

Every e-mail message that you receive includes Internet Headers, although your mail program may not display them unless you ask to see them. What good are they? If you're trying to figure out the source of unwanted e-mail, you may be able to use this information to try to identify the sender, even if they have made some attempt to conceal their identity. Interpreting headers can be a little confusing, and an alternative to reading through them yourself is to use a program such as eMailTrackerPro that will do this analysis for you.

eMailTrackerPro analyzes the e-mail header and provides you with the IP Address of the machine that sent you the e-mail. This information can then be used to track down the sender. A built-in location database is used to locate the country or region of the world from which the message originated. If you want more geographical information, including a world map showing the route the e-mail message took and where it came from, eMailTrackerPro provides hyperlink integration with VisualRoute, an Internet tracking tool (also from Visualware) that allows more detailed geographic traces.

I found that, in most cases, once I had displayed the Internet Headers using my mail program (Eudora 5.1), I had no trouble identifying the IP address from which a message originated. Although the host name was not always identified in the header, eMailTrackerPro was often able to display that information. The name of the e-mail program that was used to write a message was often in the headers, too, and was also displayed by eMailTrackerPro. The program seems to be most useful for cases in which you try to identify the source of junk mail in which the sender has intentionally misnamed the sending computer in an attempt to foil your tracking. For example, I found that one junk mail message whose return address pointed to Latvia was, in fact, coming from a host in the United States.

The integration of this program with VisualRoute was smooth, and

that program actually provides a lot more information (see the preceding review in this issue) about the source and route taken by an e-mail message. Unless you are trying to track down e-mail coming from someone who has attempted to hide its origin, you will probably be able to get all of the information that you want from VisualRoute.

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SNAGIT, VERSION 6.1 FOR WINDOWS

SnagIt, Version 6.1
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As with most other professions, ecology has become increasingly dependent on information technology and on the ability to service journals, scientists, resource managers, and the taxpaying public with digital files. Ecologists who once devoted their careers to field experimentation now find themselves scrambling to organize web sites and multimedia presentations, or trying to meet publication expectations for electronic submissions. Working with technology may facilitate the tasks at hand, but it may also prove to be a challenge to master these new tools in addition to the science. Fortunately, software like SnagIt makes the process more efficient and enjoyable. SnagIt is an effective and affordable screen capture utility that, over the years, has evolved into a capable, multi-feature graphics package.

SnagIt is actually two separate programs: a simple, yet flexible, graphics package (SnagIt Studio) and the capture utility (SnagIt). One can think of SnagIt Studio as a functional version of Microsoft Paint or a stripped-down version of some of the pricier graphics packages offered by Adobe or Corel. Although it is lacking in some tools, SnagIt Studio provides such features as clipart, object prioritizing and grouping, flow-charting, highlighting, flexible zoom, multiple bitmap import and export formats, and bitmap editing, among other functions. As an example, one can import a JPG and edit the image using the customary tools such as flood fill, cropping, freehand erase, text or polygon insertion, line drawing, etc., and then save it as a BMP file. For those who repeatedly use customized bitmaps, another handy feature of SnagIt is the ability to add bitmaps to a catalog of images for later insertion as clipart.

The SnagIt capture utility can do far more than simple screen captures (although it does this very effectively). Unless one has specifically purchased a screen capture program, pressing the <PRINT SCR> button is the preferred way to capture what is seen on the screen. While simple, this approach has its disadvantages. First, <PRINT SCR> sends a low-resolution bitmap image to the Windows clipboard, which then must be pasted into another program for cropping or annotation. SnagIt's image capture utility allows the user to pick what is to be captured, potentially including the entire screen, a pop-up window, part of a window, a region on the desktop, any screen object (e.g., a floating box or program icon), a menu, an area corresponding to a shape that the user selects (including freehand drawing), the contents of the clipboard, a TWAIN device (e.g., a scanner or digital camera), or from program files, wallpaper, scrolling DirectX, and even DOS-based screen captures. The image capture utility can also be directed to select multiple areas, adjusted so as not to show the cursor arrow, and to generate high-quality bitmaps im-

mediately viewable in a capable screen preview tool.

This image capture flexibility, alone, would justify the purchase of SnagIt, but TechSmith has added even more helpful features. SnagIt can also perform text captures (when you want only text and not images), screen video capture (which can include audio and keystroke or cursor movement, saved as an AVI output), web capture, and printer capture. The last two items of this feature list are particularly useful. Web capture allows the user to extract individual components found on an accessible web page, including graphics, video, text, and sounds. The printer capture function is one of the most practical utilities that I have seen. This feature (found only in SnagIt version 6.1 and higher) emulates a printer, allowing the user to select it instead of traditional printers or print files. Once initiated, any print job is then captured by SnagIt (at a customizable resolution) for conversion to a bitmap. Thus, Windows programs that do not generate graphics acceptable for journal submission or other needs can be induced into producing universal bitmap types (e.g., TIFF, GIF, BMP, and JPG). I have used the SnagIt printer capture feature to get output from programs including word processors, statistics software, presentation graphics, text editors, and web browsers. The quality is good and is adjustable to the software's printing capacity. Even multi-page outputs can be created if GIF or TIFF files are used. Once the image is captured, the SnagIt preview tool allows for easy drag-and-cropping, editing (many of SnagIt Studio's capabilities are available in the preview tool), printing, or saving to a file. I have run into problems using the printer capture feature only when I have attempted to generate a large graphic in Adobe Illustrator. Other images and text captured from Illustrator worked fine.

In addition to customizable input features, SnagIt can output to multiple sources like files, the clipboard, e-mail, the Web, or SnagIt Studio, regardless of the capturing approach

taken. Several graphics filters are available in SnagIt, including color conversion (monochrome, half-tone, grayscale, or custom color resolution from 1 to 32 bit), color substitution (inverting or custom substitution), color effects (brightness, contrast, hue, saturation, and gamma), image resolution and scaling, annotation, simple borders, watermark, and pixel trimming.

As with any inexpensive program, SnagIt has its limitations; it cannot perform some of the more sophisticated graphic manipulations found in the pricier packages. File import and export formats are restricted to the most common bitmap formats (BMP, TIFF, PNG, TGA, GIF, JPG, PCX), and no metafiles, postscript, or PDF capabilities are currently available. Text recognition (OCR) is lacking, as are most other word-processing options (e.g., spell-checking). The features of the SnagIt suite are available only for Windows 95B, 98, NT 4.0 (except the printer capture tool), Me, 2000, and XP; Mac and UNIX users need to look elsewhere.

In short, SnagIt is quite a graphics workhorse for a fairly minimal (\$40) investment. SnagIt uses relatively few system resources, requiring only 11 MB of hard drive space and 16 MB of RAM to install and run. TechSmith recommends at least a 400-MHz processor (although a 90-MHz chip is listed as the minimum). A fully functional download of the latest version of SnagIt (6.1) from the TechSmith website (www.techsmith.com) can be freely previewed for 30 days. Those who find their work more and more dominated by a graphics-rich digital environment will appreciate the many little features that go along with the powerful capture utilities bundled in this package. I would recommend SnagIt to both novice and expert users, as it has much to offer.

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USING PDAs TO COLLECT GEO-REFERENCED DATA

Widespread availability of handheld personal computers and global positioning systems (GPSs) has made it possible to assemble an affordable hardware configuration to collect geo-referenced data in the field. These devices also can be used to navigate on predetermined routes or to specific locations. Krueger and Rich (2001) provided an overview of how handheld personal digital assistants (PDAs) can be used as an inexpensive way to enter field data electronically. Here, we describe how the capabilities of PDAs can be extended to collect geo-referenced data.

The setup we describe was developed to map reclaimed surface mines for use in a geographic information system (GIS) and to record data collected during bird surveys. The software allowed us to display any GIS layer (e.g., geo-referenced aerial photographs, road layers) to assist with navigating to sites. Once we arrived at a study site, we mapped the boundaries as a GIS layer and recorded bird observations as a geo-referenced point with specified attributes (species, distance from observer, etc.). This setup permitted us to map dozens of polygons of habitat over a 50 square mile area and to collect attribute information for hundreds of songbird locations. The greatest benefit was that all our field data were exported directly from the PDA into a GIS. The setup we describe is composed of only a few of the many possible components now commercially available; thousands of dollars could be spent for more rugged and compact systems. Our configuration cost about \$1800 each (retail; about \$1500 using government and educational institution pricing), and was reliable and sufficiently protected for use in the field.

Equipment and software

Our setup requires a PDA that runs the Microsoft Pocket PC 2002 operating system (Microsoft, Redmond, Washington, USA; use of trade names does not imply endorsement by the U.S.