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Keyboard Filter

The Keyboard Filter EEF enables you to block entry of unwanted keys or key combinations. Keyboard Filter includes many commonly used predefined key filters. In addition, you can easily create your own custom key filters for your device.

In this Section

[Keyboard Filter Overview](#)

Provides information about Keyboard Filter including common usage, limitations, and event logging.

[Keyboard Filter Configuration](#)

Provides information about how to configure Keyboard Filter by using Local Group Policy Editor.

[Predefined Key Filters](#)

Provides information about the predefined filters in Keyboard Filter.

[Virtual Key Reference](#)

Provides reference information for Virtual Keys.

[Event Log Reference](#)

Provides reference information for Keyboard Filter event logs.

Keyboard Filter Overview

Keyboard Filter provides a predefined list of keys and key combinations that you can block on your device (for example, Ctrl-Alt-Del, Win-L, etc.). Users specify whether they want those combinations blocked. In addition, you may have unique requirements for keys that you want to block on your device. Keyboard Filter enables you to create your own custom key filters.

Configuration using Group Policy Settings

Keyboard Filter is configured by using Local Group Policy Editor (Gpedit.msc).

Note

This file is located at C:\Windows\System32\Gpedit.msc.

Local Group Policy Editor is a Microsoft Management Console (MMC) snap-in that provides a single user interface through which all the Computer Configuration and User Configuration settings can be managed for your device. Administrators can set policies that are applied regardless of who logs on to the device.

Note

You must be an administrator to open the Local Group Policy Editor.

Keyboard Filter is configured by using Local Group Policy Editor to set pre-defined key combinations to one of the following three states:

- Not configured
- Enabled
- Disabled

By default, pre-defined key combinations are set to **Not Configured**.

For more information about how to configure predefined key filters or creating your custom key filters, see [Keyboard Filter Configuration](#).

Predefined Key Filters

Keyboard Filter includes many frequently used predefined key filters. You can use these to quickly enable key filtering on your device.

The predefined key filters are grouped into the following categories:

- Accessibility keys
- Application keys
- Desktop and shell keys
- Modifier keys
- Security keys
- Windows management

For the list of the predefined key filters included in Keyboard Filter, see [Predefined Key Filtering](#).

Custom Key Filters

Virtual keys are used to map keys or key combinations to create your own custom key filters in Keyboard Filter. Virtual keys are grouped into the following supported categories:

- Modifier keys, such as the Alt, Ctrl, Shift, and Windows keys.

Note

Modifier keys are not supported as a standalone or final key in a custom key filter; instead, use a predefined key filter to block modifier keys.

Note

For certain keys, for example, PrintScr, ScrollLock, and Break, one-sided modifier keys will not work. Use the generic modifier instead; for example, use Alt instead of RAlt.

- System keys, such as the Backspace, Clear, and Tab keys.
- Cursor keys, such as the End, Home, and Insert keys.
- Less common system keys, such as the Select and Execute keys.
- Function keys, such as the numbered keys F1 through F12 or higher.
- State keys, such as the CapsLock and ScrollLock keys.
- OEM keys, such as the Register and Unregister keys; and the OEM-numbered keys, for example, Oem1.
- ICO keys

The following keys may exist on certain keyboards but are not supported in the current release (some keys might be supported by a different driver):

- Browser keys, such as Back and Forward keys.
- Media keys, such as the Mute key.
- ICO keys
- Additional keys, such as Play and Zoom keys.
- International keys, such as Kana and Kanji keys.

For more information about how to create custom key filters, see [Custom Key Filter Configuration](#).

For the list of virtual keys that are defined for use in Keyboard Filter, see [Virtual Key Reference](#).

Event Logging

Keyboard Filter includes event logging to help satisfy debugging and auditing requirements, and for use by administrators to determine how Keyboard Filter is operating.

Keyboard Filter provides the event logging information for the following areas:

- Service errors
- Driver errors
- Service filter state changes
- Service status

For more information about event logging in Keyboard Filter, see [Event Log Reference](#).

Limitations

There are several items that you should consider as you implement predefined key filters or create your own custom key filters:

- Some third-party keyboard drivers may bypass the keyboard filter driver.
- On some portable computers or other devices with compact keyboards, the function key (Fn) may enable multimedia keys (for example, the arrow keys).
- Some virtual keys may be unsupported.

Keyboard Filter Basics

Keyboard Filter is a new feature that is being introduced with Windows Thin PC. It enables you to configure key combinations that you want to prevent users from entering from a keyboard. Common examples of undesired key combinations include Control+Alt+Delete and Windows+L. These key combinations may cause unwanted behavior and cannot be disabled in Windows. Keyboard Filter is useful for blocking those key combinations.

Keyboard Filter is integrated into the Windows Thin PC image and is ready for immediate use after installation. This feature provides a predefined set of commonly blocked key combinations that can be enabled by a system administrator. For more advanced configuration, custom key combinations can be entered. Additionally, this feature uses Group Policy for a familiar and enterprise-ready configuration experience. Keyboard Filter is designed to help you protect your device experience.

This walkthrough covers basic configuration and common scenarios for Keyboard Filter on Windows Thin PC. At the end, you will have a Thin PC system that blocks both predefined and custom key combinations that you have specified.

[Prerequisites](#)

[Configure Predefined Key Combinations](#)

[Configure Custom Key Combinations](#)

[Next Steps](#)

Prerequisites

To complete this scenario, you will need the following:

- A reference computer with Thin PC installed

A reference computer is a fully assembled computer on which you install a Windows Thin PC product

Note

Installing a Windows Thin PC image is covered in other product documentation. It will not be covered in this document.

Configure Predefined Key Combinations

When developing Keyboard Filter, many key combinations that are commonly blocked were considered. Some common examples are Control+Alt+Delete and Windows+L, but others such as Alt+F4 are also frequently used.

On Windows Thin PC, Keyboard Filter is configured through Group Policy. In this walkthrough, you will configure Keyboard Filter on your device. You will use the Local Group Policy Editor for configuration.

Navigate to Keyboard Filter settings in the Local Group Policy Editor

In this step, you open the Local Group Policy Editor on your device and navigate to the section where Keyboard Filter settings are configured.

1. On your device, click Start.
2. In the search field in the Start menu, type Gpedit.msc.
3. When Gpedit.msc appears under Programs in the search results, press Enter to launch the Local Group Policy Editor.

Note

You can use the `-all` command in place of the *volume-name* parameter to perform the specified action on all volumes. For example, to enable EWF for all volumes, type: `ewfmgr -all -enable`

4. In the left pane, locate Local Computer Policy. Move to Computer Configuration, Administrative Templates, System, Keyboard Filter.

Configure Predefined Key Combinations

You have opened the Local Group Policy Editor and moved to the Keyboard Filter settings location. You can now choose some of the predefined key combinations that you would like to block. In this example, you will block Control+Alt+Delete, Windows+R, and the Shift key.

1. First, verify that the key combinations are working.
 - a. Press Windows+R.
You should see the Run dialog appear.
 - b. In the Run dialog, press the Shift+A key combination.
You should see an uppercase A appear.
 - c. Finally, press Control+Alt+Delete.
You should see the secure desktop screen, with options for locking the computer, switching users, and so on.
 - d. You can now press Escape to return to your desktop and close the Run dialog.
2. The predefined key combinations are grouped into categories. Inside the Security Keys folder, you will find the Block Secure Desktop (Ctrl+Alt+Del) setting.
 - a. To enable blocking for that combination, double-click the setting.
 - b. Choose Enabled in the upper-left corner of the dialog, and then click OK.

Note

Choosing Enabled will block the combination. You are enabling filtering, not enabling the key combination.

- c. In the left pane, return to the main Keyboard Filter folder.
- d. Choose the Desktop and Shell Keys folder.
- e. Find the Block Run Dialog (Windows+R) setting.
- f. Double-click it, select Enabled, and select OK.
- g. Return to the main Keyboard Filter folder using the left pane.
- h. Choose Modifier Keys.
- i. Double-click the Block Shift Keys setting.
- j. Select Enabled, and then click OK.

- k. Wait at least five seconds from the time that you click Apply or OK.

Group Policy settings may require additional time to take effect, especially on slower hardware or domain-joined systems.

 **Note**

An event is logged in the Event Viewer when Keyboard Filter loads new entries and becomes active.

- l. Now try entering the key combinations.

If everything worked, they should be disabled. Ctrl+Alt+Del should not bring up the desktop. Windows+R should not bring up the Run dialog box. Any key combination with the Shift key should not work; uppercase letters are a good example to try.

 **Note**

Keyboard filtering is disabled on the secure desktop. Try logging off the system. You can then enter Shift+A for an uppercase A in the password field. Disabling keyboard filtering guarantees that users and administrators can successfully log on to the computer.

Configure Custom Key Combinations

Although Keyboard Filter provides many predefined key combinations for you to filter, you may also have additional combinations that you may want to block. For those, Keyboard Filter enables you to specify custom key combinations.

In this example, you will block the Windows+Home key combination. That key combination minimizes all windows except the active one. It is not a predefined filter.

1. Navigate to the Keyboard Filter folder in the Local Group Policy Editor.

 **Note**

For instructions for this item, see [Configuring Predefined Key Combinations](#).

2. Double-click the Custom Key Filters setting.

3. Select Enabled in the upper-left.

This enables custom key filtering.

4. In the Options pane, click the Show button.

This will show a list of custom key combinations to block. If you are using Keyboard Filter for the first time, it will be blank.

5. Add a custom key combination to the list by typing the following in the blank row: Windows+Home.

6. When you enter a custom key combination, a new blank row appears for you to enter another combination. If you have any other combinations that you want to try, enter them now.

 **Note**

For full details about Custom Key Filtering that includes what keys are allowed, what keys cannot be blocked, syntax, and other notes, see the [Keyboard Filter Technical Reference](#) topics.

7. Click OK in the list, and then click OK in the Custom Key Filters setting window.

8. Wait several seconds.

Group Policy settings can sometimes take several seconds to take effect, especially on slower hardware or domain-joined systems.

 **Note**

An event is logged in Event Viewer when Keyboard Filter loads new entries and becomes active.

9. Now try pressing the Windows+Home key combination.

You should see no effect.

Next Steps

This document has provided an overview of Keyboard Filter functionality. There are additional features that you can use as part of your Windows Thin PC systems:

- **Domain Deployment through Group Policy**
Because Keyboard Filter uses Group Policy functionality, you can deploy your key filters by using Group Policy to manage key filter configuration for groups of computers and users. For more information, see the [Group Policy Planning and Deployment Guide](#) on Microsoft TechNet.
- **Disabling Filtering for Administrators**
You can disable Keyboard Filter for users who have administrative credentials and may need unimpeded access to the Thin PC system. There is a setting to enable this in the Keyboard Filter settings folder.

Note

Filtering will be disabled depending on which user is logged in. Elevated processes run by users who do not have administrative credentials will still be filtered.

Predefined Key Filter Configuration

Keyboard Filter is configured by using Local Group Policy Editor to set predefined key combinations to one of the following three states:

- Not configured
- Enabled
- Disabled

By default, predefined key combinations are set to Not Configured.

Note

Enabled means that key filtering is enabled, and the key combination will be blocked. Not Configured generally means key filtering is disabled, however, check the help text shown in the Local Group Policy Editor for specific details.

To configure predefined key filters using Local Group Policy Editor

1. Use the following steps to configure predefined key filters:
2. From the Start menu, click Run, type Gpedit.msc, and then click OK to open the Local Group Policy Editor.
In the console tree, browse to Keyboard Filter by using this path: Computer Configuration\Administrative Templates\System\Keyboard Filter.
3. In the details pane, click the key filter group, select a predefined key filter, and then click Edit Policy Setting; or right-click the predefined key filter and then click Edit.
4. Choose a state for the selected key filter by clicking Not Defined, Enabled, or Disabled.
5. Optional: Add a description or explanatory text in the Comment text box to document your custom key filter.
6. Click OK to save your changes and close the Custom Key Filters dialog box.

Custom Key Filter Configuration

Custom key filters let you add your own key filters to meet any special requirements that you may have that are not included in the predefined key filters.

You must use the following format to create custom key filters:

- **General formatting rules:** Filters must be expressed as zero or more modifier keys and a character, number, function, or cursor key, delimited by a plus symbol.
- **Modifier keys:** Ctrl, Alt, Shift, and Windows. Left or right can be specified including LCtrl, RCtrl, LAlt, RAlt, LShift, RShift, LWindows and RWindows.

These are not case sensitive.

Note

Modifier keys are not supported as a standalone or final key in a custom key filter; instead, use a predefined key filter to block modifier keys.

Note

For certain keys, for example, PrintScr, ScrollLock, and Break, one-sided modifier keys will not work. Use the generic modifier instead; for example, use Alt instead of RAlt.

- **Character and number keys:** Any key from A through Z and 0 through 9; and any other symbols that are supported by the keyboard.

Note

When applying a custom key filter to block an uppercase letter, the policy setting must be Shift+<letter>. For example, setting H as a custom key filter only blocks lowercase h. To block the uppercase H, use Shift+h.

Note

If you want to filter numbers, you must also filter the corresponding cursor key to filter them on the NumPad. For example, if you want to block the 8 key, you must also filter the Up key. At this time, you cannot block the 5 key on the NumPad.

Note

If you filter navigation keys on the NumPad (Up, Down, Left, Right, Home, End, Page Up, Page Down), the corresponding number will be blocked on the NumPad. The number on the number row above the letters will still work as expected.

- **Function keys:** Any "F" key from F1 through F24. May also include CapsLock, PrintScr, ScrollLock, Break, Tab, Space, Esc, and Backspace

No spaces are allowed in the names and names are not case sensitive.

- **Cursor keys:** Up, Down, Left, and Right (arrow keys); PageUp, PageDown, Insert, Delete, Home, and End.

These also do not have spaces in their names and are not case sensitive.

Note

When blocking cursor keys (Left, Right, Up, Down, and so on), you may want to add a key filter to block them with modifiers as well. For example, when blocking the Left cursor key, also add a filter for Shift+Left. Otherwise, the Shift+Left key combination may circumvent the Left key filter.

For example, the following list shows some custom key filters:

- Windows+L
- LWindows+L
- Ctrl+Break
- Shift+Ctrl+Esc
- Ctrl+C
- Ctrl+Enter

To configure custom key filters by using the Local Group Policy Editor

Use the following steps to configure custom key filters:

1. From the Start menu, click Run, type Gpedit.msc, and then click OK to open the Local Group Policy Editor.
2. In the console tree, browse to Keyboard Filter by using this path: Computer Configuration\Administrative Templates\System\Keyboard Filter.
3. In the details pane of the Local Group Policy Editor, select Custom Key Filters, and then click Edit Policy Setting; or right-click Custom Key Filters and then click Edit.
4. In the Custom Key Filters dialog box, click the Enabled option to enable custom key filters.
5. In the Options text box, click Show.
6. In the Show Contents dialog box, in the text area under the Value column, add a new custom filter or modify an existing custom filter by using the format previously specified in this topic.
7. Click OK to save the custom key filter and close the Show Contents dialog box.
8. Optional: In the Comment text box, add a description or explanatory text to document your custom key filter.
9. Click OK to save your changes and close the Custom Key Filters dialog box.

Keyboard Filter Service

You can control the Keyboard Filter service at the command prompt by using the start and stop commands that are shown in this topic.

In addition, you can control the Keyboard Filter service by using the Computer Management snap-in, which is in the Administrative Tools folder of Control Panel. After opening the snap-in, you can find the Keyboard Filter service in Computer Management (Local), Services and Applications, and Services.

Start the Keyboard Filter Service

To start the Keyboard Filter service, at an Administrator command prompt, run the following command:

```
sc start keyboardfilter
```

Note

To open an Administrator command prompt, click Start, click All Programs, click Accessories, right-click Command Prompt, and then click Run as administrator. Some commands require that you run the command by using administrative credentials.

The previous command enables key filtering.

Stop the Keyboard Filter Service

To stop the Keyboard Filter service, at an Administrator command prompt, run the following command:

```
sc stop keyboardfilter
```

The previous command disables key filtering.

For more information about how to run a command as an Administrator, see the Start a [Command Line as an Administrator](#) topic on Microsoft TechNet.

Note

Stopping the service suspends filtering. Marking the KeyboardFilter service as Disabled will keep filtering suspended after rebooting the computer. Starting the service resumes filtering.

Keyboard Filter and On-Screen Keyboard

On-Screen Keyboard displays a visual keyboard with all the standard keys. Instead of relying on the physical keyboard to type and enter data, you can select keys using the mouse or another pointing device, or you can use a single key or group of keys to cycle through the keys on the screen. However, On-Screen Keyboard bypasses key filters.

Keyboard Filter only supports hardware keyboards. All applications featuring software-based keyboard input will circumvent Keyboard Filter. On screen keyboards are not filtered, including those bundled with Windows. This also applies to any applications that send input using Windows APIs.

Note

By design, filtering keyboard input using Keyboard Filter may impede accessibility scenarios.

Using Keyboard Filter with Non-English Interface

Custom key filters are defined by using English virtual key names to specify keys or key combinations to block.

When using Keyboard Filter with non-US keyboards or non-English languages, you must define custom key filters by using English key names as defined in the [Virtual Key Reference](#) topic.

Note

The underlying Windows operating system also uses English virtual keys. Non-English characters are eventually translated to an English virtual key by the operating system.

For more information about how to create custom key filters using English virtual key names, see [Custom Key Filter Configuration](#).

Keyboard Filter Reference

Predefined Key Filters

Keyboard Filter provides predefined key filters that you can enable by using Local Group Policy Editor.

The predefined key filters are grouped as follows:

- [Accessibility Keys](#)
- [Application Keys](#)
- [Desktop and Shell Keys](#)
- [Modifier Keys](#)
- [Security Keys](#)
- [Windows Management Keys](#)
- [Not Categorized](#)

Accessibility Keys

Filter	Keys
Block Mouse Keys Switching	Left Shift+Left Alt+NumLock
Block High Contrast Switching	Left Shift+Left Alt+Print Screen
Block Accessibility	Windows+U

Application Keys

Filter	Keys
Block Application Close	Alt+F4
Block Window Close	Ctrl+F4
Block System Help	Windows+F1

Desktop and Shell Keys

Filter	Keys
Block Application Menus	Alt+Space
Block Start Menu	Ctrl+Esc
Block Computer Find	Ctrl+Windows+F
Block System Properties	Windows+Break
Block Toggle Display	Windows+Ctrl+P
Block Start Explorer	Windows+E
Block Find	Windows+F
Block Toggle Display	Windows+P, Windows+Shift+P
Block Run Dialog	Windows+R

Modifier Keys

Filter	Keys
Block Alt Keys	Left Alt, Right Alt  Note This filter disables all hotkeys that use the Alt key.
Block Ctrl Keys	Left Ctrl, Right Ctrl  Note This filter disables all hotkeys that use the Ctrl key, for example, Copy, Paste, Save, and Open
Block Application Key	Menu
Block Shift Keys	Left Shift, Right Shift  Note This filter disables all hotkeys that use the Shift keys.
Block Windows Keys	Left Windows, Right Windows  Note This filter disables all hotkeys that use the Windows key.

Security Keys

Filter	Keys
Block Secure Desktop	Ctrl+Alt+Del
Block Task Manager	Shift+Ctrl+Esc
Block Lock Console	Windows+L

Windows Management Keys

Filter	Keys
Block Task Switching	Alt+Tab, Shift+Alt+Tab
Block Window Switching	Ctrl+Tab, Shift+Ctrl+Tab
Block Show Desktop	Windows+D
Block minimizing current window	Windows+Down
Block docking to the left	Windows+Left
Block Minimize All	Windows+M
Block docking to the right	Windows+Right
Block restoring current window when maximized	Windows+Shift+Down
Block moving window to the left monitor	Windows+Shift+Left
Block moving window to the right monitor	Windows+Shift+Right
Block vertically maximizing current window	Windows+Shift+Up
Block Aero Flip3D Task Switching	Windows+Tab, Shift+Windows+Tab
Block maximizing current window	Windows+Up

Not Categorized

Filter	Description
Block Filtering for Administrator	<p>Disable key filtering for administrator.</p> <p> Note Once the administrator logs out or locks the console, key filtering is re-enabled.</p>

Virtual Key Reference

The following tables list the virtual key names that you can use to create custom key filtering combinations in Keyboard Filter. The virtual keys are grouped as follows:

Supported Keys:

- [Modifier Keys](#)
- [System Keys](#)
- [Cursor Keys](#)
- [Less Common System Keys](#)
- [Function Keys](#)
- [State Keys](#)
- [OEM Keys](#)

Unsupported Keys:

- [Browser Keys](#)
- [Media Keys](#)
- [ICO Keys](#)
- [Additional Keys](#)
- [International Keys](#)

Modifier Keys

Virtual Key	Common Key Name
VK_LWIN	LWin
VK_RWIN	RWin
VK_APPS	Menu
VK_LSHIFT	LShift
VK_RSHIFT	RShift
VK_LCONTROL	LControl
VK_RCONTROL	RControl
VK_LMENU	LAlt
VK_RMENU	RAlt
LWin + RWin	Win
LShift + RShift	Shift
LControl + RControl	Control
LAlt + RAlt	Alt

System Keys

Virtual Key	Common Key Name
VK_BACK	Backspace
VK_TAB	Tab
VK_CLEAR	Clear
VK_RETURN	Enter
VK_PAUSE	Pause
VK_ESCAPE	Esc
VK_SPACE	Space

Cursor Keys

Virtual Key	Common Key Name
VK_PRIOR	PageUp
VK_NEXT	PageDown
VK_END	End
VK_HOME	Home
VK_LEFT	Left
VK_UP	Up
VK_RIGHT	Right
VK_DOWN	Down
VK_INSERT	Insert
VK_DELETE	Delete
VK_MULTIPLY	Multiply
VK_ADD	Add
VK_SEPARATOR	Separator
VK_SUBTRACT	Subtract
VK_DECIMAL	Decimal
VK_DIVIDE	Divide

Less Common System Keys

Virtual Key	Common Key Name
VK_SELECT	Select
VK_PRINT	Print
VK_EXECUTE	Execute
VK_SNAPSHOT	Snapshot
VK_HELP	Help
VK_SLEEP	Sleep

Function Keys

Virtual Key	Common Key Name
VK_F1	F1
VK_F2	F2
VK_F3	F3
VK_F4	F4
VK_F5	F5
VK_F6	F6
VK_F7	F7
VK_F8	F8
VK_F9	F9
VK_F10	F10
VK_F11	F11
VK_F12	F12
VK_F13	F13
VK_F14	F14
VK_F15	F15
VK_F16	F16
VK_F17	F17
VK_F18	F18
VK_F19	F19
VK_F20	F20
VK_F21	F21
VK_F22	F22
VK_F23	F23
VK_F24	F24

State Keys

Virtual Key	Common Key Name
VK_NUMLOCK	NumLock
VK_SCROLL	ScrollLock
VK_CAPITAL	CapsLock

OEM Keys **Note**

OEM keys may vary depending on language and layout.

Virtual Key	Common Key Name
VK_OEM_NEC_EQUAL	KeypadEqual
VK_OEM_FJ_JISHO	Dictionary
VK_OEM_FJ_MASSHOU	Unregister
VK_OEM_FJ_TOUROKU	Register
VK_OEM_FJ_LOYA	LeftOyayubi
VK_OEM_FJ_ROYA	RightOyayubi
VK_OEM_PLUS	OemPlus
VK_OEM_COMMA	OemComma
VK_OEM_MINUS	OemMinus
VK_OEM_PERIOD	OemPeriod
VK_OEM_1	Oem1 (represented as “;:”)
VK_OEM_2	Oem2 (represented as “/?”)
VK_OEM_3	Oem3 (represented as “^~”)
VK_OEM_4	Oem4 (represented as “[{”)
VK_OEM_5	Oem5 (represented as “\ ”)
VK_OEM_6	Oem6 (represented as “}”)
VK_OEM_7	Oem7 (represented as “”)
VK_OEM_8	Oem8
VK_OEM_AX	OemAX (AX on Japanese AX keyboard)
VK_OEM_102	Oem102 “<>” or “\ ” on RT 102-key keyboard

Browser Keys

Virtual Key	Common Key Name
VK_BROWSER_BACK	BrowserBack
VK_BROWSER_FORWARD	BrowserForward
VK_BROWSER_REFRESH	BrowserRefresh
VK_BROWSER_STOP	BrowserStop
VK_BROWSER_SEARCH	BrowserSearch
VK_BROWSER_FAVORITES	BrowserFavorites
VK_BROWSER_HOME	BrowserHome

Media Keys

Virtual Key	Common Key Name
VK_VOLUME_MUTE	MediaMute
VK_VOLUME_DOWN	MediaDown
VK_VOLUME_UP	MediaUp
VK_MEDIA_NEXT_TRACK	MediaNext
VK_MEDIA_PREV_TRACK	MediaPrevious
VK_MEDIA_STOP	MediaStop
VK_MEDIA_PLAY_PAUSE	MediaPlay
VK_LAUNCH_MAIL	LaunchMail
VK_LAUNCH_MEDIA_SELECT	LaunchMedia
VK_LAUNCH_APP1	LaunchApp1
VK_LAUNCH_APP2	LaunchApp2

ICO Keys

Virtual Key	Common Key Name
VK_ICO_HELP	IcoHelp
VK_ICO_00	Ico00

Additional Keys

Virtual Key	Common Key Name
VK_ATTN	Attn
VK_CRSEL	CrSel
VK_EXSEL	Exsel
VK_EREOF	Ereof
VK_PLAY	Play
VK_ZOOM	Zoom
VK_PA1	Pa1
VK_OEM_CLEAR	OemClear

International Keys

Virtual Key	Common Key Name
VK_KANA	Kana
VK_HANGUL	Hangul
VK_JUNJA	Junja
VK_FINAL	Final
VK_HANJA	Hanja
VK_KANJI	Kanji

Event Log Reference

Keyboard Filter includes event logging to help satisfy debugging and auditing requirements, and for use by administrators to determine how Keyboard Filter is operating.

Event Logs

Event logs for Keyboard Filter are in the following locations:

Location	Description	Default State
Event Viewer\Applications and Services Logs\Microsoft\Windows\Keyboard Filter\Admin	Logs errors	Enabled
Event Viewer\Applications and Services Logs\Microsoft\Windows\Keyboard Filter\Operational	Logs informational events and state changes	Disabled

Service Errors (Admin)

Win32 Errors

Contains a Win32 error code and message that may be localized by the OS:

Error	Description
ServiceTokenUnavailable	Unable to obtain access to user session
ServiceGrantPermission	Unable to impersonate the user, probably because of misconfiguration of the service
ServicePolicyEventError	Unable to obtain notification of Policy changes
ServiceDriverUpdateError	Unable to transmit data to the driver, probably the driver is not running
ServiceSessionStartHook	Unable to create the process in the user's session/desktop

Parsing Errors

When interpreting custom key filters, parsing errors may occur.

Error	Description
ServiceCustomIncorrectModifier	Called when a modifier in a custom filter is incorrect. This error can be a combination that is not valid, such as Alt+Alt+C, or C+A. The incorrect value is specified
ServiceCustomIncorrectKey	Called when the final key in a custom filter is incorrect. This error can be an unreadable or incorrect value, such as Ctrl+Break. The incorrect value is specified
ServiceCustomIncorrectFormat	Called when the string cannot be interpreted. Incorrect delimiters, zero or overflow (50) length values, or incorrect characters can cause this

Error Notification

Messages that notify of an error but do not display an error code:

Error	Description
ServiceSessionHandleAbandoned	Called when a kernel event is abandoned (should never occur)

Service Status (Operational)

Service Notification

Service notification messages contain no parameters.

Error	Description
ServiceStarted	Service is operational
ServiceStopped	Service has shut down cleanly

Service Message

Service messages are used for debugging and contain a hard-coded string value.

Error	Description
ServiceMessage	Undefined

Service Filter State Changes (Operational)

User Notification

User notification messages contain the user name that initiated the log entry

Error	Description
ServiceLogonAdmin	The administrator has logged on. This message occurs only when the user belongs to the Administrators group and filtering is disabled for the administrator.
UserLogoffDisableFilter	The user has logged off or locked the console, and filtering is disabled.

System Notification

System notification messages are initiated by configuration changes.

Error	Description
ServiceLoadPolicies	A policy setting change is detected, and policy settings are being reloaded.