

sunapsis[®]:International Office Module Technical Guide



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INTRODUCTION

This is the International Office Module (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.

1.0 DISTRIBUTION FILES

In the .zip file that you received is everything that you need to install sunapsis. Included are a number of directories and files. Table 1 gives a summary of the directories and files included.

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

Table 1 - Distribution files

2.0 SYSTEM REQUIREMENTS

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

2.1 SERVER REQUIREMENTS

Recommended Software Components	Microsoft Windows Server 2012 Standard 64-bit, ColdFusion 10 Standard 64-bit, Microsoft SQL Server 2012 Standard 64-bit
Minimum Software Components	Microsoft Windows Server 2008 Standard 32-bit, ColdFusion 9 Standard 32-bit, Microsoft SQL Server 2008 Standard 32-bit
Server Security Certificates and Toolkits	SSL Server Certificate included in the Java keystore (see note below), Certificate for SEVIS Batch (Symantec Digital ID for Secure Email (Class 1), InCommon, or others. Check with SEVIS Helpdesk to verify), and OpenSSL
Recommended Server Hardware	<p>Separate Application and Database Servers</p> <ul style="list-style-type: none"> 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
Minimum Server Hardware	Single Server, dual-core processor, 4 GB RAM, 100 GB storage.
ColdFusion License Note	ColdFusion is licensed for two CPUs per license. We recommend purchasing 1 ColdFusion license for a dual-core processor application server.

Table 2 - Server Requirements

SSL CERTIFICATE NOTE: The Java keystore has only a limited number of trusted certificate authorities installed by default (you can view the default trusted authorities by following the instructions [here](#)). It is possible to use certificates not included in the Java keystore by default by adding the certificate (and its entire authority chain) to all of the involved the Java keystores. However, this process will not be supported by SUNAPSIS. You do so at your own risk.

2.2 CLIENT WORKSTATION REQUIREMENTS

While certain operations such as the SEVIS 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.

Minimum Client Machine Specifications	2.8+ GHz Pentium 4 or Dual-Core Processor with 1+ GB RAM (Note: 2+ GB RAM for Windows Vista + machines)
---------------------------------------	---

Client Software Requirements	Windows XP+, Mac OS 10.7.3+, Java Runtime (JRE) 7_u25+ (use 32-bit version ONLY), Adobe Acrobat Reader
Required Plug-in for Mac OSX Support	If running Mac OSX, the Schubert-It PDF Browser Plugin is required for SEVIS RTI use. Please download at: http://www.schubert-it.com/pluginpdf/

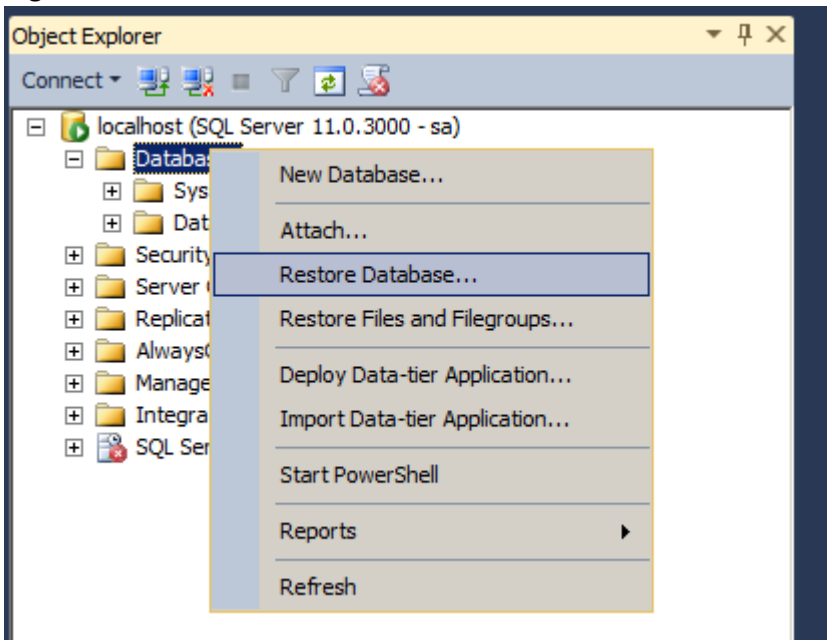
Table 3 - Client Workstation Requirements

3.0 DATABASE INSTALLATION

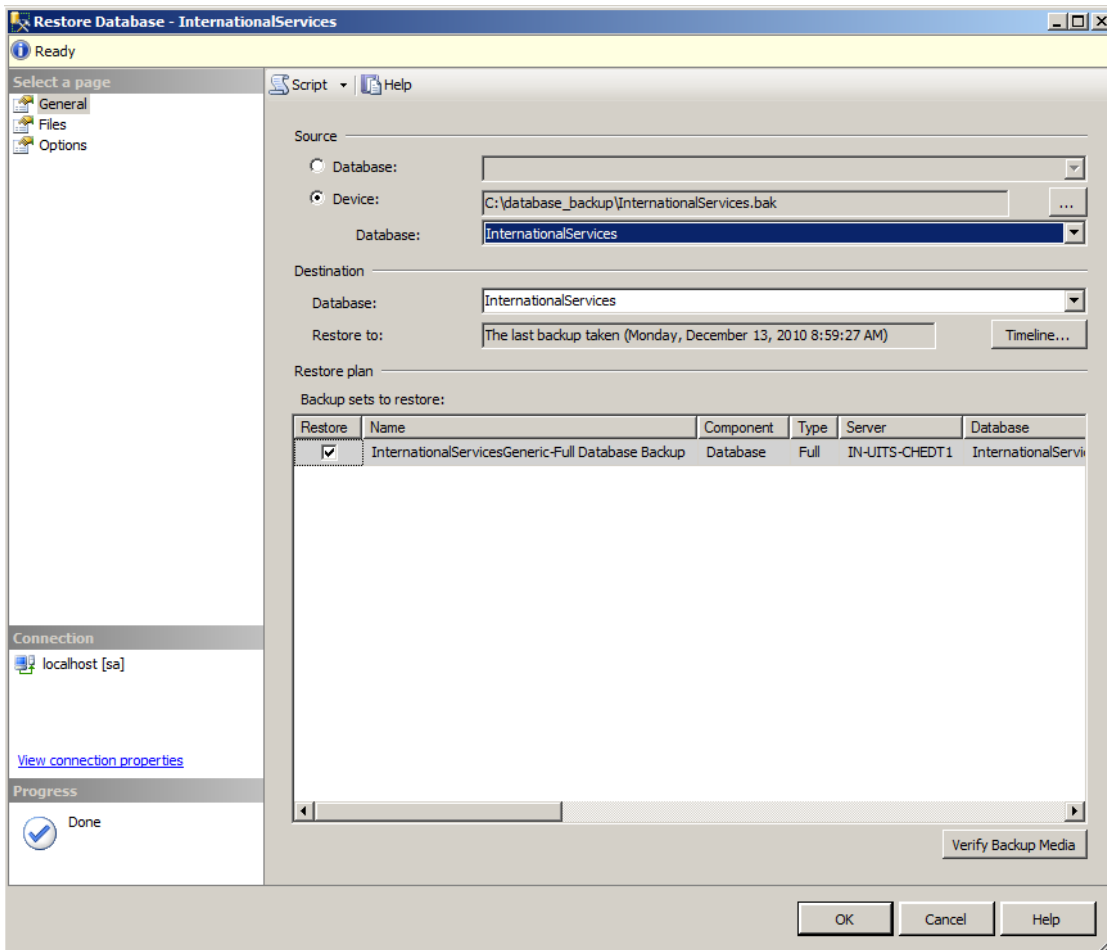
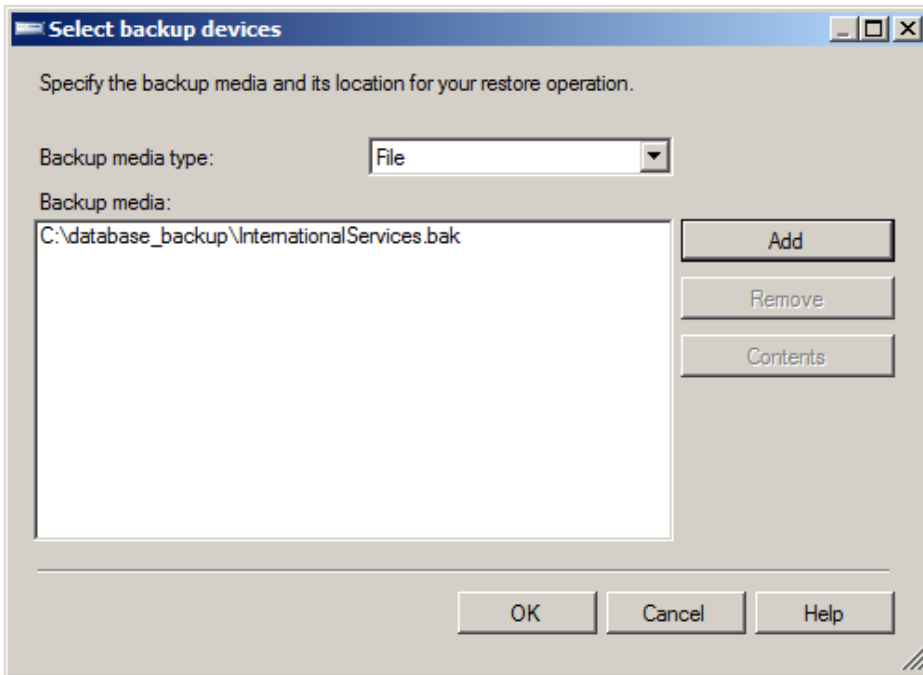
This process installs the database structure used for the application onto your database server. These steps assume that you already have installed Microsoft SQL Server 2008, 2008R2 or 2012 Standard on the server. If you have not installed it yet, please do so before continuing with this section (*screenshots are from SQL Server 2012, but 2008 is similar*).

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

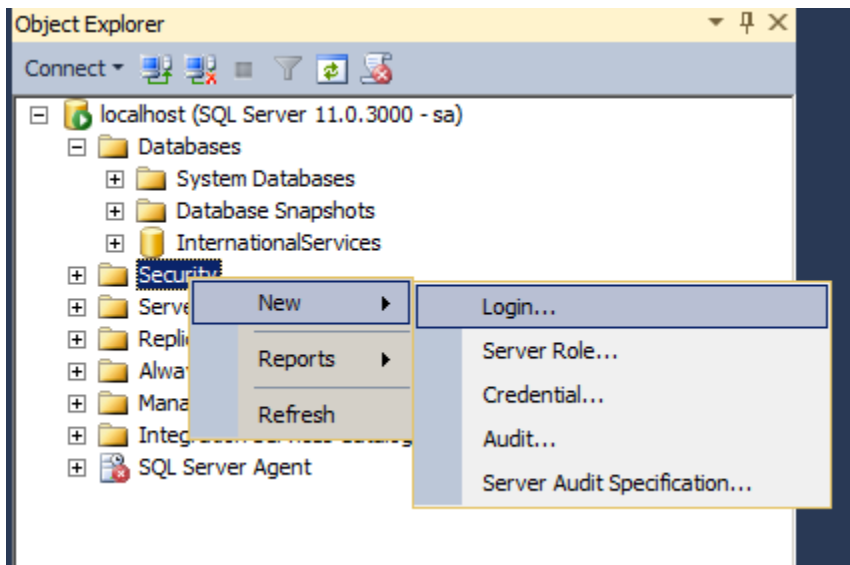
1. Launch the SQL Server Management Studio.
2. Connect to Server Database Engine using SQL Server Authentication.
3. Right click on 'Databases' and select 'Restore Database...'



4. Source ⇨ Device: <path to InternationalServices.bak>. Destination ⇨ Database: **InternationalServices**



5. Click 'OK' and the database is restored.
6. Press F5 to refresh your database listing on the server.
7. Add New Login / User.



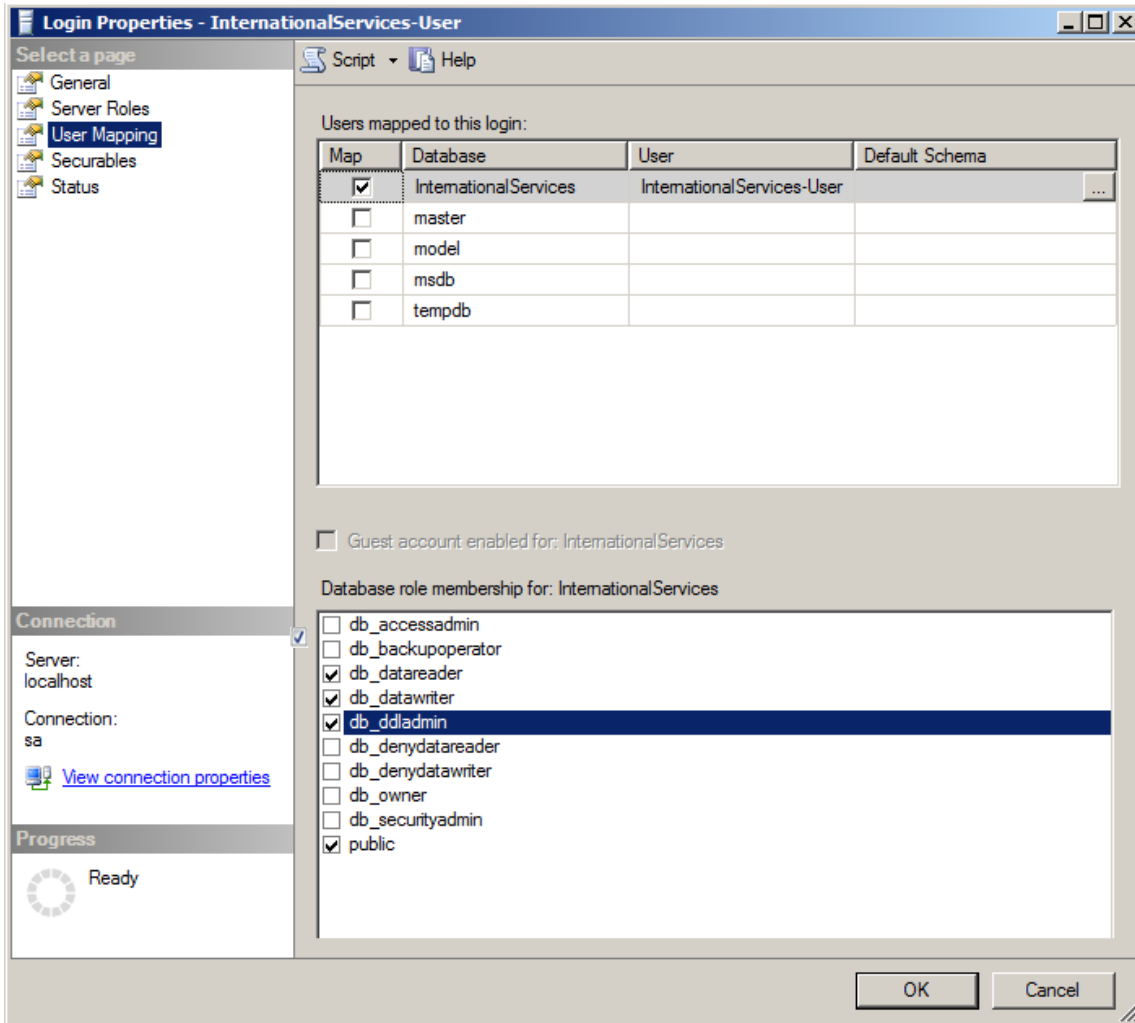
- a. Login Name: **InternationalServices-User**
- b. Select SQL Server Authentication and create a password.
- c. Uncheck “Enforce password policy.”
- d. Default Database: **InternationalServices**
- e. Do not click OK yet!

The screenshot shows the 'Login - New' dialog box with the following configuration:

- Login name:** InternationalServices-User
- Authentication:** SQL Server authentication (selected)
- Password:** [Masked]
- Confirm password:** [Masked]
- Enforce password policy:** Unchecked
- Default database:** InternationalServices
- Default language:** <default>
- Server:** localhost
- Connection:** sa
- Progress:** Ready

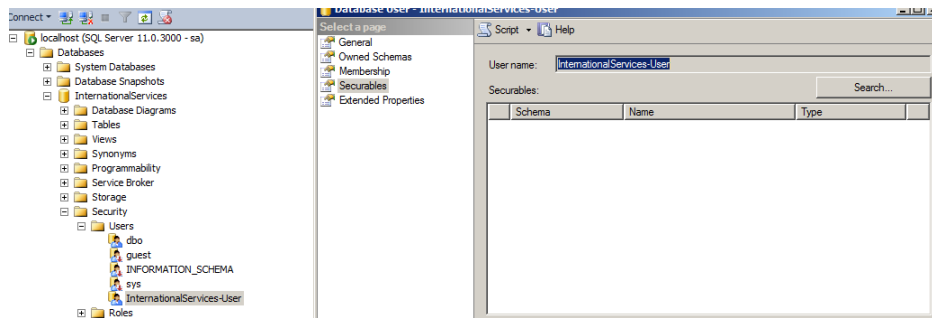
8. Go to ‘*User Mapping*’ and select the database ‘*InternationalServices.*’

9. Select 'db_datareader,' 'db_datawriter,' and 'db_ddladmin' roles. You can leave "public" checked. Click OK.

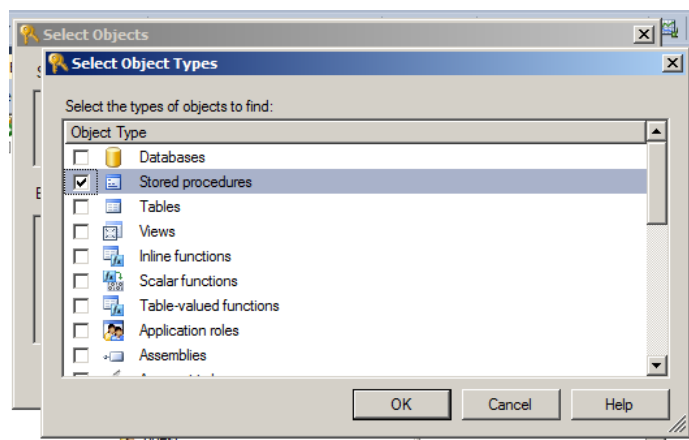
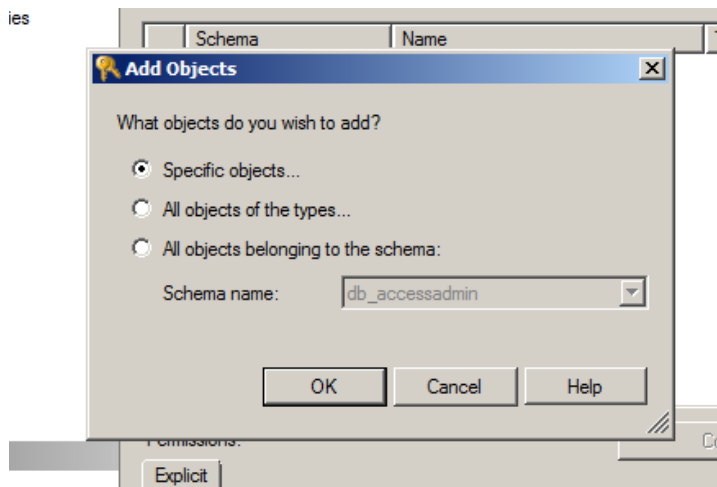


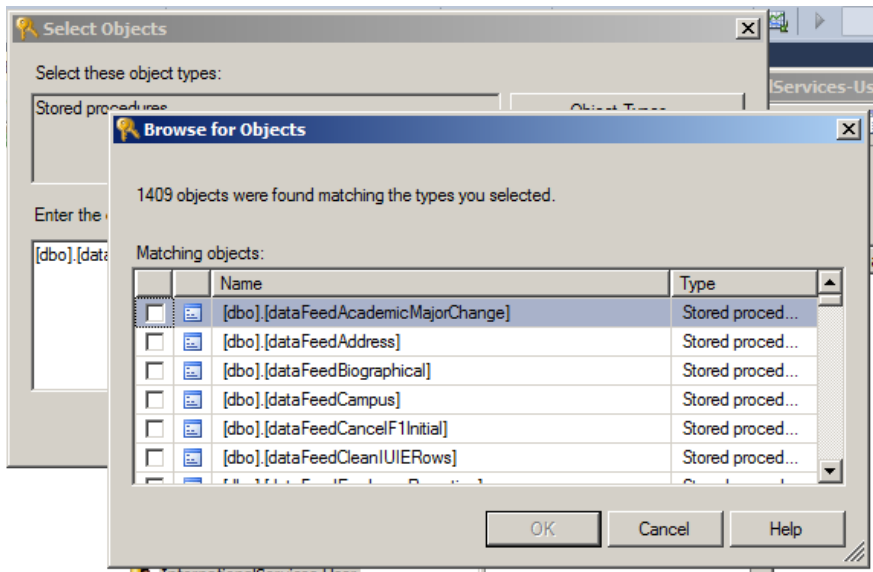
- Open the InternationalServices-User profile inside the InternationalServices database, and go to *'Securables'* to grant the user access to execute the stored procedures used by the application which include the following:

dataFeedCore
dataFeedCoreChecklist
dataFeedReindex
spCreateEFormGroup
spGeneratePIN

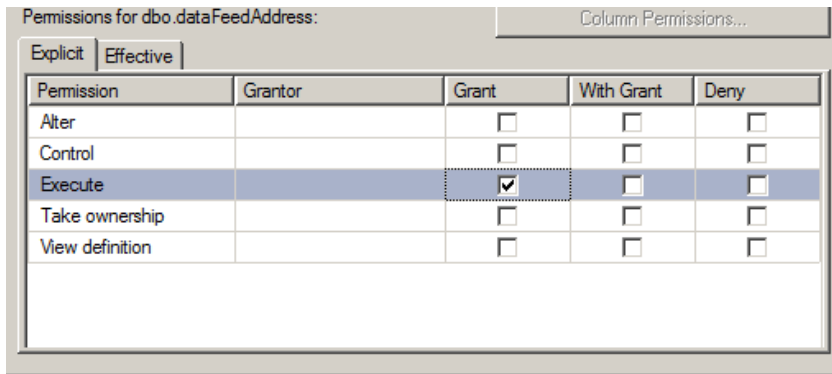


- Click on *'Search...'* ⇒ *'Specific objects...'*, *'OK'* ⇒ *'Object Types...'* ⇒ *'Stored Procedures'* ⇒ *'Browse'* ⇒ Select the above stored procedures:





11. Set the execute privilege for each of the stored procedures listed in step 10:



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

4.0 SERVER INSTALLATION

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

4.1 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 *SSL Certificate Note* in Section 2.1 for more details)
3. Install the OpenSSL binary distribution at <http://www.openssl.org/related/binaries.html> or <http://www.slproweb.com/products/Win32OpenSSL.html> and download the latest version of OpenSSL (currently v1.0.1e). Make sure to download the appropriate version for your system architecture (Win32 for 32-bit Windows, Win64 for 64-bit Windows).
4. To test if OpenSSL was installed correctly, open a command prompt and type *'openssl.'*
5. If your prompt changes to *'OpenSSL>'* it was installed properly. If you receive an error, download and install the appropriate version of *'Visual C++ 2008 Redistributables'* for your computer (x64 for 64-bit Windows). Links for this download are found on the same page as OpenSSL. Also, ensure that the openssl directory is in the PATH.
6. Ensure that the 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:
 - a. .jnlp application/x-java-jnlp-file
 - b. .swf application/x-shockwave-flash

4.2 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.).

4.3 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):
 - a. \ioffice\batch\
 - b. \ioffice\pdfs\

2. Verify that CGI execute access to the following directories is enabled (this is the default setting in IIS):
 - a. \jre\
 - b. \ioffice\batch\datafeed\

3. Disable CGI execute access to the following directory and sub-directories:
 - a. \ioffice\pdfs\content\

5.0 COLD FUSION ADMINISTRATOR SETTINGS

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

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

5.1 CONFIGURE JAVA & JVM

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

5.2 REQUEST TUNING FOR PERFORMANCE

1. Expand the '*Server Settings*' menu item.
2. Click on '*Settings*' and ensure '*Enable Global Script Protection*' is checked.

3. If you're using ColdFusion 10, set the *'Maximum number of POST request parameters'* to 750. If you are using ColdFusion 9, you will need to edit this setting in an XML file instead. Please follow the instructions below:

In the ColdFusion installation directory (C:\ColdFusion\), go to \lib, and open neo-runtime.xml as an Administrator. Search for the text

```
<var name='postSizeLimit'><number>100.0</number></var>
```

 Immediately after that line, add the following:

```
<var name='postParametersLimit'><number>750</number></var>
```

and save the file.

4. Click on *'Request Tuning'* and update the fields in the Request Limits section to the following values:

Maximum number of simultaneous Template requests:	40
Maximum number of simultaneous Flash Remoting requests:	5
Maximum number of simultaneous Web Service requests:	5
Maximum number of simultaneous CFC function requests:	10

Note: These are guidelines based on the recommended server specifications in Section 2.1. 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.

5. 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.

5.3 SETUP MAIL SERVER SETTINGS

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

5.4 COLDFUSION DATABASE CONFIGURATION

1. Click on *'Data & Services'* ⇨ *'Data Sources'* and create a new data source using the following information (*Note*: the CF 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: *****

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.).

5.5 CREATE SCHEDULED TASKS

For Coldfusion9, click on *'Debugging & Logging'* ⇨ *'Scheduled Tasks'* ⇨ *'Schedule New Task.'* For Coldfusion10, *'Scheduled Tasks'* is under *'Server Settings.'* You will need to click on *'Schedule New Task'* to setup each task. Table 5 lists the information you need to setup each task (<configBatchID> is the value you entered into the database on step 14 of Section 3.0 Database Install; this provides a basic level of security for the execution requests):

Task Name	Frequency	URL Examples (Change the baseURL and configBatchID value for each necessary path)
Institutional XML Data Feed	Recurring Daily at TBA	<baseURL>/ioffice/batch/DataFeedXMLImportApplication.cfm?id=<configBatchID>
SEVIS Download Batch	Daily every 55 minutes from 5:00 AM to 7:00 AM	<baseURL>/ioffice/batch/SEVISDownloadApplication.cfm?id=<configBatchID>
SEVIS Upload Batch	Daily every 55 minutes from 8:00 PM to 10:00 PM	<baseURL>/ioffice/batch/SEVISUploadApplication.cfm?id=<configBatchID>

Build Alert History	Recurring Daily at 1:00 AM	<baseUrl>ioffice/batch/ProcessAlertHistoryApplication.cfm?id=<configBatchID>
Read International Office Module Email	Recurring Daily at 12:15 AM	<baseUrl>/ioffice/batch/ReadOfficeEmailApplication.cfm?id=<configBatchID>
Send Queued Communications	Set this to about 15 minutes after your data feed normally finishes (check the DataFeedXMLImportApplication.done file in \ioffice\batch\bat\ once you have scheduled the data feed and it has run with a good sample size of data several days in a row). This task is only important after your office has configured checklists (and specifically, checklist communication rules) which will happen later in the implementation process—just remember to come back to this eventually!	<baseUrl>/ioffice/batch/SendQueuedCommunicationsApplication.cfm?id=<configBatchID>

Table 4 - Scheduled Tasks

PLEASE NOTE: Ensure that you have properly set up the folder permissions in Subsection 4.1 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.

6.0 CONFIGURE FOR MULTI-SERVER ENVIRONMENT

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:
 - a. `.swf application/x-shockwave-flash`
4. Install the necessary server files.
 - a. Copy the `/istart/` directory to the client server.
 - b. Create an `/ioffice/` directory on the client server.
 - c. Copy `/ioffice/contego/` onto the client server.
 - d. (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 5.1, 5.2, 5.3, and 5.4 to the new server.
6. In the database, update the table '`configOfficeBasePath`' with the URL for the server for the admin online services. Exclude the protocol from this URL. (ex., `sunapsis.iu.edu`, NOT `https://sunapsis.iu.edu`)

7.0 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 LDAP server, while others use a single-sign on service such as Central Authentication Service (CAS) or CoSign. We will work closely with you to develop a solution that meets your institution's requirements.

7.1 SINGLE-SIGN ON

If your institution uses a single-sign on 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.

7.2 LDAP AUTHENTICATION

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

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

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

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

8.0 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.

8.1 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 Single-sign on 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*'.

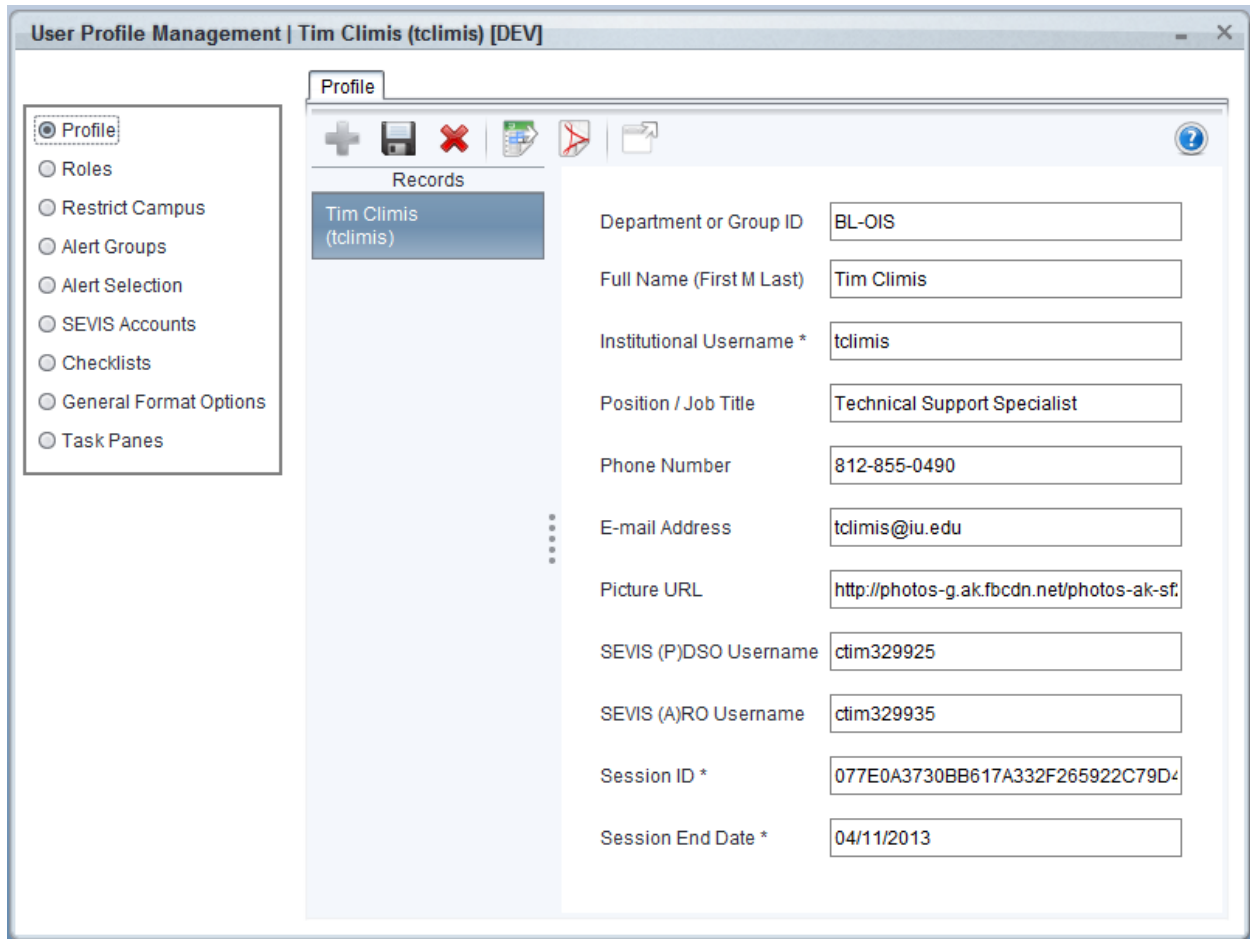
8.2 CREATE INITIAL USER ACCOUNTS

Now you can 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 7) installed, the application will fail to launch. You will have to install it now. Please see Section 2.2 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.

- 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.

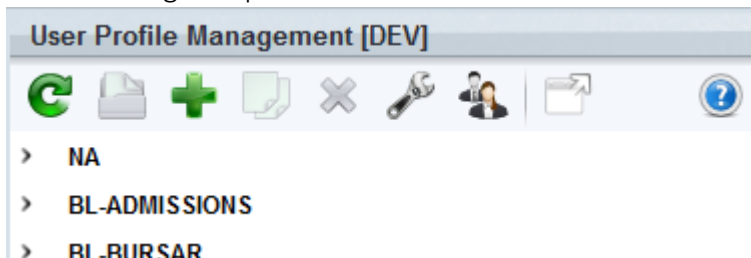


- After this process is complete, close your user profile.

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.

- Click on the green plus icon to add a new user.



- 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*'. Click the save icon. Click the New icon (on that tab) to add another role. Select 'User Management', and click Save. This set of roles will allow the user to launch the application, and to edit user permissions, but nothing else. Add additional roles as necessary.

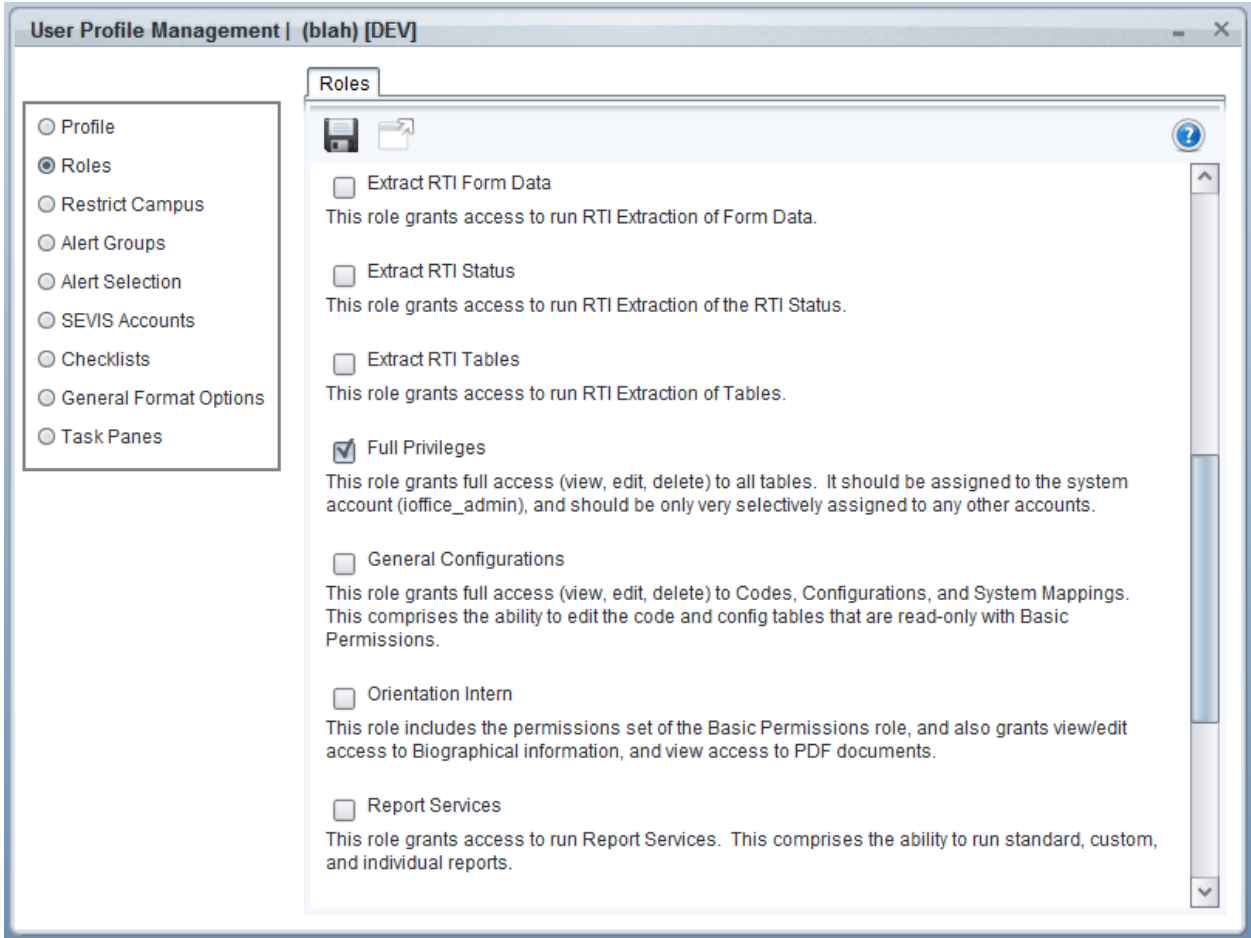
The standard set of roles for a DSO is 'Basic Permissions Required for All Users', 'Core Student Records', 'Embedded Browser', and 'SEVIS Records'.

5. After the process is complete, you can close the user profile.

8.3 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).

- On the 'Roles' tab, select the 'Full Privileges' role, and click the save button.



- After this process is complete, you can close the user profile and the User Profile Management Tool.

9.0 ENCRYPTION CONFIGURATION

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

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

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.

9.1 BACKGROUND

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

These are listed in the table below.

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

sevisCertPhrase	certPhrase
-----------------	------------

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

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

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

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.

9.2 INITIAL SETUP

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

KEY MANAGEMENT

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

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

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

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

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

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

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

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

- Important to develop, and keep updated, data use and retention policies.
- Ensure policies identify clear requirements for highly critical data (i.e. 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

As sunapsis allows one to create their own E-Forms, which can be used to collect a wide range of data, one then 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' and then see section XXX for running a process to encrypt the previously unencrypted fields.

SERVER 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.

9.3 ENCRYPTION CONFIGURATION

Configuration of encryption consists of three major portions

1. Generation of the encryption key(s)
2. Placement of the key(s) in the appropriate palaces
3. Configuration of encryption itself

KEY GENERATION

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

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

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

This utility is accessed by going to the 'Upgrade / Installation Procedures' section of the sidebar in iStart and selecting 'Generate Encryption Keys.'

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.

Number of Key Parts *

* required fields

Generate Keys

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

Generate Encryption Keys

--- Successfully Processed ---

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

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

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

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

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

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

Once the keys are in place and encryption is configured, please [verify](#) that things are configured correctly.

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

PLACEMENT OF KEYS

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

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

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

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

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

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

CONFIGURATION

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

The first section to verify is the 'Security Key' tab. 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 screenshot shows the 'Security Key' configuration tab. The interface includes a top navigation bar with tabs for 'Configuration', 'Security Key', 'Initial Conversion', and 'File Directory'. Below the navigation bar is a toolbar with icons for adding, saving, deleting, and refreshing records. A 'Records' list on the left shows a single entry for '2012'. The main configuration area contains three fields: 'Encryption Key *' with the value 'wUJPB8A', 'Old Key' with an unchecked checkbox, and 'Version' with the value '2012'.

The next section to configure is that of the 'File Directory', as shown below.

The screenshot shows the 'File Directory' configuration tab. The interface includes a top navigation bar with tabs for 'Configuration', 'Security Key', 'Initial Conversion', and 'File Directory'. Below the navigation bar is a toolbar with icons for adding, saving, deleting, and refreshing records. A 'Records' list on the left shows a single entry for 'Directory'. The main configuration area contains one field: 'Full Directory Path *' with an empty text input box.

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

X:\InternationalServices\ioffice\pdfs

The next section to configure is that of the 'Configuration' tab, as shown below.

The screenshot shows the 'Configuration' tab of a software interface. The 'Records' sidebar on the left has 'Encryption Configuration' selected. The main configuration area includes the following settings:

Setting	Value
Turn on Data Encryption	<input type="checkbox"/>
Status	Disabled
Days to keep processed SEVIS batch files *	0
Days to keep unprocessed SEVIS batch files *	0
Conversion Start Date	
Conversion Finish Date	
Current Directory (Unencrypted)	
New Directory (Encrypted)	
Effective Date	

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 following, with the exception of the 'New Directory (Encrypted)' setting.

Configuration Item	Value
Turn on Data Encryption	<input checked="" type="checkbox"/>
Status	Currently in Use
Days to keep processed SEVIS batch files *	0
Days to keep unprocessed SEVIS batch files *	15
Conversion Start Date	
Conversion Finish Date	
Current Directory (Unencrypted)	
New Directory (Encrypted)	X:\InternationalServices\ioffice\pdfs
Effective Date	

VERIFICATION OF CONFIGURATION

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

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

This page will also perform a simple test of encrypting a string.

9.4 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.

9.5 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 previously submitted E-Forms, please contact the sunapsis support team for assistance with this.

9.6 RE-KEYING

Sunapsis also has the ability to allow you to change the encryption keys currently in use.

As this process involves decrypting every file/database field with the old deprecated key and re-encrypting file/database field with the new key, please contact the sunapsis support team for assistance with this.

10.0 DATA FEED

The International Office Module 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*.'

10.1 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 Section 8.3. If you do not have access to an XML editor that can test the validity of a file against a schema, you can send the file to the support team and we will run a validation test and inform you of the results. Please reference Appendix A 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 B 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.

10.2 TEST THE DATA FEED

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

1. Launch the ColdFusion Administrator (found at `<baseURL>/CFIDE/administrator/index.cfm`).
2. Click on '*Debugging & Logging*' ⇨ '*Scheduled Tasks*.'

3. On the '*Institutional XML Data Feed*' process, click on the '*Run Scheduled Task*' icon ( or ) (left-most icon on the row). **Note:** A message saying "The scheduled task was completed successfully" means that ColdFusion successfully launched the Java application that runs the data feed. It does not mean that the data feed has actually finished, or will run successfully.)

The process can take several minutes or several hours, depending on how much data is being loaded. You can check the progress of the feed by looking on the server in the /ioffice/batch/bat/ directory. There you will find log files for the various scheduled tasks, including the data feed. The "Last Modified" dates for the DataFeedXMLImportApplication.start and DataFeedXMLImportApplication.done files indicate when the feed last started and finished, respectively. Any activity that happens in between is recorded in DataFeedXMLImportApplication.log, and can be viewed in any standard text editor.

4. Check the XML directory (\ioffice\batch\datafeed\). If the files you placed in there were removed, the data feed successfully processed.
5. You can check the application to make sure by clicking on '*Application*' ⇨ '*Search International Profiles*' and searching for a student that you had in the XML file.
6. If the file in the XML directory is still there, with the word '*failure*' prepended to the file name, your file failed schematically. Please double check to make sure the XML file validates against the schema.

11.0 APPLICATION CONFIGURATION

There are several settings in the application that need to be configured for your institution. This section outlines the settings that you need to configure. Open the application to complete the following steps.

11.1 CAMPUS INFORMATION

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'* ⇨ *'Campus Configuration.'* If you only have one campus, you still need to complete this configuration. The campus code needs to match the value being sent in your data feed.

1. Click *'Campus Code Configuration.'*
2. Input the campus description and code (i.e. description: Bloomington and code: IUBLA for the IU 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'* ⇨ *'Campus Configuration'* menu structure. Table 6 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	<p>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 (i.e. F-1 Students, J-1 Students, J-1 Scholars, etc.).</p> <p>If you have multiple campuses, you should have a row for each campus. Each area (i.e. F-1 Students, J-1 Students, J-1 Scholars, etc.) should be mapped to the campus that will handle that area. For example, the IU South Bend Campus looks like the following:</p> <p>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</p>

	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.

Table 5 - Campus Information Configurations

11.2 TERM INFORMATION

These settings configure the application with your institution’s term information. These settings can be found by clicking ‘*General Configurations*’ ⇌ ‘*Term Configuration*.’

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 want under enrollment alerts to display for a particular term type, check the box for “Trigger Enrollment Alerts.”

If you’d like sunapsis to automatically build registration batches for continuing students, check the “Report Enrollment to SEVIS” box.

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.

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

The Term Type ties back to the Term Type Configuration.

The 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> <year>.

Year is the calendar year during which the term takes place. Fall 2013 will have 2013 as a year, even though it is part of the 2013-2014 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 Campus and 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:** 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.

11.3 SEVIS CONFIGURATION

These settings configure the application to use your information when communicating with SEVIS via the batch-file transfer process. These settings can be found by clicking on '*SEVIS Management*' ⇨ '*Configuration for Batch*.'

1. Click on '*SEVIS School / Program Information*.'
2. Input the information for each school / program that the application will use.
3. '*School / Program*' is the SEVIS organization code.
4. Ensure that '*Short Description*' 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.
5. '*Full Description*' should be set to the value in '*Short Description*' with the visa type appended to the front of it (i.e. '*F-1: Indiana University Bloomington*').
6. Input the PDSO / RO and Primary Campus.

7. In the *'Associated Campus Codes'* field, input the campus code for the primary campus, and if there are multiple campuses this organization code is associated with, input them as a comma separated list, without spaces (i.e. *'IUBLA,IUSBA,IUEAA'* etc.).
8. Click *'Save.'*
9. Click *'New'* as needed for each SEVIS organization code and repeat the process. After finishing, close the display.
10. Open *'SEVIS Term Information for Registration.'*
11. This sets term information that the application will use to handle the automatic creation of batches for F-1 student registration.
12. Input term information for each campus and each term. After finishing, close the display.

Batch registrations are, by default, generated for students who have an Active or Initial SEVIS status only. If you wish to have batch registrations generated for another status (i.e. Transfers), complete the following steps:

1. Click on *'SEVIS Management'* ⇨ *'Configuration for Batch'* ⇨ *'SEVIS Batch Statuses for Registration.'*
2. Create a new row for each desired SEVIS status.

11.4 ALERT CONFIGURATION

These settings configure the Alerts infrastructure in the application. These settings can be found by clicking on *'General Configurations'* ⇨ *'Alert Configuration.'*

1. Click *'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 (i.e. *'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 8 lists a description of each configuration.

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

Table 6 - Alert Configurations

11.5 NOTE IMPORT CONFIGURATION

You can optionally choose to set up the application with its own email account. This enables the international office to email students from their normal email client and Bcc the application. It will match the email address in the "To" line to an email address stored in the application or by matching an ID number either in the subject or body of the email to an ID number in the application.

If you choose to create an email address, you need to update the application with the email settings. They can be found in *'General Configurations'* ⇒ *'Notes Grouping and Import Configuration'* ⇒ *'Email Account to Check for Note Importation.'*

In addition, configure *'General Configurations'* ⇒ *'Notes Grouping and Import Configuration'* ⇒ *'Email Account Reader Patterns'* with the information that will match your university id number.

11.6 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 styles you define do not interfere with the CSS style sheets used in the online services, the preferred method of styling is to use inline styles.

12.0 SEVIS 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 Section 13, *'Configure the International Office Module to Communicate with SEVIS 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 Primary Designated School Official (PDSO) and/or the Responsible Officer (RO).

12.1 CREATE F-1 PROGRAM IN SEVIS TEST ENVIRONMENT (IF APPLICABLE)

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

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

12.2 CREATE J-1 PROGRAM IN SEVIS TEST ENVIRONMENT (IF APPLICABLE)

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

1. Go to <https://egov.ice.gov/sbtsevis> and click on *'Register for New Account.'*
2. Fill in the required information, including a real email address.

3. Choose ‘*Apply for Designation by the DoS to admit J Exchange Visitors.*’
4. You will receive an email from SEVIS shortly. Click on the hyperlink in the second email to create a temporary password.
5. After you create the temporary password, you will be taken to the login screen again. Login with the temporary username (in the email from SEVIS) and the temporary password you just created.
6. Complete the DS-3036 form (this needs to mirror the information that you have in the SEVIS Production environment).
7. When the DS-3036 form is processed, you will receive an email with a permanent username and a hyperlink to create a permanent password.

12.3 SEND A TEST BATCH

1. In sunapsis, go to the SEVIS Management menu, select Configuration for Batch, and open SEVIS Batch Upload Path. Change the path to:
<https://egov.ice.gov/sbtsevisbatch/action/batchUpload>
2. In the same menu, open SEVIS Batch Download Path, and change the path to:
<https://egov.ice.gov/sbtsevisbatch/action/batchDownload>
3. Complete Section 13. In 13.4, upload the certificate to *<https://egov.ice.gov/sbtsevis>* instead of <https://egov.ice.gov/sevis>.
4. Open a test record that you loaded into sunapsis (either manually, or with the data feed in Section 10). 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.

12.4 SETUP BATCH PROCESSING IN SEVIS PRODUCTION ENVIRONMENT

Please do not complete this Subsection until after successfully submitting a batch to Test SEVIS. Please see Section 11 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.

13.0 CONFIGURE THE INTERNATIONAL OFFICE MODULE TO COMMUNICATE WITH SEVIS 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 13.3.

13.1 ACQUIRE A DIGITAL CERTIFICATE

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

1. Using Internet Explorer, go to the [Symantec website](#) to request a *'Digital ID for Secure Email.'*
2. Choose *'Microsoft Internet Explorer'* as your browser.
3. Follow Symantec's process for requesting the certificate.
4. In the *'Cryptographic Service Provider Name'* select *'Microsoft Enhanced Cryptographic Provider v1.0.'*
5. Do not check the box labeled *'Check this Box to Protect Your Private Key.'*
6. Now you can download your certificate. Click *'Install.'*

13.2 EXPORT DIGITAL CERTIFICATE

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

1. In Internet Explorer click *'Tools'* ⇒ *'Internet Options'* then click the *'Content'* tab and then click *'Certificates.'*
2. Select the new certificate (the *'Issued By'* column will say VeriSign) and then 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.*' PLEASE NOTE: Do not use spaces in the password.
7. Choose a place to save the file and a filename and click '*Next.*'

13.3 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 OPENSLL

2. Download and install OpenSSL. You can find the latest release at [this website](#).
3. Ensure that the OpenSSL environment variable was set by opening the command prompt and typing '*openssl.*'
4. If your prompt changes to '*OpenSSL>*', skip steps 4 and 5 and go directly to the '*Convert to .pem*' subsection. If you receive an error message, continue to step 5.
5. For Windows XP:
 - a. Open the Control Panel and click '*System.*'
 - b. Click the '*Advanced*' tab.
 - c. Click '*Environment Variables.*'
 - d. Under the list of '*System Variables*', find the '*Path*' variable.
 - e. Highlight it and click '*Edit.*'
 - f. Under '*Variable Value*' add '*;%c:\openssl\bin*' to the end. IMPORTANT: Do not forget the semi-colon.
 - g. Click '*OK*' until you are back to the Control Panel. Close the Control Panel.
6. For Windows Vista:
 - a. Open the Control Panel.
 - b. Double click '*System.*'
 - c. Click '*Advanced system settings*' from the left column (under Tasks).
 - d. Click the '*Environment Variables*' button.
 - e. Under the list of '*System Variables*', find the '*Path*' variable.
 - f. Highlight it, then click '*Edit.*'
 - g. Under '*Variable Value*,' add '*;%c:\openssl\bin*' to the end. IMPORTANT: Do not forget the semi-colon.
 - h. Click '*OK*' until you are back to the Control Panel.

CONVERT TO .PEM

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

13.4 UPLOAD THE .PEM CERTIFICATE TO SEVIS

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

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

13.5 UPDATE THE APPLICATION WITH THE NEW CERTIFICATE INFORMATION

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

1. Move the certificate (both the .pfx and the .pem) to `\ioffice\batch\sevis\certs`.
2. In the application, from the toolbar, click on *'SEVIS Management'* ⇨ *'Configuration for Batch'* ⇨ *'SEVIS Certificate Phrase.'*
3. Update 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.'*

13.6 CREATE PDSO / RO ACCOUNT

For batches to be built correctly there needs to be a Primary Designated School Official (PDSO) and/or a Responsible Officer (RO). The PDSO is required if batching for F students and the RO is required if batching for J exchange visitors. Refer to Section 7.2 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

13.7 TROUBLESHOOTING SEVIS BATCHING

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

If not using a proxy:

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

If using a proxy:

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

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

Drive letter: The physical drive on the server where the application files are stored

Certificate Name: The file name of the certificate

Certificate Password: The passphrase assigned to the certificate when exporting it from Internet Explorer

SEVIS Organization Code: The SEVIS code for the school or program that is being tested

Batch ID: The batch ID (found in the XML file to be tested)

PDSO Username: The SEVIS username for the Primary Designated School Official (PDSO) or the Responsible Office (RO) for the school / program being tested

14.0 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. The majority of this process will be done when the support team visits your institution. We provide instructions for the entire process for your review, but please do ONLY steps 1 and 2.

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

Associated Campus Codes: A comma separated set of codes for when the SEVIS organization code is applied to multiple campuses.

CAMPUSA, CAMPUSB, CAMPUSC

2. Populate the '*SEVIS ID - University ID Mapping*.'

Populate the '*mapIDNumbers*' table in the production database with the SEVIS numbers and corresponding University ID numbers. If you can export the values to a CSV spreadsheet, then sunapsis has provided an online service for uploading this mapping. Log into the online services, just as you would to launch the sunapsis application. In the left hand menu is an entry for "Initial Conversion Mapping." Click on that, and follow the instructions on the page. This information can also be manually entered via the application user interface at '*SEVIS Management*' ⇒ '*Configuration for RTI*' ⇒ '*Initial Load: SEVIS ID - University ID Map*.'

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

3. Modify the Application for Additional Memory Allocation

Within the application, go to General Configurations -> Tuning the System -> Application Memory Usage. Change the Minimum and Maximum Memory values on that screen to 384. Set the Permanent Memory size to 64.

4. Launch the application and the RTI Embedded Browser

Be sure to use users that have at least the Core Biographical, SEVIS Records, and Extract Form Data roles.

Obtain the necessary login credentials for SEVIS RTI from staff in the international services office.

5. Run the Extraction Process on a Set of Records


The extraction process should be run for all schools or programs and you would need to click on Student or Exchange Visitor Lists for a given SEVIS organization...

Listing of Schools
 * Indicates an alert for that school
 @ Indicates that the PDSO of the main campus has to apply for recertification

Name of School	Name of Campus	Location (City, State)	Role	Commands
Indiana University	Bloomington	Bloomington, IN	PDSO	Search New Student * Alerts Student Lists Reports
Indiana University	IUPUI	Indianapolis, IN	PDSO	Search New Student * Alerts Student Lists Reports
Indiana University	Summer Institute Program	Bloomington, IN	PDSO	Search New Student * Alerts Student Lists Reports

...and then click on the Initial Status or Active Status to get a list of records.

Schools / Programs Extract Data Print Page https://egov.ice.gov/sbtsevis/action/eligibility/Filter?business_context:

 **SEVIS** Student & Exchange Vis

Main | Listing of Schools | Listing of Programs | Help | Tutorial | Logout
Message Board | Change Password


Indiana University - Bloomington

Student Lists

- [Student Listing](#)
- [Draft Students](#)
- [Initial Status Students](#)
- [Active Status Students](#)
- [Terminated Status Students \(past 18 months\)](#)
- [Completed Status Students \(past 18 months\)](#)
- [Canceled Status Students \(past 18 months\)](#)
- [Students With Requested, Pending, or Approved Off-Campus Employment](#)
- [Students With Requested, Pending, or Approved Optional Practical Training \(OPT\)](#)
- [Students With Curricular Practical Training \(CPT\)](#)
- [Students With a Pending Change of Status Request](#)
- [Students With a Requested or Pending Extension Request](#)
- [Students Authorized to Drop Below Full Course](#)
- [Students Transferring In](#)
- [Students Transferring Out](#)
- [Students Requesting Reinstatement](#)
- [Students With a Pending Data Correction Request](#)
- [Students With a Filed or Waitlisted Cap-Gap Extension](#)

From this view you will see a list of records.

Schools / Programs **Extract Data** Print Page https://egov.ice.gov/sbtsevis/action/eligibility/StudentList?student_list=active_status



SEVIS

Student & Exchange Visitor Information System
Skip Navigation

Main | Listing of Schools | Listing of Programs | Help | Tutorial | Logout RO, P050
 Message Board | Change Password Get Plug-Ins

Indiana University - Bloomington

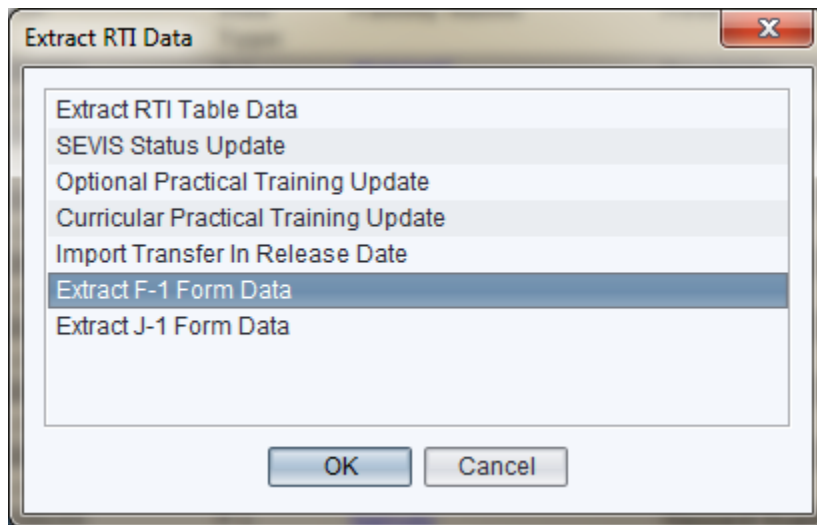
Active Status Students

[Return to Lists](#)

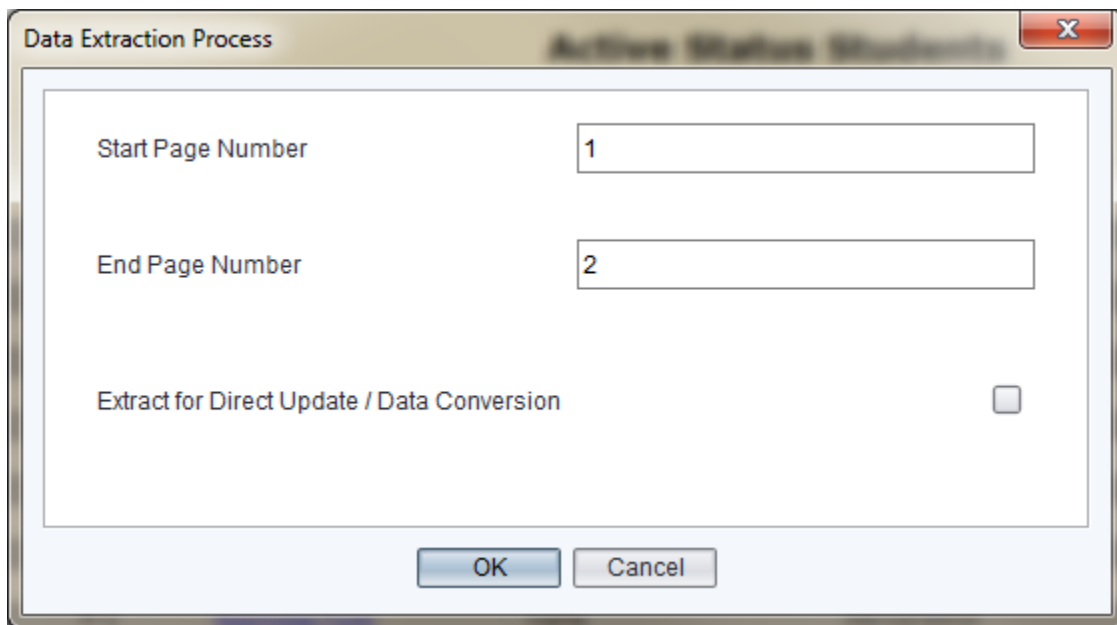
SEVIS ID	Visa Type	Family Name	First Name	Last Status Change	Program Start Date	Program End Date
N0000134631	F-1	Abdelatif	Emadeldin	11/28/2012	11/28/2012	12/14/2012
N0000134669	F-1	Abolins Abels	Mikus	11/29/2012	11/29/2012	12/31/2014
N0000134242	F-1	Aqarwal	Ananka	10/04/2012	10/04/2012	10/04/2014
N0000128544	F-1	Berqamot	Colette	10/22/2010	01/10/2011	05/20/2013
N0000126926	F-1	Busikov	Dimitri	04/28/2010	08/11/2010	05/31/2013
N0000129620	F-1	Busikov	Dimitri	04/19/2012	08/11/2011	05/31/2015
N0000135399	F-1	Cao	Yifan	04/05/2013	12/30/2014	12/31/2016
N0000128231	F-1	Casgrove	Rhett	10/22/2010	12/20/2010	12/31/2011
N0000118233	F-1	Choi	Yeon	10/22/2010	09/02/2008	05/31/2011
N0000128549	F-1	Codene	Sip	11/28/2012	08/12/2013	08/20/2014
N0000127988	F-1	Dependent	Test	08/27/2010	08/30/2010	10/20/2014
N0000134438	F-1	Dong	Yi	11/29/2012	12/31/2012	05/31/2017
N0000126549	F-1	Espinosa-Turk	Carla	03/12/2010	03/12/2010	12/01/2011
N0000133748	F-1	fiska	Josef	10/17/2012	01/01/2013	01/01/2015
N0000128233	F-1	Galindo	Gaspard Duarte	11/08/2010	01/10/2011	12/28/2014
N0000129933	F-1	Gloser	Josef	03/28/2011	08/20/2011	08/20/2015
N0000129937	F-1	Horak	Karel	03/28/2011	08/20/2011	08/20/2012
N0000117614	F-1	Izzo	Thomas	02/16/2008	02/16/2008	01/05/2009
N0000126473	F-1	Kid	Calvin	03/07/2010	03/07/2010	12/31/2011
N0000106216	F-1	Kim	Do Ra	06/25/2006	08/13/2006	05/31/2011

45 Records 1 2 3 [Next>>](#)

Click on the Extract Data button and select the appropriate Extract F-1 or J-1 Form Data.



Then provide a starting page index and then an ending page index for this extraction (no more than 5 pages at a time). The indices would be something like 1 and 5. Check the “Extract for Direct Update / Data Conversion” box.



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

When the 5 pages have extracted (which takes between 30 and 40 minutes), close the application and relaunch it before running the next 5 pages (our third party browser component has a memory leak which makes this a necessary step).

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

Repeat step 5 as necessary for other schools and programs. Once you have run all the extracts for F students as a (P)DSO, log out of SEVIS RTI, and rerun the process for the J students and scholars as an (A)RO, if necessary.

7. Verification of the Process

To verify that no records were missed either by user or machine issue you can run an extract list process on a given initial or active status list of records. Go to that list in RTI and click on the Extract Data button. Select Extract RTI Table Data, confirm that decision, click yes to append default columns, and give it a unique name like f1-initial-list. This will pull out the RTI list and run a table analysis to append additional information which will include the University ID numbers and once done it will display in the main window in a table format. You can then review the rows to see if any groups of records do not have a corresponding University ID which will indicate they were skipped in the data conversion process. For those groups you can identify the index range from the RTI list and then run tasks 3 - 6 on those records.

8. Restore Original Settings

Within the application, go to General Configurations -> Tuning the System -> Application Memory Usage. Change the Minimum and Maximum Memory values on that screen back to 512, and the Permanent Memory back to 96.

In the user management tool make sure to remove any access to the Extract Form Data role as this should only be available during this conversion process.

9. OPT / CPT / Academic Training / Off-Campus Employment

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

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

10. Other Data Conversion

Any other non-SEVIS data marked for conversion will need to be handled separately from this process.

15.0 SUNAPSYS® TEAM SITE VISIT

The final step in the implementation of the application is a site visit by a member of the sunapsis® team for data conversion, training, and the go-live of the application. The site visit will normally last 3-5 days. The approximate outline is as follows:

Data Conversion (1-2 days)

Training (1 day)

Technical meetings, follow-up with users, etc. (1-2 days)

The sunapsis® team will work in conjunction with the IT staff and the international office to plan the details of the site visit.

16.0 VOLUNTARY PRODUCT ACCESSIBILITY TEMPLATE (VPAT)

The sunapsis® team desires to create a product that is accessible for everyone to use. We provide here our VPAT for your review.

Date: February 16, 2011

Name of Product: sunapsis®: International Office Module

Contact for more Information: <http://sunapsis.iu.edu/>

16.1 SOFTWARE APPLICATIONS AND OPERATING SYSTEMS – DETAIL

This section covers the sunapsis: International Office module, used by the International Office. It is an application launched via Java Web Start, and runs on the desktop in a normal window.

SECTION 1194.21 SOFTWARE APPLICATIONS AND OPERATING SYSTEMS – DETAIL VOLUNTARY PRODUCT ACCESSIBILITY TEMPLATE		
CRITERIA	SUPPORTING FEATURES	REMARKS AND EXPLANATIONS
(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.	Menus and form items can be navigated via the tab and/or arrow keys.	All accessibility features require the Java Access Bridge to be installed on the client computer.
(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.	The application has no effect on the behavior of the operating system or other applications, accessibility-related or otherwise.	
(c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be	The active window is always on top, and has focus. Active form elements contain a blinking cursor. Active	

SECTION 1194.21 SOFTWARE APPLICATIONS AND OPERATING SYSTEMS – DETAIL VOLUNTARY PRODUCT ACCESSIBILITY TEMPLATE		
CRITERIA	SUPPORTING FEATURES	REMARKS AND EXPLANATIONS
programmatically exposed so that Assistive Technology can track focus and focus changes.	buttons have a dotted highlight around them.	
(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to Assistive Technology. When an image represents a program element, the information conveyed by the image must also be available in text.	Elements have titles and labels accessible to assistive technologies. Icon buttons also have alternate title text.	
(e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.	Icons are uniform across the application.	
(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.	All this information is available through the use of the Java Access Bridge.	
(g) Applications shall not override user selected contrast and color selections and other individual display attributes.	The application does not support color and font changes within the application, and does not use operating system defaults.	The system uses default Java UI elements, which differ in look and feel from operating system UI elements, in order to be similar across all platforms.
(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.	The animation within the application is for presentational purposes only, and provides no additional information	
(i) Color coding shall not be used as the only means of conveying information, indicating an	All color coding within the application is	

SECTION 1194.21 SOFTWARE APPLICATIONS AND OPERATING SYSTEMS – DETAIL VOLUNTARY PRODUCT ACCESSIBILITY TEMPLATE		
CRITERIA	SUPPORTING FEATURES	REMARKS AND EXPLANATIONS
action, prompting a response, or distinguishing a visual element.	accompanied by unique, meaningful text so that the color is not a necessary part of the application.	
(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.	N/A	The application does not permit the user to adjust color settings
(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.	The application contains no blinking or flashing elements, except for the cursor, which has a blink frequency of ~1Hz.	
(l) When electronic forms are used, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.	Depending on the definition of a form, either all information in the application is submitted via an electronic form, or none of it is. In either case, all fields, action, and help options are accessible via assistive technology.	

Table 7 - Section 1194.21 VPAT

16.2 WEB-BASED INTERNET INFORMATION AND APPLICATIONS – DETAIL

This section covers the iStart Online Services component of the sunapsis platform. These online services are accessible to the institution at large via the World Wide Web.

SECTION 1194.22 WEB-BASED INTERNET INFORMATION AND APPLICATIONS – DETAIL VOLUNTARY PRODUCT ACCESSIBILITY TEMPLATE		
CRITERIA	SUPPORTING FEATURES	REMARKS AND EXPLANATIONS
(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).	All non-textual elements feature descriptive alt attributes.	
(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.	N/A	iStart does not contain any multimedia presentations
(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.	Color is not necessary for portraying information. Color text offers both descriptive text, and semantic class names	
(d) Documents shall be organized so they are readable without requiring an associated style sheet.	iStart is completely useable with CSS turned off inside of a web browser.	
(e) Redundant text links shall be provided for each active region of a server-side image map.	N/A	iStart contains no image maps
(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.	N/A	iStart contains no image maps
(g) Row and column headers shall be identified for data tables.	iStart uses the <thead> and <th> XHTML tags to define headers for table columns and rows.	
(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.	iStart uses <th> and <td> XHTML tags to associate headings and data.	

SECTION 1194.22 WEB-BASED INTERNET INFORMATION AND APPLICATIONS – DETAIL VOLUNTARY PRODUCT ACCESSIBILITY TEMPLATE		
CRITERIA	SUPPORTING FEATURES	REMARKS AND EXPLANATIONS
(i) Frames shall be titled with text that facilitates frame identification and navigation	N/A	iStart does not make use of frames
(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.	iStart uses the Script.aculo.us JavaScript libraries for its animation functions which provide smooth animations without screen flicker.	
(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.	N/A	iStart has no areas that don't comply with this part, and so do not need additional pages for compliance.
(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by Assistive Technology.		iStart is inoperable without JavaScript enabled.
(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).	The iStart graphs require Adobe Flash, and the page provides a link to the Adobe plugin. The sunapsis application launch page includes a link to the Java 7 plugin.	
(n) When electronic forms are designed to be completed on-line, the form shall allow people using Assistive Technology to access the information, field elements, and	The forms on iStart use <label>, <formfield>, and <legend> tags to describe	

SECTION 1194.22 WEB-BASED INTERNET INFORMATION AND APPLICATIONS – DETAIL VOLUNTARY PRODUCT ACCESSIBILITY TEMPLATE		
CRITERIA	SUPPORTING FEATURES	REMARKS AND EXPLANATIONS
functionality required for completion and submission of the form, including all directions and cues.	the form elements to make them accessible.	
(o) A method shall be provided that permits users to skip repetitive navigation links.	iStart includes a “Skip to Content” link when CSS is turned off.	

Table 8 - Section 1194.22 VPAT

17.0 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.

17.1 ON-GOING SUPPORT

Please refer to the Services Agreement, Section 1.2 '*ON-GOING SUPPORT*.'

17.2 TECHNICAL SUPPORT CONTACT INFORMATION

Website	http://sunapsis.iu.edu
Email Address	sunapsup@indiana.edu
Hours of Operation	Monday - Friday, 8:00 AM - 12:00 PM & 1:00 PM - 05:00 PM ET
Phone Number	812.855.0490
Fax Number	812.855.4118

Table 9 - Contact Information

APPENDIX A

This Appendix is the data feed schema layout. 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.


A.1 DATASETTYPE

XML Data Feed Structure:	DataSetType
Element Name:	data
Database Table Populated:	-
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.	

Element Name	Type	Description	Required
record	RecordType	The record contains information about international student/scholars.	
emailMap	EmailType	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.	

A.1.A. RECORDTYPE

XML Data Feed Structure:	RecordType
Element Name:	record
Database Table Populated:	-
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.	

Element Name	Type	Size	Description	Required
prsn_univ_id	varchar	11	University ID	
associatedIDNumbers	AssociatedIDNumbersType	-	This identifies additional ID numbers associated with this record.	

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

A.1.A.1. ASSOCIATEDIDNUMBERSLISTTYPE

XML Data Feed Structure:	AssociatedIDNumbersListType
Element Name:	associatedIDNumbers
Database Table Populated:	jbAssociatedIDNumbers
<p>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.</p>	

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

A.1.A.2. BIOGRAPHICALTYPE

XML Data Feed Structure:	BiographicalType
Element Name:	biographical
Database Table Populated:	iuieBio
<p>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.</p>	

Element Name	Type	Size	Description	Notes	Required
prsn_prm_sfx_nm	varchar	15	Primary Name Suffix		
prsn_prm_last_nm	varchar	60	Primary Last Name	The primary last name and first name is required from the institutional system for the biographical update.	
prsn_prm_1st_nm	varchar	60	Primary First Name		
prsn_prm_mid_nm	varchar	60	Primary Middle Name		
prsn_gndr_cd	varchar	1	Gender Code	mapGender which maps to codeGender	
prsn_martl_stat_cd	varchar	1	Marital Status	mapMaritalStatus which maps to codeMaritalStatus	
prsn_prm_ethnic_cd	varchar	5	Ethnicity	mapEthnicity which maps to codeEthnicity	
prsn_ofcl_res_cd	varchar	5	Residency Status	mapResidencyStatus which maps to codeResidencyStatus	

prsn_birth_dt	datetime	10	Date of Birth		
prsn_birth_plc_nm	varchar	30	City of Birth		
prsn_birth_cntry_cd	varchar	3	Country of Birth	mapCountry which maps to viewCodeCompleteCountryList	
prsn_other_email_id	varchar	150	Non-University Email Address	Updated only if blank in sunapsis	
prsn_gds_cmp_email_addr	varchar	150	University Email Address	This email address is used by the email services, alerts, and e-forms to communicate.	
prsn_ntwrk_id	varchar	150	Client's Username	Authenticated by an institutional central login service for online services (i.e. iStart).	
prsn_lcl_ln1_addr	varchar	60	Local Address Line 1	The local U.S. address information drives the SEVIS Batch update address action. This information should be updated whenever the institution receives a new U.S. address for a client due to the 21 day SEVIS reporting requirement. Note: the state code values align with codeStates (all standard values for U.S. states)	
prsn_lcl_ln2_addr	varchar	60	Local Address Line 2		
prsn_lcl_cty_nm	varchar	60	Local City		
prsn_lcl_st_cd	varchar	30	Local State Code		
prsn_lcl_zip_cd	varchar	20	Local Zip Code		
prsn_lcl_phn_nbr	varchar	25	Local Phone		
prsn_lcl_subtype	varchar	10	Local Address Subtype		Institutional specific information * (Table: codeAddressSubtype)
prsn_frgn_cntry_cd	varchar	3	Foreign Address Country	The foreign address information is required for creating initial SEVIS documents, which is primarily at the admissions stage. This information can be helpful for the population of those RTI fields in creating a SEVIS document. Note that the foreign country value uses the mapCountry which maps to viewCodeCompleteCountryList with SEVIS country values.	
prsn_frgn_ln1_addr	varchar	60	Foreign Address Line 1		
prsn_frgn_ln2_addr	varchar	60	Foreign Address Line 2		
prsn_frgn_cty_nm	varchar	60	Foreign City		
prsn_frgn_st_cd	varchar	30	Foreign State or Province		
prsn_frgn_zip_cd	varchar	20	Foreign Postal Code		
prsn_frgn_phn_nbr	varchar	25	Foreign Phone		

prsn_frgn_subtype	varchar	10	Foreign Address Subtype	Institutional specific information * (Table: codeAddressSubtype)	
prsn_hm_ln1_addr	varchar	55	Home Address Line 1		
prsn_hm_ln2_addr	varchar	55	Home Address Line 2		
prsn_hm_cty_nm	varchar	30	Home City		
prsn_hm_st_cd	varchar	6	Home State or Province		
prsn_hm_zip_cd	varchar	12	Home Postal Code		
prsn_hm_cntry_cd	varchar	3	Home Country		
prsn_hm_phn_nbr	varchar	24	Home Phone Number		
pic_url	varchar	250	Picture URL		

* Update the sunapsis: IOM with the code/description values found in ‘General Configurations’ -> ‘Institutional Specific Codes’

A.1.A.3. VISACITIZENSHIPTYPE

XML Data Feed Structure:	VisaCitizenshipType
Element Name:	visaCitizenship
Database Table Populated:	iuieVisaCitizenship
<p>This should be populated with the most effective dated citizenship and immigration status for the international population. The immigration status will help drive some of the alerts, reporting, and filters for online services. The citizenship value may produce a SEVIS batch biographical update for changes of that value. These fields are optional because a new student may only have a one of the values, like citizenship, before the other value is assigned in the institutional system.</p>	

Element Name	Type	Size	Description	Notes	Required
prsn_vprmt_typ_cd	Text	3	Immigration Status	mapVisa which maps to codeVisa	
prsn_ctzn_cntry_cd	Text	3	Citizenship Country Code	mapCountry which maps to viewCodeCompleteCountryList with SEVIS country values	

prsn_ctzn_status_cd	Text	10	Citizenship Status Code	Institutional specific information * (Table: codeCitizenshipStatus)	
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* Update the application with the code/description values found in ‘General Configurations’ -> ‘Institutional Specific Codes’

A.1.A.4. ADMISSIONLISTTYPE/ADMISSIONTYPE

XML Data Feed Structure:	AdmissionListType
Element Name:	admissions
XML Data Feed Substructure:	AdmissionType
Child Element Name:	admission
Database Table Populated:	iuieAdmissions

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.

Element Name	Type	Size	Description	Notes	Required
inst_cd	varchar	6	Campus	Values must align with codeCampus which are determined and populated by each institution	✔
stu_admt_term_cd	varchar	10	Term Code	Values must align with codeSemesters which are determined and populated by each institution	✔
acad_career_cd	varchar	6	Academic Career	mapAcademicCareer which maps to codeAcademicCareer (i.e. UGRD, GRAD)	✔
appl_acad_lvl_cd	varchar	3	Academic Level	mapAcademicLevel which maps to codeAcademicLevel (10 - Freshman)	✔
appl_pgm_stat_cd	varchar	4	Program Status	mapAcademicProgramStatus which maps to codeAcademicProgramStatus	✔
acad_plan_cd	varchar	10	Major	the mapping of this field to the SEVIS CIP code assigns the cip_code value	
acad_plan_desc	varchar	100	Major Description		
cip_code	varchar	10	SEVIS CIP Code	CIP code can be directly populated or based on the mapping to the acad_plan_cd	

appl_cntr_cd	varchar	4	Application Center	institutional specific information only * (Table: codeApplicationCenter)	
acad_pgm_cd	varchar	6	Academic Program	institutional specific information only * (Table: codeAcademicProgram)	
acad_grp_cd	varchar	6	Academic Program Groups	institutional specific information only * (Table: codeAcademicGroup)	
acad_deg_cd	varchar	10	Academic Degree	institutional specific information only * (Table: codeAcademicDegree)	
acad_dept_cd	varchar	10	Academic Department	institutional specific information only * (Table: codeAcademicDepartment)	
stu_admt_typ_cd	varchar	3	Admit Type	institutional specific information only * (Table: codeAdmitType)	
appl_pgm_actn_cd	varchar	5	Program Action Coding	institutional specific information only * (Table: codeProgramAction)	
ext_org_name	varchar	50	Name of Previous School		
stu_admt_term_beg_dt	datetime	10	Term Start Date		
stu_admt_term_end_dt	datetime	10	Term End Date		
appl_pgm_actn_dt	datetime	10	Datestamp of Last Action on File	If this value is not provided then it will default to the current timestamp value upon insert	
school_funds	int	4	School Funding Amount		
school_funds_desc	varchar	500	School Funding Description		
appl_plan_seq_nbr	int	4	Sequence Number	used to identify different admissions so the system can handle dual-degrees (default: 1)	
appl_nbr	varchar	8	Application Number	used to identify different admission records – should be unique per person	
appl_pgm_reas_cd	varchar	4	Program Action Reason Coding	institutional specific information only * (Table: codeProgramReason)	
stu_hs_grad_dt	datetime	10	High School Graduation Date		
stu_hs_sum_gpa_typ_cd	varchar	4	High School GPA Type	institutional specific information only * (Table: codeGPAType)	


stu_hs_sum_gpa_nbr	decimal(9,3)	13	High School GPA		
appl_rcvd_mthd_cd	varchar	3	Application Received Method	institutional specific information only *	
doc_id	string	50	Document ID	institutional specific information only	

* Update the application with the code/description values found in ‘General Configurations’ -> ‘Institutional Specific Codes’

A.1.A.5. PROGRAMLISTTYPE/PROGRAMTYPE

XML Data Feed Structure:	ProgramListType
Element Name:	programs
XML Data Feed Substructure:	ProgramType
Child Element Name:	program
Database Table Populated:	iuieProgram
<p>This should be populated with active and completed programs for international students. Information from the iuieAdmissions is also appended (by the application) into this table. This information drives template usage for CIP codes in creating SEVIS documents and SEVIS batch major changes. It also is used to alert to program completions, possible change in program, etc. This information will update or insert rows based on the campus, admitted term, academic career, and sequence number.</p>	

Element Name	Type	Size	Description	Notes	Required
inst_cd	varchar	6	Campus	values align with codeCampus which are determined at each institution	✓
stu_admt_term_cd	varchar	10	Admitted Term	values align with codeSemesters which are determined by each institution	✓
acad_career_cd	varchar	6	Academic Career	mapAcademicCareer which maps to codeAcademicCareer (i.e. UGRD, GRAD)	✓
acad_lvl_cd	varchar	3	Academic Level	mapAcademicLevel which maps to codeAcademicLevel (10 - Freshman)	✓
stu_pgm_stat_cd	varchar	2	Program Status	mapAcademicProgramStatus which maps to codeAcademicProgramStatus	✓
acad_plan_cd	varchar	10	Major	the mapping of this field to the SEVIS CIP code assigns the cip_code value	
acad_plan_desc	varchar	100	Major Description		

cip_code	varchar	10	SEVIS CIP Code	CIP code can be directly populated or based on the mapping to the acad_plan_cd	
struc_declare_dt	datetime	10	Date of Program Declared		
acad_grp_cd	varchar	6	Academic Program Groups	institutional specific information only * (Table: codeAcademicGroup)	
acad_pgm_cd	varchar	6	Academic Program	institutional specific information only * (Table: codeAcademicProgram)	
acad_deg_cd	varchar	10	Academic Degree	institutional specific information only * (Table: codeAcademicDegree)	
acad_dept_cd	varchar	10	Academic Department	institutional specific information only * (Table: codeAcademicDepartment)	
stu_pgm_actn_cd	varchar	5	Program Action Coding	institutional specific information only * (Table: codeProgramAction)	
acad_plan_typ_cd	varchar	3	Academic Plan Type Code	institutional specific information only * (Table: codeAcademicPlanType)	
stu_cum_gpa_nbr	numeric	9	Cumulative GPA		
stu_expct_grad_term_cd	varchar	10	Expected Term for Graduation	this drives the email service for students near graduation; aligns with codeSemesters	
stu_degr_ckot_stat_cd	varchar	2	Degree Check-out Status	institutional specific information only * (Table: codeDegreeCheckoutStatus)	
acad_plan_dplm_desc	varchar	100	Degree Awarded	i.e. Bachelor of Science, Master of Science in Computer Science (used by online graphs)	
stu_degr_cnfr_dt	datetime	10	Degree Conferred Date		
acad_plan_seq_nbr	int	4	Sequence Number	used to identify different programs so the system can handle dual-degrees (default: 1)	
acad_pgm_actn_dt	datetime	10	Timestamp of Last Action on File	For completed students records this marker is used to denote the 30 day reporting for SEVIS	
row_eff_dt	datetime	10	Effective Date	the date this information goes/went into effect (last updated date)	

* Update the application with the code/description values found in 'General Configurations' -> 'Institutional Specific Codes'

A.1.A.6 TERMLISTTYPE/TERMTYPE

XML Data Feed Structure:	TermListType
Element Name:	terms
XML Data Feed Substructure:	TermType
Child Element Name:	term
Database Table Populated:	iuieTerm

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.

Element Name	Type	Size	Description	Notes	Required
inst_cd	varchar	6	Campus	values align with codeCampus which are determined at each institution	✓
acad_term_cd	varchar	10	Term Code	values align with codeSemesters which are determined by each institution	✓
acad_term_beg_dt	datetime	10	Term Begin Date		✓
acad_term_end_dt	datetime	10	Term End Date		✓
stu_drv_enrl_stat_ind	varchar	2	Enrollment Status	mapEnrollmentStatus which maps to codeEnrollmentStatus (i.e. E - enrolled)	✓
stu_drv_enrl_substatus	varchar	10	Enrollment Sub-Status	institutional specific information only * (Table: codeEnrollmentSubstatus)	
stu_drvd_tot_term_unt_nbr	numeric	9	Total Credits		✓
acad_career_cd	varchar	6	Academic Career	mapAcademicCareer which maps to codeAcademicCareer (i.e. UGRD, GRAD)	✓
acadlvl_beg_term_cd	varchar	5	Academic Level	mapAcademicLevel which maps to codeAcademicLevel (10 - Freshman)	✓
acad_prm_plan_1_cd	varchar	12	Primary Major	only report one major per campus and academic career so condense dual-degrees	
cip_code	varchar	10	SEVIS CIP Code	CIP code can be directly populated or based on the mapping to the acad_prm_plan_1_cd	
ft_flag	boolean	1	Full-Time Flag	Marker for automatic override from institution system about full-time	✓

				enrollment status (1 is full-time, 0 is part-time)	
census_marker	Boolean	1	Census Marker	Marker to indicate data is official institutional census data	

* Update the application with the code/description values found in ‘General Configurations’ -> ‘Institutional Specific Codes’

A.1.A.7. COURSELISTTYPE/COURSETYPE

XML Data Feed Structure:	CourseListType
Element Name:	courses
XML Data Feed Substructure:	CourseType
Child Element Name:	course
Database Table Populated:	iuieCourses


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 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.

Column Name	Type	Size	Description	Notes	Required
pplsft_acad_org_lvl_2_cd	varchar	10	Campus	values align with codeCampus which are determined at each institution	
acad_term_cd	varchar	10	Term Code	values align with codeSemesters which are determined by each institution	
crs_title	Varchar	100	Course Title		
crs_subj_dept_cd	varchar	6	Course Department Code		
crs_catlg_nbr	varchar	10	Course Catalog Number		
crn_nbr	varchar	10	Course Number		
stu_enrl_stat_cd	varchar	2	Enrollment Status	mapEnrollmentStatus which maps to codeEnrollmentStatus (i.e. E - enrolled)	
acad_unt_tkn_nbr	numeric	9	Course Credits		

stu_enrl_add_dt	datetime	10	Date Course Added		
stu_enrl_drp_dt	datetime	10	Date Course Dropped		



A.1.A.8. SAATYPE

XML Data Feed Structure:	SAATYPE
Database Table Populated:	iuieSAA
<p>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. This table would only be of interest if similar rules for full-time enrollment status of student academic appointments apply to the given institution. This information is updated or inserted with one row per individual. The information is wiped out at the end of each given term.</p>	

Column Name	Type	Size	Description	Notes	Required
job_pct_tm	numeric	9	Percentage of SAA in FTE		


A.1.A.11. STUDENTGROUPLISTTYPE/STUDENTGRUPTYPE

XML Data Feed Structure:	StudentGroupListType
Element Name:	studentGroups
XML Data Feed Substructure:	StudentGroupType
Child Element Name:	studentGroup
Database Table Populated:	iuieStudentGroup
<p>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.</p>	

Column Name	Type	Size	Description	Notes	Required
inst_cd	varchar	6	Campus		
stu_grp_cd	varchar	4	Student Group Code		
stu_grp_desc	varchar	30	Student Group Description		
row_eff_dt	datetime	10	Effective date		

A.1.A.10. STUDENTHOLDLISTTYPE/STUDENTHOLDTYPE

XML Data Feed Structure:	StudentHoldListType
Element Name:	studentHolds
XML Data Feed Substructure:	StudentHoldType
Child Element Name:	studentHold
Database Table Populated:	iuieStudentHold
This should be populated with information concerning service indicators such as holds on a student record.	

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

A.1.A.11 STUDENTVISITLISTTYPE/STUDENTVISITTYPE

XML Data Feed Structure:	StudentVisitListType
Element Name:	studentVisit
XML Data Feed Substructure:	StudentVisitType
Child Element Name:	studentVisit
Database Table Populated:	iuieStudentVisit
This should be populated with information concerning a visiting student.	

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

A.1.A.12. TOEFLLISTTYPE/TOEFLTYPE

XML Data Feed Structure:	ToeflListType
Element Name:	toefls
XML Data Feed Substructure:	ToeflType
Child Element Name:	toefl
Database Table Populated:	iuieTOEFL
This should be populated with information regarding English proficiency tests.	

Column Name	Type	Size	Description	Notes	Required
stu_tst_cmpnt_cd	varchar	10	Test component code		✓
stu_tst_dt	datetime	10	Test date		✓
stu_tst_scr_nbr	numeric	9	Test score		✓
stu_tst_desc	varchar	30	Test Description		✓

A.1.A.13. EMPLOYEELISTTYPE/EMPLOYEE TYPE

XML Data Feed Structure:	EmployeeListType
Element Name:	employees
XML Data Feed Substructure:	EmployeeType
Child Element Name:	employee
Database Table Populated:	iuieEmployee
<p>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.</p>	

Element Name	Type	Size	Description	Notes	Required
pos_nbr	varchar	8	Position Number	value used to determine if possible change to new position and to align position to LCA	
pos_desc	varchar	30	Position Description	useful for verification if a change of position number alert is activated	
emp_stat_cd	varchar	2	Employee Status Code	mapEmployeeStatus which maps to codeEmployeeStatus (i.e. A - Active)	
job_pos_entry_dt	datetime	10	Position Entry Date		
job_emp_typ_desc	varchar	30	Employment Type Description	informational only and at IU it is info like salaried, hourly, etc.	
job_slry_plan_cd	varchar	4	Salary Plan Code	specific institutional codes for salary plans (i.e. academic); informational only	
job_slry_grd_cd	varchar	3	Salary Grade Code	specific institutional codes for salary grades (i.e. various faculty levels); informational only	
job_comp_rt	numeric	9	Compensation Pay Rate	rate by hourly, bi-weekly, monthly, etc.	
job_comp_annl_rt	numeric	9	Compensation Annual Pay Rate	value is audited for the H-1B to ensure salary on file complies with salary on file with DOL	
job_reg_temp_ind	varchar	1	Regular or Temporary	mapEmployeeRegTemp which maps to codeEmployeeRegTemp (i.e. R - regular)	
job_full_pt_tm_ind	varchar	2	Full-Time or Part-Time Status	mapEmployeeTime which maps to codeEmployeeTime (i.e. FT - fulltime)	

emp_tot_fte_rt	numeric	9	Numeric FTE		
emp_occptn_unit_snrtty_dt	datetime	10	Unit Seniority Date		
pyck_lst_chk_dt	datetime	10	Last Paycheck Date		
job_dept_setid_cd	varchar	5	Department Campus	values align with codeCampus which are determined at each institution	
job_dept_id	varchar	10	Department Code	institutional specific information only	
job_dept_desc	varchar	60	Department Description		
job_loc_desc	varchar	30	Job Location Description		
prsn_cmp_ln1_addr	varchar	55	Campus Address Line 1		
prsn_cmp_ln2_addr	varchar	55	Campus Address Line 2		
prsn_cmp_ln3_addr	varchar	55	Campus Address Line 3		
prsn_cmp_phn_nbr	varchar	24	Campus Phone		

A.1.A.14. PAYCHECKLISTTYPE/PAYCHECKTYPE

XML Data Feed Structure:	PaycheckListType
Element Name:	paychecks
XML Data Feed Substructure:	PaycheckType
Child Element Name:	paycheck
Database Table Populated:	iuiePaycheck

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.

Element Name	Type	Size	Description	Notes	Required
pyck_earn_setid_cd	varchar	5	Department Campus	values align with codeCampus which are determined at each institution	

pyck_earn_dept_id	varchar	10	Department Code	institutional specific information only	
pos_nbr	varchar	8	Position Number		
pyck_earn_amt	numeric	9	Amount Earned	value used in analysis for H-1B payment	
pyck_earn_cd	varchar	3	Paycheck Earning Code	institutional specific information only and can be used for multi-payments in same period	
pyck_earn_beg_dt	datetime	10	Pay Period Begin Date		
pyck_earn_end_dt	datetime	10	Pay Period End Date		

A.1.B. EMAILTYPE

XML Data Feed Structure:	EmailType
Element Name:	emailMap
Database Table Populated:	iuieEmailList
<p>The Emailmap contains a mapping of network id to official email address for academic advisors, and other possible second approvers, for the single sign-on capable second approver authentication.</p>	

Element Name	Type	Size	Description	Notes	Required
prsn_network_id	varchar	20	Network ID		
prsn_gds_cmp_email_addr	varchar	10	Email Address		

APPENDIX B

This Appendix is the International Office Module Mapping structure.

B.1 ACADEMIC CAREER

Table Type:	mapAcademicCareer	
sunapsis® Value	sunapsis® Description	Institutional Value
GRAD	Graduate Student	
UGRD	Undergraduate Student	
PROF	Professional Student	

B.2 ACADEMIC LEVEL

Table Type:	mapAcademicLevel	
sunapsis® Value	sunapsis® Description	Institutional Value
00	Associates	
10	Freshman	
20	Sophomore	
30	Junior	
40	Senior	
50	Masters	
70	Professional	
60	Doctoral	
NDG	Non-degree Graduate	
NDU	Non-degree Undergraduate	
NDP	Non-degree Professional	
UG	Bachelors, Unspecified	

GR	Graduate, Unspecified	
IEP	Intensive English (Open Doors)	
OPT	OPT (Open Doors)	
ND	Non-degree (Open Doors)	
CRT	Certificate	

B.3 ACADEMIC PROGRAM STATUS

Table Type:	mapAcademicProgramStatus	
sunapsis® Value	sunapsis® Description	Institutional Value
AC	Active in Program	
AD	Admitted	
AP	Applicant	
CD	Conditional Admit	
CM	Completed Program	
CN	Cancelled	
DC	Discontinued	
DE	Deceased	
DF	Deferred	
DS	Dismissed	
LE	On Leave	
PM	Prematriculant	

B.4 COUNTRY

Table Type:	mapCountry	
sunapsis® / SEVIS Value	sunapsis® Description	Institutional Value
AA	Aruba	
AC	Antigua and Barbuda	
AE	United Arab Emirates	
AF	Afghanistan	
AG	Algeria	
AJ	Azerbaijan	
AL	Albania	
AM	Armenia	
AN	Andorra	
AO	Angola	
AR	Argentina	
AS	Australia	
AT	Ashmore and Cartier Islands	
AU	Austria	
AV	Anguilla	
AX	Akrotiri	
BA	Bahrain	
BB	Barbados	
BC	Botswana	
BD	Bermuda	
BE	Belgium	
BF	Bahamas	

BG	Bangladesh	
BH	Belize	
BK	Bosnia and Herzegovina	
BL	Bolivia	
BM	Burma	
BN	Benin	
BO	Belarus	
BP	Solomon Islands	
BR	Brazil	
BS	Bassas Da India	
BT	Bhutan	
BU	Bulgaria	
BV	Bouvet Island	
BX	Brunei	
BY	Burundi	
CA	Canada	
CB	Cambodia	
CD	Chad	
CE	Sri Lanka	
CF	Congo (Brazzaville)	
CG	Congo (Kinshasa)	
CH	China	
CI	Chile	
CJ	Cayman Islands	

CK	Cocos (Keeling) Islands	
CM	Cameroon	
CN	Comoros	
CO	Colombia	
CR	Coral Sea Islands	
CS	Costa Rica	
CT	Central African Republic	
CU	Cuba	
CV	Cape Verde	
CW	Cook Islands	
CY	Cyprus	
DA	Denmark	
DJ	Djibouti	
DO	Dominica	
DR	Dominican Republic	
DX	Dhekelia	
EC	Ecuador	
EG	Egypt	
EI	Ireland	
EK	Equatorial Guinea	
EN	Estonia	
ER	Eritrea	
ES	El Salvador	
ET	Ethiopia	

EU	Europa Island	
EZ	Czech Republic	
FG	French Guiana	
FI	Finland	
FJ	Fiji	
FK	Falkland Islands (Islas Malvinas)	
FM	Micronesia, Federated States of	
FO	Faroe Islands	
FP	French Polynesia	
FR	France	
FS	French Southern and Antarctic Lands	
GA	Gambia	
GB	Gabon	
GG	Georgia	
GH	Ghana	
GI	Gibraltar	
GJ	Grenada	
GK	Guernsey	
GL	Greenland	
GM	Germany	
GO	Glorioso Islands	
GP	Guadeloupe	
GR	Greece	
GT	Guatemala	

GV	Guinea	
GY	Guyana	
GZ	Gaza Strip	
HA	Haiti	
HK	Hong Kong	
HM	Heard and McDonald Islands	
HO	Honduras	
HR	Croatia	
HU	Hungary	
IC	Iceland	
ID	Indonesia	
IM	Isle of Man	
IN	India	
IO	British Indian Ocean Territory	
IP	Clipperton Island	
IR	Iran	
IS	Israel	
IT	Italy	
IV	Cote D Ivoire	
IZ	Iraq	
JA	Japan	
JE	Jersey	
JM	Jamaica	
JN	Jan Mayen	

JO	Jordan	
JU	Juan De Nova Island	
KE	Kenya	
KG	Kyrgyzstan	
KN	North Korea	
KR	Kiribati	
KS	South Korea	
KT	Christmas Island	
KU	Kuwait	
KV	Kosovo	
KZ	Kazakhstan	
LA	Laos	
LE	Lebanon	
LG	Latvia	
LH	Lithuania	
LI	Liberia	
LO	Slovakia	
LS	Liechtenstein	
LT	Lesotho	
LU	Luxembourg	
LY	Libya	
MA	Madagascar	
MB	Martinique	
MC	Macau	

MD	Moldova	
MF	Mayotte	
MG	Mongolia	
MH	Montserrat	
MI	Malawi	
MJ	Montenegro	
MK	Macedonia	
ML	Mali	
MN	Monaco	
MO	Morocco	
MP	Mauritius	
MR	Mauritania	
MT	Malta	
MU	Oman	
MV	Maldives	
MX	Mexico	
MY	Malaysia	
MZ	Mozambique	
NC	New Caledonia	
NE	Niue	
NF	Norfolk Island	
NG	Niger	
NH	Vanuatu	
NI	Nigeria	

NL	Netherlands	
NN	Sint Maarten	
NO	Norway	
NP	Nepal	
NR	Nauru	
NS	Suriname	
NU	Nicaragua	
NZ	New Zealand	
OD	South Sudan	
PA	Paraguay	
PC	Pitcairn Islands	
PE	Peru	
PF	Paracel Islands	
PG	Spratly Islands	
PJ	Etorofu, Hamomai, Kunashiri, and Shikotan Islands	
PK	Pakistan	
PL	Poland	
PM	Panama	
PO	Portugal	
PP	Papua New Guinea	
PS	Palau	
PU	Guinea-Bissau	
QA	Qatar	
RE	Reunion	

RI	Serbia	
RM	Marshall Islands	
RN	Saint Martin	
RO	Romania	
RP	Philippines	
RS	Russia	
RW	Rwanda	
SA	Saudi Arabia	
SB	St Pierre and Miquelon	
SC	St Kitts and Nevis	
SE	Seychelles	
SF	South Africa	
SG	Senegal	
SH	Saint Helena, Ascension, and Tristan Da Cunha	
SI	Slovenia	
SL	Sierra Leone	
SM	San Marino	
SN	Singapore	
SO	Somalia	
SP	Spain	
ST	Saint Lucia	
SU	Sudan	
SV	Svalbard	
SW	Sweden	

SX	South Georgia and the South Sandwich Islands	
SY	Syria	
SZ	Switzerland	
TB	Saint Barthelemy	
TD	Trinidad and Tobago	
TE	Tromelin Island	
TH	Thailand	
TI	Tajikistan	
TK	Turks and Caicos Islands	
TL	Tokelau	
TN	Tonga	
TO	Togo	
TP	Sao Tome and Principe	
TS	Tunisia	
TT	Timor-Leste	
TU	Turkey	
TV	Tuvalu	
TW	Taiwan	
TX	Turkmenistan	
TZ	Tanzania	
U2	Neutral Zone	
U3	Stateless	
U5	Unknown	
UC	Curacao	

UG	Uganda	
UK	United Kingdom	
UP	Ukraine	
US	United States	
UV	Burkina Faso	
UY	Uruguay	
UZ	Uzbekistan	
VC	St Vincent and the Grenadines	
VE	Venezuela	
VI	British Virgin Islands	
VM	Vietnam	
VT	Vatican City	
WA	Namibia	
WE	West Bank	
WF	Wallis and Futuna Islands	
WI	Western Sahara	
WS	Samoa	
WZ	Swaziland	
YM	Yemen	
ZA	Zambia	
ZI	Zimbabwe	
The following are valid only for birth countries		
AQ	American Samoa	
AY	Antarctica	

BQ	Navassa Island	
BZ	Germany, Berlin	
CL	Central and Southern Line Islands	
CQ	Northern Mariana Islands	
CZ	Czechoslovakia	
DQ	Jarvis Island	
EQ	Canton and Enderbury	
FQ	Baker Island	
FT	French Territory of the Afars and Issas	
GC	German Democratic Republic	
GE	Federal Republic of Germany	
GN	Gilbert and Ellice Islands	
GQ	Guam	
GS	Gilbert Islands	
HQ	Howland Island	
IQ	United States Misc. Pacific Islands	
IU	Israel-Syria Demilitarized Zone	
IW	Israel-Jordan Demilitarized Zone	
IY	Iraq-Saudi Arabia Neutral Zone	
JQ	Johnston Atoll	
JS	Svalbard and Jan Mayen	
KQ	Kingman Reef	
LQ	Palmyra Atoll	
ME	Spanish North Africa	

MQ	Midway Islands	
MW	Montenegro (Prior to 2001)	
NT	Netherlands Antilles	
PQ	Canal Zone	
PT	Portuguese Timor	
RH	Southern Rhodesia	
RQ	Puerto Rica	
SK	Sikkim	
SQ	Swan Islands	
SR	Serbia (Prior to 2001)	
SS	Spanish Sahara	
TQ	Trust Territory of the Pacific Islands	
UR	Union of Soviet Socialist Republics	
US	United States	
VN	Democratic Republic of Viet-nam	
VQ	Virgin Islands	
VS	Republic of Viet-nam	
WQ	Wake Island	
YE	Yeman (Sanaa)	
YI	Serbia and Montenegro	
YO	Yugoslavia	
YQ	Southern Ryukyu Islands	
YS	Yemen (Aden)	

B.5 GENDER

Table Type:	mapGender	
sunapsis® Value	sunapsis® Description	Institutional Value
F	Female	
M	Male	
U	Unknown	

B.6 ENROLLMENT STATUS

Table Type:	mapEnrollmentStatus	
sunapsis® Value	sunapsis® Description	Institutional Value
A	Audit	
D	Dropped	
E	Enrolled	
S	Scheduled - Not Enrolled	
W	Waitlist	

B.7 EMPLOYEE STATUS

Table Type:	mapEmployeeStatus	
sunapsis® Value	sunapsis® Description	Institutional Value
A	Active	
NT	Unclear Employment	
O	On Leave	
P	Leave With Pay	
T	Terminated	

B.8 EMPLOYEE REGULAR / TEMPORARY

Table Type:	mapEmployeeRegTemp	
sunapsis® Value	sunapsis® Description	Institutional Value
R	Regular Employee	
T	Temporary Employee	

B.9 EMPLOYEE TIME

Table Type:	mapEmployeeTime	
sunapsis® Value	sunapsis® Description	Institutional Value
FT	Full-Time Employment	
PT	Part-Time Employment	

B.10 ETHNICITY

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

B.11 MARITAL STATUS

Table Type:	mapMaritalStatus	
sunapsis® Value	sunapsis® Description	Institutional Value
S	Single	
M	Married	
U	Unknown	

B.12 INSTITUTIONAL MAJOR - CIP MAJOR

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.

B.13 RESIDENCY STATUS

Table Type:	mapResidencyStatus	
sunapsis® Value	sunapsis® Description	Institutional Value
NR	Non-Resident	
R	Resident	

B.14 VISA

Table Type:	mapVisa	
sunapsis® / SEVIS Value	sunapsis® Description	Institutional Value
485	I-485 Appl for Adj of Status	
A1	A-1 Embassy/Consul Employee/Dep	
A2	A-2 Govt Official/Employee/Dep	
A3	A-3 Personal Empl/Deps A1- A2	
AA	Alien Abroad	
AR1	Alien Registration	

ASY	Asylee (Political asylum)	
B1	B-1 Temporary Visitor Business	
B2	B-2 Temporary Visitor Pleasure	
BU1	Business Traveller	
C1	C-1 Alien in Transit	
C2	C-2 Alien in Transit to UN HQ	
C3	C-3 Govt Official in Transit	
D	D: Crewman (seaman or airman)	
DL	Distance Learning	
DW1	Distinguished Temporary Worker	
E1	E-1 Treaty Trader Dependents	
E2	E-2 Treaty Investor/Dependents	
E3	E-3 Temporary Australian Worker	
F-1	F-1 Student	
F-2	F-2 Dependent of Student	
F-3	F-3 Canadian / Mexican Commuter Student	
G1	G-1 Principal Govt Rep/Deps	
G2	G-2 Othr Residnt Govt Rep/Deps	
G3	G-3 nonrec/nonmbr Gov Rep/Deps	
G4	G-4 Intl Org Officer/Empl/Dep	
G5	G-5 Personal Empl/Deps G1-G4	
H1A	H-1A Temp Worker Nursing	
H1B	H-1B Temp Worker Specialty Occ	
H1C	H-1C Temp Worker Reg Nurse	

H2A	H-2A Temp Worker Agriculture	
H2B	H-2B Temp Worker Non- Agricuilt	
H3	H-3 Trainee	
H4	H-4 Spouse/Child of H1-H3	
I	I: Foreign Media Rep/Deps	
I-9	I-9 (Employment Eligibility)	
J1	J-1 Exchange Visitor	
J2	J-2 Spouse/Child of J-1	
K1	K-1 Fiance(e) of US Citizen	
K2	K-2 Child of K1 Alien	
K3	K-3 Spouse of US Citizen	
K4	K-4 Minor Child of K3 Alien	
L1	L-1 Intracompany Transferee	
L2	L-2 Spouse/Child of L1 Alien	
LPR	Permanent Resident	
M-1	M-1 Student Rec Nonacadem Inst	
M-2	M-2 Spouse/Child of M1 Alien	
N8	N-8 Parent of Child w/spl Stat	
N9	N-9 Child of Parent w/spl Stat	
NLR	Now US Citizen-No Visa Reqd	
NT1	NATO-1 Principal NATO Rep	
NT2	NATO-2 Other NATO State Rep	
NT3	NATO-3 Clerical Staff NATO/Dep	
NT4	NATO-4 Official of NATO/Deps	

NT5	NATO-5 NATO Experts NATO/Deps	
NT6	NATO-6 Civiln Employ NATO/Deps	
NT7	NATO-7 Personl Empl NT1- 6/Deps	
O	Other	
O1	O-1 Worker w/Extraord Ability	
O2	O-2 Assistant of O1 Alien	
O3	O-3 Family of O1 and O2 Alien	
OX	Status in Transition	
P1	P-1 Intl Recog Entertain/Athl	
P2	P-2 Exchng Entertainer/Artist	
P3	P-3 Unique Entertainer/Artist	
P4	P-4 Family of P1-P3	
PIP	Public Interest Parolee	
Q1	Q-1 Cultural Exchange Visitor	
Q2	Q-2 Irish Cultr Exchng Visitor	
R	R: Religious Worker	
R2	R-2 Religious Worker Dependent	
REF	Refugee	
S	S: Federal Witness	
SD1	Sponsored Domestic Helper	
TD	TD Dependent of TN Alien	
TN	TN NAFTA Professional	
TPS	Temporary Protected Status	
U-1	Victims of qualifying criminal activity	

U-2	Victims of qualifying criminal activity: spouse of victim	
U-3	Victims of qualifying criminal activity: children of victim	
U-4	Victims of qualifying criminal activity: parents of victim who are children	
U-5	Victims of qualifying criminal activity: siblings (of minor age) of victim who are children	
V1	V-1 Permanent Resident Spouse	
V2	V-2 Child of V-1	
V3	V-3 Child of V-1 or V-2	
WB	Visa Waiver Business	
WT	Visa Waiver Tourist	