Zoom Studio 2 – Whitepaper

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Executive summary

Today companies all over the world have invested in more than 18 billion images used commercially a figure that is expected to double every year. This Whitepaper explains how to use this investment and make the most out of you images. Inzomias patent pending technology enables your content regardless of your visitor's Internet connection or the size of their displays. Developers use Zoom Studio 2 to manage image data, create image galleries and convert existing sites. Zoom Studio includes SmartCompress3 that lets you convert images to next generation wavelet format. Inzomia uses standard HTTP Internet protocols for image transfers and doesn't require any more server side software than your current web server. Since no server software is needed no investment in new hardware is needed because of Inzomia.
Zoom Studio 2 is licensed on a per developer bases so its possible to use the Inzomia technology on all your images and all your sites without any extra cost.

About Inzomia AB

Inzomia AB is a content enabler that produces interactive, high performance, imaging software. Inzomias line of software tools includes "Zoom Studio 2", an easy-to-use tool for web developers to create dynamic image content. For more information about Inzomia, please visit http://www.inzomia.com. Inzomia AB is based in Stockholm, Sweden and was founded in March 2000.

What is this document

This whitepaper explains how to use Zoom Studio 2 to upgrade and extend your existing web site, make a better impression, make more sales and ultimately earn more money.

Problem description

Web developers use images to convey messages. Web developers have to make a decision between using high quality images that clearly make a better impression or to use low quality images not to turn away visitors with slow Internet connections.
You want to present the visitor with a high enough quality image to make sure you get the message though. You still want the user to feel in control. For example imagine an automobile seller that didn't allow its customer inside the store, this is how we feel the web works today.
As more and more users connect to the Internet an increasing amount of visitors are not experienced computer users. You do not want to fright these users off with complicated user interfaces or 3D navigation.
For these novice users you especially want to make sure they do not miss the important part of your images, that little detail that really separates your product from the masses.

What is included in the Zoom Studio 2 package?

Zoom Studio 2 is a suit of products based around the patent pending Inzomia technology. The package includes the Inzomia plug-in for the Netscape Navigator and Internet Explorer browsers. The Inzomia plug-in enables superior image

presentations on the Internet[1] and enable high quality product presentations for all visitors. The Inzomia desktop viewer extends the window desktop with an image viewer for all images formats supported by Inzomia.

SmartCompress 3 makes it possible to convert image to the next generation LuraWave image format, supported by all Inzomia software.

Finally Zoom Studio 2 is an integrated environment to create complete web based product catalogs in many different ways, to create animations from single images or to convert existing web pages to use the new and exciting Inzomia technology.

Save time

As a companies image content increases in numbers the task of keeping track of all images easily becomes a time consuming burden. Zoom Studio 2 allows you to view your common images as thumbnail pictures together with html documents. All other files are hidden.

Images can be moved around in the computer system with simple drag n drop. Groups of images can be organized in folders with a thumbnails attached as a preview of its content.

Zoom Studios native support for LuraWave images makes these, very high quality wavelet images, just as quick to work with as ordinary images.

Be productive

Zoom Studio 2 integrates with common image and html editors. You use the studio to manage and preview your media files but still use the programs you know to edit the files.

Image display

Today's cheap digital camera stores amazingly large images[2]. Most developers don't have monitors large enough to display the whole image at once and normal computer users definitely don't.

Inzomia automatically scales images to the window area available and let the user zoom and pan in real time to view parts of the image in detail. As the image is scaled up or down it is filtered to increase perceived image quality.

Interactivity

Inzomias patent pending technology makes it possible to update the image window at the monitors refresh rate[3]. It may not be apparent that speed is essential for the user experience. A comparison with movies makes it apparent. A movie runs at 30 frames per seconds. If a movie only updates at 5 frames per second it is perceived as a sequence of still images, it is annoying and it is no longer a movie. The same rule holds for user interaction, if the interaction is slow the user gets annoyed.

The importance of interactivity also rules out any server side only solution since the latency for a message being send from client to the server and back would be to slow even if the computer were connected though a high bandwidth connection.
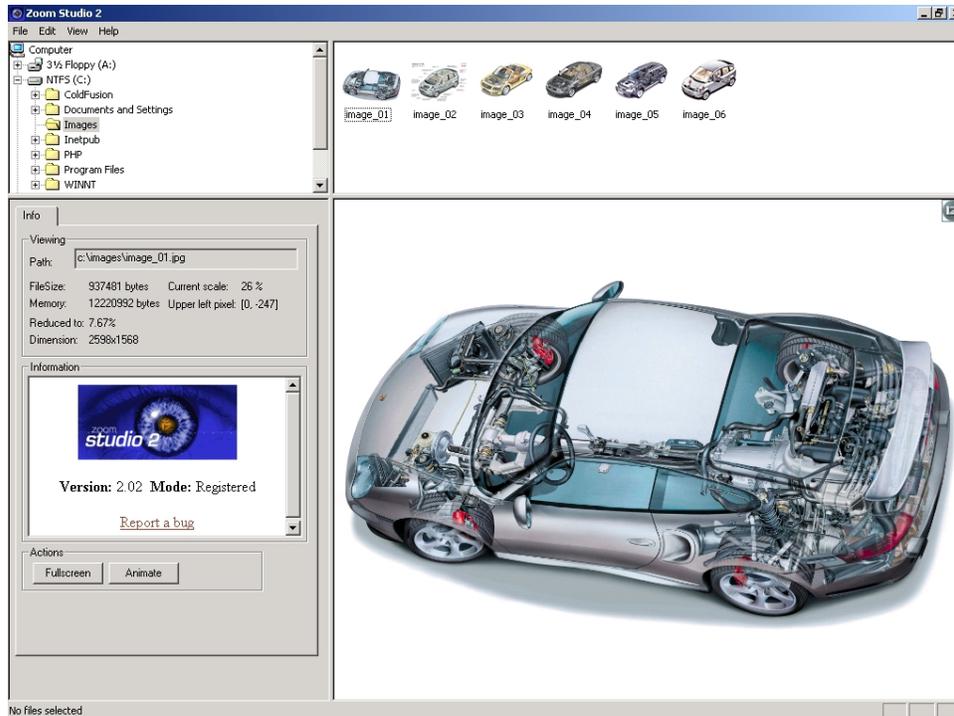
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[1] Works over any tcp/ip network, we have many companies that have used Inzomia successfully in company intranets.
[2] 1600x1200 pixels for a 2.1 Mpixel camera
[3] On a modern computer with one running Inzomia window.

Manage screen real estate

Screen real estate is important today. A normal web site is normally designed for 640x480 monitors to be viewable on laptop computers. After adding company logos, advertising and some mean of navigation there is not much area left to show your pictures. With this little space left supporting panning and zooming becomes essential but even considering this you may want to be able to show the visitor the full view of the photo. Inzomia make out of browser full screen image display. It is possible to control going into full screen mode from a script making it easy to integrate into an existing site design.

Wavelet images

Current image formats can be divided into two groups. Lossy formats and loss-less formats. The loss-less formats never changes the original image but usually offers a low compression rate. Lossy formats change the original image to allow a higher compression rate. Typically lossy-formats are best suited for photographs. Inzomia supports among other formats the lossy jpeg format and the loss-less PNG format. Jpeg compression works by applying a cosine transform on 8 by 8 pixel blocks of the original image. Because of this the compressed image may appear blocky. Wavelet compression on the other hand works on the whole image avoiding the blocky artifacts. Another advantage of Wavelet compression is that it is possible to do either lossy or loss-less compression.

Inzomia supports the LuraWave wavelet image format. SmartCompress 3 is included in the Zoom Studio 2 package, making it easy to start using this new and exciting image format. LuraWave images offers higher image quality and smaller file sizes than an equivalent jpeg compressed image.

Streaming images

More and more people are moving to faster connections. But there are still a great majority of users connected to the Internet though slow connection. Even for visitors with a high bandwidth connection servers and routers may cause their connection to your site to be slow.
Inzomia support the ability to stream high quality images. With streamed images all visitors will see a first view of the image at about the same time. As the user watch and navigate the image details are progressively added as data is being downloaded. When using streamed images we recommend using loss-less compression for the best possible quality.

Web galleries

Web developers are often faced with the task of displaying a number of images on a subject. Zoom Studio supports creation of a number of different image galleries like: Galleries with thumbnail previews, image slideshows, rollover galleries. Each type of image gallery can easily be configured in a number of ways to fit into a present web design.

Web animations

Serving movies to visitors costs a lot of money in bandwidth and is often a low resolution, low frame-rate experience for the visitor. Inzomia makes it possible to create fly though animations from a single high-resolution image. The animations do not cost more space than the image and the user get a positive experience. The animations can be done with normal or streamed images. Zoom studio 2 exports in web ready formats and you will be up and running within minutes.

Converting existing sites

Zoom studio 2 includes a tool to make images on your existing site zoomable. Load one of your web pages into Zoom Studio 2 and you will get a list of all photos on the page. Now click the checkbox next to the image you want to convert and thats it. It can not possibly be simpler!

Advanced customization

Inzomia image on a site can be fully controlled from JavaScript or VBScript scripts on the web page. It is possible to direct movement in the image window as if a user was interacting. This ability is very useful in product displays where you want to make sure a visitor does not miss an important feature, perhaps why your solution is so much better than the competition. Use scripting to connect info on your web page to specific parts of your images. Use Inzomia together with a web page and JavaScript to make instructions interactive or as a basic e-learning platform. The Inzomia web site gives some ideas of what is possible with scripting, the possibilities are endless,

Publishing

Publishing an Inzomia sites is really simple. Simply upload the exported pages to your webserver and you are ready. Inzomia works with common web servers. For sites that want to use Inzomia on a large number of images it is probably a good idea to serve images from a database.

Protocol and server load

Inzomia uses the standard HTTP protocol to transfer image data avoiding common problems with firewalls for custom protocols. Inzomia does not require any running server side software and in that way avoid additional load on the server for image serving.

Why a plug-in

Inzomia is implemented as a browser plug-in. We have found many asking why we have a plug-in but in practice there isn't a problem. As a fact we have found that most user that are willing to download the plug-in and that the ones who do, tend to spend more time visiting our customers site.

The plug-in solution is necessary to provide the performance of a truly interactive experience. A server side only solution can never be truly interactive because of the inherent latency of Internet connections. Even with broadband connection latency ranges from 250ms to several seconds, if we wanted to play a fully interactive movie (where the user controlled the camera) we would in best case get a frame-rate of 4 fps.

A solution using a Java applet is not allowed to access hardware resources and will therefore never be able to get the same level of performance as Inzomia. Other problems with Java applets are that they need to be downloaded every time an image is displayed. After a few image views the download size of the applet would exceed the size of the plug-in. A final reason for not choosing an applet solution is that the dominant web browser no longer supports Java applets by default.

Transparent

The code generated from Zoom studio encapsulates the Inzomia plug-in in JavaScript code. Visitors who do not happen to have the plug-in installed or have turned of plug-ins get a standard image instead. Using Inzomia does not shut visitors out.

Licencing

Inzomia AB uses a very simple licensing system. Every developer needs a copy of Zoom Studio 2. You are then free to use it to publish as many images as they want on as many sites as you want. Inzomia charges no per image fee and no per site fee!

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System requirements

Developer

OS: Windows95, Windows98, Windows ME, Windows NT 4 (sp3), Windows 2000, Windows XP
Browser: Internet Explorer 5.5 or later

End user

OS: Windows 95, Windows 98, Windows ME, Windows NT4 (sp3), Windows 2000, Windows XP
Browser: Internet Explorer 4 or later, Netscape Navigator 4.x