January 2002

How to:
Make Template-Based Slideshows
using GR*i*NS/RealOne

GR*i*NS/RealOne "How To" Notes

http://www.oratrix.com/

Overview

This document will give you all the information you need to create slideshows for the RealOne player using the GR*i*NS Editor for RealOne software (hereafter called simply: GR*i*NS/RealOne). You will learn how to create simple slideshows and how to integrate transitions, animations and links to the RealOne *media browser* and *related info* panes. You will also learn how to publish your presentation for use with the RealOne player and a RealSystem streaming server.

This is one in a series of GR*i*NS/RealOne *How To* guides. While it is not intended to be a substitute for reading the GR*i*NS *Quick Start Guide*, the *Template User's Guide* or the *Reference Manual*, it does provide enough information to get you up and running with GR*i*NS quickly and easily.

Your comments, suggestions and criticisms of this document and the GR*i*NS environment are welcome. Please send all comments to:

grins-support@oratrix.com

In the case of error reports, please include a brief description of the process that led to the error, so that we can repeat it.

Table of Contents

The Basics

This section will review how you obtain the GR*i*NS/RealOne editor and introduce the GR*i*NS/RealOne workflow model.

Obtaining the GR*i*NS/RealOne Editor

In order to create streaming presentation for the RealOne player using the GR*i*NS/RealOne editor, you will need the following components:

- The RealNetworks RealOne player, RealOne Beta or later;
- The OratrixGR*i*NS/RealOne Editor, version 2.2 or later;
- Media objects to insert in a presentation.

If you want to stream your presentation from a RealServer, you also need:

- RealSystem Server 8 Plus (or later).

All of this software is available from RealNetworks at:
http://www.realnetworks.com/products/editorpro/

The Oratrix GR*i*NS/RealOne editor is available for Windows-98SE, Windows 2000 (Professional) and Windows XP.

While GR*i*NS/RealOne does not have any specific hardware requirements beyond those for Windows-based software, the following system configuration is recommended:

- P-III or later CPU, 450mHz or greater
- High-resolution color display (1024x768 minimum, 1280x1024 recommended)
- 250MB RAM
- Enough disk space to store your original assets and converted versions
- Sound card and speakers/headphones (if you include audio)
- Network connection (for uploading your assets).

The GR*i*NS/RealOne Editor will let you convert and publish your assets to either a Web server or a RealSystem 8 (or higher) server. If you are targetting RealOne, you may also wish to purchase content conversion software (such as RealProducer) to give you more fine-grained control over your media content.

GR*i*NS/RealOne Workflow

Creating a RealOne slideshow presentation using a GR*i*NS/RealOne template consists of the following steps:

1. Open the editor and select a Slideshow Template
2. Add media assets to the presentation
3. Preview the presentation using the GR*i*NS Previewer
4. Fine-tune the presentation's timing
5. Publish to RealOne
6. Upload to a RealServer

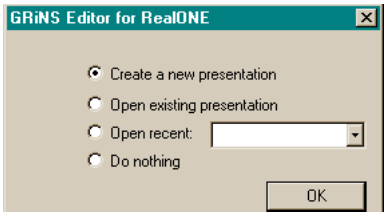
Depending on the template you select, you can create either a simple slideshow, or a slideshow with video and/or text captions. You can also add transitions and animations to your presentation. This will be highlighted briefly here, since it is the subject of another GR*i*NS/RealOne *How To* note. Finally, you can add links to HTML content in the RealOne *Media Browser* and *Related Info* panes. Since this is also the subject of a separate How To note, we only concentrate on the basics here.

Creating Basic Slideshows

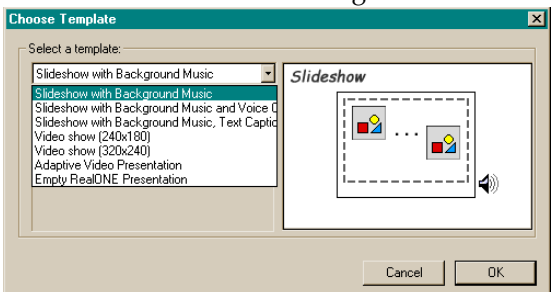
This section outlines the steps you need to create basic slideshows using GR*i*NS/RealOne, and provides introductions to the advanced features available in SMIL, RealOne and GR*i*NS/RealOne.

Open GRiNS/RealOne and Select a Slideshow Template

To create a slideshow presentation, you need to open the editor, create a new presentation and give it a name. To do these things:

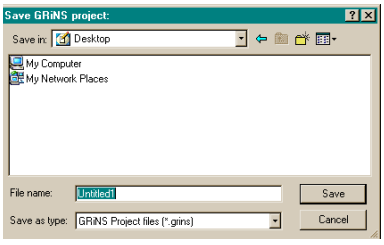


1. Open the GR*i*NS/RealOne Editor. When you do this, you get the selection box at right; choose *Create a New Presentation*. (If you want to re-open your presentation, use *Open existing presentation* or *Open recent*. If you have old Real Slideshow presentations lying around, you can also open these and convert them to RealOne native SMIL 2.0. See the *How To Convert RealSlideshow Presentations* note.)
2. Select the *Slideshow* with Background Music template, as shown below.

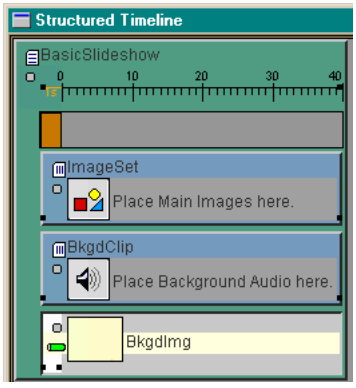


   If you want to try one of the other templates, consult the GR*i*NS *Template User's Guide*.

3. You will be prompted for a location/name to save the file. (We'll use *Untitled1*.) GR*i*NS will remember the last folder you used for saving presentations; if there is no last folder, GR*i*NS uses the Desktop.

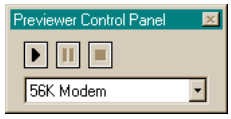


Working with the Structured Timeline



Whenever GR*i*NS is running, you have a choice of several document views. The default view is the Structured Timeline. The Structured Timeline shows the SMIL 2.0 hierarchy of the presentation, mapped to a timeline. This timeline shows a green PAR (parallel) group and two blue SEQ (sequential) groups. Media objects are placed into these containers. The timescale in the Structured Timeline is not fixed: it changes to highlight both the timing of the presentation and to identify possible performance problems. Yellow or red gaps in the timeline indicate performance related issues that affect timing. A dashed timeline indicates that GR*i*NS needs extra space to draw structure.

Before we populate the template, look at the bandwidth strip. It says that there will be a one-second delay at the start of the presentation — this is the estimated pre-roll delay used to load the background image. This time is determined by the previewer bitrate, as selected in the editor's Previewer Control Panel, shown at right.



Note: In order to get a useful idea of presentation performance, you always need to define the assumptions about the client's available bandwidth. We'll initially assume that this is 56K Modem.

Together with the Bandwidth Usage strip, you can get an idea of how well your presentation will stream as you build it step-by-step.

Add Media Assets to the Presentation

The *Slideshow* template contains all of the information required to create a presentation *except* the actual images used and the background audio. To add these, do the following:

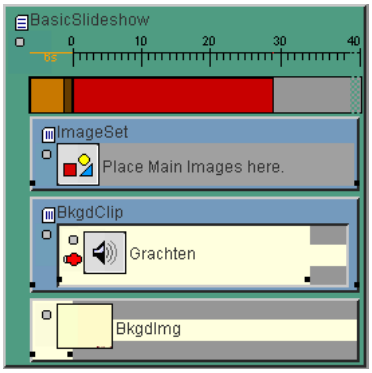
1. Using the Windows file navigation, find each of the media objects you want in the presentation.
2. Select and drag the objects to the appropriate template container: *Place Background Audio Here* for audio and *Place Images here* for the pictures.

You can also replace media objects by dropping new object on the old ones.

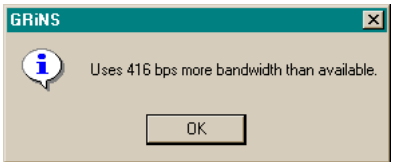
Note: When adding media assets, you should always add timed elements first (such as audio or video. Since these objects have the most critical streaming requirements, this usually leads to performance modelling in GR*i*NS*.)*

To build the presentation:

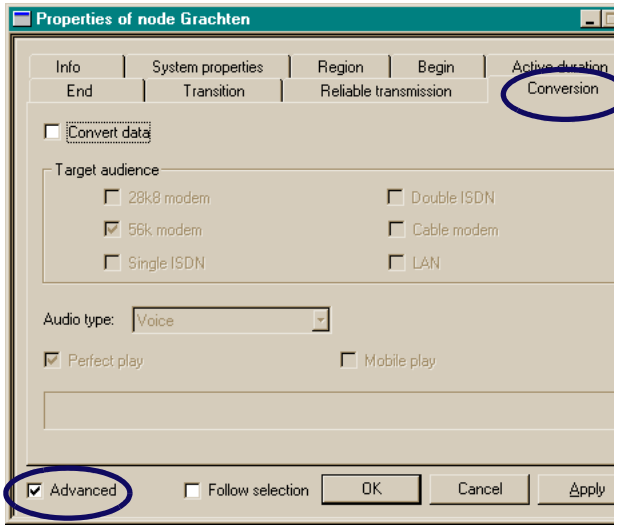
1. Add an audio object in the *BkgClip* container. This adds an icon representing the media in the Structured Timeline. Note that the Bandwidth Usage strip is red (not a good sign), and that the new audio node (named Grachten) has a red blocked-pipe icon. This icon is the GR*i*NS indicator that this node needs more bandwidth than is currently available.



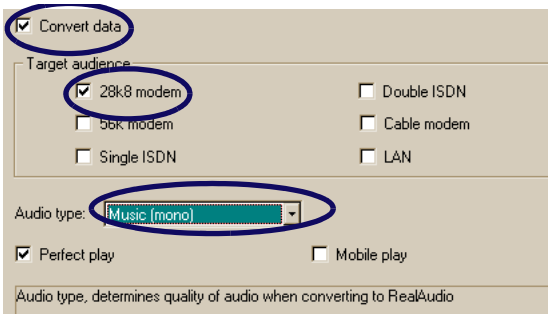
2. To get an idea of how much bandwidth we need, click on the blocked pipe. This gives a conservative indication of the bitrate (for continuous media) or time (for static media) deficiency of each item. While a deficiency of 400 bps is not extreme, it does mean that all of the network's resources will be spent delivering the audio, meaning no time for images! Unless you are running a radio station, this is probably not what you want.



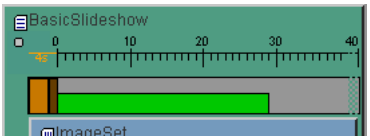
3. Part of the problem in this example is that the music node we are playing is a stereo, high fidelity audio clip. GR*i*NS has a built-in media converter that creates RealMedia files on export. To have the presentation use the effective post-conversion bitrate, first open the properties box for the media object, make sure the *Advanced* checkbox is active, and go to the *Conversion* tab.



4. To specify a more efficient use of resources, turn on the *Convert Data* checkbox, select *28.8K* (and un-check the 56K box), and set the audio type to *Music (Mono)*.



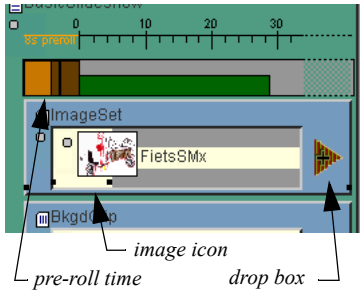
Setting the audio conversion parameters results in a major reduction in bandwidth use, as shown in the Bandwidth Usage strip. Note that the pre-roll time is now 4s.



After specifying the audio parameters, the images can be added to the presentation. When you add images, you should keep in mind that GR*i*NS (and RealOne) will scale your images to fit the viewing region, but this can waste lots of bandwidth — you send over more bits that you'll use. You will get better streaming performance if you pre-process your media to match your ultimate use.

To add images to the presentation:

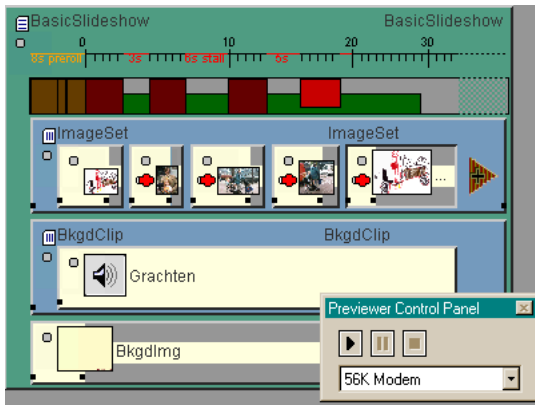
1. Drag an image from your media objects folder in Windows to the container with the *Place Main Images Here* text. You will see the illustration at right.



   This image contains very useful new information. First, the pre-roll time has increased to 8 seconds (since we have asked the image to appear at the start of the presentation). Second, the text has been replaced with an image icon. Third, a Drop Box has been added to the end of the container. (The drop box was put there by the template to say: add new images here.)

2. Add the additional images by dropping them on the *drop box* icon.

The illustration shows the effect of dropping five images into the presentation. There are still some performance issues to be addressed, but before we fine-tune the presentation, we should probably preview it first to make sure the message is "right."
Once the content is good, we can tune, tune, tune.



Making Adaptive Presentations

The red pipes on media objects and the red fields in the bandwidth strip above identify potential performance problems. To remove the red pipes (and thus get better performance), we can take one of two approaches:

1. design for the low-end, making it less interesting for the high-end, or
2. design an adaptive presentation that does something sane on a low speed connection, but also has some more excitement at the higher end.

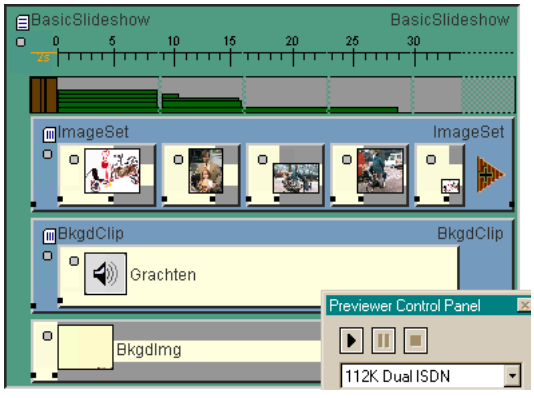
Designing for the Low-End

To make a minimalist presentation:

1. Set the minimum bitrate you expect your user to have in the Preview Control Panel.
2. Click once on the red pipe icons (if any) on media object in the Structured Timeline. This will bring up the pop-up box showing how many seconds you need to delay the start.
3. Use the begin drag handle and pull the begin time to the right, until the red pipe goes away
4. If you need to drag the element too far to the right (that is, if the delay is too great) remove the item from the presentation.

Designing an Adaptive Presentation

The presentation image above shows how the presentation would perform on a 56K connection. If the bitrate in the Preview Control is set to 112K, we see the following picture, which shows that we have plenty of headroom for the audio and the images.



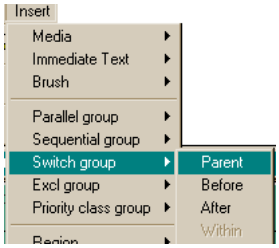
Since we have some extra resources available at the high end, let's make an *adaptive* presentation. The strategy we will use is:

- the low-end gets the standard presentation defined so far,
- the high-end get the same slides, but with stereo audio.

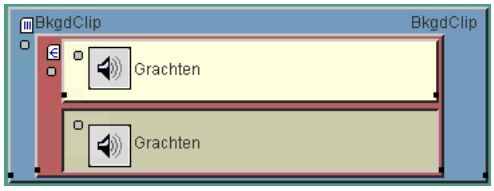
This is easily done in GR*i*NS using the SMIL *switch*.

1. Go to the audio object and select it by clicking it once;

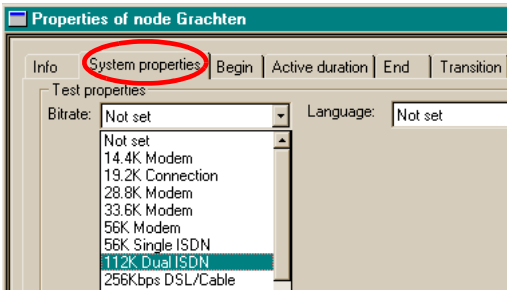
2. Insert a switch container around the object by using Insert->Switch group->Parent. This creates a red switch container. You can select a number of attributes that get transferred up to the Switch from the child, but for now, unselect everything and click OK.



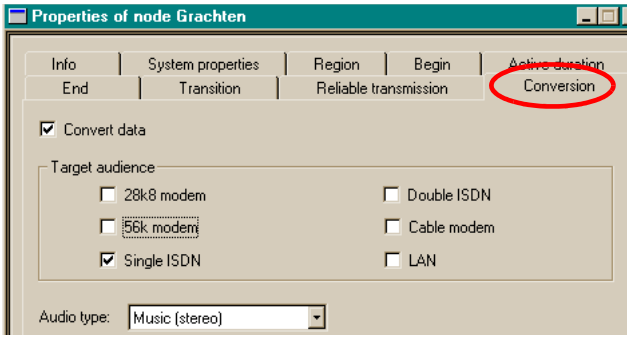
3. Make a copy of the audio object using Edit->Copy or Ctl-C and paste it into the Switch with Edit->Paste or Ctl-V. This yields the view at right.



4. Double-click the top audio node. This brings up the Properties box. Go to the System Properties tab, and set the *System Bitrate* selector to **112K Dual ISDN**. Select Apply.
(This tells the player to only play this node if the line bitrate is greater than 112K.)



5. Go to the Conversion tab (in advanced mode), and set the audio type to *stereo* and the conversion data rate to *Single ISDN*.
6. Leave the second audio node unchanged.



What you have done is to say:

> If the bitrate is 112K or higher, play the top node in the Switch. If the bitrate is less than 112k, look at the conditions on the remaining (second) node — since this has not special conditions set, it will always play if the first one doesn't.

You can preview both behaviors in GR*i*NS. First preview with the Preview bitrate to 112K and then at 56K. In the 112K case, the stereo audio is played. In the 56K case, the mono audio is played.

You could have also made separate slide sets (one with two images for low-bandwidth sites and one with five for high-bandwidth sites), or you could substitute video for images. The ability to build adaptive presentations within GR*i*NS gives you a powerful tool to address a broad audience without having to make several independent presentations.

(Making extensive use of the adaptive capabilities of RealOne is the subject of another How To note.)

Preview the Presentation using the GRiNS Previewer

GR*i*NS gives you two choices when it comes to previewing: you can preview the entire presentation or you can selectively preview just a small part.

Previewing the Entire Presentation

To preview the entire presentation, hit the Play icon in the Preview Control Panel. (In the case of the example, you'll see a background image, hear a piece of music, and see five images, each lasting 3 seconds. Actually, you will see four images lasting 3 seconds and one image lasting as long as the rest of the music. More on this below.)

Previewing Part of a Presentation

GR*i*NS allows you to selectively play parts of a presentation. You may, for example, select the container labelled *ImageSet* (it contains the five main images) and, using the Editor's Preview -> Preview Single Object command, play only the contents of this container. This plays all five images, but not the audio and not the background image. If you were to select the first image in the sequence (*Fiets.gif*), and again select Preview Single Object, you would have seen only that one image. You can preview any object at any level (at any time!) using this very handy — and uniquely GR*i*NS — feature.

You can also select Preview From Object in the Preview menu. For example, if you select the second image in *ImageSet* and then select Preview From Object, the presentation begins previewing from the point you selected. You get not only the remaining images, but the audio is also fast-forwarded to start at the appropriate point.

Polishing the Presentation

GR*i*NS provides you several tools for making your presentation more attractive:

- a set of timing controls that let you adjust the start time and duration of individual objects;
- a performance modelling system that lets you find and correct bandwidth problems;
- a transition effects system that lets you add fades, wipes, etc. to your presentation;
- an animation editor that lets you provide scaling and motion animation in the presentation; and
- a RealOne HTML synchronizing system that lets you coordinate the presentation of Web page content in the RealOne player's *browser* and *context* windows.

Adjusting Presentation Timing

In order to fine-tune your presentation, you need to become familiar with three important SMIL concepts: an object's *begin* time, its *duration* and its *fill* behavior.

Begin Times

Every object in a presentation — even PAR and SEQ structure containers — can have implicit or explicit begin times. For PAR containers, the implicit begin time for all objects in that container is the scheduled start of the PAR. For SEQs, the implicit begin time is the end of the object preceding it.

You can change the begin time of an object by:

1. selecting the *begin time handle*, which is the left-most handle on the object box, and
2. dragging this to the right to delay the start of the object or dragging it to the left to make the object start sooner.

Note that in a SEQ an object can't start before the end of its predecessor.

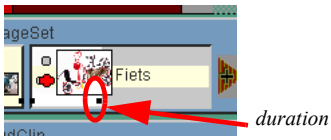
Duration

Every object has a duration in the presentation. The implicit duration of an object depends on the object type:

- the duration of a piece of continuous media (such as an audio or video clip) is the length of that clip;
- the duration of a discrete media item (such as an image or non-timed text) is 0 seconds. (Be careful: the RealPlayer used to assign 5 seconds as the default, but the default for SMIL-2 is zero seconds!);
- the duration of a PAR or SEQ is the result of computing a timeline for the contents of the container.

(There are many complexities of computing durations, especially when interaction is involved, but these are the basics.)

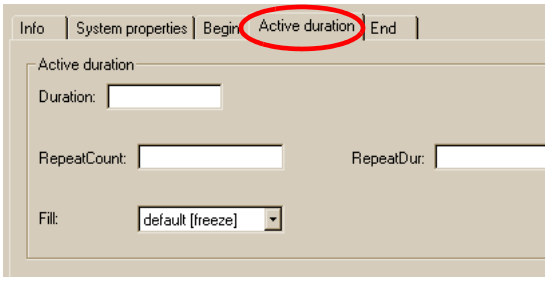
Every object can also have an explicit duration set that over-rides the implicit duration. To do this, take the duration (right) drag handle on an object and move it to the right or left to increase/decrease the duration.



The Fill Behavior

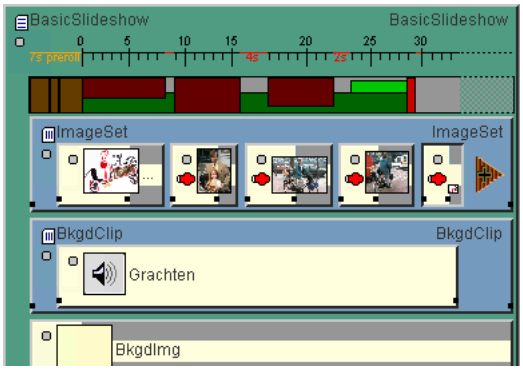
An object's fill behavior determines what happens to the object when its duration ends. Does it disappear or do the bits hang on the screen until they get covered by something else? In the Slideshow template, all objects have a fill behavior of freeze. This means that if no new object is scheduled after the end of a current object, its rendered duration (but not scheduled duration!) is extended to the end of its time container. The visual representation of fill="freeze" in GR*i*NS is given by the colored bar that extends to the end of the time container.

You can control the begin time and duration via direct manipulation. You may also set the values (and the fill behavior) by opening the object's property box and going to the *Active Duration* tab, as shown.



The distinction between an object's duration and its visual rendering time is very important in SMIL. You should consult the GR*i*NS, W3C, Microsoft and RealNetworks documentation for a more complete explanation.

Before worrying about bandwidth-related problems, you should start by pacing the data to fix the music. In our example, the music lasts 35 seconds and we have 5 images, we could give each object a relative begin time of 0, 7, 14, 21 and 28 seconds. Since fill="freeze" on all of these objects, we don't need to adjust the duration. This yields the Structured Timeline view above.

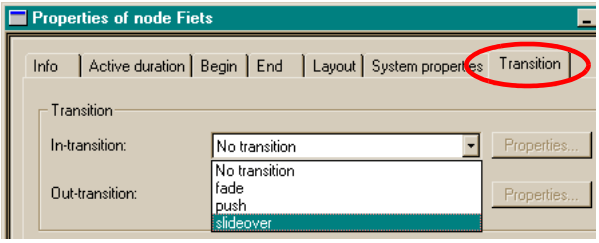


Adding Transitions to Media Objects

The RealOne player works hard to deliver your streaming media on schedule. Once that media has arrived, however, the Player can also help you make things look more exciting. Three classes of media handling can be used: transitions, animations and layout positioning. The interesting thing about all of these features is that they consume zero bandwidth. They do, of course, make some additional demands on the client's platform, so don't overdo the use!

Adding transitions involves:

1. selecting the node on which you want the transition, by single-clicking it in the structured timeline view;
2. opening the *Properties->Transitions* tab on that node; and
3. selecting either an input or output transition (or both).



You can preview this node by selecting Preview->Preview Single Object (also available under the right mouse key).

The Slideshow template defines four standard transitions. You can also define new transitions via the Transitions view. You may apply transitions to any media object, including video.

> *Note: Adding output transitions in sequences often requires that you change the value of the fill attribute from* freeze *to* transition*; this ensures that the bits of the previous image remain on the screen long enough to complete the transition.*

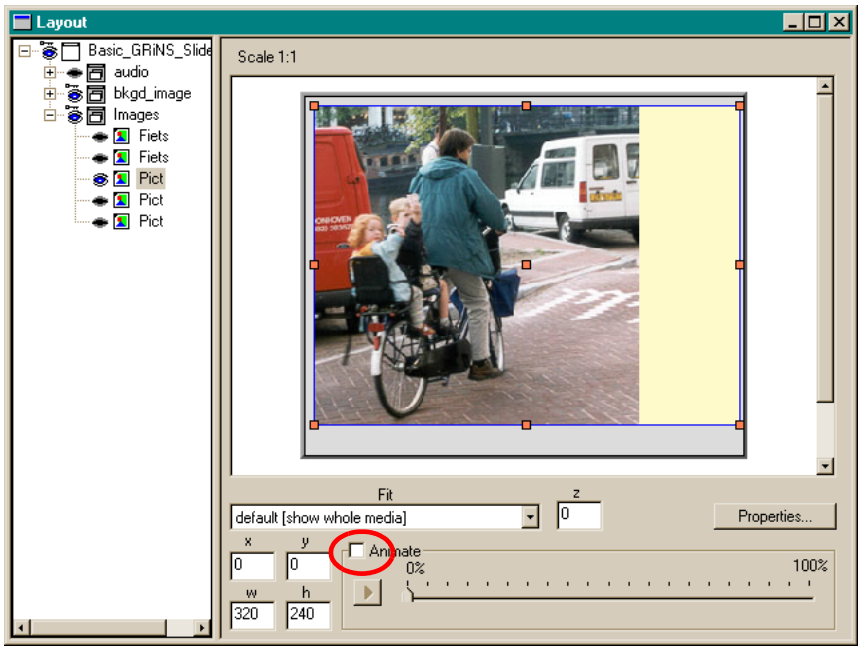
Adding Animation

You can easily add object-based animations to your presentation. What you animate is the *rendering position and size*, not the content itself. (If you want animated content, you should add Flash or SVG objects to your presentation.) Since position and size are specified via the Layout window in GR*i*NS/RealOne, this is also where the animation control is found.

To add animations to a media object, follow the five steps below.

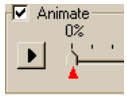
1. Select a media node that you would like to animate. For example, we select the fourth image in *ImageSet*.

2. Next, open the Layout window (via Windows->Layout). The view you get is:

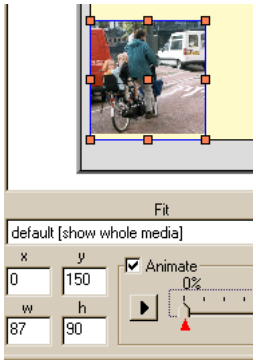


On the left side of the Layout window is the region/media selection tab. At top right is the placement window, and at bottom right is the Animate control.

3. Enable animation by enabling the Animate check box. The scale on the Animate bar defines the duration of the animation in terms of the active duration of the media object. (If you make the duration longer in the Structured Timeline, the animation will occur more slowly.)



4. Set the pointer on the Animate Timeline to 0%, and using the drag handles on the image, make the image small, and place it in the lower left hand corner. It should look something like the image at right. (Make sure you turn on Animate before you resize the image.) Note the value of the Fit attribute — this will determine how an image behaves during resizing. Show whole image usually gives a desired result, but you can try others.



5. Now, hit the Play icon next to the Animate timeline. You'll see a preview of the animation. The preview repeats continuously; you can stop it using the same button (which now is a Stop icon.)

SMIL and GR*i*NS/RealOne use a 'return to rest' animation model. That is, you define a non-standard position, and the animation will return the object to its original position and size. You can define intermediate points by positioning the slider. If you select an arrow under the Animate timeline and then shift-drag the value, you can copy existing size and position parameters.

You can delete any animation point by double-clicking its timeline triangle.

Selective Object Positioning

When you created the animation, you did two things: defining a position/size pair on the region holding a media object, and associating a time on the Animate timeline. You can also change the places where objects get rendered by simply defining a size/place pair. You can also define relative positioning of objects by selecting them in 'eyes' mode in the left pane, and then choosing one to reposition and scale. Not having every image appear at top left makes your presentation much more interesting to watch.

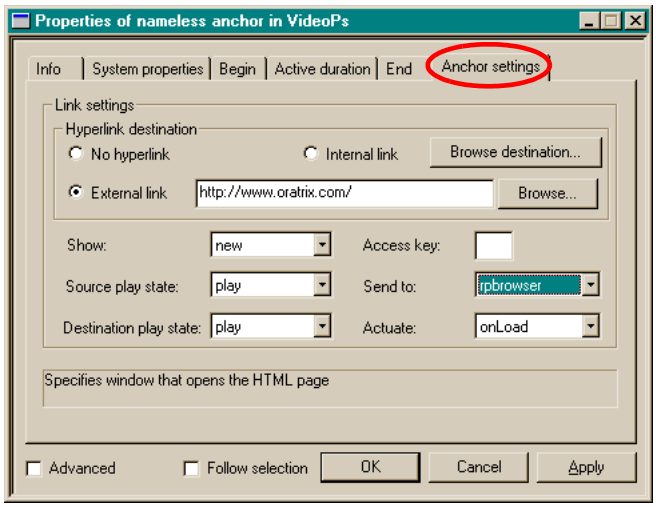
Synchronizing Content with the RealOne *Media Browser Pane*

To create a self-firing link to the RealOne *Media Browser* pane, do the following:

1. Select the node in the presentation that will serve as the source node for the link. (This is the node that, when played, causes the page to appear.)
2. See if the linking toolbar in the GR*i*NS/RealOne Editor has been activated. If not, turn it on via the View->Toolbars->Timing and Linking menu entry. The toolbar is shown above.

3. Click on the icon with an arrow pointing to the *browser* pane, as shown at right. (A link to the *related info* pane is also available.)

4. Enter the URL (either as a full Web path or as a local name) into the property dialog box for the newly created anchor. The property box and an example URL are shown below:



That's it. Now, when you play the presentation, the Web page appears in the RealOne *media browser* pane. You can add timing offsets and other special attributes via other GR*i*NS views. See the *How to Target the* Related Info *and* Browser *Panes from Content in the Media Player* note for more details.

(Creating a self-firing link to the *Related Info* pane uses the same process as for the browser pane, except that the Related Info icon is used.)

Generate/Upload the presentation

Publishing your presentation for RealOne consists of several steps, some of which are optional. The process starts by selecting

File->Publish->Publish for RealOne,

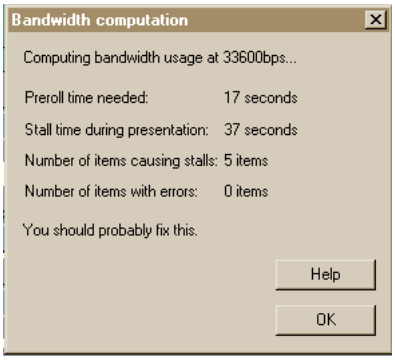
and consists of the following actions:

- a bandwidth check is performed prior to publishing, and a performance report card is generated;
- , any media items that were selected for conversion to RealMedia formats are converted;
- the media assets are all copied to a distribution directory and the .smil and .ram files are created for you; and
- (if uploading) assets are copied to a RealServer and the presentation is published to a Web page.

Each of these steps is discussed in the sections below.

Check Bandwidth Usage

When you select Publish, you first get a bandwidth report card. You'll see how much preroll time is required and what the stall time is (if any). You'll also get some advice on the severity of the problem.



If there are errors, GR*i*NS does not correct them for you (since such corrections often involve artistic design issues), but it does indicate where you should look for the problem spots in your presentation. These are indicated by red blocked pipes on data items.

Converting Media Objects to RealMedia Format

The next step in publishing is the conversion of RealMedia items. Not all file types are automatically converted — the Conversion tab in a media object's property box will determine which objects get converted and how the conversion will take place. If you are not publishing to RealOne, this step is skipped.

You see a conversion completion bar for each object being converted.

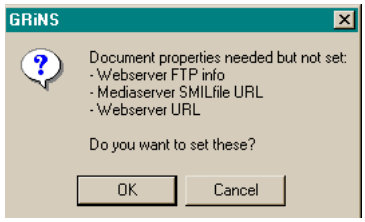
Creating the SMIL File

Once local publishing is complete, you can now preview the presentation in RealOne to see if fine-tuning is required. :

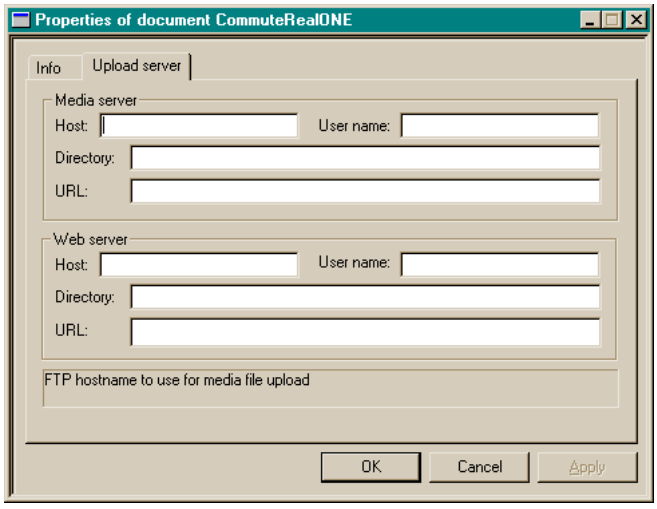
Upload to a Media Server

Once the presentation has been created, you can also upload it automatically to a media server.

Select File->Publish->Publish for RealOne and Upload. The first time you do this, you may see the box at right; this means that you need to set various upload parameters.



You can also pre-set these via File->Document properties.



The upload entries are shown above. The information you'll need is:

- *Media Server information*: this is the location of your RealServer. You'll need to supply the host name and your user name (for accessing the host — we'll prompt you for a password, but GR*i*NS won't save it, so you'll need it each time you upload.)
- *Web Server*: this is where your SMIL file gets placed; it also is where your HTML assets get stored — these are the files for the context and browser windows. (Note: since the RealOne player needs to access these pages at presentation time, you also need to supply a URL that resolves to the place where the named directory can be accessed.)

You can now view the presentation from anywhere on the Web.

Advanced Topics

This note provides the basis for working with GR*i*NS to create RealOne presentations. You should also consult the GR*i*NS (and RealOne) documentation to get more information on the wide range of facilities available with the GR*i*NS editor and the RealOne player.

GR*i*NS is available in several editions. Registered owners of GR*i*NS/RealOne may upgrade their editor to the full GR*i*NS/Pro version. In addition to support for multiple SMIL 2.0 profiles, GR*i*NS/Pro also provides the user with more control over all SMIL 2.0 related aspects of the presentation. GR*i*NS/Pro is available at http://www.oratrix.com.