
Office of Student Financial Assistance

SFA Modernization Partner

FAFSA on the Web
Semi-Monthly Status Report

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1.0 Executive Summary

The U.S. Department of Education's Office of Student Financial Assistance Programs (SFA) administers and operates the "Free Application for Federal Student Aid" (FAFSA). While available in paper form, SFA also provides this service through a web site. U.S. college students seeking student financial aid use the FAFSA program. During the academic year 2001-2002, over two million students used the web site to apply for federal financial aid. SFA anticipates that the number of users/applicants will double during the 2002-2003 academic year, and will continue to rise in future years as the number of paper submissions decreases. This anticipated growth makes it imperative that SFA maximize the capacity and availability of the FAFSA web infrastructure while at the same time minimizing the amount of support SFA's representatives will have to provide for questions or difficulties with completing the form. The web FAFSA product is commonly referred to as FAFSA on the Web and incorporates all requirements related to the paper FAFSA for each school year.

The FAFSA on the Web 6.0 project is on schedule with many planned activities completed. The detailed project work plan, CRAD, Functional Specification, High-Level Design, and Detailed Design Documents (DDD's) have been documented and delivered. Development, unit testing, functional testing, usability testing, and ED accessibility testing were completed on schedule. System and ED acceptance testing are a few days behind schedule, but completion will not impact the overall project schedule. Performance testing is on schedule, although additional performance test cycles may be planned. The Modernization Partner team is working with the VDC team to have the production environment configured and available for beta testing on schedule. There is a delay with the delivery of the Production hardware, but all teams are working to resolve this issue as well as define a contingency plan.

All known issues and risks have been identified, and are being monitored closely. Specific action required for resolution is being taken. The Modernization Partner anticipates successfully meeting the following guiding principles:

1. Production Delivery by 01/01/02 to support the 2002 – 2003 school year.
2. New look and feel for easier usability and enhanced accessibility of the application.
3. N-Tiered Integrated Technical Architecture (ITA) that conforms to SFA's infrastructure standard and forms the foundation for effective upgrades and enhancements. These SFA standards include WebSphere, IHS, and Oracle.
4. Improved performance and scalability to meet customer demands and technical capacity.
5. Maximum re-use from the Release 5.x design, code, and documentation to meet the goals of the FAFSA on the Web initiative.

2.0 Introduction

Overview

The U.S. Department of Education's Office of Student Financial Assistance Programs (SFA) administers and operates the "Free Application for Federal Student Aid" (FAFSA). While available in paper form, SFA also provides this service through a web site. U.S. college students seeking student financial aid use the FAFSA program. During the academic year 2000-2001, over two million students used the web site to apply for federal financial aid. SFA anticipates that the number of users/applicants will double during the 2001-2002 academic year, and will continue to rise in future years as the number of paper submissions decreases. This anticipated growth makes it imperative that SFA maximize the capacity and availability of the FAFSA web infrastructure while at the same time minimizing the amount of support SFA's representatives will have to provide for questions by students or difficulties with completing the form. The web FAFSA product is commonly referred to as FAFSA on the Web and incorporates all requirements related to the paper FAFSA for each school year.

The primary objectives for redesigning FAFSA on the Web are to leverage industry best practices to improve usability and accessibility by customers, performance of the web application during peak periods of FAFSA submissions, and create the foundation for efficient enhancements, as necessary. The areas of focus will be:

- Usability & Accessibility
- Technical Capacity (technical infrastructure and application performance)
- Leveraging industry best practices around human interaction models for Web-based solutions

Background

The FAFSA on the Web application is released on a school year basis. The current application available on the web is FAFSA on the Web Release 5.0 for the 2001 – 2002 school year. This application is available on the web site with the following URL – <http://www.fafsa.ed.gov>.

As part of the FAFSA on the Web Release 5.x initiative, SFA examined various design, usability, technical, and performance factors in consideration of FAFSA on the Web Release 6.0, which is scheduled to be available to the public on January 1, 2002. This initiative leveraged the SFA experience with prior versions of the application and provided design, usability, technical, and performance input for the development and deployment of Release 6.0 of the application. Efforts associated with the release 5.x initiative were performed using SFA's standard Information Technology Architecture (ITA) based on the Sun platform for WebSphere and IHS. Efforts associated with the release 6.0 initiative will be performed in an HP environment at the VDC. Marketing

and communication alternatives were also included in the Release 5.x initiative to aid in the increased use of the web product.

A transition team established by SFA included team members from the release 5.0 and 5.x team to establish the approach, milestones, project plans, organization, roles, responsibilities, and the level of effort associated with the development of FAFSA on the Web Release 6.0. The approach for Release 6.0 leverages technology such as the n-tier SFA architecture at the VDC, new look and feel, performance and scalability from the release 5.x while incorporating the business logic, edits, and other key processes from the current release 5.0 production application. Performance and stress tests conducted on the release 5.X application developed in the VDC using the Sun architecture are also being leveraged to validate the scalability and performance of the application in its release 6.0. The guiding principles, key assessments, and validation as well as the project plan for release 6.0 have been developed as part of the FAFSA on the Web Release 6.0 Transition.

This semi-monthly report provides the following:

- Section 3. Accomplishments. Provides an overview of all completed activities including updated documentation, issues resolved, key decisions made, and application components developed.
- Section 4. Planned and In-Progress Activities. Provides an outline of all remaining planned activities including development, testing, documentation, and production deployment.
- Section 5. Open Issues, Risks, and Mitigation Strategies. Provides a listing of all open issues, risks, and status including solution alternatives and recommendations.
- Section 6. Summary. Provides an overall status summary of the project.
- Appendix A. Application Development Detailed Project Schedule. Provides the updated listing of all application development activities, schedule, and resource assignments. The detailed work plan is organized with the following phases:
 - Phase 1a/b (Preliminary/Detailed Planning). This includes tasks associated with documenting the Customer Requirements Allocation Document (CRAD), Functional Specification, and High-Level Design (HLD).
 - Phase 2 (Development). This includes preparing the Detailed Design Documents (DDD's) and performing all application code development and unit, functional, system, usability, performance, and usability testing.
 - Phase 3 (Validation). This includes ED acceptance testing, beta testing, regression testing, and the Production Readiness Review (PRR).

- Appendix B. Technical Architecture Detailed Project Schedule. Provides the updated technical architecture detailed project schedule. This includes the following activities:
 - Architecture Design
 - Environment Build-out
 - Beta Testing Support
 - ITA Support
 - Application and Architecture Configuration Updates
 - Update VDC Operations Documentation
 - Performance Testing

- Appendix C. Production Action Plan. Due to the delay with the Beta Test environment hardware, a production action plan was prepared to outline all of the activities needed to get the environment ready on schedule. Activities include a description, contact, and due date.

3.0 Accomplishments

Completed Activities

Based on the application development and technical architecture schedules provided in Appendixes A and B, the following major activities have been completed since the last semi-monthly status report:

- Performance Test Environment. The performance test environment was configured at the VDC, and code was successfully migrated for performance testing.
- Quality Assurance. The Modernization Partner team met with the CIO QA team to walk through their deliverables schedule. Updated documentation was then provided to the QA team for their review.
- Functional Testing. The following core functionality has been developed, unit tested, functional tested:
 - Corrections
 - SaveRestore
 - PrintSubmit
 - Renewals
 - Fill-Out FOTW
 - Spanish FOTW
 - School Code (embedded)
 - School Code (standalone)
 - JavaScripts
 - Drug Worksheet (WS)/Standalone
 - WSA, WSB, WSC, Income, Household, and Pre-Application Worksheets
 - E-Signature
 - Student Access
 - Application Status Check
 - Expected Family Contribution (EFC)
 - End Of Edit (EOE)
 - Web Demo
 - Integration with Chat System
 - FAFSA API
 - Index Pages
 - Template/Include/Tag Libraries
 - Common Libraries
- Usability Testing. Usability testing was conducted from 9/24 – 9/28. Usability recommendations were presented to SFA. Minor enhancements are being incorporated into the application.

- ED Accessibility Testing. SFA coordinated accessibility testing with the appropriate Department of Education CIO team. There were no major issues identified.
- Oracle DASD Requirements. The Modernization Partner team provided Oracle DASD requirements for the production environment to VDC team on 9/24.
- Performance Test Plan. The Modernization Partner team delivered a performance test plan that also included capacity planning information.
- Performance Testing. The Modernization Partner team conducted three complete performance test cycles. The goals for volume thresholds have been exceeded and testing is on schedule.
- Security. The Modernization Partner team prepared a security assessment plan to be executed from 10/29 – 11/23.

Key Decisions Made, Issues Resolved, and Risks Mitigated

The following are the major decisions that have been made or the key issues that have been resolved since the last semi-monthly status report:

- Branding Changes. The SFA Chief Operating Office (COO) requested specific branding-related changes be made to the web site home page. Recommended changes that have been implemented are grouped accordingly:
 - Revised Logo to emphasize FSA
 - Bottom Navigation Bar
 - Text Change to Federal Student Aid
- Database Storage for Production. The Modernization Partner team communicated requirements to the VDC team for the following three new Oracle databases that require additional storage for production:
 - Temporary Save. This is where the application puts a record if user clicks the "save" button.
 - Session Management. This is where WAS will be putting active session data. This is for the clustering.
 - WAS Administration. This is the WAS configuration DB.
- ISP for Production. Additional network and ISP capacity is required to handle peak production capacity. SFA and the Modernization Partner team worked with the VDC team to identify what is required for procurement.

4.0 Planned and In-Progress Activities

Based on the application development and technical architecture schedules provided in Appendixes A and B, the following major activities are planned:

- Performance Testing. The Modernization Partner team is planning to conduct two more performance test cycles. Details will be included in a final performance test report.
- Capacity Planning. The capacity planning analysis will continue as the additional performance test cycles are completed.
- Web Demo Site. The Modernization Partner team is currently building the VDC production and development environments for the web demo site.
- System Testing. The Modernization Partner team began system testing on schedule (10/2) after conducting a test readiness review with Macro International, where the system testers are located. Due to down time with the test site, the completion of system testing is delayed from 11/16 to 11/20. The schedule loss will be made up during the week of 11/19, which was planned for regression testing.
- ED Acceptance Testing. SFA is leading acceptance testing with support from the Modernization Partner team. This will be completed at the same time as system test.
- Security. The Modernization Partner team began executing a security assessment on 10/29. No major issues have been identified. Details will be included in a final security assessment report.
- Beta Testing. SFA and the Modernization Partner team are planning to conduct beta testing from 12/3 – 12/17. Extensive coordination is taking place between the Modernization Partner and VDC teams.
- Production Readiness Review (PRR). The PRR will be held in December. All VDC-required documentation will be finalized by that time for SFA review and approval.

5.0 Open Issues, Risks, and Mitigation Strategies

The following issues have been identified and are currently being resolved:

- Beta Test Environment Configuration. The Beta Test environment hardware was not delivered according to schedule. The Modernization Partner and VDC teams have put together an action plan to get the environment readiness back on schedule. Full production network capabilities will not be in place when Beta Testing begins on 12/3. Additionally, there are planned network upgrades that are scheduled during December, which also impacts the production readiness of the Beta Test environment. Appendix C contains the production action plan.
- Production/Operations Roles and Responsibilities. SFA, the Modernization Partner team, and the VDC team are defining the roles and responsibilities for the Production environment to include applications, architecture, and infrastructure operations.
- Production Environment. The initial production hardware delivery has been delayed about two weeks. SFA, the Modernization Partner team, and the VDC team are defining potential contingency plans if the hardware is not received and configured in time to meet the production-readiness schedule.

The following risks and mitigation strategies have been identified:

- Performance. For capacity planning purposes, peak volume is anticipated to more than double for the 2002 – 2003 cycle, and could approach between four and five million students. To help mitigate potential performance issues, the Modernization Partner team defined the following design/performance areas as having a high priority for application development:
 - IBM HTTP Server (HIS) and WebSphere Application Server (WAS) on separate hardware servers
 - Database Connection Pooling
 - Session Size (<3k)
 - Oracle Temporary Save
 - JavaServer Pages (JSP's)

Two more performance test cycles are planned with the following three objectives:

- Validate the n-tier architecture for FAFSA 6.0
- Verify that the application will scale
- Verify the performance capability of the FAFSA 6.0 relative to users

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