

1. Apéndice E: Comunicación Electrónica con Parallel Graphics

En este apéndice se presentan las comunicaciones electrónicas que se entablaron con el personal de soporte técnico de la compañía Parallel Graphics, desarrolladora del VRML browser que se utiliza dentro de este proyecto. Este apéndice tiene la finalidad de confirmar las restricciones de desarrollo de scripts que se presentan en la sección 3.3.3

Cadena 1

Dear Joaquin,

Basically, Java can be used dually for interacting VRML scenes:

- as a scripting language for VRML and
- in the External Authoring Interface, which allows one to control the VRML browser and it's content from a Java applet on the same page as the embedded VRML model. More information about the use of java is available at http://hiwaay.net/~crispen/vrmlworks/eai_faq/scripts.html.

Of course, the use of Java applets is connected with rather severe (but sensible) limitations on security, which allow their developers to distribute HTML pages and applets over the Internet. To workaroud these limitations (for example, save files on disk from HTML pages), you need to insert special ActiveX controls, which provide this functionality, into these HTML pages. However, such pages will not be normally shown over the net by Internet browsers (which by default do not allow to download unsigned ActiveX controls). Obviously, this problem is not connected with Cortona.

What could be a more simple solution, is to insert Cortona as an ActiveX control in your standalone Java application (for example, it is possible to use Cortona Control in MS Visual Java projects). From this application you can modify properties of Cortona Control, call its methods, create handlers for its events, and access the scene graph (Cortona engine). Cortona Control interface and VRML Automation interfaces are documented in Cortona SDK, see more information at <http://www.parallelgraphics.com/products/sdk>.

If you have any further questions, please feel free to contact us.

Best regards,
Yuri Shamraev,
Support Service,
ParallelGraphics,
support@parallelgraphics.com

From: Joaquin Fuentes <joakinf@infosel.net.mx>
Sent: 2002-12-02 01:23:43
To: 'ParallelGraphics Support' <support@parallelgraphics.com>
CC:
Subject: RE: Question about Cortona\'s Client Java support

Mr. Shamraev,

Once again allow me to thank you for taking the time to answer my

questions. I am now able to add behavior to a VRML scene through a Java applet. Thank you very much for your pointers.

However, applets and other application that go attached to HTML pages have limitations when it comes to manipulating files.

What I'm really looking to accomplish in my project is to be able to record the actions that a user performs while interacting with a VRML world. For example, imagine that the user is presented with a VRML world that has a Box, and a Cone. If the user clicks on the Cone I want to record into a text file the fact that the user clicked the Cone. I don't believe this would be possible with applets attached to a HTML web page.

Can Cortona's VRML browser work with scripts that are not applets, lets say a stand alone java class or application, or a java Frame? If so, are there any specific requirements to achieve this?

Best Regards,

Joaquin

-----Mensaje original-----

De: ParallelGraphics Support [<mailto:support@parallelgraphics.com>]

Enviado el: Miércoles, 27 de Noviembre de 2002 08:46 a.m.

Para: joakinf@infosel.net.mx

Asunto: RE: Question about Cortona's Client Java support

Dear Joaquin,

To achieve the desired effect, you should specify support for early version of JDK in your compiler, for example JDK 1.0.2.

If you have any further questions, please do not hesitate to contact us.

Best regards,

Yuri Shamraev,

Support Service,

ParallelGraphics,

support@parallelgraphics.com

From: Joaquin Fuentes <joakinf@infosel.net.mx>

Sent: 2002-11-27 00:17:10

To: 'ParallelGraphics Support' <support@parallelgraphics.com>

CC:

Subject: RE: Question about Cortona's Client Java support

Thank you very much for taking the time to answer my question. It was most kind on your behalf. However, I do have one more question, and I hope not to cause any trouble for you.

I was able to disable the Sun Java-plugin, and I'm now able to view in

my IE browser the applet samples attached to your EAI web page. But I'm still unclear on how to view my own scripts. I understand that I can compile Java files on any compiler, but how do I specify support for a JDK version in the MS Java VM compiler? If I'm using the latest version of the JDK, do I still to specify the version?

Once again, thank you very much for your attention!!

Yours truly,

Joaquin

-----Mensaje original-----

De: ParallelGraphics Support [<mailto:support@parallelgraphics.com>]

Enviado el: Lunes, 25 de Noviembre de 2002 03:39 a.m.

Para: joakinf@infosel.net.mx

Asunto: RE: Question about Cortona's Client Java support

Dear Joaquin,

Thank you for your letter and for using ParallelGraphics products.

As a rule, VRML browsers compile byte code and runs within the Java Virtual Machine of an HTML browser. In other words, EAI in Cortona works only under MS Java Virtual Machine and does not work under Sun Java-plugin 1.3.1 or higher versions.

Note that you can compile Java files by using any compilers, but you need to specify support for early version of JDK in this compiler, for example JDK 1.0.2. You need also to disable Sun's plug-in in Internet Explorer and use Microsoft's Java VM.

You can check that EAI works on your computer by viewing samples from the <http://www.parallelgraphics.com/developer/products/cortona/eai> page on our Web site.

If you have any further questions, please feel free to contact us.

Best regards,

Yuri Shamraev,

Support Service,

ParallelGraphics,

support@parallelgraphics.com

From: Joaquin Fuentes <joakinf@infosel.net.mx>

Sent: 2002-11-23 19:56:12

To: <support@parallelgraphics.com>

CC: <pr@parallelgraphics.com>

Subject: Question about Cortona's Client Java support

To whom it may concern,

My name is Joaquin Fuentes and I'm majoring in Computer Science at the Universidad de las Américas (UDLA) located in Puebla, Mexico. Currently

I'm working with virtual environments which I develop through VRML 2.0. I choose Cortona VRML Browser as my display tool because I find it to be much better than any other VRML browser available in the market.

Right now I'm trying to add behavior scripts to my VRML worlds, and I'm trying to do it through the Java programming language. I know that Cortona VRML Browser has support for scripts written in both Java and Javascript, but so far I can't make it work. Even though I have successfully compiled the Java class that will add some sort of behavior to the VRML scene, nothing seems to happen in the VRML world when the java class is called upon.

Is there some sort of special configuration that I may be overlooking? Are there any special requirements for Cortona VRML Browser to be able to support java scripts? What steps do I need to follow in order to be able to use Java with your VRML Browser?

I'm using Internet Explorer 5, Cortona VRML Browser in its latest version, and the Java 1.4 sdk edition.

I would really appreciate it if you could give some pointers on this matter.

Thanking you in advanced,

Joaquin Fuentes

Cadena 2

Dear Joaquin,

It seems that the problem is with the version of VRML classes which are used for compiling java applets. In fact, to compile them, Cortona Java classes should be used. These classes are kept in classes.zip (Script Authoring Interface (SAI) for Internet Explorer), corteai.zip ("old" and "new" External Authoring Interface (EAI) for Internet Explorer), and plywood.jar (SAI and old EAI for Netscape), which are installed on the computer as a part of Cortona VRML Client.

Regarding the second question, *.class byte code file and corresponding *.wrl files indeed can be placed in different folders (you will need, of course, to specify appropriate file names on HTML pages).

If you have any further questions, please do not hesitate to contact us.

Best regards,
Yuri Shamraev,
Support Service,
ParallelGraphics,
support@parallelgraphics.com

From: Joaquin Fuentes <joakinf@infosel.net.mx>
Sent: 2002-12-30 04:38:04
To: 'ParallelGraphics Support' <support@parallelgraphics.com>
CC:
Subject: RE: Question about Cortona's Client Java support

Mr. Shamraev,

I'm sorry to call upon you one more time, but I'm still experimenting some problems while trying to work with Java program Scripts and Cortona's VRML browser.

As I told you before, I can connect Java and VRML world only through the EAI, and when a Java applet manipulates the VRML scene. However, I still can't run Java program scripts on Cortona's VRML browser. I am sure that the problem is in the browser's configuration, and not in the compiler.

Here's the scenario:

I compile my .java files using the vrml97.jar package which I got from <http://www.brevie.uni-bremen.de/vrml2/Java3DClient/vrml97.jar> , which is a URL that I access through the www.vrml.org web site. I'm able to compile my program scripts to get .class byte code files, so compiling is no trouble.

I have disabled Sun's java plug-in from my Internet browser configuration, so that java actions are executed with Microsoft VM.

I have tested java program scripts that appear to work in the tutorials, but I can't get them to work on my computer.

Is there a special configuration for Cortona's VRML browser? If there is one, can you give me a walktrough on how to configure my computer and Internet Explorer browser in order for Cortona's client to be able to execute the actions specified by the java program scripsits?

Last but not least, does the .class byte code file and the .wrl file need to be on the same directory?

Once again, thank you very much for your time and patience.

Joaquin

Cadena 3

Dear Joaquin,

Cortona VRML client does not impose addition restrictions on security. They follow from Java and JavaScript security specifications.

Let me inform you, that connection 3D world with a database can be performed with the Cortona ActiveX control. Cortona SDK (<http://www.parallelgraphics.com/products/sdk>) includes an example in Delphi that implements two Cortona Control. It shows how to load VRML files in Cortona Control, work with prototypes (define a prototype, create an instance of the defined prototype), add object to the scene and remove objects from the scene, manipulate viewpoints, and change the objects properties in the scene. Data for the manipulations are retrieved from Access database.

Best regards,

Mikhail Timofeev
ParallelGraphics Support Team

www.parallelgraphics.com
support@parallelgraphics.com

From: Joaquin Fuentes <joakinf@infosel.net.mx>
Sent: 2003-01-16 01:09:50
To: 'ParallelGraphics Support' <support@parallelgraphics.com>
CC:
Subject: RE: Question about Cortona's Client Java support

Mr. Shamraev,

Allow me to bother you once again, this time I have a more complex question that has to do with Cortona's VRML Client security restrictions.

I am very interested in recording events generated within the VRML world in any type of files, and maybe even in a database. I have recently tried to program a Java program script that senses the viewer's proximity in the VRML world and displays the word "Welcome" on the Cortona Console. Obviously this is a very simple procedure that works perfectly on Corona's VRML Client. However, when I tried to add more complex behavior, such as programming a method that records a String type data into a certain text file, I got all sorts of security exceptions. Attached to this message is the code to the .java file so that you can get a clear picture of what I'm trying to do.

Now, I'm imagining that since VRML is displayed with a web browser, maybe the security restrictions regarding files would be the same as for java applets. Am I right?

I've seen that trough the EAI VRML can work with Java Applets, would it be possible to work with Java Frames, using the EAI specification?

There are other web technologies out there, such as Java servlets and JDBC, that would allow me (theoretically speaking) to register events an actions into a database. However, I do not know about Cortona's VRML Client security specifications. Would it be possible to combine VRML with Java Data Base Connectivity trough Java Servlets and Cortona's technology? If it is possible, how can I achieve the result of registering user events and actions within the VRML world?

Thank you very much for you time and attention.

Best regards,

Joaquin