

1. Executive Summary

Symantec VIP has been used to take advantage of risk-based authentication. Working through Unicon to open-source this development work will let the rest of higher education take advantage and reduce UW-Whitewater's and UW-System's ongoing cost as other universities are likely to adopt the technology and help support the code base. This project, when completed, will successfully delivered the open-source code for risk-based authentication. Additional time was needed to complete a final test/fix release which is expected mid-February.

2. Purpose and Objectives

IT security is of great importance to UW System. A security breach would erode public and legislative confidence in all of UW System. The Legislative Audit Bureau recognizes this importance and continues to ask for security measure improvements on more and more systems. UW-Whitewater has been requested to improve access controls around our campus student information system. Our response was to implement dual factor authentication. This project included contract development of a dual factor authentication for Shibboleth v3 as part of three-phase project. While this capability will be initially deployed for UW-Whitewater, UW-Milwaukee is also taking part in the design review, and co-funding the development effort. UW-Whitewater and UW-Milwaukee see the effort essential for security beyond password. A key take-away from this development beyond UW-Whitewater and UW-Milwaukee will be a product that will be opened sourced so that others can use it. With Shibboleth is used extensively across UW System, its approach and code can be used by other institutions.

There are a few key value-adds that go beyond the operational addition of dual factor for Shibboleth. One of those key value-adds is that the authorization mechanism is abstracted outside of PeopleSoft and is instead implemented in Shibboleth. This will allow for easy implementations in other non-ERP applications that have mixed dual factor requirements for some users and not others. Another is the addition of Symantec's risk-based authentication for people enabled for dual factor. This looks at all authentication requests for dual factor users to see if the client profile is risky. It takes into account where in the world the client is, as well as looking at the browser profile. The implementation of risk-based authentication for people that have dual factor accounts will reduce the success of phished accounts.

3. Organization and Approach

The development of the authentication piece is the second part of a three phase project to implement dual factor for our local PeopleSoft Campus Solutions system. The first phase was to ready the infrastructure and role management. The third phase of the project will be to roll out the authentication to the campus community.

The requested funding is for the second phase of the project, which is the actual development and testing of dual factor for shibboleth. A project manager from the firm we are contracting with to do the development along with a project manager from UW-Whitewater have managed the timeline and delivery of milestones for the project. Standard project methodology of project task structure, resource allocation, and progress for milestones were tracked through a cloud based project management tool. Weekly check-ins with the development firm and their

project manager have helped ensure that proper communication is occurring and that issues are addressed in a timely fashion.

An extra deliverable is documentation and consultation for other UW System schools to implement the same technology.

Shibboleth IDP v3 Authentication Plugin Development

- Unicon IAM Architect-Mike Grady-Technical Interface between Unicon and UW-Whitewater
- Unicon Developer – Actual Java development for Shibboleth authentication plugin
- Unicon Project Manager – Project management interface between Unicon and UW-Whitewater
- UW-Whitewater IAM lead – Bradley Schwoerer – UW-Whitewater technical lead for the project, subject matter expert, and testing lead
- UW-Whitewater Enterprise Application Admin - Beth Drexler - UW-Whitewater technical lead for PeopleSoft infrastructure
- UW-Whitewater Development Manager – Anand Vangipuram – UW-Whitewater sponsor and service owner
- UW-Whitewater Project Manager – Stacy Scholtka – UW-Whitewater project manager and point contact for Unicon Project Manager.

The majority of the effort is for Unicon to do the Java development and interface with the Shibboleth development team on any issues encountered with Shibboleth during development.

UW-Whitewater will be in charge of quality assurance and acceptance testing based upon the test plan.

4. Analysis and Findings

The tested code will be delivered mid-February. The open-source authentication code is the main deliverable of the project. Once this is complete, the last phase of the three phase project to implement the authentication to the campus community will be started. A secondary deliverable is documentation that will be created and shared with other UW System campuses so they can determine if the solution meets their needs, then implement this solution.

5. Conclusions and Recommendations

Symantec VIP has deep market penetration in many areas except higher education. Through this development effort, UW-System will be able to take advantage of risk-based authentication, which differentiates Symantec from the use of Duo, which is heavily used in higher education. Working through Unicon to open-source this development work will let the rest of higher education take advantage and reduce UW-Whitewater's and UW-System's ongoing cost as other universities are likely to adopt the technology and help support the code base. As a next step, the UW-System campuses that require risk based authentication should review the open-source option for to meet their needs.

6. Appendices

Initial project budget

The external cost for the project is \$78,000 and will be jointly funded between UW-Milwaukee and UW-Whitewater. The grant request was for \$20,000 to offset a portion of the development costs.

	Item Description <i>(person or item)</i>	"Hours and Rate" (if labor) or "Purchase Cost" (if non-labor)	Line Total
1	Shibboleth plugin development by Unicon	78,000	\$ 78,000
2	Project Hours – Bradley Schwoerer	100 hrs x 50/hr	\$ 5,000
3	Project Hours – Beth Drexler	50 hrs x 50/hr	\$ 2,500
4	Project Hours – Anand Vangipuram	20 hrs x 50/hr	\$ 1,000
5	Project Hours – Stacy Scholtka	30 hrs x 50/hr	\$ 1,500
		Total Request:	\$ 20,000
1	Matching Funds (Source: UW-Whitewater)		\$ 39,000
2	Matching Funds (Source: UW-Milwaukee)		\$ 29,000
		Total Matching funds:	\$ 68,000

Actual Project Budget – as of 2/10/16

Additional test/fix release was added to the end of the project which increased the funding to the contract vendor Unicon by 40 hours or \$7,000. Additional time for test/fix will be added to Brad's work as well. This brings the total spend with Unicon to \$85,750. It is anticipated that the additional release will be completed by Feb 19, 2016. The documentation for other UW System Campuses will move out due to the additional fix release. The date for the documentation to be ready not known at this point.

	Item Description <i>(person or item)</i>	"Hours and Rate" (if labor) or "Purchase Cost" (if non-labor)	Line Total
1	Shibboleth plugin development by Unicon	85,750	\$ 85,750
2	Project Hours – Bradley Schwoerer	130 hrs x 50/hr	\$ 6,500
3	Project Hours – Beth Drexler	0 hrs x 50/hr	\$ 0
4	Project Hours – Anand Vangipuram	15 hrs x 50/hr	\$ 750
5	Project Hours – Stacy Scholtka	15 hrs x 50/hr	\$ 750
		Total Request:	\$ 20,000
1	Matching Funds (Source: UW-Whitewater)		\$ 44,750
2	Matching Funds (Source: UW-Milwaukee)		\$ 29,000
		Total Matching funds:	\$ 73,750