

Access Grid 2.0

Network Services



Overview

- Network Services operate on the Streams in a venue to provide a richer set of collaboration options
- We will consider an example in which a Transcoding Network Service provides a Venue with the means to match users with differing capabilities with common content



Use Cases I

- User enters a venue with an AG Node that has limited functionality
- ** User enters a venue with an AG Node with very advanced functionality
- User enters a venue, but chooses to participate with a specific subset of their resources



Requirements I

- Network Services are
 - Network accessible
 - Configurable
 - Composable
 - Described in a standard way

Architecture I

- Network Services Resources
 - Identification
 - Input Locations
 - Input Data Description
 - Output Locations
 - Output Data Description
 - Configuration



Architecture II

- Network Services Operations
 - Start
 - Stop
 - Restart
 - Query Required Inputs and Outputs
 - Modify Input Locations
 - Modify Output Locations
 - Query Configuration
 - Configure



Technology Strategy

- Establish a basis for development of Network Services and their integration with Venues
- Develop Network Services as web services, to enable integration from diverse sources
- Generalize inputs and outputs of Network Services, to support composability

Technology Choices

- Web Services
 - SOAP
 - WSDL
- Globus Toolkit 2.x
 - Identification
- Authorization

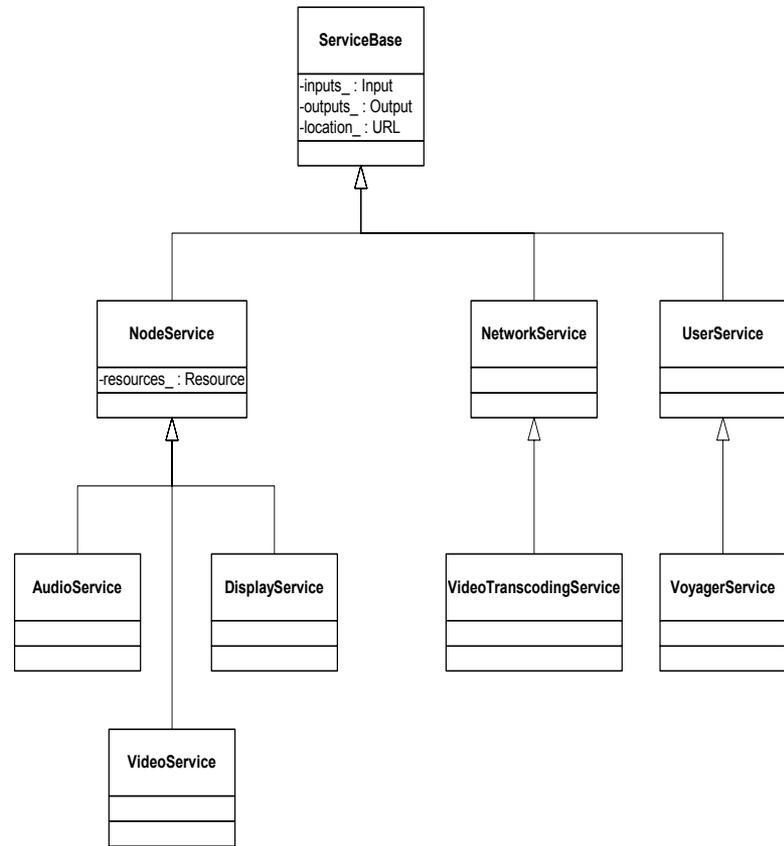
Design I

- Network Services are very similar to the Services described earlier:
 - Represented in Venue by Service Description
 - Service Description may appear in multiple Venues
 - The Venue provides interfaces for adding, removing, and configuring network services.



Design II

The commonality across the different types of Services is expressed in the class hierarchy



Design III

Consider the example of a Transcoding Network Service; for example, transcoding an 8kHz audio stream to a 16kHz audio stream. The Network Service

- inherits infrastructure from superclasses to support basic operations
- is specialized only in its transformation of the data

Design IV

A Venue can employ a range of these Transcoding Network Services to construct an interaction model for users with capabilities other than those currently in use in a Venue. The use cases listed above are valid examples, where a user wants to participate in a venue with richer capabilities than s/he has available.



Open Issues

ACES



Conclusion

- Network Services will be easy to build and integrate with the AG
- Network Services will provide users with more options for collaboration

Questions?

ACES

