

SFA Modernization Program
United States Department of Education
Student Financial Assistance



Legacy System Inventory Report

Task Order #16
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June 9, 2000

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1 Introduction

1.1 Purpose

The Legacy System Inventory Report provides an architecture analysis of the existing SFA legacy systems. The objective of this analysis is to document, at a high level, the “as is” state of SFA legacy systems. The information provided in this document represents a starting point for understanding the current technical environment, and will be used to facilitate a migration strategy for integration with the Integrated Technical Architecture.

1.2 Scope

This document covers SFA’s existing legacy systems and includes:

- Contact information for each system
- Validation of hardware platforms and versions of system software
- Review of the existing production environment
- Identification of internal and external interfaces between systems
- Review of the existing development environment to determine the capability to support application development and testing of the technical architecture components

Systems that were evaluated include:

- Campus Based Systems (CBS)
- Central Processing System (CPS)
- Direct Loan Consolidation System (DLCS)
- Direct Loan Origination System (DLOS)
- Direct Loan Servicing System (DLSS)
- Federal Family Education Loan (FFEL)
- Information for Financial Aid Professionals (IFAP)
- Multiple Data Entry (MDE)
- National Student Loan Data System (NSLDS)
- Post-secondary Education Participants System (PEPS)
- Recipient and Financial Management System (RFMS)
- Title IV Wide Area Network (TIVWAN)

1.3 Approach

The following approach was used to develop the Legacy System Inventory Report:

- Reviewed existing SFA documentation and compiled initial draft of system information (Refer to Appendix A: References for a list of all references that were used)
- Held meetings with members of CIO executive team to determine appropriate contacts for each system.
- Contacted CIO Channel owners (Paul Hill, Frank Kidd and Johann Bos-Beijer) to coordinate gathering of information for their respective systems. Worked with channel owners to schedule meetings and identify appropriate resources to evaluate and complete systems inventory.
- Updated systems information based upon feedback
- Met with CIO Channel owners to review and validate system information

1.4 Organization of this Document

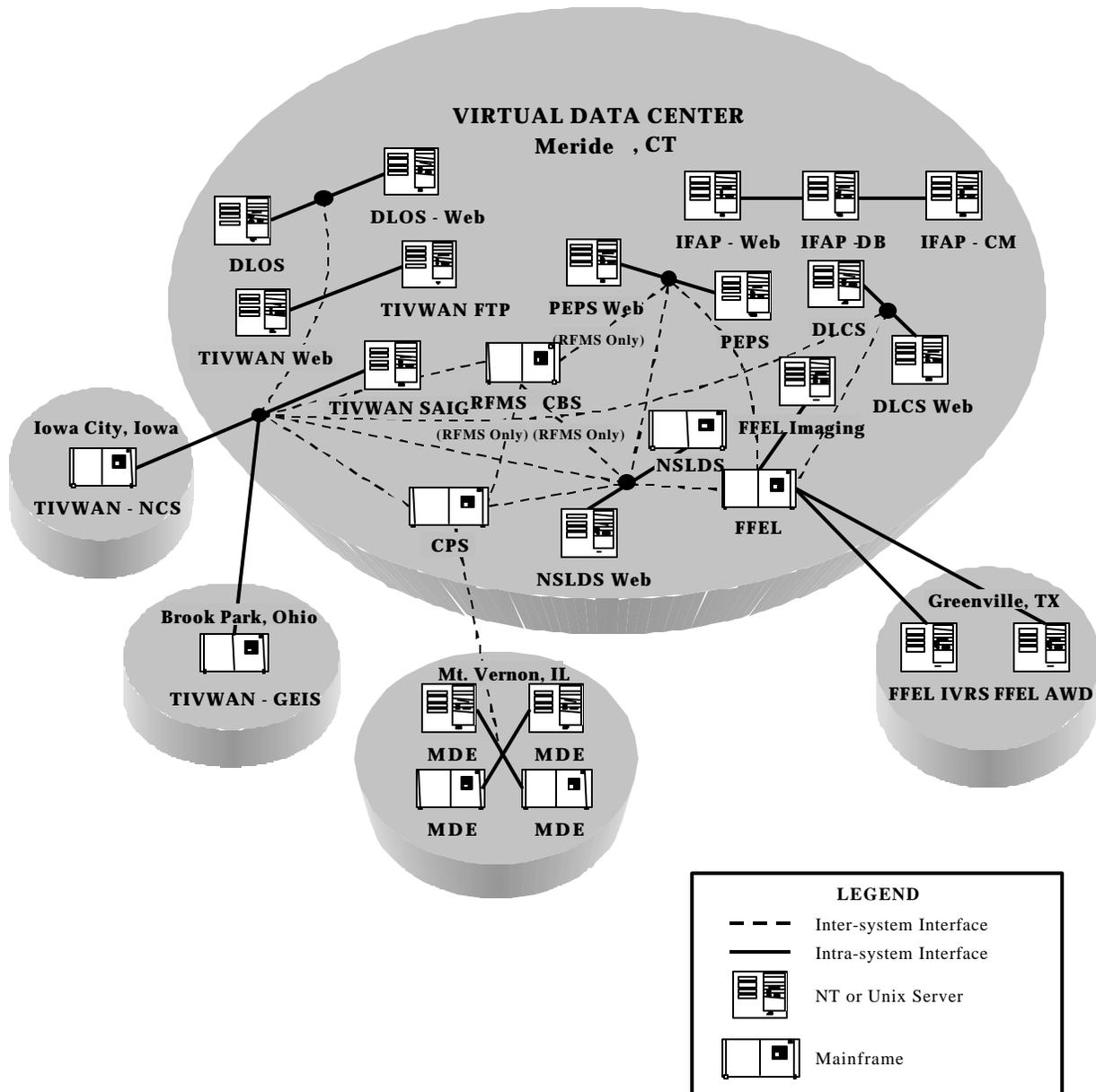
The following information was gathered for each of the systems identified above:

- **System Overview:** Identifies the functionality of each system
- **Contacts:** Lists resources that can assist in providing system-specific information
- **Production Environment:** An assessment of the current production environment which is comprised of run-time services, control structures, and supporting infrastructure upon which application software runs. This section includes:
 - **Technical Infrastructure:** Details the hardware and software components used within the production environment for each system
 - **Interfaces:** Defines the internal and external interfaces and data flows into and out of each legacy system.
 - **Process Flow Charts:** Provides a high-level graphical representation of the on-line and batch interfaces for each system.
- **Development Environment:** An assessment of the current development environment used to support analysis, design, construction, and maintenance of business systems, as well as the associated management processes. The development environment includes:
 - **Technical Infrastructure:** Details the hardware and software components used within the development environment for each system.

1.5 Summary of SFA Existing Systems

Application Acronym	Application Name	Production Platform	Operating System	DBMS	Location
CBS	Campus Based System	IBM 9672-RB5	OS390	VSAM	Meriden, CT
CPS	Central Processing System	IBM 9672-R35	OS390	DB2	Meriden, CT
DLCS	Direct Loan Consolidation System	HP-9000 T600	HP-UX	Informix	Meriden, CT
		HP-9000 K570	HP-UX	n/a	Meriden, CT
DLOS	Direct Loan Origination System	HP-9000 T600	HP-UX	Informix	Meriden, CT
		HP-9000 K570	HP-UX	n/a	Meriden, CT
DLSS	Direct Loan Servicing System	TBD	TBD	TBD	TBD
FFEL	Federal Family Education Loan Program	IBM 9672-R35	OS390	IDMS	Meriden, CT
		Sun Sparc 1000	Solaris	Custom-Code	Meriden, CT
		Sun Sparc 1000 (2)	Solaris	Informix	Greenville, TX
IFAP	Information for Financial Aid Professionals	Sun E3500	Solaris	n/a	Meriden, CT
		Sun E3500 (2)	Solaris	Oracle 8I	Meriden, CT
MDE	Multiple Data Entry	Sun SPARC20, Model 100 (8)	Solaris	Microsoft SQL DB	Mt. Vernon, IL
NSLDS	National Student Loan Data System	IBM 9672	OS390	DB2	Meriden, CT
		Compaq 1850R	NT	n/a	Meriden, CT
PEPS	Post-secondary Education Participants System	HP9000 T600	HP-UX	Oracle 7	Meriden, CT
		Compaq Proliant 4000R	NT	Oracle 7	Meriden, CT
RFMS	Recipient and Financial Management System	IBM 9672-RB5	OS390	DB2	Meriden, CT
		Compaq 1850R (2)	NT	n/a	Meriden, CT
TIVWAN	Title IV Wide Area Network	IBM 9672 R44	OS390, MVS	GEIS OPEN*net	Iowa City, Iowa
		HP-9000	HP-UX	ISAM	Meriden, CT
		Compaq Proliant 1850R (2)	NT	n/a	Meriden, CT

1.6 High-Level Topology of SFA Existing Systems



2 Campus Based Systems (CBS)

2.1 System Overview

The Campus-Based System supports processing for the FISAP (Fiscal Operations Report and Application to Participate) cycle. It contains no student-level information; it uses only summary data by school.

The Campus Based System processes FISAP data received via EDEXpress, calculates funding formulas, and provides funding to schools for the Perkins Loan, SEOG, and College Work Study Programs.

Some major functions include:

- Process campus-based funding
- Maintain and edit FISAP data
- Calculate and notify institutional awards
- Allocate campus-based funds
- Reconcile accounts and reporting
- Default reduction assistance program

Note: The information collected for Campus Based System (CBS) is valid as of June, 2000. Campus Based Programs (CBP) is beginning a new contract on October 1, 2000 and the current Production and Development environments are scheduled to be replaced. During the month of July, CBP will hold Board meetings to evaluate potential vendors for the new contract beginning October 1, 2000.

2.2 Contacts

Title/Role	Name	Contact Number	e-mail
ED System Owner	Joann Pease	202-708-9797	Joann_Pease@ed.gov
Systems Administrator	Harrison Bannister	202-708-5776	Harrison_Bannister@ed.gov
Database Administrator (DBA)	Harrison Bannister	202-708-5776	Harrison_Bannister@ed.gov
Contact(s) for Development Access	Danny Dytang (UAL), Harrison Bannister (Operations)	301-565-0032 202-708-5776	ddytang@erols.com Harrison_Bannister@ed.gov
Contact for Production Access	Danny Dytang (UAL), Harrison Bannister (Operations)	301-565-0032 202-708-5776	ddytang@erols.com Harrison_Bannister@ed.gov

2.3 Production Environment

2.3.1 Technical Infrastructure

Logical Technical Architecture Topology:

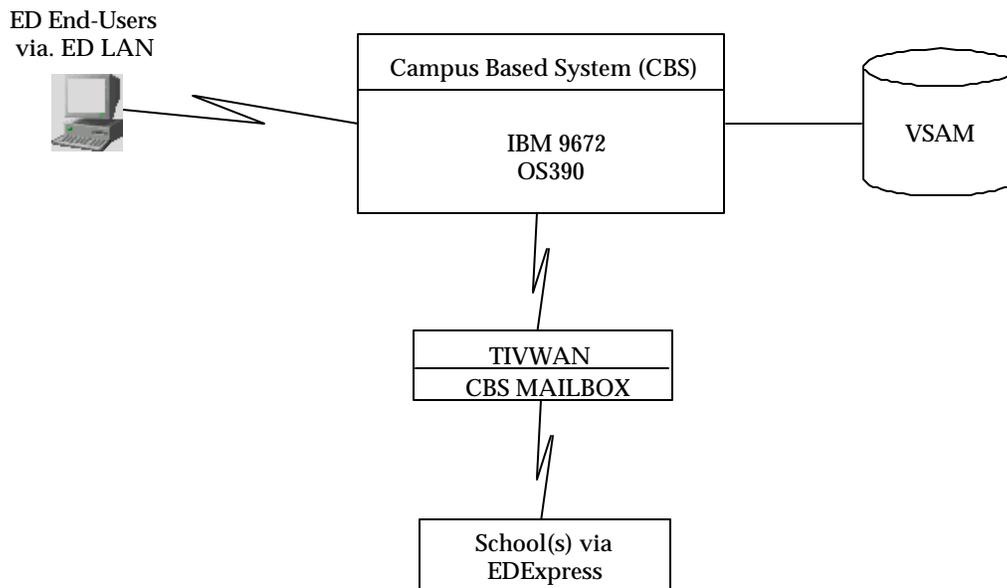


Figure 1: CBS Logical Technical Architecture Topology

Production Mainframe A:

Physical Location of Mainframe: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	IBM	9672 / OS390	RB5/2.4
Database	IBM	VSAM	2.4
Transmission Protocol	IBM	SNA - LU	6.2
Middleware	IBM	CICS	4.1
Security	CSC	RACF	2.20

Category	Vendor	Product Name	Version
Software			

2.3.2 Interfaces

On-Line Interfaces:

System	Action	Object	System	Frequency	Communications (Asynchronous/ Synchronous)	Volume of Data Processed
CBS	Sends	ED Financial Accounting Transaction	ED CAPS	Daily	Asynchronous	200 bytes to 800,000 bytes

Batch Interfaces:

System	Action	Object	System	Frequency	Volume of Data Processed
CBS	Sends	New FISAP Application Template	(Schools) via TIVWAN Institutions of Postsecondary Education	Once a year	4000 bytes per application. 4000 applications sent to schools.
	Receives	New FISAP Applications, Error Corrections, Summary Disbursement Information	(Schools) via TIVWAN Institutions of Postsecondary Education	2-4 per year	4000 bytes per application. 4000 applications from schools received randomly per year.
	Sends	FISAP Application Errors	(Schools) via TIVWAN Institutions of Postsecondary Education	Once a year	4000 bytes per application. Number of FISAP Application error corrections received varies.
	Sends	Award Authorization	ED CAPS	Weekly	avg. 20 records per week. 180 bytes per record. Once a year, peak records reach 12,000 records in one batch.
	Sends	DB Snapshots (Account Transactions, FISAP etc.) to desktop users via. ED LAN	ED LAN to ED End Users	Daily	200 MB per Snapshot, 1 Snapshot per day

2.3.3 Process Flow Charts

On-Line

2.4.1 Technical Infrastructure

Contracting Organization: United Automated Labs (UAL)

Developer Location: Silver Spring, MD

Development MainframeA

Physical Location of Mainframe: Meriden, CT

*The Development mainframe mirrors the production mainframe.

3 Central Processing System (CPS)

3.1 System Overview

CPS is a mainframe application that is responsible for receiving FAFSAs, validating data, and determining the eligibility of a student to receive financial aid. Once the validation has been performed, CPS prints a Student Aid Report (SAR) for the student and transmits Institutional Student Information Records (ISIR) to schools and state agencies.

The Web application is responsible for allowing students to complete and submit FAFSA applications via the Internet and providing a PIN registration site for PIN requests and user authentication. User authentication are for renewal applications and corrections done on the Web.

Some major functions include:

- 96/97 through 00/01 School Year Processing of student applications, development of software for schools to process student aid
- Process student aid applications
- Calculate Expected Family Contributions
- Verify applicant eligibility by matching applicant data with Federal (SSS, SSA, INS, DOJ) and other databases (NSLDS)
- Report eligibility to applicant (SAR), schools (ISIR) and guarantors
- Receive and process SAR corrections from applicants
- Generate renewal FAFSAs
- Develop software (EDEXpress) to schools for processing aid
- Develop web products (FAFSA Express, FAFSA on the Web, Renewal FAFSA on the Web, Corrections on the Web, PIN site)
- Handle student inquiries regarding web products
- CPS Customer Service Call Center – handle CPS and EDEXpress questions
- Administer SFA Tech – web page with FAQ Administer listserv and respond to questions

3.2 Contacts

Title/Role	Name	Contact Number	e-mail
ED System Owner	Jeanne Saunders	202-708-9874	Jeanne_Saunders@ed.gov
Systems Administrator	Ben Smith (CSC) Manager of Data Center Operations	202-317-2178	bsmith1@csc.com
CIO Contact	Frank W. Kidd ¹	202-260-0533	frank_kidd@ed.gov
Database Administrator (DBA)	Gabriel Perez	319-339-6063	PereGa@ncs.com

¹ Frank Kidd is the primary contact for CPS. All interactions with other CPS contacts should be coordinated through Frank.

Title/Role	Name	Contact Number	e-mail
Contact for Development Access	Jim Cunningham	202-708-8188	James_Cunningham@ed.gov
Contact for Production Access	Jim Cunningham	202-708-8188	James_Cunningham@ed.gov

3.3 Production Environment

3.3.1 Technical Infrastructure

Logical Technical Architecture Topology:

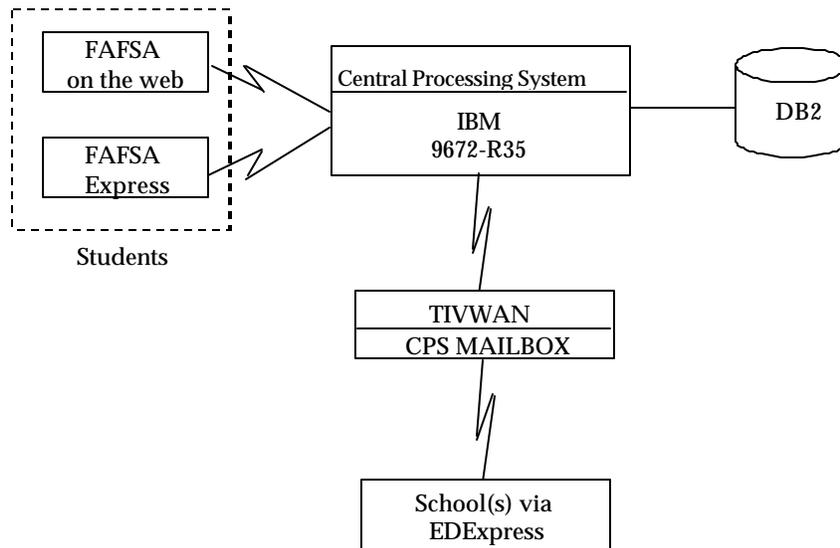


Figure 4: CPS Logical Technical Architecture Topology

Production Mainframe A:

Physical Location of Mainframe: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	IBM	9672-R35 / OS390	R35/2.8 ²
Database	IBM	DB2	4.1
Transmission Protocol	IBM	TCP/IP SNA - LU	6.2

² Current OS390 version will be upgraded to 2.8 by the Fall of 2000

Middleware	IBM	CICS	4.1
Security Software	IBM	RACF	2.20

3.3.2 Interfaces

Batch Interfaces:

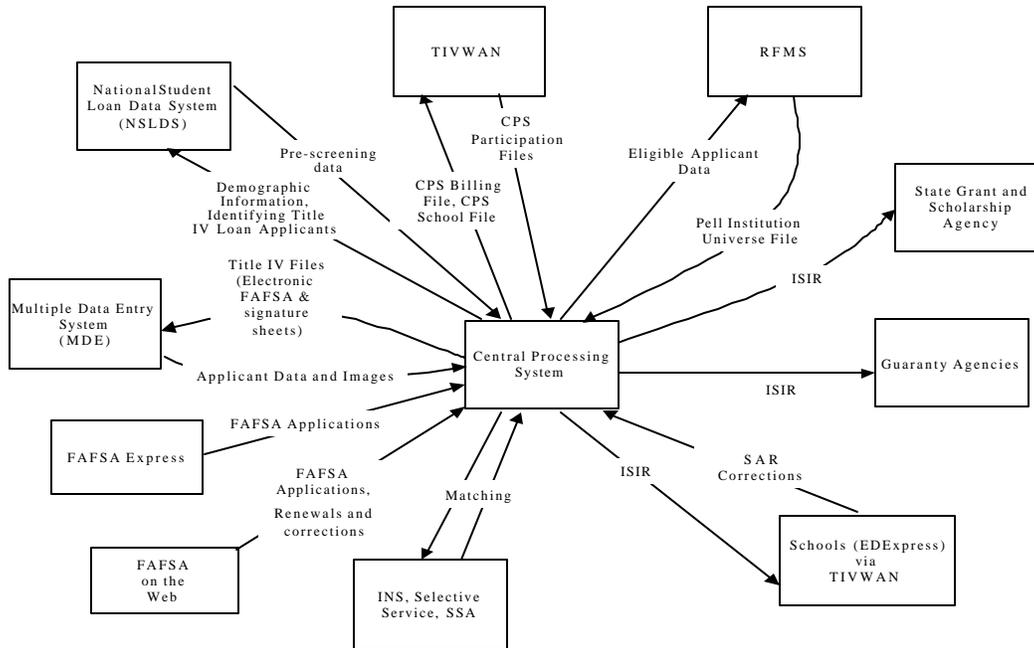
System	Action	Object	System	Frequency	Volume of Data Processed
CPS	Sends	Eligible Applicant File	RFMS	Daily	9 million per school year
	Receives	Pell Institution Universe File	RFMS	Daily	5500 records per transmission
	Sends	Institutional Student Information Record (ISIR)	State Grant and Scholarship Agency (external)	Daily	15,340 records per day
	Sends	ISIR	Schools (EDEXpress) via TIVWAN	Daily	15,340 records per day
	Sends	ISIR	Guaranty Agencies (external)	Daily	15,340 records per day
	Sends	Student demographic info, Identifying Title IV Loan Applicants	NSLDS	Quarterly	varies
	Sends	pre-screening data	NSLDS	Daily	varies
	Receives	SAR corrections	Schools (EDEXpress) via TIVWAN	Daily	3000 records per day
	Sends	CPS Billing File	TIVWAN	Weekly	**See note below
	Receives	CPS Participation Files	TIVWAN	Daily	**See note below
	Sends	CPS School File	TIVWAN	Weekly	**See note below
	Receives	Matching	INS (external)	Daily	50 records per batch
	Sends	Matching	INS (external)	Daily	50 records per batch
Receives	Matching	Selective Service (external)	Daily	50 records per batch	

System	Action	Object	System	Frequency	Volume of Data Processed
	Sends	Matching	Selective Service (external)	Daily	50 records per batch
	Receives	Matching	SSA (external)	Daily	50 records per batch

System	Action	Object	System	Frequency	Volume of Data Processed
CPS	Sends	Matching	SSA (external)	Daily	50 records per batch
	Sends	Title IV files	MDE	Daily	16,800 records per day
	Receives	Applicant Data	MDE	Daily	16,800 records per day
	Receives	Applicant Images	MDE	Daily	1700 records per day
	Receives	FAFSA Applications, renewals, corrections	FAFSA on the web	Daily	3500 records per day
	Receives	FAFSA Applications (via dial in modem)	FAFSA Express (external)	Daily	3500 records per day

**** TIVWAN processes an average of 44 GB of data per month. This information is scheduled to be processed evenly throughout the day**

3.3.3 Process Flow Charts



Batch

Figure 5: CPS Global Batch Interfaces

3.4 Development Environment

3.4.1 Technical Infrastructure

Contracting Organization: NCS

Developer Location: Iowa City, Iowa

Development Server A: LPAR of Production Server A

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	IBM	9672-R35 / OS390	R35/2.8 3
Database	IBM	DB2	4.1
Transmission Protocol	IBM	TCP/IP SNA – LU	6.2

³ Current OS390 version will be upgraded to 2.8 by the Fall of 2000

Middleware	IBM	CICS	4.1
Security Software	IBM	RACF	2.20

4 Direct Loan Consolidation System (DLCS)

4.1 System Overview

The Direct Loan Consolidation System (DLCS) is the system responsible for processing applications for Direct Consolidation Loans. DLCS allows borrowers to consolidate multiple student loans from multiple sources into one consolidated loan, funded and serviced by ED.

Some major functions include:

- Book loans
- Accounting and reconciliation for the DL program
- Process consolidation applications
- Process PLUS credit checks
- Process Fast Track consolidations
- Process verification certificates
- Process certification issues
- Process promissory notes
- Provide status of Consolidation loans
- Handle inquiries about applying for consolidation loans and technical questions about the web page application
- Process lender payoffs for FFEL loans being consolidated

4.2 Contacts

Title/Role	Name	Contact Number	e-mail
ED System Owner	Denise Leifeste	202-205-4709	Denise_Leifeste@ed.gov
CIO Contact	Frank Kidd	202-260-0533	Frank_Kidd@ed.gov
Systems Administrator (CSC)	Tony Missana	703-741-7496	Tony.Missana@eds.com
Operations Management (EDS)	Diana O'hara	703-741-7425	Diana.o'hara@eds.com
Infrastructure Team (EDS)	Dave Cote	972-604-8608	Dave.cote@eds.com
Database Administrator (DBA)	Matt Weismantle	703-741-7695	Matt.weismantle@eds.com
Contact for Development Access	Alan Farner	502-326-1941	Alan.Farner@eds.com
Contact for	Alan Farner	502-326-1941	Alan.Farner@eds.com

Title/Role	Name	Contact Number	e-mail
Production Access			
Contact for Development Web Server Access	Renee Wade	202-260-5146	Renee_Wade@ed.gov
Contact for Production Web Server Access	Renee Wade	202-260-5146	Renee_Wade@ed.gov

4.3 Production Environment

4.3.1 Technical Infrastructure

Logical Technical Architecture Topology:

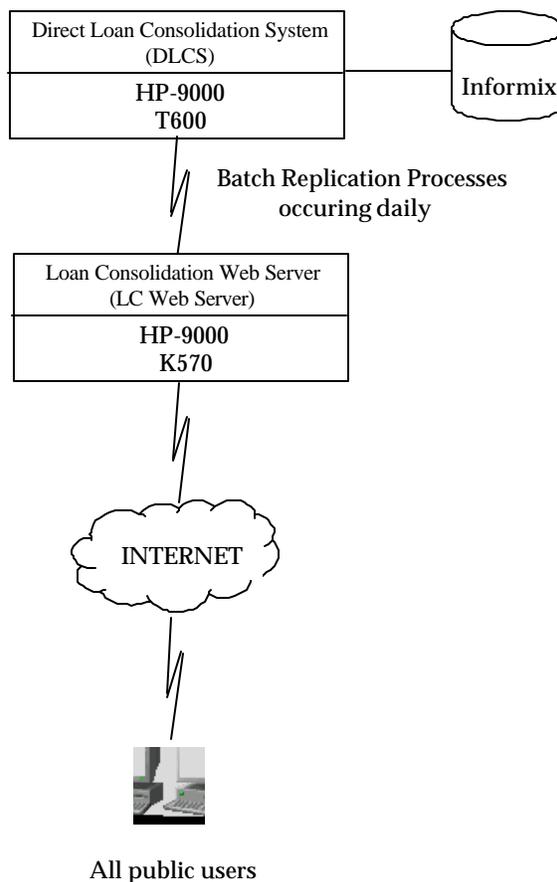


Figure 6: DLCS Logical Technical Architecture Topology

Production Server A

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Hewlett Packard	HP-9000 T600 / HP-UX 10.20	T600/ 10.20
Database	Informix	Informix	7.31
Transmission Protocol	Hewlett Packard	TCP/IP, IPX/SPX, SNA RJE	3270
Middleware	Computer Associates	Unicenter TNG Event Mgmt, Workload Mgmt	2.1, Generation Level 9906
Security System	Computer Associates	Unicenter TNG	2.1 Generation Level 9906

Production Server B: LC Web Server

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Hewlett Packard	HP-9000 K570/ HP-UX 11.0	11.0
Database	n/a	n/a	n/a
Transmission Protocol	Hewlett Packard	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

4.3.2 Interfaces

On-Line Interfaces:

System	Action	Object	System	Frequency	Communications (Asynchronous/ Synchronous)	Volume of Data Processed
DLCS	Receives	Loan holder and payoff information	FFEL (DMCS)	On- demand	Synchronous	Varies

Batch Interfaces:

System	Action	Object	System	Frequency	Volume of Data Processed
DLCS	Sends	Financial Transactions, Borrower Transactions, ICR Waiver Images, Consolidation Payoff Requests	CDS (from DLSC and IRS)	Daily	Varies
	Receives	Consolidation Payoffs, ICR Responses	CDS (from DLSC and IRS)	Daily	Varies
	Sends	Credit Check Requests	OLNACS	Daily	Varies
	Receives	Credit Check Responses	OLNACS	Daily	Varies
	Sends	Certification Requests**	Lenders	Daily	Varies
	Receives	Completed Certifications**	Lenders	Daily	Varies
	Receives	Applications	LC Web Application	Daily	Varies
DLCS (LC Web Server)	Sends	Loan application (flat files)	Informix DB residing on HP-9000 T600	Daily at 3am.	Varies

** In the case of Certifications, LCS exchanges paper certifications or diskettes depending on the Lender

4.3.3 Process Flow Charts

On-Line

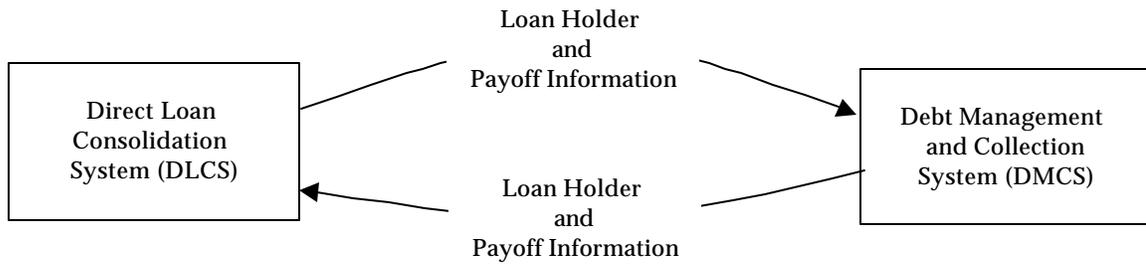


Figure 7: DLCS Global On-Line Interfaces

Batch

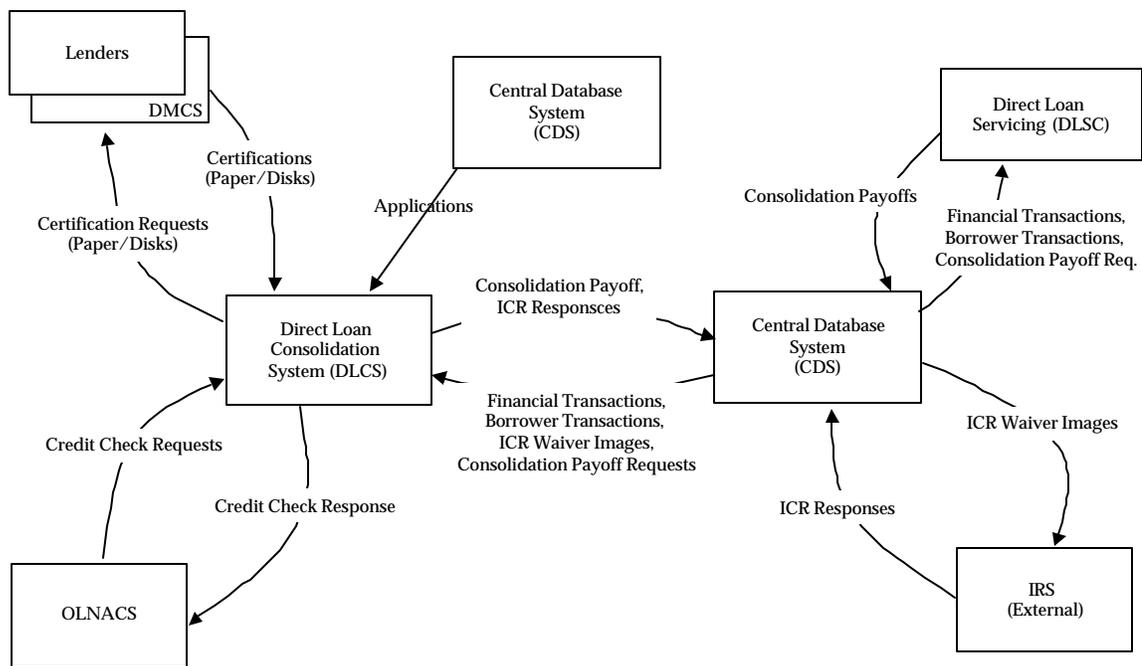


Figure 8: DLCS Global Batch Interfaces

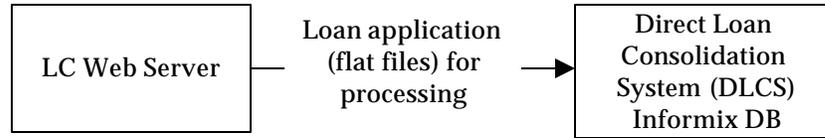


Figure 9: Batch Interfaces between DLCS (LC Web Server) and DLCS HP-9000 T600

4.4 Development Environment

4.4.1 Technical Infrastructure

Contracting Organization: EDS

Developer Location(s): Louisville, KY

Development Server A

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System	Hewlett Packard	HP-9000 T600 / HP-UX 11.0	11.0
Database	Informix	Informix	7.31
Transmission Protocol	Hewlett Packard	TCP/IP, IPX/SPX, SNA RJE	3270
Middleware	n/a	n/a	n/a
Security Software	Computer Associates	Unicenter TNG	2.1 Generation Level 9906

Development Server B: LC Web Server

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Hewlett Packard	HP-9000 K570, HP-UX	11.0
Database	n/a	n/a	n/a
Transmission Protocol	Hewlett Packard	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

5 Direct Loan Origination System (DLOS)

5.1 System Overview

The Direct Loan Origination System (DLOS) performs loan origination for Regular Origination's and Plus Loan Origination's. The DLOS system provides direct interface with schools, 3^d party servicers, and the Student Account Manager (SAM).

Some major functions include:

- Manage loan information (process credit checks, process loan details, and maintain school and participant information)
- Manage disbursement of funds (process drawdowns, book loans, process loan disbursement information)
- Manage promissory notes, process promissory notes
- Receive and process Direct Loan origination records, loan disbursement records, and adjustments from schools; and perform reconciliation's with schools for the Direct Loan program
- Provide technical support for batch processing questions
- Provide status of Direct PLUS applications
- Handle inquiries about PLUS credit checks and handle credit appeals
- Direct Loan status administration

5.2 Contacts

Title/Role	Name	Contact Number	e-mail
ED System Owner	Rosemary Beavers	202-260-0094	Rosemary_Beavers@ed.gov
Systems Administrator (CSC)	Bill Keenan	203-317-4929	Wkeenan2@csc.com
Operations Management (EDS)	Diana O'hara	703-741-7425	Diana.o'hara@eds.com
Infrastructure Team (EDS)	Dave Cote	972-604-8608	Dave.cote@eds.com
Federal Senior Manager (EDS)	Bill McGovern	703-741-7409	bill.mcgovern@eds.com
Database Administrator (DBA)	Matt Weismantle	703-741-7695	Matt.weismantle@eds.com
Contact for Development Access	Don Dorsey	202-708-4854	Don_Dorsey@ed.gov

Title/Role	Name	Contact Number	e-mail
Contact for Production Access	Don Dorsey	202-708-4854	Don_Dorsey@ed.gov
Contact for Development Web Server Access	Renee Wade	202-260-5146	Renee_Wade@ed.gov
Contact for Production Web Server Access	Renee Wade	202-260-5146	Renee_Wade@ed.gov

5.3 Production Environment

5.3.1 Technical Infrastructure

Logical Technical Architecture Topology:

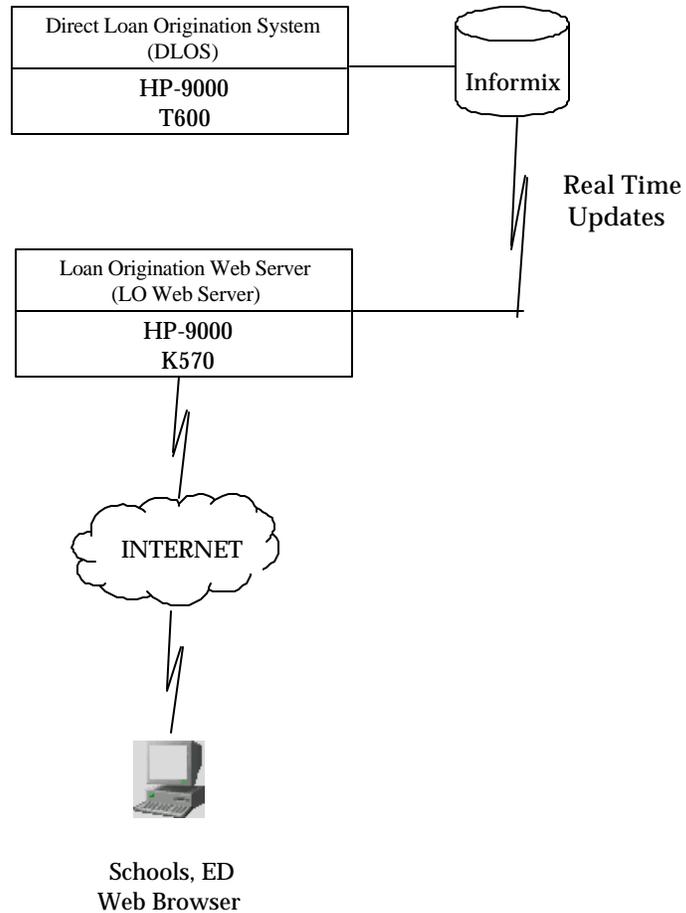


Figure 10: DLOS Logical Technical Architecture Topology

Production Server A

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Hewlett Packard	HP-9000 T600/ HP-UX 10.20	10.20 ⁴
Database	Informix	Informix	7.31 ⁵

⁴ All HP/UX 10.20 OS is scheduled to be upgraded to version 11.0

⁵ Informix 7.31 is scheduled to be upgraded to 9.2

Category	Vendor	Product Name	Version
Transmission Protocol	Hewlett Packard	TCP/IP	n/a
Middleware	Computer Associates	Unicenter TNG Event Mgmt, Workload Mgmt	2.1, Generation Level 9906
Security Software	Computer Associates	Unicenter TNG	2.1 Generation Level 9906

Production Server B: LO Web Server

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Hewlett Packard	HP-9000 K570/ HP-UX 11.0	11.0
Database	n/a	n/a	n/a
Transmission Protocol	Hewlett Packard	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

5.3.2 Interfaces

On-Line Interfaces:

System	Action	Object	System	Frequency	Communications (Asynchronous/ Synchronous)	Volume of Data Processed
DLOS (LO WEB)	Sends	Credit Check Requests	Credit Check via (OLNACS)	On Demand	Synchronous	Varies
	Receives	Credit Check Results	Credit Check via (OLNACS)	On Demand	Synchronous	Varies
	Sends	Informix DB data Updates	Informix DB residing on DLOS HP- 9000 T600	On Demand	Asynchronous	Varies
	Receives	Informix DB Data (Read- only)	Informix DB residing on DLOS HP- 9000 T600	On Demand	Synchronous	Varies

Batch Interfaces:

System	Action	Object	System	Frequency	Volume of Data Processed
DLOS	Sends	Booked loans	CDS ⁶	Daily	12,000 loans avg. per day
	Sends	Disbursement adjustments	CDS	Daily	18,000 adjustments avg. per day
	Sends	System Balancing (Financial Transactions)	CDS	Daily	1,000 Transactions avg. per day
	Receives	XE error (rejected financial transactions)	CDS	Daily	100 Transactions avg. per day
	Receives	Servicer Refund	CDS	On demand	Data has yet to be received since the inception of this transmission.
	Sends	Servicer Refund	TIVWAN	On demand	Data has yet to be received since the inception of this transmission.
	Sends	Disclosure Stmt and requests for information	Borrowers	Daily	12,000 avg. per day
	Receives	Loan Origination records/Disbursement records, promissory notes	TIVWAN	Daily	100,000 avg. per day
	Sends	Loan Origination records/Disbursement records, promissory notes	TIVWAN	Daily	100,000 avg. per day
	Sends	Direct Loan School Account Stmt (DLSAS) and/or 732 report	TIVWAN	Monthly	1 report per month
	Sends	732 report	TIVWAN	Bi-Weekly/ Monthly	Year 4 and 5 every two weeks, Year 6 and 7 monthly
	Sends	Credit Check Request	Credit Agency via. (OLNACS)	Daily	400 avg. requests per day
	Receives	Credit Check Results	Credit Agency via. (OLNACS)	Daily	400 avg. results per day
	Sends	Drawdown request and Excess Cash Data	GAPS	Daily	75 avg. per day

⁶ CDS has been officially retired, however, transmissions to CDS will not cease until November 11, 2000.

System	Action	Object	System	Frequency	Volume of Data Processed
	Receives	Drawdown, Drawdown adjustments, Cancellation, Excess Cash Data	GAPS	Daily	75 avg. per day

System	Action	Object	System	Frequency	Volume of Data Processed
DLOS	Sends	Monthly Reports Schedules (A,B,C) Summary	CPS and GAPS	Monthly	6 reports per month

5.3.3 Process Flow Charts

On-Line

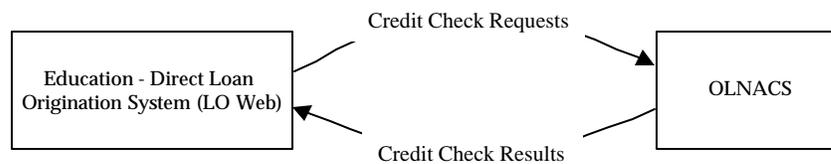


Figure 11: DLOS Global On-line Interfaces

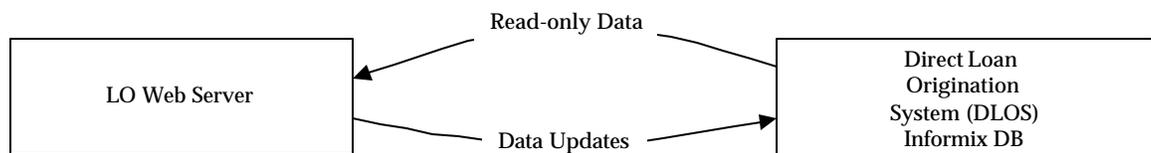


Figure 12: On-Line Interfaces between DLOS (LO Web Server) and DLOS HP-9000 T600

Batch

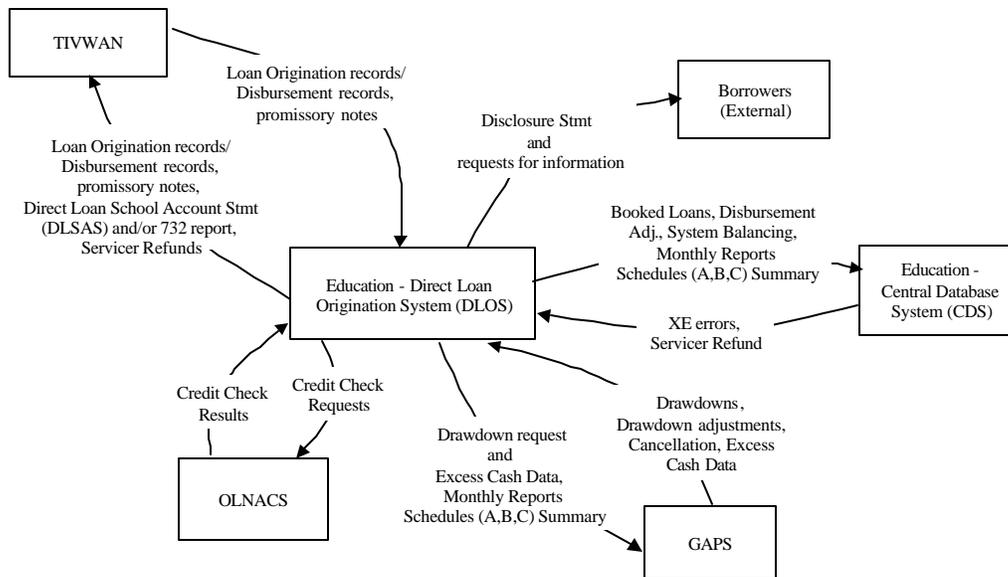


Figure 13: DLOS Global Batch Interfaces

5.4 Development Environment

5.4.1 Technical Infrastructure

Contracting Organization: EDS

Developer Location(s): Ballston, VA, Montgomery, AL

Development Server A

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Hewlett Packard	HP-9000 T600/ HP-UX 10.20	10.20
Database	Informix	Informix	7.31
Transmission Protocol	Hewlett Packard	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	Computer Associates	Unicenter TNG	2.1 Generation Level 9906

Development Server B: LO Web Server

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Hewlett Packard	HP-9000 K570, HP-UX	11.0
Database	n/a	n/a	n/a
Transmission Protocol	Hewlett Packard	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

6 Direct Loan Servicing System (DLSS)

6.1 System Overview

The Direct Loan Servicing System (DLSS) tracks loans received from the booking process, through the in-school period, and through payoff from either the borrower or the Department of Education (defaulted loan).

Some major functions include:

- Service Direct Loans while the borrower is in school, in grace, in deferment or forbearance, or repayment status
- Manage borrower counseling
- Select repayment options
- Present borrowers with repayment incentives and consolidation choices
- Produce and mail billing information
- Conduct skip tracing
- Process loan payments
- Track participant payments
- Certify loan information for Consolidations
- Handle borrower account inquiries and servicing issues
- Handle account inquiries for schools
- Terminate Loan Servicing (due to paid in-full, death, disability, bankruptcy, defaulted, overpaid)
- Maintain Data (borrower data, endorser data, loan program parameters, participating direct loan program institutions, disbursement records)

6.2 Contacts

Title/Role	Name	Contact Number	e-mail
ED System Owner	Dan Hayward	202-205-0038	Dan_Hayward@ed.gov
CIO Contact	Frank Kidd	202-260-0533	Frank_Kidd@ed.gov
Systems Administrator			
Database Administrator (DBA)			
Contact for Development Access			
Contact for Production Access			

6.3 Production Environment

6.3.1 Technical Infrastructure

Production Mainframe A

Physical Location of Mainframe: Rockville, MD

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System	Digital	DEC Alpha/ Open VMS, AIX	8400
Database	Oracle	RDB	7.0
Transmission Protocol	Digital	TCP/IP, DECNet	n/a
Middleware	?	?	?
Security Software	Computer Associates	CA-7, CA-1, RACF	?

Production Mainframe B

Physical Location of Mainframe: Rockville, MD

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System	Digital	DEC VAX / Open VMS, AIX	7610
Database	Oracle	RDB	7.0
Transmission Protocol	Digital	TCP/IP, DECNet	n/a
Middleware	?	?	?
Security Software	Computer Associates	CA-7, CA-1, RACF	?

Production Mainframe C

Physical Location of Mainframe: Rockville, MD

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System	?	RISC 6000 / Open VMS, AIX	6000
Database	Oracle	RDB	7.0
Transmission Protocol	?	TCP/IP, DECNet	n/a
Middleware	?	?	?
Security Software	Computer Associates	CA-7, CA-1, RACF	?

Production Mainframe D

Physical Location of Mainframe: Rockville, MD

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System	Digital	VAX 7000 / Open VMS, AIX	7000
Database	Oracle	RDB	7.0
Transmission Protocol	Digital	TCP/IP, DECNet	n/a
Middleware	?	?	?
Security Software	Computer Associates	CA-7, CA-1, RACF	?

6.3.2 Interfaces

On-Line Interfaces:

System	Action	Object	System	Frequency	Communications (Asynchronous/ Synchronous)	Volume of Data Processed
DLSS						

Batch Interfaces:

System	Action	Object	System	Frequency	Volume of Data Processed
DLSS	Sends	Direct loan info	NSLDS		
	Sends	Updated loan balances	CDS (for DLOS)		
	Receives	Booked student loans (loans and repayment info)	CDS (for DLOS)		
	Receives	Error transmittal file	NSLDS		
	Receives	Autodialer	CDSI (External)		
	Sends	Autodialer	CDSI (External)		
		Delinquent Borrower Report	Schools (External)		
	Receives	Central Database Router System	CDSI (External)		
	Sends	Central Database Router System	CDSI (External)		
	Receives		Various Credit Bureaus (External)		
	Sends		Various Credit Bureaus (External)		
	Receives	Debt Collection Service (DCS)	Raytheon (External)		
	Sends	Debt Collection Service (DCS)	Raytheon (External)		
	Receives	Direct Loan Website	CDSI (External)		
	Sends	Direct Loan Website	CDSI (External)		
	Receives	FileNet	CDSI (External)		
	Sends	FileNet	CDSI (External)		
	Receives	National Student Loan Data System (NSLDS)	Raytheon /CSC (External)		

System	Action	Object	System	Frequency	Volume of Data Processed
	Sends	National Student Loan Data System (NSLDS)	Raytheon /CSC (External)		
	Receives	Voice Response Unit (VRU)	CDSI (External)		
	Sends	Voice Response Unit (VRU)	CDSI (External)		

6.3.3 Process Flow Charts

On-Line

Batch

6.4 Development Environment

6.4.1 Technical Infrastructure

Contracting Organization: CDSI

Developer Location:

Development Server A

Physical Location of Server: Rockville, MD

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System	Digital	DEC Alpha / Open VMS, AIX	8400
Database	Oracle	RDB	7.0
Transmission Protocol	Digital	TCP/IP, DECNet	n/a
Middleware	?	?	?

Category	Vendor	Product Name	Version
Security Software	Computer Associates	CA-7, CA-1, RACF	?

Development Server B

Physical Location of Server: Rockville, MD

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System	?	?	?
Database	?	?	?
Transmission Protocol	?	?	?
Middleware	?	?	?
Security Software	?	?	?

Development Server C

Physical Location of Server: Rockville, MD

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System	?	?	?
Database	?	?	?
Transmission Protocol	?	?	?
Middleware	?	?	?
Security Software	?	?	?

Development Server D

Physical Location of Server: Rockville, MD

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System	?	?	?
Database	?	?	?
Transmission Protocol	?	?	?
Middleware	?	?	?
Security Software	?	?	?

7 Federal Family Education Loan (FFEL)

7.1 System Overview

The Federal Family Education Loan (FFEL) System Support Project is comprised of four major systems:

A. Debt Management and Collections System (DMCS)

The DMCS is the largest component of the FFEL Project. This system consists of 21 subsystems that support assignment, collection activity, record maintenance and reporting of various outstanding debts. Key functions and related interfaces of the DMCS include:

- Payment receipt and processing
- Federal Treasury Offset Program (TOP)
- Processing debt assignments
- Generation of billing statements and letters
- Manage debt accounting
- Income Contingent Repayment Plan (ICRP)
- Collection Agency Reporting
- Loan Rehabilitation and Consolidation
- Federal Defaulter Program (FDP)
- Collector assistance
- Management and Operations reporting
- Department of Justice Litigation
- Treasury Skip Tracing
- Letters generator
- Credit Bureau Reporting
- Lender Pre-Claims and Skip-Tracing
- Interactive Voice Response System (IVRS)
- Administration Wage Garnishment (AWG)
- Data Exchange Agreements with various Federal Agencies
- NSLDS Data Provider Submission

B. Lender and School System

The Lender and School System supports the calculation of interest benefits and special allowance requests submitted by participating lenders. This system also supports the processing of Federal Claims and Loan Assignments. Key functions of the system include:

- Receipt and processing of FISL Claims
- Receipt and processing of Rehabilitation/Consolidation Claims
- Receipt and processing of NDSL Loans

- Receipt and processing of *Lender's Interest and Special Allowance Request and Report* (ED 799)
- Maintenance of school data bases for FFEL, NDSL and PELL debt processing
- Maintenance of lender data base
- NSLDS Lender Data Submission

C. Guaranty Agency System

The Guaranty Agency System supports collection and processing of guaranty agency portfolio data. Key functions provided by this system include:

- Receipt and processing of *GA Claims and Collections Report* (ED 1189)
- Receipt and processing of *GA Quarterly/Annual Report* (ED1130)
- Calculation of administrative cost allowance and reinsurance fees
- Management reporting

D. Support and Maintenance System

The Support and Maintenance System comprises the various Project level support and maintenance programs and activities such as accounting interface for FFEL financial reporting to the Department's financial ledger system, Quality Control, Management Reports and Invoicing. Key functions of the system include:

- Accounting and reconciliation of FFEL financial transactions (DMCS, Interest Payments, Guaranty Agency, etc.)
- Accounting and reconciliation for FFEL funding
- Management of security administration and user profiles
- Management and Operations reporting
- Collection of processing statistics for invoicing
- Collection of quality control statistics for contract performance evaluation

The overall FFEL processing environment is further supported by two additional components:

A. Student Loan Processing Center (SLPC)

The SLPC is responsible for various manual activities within the FFEL System Support Project. Some of these activities include:

- National Payment Center (NPC)
 1. Receipt, processing and timely posting of payment instruments
 2. Receipt, processing and timely posting of financial vouchers (SF 1081)
 3. Delivery of daily deposits to the Federal Reserve Bank (FRB)
 4. Resolution of unidentified payment instruments

- Receipt, distribution and proper handling of incoming correspondence
- Preparation and delivery to postal service of all letters and billing statements
- Receipt, preparation and key entry of Department documents such as:
 1. GSL Assignment form
 2. FISL claim application (ED 1207)
 3. NDSL loan assignment form (ED 553)
 4. *Lender's Interest and Special Allowance Request and Report* (ED 799)
 5. *GA Claims and Collections Report* (ED 1189)
 6. *GA Quarterly/Annual Report* (ED1130)
 7. ICRP Waiver Agreements
 8. Administrative Wage Garnishment notifications and reports
- Control exchange of FFEL data via magnetic tape
- Control transmission of FFEL data via electronic file transfer

B. FFEL Perkins Support Project Customer Service Center (CSC)

The CSC is accountable for the collection, tracking and response to inquiries relating to hardware, system software, application software, procedures, production processing, user access, etc.

Note: Effective October 2000 the GA's will be using the FORMS 2000 for the forms that relate to the FY 2001 period. During the January 2001 time frame, the GA information on FFEL may be 'read only'.

The Lender forms are currently expected to go to the FMS system in October 2001. There will be similar timing issues related to the Lender form.

7.2 Contacts

Title/Role	Name	Contact Number	e-mail
System Owner	Linda Hall, Jim Lynch, Jeanne Vlandren	(202) 205-3796 (202) 260-9729	Linda_Hall@ed.gov James_Lynch@ed.gov Jeanne_Van_Vlandren@ed.gov
COTR	Anna Allen	202.708.8770	Anna_Allen@ed.gov
Systems Administrator	David Elliott/VDC	202.401.0551	David_Elliott@ed.gov
Database Administrator (DBA)	Kris Ethridge (Raytheon)	703.289.1304	Kethridge@fallschurch.esys.com
Contact for Production	TBD Brian Sullivan	202.708.9199	Brian_Sullivan@ed.gov

Title/Role	Name	Contact Number	e-mail
Collections Access	(meanwhile)		
Contact for Production Financial Access	Cynthia Mills	202.708.9768	Cynthia_Mills@ed.gov
Contact for Development Access	Kriss Ethridge (Raytheon)	703.289.1304	Kethridge@fallschurch.esys.com
Manager of Debt Collection Services System (DCSS)	Brian Sullivan	202.708.9199	Brian_Sullivan@ed.gov
Systems analyst task lead for DCSS	Bob Ingwalson	202.205.5316	Robert_Ingwalson@ed.gov

7.3 Production Environment

7.3.1 Technical Infrastructure

Logical Technical Architecture Topology:

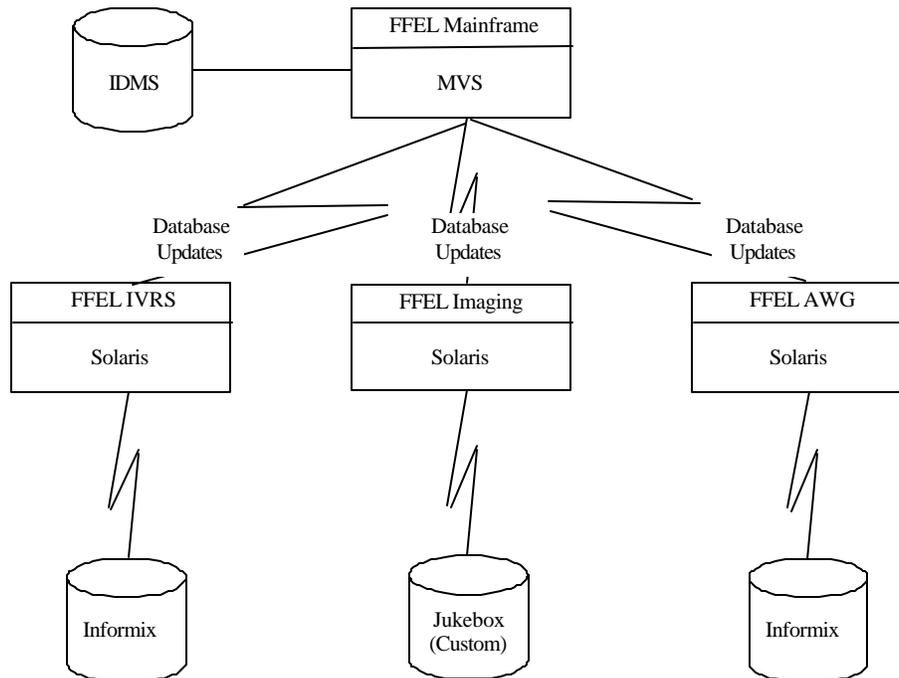


Figure 14: FFEL Logical Technical Architecture Topology

Production Mainframe A

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	IBM	9672/R35 / OS390	2.4
Database	n/a	IDMS	n/a
Transmission Protocol	n/a	IP, NAS	n/a
Middleware	n/a	CICS	n/a
Security Software	n/a	RACF	

Production Server A: DMCS Server - Imaging

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Sun	Sparc 1000/Solaris	2.x
Database	Jukebox	Custom - Code	
Transmission Protocol	n/a	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

Production Server B: DMCS Server – Interactive Voice Response System (IVRS)

Physical Location of Server: Greenville, TX

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Sun	Sparc	2.x

		1000/Solaris	
Database	Informix	Informix	
Transmission Protocol	n/a	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

Production Server C: DMCS Server – Administrative Wage Garnishment (AWG)

Physical Location of Server: Greenville, TX

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Sun	Sparc 1000/Solaris	2.x
Database	Informix	Informix	
Transmission Protocol	n/a	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

7.3.2 Interfaces

On-Line Interfaces:

System	Action	Object	System	Frequency	Communications (Asynchronous / Synchronous)	Volume of Data Processed
FFEL	Sends	Queries	1900 ED and Contract users access CICS and TMON	Daily	Synchronous	Varies
FFEL	Receives	Updates	1900 ED and Contract users access CICS and TMON	Daily	Synchronous	Varies

Batch Interfaces:

System	Action	Object	System	Frequency	Volume of Data Processed
FFEL	Sends	Demand letters	Students	Daily	Varies
	Sends	Billing statements	Students	Weekly	Varies
	Sends, Receives	Debtor info	Students	As Requested	Varies
	Receives	Defaulted loans (Federally Insured)	Lenders	Daily	Varies
	Receives	Interest and special allowance invoices (paper and electronic)	Lenders	Quarterly	Varies
	Receives	Defaulted loans (Rehabilitation, Consolidation)	Lenders, FDSL (Federal Direct Student Loan)	Daily	Varies
	Receives	Defaulted loans (Direct)	FDSL	Daily	Varies
	Receives	Debtor info	FDSL (CDS is part of FDSL)	Weekly/ Monthly/ Annually	Varies
	Sends	Debtor info	Credit Bureaus	Monthly	Varies
	Receives	Defaulted loans (Perkins, Pell Grant)	Schools	Daily	Varies
	Receives	Defaulted loans (FFEL)	Guarantee agencies	Daily	Varies
	Receives	Loan portfolio info and reimbursement invoices	Guarantee agencies	Monthly/ Quarterly	Varies

System	Action	Object	System	Frequency	Volume of Data Processed
FFEL	Sends, Receives	Offset Information	Treasury Department/ Guarantee agencies	Weekly/ Monthly/ Annually	Varies
	Sends, Receives	SF1081 Offset Data	Treasury Department	As Required	Varies
	Sends, Receives	Debtor info	DOD	Annual	Varies
	Sends, Receives	Debtor info	USPS	Annual	Varies
	Sends, Receives	Debtor info	Federal agencies	As Required	Varies
	Sends, Receives	Debtor info	Employers	As Required	Varies
	Sends, Receives	Debtor/Loan info	Collection agencies	As Required	Varies
	Receives	Repayments	National Payment Center, Greenville, TX	Daily	Varies
	Sends	Repayment Instruments	Federal Reserve Bank	Daily	Varies
	Receives	SF1081's	ED/DOJ	Weekly	Varies
	Sends, Receives	Debtor info	Public Inquiry Contract	Daily	Varies
	Sends	Debtor info	HUD	Monthly	Varies
	Sends	Debtor info	SSA	Monthly	Varies
	Sends	Payment and Portfolio data	Census	Annual	Varies
	Receives	ED Form 799 (paper and electronic)	Lender trading partners	Quarterly	Varies
	Receives	School eligibility info (via email)	IPOS (Institutional Participation Oversight Services)	Weekly	Varies
	Receives	Closed School Information	IPOS	As Required	Varies
	Sends, Receives	Accounting and Payments	EDCAPS/ Treasury Department	As Requested	Varies

System	Action	Object	System	Frequency	Volume of Data Processed
	Sends	Lender and guarantor info (electronic)	PEPS	Monthly	Varies
	Sends	Debtor/lender info (electronic)	NSLDS	Weekly/ Monthly/ Annually	Varies

7.3.3 Process Flow Charts

On-Line

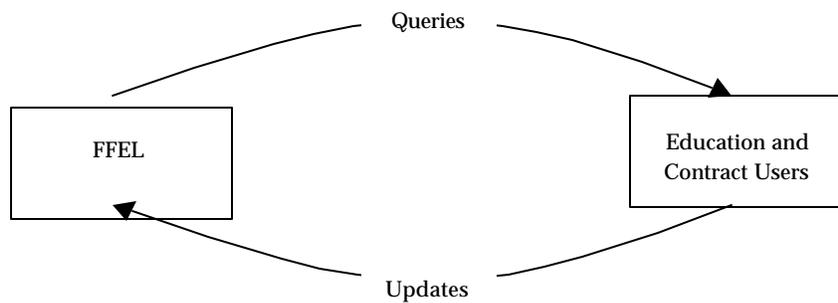


Figure 15: FFEL Global On-line Interfaces

Batch

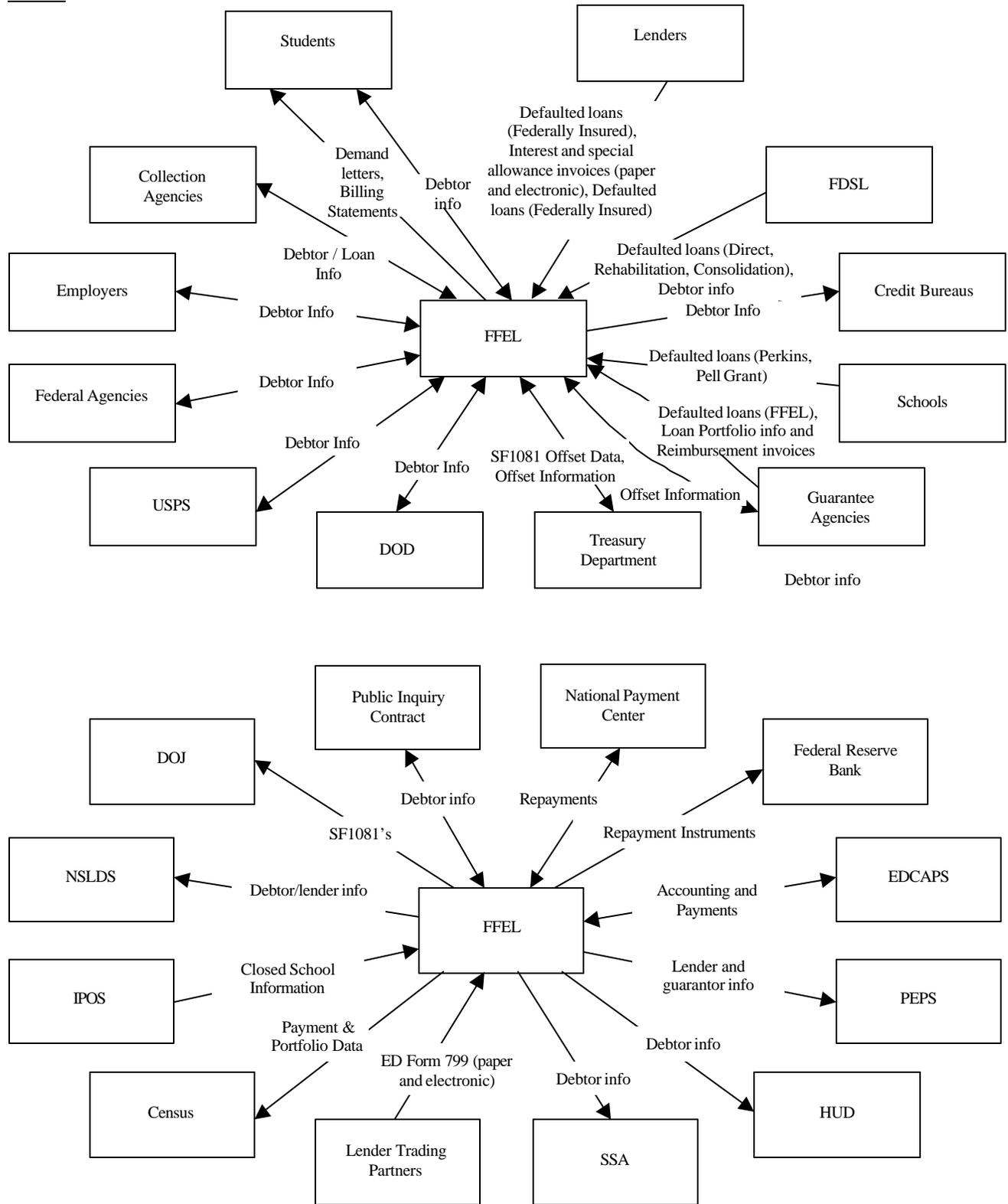


Figure 16: FFEL Global Batch Interfaces

7.4 Development Environment

7.4.1 Technical Infrastructure

Contracting Organization: Raytheon

Developer Location: Falls Church, VA

Development Mainframe A

Physical Location of Server: Meriden, CT

Note: The Mainframe server is also used for development. This server contains another instance of the IDMS database for development use.

Development Server A: DMCS Server - Imaging

Physical Location of Server: Falls Church, VA (Raytheon Site)

Note: The Development Server mirrors Production Server

Development Server B: DMCS Server - IVRS

Physical Location of Server: Falls Church, VA (Raytheon Site)

Note: The Development Server mirrors Production Server

Development Server C: DMCS Server - AWG

Physical Location of Server: Falls Church, VA (Raytheon Site)

Note: The Development Server mirrors Production Server

8 Information for Financial Aid Professionals (IFAP)

8.1 System Overview

The Information for Financial Aid Professionals (IFAP) web site (<http://ifap.ed.gov>) is an electronic library for financial aid professionals containing publications, regulations, and guidance regarding the administration of the Title IV Federal Student Financial Aid Programs. IFAP is managed by the Customer Support Branch (CSB) within Office of Student Financial Assistance Programs (OSFAP) of the Department of Education.

The IFAP web collection went “live” in early March 1998. IFAP consists of forty-one (41) specific types of publications that CSB posts.

IFAP has a subscription option that notifies registered customers via email when new information (Dear Partner Letter, Announcement, Federal Register, etc.) has been added to the wealth of information available on IFAP. The email is customized based on users’ subscription selections. Users can select to be notified when new documents are added to the IFAP catalog based on Publication Type and Program/Service categories. Users can select more than one Publication Type or Program/Service category. Even if selections overlap, the system is designed to not send duplicate notifications of a single document.

The following Publication Types exist:

- Action Letters
- Accrediting Agencies
- Audit Guides
- Blue Books
- Brochures And Pamphlets
- Counselor's Handbooks
- Dear Partner/Colleague Letters
- Default Rate Materials
- Direct Loan Bulletins
- Direct Loan Fact Sheets
- Direct Loan Newsletters
- Direct Loan Pamphlets
- Direct Loan School Guides
- Direct Loan Technical References
- EDConnect For Windows User's Guide
- EDE Technical References
- EFC Formula Books
- Electronic Announcements
- FAFSA's And Renewal FAFSA's
- Federal Registers
- FFEL Special Allowance Rates

- FFEL Variable Interest Rates
- FWS Resource Guide
- IPOS Program Review Guidance
- NSLDS: The Paperless Link
- NSLDS Quick Reference Guide
- Pell Grant Program Materials
- Policy Bulletins
- Reauthorization Materials
- Regulation Compilations
- SAR And ISIR Materials
- SSCR User's Guides
- SFA Handbooks
- Training Guides
- Verification Guides

The following Program/Service Categories exist:

- Campus-Based Programs (General Provisions)
- Cash Management
- FAFSA Processing/SAR/ISIR
- Federal Family Education Loan (FFEL) Program
- Federal Pell Grant Program
- Federal Perkins Loan Program
- Federal Supplemental Educational Opportunity Grant (FSEOG) Program
- Federal Work-Study (FWS) Program
- Higher Education Programs
- Institutional Eligibility And Participation
- National Student Loan Data System (NSLDS)
- Refunds And Repayments
- State Student Incentive Grant (SSIG) Program
- Student Eligibility
- Title IV WAN/Electronic Data Exchange (EDE)
- Training/Conferences/Meetings
- Verification
- William D. Ford Federal Direct Loan Program

The IFAP subscription option sends “Weekly” (a weekly summary of all IFAP additions) subscription emails and “48 Hour” (a summary of IFAP additions within 48 hours) emails based on the end user’s subscription options form. Users must be registered to use the IFAP subscription option.

8.2 Contacts

Title/Role	Name	Contact Number	e-mail
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Title/Role	Name	Contact Number	e-mail
ED System Owner	Michaelyn Milidantri	202-690-5230	Michaelyn_Milidantri@ed.gov
Systems Administrator	Collen K. Miller	202-690-5241	Colleen_Miller@ed.gov
Database Administrator (DBA)	Palmer Fousek Beacon Technologies	336-931-1295 ext. 249	pfousek@beacontec.com
Contact for Development Access	Rich Guarino Beacon Technologies	336-931-1295 ext. 222	rguarino@beacontec.com
Contact for Production Access	TBD	TBD	TBD

8.3 Production Environment

8.3.1 Technical Infrastructure

Logical Technical Architecture Topology:

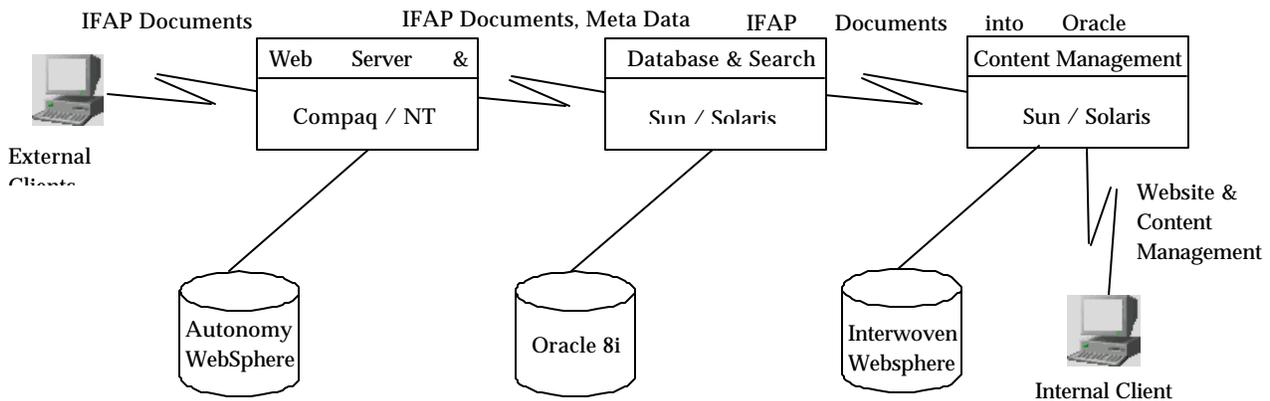


Figure 17: IFAP Logical Technical Architecture Topology

Production Server A: Content Management Server

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System (OS)	SUN	E3500 / Solaris	2.6.1
Database	n/a	n/a	n/a
Transmission Protocol	n/a	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

Production Server B: IFAP Database & Search

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	SUN	E3500 / Solaris	2.6.1
Database	Oracle	8I	Release 2
Transmission Protocol	n/a Oracle	TCP/IP Net8	n/a Release 8
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

Production Server C: IFAP Web Server & Search

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	SUN	E3500 / Solaris	2.6.1
Database	Oracle	8I	Release 2
Transmission Protocol	n/a	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

8.3.2 Interfaces

On-Line Interfaces:

System	Action (sends/ receives)	Object	System	Frequency	Communications (Asynchronous/ Synchronous)	Volume of Data Processed
IFAP	Receives	User registration	Client (External)	Daily (on demand)	Asynchronous	Varies
	Receives	Content Management	Internal End-User thin Client (browser with Interwoven's launch-pad utility)	Daily (on demand)	Asynchronous	Varies
	Sends	Registration confirmation	Client (External)	Daily (on demand)	Asynchronous	Varies
	Sends	Subscription messages	Client (External)	Once a Day weekly	Asynchronous	Varies
IFAP (CM)	Receives	Metadata about documents to Oracle	IFAP (Oracle & Search)	Daily (on demand)	Asynchronous	Varies
IFAP (Oracle & Search)	Receives	Http request	IFAP (Web)	Daily (on demand)	Asynchronous	Varies
IFAP (CM)	Sends	HTML Pages	IFAP (Web)	Daily (on demand)	Asynchronous	Varies
IFAP (Oracle & Search)	Sends	Metadata from Oracle	IFAP (Web)	Daily (on demand)	Asynchronous	Varies
IFAP (Oracle & Search)	Sends	Results Set	IFAP (Web)	Daily (on demand)	Asynchronous	Varies

8.3.3 Process Flow Charts

On-Line

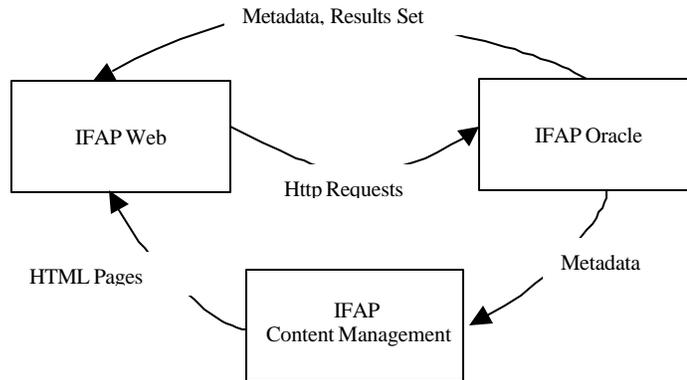


Figure 18: IFAP On-line Interfaces within IFAP

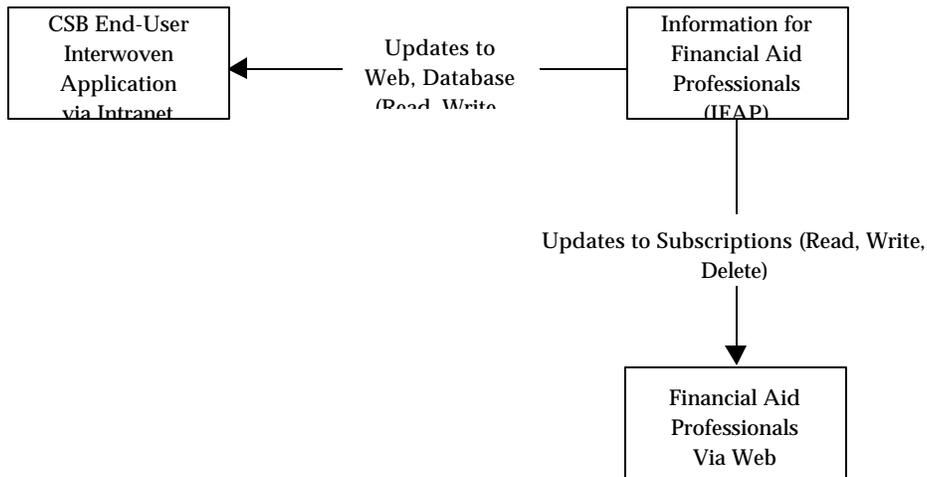


Figure 19: IFAP On-line Interfaces with IFAP

8.4 Development Environment

8.4.1 Technical Infrastructure

Contracting Organization: Andersen Consulting - Beacon Technologies

Location of Developer: Greensboro ,NC

Development Server A

Physical Location of Server: Beacon Technologies Greensboro, NC

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	SUN	E3500 / Solaris	2.6.1
Database	Oracle	8i	Release 2
Transmission Protocol	n/a Oracle	TCP/IP Net8	n/a Release 8
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

9 Multiple Data Entry (MDE)

9.1 System Overview

The agents who collect the data from ED's paper-based common financial reporting form for ED are called the Multiple Data Entry (MDE) processors. The existing Multiple Data Entry system consists of a group of private and public organizations that collect student data on its own common financial reporting form (which each produces, prints, and distributes) and transmit the data to ED for processing.

Some major functions include:

- Data entry of paper FAFSA's and Renewed FAFSA's
- Optical scanning of paper FAFSA's and Renewal FAFSA's
- Optical scanning of paper signature for electronically submitted FAFSA's
- Data entry of Student Aid Reports (SAR)
- Optical Scanning of SAR's
- Transmission of data and images to the Central Processing System

9.2 Contacts

Title/Role	Name	Contact Number	e-mail
ED System Owner	Jeanne Saunders	202-708-9874	Jeanne_Saunders@ed.gov
CIO Contact	Frank Kidd	202-260-0533	Frank_Kidd@ed.gov
Systems Administrator	Ed Daering America College Testing (ACT)	319.337.1176	Daering@act.org
Database Administrator (DBA)	Ed Daering America College Testing (ACT)	319.337.1176	Daering@act.org
Contact for Development Access	Ed Daering America College Testing (ACT)	319.337.1176	Daering@act.org
Contact for Production Access	Ed Daering America College Testing (ACT)	319.337.1176	Daering@act.org

9.3 Production Environment

9.3.1 Technical Infrastructure

Logical Technical Architecture Topology:

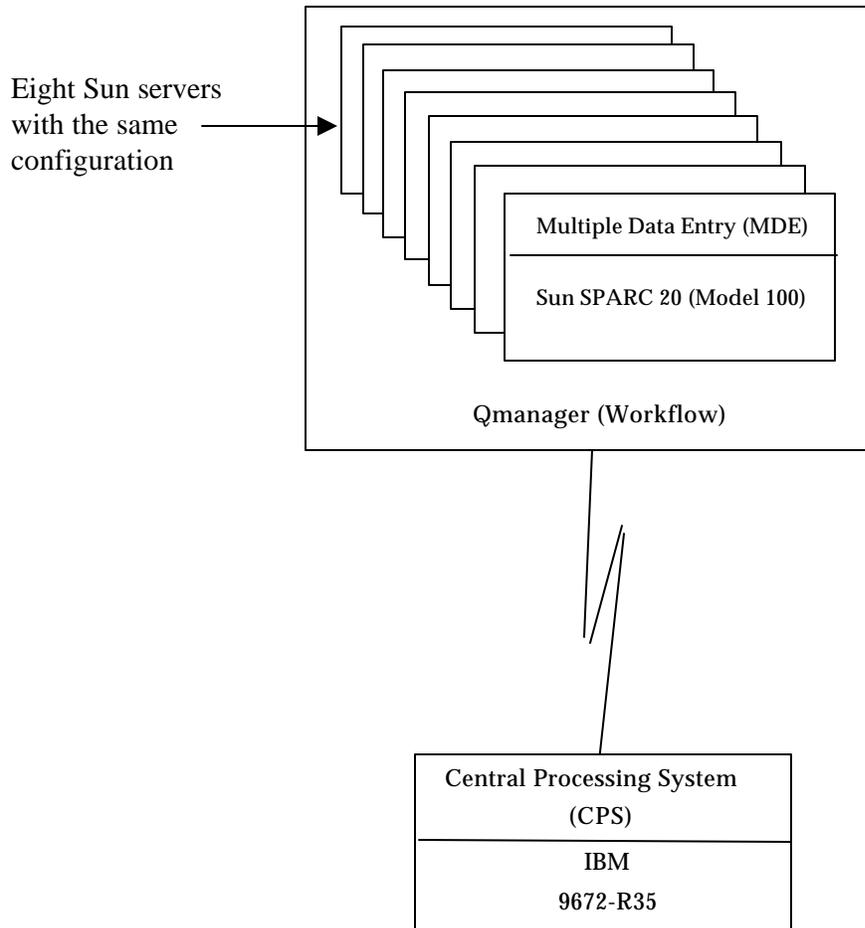


Figure 20: MDE Logical Technical Architecture Topology

Production Server A

Physical Location of Server: Mt. Vernon, IL

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System	Sun Microsystems	SPARC20/Solaris	Model 100 / (2.6)
Database	n/a	n/a	n/a
Transmission Protocol	Sun Microsystems	TCP/IP	n/a

Category	Vendor	Product Name	Version
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

Note: There are 8 Sun SPARC20 (Model 100) Servers that support QManager (workflow) and communications functions between Mt. Vernon and CPS (Meriden, CT). Each Sun server contains the HW/SW specifications documented above.

9.3.2 Interfaces

On-Line Interfaces:

System	Action	Object	System	Frequency	Communications (Asynchronous/ Synchronous)	Volume of Data Processed
MDE	Receives	Acknowledgments for received history corrections, new/renewal apps and images	CPS	Daily	Synchronous	1 Acknowledgment (Ack) per Transaction

Batch Interfaces:

System	Action	Object	System	Frequency	Volume of Data Processed
MDE	Sends	Original/ Correction Applications	CPS	Daily	Average of 45,000 per day. Peak transactions of 85,000 in one day. Sent in batches of 50.
	Sends	MIS Reports		Weekly	3 Reports per week
	Sends	Renewal Applications		Daily	Average of 43,000 per day. Peak transactions of 53,000 in one day. Sent in batches of 50.
	Sends	History Corrections from SARS		Daily	Average of 15,500 records per day. Peak transactions of 24,000 in one day. Sent in batches of 50.
	Sends	History Corrections from Letters		Daily	Average of 9,300 records per day. Peak transactions of 26,000 in one day. Sent in batches of 50.
	Sends	Duplicate SAR Requests		Daily	Average of 55 per day. Peak transactions of 150 in one day. Sent in batches of 50.
	Sends	Imaged Documents		Daily	Average of 102,000 per day. Peak transactions of 179,000 in one day. Sent in batches of 50.

9.3.3 Process Flow Charts

On-line

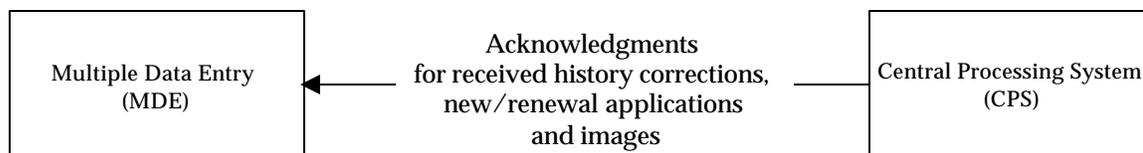


Figure 21: MDE Global On-Line Interface

Batch

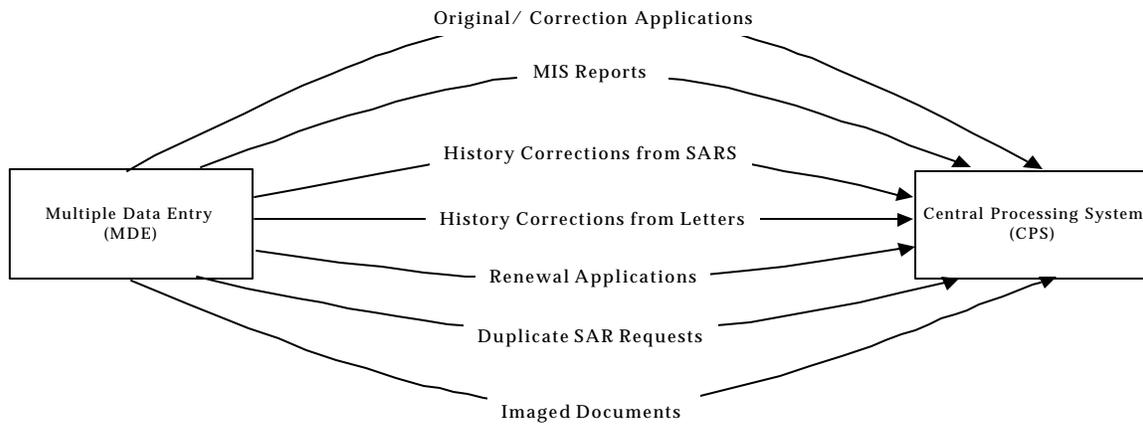


Figure 22: MDE Global Batch Interfaces

9.4 Development Environment

9.4.1 Technical Infrastructure

Contracting Organization: CBMI

Location of Developer: Fairfax, VA

Development Server A

Physical Location of Server: Mt. Vernon, IL

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform / Operating	Sun Microsystems	SPARC20/Solaris	Model 100 / (2.6)

Category	Vendor	Product Name	Version
System			
Database	n/a	n/a	n/a
Transmission Protocol	Sun Microsystems	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

Note: There are 2 Sun SPARC20 (Model 100) Servers that support QManager (workflow) development. Each Sun server has the same HW/SW specifications as documented above.

10 National Student Loan Data System (NSLDS)

10.1 System Overview

The National Student Loan Data System (NSLDS) is a national database of loan and grant-level data on the majority of Title IV programs. Through a mandate from Congress, NSLDS was intended to provide a consolidated research database as well as support operational functions of the agency and Title IV participants. The scope of the NSLDS has been broadened over time to include certain reasonability and adjunct accounting process validations. Its functionality extends to a broad base user community that accesses data through a query management facility and defined reporting structures.

NSLDS was designed with the intent to perform various loan administration functions:

- Student eligibility Prescreening for Title IV Aid Programs
- Student eligibility Postscreening for Title IV Aid Programs
- Aid Overpayment recordation
- Eligibility of school participants in Title IV Aid programs
- Cohort Default Rate Calculations
- Enrollment reporting through SSCR Standardization
- Preparation of Financial Aid Transcript (FAT) Information
- Borrower tracking for attendance, eligibility, status, and aid thresholds
- Demographics

NSLDS was designed with the intent to perform the following operational support functions:

- Audit and Program Review Planning
- Research Studies and Policy Development
- Budget Analysis and Development
- Loan Transfer Tracking
- Monitoring GA and Lender Billing for Reasonability
- Assessment of FFELP, FDLP, and Other Program Administration
- Borrower Tracking for attendance, eligibility, status, and aid thresholds
- Credit Reform Act Support
- Refund and Loan Cancellation Support

Note: HELP, HEAL, LEAP, FISL non –default, ALAS, and OHEP/Tribal Community Loans are not encompassed within NSLDS.

10.2 Contacts

Title/Role	Name	Contact Number	e-mail
ED System Owner	Lynn Alexander	202-205-7130	Lynn_Alexander@ed.gov
Systems Administrator (CM)	Leslie Willoughby	703-560-5000 ext. 3329	Lwilloughby@fallschurch.esys.com
Database Administrator (DBA)	Cliff Clemens	703-560-5000 ext. 3025	CClemens@fallschurch.esys.com
Contact for Mainframe Access	Mike Fillinich	703-560-5000 ext. 3322	MFillinic@fallschurch.esys.com
Contact for Development and Test Support	Barbara Ferencz	703-560-5000 ext. 3521	BFerencz@fallschurch.esys.com
NSLDS Document Manager	Lisa Layden	703-560-5000 ext. 3547	LLayden@fallschurch.esys.com

10.3 Production Environment

10.3.1 Technical Infrastructure

Logical Technical Architecture Topology:

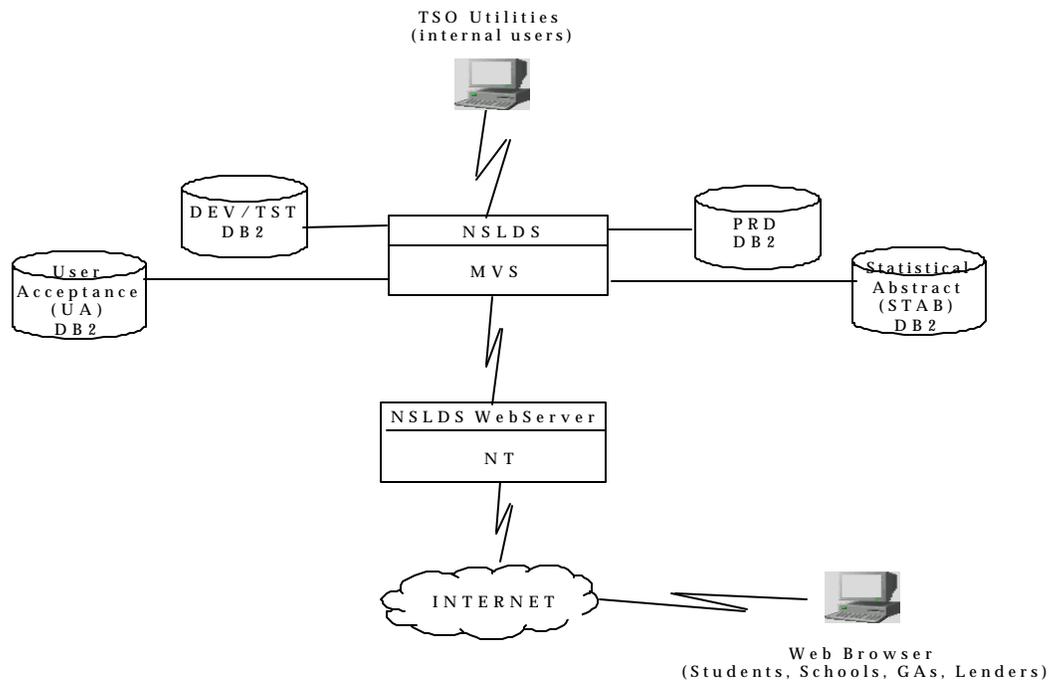


Figure 23: NSLDS System Topology

Production Mainframe A

Physical Location of Mainframe: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform	IBM	9672-OS/390 (MVS)	2.4
Database	IBM	DB2	5.1
Transmission Protocol	IBM	TCP/IP	3.2
Middleware	Landmark	TMON/CICS	2
Security Software	IBM	RACF	R4(2.2)

Production Server A: NSLDS Web Server

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
----------	--------	--------------	---------

Category	Vendor	Product Name	Version
Platform	Compaq	1850R / NT	4.0
Database	n/a	n/a	n/a
Transmission Protocol	Microsoft	Windows NT – SNA	4.0
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

10.3.2 Interfaces

On-Line Interfaces:

System	Action	Object	System	Frequency	Communications (Asynchronous/Synchronous)	Volume of Data Processed
NSLDS	Receives	Over-payments	Schools (External) & Debt Collection Service (ED)	Daily (via web)	Dependant on Access Method	Varies
	Receives	SSCR cycle updates	Schools/Serviceers (External)	Daily (via web)	Dependant on Access Method	Varies
	Receives	Organizational Contacts	GA/Schools/ED /Serviceers (External)	Daily (via web)	Dependant on Access Method	Varies
			73			June 9, 2000

System	Action	Object	System	Frequency	Communications (Asynchronous/ Synchronous)	Volume of Data Processed
	Processes	Defined user queries (**)	GA/Schools/ Servicers/ED/ Congressional/ Adjunct (External)	Daily (via web)	Dependant on Access Method	Varies

(**) significant volume occurs in SQL processes which provide extract, cyclical process, and defined quantifiable reporting on specific activities within programs, systems, and locale (demographics) to comply with regulatory, statutory and portfolio management requirements.

Batch Interfaces:

System	Action	Object	System	Frequency	Volume of Data Processed
NSLDS	Sends	SSCR, FAT (tape)	School Servicers (External)	Monthly	Varies
	Sends	Default rates	PEPS	(cycle specific)	Varies
	Sends	SSCR	Direct Loan Servicer	Monthly	Varies
	Sends	Pre-screening info, Post-screening info	CPS	On Demand	Varies
	Sends	SSCR, FAT	Schools TIVWAN mailbox	On Demand	Varies
	Receives	FFEL loans	Guarantee Agencies (External)	Monthly	Varies
	Receives	Perkins loan info	Schools/Servicers (External)	Monthly	Varies
	Receives	Identifying Title IV loan applicants	CPS	Quarterly	Varies
	Receives	School demographics and status info	PEPS	Weekly	Varies
	Receives	Recipient info	RFMS	Weekly	Varies
	Receives	GA code table, lender code table	FFEL	Weekly	Varies
	Receives	Direct loan info	Direct Loan Servicing Service	Monthly	Varies
	Receives	FAT, SSCR	Schools (via EDExpress)	Daily	Varies
	Receives	Student Demographic information	CPS	Quarterly	Varies
	Receives	Defaulted loan and overpayment information	DMCS – (FFEL)	Monthly	Varies

10.3.3 Process Flow Charts

Note: The following documentation should be referenced during the future analysis of NSLDS.
 Hard copies of the following references are attached as Appendix D:

1. Load process charts are provided for:

- Perkins
- FFELP/GA

- DMCS
- Federal Direct Loan

2. NSLDS production schedule for the duration of YR2000.
3. NSLDS QA/QC Metrics Reports.

On-Line

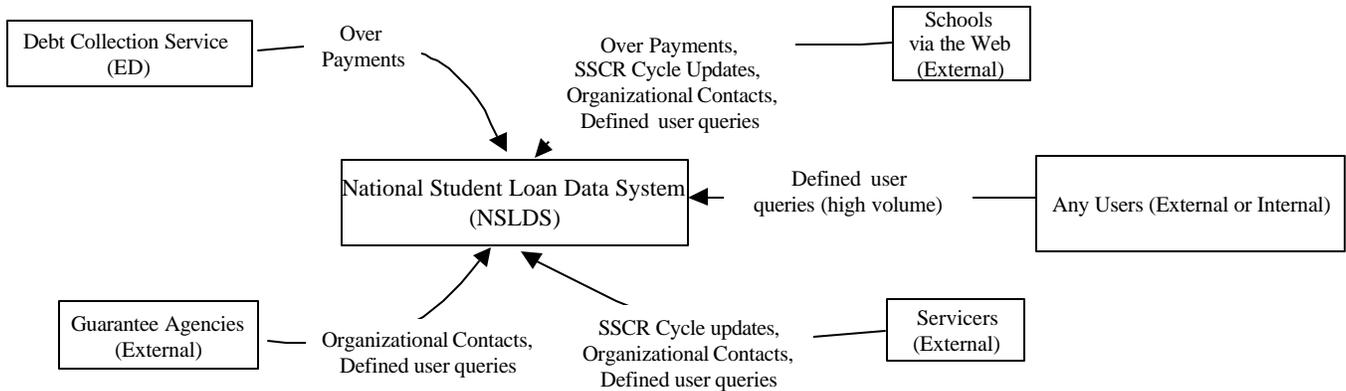


Figure 24: NSLDS Global On-Line Interfaces

Batch

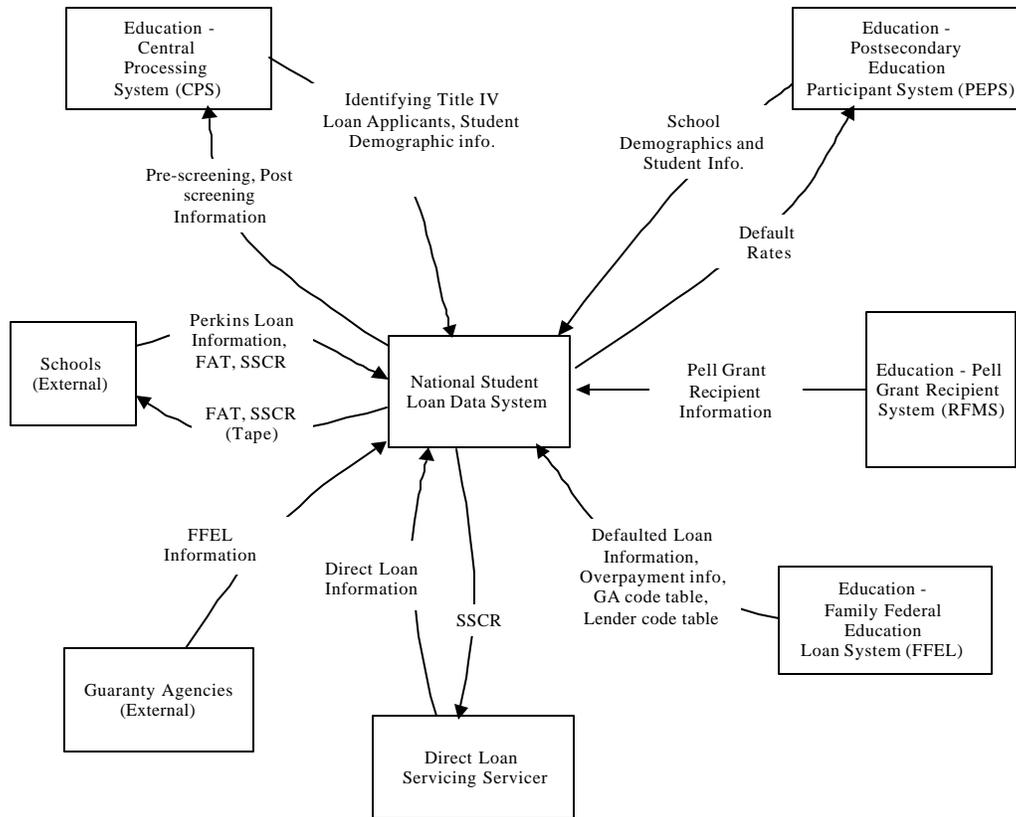


Figure 25: NSLDS Global Batch Interfaces

10.4 Development Environment

10.4.1 Technical Infrastructure

Development Mainframe A

Physical Location of Mainframe: Meriden, CT

Note: The Development Mainframe mirrors the Production Mainframe.

Development Server A: NSLDS Web Server

Physical Location of Server: Falls Church, VA - Raytheon

Note: The Development Server mirrors Production Web Server

11 Post-secondary Education Participants System (PEPS)

11.1 System Overview

Post-secondary Education Participants Systems (PEPS) is used to provide a management information system with consistent and reliable data, and flexible reporting concerning post-secondary institutions, accrediting bodies, state licensing agencies, lenders, and guarantors, for a large number of users with diverse business needs.

Some major functions include:

- Provide data on school participation: eligibility, certification, address, and program participation
- Provide institutional reviewer data
- Support annual default rate calculation for FFEL and Direct Loan schools
- Logs hardware/software problem calls from PEPS users and forwards them to the appropriate area of response
- Provide audit data on schools, lenders, and guarantee agencies (including interface to Dept. of ED OCPO)
- Run SQL queries for the SFA community (internal and external)
- Monitor and record GA and lender servicer participation and default rates
- Provide audit data on lenders and guarantee agencies including interface to Dept of ED OCPO
- Use Federal School Code File to look up school codes for FAFSA completion

11.2 Contacts

Title/Role	Name	Contact Number	e-mail
ED System Owner	Rana O'Brien	202-708-6266	Rana_O'Brien@ed.gov
Systems Administrator (HP Server)	Jay Sriram	202-260-4801	Jay_Sriram@ed.gov
Systems Administrator (NT Server)	Tim Lin	202-205-9768	Tim_Lin@ed.gov
Database Administrator (DBA) (HP Server)	Jay Sriram	202-260-4801	Jay_Sriram@ed.gov
Database Administrator (DBA) (NT Server)	Tim Lin	202-205-9768	Tim_Lin@ed.gov

Title/Role	Name	Contact Number	e-mail
Contact for Development Access	Laurie Miesen (CBMI)	703-846-8233	Lmiesen@clarke.net
Contact for Production Access	Nita Washington (Security Officer)	202-708-6566	Nita_Washington@ed.gov

11.3 Production Environment

11.3.1 Technical Infrastructure

Logical Technical Architecture Topology:

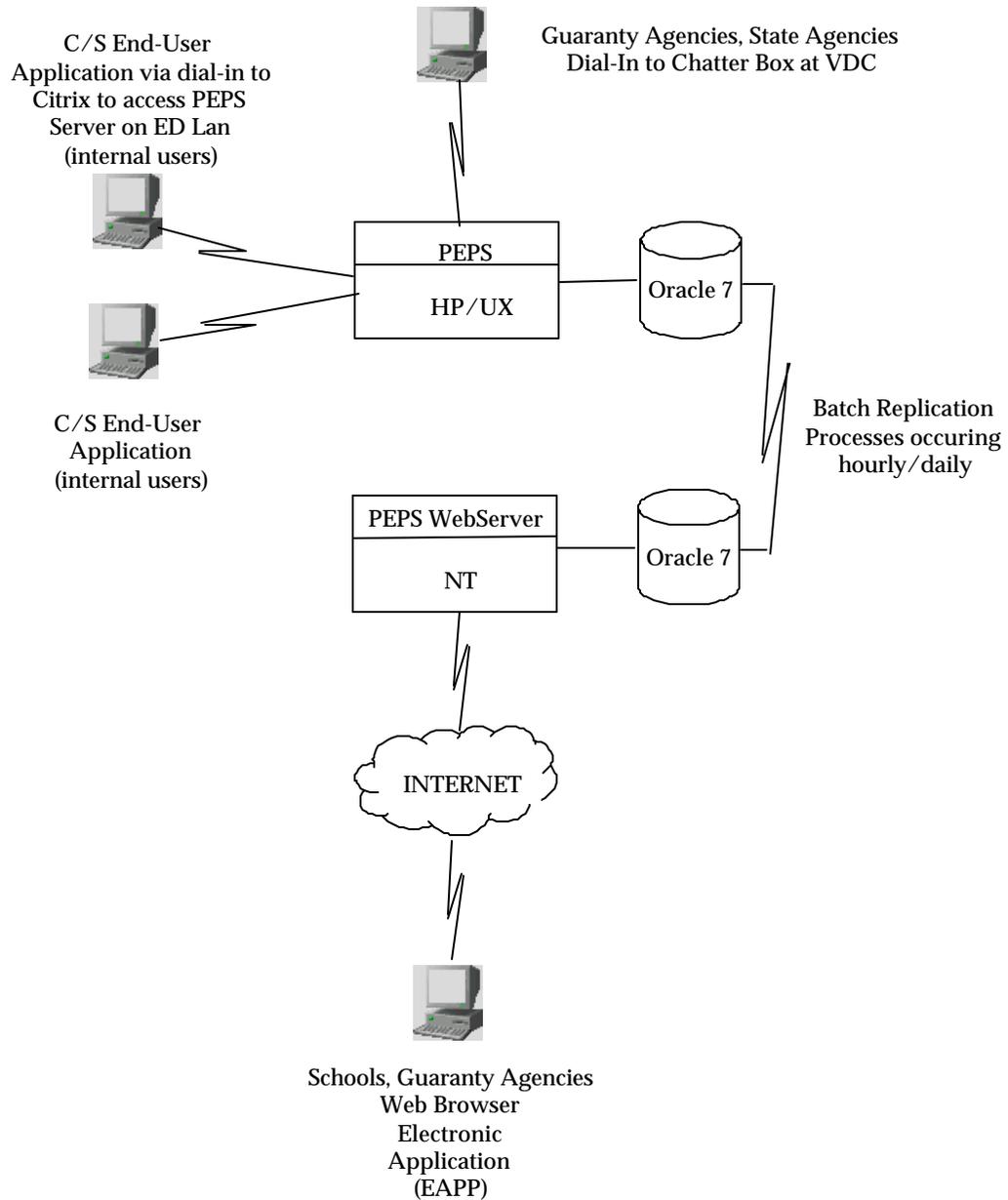


Figure 26: PEPS Logical Technical Architecture Topology

Production Server A

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	HP	HP9000 T600, HP/UX	10.20
Database	Oracle	Oracle 7	7.3 ⁷
Transmission Protocol	n/a	TCP/IP	n/a
Middleware	Oracle	SQLNet	2.3.2 ⁸
Security Software	Oracle	Oracle 7/8 RDBMS Security	7.3

Production Server B: PEPS Webserver

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Compaq	Prolient 4000R /NT	4.0
Database	Oracle	Oracle 7	7.3 ⁹
Transmission Protocol	n/a	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	Oracle	Listener, Oracle 7/8 RDBMS Security	2.3.2 ¹⁰ , 7.3

⁷ Oracle 7.3 scheduled to be upgraded to version 8.03 in July 2000

⁸ Oracle SQLNet 2.3.2 scheduled to be upgraded to version 8 (Net80) in July 2000

⁹ Oracle 7.3 scheduled to be upgraded to version 8.03 in July 2000

¹⁰ Oracle Listener 2.3.2 scheduled to be upgraded to version 8 (Net80) in July 2000

11.3.2 Interfaces

On-Line Interfaces:

System	Action	Object	System	Frequency	Communications (Asynchronous/ Synchronous)	Volume of Data Processed
PEPS	Receives	Institution eligibility application updates	Schools via the web (EAPP)	Daily (on demand)	Asynchronous	20MB
	Receives	Updates to financial partner data	Guaranty Agencies via the web (EAPP)	Daily (on demand)	Asynchronous	Varies
	Sends	Data from Oracle DB	End-user Client/Server Application	Daily (on demand)	Asynchronous	Varies
	Receives	Institution Eligibility /GA program certification data	End-user Client/Server Application	Daily (on demand)	Asynchronous	Varies
	Sends	Data from Oracle DB	End-user Client/Server Application Dial-in Access to PEPs Server via Citrix	Daily (on demand)	Asynchronous	Varies
	Receives	Institution Eligibility /GA program certification data	End-user Client/Server Application Dial-in Access to PEPs Server via Citrix	Daily (on demand)	Asynchronous	Varies
	Sends	Read-only data from PEPS Oracle DB	State and Guaranty Agencies via Chatter box in VDC	Daily (on demand)	Asynchronous	Varies

Batch Interfaces:

System	Action	Object	System	Frequency	Volume of Data Processed
PEPS	Sends	School eligibility info	FFEL	Weekly, Thurs	500KB-50MB
	Sends	School eligibility info	NSLDS	Weekly, Thurs	500KB-50MB
	Sends	School eligibility info	PELL	Weekly, Thurs	500KB-50MB
	Receives	Default rates	NSLDS	6 times a year	10MB
	Receives	Lender and guaranty agency info (File placed on Network drive and manually retrieved by users)	FFEL	Quarterly	20 MB
PEPS (Oracle on HP)	Receives	Institution eligibility application updates submitted to the reviewer area on HP server.	PEPS (Oracle on NT)	On demand (every 10 min, hourly, daily) ¹¹	20 MB
PEPS (Oracle on NT)	Receives	User Password and User ID snapshots	PEPS (Oracle on HP)	On demand	Varies
PEPS (Oracle on HP)	Sends	Rejection notice for Institution eligibility applications updates	PEPS (Oracle on NT)	On Demand	Varies
PEPS	Sends	New School Eligibility Data and more	www.ED.gov /offices/OSFA P/PEPS	Once a week	70MB

¹¹ Currently, there is no set schedule for receiving batch updates from the NT Webserver to the HP Server. However, by July 2000 schedule capability should be implemented to control these batch updates.

11.3.3 Process Flow Charts

On-line

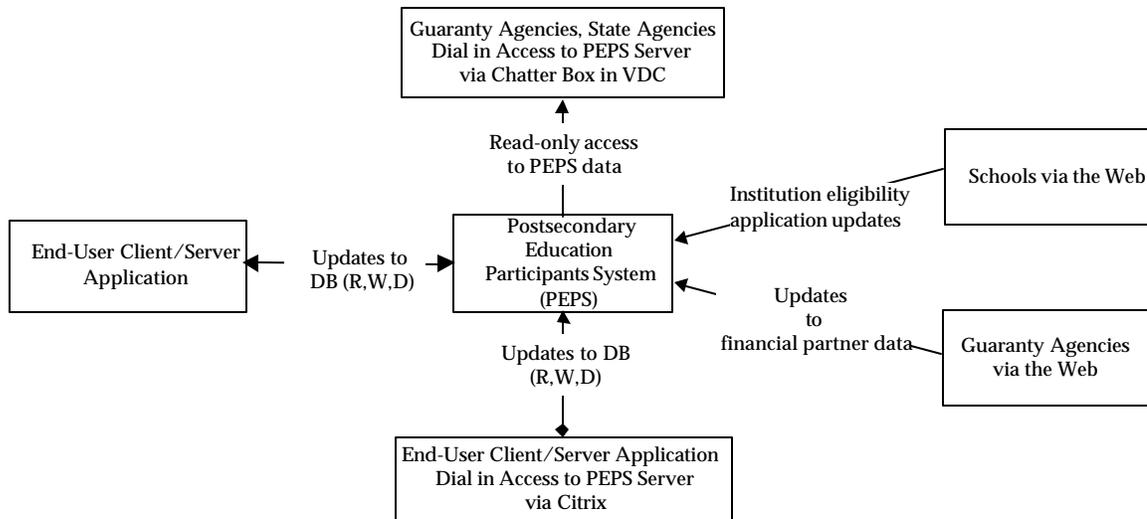
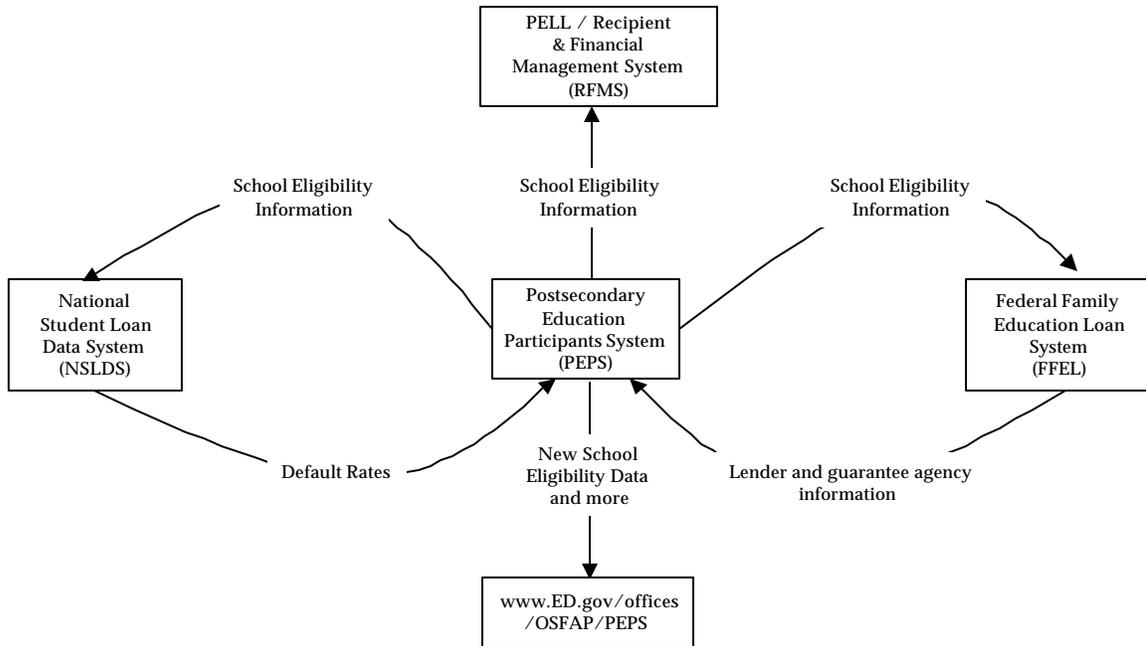


Figure 27: PEPS Global On-Line Interfaces



Batch

Figure 28: PEPS Global Batch Interfaces

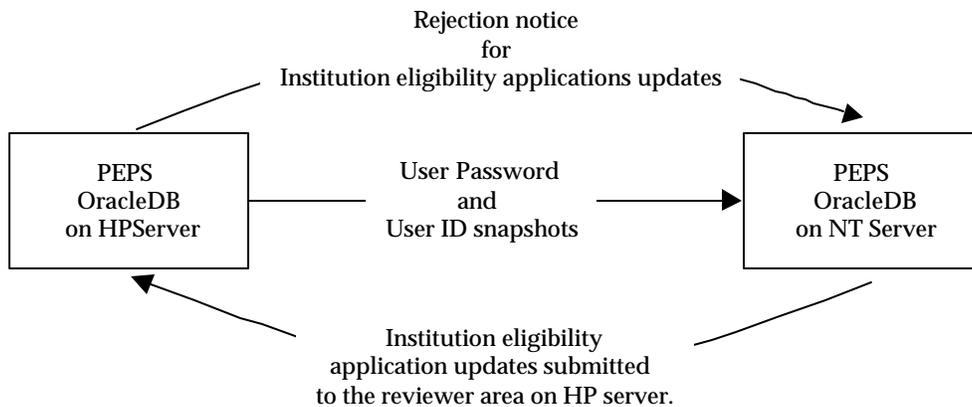


Figure 29: PEPS Batch Interfaces between Oracle Databases on HP and NT Servers

11.4 Development Environment

11.4.1 Technical Infrastructure

Contracting Organization: CBMI

Location of Developer: Fairfax, VA

Development Server A

Physical Location of Server: Fairfax, VA

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	HP	HP9000 T600, HP/UX	10.20
Database	Oracle	Oracle 7	7.3 ¹²
Transmission Protocol	n/a	TCP/IP	n/a
Middleware	Oracle	SQLNet	2.3.2 ¹³
Security Software	Oracle	Oracle 7/8 RDBMS Security	7.3

Test Server A: (PEPS Test Webserver¹⁴)

Physical Location of Server: Washington DC.

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/OS	Compaq	Prolient 1850R /NT	4.0
Database	n/a	n/a	n/a
Transmission Protocol	n/a	TCP/IP	n/a
Middleware	n/a	n/a	n/a
Security Software	n/a	n/a	n/a

¹² Oracle 7.3 scheduled to be upgraded to version 8.03 in July 2000

¹³ Oracle SQLNet 2.3.2 scheduled to be upgraded to version 8 (Net80) in July 2000

¹⁴ PEPS Test Web Server located at the Department of Education (ROB 3). Scheduled to be moved to the VDC in Meriden, CT. Use and function are yet to be defined.

12 Recipient and Financial Management System (RFMS)

12.1 System Overview

The Recipient and Financial Management System is used to generate obligation information and to monitor grant funds at both the institution and the recipient level. It does this by performing the following functions: authorize the distribution of funds through the participating institutions to permit payment of vouchers; monitoring the use of funds throughout the award year to permit reallocation of supplemental awards as necessary to correspond with student attendance; to verify institutional expenditures through comparing disbursements reported at the recipient level; by responding to informational requests from institutions, recipients, and others; and by defining, collecting, and reporting data to assist in the evaluation of the Pell Grant program and in projecting future needs.

Some major functions include:

- Track delivery of Pell Grant aid to schools
- Calculate eligibility amounts
- Aggregate planned disbursements by schools
- Authorize school drawdown funds
- Receive origination notices and Statements of Account from schools in the Pell program (Statements of Account, verification of drawdown and repayment, location of school data, technical questions, mailings)
- Maintain student eligibility

12.2 Contacts

Title/Role	Name	Contact Number	e-mail
ED System Owner	Michele Selvage	202-260-9221	Michele_Selvage@ed.gov
Systems Administrator	Jim Churchill	203-317-5016	
Database Administrator (DBA)			
Security Administrator	Jim Rotchford	203-317-5007	
Contact for Production Access			
Contact for Development Access	Marian Tepper	301-721-5318	

12.3 Production Environment

12.3.1 Technical Infrastructure

Logical Technical Architecture Topology:

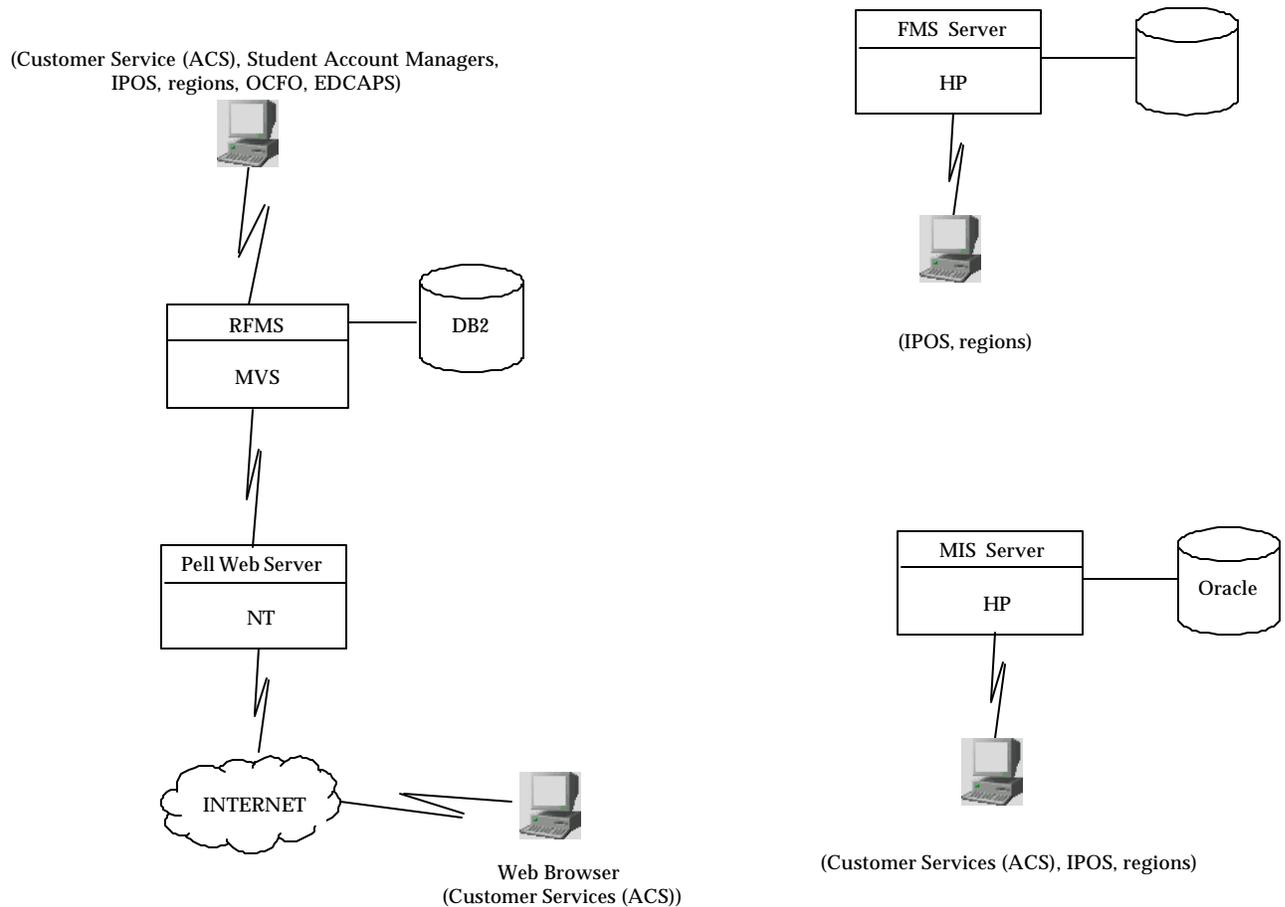


Figure 30: RFMS Logical Technical Architecture Topology

Production Mainframe A

Physical Location of Mainframe: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform / Operating System (OS)	Amdahl	5995A / MVS	

Database	IBM	DB2	5.1
Transmission Protocol	IBM	TCP/IP	2.4
Middleware	IBM	CICS	4.1
Security System	IBM	RACF	2.4

Production Server B: Web Server - PELLPROD

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform / Operating System	Compaq	1850R / NT	4.0
Database	n/a	n/a	n/a
Transmission Protocol	Microsoft	NT - SNA	4.0
Middleware	n/a	n/a	n/a
Security System	NT Security	NT Security	NT Security

Production Server C: Web Server - PELLCTD

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform / Operating System (OS)	Compaq	1850R / NT	4.0
Database	n/a	n/a	n/a
Transmission Protocol	n/a	n/a	n/a
Middleware	n/a	n/a	n/a
Security System	NT Security	NT Security	NT Security

Production Server D: HP - FMS

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
----------	--------	--------------	---------

Category	Vendor	Product Name	Version
Platform/ Operating System (OS)	HP		
Database			
Transmission Protocol			
Middleware			
Security Software			

Production Server E: HP - MIS

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System (OS)	HP		
Database			
Transmission Protocol			
Middleware			
Security Software			

12.3.2 Interfaces

On-Line Interfaces:

System	Action (sends/receives)	Object	System	Frequency	Communications (Asynchronous/Synchronous)	Volume of Data Processed
RFMS	sends		EDLAN Users (IPOS, regions)			
	receives		EDLAN Users (IPOS, regions)			
	sends		Student Account Managers			
	receives		Student Account Managers			
	sends		Customer Service (ACS) via the Web			
	receives		Customer Service (ACS) via the Web			
		Accounts receivable data	OCFO, EDCAPS via Financial Mgmt. Systems Software			

Batch Interfaces:

System	Action	Object	System	Frequency	Volume of Data Processed
Main-frame	receives	Pell-eligible Applicant data	Central Processing System (CPS)	Daily	9 million/ school year
Main-frame	receives	Pell-eligible Applicant data	Legacy System (PGRFMS)	Daily	9 million/ school year
Main-frame	receives	EDE Participation data	Title IV Wide Area Network (TIV WAN)	Daily	33K records/ transmission
Main-frame	receives	TIV WAN Destination data	Title IV Wide Area Network (TIV WAN)	Daily	29K records/ transmission
Main-frame	receives	OPE Institution data	Post-secondary Education Participation System (PEPS)	Weekly	
Main-frame	receives	ED Recipient organization data	Recipient System (RS)		
Main-frame	receives	Pell Origination & Distribution data/Institution data requests	Title IV Wide Area Network (TIV WAN)	Daily	
Main-frame	receives	Pell Origination & Distribution data/Institution data requests	Post-secondary institution in Recipient (tape) Data exchange	Daily	
Main-frame	sends	Processed Pell O & D data/ requested data	Title IV Wide Area Network (TIV WAN)	Daily	
Main-frame	sends	Processed Pell O & D data/ requested data	Post-secondary institution in Recipient (tape) Data exchange	Daily	
Main-frame	sends	Pell recipient data (when DR accepted)	National Student Loan Data System (NSLDS)	Daily	
Main-frame	receives	Pell recipient data errors	National Student Loan Data System (NSLDS)	Daily	
Main-frame	sends	Subledger input data	Subledger (Oracle Financials)		4000-5500 records/ transmission
HP-FMS	receives	Subledger input	Recipient and Financial		4000-5500

System	Action	Object	System	Frequency	Volume of Data Processed
		data	Management System (DB2)		records/ transmission

System	Action	Object	System	Frequency	Volume of Data Processed
HP-FMS	sends	Subledger acknowledgement	Recipient and Financial Mgmt System (DB2)		4000-5500 records/ transmission
Main-frame	receives	Subledger acknowledgement	Subledger (Oracle Financials)		4000-5500 records/ transmission
HP-FMS	sends	Obligation & Obligate/ Payment data	Grants Administrative & Payment System (GAPS)		4000-5500 records/ transmission
HP-FMS	receives	GAPS Acknowledgement to subledger	Grants Administrative & Payment System (GAPS)		
Main-frame	sends	GAPS Acknowledgement	Subledger (Oracle Financials)		
HP-FMS	receives	GAPS Acknowledgement	Recipient and Financial Management System (DB2)		
HP-FMS	receives	Posted Obligation & Obligate/ payment data	Grant Administration & Payment System (GAPS)		4000-5500 records/ transmission
Main-frame	sends	Posted Obligation & Obligate/ payment data	Subledger (Oracle Financials)		4000-5500 records/ transmission
HP-FMS	receives	Posted Obligation & Obligate/ payment data	Recipient and Financial Management System (DB2)		4000-5500 records/ transmission
Main-frame	sends	ESOA data	Title IV Wide Area Network (TIV WAN)	Daily	
Main-frame	sends	Grantee DUNS/other information	Post-secondary Education Participation System (PEPS)		
HP-MIS	sends	MIS data	MIS (Oracle)	Daily	
Main-frame	receives	MIS data	MIS (Oracle)	Daily	
Main-frame	receives	Program specific Grantee DUNS	Recipient and Financial Management System (DB2)		

12.3.3 Process Flow Charts

On-Line

Batch

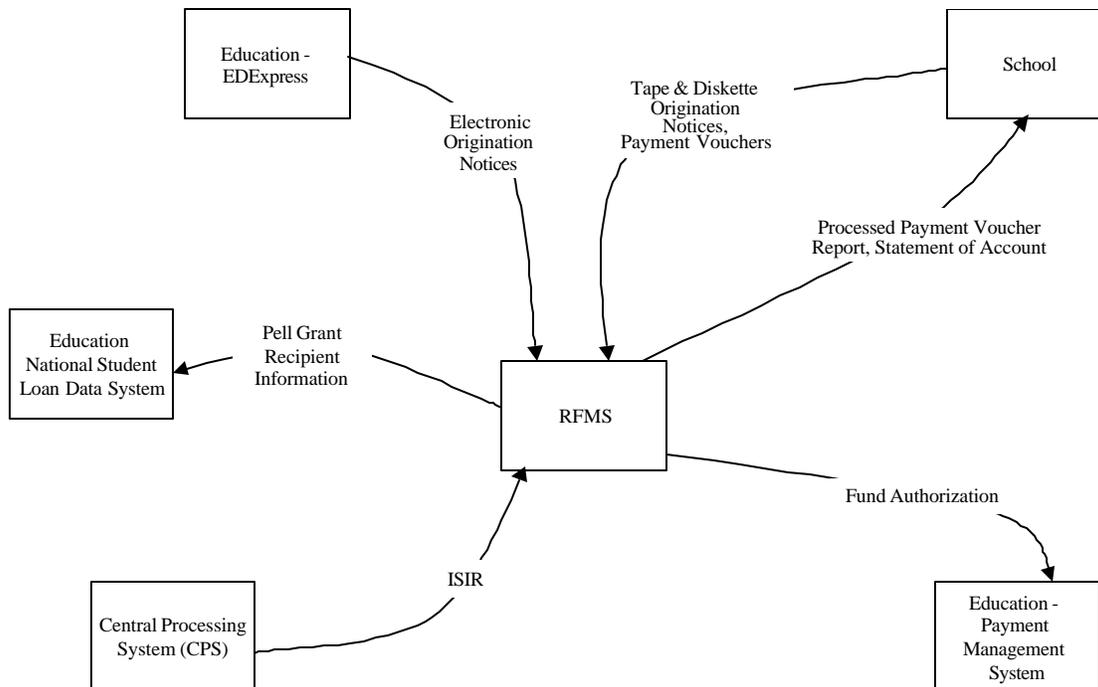


Figure 31: RFMS Batch Interfaces

12.4 Development Environment

12.4.1 Technical Infrastructure

Contracting Organization: CBMI

Location of Developer: Fairfax, VA

Development Server A:

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform/ Operating System (OS)			
Database			
Transmission Protocol			
Middleware			
Security Software			

Development Server B: Web Server - PELLDEV

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform / Operating System (OS)	Compaq	1850R / NT	4.0
Database			
Transmission Protocol	Microsoft	NT - SNA	4.0
Middleware			
Security Software	NT Security	NT Security	NT Security

13 Title IV WAN (TIVWAN)

13.1 System Overview

TIVWAN (Title IV WAN) is a GEIS proprietary dial-up network which hosts the mail-boxing system for SFA. It is a telecommunications network that carries and stores data. It has a six months file storage capability and provides free transmission services for Direct Loan Schools, Pell, and FISAP systems.

TIVWAN provides transmitting and receiving capabilities:

Transmitting consists of creating data to send to the network for processing and using the Transmission Queue to format the data. When EDConnect connects to TIVWAN, it picks up the data that has been formatted and transmits it from the PC to the network mailbox. From there, the appropriate TIV Application System picks up the data, processes it, and returns it to the mailbox.

The mainframe also utilizes the GEIS proprietary mail-boxing system for a portion of the mailboxes. The GEIS system is charted to be integrated into the VDC system September 30, 2000.

PC customers utilize Ed Connect to directly access the mailboxes stored on the SAIG Enterprise servers. Mainframe customers access the GEIS OPEN *net software. When accessing GEIS or SAIG Enterprise, mailbox requests that are not stored internally are forwarded to the other system.

Receiving data takes place when a connection to the network is initiated to retrieve the processed data placed in the network mailbox by the application system. The data is received by creating receive requests in the Transmission Queue that transmits data from the network mailbox to the PC.

TIVWAN is utilized to transmit data from all organizations participating in the Title IV programs to NSLDS.

Some major functions include:

- Manage the network for student aid processing (SSCR, FAFSA, ISIR, Direct Loan data, Pell Grant data, FISAP, delinquency reports)
- Manage software documentation and distribution via the SFA website
- Participants management (schools, lenders, Gas, state agencies)
- Transmit Student Status Confirmation Reports
- Handle transmission and connectivity problems, EDConnect software questions, archive/restore requests, TIVWAN password resets, and TIVWAN enrollment questions/problems

- Electronic Access Conference – provide computer training and conference support on the various electronic initiatives in SFA (3x a year)
- Provide support for the Direct Loan Conference
- Transmit origination records and disbursement information by schools to the Direct Loan origination system
- Transmit Pell Grant data
- Transmit FISAP
- Transmit delinquency reports
- Transmit FAFSA's and ISIR's

13.2 Contacts

Title/Role	Name	Contact Number	e-mail
ED System Owner	Yolanda Brooks	202-708-7926	Yolanda_Brooks@ed.gov
Systems Administrator	Connie Donald	319-339-6455	Connie_Donald@ncs.com
Mainframe Database Administrator (DBA)	Michael Horack (NCS)	319-339-6905	mike_horak@ncs.com
Contact for Mainframe Production Access	Bob Elliot	319-337-6717	bob_ellot@ncs.com
Contact for Remote Access to Mainframe	Dave Lass (CSC)	203-317-5037	dlass@csc.com
Contact for HP – Unix Access (Production & Development)	Paul Izzu (VDC)	203-317-2175	pizzo@csc.com
Contact for NT Access (Production & Development)	Carl Reese (VDC)	203-317-2130	creese3@csc.com
Contact for GEIS Access	Jamie Steapp (GEIS)	319-339-6954	jamie.steapp@geio.ge.com

13.3 Production Environment

13.3.1 Technical Infrastructure

Logical Technical Architecture Topology:

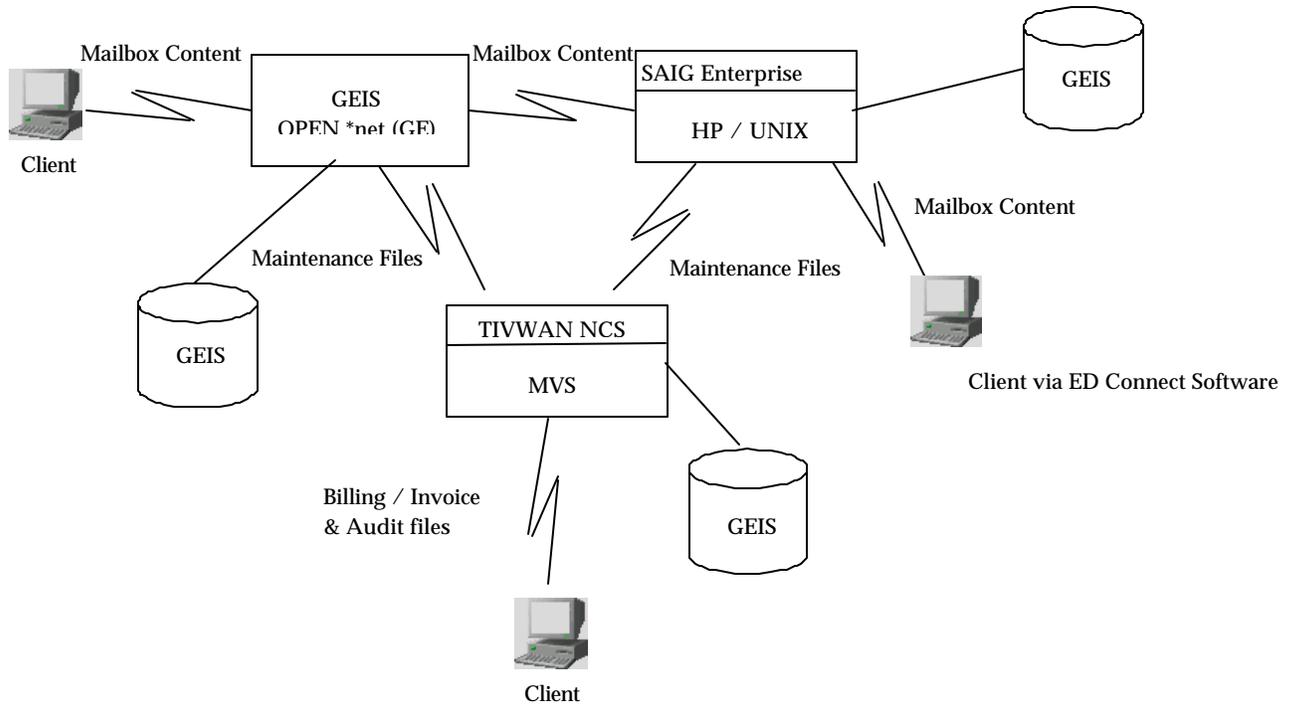


Figure 32: TIVWAN Mailbox System

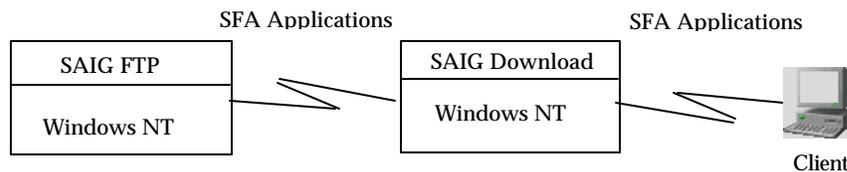


Figure 33: TIVWAN Download

Production Mainframe A: NCS hosted

Physical Location of Mainframe: Iowa City, Iowa

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform / Operating System	IBM	9672 R44 / 390 MVS	2.7
Database	GEIS	OPEN *net	Proprietary
Transmission Protocol	Various	SNA / LU6.2, SNI, FTP, Bisynchronous	n/a
Middleware	IBM	CICS	4.1
Security Software	IBM	RACF	2.2

Production Mainframe B: GEIS Mailboxes to be migrated to VDC Sept 30

Physical Location of Mainframe: Cleveland / Brook Park, Ohio

Note: System Specifications are proprietary to General Electric, but use Amdahl and IBM mainframes.

Production Server A: Student Aid Internet Gateway (SAIG) Enterprise

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform / Operating System	Hewlett Packard	9000 / HP / UX	10.2
Database	GE	(ISAM) Proprietary	n/a
Transmission Protocol	n/a	TCP/IP	n/a
Middleware	Standard UNIX	Standard UNIX	Standard UNIX
Security	n/a	n/a	n/a

Category	Vendor	Product Name	Version
Software			

Production Server B: Standby

Physical Location of Server: Meriden, CT

Note: Standby Server Configuration Mirrors Production Configuration also serves for Development.

Production Server C: SAIG Download Server

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Category	Vendor	Product Name	Version
Platform / Operating System	Compaq	Proliant 1850R / NT	4.0
Database	n/a	n/a	n/a
Transmission Protocol	n/a	TCP/IP	n/a
Middleware	CA	Unicenter	n/a
Security Software	n/a	n/a	n/a

Production Server D: SFA Download FTP Server

Physical Location of Server: Meriden, CT

Hardware/Software Components:

Note: Same specifications as the Download Server.

13.3.2 Interfaces

On-Line Interfaces:

System	Action	Object	System	Frequency	Communications (Asynchronous/ Synchronous)	Volume of Data Processed
TIVWAN	Sends	Online Query	End Users	Ongoing	Synchronous	Varies
	Receives	Online Query	End Users	Ongoing	Synchronous	Varies

Batch Interfaces:

System	Action	Object	System	Frequency	Volume of Data Processed
TIVWAN	Receives	Eligibility file, Billing file	CPS	*See Note	*See Note
	Receives	OPEID file, NSLDS GA file	NSLDS		
	Sends	Participation files	CPS		
	Sends	Participation files	NSLDS		
	Sends	Participation files	DLOS		
	Sends	Participation files	DLCS		
	Sends	Participation files	DLSS		
	Sends	Participation files	RFMS		
TIVWAN (MVS)	Receives, Sends	Maintenance Files	TIVWAN (GEIS OPEN *net)	Every half hour	Varies
TIVWAN (MVS)	Receives, Sends	Maintenance Files	TIVWAN (SAIG Enterprise)	Every half hour	Varies
TIVWAN (SAIG Enterprise)	Receives, Sends	Mailbox Content	TIVWAN (GEIS OPEN *net)	On Demand	Varies

*** TIVWAN processes an average of 44 GB of data per month. This information is scheduled to be evenly processed throughout the day.**

13.3.3 Process Flow Charts

On-Line

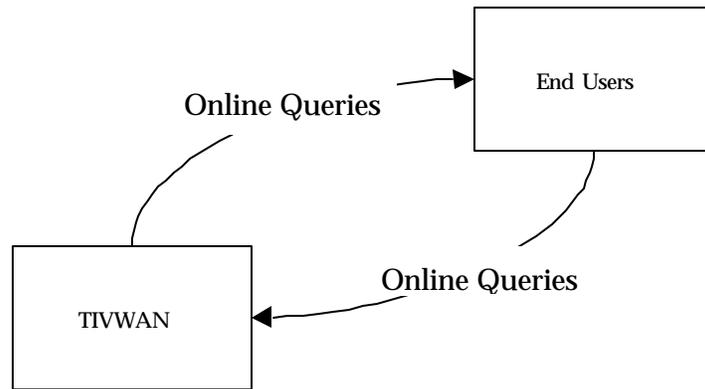
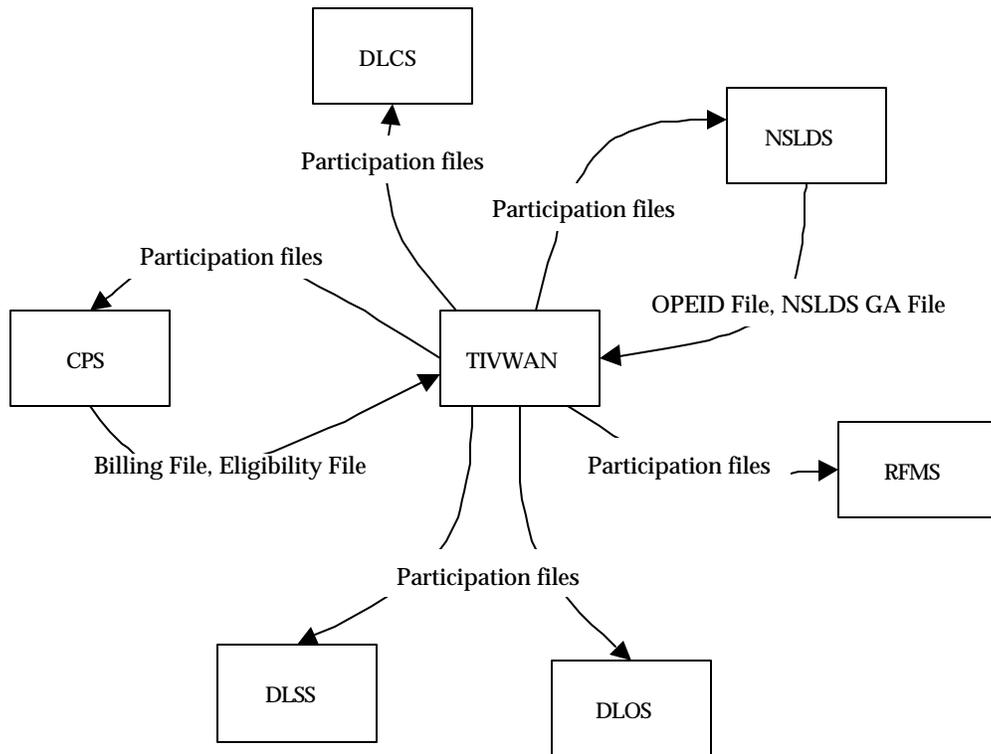


Figure 34: TIVWAN Global On-Line Interfaces



Batch

Figure 35: TIVWAN Global Batch Interfaces

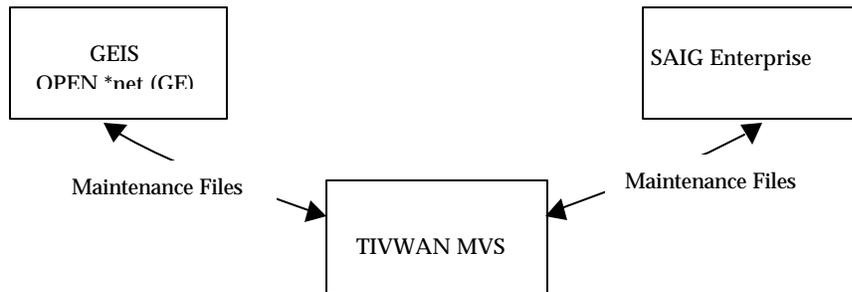


Figure 36: TIVWAN Batch Interfaces within TIVWAN

13.4 Development Environment

13.4.1 Technical Infrastructure

Development Mainframe A: NCS based applications

Contracting Organization: NCS

Developer's Location: Iowa City, Iowa

Physical Location of Mainframe: Iowa City, Iowa

Note: The Development Server mirrors the Production Server.

Development Mainframe B: GEIS based applications

Contracting Organization: GE

Developer's Location: Cleveland / Brook Park, Ohio

Physical Location of Mainframe: Cleveland / Brook Park, Ohio

Note: System Specifications are proprietary to General Electric, but uses Amdahl and IBM Mainframes.

Development Server A: SAIG Enterprise

NCS based applications

Contracting Organization: NCS

Developer's Location: Iowa City, Iowa

Physical Location of Server: Meriden, CT

Note: The Development Server mirrors the Production Server.

GEIS based applications

Contracting Organization: GE

Developer's Location: Cleveland / Brook Park, Ohio

Physical Location of Server: Meriden, CT

Note: The development is done on the same SAIG Enterprise machine, but the GEIS specific applications are worked on by GE.

Development Server B: SAIG Web

Contracting Organization: NCS

Developer's Location: Iowa City, Iowa

Physical Location of Server: Meriden, CT

Note: The Development Server mirrors the Production Server.

14 Appendix A: References

Project EASI/ED:

- ED Common Operating Environment (COE) Document (July 10, 1998)
- Application Services Definition Document (Version 2.0, October 14, 1998)
- Transition Strategy - Appendix D: Analysis of Title IV Systems (Version 1.0, September 25, 1998)
- Concept Document (June 23, 1997)
- OSFAP Enterprise Information Technology Architecture: Architecture Baseline Characterization Document (ABCD) (Version 1.0, October 23, 1998)
- Technical Vision and Target Architecture (September 15, 1997)

U.S. Department of Education 1999 Direct Loan Conference:

- Welcome to Direct Loans: From Origination to Repayment PowerPoint Presentation

Modernization Partner Deliverables:

- Direct Loan Servicing Reengineering - Current Environment Assessment (March 13, 2000)
- SFA Common Operating Environment (February 16, 2000)
- Common Origination and Disbursement - Current Environment Assessment (Final) (March 2000)
- Technical Reference for Direct Loan (2000-2001) (November 1999)

IFAP documentation

- IFAP Subscription Options Developer's Guide
- IFAP Subscription Option User's Guide

Brown Bag Presentation

- David Elliott, Mysteries of the Virtual Data Center (VDC) Revealed (April 28, 2000)

Loan Origination SubSystem Documentation

- Solution Approach for Common Aid Origination and Disbursement Processing (March 17, 2000)

DOE Hardware and Software Inventory Documentation

- CSC DOE Mid-Range Systems Hardware Inventory (January 18, 2000)
- CSC DOE Mid-Range Systems Software Inventory (January 18, 2000)

Intermetrics, Inc. IV&V Final Summary Assessment Reports

- Title IV Wide Area Network (TIVWAN), (December 16, 1998)
- Campus-Based System (CBS), Central Processing System (CPS), (January 12, 1999)
- Direct Loan Origination System (DLOS)/Direct Loan Consolidation System (DLCS), (August 31, 1998)
- Postsecondary Education Participants System, Multiple Data Entry (MDE), National Student Loan Data

System (NSLDS), Pell Grant/Recipient and Financial Management System (RFMS) (March 16, 1999)

Existing Systems Interface Documentation

- OSFA/PSS Systems Data Exchange List (Creation data unknown)

15 Appendix B: Glossary

Term or Acronym

Definition

Asynchronous

In computer programming, asynchronous pertains to processes that proceed independently of each. Using the client- server model, the server handles many asynchronous requests from its many clients. The client is often able to proceed with other work or must wait on the service requested from the server.

Architecture Services/ Components

The major classes (and sub-classes) of functionality provided by a computer system.

Business Application

An operation that fulfills some specific business function.

Client

A client is usually a PC that communicates over a network both with its peers, other clients, and with a larger computer, called a server, which typically stores data that many workers need to use. The client has just one user, the server many.

Connection

A communications path between two devices that allows the exchange of information. Other terms used to refer to a connection are session or circuit.

Internet

The interconnection of thousands of separate networks using a common terminology. Developed by the Pentagon, the Internet first linked government agencies and colleges. Now the Internet also connects thousands of companies and millions of individuals who subscribe to on-line services; they can use it to exchange messages or data files.

LAN

A Local Area Network (LAN) is a communications network that provides high-speed data transmission over a small geographic area. LAN also refers to a group of computers that are connected by cable and share data, software and storage devices. LANs are needed to practice client-server computing.

Network

A system of computers and other hardware and software that is connected and allows users to transmit data and messages.

Network Topology

The geography of a network.

Term or Acronym

Definition

Organization	An organization may be a school, government agency, funding source, outsource, institution, standards committee, or ED itself.
Protocol	A strictly defined procedure and message format that allows two or more systems to communicate over a physical transmission medium. Due to the complexity of communications between systems and the need for different communications requirements, protocols are divided into layers. Each layer of a protocol performs a specific function, such as routing, end-to-end reliability, and connection.
Service	A method for making systems resources available to users, electronic or human, in a consistent manner.
Standards	A standard is a well-defined, and typically published, definition for the method of satisfying some aspect of a computer system. Standards may be endorsed and/or published by one or more accredited standards committees, or they may be so widely used that they have become de facto industry standards.
Synchronous	In program-to-program communication, synchronous communication requires that each end of an exchange of communication respond in turn without initiating a new communication. A typical activity that might use a synchronous protocol would be a transmission of files from one point to another. As each transmission is received, a response is returned indicating success or the need to resend. Each successive transmission of data requires a response to the previous transmission before a new one can be initiated.
TCP/IP	Transmission Control Protocol/Internet Protocol. A set of de facto networking standards commonly used over Ethernet or X.25 networks. It was originally developed by the U.S. Government and is now supported by many equipment manufacturers. It defines high-level protocols such as Telnet (terminal connection), FTP (file transfer), and SMTP (electronic mail).
WAN	A Wide Area Network is data communications network designed to serve an area of hundreds or thousands of miles. A WAN can be public or private.

16 Appendix C: Acronyms

<u>Acronym</u>	<u>Meaning</u>
ACK	Acknowledgement
AWG	Administrative Wage Garnishment
CBS	Campus Based System
CICS	Customer Information Control System
CPS	Central Processing System
CRUD	Create, Read, Update, Delete
DL	Direct Loan
DLCS	Direct Loan Consolidation System
DLOS	Direct Loan Origination System
DLSS	Direct Loan Servicing System
EASI	Easy Access for Students and Institutions
ED LAN	Education Local Area Network
FAFSA	Financial Application For Student Aid
FFEL	Federal Family Education Loan
FISAP	Fiscal Operations Report and Application to Participate
GA	Guarantee Agencies
GEIS	General Electric Information Services
HP	Hewlett Packard
IFAP	Information for Financial Aid Professionals

<u>Acronym</u>	<u>Meaning</u>
ISIR	Institutional Student Information Report
IVRS	Interactive Voice Response System
MDE	Multiple Data Entry
NACK	Negative Acknowledgement
NCS	National Computer Systems
NSLDS	National Student Loan Data System
OS	Operating System
PEPS	Post-Secondary Education Participants System
RFMS	Recipient and Financial Management System
SAIG	Student Aid Internet Gateway
SAR	Student Aid Report
SNA	Systems Network Architecture
SSA	Social Security Administration
TCP/IP	Transmission Control Protocol/ Internet Protocol
TIVWAN	Title IV Wide Area Network
UAL	United Automated Labs
VDC	Virtual Data Center

Acronym

Meaning

17 Appendix D: NSLDS Reference Material

Note: The following documentation should be referenced during the future analysis of NSLDS.

1. Load process charts are provided for:

- Perkins
- FFELP/GA
- DMCS
- Federal Direct Loan

2. NSLDS production schedule for the duration of YR2000.

3. NSLDS QA/QC Metrics Reports.