9 Rules for Evaluating Web TWAIN Components

TWAIN is a standardized software protocol that provides a universal standard that communicates between applications and image acquisition devices, like scanners and digital cameras. As web applications become increasingly popular, many TWAIN applications also need to work with web applications. Currently, only ActiveX and Plug-in can communicate with TWAIN-compatible devices from browsers.

This white paper is for software developers building web applications that acquire images from TWAIN-compatible devices through web browsers. The paper offers some rules to live by when evaluating a TWAIN component. By following these rules you'll find a solution that will save you time and improve your productivity.

What to Look for when Evaluating Web Scanning Components

Easy to Develop

Rule #1: A web scanning component should make web development easier.

The TWAIN 2.1 specification is a pain-staking 664 pages long. It can take weeks just to read through the document let alone get a full understanding of the specification. Additionally, once you've grasped TWAIN, the amount of work to enable image compression codec, like TIFF, JPEG or PNG, and image upload/download features can be overwhelming. As such, developing a web scanning solution from the scratch is almost impossible.

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Web Page Load Time

Rule #2: A web scanning component must be small for lightning-fast rendering.

When a user visits a web page with an ActiveX/Plug-in component for the first time, the control must be downloaded from the web server to the user's browser and then installed. The larger the control size, the longer it takes to download. Users' patience for slow downloads is thin, so every second counts.

Image Upload Time

Rule #3: A web scanning component must support multiple compression formats.

When a scanned image is large the upload time increases and the chance of upload failure is higher. Here's an example: the image size of a color A4 document scanned in 200DPI is 10.41 megabytes. For an ADSL connection, this can take more than 10 minutes to upload. A three-page document will take three times the time to load.

You can counter this problem by using image compression technologies, like JPEG and PNG. They significantly reduce the size of the image and, in turn, the time for uploading. They also reduce the risk of upload failure.

Different compression methods have distinct features. For example, JPEG has a high compression rate but is lossy, which makes JPEG format unsuitable for document images that require high precision. On the other hand, PNG format is lossless, which means it retains all the information during the compression process.

User Interaction

Rule #4: A web scanning component must allow you to build rich user interface applications.

User interaction--or user interface (UI)--is an important part of every application. In many cases, good UI is the key to a web application's success. Your web scanning application might use the scanner's built-in UI or your own custom-developed interface to control the scanner, depending on the scenario.

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Additionally, users may need to preview scanned images or edit them before uploading them to a web server. A scanning control that allows a rich user experience can differentiate your applications from competitors' products.

Multi-page Document Support

Rule #5: A TWAIN component must support multi-page format, such as TIFF and PDF.

Many documents have multiple pages. If each page is stored as a separate scanned image, retrieving and viewing the document involves handling multiple images. Being able to store all pages of a document in a single file makes it much easier to manage multiple-page documents.

Security

Rule #6: The TWAIN component must be marked as "safe for scripting" and should be digitally signed.

Security is an ever-growing concern for end users. If a user downloads and installs a control on their computer, it's possible that the control can do anything to the computer. As a result, you must be able to build end users' confidence about security issues.

When a publisher marks a control as 'safe for scripting', the publisher promises that the control will not intentionally harm the end users' computer system. If the control intentionally damages the system, the publisher assumes legal responsibility.

If the component is digitally signed, a dialog box with the publisher's legal name will appear when a customer uses the scanning component for the first time. The user can choose whether they want to install the component during the download and install process. If the control is altered after the publisher has signed it, the digital signature will be broken and the user will be informed. This makes it impossible for the signed control to be infected by a virus or maliciously changed by hackers.

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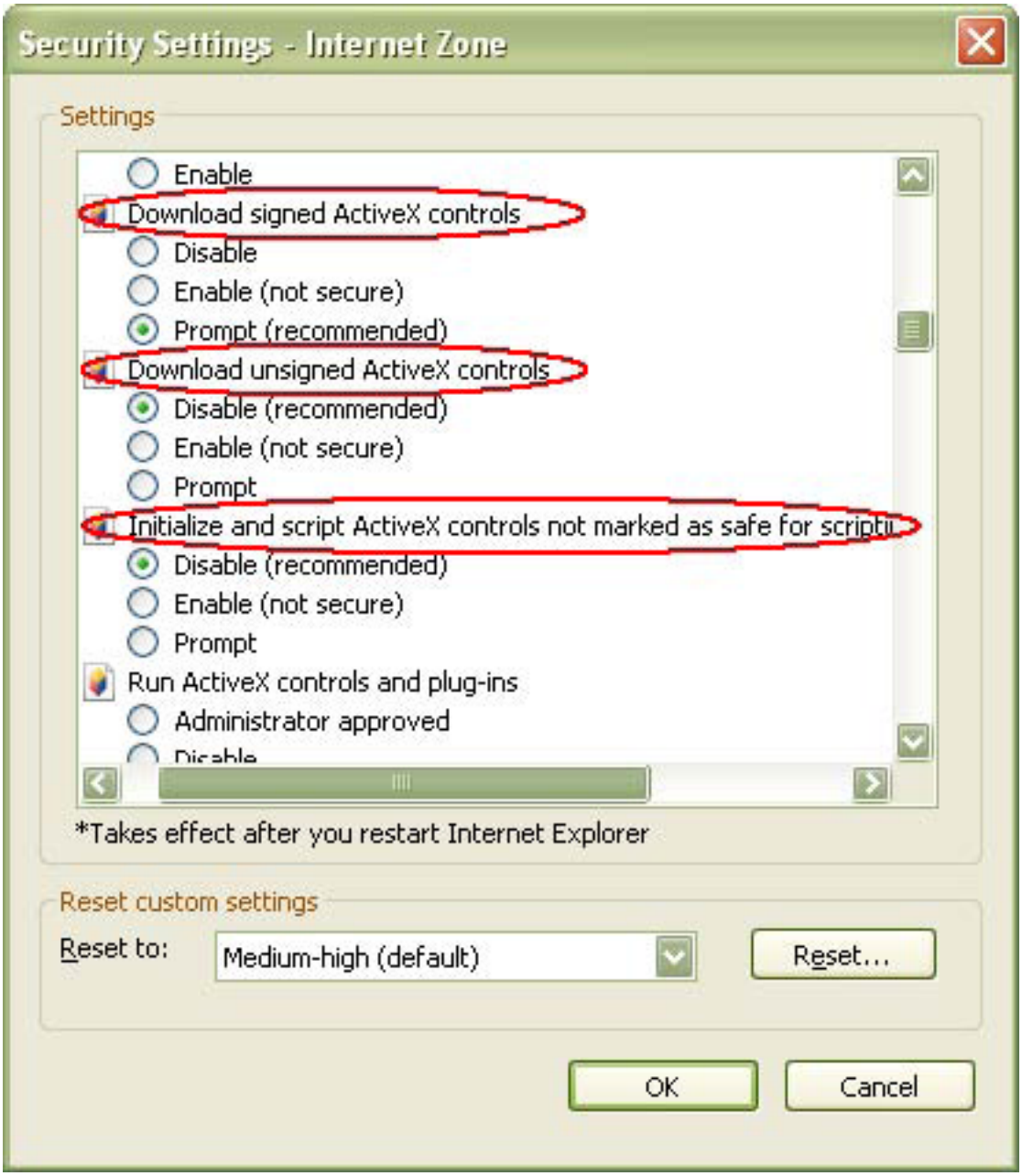

At the same time, if a control is not marked as safe for scripting or is not digitally signed, the default setting of popular browsers--like Internet Explorer and Firefox—will simply prevent the control from downloading or initializing.

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Web Browser Compatibility

Rule #7: The scanning control must support all major web browsers.

In many cases, you won't know which browser your end users will use—Microsoft Internet Explorer 32-bit/64-bit, Firefox, Chrome or others. If you only support one or two browsers, you significantly limit your ability to reach a broad range of customers. Even if you know which web browser your customers are using now, it's highly likely you will need to expand your web scanning application to other browsers in the future.

Web Server and Industry Standard Support

Rule #8: The scanning control must use standard technology protocols and support all major web servers.

HTTP and FTP are standard Internet protocols. A component that uses any nonstandard protocol seriously increases deployment costs for your web application. It's possible your existing infrastructure or team expertise may require you to use a specific web server. A component that uses an upload and download protocol that's not compatible with your chosen web server can cause serious headaches for your team.

Technical Support

Rule #9: The web scanning component vendor must provide great technical support.

TWAIN can require special expertise and experience. Without prompt and accurate support from your vendor, you won't be able to get the most out of your TWAIN component. Poor technical support can result in hours spent struggling with technical issues, or even unsatisfied customers.

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Our Solution – Dynamic Web TWAIN

Dynamic Web TWAIN is a TWAIN control that enables you to acquire images from any TWAIN-compatible device. It includes a variety of features specifically designed for the web environment. It's been developed with four core objectives in mind:

1. User Experience - To provide applied function and powerful interaction for users
2. Security - To offer a safe component over the web
3. Compatibility - To support different browsers, web servers and protocols
4. Development – To save the time and energy for developers

Dynamic Web TWAIN is also backed by unrivalled industry technical support.

User Experience – Powerful Interaction for Users

- **Reduced web page load time**

The Dynamic Web TWAIN distribution file is only 213 KB for 32-bit IE and 301 KB for 64 bit IE, while the XPI file for Firefox, Chrome and other browsers is 201 KB. It takes seconds to download and install to the users' web browser.

- **Reduced image upload time**

Dynamic Web TWAIN supports major compression methods, including JPEG, TIFF and PNG. It also supports multi-page TIFF and PDF formats.

- **User interaction**

Dynamic Web TWAIN lets you use a scanner's built-in user interface or build your own UI to control the scanner. Additionally, Dynamic Web TWAIN includes a built-in image editor to enable your end users to edit the image in their browser.

Security – Safe Component over the Web

- **Marked as safe for scripting**

Dynamic Web TWAIN is marked as 'safe for scripting'. Dynamsoft assumes the legal responsibilities if Dynamic Web TWAIN does any intentional damage to your users' computer.

- **Digitally Signed**

Dynamic Web TWAIN is signed by VeriSign.

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Compatibility – Support Different Browsers, Servers and Protocols

• Browsers

Dynamic Web TWAIN, as a scanner SDK, has ActiveX and Plug-In editions. It supports Microsoft Internet Explorer 32 bit and 64 bit, Firefox, Chrome, Opera, Mozilla, NetScape and other browsers on Windows platform.

• Servers

Dynamic Web TWAIN is compatible with all major web servers, including Microsoft IIS (Internet information server), IBM Notes, Websphere, Apache, Tomcat on Windows, Linux and other platforms.

• Protocols

Dynamic Web TWAIN is compatible with File Transfer Protocol (FTP) and Hyper Text Transfer Protocol (HTTP). It also supports Secure Sockets Layer (SSL) encryption.

Development – Give Your Team a Competitive Advantage

• Reduced development time

Dynamic Web TWAIN is compatible with TWAIN specification V1.9 and with built-in TIFF, JPEG and PNG encoder and decoder, Upload/download and ActiveX/Plug-in technology. Your team can forget about the scanning component and only needs to focus on business requirement.

Technical support

• Unrivalled support

Dynamsoft provides unrivalled technical support in the TWAIN component industry. The technical support options include: email support; phone support; LiveHelp support, which is available 16 hours per day Monday to Friday; and scheduled desktop sharing support for complex issues.

• Virtual Developer Service

Dynamsoft offers a Virtual Developer Service. With this service, our developers participate in the implementation of your web scanning module as an active team member from requirements analysis, design, coding, testing and deployment to maintenance.

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About Dynamsoft Corporation

Dynamsoft is now an Associate Member of the **TWAIN working group**. It means closer relationship and easier access to the latest trends of TWAIN technologies.

Dynamsoft is a software publisher developing SDKs, version control and TWAIN SDK for professional development teams. Our products are well thought-out, carefully implemented, heavily tested and well documented. Dynamsoft is striving to make the life of software developers more enjoyable. We pay special attention to details to ensure that you can focus on what's important - your business.

For more information about Dynamsoft Corporation, please visit:
http://www.dynamsoft.com

For more information about Dynamic Web TWAIN, please visit:
http://www.dynamsoft.com/Products/WebTWAIN_Overview.aspx

For the demo of how Dynamic Web TWAIN can help you build a rich interactive application, please visit:
http://www.dynamsoft.com/Demo/DWT5/Online_Demo_Scan.aspx

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