AlwaysUp User's Manual

Version 16.5

1. Introduction 3
2. Key Features & Benefits 4
3. System Requirements 5
4. Using AlwaysUp 6
   - 4.1. The Main Window 6
   - 4.2. The Menu 9
   - 4.3. The Toolbar 13
   - 4.4. The Task Tray Icon 14
   - 4.5. Adding an Application 16
     - 4.5.1. The General Tab 17
     - 4.5.2. The Logon Tab 19
     - 4.5.3. The Restart Tab 21
     - 4.5.4. The Monitor Tab 24
     - 4.5.5. The Email Tab 27
     - 4.5.6. The Startup Tab 31
     - 4.5.7. The Automate Tab 34
     - 4.5.8. The Extras Tab 36
   - 4.6. Adding a Well-Known Application with Recommended Settings 39
     - 4.6.1. Using the Application Advisor 40
     - 4.6.2. Adding Dropbox 44
     - 4.6.3. Adding OneDrive 47
     - 4.6.4. Adding a JAVA JAR application 50
   - 4.7. Editing Application Settings 54
   - 4.8. Starting an Application 56
   - 4.9. Stopping an Application 56
   - 4.10. Restarting an Application 56
   - 4.11. Removing an Application 56
   - 4.12. Creating Application Shortcuts 57
   - 4.13. Reporting on an Application's Activities 60
   - 4.14. Exporting an Application to a File (XML) 61
   - 4.15. Exporting all Applications to a Directory 61
   - 4.16. Importing one or more Applications from Files (XML) 62
   - 4.17. Adding an Application by Drag & Drop 63
   - 4.18. Adding a Copy of an Application 63
   - 4.19. Running Applications on your Desktop 64
   - 4.20. Controlling AlwaysUp Applications from the Command Line 66
   - 4.21. Working with Application Tags 67
     - 4.21.1. Bulk-Changing Multiple Applications 68
   - 4.22. Filtering the List of Applications 70
   - 4.23. Setting the Delay for "Automatic (Delayed Start)" Services 71
5. Licensing, Registration & Pricing 72
6. Troubleshooting and Reporting Problems 74

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7. Appendix I: Remote Desktop and Terminal Services Sessions 75
8. Appendix II: Session 0 Isolation 76
8.1. How to Show Your Application's Windows on the Current Desktop 77
9. Appendix III: The Sanity Check Feature 78
9.1. Check that a drive is mapped 79
9.2. Check that a file was recently updated 81
9.3. Check that a network server is accepting connections 83
9.4. Check that a web server is responding properly 85
9.5. Check that a program is running 87
9.6. Check that your application has open network connections 89
9.7. Check for one or more adverse Windows events 91
9.8. Check that your application doesn't have too many resource handles open 93
9.9. Check your application with a custom executable/script 95
10. Appendix IV: AlwaysUp Web Service 98
11. Appendix V: AlwaysUp Command Line Tools (CLT) 99
12. Appendix VI: AlwaysUp Event Log Messages 100
12.1. How to Suppress Writing to the Event Log 100
13. Appendix VII: How to Run Popular Applications with AlwaysUp 102
14. Appendix VIII: Special Command Line & Input Variables 105
14.1.1. Using Variables in Input Fields 106

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1. Introduction

AlwaysUp runs your application as a Windows Service, starting it when your computer boots and monitoring it constantly to ensure 100% uptime.

This manual describes how to use the AlwaysUp Graphical User Interface (GUI), which is responsible for adding and editing your application settings. Note that once you have configured and started your application, the GUI is not necessary to monitor your running application.

Find out more about AlwaysUp at its web site:

https://www.coretechnologies.com/products/AlwaysUp/

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2. Key Features & Benefits

- Runs your application (executable, batch file or shortcut) as a Windows Service
- Monitors your application and restarts it whenever it fails
- Able to start your application as the system boots, to run when no user is logged in and to run despite logon/logoffs -- all to guarantee uptime without manual user intervention
- Able to manage virtually any 32-bit or 64-bit Windows application with minimal configuration
- The intuitive GUI makes it easy to set up your application, but no GUI is necessary once your application has been configured.
- Able to detect and restart applications that hang, hog the CPU or consume too much memory.
- Able to restart your application (or reboot the computer) at a scheduled time
- Able to boost your application's priority to ensure that it gets preferential treatment on the host computer
- e-mails you with details of crashes, restarts and other problems
- Select the CPUs on which your application will run
- Supports the integration of your own custom "sanity check" utilities, executed regularly to test if your application is functioning normally or not
- Automatically dismisses common "Application error" dialog boxes that prevent crashed applications from fully exiting
- Automatically dismisses Debug dialog boxes and logs the dialog box text for subsequent review by developers -- thus facilitating the deployment of applications in "Debug mode"
- Leverages the Windows Services API to achieve robust, low-level application control in a secure environment
- Reports all activities to the Windows Event Log
- Works in all virtual environments (VMware, Virtual PC, etc.)
- Works with Terminal Services and Remote Desktop
- Able to capture output from console-based applications
- Supports automation – arbitrary interaction with your application to automatically fill in forms, pop down windows, etc.
- Very efficient; demands minimal CPU & memory resources
- No programming required!

But perhaps most important of all, AlwaysUp was designed and implemented by senior software engineers with over 25 years of real-world experience developing robust, mission-critical applications. Our software is of the highest quality, and we stand by it without reservation.

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3. System Requirements

- Windows 11/10 or Windows Server 2025/2022/2019/2016 (x86 and x64 versions).
- 25 MB free hard drive space for installation files.

The AlwaysUp components that manage and monitor your application are designed to be extremely frugal with machine resources. They almost always consume less than 1% of the CPU, less than 25 MB of RAM, and don't fall victim to the "memory growth" characteristic of many applications today.

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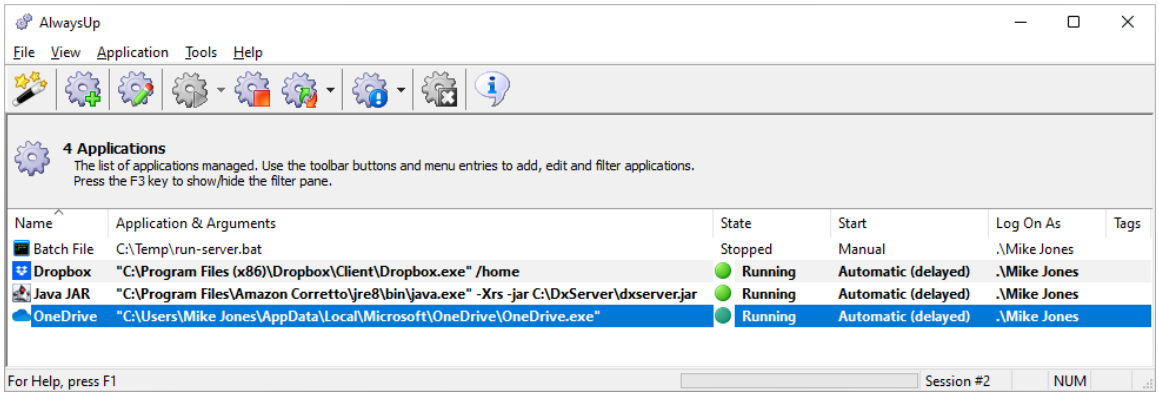
4. Using AlwaysUp

4.1. The Main Window



When started, AlwaysUp displays a list of the applications it is managing. The list will be empty when AlwaysUp is run for the first time. The above screenshot shows four applications, one per line. See section 4.5 for adding an application.

Hovering over the first column in the list (the application's name) will pop up a convenient tooltip summarizing the application's settings:

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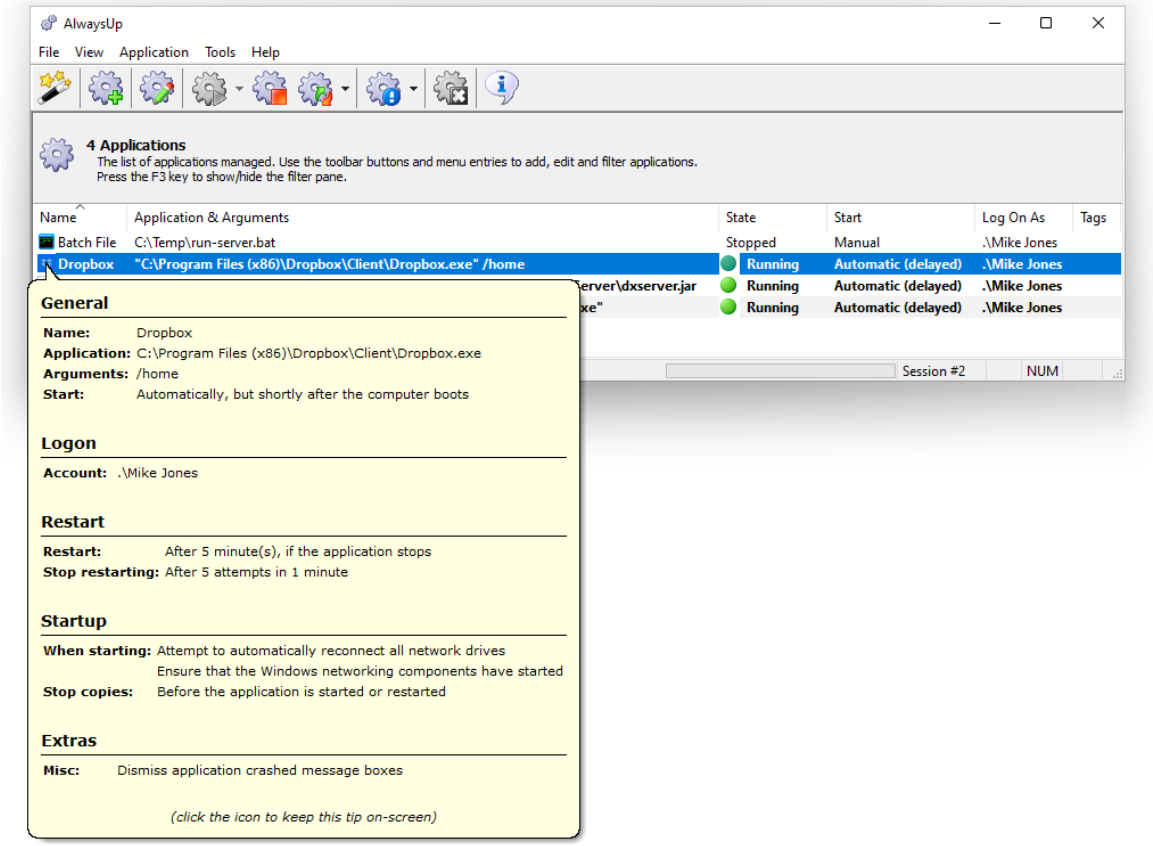
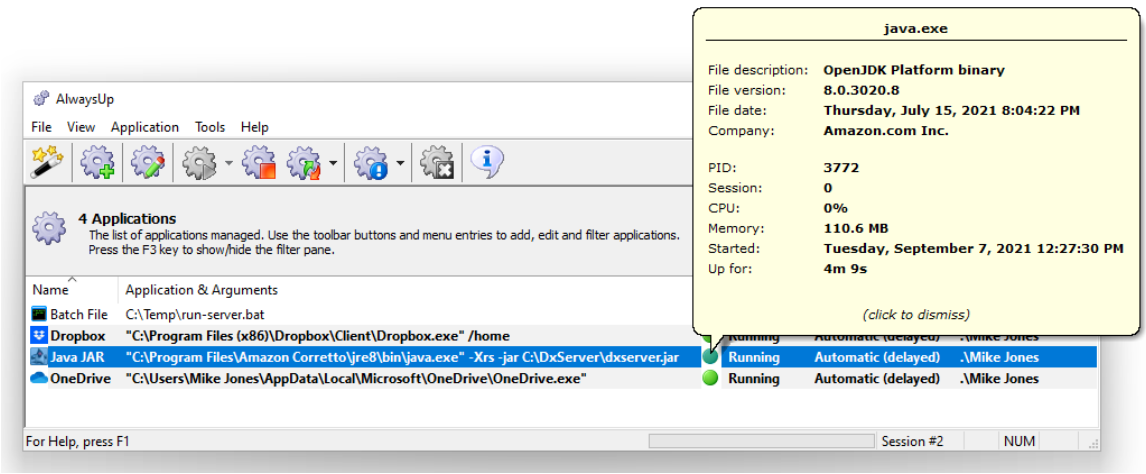
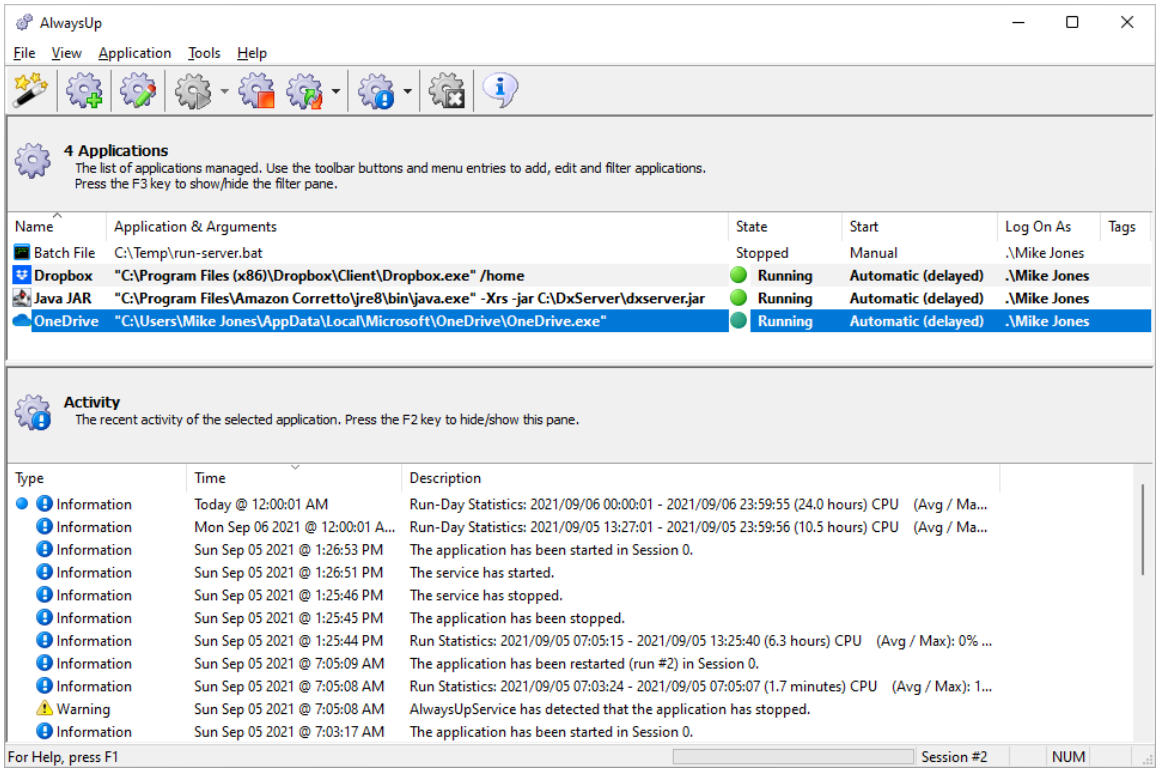


When an application is running, hovering over the State column (the one with the green circle) will pop up a tooltip showing the application's process ID, session ID, uptime, and other information:



Note that clicking on an icon/image will cause the corresponding tooltip to remain on screen instead of quickly going away.

Selecting "Activity Pane" from the "View" menu (or hitting the F2 key) will bring up a panel showing the application's recent activity:



4.2. The Menu

The application menu contains the following entries:

File

Exit	Exit AlwaysUp

View

Toolbar	Toggle viewing of the button toolbar.
Status Bar	Toggle viewing of the status bar.
List Headers	Toggle viewing of the headers atop the Applications and Activity panes.
Activity Pane	Toggle viewing of the Activity pane.
Filter Pane	Toggle viewing of the Filter pane.
Large Icons	View the list of applications as large icons.
Small Icons	View the list of applications as small icons.
List	View the list of applications as a list of icons.
Details	View the list of applications as a report with columns.
Hide Disabled Applications	Hide/show applications that have been disabled.
Clear Filters	Removes all filters so that all applications are shown.
Always On Top	Keep AlwaysUp on top of other windows.
Hide When Minimized	Hide AlwaysUp when the minimize button is clicked.
Refresh	Re-load the list of applications.
Auto-refresh | Every 5 seconds	Automatically re-load the list of applications every 5 seconds.
Auto-refresh | Every 10 seconds	Automatically re-load the list of applications every 10 seconds.
Auto-refresh | Every 30 seconds	Automatically re-load the list of applications every 30 seconds.
Auto-refresh | Disabled	Don't automatically re-load the list of applications.

Application

Add	Add a new application to be managed.
Add Copy	Add a copy of the selected application.
Advisor	Launch the Application Advisor, which will help you add a well-known application with recommended settings.
Import	Adds one or more applications from a file.
Export	Save the selected application(s) to files (in XML).

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Export All	Save each application to a separate file (in XML).
Edit/View	Edit / View the settings of the selected application.
Start	Start the selected application(s) that are not running in Session 0.
Start in this session	Start the selected application(s) that are not running in the current session. *(Note: Only available on systems supporting multiple sessions – see Appendix I.)*
Stop	Stop the selected application(s) that are running.
Restart	Restart the selected application(s) that are running.
Restart in this session	Restart the selected application(s) that are running in the current session. *(Note: Only available on systems supporting multiple sessions – see Appendix I.)*
Start All	Start all applications in Session 0.
Start All in this session	Start all applications in the current session.
Stop All Running	Stop all running applications.
Restart All Running	Restart all running applications in Session 0.
Restart All Running in this session	Restart all running applications in the current session. *(Note: Only available on systems supporting multiple sessions – see Appendix I.)*
Detach from	Stop the selected AlwaysUp service but leaves your application running on its own (unmonitored).
Startup | Automatic	Start the selected application(s) automatically, when the computer boots.
Startup | Automatic (Delayed)	Start the selected application(s) automatically, shortly after the computer has booted.
Startup | Manual	Don't start the selected application(s) automatically – only start when requested from AlwaysUp (or the Windows Services Control Panel).
Startup | Disabled	Disable the selected application(s) so that they cannot be started/run.
Remove	Remove the selected application.
Create Shortcut(s)	Create shortcuts to start, stop or restart the selected application without having to open AlwaysUp.
Tags | Add	Add one or more tags to the selected applications.
Tags | Remove All	Removes all tags from the selected applications.
Report Activity | Today	Generate and launches a HTML report on the application's activities for today.
Report Activity | Past Week	Generate and launches a HTML report on the application's activities over the past week.
Report Activity | Past 30 Days	Generate and launches a HTML report on the application's activities over the past 30 days.
Advanced | Service Security Settings	Set who can start and stop the service.
Advanced | Collect Application Diagnostics	Gather relevant technical information that can help our support team troubleshoot problems.

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Tools

Local Security Settings/Policy	Open the application for editing security settings for the current machine.
Desktop Security Settings	Open the application for editing desktop security settings for the current machine.
Event Viewer	Open the Windows Event Viewer application, for examining the Event Logs.
Services	Open the Services Control Panel application.
Computer Management	Open the Computer Management Control Panel application.
Task Manager	Open the Task Manager.
Set Auto Start Delay	Specify when to launch "Automatic (Delayed Start)" services.
Autologon	Setup automatic logon at boot and auto-start applications on the user's desktop.
Switch to Session 0	Switches to the isolated Session 0 desktop. Note that this option is only available on versions of Windows where Session 0 is accessible (between Windows Vista and Windows 10 Build 1803).

Help

User's manual (PDF)	Open this user's manual.
Registration	Display the registration window, for purchasing and registering AlwaysUp (not available once registered).
AlwaysUp Home Page	Open the AlwaysUp home page in your browser. Your computer will need to be connected to the Internet for this to work.
Visit our Blog	Open our blog in your browser. Your computer will need to be connected to the Internet for this to work.
How to Setup Popular Applications	View over 150 set-by-step tutorials showing how to configure AlwaysUp with popular programs. Your computer will need to be connected to the Internet for this to work.
AlwaysUp Web Service	Open the home page for AlwaysUp Web Service in your browser. Your computer will need to be connected to the Internet for this to work.
Troubleshoot Common Problems	Visit the online troubleshooter, which can help diagnose common problems when running as a Windows Service. Your computer will need to be connected to the Internet for this to work.

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Provide your feedback	Open the feedback web page in your browser to let us know what you think of AlwaysUp. Your computer will need to be connected to the Internet for this to work.
Frequently Asked Questions | How do I Report a Problem?	Browse to the blog article showing what information you should send to help us diagnose problems running your program as a Windows Service. Your computer will need to be connected to the Internet for this to work.
Frequently Asked Questions | How do I find my Serial Number	Open the FAQ article in your browser. Your computer will need to be connected to the Internet for this to work.
Frequently Asked Questions | How do I Move my License	Open the FAQ article in your browser. Your computer will need to be connected to the Internet for this to work.
Frequently Asked Questions | Why don't I See my Application's Windows	Open the FAQ article in your browser. Your computer will need to be connected to the Internet for this to work.
Frequently Asked Questions | See all FAQs	Open AlwaysUp FAQ page in your browser. Your computer will need to be connected to the Internet for this to work.
Check for Updates	Visit the program's web site and check if a new version is available.
About AlwaysUp	Display program information.

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4.3. The Toolbar

For convenience, the most common functionality can be accessed from the toolbar. The buttons are as follows:

	Open the Application Advisor, to add a well-known application
	Add an application
	Edit/View the selected application's settings
	Start the selected application(s)
	Stop the selected application(s)
	Restart the selected application(s)
	Report on the selected application (in your web browser)
	Remove the selected application
	Switch to Session 0 (*only on versions of Windows where Session 0 is accessible*)
	Display program information

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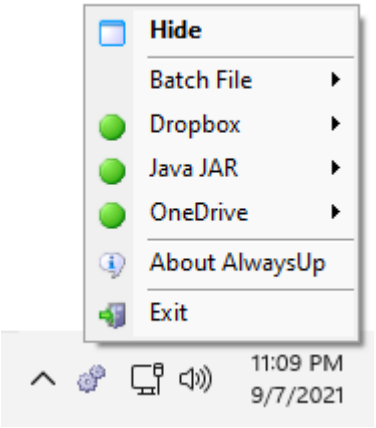
4.4. The Task Tray Icon

When running, AlwaysUp will display its tray icon in the notification area of the Windows taskbar (pictured in the red rectangle):

Several operations can be performed from this tray icon. Double-clicking the icon will hide or show the AlwaysUp main window. A right-click displays the menu:



Hide (or Show)	Hide (or Show) the AlwaysUp main window
<Application1>	Display a sub-menu for controlling <Application1>
<Application2>, etc.	Display a sub-menu for controlling <Application2>
About AlwaysUp	Display program information
Exit	Exit AlwaysUp

An application can be started, stopped, detached or reported on from its sub-menu:

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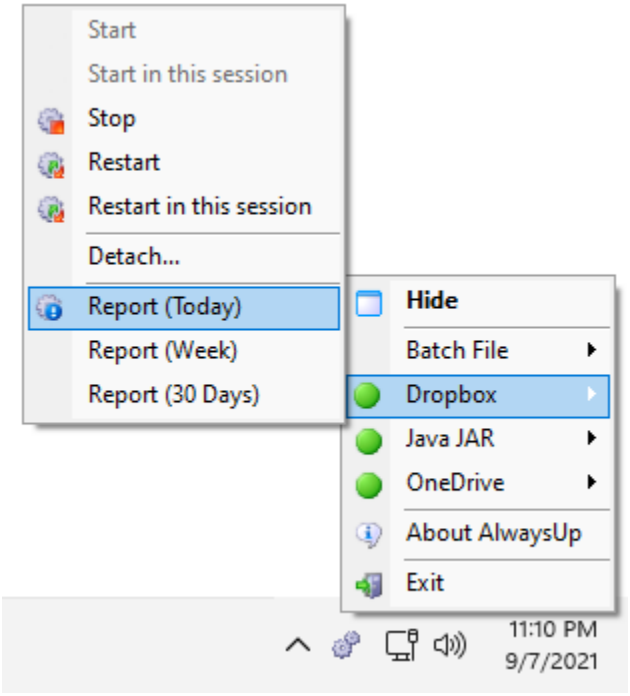

Start	Start the selected application if it is not running.
Start in this session	Start the selected application in the current session if it is not running. *(Note: Only available on systems supporting multiple sessions – see Appendix I.)*
Stop	Stop the selected application if it is running.
Restart	Restart the selected application if it is running.
Restart in this session	Restart the selected application in the current session if it is running. *(Note: Only available on systems supporting multiple sessions – see Appendix I.)*
Detach	Stops the AlwaysUp service but leaves your application running on its own.
Report (Today)	Generate and launches a HTML report on the application's activities for today.
Report (Week)	Generate and launches a HTML report on the application's activities over the past week.
Report (30 Days)	Generate and launches a HTML report on the application's activities over the past 30 days.

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4.5. Adding an Application

Note: If you wish to add a well-known application (like Dropbox, OneDrive, Kibana, or Java), please review section 4.6, "Adding a Well-Known Application with Recommended Settings", which describes the simplest approach.

To add an application to be monitored, click on the "Add" toolbar button or select "Add" from the "Application" menu. This will summon the "Add Application" dialog, which consists of eight tabs: General, Logon, Restart, Monitor, Email, Startup, Automate and Extras.

Note that only 2 pieces of information are actually required to add an application – a name, and the path to your application – and both are specified on the General tab.

Please see our web site for a short demonstration video showing how to add the Windows "Notepad" application:
https://www.coretechnologies.com/products/AlwaysUp/AddNotepadDemo/

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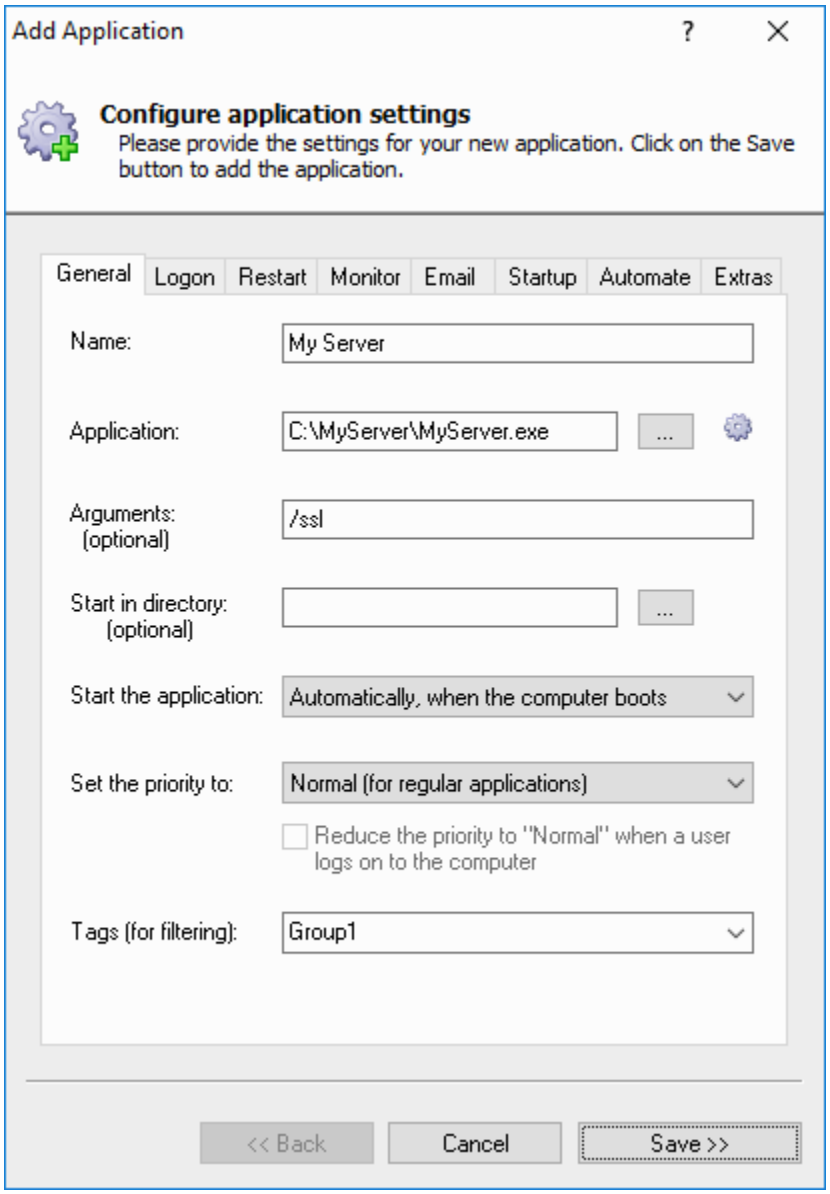
4.5.1. The General Tab

The basic settings can be specified on the General tab:



Name: The name of the application. The maximum length is 256 characters. Forward-slash (/) and back-slash (\) are not allowed.

Application: The full path to the application, batch file, or shortcut to be run and monitored. Click on the "…" button to browse your hard drive.

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Arguments (optional): Specify any arguments to your program here. Be sure to quote each component that contains spaces. For example:

-d -f "C:\Program Files\config.xml"

Start in directory (optional): The working directory for the application specified. If not provided, the directory containing the application is used. Click on the "…" button to browse your hard drive.

Start the application: This can be either "Automatically, when the system boots", or "Manually, from AlwaysUp".

Set the priority to: Allows for the application to be run at a higher (or lower) priority than other applications. If your application needs first shot at the computer's resources, above other running applications, set its priority to "Above Normal" or "High". The highest setting is "Real-time", but that is not recommended as it boosts your application beyond regular operating system programs and can lead to problems if your application monopolizes resources.

Reduce the priority to normal when a user logs on to the computer: This option is available when the application's priority has been boosted beyond "Normal". Basically, this setting can help to ensure that the computer remains responsive to users that log in while the application is running.

Tags (for filtering): Enter (or select) the tags to be associated with this application. Tags can be used to filter the list of applications. See sections 4.20 and 4.21 for additional details on tags and filtering.

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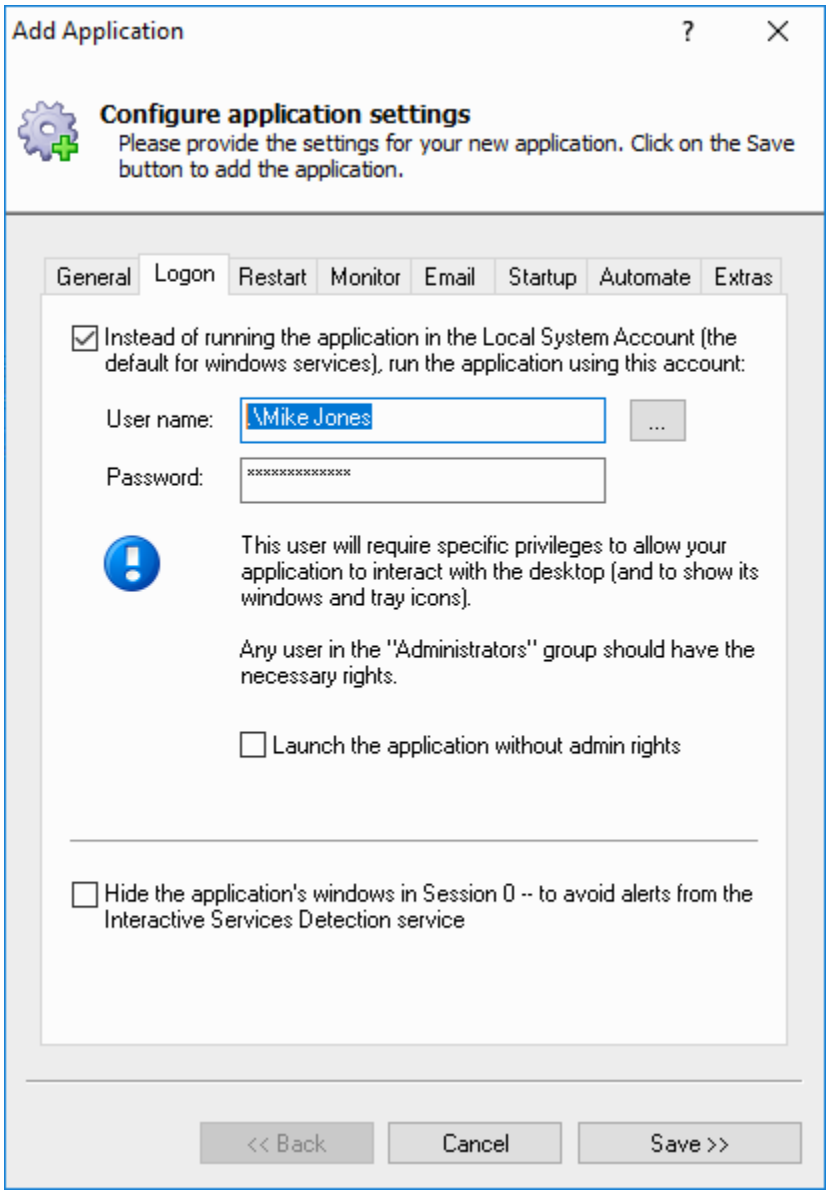
4.5.2. The Logon Tab

The Logon tab contains settings for running the application as a specified user:



Instead of running the application in the Local System Account (the default for windows services), run the application using this account: Check here to run the application under a given user account. You will have to enter a user name and password. This may be appropriate when the application needs to access items (drives, printers, etc.) that are only accessible to specific users. If

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you are unsure what to do here, first try the default Local System Account (LSA) as that will be appropriate for most situations (i.e. do not check this box).

User name: Enter the name of the user account in which to run the application. Use an account name in the form *DomainName\UserName*; if the account belongs to the built-in domain, you can specify *.\UserName*. AlwaysUp will grant the user the *Log on as a Service* privilege (as managed in the *Control Panel/Administrative Tools/Local Security Policy* application).

Note that this user will require specific privileges to allow your application to interact with the desktop (to show its windows and tray icons when someone is logged on). Any user in the *Administrators* group should have the necessary privileges.

Password: Enter the password of the Windows user account in which to run the application. Note that you will be required to enter this password whenever you make changes to the service.

Launch the application without admin rights: Check this box if you are concerned about security don't want the application to run with administrative rights. It is equivalent to running the application in the "Standard", non-elevated UAC context.

Hide the application's windows in Session 0 – to avoid alerts from the Interactive Services Detection service: By default, AlwaysUp will run your application in Session 0 – the background desktop where Windows Services operate. If you are running on a version of Windows supporting interactive services and your application shows a Window in Session 0, you might be alerted (annoyed?) by the Interactive Services Detection (ISD) service. Check this box have AlwaysUp hide your application's windows in Session 0 and avoid ISD alerts.

(Read more about the ISD service at our web site: https://www.coretechnologies.com/blog/alwaysup/prevent-interactive-services-detection/.)

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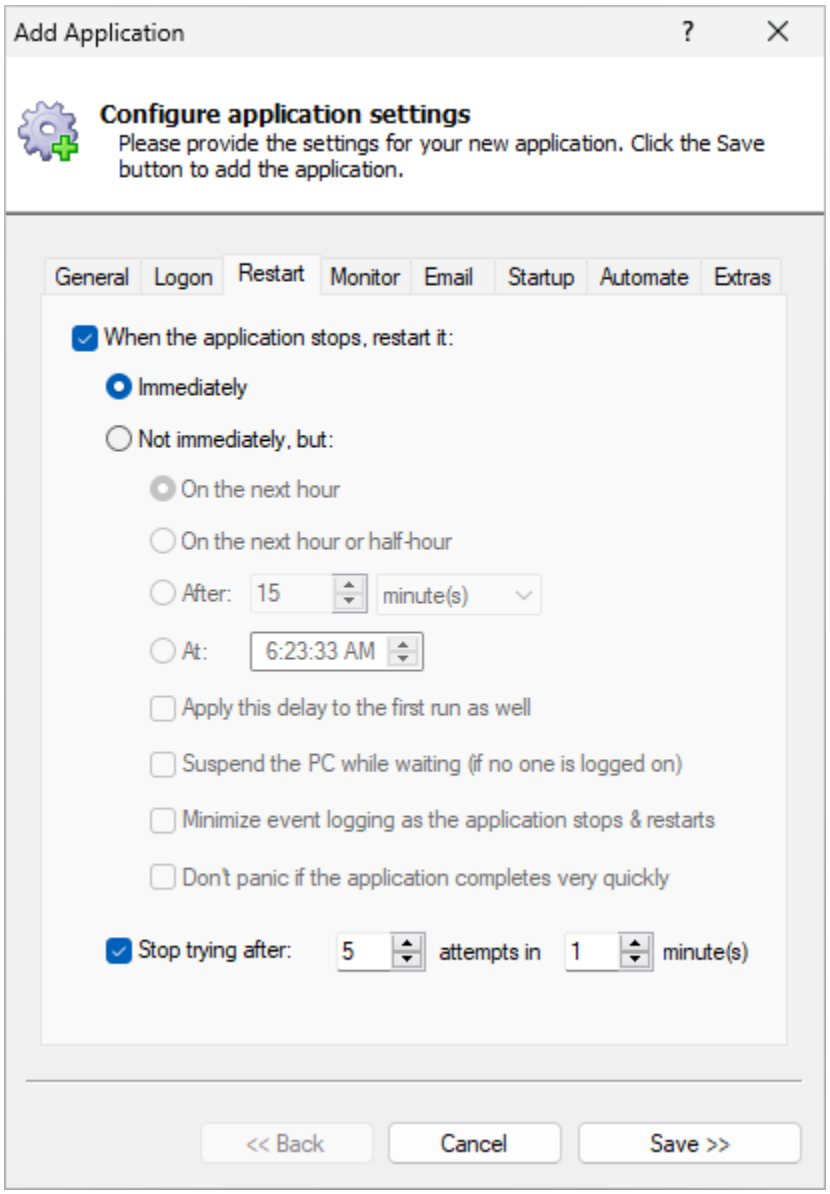
4.5.3. The Restart Tab

The Restart tab allows you to specify how to restart your application if it fails:



When the application stops, restart it immediately: Check to have AlwaysUp immediately restart the application whenever it stops running. Most users will want this option – to ensure that their application is always running, 24x7.

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When the application stops, restart it on the next hour: Choose this option to have your application restarted on the next hour whenever it stops running. For example, if it stops at 4:23 AM, it would be restarted at 5 AM. This option can be useful for programs/scripts that are run once an hour on the hour.

When the application stops, restart it on the next hour or half-hour: Choose this option to have your application restarted on the next hour or half-hour. For example, if it stops at 4:23 AM, it would be restarted at 4:30 AM. This option can be useful for programs/scripts that should be run every 30 minutes.

When the application stops, restart it after: Choose this option to have your application restarted after waiting a fixed amount of time (which you must specify in seconds, minutes, hours, or days). For example, if set to 15 minutes and the application stopped at 4:23 AM, AlwaysUp would run it again at 4:38 AM.

When the application stops, restart it at: Choose this option to have your application restarted at a specific time. This may be useful for applications that must be run once a day, at a fixed time.

Apply this delay to the first run as well: Check this box to have AlwaysUp wait before starting your application for the first time (at boot, or whenever you start your application from AlwaysUp).

Suspend the PC while waiting (if no one is logged on): If this box is checked, AlwaysUp will suspend your PC while it is waiting to restart your application and will wake up your PC when it is time to run your application.

While suspended, your computer will consume minimal power. This may be a good choice for reducing the operational costs of your PC (if dedicated to the application AlwaysUp is running).

Minimize event logging as the application stops & restarts: AlwaysUp writes and entry in the Windows Event Log whenever the application stops and must be restarted. However this can be overkill for applications that close normally and are restarted regularly. Check this option if you wish to avoid the logging of periodic stops and restarts.

Note: Use of this option will prevent AlwaysUp from showing application stops & restarts in the activity logs (section 4.12).

Don't panic if the application completes very quickly: If your application starts and finishes its work very quickly (in less than 5 seconds), AlwaysUp might think that it failed to launch properly. And when that happens, AlwaysUp will treat

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that situation as an error, logging messages and sending email alerts if so configured.

So if you're running an application, script or batch file that can exit very quickly, check this box to let AlwaysUp know that it's normal behavior. Doing so will avoid misleading errors and warnings.

Stop trying after: Activate this option to prevent your application from being constantly restarted if it is failing to start properly. Specify the maximum number of attempts to tolerate over a given time frame in minutes.

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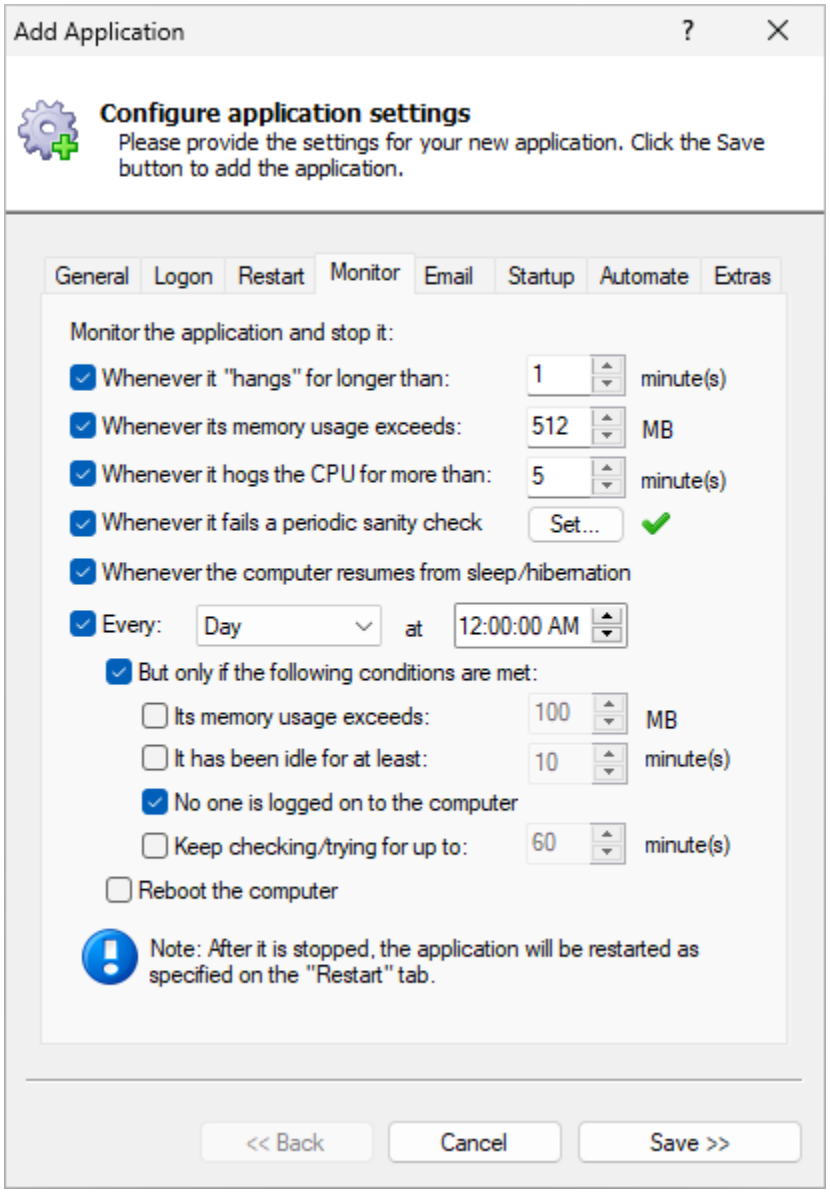
4.5.4. The Monitor Tab

The Monitor tab groups many of the settings that describe how AlwaysUp is to monitor and manage the application:



Monitor the application and stop it whenever it "hangs": Check to have AlwaysUp automatically stop the application whenever Windows classifies it as "Not responding" (as seen in the Windows Task Manager) for a given duration. Enter the time (in minutes) that you wish to wait before declaring a non-

responsive program to be a hang. Activating this option will also allow AlwaysUp to detect "zombie" processes, which show up as running in the Task Manager but do not actively respond to the operating system.

Monitor the application and stop it whenever its memory usage exceeds: Check to have AlwaysUp monitor the application's memory use (as seen in the Windows Task Manager) and stop it when it exceeds the threshold value supplied in Megabytes (MB). Note that AlwaysUp will check the application repeatedly over a 30 second time period and only take action if the memory threshold is consistently exceeded.

Monitor the application and stop it whenever it hogs the CPU for more than: Check to have AlwaysUp stop the application if it "hogs" the CPU for longer that the specified time in minutes. The application is designated a "CPU hog" if it consumes more than 95% of a single CPU (as seen in the Windows Task Manager) over the given duration.

Monitor the application and stop it whenever it fails a periodic sanity check: Sometimes, even though your application says it's running, it is not actually doing its work. For those tricky situations, you may be able to employ advanced failure detection (i.e. a "sanity check"), to have AlwaysUp identify those scenarios and automatically restart your application.

Please see Appendix III for a full discussion of the sanity check feature.

Monitor the application and stop it whenever the computer resumes from sleep/hibernation: Check to have AlwaysUp stop the application when the PC comes out of a low-power state. This is useful for programs that can't handle the "time lapses" or interruptions associated with powering down.

Monitor the application and stop it every: Check to stop the application once per week, or once daily at a specific time. Specify the details in the adjoining controls. This option can be useful for programs that degrade over time (for example, those with memory leaks). Note that the application will be restarted as per the schedule indicated on the Restart tab.

But only if the following conditions are met: Check this box if you want to provide some conditions that must be met for your application to be stopped.

Its memory usage exceeds: Check this box if you want to stop your application only if it is using more than a specified amount of memory (in MB).

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It has been idle for at least: Check this box if you want to stop your application only if it has been idle for a while. Note that your application is deemed idle if it has not been using the CPU nor generating any I/O for 95% of the duration.

No one is logged on to the computer: If checked, your application will not be restarted if someone is logged on to the computer. Note that a disconnected RDP session counts as logged on.

Keep checking/trying for up to: If the conditions (memory, idle, etc.) are not met at the given time, checking this box will cause AlwaysUp to keep re-evaluating the conditions over the given period, and stop the application if they are subsequently met.

Reboot the computer: Check here to reboot the entire computer as part of stopping the application. Your application will be run immediately after the computer reboots if it is set to start "Automatically, when the system boots" on the General tab.

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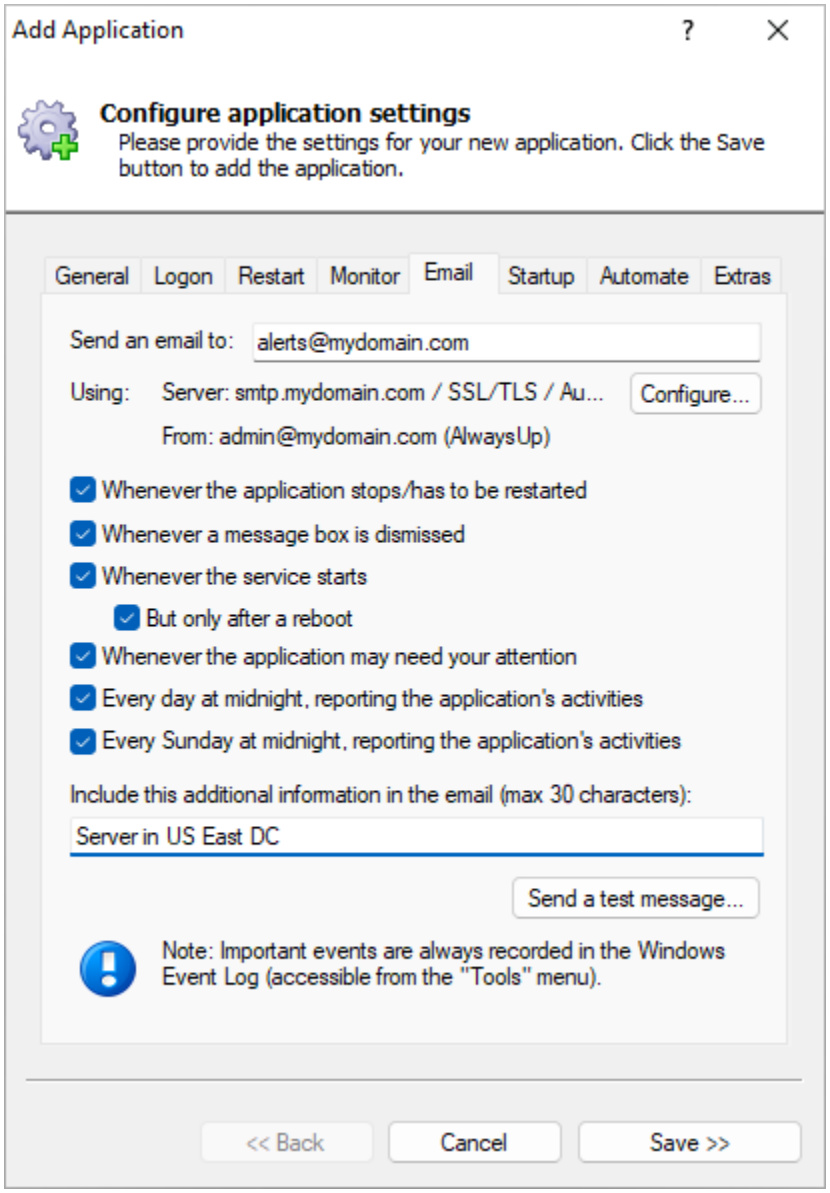
4.5.5. The Email Tab

The Email tab describes the email alert settings:



To: The target email address(es). Separate multiple addresses with a space or comma (,).

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Whenever the application stops/has to be restarted: Check to send an email when the application being monitored stops prematurely/crashes.

Whenever a message box is dismissed: Check to send an email whenever AlwaysUp dismisses a message box on behalf of the application being monitored. The full text of the message box will be included in the email.

Whenever the service starts: Check to send an email whenever the AlwaysUp service is started. Checking the **But only after a reboot** box will limit the emails to only when AlwaysUp is started after a reboot. Use this option if you want to be notified when your machine reboots unexpectedly.

Whenever the application may need your attention: Check to send an email whenever AlwaysUp is running your application but AlwaysUp determines that your application may not be working as expected.

Every day at midnight, reporting the application's activities: Check to send a nightly email detailing the application's activities over the previous day. A sample report is shown in section 4.12.

Every Sunday at midnight, reporting the application's activities: Check to send a weekly email detailing the application's activities over the previous week. A sample report is shown in section 4.12.

Include this additional information in the email: Optionally specify some text that will be included in each email message sent. The text will appear in the body, in a line labeled "Additional". If you expect many emails from various similar installations you are encouraged to enter an identifier of some kind here -- one that will help you to identify the source of each message you receive. Please specify at most 30 characters.

Send a test message: Clicking this button will generate a test email to the given target address(es) using the settings specified.

Configure: Clicking this button will summon the "Configure Email Settings" dialog, where details on the mail server (and more) can be specified:

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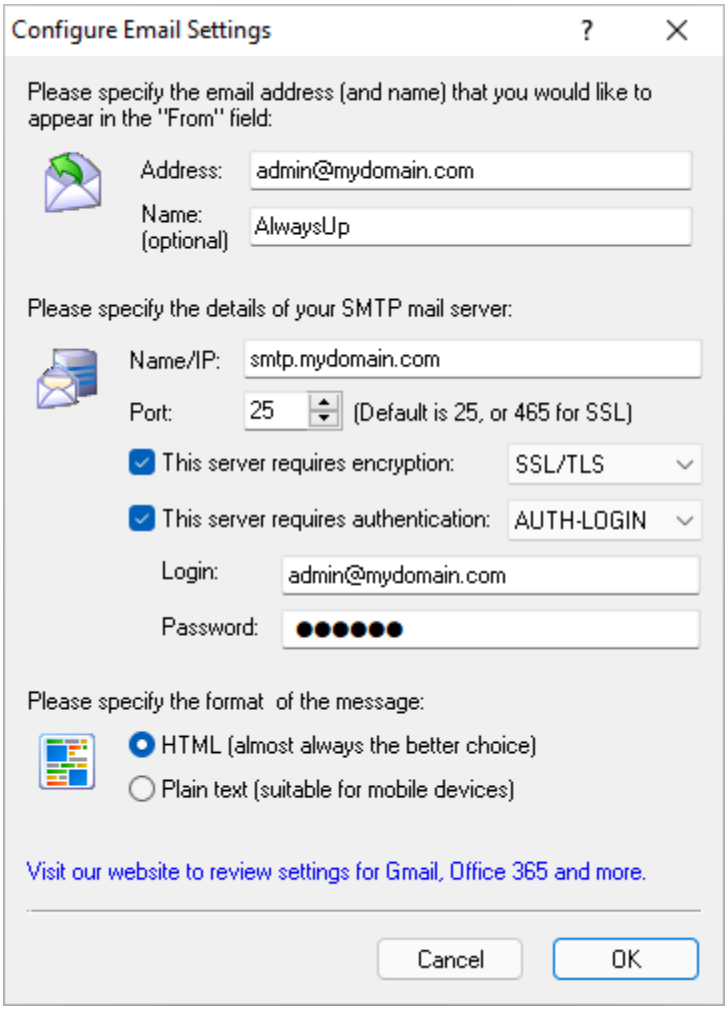

Address: The email address that will be displayed in the "From" field of the email messages sent by AlwaysUp.

Name: The name that will be displayed in the "From" field of the email messages sent by AlwaysUp. This value is optional.

Name/IP: Enter the name (or IP address) of your mail server. The server must be able to accept and route standard SMTP traffic. Please consult a system administrator if in doubt.

Port: The numeric port on which the mail server is available. Note that the default is 25 for regular SMTP servers and 465 for servers using SSL – please specify one if these if in doubt.

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This server requires an encryption: Check this box if the mail server uses SSL, TLS or STARTTLS. Select the appropriate protocol from the accompanying dropdown.

This server requires authentication: Check if the server requires authentication, and select the authentication method. The choices are CRAM-MD5, AUTH-LOGIN, AUTH-PLAIN, and AUTH-NTLM. A login and a password will be required for all but AUTH-NTLM.

Login: The user name/login for the mail server.

Password: The password for the mail server.

HTML Format: Select this option to have your emails composed in rich HTML format (the default).

Plain Text Format: Select this option to have AlwaysUp send email in simple text, with no markup. This is an appropriate choice for mobile devices which cannot effectively render HTML.

This blog article shows how to setup email from AlwaysUp. It provides specific guidance for Gmail, Office 365 and other systems.

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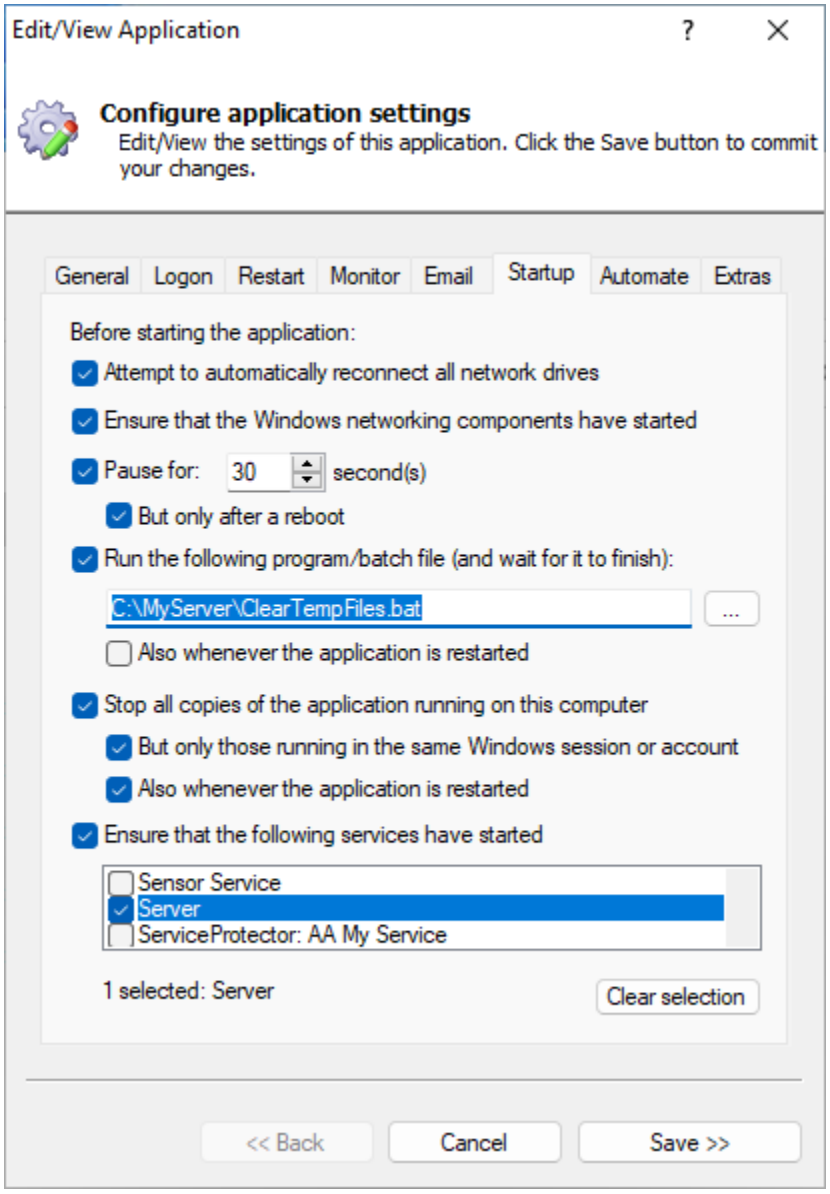
4.5.6. The Startup Tab

The Startup tab can be used to connect to network drives, configure a program to be run prior to the main application, and to specify the set of Windows Services that must be started prior to running the main application.



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Attempt to automatically reconnect all network drives: If checked, AlwaysUp will attempt to restore all persistent network drive mappings for the user running the application. Note that this will not work for any drive where a password must be supplied to access it at login. It can also take some time if any of the network drives are hosted on a "slow" server.

If you wish to map a drive requiring a password, you should create a batch file with the necessary "net use" command and have AlwaysUp run that prior to starting your application (via the "Run the following program/batch file" option described below).

Ensure that the Windows networking components have started: If your application makes use of the network, check this box to ensure that all network resources are available when your application starts.

Pause for: If your application must wait for other programs or resources to become available, or if you wish to delay its start for any other reason, check this option and specify the number of seconds to wait. Checking the **But only after a reboot** box will limit the pause to only when AlwaysUp is started after a reboot. Use this option to avoid pausing when you start the service manually.

Run the following program/batch file: Check this box and specify the full path to the program to be run, along with any arguments to be passed. Be sure to quote each component that contains spaces. For example:

"C:\MyServer\MapDrive.bat"

Note that AlwaysUp will wait for this program to complete before running your application.

Note that AlwaysUp can be configured to pass your program one or more special command line values. Please see Appendix VIII for a description of the values.

Also whenever the application is restarted: Normally, the "startup" program above is run once, when AlwaysUp first starts your application (normally at boot). Check this box to have AlwaysUp run the startup program each time it restarts your application as well. This setting can be useful if you have some cleanup/housekeeping to be done between runs of the application.

Stop all copies of the application running on this computer: Prior to starting the application for the first time, AlwaysUp will close all other running copies. Check this option for applications that only support a single instance, where starting a second copy will immediately fail.

But only those running in the same Windows session or account: Check this option if your application supports running multiple instances, but each in its

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own login session or per user. With this option, AlwaysUp will only terminate running instance(s) in the:

1. session where it's about to launch the application, or
2. account specified on the Logon tab

That will prevent AlwaysUp from stopping copies running in other sessions, for other users, if those can happily co-exist with the instance that AlwaysUp runs.

Also whenever the application is restarted: Check this to have AlwaysUp stop copies whenever it restarts the application. Otherwise, that "clearing out" will only happen the first time AlwaysUp starts the application (at boot or manually).

Ensure that the following services have started: If the main application (or the startup program) depends on any existing services, select those here and they will be started prior to the main application (or the startup program). Many applications should depend on the Workstation service, which provides basic network connections.

Clear selection: Un-checks all services selected in the list.

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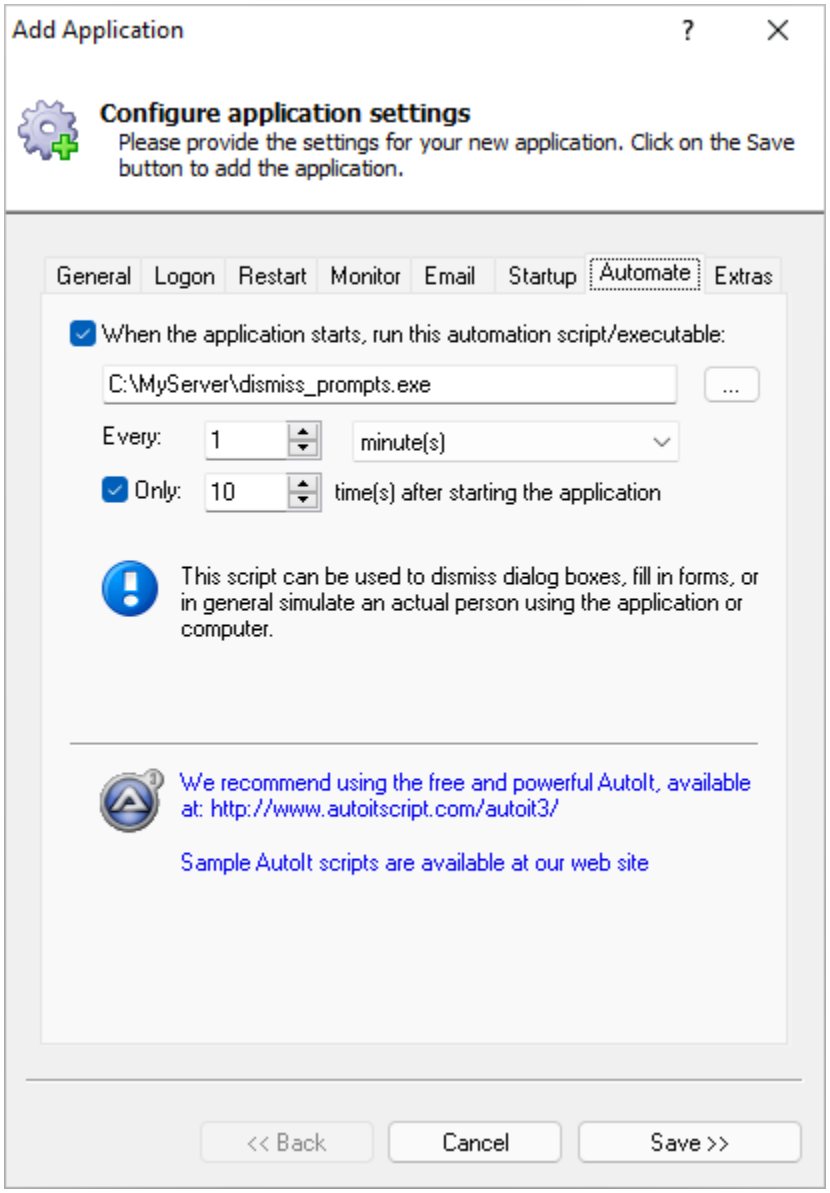
4.5.7. The Automate Tab

This tab contains settings for periodically running an automation script to:

- automatically fill in forms (such as a prompt for login information),
- click buttons (such as the common 'are you sure' prompts)
- dismiss dialogs (such as the error messages unique to your application)
- or perform almost any interactive task that a user sitting at the keyboard would normally have to do.



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Run the following automation script/executable: Check this box to activate the automation feature and enter the full path to the script or executable below. AlwaysUp supports AutoIt scripts (https://www.autoitscript.com/autoit3/) and a script file can be specified directly once AutoIt is installed on the computer.

Note that AlwaysUp can be configured to pass your program one or more special command line values. Please see Appendix VIII for a description of the values.

Every: Specify how often to run the automation script in minutes or seconds.

Only: Check if it is best to only run the script a few times after the program starts (for example, when driving an interactive login procedure) and specify the number of times the script/executable is to be run.

Click the hyperlinks to access the AutoIt web site or our page of AutoIt sample scripts (at https://www.coretechnologies.com/products/AlwaysUp/AutoIt/).

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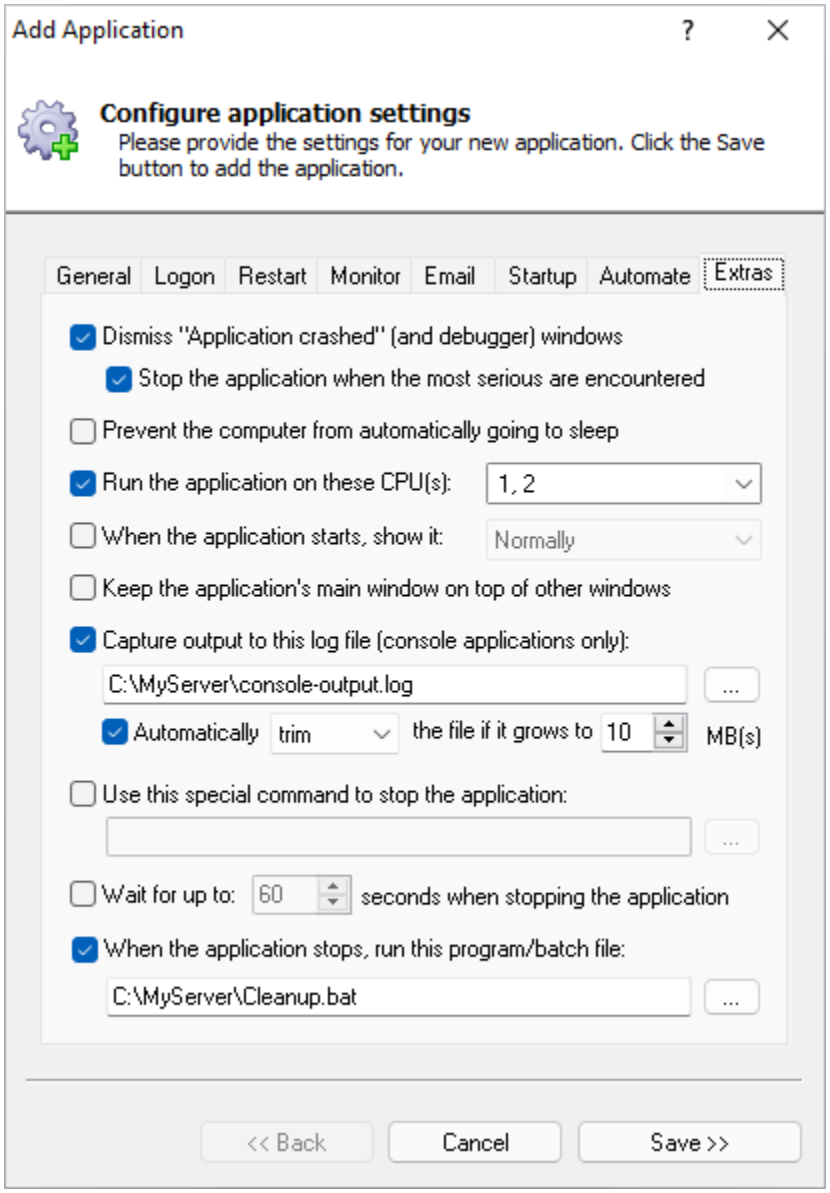
4.5.8. The Extras Tab

This tab contains a few "extra" settings:



Dismiss "Application crashed" (and debugger) windows: Check to have AlwaysUp automatically dismiss/cancel message boxes that the application being monitored (or Windows) may pop up while running. This handles the dreaded Application Error dialog, which informs of a crash but still leaves the

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process running in a vegetative state. This option is particularly useful for developers running their applications in debug mode as the standard debug/assert dialogs are handled (and their full textual content captured in the Windows Event Log and email).

Stop the application when the most serious are encountered: Normally, AlwaysUp will simply dismiss those pesky "problem/crash/exception" dialogs and give your application a chance to handle the problem gracefully. Unfortunately, though, some of them (like the VB "run-time error" dialog) signal instant death. Check this box to have AlwaysUp immediately stop the application when it sees a fatal dialog, instead of waiting a few seconds for the application to slowly expire.

Prevent the computer from automatically going to sleep: Check this option to have AlwaysUp prevent your PC from putting itself to sleep while the service is running. Note that this option will not stop a user from intentionally putting the computer to sleep. It only prevents Windows from doing so because the PC has been idle for some time (as configured in the machine's power settings).

Run the application on these CPU(s) only: On multi-processor systems, check this box to restrict your application to run on one or more specific CPUs. Note that this option is not available on single-CPU systems.

When the application starts, show it: Check this option to force your application's main window to be displayed minimized, maximized, or normally. Note that this setting may not work properly for non-standard Windows applications and those that feature multiple top-level windows. Also, this setting will be ignored if the "When a user logs on, don't show the applications windows…" setting on the "Logon" tab is active.

Keep the application's main window on top of other windows: Check this option to keep your application's main window on top of other windows. This may be useful when your application needs to be visible always, such as in a kiosk environment. Note that this setting may not work properly for non-standard Windows applications and those that feature multiple top-level windows. Also, this setting will be ignored if the "When a user logs on, don't show the applications windows…" setting on the "Logon" tab is active.

Capture output to this log file (console applications only): Check this option to have the output from your console application saved to a file. Both the STDOUT and STDERR streams are captured.

Automatically trim/rollover the file if it grows to: Use this option to avoid the output file from growing too large. If the file grows to the specified threshold:

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- **Trim** will discard the oldest 25% of the lines from the file to make room for new output.
- **Rollover** will copy the file to a name suffixed with the current date and start over with an empty file. For example, "log.txt" might be copied to "log_2022-04-11.txt". If that file already exists, a numeric suffix is added to produce a unique name like "log_2022-04-11_01.txt".

Use this special command to stop the application: If your application is best stopped by running a program, specify the full path to that program here. AlwaysUp will wait up to 60 seconds for the program to do its work, terminating it if it takes any longer. (You can extend that time with the setting below.)

Note that AlwaysUp can be configured to pass your program one or more special command line values. Please see Appendix VIII for a description of the values.

Wait for up to X seconds when stopping the application: If your application can take a while to shut down, check this box and specify the number of seconds that AlwaysUp should wait for your application to exit normally. AlwaysUp may terminate your application after that time has elapsed.

When the application stops, run this program/batch file: Check to specify a program that will be run whenever your application stops. Note that this program will be invoked under all circumstances, independently of how the application stops (normally or abnormally), and that AlwaysUp will wait for it to complete (except sometimes when the service is being stopped).

Note that AlwaysUp can be configured to pass your program one or more special command line values. Please see Appendix VIII for a description of the values.

Once all required information has been specified to your satisfaction, click the "Save >>" button to add your new application.

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4.6. Adding a Well-Known Application with Recommended Settings

If you are adding a popular application as a Windows Service, the Application Advisor will help you configure your application with all our recommended settings.

The Application Advisor currently supports 15 prominent applications:

- Dropbox
- OneDrive
- Google Drive for desktop
- Batch files
- InfluxDB
- Java JAR/WAR files
- Kibana
- Node.js scripts
- PHP scripts
- Plex Media Server
- Python scripts
- VMWare Workstation Player
- WinForms programs
- Emby Media Server
- PowerShell scripts
- nginx

Support for additional applications covered in our 150+ step-by-step tutorials will be introduced in future releases. Of course, please let us know of any applications that you would like the Application Advisor to support sooner rather than later.

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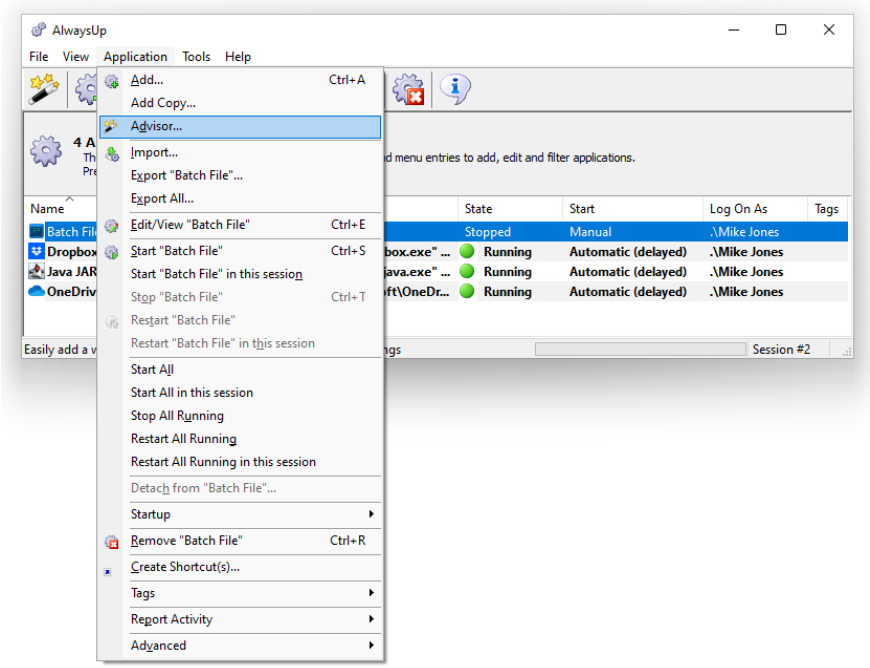
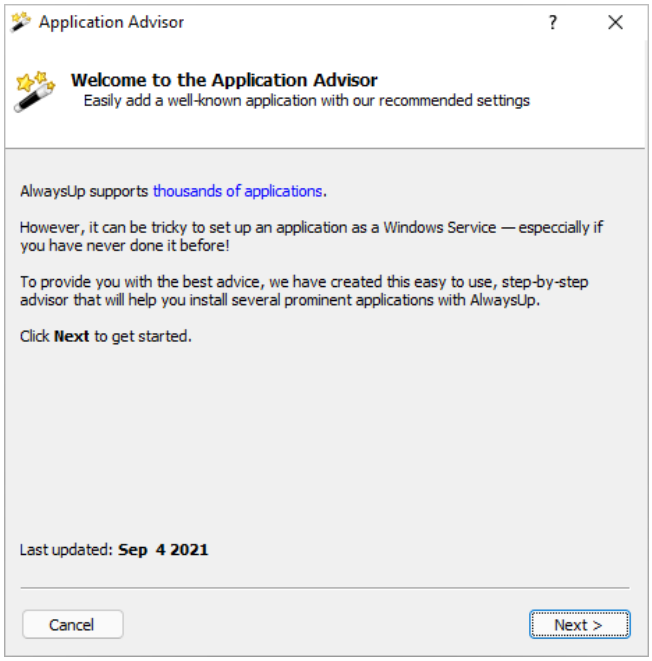
4.6.1. Using the Application Advisor

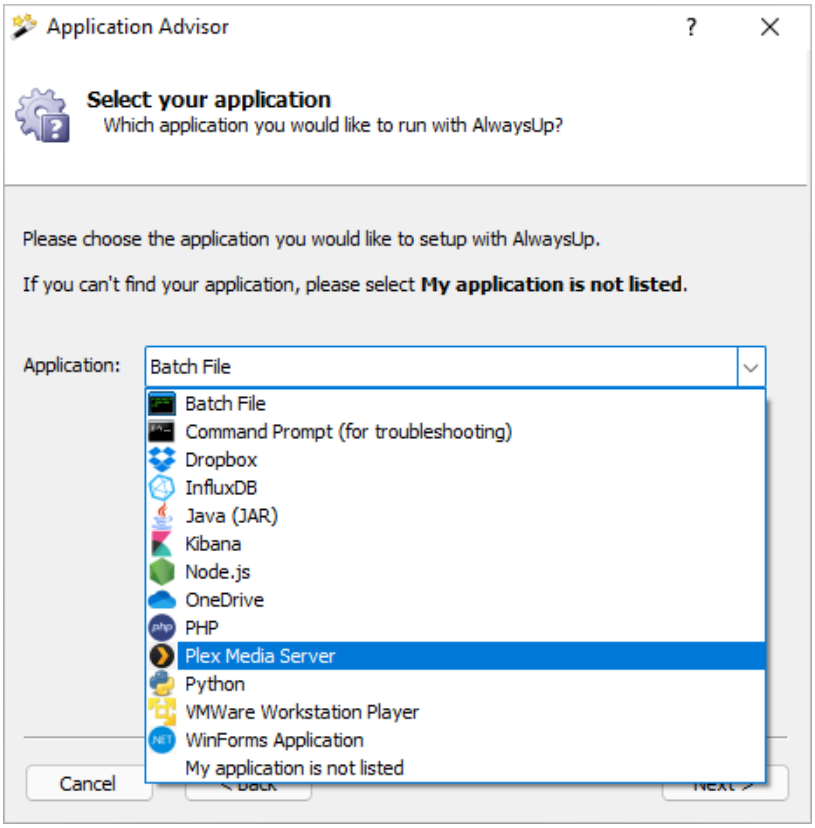
1. Open the Advisor by selecting "Advisor" from the "Application" menu:



2. The Advisor window will appear. Click "Next" to start the process.



3. From the dropdown list, choose the application you would like to run as a service and click "Next" to continue:



If your application isn't in the list, select "My application is not listed". Unfortunately the Advisor cannot help you and you will have to add your application yourself (as described in section 4.5).

4. Follow the specific prompts requesting the path to the application's executable, login details and any other information required to configure your application in AlwaysUp.

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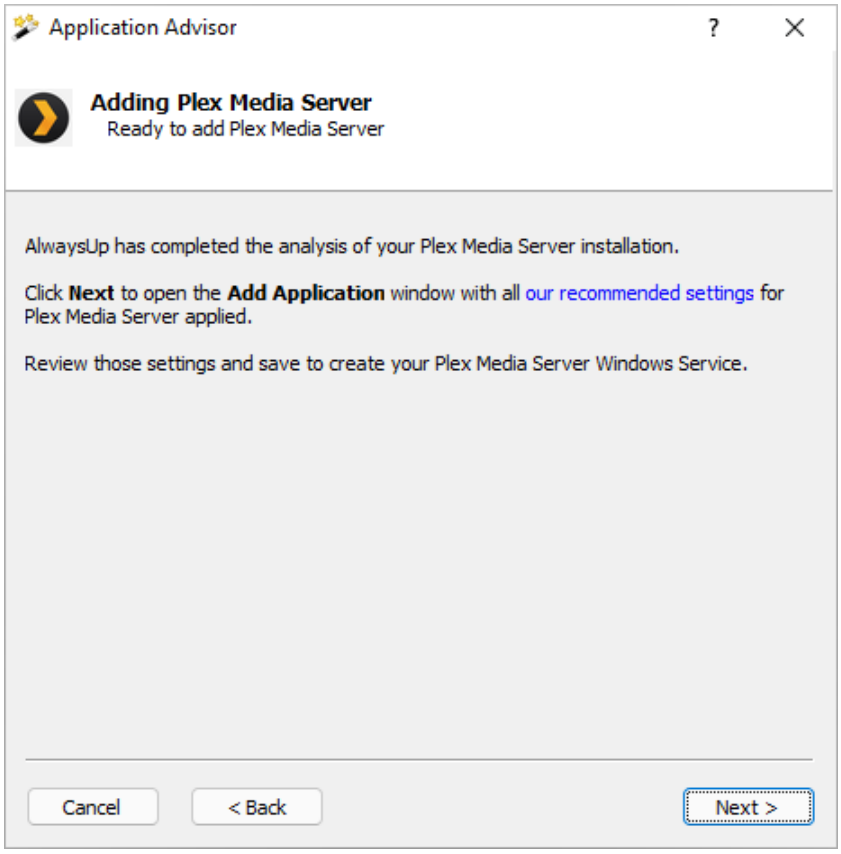
5. At the end of the process, you will be presented with a confirmation screen. Click "Next" to continue to the "Add Application" window:



6. Briefly review the recommended settings in the "Add Application" window (which is described in section 4.5). Once you are satisfied, click "Save" to create your new service.

7. And now that your application has been installed as a service, you may be required to make a few changes outside of AlwaysUp. For instance, if the application is configured to start when you log on, you should disable that option.

   For example, here is the advice presented after Plex Media Server has been installed in AlwaysUp:

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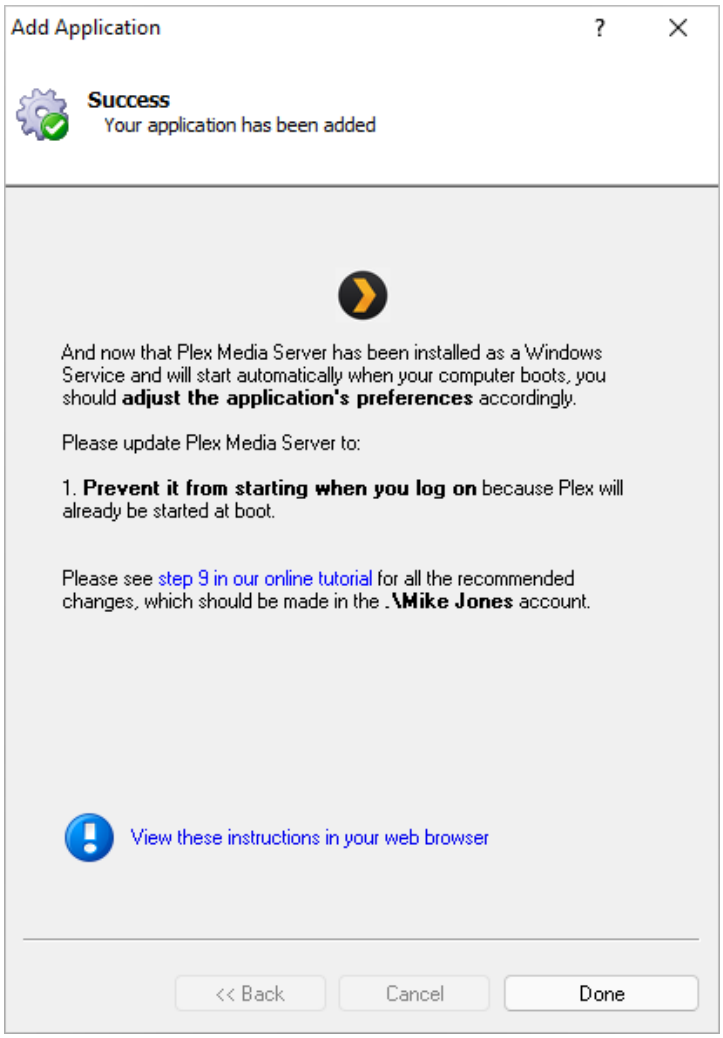

Please make the changes described. Once you are finished, click "Done" to complete the process and close the "Add Application" window.

And now that we have outlined the process, let's show you how to add a few of the most common applications installed by our customers.

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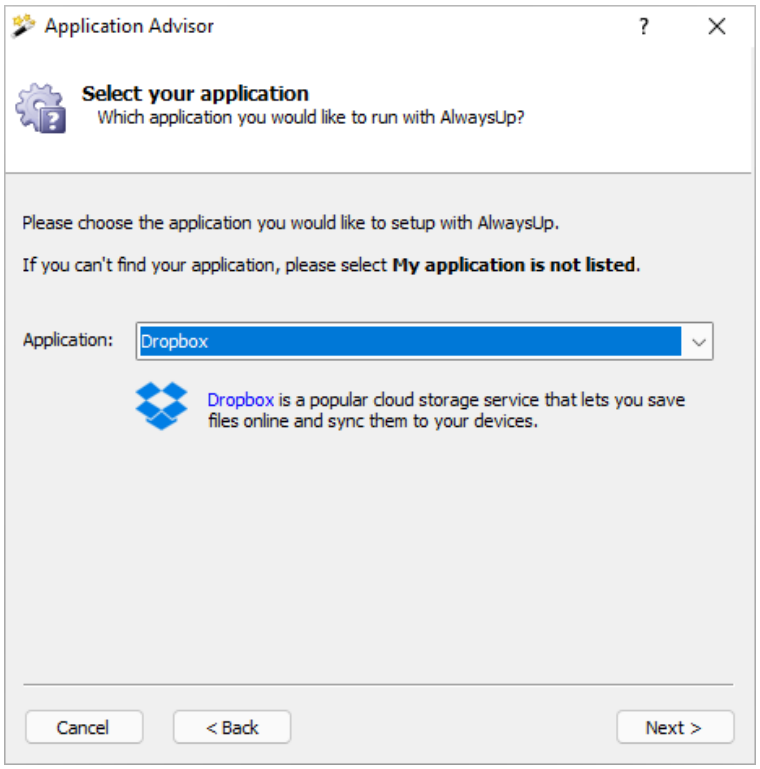
4.6.2. Adding Dropbox

1. Start the Application Auditor (by selecting "Auditor" from the "Application" menu) and click "Next" to move to the application selector screen.

2. Select "Dropbox" from the dropdown list and click "Next":



3. The Advisor will spend a few seconds gathering Dropbox information from your PC. If it does not find the Dropbox executable ("Dropbox.exe") in a standard location, the Advisor will prompt for the full path to the executable.

4. Next, the Advisor will ask you to enter the credentials of the Windows account where Dropbox is installed. Click "Next" after you have supplied that information:

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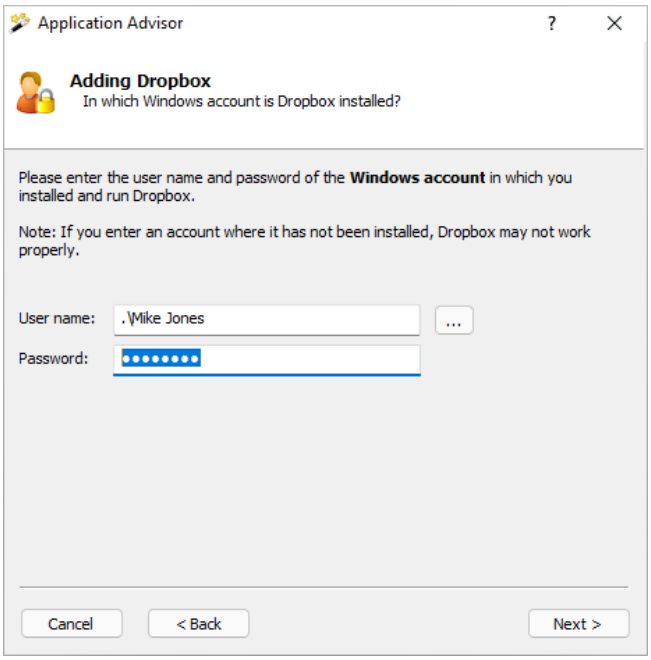
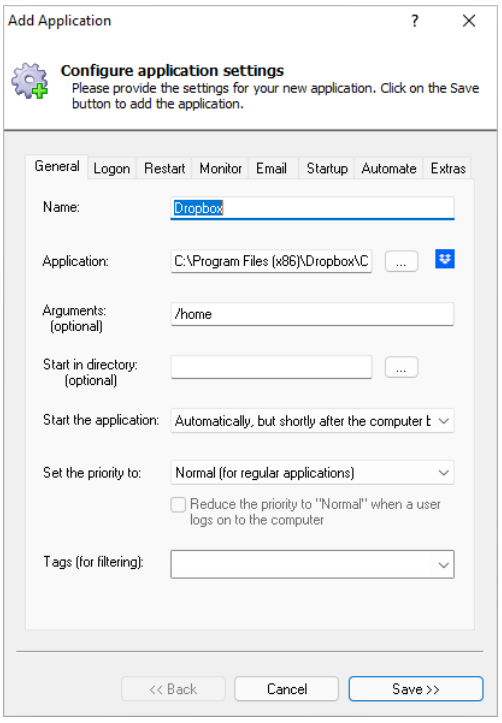


5. And on the last step with the Advisor, click "Next" to move past the summary screen and open the "Add Application" window with all the recommended settings to run Dropbox 24/7 as a Windows Service:

6. In the "Add Application" window, click "Save" to create your new service:



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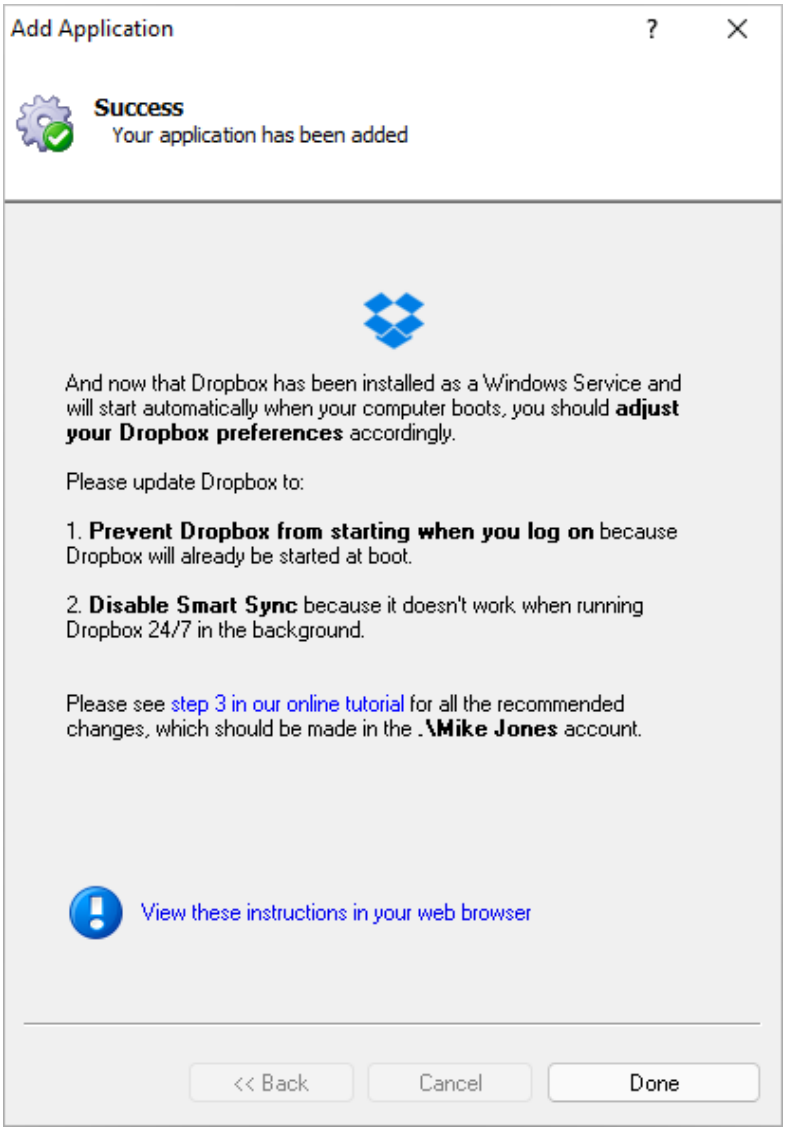
7. And finally, now that Dropbox is installed as a service, start Dropbox normally on your desktop and update its preferences as described:



8. Click "Done" to complete the process.

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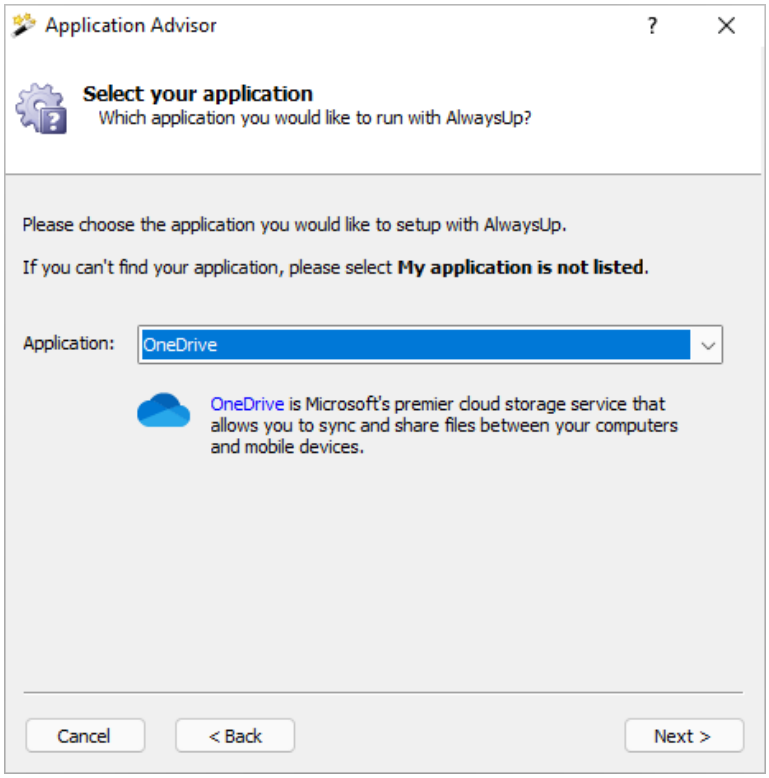
4.6.3. Adding OneDrive

1. Start the Application Auditor (by selecting "Auditor" from the "Application" menu) and click "Next" to move to the application selector screen.

2. Select "OneDrive" from the dropdown list and click "Next":



3. The Advisor will spend a few seconds gathering OneDrive information from your PC. If it does not find the OneDrive executable ("OneDrive.exe") in a standard location, the Advisor will prompt for the full path to the executable.

4. Next, the Advisor will ask you to enter the credentials of the Windows account where OneDrive is installed. Click "Next" after you have supplied that information:

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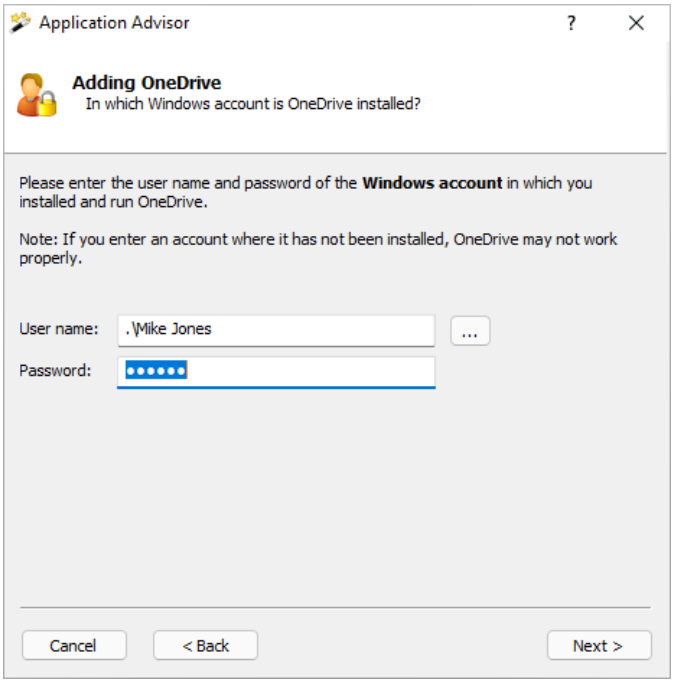
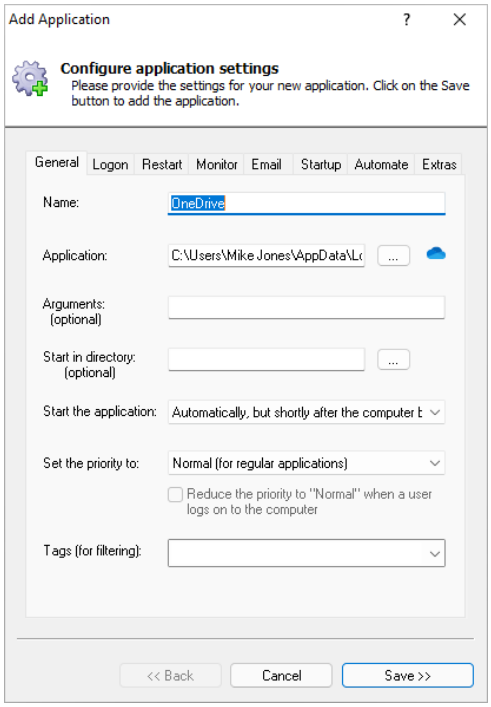


5. And on the final step with the Advisor, click "Next" to move past the summary screen and open the "Add Application" window with all the recommended settings to run OneDrive 24/7 as a Windows Service.

6. In the "Add Application" window, click "Save" to create your new service:



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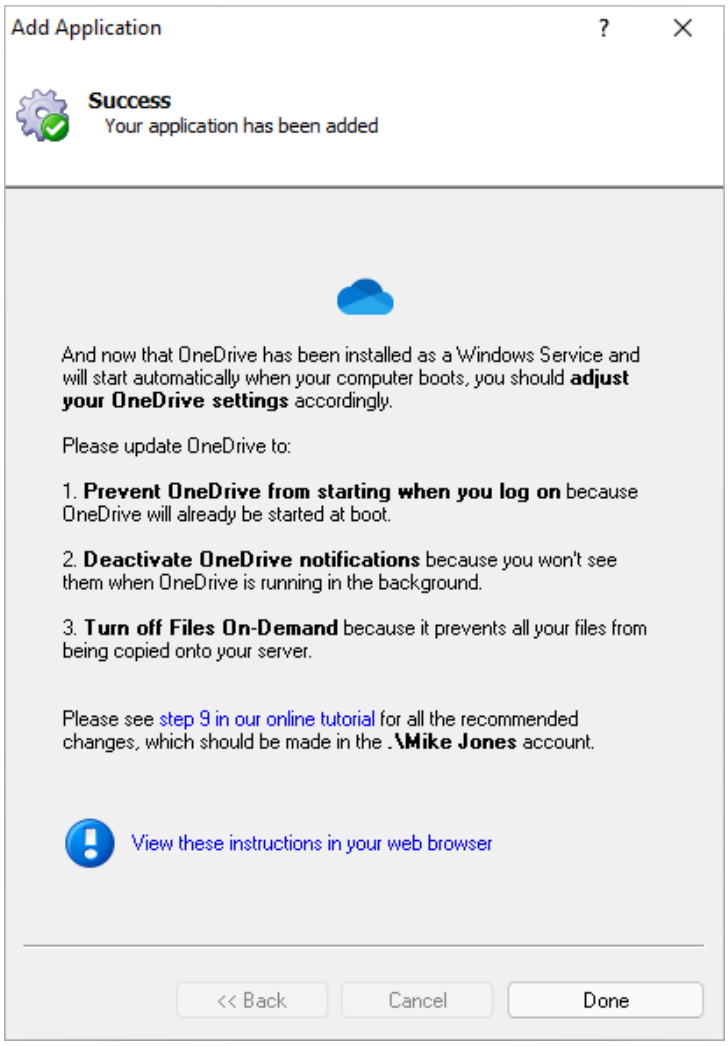
7. And finally, now that OneDrive is installed as a service, start OneDrive normally on your desktop and update its preferences as described:



8. Click "Done" to complete the process.

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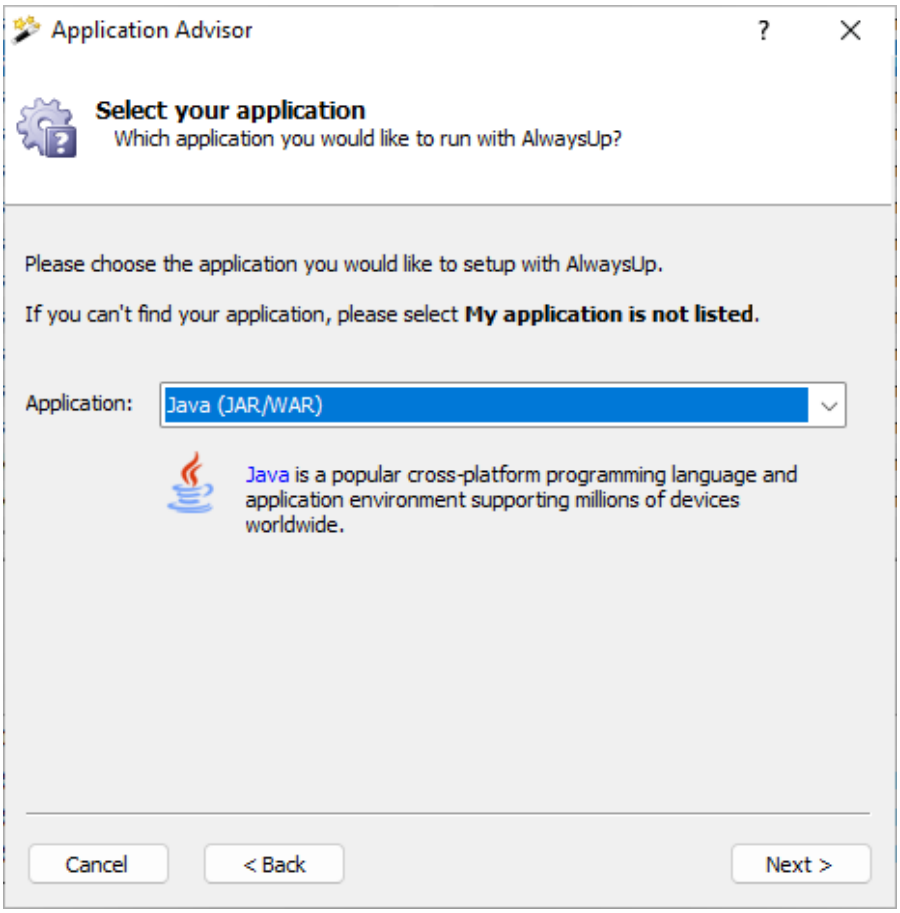
4.6.4. Adding a JAVA JAR application

1. Start the Application Auditor (by selecting "Auditor" from the "Application" menu) and click "Next" to move to the application selector screen.

2. Select "Java (JAR/WAR)" from the dropdown list and click "Next".



3. The Advisor will spend a few seconds gathering Java information from your PC. If it does not find the JAVA_HOME environment variable defined, the process will fail.

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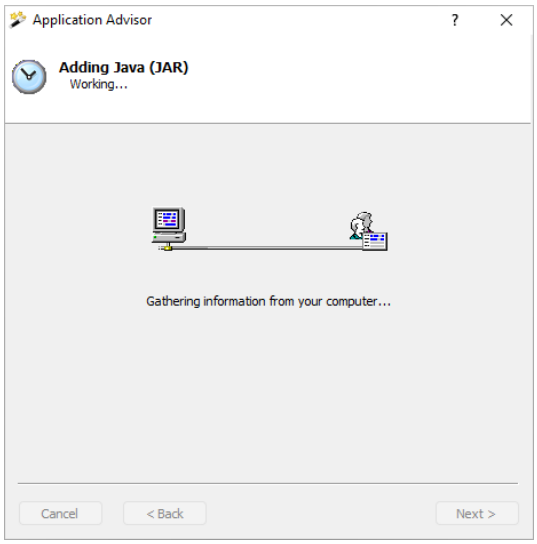
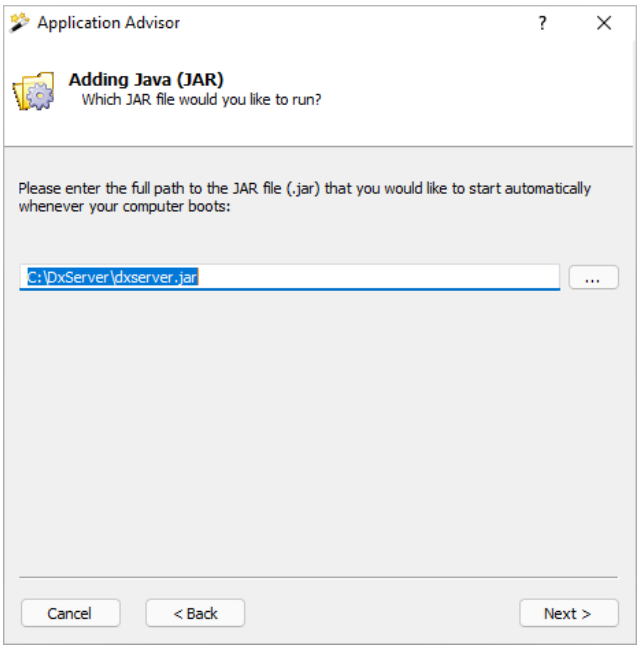


4. At this point, enter the full path to the JAR file (*.jar) that you want to run with AlwaysUp:



5. Next, the Advisor will ask you to enter the password of the Windows account that you are currently logged in to (where we know Java has been installed). Click "Next" after you have supplied that information:

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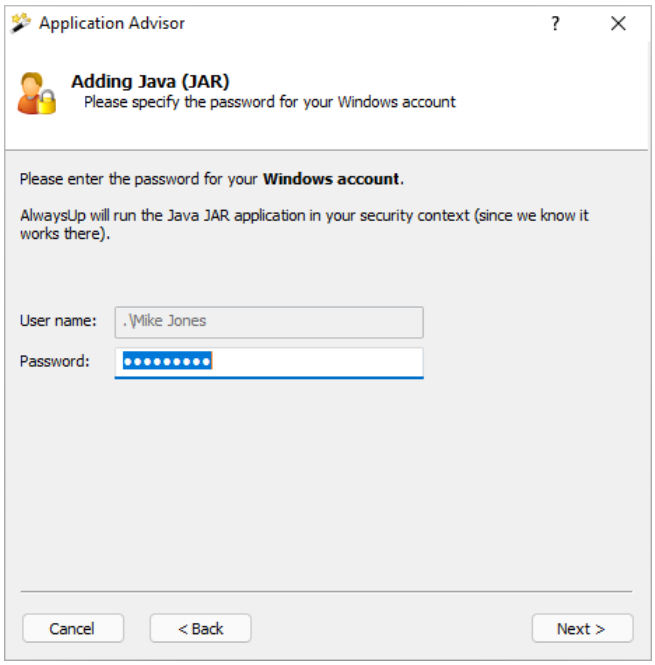

6. And on the last step with the Advisor, click "Next" to move past the summary screen to open the "Add Application" window with all the recommended settings to automatically start your Java application at boot.

7. And finally, review the settings in the "Add Application" windows and click "Save" to create your Java JAR service:

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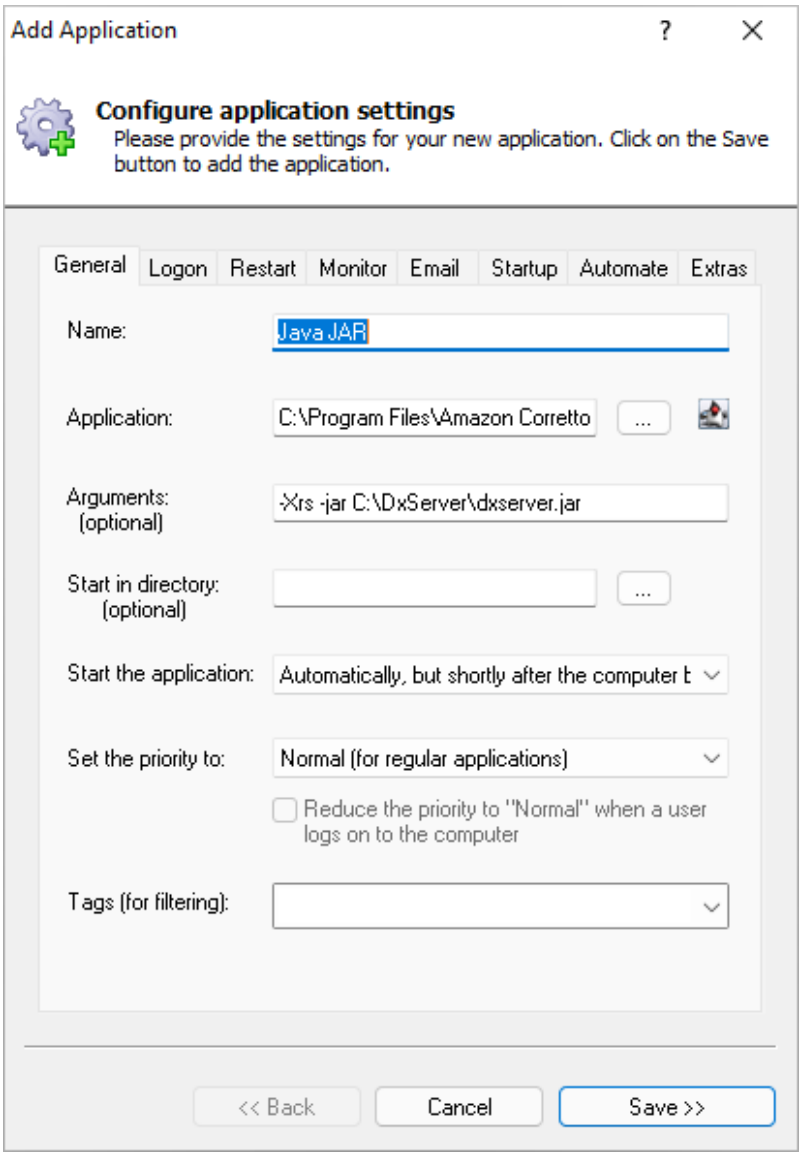

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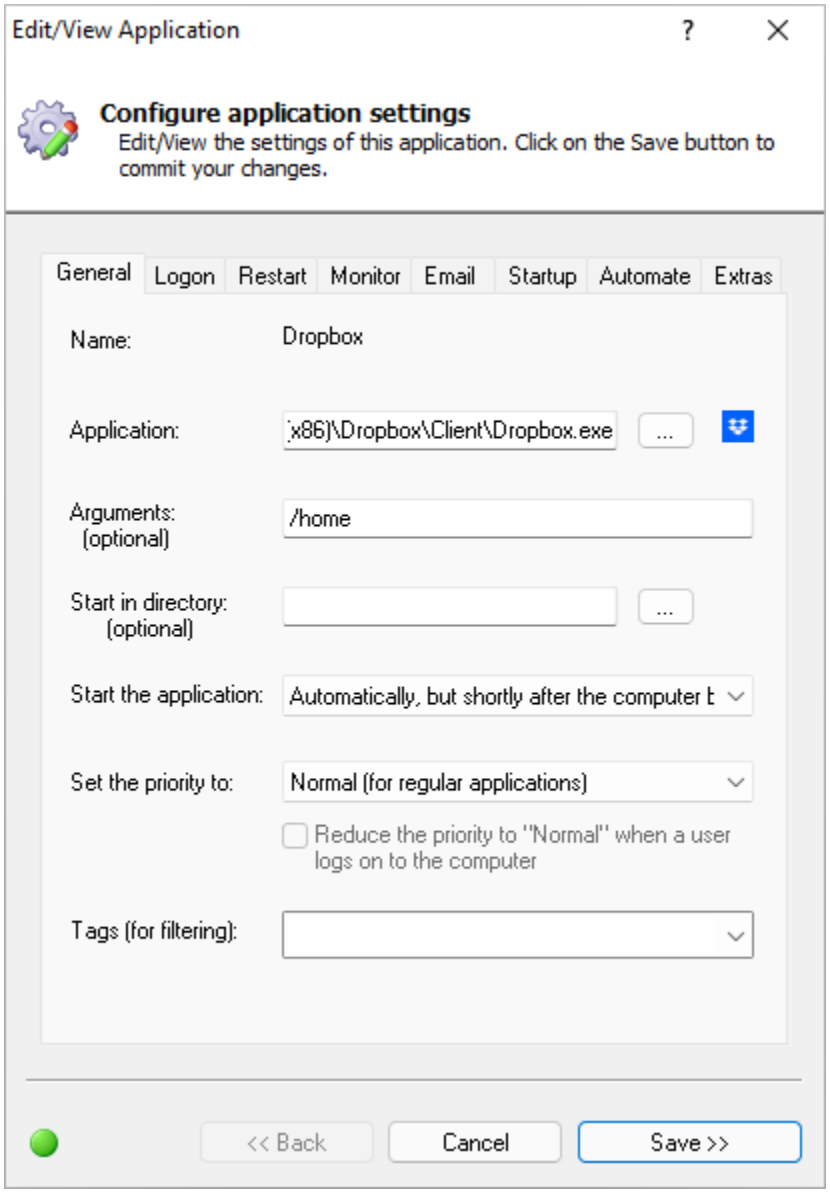
4.7. Editing Application Settings

Edit an application's settings by either double-clicking on its entry, or highlighting its entry and choosing "Edit/View" from the "Application" menu. This will bring up the "Edit/View Application" window:



The "Edit/View Application" dialog is identical to the "Add Application" dialog, with the only difference being that the name of the application is not editable. Please see section 4.5 for a description of the "Add Application" dialog.

Click on the "Save >>" button to commit your changes. If your application is running, you may be given a choice of how to proceed:

Note that if you choose "Save & Restart >>", your application will be briefly stopped while changes are saved and then restarted in a few seconds.

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4.8. Starting an Application

Start an application by highlighting its entry in the list and clicking the "Start" toolbar button, or by selecting "Start" from the "Application" menu. This functionality will not be available if the selected application is already running.

On systems that support multiple login sessions, there is also the option to start an application in the current session instead of on the default/console session. This will ensure that the application's user interface elements are visible in the current session. Select "Start in this session" from the "Application" menu (or click on the dropdown-arrow next to the "Start" button and select the second entry from the menu displayed) to activate this functionality.

4.9. Stopping an Application

Stop an application by highlighting its entry in the list and clicking the "Stop" toolbar button, or by selecting "Stop" from the "Application" menu. This functionality will not be available if the selected application is not running.

4.10. Restarting an Application

Restart (that is, quickly stop and start) an application by highlighting its entry in the list and clicking the "Restart" toolbar button, or by selecting "Restart" from the "Application" menu. This functionality will not be available if the selected application is not running.

On systems that support multiple login sessions, there is also the option to restart an application in the current session instead of on the default/console session. This will ensure that the application's user interface elements are visible in the current session.

Select "Restart in this session" from the "Application" menu (or click on the dropdown-arrow next to the "Restart" button and select the second entry from the menu displayed) to activate this functionality.

4.11. Removing an Application

Remove an application by highlighting its entry in the list and clicking the "Remove" toolbar button, or by selecting "Remove" from the "Application" menu.

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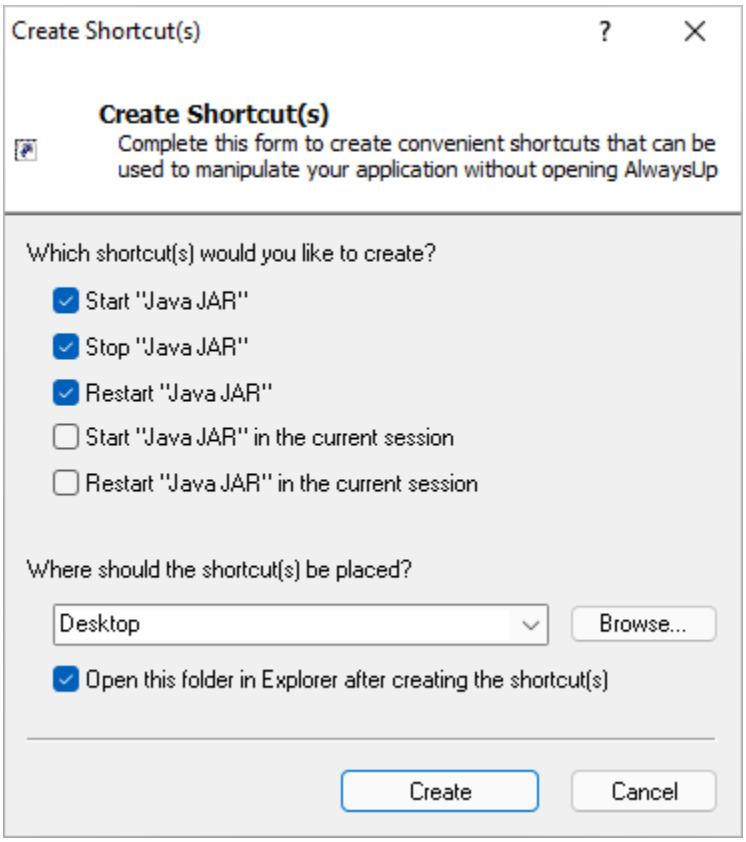
You will be asked to confirm the removal. Note that an application cannot be removed while it is running.

4.12. Creating Application Shortcuts

AlwaysUp can create convenient windows shortcuts to start, stop and restart your application without having to open up the AlwaysUp program.

With your application selected, choosing the "Create Shortcut(s)" entry in the "Application" menu summons the "Create Shortcut(s)" window (pictured here for an application called "Java JAR"):



Start: Check this option to create a shortcut that will start your application.

Stop: Check this option to create a shortcut that will stop your application.

Restart: Check this option to create a shortcut that will restart your application.

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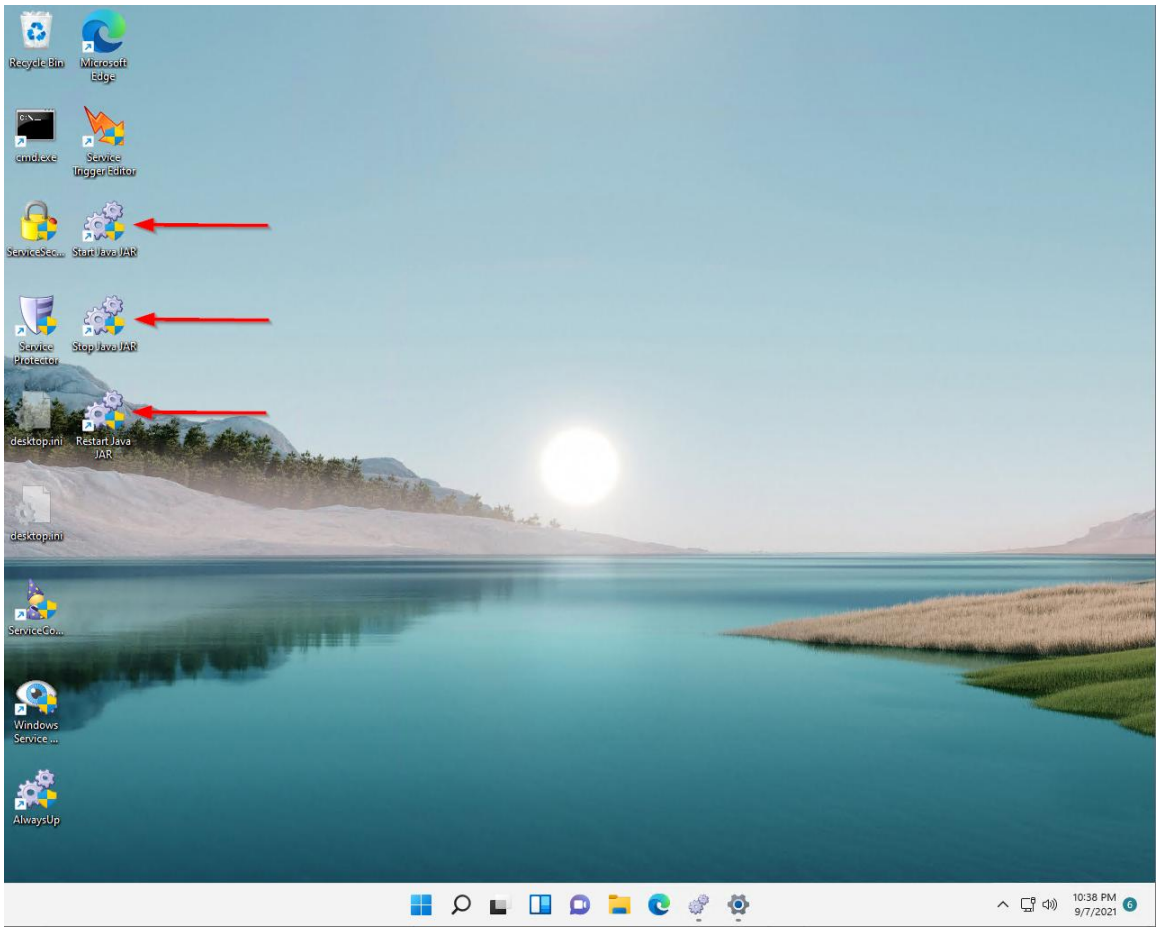
Start in the current session: Check this option to create a shortcut that will start your application in the current session.

Restart in the current session: Check this option to create a shortcut that will restart your application in the current session.

Where should the shortcut(s) be placed?: Select the folder where the new shortcuts should be saved. A few special folders are available in the drop-down list and others can be visually selected by clicking on the "Browse…" button.

Open this folder in Explorer after creating the shortcut(s)?: Checking this option will cause a new Explorer window to be opened to browse the folder with the newly created shortcuts.

Click the "Create" button to create shortcuts for the selected operations. To illustrate the results, this screenshot shows the three shortcuts for the "Java JAR" application saved to the desktop:



Simply double-click an icon (as you would do with any other shortcut) to perform the functionality described.

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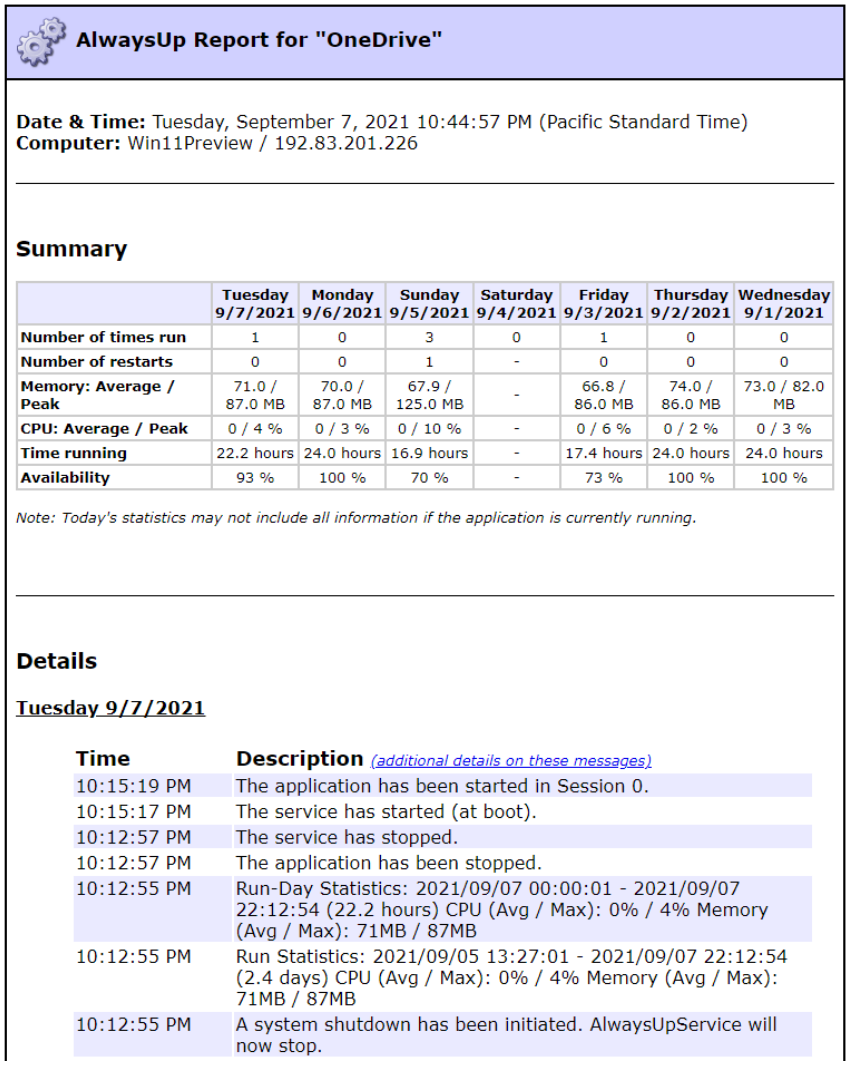
4.13. Reporting on an Application's Activities

As it runs your application, AlwaysUp writes relevant information to the "Application" section of the Windows Event Log, including:

- CPU statistics (average / peak)
- Memory statistics (average / peak)
- Application restart events
- Threshold exceeded events (CPU & memory), etc.

AlwaysUp will summarize this activity in a single web page if you select "Report Activity" from the "Application" menu and choose whether to see today's or the past week's activity. The report will be opened in your web browser and can be saved in HTML format from the browser. Here is a sample report:



AlwaysUp Report for "OneDrive"

Date & Time: Tuesday, September 7, 2021 10:44:57 PM (Pacific Standard Time)
Computer: Win11Preview / 192.83.201.226

Summary

	Tuesday 9/7/2021	Monday 9/6/2021	Sunday 9/5/2021	Saturday 9/4/2021	Friday 9/3/2021	Thursday 9/2/2021	Wednesday 9/1/2021
Number of times run	1	0	3	0	1	0	0
Number of restarts	0	0	1	-	0	0	0
Memory: Average / Peak	71.0 / 87.0 MB	70.0 / 87.0 MB	67.9 / 125.0 MB	-	66.8 / 86.0 MB	74.0 / 86.0 MB	73.0 / 82.0 MB
CPU: Average / Peak	0 / 4 %	0 / 3 %	0 / 10 %	-	0 / 6 %	0 / 2 %	0 / 3 %
Time running	22.2 hours	24.0 hours	16.9 hours	-	17.4 hours	24.0 hours	24.0 hours
Availability	93 %	100 %	70 %	-	73 %	100 %	100 %

Note: Today's statistics may not include all information if the application is currently running.

Details

Tuesday 9/7/2021

Time	Description (additional details on these messages)
10:15:19 PM	The application has been started in Session 0.
10:15:17 PM	The service has started (at boot).
10:12:57 PM	The service has stopped.
10:12:57 PM	The application has been stopped.
10:12:55 PM	Run-Day Statistics: 2021/09/07 00:00:01 - 2021/09/07 22:12:54 (22.2 hours) CPU (Avg / Max): 0% / 4% Memory (Avg / Max): 71MB / 87MB
10:12:55 PM	Run Statistics: 2021/09/05 13:27:01 - 2021/09/07 22:12:54 (2.4 days) CPU (Avg / Max): 0% / 4% Memory (Avg / Max): 71MB / 87MB
10:12:55 PM	A system shutdown has been initiated. AlwaysUpService will now stop.

4.14. Exporting an Application to a File (XML)

AlwaysUp allows you to export your application's settings to a XML file by either:
(1) selecting "Export…" from the "Application" menu and subsequently specifying an XML file to be created, or
(2) dragging-and-dropping from the list of applications to Windows Explorer (or the desktop, etc.) to create a new XML file in the specified location.

The XML file created can be taken to another machine and imported there to re-create the application on that machine.

Note that the XML is described by the schema available at our web site:
https://www.coretechnologies.com/products/AlwaysUp/AlwaysUpCLT/alwaysup_installservice.xsd

4.15. Exporting all Applications to a Directory

All applications can be exported at once by selecting "Export all…" from the "Application" menu. You will be prompted for a directory, and an XML file will be created there for each application.

Each file name created will resemble:
"<application-name>_alwaysup.xml"
For example, if you have an application called "notepad", then the exported file will be named "notepad_alwaysup.xml".

The XML files created can be taken to another machine and imported there to re-create the applications on that machine.

Note that the XML is described by the schema available at our web site:
https://www.coretechnologies.com/products/AlwaysUp/AlwaysUpCLT/alwaysup_installservice.xsd

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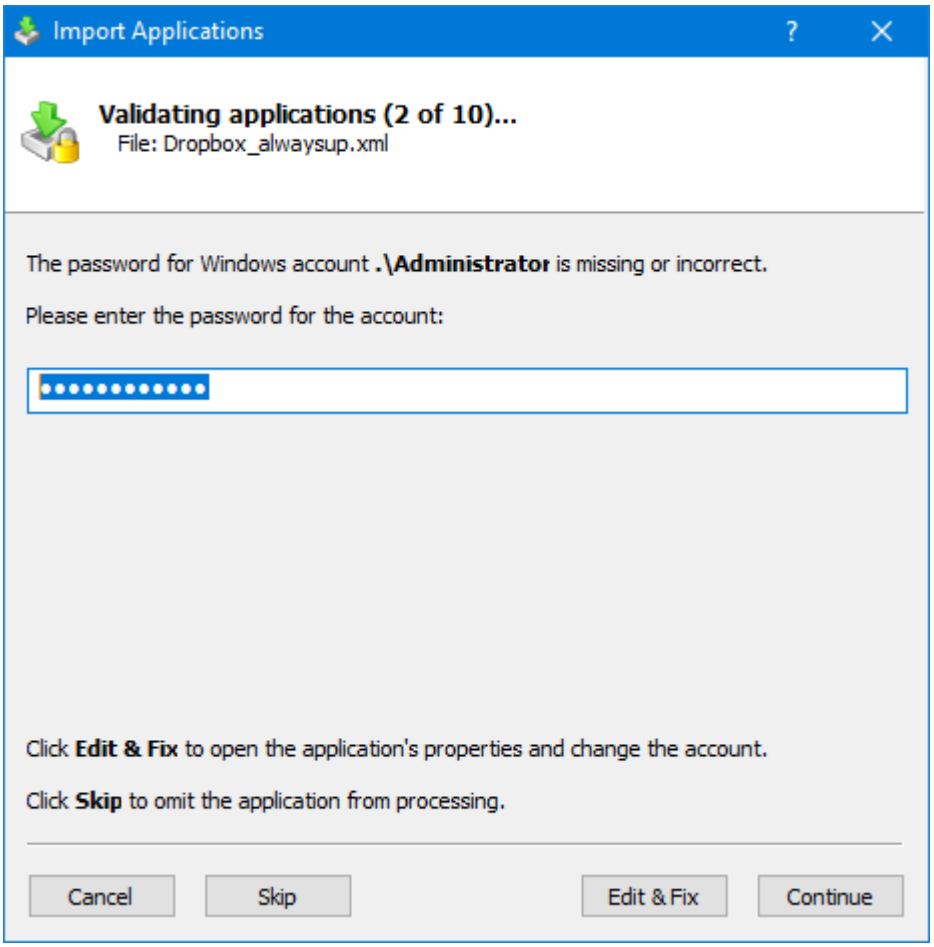
4.16. Importing one or more Applications from Files (XML)

AlwaysUp allows you to import a previously exported XML file by either:

(1) selecting "Import…" from the "Application" menu and selecting the XML file, or
(2) dragging-and-dropping from Windows Explorer (or the desktop, etc.) to the list of applications in AlwaysUp.

Importing a single file will summon the "Add Application" window (described in section 4.5) where you can confirm settings and supply passwords if necessary prior to actually creating the application in AlwaysUp.

Importing multiple files will launch the "Import Applications" window to take you, step-by-step, through the process. The files are all read and validated prior to adding the new applications:



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Note that the XML is described by the schema available at our web site: https://www.coretechnologies.com/products/AlwaysUp/AlwaysUpCLT/alwaysup_installservice.xsd

4.17. Adding an Application by Drag & Drop

Dragging and dropping an executable file onto AlwaysUp will summon the "Add Application" window (described in section 4.5) with the full path to the executable already specified.

Note: When UAC is enabled, Windows will may disallow drag & drop from an Explorer window not started as an Administrator. Run Explorer as an Administrator to enable drag & drop.

4.18. Adding a Copy of an Application

To make a copy of an application, select it in the list and choose "Add Copy…" from the "Application" menu. This will launch the "Add Application" window (described in section 4.5) with all settings copied from the selected application. The default name will be "Copy of <your-existing-application>" but of course you are free to change that before saving.

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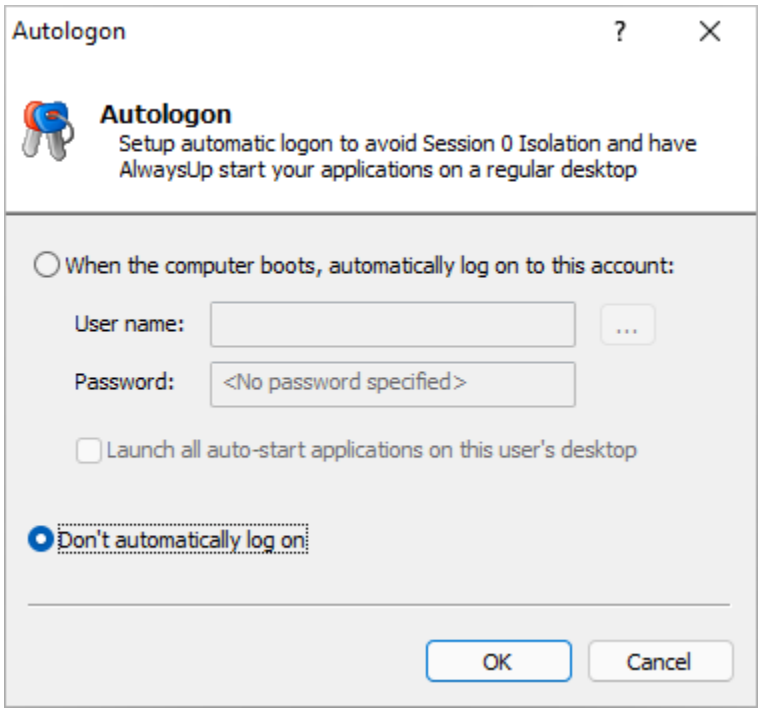
4.19. Running Applications on your Desktop

Windows Services have always run on Session 0 – the desktop created when a PC boots. In older versions ow Windows, you could log in to Session 0 and see your service applications running normally. However, in modern versions of Windows, Microsoft has "isolated" Session 0 and no user is allowed to log in there. This has essentially killed the option for running Windows Services interactively/normally on your desktop. Fortunately AlwaysUp can help you get around this restriction.

If it is important that you see your application and be able to interact with it normally on your desktop, then we suggest that you configure your PC to automatically log in to a designated user account (to create a viable user session) and then have AlwaysUp automatically start your application(s) in that session. When you log in, your application will already be running on your desktop.

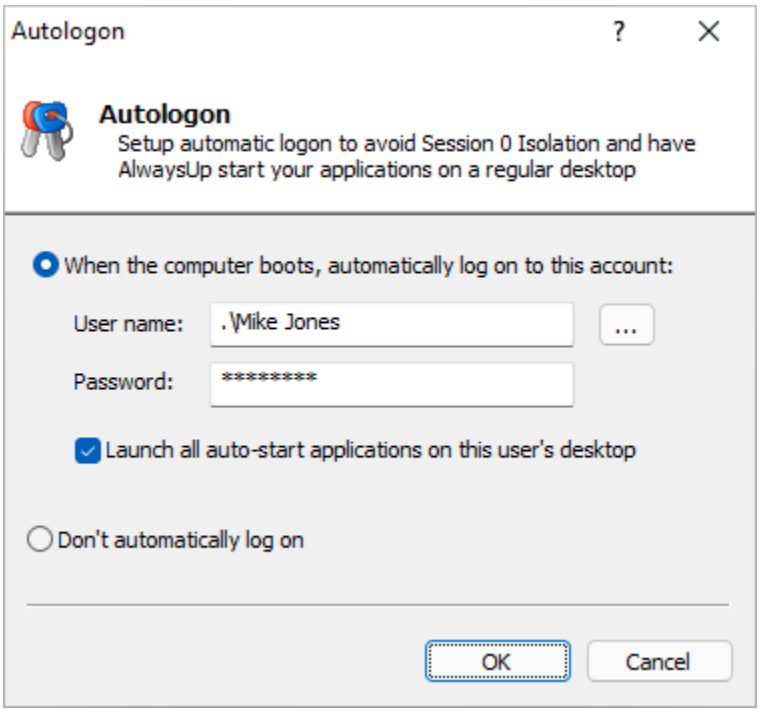
To set this up:

1. Select "Autologon..." from the "Tools" menu to open the Autologon dialog:



2. Select the "When the computer boots, automatically log on to this account" option and enter the user name and password for the user that will be automatically logged in. You will log in as this account when you wish to use your PC and work with your application.

3. Check the "Launch all auto-start applications on this user's desktop" box:



4. Click OK to save your settings and close the window.

Next time your PC boots, AlwaysUp will automatically log in the designated user and run all your applications (set to startup "Automatic" or "Automatic (Delayed)") on the user's desktop. When you log on as the same user (either on the console, or via RDP), you will see the applications running normally.

One important note – if you log out, thus closing your session, your applications running on the desktop will be stopped and AlwaysUp will quickly restart them on the isolated Session 0. If you subsequently log in, your applications will NOT be running on your desktop!

To avoid this outcome, avoid logging off. Disconnect from your RDP session to leave it open for the next time you connect.

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4.20. Controlling AlwaysUp Applications from the Command Line

You can start, stop, restart or manipulate one or all of your AlwaysUp applications entirely from the command line. The parameters are as follows:

Operation	Command Line Parameters
Start an application	-start <app-name>
Start an application in the current session	-start-in-current-session <app-name>
Stop a running application	-stop <app-name>
Restart a running application	-restart <app-name>
Restart a running application in the current session	-restart-in-current-session <app-name>
Grant the account running the service rights to the current Window Station and Desktop	-grant-service-account-desktop-rights <app-name>
Start all applications	-start-all
Start all applications in the current session	-start-all-in-current-session
Stop all running applications	-stop-all
Restart all applications	-restart-all
Restart all running applications in the current session	-restart-all-in-current-session

For example, to start an AlwaysUp application called MyServer, use:

"C:\Program Files\AlwaysUp\AlwaysUp.exe" -start MyServer

To start all applications, use:

"C:\Program Files\AlwaysUp\AlwaysUp.exe" -start-all

Be sure to use the full path to your AlwaysUp.exe file and enclose paths (and application names) having a space in quotes.

Note that errors coming back from a failed command are reported in a popup window. Specify the "**-silent**" parameter to avoid showing a window when an error is encountered.

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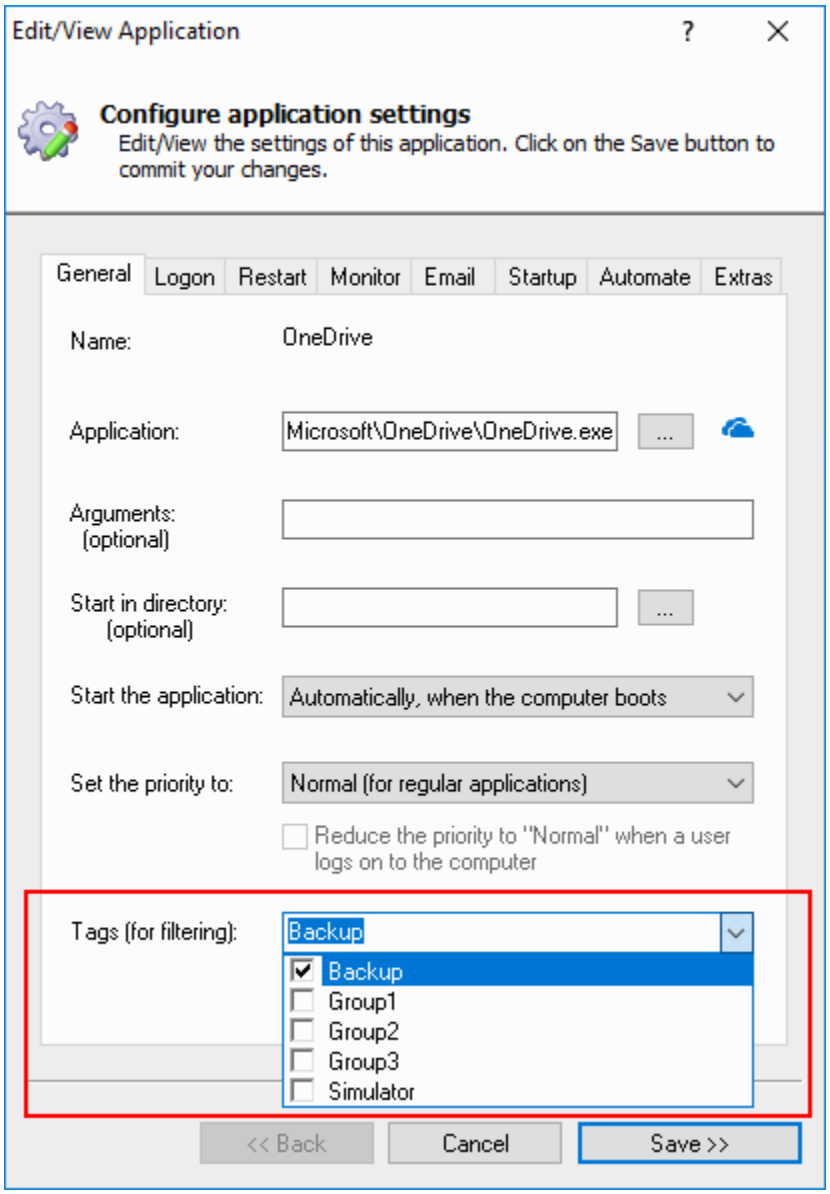
4.21. Working with Application Tags

AlwaysUp allows you to tag each application. Tags are specified on the General tab:



By default, AlwaysUp pre-defines three tags (**Group1**, **Group2** and **Group3**) but you can add as many as you like. Separate multiple tags with a semi-colon (";").

Note that the total length of all tags applied to an application cannot exceed 100 characters.

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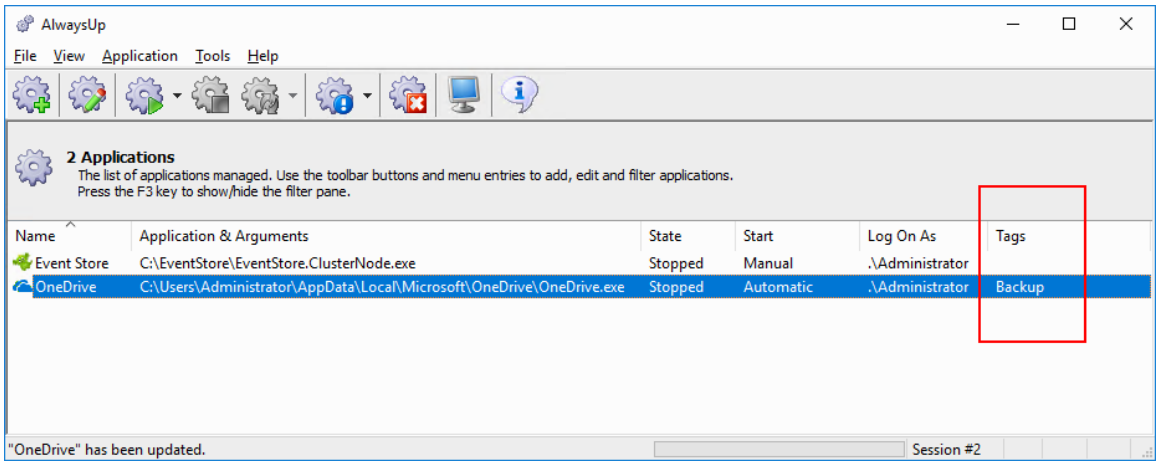
The tags you specify will be listed in the Tags column in the main window:

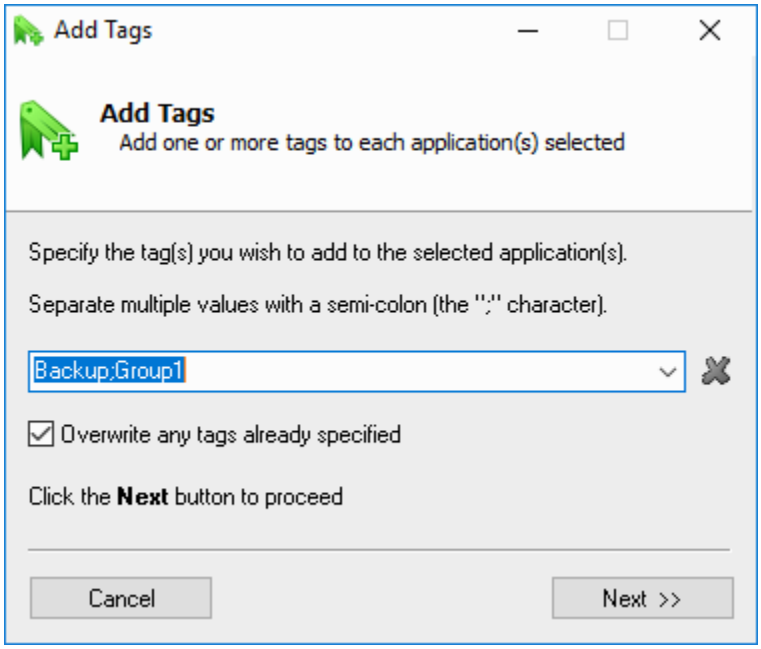


4.21.1. Bulk-Changing Multiple Applications

Instead of adding or removing tags from each application individually, you can also update multiple applications at once. To do so, select the applications you would like to change and choose the appropriate operation from the "Application" menu.

Adding Tags

Selecting "Application > Tags > Add…" summons the **Add Tags** window:



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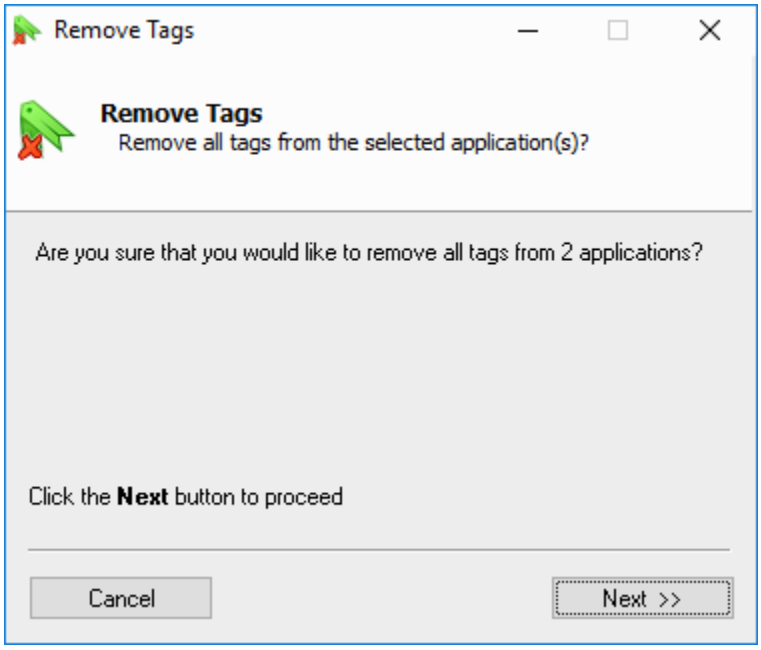
Specify the tags you would like to add. Check the "Overwrite" button to clear out existing tags to end up with only the new ones specified.

Removing All Tags

Select "Application > Tags > Remove All…" to bring up the **Remove Tags** window:



Click the **Next** button to have all tags removed from the selected applications.

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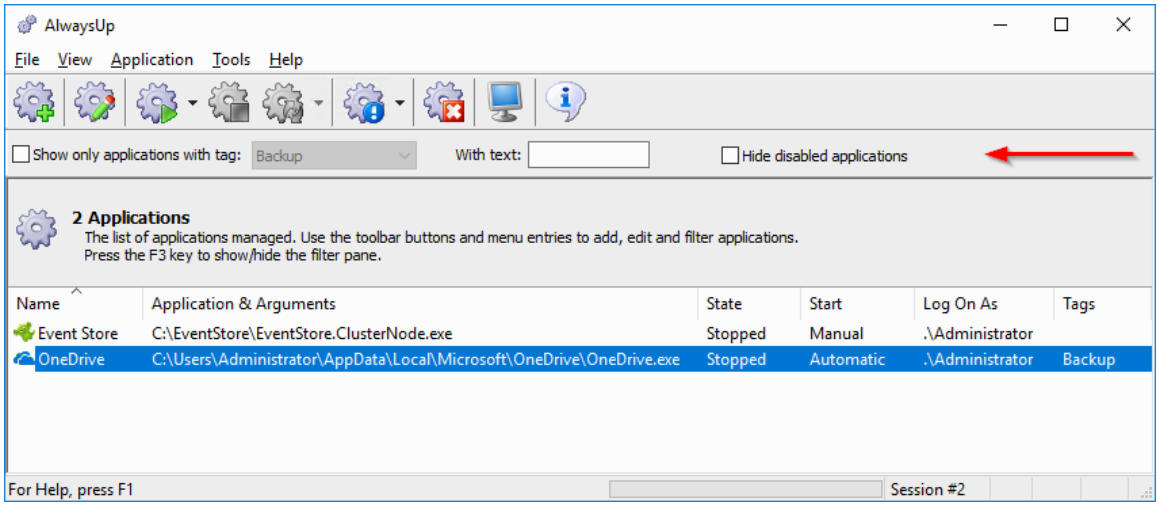
4.22. Filtering the List of Applications

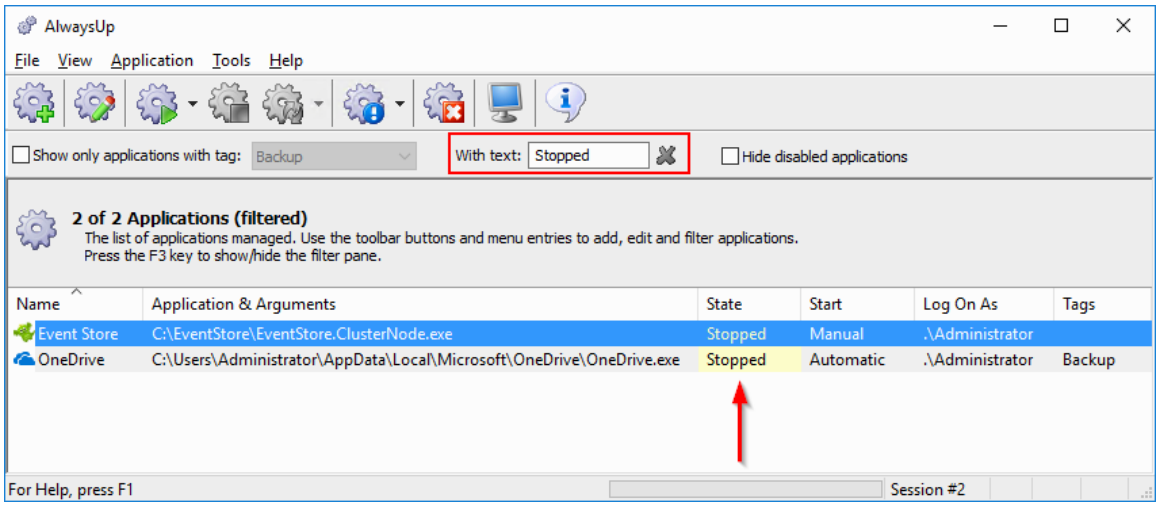
Customers managing many applications can use the **Filter Pane** to view a subset of applications. Select "View > Filter Pane" (or hit the F3 key) to show the Filter Pane, positioned directly underneath the toolbar:



The list of applications can be filtered in three ways:

1. By tag: Select a tag to show only applications having that tag
2. By text: Type in text to match only applications featuring that text
3. By disabled/enabled status: Check the box to show only applications that have not been disabled.

When searching by text, cells matching the text are highlighted:



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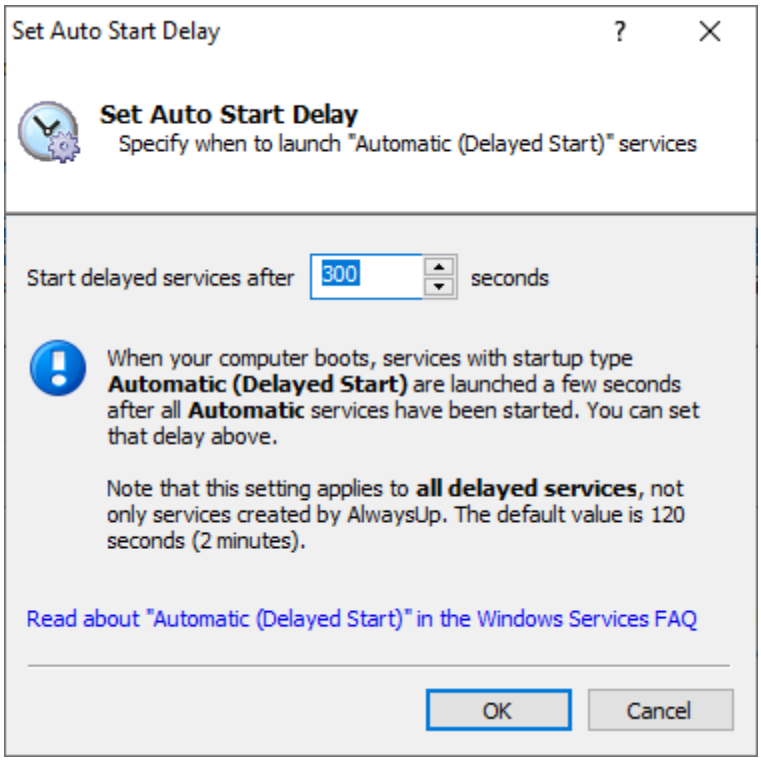
4.23. Setting the Delay for "Automatic (Delayed Start)" Services

By default, services with startup type set to "Automatic (Delayed Start)" are launched 2 minutes after all "Automatic" services have started. That default will be fine for most cases, but if your computer is very fast or very slow, you may want to tweak that value. You can do so from AlwaysUp.

Select **Set Auto Start Delay** from the **Tools** menu to bring up the window controlling the setting. Set your desired value and click OK to confirm your change:



As noted in the window, the setting applies to all "Automatic (Delayed Start)" services. It's not just for services created by AlwaysUp.

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5. Licensing, Registration & Pricing

AlwaysUp is free to evaluate for the first 30 days. After the trial period a license must be purchased to continue usage.

Prior to licensing, AlwaysUp will:

1) Show a "Registration" dialog when it is started. Follow the instructions there to purchase a license and register the application.
2) Emit registration reminders whenever an email is sent from the program or when a message is added to the event log.

If you find the program useful, we encourage you to license it. The small licensing fee charged will fund continued development of AlwaysUp and will entitle you to expedited support from Core Technologies Consulting LLC, the author of the software.

Please visit https://www.coretechnologies.com/products/AlwaysUp/
for the latest licensing and registration information. The software can be purchased there as well (Visa / MasterCard / PayPal accepted).

Enterprise, Site and royalty-free OEM licensing are also options; please see:
https://www.CoreTechnologies.com/products/AlwaysUp/AlwaysUp_Versions.html

Pricing is as follows (*subject to change – please check our site for the most current*):

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Quantity	Price per license (US dollars)
1	$49.99
2-9	$44.99 (a 10% discount!)
10-24	$39.99 (a 20% discount!)
25+	$34.99 (a 30% discount!)
Limited Site (50 PCs)	$999 (save over 60%!)
Site Plus (200 PCs)	$1,999 (save over 80%!)
Unlimited Site	$2,999 (unlimited savings!)
Limited Enterprise (100 PCs)	$1,999 (save over 60%!)
Enterprise Plus (300 PCs)	$2,799 (save over 80%!)
Unlimited Enterprise	$4,999 (unlimited savings!)
Limited OEM (25 PCs/year)	$1,299 (save over 60%!)
OEM Plus (100 PCs/year)	$2,799 (save over 80%!)
Unlimited OEM	$4,999 (unlimited savings!)

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6. Troubleshooting and Reporting Problems

Please consult the AlwaysUp FAQ for troubleshooting tips and answers to frequently asked questions:
https://www.coretechnologies.com/products/AlwaysUp/AlwaysUp_FAQ.html

If you encounter a problem while using AlwaysUp, please send email to:
support@CoreTechnologies.com

For a speedy resolution, please include the information outlined in this article:
https://www.coretechnologies.com/blog/support/alwaysup-help-details/

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7. Appendix I: Remote Desktop and Terminal Services Sessions

Whenever a user logs in to a Windows PC, he interacts with a "session" – his own private graphical sandbox with a dedicated desktop and set of windows. PCs with Terminal Services and Remote Desktop software allow multiple users to be logged in to a single PC simultaneously, with each user having his own private session and the illusion of being the only user of the PC. This privacy ensures that application windows in one session are not visible in (nor accessible to) another session. Each session is identified by a unique session ID.

Windows services can be affected by PCs supporting multiple sessions. When the PC boots and services are started, only one session is created and all services will run in that session. That session is known as "Session 0".

When AlwaysUp is running your application in Session 0, it is not visible in any other session. If you start a Remote Desktop Connection and you are granted another session (with a non-zero ID), you will not be able to interact with your application running in Session 0. Old tricks such as starting Remote Desktop with the "/console" flag will allow you to connect to the Session 0 on Windows XP and 2003, but will not do the job on newer versions of Windows as Session 0 is isolated there.

If your application is running in a different session, you can use AlwaysUp to run it in the current session and make its windows and tray icons available to you by selecting "Start <app> in this session" or "Restart <app> in this session" from the "Application" menu. Note that restarting will temporarily stop your application.

Additional information:
What is Session 0 Isolation?
https://www.coretechnologies.com/WindowsServices/FAQ.html#WhatIsSession0Isolation
Impact of Session 0 Isolation on Services and Drivers in Windows Vista
https://www.coretechnologies.com/WindowsServices/Microsoft-Impact-of-Session-0-Isolation-on-Services-and-Drivers-in-Windows-Vista.pdf
Terminal Services Sessions
https://docs.microsoft.com/en-us/windows/desktop/TermServ/terminal-services-sessions

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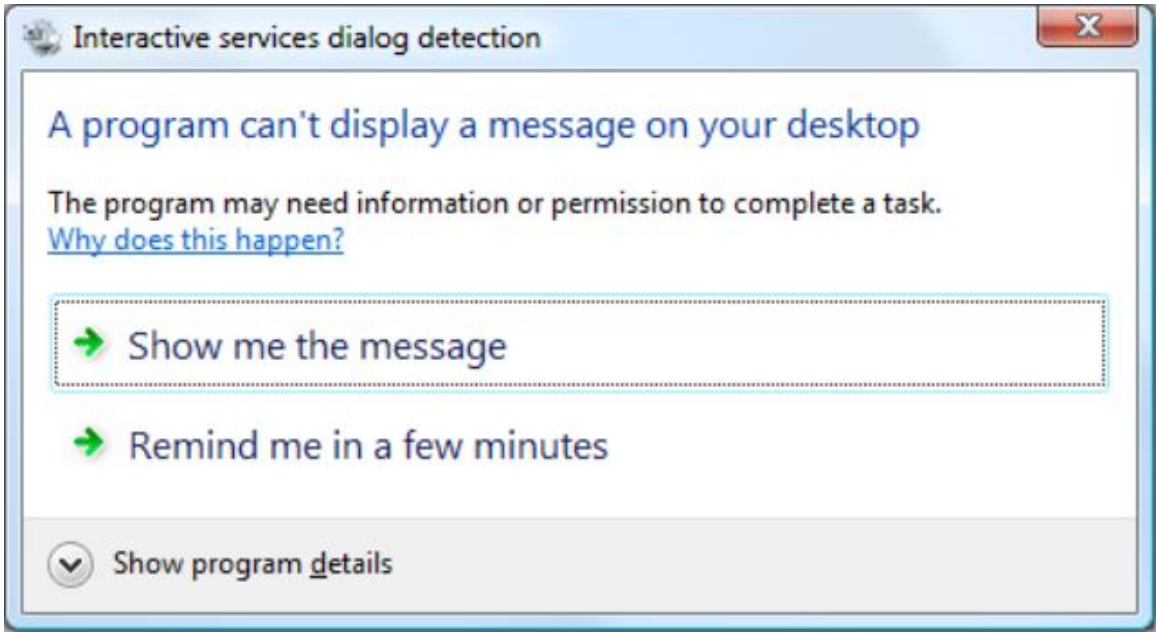
8. Appendix II: Session 0 Isolation

In 2006, along with the release of Windows Vista, Microsoft introduced several changes for Windows Service applications, described in this technical document: https://www.coretechnologies.com/WindowsServices/Microsoft-Impact-of-Session-0-Isolation-on-Services-and-Drivers-in-Windows-Vista.pdf

This video from Microsoft demonstrates how these changes impact Windows Service applications that show a user interface: https://www.coretechnologies.com/products/AlwaysUp/MSDN--Vista-Service-Isolation.wmv

To summarize, Windows will run all Service applications on an "isolated desktop" called "Session 0". Windows coming from a Service application will not be shown alongside other windows on your desktop.

In versions of Windows released before 2018, Session 0 is accessible. Whenever a Service application running in Session 0 wants to display a window, the "Interactive services dialog detection" window will be displayed (after flashing on the taskbar):



Clicking on the "Show me the message" button will switch you to the isolated Session 0 desktop where you can interact with the Service application. You will be able to switch back to your regular desktop when you are done.

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In versions of Windows released in and after 2018 (i.e. Windows 11, 10 and Server 2019), Session 0 is not accessible. There is simply no way to see your application running as a service in Session 0. This blog article digs into the details.

Applications run as a Windows Service by AlwaysUp are bound by these restrictions. If your application needs to show a window, it will be shown (by default) on the Isolated Session 0. Fortunately, this is not the end of the story…

8.1. How to Show Your Application's Windows on the Current Desktop

After logging in, you can instruct AlwaysUp to run your application in the current session/desktop and make its windows and tray icons available to you by selecting "Start <app> in this session" (or "Restart <app> in this session") from the "Application" menu. Note that restarting will temporarily stop your application.

AlwaysUp will continue to run your application on your desktop until you log out and the session closes, at which point your application is restarted and "returned" to Session 0.

Note that when your computer boots, only Session 0 is available. AlwaysUp will start your application there.

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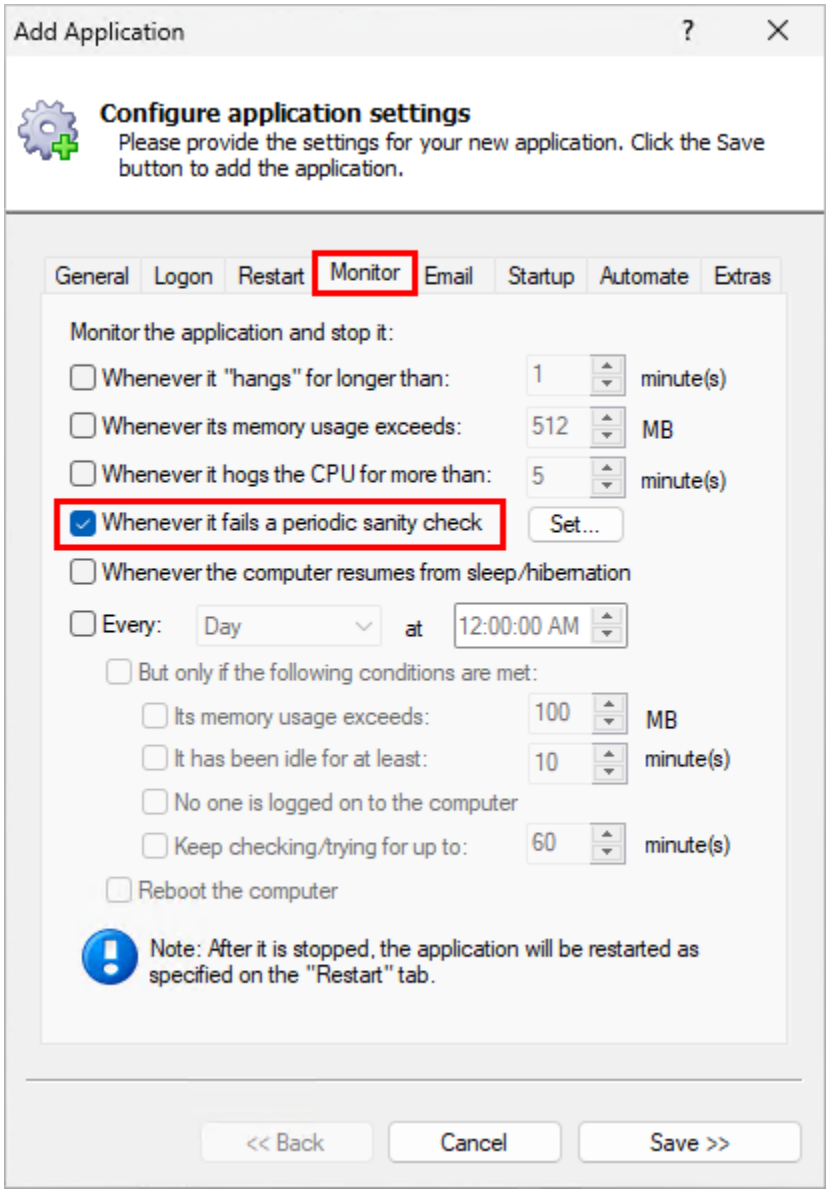
9. Appendix III: The Sanity Check Feature

Sometimes, even though your application says it's running, it is not actually doing its work. For those tricky situations, you may be able to employ advanced failure detection (i.e. a "sanity check") to help AlwaysUp expose the problem and automatically recycle your application.

You can activate a sanity check from the Monitor tab. Start by checking the **Whenever it fails a periodic sanity check** box:



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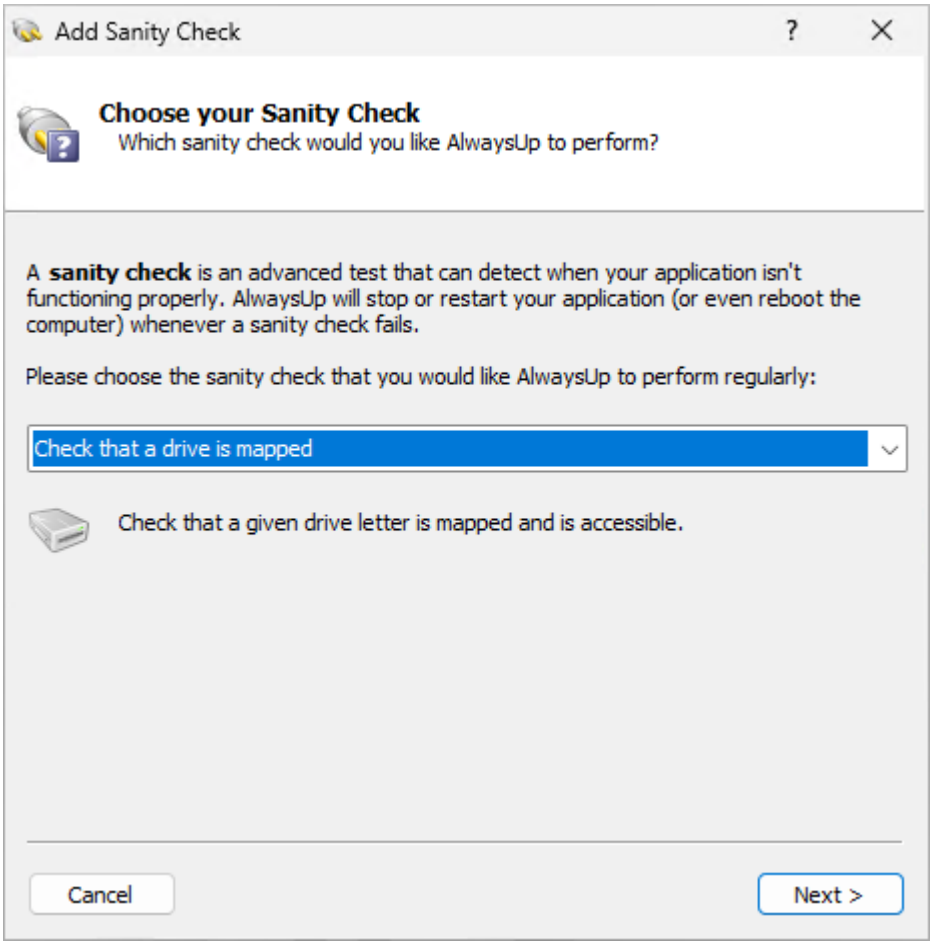
Next, click the **Set** button to summon the "Add Sanity Check" wizard, which will guide you step by step through the configuration process.

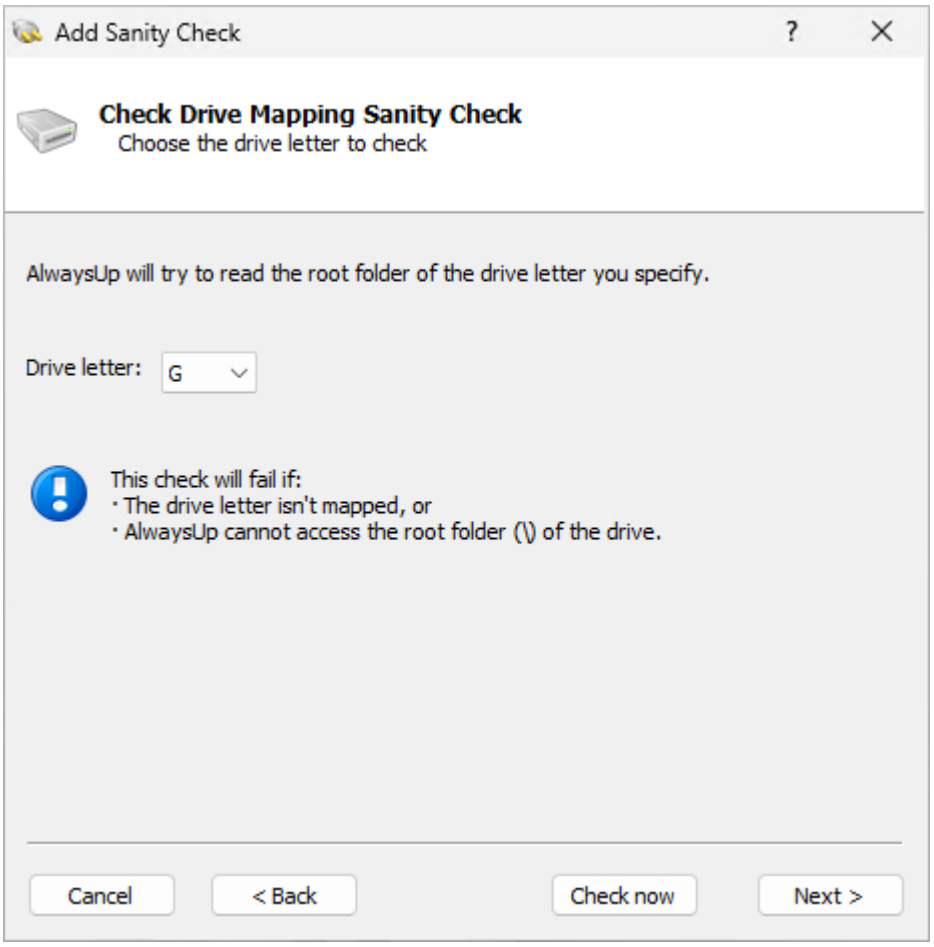
The following sanity checks are available.

9.1. Check that a drive is mapped

Does your application rely on a specific drive to do its work? Or does it map a drive letter for other programs? If so, this sanity check may be helpful because it restarts your application whenever it detects that a given drive isn't available.



You must specify the drive letter to be checked:



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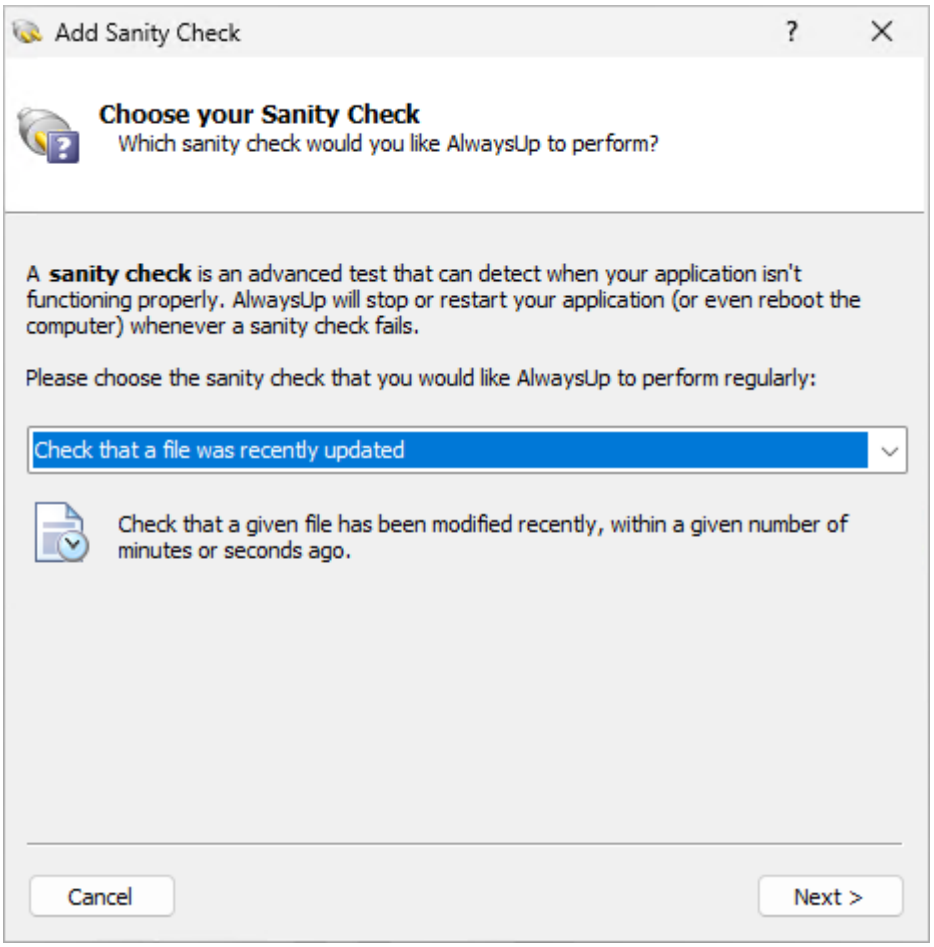
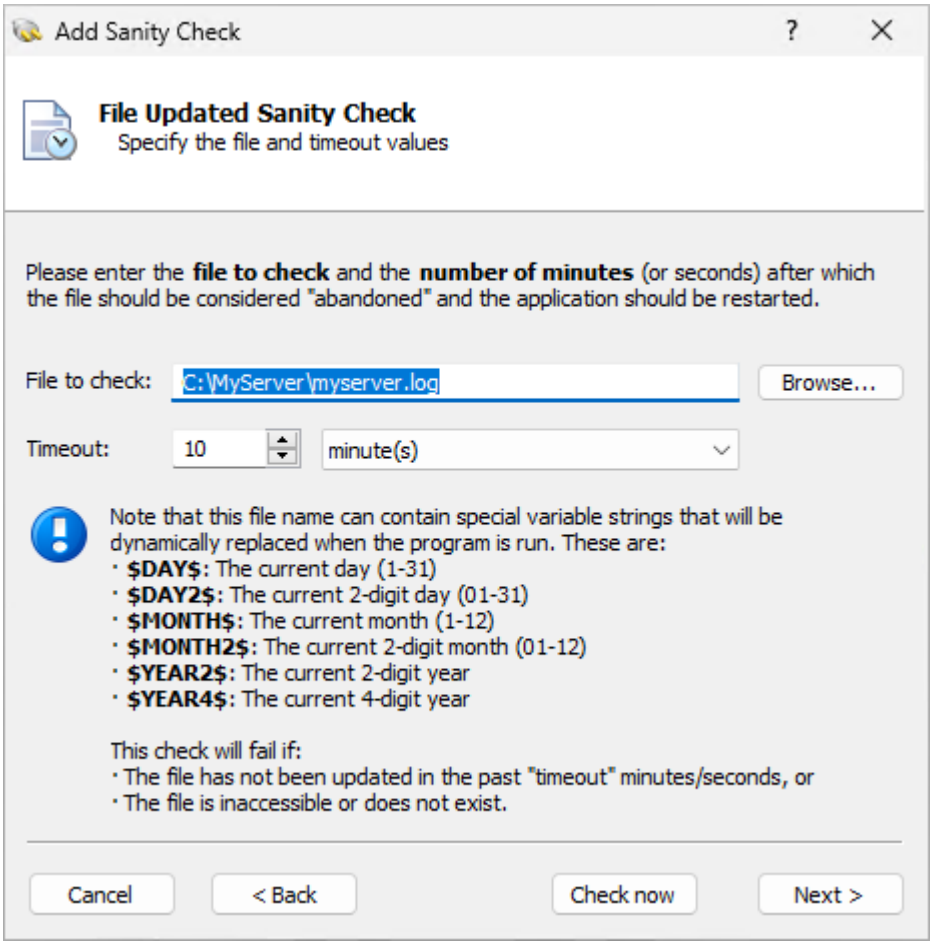
9.2. Check that a file was recently updated

This sanity check may be helpful if your application should be considered failed if it stops writing to a file.

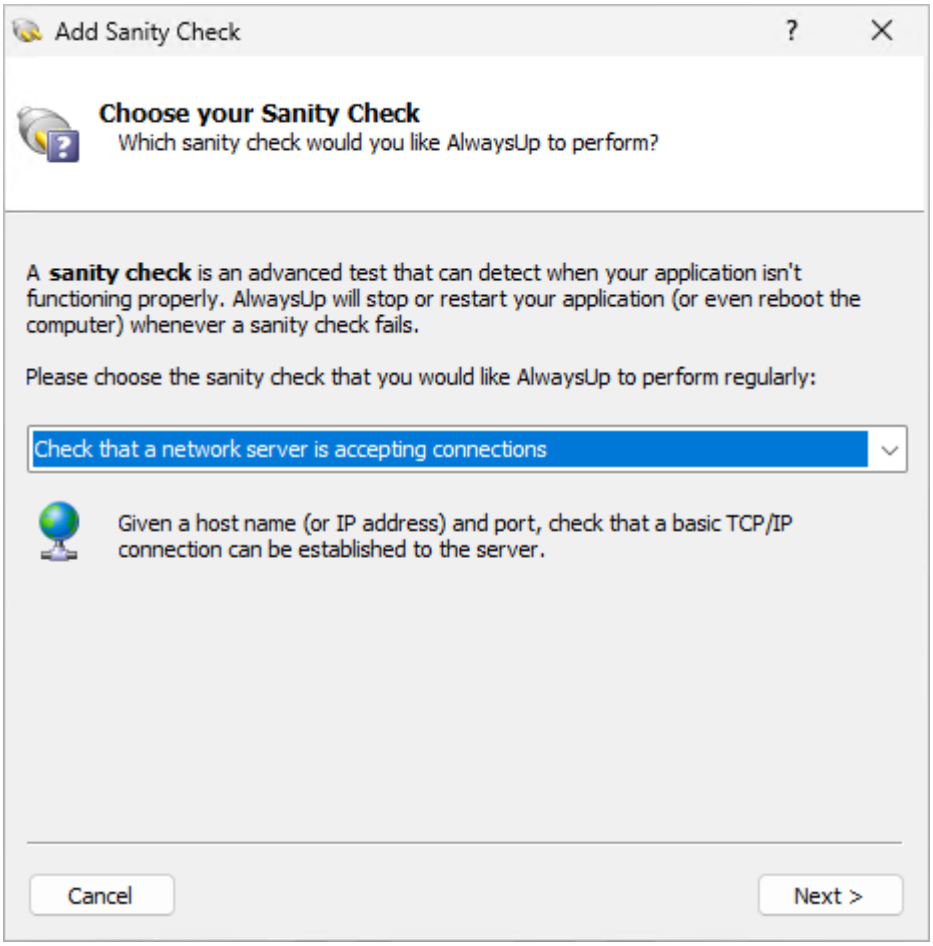


You must specify the full path to the file to be checked and the time after which the file should be considered "stale":

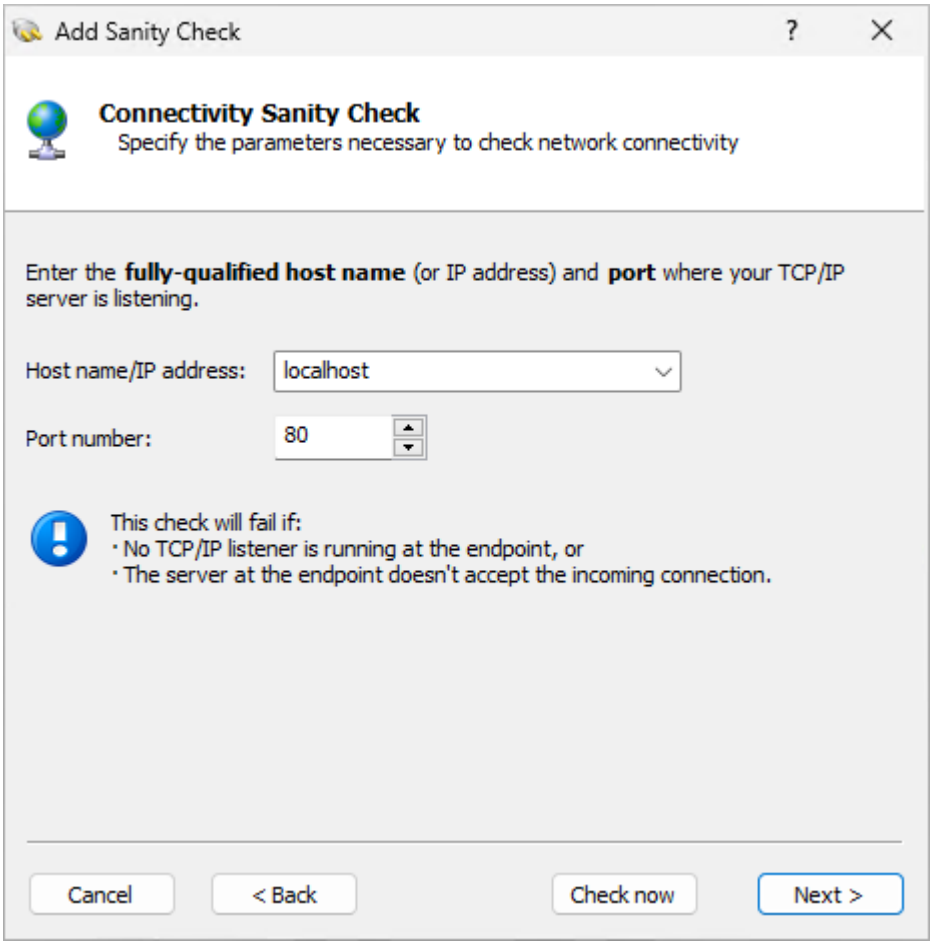


9.3. Check that a network server is accepting connections

This sanity check will trigger a failure if a given endpoint is not accepting TCP/IP connections. It's good for any server providing an internet service (e.g. FTP, SSH, etc.) to other devices.

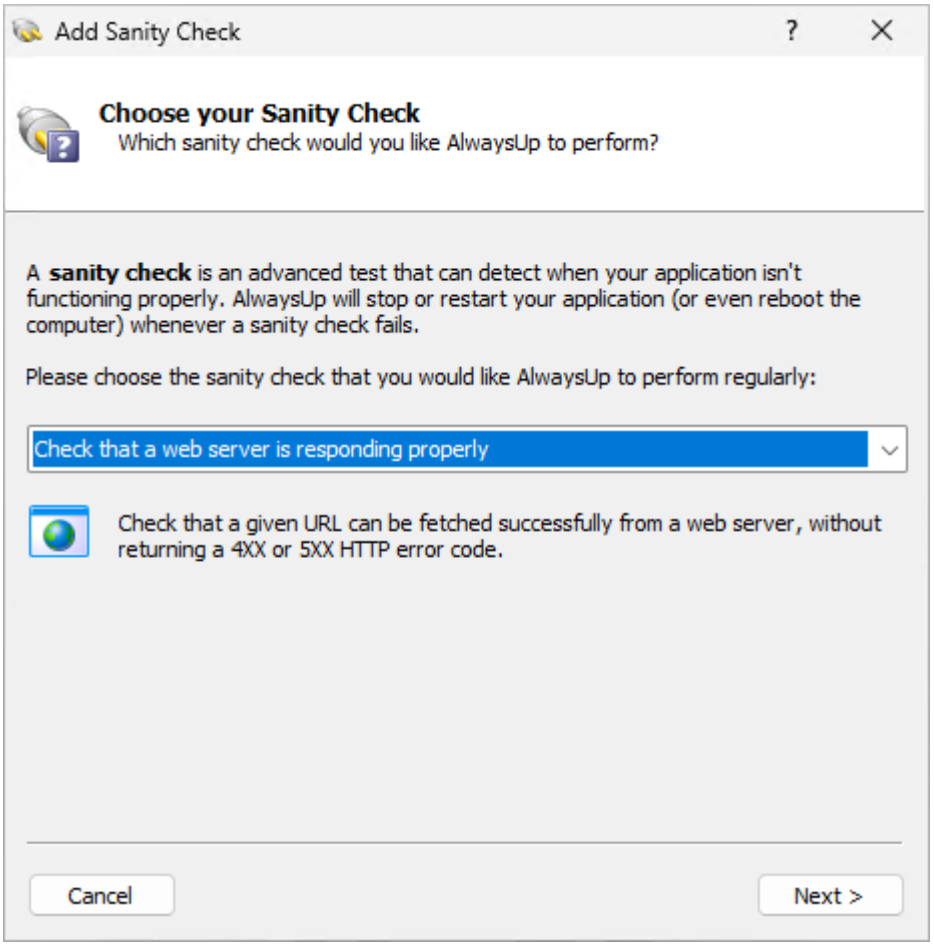


You must supply a host name (or IP address) and port number of the endpoint to be checked:

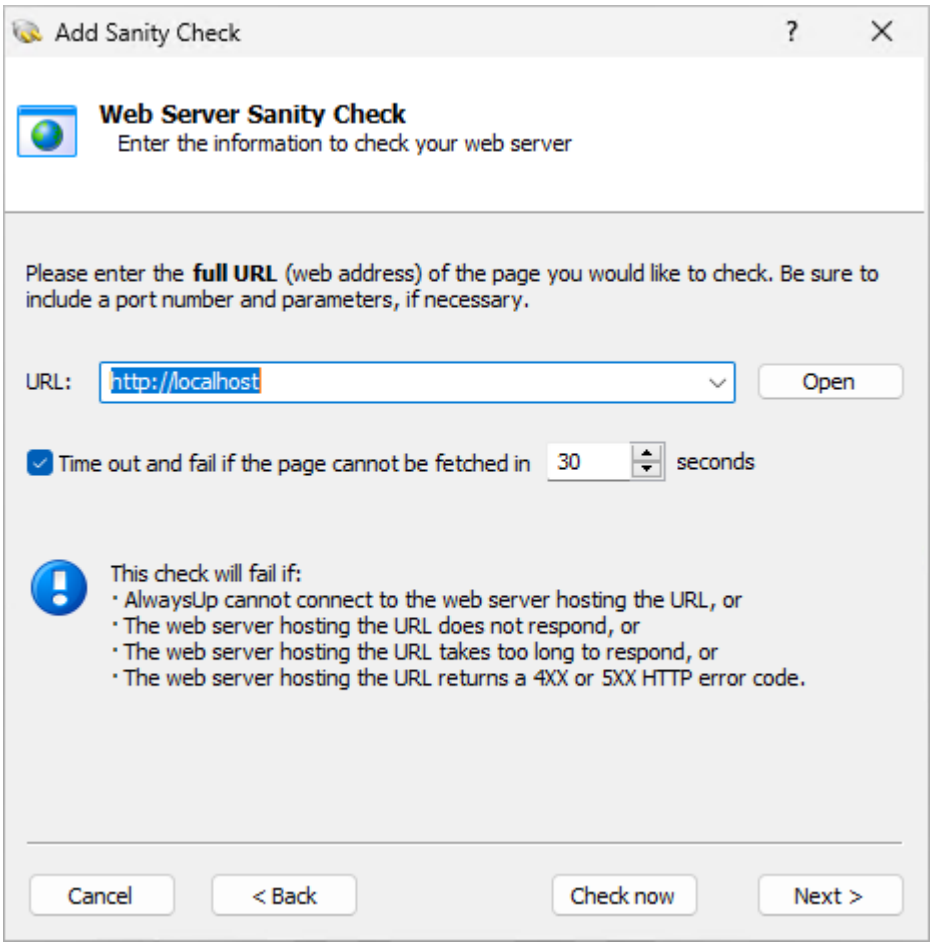


9.4. Check that a web server is responding properly

If your application hosts a web server, this sanity check will help to detect problems serving web pages. The check will fail if your server doesn't respond or returns a 4XX or 5XX HTTP error code.



You must specify the URL that the sanity check will fetch:



You can also set a timeout value, to indicate how to handle a sluggish web server that takes a long time to respond. By default, the sanity check will fail if the server doesn't respond within 30 seconds.

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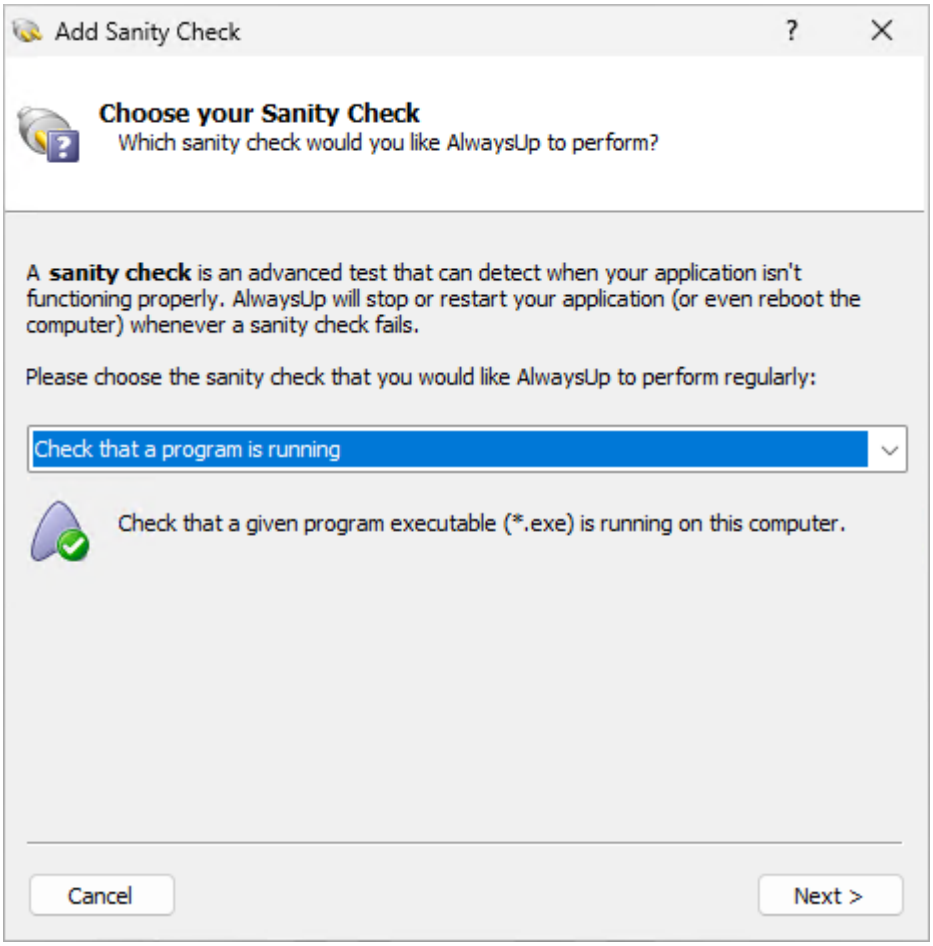
9.5. Check that a program is running

Does your application depend on an important "helper" program to function properly? If so, AlwaysUp can periodically check if the helper program is running and restart your application if the program isn't active.



You must specify the name of the helper program's executable file to enable the check:

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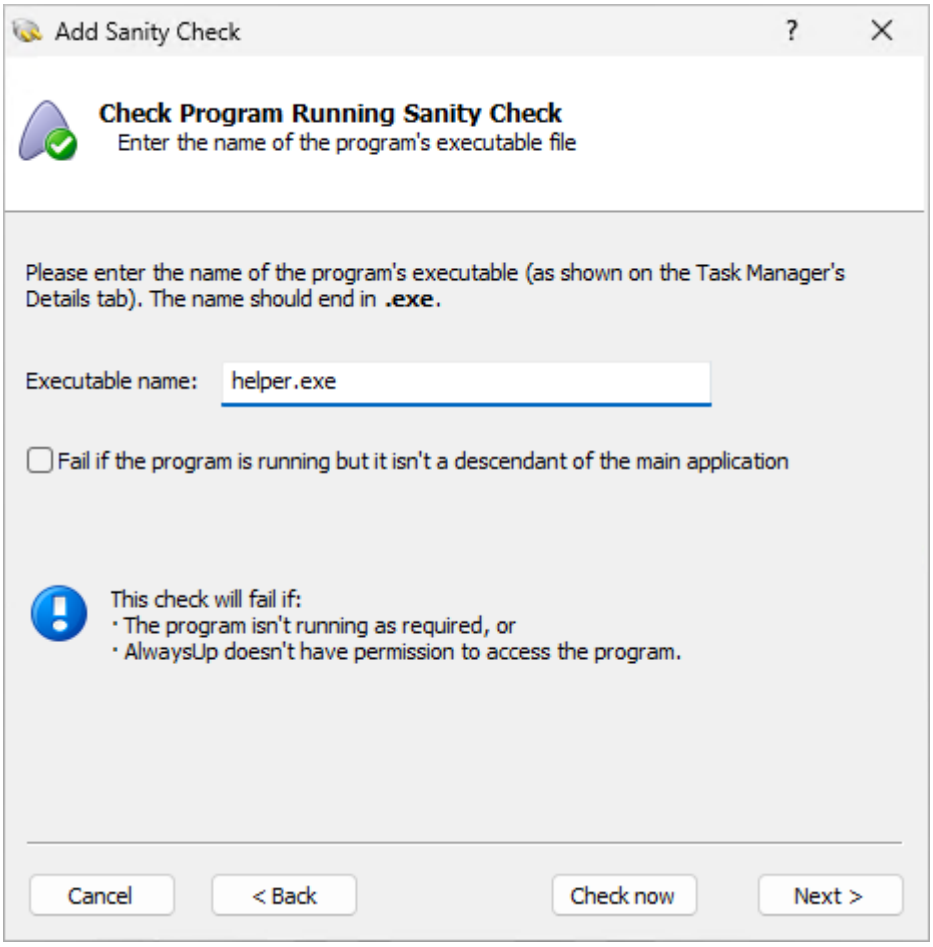
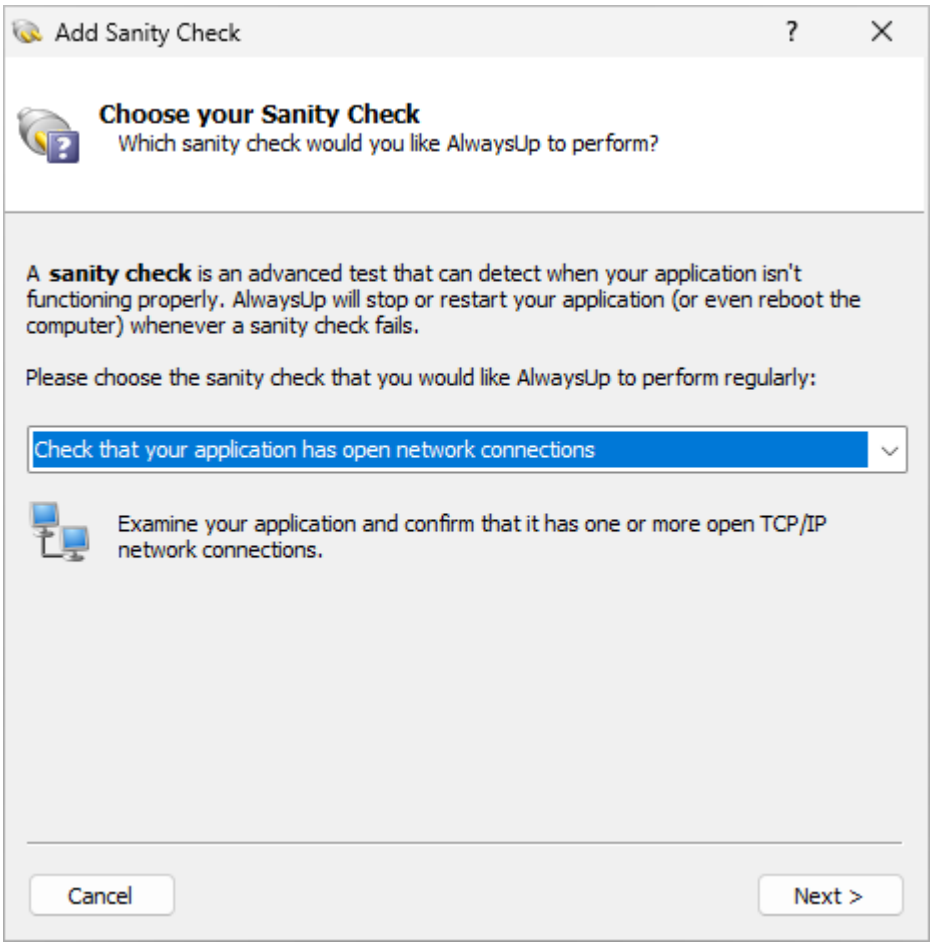


For example, to check that Microsoft Word is running, enter "winword.exe" (no quotes).

9.6. Check that your application has open network connections

Is your application a typical server that accepts TCP/IP requests over the network? If so, you may want to configure the network connections sanity check. With that in place, AlwaysUp will automatically restart your application if it has no inbound or outbound connections.



You get the opportunity to specify what types of network connections (outbound or inbound) to monitor:

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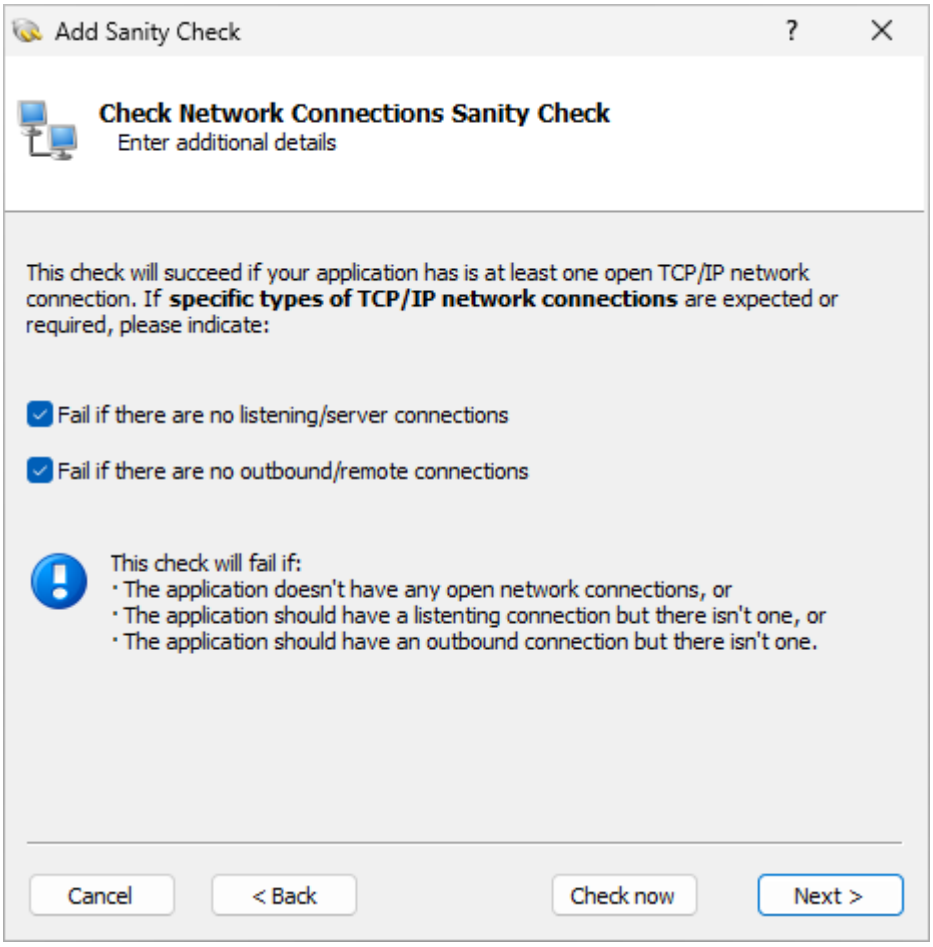
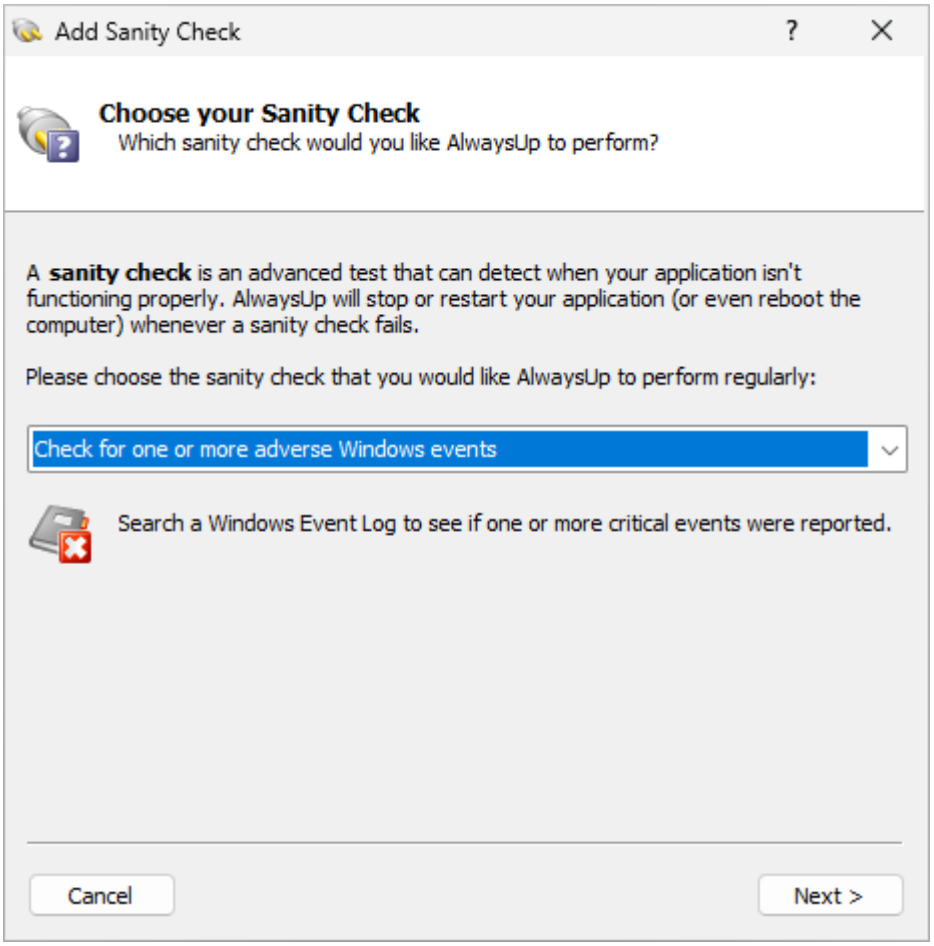


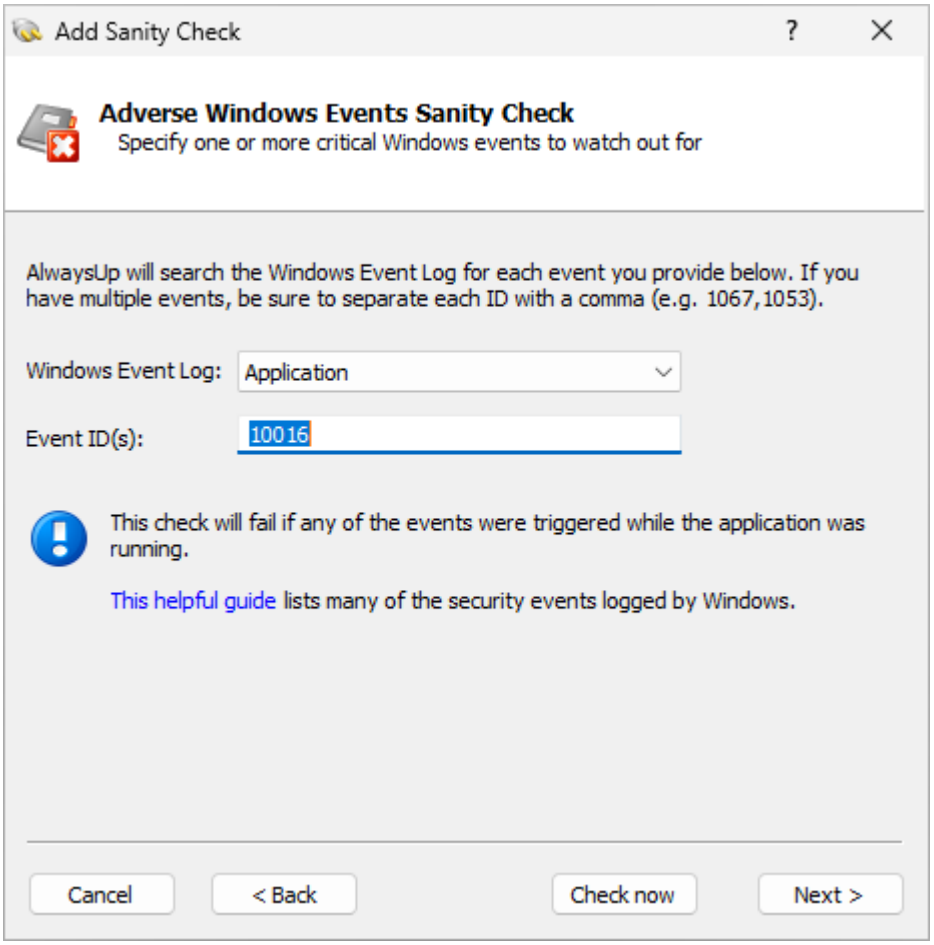
For a simple server, you probably want to check for listening/server connections only.

9.7. Check for one or more adverse Windows events

Does your application stop working when a specific event shows up in the Windows Event Viewer? If so, you should configure this sanity check to watch for that event and restart your application whenever it's reported.

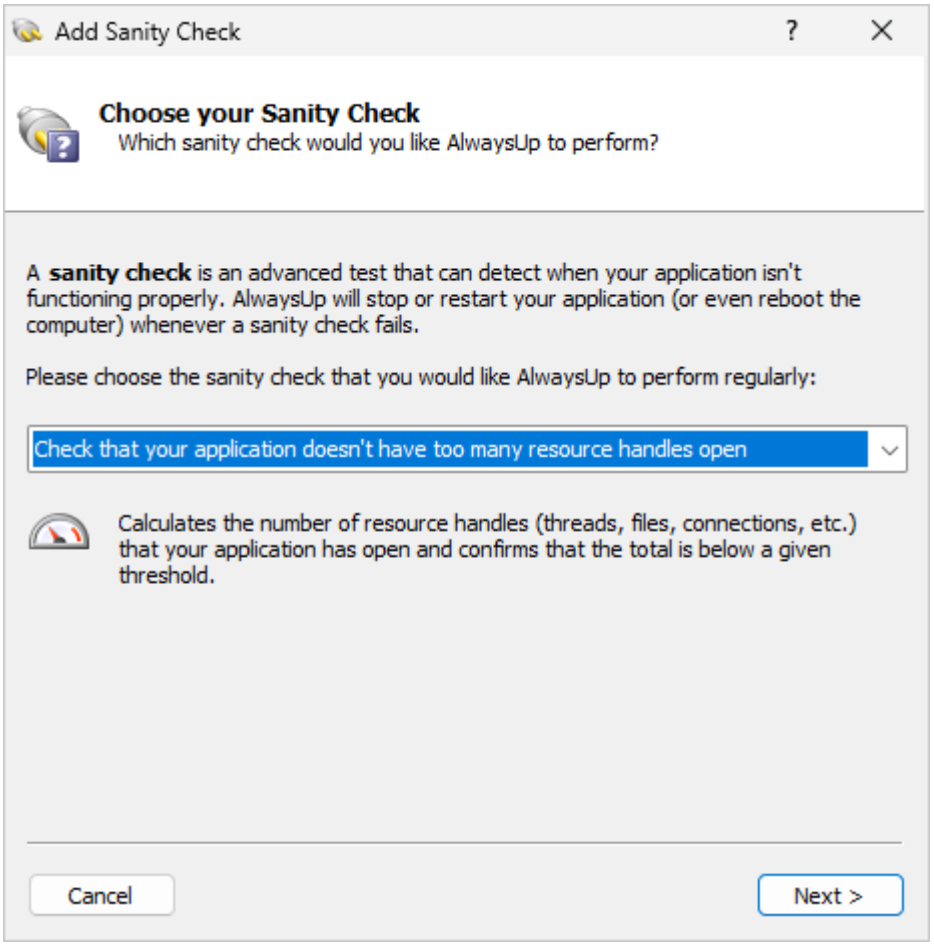


You'll have to choose the Windows Event Log to monitor as well as the events that signal trouble. If there are multiple events, separate the ID's with commas (like 10016,7040,24).

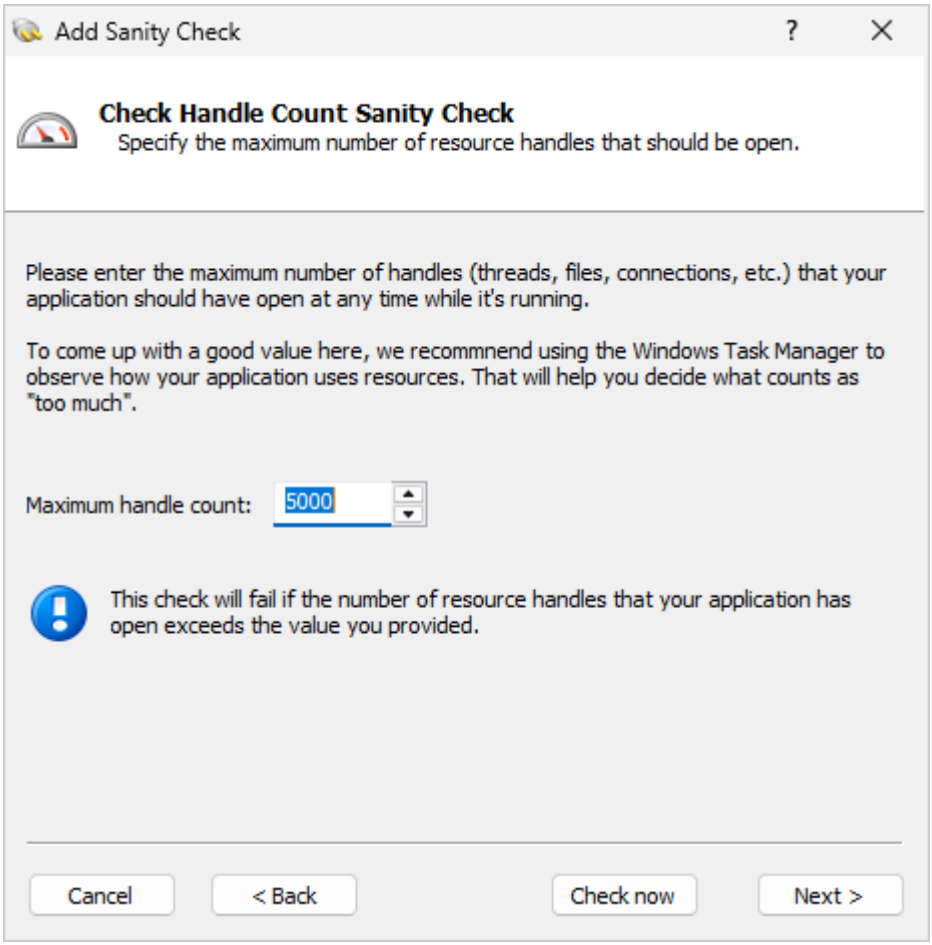


9.8. Check that your application doesn't have too many resource handles open

Does your application leak resources, like threads, files and other operating system entities? If so, this sanity check will restart your application if it holds on to too many resource handles.



You'll have to set the maximum number of handles that your program should have open at any time:



Be sure to observe your application (in Windows Task Manager) to understand how it uses resource handles and what would be an appropriate limit in your situation. Because AlwaysUp will recycle your application when it steps over the threshold you provide, you should be wary of setting the value too low.

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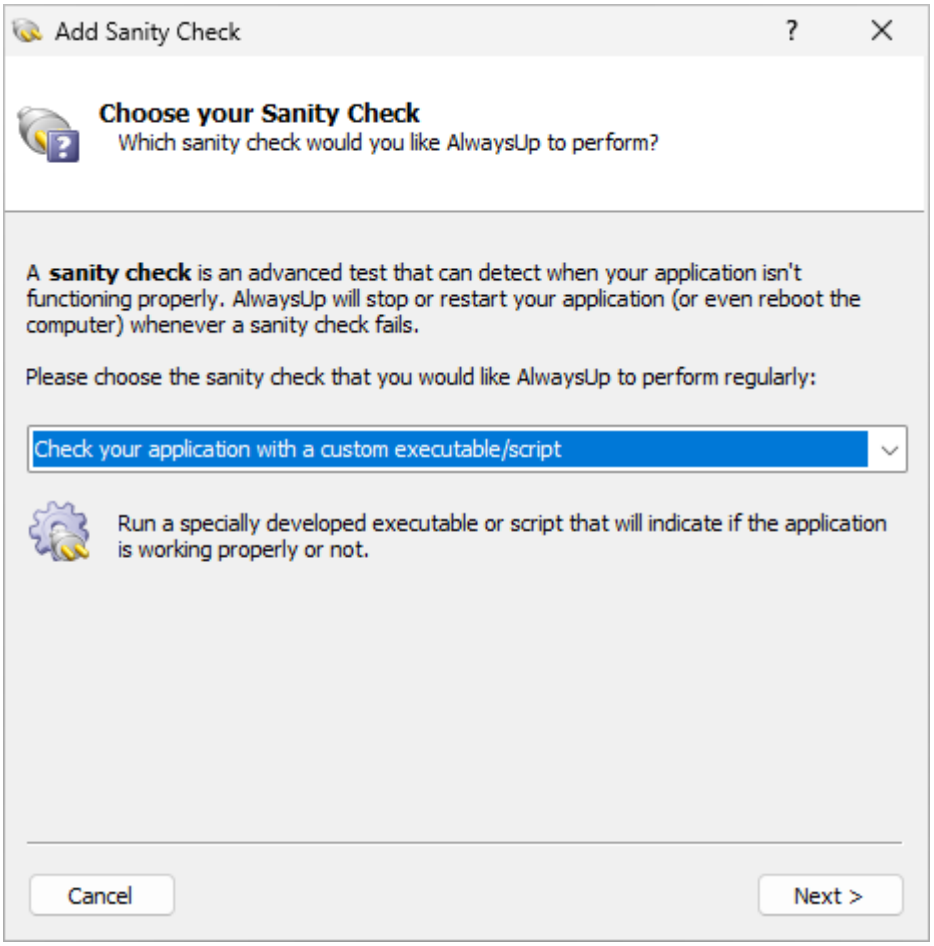
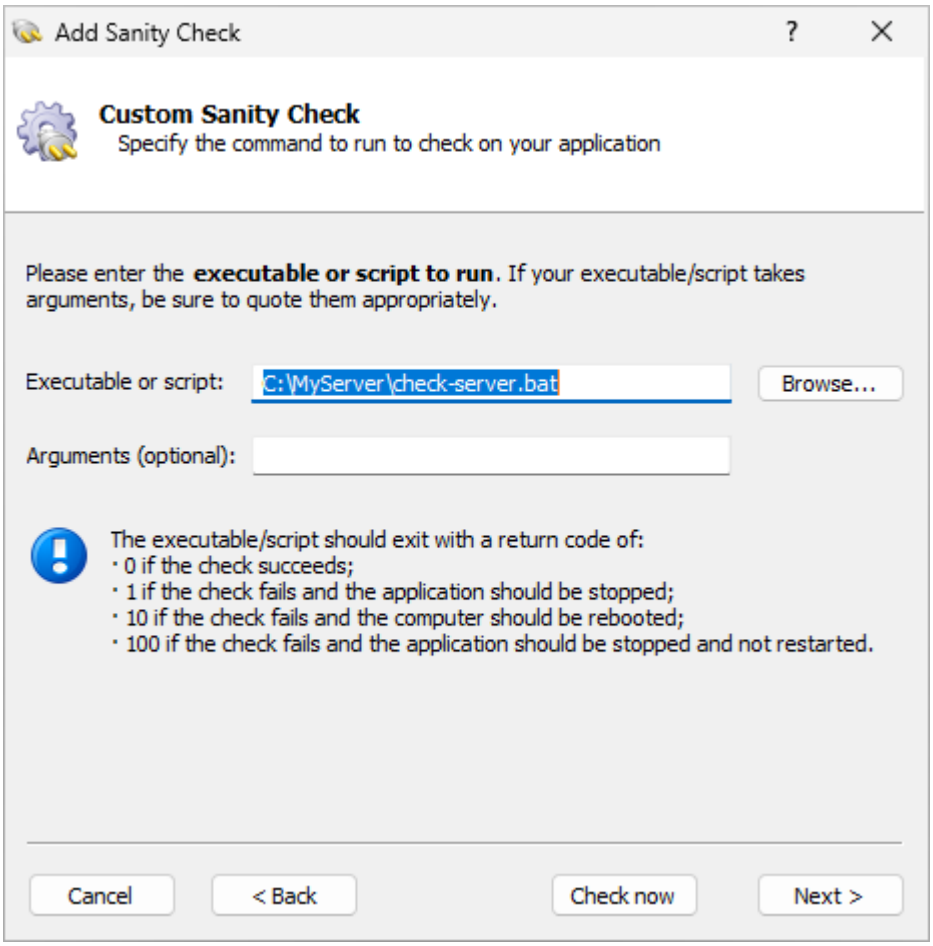
9.9. Check your application with a custom executable/script

For the ultimate in extensibility, AlwaysUp can run your own specially designed executable or batch file to detect if the application is functioning normally.



Specify the full path to your utility and any arguments it needs:



The custom sanity check program should exit with a return code of:

- 0 when the check succeeds, to signal that the application is working as expected;
- 1 when the check fails and the application should be stopped and restarted as you have configured;
- 10 when the check fails and the computer should be rebooted;
- 100 when the check fails and your application should be stopped **and not restarted**;
- any other value when the check fails due to an error independent of the application being monitored (such as an error internal to the utility), or to simply indicate failure without causing a restart.

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In the last case, the application is not restarted but a message is written to the event log (and an email is sent if so configured).

Note that if the sanity check utility fails to complete in 120 seconds, the application will be restarted.

The popular "ConnectToSocketSanityCheck" program (with full source code) is available in the "SanityCheck" sub-directory. Given a host and port on the command line, it returns 0 if a socket could be opened, 1 if the socket could not be opened, and -1 if there was an internal error initializing the sockets API. It can be used to check if a TCP/IP application is accepting connections.

Appendix VIII lists a few special variables that can be used when configuring the command line for your sanity check.

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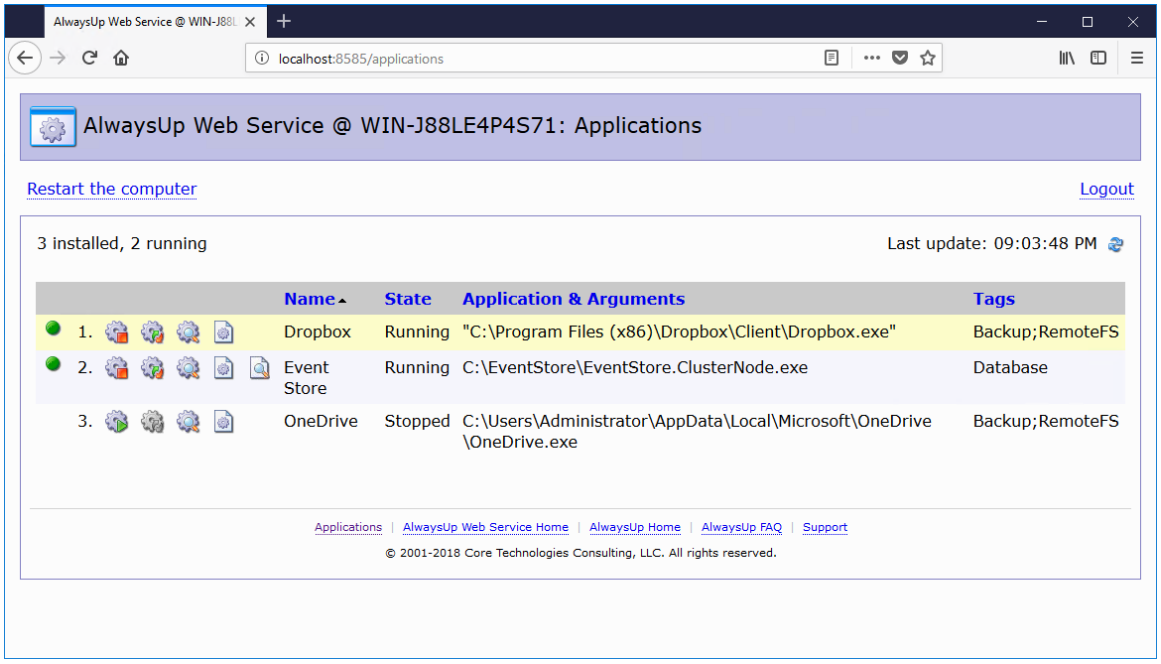
10. Appendix IV: AlwaysUp Web Service

AlwaysUp Web Service is a free add-on program that allows you to control AlwaysUp from your web browser. Find out more and download the latest version at:
https://www.CoreTechnologies.com/AlwaysUp/AlwaysUpWebService

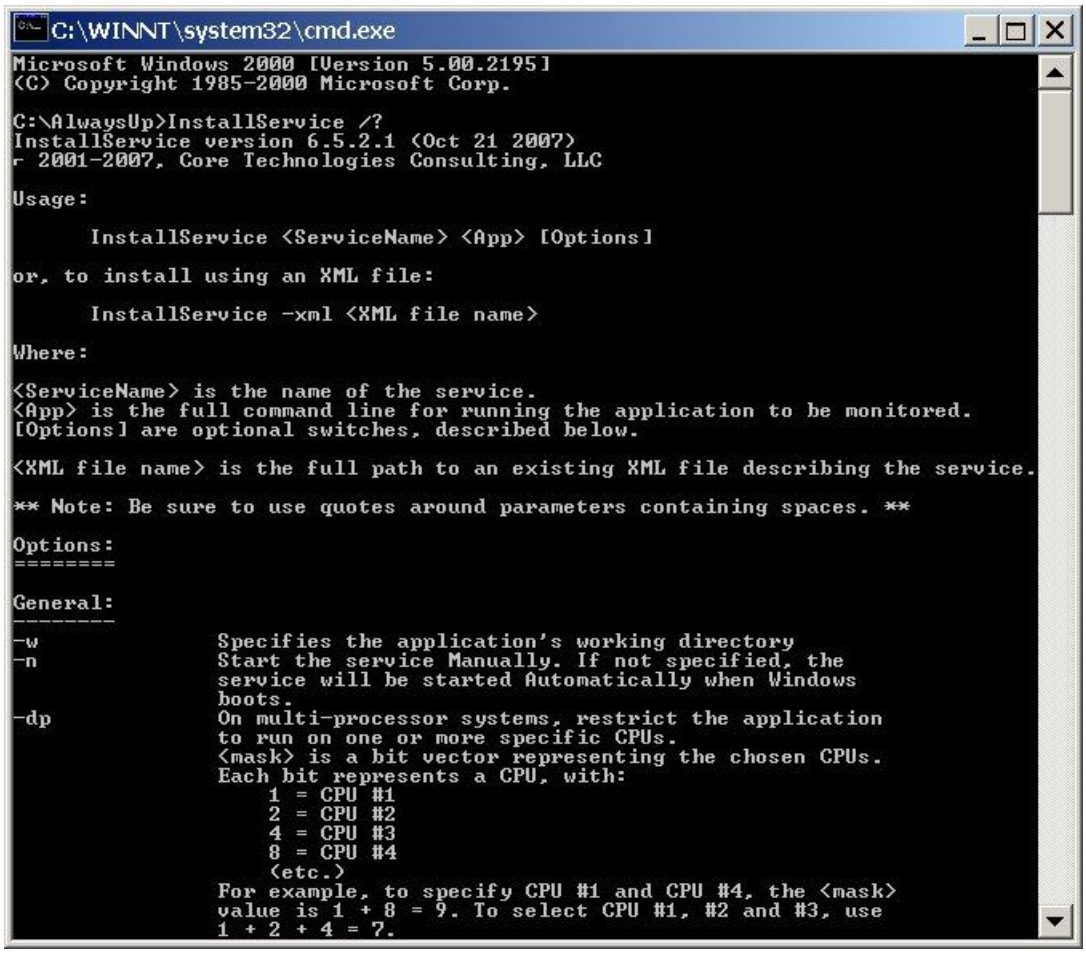


11. Appendix V: AlwaysUp Command Line Tools (CLT)

The AlwaysUp Command Line Tools (CLT) package is designed for developers and application integrators looking to discreetly keep their applications available 24x7. It delivers the full power and sophistication of the "conventional" AlwaysUp GUI product, but entirely from the Windows command line.

Instead of devoting your precious development resources to re-writing your application to operate as a Windows Service, use AlwaysUp CLT to achieve that objective in an afternoon!

Distribution is royalty free.



Find out more about AlwaysUp CLT and download the free 30-day trial at: https://www.coretechnologies.com/products/AlwaysUp/AlwaysUpCLT/

12. Appendix VI: AlwaysUp Event Log Messages

As is the convention with Windows Services, AlwaysUp reports information, warnings, and errors to the Windows Application Event Log. That log is accessible through the Control Panel Event Viewer applet.

Each entry is logged on behalf of the related AlwaysUp application. For example, if you have an application called **"MyServer"**, then the Event Log will have entries with **"MyServer (managed by AlwaysUpService)"** as the designated source.

The following web page presents the various messages that can be logged, along with more detailed information for each situation:

https://www.coretechnologies.com/products/AlwaysUp/AlwaysUp_EventLog.html

12.1. How to Suppress Writing to the Event Log

Event logging can be entirely disabled or limited by category via a registry key. To do so for a specific application/service:

1. Start the Registry Editor, Regedit.exe.
2. Navigate to **HKEY_LOCAL_MACHINE\ SYSTEM\CurrentControlSet\Services**
3. In the tree on the left, click on the service that you wish to modify. If your application is called "Notepad", then look for "Notepad (managed by AlwaysUpService)".
4. From the menu, select "Edit > New > DWORD (32-bit) value".
5. Rename the new value on the right to **"EventLogMask".**
6. Right-click on that name and select "Modify..."
7. Set the value to:
   - **0** to disable all writing to the event log
   - **1** if you want only errors
   - **3** if you want errors and warnings
   - **7** if you want errors, warnings and information (the default)
8. Click OK to record the value.
9. Close the Registry Editor.

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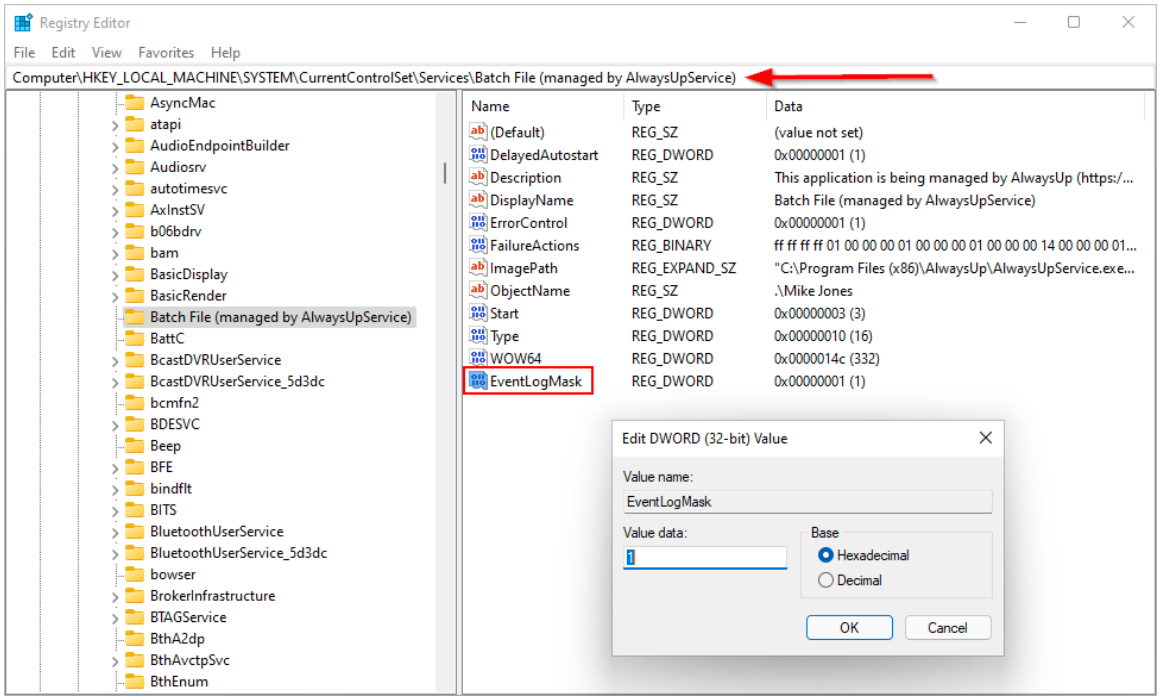

The changes will take effect the next time you restart your application in AlwaysUp (or reboot your PC).

You can affect all AlwaysUp applications by setting the EventLogMask value in **HKEY_LOCAL_MACHINE\SOFTWARE\ Core Technologies Consulting\AlwaysUp** (or **HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Core Technologies Consulting\AlwaysUp** on 64-bit machines) instead. However an individual service's setting, when present, will override that master setting.

Note: *The activity report described in section 4.12, which uses the records written to the event log, may not be accurate when not all events are written. For example, the number of times the application is started will be incorrect if information events are disabled.*

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13. Appendix VII: How to Run Popular Applications with AlwaysUp

While many of our customers run their own internally developed applications with AlwaysUp, a large number use AlwaysUp to convert well-known applications to run as Windows Services. As a guide for future customers, our technical team has created step-by-step "How-To"s for more than 160 commonly used programs including:

- MetaTrader
- Java Applications
- Batch Files
- Alpha Five Web Server
- Microsoft Outlook
- Tomcat
- Dropbox
- VirtualBox
- JBoss
- TeamSpeak Server
- VMware Player
- Mozilla Firefox
- Python Scripts
- Nginx
- OpenOffice
- FishEye
- Cute FTP
- Perl
- Wireshark
- HFS
- Mozilla Thunderbird
- Ruby Scripts
- Livedrive
- Selenium Remote Control Server
- Plex Media Server
- Google Drive
- Fiddler
- Netcam Watcher Pro
- FitNesse
- SugarSync
- PDFCreator

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- Gbridge
- Microsoft SkyDrive
- MAPI Applications
- Google Chrome
- Internet Explorer
- Kiosks Applications
- PowerShell
- Visual DataFlex
- Growl
- Tracd
- Cubby
- Node.js
- Audiogalaxy
- SpiderOak
- Lighttpd Web Server
- Adobe AIR
- Apple iTunes
- iCloud Control Panel
- Apache Derby
- Play Framework Applications
- Memcached
- PuTTY
- Sage ACT! Pro
- Evernote
- Microsoft Access 2007
- Jottacloud
- PHP Scripts
- Buzof
- Apache Solr
- XBMC
- Apple Safari
- SyncToy
- WinForms GUI
- Syncdocs
- Tonido
- SkyDrive Pro
- Box Sync
- Dart Scripts
- odrive
- OpenOffice
- Microsoft Outlook 2010

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- BoxCryptor
- Aria2
- WD My Cloud
- pyLoad
- Microsoft Excel 2013
- AutoIt Scripts
- Microsoft Outlook 2013
- AeroFS
- Microsoft Excel 2010
- Microsoft Word 2010
- Visual FoxPro Programs
- MS Access 2010
- Syncthing
- WinSCP Scripts
- Calibre Server
- ZooKeeper
- AutoHotkey
- RealtimeSync
- TwoToneDetect
- SpamAssassin
- SimpleHTTPServer
- Avuna HTTPD
- Docker Daemon

The full list of applications is available at our web site:

https://www.coretechnologies.com/products/AlwaysUp/Apps/

Please let us know if you would like us to create a tutorial for your application!

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14. Appendix VIII: Special Command Line & Input Variables

AlwaysUp is able to pass your sanity check program (and any of the other commands invoked to support your application) one or more "special" variables. Compose your command line with the appropriate string and AlwaysUp will make the substitution before invoking your program.

Replacement String	Replaced With
$ALWAYSUP_APPPID	The program identifier (PID) of your running application, as seen in the Task Manager, or -1 if the application is not running.
$ALWAYSUP_APPEXENAME	The name of the executable run to invoke your application. (Just the name, not the full path.)
$ALWAYSUP_APPNAME	The name of your application in AlwaysUp.
$ALWAYSUP_APPPATH	The full path to the application that AlwaysUp runs.
$ALWAYSUP_APPSTARTTIME	The time when the application being monitored was started, in the format "YYYY/MM/DD HH:MM:SS". This value is the empty string if the application is not running.
$ALWAYSUP_APPUPTIME	The number of seconds that have elapsed since the application being monitored was started. This value is -1 if the application is not running.
$ALWAYSUP_APPRUNNUMBER	The number of times AlwaysUp has started your application. This will be 0 before AlwaysUp starts your application and will increase by 1 each time that AlwaysUp starts/restarts your program.
$ALWAYSUP_SERVICENAME	The name of the service created by AlwaysUp. This will be the name of your application, plus a suffix of " (managed by AlwaysUpService)".
$ALWAYSUP_SERVICESTARTTIME	The time when the service created by

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	AlwaysUp was started, in the format "YYYY/MM/DD HH:MM:SS".
$ALWAYSUP_SERVICEUPTIME	The number of seconds that have elapsed since the service created by AlwaysUp was started.

For example, to have AlwaysUp pass your Sanity check program the application's program identifier (PID), then your command line might resemble this:

C:\myserver\my_check.exe $ALWAYSUP_PID

If your main application is running with PID 563, then your Sanity program will be invoked like this:

C:\myserver\my_check.exe 563

14.1.1. Using Variables in Input Fields

Some of the special variables can be used in input fields when configuring your application in AlwaysUp. Using variables can be a convenient option when running many configurations that follow a predictable format.

For example, if you want to specify the name of the AlwaysUp application as a variable in the working directory, you could include $ALWAYSUP_APPNAME in the "Start in directory" field on the "General" tab:

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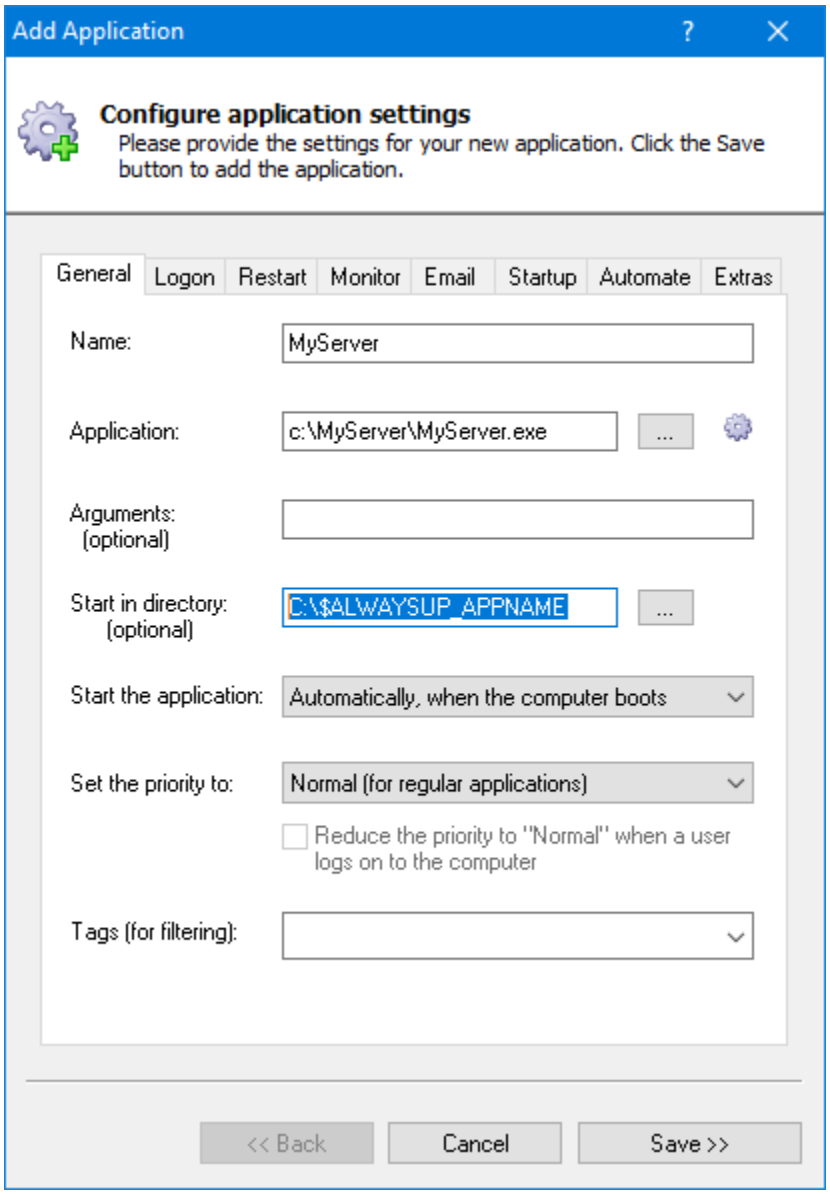

In this scenario, the application would be started in the "C:\MyServer" directory (because **$ALWAYSUP_APPNAME** evaluates to **MyServer**).

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