NCTrust, a K-20 Federation Pilot

In the fall of 2007 MCNC's Collaborative Services Working Group (CSWG) created a task force of IT representatives from various educational institutions to explore the benefits and challenges of federated identity management. The Federated Identity Management Task Force (FIM-TF) set out to find a better and more secure solution for the K-20 institutions accessing a growing number of local, hosted and "cloud" resources within and outside of North Carolina.

The Problem

Projects were already underway to connect all K-12 school districts (LEAs), Community Colleges and most public and private universities in North Carolina to the NCREN broadband backbone. This high-speed network would enable students and teachers to access existing and future state educational resources, as well as a growing number of cloud resources. However as each new service or application was made available, users needed to remember and maintain an additional *account*. What was needed was a way for these applications and resources to be accessed using a single account that could be managed locally (at the user's institution/school) providing not only a more simplified and secure way of accessing these online resources, but reducing the number of accounts being maintained and the user personal data being released.

The Solution

Interested individuals were invited to join the Federated Identity Management Task Force (FIM-TF) with the goal of creating a pilot identity federation made up of K-20 participants.

Initial meetings focused on getting to a common understanding of what federation was, and what it would take to create the pilot. The next hurdle was whether to build a standalone federation or have all NC federation members join the *InCommon Federation* and take advantage of their existing trust infrastructure, participant agreements, etc. Due to time constraints, InCommon was chosen as the federation model to cut down on administrative overhead and utilize their established policies and participant agreement.

A limited number of institutions were selected for the pilot from each educational sector: K-12, Community

Colleges, Public and Private universities, as well as the North Carolina Department of Public Instruction (NCDPI) and MCNC. Two service providers (SPs) were chosen for the pilot: *NC LIVE* – an online library resource of eBooks, audio books, videos, online magazines, newspapers, journals, etc., and the *Virtual Computing Lab (VCL)* at NC State University, a service that allows users to schedule a virtual desktop with a desired set of applications and remotely access it over the Internet. Training on the setup of federation software (Shibboleth IdPs and SPs), was provided via two "ShibFest" workshops held at MCNC and delivered by staff from Duke University.

Generic virtual machine appliances were created by MCNC and preconfigured with the Shibboleth IdP software and some federation settings, along with a documented set of steps to transition the generic appliance to a host institution's customized setup.

The Results

The pilot successfully established a K-20 federation that enabled the participating users to access shared online services using their local institution's username and password.

The large higher education (HE) institutions and service providers were able to implement and configure Shibboleth fairly easily, however, it was quite challenging for the K-12 and small HE members. These institutions had limited experience with the technologies needed to support federation and needed external assistance (provided by MCNC for the pilot).

Once the federation was up and running, many of the NCTrust participants quickly expanded their use of FIM to other service providers, which were already members of InCommon. And due to Shibboleth's single sign-on functionality, its use was frequently extended to local/campus web applications and resources.

Rockingham County Schools (RCS) worked with their vendor and MCNC to implement federated access to Instructure Canvas, a learning management system. And in 2012 RCS may use their IdP to access Zscaler - a hosted firewall and content filtering service, and Google Apps for Education.

A Final Report on the NCTrust pilot was written in early 2010 and can be found on the NCTrust website at: edspace.mcnc.org/confluence/display/FIM/NCTrust.

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