12.14.4 Application Troubleshooting Facts

When troubleshooting applications, it is always best to check a knowledge base on the manufacturer's website or search on the internet for an answer to the problem first. The following table contains guidelines for troubleshooting common application issues.

Problem	Troubleshooting Method

Shortcut Malfunction	Installation of an application may create a shortcut on the desktop. The *shortcut* is a pointer file that identifies the location of the executable file that runs the application.
	▪ During install you can often choose to add shortcuts for only the current user or all users.
	▪ Shortcuts will cease to work if the file to which they point is moved or altered, or if a drive has been remapped to a different drive letter (which can happen when working with removable media).
	▪ Some issues can be resolved by fixing the shortcut instead of re-installing the application.
	▪ Edit the properties of the shortcut to correct many application-related issues:
	  ▪ Use the **Target** field to point to the executable location.
	  ▪ Use the **Start in** field to identify a working directory for the application.

Installation Issues	Application installation involves more than just copying the executable files to the computer. Installation typically modifies the registry, creates shortcuts, creates Start menu tiles, and configures other settings required by the application. Users must have the appropriate permissions to install applications. The ability to install applications depends on the user's group membership and the operating system: ▪ Users who are members of just the Users group are not allowed to install applications. ▪ Users who are members of the Administrators group can install applications. If an application's files get deleted or become corrupted after installation, they can be repaired by doing one of the following: ▪ Some applications provide the Repair option in Programs and Features. When selected, the Repair option inspects all of the application's files and replaces files that are missing or corrupt. ▪ If an application does not provide the Repair option in Programs and Features, it must be first uninstalled and then reinstalled to repair missing or corrupt application files.
Windows Compatibility	Because some applications use elements that are specific to a certain version of an operating system, you may run into problems when trying to use these same programs on newer operating systems. Windows Compatibility Mode is designed to correct this problem by creating an environment that emulates the operating system for which the application was originally intended. In compatibility mode, you choose a target operating system (such as Windows 7). When the application runs, it appears as if the application is running on the target operating system. To configure Compatibility Mode for an application, edit the properties of its shortcut or executable file. On the Compatibility tab, configure the following as appropriate: ▪ Operating system compatibility mode ▪ Reduced color mode ▪ Run in 640x480 screen resolution ▪ Disable display scaling on high DPI settings ▪ Disable full screen optimizations ▪ Run the program as an administrator If you're not sure which settings to use, you can run the Compatibility Troubleshooter from the Compatibility tab. This utility will probe the application and automatically determine the correct compatibility settings.
Permissions	On older versions of Windows, applications ran with the privileges associated with the user who ran the application. But on modern versions of Windows, applications run by default as a standard user, even if the user who launches the application is an administrator. This is done to contain damage that could potentially result if the end user launches a poorly-written or malicious application. However, some applications need to run with administrative privileges to be able to complete necessary tasks.

	Be aware of the following permission-related issues when running applications:
	- Using UAC in modern versions of Windows, applications run with standard user privileges by default. The user will be prompted if the application requires elevated permissions.
	- Older applications written for previous versions of Windows may not be compatible with UAC. They may assume that they can run with administrator-level privileges.
	- Applications with insufficient permissions might not run, or they might run but not function correctly (some features might not be available). If this happens, you can run the application:
	  - In compatibility mode. You can enable **Run this program as an administrator** on the Compatibility tab to automatically elevate privileges when the application is run.
	  - As administrator. To do this, right-click the application shortcut or executable file and choose **Run as administrator**.
	- Many applications create data files as they run. They may also create temporary files. The user running the application must have sufficient file system permissions to the directories where these files will be created.

Error Reporting	Windows Error Reporting is a feature of Windows that enables Microsoft to be notified of application faults, system unresponsiveness, and kernel defects. Microsoft uses these error reports to diagnose the cause for common problems, then, if possible, improve upon their product or supply troubleshooting techniques. Each time an error occurs, a dialog box will appear that prompts you to report the problem to Microsoft. If you are connected to the internet and you choose to report the problem, technical information about the problem is sent to Microsoft. If known information about the problem you have experienced is available, you will receive a link to a web page that contains information about the problem.
Service Fails to Start	During or shortly after startup, you might see an error message stating that a service has failed to start. - Check the Event Viewer for additional information about which service failed to start and the reason why it did not load. - Try using the Services console or the net start command to manually start the service. - If the service is not required, you can change its startup type to **Manual** in the Services console to prevent it from trying to load during startup. - If the service is necessary, use the Services console to make sure that any dependent services are configured to start and have started successfully. - Verify that the service is configured with a valid user account and that the password has not changed. If an account other than the Local System account is used, make sure that the service is configured with the correct password (when you change the user account password, you must also change the password configured by the services that use that account).
Hung Applications	If an application hangs and won't exit properly, you can use Task Manager to force it to close. This can be done in two ways: - Select the hung application on the Processes tab and select **End Task**. - Right-click the hung application on the Processes tab and select **Go to Details**. Then, with the application's process selected on the Details tab, select **End Task**.
Process Priority	By default, the Windows operating system kernel tries to evenly distribute access to system resources to all processes running on the system. However, if a process needs to run with a higher priority than the other processes on the system, its priority can be manually configured. From the Details tab in Task Manager, right-click the process, select **Set Priority**, and then select a priority level.
Processor Affinity	In a multi-core or multiprocessor system, the Windows operating system kernel will automatically distribute processes across all available processes. However, a process can be constrained to run only on certain processors. Right-click the process in Task Manager, select **Set Affinity**, and then mark the processors that the process is allowed to run on.
Slow Loading Profile	Over time, after an update, or installation of new program, operating systems can become very slow to load a user's profile. Check the following as troubleshooting steps. - Check programs that start with Windows in Task Manager under the Startup tab. Disable

	any programs that are not required to start with Windows. ▪ Check for updates for device drivers. ▪ Check to see if the profile is a Roaming User Profile that is being pulled down from the network. ▪ Check Event Viewer for information for any errors.