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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.

<table>
<thead>
<tr>
<th>Website</th>
<th><a href="https://sunapsis.happyfox.com">https://sunapsis.happyfox.com</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Email Address</td>
<td><a href="mailto:sunapsup@indiana.edu">sunapsup@indiana.edu</a></td>
</tr>
<tr>
<td>Hours of Operation</td>
<td>Monday–Friday, 8:00 am–12:00 pm &amp; 1:00pm–05:00 pm ET</td>
</tr>
<tr>
<td>Phone Number</td>
<td>812–855–0490</td>
</tr>
</tbody>
</table>

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 brief summary of these items:

<table>
<thead>
<tr>
<th>Folder or File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>\Admin Server Files\</code></td>
<td>Contains the core application files for the admin application server. NOTE: This server may be the same as client if using a single app server environment. You do not need to copy both admin and client files for a single app server environment. You only need to use the admin files in this scenario.</td>
</tr>
<tr>
<td><code>\Client Server Files\</code></td>
<td>Contains the core application files for the client application server. NOTE: The client server is the same server as admin if using a single app server environment, and only admin server files are needed.</td>
</tr>
<tr>
<td><code>Create InternationalServices.sql</code></td>
<td>The database script file that you will use to create the database on your Microsoft SQL Server.</td>
</tr>
<tr>
<td><code>data Dictionary.xlsx</code></td>
<td>XML A spreadsheet detailing the database for sunapsis.</td>
</tr>
<tr>
<td><code>datafeed.xsd</code></td>
<td>XML Schema file that the data feed XML files need to validate against. This file will be in the folder <code>office\xml\schema\sunapsis</code>.</td>
</tr>
<tr>
<td><code>example-student.xml</code></td>
<td>Sample student data feed XML file provided by your sunapsis CR specialist</td>
</tr>
<tr>
<td><code>example-employee.xml</code></td>
<td>Sample employee data feed XML file provided by your sunapsis CR specialist</td>
</tr>
</tbody>
</table>

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. Also, please take a moment to review our supported software policy at the link below. It is important to be aware that application performance will be affected if the server or client workstation requirements are not met. Contact the sunapsis client relations team if you have any concerns.

Please click here to review our supported server software policy

1.3.1 Server Requirements

Software Requirements

**Minimum** Microsoft Windows Server (WINDOWS SERVER) 2008 Standard 64-bit, ColdFusion 11 Standard 64-bit, Microsoft SQL Server (SQL SERVER) 2014 Standard 64-bit

**Recommended** WINDOWS SERVER 2016 Standard 64-bit, ColdFusion 2018 Standard 64-bit, SQL SERVER 2017 Standard 64-bit

Hardware/VM Requirements

**Minimum** Single Server, dual-core processor, 4 GB ram, 100 GB storage (consider also your file 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 Environment (*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

The following instructions describe installing the InternationalServices database using a create script. 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.

1. Launch the SQL Server Management Studio.
2. Connect to Server Database Engine using SQL Server Authentication.
5. Change the passwords on line 5 and 6 of the script from "change this password" to a password of your choosing. This will be the password for the database users the Coldfusion server uses. The read only user is used for verification tools in sunapsis, while the main user is used by the system for data saving and retrieval. Details about verification tools can be found here: https://sunapsis.happyfox.com/kb/article/850-37-verification-toolset
6. Execute the script. This will create and populate your initial sunapsis database.
7. 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 exact 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. This value should be unique per sunapsis instance (I.E. Production should not match Test). This is for security reasons.

2.1.1 Notes

For the systemValue hash, you may make up a value (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.

Previous instructions for Section 2.1 in prior versions of the Technical Guide reference creating users, setting permissions, etc. These are now handled in the creation script InternationalServices.sql.

Additionally, not that the script will fail (and print an error message) if you don’t complete step 5.

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 https://www.slproweb.com/products/Win32OpenSSL.html and download the latest version of OpenSSL(currently v1.1.1). 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\
   - \ioffice\contego\working\

2. Verify that CGI execute access to the following directories is enabled (this is the default setting in IIS):
   - \jre\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, i.e., 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 2.4.2, 2.4.3, 2.4.4, and 2.4.5 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 (e.g., 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 URL for 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 10, 11 or 2016 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 years ago. There have been upgrades by ColdFusion and .NET since that time that may render this warning irrelevant, but we have not tested it again because we moved to a virtual server space. If you install .NET on your server, you do so at your own risk.

2.4.1 ColdFusion Memory Variable Settings

In ColdFusion Administrator, the Server Settings⇒Memory Variables needs to have the following settings for the Online Services (aka iStart) site to load properly:

1. Use J2EE session variables must be unchecked.
2. Enable Application Variables must be checked.
3. Enable Session Variables must be checked.
4. Under Session Cookie Settings, HTTPOnly and Secure Cookie must be checked.
2.4.2 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 11, 2016, or 2018 may be 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
- If using ColdFusion 2018 which ships with Java 10 JRE, remove -Xdebug
- Add -Dsun.io.useCanonCaches=false
- Add -Dsun.rmi.dgc.client.gcInterval=600000
- Add -Dsun.rmi.dgc.server.gcInterval=600000
- If using ColdFusion 2016 or earlier, which ships with Java 7/8 JRE, set -XX:MaxPermSize=256m (this parameter should already exist, you just need to change the number at the end)
- If using ColdFusion 2018 which ships with Java 10 JRE, change -XX:MaxMetaspaceSize=192m to -XX:MaxMetaspaceSize=256m (replaces the deprecated -XX:MaxPermSize from Java 8)
- If using ColdFusion 2016 or newer and you are wanting to configure a SSL encrypted connection between the server and database, add -Dcom.sun.net.ssl.enableECC=false

2.4.3 Request Tuning for Performance

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.

4. Navigate to Server Settings⇒Request Tuning and, if allowed (Enterprise Edition), 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

5. Navigate to the Debugging & Logging⇒Debug Output Settings page from the menu sidebar.

6. Ensure that Enable Request Debugging Output is unchecked.

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.

7. 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.
2.4.4 Setup Mail Server Settings

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

2.4.5 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).
5. If using SSL to connect ColdFusion with the data source, you may need to supply a connection string. For example:

   Starting with sunapsis IOM 3.7.0, a second data source is required to be configured for the use of the Verification Tools configuration in sunapsis. For more information, please visit the following KB article which describes the tool and how to configure it.

2.4.6 Create Scheduled Tasks

In ColdFusion 10 and greater, click on Server Settings⇒Scheduled Tasks. You will need to click on Schedule New Task to set up each task on the admin application server (not client if different). 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 7.; this provides a basic level of security for the execution requests):

**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 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).
   < baseURL > /ioffice/batch/SendQueuedCommunicationsApplication.cfm?id=<configBatchID>

**Generate Checklist Packet** set to run Recurring Daily at 10:45 AM. This will generate checklist packets to be stored in the document management area of international records that are tied to sunapsis Checklists utilizing the Letter Production configurations. These can be physically printed manually, or automatically by being sent to the physical printer mapped on the application server later using the Print Checklist Packet scheduled task.
   < baseURL > /ioffice/batch/GenerateChecklistPacket.cfm?id=<configBatchID>

**Print Checklist Packet** set to run Recurring Daily at 4:00 AM. This scheduled task will print any generated documents that have been flagged for physical printing in the checklist configurations for letters that have yet to be printed. This requires a physical printer to be mapped in Windows Server for the sunapsis application server, and the mapped printer to be configured in Administrative Management⇒General Configurations⇒Document Management Configurations⇒Form Letters and Output Configurations
   < baseURL > /ioffice/batch/PrintChecklistPacket.cfm?id=<configBatchID>

**Update EForm Applicability Records** set to run Recurring Daily before 8 AM. This scheduled task will batch update eform applicability records for all students with eform activity.
   < baseURL > /ioffice/batch/UpdateEFormApplicabilityRecords.cfm?id=<configBatchID>

**Review PDF Associations** set to run Recurring Daily at 11:05 PM. This scheduled task will look for documents uploaded prior to client checklist access and associate documents to new checklists as appropriate. This is to facilitate the pdf auto-check feature of checklist management.
   < baseURL > /ioffice/batch/ReviewDocumentIndexApplication.cfm?id=<configBatchID>

Table 2.1: Scheduled Tasks

**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.

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

If your institution plans to use LDAP for authenticating staff and clients with sunapsis, the sunapsis development team will need your help in developing LDAP login scripts. Please provide the following information in an email to the sunapsis support office at sunapsup@iu.edu.

- The LDAP server hostname.
- Whether or not your LDAP environment is utilizing SSL.
- The LDAP server port number.
- The "Start Path" for the query. LDAP is formulized as a directory structure. This should be the path to the OU (organization unit) that contains the users who will be authenticating with sunapsis. (e.g., OU=People,OU=ABMain,DC=indiana,DC=edu) (the ABMain/People folder of the indiana.edu domain).
- The login Attribute. This is the attribute that contains the identifier value the users will be entering on the login form (i.e., username, networkID, universityID, email address, etc.).
- The username prepend. This is a value that prefices the username\networkID so that LDAP will recognize it (for example, at IU, it would be "ADS\" because LDAP wants "ADS\username", not just "username").
- The attribute that contains the value that is being used as the sunapsis username\networkID (in most cases this is the same as the login attribute, but some LDAP implementations require logging in with an email address, and then are translating that to a random number used as the sunapsis username).

The above is required from every institution. Additionally, some schools require, before any sunapsis user can authenticate, that the application must authenticate with the LDAP server as a system user. If this is the case, we need the following information for use in an LDAP binding query:

- The System Username.
- The system user "Start Path" This may or may not be the same as the start path for regular users as mentioned above.
- You will need the system user password. Please do not send your password to the sunapsis support office. This will be entered by IT staff at your institution.
- The attribute that needs to be returned from this initial query that signifies that the login script in sunapsis is permitted to run the user query. Usually, this is a username the login script can run the user query as to ensure proper permissions are set for retrieving general users.
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.
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 (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, add 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) or Responsible 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 (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 performing an initial install.

WARNING:
If you are currently 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 performing 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, 192-bit, or 256-bit encryption. When configured and enabled, SUNAPSIS will encrypt all files that are uploaded into the system as well as a number of pre-defined fields in the database (Passport Numbers, Social Security Numbers, etc).

These are listed in the table below.

<table>
<thead>
<tr>
<th>Table</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>configEmailPassword</td>
<td>password</td>
</tr>
<tr>
<td>formI129</td>
<td>individualTaxNumber</td>
</tr>
<tr>
<td>formI129</td>
<td>employerSSN</td>
</tr>
<tr>
<td>formI129</td>
<td>passportNumber</td>
</tr>
<tr>
<td>formI129</td>
<td>ssn</td>
</tr>
<tr>
<td>formI129DataCollection</td>
<td>ssn</td>
</tr>
<tr>
<td>formI140</td>
<td>ssn</td>
</tr>
<tr>
<td>formI140</td>
<td>alienSSN</td>
</tr>
<tr>
<td>IOfficeEmailAccount</td>
<td>password</td>
</tr>
<tr>
<td>IStartGeneralSetup</td>
<td>orientationLoginPassword</td>
</tr>
<tr>
<td>IStartOrientationSetup</td>
<td>orientationLoginPassword</td>
</tr>
<tr>
<td>jbPassport</td>
<td>passnum</td>
</tr>
<tr>
<td>jbVisaInfo</td>
<td>visastamp</td>
</tr>
<tr>
<td>jbVisaInfo</td>
<td>Controlnumber</td>
</tr>
<tr>
<td>sevisCertPhrase</td>
<td>certPhrase</td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>File Type</th>
<th>File Extension(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Word</td>
<td>doc, docx</td>
</tr>
<tr>
<td>Microsoft Excel</td>
<td>xls, xlsx</td>
</tr>
<tr>
<td>Microsoft PowerPoint</td>
<td>ppt, pptx</td>
</tr>
<tr>
<td>Microsoft Outlook Messages</td>
<td>msg</td>
</tr>
<tr>
<td>Plain Text</td>
<td>txt</td>
</tr>
<tr>
<td>HTML</td>
<td>htm, html</td>
</tr>
</tbody>
</table>

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 one 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.

At 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 into online services and signing into the administrative `adminEngine` page. Under the Upgrade / Installation Procedures there is a menu item Generate Encryption Keys.

**Generate Encryption Keys**

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

This tool is only designed to assist you in generating the needed key(s) for enabling encryption for sunapsis. It will neither turn on encryption nor place the encryption key(s) in the system.

There are two key generation methods for sunapsis:

1. The key is in one piece; this piece will need to be stored in the database.
2. The key is divided in the three pieces; two pieces will need to be stored in two separate encrypted pdf files in specific locations on server(s), one piece will need to be stored in the database.

This tool will generate needed encryption key(s), and if needed the password for the encrypted pdf files as well as the encrypted pdf files.

Please see the Technical Guide for more information.

Verify the current configuration.

Size of key "

Number of Key Parts "

" required fields

Generate Keys

Figure 3.2: Generate Encryption Keys

Once you have selected the key size, and 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 which 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

**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.

```sql
INSERT INTO dbo.configContego (systemValue, version, deprecated)
VALUES ('foobar', 'systemValue', 'key', '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.

### Additional Step for 192 and 256-bit Keys

In addition to the 128-bit key originally supported, sunapsis clients who are enabling encryption for the first time may now choose to use 192-bit or 256-bit-bit key. The Generate Encryption Keys service in iStart will allow for choosing these key sizes. As a prerequisite, you need to unlock the features in Java so that ColdFusion (and in turn, sunapsis) can make use of them:

1. Determine what version of Java your ColdFusion instance is using. Go to the Coldfusion Administrator on your server. Click on Server Settings>Settings Summary. Your Java version in listed next to Java Version, under JVM Details. Also make note of your Java Home path (a couple of entries below the Java Version).

2. Download the Java Cryptography Extension (JCE) Unlimited Strength Jurisdiction Policy Files. If you are using Java 8 (1.8.0_\x) then download version 8:

   `http://www.oracle.com/technetwork/java/javase/downloads/jce8-download-2133166.html`
If you are using Java 7 (1.7.0_x) then download version 7: 
http://www.oracle.com/technetwork/java/javase/downloads/jce-7-download-432124.html

3. Install the JCE. Extract the JCE files to the /lib/security directory on your server’s ColdFusion installation. You want only the files: local_policy.jar, US_export_policy.jar, and README.txt; and not the parent directory. These should overwrite the files of the same names already in lib/security.

4. Restart the Coldfusion Service. Go to the Services in Windows. (Administrative Tools>Services) and restart the Coldfusion Application Server service.

Configuration

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

![Security Key](image)

**Figure 3.4: Security Key**

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 your path should be similar to the following, where the `<Your Path>` portion will be specific to your server.

`<Your Path>\ioffice\pdfs`

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

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.

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.
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 need 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. 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\datafeed\) 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 Server Settings⇒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.

**NOTE:** If your institution has an English as a Second Language or Intensive English program, it is recommended that you configure Sunapsis with a campus code specific for that population of international (e.g., ESL). This campus code will be passed for all English Language students during the daily data feed import process using element INST_CD. Please see Appendix D for details regarding the data feed values.

1. Click Campus Code Configuration.
2. Input the description and code (e.g., 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 the General 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 General Configurations 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 **SUNAPSI**S user (i.e., they have a user profile in SUNAPSI).

**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 Access Link Text**: This is the bold text above the full client services login box. Clearing this field removes the full client services access box from the start page.

8. **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.

9. **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.

10. **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”.

11. **Limited Client Services Access Link Text**: This is the bold text above the limited services login box. Clearing this field removes the limited services access box from the start page.

12. **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.

13. **Display Anonymous Client Services On Homepage**: SUNAPSI allows you to collect anonymous 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.

14. **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.

15. **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.

16. **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 institutions 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 SUNAPPSIS 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 SUNAPPSIS 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 institutional 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 institutional 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 institutional 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 institutional 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 institutional 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 institutional 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 institutional 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 institutional 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 institutional 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 institutional 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.

### 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 Degrees**: 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. 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 at 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 settings 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/pdf-s/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 their 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 SUNAPSI S will store files.

1. If you plan to use an external file store for housing your PDF documents for SUNAPSI S, 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.
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 Organization 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 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.


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 sunapsis 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.

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

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:

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:

2. Fill in the required information, including a real email address.
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 SUNAPSI, go to the Administrative Management ⇒General Configurations ⇒SEVIS Configurations ⇒Batch Configurations ⇒SEVIS Batch Upload Path menu. Change the path to: https://egov.ice.gov/sbtsevisbatch/action/batchUpload
2. In the Administrative Management ⇒General Configurations ⇒SEVIS Configurations ⇒Batch Configurations ⇒SEVIS Batch Download Path menu, change the path to: https://egov.ice.gov/sbtsevisbatch/action/batchDownload

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 Batch-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 Comodo for $16.36 per year. There are other options available, such as InCommon. Please contact the SEVIS helpdesk if you have questions about whether or not a certain certificate vendor will work with their system. Thawte and Symantec no longer issue certificates for use in email. Please make sure to use Internet Explorer for the simplest experience. There have been numerous issues with purchasing and exporting a certificate from other web browsers.

If you would like to purchase a Comodo certificate, you may do so at this URL: https://ssl.comodo.com/personal-authentication.php

NOTE: This guide assumes you are using a Comodo certificate. The free personal email certificates provided by Comodo are not supported by SEVIS.
1. Using Internet Explorer, go to the Comodo website to request an Individual Personal Authentication Certificate.
2. Follow Comodo’s process for requesting the certificate.
3. If ever asked, do not check the box to Protect Your Private Key.
4. 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 Comodo) and then click Export…
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. This will only be used when converting your certificate to .pem format with OpenSSL.

---

**WARNING: Spaces are 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. A reliable binary we have used in the past can be found here:

   https://slproweb.com/products/Win32OpenSSL.html

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

**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.
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/](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 Administrative Management ⇒ General Configurations ⇒ SEVIS Configurations ⇒ Batch Configurations ⇒ SEVIS Certificate Phrase.

3. Update the Certificate File Name to the name of your certificate (include the PEM file extension in the file name, i.e. 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 Troubleshooting 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 --connect-timeout 600 --tlsv1.0 --verbose --location --cacert C:\inetpub\wwwroot\ioffice\batch\sevis\curl\curl-ca-bundle.crt --cert <Drive letter>:\ioffice\batch\sevis\curl\certs\certificate name>.pem:"" --form orgid="<SEVIS_organization_code>" --form batchid="<batchid>" --form userid="<PDSO_username>" --form xml=<drive letter>:\ioffice\batch\sevis\<SEVIS_organization_code>\<batchid>.xml --output <drive letter>:\ioffice\batch\sevis\<SEVIS_organization_code>\<batch id>\Upload.xml https://egov.ice.gov/sevisbatch/action/batchUpload
```

If using a proxy:
<Drive letter>::\ioffice\batch\sevis\curl\curl.exe --connect-timeout 600
   --tlsv1.0 --verbose --location
   --cacert C:\inetpub\wwwroot\ioffice\batch\sevis\curl\curl-ca-bundle.crt
   --cert <Drive letter>::\ioffice\batch\sevis\certs\certificate name>.pem:
   --form orgid="<SEVIS organization code>", --form batchid="<batchid>",
   --form userid="<PDSO_username>",
   --form xml=<Drive letter>::\ioffice\batch\sevis\sevis\organization code><batchid><batch id>.xml
   --output <Drive letter>::\ioffice\batch\sevis\sevis\organization code><batchid><batch id>Upload.xml
   --proxy <proxy server>:<port>
https://egov.ice.gov/sevisbatch/action/batchUpload

You will need to replace the above variables with values as described below:

- Drive letter: The physical drive on the server where the application files are stored
- Certificate Name: The filename of the certificate
- 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 sunapsis CR team member assigned to this project visits your institution, but you are encouraged to give this process a test run to rule out any anomalies 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 the pre-conversion checklist steps noted by the article cited below before the sunapsis team member arrives in order for your institution to have a successful site visit experience.

Please click here to redirect to the sunapsis happyfox knowledge base article describing this procedure.
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  what's 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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Website</td>
<td><a href="http://sunapsis.iu.edu">http://sunapsis.iu.edu</a></td>
</tr>
<tr>
<td>Email Address</td>
<td>sunapsup indiana.edu</td>
</tr>
<tr>
<td>Hours of Operation</td>
<td>Monday–Friday, 8:00 am–12:00 pm &amp; 1:00pm–05:00 pm ET</td>
</tr>
<tr>
<td>Phone Number</td>
<td>812–855–0490</td>
</tr>
<tr>
<td>Fax Number</td>
<td>812–855–4118</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>record</td>
<td>RecordType</td>
<td>N/A</td>
<td>The record contains information about international student/scholars.</td>
<td></td>
</tr>
<tr>
<td>emailMap</td>
<td>EmailType</td>
<td>N/A</td>
<td>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.</td>
<td></td>
</tr>
</tbody>
</table>

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
### 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: associatedIDNumber

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

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>associatedIDNumber</td>
<td>varchar</td>
<td>11</td>
<td>Associated ID Number</td>
</tr>
</tbody>
</table>

**Table C.3: AssociatedIDNumbersListType**

### Element Name: biographical

**Database Table Populated:** iuiBio

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>prsn_prm_sfx_nm</td>
<td>varchar</td>
<td>15</td>
<td>Primary Name Suffix</td>
</tr>
<tr>
<td>prsn_prm_last_nm</td>
<td>varchar</td>
<td>60</td>
<td>Primary Last Name</td>
</tr>
<tr>
<td>prsn_prm_first_nm</td>
<td>varchar</td>
<td>60</td>
<td>Primary First Name</td>
</tr>
<tr>
<td>prsn_prm_middle_nm</td>
<td>varchar</td>
<td>60</td>
<td>Primary Middle Name</td>
</tr>
<tr>
<td>prsn_prf_last_nm</td>
<td>varchar</td>
<td>60</td>
<td>Preferred Last Name</td>
</tr>
<tr>
<td>prsn_prf_first_nm</td>
<td>varchar</td>
<td>60</td>
<td>Preferred First Name</td>
</tr>
<tr>
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<td>varchar</td>
<td>60</td>
<td>Preferred Middle Name</td>
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<td>Preferred Name Suffix</td>
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<td>Marital Status</td>
</tr>
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<td>Ethnicity</td>
</tr>
<tr>
<td>prsn_residency_status_cd</td>
<td>varchar</td>
<td>5</td>
<td>Residency Status</td>
</tr>
<tr>
<td>prsn_birth_dt</td>
<td>datetime</td>
<td>10</td>
<td>Date of Birth</td>
</tr>
<tr>
<td>prsn_birth_place_nm</td>
<td>varchar</td>
<td>30</td>
<td>City of Birth</td>
</tr>
<tr>
<td>prsn_birth_country_cd</td>
<td>varchar</td>
<td>3</td>
<td>Country of Birth</td>
</tr>
<tr>
<td>prsn_death_dt</td>
<td>datetime</td>
<td>10</td>
<td>Date of Death</td>
</tr>
<tr>
<td>prsn_other_email_id</td>
<td>varchar</td>
<td>150</td>
<td>Non-University Email Address</td>
</tr>
<tr>
<td>prsn_gds_cmp_email_addr</td>
<td>varchar</td>
<td>150</td>
<td>University Email Address</td>
</tr>
<tr>
<td>prsn_ntwrk_id</td>
<td>varchar</td>
<td>150</td>
<td>Client’s Username</td>
</tr>
<tr>
<td>prsn_cell_phone_number</td>
<td>varchar</td>
<td>25</td>
<td>Cell Phone Number</td>
</tr>
</tbody>
</table>

**Note:**
- The primary last name and first name is required from the institutional system for the biographical update.
- The preferred name suffix maps to CodeGender.
- The marital status maps to CodeMaritalStatus.
- The ethnicity maps to CodeEthnicity.
- The residency status maps to CodeResidencyStatus.
- The date of birth is required.
- The email address is used by the email services, alerts, and e-forms to communicate.
- The username is authenticated by an institutional central login service for online services (i.e. iStart).
<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Length</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>prsn_lcl_ln1_addr</td>
<td>varchar</td>
<td>255</td>
<td>Local Address Line 1</td>
</tr>
<tr>
<td>prsn_lcl_ln2_addr</td>
<td>varchar</td>
<td>255</td>
<td>Local Address Line 2</td>
</tr>
<tr>
<td>prsn_lcl_cty_nm</td>
<td>varchar</td>
<td>60</td>
<td>Local City</td>
</tr>
<tr>
<td>prsn_lcl_st_cd</td>
<td>varchar</td>
<td>30</td>
<td>Local State Code</td>
</tr>
<tr>
<td>prsn_lcl_zip_cd</td>
<td>varchar</td>
<td>20</td>
<td>Local Zip Code</td>
</tr>
<tr>
<td>prsn_lcl_cntry_cd</td>
<td>varchar</td>
<td>5</td>
<td>Local Address Country</td>
</tr>
<tr>
<td>prsn_lcl_phn_nbr</td>
<td>varchar</td>
<td>25</td>
<td>Local Phone</td>
</tr>
<tr>
<td>prsn_lcl_subtype</td>
<td>varchar</td>
<td>25</td>
<td>Local Address Subtype</td>
</tr>
<tr>
<td>prsn_frgn_cntry_cd</td>
<td>varchar</td>
<td>5</td>
<td>Foreign Address Country</td>
</tr>
<tr>
<td>prsn_frgn_ln1_addr</td>
<td>varchar</td>
<td>255</td>
<td>Foreign Address Line 1</td>
</tr>
<tr>
<td>prsn_frgn_ln2_addr</td>
<td>varchar</td>
<td>255</td>
<td>Foreign Address Line 2</td>
</tr>
<tr>
<td>prsn_frgn_cty_nm</td>
<td>varchar</td>
<td>60</td>
<td>Foreign City</td>
</tr>
<tr>
<td>prsn_frgn_st_cd</td>
<td>varchar</td>
<td>30</td>
<td>Foreign State or Province</td>
</tr>
<tr>
<td>prsn_frgn_zip_cd</td>
<td>varchar</td>
<td>20</td>
<td>Foreign Postal Code</td>
</tr>
<tr>
<td>prsn_frgn_phn_nbr</td>
<td>varchar</td>
<td>25</td>
<td>Foreign Phone</td>
</tr>
<tr>
<td>prsn_frgn_subtype</td>
<td>varchar</td>
<td>10</td>
<td>Foreign Address Subtype</td>
</tr>
<tr>
<td>subcampus</td>
<td>varchar</td>
<td>30</td>
<td>An additional campus separator used by the alerts system. See the KB for details.</td>
</tr>
<tr>
<td>pic_url</td>
<td>varchar</td>
<td>250</td>
<td>Client Picture URL</td>
</tr>
</tbody>
</table>

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).

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.

Institutional specific information (Table: codeAddressSubtype)
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 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

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>prsn_vprnt_typ_cd</td>
<td>Text</td>
<td>3</td>
<td>Immigration Status</td>
<td>mapVisa which maps to codeVisa</td>
<td></td>
</tr>
<tr>
<td>prsn_ctzn_cntry_cd</td>
<td>Text</td>
<td>3</td>
<td>Citizenship Country</td>
<td>mapCountry which maps to viewCodeComplete-CountryList with SEVIS country values</td>
<td></td>
</tr>
<tr>
<td>prsn_ctzn_status_cd</td>
<td>Text</td>
<td>10</td>
<td>Citizenship Status Code</td>
<td>Institutional specific information (Table: codeCitizenshipStatus)</td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>inst_cd</td>
<td>varchar</td>
<td>15</td>
<td>Campus</td>
<td>values align with codeCampus which are determined at each institution</td>
<td>Yes</td>
</tr>
<tr>
<td>stu_admt_term_cd</td>
<td>varchar</td>
<td>10</td>
<td>Term Code</td>
<td>values align with codeSemesters which are determined by each institution</td>
<td>Yes</td>
</tr>
<tr>
<td>acadCareer_cd</td>
<td>varchar</td>
<td>6</td>
<td>Academic Career</td>
<td>mapAcademicCareer which maps to codeAcademicCareer (i.e. UGRD, GRAD)</td>
<td>Yes</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Length</td>
<td>Description</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>----------</td>
<td>--------</td>
<td>----------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>appl_acad_lvl_cd</td>
<td>varchar</td>
<td>3</td>
<td>Academic Level</td>
<td>mapAcademicLevel which maps to codeAcademicLevel (10 - Freshman)</td>
<td></td>
</tr>
<tr>
<td>appl_pgm_stat_cd</td>
<td>varchar</td>
<td>4</td>
<td>Program Status</td>
<td>mapAcademicProgramStatus which maps to codeProgramStatus</td>
<td></td>
</tr>
<tr>
<td>acad_plan_cd</td>
<td>varchar</td>
<td>12</td>
<td>Major</td>
<td></td>
<td></td>
</tr>
<tr>
<td>acad_plan_desc</td>
<td>varchar</td>
<td>100</td>
<td>Major Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cip_code</td>
<td>varchar</td>
<td>10</td>
<td>SEVIS CIP Code</td>
<td>CIP code can be directly populated or based on the mapping to the</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>acad_plan_cd</td>
<td></td>
</tr>
<tr>
<td>appl_cntr_cd</td>
<td>varchar</td>
<td>4</td>
<td>Application Center</td>
<td>institutional specific information only *(Table: codeApplicationCenter)</td>
<td></td>
</tr>
<tr>
<td>acad_pgm_cd</td>
<td>varchar</td>
<td>15</td>
<td>Academic Program</td>
<td>institutional specific information only *(Table: codeAcademicProgram)</td>
<td></td>
</tr>
<tr>
<td>acad_grp_cd</td>
<td>varchar</td>
<td>6</td>
<td>Academic Program Groups</td>
<td>institutional specific information only *(Table: codeAcademicGroup)</td>
<td></td>
</tr>
<tr>
<td>acad_deg_cd</td>
<td>varchar</td>
<td>10</td>
<td>Academic Degree</td>
<td>institutional specific information only *(Table: codeAcademicDegree)</td>
<td></td>
</tr>
<tr>
<td>acad_dept_cd</td>
<td>varchar</td>
<td>20</td>
<td>Academic Department</td>
<td>institutional specific information only *(Table: codeAcademicDepartment)</td>
<td></td>
</tr>
<tr>
<td>stu_admt_typ_cd</td>
<td>varchar</td>
<td>5</td>
<td>Admit Type</td>
<td>institutional specific information only *(Table: codeAdmitType)</td>
<td></td>
</tr>
<tr>
<td>appl_pgm_actn_cd</td>
<td>varchar</td>
<td>5</td>
<td>Program Action Coding</td>
<td>institutional specific information only *(Table: codeProgramAction)</td>
<td></td>
</tr>
<tr>
<td>ext_org_name</td>
<td>varchar</td>
<td>50</td>
<td>Name of Previous School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>stu_admt_term_beg_dt</td>
<td>datetime</td>
<td>10</td>
<td>Term Start Date</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>stu_admt_term_end_dt</td>
<td>datetime</td>
<td>10</td>
<td>Term End Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>appl_pgm_actn_dt</td>
<td>datetime</td>
<td>10</td>
<td>Datestamp of Last Action on File</td>
<td>If this value is not provided then it will default to the current</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>timestamp value upon insert</td>
<td></td>
</tr>
<tr>
<td>school_funds</td>
<td>int</td>
<td>4</td>
<td>School Funding Amount</td>
<td></td>
<td></td>
</tr>
<tr>
<td>school_funds_desc</td>
<td>varchar</td>
<td>500</td>
<td>School Funding Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>appl_plan_seq_nbr</td>
<td>int</td>
<td>4</td>
<td>Sequence Number</td>
<td>used to identify different admissions so the system can handle</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>dual-degrees (default: 1)</td>
<td></td>
</tr>
<tr>
<td>appl_nbr</td>
<td>varchar</td>
<td>8</td>
<td>Application Number</td>
<td>used to identify different admission records should be unique per</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>person</td>
<td></td>
</tr>
<tr>
<td>appl_pgm_reas_cd</td>
<td>varchar</td>
<td>4</td>
<td>Program Action Reason Coding</td>
<td>institutional specific information only *(Table: codeProgramReason)</td>
<td></td>
</tr>
</tbody>
</table>
Table C.6: AdmissionListType / AdmissionType

C.7 ProgramListType / ProgramType

This should be populated with active and completed programs for international students. Information from the iuicAdmissions 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.

About Sequence Number We use acad_plan_seq_nbr to order majors. If you are only sending in the student’s primary major, and ignoring secondary majors and minors (a perfectly fine option), there is absolutely no reason to specify this. We will default it to 1 if it is left empty. However, if you are sending in multiple plans, it is highly recommended that you set this field.

XML Data Feed Structure ProgramListType

Element Name programs

XML Data Feed Substructure ProgramType

Child Element Name program

Database Table Populated iuieProgram

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>inst_cd</td>
<td>varchar</td>
<td>15</td>
<td>Campus</td>
<td>values align with codeCampus which are determined at each institution</td>
<td>Yes</td>
</tr>
<tr>
<td>stu_admt_term_cd</td>
<td>varchar</td>
<td>10</td>
<td>Admitted Term</td>
<td>values align with codeSemesters which are determined by each institution</td>
<td>Yes</td>
</tr>
<tr>
<td>acad_career_cd</td>
<td>varchar</td>
<td>6</td>
<td>Academic Career</td>
<td>mapAcademicCareer which maps to codeAcademicCareer (i.e. UGRD, GRAD)</td>
<td>Yes</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Length</td>
<td>Description</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>---------</td>
<td>--------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>acad_lvl_cd</td>
<td>varchar</td>
<td>3</td>
<td>Academic Level</td>
<td>mapAcademicLevel which maps to codeAcademicLevel (10 - Freshman)</td>
<td></td>
</tr>
<tr>
<td>stu_pgm_stat_cd</td>
<td>varchar</td>
<td>2</td>
<td>Program Status</td>
<td>mapAcademicProgramStatus which maps to codeProgramStatus</td>
<td></td>
</tr>
<tr>
<td>acad_plan_cd</td>
<td>varchar</td>
<td>12</td>
<td>Major</td>
<td>the mapping of this field to the SEVIS CIP code assigns the cip_code</td>
<td></td>
</tr>
<tr>
<td>acad_plan_desc</td>
<td>varchar</td>
<td>100</td>
<td>Major Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cip_code</td>
<td>varchar</td>
<td>10</td>
<td>SEVIS CIP Code</td>
<td>CIP code can be directly populated or based on the mapping to the</td>
<td></td>
</tr>
<tr>
<td>struc_declare_dt</td>
<td>datetime</td>
<td>10</td>
<td>Major Declared Date</td>
<td>This is the date of major declaration.</td>
<td></td>
</tr>
<tr>
<td>acad_grp_cd</td>
<td>varchar</td>
<td>6</td>
<td>Academic Program Groups</td>
<td>institutional specific information only * (Table: codeAcademicGroup)</td>
<td></td>
</tr>
<tr>
<td>acad_pgm_cd</td>
<td>varchar</td>
<td>15</td>
<td>Academic Program</td>
<td>institutional specific information only * (Table: codeAcademicProgram)</td>
<td></td>
</tr>
<tr>
<td>acad_deg_cd</td>
<td>varchar</td>
<td>10</td>
<td>Academic Degree</td>
<td>institutional specific information only * (Table: codeAcademicDegree)</td>
<td></td>
</tr>
<tr>
<td>acad_dept_cd</td>
<td>varchar</td>
<td>20</td>
<td>Academic Department</td>
<td>institutional specific information only * (Table: codeAcademicDepartment)</td>
<td></td>
</tr>
<tr>
<td>stu_pgm_actn_cd</td>
<td>varchar</td>
<td>5</td>
<td>Program Action Coding</td>
<td>institutional specific information only * (Table: codeProgramAction)</td>
<td></td>
</tr>
<tr>
<td>acad_plan_typ_cd</td>
<td>varchar</td>
<td>3</td>
<td>Academic Plan Type Code</td>
<td>institutional specific information only * (Table: codeAcademicPlanType)</td>
<td></td>
</tr>
<tr>
<td>stu_cum_gpa_nbr</td>
<td>numeric</td>
<td>9</td>
<td>Cumulative GPA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>stu_expect_grad_term_cd</td>
<td>varchar</td>
<td>10</td>
<td>Expected Term for Graduation</td>
<td>this drives the email service for students near graduation; aligns with codeSemesters</td>
<td></td>
</tr>
<tr>
<td>stu_degr_ckot_stat_cd</td>
<td>varchar</td>
<td>2</td>
<td>Degree Check-out Status</td>
<td>institutional specific information only * (Table: codeDegreeCheck-outStatus)</td>
<td></td>
</tr>
<tr>
<td>acad_plan_dplm_desc</td>
<td>varchar</td>
<td>100</td>
<td>Degree Awarded</td>
<td>i.e. Bachelor of Science, Master of Science in Computer Science (used by online graphs)</td>
<td></td>
</tr>
<tr>
<td>stu_degr_cnfr_dt</td>
<td>datetime</td>
<td>10</td>
<td>Degree Conferred Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>acad_plan_seq_nbr</td>
<td>int</td>
<td>4</td>
<td>Sequence Number</td>
<td>used to identify different programs for handling dual-degrees. see section header for details. (default: 1)</td>
<td></td>
</tr>
</tbody>
</table>
C.7 ProgramListTypeProgramType

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

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>inst_cd</td>
<td>varchar</td>
<td>15</td>
<td>Campus</td>
<td>values align with codeCampus which are determined at each institution</td>
<td>Yes</td>
</tr>
<tr>
<td>acad_term_cd</td>
<td>varchar</td>
<td>10</td>
<td>Term Code</td>
<td>values align with codeSemesters which are determined by each institution</td>
<td>Yes</td>
</tr>
<tr>
<td>acad_term_beg_dt</td>
<td>datetime</td>
<td>10</td>
<td>Term Begin Date</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>acad_term_end_dt</td>
<td>datetime</td>
<td>10</td>
<td>Term End Date</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>stu_driv_enrl_stat_ind</td>
<td>varchar</td>
<td>2</td>
<td>Enrollment Status</td>
<td>mapEnrollmentStatus which maps to codeEnrollmentStatus (i.e. E - enrolled)</td>
<td>Yes</td>
</tr>
<tr>
<td>stu_driv_enrl_substatus</td>
<td>varchar</td>
<td>10</td>
<td>Enrollment Sub-Status</td>
<td>institutional specific information only * (Table: codeEnrollmentSubstatus)</td>
<td>Yes</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Length</td>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>----------</td>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>stu_drvd_tot_term_unt_nbr</td>
<td>numeric</td>
<td>9</td>
<td>Total Credits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>acad_career_cd</td>
<td>varchar</td>
<td>6</td>
<td>Academic Career</td>
<td></td>
<td></td>
</tr>
<tr>
<td>acadlvl_beg_term_cd</td>
<td>varchar</td>
<td>5</td>
<td>Academic Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>acad_prm_plan_1_cd</td>
<td>varchar</td>
<td>12</td>
<td>Primary Major</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cip_code</td>
<td>varchar</td>
<td>10</td>
<td>SEVIS CIP Code</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ft_flag</td>
<td>boolean</td>
<td>1</td>
<td>Full-Time Flag</td>
<td></td>
<td></td>
</tr>
<tr>
<td>census_marker</td>
<td>Boolean</td>
<td>1</td>
<td>Census Marker</td>
<td></td>
<td></td>
</tr>
<tr>
<td>current_session_start</td>
<td>datetime</td>
<td>10</td>
<td>Current Session Start Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>current_session_end</td>
<td>datetime</td>
<td>10</td>
<td>Current Session End Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>next_session_start</td>
<td>datetime</td>
<td>10</td>
<td>Current Session Start Date</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>pplsft_acad_org_lvl_2_cd</td>
<td>varchar</td>
<td>15</td>
<td>Campus</td>
<td>values align with codeCampus which are determined at each institution</td>
<td>Yes</td>
</tr>
<tr>
<td>acad_term_cd</td>
<td>varchar</td>
<td>10</td>
<td>Term Code</td>
<td>values align with dbo.codeTerm which are determined by each institution</td>
<td>Yes</td>
</tr>
<tr>
<td>crs_title</td>
<td>Varchar</td>
<td>100</td>
<td>Course Title</td>
<td></td>
<td></td>
</tr>
<tr>
<td>crs_subj_dept_cd</td>
<td>varchar</td>
<td>10</td>
<td>Course Department</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>crs_catlg_nbr</td>
<td>varchar</td>
<td>20</td>
<td>Course Catalog Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>crn_nbr</td>
<td>varchar</td>
<td>10</td>
<td>Course Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>stu_enrl_stat_cd</td>
<td>varchar</td>
<td>2</td>
<td>Enrollment Status</td>
<td>mapEnrollmentStatus which maps to codeEnrollmentStatus (i.e. E - enrolled)</td>
<td>Yes</td>
</tr>
<tr>
<td>acad_unit_tkn_nbr</td>
<td>numeric</td>
<td>9</td>
<td>Course Credits</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>stu_enrl_add_dt</td>
<td>datetime</td>
<td>10</td>
<td>Date Course Added</td>
<td></td>
<td></td>
</tr>
<tr>
<td>stu_enrl_drp_dt</td>
<td>datetime</td>
<td>10</td>
<td>Date Course Dropped</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cls_instrc_mode</td>
<td>string</td>
<td>2</td>
<td>Course Instruction Mode Indicator</td>
<td>institutional specific information only</td>
<td></td>
</tr>
<tr>
<td>cmp_loc_cd</td>
<td>string</td>
<td>10</td>
<td>Boolean Campus Location Code</td>
<td>Indicates whether the course is on or off campus (dbo.mapCampusCourseLocation maps to ON or OFF)</td>
<td></td>
</tr>
</tbody>
</table>

Table C.9: CourseListType / CourseType

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

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>job_pct_tm</td>
<td>numeric</td>
<td>9</td>
<td>Percentage of SAA in FTE</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>inst_cd</td>
<td>varchar</td>
<td>15</td>
<td>Campus</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>stu_grp_cd</td>
<td>varchar</td>
<td>4</td>
<td>Student Group Code</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>stu_grp_desc</td>
<td>varchar</td>
<td>30</td>
<td>Student Group Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>row_eff_dt</td>
<td>datetime</td>
<td>10</td>
<td>Effective date</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

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**

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>lab_name</td>
<td>varchar</td>
<td>100</td>
<td>Lab name</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>app_id</td>
<td>Varchar</td>
<td>100</td>
<td>Application ID</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>visiting_begin_date</td>
<td>datetime</td>
<td>10</td>
<td>Visit begin date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>visiting_end_date</td>
<td>datetime</td>
<td>10</td>
<td>Visit end date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>supervising_faculty_pidm</td>
<td>varchar</td>
<td>20</td>
<td>Supervising faculty user-name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>supervising_faculty_name</td>
<td>varchar</td>
<td>50</td>
<td>Supervising faculty name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>english_req_waived</td>
<td>varchar</td>
<td>5</td>
<td>English requirement waived</td>
<td></td>
<td></td>
</tr>
<tr>
<td>primary_application</td>
<td>varchar</td>
<td>100</td>
<td>Primary application</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sxu_get_faculty_email_address</td>
<td>varchar</td>
<td>150</td>
<td>Supervising faculty email address</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sxu_get_faculty_phone1</td>
<td>varchar</td>
<td>25</td>
<td>Supervising faculty phone number</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>stu_tst_cmpnt_cd</td>
<td>varchar</td>
<td>10</td>
<td>Test component code</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>stu_tst_dt</td>
<td>datetime</td>
<td>10</td>
<td>Test date</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>stu_tst_scr_nbr</td>
<td>numeric</td>
<td>9</td>
<td>Test score</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>stu_tst_desc</td>
<td>varchar</td>
<td>30</td>
<td>Test Description</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

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**
<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>pos_nbr</td>
<td>varchar</td>
<td>8</td>
<td>Position Number</td>
<td>value used to determine if possible change to new position and to align position to LCA</td>
<td>Yes</td>
</tr>
<tr>
<td>pos_desc</td>
<td>varchar</td>
<td>255</td>
<td>Position Description</td>
<td>useful for verification if a change of position number alert is activated</td>
<td>Yes</td>
</tr>
<tr>
<td>emp_stat_cd</td>
<td>varchar</td>
<td>1</td>
<td>Employee Status Code</td>
<td>mapEmployeeStatus which maps to codeEmployeeStatus (i.e. A - Active)</td>
<td>Yes</td>
</tr>
<tr>
<td>row_hist_cur_fut_ind</td>
<td>varchar</td>
<td>10</td>
<td>Row Type Indicator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>job_pos_entry_dt</td>
<td>datetime</td>
<td>10</td>
<td>Position Entry Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>job_emp_typ_desc</td>
<td>varchar</td>
<td>30</td>
<td>Employment Type Description</td>
<td>informational only and at IU it is info like salaried, hourly, etc.</td>
<td></td>
</tr>
<tr>
<td>job_slry_plan_cd</td>
<td>varchar</td>
<td>15</td>
<td>Salary Plan Code</td>
<td>specific institutional codes for salary plans (i.e. academic); informational only</td>
<td></td>
</tr>
<tr>
<td>job_slry_grd_cd</td>
<td>varchar</td>
<td>15</td>
<td>Salary Grade Code</td>
<td>specific institutional codes for salary grades (i.e. various faculty levels); informational only</td>
<td></td>
</tr>
<tr>
<td>job_comp_rt</td>
<td>numeric</td>
<td>9</td>
<td>Compensation Pay Rate</td>
<td>rate by hourly, bi-weekly, monthly, etc.</td>
<td></td>
</tr>
<tr>
<td>job_comp_annl_rt</td>
<td>numeric</td>
<td>9</td>
<td>Compensation Annual Pay Rate</td>
<td>value is audited for the H-1B to ensure salary on file complies with salary on file with DOL</td>
<td></td>
</tr>
<tr>
<td>job_reg_temp_ind</td>
<td>varchar</td>
<td>1</td>
<td>Regular or Temporary</td>
<td>mapEmployeeRegTemp which maps to codeEmployeeRegTemp (i.e. R - regular)</td>
<td>Yes</td>
</tr>
<tr>
<td>job_full_pt_tm_ind</td>
<td>varchar</td>
<td>2</td>
<td>Full-Time or Part-Time Status</td>
<td>mapEmployeeTime which maps to codeEmployeeTime (i.e. FT - fulltime)</td>
<td>Yes</td>
</tr>
<tr>
<td>emp_tot_fte_rt</td>
<td>numeric</td>
<td>9</td>
<td>Numeric FTE</td>
<td>% of full time employment (ex .04 = 4)</td>
<td>Yes</td>
</tr>
<tr>
<td>emp_occppn_unit_snrty_dt</td>
<td>datetime</td>
<td>10</td>
<td>Unit Seniority Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pyck_lst_chk_dt</td>
<td>datetime</td>
<td>10</td>
<td>Last Paycheck Date</td>
<td></td>
<td></td>
</tr>
<tr>
<td>job_dept_setid_cd</td>
<td>varchar</td>
<td>15</td>
<td>Department Campus</td>
<td>values align with code-Campus which are determined at each institution institutional specific information only</td>
<td>Yes</td>
</tr>
<tr>
<td>job_dept_id</td>
<td>varchar</td>
<td>15</td>
<td>Department Code</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>job_loc_desc</td>
<td>varchar</td>
<td>30</td>
<td>Job Location Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>prsn_cmp_ln1_addr</td>
<td>varchar</td>
<td>255</td>
<td>Campus Address Line 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>prsn_cmp_ln2_addr</td>
<td>varchar</td>
<td>255</td>
<td>Campus Address Line 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>prsn_cmp_ln3_addr</td>
<td>varchar</td>
<td>255</td>
<td>Campus Address Line 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>prsn_cmp_phn_nbr</td>
<td>varchar</td>
<td>24</td>
<td>Campus Phone</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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** iuiPaycheck

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

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

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>table</td>
<td>varchar</td>
<td>15</td>
<td>Table Name</td>
<td>One of the jbCustomFieldsXX tables, e.g., jbCustomFields1</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table C.17: Elements of CustomTableType

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>name</td>
<td>varchar</td>
<td>15</td>
<td>Name</td>
<td>Name of the jbCustomFieldsXX column, customFieldXX, e.g., customField1</td>
<td>Yes</td>
</tr>
<tr>
<td>value</td>
<td>varchar</td>
<td>4000</td>
<td>Value</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Element Name</th>
<th>Type</th>
<th>Size</th>
<th>Description</th>
<th>Note</th>
<th>Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>prsn_ntwrk_id</td>
<td>varchar</td>
<td>20</td>
<td>Network ID</td>
<td></td>
<td>Yes</td>
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<tr>
<td>prsn_gds_cmp_email_addr</td>
<td>varchar</td>
<td>70</td>
<td>Email Address</td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>SUNAPSIS Value</th>
<th>SUNAPSIS Description</th>
<th>Institutional Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAD</td>
<td>Graduate</td>
<td></td>
</tr>
<tr>
<td>PROF</td>
<td>Professional</td>
<td></td>
</tr>
<tr>
<td>UGRD</td>
<td>Undergraduate</td>
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</tbody>
</table>

Table D.1: mapAcademicCareer

D.2 Map Academic Level

<table>
<thead>
<tr>
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<th>SUNAPSIS Description</th>
<th>Institutional Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>Associates</td>
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</tr>
<tr>
<td>10</td>
<td>Freshman</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Sophomore</td>
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</tr>
<tr>
<td>SUNAPPSIS Value</td>
<td>SUNAPPSIS Description</td>
<td>Institutional Value</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>AC</td>
<td>Active in Program</td>
<td></td>
</tr>
<tr>
<td>AD</td>
<td>Admitted</td>
<td></td>
</tr>
<tr>
<td>AP</td>
<td>Applicant</td>
<td></td>
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<tr>
<td>CN</td>
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<td></td>
</tr>
<tr>
<td>PM</td>
<td>Prematriculant</td>
<td></td>
</tr>
<tr>
<td>CM</td>
<td>Completed Program</td>
<td></td>
</tr>
<tr>
<td>DC</td>
<td>Discontinued</td>
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<tr>
<td>DE</td>
<td>Deceased</td>
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<tr>
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<td>DS</td>
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<tr>
<td>CD</td>
<td>Conditional Admit</td>
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<tr>
<td>AA</td>
<td>Admitted (IU Other)</td>
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Table D.3: mapAcademicProgramStatus

D.5 Map Country Codes

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<th>Institutional Value</th>
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<tr>
<td>AC</td>
<td>Antigua and Barbuda</td>
<td></td>
</tr>
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<td>AE</td>
<td>United Arab Emirates</td>
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<td>AF</td>
<td>Afghanistan</td>
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<td>AG</td>
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<td>AL</td>
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<td>AN</td>
<td>Andorra</td>
<td></td>
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<tr>
<td>AO</td>
<td>Angola</td>
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Table D.4: mapCountryCodes

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.
<table>
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<td>AS</td>
<td>Australia</td>
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<tr>
<td>AT</td>
<td>Ashmore and Cartier Islands</td>
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<tr>
<td>AU</td>
<td>Austria</td>
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<td>Anguilla</td>
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<td>Akrotiri</td>
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<td>Micronesia, Federated States of</td>
</tr>
<tr>
<td>FO</td>
<td>Faroe Islands</td>
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<tr>
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<td>French Polynesia</td>
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</tr>
<tr>
<td>FR</td>
<td>France</td>
</tr>
<tr>
<td>FS</td>
<td>French Southern and Antarctic Lands</td>
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<tr>
<td>FT</td>
<td>French Territory of the Afars and Issas</td>
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<tr>
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<td>GB</td>
<td>Gabon</td>
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<td>Serbia and Montenegro</td>
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<td>YM</td>
<td>Yemen</td>
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YO  Yugoslavia
YQ  Southern Ryukyu Islands
YS  Yemen (Aden)
ZA  Zambia
ZI  Zimbabwe

Table D.4: mapCountry

D.6  Map Employee Regular / Temporary

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Table D.5: mapEmployeeRegTemp

D.7  Map Employee Status

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<td>O</td>
<td>On Leave</td>
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<td>P</td>
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<td>NT</td>
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<td>H</td>
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Table D.6: mapEmployeeStatus

D.8  Map Employee Time

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Table D.7: mapEmployeeTime

D.9  Map Enrollment Status

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<td>S</td>
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Table D.8: mapEnrollmentStatus

D.10  Map Ethnicity

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Table D.9: mapEthnicity

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<th>Native Hawaiian/Other Pacific Islander</th>
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D.11 Map Gender

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Table D.10: mapGender

D.12 Map Marital Status

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Table D.11: mapMaritalStatus

D.13 Map Residency Status

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Table D.12: mapResidencyStatus

D.14 Map Scholar Plan / Grade Codes

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Table D.13: mapScholarPlanGradeCodes

D.15 Map Visa Type
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<td>A-2 Govt Official/Employee/Dep</td>
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<tr>
<td>L2</td>
<td>L-2 Spouse/Child of L1 Alien</td>
<td></td>
</tr>
<tr>
<td>LPR</td>
<td>Permanent Resident</td>
<td></td>
</tr>
<tr>
<td>M-1</td>
<td>M-1 Student Rec Nonacadem Inst</td>
<td></td>
</tr>
<tr>
<td>M-2</td>
<td>M-2 Spouse/Child of M1 Alien</td>
<td></td>
</tr>
<tr>
<td>N8</td>
<td>N-8 Parent of Child w/spl Stat</td>
<td></td>
</tr>
<tr>
<td>N9</td>
<td>N-9 Child of Parent w/spl Stat</td>
<td></td>
</tr>
<tr>
<td>NLR</td>
<td>Now US Citizen-No Visa Req'd</td>
<td></td>
</tr>
<tr>
<td>NT1</td>
<td>NATO-1 Principal NATO Rep</td>
<td></td>
</tr>
<tr>
<td>NT2</td>
<td>NATO-2 Other NATO State Rep</td>
<td></td>
</tr>
<tr>
<td>NT3</td>
<td>NATO-3 Clerical Staff NATO/Dep</td>
<td></td>
</tr>
<tr>
<td>NT4</td>
<td>NATO-4 Official of NATO/Dep</td>
<td></td>
</tr>
<tr>
<td>NT5</td>
<td>NATO-5 NATO Experts NATO/Dep</td>
<td></td>
</tr>
<tr>
<td>NT6</td>
<td>NATO-6 Civiln Employ NATO/Dep</td>
<td></td>
</tr>
<tr>
<td>NT7</td>
<td>NATO-7 Person Empl NT1-6/Deps</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td>O1</td>
<td>O-1 Worker w/Extraord Ability</td>
<td></td>
</tr>
<tr>
<td>O2</td>
<td>O-2 Assistant of O1 Alien</td>
<td></td>
</tr>
<tr>
<td>Code</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>O3</td>
<td>O-3 Family of O1 and O2 Alien</td>
<td></td>
</tr>
<tr>
<td>P1</td>
<td>P-1 Intl Recog Entertain/Athl</td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>P-2 Exchng Entertainer/Artist</td>
<td></td>
</tr>
<tr>
<td>P3</td>
<td>P-3 Unique Entertainer/Artist</td>
<td></td>
</tr>
<tr>
<td>P4</td>
<td>P-4 Family of P1-P3</td>
<td></td>
</tr>
<tr>
<td>PIP</td>
<td>Public Interest Parolee</td>
<td></td>
</tr>
<tr>
<td>Q1</td>
<td>Q-1 Cultural Exchange Visitor</td>
<td></td>
</tr>
<tr>
<td>Q2</td>
<td>Q-2 Irish Cultr Exchng Visitor</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>R: Religious Worker</td>
<td></td>
</tr>
<tr>
<td>R2</td>
<td>R-2 Religious Worker Dependent</td>
<td></td>
</tr>
<tr>
<td>REF</td>
<td>Refugee</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>S: Federal Witness</td>
<td></td>
</tr>
<tr>
<td>SD1</td>
<td>Sponsored Domestic Helper</td>
<td></td>
</tr>
<tr>
<td>TD</td>
<td>TD Dependent of TN Alien</td>
<td></td>
</tr>
<tr>
<td>TN</td>
<td>TN NAFTA Professional</td>
<td></td>
</tr>
<tr>
<td>TPS</td>
<td>Temporary Protected Status</td>
<td></td>
</tr>
<tr>
<td>V1</td>
<td>V-1 Permanent Resident Spouse</td>
<td></td>
</tr>
<tr>
<td>V2</td>
<td>V-2 Child of V-1</td>
<td></td>
</tr>
<tr>
<td>V3</td>
<td>V-3 Child of V-1 or V-2</td>
<td></td>
</tr>
<tr>
<td>OX</td>
<td>Status in Transition</td>
<td></td>
</tr>
<tr>
<td>F-3</td>
<td>F-3 Canadian / Mexican Commuter Student</td>
<td></td>
</tr>
<tr>
<td>E3</td>
<td>E-3 Temporary Australian Worker</td>
<td></td>
</tr>
<tr>
<td>WB</td>
<td>Visa Waiver Business</td>
<td></td>
</tr>
<tr>
<td>WT</td>
<td>Visa Waiver Tourist</td>
<td></td>
</tr>
<tr>
<td>U-1</td>
<td>Victims of qualifying criminal activity</td>
<td></td>
</tr>
<tr>
<td>U-2</td>
<td>Victims of qualifying criminal activity: spouse of victim</td>
<td></td>
</tr>
<tr>
<td>U-3</td>
<td>Victims of qualifying criminal activity: children of victim</td>
<td></td>
</tr>
<tr>
<td>U-4</td>
<td>Victims of qualifying criminal activity: parents of victim who are children</td>
<td></td>
</tr>
<tr>
<td>U-5</td>
<td>Victims of qualifying criminal activity: siblings (of minor age) of victim who are children</td>
<td></td>
</tr>
<tr>
<td>DACA</td>
<td>Consideration of Deferred Action for Childhood Arrivals</td>
<td></td>
</tr>
</tbody>
</table>

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: October 12, 2018
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

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Level of Support &amp; Supporting Features</th>
<th>Remarks and explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section 1194.21 Software Applications and Operating Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 1194.22 Web-based Internet Information and Applications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 1194.23 Telecommunications Products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 1194.24 Video and Multi-media Products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 1194.25 Self-Contained, Closed Products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 1194.26 Desktop and Portable Computers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 1194.31 Functional Performance Criteria</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section 1194.41 Information, Documentation and Support</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table E.1: Summary Table

E.2 Section 1194.21 Software Applications and Operating Systems

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Level of Support &amp; Supporting Features</th>
<th>Remarks and explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(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.</td>
<td>Menus and form items can be navigated via the tab and/or arrow keys.</td>
<td>All accessibility features require the Java Access Bridge to be installed on the client computer.</td>
</tr>
<tr>
<td>(b)</td>
<td>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.</td>
<td>The application has no effect on the behavior of the operating system or other applications, accessibility-related or otherwise.</td>
</tr>
<tr>
<td>(c)</td>
<td>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.</td>
<td>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.</td>
</tr>
<tr>
<td>(d)</td>
<td>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.</td>
<td>Elements have titles and labels accessible to assistive technologies. Icon buttons also have alternate title text.</td>
</tr>
<tr>
<td>(e)</td>
<td>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.</td>
<td>Icons are uniform across the application.</td>
</tr>
<tr>
<td>(f)</td>
<td>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.</td>
<td>All this information is available through the use of the Java Access Bridge.</td>
</tr>
<tr>
<td>(g)</td>
<td>Applications shall not override user selected contrast and color selections and other individual display attributes.</td>
<td>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.</td>
</tr>
<tr>
<td>(h)</td>
<td>When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.</td>
<td>The animation within the application is for presentational purposes only, and provides no additional information.</td>
</tr>
<tr>
<td>(i)</td>
<td>Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.</td>
<td>All color coding within the application is accompanied by unique, meaningful text so that the color is not a necessary part of the application.</td>
</tr>
<tr>
<td>(j)</td>
<td>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.</td>
<td>N/A</td>
</tr>
<tr>
<td>(k)</td>
<td>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.</td>
<td>The application contains no blinking or flashing elements, except for the cursor, which has a blink frequency of 1Hz.</td>
</tr>
</tbody>
</table>
(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.

Table E.2: Software Applications and Operating Systems

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

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Level of Support &amp; Supporting Features</th>
<th>Remarks and explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>All non-textual elements feature descriptive alt attributes.</td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td>N/A</td>
<td>iStart does not contain any multimedia presentations</td>
</tr>
<tr>
<td>(c)</td>
<td>Color is not necessary for portraying information. Color text offers both descriptive text, and semantic class names</td>
<td></td>
</tr>
<tr>
<td>(d)</td>
<td>iStart is completely useable with CSS turned off inside of a web browser.</td>
<td></td>
</tr>
<tr>
<td>(e)</td>
<td>iStart contains no image maps</td>
<td></td>
</tr>
<tr>
<td>(f)</td>
<td>iStart contains no image maps</td>
<td></td>
</tr>
<tr>
<td>(g)</td>
<td>iStart uses the thead and th XHTML tags to define headers for table columns and rows.</td>
<td></td>
</tr>
<tr>
<td>(h)</td>
<td>iStart uses th and td XHTML tags to associate headings and data.</td>
<td></td>
</tr>
<tr>
<td>(i)</td>
<td>iStart does not make use of frames</td>
<td></td>
</tr>
<tr>
<td>(j)</td>
<td>iStart uses the Script.aculo.us JavaScript libraries for its animation functions which provide smooth animations without screen flicker.</td>
<td></td>
</tr>
<tr>
<td>(k)</td>
<td>iStart has no areas that don’t comply with this part, and so do not need additional pages for compliance.</td>
<td></td>
</tr>
<tr>
<td>(l)</td>
<td>iStart is inoperable without JavaScript enabled.</td>
<td></td>
</tr>
</tbody>
</table>
(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).

(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.

(o) A method shall be provided that permits users to skip repetitive navigation links.

(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

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.

The forms on iStart use label, formfield, and legend tags to describe the form elements to make them accessible.

iStart includes a “Skip to Content” link when CSS is turned off.

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

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Level of Support &amp; Supporting Features</th>
<th>Remarks and explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(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.</td>
<td>(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.</td>
<td></td>
</tr>
<tr>
<td>(b) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.</td>
<td>(b) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.</td>
<td></td>
</tr>
<tr>
<td>(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.</td>
<td>(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.</td>
<td></td>
</tr>
<tr>
<td>(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.</td>
<td>(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.</td>
<td></td>
</tr>
<tr>
<td>(e) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.</td>
<td>(e) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.</td>
<td></td>
</tr>
<tr>
<td>(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.</td>
<td>(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.</td>
<td></td>
</tr>
<tr>
<td>(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.</td>
<td>(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.</td>
<td></td>
</tr>
</tbody>
</table>

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(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**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Level of Support &amp; Supporting Features</th>
<th>Remarks and explanations</th>
</tr>
</thead>
</table>

SUNAPSIS Technical Guide
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

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Level of Support &amp; Supporting Features</th>
<th>Remarks and explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(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).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(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

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Level of Support &amp; Supporting Features</th>
<th>Remarks and explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) All mechanically operated controls and keys shall comply with 1194.23 (k) (1) through (4).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(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).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) Where provided, at least one of each type of expansion slots, ports and connectors shall comply with publicly available industry standards.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table E.7: Desktop and Portable Computers

E.8 Section 1194.31 Functional Performance Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Level of Support &amp; Supporting Features</th>
<th>Remarks and explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(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.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(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.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(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

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Level of Support &amp; Supporting Features</th>
<th>Remarks and explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Product support documentation provided to end-users shall be made available in alternate formats upon request, at no additional charge</td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td>Support services for products shall accommodate the communication needs of end-users with disabilities.</td>
<td></td>
</tr>
</tbody>
</table>

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