sunapsis® Technical Guide

sunapsis Development and Support Teams

August 17, 2015

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Chapter 1

Introduction

This is the International Office Module (IOM) (Powered by SUNAPSIS) Technical Guide. This guide provides a step-by-step process on how to install and configure the application. Most of this guide needs to be completed by an IT staff member, though specific parts (especially those regarding the data feed) will require collaboration between the IT staff and the international office. Although we have strived to create an exhaustive guide that details every step sufficiently, please feel free to contact our support team anytime you have questions or need clarification on any of the steps.

1.1 SUNAPSIS Support Contact Information

When working through the configurations outlined in this document, you may have questions or concerns that the document does not seem to answer. Please contact the SUNAPSIS Support Team with any questions you may have.

Website	http://sunapsis.iu.edu
Email Address	sunapsup@indiana.edu
Hours of Operation	Monday–Friday, 8:00 am–12:00 pm & 1:00pm–05:00 pm ET
Phone Number	812–855–0490

Table 1.1: Technical Support Contact Information

1.2 Distribution Files

Typically, you will receive a ZIP file from the Support Team following the initial implementation call that contains everything that you need to install SUNAPSIS.

Table 1.2 gives a summary of the directories and files included:

Folder or File	Description
\Server Files\	Contains the core application files. Use only the folder applicable to the version of the ColdFusion server on the environment in which you are installing SUNAPSIS.
\InternationalServices.bak	The database backup file that you will use to restore the database on your Microsoft SQL Server.
\datafeed.xsd	XML Schema file that the data feed XML files need to validate against.
\example-student.xml	Sample student data feed XML file
\example-employee.xml	Sample employee data feed XML file

Table 1.2: Distribution files

1.3 System Requirements

Before starting this document, please review the server and workstation requirements and ensure that your systems match these specifications. Please be aware that application performance will be affected if the server or client workstation requirements are not met. Contact the support team if you have any concerns.

1.3.1 Server Requirements

Software Requirements

Minimum Microsoft Windows Server (WINDOWS SERVER) 2008 Standard 32-bit, ColdFusion 9 Standard 32-bit, Microsoft SQL Server (SQL SERVER) 2008 Standard 32-bit

Recommended WINDOWS SERVER 2012 Standard 64-bit, ColdFusion 11 Standard 64-bit, SQL SERVER 2012 Standard 64-bit

Hardware/VM Requirements

Minimum Single Server, dual-core processor, 4 GB ram, 100 GB storage

Recommended Separate Application and Database Servers.

- Application Server: Dual-core processor, 5 GB ram, 50 GB storage with room for expansion (you may also choose to use a separate shared disk or file server altogether, but the default behavior of the system is to store the files on the application server).
- Database Server: Dual-core processor, 2 GB ram, 50 GB storage

Certificate Requirements

Minimum SSL Server certificate included in the Java truststore (see note below), S/MIME certificate for SEVIS Batch (Symantec Digital ID for Secure Email (Class 1), InCommon, or others. Check with SEVIS Helpdesk to verify), and OpenSSL(to convert S/MIME certificate from PFX to PEM format)

NOTE: Ssl Certificates and Java

The Java truststore has only a limited number of trusted certificate authorities installed by default (you can view the default trusted authorities by following the instructions on Oracle's website or another reputable source). It is possible to use certificates not included in the Java truststore (cacerts file) by default by adding the certificate (and its entire authority chain) to all of the involved the Java cacerts files (the JRE in the ColdFusion installation, the JRE provided in our application files, and the JRE of the Java installation on each computer being used to run the SUNAPSIS Java application). However, this process is not supported by SUNAPSIS. You do so at your own risk, and there is no guarantee of assistance if your use of a non-default cert is determined to be the reason for an issue with the application.

1.3.2 Client Workstation Requirements

While certain operations such as the SEVIS Real Time Interface (RTI) Extraction will benefit from a high-performance machine, even workstations that are several years old should be able to run the SUNAPSIS application without any difficulty.

Software Requirements

Minimum Microsoft Windows (WINDOWS) XP, MacOS 10.7.3, Java Runtime Enviroment (JRE) 7_u25, Adobe Acrobat Reader

Recommended WINDOWS 7, or higher, MacOS 10.8+, JRE 7_u79 or newer, Adobe Acrobat Professional

Hardware Requirements

Minimum 2.8+ Ghz Pentium 4 or Dual-Core Processor with 2+ GB ram

Chapter 2

Installation

2.1 Database Installation

This process installs the database structure used for the application onto your database server. These steps assume that you already have installed SQL Server. If you have not installed it yet, please do so before continuing with this section.

Database Backup File: InternationalServices.bak Database File Type: SQL Server Database Backup

1. Launch the SQL Server Management Studio.
2. Connect to Server Database Engine usingSQL Server Authentication.
3. Right click on Databases and select Restore Database...
4. Source ⇒ Device: <path to>\InternationalServices.bak.
5. Destination ⇒ Database: InternationalServices
6. Click OK and the database is restored.
7. Press F5 to refresh your database listing on the server.
8. Add New Login/User.
    a. Login Name: InternationalServices-User
    b. Select SQL Server Authentication and create a password.
    c. Uncheck Enforce password policy.
    d. Default Database: InternationalServices
    e. Do not click OK yet!
9. Go to User Mapping and select the database InternationalServices.
10. Select db_datareader, db_datawriter, and db_ddladmin roles. You can leave public checked. Click OK.
11. Open the InternationalServices-User profile inside the InternationalServices database, and go to Securables to grant the user access to execute the stored procedures used by the application which include the following

    - dataFeedCore
    - dataFeedCoreChecklist
    - dataFeedReindex
    - spCreateEFormGroup
    - spGeneratePIN

    a. Click on Search...⇒Specific objects..., Click on OK⇒Object Types... ⇒Stored Procedures⇒Browse ⇒ Select the stored procedures
        - dataFeedCore
        - dataFeedCoreChecklist
        - dataFeedReindex
        - spCreateEFormGroup

- spGeneratePIN

Set the execute privilege for each these the stored procedures.

12. In the database open up the table configBatchID and place a string value in the systemValue column, for example 09A6D31C420F0138B39 (example only–do not use this value!). This value will be used later when setting up scheduled tasks in the ColdFusion Administrator. This can be any string value up to 50 characters in length. You can make up a password (so long as it does not contain spaces, punctuation, or special characters), or run something through the SQL Server function HASHBYTES (or use some other randomizing function) to generate a string for you.

2.2 Server Configuration

This process installs the server files used by the application and configures the server ssl and MIME types.

2.2.1 Configure Server for ssl and MIME types

1. Set up the website on the web server. Be sure to set up the initial server infrastructure so that this will be run as an independent website and not a directory of an existing site. Therefore a URL should look something like https://istart.iu.edu/ and not something like https://intl.iu.edu/istart/. This is important because ColdFusion will need to locate files based upon the given structure being applied to a root site.

2. Install a standard ssl server certificate that is in the default Java keystore, like VeriSign or Thawte. (Please see Certificate Requirements in Section 1.3.1 for more details)

3. Install the OpenSSL binary distribution at `http://www.openssl.org/related/binaries.html` or `http://www.slproweb.com/products/Win32OpenSSL.html` and download the latest version of OpenSSL(currently v1.0.1e). Make sure to download the appropriate version for your system architecture (Win32 for 32-bit Windows, Win64 for 64-bit Windows).

4. To test if OpenSSL was installed correctly, open a command prompt and type openssl.

5. If your prompt changes to OpenSSL>it was installed properly. If you receive an error, download and install the appropriate version of Visual C++ 2008 Redistributables for your computer (x64 for 64-bit Windows). Links for this download are found on the same page as OpenSSL. Also, ensure that the openssl directory is in the PATH.

6. Ensure that the Microsoft Internet Information Services (IIS) server has the MIME types for file serving. Go to Admin Tools⇒Internet Services Manager⇒Select the website properties⇒HTTP headers⇒MIME types and enter the following:

   - .jnlp application/x-java-jnlp-file
   - .swf application/x-shockwave-flash

2.2.2 Install Server Files

Copy the contents under the Server Files directory (not including that directory) into the root for the website. These include the following directories: dashboard\, ioffice\, istart\, jre\, and orient\, and also all of the standalone files (index.cfm, review.cfm, etc).

NOTE: You may name your online services 'iStart' as well as use 'iStart' in the web address. You may otherwise customize the name of your online services and corresponding web address to whatever you want, but there is a caveat: The actual folder location the application will be installed into must not be named 'iStart' or contain the word 'iStart'. Doing so will return multiple Access Denied messages.

2.2.3 Configure Read/Write/Execute Privileges

1. Enable write access to the following directories and their sub-directories for the user that ColdFusion is running as (if you are using the default ColdFusion installation, this is SYSTEM, and you shouldn't need to do anything here):

   - \ioffice\batch\
   - \ioffice\pdfs\

2. Verify that CGI execute access to the following directories is enabled (this is the default setting in IIS):

   - \jre\
   - \ioffice\batch\datafeed\

3. Disable CGI execute access to the following directory and sub-directories:

   - \ioffice\pdfs\content\

This can be completed by clicking Handler Mappings in IIS, selecting the appropriate folder in the directory on the left-hand side of the screen, then clicking "Edit Feature Permissions..." on the right. After disabling (unchecking) the Execute permission, you should see the resources "CGI-exe" and "ISAPI-dll" disabled in the center panel

2.3 Server Configuration—Split Server

There are two main parts of the application: the online services for students, scholars, and university departments; and the administrative application. If desired, these two different pieces of the application can be set up to run on different servers. The reason this is sometimes desired is that the online services are of most use when they can be accessed outside the university firewall, ie accessed from anywhere in the world. For some institutions this public access is unacceptable on a server that houses student data. Please follow the below steps to set up the multi-server environment.

1. Setup the website on the new web server. Be sure to setup the initial server infrastructure so that this will be run as an independent website and not a directory of an existing site. Therefore a URL should look something like https://istart.iu.edu/ and not like https://intl.iu.edu/istart/. This is important because ColdFusion will need to locate files based upon the given structure being applied to a root site.

2. Install a SSL server certificate. Please note, that for this additional server it does not have to be a standard certificate from VeriSign or Thawte as the other server requires.

3. Ensure that the IIS server has the MIME types for file serving. Go to Admin Tools⇒Internet Services Manager⇒Select the website properties⇒HTTP headers⇒MIME types and enter the following:

   - .swf application/x-shockwave-flash

4. Install the necessary server files.

   - Copy the /istart/ directory to the client server.
   - Create an /ioffice/ directory on the client server.
   - Copy /ioffice/contego/ onto the client server.
   - (Optional) There are a set of public online charts and graphs. To enable access to these outside the university firewall, also copy the /dashboard directory onto the root of the server.

5. Apply all the settings found in Sections 2.4.1, 2.4.2, 2.4.3, and 2.4.4 to the new server.

6. You will need to configure the Online Services. In SUNAPSIS version 3.2, this configuration is available in the UI. Go to Administrative Management⇒General Configurations⇒Online Services Configuration⇒Hostname for Sunapsis. Enter the Host Names for both the Admin Server and Client Server in the appropriate field excluding the protocol from the URL(eg sunapsis.iu.edu, not https://sunapsis.iu.edu).

   NOTE: If you are not using a split server setup, leave both fields blank.

   Alternately, you could configure the servers in the database by updating the table configIOfficeBasePath with the URLfor each server for the admin online services.

2.4 ColdFusion Administrator Settings

This process uses the ColdFusion Administrator to configure settings, create scheduled tasks, and setup a database connection. These steps assume that you already have installed ColdFusion 9,10, or 11 Standard on the server. If you have not installed it yet, please do so before continuing with this section.

TIP: ColdFusion and .NET

If you run the ColdFusion server on the same machine as a .NET framework there may be issues with web services conflicts. This was encountered at Indiana University about 2 years ago. There have been upgrades by ColdFusion and .NETsince that time that may render this warning irrelevant, but we have not tested it again because we moved onto a virtual server space. If you install .NET on your server, you do so at your own risk.

2.4.1 Configure Java and jvm

1. Open the ColdFusion Administrator website (<baseURL>/CFIDE/administrator/index.cfm)
2. Click on Server Settings⇒Java and JVM.
3. Update Minimum JVM Heap Size (MB) to 3072 (64-bit servers) or 1024 (32-bit servers).
4. Update Maximum JVM Heap Size (MB) to 3072 (64-bit servers) or 1280 (32-bit servers).
5. The default JVM arguments for ColdFusion 9, 10 are different from each other. Starting with the default set, make adjustments to the arguments as follows. Make sure that when you are done, there are no line break characters in the text, and that there is a space before each hyphen (unless it is at the beginning of a line). Copying the original block into Notepad can help with this. Invalid parameters may result in an inability to start the ColdFusion Application Server. If you are unsure of these steps, please contact SUNAPSIS Support for assistance.
   - Remove -Xbatch
   - Add -Dsun.io.useCanonCaches=false
   - Add -Dsun.rmi.dgc.client.gcInterval=600000
   - Add -Dsun.rmi.dgc.server.gcInterval=600000
   - On 64-bit servers, set -XX:MaxPermSize=256m (this parameter should already exist, you just need to change the number at the end)

2.4.2 Request Tuning for Performance

Some options may only be available in ColdFusion 10 or later.

1. Navigate to the Server Settings⇒Settings page on the menu sidebar.
2. Ensure that Enable Global Script Protection is checked.
3. Set the Maximum number of POST request parameters to 750. If you are using ColdFusion 9, you will need to edit this setting in a ColdFusion config file. Please follow the instructions below:

   In the ColdFusion installation directory (C:\ColdFusion\), go to \lib, and open neo-runtime.xml as an Administrator. Search for the text
   <var name='postSizeLimit'><number>100.0</number></var>
   Immediately after that line, add the following
   <var name='postParametersLimit'><number>750</number></var>
   and save the file.
4. Navigate to the Server Settings⇒Memory Variables page from the menu sidebar.
5. Ensure that Enable Session Variables is checked.
6. Ensure that Use J2EE Session Variables is unchecked.
7. Ensure that HTTP Only is checked.
8. Ensure that Secure Cookies is checked.
9. Navigate to the Debugging & Logging⇒Debug Output Settings page from the menu sidebar.
10. Ensure that Enable Request Debugging Output is unchecked.
11. Click on Request Tuning and update the fields in the Request Limits section to the following values:
    - Maximum number of simultaneous Template requests: 40
    - Maximum number of simultaneous Flash Remoting requests: 5
    - Maximum number of simultaneous Web Service requests: 5
    - Maximum number of simultaneous CFC function requests: 10

NOTE:

These are guidelines based on the recommended server specifications in 1.3.1. If your server setup differs, or if you have an exceptionally large international population to manage and you are experiencing performance issues, please contact the Support Team to discuss possible solutions or adjustments to these guidelines.

12. Click on Caching and ensure that Save class files and Trusted cache are checked and Cache web server paths is unchecked. Component cache should be checked by default, and that's fine. It will cache a copy of the ColdFusion files on the server. Under normal circumstances this is desirable, especially in a production environment. However, if you are developing your own alerts, e-form extensions, or other custom ColdFusion components, you will need to come back to this page and clear the component cache in order to test those files out—otherwise, the original, possibly broken, version of your custom component will be cached on the server. Keep in mind that clearing the cache can cause temporary (albeit significant) performance hits that will affect both the web services and Java application. Therefore, it is recommended that you wait until after business hours to clear the component cache.

2.4.3 Setup Mail Server Settings

1. Click on Mail.
2. Input the settings for your mail server in Mail Server, User name, and Password.

2.4.4 Data Source Configuration

1. Click on Data & Services⇒Data Sources and create a new data source using the following information

   WARNING:

   the ColdFusion Data Source Name is required to be the one listed below. The application will not know which database to connect to if you call it something else).

   CF Data Source Name: LocalInternationalServicesMssql

   Database: InternationalServices

   Server: Your database server's hostname or IP Address

   Port: 1433

   Username: InternationalServices-User

   Password: Password for InternationalServices-User

2. Click Show Advanced Settings.
3. Check the box for --Enable long text retrieval (CLOB)
4. Ensure under Allowed SQL that all checkboxes are checked (SELECT, INSERT, UPDATE, etc).

2.4.5 Create Scheduled Tasks

In ColdFusion 10 and greater, click on Server Settings⇒Scheduled Tasks. In ColdFusion 9, Scheduled Tasks is under Debugging & Logging. You will need to click on Schedule New Task to set up each task. Table 2.1 lists the information you need to setup each task (configBatchID is the value you entered into the database in section 2.1 in step 12.; this provides a basic level of security for the execution requests):

WARNING: Scheduled Tasks and Permissions

Ensure that you have properly set up the folder permissions in 2.2.1 or these scheduled tasks will not run properly. Also be sure that baseURL is the exact same URL for which your SSL certificate was created.

2.5 Authentication Process

Before you can run the application or use the online protected web services, an authentication layer must be implemented. The authentication process is different at each institution. Some institutions authenticate against an Lightweight Directory Access Protocol (LDAP) server, while others use a Single Sign On (SSO) such as Central Authentication Service (CAS) or CoSign. We will work closely with you to develop a solution that meets your institution's requirements.

Institutional XML Data Feed set to run Recurring Daily at TBA
<baseURL>/ioffice/batch/DataFeedXMLImportApplication.cfm?id=<configBatchID>

SEVIS Download Batch Daily set to run every 55 minutes from 5:00 AM to 7:00 AM
<baseURL>/ioffice/batch/SEVISDownloadApplication.cfm?id=<configBatchID>

SEVIS Upload Batch set to run Daily every 55 minutes from 8:00 PM to 10:00 PM
<baseURL>/ioffice/batch/SEVISUploadApplication.cfm?id=<configBatchID>

Build Alert History set to run Recurring Daily at 1:00 AM
<baseURL>/ioffice/batch/ProcessAlertHistoryApplication.cfm?id=<configBatchID>

Read International Office Module Email set to run Recurring Daily at 12:15 AM
<baseURL>/ioffice/batch/ReadIOfficeEmailApplication.cfm?id=<configBatchID>

Auto Upload Files from Server Directory set to run Recurring Daily at 12:15 AM.
This is the CFM to build a windows BAT file that will launch a sunapsis application instance on the server for automatically uploading files to student record (either by scanning a directory for files adhering to a specific naming convention or by reading file names from a CSV file).
<baseURL>/ioffice/batch/AutoUploadFilesApplication.cfm?id=<configBatchID>

Send Queued Communications Set this to about 15 minutes after your data feed normally finishes (check the DataFeedXMLImportApplication.done file in \ioffice\batch\bat once you have scheduled the data feed and it has run with a good sample size of data several days in a row). This task is only important after your office has configured checklists (and specifically, checklist communication rules) which will happen later in the implementation process—just remember to come back to this eventually!)
<baseURL>/ioffice/batch/SendQueuedCommunicationsApplication.cfm?id=<configBatchID>

Table 2.1: Scheduled Tasks

2.5.1 Single Sign On

If your institution uses a SSO solution such as CAS, Shibboleth, or CoSign, we will work with you to decide how best to move forward implementing your sign on with the online services. Please inform the support team that you would like to use this method of authentication and which SSO your institution uses. We will then be able to tell you what information (if any) we require.

2.5.2 Lightweight Directory Access Protocol Authentication

Below is a sample LDAP query. If you want to use an LDAP query, please replace the highlighted information with the appropriate values for your institution and email the query to the support team. We will create a login script for you to test. If your LDAP server requires a bind query first, please let us know that, and the information for that query as well. You do not need to share your password with us—we will tell you where to put it in the file instead.

```
<cfldap
action="query"
server="ldap.indiana.edu"
port="636"
secure="CFSSL_BASIC"
scope="subtree"
name="results"
start="dc=indiana,dc=edu"
filter="sAMAccountName=#FORM.username#"
username="sAMAccountName=#FORM.username#,ou=People,dc=indiana,dc=edu"
password="#FORM.password#"
attributes="sAMAccountName">
```

Port 636 is the standard port for secure communication with an LDAP server. If you do not require a secure connection to your LDAP server, the standard port is 389.

In the login files that will be sent to you, there will be a very basic HTML form with username and password fields. You can edit this page as needed to match your institution's visual identity.

Chapter 3

Configuration

3.1 User Setup

After the authentication process is working correctly, you need to launch the application to set up the first user account for the international office.

3.1.1 Create New Records in Database

1. From the database, execute the stored procedure spIOfficeRoleUpdate.
2. From the database, open the table, IOfficeUsers.
3. Create a new record. In the username field, insert the username that your authentication system is passing to sunapsis after logging in (generally your LDAP or SSO username, but perhaps something else).
4. In the name field, put in your name. In the rest of the fields, you can insert a blank space (NULLs are not allowed).
5. Open the IOfficeUsersRoles table.
6. Create a new record. In the username field, insert the same username as above. In the role field, insert R000.

3.1.2 Create Initial User Accounts

You can now launch the application and use the User Management tool inside the program to edit your own user profile and to create a new account for the person who will be managing users in the international office.

Edit your user profile

1. Go to <baseURL>/istart/controllers/admin/AdminEngine.cfm to login. After logging in, click on Launch the sunapsis: International Office Module in the middle of the page.
2. If you do not have the correct version of Java (Java 8) installed, the application will fail to launch. You will have to install it now. Please see 1.3.2 for additional instructions.
3. If asked if you want to trust the program or run the application, say yes.
4. After the program launches, click on Administrative Management⇒User Profile Management. This will open the User Profile Management tool. Double-click on NA to expand that subtree, and then Double-click on your name to open your profile.
5. The first tab that it opens up to is your user profile. Input your information and click Save Profile. Session ID and End Date will be automatically populated.
6. After this process is complete, close your user profile.

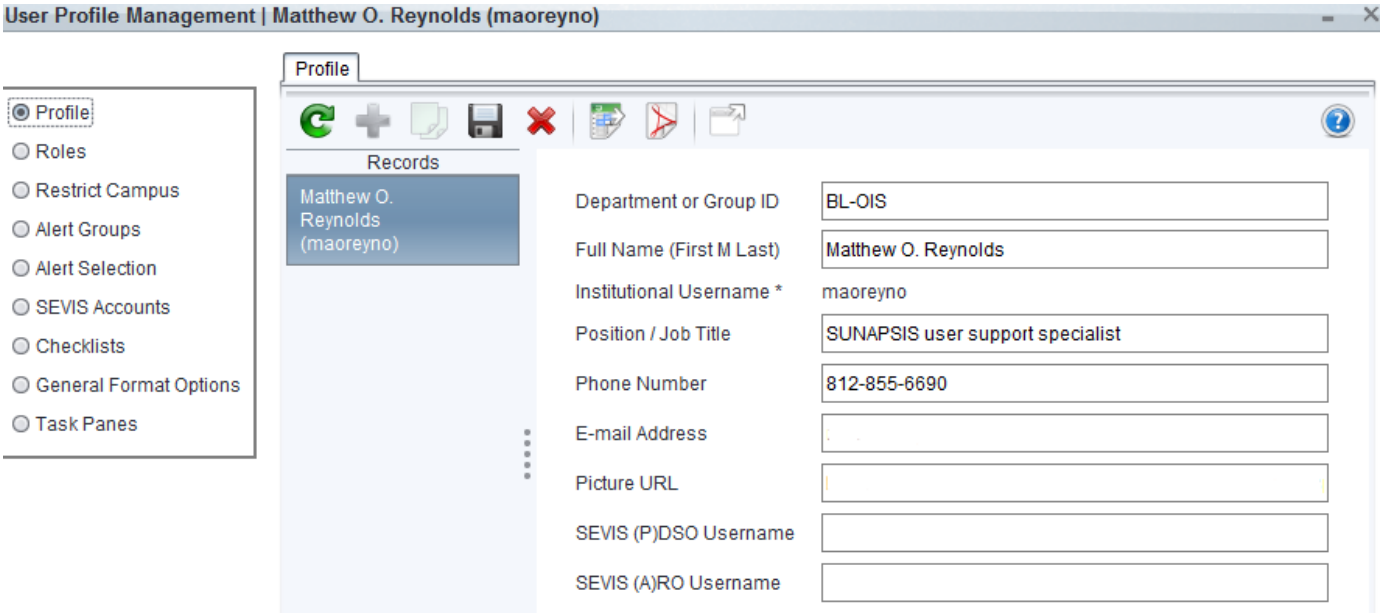


Figure 3.1: User Profile Management

Create a new profile

Normally, the person going through this document is not the person who will be managing users in the application. If that is the case, you can now create a profile for the person who will be managing users. If you will be the one managing users, you can skip this subsection.

1. Click on (New) to add a new user.
2. In the dialog box that pops up, type the username value for the user and click OK
3. Fill out the information on the Profile tab and click the save icon on that tab.
4. On the Role tab, select Basic Permissions Required for All Users. This role will allow the user to launch SUNAPSIS but they will be unable to do anything else without additional user role assignments. Next, addd the User Management role for this user so that they are able to access User Profile Management. If you are the one in charge of maintaining user permissions, it is recommended that you review all of the user roles in this menu.

   The standard set of roles for a Designated School Official (DSO) or Alternate Responsible Officer (ARO) is Basic Permissions Required for All Users, Core Student Records, Embedded Browser, and SEVIS Records. If a Principal Designated School Official (PDSO) orResponsible Officer (RO) user needs to perform data extracts form SEVIS, they will need to have the Extract RTI Form Data, Extract RTI Status, and/or Extract RTI Tables role assignments.
5. After the process is complete, you can close the user profile.

3.1.3 Edit System User Account

1. In the User Profile Management Tool, expand the SYSTEM tree, and double-click on the System Admin account.
2. In the E-mail Address field, input an email address (normally a group-accessible email account, or a distribution list email address). An email will be sent to this address when there are certain errors with the application (such as the data feed process).
3. On the Roles tab, select the Full Privileges role, and click (Save) button.
4. After this process is complete, you can close the user profile and the User Profile Management Tool.

3.2 Encryption Configuration

WARNING:

These instructions are only intended for clients preforming an initial install.

WARNING:

If you are currently are running SUNAPSIS in production and want to use encryption, contact the SUNAPSIS support team for assistance with this. The instructions below do not detail the extra steps involved in preforming a conversion

WARNING:

As with any encryption method, there exists the possibility to lose all encrypted data; great care must be given to a key management strategy and testing before use.

3.2.1 Background

Encryption in SUNAPSIS is set to use AES 128-bit encryption. When configured and enabled, SUNAPSIS will encrypt all files that are uploaded into the system as well as a number pre-defined fields in the database (Passport Numbers, Social Security Numbers, etc).

These are listed in the table below.

Table	Field
configEmailPassword	password
formI129	individualTaxNumber
formI129	employerSSN
formI129	passportNumber
formI129	ssn
formI129DataCollection	ssn
formI140	ssn
formI140	alienSSN
IOfficeEmailAccount	password
IStartGeneralSetup	orientationLoginPassword
IStartOrientationSetup	orientationLoginPassword
jbPassport	passnum
jbVisaInfo	visastamp
jbVisaInfo	Controlnumber
sevisCertPhrase	certPhrase

Table 3.1: Encrypted fields in the database.

In addition, for any E-Form that one may create in the system, one can specify which fields to encrypt for them.

Additionally by enabling encryption, an extra feature is available in the Java application, which is the ability to upload a wider range of documents into the system than just image files. In particular one is able to upload the following:

File Type	File Extension(s)
Microsoft Word	doc, docx
Microsoft Excel	xls, xlsx
Microsoft PowerPoint	ppt, pptx
Microsoft Outlook Messages	msg
HTML	txt
Plain Text	htm, html

Table 3.2: Additional file types

How Encryption Looks to Users

From an end user perspective, all the encryption and decryption is all done transparently. The unencrypted fields and files can only be viewed via SUNAPSIS.

On the fileserver where the files are stored, the files are always stored encrypted. When uploading, the system copies the requested file to a working directory (separate from where the files are stored) where it is then encrypted and moved to the file store; when viewing a file, the system copies the requested file to a working directory (separate from where the files are stored), decrypted, and then served to the client, when no longer in use it is deleted.

The system is automatically configured to delete any file in this working directory after 15 minutes, to account for cases in which it is not deleted as soon as it is no longer in use. As a note, SUNAPSIS will use this working directory regardless if encryption is enabled or not.

It is important to note there is no method for viewing the encrypted data stored in the database when querying the database directly.

3.2.2 Initial Setup

As with any encryption method, there exists the possibility to lose all encrypted data; great care must be given to a key management strategy.

Key Management

For the key itself, we provide you with the option to keep it in once piece or be broken into several pieces.

For the option of having the encryption key in one piece, this option will store the key in the database.

For the option of having the encryption key in three pieces, this option will store

- Part one in a password protected and encrypted pdf file on the application server in a web inaccessible directory.
- Part two in a password protected and encrypted pdf file on the application server in a different web inaccessible directory.
- Part three in a database table.

Also, you will want to consider how many days you want SUNAPSIS to keep processed SEVIS batch files and unprocessed SEVIS batch files before they are deleted.

During this time, it is recommended to develop plans for changing the encryption keys on a regular basis, or in the case of the key becoming compromised.

- Plan to run a re-keying of both the files and the encrypted fields on a regular basis (eg every two years)
- Verification steps to ensure complete re-keying before purging of old keys.
- Policy in place to require re-keying in the event of any comprise of any key part.

It is also recommended during this time, work to develop plans for data retention policies paying attention to the key points of:

- Important to develop, and keep updated, data use and retention policies.
- Ensure policies identify clear requirements for highly critical data (ie federal regulations).
- Ensure policies identify clear requirements for the retention schedule.
- Implement process to review and purge sensitive data on that retention schedule.

Review E-Forms

SUNAPSIS allows office staff users to create their own E-Forms, which can be used to collect a wide range of data. One needs to configure E-Forms in such a way so SUNAPSIS is aware of which fields might contain sensitive information, such as Passport numbers.

In order to do this, for each E-Form in the system, go to Form Design and then under each of Client Form Design, Second Approver Form Design and Internal Office Use Form Design inspect each field element in which you are collecting data.

For each field that is collecting sensitive information, ensure that the conceal field view is checked. Any E-Form field with conceal field view checked, will be encrypted.

It is important to note that for any E-Form made after encryption is enabled, any field that needs to be encrypted have conceal field view checked in the E-Form design before making the E-Form available to clients.

If you forget to do so, or later decide that a field in an E-Form needs to be encrypted, the system will not automatically retroactively find previous E-Form submissions and encrypt that field. You will need to mark the field with the conceal field view setting and then see 3.2.3 or the sunapsis support team for running a process to encrypt the previously unencrypted fields.

Sever Configuration

As SUNAPSIS will use the working directory it will automatically delete files from this directory as long as they are no longer in use, or in 15 minutes.

In rare cases, we have noticed that some files have file locks on them after several days for no apparent reason, thus we recommend daily/weekly server reboots to remove any file locks in order to allow files to be deleted.

If you have decided to use the option of splitting the key in the three parts, this next portion applies to you.

As noted above, this option stores two parts of the key in encrypted pdf files stored in two different locations. You will need to verify these directories exist, or create if needed.

The first directory is fixed and cannot be changed. You should have a directory \ioffice\batch\contego with one file in it, namely web.config. This will be where part 1 of the key will be stored eventually. As this is an initial install of SUNAPSIS for the first time at your organization, then you should have the directory structure \ioffice\pdfs\content already. In this content directory you will need to create the directory named 000, then copy the contego directory from \ioffice\batch to the 000 directory. It is this \ioffice\pdfs\content\000\contego directory that part 2 of the key will be stored eventually.

Encryption Configuration

Configuration of encryption consists of three major portions

- Generation of the encryption key(s)
- Placement of the key(s) in the appropriate palaces
- Configuration of encryption itself

Key Generation

To assist you in generating encryption keys for the method that you have decided on, we have provided a utility to generate the needed keys and/or encrypted pdf files.

Each time you go to this utility and generate a set of keys, new keys are generated. The keys that are displayed are not stored by Indiana University. There is no method we have to recover any key generated by this utility. It is your responsibility to safe guard and store all needed keys for your organization.

We highly recommend that you generate separate keys for your test and production environments.

This utility is accessed by going to the Community menu, and selecting Support Services.

Under the Upgrade / Installation Procedures there is a menu item Generate Encryption Keys.

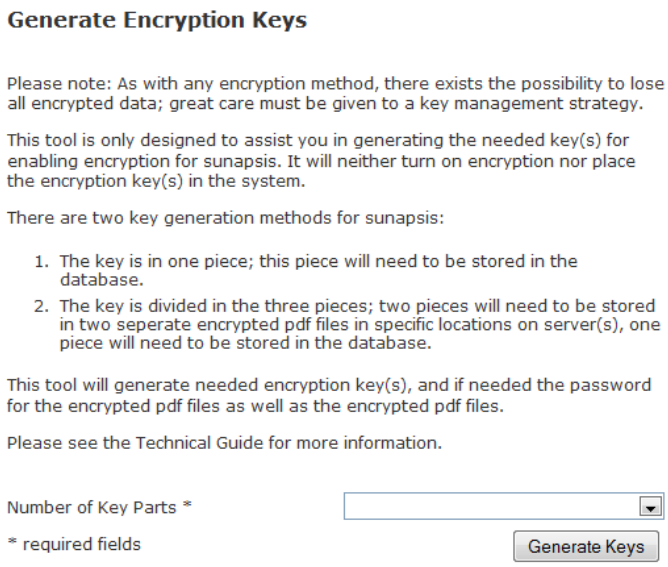
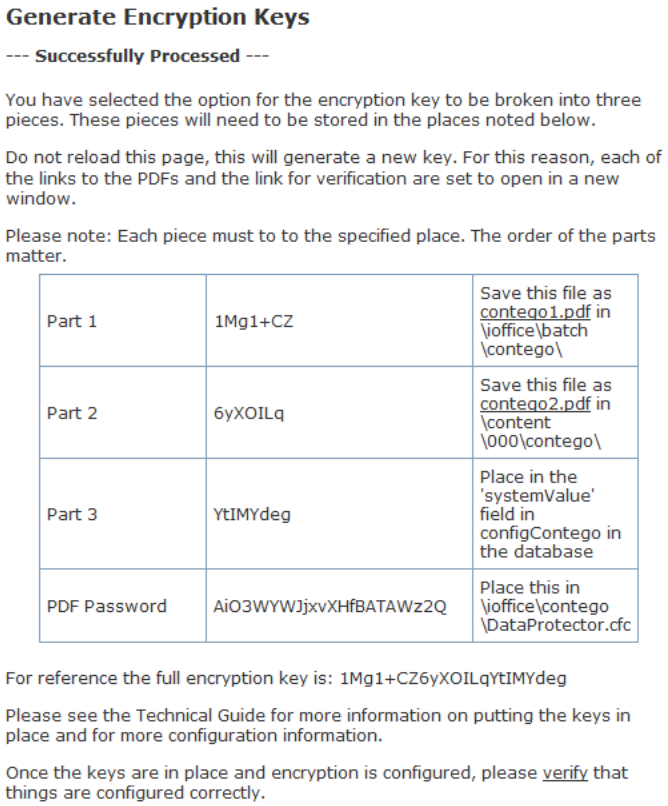


Figure 3.2: Generate Encryption Keys

Once you have selected the number of key parts you want, the page that follows (in this example, the use of 3 key parts was selected) will show the key(s) and/or links to encrypted pdfs depending on the option you selected.

Also note, that this page contains a verify link with will open in a new page which you can use to verify things are configured correctly, once the keys have been placed and encryption has been configured. forITStaff



Generate Encryption Keys

--- Successfully Processed ---

You have selected the option for the encryption key to be broken into three pieces. These pieces will need to be stored in the places noted below.

Do not reload this page, this will generate a new key. For this reason, each of the links to the PDFs and the link for verification are set to open in a new window.

Please note: Each piece must to to the specified place. The order of the parts matter.

Part 1	1Mg1+CZ	Save this file as contego1.pdf in \ioffice\batch \contego\
Part 2	6yXOILq	Save this file as contego2.pdf in \content \000\contego\
Part 3	YtIMYdeg	Place in the 'systemValue' field in configContego in the database
PDF Password	AiO3WYWJjxvXHfBATAWz2Q	Place this in \ioffice\contego \DataProtector.cfc

For reference the full encryption key is: 1Mg1+CZ6yXOILqYtIMYdeg

Please see the Technical Guide for more information on putting the keys in place and for more configuration information.

Once the keys are in place and encryption is configured, please verify that things are configured correctly.

Figure 3.3: Generate Encryption Keys

Placement of Keys

The output of the utility generating the key(s) will specify what and where to place the key(s) depending on the method selected.

In either method, you will have to insert either the whole key or a key part in to the database. The utility will specify what will need to be stored in the database.

For the placement in to the database, you can use the following SQL code, with KEY replaced with the utility specifies goes in to the configContego table.

For the version field, we recommend using the 4 digit year as a version number.

```
INSERT INTO dbo.configContego (systemValue, version, deprecated)
VALUES (
        N'foobar', -- systemValue - key
        N'2020',   -- version
        0 -- indicator for old key
)
```

If you selected the option for breaking the key into three parts, the pdfs need to be saved on the file system and the ColdFusion file needs to be modified to store the pdf Password.

Configuration

The configuration options for encryption are found in Encryption Management in the Administrative Management menu.

The first section to verify is the Security Key tab (figure 3.4). From the steps above, you should have the key and the version already entered, which needs to match the output of the utility that generated your key.

The next section to configure is that of the File Directory, as shown in figure 3.5.

For this configuration, you must enter the full path to the directory in with files will be stored in the system. When configured you path should be similar to the following, where the <Your Path> portion will be specific to your server.

<Your Path>\ioffice\pathSeparatorpdfs

The next section to configure is that of the Configuration tab, as shown in figure 3.6 .

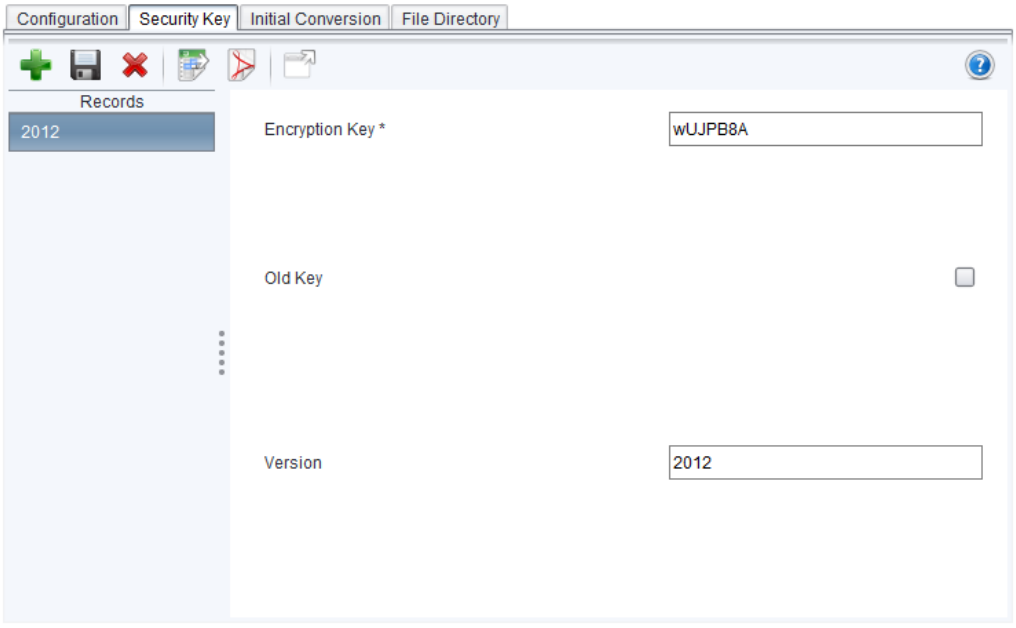


Figure 3.4: Security Key

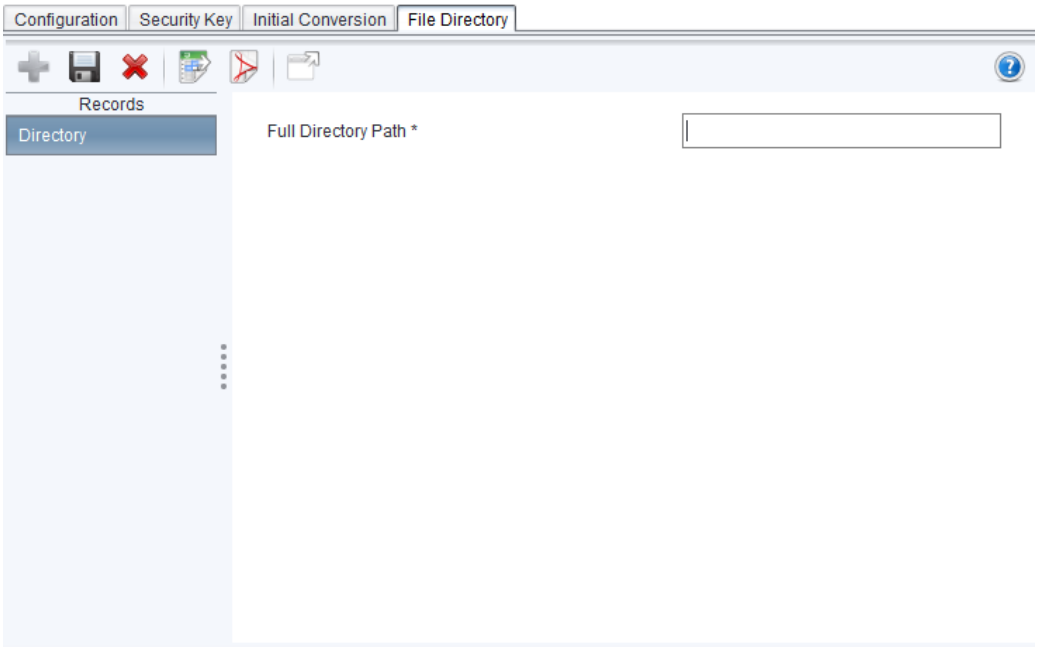


Figure 3.5: File Directory

For the New Directory (Encrypted), this value will be the same value you set in the File Directory tab. You will need to configure the days to keep processed/unprocessed SEVIS batch files. We recommend 0 days for processed SEVIS batch files and 15 days for unprocessed SEVIS batch files.

The Conversion Start Date, Conversion Finish Date can be left blank.

For the Effective Date you can enter the date which you turn on encryption.

For the Status you need to select the Currently in Use option. Lastly, click the checkbox for Turn on Data Encryption.

Your configuration should be similar to the figure 3.7, with the exception of the New Directory (Encrypted) setting.

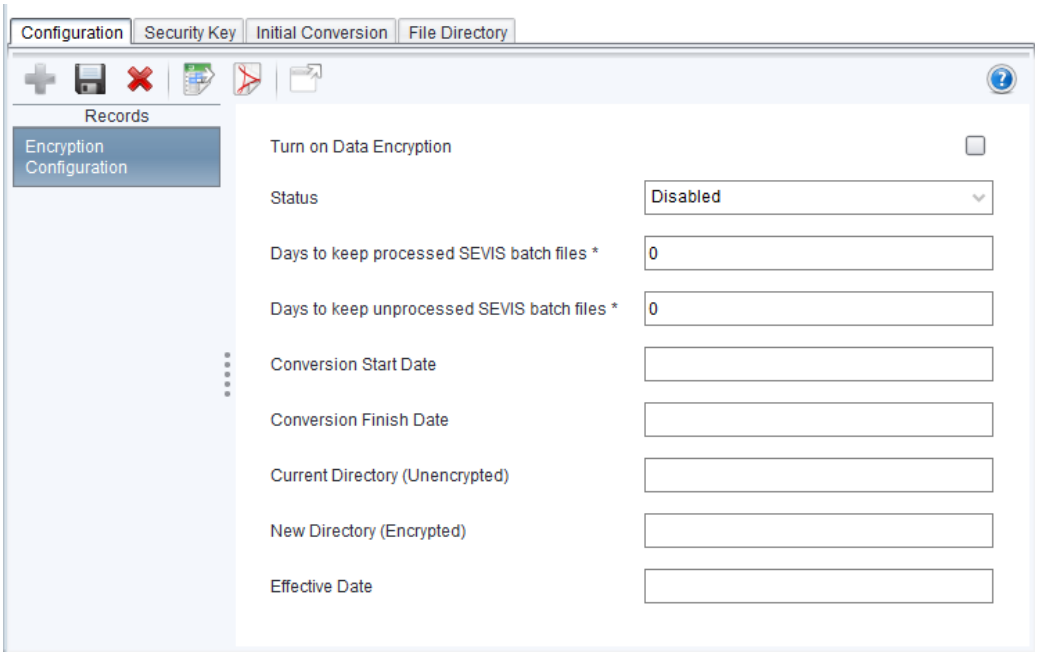


Figure 3.6: Configuration Tab

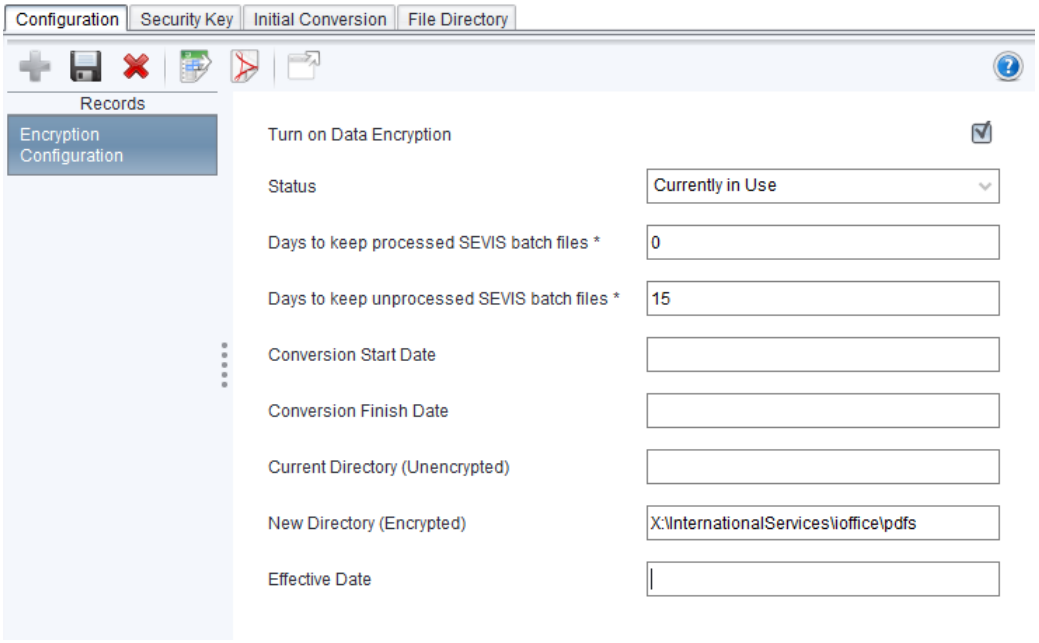


Figure 3.7: Security Key

Verification of Configuration

Once all the configuration changes are made, we now can check the configuration using the verify link provided in the utility that generated the encryption keys.

On this page one will see a number of checks that are performed. All checks not marked as optional should say Yes. If they do not, please double check the configuration.

This page will also perform a simple test of encrypting a string. Test and Verification of Encryption

Now that encryption is turned on and configured additional testing should be performed.

For this testing, you will need to create a test person in SUNAPSIS. Once this record has been created you will want to test several things, namely

- Entering information into a record that encrypted fields, such as the passport number in the Passport Information. In SUNAPSIS, you should be able to save this information, close and re-open it, and see the number you entered.

In the database, looking at the passport number in jbPassport, one not see the passport number, but another string of letters and numbers.
- Uploading pdfs onto this record. In SUNAPSIS, you should be able to open the pdf that you just uploaded with no issue. On the server where the files are stored, attempting to open the pdf directly should fail.

If this did not work as expected, please contact the SUNAPSIS support team for assistance with this.

3.2.3 Updating Encrypted Fields

If you forget to do so, or later decide that a field in an E-Form needs to be encrypted, the system will not automatically retroactively find previous E-Form submissions and encrypt that field.

As this process involves retroactively finding and updating previously submitted E-Forms, please contact the SUNAPSIS support team for assistance with this.

3.3 Data Feed

The IOM pulls information from the institutional system via a daily data feed process. This is accomplished by generating an XML file from the institutional system that the application reads. For this process to work the system user account must be configured appropriately, the XML file needs to be in the correct folder with the correct name, and the XML files needs to validate against the schema file included in the distribution files, datafeed.xsd.

3.3.1 Create valid xml file

Included in the distribution files are two example XML files, example-student.xml and example-employee.xml, and the XML schema, datafeed.xsd. You need to create a data extraction process that will pull information from the institutional system into an XML file that will validate against the schema. This process varies widely from institution to institution, therefore writing a step-by-step process is not possible. Contact the support team if you have any questions about this process.

The XML files need to be placed on the server in the directory \ioffice\batch\datafeed\ with the file names specified in the database table, configDataFeedXMLFileName. The defaults are student.xml, employee.xml, and admission.xml but you may add or remove filenames as required.

When the data feed process runs, if the file fails the schema, it will append failure- to the front of the file name and an email will be sent to the email address specified in 3.1.3. If you do not have access to an XML editor that can test the validity of a file against a schema, you can send the file to the support team and we will run a validation test and inform you of the results. Please reference Appendix D for the data feed schema layout.

In addition, there is a mapping structure between the application and your institutional system that needs to be updated. Please reference Appendix D for the maps. You need to update this information in the application by clicking on System Setup⇒Institutional System Mappings. Each of the individual mapping structures must be updated.

3.3.2 Test the data feed

After you have created a valid XML file, placed it in the correct directory (\ioffice\batch\data feed\) with the correct file names (as referenced in configDataFeedXMLFileName), you can begin the testing process.

NOTE: Review your XML file for properly escaped characters. If you include literal characters like `<, >, or &,` your file will not be valid and will break the data feed.

1. Launch the ColdFusion Administrator (found at <baseURL>/CFIDE/administrator/index.cfm).
2. Click on Debugging & Logging⇒Scheduled Tasks
3. On the Institutional XML Data Feed process, click on the Run Scheduled Task icon (or) (left-most icon on the row). Note: A message saying The scheduled task was completed successfully means that ColdFusion successfully launched the Java application that runs the data feed. It does not mean that the data feed has actually finished, or will run successfully.)

   The process can take several minutes or several hours, depending on how much data is being loaded. You can check the progress of the feed by looking on the server in the /ioffice/batch/bat/ directory. There you will find log files for the various scheduled tasks, including the data feed. The Last Modified dates for the DataFeedXMLImportApplication.start and DataFeedXMLImportApplication.done files indicate when the feed last started and finished, respectively. Any activity that happens in between is recorded in DataFeedXMLImportApplication.log, and can be viewed in any standard text editor.
4. Check the XML directory (\ioffice\batch\datafeed). If the files you placed in there were removed, the data feed successfully processed.
5. You can check the application to make sure by clicking on Application⇒Search International Profiles and searching for a student that you had in the XML file.
6. If the file in the XML directory is still there, with the word failure- prepended to the file name, your file failed schematically. Please double check to make sure the XML file validates against the schema.

3.4 Application Configuration

There are several settings in the application that need to be configured for your institution before you can go live with the sunapsis application. This section of the guide outlines the settings that you need to configure. Open the application to complete the following steps.

3.4.1 Campus Configuration

This setting sets the campus information in SUNAPSIS. If you have multiple campuses, ensure that you input information for all of the campuses. The settings in this section can be found by clicking General Configurations⇒Core Configurations⇒Campus Configuration. If you only have one campus, you still need to complete this configuration. The campus code needs to match the value being sent in your data feed.

1. Click Campus Code Configuration.
2. Input the description and code (ie description: Bloomington and code: IUBLA for the Indiana University Bloomington campus).
3. Click Save.
4. If you have multiple campuses, click  (New) and repeat the process for each campus.
5. After you have completed the Campus Code Configuration, close the display.
6. Complete these steps for each configuration in theGeneral Configurations⇒Core Configurations⇒Campus Configurations menu structure. Table 3.4.1 lists a description of each configuration.

Campus / Office Information This sets information about each campus to be displayed online and in emails.

Map Campus Application Area This sets the mapping of application area to campus. This is used to allocate certain application area responsibilities to particular campuses. If you have a single campus, you should have only one row in this configuration with the same campus for each area (e.g. F-1 Students, J-1 Students, J-1 Scholars).

If you have multiple campuses, you should have a row for each campus. Each area (e.g. F-1 Students, J-1 Students, J-1 Scholars) should be mapped to the campus that will handle that area. For example, the IU South Bend Campus looks like the following:

- Specific Campus: South Bend
- Map for F-1 Students: South Bend
- Map for J-1 Students: South Bend
- Map for J-1 Scholars: South Bend
- Map for H-1B Employees: Bloomington
- Map for Permanent Residency: Bloomington
- Map for Other: South Bend
- Map for Student Open Doors: South Bend

Total Campus Enrollment Information This lists the total enrollment for the entire campus (domestic and international students) and is used for the online charts and graphs found from the main iStart page.

Table 3.3: Campus Information Configurations

3.4.2 Online Services Configurations

This section of the GeneralConfigurations menu defines the various settings for the client facing website commonly referred to as "iStart".

Departmental Access to Online Services

Navigate to the General Configurations⇒Online Services Configurations⇒Accounts and Access Configurations⇒Departmental Access to Online Services menu. structure. This configuration section lists individuals who have requested, been granted, or denied access to web services in sunapsis (traditionally known as iStart) per campus. There is a tool in the online services (Authorization to Access Departmental E-Forms) that should be used to decide access to the online services, and when the decision is made, an email will automatically be sent to the individual. If a departmental contact does not have access in this menu, they will not be able to appropriately sign into Administrative and Departmental Services unless they are considered a SUNAPSIS user (i.e., they have a user profile in SUNAPSIS).

Online Services Setup

Within General Configurations⇒Online Services Configurations⇒General Configurations⇒Online Services Setup are the options available to configure the online services display properties (i.e., the look, feel, and function of the website).

1. **Online Services Name**: The large name that displays at the top of each page. By default this is "iStart". There is a 10 character limit on this field.
2. **Online Services Description**: The short description that is displayed at the top right of every page.
3. **Homepage Title**: This is the bold text on the start.cfm login page. If left blank, the text will display "Welcome to the iStart Services Login Page".
4. **Homepage Description**: This is a paragraph of text that will appear beneath the homepage title on the start.cfm login page.
5. **Display Full Client Services On Homepage**: This allows the international office to turn on/off the ability for individuals to log in under the full client services on the start.cfm login page. The option simply will not be available on the page.
6. **Full Client Services Homepage Title**: This is the bold text at the top of the page that a client will see once signed into "Full Client Services for Students & Scholars".
7. **Full Client Services Homepage Description**: This allows the international office to supply a paragraph of text to the authenticated full services client user on the homepage once they have signed in.
8. **Display Limited Client Services On Homepage**: This enables or disables Limited Access Login from the start.cfm login page. When this is disabled, limited services is not an option to choose from.
9. **Limited Client Services Homepage Title**: This is the bold text at the top of the page that a client will see once signed into "Limited Services for Students & Scholars".
10. **Limited Client Services Homepage Description**: This allows the international office to supply a paragraph of text to the authenticated limited services client user on the homepage once they have signed into limited client services.
11. **Display Anonymous Client Services On Homepage**: SUNAPSIS allows you to collect annonymous data via e-forms coupled with the anonymous application area. This option allows you to enable/disable the "Anonymous Feedback (surveys, evaluations, etc)" link on the start.cfm login page.
12. **Display Admin Services on Homepage**: In some rare cases, you may decided to hide the "Administrative Services for University Departments" link from the start.cfm login page. This option will allow you to enable/disable this link.
13. **Display Statistics on Homepage**: if you would prefer your metrics to be private within your office, you may disable the "International Student & Scholar Statistical Reports" link on the start.cfm login page with this feature.
14. **Optional: Logout URL**: This programs the logout URL on the customer facing website, so that, if it is clicked, the link will call the university authentication system and request that the authentication token be deauthenticated. This means that the client user would need to login again with their username/passphrase before being allowed to access the site after having clicked that button. It is recommended to enable this feature, as it will help in mitigating authentication problems at public workstations on campus (e.g., a kiosk in your office, public workstations at the library, or in the hallways at your institution).

Limited Services Login Lockout

The menu located within General Configurations⇒Online Services Configurations⇒Account and Access Configurations⇒Limited Services Login Lockout enables configuration of the limited services login, with respect to failed login attempts. Setting a number of allowed failed attempts above zero will lock the user out of attempt login attempts in that session once they have reached or exceeded that number of failed login attempts. Setting a limit of zero will allow unlimited failed login attempts. If you have set a limit on failed login attempts, you may also configure whether the PIN is to be reset on the account, and whether a PIN reset/lookup email is automatically sent to the client. (Whether the "PIN Reset" or "PIN Lookup" email message is sent is determined by whether you have configured automatic PIN reset.)

Add New Person Confirmation Email

If you allow departments to use the Add New Person service in iStart to add individuals to the sunapsis database, then the Add New Person Confirmation Email screen located in General Configurations⇒Online Services Configurations⇒Account and Access Configurations allows you to customize the message that you send to them after they complete the form. This is useful if you want to direct them to do different things for the different visa types.

CINTAX Configuration

If you purchase CINTAX: Complete International Tax Preparation tax software for the internationals at your institution, you can allow them to access it through iStart by providing the appropriate CINTAX information under General Configurations⇒Online Services Configurations⇒Other Configurations⇒CINTAX Configuration. Please note: when purchasing CINTAX, be sure to select the **Gateway** method of access.

The CINTAX URL will likely remain the same for the foreseeable future. It is https://www.cintax.us/gateway.asp. CINTAX will provide this URL every year when you purchase. CINTAX will provide the access code after you purchase it. They typically provide a general gateway access code, which you would put in this configuration. They also might provide you with an access code for individuals who are no longer able to access iStart. This does not need to be stored on this configuration. The Tax Year is the tax year for which you are providing access.

For example, in the spring 2015 tax season, specify 2014 as the tax year. When an international accesses CINTAX using iStart, there is a record logged in the database so that you can generate a report for how many individuals have accessed CINTAX per year.

Google Map Key

To use the Google Maps capabilities (for event scheduling in schedule management), you need to get a Google Maps API Key and configure that key in SUNAPSIS within General Configurations⇒Online Services Configurations⇒Other Configurations⇒Google Map Key. Go to `http://code.google.com/apis/maps/signup.html` and fill out the form to get a free key and copy and paste that key here.

Hostname for Sunapsis

If you are a client institution using a split application server environment (i.e., Multi-server environment), navigate to General Configurations⇒Online Services Configurations⇒General Configurations⇒Hostname for Sunapsis. This is the hostname (e.g. sunapsis.iu.edu) for the sunapsis: International Office Module. NOTE: This is **ONLY** to be used by istitutions who are using the multi-server environment model of implementation.

PLEASE NOTE: This only needs to be set if your Online Services and Office Application are housed on different servers. If your Online Services and the application reside on the same server **leave this menu completely empty**.

3.4.3 Term Configuration

These settings configure the application with your institution's term information. These settings can be found by navigating to General Configurations⇒Core Configurations⇒Term Configurations.

1. Click on Term Type Configuration.
2. SUNAPSIS comes with reasonable defaults for Term Types. (PeopleSoft schools this is not the same as Term Type in PeopleSoft. The use of similar language is an unhappy coincidence). Please adjust these term types as needed for your institution.

   If you would like to see under-enrollment alerts displayed for terms of a particular type, check the box for Trigger Enrollment Alerts.

   If you'd like SUNAPSIS to automatically build registration batches for continuing students, check the Report Enrollment to SEVIS box. New students will be have a registration batch created regardless of this box being checked.

   If you'd like to count a particular type toward the IIE Open Doors Census report, check that box. Only 1 of these term types should be checked. Having multiples introduces the possibility of double counting students for Open Doors.
3. Once done with Term Types, click on Term Code Configuration. Input information for each term.

Term Code is the value that is being sent in your data feed.

Term Type ties back to the Term Type Configuration.

Report Code is the value of the term code in your institutional system. In most cases, this will be the same as the Term Code itself, but if you are deriving special term codes inside your data feed logic, you can use this field to tie that data back to your institutional system.

Description is a supplemental description value for your term. It is not required. The actual term description will be built with a combination of the term type, description, and year.

Year is the calendar year during which the term takes place. Fall 2015 will have 2015 as a year, even though it is part of the 2015–2016 academic year.

Show in Online Services makes this term available for students to choose in the Term drop downs on electronic forms.

4. When you're done with Term Code Configurations, open Term Dates Configuration.

   Campus is the campus for which this term applies.

   Term is the term code (defined in the previous screen).

   Start Date is the first day of that term, at that campus.

   End Date is the last day of that term, at that campus.

   This now allows you to have multiple simultaneous terms, and also have different start dates for different campuses, as needed.

   NOTE: Need for Updates

   This information needs to be updated for every new term. You can load as many terms as you wish in this initial setup, but future terms will have to be inserted as they come up for the application to work appropriately.

3.4.4 Institutional Specific Mappings

The General Configurations⇒Institutional Code and Data Configurations⇒Institutional System Mappings to SUNAPSIS section is designed to allow the client institution to provide institutional specific codes that need to be mapped to the sunapsis standard internal codes. You will only need to provide a mapping in this menu for codes that are different in your system from the codes sunapsis expects by default. Think of this as a bridge to help sunapsis understand how to process and display your international data.

Map Academic Career: The Map Academic Careers screen allows you to map the values from your institutional system to the values in sunapsis for academic careers. Again, if the values passed in the data feed match the sunapsis values already, this mapping does not need to be completed. The table name in the database for this mapping is dbo.mapAcademicCareer. Examples of an academic career are undergraduate, graduate, doctorate, etc.

Map Academic Level: The Map Academic Level screen allows you to map the values from your institutional system to the values in sunapsis for academic levels. If the values passed in the datafeed match the sunapsis values, this mapping does not need to be completed. The table name in the database for this mapping is dbo.mapAcademicLevel Examples of an academic level are freshman, sophomore, etc.

Map Academic Program Status: The Map Academic Program Status screen allows you to map the values from your instituional system to the values in sunapsis for academic program statuses. If the values passed in the datafeed match the sunapsis values, this mapping does not need to be completed. An academic program status is active in program, cancelled, etc. The table name in the database for this mapping is dbo.mapAcademicProgramStatus.

Map Country Codes: The Map Country Codes screen allows you to map the values from your instituional system to the values in sunapsis for countries of birth, citizenship, and permanent residency. If the values passed in the datafeed match the sunapsis values, this mapping does not need to be completed. The table name in the database for this mapping is dbo.mapCountry.

Map Departments to SEVIS CIP Headers: The Map Departments to SEVIS CIP Headers screen allows you to map the departments at your institution to a particular SEVIS CIP header (i.e. the first 2 digits of a CIP code which indicate the broad field of study). This is used for the IIE Scholars Open Doors reporting. The table name in the database for this mapping is dbo.mapDepartmentCIP.

Map Employee Regular / Temporary: The Map Employee Regular / Temporary screen allows you to map the values from your instituional system to the values in sunapsis for employee time. If the values passed in the datafeed match the sunapsis values, this mapping does not need to be completed. The table name in the database for this mapping is dbo.mapEmployeeRegTemp.

Map Employee Status: The Map Employee screen allows you to map the values from your instituional system to the values in sunapsis for employee statuses. If the values passed in the datafeed match the sunapsis values, this mapping does not need to be completed. The table name in the database for this mapping is dbo.mapEmployeeStatus. An employee status is Active, On Leave, etc.

Map Employee Time: The Map Employee Time screen allows you to map the values from your instituional system to the values in sunapsis for employee full/part time. If the values passed in the datafeed match the sunapsis values, this mapping does not need to be completed. The table name in the database for this mapping is dbo.mapEmployeeTime.

Map Enrollment Status: The Map Enrollment Status screen allows you to map the values from your instituional system to the values in sunapsis for enrollment statuses. If the values passed in the datafeed match the sunapsis values, this mapping does not need to be completed. The table name in the database for this mapping is dbo.mapAcademicProgramStatus. An enrollment status is enrolled, waitlisted, audited, etc.

Map Gender: The Map Gender screen allows you to map the values from your instituional system to the values in sunapsis for gender. If the values passed in the datafeed match the sunapsis values, this mapping does not need to be completed. The table name in the database for this mapping is dbo.mapGender.

Map Ethnicity: This is the mapping structure between the institutional codes and the Sunapsis values for ethnicity. The table name in the database for this mapping is dbo.mapEthnicity.

Map Majors to SEVIS CIP: The Map Majors to SEVIS CIP screen allows you to map the values from your instituional system to the values in sunapsis for CIP code majors. If the values passed in the datafeed match the sunapsis values, this mapping does not need to be completed. The table name in the database for this mapping is dbo.mapAcademicPlanCIP.

Map Marital Status: The Map Marital Status screen allows you to map the values from your instituional system to the values in sunapsis for marital statuses. If the values passed in the datafeed match the sunapsis values, this mapping does not need to be completed. The table name in the database for this mapping is dbo.mapMaritalStatus.

Map Scholar Plan / Grade Codes: The Map Scholar Plan / Grade Codes screen allows you to map certain scholar plan or grade codes that are imported into sunapsis via the datafeed from the institutional system to a primary function for the scholar. The table name in the database for this mapping is dbo.mapScholarPlanGradeCodes.

Map Visa Type: The Map Visa Type screen allows you to map the values from your instituional system to the values in sunapsis for visa types. If the values passed in the datafeed match the sunapsis values, this mapping does not need to be completed. The table name in the database for this mapping is dbo.mapVisaType. A visa type is F-1 Student, J-1 Exchange Visitor, H-1B Temporary Employee, etc.

Map External Organization Names: The Map External Organization Names allows a mapping between what SIS has for a school name and what the school name should be for admission letter.. The table name in the database for this mapping is dbo.mapExternalOrgNames.

3.4.5 Institutional Specific Codes

The General Configurations⇒Institutional Code and Data Configurations⇒Institutional Specific Code Configurations is designed to allow the client institution to provide institutional specific codes for various optional types of data that can be fed in through the data feed. These are different than the institutional specific mappings described in section 3.4.4. Institutional specific codes are code values that do not have a preset, default value in SUNAPSIS, and instead require the institution to specifically define the codes and their descriptions to the system. Below we will describe each of the institutional specific code tables, and for what they are used. For each table, you will need to specify your institutional code value and the description that should be associated with it (i.e., the text to display in the field when that code is selected).

Last Attended Semester: This table lists the code/value pairs that are used on the Transcript Review screen in the checklist for the field called Last Semester Attended. The database table that this menu saves to when a user clicks  (Save) is dbo.codeExternalEducationSemester.

Admission Application Centers: This screen lets you list your institution's Application Centers, so they display in a readable format on the Admission Information screen. Your institution can use this field however it wishes. IU uses it to determine who admitted a student (Undergraduate International Admissions, Grad departments, etc.) Code: This is the code that is sent in through your data feed. Description: This is the name of the Application Center represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeApplicationCenter.

Admission Admit Types: This screen lets you list your institution's Admit types, so they display in a readable format on the Admission Information screen. Your institution can use this field however it wishes. IU uses it to label new and transfer students (First year beginning undergrad, graduate transfer, etc.). Code: This is the code that is sent in through your data feed. Description: This is the name of the Admit Type represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeAdmitType.

Admission Action Reason: This list contains valid combinations of Admission Program Actions and Admission Program Action Reasons. These values are used in Checklist Management for the Admission checklist type, for stage movement options and available options on the Admission Decision Review Screen. The database table that this menu saves to when a user clicks  (Save) is dbo.codeAdmissionActionReason.

Admission Letter Schools / Degrees: This screen allows you to input institutional specific degree and school descriptions that will be used on the admission letters. The database table that this menu saves to when a user clicks  (Save) is dbo.codeAdmissionLetterSchoolsDegrees.

Academic Groups: This screen lets you list your institution's Academic Groups, so they display in a readable format on the Admission Information and Program Information screens. Your institution can use this field however it wishes. IU uses this to designate schools and colleges (School of Law, School of Business, College of Arts and Sciences, etc.). Code: This is the code that is sent in through your data feed. Description: This is the name of the Academic Group represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeAcademicGroup.

Academic Plan Types: This screen lets you list your institution's Academic Plan Types, so they display in a readable format on the Program Information screen. Your institution can use this field however it wishes. IU does not use this field, but many institutions use it to designate whether the plan is a major or a minor. Code: This is the code that is sent in through your data feed. Description: This is the name of the Academic Plan Type represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeAcademicPlanType.

Academic Programs: This screen lets you list your institution's Academic Programs, so they display in a readable format on the Admission Information and Program Information screens. Your institution can use this field however it wishes. IU uses it to designate department (Chemistry Graduate, COAS Undergrad, Business Undergrad, etc). Code: This is the code that is sent in through your data feed. Description: This is the name of the Academic Program represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeAcademicProgram.

Academic Degress: This screen lets you list your institution's Academic Degrees, so they display in a readable format on the Admission Information and Program Information screens. Your institution can use this field however it wishes. IU does not use it at all. Code: This is the code that is sent in through your data feed. Description: This is the name of the Academic Degree represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeAcademicDegree.

Degree Check-out Status: This screen lets you list your institution's Degree Check-out Statuses, so they display in a readable format on the Program Information screen. Your institution can use this field however it wishes. IU does not use it at all, but it could be used, for example, to track progress toward degree (Done with coursework, applied for graduation, approved for graduation, degree conferred). Code: This is the code that is sent in through your data feed. Description: This is the name of the Degree Check-out Status represented by the code. The database table that this menu saves to when a user clicks (Save) is dbo.codeDegreeCheckoutStatus.

Academic Departments: This screen lets you list your institution's Academic Departments, so they display in a readable format on the Admission Information and Program Information screens. Your institution can use this field however it wishes. IU does not use it at all. Code: This is the code that is sent in through your data feed. Description: This is the name of the Academic Department represented by the code. This is the name of the Degree Check-out Status represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeAcademicDepartment.

Academic Program Action: This screen lets you list your institution's academic Program Actions, so they display in a readable format on the Admission Information screen. Your institution can use this field however it wishes. IU uses it for actions describing the status of program enrollement (Admit, Matriculation, Active, Completion of Program, etc.). Code: This is the code that is sent in through your data feed. Description: This is the name of the Program Action represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeProgramAction.

Address Sub-type: This screen lets you list your institution's Address Sub-types, so they display in a readable format on the Address Information screen. Your institution can use this field however it wishes. IU does not use it all, but other institutions use it to provide additional detail to an address. For example, a Local address type may have subtypes of Off-Campus, Dorm, On-Campus Apartment, etc.). Code: This is the code that is sent in through your data feed. Description: This is the name of the Address Sub-type represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeAddressSubType.

Citizenship Status: This screen lets you list your institution's Citizenship Statuses, so they display in a readable format on the Extended Biographical Information screen. Your institution can use this field however it wishes. IU does not use it at all. Code: This is the code that is sent in through your data feed. Description: This is the name of the Citizenship Status represented by the code. This is the name of the Address Sub-type represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeCitizenshipStatus.

Enrollment Sub-Status: This screen lets you list your institution's Enrollment Sub-statuses, so they display in a readable format on the Student Enrollement screen. Your institution can use this field however it wishes. IU does not use it at all. Code: This is the code that is sent in through your data feed. Description: This is the name of the Enrollment Sub-Status represented by the code. This is the name of the Address Sub-type represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeCitizenshipStatus.

Appointment Designation: This screen allows you to enter the code / descriptions for the Designations used by the Appointment Data table. The database table that this menu saves to when a user clicks  (Save) is dbo.codeDesignation.

Institutes / Centers: This screen lets you list your institution's institutions and centers (this comes originally from an NIH request - Think of this as an organizational level similar to "School" in the standard "University," "College," "School," "Department" layout of academia. Your institution can use this field however it wishes. Code: This is the code that is sent in through your data feed. Description: This is the name of the Institute/Center represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeInstituteCenter.

Lab Branch: This screen lets you list your institution's laboratories (this comes originally from an NIH request - Think of this as an organizational level between to "School" and "Department" in the standard "University," "College," "School," "Department" layout of academia. Your institution can use this field however it wishes. Code: This is the code that is sent in through your data feed. Description: This is the name of the Lab represented by the code. The database table that this menu saves to when a user clicks  (Save) is dbo.codeLabBranch.

Request Type: This sets the options for Request Type on the Employee Appointment screen. Code: This is the code that is stored in the database. Description: This is the name of the Request Type represented by the code (that displays in the drop down list). The database table that this menu saves to when a user clicks  (Save) is dbo.codeRequestType.

Program Reason: This table contains the institution specific list of Program Action Reason codes. A Program Action Reason answers why a Program Action was taken (Action: Admitted, Reason: Fully Qualified; Action: Incomplete, Reason: Inadequate Financials). The database table that this menu saves to when a user clicks  (Save) is dbo.codeProgramReason.

GPA Types: This screen allows configurations of GPA Scale types. When a GPA is fed in from the admission data, it is a number (ex. 4.2). The GPA type tells us if that 4.2 is on a 4 scale, a 5 scale, a 100 scale, etc. The code is the value you send in in your data feed, while the description is a human readable value, so you know what the code means. The database table that this menu saves to when a user clicks  (Save) is dbo.codeGPAType.

3.4.6 Document Configuration

The settiings found within General Configurations⇒Document Management Configurations allow you to configure the handling and display of various uploaded documents and images, either uploaded by staff directly, or by students and scholars via eforms.

1. Expand the Category and Structure Configurations section and open the PDF Document Categories screen.
2. Review the existing top-level categories for documents and images. A set of categories is provided with the base installation of sunapsis, but you may add new categories using the (New) and entering a Description
3. Open the PDF Document File Structure screen
4. Review the existing file structures. A structure is essentially a general label for a type of file, though more specific than a category. A set of structures is provided with the base installation of sunapsis, but you may add new structures using the (New) and entering a Category that was configured on the previous screen, a Sub-Path, and a Description. A sub-path is an even more specific level of organizing. If you do not wish to use a sub-path, enter a decimal or period. You may specify a sub-path of a sub-path using the | (pipe) character. See the help text on the PDF Document File Structure screen for more information. The Confidential checkbox is used to indicate that documents and images of that structure may only be viewed by sunapsis users who have the Confidential PDFs role checked on their User Profile. FIXME (add content for orientation flag, client reviewable, department reviewable)
5. Open the Directory to Store PDF Files screen.
6. The default for Full Directory Path is blank, meaning that documents and images will be stored in the /ioffice/pdfs/content/ directory of the application. If you would like to store the files on a separate partition or server altogether, a path may be entered here. This can be a network UNC path (e.g,. `\\file-server\sunapsis\documents`) or a letter drive (e.g. `X:\files`) mapped on the Windows server where the application resides. So long as the specified location contains a folder called content the files will be stored in that content directory. This should have no effect on ther international office staff.
7. Open the Filter Client Image Picture screen. This screen allows you to configure which document structure, when uploaded to an international's record, will show up in the main display area when the profile is opened. This defaults to Passport but if you are uploading other pictures from events or allow internationals to provide their own portrait, you may select a different structure.

3.4.7 Document Upload and Storage Configurations

Here, we will describe two important screens which handle configuring automatic document uploading and configuring the server path to which SUNAPSIS will store files.

1. If you plan to use an external file store for housing your PDF documents for SUNAPSIS, you will need to configure the directory path within General Configurations⇒Document Management Configurations⇒Directory to Store PDF Files. If the default directory (`\ioffice\pdfs`) is desired, then leave this configuration blank. You may use a drive letter and folder path for a mapped server on your Windows Server (e.g., `D:\PDFStore`) or use a UNC path (e.g., `\\PDFStore`). The ColdFusion user account needs to have access to the path specified if your institution decides to use a custom file storage directory.
2. The Automatic Upload Directory screen allows you to specify a directory that the system will watch and will automatically upload any documents that are placed in it. You have a few configuration options for this feature. First, you may choose whether or not to specify a CSV spreadsheet file which will list information about the files to be uploaded. If no CSV file is specified, the specified directory will be monitored for files that are named in the format structureID_universityID or structureID_universityID_metainfo, where metainfo is a description of the file (500 characters or fewer). For example, if you placed a PDF of an individual's passport in the directory, you might give it the file name S62_0001538992.pdf (where 0001538992 is the individual's university id and S62 is the PDF structure for passports). For the list of available structures and their structureIDs, see General Configurations⇒Document Management Configurations⇒Category and Structure Configurations⇒PDF Document File Structure.

   Alternatively, you may enter the name of a CSV file (located in specified directory) which contains information about specific files to upload in the following format: File Name, Structure ID, University ID, Last Edited Date

(yyyy-mm-dd or yyyy-mm-dd hh:mm:ss), Metainfo (500 chars or fewer).
Only the first three of these are required, but you must still include a comma if metainfo is unspecified. For example, if you were uploading a passport file named "StudentPassport500.pdf", you might have this line in the CSV: StudentPassport500.pdf, S62, 0001538992, 2014-05-05, Optionally, you may specify a username to indicate that the automatic upload is only applicable for a particular user. This is useful if the file location is specific to your computer (e.g., your My Documents folder). If no username is selected, the upload directory will be monitored for every user unless the Only Run on Server option is selected.

Use the "Only Run on Server" option to indicate whether monitoring and uploads should happen only on the server or if they should happen when sunapsis is running on your desktop. This option is useful if you are uploading files from a shared drive. If you elect to only run on the server, be sure your IT office has enabled the "Auto-Upload Documents" scheduled task described in section 2.4.5 of this guide.

3.4.8 SEVIS School / Program Information Configurations

Before your institution will be able to communicate with SEVIS using SUNAPSIS, SEVIS school code configurations must be appropriately defined within the application. These settings can be found by clicking on General Configurations⇒SEVIS Configurations⇒Organization Code Configurations⇒SEVIS School / Program Information. Here, you will input the information for each school / program that the application will use.

1. SEVIS Orgianzation Code for School/ Program is the SEVIS organization code as listed in SEVIS RTI.
2. Visa Type (F-1 or J-1) should be set to whichever is appropriate for the organization code entered in the field above. Do not forget to hyphenate the visa type value.
3. Ensure that Match to RTI Column: Name of Campus / Name of Program is the Name of Campus that is listed in SEVIS RTI under the Listing of Schools (Student System) or Name of Program under the Listing of Programs (Employee System) menu.
4. Description for Drop-down fields within SUNAPSIS should be set appropriately to name the school code. This should have the visa type appended to the front of it (ie 'F-1: Indiana University Bloomington').
5. Input the PDSO/ RO Username and Primary Campus. This is the primary campus that will handle SEVIS interaction.
6. In the All Associated Campuses to this SEVIS Organization Code section, check the appropriate primary campus as well as any campuses associated with the primary campus. These are campuses students and scholars can be attending that will also be reporting through the organization code configured above.
7. Click  (Save)
8. Click  (New) as needed for each SEVIS organization code and repeat the process. After finishing, close the display.

Batch registrations are, by default, generated for students who have an Active or Initial SEVIS status only

3.4.9 SEVIS Batch Configuration

The General Configurations⇒SEVIS Configurations⇒Batch Configurations is most applicable to clients planning to utilize SEVIS Batch functionality within SUNAPSIS. It is a good idea to complete the configuration screens noted here as early as possible, and to keep them maintained, as these can have a direct impact on your ability to initiate any batch events for students and scholars (e.g., batch register students to SEVIS at the beginning of each term).

SEVIS Term Information for Registration

Expand SEVIS Term Information for Registration. This sets term information that the application will use to handle the automatic creation of batches for F-1 student registration. If a term is not included in this list, no Registration Batches will be created for that term. Here is a brief explanation of each field in this menu:

1. **Term**: the term for which to generate pending status registration batches.
2. **Campus**: the campus to generate Registration Batches for
3. **Academic Year**: The academic year the Batches should be associated with (a four digit year: the 2010-11 academic year would be listed as 2011)

4. **Term End Date**: the last day of the reported term.

5. **Next Term Start**: the first day of the next term to report to SEVIS.

The filters below allow you to configure a population for whom batches are generated. If all of these are blank, then every student enrolled for the current term will have a Registration Batch created. If a filter has been applied, the system automatically assumes that only students in Active status should be registered. Also, filters are multiplicative: if you select a Spring 2011 admit term and a Graduate academic career, this will create batches for any active student that is both a Graduate student and was admitted in Spring 2011. Active grad students admitted in Fall 2010 would not be batch registered; neither would active undergrads admitted in Spring 2011. Filters use the information on the Student Academic Information Program Information screen.

1. **Admit Term**: Batch register everyone except students admitted in the specified term.

2. **Academic Career**: Batch register ONLY students in the specified Academic Career. Academic Program: Batch register ONLY students in the specified Academic Program.

3. **Academic Degree**: Batch register ONLY students in the specified Academic Degree.

4. **Academic Department**: Batch register ONLY students in the specified Academic Department.

SEVIS Batch Statuses for Registration

If you wish to have batch registrations generated for another status (ie Transfers) than only Active/Initial, complete the following steps:

1. Expand General Configurations⇒SEVIS Configurations⇒Batch Configurations⇒SEVIS Batch Statuses for Registration.

2. Create a new row for each desired SEVIS status.

SEVIS Batch Ignore Data Changes

The SUNAPSIS: International Office Module builds SEVIS batches automatically when certain data from the Institutional System does not match data inside of sunapsis. The General Configurations⇒SEVIS Configurations⇒Batch Configurations⇒SEVIS Batch Ignore Data Changes menu allows you to configure which batches are generated by choosing to ignore certain data differences.

1. **Ignore Biographical Changes**: check this box to ignore differences in biographical data (name, citizenship, birthday, etc).

2. **Ignore Address Changes**: check this box to ignore differences in address.

3. **Ignore Address Changes while on OPT**: check this box to ignore differences in address only when a student is on Optional Practical Training (OPT).

4. **Ignore Changes in Major**: check this box to ignore differences in primary major.

SEVIS Batch Auto Return PDF Files

The General Configurations⇒SEVIS Configurations⇒Batch Configurations⇒SEVIS Batch Auto Return PDF Files screen allows you to configure which SEVIS batch actions return a new document by default (I-20 or DS-2019).
Check the box next to the appropriate action to return a new document for each of the available SEVIS batch actions. Leave the box unchecked if you do not wish to receive a document when the action is completed.

SEVIS Batch Records Per XML File

The General Configurations⇒SEVIS Configurations⇒Batch Configurations⇒SEVIS Batch Records Per XML File screen allows you to configure the number of records included in a single XML file sent to SEVIS during the SEVIS Batch Process. SEVIS will not accept more than 250 records in a single file. Decreasing this number will result in more, smaller batches being sent. Preparing more batches causes the process to take more time, but smaller numbers of records in a file reduces the number other records affected by a single failure within the file (if one record in the file fails, then the whole file fails). The sunsapsis default value is 200.

SEVIS Batch Upload Path

The General Configurations⇒SEVIS Configurations⇒Batch Configurations⇒SEVIS Batch Upload Path screen lets you configure the URL to which batches are uploaded. You should only need to change this URL during application installation and for a testing environment. Upload Path: The complete upload path for SEVIS batch. The default is `https://egov.ice.gov/sevisbatch/action/batchUpload` in the production system and `https://egov.ice.gov/sbtsevisbatch/action/batchUpload` in the TEST system

SEVIS Batch Download Path

The General Configurations⇒SEVIS Configurations⇒Batch Configurations⇒SEVIS Batch Download Path screen lets you configure the URL from which batches are downloaded. You should only need to change this URL during application installation and for a testing environment. Download Path: The complete download path for SEVIS batch. The default is `https://egov.ice.gov/sevisbatch/action/batchDownload` in Production and `https://egov.ice.gov/sbtsevisbatch/action/batchDownload` in the TEST environment.

SEVIS Certificate Phrase

In order to communicate with SEVIS via the batch process, your institution must have a digital certificate. The configuration in General Configurations⇒SEVIS Configurations⇒Batch Configurations⇒SEVIS Certificate Phrase is used for every batch file that is sent to SEVIS.

Configure Proxy Server

The General Configurations⇒SEVIS Configurations⇒Batch Configurations⇒Configure Proxy Server screen is for configuring proxy server parameters if your server requires a proxy to connect to the Internet (for SEVIS batching). If port is left blank, it defaults to a value of 1080. If you connect to the host via a protocol other than http, specify the host with the protocol first `(e.g., socks://proxhost.com)`.
Most institutions will not need to use this. If you are not sure whether or not your institution's sunapsis application is using a proxy, contact your IT team.

3.4.10 SEVIS RTI Configurations

The General Configurations⇒SEVIS Configurations⇒RTI Configurations section allows the user to supply RTI specific configurations to the SUNAPSIS server instance.

SEVIS RTI Launch Page

The General Configurations⇒SEVIS Configurations⇒RTI Configurations⇒SEVIS RTI Launch Page screen allows you to change the URL for the SEVIS Real-Time Interface (RTI) launch page. This URL should only need to be changed when configuring a testing environment.

By default, the URL for the production SEVIS RTI is `https://egov.ice.gov/sevis/`.
When configuring a TEST SUNAPSIS system, use the SEVIS beta URL: `https://egov.ice.gov/sbtsevis/`

SEVIS RTI Main Page Referrer

The General Configurations⇒SEVIS Configurations⇒RTI Configurations⇒SEVIS RTI Main Page Referrer screen allows you to configure the URL for the International Office Module to load when the system auto-refreshes to keep RTI from timing out. This value should not have to change unless you are setting up a testing environment.
The default value is `https://egov.ice.gov/sevis/action/common/MainPageData`. If configuring a SUNAPSIS TEST server, use the following URL: `https://egov.ice.gov/sbtsevis/action/common/MainPageData`

Initial Load: SEVIS ID - University ID Map

The General Configurations⇒SEVIS Configurations⇒RTI Configurations⇒Initial Load: SEVIS ID - University ID Map screen is used for the initial data conversion from SEVIS to SUNAPSIS and/or fsaATLAS to SUNAPSIS. It needs to be populated with SEVIS numbers and University ID numbers for all Active and Initial F and J individuals.

3.4.11 Alerts Configurations

It is a crucial step to the implementation that a staff user configures the alerts to fit the institution's needs. These settings can be found by navigating to General Configurations⇒Core Configurations⇒Alerts Configurations.

1. Open Alert Group Configuration.
2. The application comes with one alert group, the default alert group.
3. Update the Description field of the default alert group (ie 'Bloomington - International Services (OIS)'), and the primary campus.
4. The application has the ability to send mass emails to students. The email addresses that you input into the E-mails field define the list of emails that the application can send from.
5. Once complete, click (Save).
6. Finish configuring the alert information. Table 3.4 lists a description of each configuration sub-section within the Alerts Configurations section.

Field	Description
Assigned Campus by Alert Group	This maps the alert groups to the appropriate campus.
Assigned SEVIS School / Program by Alert Group	This maps the alert groups to the appropriate SEVIS school code.
Assigned Alert Services by Alert Group	This maps individual alerts to an alert group.
Schedule Automation of Alert Based Emails	This allows you to schedule automatic emails based on alerts.

Table 3.4: Encrypted fields in the database.

3.4.12 Edit Online Services Header & Footer

When you view the website now, you will see — INSTITUTIONAL HEADER GOES HERE —. This is the area where you can add in HTML to create a header and footer for the online services that will match your institution. There are two files that need to be edited: /istart/ui/layout/HeaderInstitutionLogo.html and /istart/ui/layout/FooterInstitutionLogo.html. Within these files you can add your own HTML to customize the page.

Only the content from the BEGIN INSTITUTIONAL BRANDING BAR HTML comment to the END INSTITUTIONAL HEADING HTML comment can be edited (or the BEGIN / END INSTITUTIONAL FOOTER HTML comments in the case of the footer file). This means that you can only include tags that can be wrapped inside a <DIV> tag. For instance, <HTML>, <HEAD>, <TITLE>, and <BODY> tags are NOT allowed as they will interfere with the online services. To ensure that any CSS you define do not interfere with the CSS used in the online services, the preferred method of styling is to use inline styles.

3.5 Student and Exchange Visitor Program Batch Setup if New to Batch Processing

This is a one-time process needed ONLY for schools that have never communicated with SEVIS via the batch-file transfer process. If your school has used the SEVIS Batch-File Transfer process, you can skip this entire section and move on to the section 3.6 'Configure the International Office Module to Communicate with Student and Exchange Visitor Program Batch'. You need to complete this process for both the F-1 and J-1 Programs at your institution.

This section needs to be completed by the PDSO and/or the RO.

3.5.1 Create F-1 Program in sevis Test Environment (If Applicable)

Create an F-1 Program in the sec:configSevisBatchsevis Test environment that mirrors the F-1 Program in the SEVIS Production environment by completing the following steps:

1. Go to `https://egov.ice.gov/sbtsevis` and click on Register for New Account.
2. Fill in the required information, including a real email address.
3. Choose Apply for Certification by DHS to admit F and/or M Students.
4. You will receive an email from SEVIS shortly. Click on the hyperlink in the second email to create a temporary password.
5. After you create the temporary password, you will be taken to the login screen again. Login with the temporary username (in the email from SEVIS) and the temporary password you just created.
6. Complete the I-17 form (this needs to mirror the information that you have in the SEVIS Production environment).
7. When the I-17 form is processed, you will receive an email with a permanent username and a hyperlink to create a permanent password.

3.5.2 Create J-1 Program in Student and Exchange Visitor Program Test Environment (If Applicable)

Create a J-1 Program in the SEVIS Test environment that mirrors the J-1 Program in the SEVIS Production environment by completing the following steps:

1. Go to `https://egov.ice.gov/sbtsevis` and click on Register for New Account.
2. Fill in the required information, including a real email address.
3. Choose Apply for Designation by the DoS to admit J Exchange Visitors.
4. You will receive an email from SEVIS shortly. Click on the hyperlink in the second email to create a temporary password.
5. After you create the temporary password, you will be taken to the login screen again. Login with the temporary username (in the email from SEVIS) and the temporary password you just created.
6. Complete the DS-3036 form (this needs to mirror the information that you have in the SEVIS Production environment).
7. When the DS-3036 form is processed, you will receive an email with a permanent username and a hyperlink to create a permanent password.

3.5.3 Send a Test Batch

1. In SUNAPSIS, go to the SEVIS Management menu, select Configuration for Batch, and open SEVIS Batch Upload Path. Change the path to: `https://egov.ice.gov/sbtsevisbatch/action/batchUpload`
2. In the same menu, open SEVIS Batch Download Path, and change the path to: `https://egov.ice.gov/sbtsevisbatch/action/batchDownload`
3. Complete section 3.6 . In 3.6.5, upload the certificate to `https://egov.ice.gov/sbtsevis` instead of `https://egov.ice.gov/sevis`.

4. Open a test record that you loaded into sunapsis (either manually, or with the data feed in Section 3.3). On the left menu, click on Create a SEVIS Batch and double click on Create New I-20, under F-1 Student⇒Create New Document.

5. Fill in all of the required information on all of the tabs, and then approve the batch with the button in the top left.

6. If your SEVIS Batch Upload and Download tasks are scheduled to run in your test environment, then you can wait until the next day, and see if the record is updated with a SEVIS number. If the scheduled tasks are not running, then you will need to run the Upload process twice manually. Then wait for SEVIS to process the batch, and run the Download process manually, again twice. Please note that the time it takes for batches to get processed on the SEVIS Test site can vary. It usually takes about half an hour, but if you notices that the batches are not downloading properly, you may need to call the SEVIS helpdesk and ask if they have changed their processing schedule.

7. Once you have successfully received a batch from SEVIS, then you can proceed to the next session, to get approval to batch in SEVIS Production.

3.5.4 Setup Batch Process in Student and Exchange Visitor Program Production Environment

Please do not complete this Subsection until after successfully submitting a batch to Test SEVIS. Please see Section 3.4 for details on how to do that. This subsection is derived from the Department of Homeland Security (DHS) document Process for Using the SEVIS Batch-File Transfer.

1. Contact the SEVIS Help Desk to report that Batch testing has been successfully completed in the SEVIS Test environment and that you are ready to begin Batch processing in the Production environment.

2. Print the Customer Agreement for Using the SEVIS Beatch-File Transfer Process (CA) and have it signed by the appropriate representative for your organization.

3. Fax the completed CA to (202) 414–8299.

4. The SEVIS Help Desk will provide confirmation of the receipt of the CA to the email address specified in the CA.

5. A DHS representative will verify the CA and approve it. If the DHS representative has any questions regarding the CA, they will contact the requestor immediately.

6. Upon approving the CA, the DHS representative will direct the SEVIS Help Desk to send an e-mail message to the requestor that states the requestor has been approved.

3.6 Configure the International Office Module to Communicate with Student and Exchange Visitor Program Batch

To communicate with SEVIS via the Batch process, you will need a security certificate in PEM format. If you already have a PFX certificate, you may skip to Section 3.6.3

3.6.1 Acquire a Digital Certificate

You can purchase a digital certificate for use in email communication from Symantec for $22.95. There are other options available, such as InCommon and Comodo. Please contact the SEVIS helpdesk if you have questions about whether or not a certain certificate vendor will work with their system. Thawte no longer issues certificates for use in email. Please make sure to use Internet Explorer as there have been numerous issues with purchasing and exporting a certificate from Firefox.

1. Using Internet Explorer, go to the Symantec website to request a Digital ID for Secure Email.

2. Choose Microsoft Internet Explorer as your browser.

3. Follow Symantec's process for requesting the certificate.

4. In the Cryptographic Service Provider Name select Microsoft Enhanced Cryptographic Provider v1.0.

5. Do not check the box labeled Check this Box to Protect Your Private Key.

6. Now you can download your certificate. Click Install.

3.6.2 Export Digital Certificate

This process exports the certificate information from Internet Explorer into a file that can be uploaded to SEVIS.

1. In Internet Explorer click Tools ⇒ Internet Options then click the Content tab and then click Certificates.
2. Select the new certificate (the Issued By column will say VeriSign) and then clickExport...
3. Click Next to start the Certificate Export Wizard
4. Select Yes, export the private key and click Next.
5. Ensure that Personal Information Exchange - PKCS #12 (PFX) is selected, that none of the checkboxes underneath this option are selected and click Next.
6. Type and retype a password for your certificate and click Next

   WARNING: Spaces Bad

   Do not use spaces in the password.
7. Choose a place to save the file and a filename and click Next.

3.6.3 Convert PFX Certificate to PEM Certificate

You now should have a certificate with the file extension PFX. We need to convert the file to a PEM certificate. You can do this using any number of programs, but these directions detail how to accomplish it using the free program OpenSSL.

Install OpenSSL

1. Download and install OpenSSL. You can find the latest release at this website.
2. Ensure that the OpenSSL environment variable was set by opening the command prompt and typing openssl
3. If your prompt changes to OpenSSL>, continue on to the Convert to PEM subsection. If you receive an error message, add openssl.exe to your system PATH variable

3.6.4 Convert to PEM

1. Open the Command Prompt and change the directory to the directory where you saved your PFX certificate.
2. Type openssl pkcs12 -in mycert.pfx -out mycert.pem -nodes (where mycert.pfx is the name you gave the certificate, and mycert.pem is the name you wish to give the PEM certificate).
3. Type in the password you assigned to the certificate when exporting it from Internet Explorer.
4. Type in the same password again when it asks for a passphrase for the PEM certificate.

3.6.5 Upload the PEM Certificate to Student and Exchange Visitor Program

Once you have a PEM format certificate, you need to upload it to SEVIS. The certificate needs to be uploaded for each SEVIS school code and it must be done while logged in as the PDSO/RO for the school.

1. Go to `https://egov.ice.gov/sevis/` and log in as the PDSO or RO.
2. From the main page, click on the appropriate school (if there is more than one, this needs to be repeated for all the schools).
3. On the left side, click on Register for Batch
4. Accept the terms.
5. Click on Browse... to locate the PEM certificate.
6. Click on Upload Certificate.

3.6.6 Update the Application With the New Certificate Information

Once the certificate has been uploaded to SEVIS, you need to update the information in the application.

1. Move the certificate (both the PFX and the PEM) to \ioffice\batch\sevis\certs.
2. In the application, from the toolbar, click on SEVIS Management⇒Configuration for Batch⇒SEVIS Certificate Phrase.
3. Update theCertificate File Name to the name of your certificate (include the PEM file extension in the file name, ie sunapsis.pem) and Certificate Pass Phrase to the passphrase you set for the PEM certificate and click Save

3.6.7 Create Principal Designated School Official / Responsible Officer Account(s)

For batches to be built correctly there needs to be a PDSO and/or RO. The PDSO is required if batching for F students and the RO is required if batching for J exchange visitors. Refer to Section 3.1.2 on how to create a user account, and create one now for the PDSO and/or RO.

1. In the Profile tab, input the user's PDSO and/or RO username(s).
2. In the SEVIS Accounts tab, select the appropriate SEVIS organization from the list
3. Input the PDSO/RO username
4. Choose either Primary Designated School Official or Responsible Officer for the Status

3.6.8 Troublesooting Student and Exchange Visitor Program Batching

If after following all the steps in this section you are unable to successfully communicate with SEVIS via the batch process, you may use the following command line script to further diagnose the issue.

If not using a proxy:

```
<Drive letter>:\ioffice\batch\sevis\curl\curl.exe -k -v -L -E <Drive
letter>:\ioffice\batch\sevis\certs\<certificate name>.pem:''<certificate
 password>'' -F orgid=<SEVIS organization code> -F batchid=<batch
  id> -F userid=<PDSO username> -F xml=@<drive
   letter>:\ioffice\batch\sevis\<SEVIS organization code>\<batch
    id>\<batch id>.xml -o <drive letter>:\ioffice\batch\sevis\<SEVIS
    organization code>\<batch id>\<batch id>Upload.xml https://egov.
    ice.gov/sevisbatch/action/batchUpload -k -v -L
```

If using a proxy:

```
<Drive letter>:\ioffice\batch\sevis\curl\curl.exe -k -v -L -E <Drive
 letter>:\ioffice\batch\sevis\certs\<certificate name>.pem:''<certificate
 password>'' -F orgid=<SEVIS organization code> -F batchid=<Batch
 ID> -F userid=<PDSO/RO username> -F xml=@<path/to/xml/file>
 -o <path/to/output/file> -x <proxy server>:<port> <sevis site>
```

You will need to replace the highlighted values as described below:

- Drive letter: The physical drive on the server where the application files are stored
- Certificate Name: The file name of the certificate
- Certificate Password: The passphrase assigned to the certificate when exporting it from Internet Explorer
- SEVIS Organization Code: The SEVIS code for the school or program that is being tested
- Batch ID: The batch ID (found in the XML file to be tested)
- PDSO Username: The SEVIS username for the PDSO/RO for the school / program being tested

3.7 Data Conversion

The data conversion is the process where the application database is populated with information about all active and initial students and/or scholars. This is done by extracting the information from SEVIS using your (P)DSO/(A)RO credentials. Since this process can take quite a while for a single user to accomplish, we recommend having several (P)DSO/(A)RO staff conduct this process. The majority of this process will be conducted when the support team visits your institution, but you are encouraged to give this process a test run to rule out any annomalies we may encounter

during the site visit. We provide instructions for the entire process for your review below, but at the bare minimum, you must complete steps 1 and 2 below ***before the support team arrives*** in order for your institution to have a successful site visit experience.

1. In the application, click on General Configurations⇒SEVIS Configurations⇒Organization Code Configurations⇒SEVIS School / Program Information to ensure that all SEVIS organization codes are defined with accurate information and that the short descriptions properly match the Name of Campus (or Program) as listed in SEVIS RTI. You should not have more than one entry in this menu using the same Organization Code. To separate campuses that use a single Organization Code, use the campus code you have configured for each of your campuses to fill the Associated Campus Codes checkboxes at the bottom of this menu. See the below example:

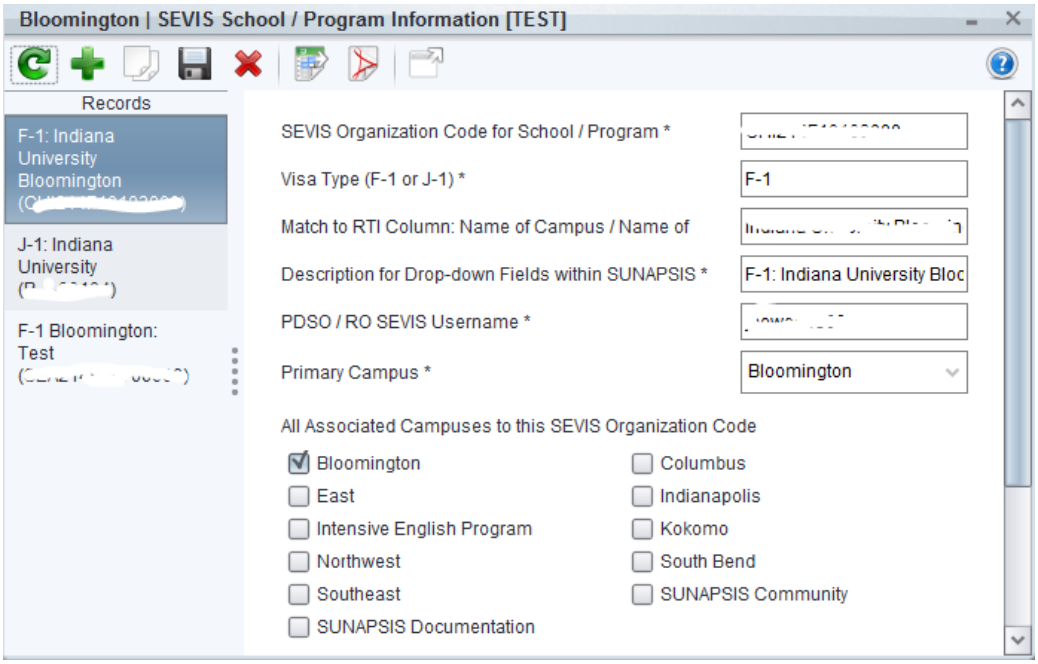


Figure 3.8: SEVIS School Code Configuration

2. Populate the SEVIS ID - University ID Mapping

   Populate the mapIDNumbers table in the production database with the SEVIS numbers and corresponding University ID numbers. If you can export the values to a csv spreadsheet you may use the provided online service for uploading this mapping in the Online Services Adminsitrative Services named "Initial Conversion Mappings". Log into the online services, just as you would to launch the SUNAPSIS application. In the left hand menu under International Office is an entry for Initial Conversion Mappings. Click on that, and follow the instructions on the page. This information can also be manually entered via the application user interface at SEVIS Management⇒Configuration for RTI⇒Initial Load: SEVIS ID - University ID Map.

   Be sure that all initial and active F-1 and J-1 records are in this mapping table with corresponding SEVIS ID and University ID values. If you have J-1 scholars that do not have any University ID number then you can assign temporary University ID values in the format of TEMP000000 in which you define a unique temporary number for each case.

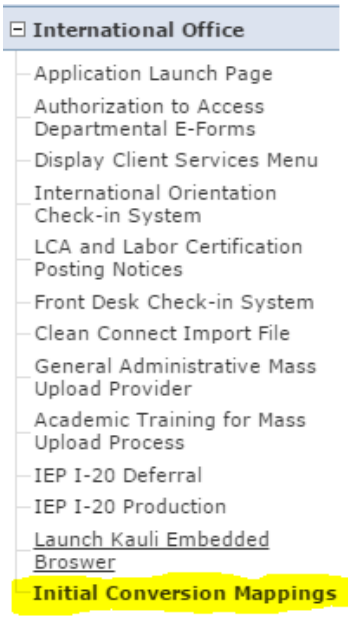


Figure 3.9: Initial Conversion Mappings Link in Online Services

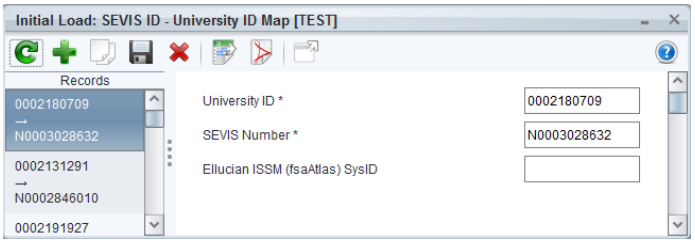


Figure 3.10: Initial Conversion Mappings Configuration

3. Ensure user Roles are setup correctly and launch SUNAPSIS and its RTI Embedded Browser.

   Be sure that the DSO/ARO users performing the data conversion have at least the Core Biographical, SEVIS Records, and Extract Form Data roles in User Profile Management. An easy way to handle this is to assign Full Privileges for this process, and remove it once the conversion has finished.

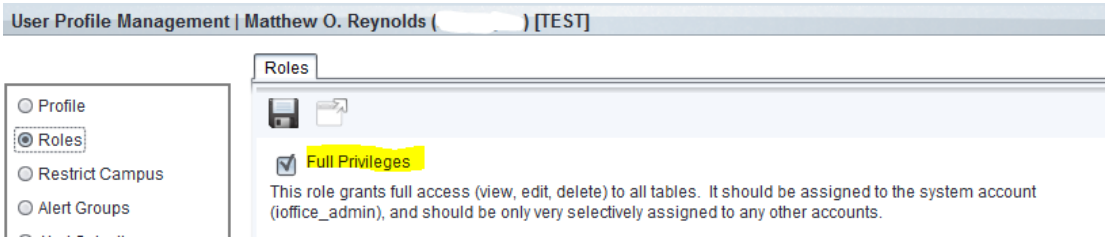


Figure 3.11: User Role Assignment

4. Run the Extraction Process on a Set of Records

   The extraction process should be run on the Active/Initial student lists for all schools or programs. You would need to click on Student or Exchange Visitor Lists for a given SEVIS organization and then click on the Initial Status or Active Status to get a list of student/scholar records.

Figure 3.12: SEVIS Initial and Active Student Lists

Click on theExtract Data button and select the appropriate Extract F-1 orJ-1 Form Data.

Figure 3.13: SEVIS Extract Tool Button

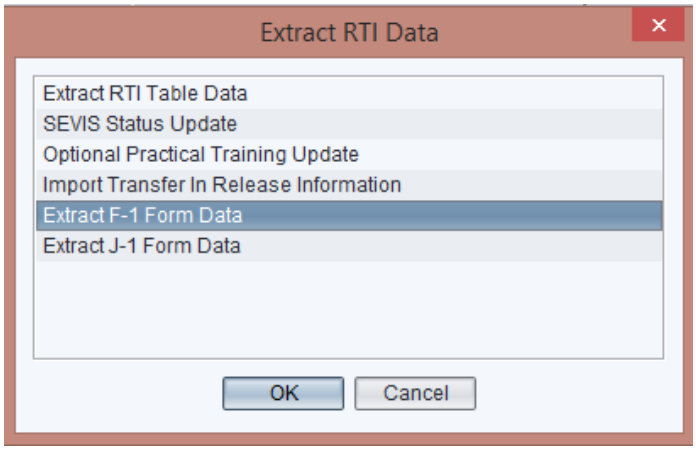


Figure 3.14: SEVIS Extract Tool Options

Next, provide a starting page index and then an ending page index for this extraction. It is recommended that you divide the number of total pages by the number of staff performing the extract, and designate a range of pages per user so that there is no overlap. The indices would be something along the lines of 1 and 5 where 1 is the first page of a student list and 5 is the last page in the range a particular staff user would like to extract. To make sure you are extracting data directly into the SUNAPSIS database, check the Extract for Direct Update / Data Conversion box.

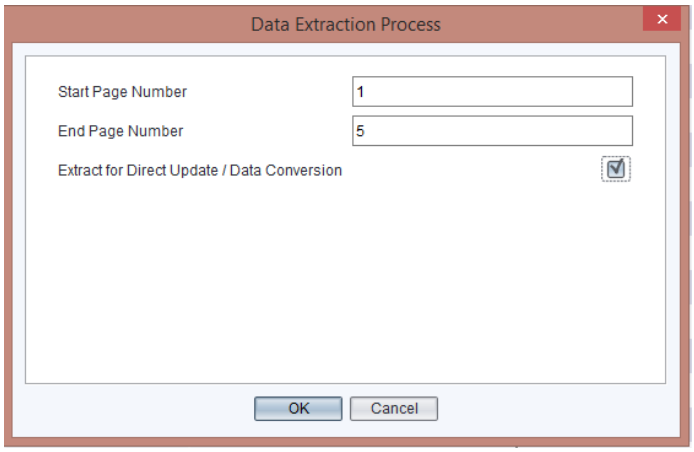


Figure 3.15: SEVIS Extract Tool Form Data Parameters

Once the process starts, the system will look at each record in that page range in the RTI website and populate the database with that information.

When all selected pages have finished being extracted, the embedded browser page will come to a standstill on the last page. The progress bar along the bottom, as shown below in figure 3.16, will have disappeared, indicating that the process has concluded.

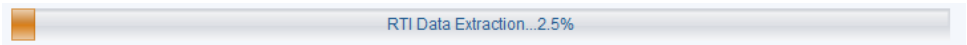


Figure 3.16: SEVIS Extract Tool Progress Bar

5. Log out and then Run the Other Schools and Programs

   Repeat step 4. as necessary for other schools and programs. Once you have run all the extracts for F students as a (Principal) Designated School Official ((P)DSO), log out of SEVIS RTI, and rerun the process for the J students and scholars as an (Alternate) Responsible Officer ((A)RO), if necessary.

6. Verification of the Process

   To verify that no records were missed either by user or machine issue you can run a table data extract process on a given initial or active status list of records in SEVIS. Go to that list in RTI and click on the Extract Data button once more. Select Extract RTI Table Data, confirm that decision, click yes to append default columns, and give it a unique name such as f1-initial-list. This will pull out the RTI list and run a table analysis to append additional information which will include the University ID number found in SUNAPSIS. Once this is completed, SUNAPSIS will display the table data in the main application window in a similar table format. You can then review the rows to see if any groups of records do not have a corresponding University ID which will indicate that the international persons were skipped in the data conversion process. For those groups you can identify the index range from the RTI list (i.e., pages of the list in SEVIS) and then run tasks 3–6 once more to attempt to recapture them. If you still are unable to capture them from RTI, refer to SEVIS ID - University ID Mapping section of the data conversion guide to ensure the internationals are populated there.

7. Restore User Roles to Original State

   In the user management tool make sure to remove any access to the Extract Form Data and potentially the Full Privileges roles for non DSO/RO personnel as this should only be available during this conversion process.

8. Optional Practical Training (OPT) / Curricular Practical Training (CPT) / Academic Training / Off-Campus Employment

   Unlike the core data conversion tools this step involves a status update tool for OPT and CPT that can be used throughout the life cycle use of the application. The employment based data is not automatically converted in the main data extraction process. To capture this information for the OPT and CPT employment periods the following list extraction can be run. Go to the RTI list of those on OPT or CPT and then click the Extract Data button selecting the appropriate option for either OPT Update or CPT Update. This functionality runs an update of the status, dates, and the receipt numbers to update the application with that information. Therefore this can populate the system with that core information on the first load of data. However this does not include the employer information. If you want to capture that information then you will need to make individual RTI edits (ie lookup OPT / CPT record on an individual's record and click update to get the employer address to flow over).

   Please note that the academic training and off-campus employment must be individually either data entered into the application or an RTI edit action must be made on those elements to capture that information in the application.

Appendix A

sunapsis Team Site visit

The final step in the implementation of the application is a site visit by a member of the SUNAPSIS Support Team for data conversion, training, and the go-live of the application. The site visit will normally last 3 business days. The approximate outline is as follows, but can be adjusted to fit your institutions needs. Inform the SUNAPSIS support team if you would like to make adjustments to the standard schedule.

Day 1 AM: Resolve outstanding tech issues (if any) and perform configuration checks
Day 1 PM: Data conversion (computer lab set-up recommended)
Day 2: End-user training (computer lab set-up recommended):

- How to get to the Launch page
- How to launch
- How Search works
- Profile record whats there, where to find data.
- Mass Emails
- Reports
- Alerts
- How Batching works
- How RTI works

Day 3 AM: Office Admin User Training (computer lab set-up recommended):

- User Management
- On-going Configurations
- E-Form Management
- Checklist Management

Day 3 PM: Resolve any outstanding questions/concerns with training and have users return to their office to use sunapsis while SUNAPSIS support is onsite to answer questions

Appendix B

Service Level Agreement

This section details what support you may expect from the SUNAPSIS team and what support is not performed outside of a separate services agreement.

B.1 On-going Support

Please refer to the Services Agreement, §1.2 'On-going Support'.

B.2 Technical Support Contact Information

Website	http://sunapsis.iu.edu
Email Address	sunapsup indiana.edu
Hours of Operation	Monday–Friday, 8:00 am–12:00 pm & 1:00pm–05:00 pm ET
Phone Number	812–855–0490
Fax Number	812–855–4118

Table B.1: Technical Support Contact Information

Appendix C

Data feed schema layout

This appendix is the data feed schema layout for SUNAPSIS:IOM. The Type column below for each field closely aligns with SQL data types. Please format the datetime fields like YYYY-MM-DD. Please use true/false for the Boolean values.

C.1 DataSetType

The DataSetType is the root element for the data feed. Neither of the elements is required allowing RecordTypes and EmailTypes to be in separate data feed files if desired.

XML Data Feed Structure DataSetType

Element Name data

Database Table Populated N/A

Element Name	Type	Size	Description	Required
record	RecordType	N/A	The record contains information about international student/scholars.	
emailMap	EmailType	N/A	The emailMap contains a mapping of network ID's and email addresses to allow academic advisors and department heads to use LDAP/Single Sign-On authentication for routed requests.	

Table C.1: DataSetType

C.2 RecordType

The record is the information from the institutional SIS or HR systems for a given individual identified by their institution specific university id. This information can be any combination of the following structures that define the record. The University ID is required and if any element structure is included then please review those particular structures for required fields, field types, and field sizes.

XML Data Feed Structure RecordType

Element Name record

Database Table Populated N/A

Element Name	Type	Size	Description	Required
prsn_univ_id	varchar	11	University ID	Yes
associatedIDNumbers	AssociatedIDNumbersType	-	This identifies additional ID numbers associated with this record.	
biographical	BiographicalType	-	The core biographical and address information with SEVIS batch implications.	
visaCitizenship	VisaCitizenshipType	-	The immigration status and citizenship information with SEVIS batch implications.	
admissions [admission]	AdmissionListType [AdmissionType]	-	List of current and future admission rows.	
programs [program]	ProgramListType [ProgramType]	-	List of active and completed academic programs with SEVIS batch implications.	
terms [term]	TermListType [TermType]	-	List of current enrollment information used for SEVIS registrations and enrollment analysis.	
courses [course]	CourseListType [CourseType]	-	List of current term courses for enrolled students used for enrollment analysis.	
saa	SAAType	-	The amount of FTE on a student academic appointment used for enrollment analysis	
studentGroups [studentGroup]	StudentGroupListType [StudentGroupType]	-	Any identifying groups a student may be a part of in the SIS—for information only.	
studentHolds [studentHold]	StudentHoldListType [StudentHoldType]	-	List of holds on a students record. Can be a list of past, current, and future holds.	
studentVisits [studentVisits]	StudentVisitListType [StudentVisitType]	-	Information about a visiting student.	
toefls [toefl]	ToeflListType [ToeflType]	-	List of TOEFL scores. Can be a list of all TOEFL tests on record for the person.	
employees [employee]	EmployeeListType [EmployeeType]	-	List of most recent employment records (currently active and recently terminated) used for H-1B and J-1 analysis.	
paychecks [paycheck]	PaycheckListType [PaycheckType]	-	Last 3-5 years of payroll paycheck data used for complete verification of H-1B salary.	
customTables [custom]	CustomListType [CustomTableType]	-	Custom Fields	

Table C.2: RecordType

C.3 AssociatedIDNumbersListType

A list collection of associated string University ID numbers tied to this account. The primary number must be defined in the RecordType and those defined in this structure will be used to determine if a record already exists in sunapsis.

XML Data Feed Structure AssociatedIDNumbersListType

Element Name associatedIDNumbers

Database Table Populated jbAssociatedIDNumbers

C.4 BiographicalType

This is the core biographical information for all international student or scholar records which will populate and update the various biographical and address elements in the application. This will also generate SEVIS batch records for biographical or local address changes as required by SEVIS.

XML Data Feed Structure BiographicalType

Element Name	Type	Size	Description	Note	Required
associatedIDNumber	varchar	11	Associated ID Number	String listing of ID numbers to be mapped to this primary record.	Yes

Table C.3: AssociatedIDNumbersListType

Element Name biographical

Database Table Populated iuieBio

Element Name	Type	Size	Description	Note	Required
prsn_prm_sfx_nm	varchar	15	Primary Name Suffix		
prsn_prm_last_nm	varchar	60	Primary Last Name	The primary last name and first name is required from the institutional system for the biographical update.	Yes
prsn_prm_1st_nm	varchar	60	Primary First Name		Yes
prsn_prm_mid_nm	varchar	60	Primary Middle Name		
prsn_pref_sfx_nm	varchar	15	Preferred Name Suffix		
prsn_pref_last_nm	varchar	60	Preferred Last Name		Yes
prsn_pref_1st_nm	varchar	60	Preferred First Name		Yes
prsn_pref_mid_nm	varchar	60	Preferred Middle Name		
prsn_gndr_cd	varchar	1	Gender Code	mapGender which maps to codeGender	Yes
prsn_martl_stat_cd	varchar	1	Marital Status	mapMaritalStatus which maps to codeMaritalStatus	
prsn_prm_ethnic_cd	varchar	5	Ethnicity	mapEthnicity which maps to codeEthnicity	
prsn_ofcl_res_cd	varchar	5	Residency Status	mapResidencyStatus which maps to codeResidencyStatus	
prsn_birth_dt	datetime	10	Date of Birth		Yes
prsn_birth_plc_nm	varchar	30	City of Birth		
prsn_birth_cntry_cd	varchar	3	Country of Birth	mapCountry which maps to viewCodeCompleteCountryList	
prsn_death_dt	datetime	10	Date of Death		
prsn_other_email_id	varchar	150	Non-University Email Address	Updated only if blank in sunapsis	
prsn_gds_cmp_email_addr	varchar	150	University Email Address	This email address is used by the email services, alerts, and e-forms to communicate.	
prsn_ntwrk_id	varchar	150	Client's Username	Authenticated by an institutional central login service for online services (i.e. iStart).	
prsn_cell_phn_nbr	varchar	25	Cell Phone Number		

prsn_lcl_ln1_addr	varchar	255	Local Address Line 1	The local U.S. address information drives the SEVIS Batch update address action. This information should be updated whenever the institution receives a new U.S. address for a client due to the 21 day SEVIS reporting requirement. Note: the state code values align with codeStates (all standard values for U.S. states)
prsn_lcl_ln2_addr	varchar	255	Local Address Line 2	
prsn_lcl_cty_nm	varchar	60	Local City	
prsn_lcl_st_cd	varchar	30	Local State Code	
prsn_lcl_zip_cd	varchar	20	Local Zip Code	
prsn_lcl_cntry_cd	varchar	53	Local Address Country	
prsn_lcl_phn_nbr	varchar	25	Local Phone	
prsn_lcl_subtype	varchar	25	Local Address Subtype	Institutional specific information (Table: codeAddressSubtype)
prsn_frgn_cntry_cd	varchar	3	Foreign Address Country	The foreign address information is required for creating initial SEVIS documents, which is primarily at the admissions stage. This information can be helpful for the population of those RTI fields in creating a SEVIS document. Note that the foreign country value uses the mapCountry which maps to viewCodeCompleteCountryList with SEVIS country values.
prsn_frgn_ln1_addr	varchar	255	Foreign Address Line 1	
prsn_frgn_ln2_addr	varchar	255	Foreign Address Line 2	
prsn_frgn_cty_nm	varchar	60	Foreign City	
prsn_frgn_st_cd	varchar	30	Foreign State or Province	
prsn_frgn_zip_cd	varchar	20	Foreign Postal Code	
prsn_frgn_phn_nbr	varchar	25	Foreign Phone	
prsn_frgn_subtype	varchar	10	Foreign Address Subtype	Institutional specific information (Table: codeAddressSubtype)
pic_url	varchar	250	Picture URL	

Table C.4: BiographicalType

C.5 VisaCitizenshipType

This should be populated with the most effective dated citizenship and immigration status for the international population. The immigration status will help drive some of the alerts, reporting, and filters for online services. The citizenship value may produce a SEVIS batch biographical update for changes of that value. These fields are optional because a new student may only have a one of the values, like citizenship, before the other value is assigned in the institutional

system.

XML Data Feed Structure VisaCitizenshipType

Element Name visaCitizenship

Database Table Populated iuieVisaCitizenship

Element Name	Type	Size	Description	Note	Required
prsn_vprmt_typ_cd	Text	3	Immigration Status	mapVisa which maps to codeVisa	
prsn_ctzn_cntry_cd	Text	3	Citizenship Country Code	mapCountry which maps to viewCodeComplete-CountryList with SEVIS country values	
prsn_ctzn_status_cd	Text	10	Citizenship Status Code	Institutional specific information (Table: codeCitizenshipStatus)	

Table C.5: VisaCitizenshipType

C.6 AdmissionListType / AdmissionType

This should be populated with admission records for current and future admission rows for international students (all visa types). This information drives alerts tied to records in the admission queue and provides for online services for newly admitted students (i.e. access to the SEVIS transfer-in e-form). There is no automatic SEVIS batch process tied to this information. This information will update or insert rows based on the campus, admitted term, and academic career.

XML Data Feed Structure AdmissionListType

Element Name admissions

XML Data Feed Substructure AdmissionType

Child Element Name admission

Database Table Populated iuieAdmissions

Element Name	Type	Size	Description	Note	Required
inst_cd	varchar	15	Campus	values align with codeCampus which are determined at each institution	Yes
stu_admt_term_cd	varchar	10	Term Code	values align with codeSemesters which are determined by each institution	Yes
acad_career_cd	varchar	6	Academic Career	mapAcademicCareer which maps to codeAcademicCareer (i.e. UGRD, GRAD)	Yes
appl_acad_lvl_cd	varchar	3	Academic Level	mapAcademicLevel which maps to codeAcademicLevel (10 - Freshman)	Yes
appl_pgm_stat_cd	varchar	4	Program Status	mapAcademicProgramSta which maps to codeProgramStatus	Yes

acad_plan_cd	varchar	12	Major	the mapping of this field to the SEVIS CIP code assigns the cip_code value	
acad_plan_desc	varchar	100	Major Description		
cip_code	varchar	10	SEVIS CIP Code	CIP code can be directly populated or based on the mapping to the acad_plan_cd	
appl_cntr_cd	varchar	4	Application Center	institutional specific information only * (Table: codeApplicationCenter)	
acad_pgm_cd	varchar	15	Academic Program	institutional specific information only * (Table: codeAcademicProgram)	
acad_grp_cd	varchar	6	Academic Program Groups	institutional specific information only * (Table: codeAcademicGroup)	
acad_deg_cd	varchar	10	Academic Degree	institutional specific information only * (Table: codeAcademicDegree)	
acad_dept_cd	varchar	20	Academic Department	institutional specific information only * (Table: codeAcademicDepartment)	
stu_admt_typ_cd	varchar	3	Admit Type	institutional specific information only * (Table: codeAdmitType)	
appl_pgm_actn_cd	varchar	5	Program Action Coding	institutional specific information only * (Table: codeProgramAction)	
ext_org_name	varchar	50	Name of Previous School		
stu_admt_term_beg_dt	datetime	10	Term Start Date		Yes
stu_admt_term_end_dt	datetime	10	Term End Date		
appl_pgm_actn_dt	datetime	10	Datestamp of Last Action on File	If this value is not provided then it will default to the current timestamp value upon insert	
school_funds	int	4	School Funding Amount		
school_funds_desc	varchar	500	School Funding Description		
appl_plan_seq_nbr	int	4	Sequence Number	used to identify different admissions so the system can handle dual-degrees (default: 1)	
appl_nbr	varchar	8	Application Number	used to identify different admission records should be unique per person	
appl_pgm_reas_cd	varchar	4	Program Action Reason Coding	institutional specific information only *(Table: codeProgramReason)	
stu_hs_grad_dt	datetime	10	High School Graduation Date		
stu_hs_sum_gpa_typ_cd	varchar	4	High School GPA Type	institutional specific information only *(Table: codeGPAType)	
stu_hs_sum_gpa_nbr	decimal(9,3)	13	High School GPA		
appl_rcvd_mthd_cd	varchar	3	Application Received Method	institutional specific information only *	

doc_id	string	14	Document ID	institutional specific information only
plan_online_ind	string	2	Plan Online Indicator	institutional specific information only

Table C.6: AdmissionListType / AdmissionType

C.7 ProgramListType / ProgramType

This should be populated with active and completed programs for international students. Information from the iuieAdmissions is also appended (by the application) into this table. This information drives template usage for CIP codes in creating SEVIS documents and SEVIS batch major changes. It also is used to alert to program completions, possible change in program, etc. This information will update or insert rows based on the campus, admitted term, academic career, and sequence number.

XML Data Feed Structure ProgramListType

Element Name programs

XML Data Feed Substructure ProgramType

Child Element Name program

Database Table Populated iuieProgram

Element Name	Type	Size	Description	Note	Required
inst_cd	varchar	15	Campus	values align with codeCampus which are determined at each institution	Yes
stu_admt_term_cd	varchar	10	Admitted Term	values align with codeSemesters which are determined by each institution	Yes
acad_career_cd	varchar	6	Academic Career	mapAcademicCareer which maps to codeAcademicCareer (i.e. UGRD, GRAD)	Yes
acad_lvl_cd	varchar	3	Academic Level	mapAcademicLevel which maps to codeAcademicLevel (10 - Freshman)	Yes
stu_pgm_stat_cd	varchar	2	Program Status	mapAcademicProgramSta which maps to codeProgramStatus	Yes
acad_plan_cd	varchar	12	Major	the mapping of this field to the SEVIS CIP code assigns the cip_code value	
acad_plan_desc	varchar	100	Major Description		
cip_code	varchar	10	SEVIS CIP Code	CIP code can be directly populated or based on the mapping to the acad_plan_cd	
struc_declare_dt	datetime	10	Major Declared Date	This is the date of major declaration.	
acad_grp_cd	varchar	6	Academic Program Groups	institutional specific information only * (Table: codeAcademicGroup)	

acad_pgm_cd	varchar	15	Academic Program	institutional specific information only * (Table: codeAcademicProgram)	
acad_deg_cd	varchar	10	Academic Degree	institutional specific information only * (Table: codeAcademicDegree)	
acad_dept_cd	varchar	20	Academic Department	institutional specific information only * (Table: codeAcademicDepartment)	
stu_pgm_actn_cd	varchar	5	Program Action Coding	institutional specific information only * (Table: codeProgramAction)	
acad_plan_typ_cd	varchar	3	Academic Plan Type Code	institutional specific information only * (Table: codeAcademicPlanType)	
stu_cum_gpa_nbr	numeric	9	Cumulative GPA		
stu_expct_grad_term_cd	varchar	10	Expected Term for Graduation	this drives the email service for students near graduation; aligns with codeSemesters	
stu_degr_ckot_stat_cd	varchar	2	Degree Check-out Status	institutional specific information only * (Table: codeDegreeCheckoutStatus)	
acad_plan_dplm_desc	varchar	100	Degree Awarded	i.e. Bachelor of Science, Master of Science in Computer Science (used by online graphs)	
stu_degr_cnfr_dt	datetime	10	Degree Conferred Date		
acad_plan_seq_nbr	int	4	Sequence Number	used to identify different programs so the system can handle dual-degrees (default: 1)	
acad_pgm_actn_dt	datetime	10	Datestamp of Last Action on File	For completed students records this marker is used to denote the 30 day reporting for SEVIS	Yes
row_eff_dt	datetime	10	Effective Date	the date this information goes/went	
plan_online_ind	string	2	Plan Online Indicator	institutional specific information only	

Table C.7: ProgramListTypeProgramType

C.8 TermListType / TermType

This should be populated with the current term for the enrolled international student population with the primary academic career, major, level, and CIP values associated with this term. There needs to be unique rows for an individual's term and campus so any multiple rows for the same campus and term will need to be condensed into a primary row with a sum of the credits. This information drives the SEVIS batch registration processes and builds term history data managed within the application. This information will update or insert rows based on the campus and term. This information will only stay in the application on the iuieTerm for the duration of the given term. The jbStudentTerm will retain history.

XML Data Feed Structure TermListType

Element Name terms

XML Data Feed Substructure TermType

Child Element Name term

Database Table Populated iuieTerm

Element Name	Type	Size	Description	Note	Required
inst_cd	varchar	15	Campus	values align with codeCampus which are determined at each institution	Yes
acad_term_cd	varchar	10	Term Code	values align with codeSemesters which are determined by each institution	Yes
acad_term_beg_dt	datetime	10	Term Begin Date		Yes
acad_term_end_dt	datetime	10	Term End Date		Yes
stu_drv_enrl_stat_ind	varchar	2	Enrollment Status	mapEnrollmentStatus which maps to codeEnrollmentStatus (i.e. E - enrolled)	Yes
stu_drv_enrl_substatus	varchar	10	Enrollment Sub-Status	institutional specific information only * (Table: codeEnrollmentSubstatus)	
stu_drvd_tot_term_unt_nbr	numeric	9	Total Credits		Yes
acad_career_cd	varchar	6	Academic Career	mapAcademicCareer which maps to codeAcademicCareer (i.e. UGRD, GRAD)	Yes
acadlvl_beg_term_cd	varchar	5	Academic Level	mapAcademicLevel which maps to codeAcademicLevel (10 - Freshman)	Yes
acad_prm_plan_1_cd	varchar	12	Primary Major	SUNAPSIS only reports one major for a student for a given campus and academic career, so condense dual-degrees to the major you want to report to SEVIS	
cip_code	varchar	10	SEVIS CIP Code	CIP code can be directly populated or based on the mapping to the acad_prm_plan_1_cd	
ft_flag	boolean	1	Full-Time Flag	Marker for automatic override of under-enrollment alerts. Discuss with international office to determine necessity. See notes on CourseType and SAA sections.	Yes
census_marker	Boolean	1	Census Marker	Marker to indicate data is official institutional census data	

Table C.8: TermListType / TermType

C.9 CourseListType / CourseType

This should be populated with course information for enrolled international students in the current term. This information is primarily used for the under-enrollment analysis and for general information lookup as part of the student record. If the iuieTerm table is populated with the ft_flag then the population of this view would be optional as that flag would handle the full-time verification. If that flag is not populated then this view can identify possible courses that may reduce the minimum hours for the enrollment analysis. This information will update or insert rows based on the term, course catalog number, and department. This information will only stay in the application for the duration of the given term.

XML Data Feed Structure CourseListType

Element Name courses

XML Data Feed Substructure CourseType

Child Element Name course

Database Table Populated iuieCourses

Element Name	Type	Size	Description	Note	Required
pplsft_acad_org_lvl_2_cd	varchar	15	Campus	values align with codeCampus which are determined at each institution	Yes
acad_term_cd	varchar	10	Term Code	values align with codeSemesters which are determined by each institution	Yes
crs_title	Varchar	100	Course Title		
crs_subj_dept_cd	varchar	10	Course Department Code		Yes
crs_catlg_nbr	varchar	20	Course Catalog Number		Yes
crn_nbr	varchar	10	Course Number		
stu_enrl_stat_cd	varchar	2	Enrollment Status	mapEnrollmentStatus which maps to codeEnrollmentStatus (i.e. E - enrolled)	Yes
acad_unt_tkn_nbr	numeric	9	Course Credits		Yes
stu_enrl_add_dt	datetime	10	Date Course Added		
stu_enrl_drp_dt	datetime	10	Date Course Dropped		
cls_instrc_mode	string	2	Course Instruction Mode Indicator	institutional specific information only	

Table C.9: CourseListType / CourseTyp

C.10 SAAType

This should be populated with FTE for the international students on student academic appointments (associate instructors, teaching assistants, research assistants, etc.) for the current term. This information is used to help determine the under-enrollment analysis for the international graduate student population. If the iuieTerm table is populated with the ft_flag then the population of this view would be optional as that flag would handle the full-time verification. If that flag is not populated then this view can identify the FTE percentage that may reduce the minimum hours for the enrollment analysis. This table would only be of interest if rules for full-time enrollment status based on student academic appointments apply to your institution. Please discuss with the international office. This information is updated or inserted with one row per individual. The information is wiped out at the end of each given term.

XML Data Feed Structure SAAType

Element Name N/A

Database Table Populated iuieSAA

Element Name	Type	Size	Description	Note	Required
job_pct_tm	numeric	9	Percentage of SAA in FTE		Yes

Table C.10: SAAType

C.11 StudentGroupListType / StudentGroupType

This should be populated with information about particular groups students are in (Athletes, sponsored students, other miscellaneous meta data that may be in your institutional system). This information is not used by sunapsis, but may be useful for custom alerts or checklist task extensions, or just as information for staff to have available on a record.

XML Data Feed Structure StudentGroupListType

Element Name studentGroups

XML Data Feed Substructure StudentGroupType

Child Element Name studentGroup

Database Table Populated iuieStudentGroup

Element Name	Type	Size	Description	Note	Required
inst_cd	varchar	15	Campus		Yes
stu_grp_cd	varchar	4	Student Group Code		Yes
stu_grp_desc	varchar	30	Student Group Description		
row_eff_dt	datetime	10	Effective date		

Table C.11: StudentGroupListType / StudentGroupType

C.12 StudentHoldListType / StudentHoldType

This should be populated with information concerning service indicators such as holds on a student record.

XML Data Feed Structure StudentHoldListType

Element Name studentHolds

XML Data Feed Substructure StudentHoldType

Child Element Name studentHold

Database Table Populated iuieStudentHold

Element Name	Type	Size	Description	Note	Required
sprhold_hldd_code	varchar	5	Hold code		Yes
sprhold_user	varchar	20	Hold creator username		
sprhold_from_date	datetime	10	Hold from date		
sprhold_to_date	datetime	10	Hold to date		
sprhold_release_ind	varchar	5	Hold release indicator		
sprhold_reason	varchar	100	Hold reason		
sprhold_amount_owed	numeric	9	Hold amount owed		
sprhold_activity_date	datetime	10	Hold activity date		
sprhold_remove_user	varchar	20	Hold remover username		

Table C.12: StudentHoldListType / StudentHoldType

C.13 StudentVisitListType / StudentVisitType

This should be populated with information concerning a visiting student.

XML Data Feed Structure StudentVisitListType

Element Name studentVisit

XML Data Feed Substructure StudentVisitType

Child Element Name studentVisit

Database Table Populated iuieStudentVisit

Element Name	Type	Size	Description	Note	Required
lab_name	varchar	100	Lab name		Yes
app_id	Varchar	100	Application ID		Yes
visiting_begin_date	datetime	10	Visit begin date		
visiting_end_date	datetime	10	Visit end date		
supervising_faculty_pidm	varchar	20	Supervising faculty username		
supervising_faculty_name	varchar	50	Supervising faculty name		
english_req_waived	varchar	5	English requirement waived		
primary_application	varchar	100	Primary application		
sxu_get_faculty_email_address	varchar	150	Supervising faculty email address		
sxu_get_faculty_phone1	varchar	25	Supervising faculty phone number		

Table C.13: StudentVisitListType / StudentVisitType

C.14 ToeflListType / ToeflType

This should be populated with information regarding English proficiency tests.

XML Data Feed Structure ToeflListType

Element Name toefls

XML Data Feed Substructure ToeflType

Child Element Name toefl

Database Table Populated iuieTOEFL

Element Name	Type	Size	Description	Note	Required
stu_tst_cmpnt_cd	varchar	10	Test component code		Yes
stu_tst_dt	datetime	10	Test date		Yes
stu_tst_scr_nbr	numeric	9	Test score		Yes
stu_tst_desc	varchar	30	Test Description		Yes

Table C.14: ToeflListType / ToeflType

C.15 EmployeeListType / EmployeeType

This should be populated with the most recent (currently active or recently terminated) employment information for the international so that the system could notify about H-1B or J-1 issues because of position termination, annual compensation review, possible change in position (based on position number), identification of scholar employees (based on salary plan and grade codes), etc. This table should only be required if the institution plans to utilize audits against the H-1B and J-1 data. This information would be core HR data.

XML Data Feed Structure CourseListType

Element Name employees

XML Data Feed Substructure EmployeeType

Child Element Name employee

Database Table Populated iuieEmployee

Element Name	Type	Size	Description	Note	Required
pos_nbr	varchar	8	Position Number	value used to determine if possible change to new position and to align position to LCA	Yes
pos_desc	varchar	255	Position Description	useful for verification if a change of position number alert is activated	Yes
emp_stat_cd	varchar	1	Employee Status Code	mapEmployeeStatus which maps to codeEmployeeStatus (i.e. A - Active)	Yes
row_hist_cur_fut_ind	varchar	10	Row Type Indicator		
job_pos_entry_dt	datetime	10	Position Entry Date		
job_emp_typ_desc	varchar	30	Employment Type Description	informational only and at IU it is info like salaried, hourly, etc.	
job_slry_plan_cd	varchar	15	Salary Plan Code	specific institutional codes for salary plans (i.e. academic); informational only	
job_slry_grd_cd	varchar	15	Salary Grade Code	specific institutional codes for salary grades (i.e. various faculty levels); informational only	
job_comp_rt	numeric	9	Compensation Pay Rate	rate by hourly, bi-weekly, monthly, etc.	
job_comp_annl_rt	numeric	9	Compensation Annual Pay Rate	value is audited for the H-1B to ensure salary on file complies with salary on file with DOL	Yes
job_reg_temp_ind	varchar	1	Regular or Temporary	mapEmployeeRegTemp which maps to codeEmployeeRegTemp (i.e. R - regular)	Yes
job_full_pt_tm_ind	varchar	2	Full-Time or Part-Time Status	mapEmployeeTime which maps to codeEmployeeTime (i.e. FT - fulltime)	Yes
emp_tot_fte_rt	numeric	9	Numeric FTE		Yes
emp_occptn_unit_snrty_dt	datetime	10	Unit Seniority Date		

pyck_lst_chk_dt	datetime	10	Last Paycheck Date		
job_dept_setid_cd	varchar	15	Department Campus	values align with code-Campus which are determined at each institution	Yes
job_dept_id	varchar	15	Department Code	institutional specific information only	Yes
job_dept_desc	varchar	60	Department Description		
job_loc_desc	varchar	30	Job Location Description		
prsn_cmp_ln1_addr	varchar	255	Campus Address Line 1		
prsn_cmp_ln2_addr	varchar	255	Campus Address Line 2		
prsn_cmp_ln3_addr	varchar	255	Campus Address Line 3		
prsn_cmp_phn_nbr	varchar	24	Campus Phone		

Table C.15: EmployeeListType / EmployeeType

C.16 PaycheckListType / PaycheckType

This should be populated with H-1B paycheck information so the system can run the analysis of actual payments for the Department of Labor compliance. This should cover between 3-5 years of paycheck data to cover the entire H-1B period for review. At IU we review the last 5 years of paycheck data. This table is optional and it serves as an audit of actual payments versus the H-1B minimum salary value. There is a check of the salary on the HR record but this verifies against payroll data in this analysis. This information is updated only if a record matches all the fields otherwise it is inserted. The information will stay in the application for 5 years.

XML Data Feed Structure PaycheckListType

Element Name paychecks

XML Data Feed Substructure PaycheckType

Child Element Name paycheck

Database Table Populated iuiePaycheck

Element Name	Type	Size	Description	Note	Required
pyck_earn_setid_cd	varchar	15	Department Campus	values align with code-Campus which are determined at each institution	Yes
pyck_earn_dept_id	varchar	10	Department Code	institutional specific information only	Yes
pos_nbr	varchar	8	Position Number		Yes
pyck_earn_amt	numeric	9	Amount Earned	value used in analysis for H-1B payment	Yes
pyck_earn_cd	varchar	5	Paycheck Earning Code	institutional specific information only and can be used for multi-payments in same period	
pyck_earn_beg_dt	datetime	10	Pay Period Begin Date		Yes
pyck_earn_end_dt	datetime	10	Pay Period End Date		Yes

Table C.16: PaycheckListType / PaycheckType

C.17 CustomListType / CustomTableType

This type can be used to bring additional data into pre-configured custom tables in SUNAPSIS. To map the data into custom tables, this table should be populated with the custom table name to map to (e.g. jbCustomFields1), the column name of the field (e.g. customField1) and the value to populate into this field.

XML Data Feed Structure CustomListType

Element Name customTables

XML Data Feed Substructure CustomTableType

Child Element Name custom

XML Data Feed Subsubstructure CustomFieldType

Grandchild Element Name field

Database Table Populated jbCustomFieldsX

Element Name	Type	Size	Description	Note	Required
table	varchar	15	Table Name	One of the jbCustomFieldsXX tables, e.g., jbCustomFields1	Yes

Table C.17: Elements of CustomTableType

Element Name	Type	Size	Description	Note	Required
name	varchar	15	Name	Name of the jbCustomFieldsXX column, customFieldXX, e.g., customField1	Yes
value	varchar	4000	Value		Yes

Table C.18: Elements of CustomFieldType

C.18 EmailType

The Emailmap contains a mapping of network id to official email address for academic advisors, and other possible second approvers, for the Single Signon capable second approver authentication.

XML Data Feed Structure EmailType

Element Name emailMap

Database Table Populated iuieEmailList

Element Name	Type	Size	Description	Note	Required
prsn_network_id	varchar	20	Network ID		Yes
prsn_gds_cmp_email_addr	varchar	70	Email Address		Yes

Table C.19: EmailType

Appendix D

International Office Module Mapping Structure

This Appendix is the International Office Module Mapping structure. This section of the technical guide is to help you plan to map your institutional system's specific values to the sunapsis values for the various structure types below. This configuration menu is located in sunapsis within Administrative Management⇒Institutional Code and Data Configurations⇒Institutional Specific Mappings to SUNAPSIS. Once this has been taken care of, sunapsis will be able to interpret your institutional codes and translate them into codes used internally by the system. This is mainly for the purpose of the XML data feed process to help sunapsis features understand your institutional system values coming in each day.

Institutional specific mappings do not need to be set if the sunapsis value is the same as the value you use in your institutional system (e.g., banner, peoplesoft, homegrown solution, etc.). For example, if your SIS code for Graduate Academic Careers is 'GRAD' without the single quotation marks, you do not need to map the value to a sunapsis value, as sunapsis already knows how to interpret GRAD since it is a pre-existing sunapsis value. If your code was 'GRD' without the single quotation marks, you would need to map GRD to the sunapsis value GRAD in the Institutional specific mappings Academic Career table.

You may map more than one Institutional specific code to a single sunapsis value. For example, you may have several codes such as GRD1, GRD2, GRD3, etc. that indicate that someone is partaking in a Graduate Academic Career. You may map all three of these codes to 'GRAD' in this instance, so that your data can all be represented as "Graduate Student" where applicable in the sunapsis system.

NOTE: Those performing the fsaATLAS data conversion will need to fill out the Visa Type mapping structure regardless for F and J visa types.

D.1 Map Academic Career

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
MED	Medicine	
OPT	Optometry	
UGRD	Undergraduate	
GRAD	Graduate	
LAW	Law	
DENT	Dentistry	
INTEN	Intensive English	
GRD1	Graduate (Distance)	
PROF	Professional	

Table D.1: mapAcademicCareer

D.2 Map Academic Level

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
00	Associates	
10	Freshman	
20	Sophomore	
30	Junior	
40	Senior	
GR	Graduate, Unspecified	
50	Masters	
70	Professional	
60	Doctoral	
NDG	Non-degree Graduate	
NDU	Non-degree Undergraduate	
NDP	Non-degree Professional	
UG	Bachelors, Unspecified	
IEP	Intensive English (Open Doors)	
OPT	OPT (Open Doors)	
ND	Non-degree (Open Doors)	
CRT	Certificate	

Table D.2: mapAcademicLevel

D.3 Map Majors to SEVIS CIP

This is the mapping between institutional academic major codes and the SEVIS CIP codes. We did not include the full list because there are in excess of 2,000 in the SEVIS CIP majors. If the application is pulling CIP codes from the institutional system, this table does not need to be updated.

D.4 Map Academic Program Status

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
AC	Active in Program	
AD	Admitted	
AP	Applicant	
CN	Cancelled	
PM	Prematriculant	
CM	Completed Program	
DC	Discontinued	
DE	Deceased	
LE	On Leave	
DF	Deferred	
DS	Dismissed	
CD	Conditional Admit	
AA	Admitted (IU Other)	

Table D.3: mapAcademicProgramStatus

D.5 Map Country Codes

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
AA	Aruba	
AC	Antigua and Barbuda	
AE	United Arab Emirates	
AF	Afghanistan	
AG	Algeria	

AJ	Azerbaijan
AL	Albania
AM	Armenia
AN	Andorra
AO	Angola
AQ	American Samoa
AR	Argentina
AS	Australia
AT	Ashmore and Cartier Islands
AU	Austria
AV	Anguilla
AX	Akrotiri
AY	Antarctica
BA	Bahrain
BB	Barbados
BC	Botswana
BD	Bermuda
BE	Belgium
BF	Bahamas
BG	Bangladesh
BH	Belize
BK	Bosnia and Herzegovina
BL	Bolivia
BM	Burma
BN	Benin
BO	Belarus
BP	Solomon Islands
BQ	Navassa Island
BR	Brazil
BS	Bassas Da India
BT	Bhutan
BU	Bulgaria
BV	Bouvet Island
BX	Brunei
BY	Burundi
BZ	Germany, Berlin
CA	Canada
CB	Cambodia
CD	Chad
CE	Sri Lanka
CF	Congo (Brazzaville)
CG	Congo (Kinshasa)
CH	China
CI	Chile
CJ	Cayman Islands
CK	Cocos (Keeling) Islands
CL	Central and Southern Line Islands
CM	Cameroon
CN	Comoros
CO	Colombia
CQ	Northern Mariana Islands
CR	Coral Sea Islands
CS	Costa Rica
CT	Central African Republic
CU	Cuba
CV	Cape Verde
CW	Cook Islands
CY	Cyprus
CZ	Czechoslovakia

DA	Denmark
DJ	Djibouti
DO	Dominica
DQ	Jarvis Island
DR	Dominican Republic
DX	Dhekelia
EC	Ecuador
EG	Egypt
EI	Ireland
EK	Equatorial Guinea
EN	Estonia
EQ	Canton and Enderbury
ER	Eritrea
ES	El Salvador
ET	Ethiopia
EU	Europa Island
EZ	Czech Republic
FG	French Guiana
FI	Finland
FJ	Fiji
FK	Falkland Islands (Islas Malvinas)
FM	Micronesia, Federated States of
FO	Faroe Islands
FP	French Polynesia
FQ	Baker Island
FR	France
FS	French Southern and Antarctic Lands
FT	French Territory of the Afars and Issas
GA	Gambia
GB	Gabon
GC	German Democratic Republic
GE	Federal Republic of Germany
GG	Georgia
GH	Ghana
GI	Gibraltar
GJ	Grenada
GK	Guernsey
GL	Greenland
GM	Germany
GN	Gilbert and Ellice Islands
GO	Glorioso Islands
GP	Guadeloupe
GQ	Guam
GR	Greece
GS	Gilbert Islands
GT	Guatemala
GV	Guinea
GY	Guyana
GZ	Gaza Strip
HA	Haiti
HK	Hong Kong
HM	Heard and McDonald Islands
HO	Honduras
HQ	Howland Island
HR	Croatia
HU	Hungary
IC	Iceland
ID	Indonesia
IM	Isle of Man

IN	India
IO	British Indian Ocean Territory
IP	Clipperton Island
IQ	United States Misc. Pacific Islands
IR	Iran
IS	Israel
IT	Italy
IU	Israel-Syria Demilitarized Zone
IV	Cote D Ivoire
IW	Israel-Jordan Demilitarized Zone
IY	Iraq-Saudi Arabia Neutral Zone
IZ	Iraq
JA	Japan
JE	Jersey
JM	Jamaica
JN	Jan Mayen
JO	Jordan
JQ	Johnston Atoll
JS	Svalbard and Jan Mayen
JU	Juan De Nova Island
KE	Kenya
KG	Kyrgyzstan
KN	North Korea
KQ	Kingman Reef
KR	Kiribati
KS	South Korea
KT	Christmas Island
KU	Kuwait
KV	Kosovo
KZ	Kazakhstan
LA	Laos
LE	Lebanon
LG	Latvia
LH	Lithuania
LI	Liberia
LO	Slovakia
LQ	Palmyra Atoll
LS	Liechtenstein
LT	Lesotho
LU	Luxembourg
LY	Libya
MA	Madagascar
MB	Martinique
MC	Macau
MD	Moldova
ME	Spanish North Africa
MF	Mayotte
MG	Mongolia
MH	Montserrat
MI	Malawi
MJ	Montenegro
MK	Macedonia
ML	Mali
MN	Monaco
MO	Morocco
MP	Mauritius
MQ	Midway Islands
MR	Mauritania
MT	Malta

MU	Oman
MV	Maldives
MW	Montenegro (Prior to 2001)
MX	Mexico
MY	Malaysia
MZ	Mozambique
NC	New Caledonia
NE	Niue
NF	Norfolk Island
NG	Niger
NH	Vanuatu
NI	Nigeria
NL	Netherlands
NN	Sint Maarten
NO	Norway
NP	Nepal
NR	Nauru
NS	Suriname
NT	Netherlands Antilles
NU	Nicaragua
NZ	New Zealand
OD	South Sudan
PA	Paraguay
PC	Pitcairn Islands
PE	Peru
PF	Paracel Islands
PG	Spratly Islands
PJ	Etorofu, Hamomai, Kunashiri, and Shikotan Islands
PK	Pakistan
PL	Poland
PM	Panama
PO	Portugal
PP	Papua New Guinea
PQ	Canal Zone
PS	Palau
PT	Portuguese Timor
PU	Guinea-Bissau
QA	Qatar
RE	Reunion
RH	Southern Rhodesia
RI	Serbia
RM	Marshall Islands
RN	Saint Martin
RO	Romania
RP	Philippines
RQ	Puerto Rica
RS	Russia
RW	Rwanda
SA	Saudi Arabia
SB	St Pierre and Miquelon
SC	St Kitts and Nevis
SE	Seychelles
SF	South Africa
SG	Senegal
SH	Saint Helena, Ascension, and Tristan Da Cunha
SI	Slovenia
SK	Sikkim

SL	Sierra Leone
SM	San Marino
SN	Singapore
SO	Somalia
SP	Spain
SQ	Swan Islands
SR	Serbia (Prior to 2001)
SS	Spanish Sahara
ST	Saint Lucia
SU	Sudan
SV	Svalbard
SW	Sweden
SX	South Georgia and the South Sandwich Islands
SY	Syria
SZ	Switzerland
TB	Saint Barthelemy
TD	Trinidad and Tobago
TE	Tromelin Island
TH	Thailand
TI	Tajikistan
TK	Turks and Caicos Islands
TL	Tokelau
TN	Tonga
TO	Togo
TP	Sao Tome and Principe
TQ	Trust Territory of the Pacific Islands
TS	Tunisia
TT	Timor-Leste
TU	Turkey
TV	Tuvalu
TW	Taiwan
TX	Turkmenistan
TZ	Tanzania
U2	Neutral Zone
U3	Stateless
U5	Unknown
UC	Curacao
UG	Uganda
UK	United Kingdom
UP	Ukraine
UR	Union of Soviet Socialist Republics
US	United States
UV	Burkina Faso
UY	Uruguay
UZ	Uzbekistan
VC	St Vincent and the Grenadines
VE	Venezuela
VI	British Virgin Islands
VM	Vietnam
VN	Democratic Republic of Viet-nam
VQ	Virgin Islands
VS	Republic of Viet-nam
VT	Vatican City
WA	Namibia
WE	West Bank
WF	Wallis and Futuna Islands
WI	Western Sahara
WQ	Wake Island

WS	Samoa
WZ	Swaziland
YE	Yeman (Sanaa)
YI	Serbia and Montenegro
YM	Yemen
YO	Yugoslavia
YQ	Southern Ryukyu Islands
YS	Yemen (Aden)
ZA	Zambia
ZI	Zimbabwe

Table D.4: mapCountry

D.6 Map Employee Regular / Temporary

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
R	Regular Employee	
T	Temporary Employee	

Table D.5: mapEmployeeRegTemp

D.7 Map Employee Status

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
A	Active	
T	Terminated	
O	On Leave	
P	Leave With Pay	
NT	Unclear Employment	
H	Hired - Not Yet Active	

Table D.6: mapEmployeeStatus

D.8 Map Employee Time

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
FT	Full-Time Employment	
PT	Part-Time Employment	

Table D.7: mapEmployeeTime

D.9 Map Enrollment Status

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
E	Enrolled	
A	Audit	
W	Waitlist	
D	Dropped	
S	Scheduled - Not Enrolled	

Table D.8: mapEnrollmentStatus

D.10 Map Ethnicity

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
1	White	
2	Black/African American	
3	Hispanic/Latino	
4	Asian	
5	American Indian/Alaska Native	
6	NR-Alien	
7	Native Hawaiian/Other Pacific Islander	
8	Two or More Races	

Table D.9: mapEthnicity

D.11 Map Gender

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
M	Male	
F	Female	
U	Unknown	

Table D.10: mapGender

D.12 Map Marital Status

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
S	Single	
M	Married	
U	Unknown	

Table D.11: mapMaritalStatus

D.13 Map Residency Status

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
NR	Non-Resident	
R	Resident	

Table D.12: mapResidencyStatus

D.14 Map Scholar Plan / Grade Codes

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
01	Teaching Scholar	
02	Research Scholar	
03	Short Term Scholar	
04	Other Scholar	
05	Non-Scholar	

Table D.13: mapScholarPlanGradeCodes

D.15 Map Visa Type

SUNAPSIS Value	SUNAPSIS Description	Institutional Value
485	I-485 Appl for Adj of Status	
A1	A-1 Embasy/Consul Employe/Dep	
A2	A-2 Govt Official/Employe/Dep	
A3	A-3 Personal Empl/Deps A1-A2	
AA	Alien Abroad	
AR1	Alien Registration	
ASY	Asylee (Political asylum)	
B1	B-1 Temporary Visitor Business	
B2	B-2 Temporary Visitor Pleasure	
BU1	Business Traveller	
C1	C-1 Alien in Transit	
C2	C-2 Alien in Transit to UN HQ	
C3	C-3 Govt Official in Transit	
D	D: Crewman (seaman or airman)	
DW1	Distinguished Temporary Worker	
E1	E-1 Treaty Trader Dependents	
E2	E-2 Treaty Investor/Dependents	
F-1	F-1 Student	
F-2	F-2 Dependent of Student	
G1	G-1 Principal Govt Rep/Deps	
G2	G-2 Othr Residnt Govt Rep/Deps	
G3	G-3 nonrec/nonmbr Gov Rep/Deps	
G4	G-4 Intl Org Officer/Empl/Dep	
G5	G-5 Personal Empl/Deps G1-G4	
H1A	H-1A Temp Worker Nursing	
H1B	H-1B Temp Worker Specialty Occ	
H1C	H-1C Temp Worker Reg Nurse	
H2A	H-2A Temp Worker Agriculture	
H2B	H-2B Temp Worker Non-Agricult	
H3	H-3 Trainee	
H4	H-4 Spouse/Child of H1-H3	
I	I: Foreign Media Rep/Deps	
I-9	I-9 (Employment Eligibility)	
J1	J-1 Exchange Visitor	
J2	J-2 Spouse/Child of J-1	
K1	K-1 Fiance(e) of US Citizen	
K2	K-2 Child of K1 Alien	
K3	K-3 Spouse of US Citizen	
K4	K-4 Minor Child of K3 Alien	
L1	L-1 Intracompany Transferee	
L2	L-2 Spouse/Child of L1 Alien	
LPR	Permanent Resident	
M-1	M-1 Student Rec Nonacadem Inst	
M-2	M-2 Spouse/Child of M1 Alien	
N8	N-8 Parent of Child w/spl Stat	
N9	N-9 Child of Parent w/spl Stat	
NLR	Now US Citizen-No Visa Reqd	
NT1	NATO-1 Principal NATO Rep	
NT2	NATO-2 Other NATO State Rep	
NT3	NATO-3 Clerical Staff NATO/Dep	
NT4	NATO-4 Official of NATO/Deps	
NT5	NATO-5 NATO Experts NATO/Deps	
NT6	NATO-6 Civiln Employ NATO/Deps	
NT7	NATO-7 Personl Empl NT1-6/Deps	
O	Other	

O1	O-1 Worker w/Extraord Ability
O2	O-2 Assistant of O1 Alien
O3	O-3 Family of O1 and O2 Alien
P1	P-1 Intl Recog Entertain/Athl
P2	P-2 Exchng Entertainer/Artist
P3	P-3 Unique Entertainer/Artist
P4	P-4 Family of P1-P3
PIP	Public Interest Parolee
Q1	Q-1 Cultural Exchange Visitor
Q2	Q-2 Irish Cultr Exchng Visitor
R	R: Religious Worker
R2	R-2 Religious Worker Dependent
REF	Refugee
S	S: Federal Witness
SD1	Sponsored Domestic Helper
TD	TD Dependent of TN Alien
TN	TN NAFTA Professional
TPS	Temporary Protected Status
V1	V-1 Permanent Resident Spouse
V2	V-2 Child of V-1
V3	V-3 Child of V-1 or V-2
OX	Status in Transition
F-3	F-3 Canadian / Mexican Commuter Student
E3	E-3 Temporary Australian Worker
WB	Visa Waiver Business
WT	Visa Waiver Tourist
U-1	Victims of qualifying criminal activity
U-2	Victims of qualifying criminal activity: spouse of victim
U-3	Victims of qualifying criminal activity: children of victim
U-4	Victims of qualifying criminal activity: parents of victim who are children
U-5	Victims of qualifying criminal activity: siblings (of minor age) of victim who are children
DACA	Consideration of Deferred Action for Childhood Arrivals

Table D.14: mapVisa

Appendix E

Voluntary Product Accessibility Template

The SUNAPSIS team desires to create a product that is accessible for everyone to use. We provide here our Voluntary Product Accessibility Template (VPAT) for your review.

Date: February 16, 2011
Product Name: SUNAPSIS: IOM
Product Version Number:
Vendor Company Name:Indiana University
Vendor Contact Name: Gillian Thiebe, SUNAPSIS Business Manager
Vendor Contact Telephone: (812) 855–0490
Vendor Information: http://sunapsis.iu.edu/

E.1 Summary Table

Criteria	Level of Support & Supporting Features	Remarks and explanations
Section 1194.21 Software Applications and Operating Systems		
Section 1194.22 Web-based Internet Information and Applications		
Section 1194.23 Telecommunications Products		
Section 1194.24 Video and Multi-media Products		
Section 1194.25 Self-Contained, Closed Products		
Section 1194.26 Desktop and Portable Computers		
Section 1194.31 Functional Performance Criteria		
Section 1194.41 Information, Documentation and Support		

Table E.1: Summary Table

E.2 Section 1194.21 Software Applications and Operating Systems

Criteria	Level of Support & Supporting Features	Remarks and explanations
(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.	Menus and form items can be navigated via the tab and/or arrow keys.	All accessibility features require the Java Access Bridge to be installed on the client computer.

(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.	The application has no effect on the behavior of the operating system or other applications, accessibility-related or otherwise.	
(c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that Assistive Technology can track focus and focus changes.	The active window is always on top, and has focus. Active form elements contain a blinking cursor. Active buttons have a dotted highlight around them.	
(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to Assistive Technology. When an image represents a program element, the information conveyed by the image must also be available in text.	Elements have titles and labels accessible to assistive technologies. Icon buttons also have alternate title text.	
(e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.	Icons are uniform across the application.	
(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.	All this information is available through the use of the Java Access Bridge	
(g) Applications shall not override user selected contrast and color selections and other individual display attributes.	The application does not support color and font changes within the application, and does not use operating system defaults.The system uses default Java UI elements, which differ in look and feel from operating system UI elements, in order to be similar across all platforms.	
(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.	The animation within the application is for presentational purposes only, and provides no additional information	
(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.	All color coding within the application is accompanied by unique, meaningful text so that the color is not a necessary part of the application.	
(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.	N/A	The application does not permit the user to adjust color settings
(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.	The application contains no blinking or flashing elements, except for the cursor, which has a blink frequency of 1Hz.	

(l) When electronic forms are used, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.	Depending on the definition of a form, either all information in the application is submitted via an electronic form, or none of it is. In either case, all fields, action, and help options are accessible via assistive technology.	

Table E.2: Software Applications and Operating Systems

E.3 Section 1194.22 Web-based Intranet and Internet information and Applications

Criteria	Level of Support & Supporting Features	Remarks and explanations
(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).	All non-textual elements feature descriptive alt attributes.	
(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.	N/A	iStart does not contain any multimedia presentations
(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.	Color is not necessary for portraying information. Color text offers both descriptive text, and semantic class names	
(d) Documents shall be organized so they are readable without requiring an associated style sheet.	iStart is completely useable with CSS turned off inside of a web browser.	
(e) Redundant text links shall be provided for each active region of a server-side image map.	N/A	iStart contains no image maps
(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.	N/A	iStart contains no image maps
(g) Row and column headers shall be identified for data tables.	iStart uses the thead and th XHTML tags to define headers for table columns and rows.	
(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.	iStart uses th and td XHTML tags to associate headings and data.	
(i) Frames shall be titled with text that facilitates frame identification and navigation	N/A	iStart does not make use of frames
(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.	iStart uses the Script.aculo.us JavaScript libraries for its animation functions which provide smooth animations without screen flicker.	
(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.	N/A	iStart has no areas that don't comply with this part, and so do not need additional pages for compliance.
(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by Assistive Technology.		iStart is inoperable without JavaScript enabled.

(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with 1194.21(a) through (l).		The iStart graphs require Adobe Flash, and the page provides a link to the Adobe plugin. The SUNAPSIS application launch page includes a link to the Java plugin.
(n) When electronic forms are designed to be completed on-line, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.	The forms on iStart use label, formfield, and legend tags to describe the form elements to make them accessible.	
(o) A method shall be provided that permits users to skip repetitive navigation links.	iStart includes a "Skip to Content" link when CSS is turned off.	
(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.		

Table E.3: Web-based Intranet and Internet information and Applications

E.4 Section 1194.23 Telecommunications Products

Criteria	Level of Support & Supporting Features	Remarks and explanations
(a) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a standard non-acoustic connection point for TTYs. Microphones shall be capable of being turned on and off to allow the user to intermix speech with TTY use.		
(b) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.		
(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.		
(d) Voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems that require a response from a user within a time interval, shall give an alert when the time interval is about to run out, and shall provide sufficient time for the user to indicate more time is required.		
(e) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.		
(f) For transmitted voice signals, telecommunications products shall provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one intermediate step of 12 dB of gain shall be provided.		
(g) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the volume to the default level after every use.		

(h) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.		
(i) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.		
(j) Products that transmit or conduct information or communication, shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.		
(k)(1) Products which have mechanically operated controls or keys shall comply with the following: Controls and Keys shall be tactilely discernible without activating the controls or keys.		
(k)(2) Products which have mechanically operated controls or keys shall comply with the following: Controls and Keys shall be operable with one hand and shall not require tight grasping, pinching, twisting of the wrist. The force required to activate controls and keys shall be 5 lbs. (22.2N) maximum.		
(k)(3) Products which have mechanically operated controls or keys shall comply with the following: If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key repeat rate shall be adjustable to 2 seconds per character.		
(k)(4) Products which have mechanically operated controls or keys shall comply with the following: The status of all locking or toggle controls or keys shall be visually discernible, and discernible either through touch or sound.		

Table E.4: Telecommunications Products

E.5 Section 1194.24 Video and Multi-media Products

Criteria	Level of Support & Supporting Features	Remarks and explanations

a) All analog television displays 13 inches and larger, and computer equipment that includes analog television receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals. As soon as practicable, but not later than July 1, 2002, widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and standalone DTV tuners, whether or not they are marketed with display screens, and computer equipment that includes DTV receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.		
(b) Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.		
(c) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, shall be open or closed captioned.		
(d) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described.		
(e) Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.		

Table E.5: Video and Multi-media Products

E.6 Section 1194.25 Self-Contained, Closed Products

Criteria	Level of Support & Supporting Features	Remarks and explanations
(a) Self contained products shall be usable by people with disabilities without requiring an end-user to attach Assistive Technology to the product. Personal headsets for private listening are not Assistive Technology.		
(b) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.		
(c) Where a product utilizes touchscreens or contact-sensitive controls, an input method shall be provided that complies with 1194.23 (k) (1) through (4).		

(d) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.	
(e) When products provide auditory output, the audio signal shall be provided at a standard signal level through an industry standard connector that will allow for private listening. The product must provide the ability to interrupt, pause, and restart the audio at anytime.	
(f) When products deliver voice output in a public area, incremental volume control shall be provided with output amplification up to a level of at least 65 dB. Where the ambient noise level of the environment is above 45 dB, a volume gain of at least 20 dB above the ambient level shall be user selectable. A function shall be provided to automatically reset the volume to the default level after every use.	
(g) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.	
(h) When a product permits a user to adjust color and contrast settings, a range of color selections capable of producing a variety of contrast levels shall be provided.	
(i) Products shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.	
(j) (1) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: The position of any operable control shall be determined with respect to a vertical plane, which is 48 inches in length, centered on the operable control, and at the maximum protrusion of the product within the 48 inch length on products which are freestanding, non-portable, and intended to be used in one location and which have operable controls.	
(j)(2) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Where any operable control is 10 inches or less behind the reference plane, the height shall be 54 inches maximum and 15 inches minimum above the floor.	
(j)(3) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Where any operable control is more than 10 inches and not more than 24 inches behind the reference plane, the height shall be 46 inches maximum and 15 inches minimum above the floor.	

(j)(4) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Operable controls shall not be more than 24 inches behind the reference plane.		

Table E.6: Self-Contained, Closed Products

E.7 Section 1194.26 Desktop and Portable Computers

Criteria	Level of Support & Supporting Features	Remarks and explanations
(a) All mechanically operated controls and keys shall comply with 1194.23 (k) (1) through (4).		
(b) If a product utilizes touchscreens or touch-operated controls, an input method shall be provided that complies with 1194.23 (k) (1) through (4).		
(c) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.		
(d) Where provided, at least one of each type of expansion slots, ports and connectors shall comply with publicly available industry standards		

Table E.7: Desktop and Portable Computers

E.8 Section 1194.31 Functional Performance Criteria

Criteria	Level of Support & Supporting Features	Remarks and explanations
(a) At least one mode of operation and information retrieval that does not require user vision shall be provided, or support for Assistive Technology used by people who are blind or visually impaired shall be provided.		
(b) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 shall be provided in audio and enlarged print output working together or independently, or support for Assistive Technology used by people who are visually impaired shall be provided.		
(c) At least one mode of operation and information retrieval that does not require user hearing shall be provided, or support for Assistive Technology used by people who are deaf or hard of hearing shall be provided		
(d) Where audio information is important for the use of a product, at least one mode of operation and information retrieval shall be provided in an enhanced auditory fashion, or support for assistive hearing devices shall be provided.		

(e) At least one mode of operation and information retrieval that does not require user speech shall be provided, or support for Assistive Technology used by people with disabilities shall be provided.		
(f) At least one mode of operation and information retrieval that does not require fine motor control or simultaneous actions and that is operable with limited reach and strength shall be provided.		

Table E.8: Functional Performance Criteria

E.9 Section 1194.41 Information, Documentation and Support

Criteria	Level of Support & Supporting Features	Remarks and explanations
(a) Product support documentation provided to end-users shall be made available in alternate formats upon request, at no additional charge		
(b) End-users shall have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge.		
(c) Support services for products shall accommodate the communication needs of end-users with disabilities.		

Table E.9: Information, Documentation and Support

E.10 APPENDIX A (of the DoS VPAT/GPAT Checklist)

E.10.1 Suggested Language for Filling out the VPAT/GPAT

In order to simplify the task of conducting market research assessments for procurement officials or customers, ITIC (Information Technology Industry Council) has developed suggested language for use when filling out a VPAT/GPAT. You may choose to employ all or some of the language below. Once you determine what language you intend to use, we recommend that use is consistent throughout all of your VPAT/GPATs.

E.10.2 Supporting Features (Column 2 on VPAT/GPAT)

Supports

Use this language when you determine the product fully meets the letter and intent of the Criteria.

Supports with Exceptions

Use this language when you determine the product does not fully meet the letter and intent of the Criteria, but provides some level of access relative to the Criteria.

Supports through Equivalent Facilitation

Use this language when you have identified an alternate way to meet the intent of the Criteria or when the product does not fully meet the intent of the Criteria.

Supports when combined with Compatible AT

Use this language when you determine the product fully meets the letter and intent of the Criteria when used in combination with Compatible AT. For example, many software programs can provide speech output when combined with a compatible screen reader (commonly used assistive technology for people who are blind).

Does not Support

Use this language when you determine the product does not meet the letter or intent of the Criteria.

Not Applicable

Use this language when you determine that the Criteria do not apply to the specific product.

Not Applicable - Fundamental Alteration Exception Applies

Use this language when you determine a Fundamental Alteration of the product would be required to meet the Criteria (see the access board standards for the definition of "fundamental alteration").

E.10.3 IMPACT Outreach Center

IRM Program for Accessible Computer/Communication Technology (IMPACT)
2025 E Street, N.W. (SA-9)
Washington, DC 20006
Email: SECTION508@state.gov
Internet: http://www.state.gov/m/irm/impact/index.htm
Intranet: http://impact.state.gov