# CineGrid:
# Building a distribution node in Amsterdam

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The amount of high resolution media content such as video for scientific visualization, remote learning and entertainment is increasing. One of the challenges is to create a suitable infrastructure that supports the storage and retrieval of this material and to develop the tools for the distribution in real time over dedicated network paths. The UvA and SARA take on this challenge within the CineGrid organization and create one of the first European CineGrid distribution centers in the Amsterdam LightHouse facility.



The CineGrid community now has available a large selection of 4K material: operas, animation movies, documentaries. In our demo we will show 4k recordings of locations in Amsterdam taken during the Holland Festival.

4K is a high quality video format, four times more detail than HD-TV. Image sizes are 4096×2160 pixels, hence the name. The frame rate is of 30 frames/sec; the size of a single frame is 50 MBytes: a 1 hour movie is about 5.5 TB of uncompressed data.
To stream uncompressed 4K content over the network we need a bandwidth of ~6.4 gbps.

A CineGrid distribution center needs to provide sufficient network bandwidth to transmit the material to other sites and sufficient storage capacity to maintain a copy of the data.
The Amsterdam Lighthouse with its connection to NetherLight (www.netherlight.net), a wavelength switching facility in Amsterdam, has access to dedicated optical network paths that offer sufficient bandwidth for the transmission of 4K content.
Sun Microsystems provided a part of the demo hardware and filesystems technology that meet the CineGrid demands.