Presentation title: Testbed for R&D in Trust and Identity Management

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RENs operate services related to Federated Identity Management (IdM) that include the R&E Federation, Eduroam, and other federated services. These, however, cannot be used for exploratory researches that could compromise the security of these production services. We noted that researchers in R&D projects devoted a reasonable amount of time setting up identity management environments to run their experiments, only to discard the environment when the test was completed. In the end, setting up a Federation or an Eduroam infrastructure to provide an environment to conduct tests may be more arduous and time-consuming than implementing the research experiments. Furthermore, developing applied research in the IdM area requires that the analyses be performed within a distributed, controlled and reliable environment.

The purpose of this lightning talk is to introduce GIdLab (https://gidlab.rnp.br/), a testbed to run experiments related to IdM that provides a set of Authorization, Authentication Infrastructures (AAI) and Eduroam environment ready to be used by the researchers in their investigations. The GIdLab is maintained by the RNP, the Brazilian NREN, to support the experimentation on IdM technologies and the development of new solutions that can become new services offered by the RNP. This experimentation service was an initiative from the IdM technical committee. Since 2013, 44 Brazilian R&D projects used the GidLab testbed.

GIdLab provides: (1) a full Shibboleth federation, known as CAFe Expresso; (2) a repository with a set of virtual machines and Docker containers to build Shibboleth providers; (3) a SAML Federation that uses SimpleSAMLPHP framework; (4) an OpenID Connect environment that uses MITREId Connect; (5) an Eduroam testbed; (6) a GidLab Infrastructure Servers Monitoring Solution (based on Zabbix); and (7) a customer service via the RNP Service Desk and the Testbed Technical Assistants.

The CAFe Expresso federation offers standard Shibboleth IdPs, populated with many users with different profiles and attributes, such as students, faculty, and people with more than one affiliation (student and employee).

CAFe Expresso also offers a dynamic discovery service (WAYF) and service providers that host PHP, Java, and Python demo applications. Researchers wishing to maintain IdPs or SPs in their home institutions can make them available in the federation, and the WAYF service will be responsible for ensuring that other IdPs and SPs know about the existence of these new providers.

The CAFe Expresso interoperates with a SimpleSAMLPHP federation, which has others IdPs and SPs. One of these IdPs was developed in an R&D project, and it also can be used to authenticate IoT devices.

Testbed Eduroam is the first worldwide initiative to offer an authentication and authorization infrastructure for experimentation based on RADIUS, the IEEE 802.1X protocol, and the Eduroam service. Since May 2018, Eduroam testbed is available in the GIdLab, allowing researchers and professionals, interested in these wireless networks, run their experiments with the support of technical assistance and other facilities offered to GIdLab users. The Eduroam testbed infrastructure is distributed not only in RNP's PoPs but also in machines in Mexico and Peru providing access at the confederation level. The testbed Eduroam configuration has three levels of RADIUS servers: local, national (federation), and top-level confederation.

The breaking news is that we would like to promote the GIdLab testbed to be an international experimentation service. Anyone interested in using and contributing, please feel free to contact us.