



# EXACT FERRET

Kangaroo Standard

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Exact Ferret changes your Windows desktop and lock screen backgrounds automatically by downloading random images from the Internet.

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# Introduction

Welcome to Exact Ferret, and thank you for downloading and installing! If you don't know already, Exact Ferret is a computer program that takes control of your desktop background (and/or lock screen background if you desire) and displays completely random images downloaded from the Internet.

As of Exact Ferret version 2.0, all the details of setting up Exact Ferret are taken care of automatically when you install. The only thing you need to provide is a Google Custom Search API key (more on that later). Also as of version 2.0, there are many ways to customize Exact Ferret.

# System Requirements

There are no real hardware requirements for running Exact Ferret. However, there are a couple software requirements. If your computer does not meet these requirements, you will not be allowed to install Exact Ferret.

- 64-bit Windows 7 operating system or higher
- Microsoft .NET Framework v4.0.30319

# Version History

## 3.2.4 (06-12-2014)

Removed red and orange from the "colors in image" option because Google doesn't recognize them as valid colors, at least not when using the Custom Search API.

## 3.2.3 (06-02-2014)

Fixed a bug in the settings window. If you make changes to the settings, click on the "Download a new picture now" button, and say yes to save your changes, Exact Ferret should restart and download a new picture with your new settings. However, this bug prevented a new picture from being downloaded if Exact Ferret's schedule didn't allow the background process to run at the time.

## 3.2.2 (05-22-2014)

Fixed a bug that prevented Exact Ferret from deleting invalid image files when detected. Also fixed a bug that caused Exact Ferret to record the search term as an empty string after downloading a new file to replace a detected invalid file.

## 3.2.1 (05-21-2014)

Fixed a bug that caused a crash window to appear when a problem with an image file prevented Exact Ferret from saving its metadata. Also fixed a bug that allowed invalid image files to be downloaded and undetected.

## 3.2.0 (05-16-2014)

New features:

- Access Exact Ferret settings through an icon in the right-click menu on the desktop.
- Easily see the domain a picture came from (near the thumbnail in the settings window).
- Easily see the search term used to download a picture (near the thumbnail in the settings window). No need to check the log for this anymore.
- New themed dictionaries included, for example Animals.txt and VideoGames.txt.

- Schedule Exact Ferret to run the background process only during certain times of the day and/or on certain days of the week.
- Schedule Exact Ferret to use different settings during different times of the day, days of the week, and/or months of the year.
- Opt to prevent Exact Ferret from running the background process when on battery power.
- Double-click an Exact Ferret settings file (.exf) to instantly import it.

#### Improvements:

- Wallpaper style of the current picture changes when you update the style in the settings window.
- Google image search logic was improved for better search results.
- Second-level domain is blocked when you opt to block the domain of a picture (for example, kangaroostandard.com instead of 6.img.kangaroostandard.com).
- Blocked pictures and domains are no longer overwritten when importing an Exact Ferret settings file (but there is an option to allow this).
- Choose which settings to export when exporting settings. Only these settings will be imported when the settings file is imported, and all other settings will be unaffected.
- New versions of Exact Ferret come with a welcome screen to introduce the user to new features, etc.
- New versions of Exact Ferret no longer revert the settings from the previous version.

#### Bug fixes:

- Settings window crashed after deleting a picture and then closing the window.
- Image file naming scheme sometimes caused file names to be too long so the download failed.
- Automatic wallpaper style didn't handle tall images well.

### 3.1.1 (04-02-2014)

Fixed a bug in the installation program that only uninstalls the previous version of Exact Ferret but doesn't install the new version, if obtained through an automatic update.

### 3.1.0 (04-01-2014)

Exact Ferret now uses the Google Custom Search API to search the Internet for images to download. This will provide a more reliable experience and reduce or eliminate the need for quick updates when Google changes how their search engine works. Though this was the biggest change with version 3.1, there are also many new features:

- Exact Ferret now has a “real” setup program with a graphical user interface that is easier to use and less prone to error than the previous command-line interface.
- Exact Ferret now has an icon that appears in the notification area (bottom-right corner of the screen). This provides a quick and easy way to control Exact Ferret.
- The settings window shows a thumbnail preview of the current picture.
- The settings window now features a “countdown” to when the next picture will be downloaded.
- You can go back and forth between the current picture and previously downloaded pictures (from the settings window).
- When you see a picture you don't like, you can have Exact Ferret delete the picture and block it so that it is never downloaded again. You can also block the entire domain the picture came from.
- You can now configure Exact Ferret to run at second-based intervals, such as every thirty seconds or every ten minutes and fifteen seconds, etc.
- Old log files are now deleted automatically. The length of time that log files are retained can be configured in the settings window.
- The current log file can be opened from the settings window.
- A bug that prevented Exact Ferret from deleting old images was fixed.
- A bug that allowed pictures to be used even though they were too small or big was fixed.
- Other minor improvements and bug fixes.

### 3.0.0 (03-01-2014)

The initial release of Exact Ferret 3.0. Exact Ferret was rewritten in C# using Microsoft's .NET Framework for better Windows operating system integration. The settings window was completely redesigned and several new features were added:

- All settings can now be imported and exported so that you can switch between different settings easily.
- The Exact Ferret background process can now be started and stopped from the settings window.
- Environment variables can be used in file system paths (like the log folder path).
- The time limit for HTTP requests can be controlled.
- The wallpaper style (Center, Stretch, etc) can be controlled, or Exact Ferret can determine a style automatically.
- You can choose a different dictionary file instead of using the default.
- Image size maximums can be specified.
- Google search options for image colors and types can be used.
- Log level options have changed. Trace no longer outputs the Google search results, and new levels Warning and Results have been added. Results outputs everything, including Google search results.
- HTTP proxies no longer need to be specified. Exact Ferret uses the system proxy settings as defined in *Control Panel > Internet Options*.

- Windows 8 lock screen background changes work more reliably.

## 2.0.2 (02-26-2014)

Updated Google search result parsing logic after Google implemented a change to the format of their search results.

## 2.0.1 (02-04-2014)

General security improvements, fixed a bug in the uninstallation process that could prevent automatic updates from working correctly when re-installed.


## 2.0.0 (01-18-2014)

The initial release of Exact Ferret 2.0.



# How to Run Exact Ferret

There are two ways to run Exact Ferret. The first way is to simply do nothing. After you install Exact Ferret and enter your API key (more on that later), it starts running immediately. You should see your desktop wallpaper change right afterward. Exact Ferret will continue to run in the background, changing your desktop wallpaper every 15 minutes by default.

The other way to run Exact Ferret is to use the Quick Run shortcut. The Quick Run shortcut changes your background immediately, and you can run it whenever you want. For example, if Exact Ferret running in the background changes your background to something appalling, you can use the Quick Run shortcut to change your background again right away. The Quick Run shortcut can be found at *Start > All apps > Exact Ferret > Exact Ferret - Quick Run*. You can also do a Quick Run by right-clicking the notification area icon and selecting *Quick Run*, or by clicking the download () button in the settings window.

# Google Custom Search API

Exact Ferret uses Google's Custom Search API to search the Internet for random images to use as your background. In order to access the API, Google requires each user to obtain an API key. Once obtained, Exact Ferret will use your API key on your behalf to search Google.

## How to Get an API Key

To get an API key for free, follow these steps:

1. First of all, if you don't already have one, sign up for a Google account at <https://accounts.google.com/signup>.
2. Open the Google Developer Console at <https://console.developers.google.com/project>.
3. Click on "Create Project".
  - a. Project Name: Exact Ferret (you can pick anything you want though)
  - b. Project ID: exactferret (you can pick anything you want or leave the default)
4. On the left sidebar, click on "APIs & auth".
5. Find the "Custom Search API" in the list and click the "OFF" button to turn it "ON".
6. Click on "Custom Search API" (the link probably moved to the top of the page after you turned it on)
7. Click on "Quota".
8. On the left sidebar, click on "API Access".
9. Scroll down to the "Simple API Access" section and click on the "Create new Server key..." button.
10. Click on the "Create" button.
11. Your API key will be displayed.

## Custom Search API Usage Limits

Google limits the usage of its Custom Search API. When you get a free API key, you are limited to only 100 uses per day. You can certainly upgrade your API key to allow more uses, but for Exact Ferret, upgrading probably isn't worth it. Through normal use, Exact Ferret shouldn't consume that many API usages in a single day. Exact Ferret runs every 15 minutes by default and almost always needs to use the API only once per run. Using

the default settings, it would be about 25 hours in a single day before you use up the 100 uses.

## How Exact Ferret Uses the API Key

Exact Ferret tries to use your API key carefully so as not to exhaust your daily limit too quickly. Below are some details about how this works.

Making a call to the Custom Search API returns up to 100 image search results. Furthermore, a single call to the API returns only one page of results, which is limited to ten results. Luckily, in most cases, Exact Ferret only needs one result because that would be the image it downloads to your computer. Exact Ferret still manages to keep the randomness high by requesting a random page of results and selecting a random image from that page.

When Exact Ferret encounters an image that can't be downloaded for some reason (such as if it no longer exists on the original web site), it will try to use another image search result from the same page so that it doesn't need to make a separate request to the API for another page. Only when all options on the page have been tried will Exact Ferret call the API again in the same run.

# Settings

As of Exact Ferret version 2.0, there are many settings that you can configure in order to customize the behavior of Exact Ferret. To access the settings for Exact Ferret, go to *Start > All apps > Exact Ferret > Exact Ferret*. You can also click on the notification area icon (in the bottom-right corner of your screen), or right-click your desktop and select *Exact Ferret* to open the settings window.

## General Settings

### Start Exact Ferret when I log into Windows

This will automatically start the Exact Ferret background process when you log Windows. Without this option enabled, you will have to start Exact Ferret manually each time you log into your computer (you can use the *Start* button in the settings window or the *Start* option in the right-click menu of the notification area icon).




### Install updates automatically

Selecting this option will tell Exact Ferret to check online for updates. Exact Ferret will check for updates every time it changes your background. If an update is available, Exact Ferret will automatically download and install it. It is highly recommended that you enable this option as outdated versions of Exact Ferret will not be supported.


### Start and stop Exact Ferret

Use the *Start* and *Stop* buttons on the *General* tab to start and stop the Exact Ferret background process. The Exact Ferret background process is what downloads pictures and changes your background behind the scenes.


### Back, Next, and Current

Use the back () and next () arrow buttons to cycle through previously downloaded pictures. When you click on these buttons your background will be immediately changed to the new picture. The last () button goes to the most recently downloaded picture.

## Download a new picture

Click the download () button to download a new picture from the Internet and set it as your background. This has the same effect as the Quick Run shortcut.

## Delete

The delete () button deletes the current picture and lets you decide whether you want to block that picture from being downloaded again or to block the entire domain the picture was downloaded from. When you delete the current picture, Exact Ferret will set your background to another picture that you have previously downloaded. Pictures and domains can be unblocked from the *Blocked Pictures* tab.

## Behavior Settings

### Save picture files to

This setting tells Exact Ferret what folder to save downloaded image files in. You can take a look in this folder to see the last image Exact Ferret downloaded as well as older image files that were already used.

### Number of old pictures to keep before deleting

When Exact Ferret downloads an image file from the Internet, it stores that file in a certain folder. This setting tells Exact Ferret how many previously downloaded image files it should keep in that folder. If there are too many images in the folder, Exact Ferret will delete the oldest ones. If you are running Exact Ferret frequently enough to exhaust your Google Custom Search API daily limit, be sure to keep a lot of old pictures so that Exact Ferret can reuse them when you hit your limit.

### HTTP request timeout

Sets a time limit in seconds to wait for an HTTP request before giving up and moving on. If your network is particularly slow, increase this setting.

### Number of download attempts before giving up

Sometimes Exact Ferret will encounter an error when it tries to download an image from the Internet. When it does, it tries to download a different image. This setting tells Exact Ferret how many times to retry before giving up. This prevents Exact Ferret from getting stuck trying to download images and getting errors every single time. This would be the case if you do not have an Internet connection, for example. Note that your Google

Custom Search API key is not used on every attempt, but when Exact Ferret has a hard time finding pictures based on your settings, it may use your key multiple times per run, depending on how you set this option.

### Change desktop wallpaper

There are two backgrounds that Exact Ferret can change: Your desktop background and your lock screen background (this is the screen you see when you are logging into your computer, or when you lock it). This setting tells Exact Ferret to change your desktop wallpaper. You may additionally specify the wallpaper style (Stretch, Tile, etc), or select Automatic. When Automatic is selected, Exact Ferret determines the best style to use for each picture.

### Change lock screen background

There are two backgrounds that Exact Ferret can change: Your desktop background and your lock screen background (this is the screen you see when you are logging into your computer, or when you lock it). This setting tells Exact Ferret to change your lock screen background.

## Search Settings

### Dictionary file

Tells Exact Ferret where to find the dictionary file (see below for more about the dictionary file).

### Search term modifier

Exact Ferret uses Google Image Search to search for images on the Internet. Words you put in this setting will be added to the end of each search term Exact Ferret uses. You can use this to “bias” the downloaded images toward a certain theme. For example, in the month of December, you can set this to “christmas”. This will make it more likely that Exact Ferret will download Christmas-themed images. Or, if you like seamless tiled backgrounds, try setting this to “seamless tile” and adjusting the maximum image size for smaller images.

### Image size range

This setting specifies the minimum and maximum size of downloaded images, in pixels. Exact Ferret will not download any images outside this range.

### Image width:height ratio range

An image's width:height ratio is the number you get when you divide its width by its height. For example, a standard 800x600 pixel image has a width:height ratio of 1.3. You can use this setting to make sure that Exact Ferret only downloads images which have a similar width:height ratio to your screen. Be careful about setting this too restrictively, or you might end up exhausting your API key due to many failed searches.

### Colors in image

This setting uses Google's image color search setting to search for images of a certain dominant color.

### Type of image

This setting uses Google's image type search setting to search for images of a certain type, such as photos or clip art.

### Use Google's safe search feature

Select this option to turn on Google's Safe Search option, which helps prevent naughty images from appearing in search results, and thus helps prevent Exact Ferret from using such images as your background.

### Search domain

This setting uses Google's domain search option to only search a single Internet domain (such as [www.flickr.com](http://www.flickr.com)). This setting is very restrictive, so don't be surprised if Exact Ferret can't find any images to download after you set this option (which would also use up your API key quickly).

## Background Process Settings

### Run Exact Ferret every ? minutes and ? seconds

This tells Exact Ferret how long to wait between each time it changes your background. Note that if you set this to 0 minutes and 0 seconds, Exact Ferret will continuously change your background, possibly causing system slowness. Also, keep in mind that with Google's free Custom Search API key, you only get 100 queries per day. If you set Exact Ferret to run too frequently, you may exhaust that limit. As a point of reference,

consider that leaving this option at the default of 15 minutes will provide approximately 25 hours of use (much more than enough for a single day).

### Run all the time or Run on a schedule

This setting controls when the Exact Ferret background process runs. Setting it to all the time will allow the background process to run as long as Exact Ferret is started. Setting it to run on a schedule will only allow the background process to run between the times you specify on the days of the week you specify. This setting can be used strategically to limit unnecessary Google API usage. For example, if you leave your computer on during the day while you are at work, you can schedule Exact Ferret to only run between 5:00 PM (when you get home) and 11:59 PM Monday-Friday, and all day Saturday and Sunday.

### Don't run when on battery power

Select this setting if you want to save your laptop's battery power by not running the Exact Ferret background process.

## Google API Settings

### Google Custom Search API key

This is the API key that you get from Google in order to allow Exact Ferret to use Google's Custom Search API. Exact Ferret requires a valid API key in order to work. See above for instructions on obtaining an API key.

### Display a message on my screen

When the daily limit for your API key has been reached, Exact Ferret will display a warning message on your screen.

### Use previously downloaded pictures

When the daily limit for your API key has been reached, Exact Ferret can't download any more pictures until the next day. Enabling this option allows Exact Ferret to randomly select previous pictures as your background since it can't get any new ones.

## Blocked Pictures



## Do not overwrite these settings when I import settings from a file

This prevents blocked picture settings from being overwritten or changed in any way when you import settings from an Exact Ferret settings file (.exf). This also applies to settings files used in the *Schedule Settings* File menu option.

## Blocked images

This is a list of links to images on the Internet that you have blocked. If you change your mind, you can select one (or multiple) and click on *Unblock*.

## Blocked domains

This is a list of Internet domains that you have blocked all images from. If you change your mind, you can select one (or multiple) and click on *Unblock*.

# Log Settings

## Log file location

Exact Ferret keeps track of everything it does in the log file. This setting tells Exact Ferret where to save the log file. If you ever need to troubleshoot a problem with Exact Ferret, the log file is a good place to look.

## Log file rolls over at ? KB

This setting tells Exact Ferret when to stop writing information in the log file and start a new log file. Setting a limit here prevents log files from getting too large (a log file that is too large would be very difficult for you to open in a program such as Notepad). If you don't know what a KB is, just leave this setting at the default. It's fine.

## Delete old logs after ? days

Exact Ferret deletes old log files so that they don't consume disk space. This setting tells Exact Ferret how long to keep old log files before deleting them.

## Log level

This setting controls what kind of information is written into the log file. If you are troubleshooting a problem with Exact Ferret and the normal information in the log isn't enough to help you narrow down the problem, you can try setting this to *Trace* or *Results*. *Results* will log the maximum information. Always be sure to set this back to

something else, like *Info*, when you're done, though. Leaving this setting on *Results*, or even *Trace*, generates **a lot** of information in the log file and will start to consume a lot of disk space.

## Other Options

### Import and export settings

From the File menu, you can export your current settings to a file. Then you can change your settings however you want, and later you can import your old settings back from the file. This allows you to configure Exact Ferret in several different ways and switch between them easily. Note that an Exact Ferret settings file can be double-clicked to import it instantly.

### Schedule settings

From the File menu, you can open this screen in order to schedule different settings for Exact Ferret at different times. This works by selecting settings files you exported and specifying one or more conditions for when the settings in those files should be applied. To specify multiple conditions for a given file, add the file to the list multiple times. Note that there are two types of conditions: **AND** and **OR**. A given file will be applied any time **all** **AND** conditions for the file are true, **or any** **OR** conditions for the file are true.

# The Dictionary File

The dictionary file is a text file that Exact Ferret uses to come up with things to search the Internet for. Exact Ferret picks a random word from the dictionary file and uses it as a Google Image Search (through the Google Custom Search API) to find images. The basic included dictionary file has over 80,000 words in it. You can add more (such as names of people or places) if you'd like. You can also remove some. You can even replace the entire contents of the dictionary file with a totally new set of words or phrases that you want Exact Ferret to use. If you are interested in this, you can find the dictionary file in Exact Ferret's installation directory. It is called *dictionary.txt*.

Exact Ferret also includes several other themed dictionary files. These files are intended to make Exact Ferret search for things based on some theme, such as animals or video games. These dictionary files can be found in the *Dictionaries* folder in Exact Ferret's installation directory. To use one of these files, browse for it in the settings window.

You can also create your own dictionary file and tell Exact Ferret to use it instead (in the settings window).

# Frequently Asked Questions (FAQ)

Q: Will Exact Ferret damage my computer or give me viruses?

A: Yes, of course. But that's what you get for ignoring the Windows warning about unsigned software.

Actually, no, Exact Ferret will not hurt your computer. It is okay to ignore any warnings about the software. The most dangerous thing Exact Ferret does is download and execute installer files for automatic updates. However, this is safe because the download is secure and the identity of the update server is checked to ensure you are downloading from a safe source.

Also, please note that image files downloaded from the Internet cannot harm your computer either. And just in case some goon out there posts an "image" which is really an executable virus, there is no need to worry because Exact Ferret will not execute it. In fact, if Exact Ferret determines the file to not be a valid image file, it will delete it.

Q: My background isn't changing! Why isn't it working?

A: First, check to make sure Exact Ferret is running (you can see this in the settings window). Then, again in the settings window, make sure Exact Ferret is configured to set the background you are concerned about (wallpaper and/or lock screen). Next, make sure Exact Ferret is scheduled to run at this time (see the Background Process tab). Then check if any settings files are overriding anything in the File > *Schedule settings* window. If everything looks good, check the log file (you can find the location of the log file in the settings window). If the log file has errors, there may be some operating system changes you need to make in order to get Exact Ferret to work (like maybe enabling your Wi-Fi adapter).

If you still can't get it to work, set your log level to Results, perform a Quick Run, and send an email with your latest log files to [danielpace6@gmail.com](mailto:danielpace6@gmail.com).

Q: Why does Exact Ferret use the Google Custom Search API now? There was no daily limit before!

A: The Custom Search API is Google's official way of accessing Image Search programmatically. Google's standard Image Search interface is not meant for programs to use, only people. However, because the Custom Search API is meant for programs to use and has published documentation on how to use it, it is unlikely to change in a way that will cause Exact Ferret to stop working. That means you won't have to wait for an update to Exact Ferret before it is usable again.



# Support

Sometimes you might have a question about how Exact Ferret works, or you might have a problem with the software that you can't resolve yourself. Should such a situation arise, please send an email to [danielpace6@gmail.com](mailto:danielpace6@gmail.com).

If you are having problems with the software, please follow these steps (if Exact Ferret is able to run at all):

1. Open the Exact Ferret settings window.
2. Click on the *Log* tab and set the *Log level* to *Results*.
3. Click *Apply*.
4. Click on the *General* tab and click on the *Stop* button (if available).
5. Click on the *Start* button.
6. Wait a minute.
7. Click on the *Log* tab again and note the location of the log file.
8. Find the log file (and any other log files generated today – look at the timestamp) and include it in your email. If the log file(s) is too large for an email, include as much of the latest data as you can.