

Streaming from the Institutional Repository

By: Diane Butler
Geneva Henry
Rice University

CNI Spring 08 Task Force Mtg.

Overview

- Problems with multimedia asset management
- Our approach to the problem
- Solutions and Issues

Our Problem

- Shepherd School of Music
 - Preserve and make available online faculty and student performances
 - 348 performances
 - 3.1 GB for 90 min performance

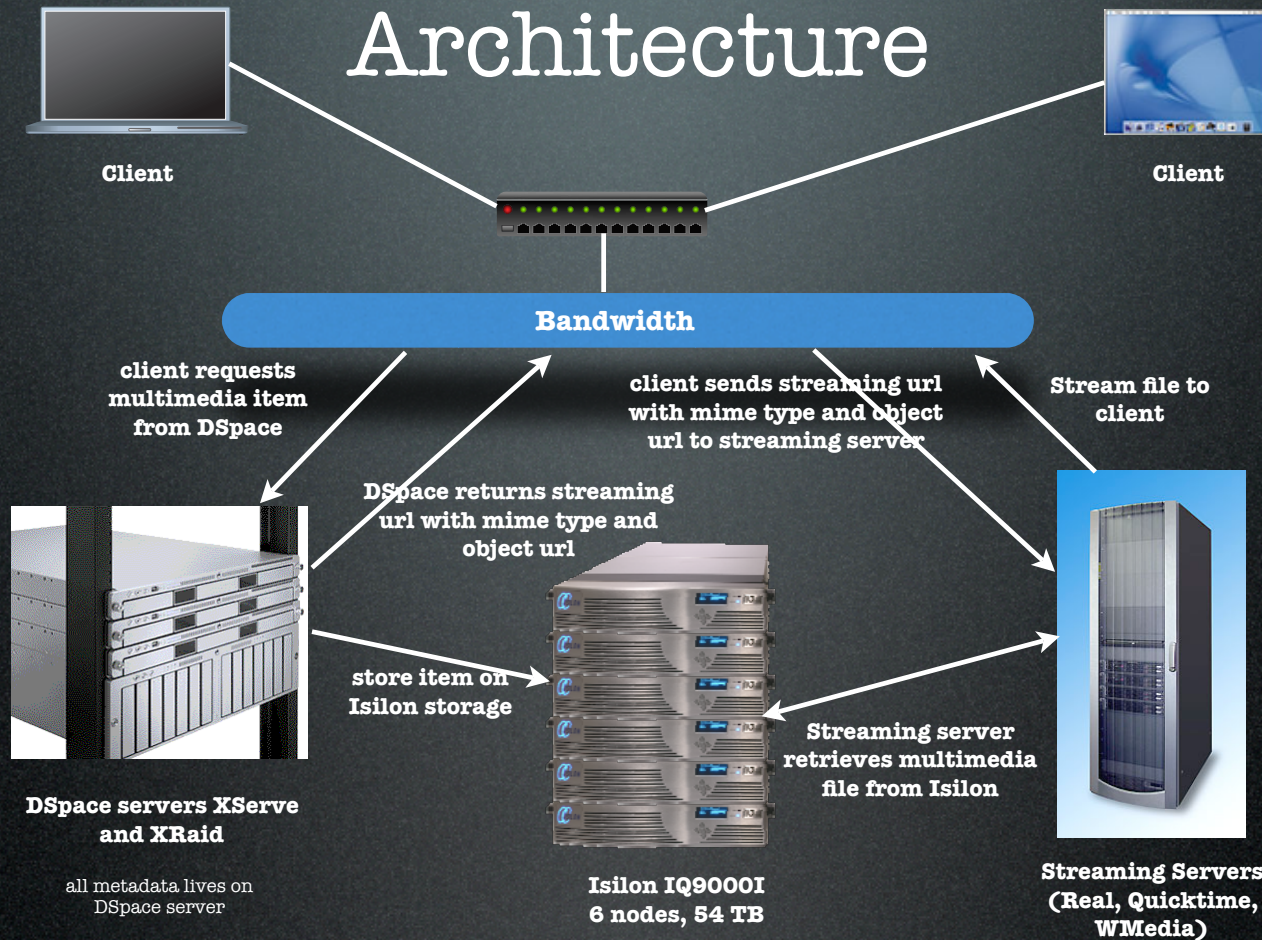
Our Problem (2)

- Typical multimedia asset management in an IR
 - Download vs stream
- Stream file and maintain metadata

Our Approach

- Clustered storage - Isilon
- Streaming servers
- Modify DSpace software

Architecture



Sample Metadata

Turi Hoiseth, violin, Master's Recital

[Show simple item record](#)

date.accessioned	2007-05-07T18:40:33Z	
date.available	2007-05-07T18:40:33Z	
date.issued	2004-11-19	
identifier.uri	http://hdl.handle.net/1911/3780	
description	This recital is given in partial fulfillment of the requirements for the degree Master of Music. Ms. Hoiseth is a student of Kenneth Goldsmith.	
description.provenance	Made available in DSpace on 2007-05-07T18:40:33Z (GMT). No. of bitstreams: 3 Maple-Leaf-Rag.mp3: 784219 bytes, checksum: 9590763d97641997d533b9bda181f745 (MD5) Fur-Elise.mp3: 625081 bytes, checksum: ee6db3ceaa4bd05cd5c6b92127fcbbe8 (MD5) sugar-plum-fairy.mp3: 403543 bytes, checksum: 46a56d58432baacf0d106d9b4585f221 (MD5)	en
description.provenance	Submitted by Monica Rivero (mpr1@rice.edu) on 2007-05-07T18:40:33Z No. of bitstreams: 3 Maple-Leaf-Rag.mp3: 784219 bytes, checksum: 9590763d97641997d533b9bda181f745 (MD5) Fur-Elise.mp3: 625081 bytes, checksum: ee6db3ceaa4bd05cd5c6b92127fcbbe8 (MD5) sugar-plum-fairy.mp3: 403543 bytes, checksum: 46a56d58432baacf0d106d9b4585f221 (MD5)	en
description.tableofcontents	Allemanda -- Corrente -- Sarabanda -- Giga	
description.tableofcontents	Allegro -- Adagio molto espressivo -- Scherzo: Allegro molto -- Rondo: Allegro ma non troppo	
description.tableofcontents	Program: Sonata no.5 in F major, op. 24 "Spring," Ludwig van Beethoven (1770-1827) -- Partita no. 2 in D minor, S.1004, Johann Sebastian Bach (1685-1750) -- Sonata no. 2, Charles Ives (1874-1954)	
description.tableofcontents	Autumn -- In the barn -- The revival	
subject.lcsh	Sonatas (Violin and piano)	
subject.lcsh	Suites (Violin)	
title	Turi Hoiseth, violin, Master's Recital	en
type	classical music	
type	sound recording-musical	en
title.other	Sonaten und Partiten, violin, BWV 1001-1006. Partita, no.2, Selections.	
title.other	Sonatas, violin, piano, no. 5, op. 24, F major	
title.other	Sonatas, violin, piano, no. 2	
contributor.composer	Charles Ives, 1874-1954	
contributor.composer	Bach, Johann Sebastian, 1685-1750	
contributor.composer	Ludwig van Beethoven, 1770-1827	
creator.performer	Moeling, Robert	
creator.performer	Hoiseth, Turi	
coverage	Lillian H. Duncan Recital Hall, Rice University, Houston, TX	

Files in this item

Files	Size	Format	View
Fur-Elise.mp3	625.0Kb	audio/basic	View/Open
Maple-Leaf-Rag.mp3	784.2Kb	audio/basic	View/Open
sugar-plum-fairy.mp3	403.5Kb	audio/basic	View/Open
			Need help?

Solutions & Issues

- Clustered storage
 - Cost
 - Grant

Isilon

ENVIRONMENTAL SPECIFICATIONS

Power Supply	Dual redundant, hot-swappable 650W power supplies with Power Factor Correction (PFC)
Operating Environment	50° F to 95° F (10° C to 35° C), 5% to 95% relative humidity, non-condensing
Non-Operating Environment	-40° F to 149° F (-40° C to 65° C), 5% to 95% relative humidity, non-condensing
Dimensions/Weight	Height: 3.48" (8.8 cm), Width: 18.87" (47.9 cm), Depth: 28.5" (72.4 cm), Weight: 58.2 lbs / 26.4 kg
Minimum Service Clearances	Front: 35" (88.9 cm), Rear: 14" (35.6 cm)

Single Node Attributes	Isilon IQ 1920	Isilon IQ 3000	Isilon IQ 6000	Isilon IQ 9000	Isilon IQ 12000										
Capacity	1.92 TB	3.00 TB	6.00 TB	9.00 TB	12.00 TB										
Hard Drives (hot-swappable)	Twelve (12) 3.5" SATA-2 160 GB HDD	Twelve (12) 3.5" SATA-2 250 GB HDD	Twelve (12) 3.5" SATA-2 500 GB HDD	Twelve (12) 3.5" SATA-2 750 GB HDD	Twelve (12) 3.5" SATA-2 1 TB HDD										
Storage Expansion	N/A	N/A	YES — via Serial Attached SCSI (SAS)	YES — via Serial Attached SCSI (SAS)	YES — via Serial Attached SCSI (SAS)										
Typical Power Consumption @ 100v	3.6A	3.6A	3.6A	3.6A	3.6A										
Typical Power Consumption @ 240v	1.5A	1.5A	1.5A	1.5A	1.5A										
Typical Thermal Rating	1250 BTU/hour	1250 BTU/hour	1250 BTU/hour	1250 BTU/hour	1250 BTU/hour										
CPU Type	2.0 GHz Dual core Intel® Xeon™ processor 5130														
Front-End Networking	Two (2) copper 1000 Base-T (Gigabit Ethernet) per node														
Intracenter Networking	Two (2) InfiniBand® connections per node														
ECC Memory	4 GB of FBDIMM Cache														
Non-volatile RAM (NVRAM)	512 MB														
External Indicators	Cluster status and alert (LED) and front panel LCD														
Cluster Attributes (Nodes)	3 (min)	10	96 (max)	3 (min)	10	96 (max)	3 (min)	10	96 (max)	3 (min)	10	96 (max)	3 (min)	10	96 (max)
Capacity (TB)	5.7	19.0	184	9	30	288	18	60	576	27	90	864	36	120	1152
Memory (GB)	12	40	384	12	40	384	12	40	384	12	40	384	12	40	384
Rack Units (RU)	6U	20U	192U	6U	20U	192U	6U	20U	192U	6U	20U	192U	6U	20U	192U

Solutions & Issues (2)

- Partners
 - James A. Baker Institute for Public Policy
 - Language Resource Center
 - Central IT

Solutions & Issues (3)

- New issues
 - Needed Central IT's blessing
 - Needed Central IT to maintain it
 - Too many Chiefs (admins)

Where We Are Now

- Purchased - Nov 2007
- Installed - Dec 2007
- Trained - Mar 2008
- Test Phase - Apr - Jul 2008
- Go Live - Aug 2008

Questions?

- Contact information:
 - Diane Butler, diane@rice.edu
 - Geneva Henry, ghenry@rice.edu