

Agenda



- Open forum
- Identify subjects for breakout groups and later meetings
- Main presentation
- Tea and coffee break (3.30pm)
- Breakout into smaller groups
- 30 Aug 2013

Basics (For the curious)

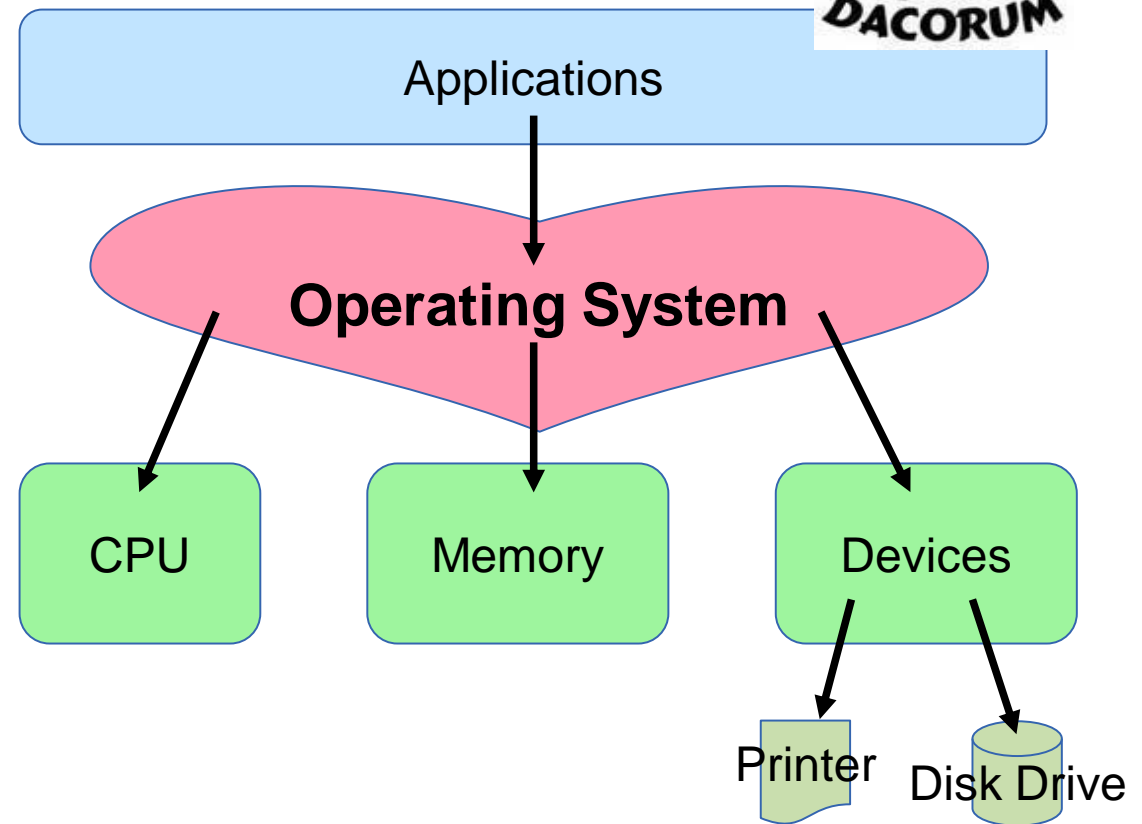


- Operating Systems – What are they?
- Applications – word processors, browsers, search engines, anti-virus programs, etc
- Data and applications (programs)
- How programs work together – word processor and spell checker, browser and search engine.
- How data is sent across networks – two levels – IP (one way radio or mail), and TCP (telephone).

Operating Systems



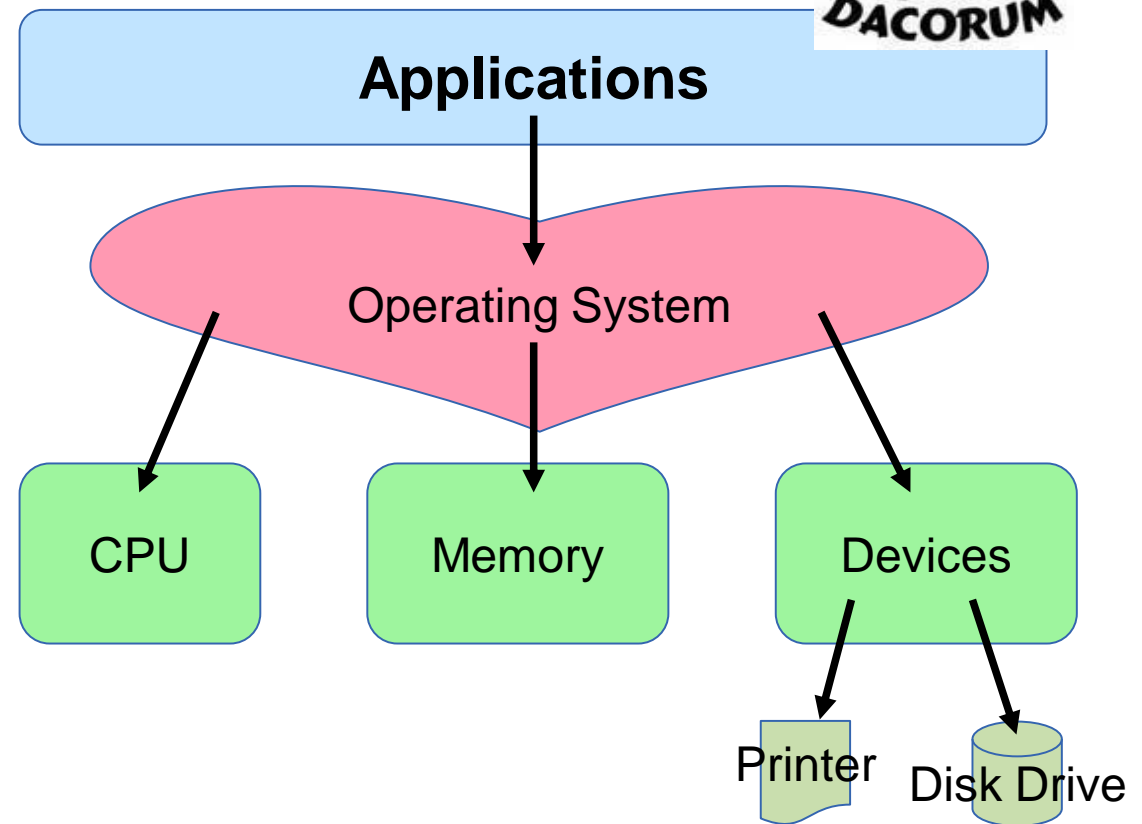
- The operating system is the software heart.
- It joins everything together.
- Windows, MAC OS, OSX, Unix, Linux, Android, etc



Applications (Programs)



- The things you use.
- Word processor, Spreadsheet, Skype, Photo editor, Genealogy app, Browser, Search engine, etc.



Data and Applications

- Applications are tools like a Potter's wheel:
 - They need a user;
 - The user brings clay, water and imagination.
 - The user uses the tool to create a pot.
 - The finished pot is stored in a cupboard.
 - The clay is data, but the pot is information.
- In the case of a computer, a viewer application is needed to see what was created – to look through the cupboard door.
- The viewer may be the original application or another one (A cupboard with a window).

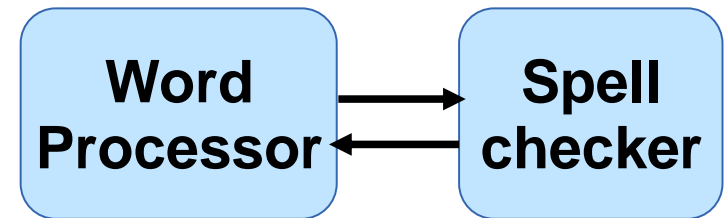


Word processor = wheel Imagination = clay Disk drive = cupboard

How Programs Work Together



- Programs share functionality.
- They can use each other's code.
- The Operating System provides:
 - Keyboard access
 - Screen display
 - Network access
 - Printer access
 - Disk access
- Browsers also call on Search Engines, Spell Checkers, Video Players, Audio Players, etc.



One application can use another's functions – libraries, plug-ins, extensions.

A Simple Program

A simple program is 'script' based.

1. Open Notepad, and type in two lines:

```
cd \
```

```
dir /? > mylisting.txt
```

2. Save it as [c:\myprog.bat](#)

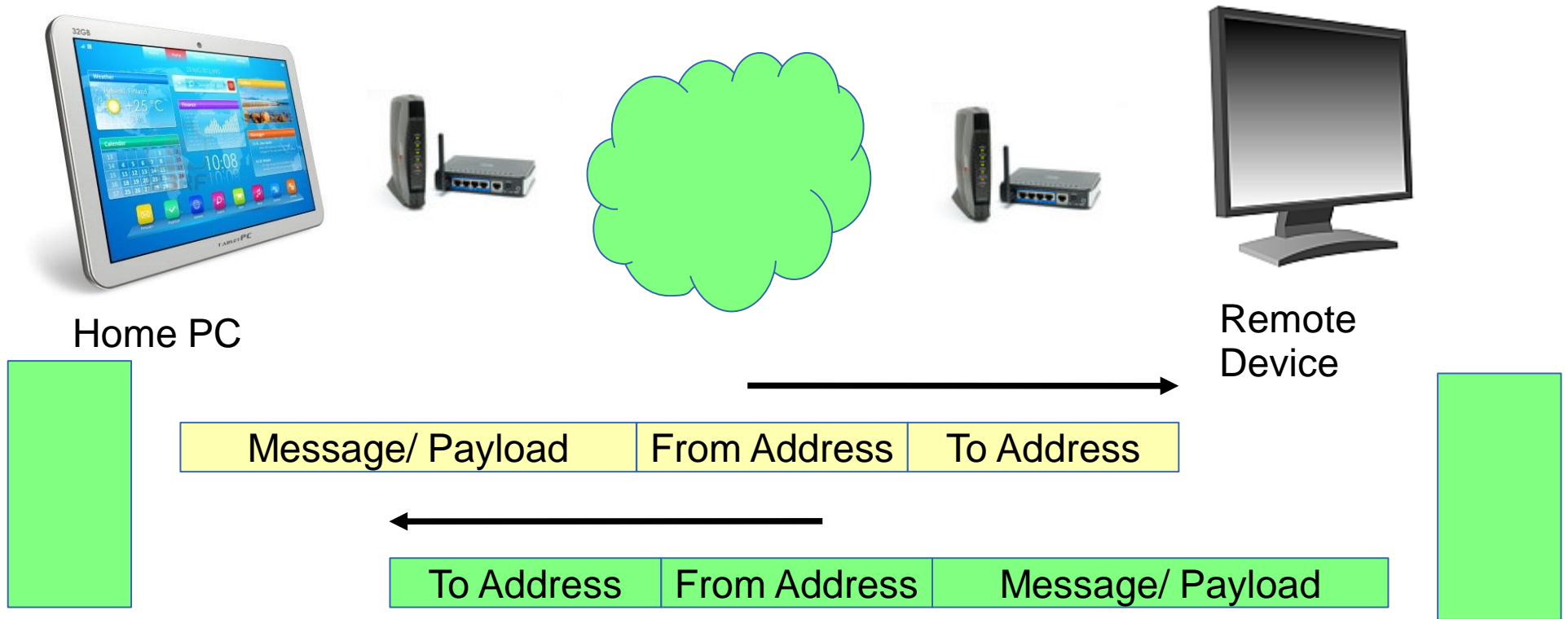
3. Click on Start and in the Search box type 'c:\myprog.bat' and

press return

4. Open File Explorer and open [c:\mylisting.txt](#)

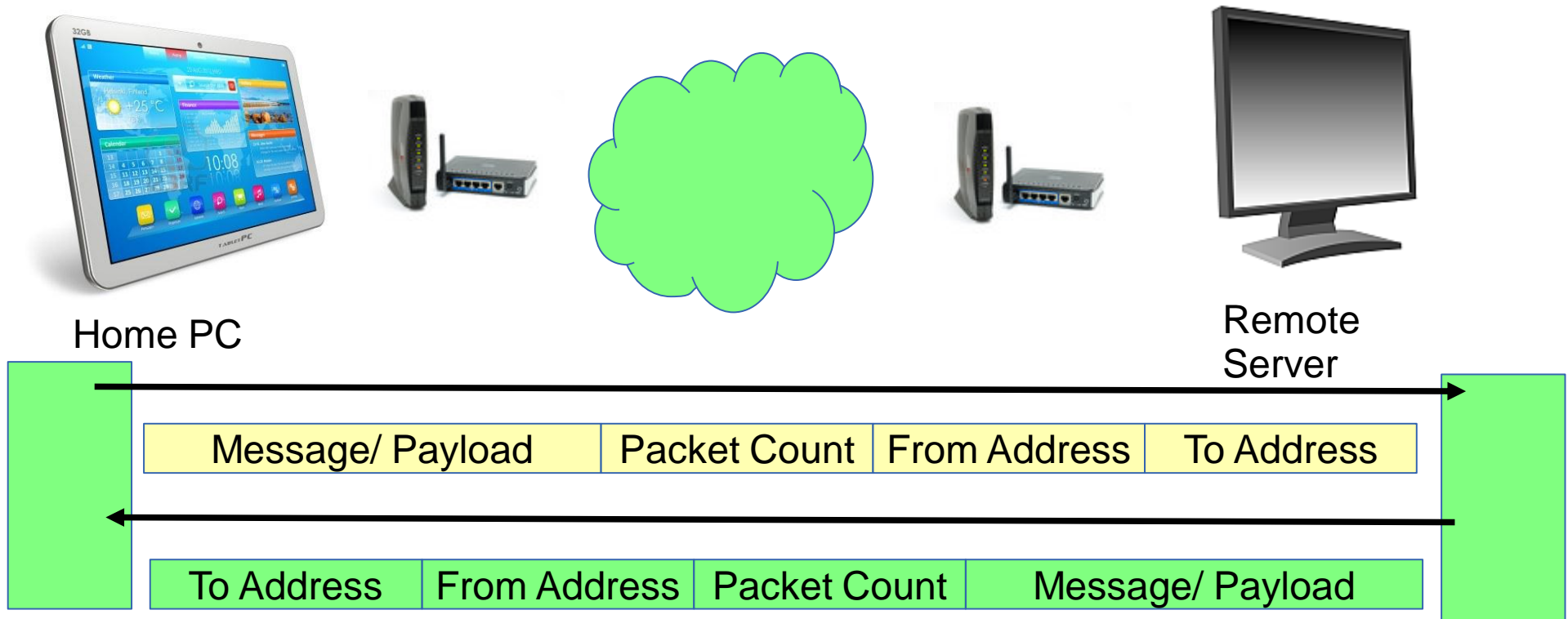
5. You have written and run your first 'batch'

Sending Data Across Networks 1



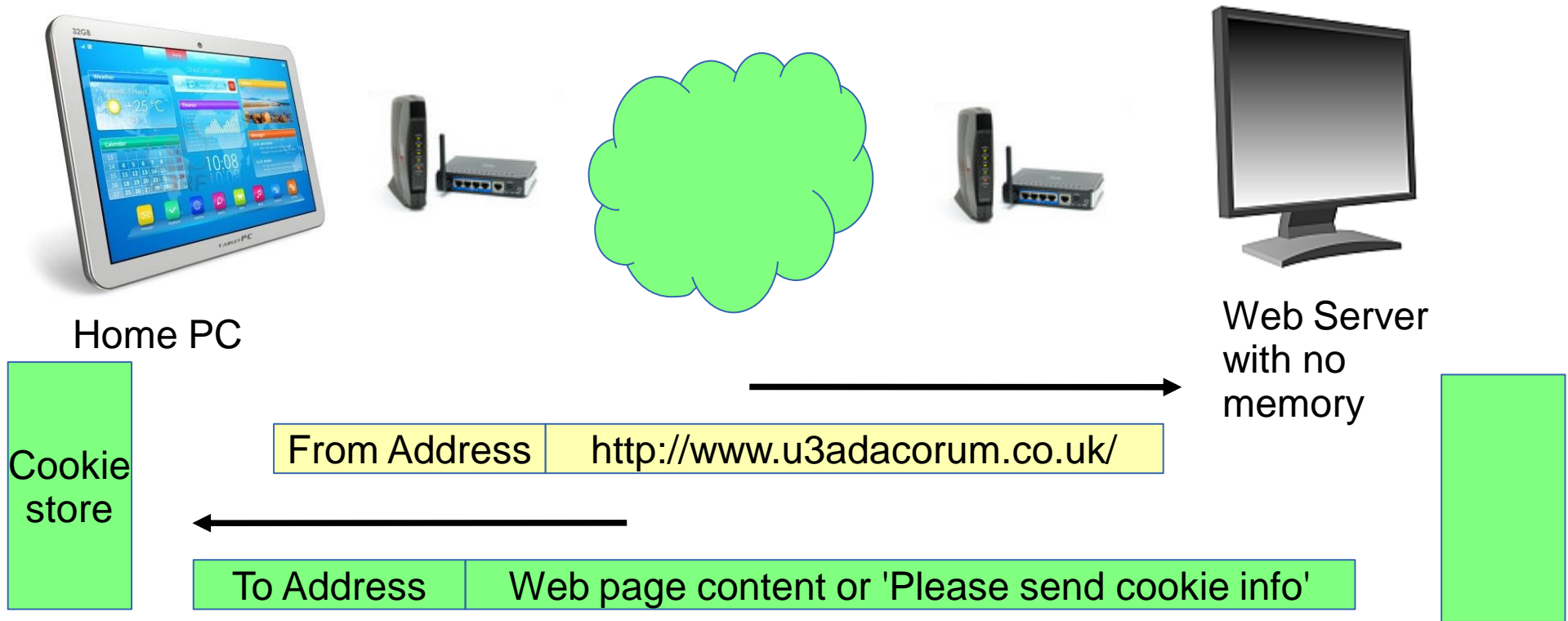
At the lowest level this is an 'IP' (Internet Protocol) message. The sender does not know if it arrived or was read, unless a reply arrives. This is the same as the Royal Mail.

Sending Data Across Networks 2



The next level is 'TCP' (Transport Control Protocol).
The sender and receiver create an end to end connection.
This is the same as a telephone call.

Sending Data Across Networks 3



This is a web page request. It works at the IP level. The sender does not know if it arrived or was read, unless a reply arrives. The server has no memory. It stores data in cookies on the user PC, and asks for them as required.

Back to the Beginning

- How Google, Yahoo and Bing 'Track', 'Target' and 'Bubble' you – ie tune your search results to what they know about you, and send you annoying adverts.
- How to avoid this with Firefox and the DuckDuckGo search engine:
 - Firefox settings
 - DuckDuckGo settings
- Private tunnels (VPNs):
 - How to encrypt your stuff in transmission.
 - How to always appear to be in the UK, even when abroad.
 - How to receive BBC iPlayer TV outside of the UK.

Tracking 1

- When you search Google, Yahoo or Bing:
 - Your search term is usually sent to that site
 - With browser and computer info
 - Check with Panopticlick
<https://panopticlick.eff.org/index.php?action=log&js=yes>

Your browser fingerprint appears to be unique among the 3,304,172 tested so far.

Currently, we estimate that your browser has a fingerprint that conveys at least 21.66 bits of identifying information.

The measurements we used to obtain this result are listed below. You can read more about our methodology, statistical results, and some defenses against fingerprinting in this article.

Tracking 2



- Who cares about some random site?
- Those sites usually have third-party ads, and those third-parties build profiles about you, so they can follow you.
- Your profile can also be sold, so if you had a cold sore and looked up 'herpes', your insurance might go up.
- Your searches are saved by Google, and may be legally requested.
- The same applies to your email.

Tracking 3



- A bad Google employee could go snooping
- Google could get hacked
- Bubbling is when your search history is used to promote what you like, and demote what you do not like.
- Different people get different results.



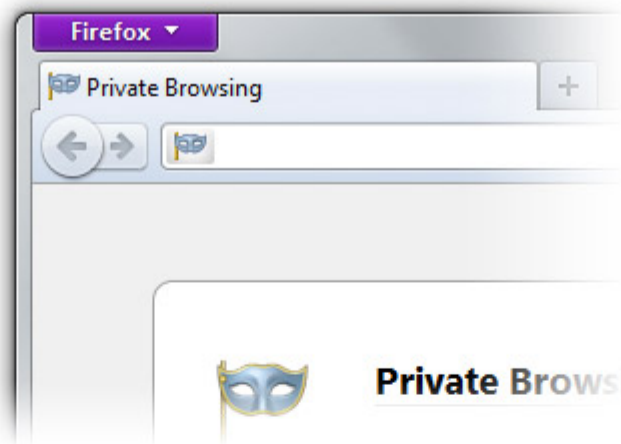
Firefox - Privacy



Protect Your Privacy

When you browse, you leave a trail of data that potentially contains all sorts of personal information. We believe this info belongs to you and you alone (and least of all to overzealous advertisers), and have built in features to ensure that's the case.

[Return to Top](#)



Do Not Track

Many sites track your online behavior and sell that data to advertisers. Firefox lets you tell sites that you want to opt out of behavioral tracking. [Learn how.](#)

Private Browsing

Sometimes it's nice to go undercover, so turn this feature on and protect your browsing history. [Learn how.](#)

Clear Recent History

Clear all your private data or just your most recent activity with a few quick clicks. [Learn how.](#)

Forget This Site

Having second thoughts about having visited a certain site? Remove every trace of ever having been there! [Learn how.](#)

Content Security Policy

Firefox lets sites explicitly tell it which content is legitimate, thus protecting you from cross-site scripting attacks.

Firefox Security



Browse With Security

Whether it's buying a gift, paying your bills or simply signing in to Facebook, it's important keep your personal info out of the hands of any online bad guys who might be snooping around. Fortunately, Firefox is packed with advanced security features to help you stay safe.

[Return to Top](#)



Instant Website ID

A color-coded system makes it easy to check on suspicious sites and avoid Web forgeries. [Learn more.](#)

Anti-Phishing & Anti-Malware

Firefox protects you from trojan horses and spyware, and warns you away from fraudulent sites.

Secure Software Installation

A secure connection is required before you can install add-ons and other 3rd party software.

Anti-Virus Integration

Firefox integrates elegantly with your computer's anti-virus software whenever you download.

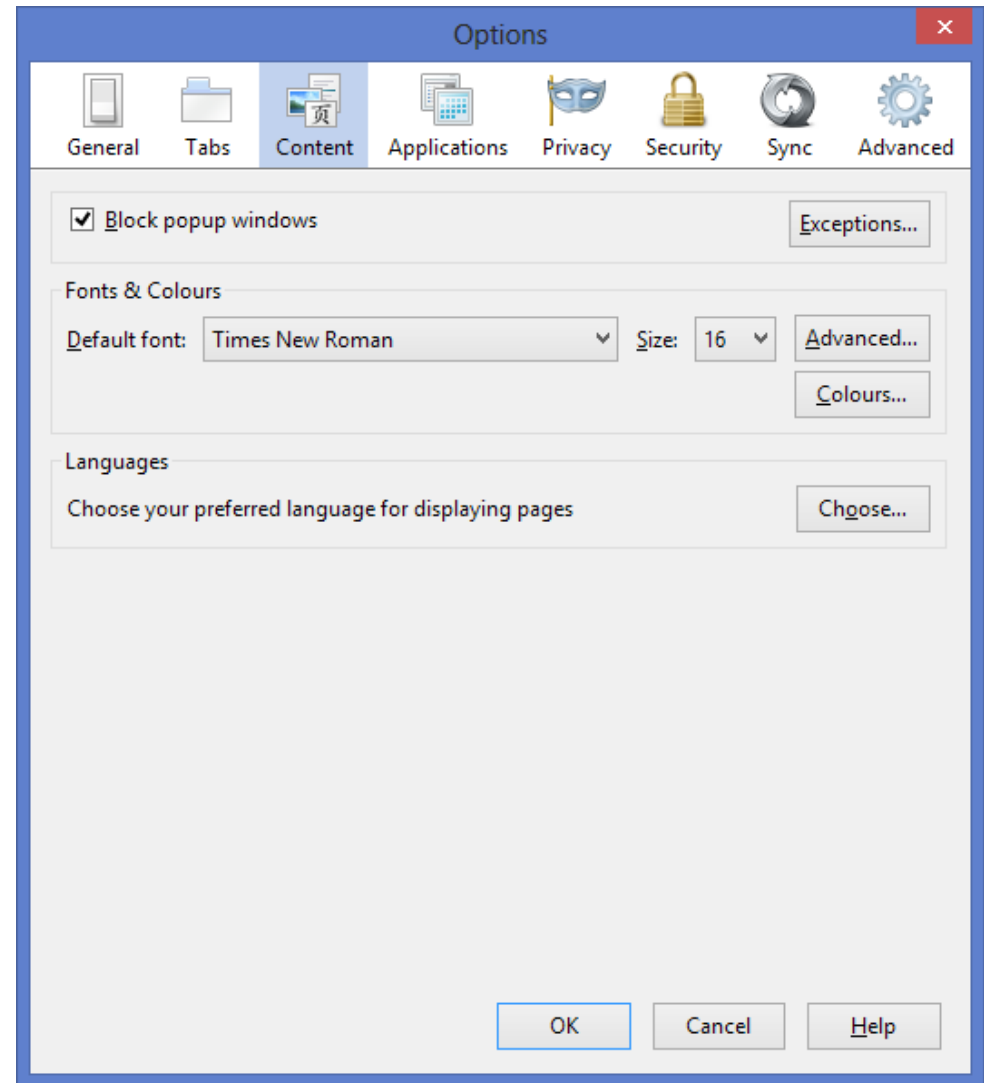
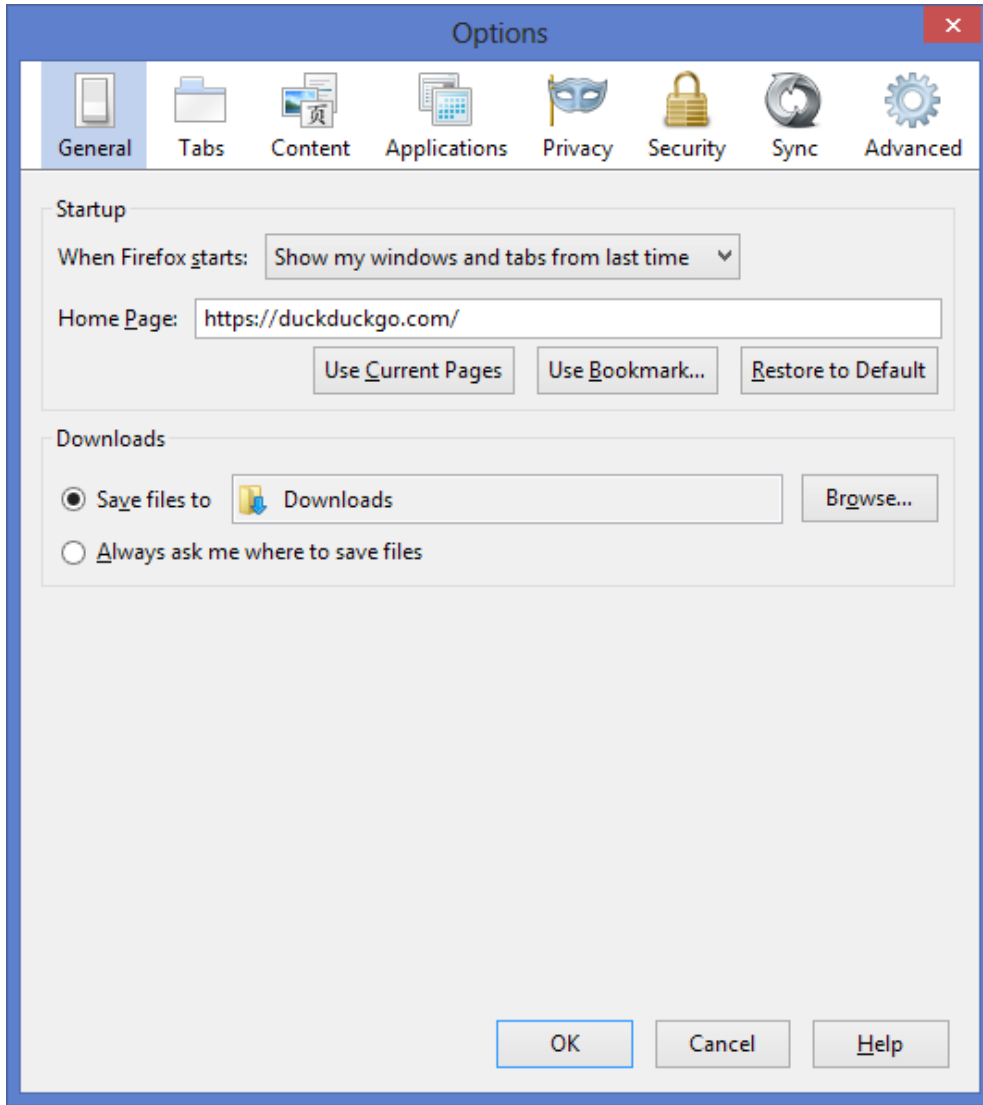
Firefox Add-ons



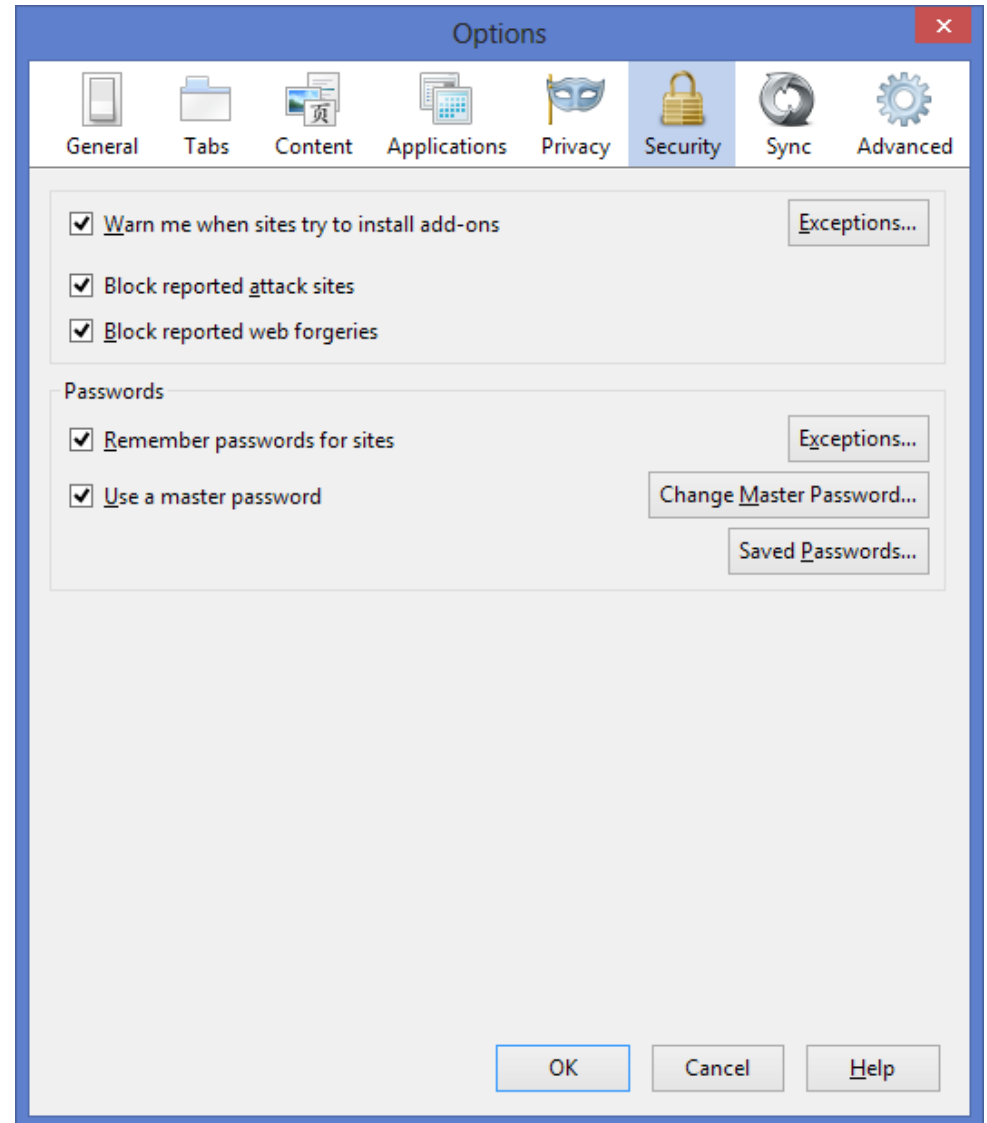
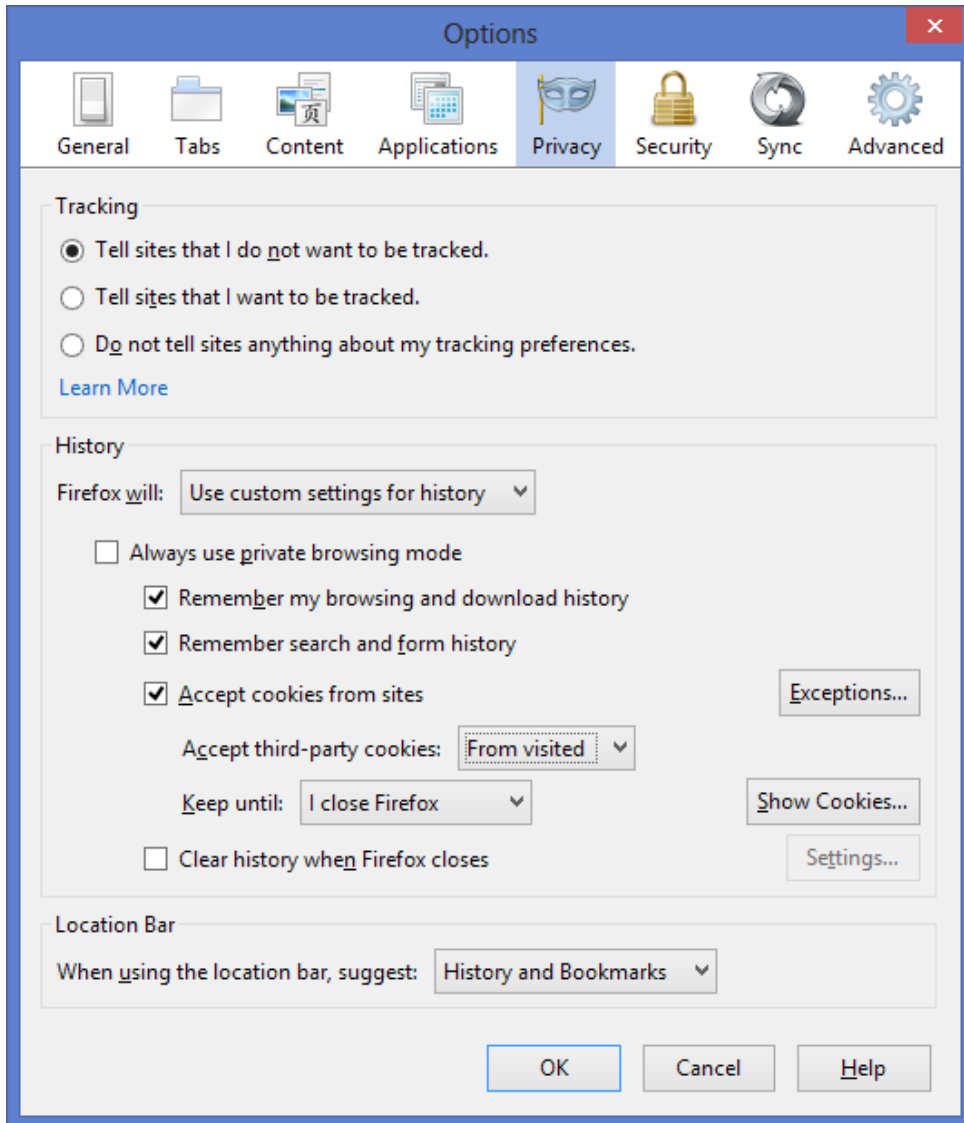
The screenshot shows the Firefox Add-ons Manager window. The browser's address bar contains several tabs: "Welcome to eBay", "Thank you for visiting Genes Reunite...", "Escape your search engine Filter Bub...", and "Add-ons Manager". The Add-ons Manager interface features a search bar at the top right with the text "Search all add-ons". On the left side, there is a navigation menu with the following items: "Get Add-ons", "Extensions", "Appearance", "Plugins", and "Services". The main content area displays a list of installed add-ons:

- DuckDuckGo Plus 0.2.53**: DuckDuckGo Plus [More](#) [Options] [Disable] [Remove]
- HTTPS-Everywhere 3.4.1**: Encrypt the Web! Automatically use HTTPS security on many sites. [More](#) [Options] [Disable] [Remove]
- BetterPrivacy 1.68 (disabled)**: "Super-Cookie Safeguard" [More](#) [Enable] [Remove]
- WOT 20130515 (disabled)**: Web of trust. [More](#) [Enable] [Remove]

Firefox Set Up 1



Firefox Set Up 2



Firefox Master Password

The screenshot shows the 'Saved Passwords' window in Firefox. The window title is 'Saved Passwords'. At the top, there is a search bar. Below it, a message states: 'Passwords for the following sites are stored on your computer:'. A table lists various sites and their corresponding user names. A 'Password Required' dialog box is overlaid on the table, asking for the master password for the Software Security Device. The dialog box has a question mark icon, a text input field, and 'OK' and 'Cancel' buttons. The table lists the following sites and user names:

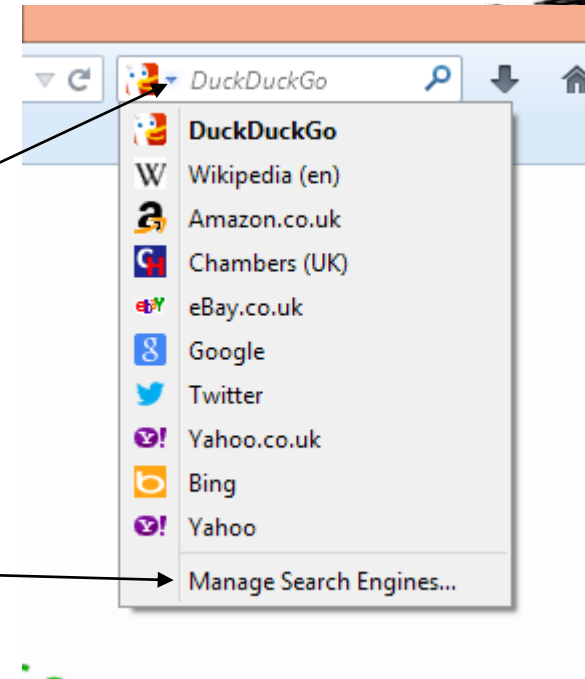
Site	User name
http://127.0.0.1	admin
http://192.168.0.1 (NETGEAR DGND4000)	admin
http://192.168.0.1	mike.sapsard@gmail.com
http://192.168.1.1 (NETGEAR DGND4000)	admin
http://192.168.1.50 (NETGEAR DGND4000)	admin
http://192.168.1.74:9001 (NSA325)	admin
http://bugs.freepascal.org	
http://forum.lazarus.freepascal.org	
http://lazarus.firmos.at	
http://localhost	
http://mantis.freepascal.org	
http://my.freecycle.org	
http://templates.libreoffice.org	
http://www.genesreunited.co.uk	
http://www.growhemel.co.uk	
http://www.lazarus.firmos.at	
http://www.lazarus.freepascal.org	
http://www.noip.com	
http://www.noip.com	
http://www.routerlogin.net (NETGEAR DGND4000)	
http://www.study.net2.herts.ac.uk	
http://www.webhostingbuzz.co.uk	
http://www.windsurfer.me.uk	

Also use a systematic password system, for when you cannot use Firefox or other regular browser.

Firefox Search Engines



- You can add any search engines you like.
- Click down arrow to see drop down list.
- Click 'Manage Search Engines' to change.
- For others see https://en.wikipedia.org/wiki/Search_engine



DuckDuckGo



Set as Homepage

- + Drag this text to toolbar home icon
- ... More ways to add DDG

Add to Browser

- + Install DuckDuckGo Plus
- + Install search plugin only
- ... More ways to add DDG

Set as Homepage

Add to Browser

More

PRIVACY

- Policy
- DontTrack
- DontBubble
- WhatsDNT
- FixTracking

GET INVOLVED

- Develop
- Translate
- Support Us

Private Tunnels (VPNs)



- If I encrypt a letter then nobody else can read it.
- If I give only you the decryption method, only you can read it.
- If you have a similar system set up with me, we can communicate in private.
- If we send our communications through the Royal Mail, we have a Virtual Private Mail system.
- Doing it over the internet gives us a Virtual Private Network or VPN.
- OpenVPN is GNU GPL, so many people review it.
- Several VPN providers exist. Some are free.

PrivateTunnel

PrivateTunnel.com

California based

50Gb free per year

You appear to be in UK

Encrypted link from anywhere to UK

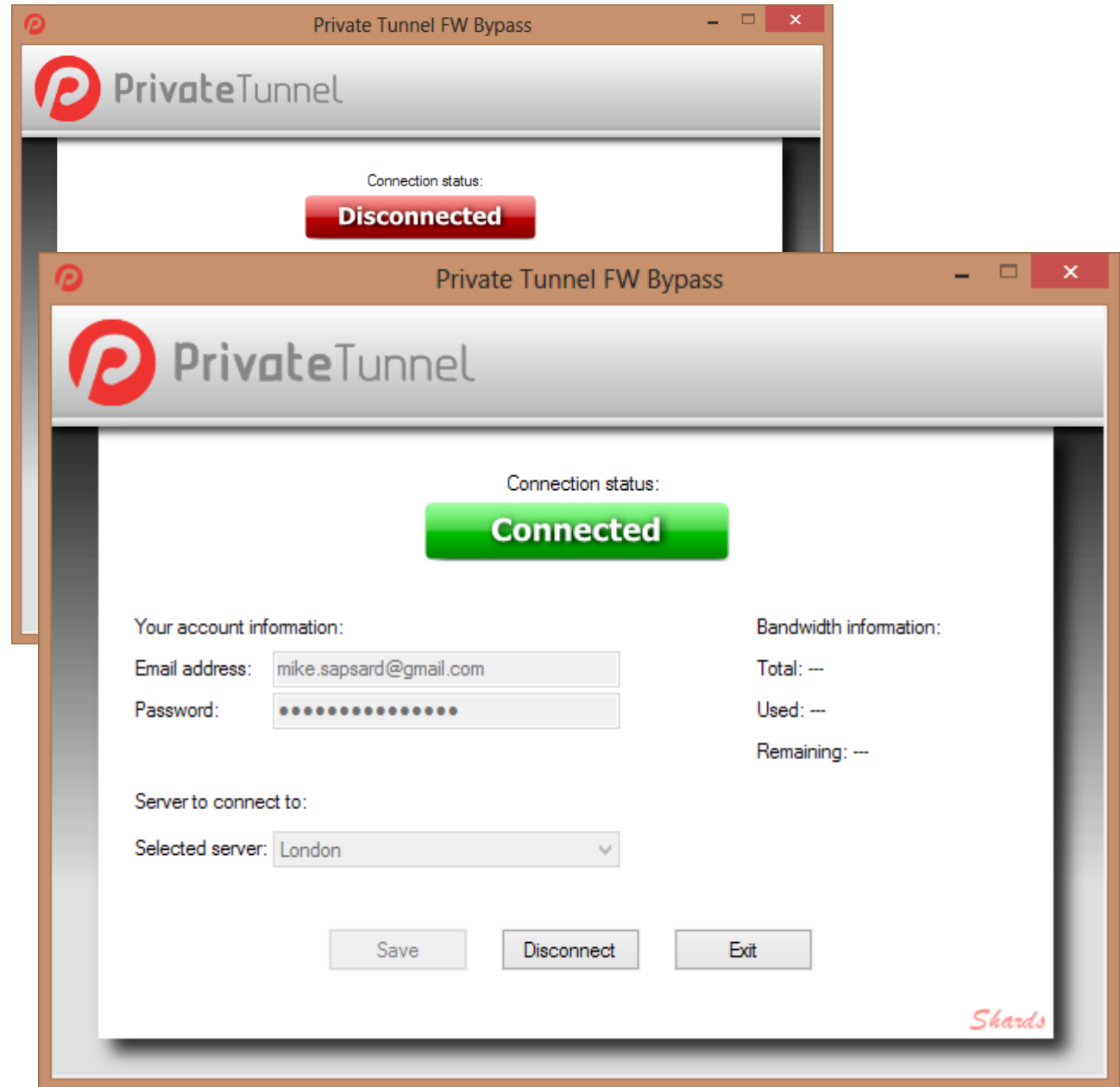
Secure link to UK even if not an https:// link

The screenshot shows the PrivateTunnel web interface. At the top, the logo and navigation links 'My Account', 'Purchase', 'My Usage', and 'Disconnect' are visible. The main content area displays 'You're connected as: mike.sapsard@gmail.com' with a 'Used: 27GB of 50GB' progress bar. The 'Tunnel to:' dropdown is set to 'UNITED KINGDOM - London'. A 'Refer Your Friends' section is also present. Below this is a grid of website thumbnails, including duckduckgo.com, skype.co.uk, itv.com, channel4.com, signup.netfli..., bbc.co.uk, facebook.com, yahoo.com, live.com, twitter.com, amazon.com, chase.com, and bankofamerica... A vertical 'feedback' button is on the right side.

PrivateTunnel FireWall Bypass

Sometimes you need to use an extra tool.

This uses yet another proxy, so that PrivateTunnel is not recognised, even by BBC iPlayer and ITVPlayer.



Conclusion



- To optimise your security:
 - Use your browser features.
 - Tune the features for optimum convenience.
 - Use a non-tracking search engine.
 - Use a VPN (Private Tunnel) when in a public place or abroad.