Connecting to the NC Education Cloud

May 2012 Update

http://cloud.fi.ncsu.edu

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First Things First

- Year one was about planning – we are at month 17 of 44
- Over $30M of the $34M cloud budget will be used to procure services and wares for LEAs and Charters
- We are focused on sustainability
- Our Identity and Access Management approach has gained national traction – including with the SBAC
- We have met with over 50 vendors and providers
- Software as a service has made the turn
- NC ITS is heading into the turn
Timeline

- **Planning**
- **Design & Build**
- **Deploy**
- **Operate**

- **2011**
- **2012**
- **2013**
- **2014**

- All services operational by January 2014

- RttT funding ends August 2014
NC Education Cloud Basics

- De-emphasize buying and hosting infrastructure
- Emphasize procuring services
- Raise the bar on reliability
- Towards 24x7 access to services
- The cloud isn’t the backup – it’s the primary
- Defragmentation – fewer providers, more competition
- Avoid custom integration – adopt standards
- Fill in the gaps
LEA IT Infrastructure Platforms

Platforms and Services
- SIS
- IIS
- PD System
- Email
- VoIP
- Filtering & Firewall

Data and Content
- Student Data
- Course
- Common Core
- Identity
- Messages
- Docs
- Finance
- HR
- BI
- AP/AR
- HR
- Finance
- Child Nutrition

Shared Infrastructure
- Identity and Access Management
- Content and Learning Management
- LOR & Collection Management
- Data Management
Modernized Business Services

• i-Series RFP
  • Central hosting of i-Series (AS/400) infrastructure
  • Exact copy of LEA platform hosted outside the LEA
  • NCDPI i-Series transition as well
  • Target 4Q2012 for operational services

• Business process review
  • Identify interconnections between LEA and NCDPI business systems and processes – particularly those connected to the LEA-hosted i-Series
  • Opportunistically modify and/or upgrade interfaces and applications
Behind the Curtain Cloud Services

• Identity and access management
  • Automatically create user accounts
  • Provide mechanisms for those accounts to be used to login to many services (including IIS and SBAC assessments)
  • Require all future providers to adhere to identity standards

• Data integration
  • ETL from authoritative SIS, accountability, program sources
  • Operational data store

• Instructional content services
  • Learning object repository (LOR)
  • Digital card catalog to search, contribute, and manage content
  • Provisioning and procuring learning management systems

• Annual media and technology report (AMTR) 3.0
  • Automated collection and reporting
  • Supporting “readiness” determinations
Identity and Access Management

1. User logs into a cloud service once
2. Cloud service passes user request to IAM for authentication
3. IAM passes user authorization information back to cloud service
4. User granted access to all relevant cloud services
Next Steps

• **RFP Contract Award for IAM Service (August 2012)**
  Once the RFP is posted for vendors, a detailed evaluation process is done to select the best service offering. A contract is then awarded to the winning vendor.
  • Build and Implementation (Fall 2012 – Spring 2013)
  • IAM Pilots and Testing (Spring-Summer 2013)

• **Full Operational IAM Service (August 2013)**
Data Integration

Data Integration - Basic ETL + ODS

Data Sources

Data Integration Service

Extract

Operational Data Source

Load

Target Services

Transform

Target Services

Operational Data Source

Load

Target Services

Load

Target Services

Load

Target Services

Load
Next Steps

• Final DI Plan Reviews by Stakeholders
  Version 3.0 of DI Plan is currently being presented to DI Stakeholders for approval before moving to RFP.

• RFP for DI Managed Service (Summer 2012)
  The DI Team has gathered enough requirements and specifications from the vendor and stakeholder community to create a definitive solicitation proposal for the DI Service. The beginning administrative steps of this process have already started.

• DI RFP Contract Award (September 2012)
  • Build and Implementation (Fall 2012-Spring 2013)
  • DI Pilots and Testing (Spring 2013)

• Full Operational DI Service (May 2013)
Learning Object Repository

NC School of Science and Math Adds Instructional Music Videos to NCLOR

The North Carolina School of Science and Mathematics has added 95 new instructional videos to the NCLOR. The videos include music theory and how to play music on a variety of instruments. The videos by Scott Laird & Phillip Rigs, instructors at the North Carolina School of Science and Mathematics, cover a range of musical instruments. Some of the instruments covered in this series are: Guitar, Cello, Jazz Bass, Violin, Viola, ...and more.
Next Steps

- Extend NCLOR licensing to include all of K12
  - July 2012
- Procure scalable managed LOR service
  - Pilot starting July 2012
  - Fully operational LOR service April 2013
- Import standards aligned content
  - Working with NCSU TOPS
  - Standards aligned (NC and Common Core) resources
  - Initial task: Thinkfinity Lesson Plans
  - Content alignment work is being funded by DPI
- Determine LMS procurement options
Next Steps

- Finalize Scope of Work
  - May 2012

- Engage working group on non-automated collection and workflow decision making
  - June 2012 and ongoing

- Release RFP for Asset Management Platform
  - July 2012

- Release RFP for Analytics Platform
  - July/August 2012

- Release RFP for ongoing platform management
  - July/August 2012
Enterprise Services – Interview and Survey Findings

- On average, technology departments spend 45% to 55% of their time as measured as a percentage of FTEs providing end-user support – typical ratio of one technician per 1,200 computers
- Infrastructure and client device obsolescence is prevalent
- Disparate requirements for teaching and learning hardware and software
- Exploring alternative strategies for getting more devices in the hands of students, e.g. BYOD
- Sufficient OA&M tools are typically lacking in LEAs
- Online assessment readiness is a concern
- Cloud computing is a well-accepted practice in the state’s public schools – cloud email and SaaS instructional applications
End-user devices
- Supporting bring your own device (BYOD) – CNE report
- Mobile device management
- Desktop virtualization
- Desktop malware protection

Sustainable Infrastructure
- AS/400 hosting – finance/HR system modernization
- Firewall and filtering
- Hosted voice over IP
- Wireless services and management
- Email and collaboration

Performance monitoring and management
- Application performance management
Mobile Device Management

- Establish a convenience contract for mobile device management software or SaaS, or offer MDM functionality as a managed shared service.
- RFI released and responses received from:
  - AirWatch, Good Technology, JAMF Software (Casper), Juniper, McAfee, MobileIron (AT&T), Symantec, Zenprise.
- AirWatch and JAMF Software (iOS only) have the most penetration in NC K-12.
  - Mobile OS vendors offer limited functionality - Google Apps Mobile Management, Apple Profile Manager with OS X Lion Server.
- RFP(s) released – June 15, 2012.
  - Determine NC K-12 demand and conduct LEA informational webinars.
- Target in-service date – Q4 2012.
Desktop virtualization requires a substantial upfront investment - $90 - $100 for compute and storage per desktop – Capex savings are minimal

Simplifying the management of desktops will reduce operational costs – ratio of computers to technicians in NC K-12 very high (1,200:1) – where are the savings? Better service quality

It really is about the applications

LEA trends and other feedback
Desktop & Application Virtualization (cont.)

- POC lab at MCNC – currently evaluating Citrix and VMware solutions
- Evaluating deployment options – mitigate risks associated with potential large capital investment
- Parallel efforts
  - MCNC in early stage discussions with VMware regarding a statewide license agreement for education – 4/2/2012 NSOC communications from John Killebrew
  - Internet2 NET+ Cloud Services
Hosted IP Telephony

- Establish a convenience contract for Hosted IP Telephony Services
- Service provider assessment complete
  - AT&T, Jive Communications, CSI, NWN, CenturyLink, Telovations, Bandwidth.com
- RFP(s) released – June 29, 2012
- Target date for execution of convenience contract – November 1, 2012
End-user Performance Management

- **End-user experience monitoring** — extend traditional network management functionality to collect and analyze data about how end-to-end application availability and latency appeared to the end user
- RFI – June 15, 2012
- Potential vendors - CA Technologies, HP, IBM, OPNET Technologies, SolarWinds, etcetera
- Service reference architecture – July 13, 2012
- RFP(s) released – August 31, 2012
- Target in-service date – Q1 2013
Many LEAs identified a convenience contract for endpoint security as a possible NCEdCloud service.

**ITS Statewide Contract - Contract No. 208M**

http://www.its.state.nc.us/ITProcurement/TermContracts/Contracts/208M/STC%20208M%20webpage%20284-05-2011.pdf

Two products available on contract - McAfee and Symantec

Competitors typically under bid state contract rates, e.g. Trend Micro
Other Early Stage Opportunities

- Operations, Administration, and Management (OA&M) infrastructure
- Sustainable wireless
- Email
- Rural broadband programs
- ???
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<thead>
<tr>
<th>Project</th>
<th>Owner</th>
<th>Status</th>
<th>Target In-Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity and Access Management service</td>
<td>Friday Institute</td>
<td>RFP</td>
<td>Q3 2013</td>
</tr>
<tr>
<td>Desktop Virtualization – remote hosted desktops and remote virtual applications</td>
<td>MCNC</td>
<td>Plan</td>
<td>Q4 2013</td>
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<tr>
<td>Mobile device management (MDM)</td>
<td>MCNC</td>
<td>Design</td>
<td>Q4 2012</td>
</tr>
<tr>
<td>AMTR 3.0 – automated collection and reporting for IT assets</td>
<td>Friday Institute</td>
<td>Design</td>
<td>Q2 2013</td>
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<tr>
<td>Learning Management System (LMS) procurement and provisioning</td>
<td>Friday Institute/ NCDPI</td>
<td>RFP</td>
<td>Q2 2013</td>
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<tr>
<td>Establish a convenience contract for Hosted IP Telephony</td>
<td>MCNC</td>
<td>Design</td>
<td>Q4 2012</td>
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<tr>
<td>Data Integration managed service</td>
<td>Friday Institute</td>
<td>RFP</td>
<td>Q2 2013</td>
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<td>Email/Collaboration</td>
<td>MCNC</td>
<td>Operational</td>
<td>Available</td>
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<td>Learning Object Repository (LOR) – Extend NCLOR to support K12 IIS and LMS integration</td>
<td>Friday Institute</td>
<td>Design</td>
<td>Q2 2013</td>
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<tr>
<td>Performance monitoring/management – extend network management functionality to collect and analyze data about user application availability and performance</td>
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<td>Design</td>
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<td>Sustainable managed wireless infrastructure</td>
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<td>Plan</td>
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<td>AS/400 (i-Series) Managed Hosting</td>
<td>Friday Institute</td>
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