tool for performing remote operations; however, for actually working with users on a problem interactively, Microsoft now offers its Remote Assistance tool (which I'll discuss in a moment).

To configure a system as a valid host for Remote Desktop, select the *Allow users to connect remotely to this computer* check box on the Remote tab of the System Properties applet (see Figure 6.2). By clicking Select Remote Users, you can specify groups or individual accounts that are authorized to connect to the computer.

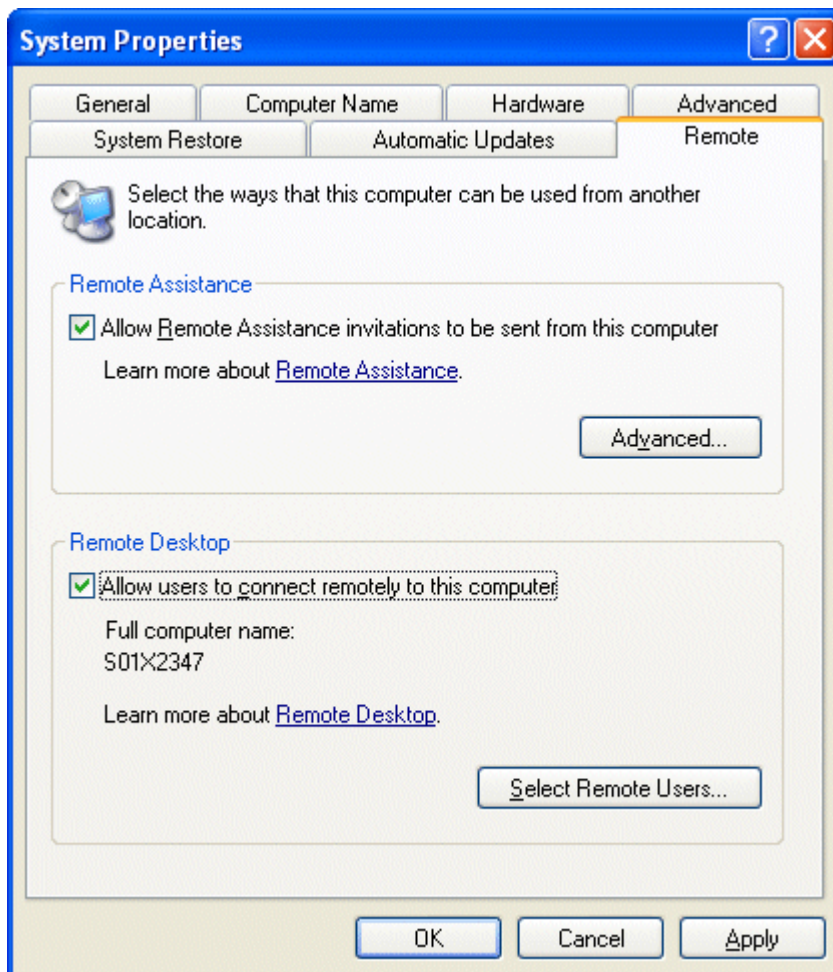



Figure 6.2: Use the System applet to control Remote Assistance and Remote Desktop settings.

This setting enables the system to function as a host (to be remotely controlled). To actually perform remote control operations, you will need to utilize the Remote Desktop Connection client (a Terminal Services client software component). On Windows XP systems, this program is available in the Communications program group under Accessories in the Start menu.

For Windows 95, Windows 98, Windows ME, Windows NT, and Win2K systems, you can install the client software so that you can connect to any properly configured Windows XP client. To install the Remote Desktop Connection client, insert the Windows XP CD-ROM, and click *Perform additional tasks* from the Welcome page. You can also download the client setup from Microsoft's Web site at <http://www.microsoft.com/windowsxp/pro/downloads/rdclientdl.asp>.

 Accounts used for remote administration must not have blank passwords. Hopefully, this requirement will not be an issue in your production environment; in your lab, this issue is one to be aware of.

Not to be confused with Remote Desktop, which only allows one active session at a time per computer, Remote Assistance allows both the owner and the remote user to control the computer at the same time. It also provides additional support features such as keyboard and microphone chat.

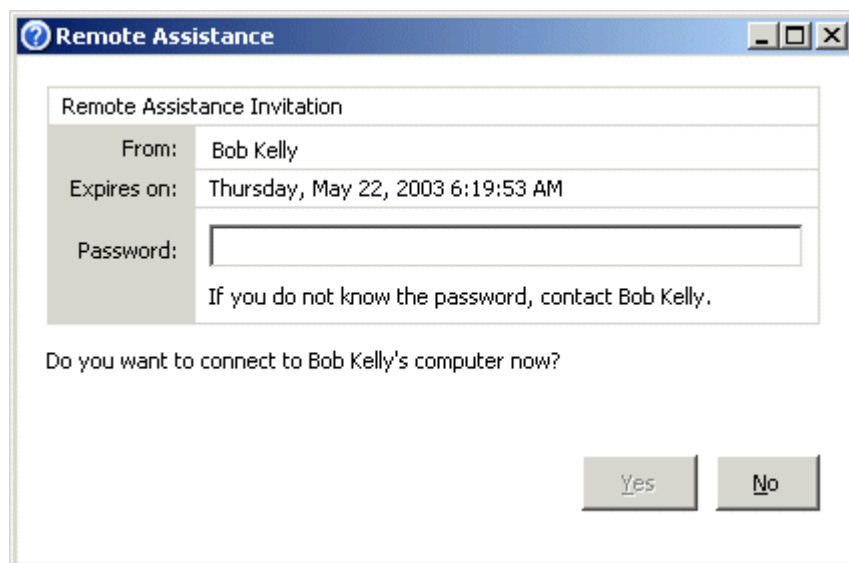
Because security is a concern with this feature, establishing a connection is not a one-step process (giving the remote computer plenty of opportunities to deny the session). The following steps walk you through the process of initiating a Remote Assistance session:

User:

1. Click Start, Help and Support to open the Office XP Help and Support Center.
2. Click the link in the upper left *Invite a friend to connect to your computer with Remote Assistance*.
3. Select *Invite someone to help you* from the main Remote Assistance screen.
4. At the bottom of the screen select *Save invitation as a file (Advanced)*. MSN Messenger or any MAPI mail account can also be used to initiate the session at this step in the process.
5. Specify the name that you want to appear on the invitation, and set a time period that the invitation should be set to expire in hours, minutes, or days.
6. Next specify a password, which the remote user will need to enter to make use of the invitation being created.
7. Click Save Invitation, and you will be prompted for a location to save the file, which will have a file extension of *.msrcincident*.
8. Email (or use any preferred method) to get the file to the administrator.

Administrator:

The administrator must open the file received from the user. When he or she does so, as Figure 6.3 shows, a prompt will appear to connect and supply a password (if specified).



**Figure 6.3: An example Remote Assistance invitation.**

The Remote Assistance application will launch and wait for a response from the user.

User:

Remote Assistance prompts the user with a window advising that the administrator has accepted the invitation and is ready to connect to the user's computer. The user must accept this prompt by clicking OK for the session to begin.

Once the session is established, a Remote Assistance window is presented with chat, file transfer, and control options.

Administrator:

When first initiated, the remote system can be viewed but not manipulated by the administrator. To request control, the administrator must click Take Control at the top left of the screen.

User:

The user is prompted to allow or disallow the administrator from being able to share control of the user's desktop (mouse and keyboard movements).



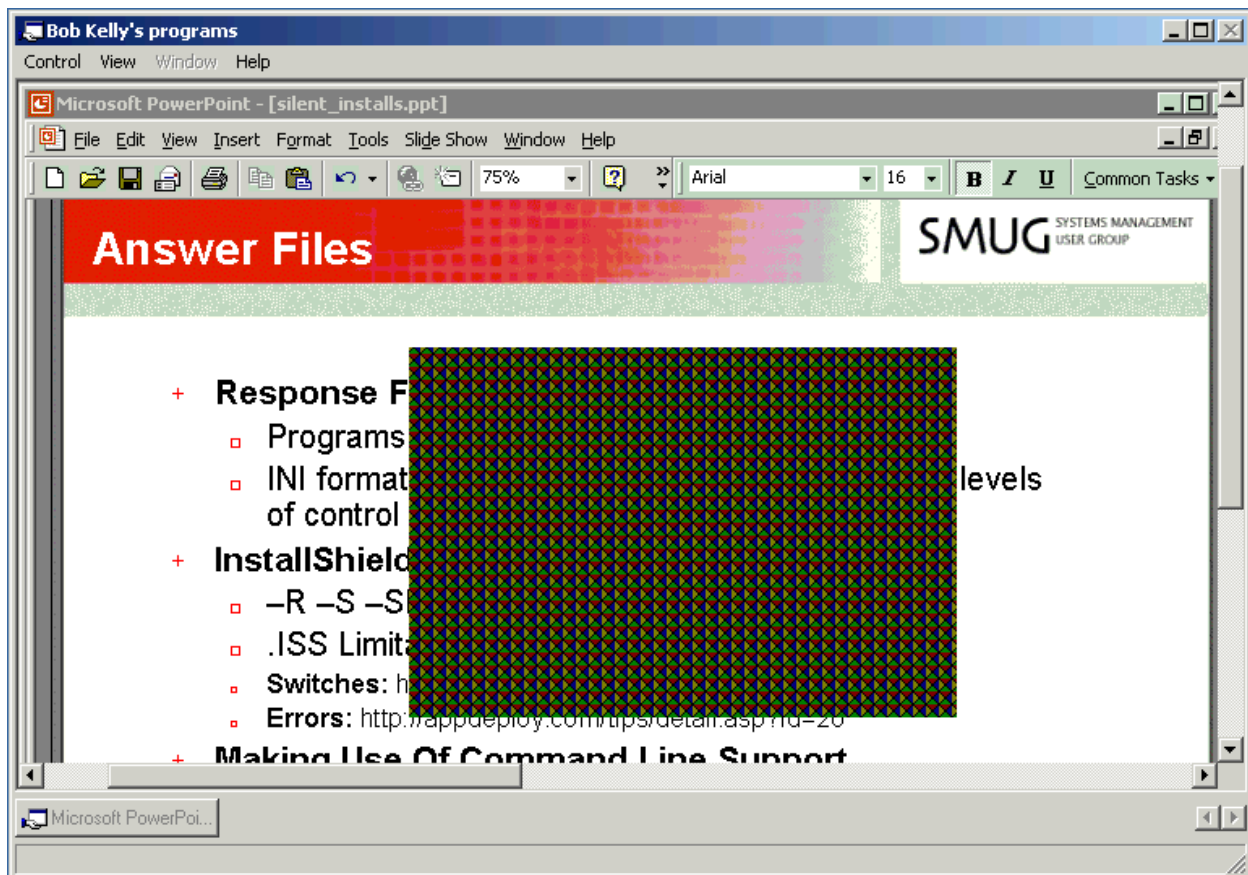
If the local or remote computer is behind a firewall, the firewall will need to be configured to allow Remote Assistance traffic via outbound TCP port 3398.



Remote Desktop Web Connection is a Win32-based ActiveX control (COM object) that you can use to run Remote Desktop sessions from within Internet Explorer (IE). This version is the latest of what was previously referred to as the Terminal Services Advanced Client (TSAC). You can download this control from <http://www.microsoft.com/windowsxp/pro/downloads/rdwebconn.asp>.




Another free Microsoft remote control tool, NetMeeting is often used for chatting and video conferencing. However, there is also a desktop sharing option that allows users to share specific applications and allow or disallow control of the application to the remote user. As Figure 6.4 shows, a PowerPoint presentation is being shared and a dialog box that is not shared has appeared on the screen of the host system. Because the contents of the dialog box are not being shared, this remote view hides the dialog box from the remote system. The dialog box covers a portion of the work area, and NetMeeting presents a box pattern in its place, effectively hiding the dialog box.



**Figure 6.4:** NetMeeting desktop sharing allows for the sharing of specific applications; others, such as the unavailable dialog box that appears here, cannot be seen by the remote user.

Although not free, Microsoft's SMS tool is worth mentioning here as its remote control tool is among the most widely used in large organizations. (SMS may be considered "free" to those that own BackOffice or have its licensing covered by an Enterprise License Agreement). Although very useful, this tool is a complicated and robust program that offers much more than remote control features. Thus, SMS can be very dangerous in the wrong hands. If you are using, or plan to make use of, SMS as your remote control solution, be sure to restrict access to those features not necessary for desktop support. For details about how to use SMS to remotely support users, see the Microsoft article "SMS: How to Set Up a Help Desk Administrator" at <http://support.microsoft.com/default.aspx?scid=kb;en-us;252674>.

SMS 2003 integrates three remote control technologies: SMS remote control, Terminal Services, and Remote Assistance. You control access to remote control through the SMS admin console.

 In many environments, Microsoft SMS is used almost exclusively as a remote control tool despite its many additional features (and their inherent complexities). In fact, such is the case to such an extent that about 80 percent of the resumes that I have seen that boast SMS experience turn out to be simply the use of its remote control functionality. Used as a verb, I have often been told “I SMS computers all day helping users.”

## AT&T

With a stable reputation and the fact that it is free, AT&T’s VNC is a very popular remote control solution. Though its security features are lacking, it is very easy to operate and supports many OSs.

VNC utilizes its VNC protocol to redirect the display of a system. This tool’s design is based on the concept of a remote frame buffer (RFB). The protocol simply allows a server to update the frame buffer displayed on a viewer (as Figure 6.5 shows). Because it works at this low level, you can use VNC on any OS. Currently there are client applications (viewers) for Linux, Solaris, Windows, Macintosh, DEC Alpha, and Windows CE. The protocol will operate over any reliable transport, such as TCP/IP.

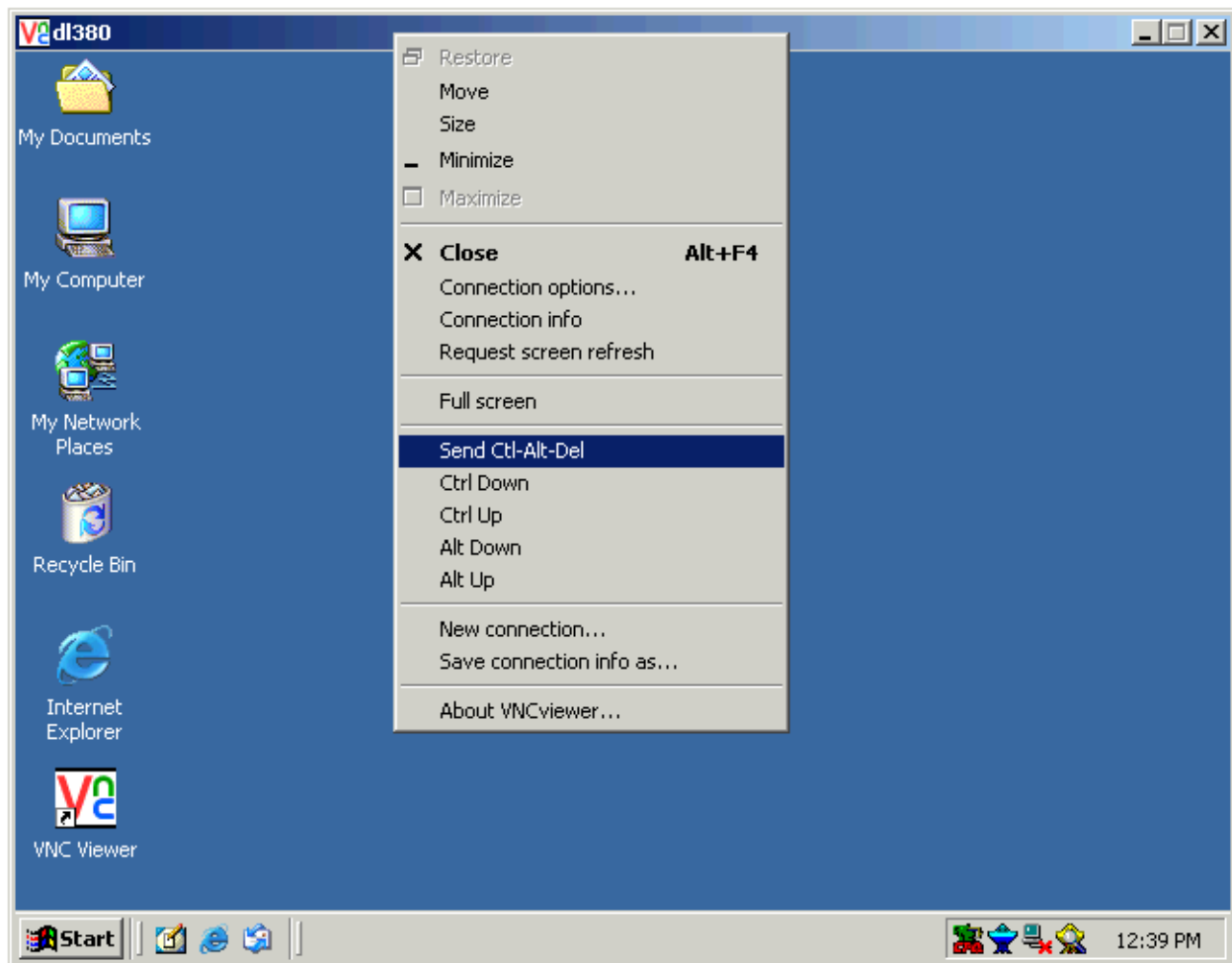




Figure 6.5: A VNC viewer session.

 To use this tool, install the VNC Server on the machine that you want to remotely control. Then, using the VNC Viewer software, you can connect to any system running this VNC Server component. If you are having trouble connecting to a server, try specifying the IP address of the VNC Server system.

 VNC is available from AT&T at <http://www.uk.research.att.com/vnc/>.

 Another freeware remote control product that is starting to build a following is Specrem Pro. This tool is an open source project by Farid Bengrid and Antti Kirjavainen of Finland. In addition to the features that you would expect from a remote control product, Specrem also lets you control multiple computers at the same time. To learn more about Specrem Pro, visit <http://specrem.sourceforge.net/>.

## Paying for the Good Stuff

In addition to these free (with the exception of SMS) remote control tools, there are several feature-rich third-party solutions available on the market for your consideration. Many of these products integrate with desktop management solutions and provide benefits not found in many of their free counterparts, including:

- Increased speed
- Increased security
- Integrated deployment
- Support for mobile devices
- No client software
- Cross platform support

### Remote Control Vendors

The following list offers remote control tool vendors to get you started in your search:


ScriptLogic Desktop Authority at <http://www.scriptlogic.com>

Symantec pcAnywhere at <http://www.symantec.com/pcanywhere/>

NetSupport Manager <http://www.netsupport-inc.com/NSM/>

3am Labs RemotelyAnywhere at <http://www.remotelyanywhere.com/>

Netopia Timbuktu at <http://www.netopia.com/en-us/software/products/tb2/>

 You can find feature summaries and links to downloads for a wide range of remote control solutions at <http://appdeploy.com/downloads>.



## Working through Problems

Although it is beyond the scope of any book to tell you how to solve all your problems (wouldn't you love that book?), there are several typical obstacles and troubleshooting methods you can apply to most problems. In this section, I'll start out by discussing a few basic problems that are common to most networks, then we'll explore troubleshooting logic as it applies to desktop administration.

### ***What is Your System's Computer Name?***

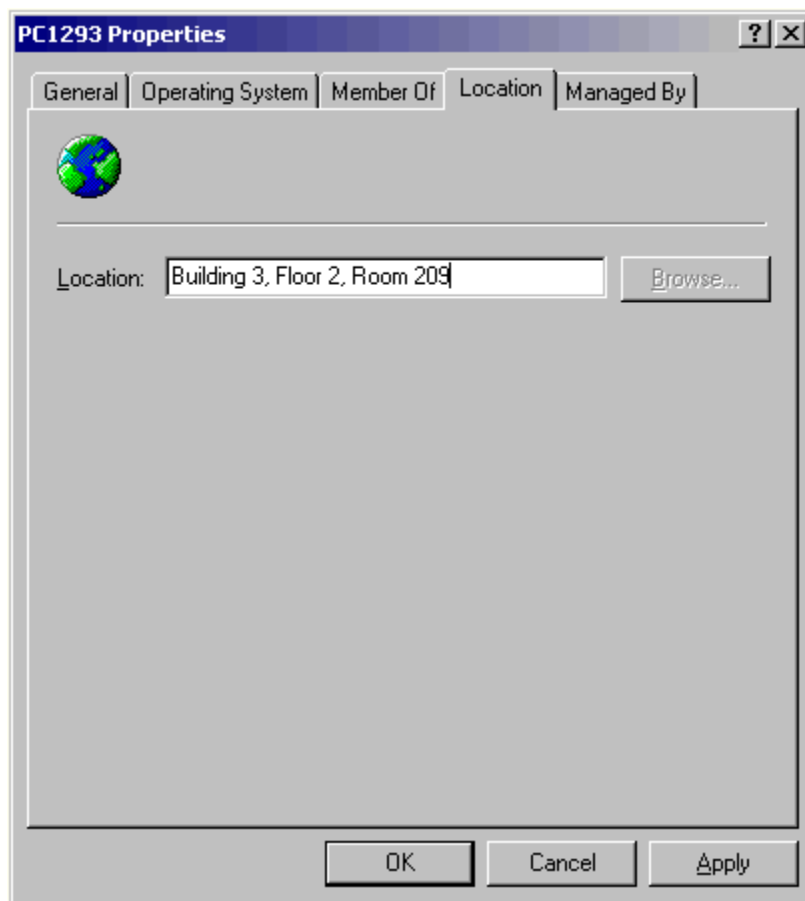
When a user calls with a problem, do you know the computer name of the user's system? If you have chosen an effective naming convention for your systems, you might be able to identify the user's machine quickly. However, particularly in larger environments, the computer name is often an unknown fact that must be investigated. Such being the case, the ability to quickly resolve the user's problem begins with quick identification of the system about which the user is reporting a problem. The following list provides common best practices for doing just that:

- **Asset management database**—A well-maintained asset management database often identifies the primary user of a system. This database is the perfect look-up tool for accessing a wealth of information about the system and the user. Some support desks have even gone so far as to incorporate an automatic presentation of information based on the phone number from which the user is calling. Not having to ask the user for information other than what the problem is adds in a great level of efficiency to the support process.
- **My Computer icon**—When asked for the computer name of their systems, users often ask “Where should I look?” Having them bring up the System applet, then select the Computer Name tab is certainly not the most efficient way to spend the first minutes of a support call. One popular way to make this information easily available is to change the text identifying the My Computer icon to that of the computer name. To do so on Windows XP systems, manipulate the HKEY\_CLASSES\_ROOT\CLSID\{20D04FE0-3AEA-1069-A2D8-08002B30309D} registry key by setting the value of LocalizedString of type REG\_EXPAND\_SZ to %COMPUTERNAME%.
- **Stickers**—A sticker or other manually attached identification is yet another common way to make systems easy to identify. One primary benefit to this method is easy identification when the system is powered off. If the machine will not start, you are going to have a very difficult time getting a look at that My Computer icon.

### ***Where is that Computer?***


Once you have identified a computer on the network, often you don't know where it is located or to whom it belongs. If this situation sounds absurd to you, you are doing something right. A well-planned naming convention and asset-management system will make such information readily available. However, there are many organizations that need to improve things. To that end, the following list offers ways to identify the location of a computer on the network:

- **AD**—In AD, a location field is associated within the properties of each system (as Figure 6.6 shows). However, this value is only useful if it has been configured; the default value is not populated automatically. Setting this value should be a part of the process used when creating any new computer account on the network.



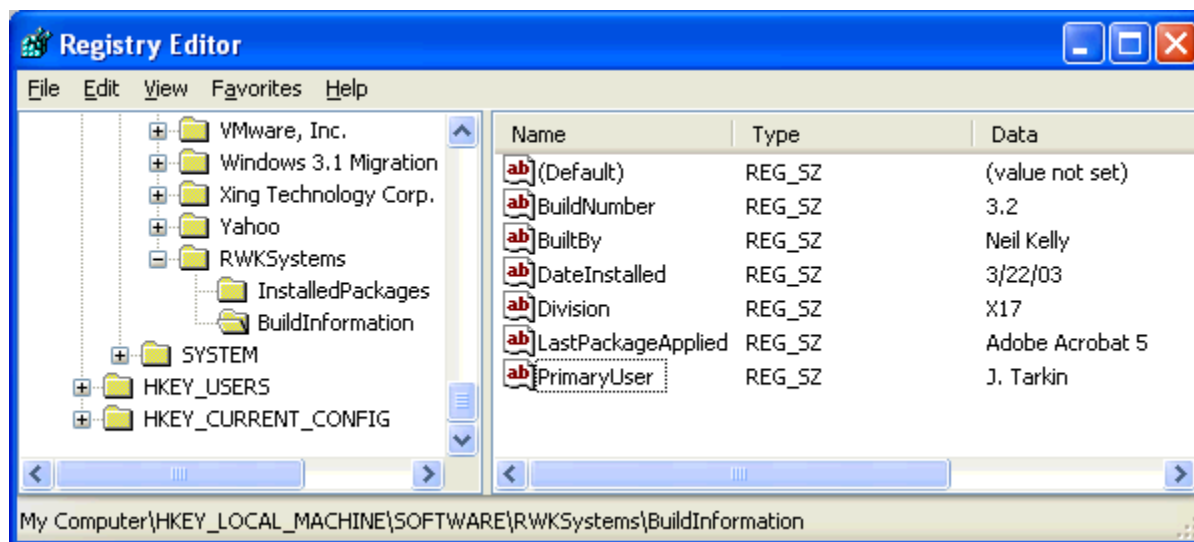
**Figure 6.6:** The AD Location tab in Computer Properties.

- Asset management database—As discussed previously, an asset management database is a common place to track the primary user of a system, among many other things—such as the location of a computer.

 I cover asset management in more detail in Chapter 8.

- Locally stored data—When establishing your build procedures, it is a good idea to identify the system's location on the system as well as in a database. Creating a custom registry key and storing various identifying information there can be helpful down the road in a scripted or automated process that relies on such information. You would normally use computer groups (or organizational units—OUs) to identify collections of machines, but what if all the machines installed by one of the people on your team have a problem? Having the ability to base the correction for such a problem on a value that identifies the person who set up the computer can be very helpful (see Figure 6.7).





**Figure 6.7:** Locally stored build information for use by automation scripts or inventory.


- Net send—If you don't have a good naming convention or tracking database, give good old NET SEND a try:

```
NET SEND <computername> Please Call The Helpdesk at x111.
```

Then, sit back and hope for a phone call!

### Troubleshooting Tips

Like I said earlier, there's not one answer to any IT problem, but there are a few things you can keep in mind when troubleshooting a problem. Particularly when dealing with Windows desktops, user profiles can often be a cause of grief.

 For more information about user profiles, flip back to Chapter 3.

### Profile Problems

Roaming or not, it is likely that the user has spent some time configuring his or her desktop and choosing system settings. Deleting this profile will cause the user to regenerate this environment, and in some cases, doing so could cost hours of time that the user might have spent being more productive. If the problem that the user is experiencing is also present for another person that logs onto the machine, it is unlikely to be the user profile. If the person has a roaming profile and is able to perform the same action without error after logging into another system, it is also unlikely to be a problem with the user profile.

If deleting the user profile should become a necessary troubleshooting step, try renaming the user's NTUSER.DAT file. Doing so will cause the user's files and application data to remain, but the HKEY\_CURRENT\_USER settings will be regenerated from the default profile. If the problem persists, try looking for and removing any related data from the user's Application Data directory that corresponds to the application or vendor that is causing problems. Finally, you can move or delete the user profile in an attempt to eliminate it as a problem altogether. Just be sure that anything you do can be undone if the user profile turns out not to be the problem's source.

## Works On One Computer, But Not On Another

The obvious question to ask when something works on one system and not another is, what is different? Unfortunately, the answer is not so easy to expose.

“Just do a ‘Diff’.” If you have heard this response as often as I have, it probably makes the hair on the back of your neck stand up. Aggravating as it is to explain, you cannot simply compare two systems—there is too much to consider. Even if you were to dump the security settings, ACL settings, policy settings, file versions, registry settings, and data files to a comparable format, there would be so many inherent differences between two systems that the results would be very difficult to examine. Still, if you can narrow the problem to a reasonable scope, a comparison between a subset of a functioning and non-functioning systems may be helpful (see Figure 6.8).

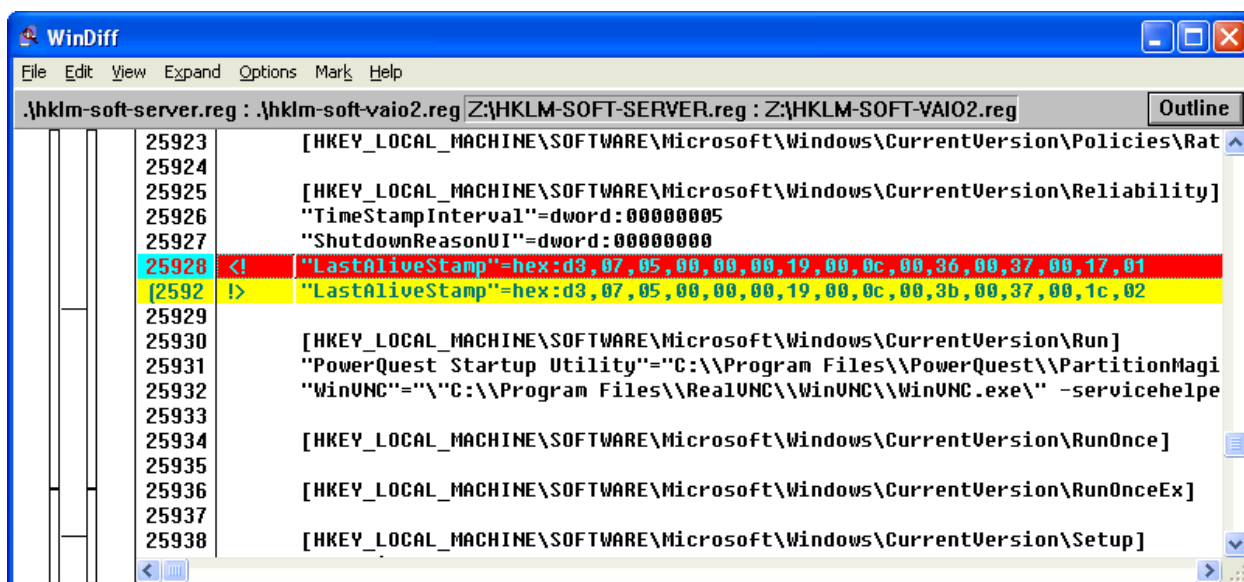
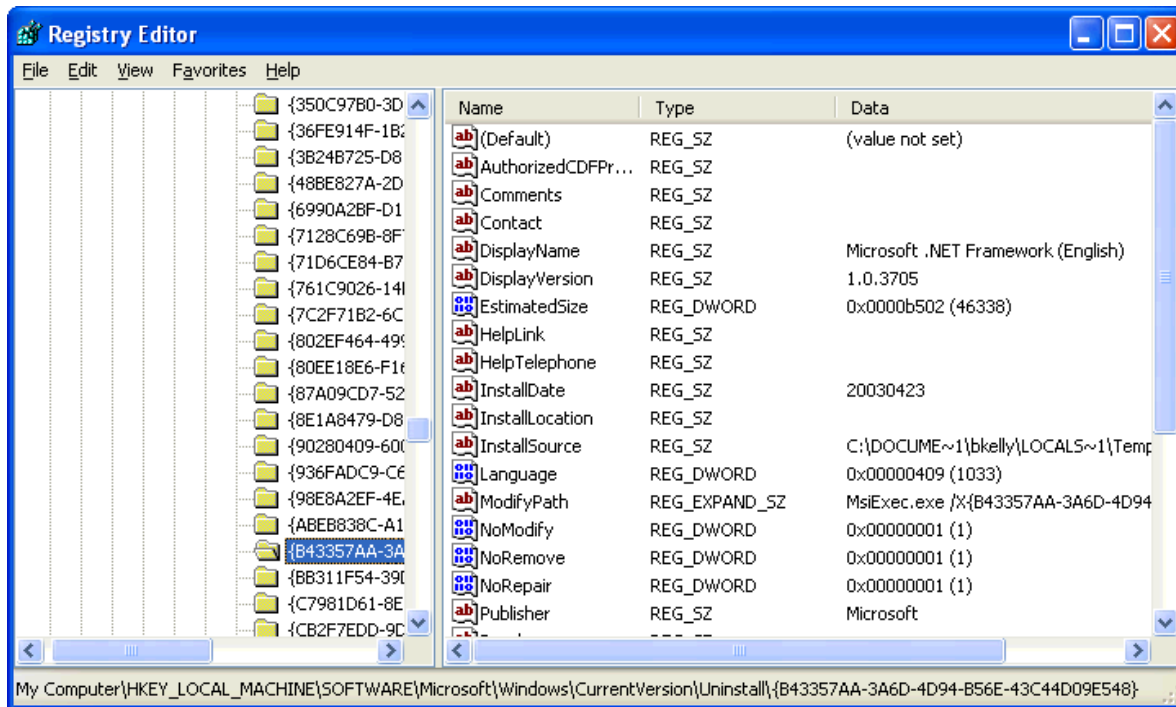


Figure 6.8: WinDiff file comparison tool view.

There are several tools available to perform file comparisons, and WinDiff is one such tool. It is available from many places, including the Support Tools folder on the Win2K and Windows XP CD-ROM as well as in the Windows 98 and NT resource kits, the Microsoft Windows OS Driver Development Kits, and with Visual C++. The tool shows all file contents by line number. Lines that are different show the first file entry in red and the line from the second file in yellow.


 For step-by-step instructions for how to use WinDiff, see the Microsoft article “How to Use WinDiff to Compare Registry Files” at <http://support.microsoft.com/default.aspx?scid=kb;en-us:Q171780>.

Discovering what is installed on a machine is usually best performed by examining software inventory data. However, if you do not have such reports available to you, examining the registry can be the next best thing (when you know where to look). All software installed in Windows that offers the ability to be uninstalled is listed in the registry’s Uninstall key. This key is located at HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall (see Figure 6.9). It accounts for most Windows software installed on a system (with very few exceptions—those that exist are usually made up of simple command-line utilities or 16-bit applications).



**Figure 6.9: The Uninstall key lists Windows software installed with uninstall support.**

A GUID identifies newer software keys, whereas older software will store uninstall details in a key with the application name as an identifier. Although the older way is better, the benefits of the new way far outweigh this simple issue. Before Windows Installer (the new way), software developers included whatever information they felt necessary, normally UninstallString and DisplayName; sometimes there would be more, sometimes less. The new way provides guidance about the inclusion of a great deal more data.

 In the next chapter we will explore how to use this information and the KiXtart scripting language to generate an inventory.

## The Web Is Your Friend

It is hard to imagine having to crack open a manual or call a support line every time you had a problem to investigate. The Internet provides an excellent administrative resource that cannot be understated. Chances are that when you encounter a problem, someone has encountered it before—possibly quite a number of people. Depending upon that number, the solution may be easy to find (or if not a solution, a tip to put you on the right track).

An increasing number of vendors now provide knowledge bases, answers to frequently asked questions (FAQs), technical manuals, and white papers on their Web sites. These resources are of enormous value and should always be investigated when a problem arises.

Newsgroups and user forums (message boards) can be another great resource, but use them with caution. Some such discussion areas are moderated, meaning that there is someone taking responsibility for content through a screening process of some kind. Most discussion areas are not moderated, providing no such filter for quality. In fact, even when moderated, the answers given may not be “official” answers and should be pursued with scrutiny.

## Is it Worth the Time?


Before spending too much time on a problem, you should ask yourself “How long will it take to rebuild this workstation?” and “What will be lost if I rebuild this workstation?”

If the answer to a problem is escaping you, consider rebuilding the machine. Assuming you have a strong baseline and have done proper testing on your deployment packages and changes, any problems should be the result of non-standard configurations or file corruption—both of which can usually be quickly corrected by rebuilding the workstation. If you have automated your Windows deployment, take advantage of that work and use it to reset a computer to a known good state before spending much time and effort identifying a problem that cannot be easily replicated.

If a computer can be re-imaged in a few minutes, and you have spent the last 2 hours trying to figure out some odd inconsistency, you might be itching to make use of that image and be done with it. However, similar to deleting a user’s profile, wiping out an entire computer can be devastating to users in some environments. The key is whether users’ store data locally. Further, if the user has significant changes that fall outside your automated process, the user must be considered when weighing the speed of starting over again.

## Keeping Users Informed


Email is the primary means of communication with users for most organizations. However, you cannot send an email to let users know that email is unavailable. And if there is an emergency of some kind, do you want to rely on users to check their email? It is important to have an alternative means of communicating with everyone available to you *before* it is needed.

 Was there a power outage over the weekend? Was a massive deployment initiated last night? Will your application servers be offline this afternoon? If you have to hunt down answers to these questions, time has already been wasted. Users aren’t the only ones that you need to communicate with—it is vital that everyone on the support staff is aware of network-wide events and issues to avoid spending time troubleshooting the cause of a problem that may have an obvious.

Some phone systems provide a means of performing a one-way broadcast so that you can ring all phones and make your announcement as people pick up. It is important that this communication method is exercised; otherwise, users might pick up, hear a recording, and hang up.

As most users are sitting at their desks, a dialog box or visual warning is often implemented. Particularly when announcing impending server outages, this option is common.

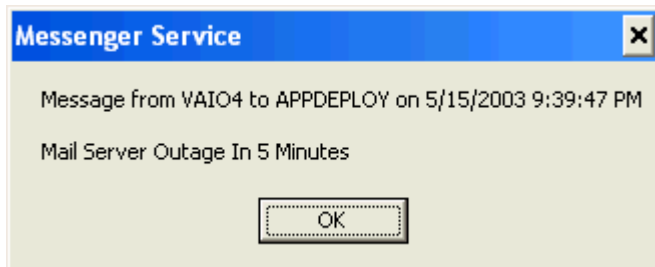
Remember the first class you took on Windows, in which everyone discovered the NET SEND command? It lost its charm quickly then, but if you need to get a message out to a large number of people at one time, this method is effective.

 The messenger service accepts and displays only six messages. If more than six messages are received and not acknowledged, all subsequent messages will not be displayed.

To send to all computers within your subnet, specify an asterisk as the target system. To send a message to all computers within a domain, specify the domain name as the target using the /DOMAIN: <domain> parameter, as the following example shows:

```
NET SEND * Mail Server Outage In 5 Minutes
```

The message is received by the client workstation's Messenger Service, which presents the specified message along with the source system, target system, date, and time (see Figure 6.10).



**Figure 6.10:** Sample message displayed by the NET SEND command.

- Unless your routers are configured to forward broadcasts (not normally the case) only computers on the local subnet will receive messages using the NET SEND \* and NET SEND /DOMAIN options. You can send messages to specific computer across subnets, but not broadcasts such as this. It is therefore possible to send messages to a list of computers using a script; we will explore this option in the next chapter.

Shutting down a server? You can send a message to all connected users by using NT Server Manager's Send Message option. For Win2K servers, you can right-click the Shared Folders item in the Computer Management MMC snap-in, and select Send Console Message under All Tasks.

- Windows 95 and Windows 98 systems do not support the NET SEND command because it relies on server-side named pipes (functionality not present in Windows 9x). To receive such messages, the target system must be running the WinPopup utility. Because Windows 9x cannot run services, the utility must be added to the registry's RUN key or the Startup program group.

## Monitoring the End-User Experience

You might think that the desktops in your environment are operating at a very high reliability rate, but people using these systems might think otherwise. If your users are happy with their desktop experience, you may not know until you ask. After all, things can seem pretty negative when you only hear complaints and problem calls. Know for sure by generating workload and success metrics and surveying your users.

## Survey Users

How do you know what the users are experiencing if you do not ask them? Measuring success solely on the number of complaints you receive is a poor method resulting in an inaccurate view of the way your desktops are actually perceived. With the exception of those users that are a regular voice in your head (letting you know about everything they experience), most users will live with a problem unless it is affecting their ability to perform their jobs. It is not unusual for users to answer an error message every time they logon for months, until you happen to see it and ask them about it.

## Email

Email is widely the most heavily used communication medium in business today. It seems only natural to make use of it in an attempt to learn more from your users as well. Although a bulleted list of questions provides some feedback, more robust means of utilizing email for this purpose are readily available.

- Outlook forms—Microsoft Outlook is easily the most commonly used email software on Windows networks, and it provides an Outlook Form Designer that you can use to provide a customized survey. All forms you create must be based on an existing Outlook form. First, select *Design a form* from the Forms submenu under Tools in the Outlook menu bar. When you select a form, such as the Message form used to send email, you will be able to perform tasks such as add fields, insert images, and add controls. You can also specify field validation parameters to help ensure that questions are answered as you want them to be. It is a fairly simple interface (similar to that used for creating Microsoft Access database forms) and should serve to stimulate your ideas for how to gather information from your users. If you start to get carried away, you can use multiple pages in a single form. Figure 6.11 shows an example survey.

**User Survey Response - Message (HTML)**

File Edit View Insert Tools Actions Help

To...

Subject:

**Timeliness**

When you made a call, what was your satisfaction level in regards to the speed at which your issues was handled?

Failed To Meet Expectations

Met Expectations

Exceeded Expectations

**Proficiency**

Were you issued identified and corrected in an efficient manner?

Failed To Meet Expectations

Met Expectations

Exceeded Expectations

**Friendliness**

Were support personnel curious and professional in helping you with your issue?

Failed To Meet Expectations

Met Expectations

Exceeded Expectations

Comments:

**Figure 6.11:** Example of a survey form created with MS Outlook.

☞ When working on a form, disable Microsoft Word as your email editor; otherwise, the forms design environment won't be available to you.

- IBM Lotus Notes databases—The IBM Lotus Notes email system provides an environment that lends itself to implementing a survey. Lotus Notes provides an interface that is made up of a series of database forms, making it a particularly suitable environment for such a requirement. Although it might take a bit more knowledge on the development side, most environments that utilize Notes as their mail system have some level of competence with Notes Development and are capable of generating a suitable database interface for collecting information from users.



- Other solutions—Web-based forms are also a logical choice for performing surveys, and several solutions are available as both products and online services to help you design, deploy, and analyze surveys. If you are looking for such a product or service, check out the following vendors:
  - Survey Said at <http://www.surveysaid.com>
  - Infopoll Business Intelligence Suite at <http://www.infopoll.com>
  - Zoomerang at <http://www.zoomerang.com>
  - ViewsFlash at <http://www.cogix.com>
  - SelectSurveyASP at <http://www.classapps.com>

## Documenting Your Workload

Few departments are able to account for and prove their workload; however, the nature of desktop administration tasks makes them easy to measure and closely monitor. For example, a count of how many tickets were addressed and the average time to close those tickets is a metric often recorded for IT support departments. This information can be used to benefit the IT department:

- Due appreciation—It might seem inconsequential, but if you have a group of people working hard week after week handling users and solving problems, it is nice to show them what they have accomplished. During a migration or heavy software deployment period, the level of effort required of an organization's support staff will increase significantly.
- Acceptable delays—Along the same lines, if you are experiencing an increased number of support calls and it is taking longer to address them all as a result, user knowledge of this fact can go a long way. If informed of the situation, users will be more tolerant of perceived delays in support—some might determine that their problem isn't worth your trouble and eliminate the request altogether.
- Justification for staff increases—If your support team has a constant backlog of trouble tickets and can show that a healthy number are indeed being addressed each day, it is very easy to show a need for more personnel.

## Summary

In this chapter, we looked at desktop support, including best practices, the benefits of a ticket-tracking system, and the importance of a knowledge base and remote control tools. We ended with a discussion of common obstacles and troubleshooting tips. In the next chapter, I'll cover scripting and how you can automate tasks and simplify administration through scripts.