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LCG Committee 2012/13

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WINDOWS 7 TIPS FROM BRUCE

Understanding System Restore

If you have installed a program that causes your computer trouble then you can put it back the way it was with SYSTEM RESTORE.

Just type System Restore in the search bar of the Start menu and choose the restore point you'd like to use. Click the new button to 'Scan for affected programs' and Windows will tell you which (if any) programs and drivers will be deleted or recovered by selecting this restore point.

(*Editor's note : System Restore does not affect files and documents*)

Desktop slideshow

Windows 7 comes with some very attractive new wallpapers, and it's not always easy to decide which one you like the best. So why not let choose a few, and let Windows display them all in a desktop slideshow?

Right-click an empty part of the desktop, select Personalise > Desktop Background, then hold down Ctrl as you click on the images you like. Choose how often you'd like the images to be changed (anything from daily to once every 10 seconds), select Shuffle if you'd like the backgrounds to appear in a random order, then click Save Changes and enjoy the show.

Recover screen space

The Windows 7 taskbar acts as one big quick launch toolbar that can hold whatever program shortcuts you like (just right-click one and select Pin To Taskbar). And that's fine, except it does consume a little more screen real estate than we'd like. Shrink it to a more manageable size by right-clicking the Start orb, then Properties > Taskbar > Use small icons > OK.

Windows 7 has some useful new keyboard shortcuts.

Key Combination	Action
Alt+P	Display/ hide the Explorer preview pane
Windows Logo+G	Display gadgets in front of other windows
Windows Logo++ (plus key)	Zoom in, where appropriate
Windows Logo+- (minus key)	Zoom out, where appropriate.
Windows Logo+Up Arrow	Maximise the current window
Windows Logo+Down	Minimise the current window
Windows Logo+Left Ar-	Snap to the left hand side of
Windows Logo+Right	Snap to the right hand side
Windows Logo+Home	Minimise/ restore everything except the current window

VICTOR TELEPHONE NUMBER

Help for members **0408 174235**

Australia's Biggest Morning Tea

Great Lucky Door Prizes will be drawn at OPEN June 29 following our effort for 2012. .

MEETINGS

OPEN JULY 4 AT 1 PM

LCG JULY 4 AT 7 PM

Workshop Topic to be advised

VENUE TELEPHONE NUMBER
The club telephone is available during class hours.
63434928
10am –3 pm

OPEN NEWSLETTER – JULY 2012

CLIP ART IN OPEN OFFICE

Quite a few members at OPEN use the free word processor **Open Office Writer** as an alternative to paying for Microsoft Word. However in almost every version of OO Writer and its successor, Libre Office Writer, there is **hardly any Clip Art** included as part of the program's 'Gallery'.

That means that members wanting to use Clip Art to complete some their O-Learn exercises usually have to insert graphics objects as files from other sources.

The good news is that it is possible to customise the Gallery by adding your own Clip Art or photos using the simple **drag-and-drop** method. Open Office even allows you to create new Themes (or categories) so that you can organise your Clip Art in logical groupings.

Just fire up Open Office, then the Gallery and select the category where you want to add images. Re-size the window so that you can open up an images folder next to Open Office and just drag the clip-art or picture files into the Gallery window.

Clip-art images are available on our server and also from other programs e.g. Print Artist 4.

Dennis

BASIC GRAPHICS SESSIONS

10 am—noon

July 11

August 8

LEVEL 2 & 3 GRAPHICS

July 18

August 15

1 pm—3 pm

FAMILY HISTORY ON-LINE

Wednesday Morning
July 25
August 22

Wednesday Afternoons
July 11
August 8

DIGITISING RECORDS AND TAPES

A SPECIAL CLASS will be held on July 18 to demonstrate the techniques required to enable you to record the music from your old vinyl records and cassette tapes in to 'digital format ' that can be burned to CD or stored on a PC.

What equipment is needed? What programs are needed? All will be answered at the session.

Bring along a favourite record or tape for the session.

From 10 am to noon

PSP X1

1pm—3pm

With Judy, Eleanor and Margaret B

July 25

August 22

MAC USERS

Classes every Tuesday with Reinhard, Ivan and Maurice.

Bring your own or use our club computers.

ADVANCED GRAPHICS
EXTRA SESSIONS

Aug 29	all 1pm—3.15
Oct 31	
July 4	2pm—4.15

NEWSTREAM

OPEN Session Times
At Studioworks, 1 Pipeworks Rd, L'ton
Standard Sessions $5.00

Monday	10 am –12	General & Beginners
	1 pm – 3 pm	**Beginners & PC Support**
Tuesday	10 am –12	P C Support & Beginners + Mac
	1 pm – 3 pm	**As above**
	7 pm—9 pm	PC Support (Night Class)
Wednesday	10 am—noon	Special sessions or Meetings
	1.pm—3 pm	As for mornings (see rosters)
Thursday	10 am –12	General & Beginners
	1 pm – 3 pm	General & Beginners
Friday	10 am –12	General & Beginners
	1 pm—3 pm	Beginners

SPECIAL WEDNESDAY SESSIONS
Please register on the sheets – numbers may be limited

Date	Time	Topic	Details
June 29	11 am to 1 pm	Australia's Biggest Morning Tea	Come and meet members who attend on other days and help raise funds for a worthy charity
July 4	10 am-noon	Graphics Workshop	Judy and Laraine,
	1 pm—	**OPEN MEETING**	
	From 2 pm	Advanced Graphics	Judy will hold a special class session.
July 11	**10 am– noon**	**Basic Graphics**	**Judy, Laraine, Sandra V**
	1 pm—3pm	Family History online	Judy, Sandra, Margaret G
July 18	**10 am-noon**	**Digitising LP's etc**	**Judy will demonstrate how to convert vinyl records and cassette tapes**
	1 pm—3 pm	Level 2-3 Graphics	Judy, Eleanor and Sandra V
July 25	**10 am –noon**	**Family History**	**Judy, Sandra V, Margaret G**
	1 pm - 3pm	PSP X1 Graphics	Judy, Eleanor
August 1	**10 am– noon**	**Graphics Workshop**	**Judy. Eleanor, Laraine**
	1pm	**OPEN MEETING**	

OPEN NEWSLETTER — JULY 2012

E-MAIL CAUTIONS AND ADVICE

Most of us have been using e-mail for so long that it might seem superfluous to be giving advice on the subject in the year 2012. However, some recent experiences have prompted me to compile these notes.

Hijacking of contacts lists? About 6 weeks ago I was asked to help a friend with an e-mail that he could not open. Supposedly the e-mail was from one of his grand-daughters but I began to have doubts when the subject line was blank, and the content was an unrecognisable web-site link.

After much discussion my friend still insisted on following the link and was greeted with some advertising for a 'pharmaceutical product' beginning with the letter 'V'.

I posed the question "Is this something you would expect your grand-daughter to send to you?"

Even as we discussed this matter another e-mail in similar format arrived (allegedly) from his grand-daughter. I could not believe it when my friend insisted on opening the second e-mail.

A few weeks after this case I received a similar e-mail in my own Inbox. It was (supposedly) from a former employee of the business that I used to work for. The alarm bells rang— the employee had left the business more than 3 years ago, the subject line was blank and the content was just a web-site address.

I deleted the e-mail immediately!

In both of these cases the list of people to which the e-mails had been sent contained out-of-date information. I suspect that the Contacts lists of both senders had been 'hacked' by spammers.

E-MAIL CAUTIONS AND ADVICE

Solving the right problem? Do you occasionally get an error message from your e-mail program informing you about unsent messages, servers not being found etc?

This problem surfaced twice on consecutive days at OPEN recently and the cause was the same in both cases— incorrect e-mail addresses.

In the first case the member could not understand why an e-mail was 'stuck' in the Outbox when he had already received feedback on the contents. On investigation I found that the e-mail was addressed to several recipients and ONE of those was to an incorrect e-mail address so the e-mail program could not send it.

In the second case the member tried all sorts of remedies including recreating the e-mail account, changing the provider's server settings, etc. But on checking the recalcitrant e-mail it was discovered that the intended recipient's e-mail address was incorrect due to spaces being inserted between the first-name and surname.

Do you know where your e-mail is located?

When someone is upgrading to a new computer one of the things they often want to do is transfer their e-mail settings, messages and contacts list from their old computer. Documents and Pictures are usually easy to locate and copy, but what about your e-mail messages?

To begin with let's just review the e-mail programs that Windows provides.

E-MAIL CAUTIONS AND ADVICE

For Windows XP and earlier versions of Windows **Outlook Express (OE)** was included as part of the operating system.

In Windows Vista OE disappeared and was replaced by **Windows Mail** which also was included as part of the operating system.

However, when Windows 7 arrived it did not include an in-built e-mail program—you had to go to Microsoft web-site and download **Windows Live Mail.**

Where does plain old **Outlook** fit in to the picture I hear you ask? Outlook, which includes features other than just e-mail, is a paid product which is usually part of Microsoft Office but you don't get it in Home and Student versions of Office.

So back to question of where your e-mail is located.

In **Outlook Express** each folder in your e-mail has a corresponding 'dbx' file buried deep somewhere on your C: Drive—the easiest way to find those files is to do a Search and you will see a list including Inbox.dbx, Sent.dbx, Deleted.dbx etc.

In **MS Outlook** all the information is contained in a single 'pst' file, and again it is much easier to search for it rather than drilling down deep in to your folder structure.

In **Vista** and **Windows 7** your e-mails are also buried deep within the folder structure under the general heading of the User's AppData . App Data is usually a Hidden Folder so you first need to change your Folder Options to be able to access AppData.

And even when you find your e-mails you may not recognise them as they often appear as a long string of numbers and letters rather than being from Uncle Dave, or Auntie Flo.   *Dennis Murray*

TALKING TECH: AMATEUR COMPUTER "FORENSICS" TO TRACK DOWN HIDDEN DATA, PART 1

Computer forensics is the science of examining computers to find, preserve, protect and present legal evidence for a criminal or civil court action. Evidence to be used in court must meet very high standards, so forensics examiners have to follow very precisely-defined procedures and document their actions each step of the way. The forensics examiner may have to testify to the findings on the witness stand or through a sworn deposition. As an expert witness, the examiner's background, training and experience will be questioned for the purpose of establishing credibility. A real computer forensics examiner is a professional in every sense of the word.

However, I often hear from folks who want to indulge in a bit of amateur forensics work. They want to track down where an email message really came from or they're looking for "evidence" of a child, spouse or employee's forbidden computer activities. We'll leave aside the question of whether parents, spouses and employers *should* be poking around in the bits and bytes. That obviously depends on the particular circumstances and relationships. But we can take a look at where and how hidden data can be ferreted out - not only to help point those "investigators" in the right direction but also to let you know where someone else will be looking if you happen to be the object of such a search.

Often the issue (or one of the issues) is finding out which websites a computer user has visited in the past, so that's what we're going to focus on in Part 1 of this series. The obvious place to start looking is in the web browser's history records. Browsers keep a log of the URLs that have been accessed; this is used to take you to previous pages when you click the Back button and you can view the history when you've followed links to find a great site and then can't remember the URL or site name at a later time. This log doesn't go back forever; usually a set period of time is covered, with the browser clearing old entries automatically at periodic intervals. IE displays the history in an "Explorer bar" side pane, going back three weeks, as shown in the screenshot.
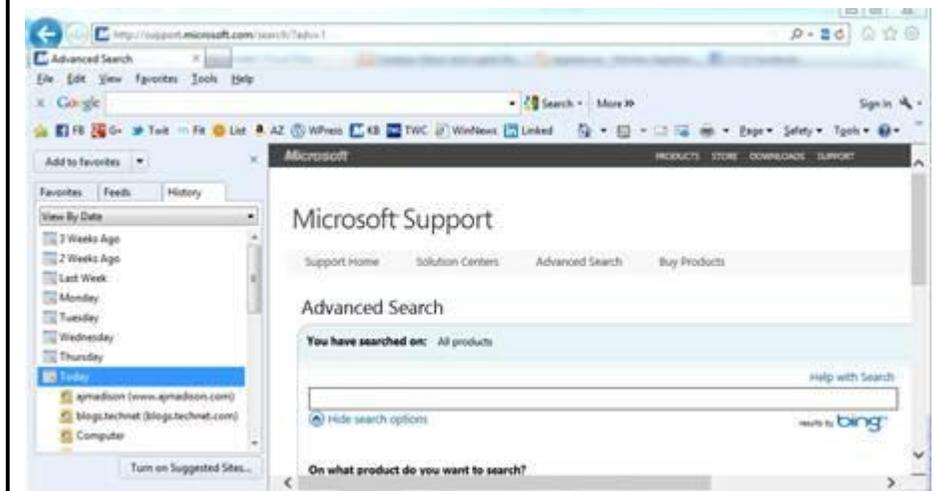
Keep in mind, though, that a computer user can clear the history easily. You probably know that you can clear the entire contents of the history in IE by selecting **Tools** and then **Delete browsing history**. But a completely empty history log can, in and of itself, raise suspicions. You might not know that you can also delete individual items from the history, simply by right-clicking them in the left pane and selecting **Delete**. So even though a user's history appears to be intact, that doesn't mean you're getting the whole story.

Something else that amateur digital sleuths sometimes overlook is that the computer user might have installed multiple web browsers. Maybe your child uses IE for homework research but uses Firefox or Chrome to visit questionable sites. If your child is really sneaky, he/she may have deleted the program shortcut from the Start menu, taskbar, etc., so that you would have to know where its executable is installed on the hard drive to find and open it.

Of course, if he/she is that sneaky, the history or deleted select entries in the secondary browser is probably cleared, too. The second place to look for your evidence is in the browser's cache (in IE, called "Temporary Internet Files"). While the history log records the URLs, the cache folder contains copies of the actual web objects that were downloaded to your browser (pages, graphics and other objects). You can view the Temporary Internet Files that are stored by default in Windows 7 in a folder in the path:
<driveletter>:\Users\<username>\AppData\Local\Microsoft\Windows\Temporary Internet Files

(Continued from page 7)

Some websites put cookies (small files that record a user's activities on a site) on the computer. You'll find these in the Temporary Internet Files folder, too, as shown in the screenshot below.
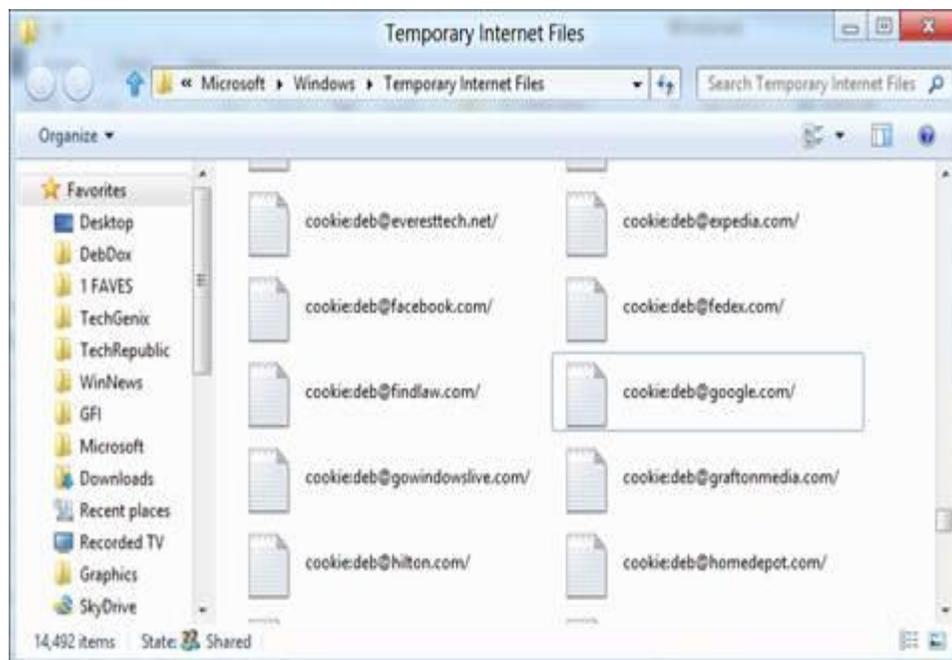
You may also be able to find some very recently visited websites in the list of locally-cached DNS entries on the computer. When the web browser resolves a URL to an IP address, it's cached here and you can view the cache by typing **ipconfig /displaydns** at the command line.
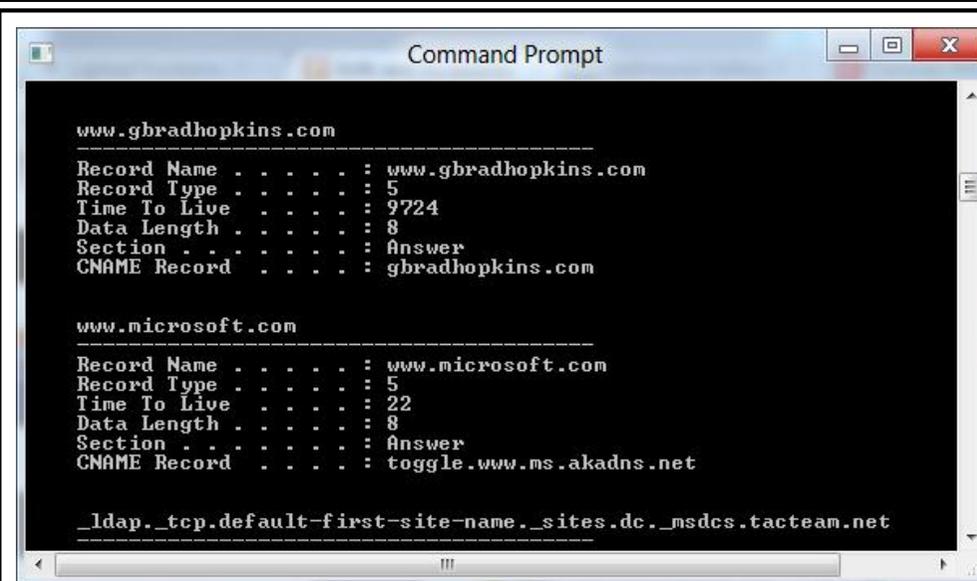
Of course, if you know in advance that you'll want to track which websites are visited, you can install software or hardware designed specifically to do just that. Businesses use sophisticated web monitoring solutions such as GFI WebMonitor™ to track web usage, but home users can choose from a variety of web monitoring programs priced to fit their budgets. Just do a search for "track web activity" and you'll find dozens of free solutions as well as those that charge for them. Some of these will let you monitor usage from a remote computer.

Physical keyloggers are small devices that can be plugged in between the keyboard and computer to track everything typed on the keyboard, which would include typed URLs.

Even if the information about web activity has all been wiped off the computer, some of it may exist somewhere else. Some routers also log web traffic that passes through them but most inexpensive home routers don't do this. Likewise, some firewall logs will show websites visited but again, this is more common in business-grade firewalls.

Did you know that if you use Google to search and you have a Google account (Gmail,

Google+, etc.), it records your web history and stores it in the "cloud?" That means the online web history also can be used to discover what sites a user has visited. Of course, it's also possible for a savvy user to clear that history.

All in all, there are a number of places that records of web activity "hang out" long after a user has navigated away from a web page, closed the browser or even shut down the computer. Depending on how knowledgeable about technology (and how careful) a person is, you may be able to find plenty of "evidence" of the websites he/she has visited.

DELETING FILES PROTECTED BY TRUSTEDINSTALLER

Who is TrustedInstaller and why does he/she own all those files on your Windows system? You thought that because you're the administrator, you would own the system files and folders by default, didn't you? But if you should ever need to delete one, you might discover that you don't have permission to perform the action and/or be told that "You need authorization from TrustedInstaller in order to perform this action." What's up with that? Well, you'll need to take ownership of that file away from the TrustedInstaller process before you can do what you want to do.

Be careful, though, when you're messing with files owned by TrustedInstaller. There's a reason Windows didn't make you the owner; so be sure you really know what the file does and are sure you don't need it before you remove it.

NEW AND IMPROVED CHKDSK FOR WINDOWS 8

If you've been using Microsoft-based computers for a while, you're probably familiar with the CHKDSK disk-checking utility, which can be used to detect and fix problems with disk corruption and file system errors. It's been around since the MS-DOS days and has repaired many hard drives. CHKDSK will still be around in Windows 8, but it's been given a makeover.

Windows 8's CHKDSK gives you more control over the process and also divides it up into different phases and performs many of its functions in the background instead of the "in your face" method that we've been used to. Read more about the changes to CHKDSK in Windows 8 in this Neowin.net article.

SPEED UP YOUR COMPUTING BY REDUCING THE "HUMAN BOTTLENECK"

What's the real bottleneck that slows down your computing? The processor? Memory? Hard disk? Well, you might be surprised to learn that often, it's *you.* We know it's possible to upgrade the hardware to get more speed, but how do you speed up your own input so the computer doesn't have to sit around and wait for you? This article

contains 15 ways to accelerate your PC's slowest component (you), including such well known but often unheeded tips as assigning keyboard shortcuts, using macros and installing some browser extensions. Peruse the different methods and see how much time each can save you.

How To: Step-by-Step Guidance

XP TIP OF THE WEEK: HIDE THE CLOCK

1. Maybe you already have a wall clock sitting right behind your monitor so you don't need to see the clock in the XP notification area. Maybe you prefer not to watch the clock at all - it can be distracting if time seems to be dragging and/or you're working to meet a tight deadline and it's running out faster than you'd like. You can hide the clock from view and relieve yourself of the pressures of this temporal existence (well, for a while). Here's how:

Right-click an empty spot on the taskbar.

2. Click **Properties**.

3. Click the **Taskbar** tab if it's not already displayed.

4. Under Notification Area, uncheck the box that says **Show the clock**.

5. Click **OK**.

That's all there is to it.

Windows 7 tip of the week: How to enable Telnet in Vista/Windows 7

1. Telnet? What's that? If you don't know, you probably don't need it. But if you're an old school computer user who still occasionally has need to telnet into another system on the network, you'll find that it's disabled by default in Windows 7 and Vista. If you have another way to connect, you should use that, because telnet is not secure. But if you still want your telnet back, here's how to get it:

Click **Start** and select **Control Panel**.

2. Click the **Programs and Features** applet.

3. Click **Turn Windows features on or off**.

4. Scroll down the list and find **Telnet Client** and click the checkbox.

5. Click **OK**.

Now you'll be able to invoke a telnet session from the command prompt as you did in previous versions of Windows.

Windows 8 tip of the week: Disable the lock screen

(Continued from page 9)

1. When you start Windows 8 CP (or when it locks after being idle for a period of time), the first thing you see is the lock screen. It looks nice, but why go through the process of sliding it up (or clicking if you don't have a touchscreen) when you don't have to? If you'd prefer not to see it, you can just disable the lock screen completely, without affecting the security of your system. Here's how:

   On the Metro Start screen, type **Run.**

2. In the Run box, type **gpedit.msc** and open the Group Policy editor.

3. In the left pane, navigate to **Computer Configuration\Administrative Templates\Control Panel\Personalization.**

4. Double-click **Do not display the lock screen** in the right pane.

5. Click the option button to set it to **Enabled.**

6. Click the **OK** button.

Now the lock screen will be bypassed when you restart or want to log back on. You'll be taken directly to the logon screen where you can type your username and password.

Windows Phone tip of the week: Transferring your "stuff" to a new Windows Phone

If you had an old Windows Phone and now you've decided to upgrade to one of the cool new ones (Lumia 900, anyone?), you might be wondering whether you'll have to jump through a lot of hoops to get your apps and contacts and other "stuff" transferred. The trick is to use the same Windows Live ID that you used with the old one. [Now just go to the My Phone section of the Windows Phone website](#) and sign in with your Live ID and follow these steps:

1. Click your name.

2. Click **Account**.

3. Under App Purchase History, you'll see a list of the apps you've bought from the Windows Marketplace. Click **Reinstall** for each one that you want on the new phone.

Getting your contacts and calendars depends on where they're stored. For your Facebook, Hotmail, Gmail or Exchange contacts, just sign into those services with your accounts and they'll be automatically added to the People Hub. If you have contacts stored in Outlook (without an Exchange account), you can use the Hotmail Connector to transfer them to your Windows Live account.

Attendance call on the first day back at school in Birmingham

The teacher began calling out the names of the pupils :

"Mustafa El Ekh Zeri?"

"Here."

"Achmed El Kabul?"

"Here."

"Fatima Al Chadoury? "

"Here."

"Abdul Alu Ohlmi?"

"Here."

"Mohammed Ibn Achrha?"

"Here."

"Mi Cha El Mey Er" Silence in the classroom.

"Mi Cha El Mey Er"

Continued silence as everyone looked around the room. She repeated, "Is there any child here called Mi Cha El Mey Er ?"

A boy shyly arose and said, "Sorry teacher. I think that's me; It's pronounced Michael Meyer

Little-known browser commands and functions

By Fred Langa

No matter what browser you use, chances are good that you've never even heard of some its powerful and useful commands, features, and functions.

Here's a guided tour to some of the most interesting — and unfamiliar — functions in Internet Explorer, Chrome, and Firefox.

Power beneath the top-level menus

Today, about 75 different browsers currently are in use across all the major computing platforms, although just three browsers dominate on Windows: Internet Explorer, Chrome, and Firefox.

As each of those browsers has evolved to its current version, developers have added new features, functions, and commands — including some powerful, special-purpose ones that don't appear on the usual, top-level menus.

Here are some of the more useful and interesting obscure features and functions to be found in the big three. I'll focus on the most current of these browsers: IE9 (site), Chrome 19 (site), and Firefox 12 (site). Previous versions often have the same or similar functions and features. (If you're still using an older version, check your browser's Help file for specifics.)

The specialist's approach to Internet Explorer

Did you know that IE9 supports over *two dozen* command-line parameters (software switches) you can use to install and launch IE in specific modes for specific purposes?

For example, the **-k** switch immediately starts IE in true, full-screen, kiosk mode — with no frames, menus, toolbars, or other distractions visible. Instead, kiosk mode takes 100 percent of the screen to display whatever webpage or other HTML content you specify.

This is different from IE's conventional full-screen mode, which you can invoke by pressing **F11** anytime IE is running. In that simplified mode, you simply press **F11** again to exit full-screen mode. But as you might have noticed, when you're using the F11/full-screen mode to, say, watch a video, another program or browser tab might *steal the focus* and cause the browser to fall out of full-screen mode or even to switch to a different tab or window.

The **-k** command locks IE9 into the full-screen mode. It launches a new instance of the browser in which no other tabs or pages are active. The browser stays full-screen on whatever page or document you've specified, and it won't quit until you exit. The standard full-screen toggle, the **F11** key, has no effect.

The only way to exit the **-k** full-screen mode is to press **Alt + F4,** which closes the full-screen instance of the browser.

Try it! Click the Start orb and type (or copy/paste) the following into the **Search programs and files** box, then press Enter. The Windows Secrets home page will open full-screen.

iexplore -k www.windowssecrets.com

(Of course, you can substitute other sites in place of **www.windowssecrets.com.**)

When you're finished, press **Alt + F4** to exit the full-screen browser.

This is just one simple example from the many commands available for setting up and running IE. Others include **-nohome,** which starts IE while bypassing whatever home page you normally launch; **-new,** which starts an entirely new instance of IE; **-extoff,**

which prevents add-ons from launching; **-nohangrecovery,** which tells IE not to try to automatically reload any pages that cause a crash (avoiding potential loops where a tab crash leads to an attempted recovery, which leads to a new crash, etc.); and many more.

You'll find command-line options for IE explained in the TechNet article, "Using command-line switches," and in Microsoft Support item 927677.

But there's more in IE's bag of tricks than just command-line switches. My personal favorite, among IE's lesser-known features is the suite of built-in developer tools — more than **50** in all.

These tools give you ways to examine what's going on in any webpage — to see how it works or to learn what's hidden in the page's coding, to immediately resize your browser to any of several common proportions, to gain immediate control over your browser's caches and cookies, to set or alter the user-agent string (you can tell IE to identify itself to websites as, say, Chrome or Firefox, if a site requires a non-IE browser), and lots more.

And all you have to do to access the developer-tools windows is press **F12.** Figure 1 shows an example.
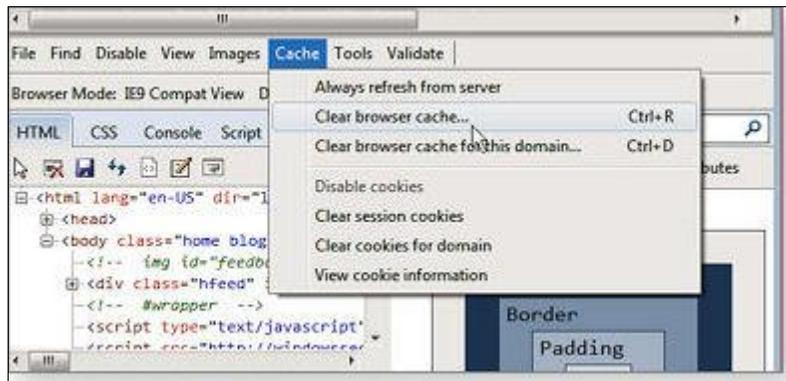

Figure 1. Pressing F12 puts IE into split-screen mode, with a bevy of powerful tools in a subwindow right at your fingertips.

For complete information on the developer tools for IE9 and other versions of IE, see the MSDN article, "Discovering Windows Internet Explorer developer tools"; the MSDN blog page, "Improved productivity through Internet Explorer 8 developer tools"; or the MSDN article, "How to use F12 developer tools to debug your webpages."

The uncollected Google Chrome commands

The most interesting commands for Chrome are ones you enter directly into the URL box, as if they were Web addresses.

For example, entering **chrome://flags** into the address box enables a raft of experimental Chrome features — several dozen, as of this writing. (The available features change as Chrome evolves.) See Figure 2.

Figure 2. Access hidden features in Chrome simply by entering *chrome://flags* into the ad

Chrome also supports many other such direct commands, as discussed in the May 17 LangaList Plus item, "Hundreds more commands for Google Chrome." That tip listed Web developer Peter Beverloo's long list of little-known and powerful command-line switches for Google Chrome. It also mentions The Geek Stuff's pared-down list, "12 most useful Google Chrome browser chrome:// commands."

But there are more sites listing Chrome commands!

✦ Developer Eric Larson's page of "Google Chrome command line switches" aggregates and nicely documents about 80 Chrome commands.

✦ Chromespot.com has its own raw list: "Chrome.exe command line switches."

✦ Chromeplugins.org offers a shorter list of commands specifically targeted at managing that browser's plugins.

You'll see overlaps in these lists and sources — a consequence of Google's astonishing lack of leadership in publishing a centralized, standardized list of these features. Instead, it's been left up to individuals (such as those cited above) to track down the information, document it, and present it for others to use. Google, what are you thinking?

If you want to dig out additional Chrome command-line information on your own, use this search string to spelunk the pages at dev.chromium.org:

http://dev.chromium.org/system/app/pages/search?scope=search-site&q=command+line

Download commands and tools for Firefox

Like IE, Firefox ships with a built-in set of developer's tools. You can access these tools via the Firefox/Web developer menu. Alas, this toolset is much less comprehensive than IE's (see Figure 3).
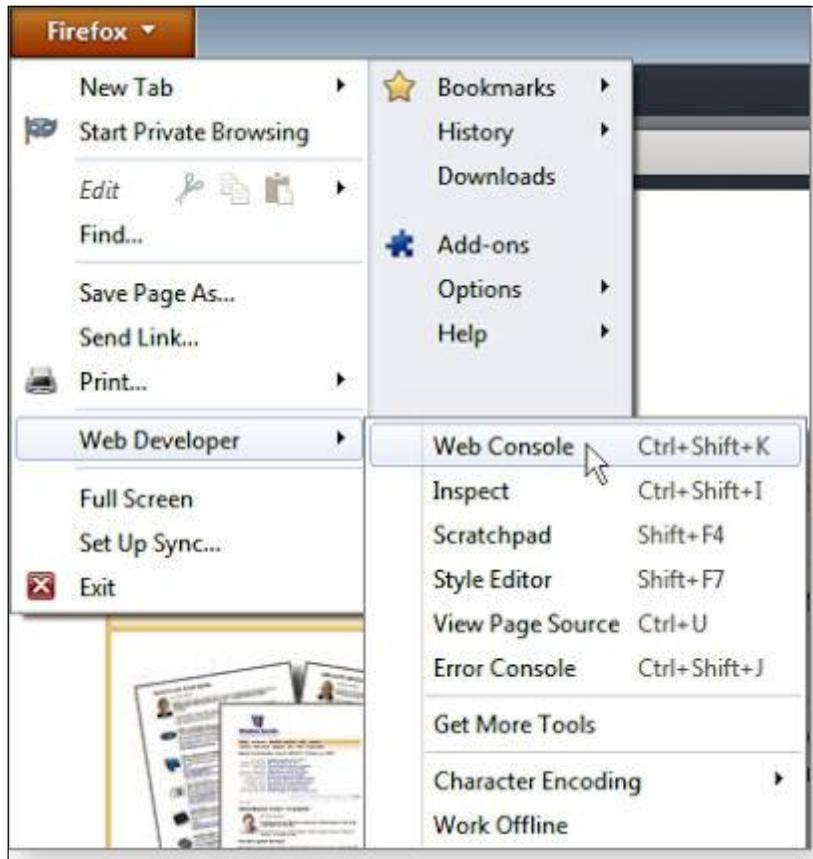
Figure 3. The available Firefox developer's tools are far fewer in number than those built into Internet Explorer.

Perhaps to make up for the relative paucity of built-in tools, Mozilla also offers a downloadable Web Developer's Toolbox containing 13 additional special-purpose add-ons for Firefox. It's free via Mozilla's add-ons site.

Like IE and Chrome, Firefox supports a number of command-line arguments. They're listed on Mozilla's "Command line arguments" page. Oddly, Mozilla explicitly states that this — their own official list — is incomplete and may contain outdated information. Sigh.

A second official source is a Mozilla Developer Network page, which lists several more "commonly used" commands, along with descriptions of how to use them.

With such scant and incomplete official documentation, Firefox users have picked up the slack and developed their own lists. But — as we saw with Chrome — the lack of an official, all-inclusive, centralized resource means you have to jump around to various third-party sites and wade through some of the inevitable overlap. But here are some of the best:

♠ Technology Made Easy's page, "Firefox's about: commands (and easter eggs!)," contains a nice listing of some of the commands you can invoke by typing into Firefox's address bar.

♠ For example, typing **about:config** brings you directly to the Firefox browser configuration page; typing **about:privatebrowsing** engages Firefox's private browsing mode. And yes, there are easter eggs, which are bits of silliness the developers programmed into Firefox. To see an example, type **about:robots** into the Firefox address bar and see what happens.
✦
✦ On a more serious note, Binary Turf's page, "Lesser known Firefox command line options" offers succinct summaries of some common commands.
✦ Firefox Facts' page, "More command line Firefox tips," explains several useful commands for launching Firefox directly from Windows' **Search programs and files** box.

Unsuspected power at your fingertips: All the major browsers offer little-known commands, features, and functions that give you more control and — especially in the case of Internet Explorer — access to a rich array of professional-quality developer tools built in — all free.

Spend a little time exploring your favorite browser's less familiar byways. You just might be surprised at the riches waiting for you, right at your fingertips!