

Visualisation Element: towards the definition of a new Grid service

The intensive activity, co-funded by the European Union in the last 8-10 years, has seen the creation of global Grid infrastructures for supporting scientific research. Today these global Grid Infrastructures are mature enough to offer production quality services to a large number of Virtual Research Communities (VRCs) and several Grid applications (e.g. Fluent [1], Blender [2] and VISIVO [3], just to name a few) produce, after long executions, complex output patterns that can be collected and encoded as a unique video that can be easily shown to a wide audience and monitored with the strong impact of multimedia communication. In this contribution we describe the design and prototypal implementation of the Visual-Element, a new Grid service implemented through the EnginFrame/GENIUS Grid Portal [4] in order to allow non- expert users to control and show job evolution using a web based interface. With this new Grid service and the strong impact of multimedia communication, user's jobs can be better monitored and controlled. Once the new service is started, the job running on a Worker Node (WN) downloads from a Storage Element (SE) a compressed file containing the images produced by the producer application during its execution. The GFAL C APIs have been adopted in order to speed up the download of the files from the SE. The images downloaded from the SE are processed by Mencoder and an output video is then created. Before the end of the computation, an UDP network connection on port 1234 is initialized between the WN where the service is running on and the public IP of the user desktop. This UDP connection is used by VLC [5] software running in the WN to stream the video over the network to the user desktop. Recently, this service has been enhanced with the support to the stereoscopy and the possibility to create 3D videos. The service has been successfully tested in the Grid infrastructure of the COMETA Consortium [6].

References [1] The Fluent web site – www.fluent.com [2] The BLENDER web site – www.blender.org [3] The VISIVO Server - http://visivo.oact.inaf.it/index.php?Itemid=43=26=com_content=view [4] The EnginFrame XML/Java framework – www.enginframe.com [5] The VideoLAN Project - <http://www.videolan.org/.videolan.org> [6] The COMETA Consortium – www.consortio-cometa.it

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