

Higher Education Partners with the Federal Government for PKI

Both communities bring substantial expertise and investment to the solutions

by **PKI for Networked Higher Education Working Group**

An important technical barrier to large-scale Web-based education is the lack of an effective system to properly identify and authorize the participants, content, and educational institutions involved in the transactions. The traditional reliance on user names and passwords issued separately for each person and each application is simply too difficult to administer on a national scale and does not guarantee that communications are secure, private, and taking place with the intended parties. PKI, or public-key infrastructure, is an emerging technology that can certify the correct identity of each person and related communication involved in Web-based learning. It will be an essential part of the technological infrastructure required for delivery of education through the Web.

In June Net@EDU, the networking arm of EDUCAUSE, hosted its second National Science Foundation workshop to coordinate PKI development between higher education and the federal government. Members of the PKI for Networked Higher Education Working Group met with colleagues from the Internet2 Middleware Initiative and CREN (Corporation for Research and Educational Networking) as well as the leaders of the federal PKI initiatives in key agencies that conduct research, edu-

cation, and financial transactions with campuses. The higher education community and the federal government agree that it is important to coordinate PKI planning and development so all systems interoperate as needed in the end. This coordination will also reduce the costly duplication of PKI systems and digital identities.

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The participants of the June workshop reviewed the progress made in both communities since their initial November meeting, exchanged status reports, and outlined joint next steps. Specifically, the group agreed to:

- harmonize the ongoing definition of certificate profiles for use in the federal government and higher education;
- organize contacts with attorneys, auditors, and other communities in

higher education to realize a production-level PKI;

- organize interoperability tests between the Federal Bridge Certificate Authority, the CREN Certificate Authority, and several commercial systems now in use on member campuses;
- explore open-source software solutions;
- coordinate work on the requirements of browsers with respect to PKI; and
- focus on the use of LDAP directories and XML to support both PKI services and networked, production applications.

A collaborative workshop last November revealed that both groups already had initiated significant projects to develop PKI for use within their own communities and that they had similar requirements and specifications for PKI. Both groups want systems that will work in a complex environment of widely distributed autonomous organizations; an open, standards-based approach that allows flexible choice and evolution of component parts; and affordable, off-the-shelf solutions. These common goals supported real hope for effective solutions.

Perhaps more importantly, the November workshop highlighted the large volume and variety of communications between the federal government and the broad community of higher education, which includes students, fac-

ulty and staff, campuses, parents, banks, and others. Proposed federal systems will interoperate across agencies and higher education. If successful, this approach would enhance overall communication tremendously. PKI would

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enable a shift from a system of separate user names and passwords for each application in the federal government to an integrated system in which each par-

ticipant has one or more "digital identities" that are used in transactions with all agencies. Higher education also needs this kind of system to share resources between campuses and to support Web-based learning, so extending the designs to support more uniform Internet communications with the federal government is a big win for both communities.

It is essential for Web-based applications that government and higher education communicate effectively with each other over the Internet. Both communities bring substantial expertise and investment to the solutions, and collaboration is a must. *e*

Resources and additional information about the PKI for Networked Higher Education effort are available at www.educause.edu/netatedu/groups/pki/.

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