Step by step guide on how to Integrate System2system on EFRIS Version 1.1 Issue date 19/07/2022

What is EFRIS?

Electronic Fiscal Receipting and Invoicing Solution (EFRIS) is a government initiative under the Domestic Revenue Mobilization Strategy (2019/20-2023/24) that shall be used by all Value Added Tax (VAT) registered taxpayers' businesses to manage the issuance of e-receipts and e-invoices in accordance with Sec 73A of the Tax Procedures Code Act 2014.

What is e-receipt/Invoice?

This is an electronic tax document issued under business models of Business to Business (B2B), Business to Government (B2G) and Business to Consumer (B2C) and authenticated by the central Electronic Fiscal Receipting and Invoicing system. The e-invoicing solution has the following options available;

i. **System2system integration**: For clients with existing sales systems. In this case, taxpayers shall integrate his/her existing sales system with EFRIS and continue to use the same systems to issue e-receipts and e-invoices. The option supports both online and offline mode.
ii. **The URA web portal**: Taxpayers may opt to use their accounts on the portal to issue e-receipts and e-invoices.
iii. **The Desktop (client) Application:** The application can be downloaded from the portal under downloads and uploaded onto one's computer for the issuance of e-receipts and e-invoices.
iv. **Electronic Fiscal devices (EFD):** Taxpayers may opt to use EFDs purchased from approved suppliers to issue e-receipts and e-invoices.

How do I integrate my existing sales system with EFRIS?

The integration is through a web service Application Programming Interface (API) that supports both Online Mode and Offline Mode. Below is the summary of steps to follow to complete the integration. The detailed process for each of the steps will be detailed further below;

Step 1 Register for EFRIS on the test environment.

Step 2 Download the latest technical documents regarding system to system integration. The documents can be found under Downloads >> Documents.

Step 3 If you wish to use the offline enabler you can download it from the test environment under Downloads >> Application (Software). If you wish to connect directly, the API endpoint is https://efristest.ura.go.ug/efrisws/ws/taapp/getInformation

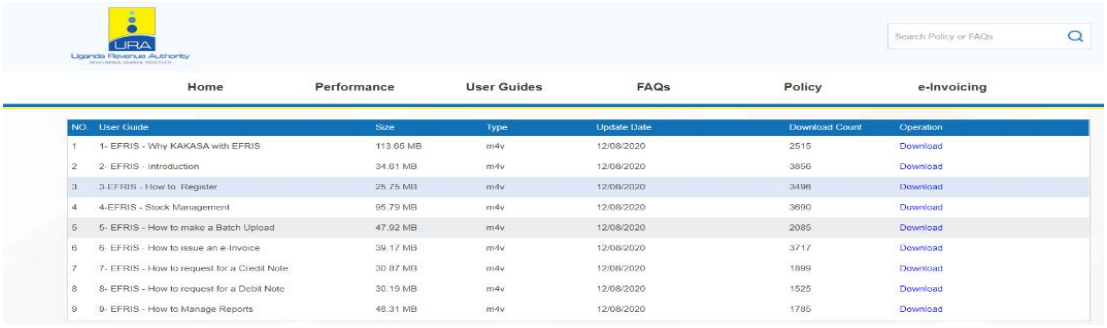
Step 4 Execute the interface codes.

Step 5 Conduct joint User Acceptance Tests with URA.

Step 6 Migrate to production.

Step 1 EFRIS Registration

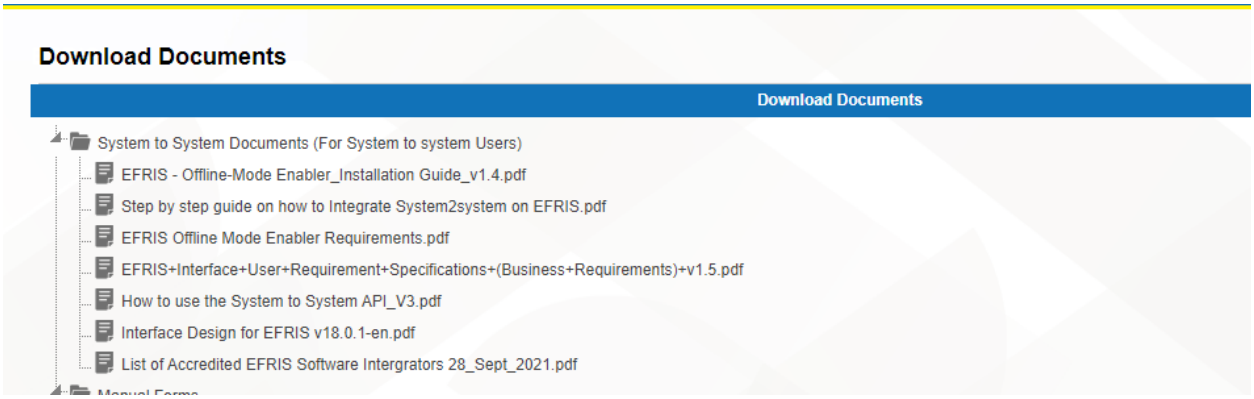
Register for EFRIS on the test environment. To register, follow the step by step guide in the How to Register tutorial on the portal under User Guides.



NO.	User Guide	Size	Type	Update Date	Download Count	Operation
1	1- EFRIS - Why KAKASA with EFRIS	113.65 MB	m4v	12/08/2020	2515	Download
2	2- EFRIS - Introduction	34.61 MB	m4v	12/08/2020	3856	Download
3	3-EFRIS - How to Register	25.75 MB	m4v	12/08/2020	3496	Download
4	4-EFRIS - Stock Management	95.79 MB	m4v	12/08/2020	3690	Download
5	5- EFRIS - How to make a Batch Upload	47.92 MB	m4v	12/08/2020	2085	Download
6	6- EFRIS - How to issue an e-Invoice	39.17 MB	m4v	12/08/2020	3717	Download
7	7- EFRIS - How to request for a Credit Note	30.87 MB	m4v	12/08/2020	1899	Download
8	8- EFRIS - How to request for a Debit Note	30.19 MB	m4v	12/08/2020	1525	Download
9	9- EFRIS - How to Manage Reports	48.31 MB	m4v	12/08/2020	1785	Download

Step 2 Download technical documents.

After successful registration, download the latest technical documents regarding system to system integration that are available on the **test portal** https://efristest.ura.go.ug/efrissite >> Downloads >> Documents as summarized below to get the required invoice/receipt details, endpoints and interface codes.



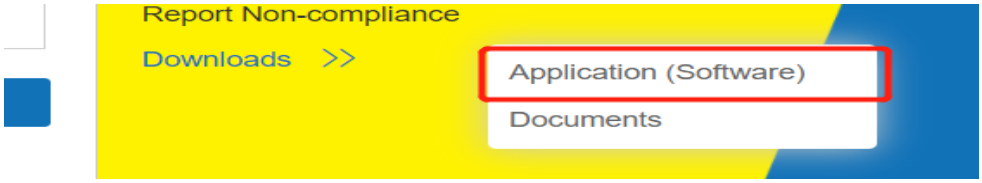
Note: The test **API URL** when connecting directly is;
https://efristest.ura.go.ug/efrisws/ws/taapp/getInformation

Step 3 Download and install the offline enabler.

a) Offline mode (Recommended)

i. The taxpayer is required to submit their digital certificate/keys to URA by completing the EFRIS Digital Certificate form in **appendix 1** to indicate the details of the digital certificate they intend to use in the test. The form is to be signed by the Taxpayer's Authorized contact person(s).

ii. Upon successful completion of the EFRIS Digital Certificate form(**Appendix 1**), the taxpayer is required to download and install the offline mode installer (Windows, Ubuntu, or Linux) that supports their application from the test portal https://efristest.ura.go.ug/efrissite under Downloads >> Applications (Software) as highlighted below.



Application (Software)

NO.	Software Name	Size	Type	Update Date
1	EFRIS_Offline_Mode_Enabler_for_Linux_V17_Test	963.81 MB	gz	16/04/2022
2	EFRIS_Offline_Mode_Enabler_for_Ubuntu_V17-Test	963.82 MB	gz	16/04/2022
3	EFRIS_Offline_Mode_Enabler_for_Windows_V18-Test	351.33 MB	zip	16/04/2022

iii. To Install the Offline enabler, follow the installation guide **in Appendix 2**. The offline mode enabler installation guide is also available for download from the test portal https://efristest.ura.go.ug/efrissite under Downloads >> Documents.

iv. The RSA key pair generated must have a key size of 2048 and support SHA1withRSA algorithm. To generate the key-pair we recommend using KeyStore explorer version 5.4.4. Follow the guide **Appendix 5.**

v. Upon successful completion of the installation process, the EFRIS system shall automatically assign you a device number. **To avoid the Device Number changing in future, you will need to set the MAC address of the computer used to be static and remain consistent with one modem in the event that you use that as your internet source.**

vi. The taxpayer is required to register the device number and thumbprint using the guide below in **Appendix 6**. The taxpayer shall receive a notification through the registered email address when the device registration process is completed.

b) Online Mode

i. The taxpayer is required to submit their device number and thumbprint following the step by step guide in **Appendix 6**.

Step 4: Execute interface codes.

There are a couple of interface codes to support this implementation. The order of execution of the interface codes is as follows;

Online:

1. Test the Interface using interface code **T101**
2. Use interface code T104 to get the symmetric (AES) key. This will be used for encryption of the request and decryption of the response.
3. Use Interface code T103 to log in (Not mandatory for transaction processing).
4. Use interface code T115 for system dictionary (Not mandatory for transaction processing).

5. Call other interfaces as specified in the *table below*.

How to generate the signature.

Obtain AES key.

1. Get the response of interface T104.
2. Base64 decode the content field value in the response.
3. The value in passowrdDes is RSA encrypted using your public key, so you have to decrypt it using your private key.
4. The value obtained after decryption is the AES key.

Encryption

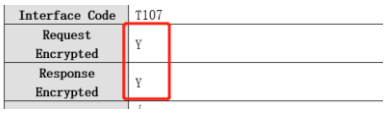
5. Encrypt the request content json of the given interface using the AES key.
6. Base64 encode the result and add it to the content field.

Signing the request.

7. Use your private key to RSA sign the content from 6.
8. Add the resulting string to the signature field.

Offline mode enabler (Supports both online and offline)

1. Download from the portal and install the offline enabler
2. Configure the public certificate on the portal and private certificate on the offline-mode enabler.
3. Initialize the offline-mode enabler following the installation guide in appendix 2.
4. Call other interfaces as specified in the following table.

Module	Interface Code	Mandatory/ Optional	Interface Name	Description/Remarks
System set up and data E encryption /decryption	T104	Mandatory	Get symmetric key and signature information	This is mandatory during system set up for taxpayers that have opted to connect directly to the EFRIS end point at URA without using the offline-mode enabler. This is required for all interface codes where the defined request or response is indicated as encrypted. 
	T115	Mandatory	System dictionary update	Used to map the taxpayer System dictionary /update with EFRIS
Registration	T119	Mandatory	Query Taxpayer Information By TIN	Used for TIN validation
	T138	Optional	Get all branches	Used to get a list of registered branches.
Stock management	T124	Optional	Query Commodity Category pagination	Used to query/get the commodity category codes
	T125	Mandatory for taxpayers dealing in excisable products	Query Excise Duty	Used to query/get excise duty codes. Only applicable for taxpayers dealing in excisable products.
	T126	Optional	Get All Exchange Rates	Used to query/get exchange rates. Only applicable for

				taxpayers generating invoices in foreign currencies.
	T130	Mandatory	Goods Upload	Used to configure and upload your products on to EFRIS. However, this can also be done through the web portal.
Stock management Stock management	T127	Optional	Goods/Services Inquiry	Used to Get/inquire all your products configured through interface T130 or web portal
	T127	Optional	Goods/Services Inquiry by goods Code	Used to Get/inquiry all your products configured through interface T130 or web portal by the product code
	T128	Optional	Query the stock quantity by goods id	Used to Get/inquiry stock values for a given product
	T131 Note: Only required for goods	Optional	Goods Stock Maintain	Used to update stock for a given product. However, the same can be updated from the web portal.
	T139	Optional	Goods Stock Transfer	Used to transfer goods from one branch to another. However, the same can be transferred from the web portal.
Invoice Management	T109	Mandatory	Billing upload	Used to fiscalise receipts/invoices
	T129	Optional	Batch Invoice Upload	Used to fiscalise Batch (multiple) receipts/invoices in a single request.
	T108	Optional	Invoice details	Used to validate a fiscalised receipts/invoices using; a) Fiscal document number(FDN)

				b) Verification code c) QR code
	T106	Optional	Invoice /Receipt query	Used to search fiscalised transactions with more search parameters other the one in T108.
	T137	Mandatory for taxpayers selling to persons with special VAT treatment	Check taxpayer type.	Used to check the exemption/VAT deeming status for a given taxpayer/products.
Credit note/ Debit Note referenced to the original invoice.	T110 T110	Mandatory where the buyer type was B2B & B2G Note: No approval is required for buyer type B2C	Credit Application Credit/Cancel Debit Note Application List Query	Credit notes take the following process flow; a) Invoice is raised using T109 b) Credit note application is raised using T110. (Note that this returns a reference to the application. The credit note must be approved by URA before it is considered fiscalised.) c) Query for credit note application status(Approved/Rejected) using T111. Only approved Credit notes will return the CNN(Credit Note Number) d) Get the verification code and QR code using T108.
	T114	Mandatory where the buyer type was B2B & B2G	Credit Note application cancel	Use interface code T114 to cancel credit/debit note that has already been approved.

	T118	Mandatory where the buyer type was B2B & B2G	Query Credit Note Application and Cancel of Debit Note Application Details	Use interface code T118 to cancel credit/debit note application that has not been approved.
	T113	Optional	Credit Note application detail	Use interface code T113 to get Credit Note application detail
	Any other interface relevant to your business as specified in the API document			

Support

For any support during the integration process, contact efris-it-support@ura.go.ug. Please ensure to always specify the following whenever available:

1. TIN
2. Device Number
3. JSON request and response.

Step 5: Conduct joint UAT online and Go live configurations.

i. After successful integration or completion of the development of EFRIS requirement, the taxpayer is required to complete the readiness check list **in appendix 4** and share the completed form to ikamya@ura.go.ug; sauma@ura.go.ug; tbesigye@ura.go.ug, jkayeny@ura.go.ug and bajuna@ura.go.ug copy using the registered using the email address registered on the TIN profile.

ii. Upon receiving the notification and the completed checklist, the taxpayer shall be advised on the suitable date and time to conduct the joint User Acceptance Testing (UAT)based on EFRIS Interface User Requirements Specifications (Business Requirements) and the EFRIS API Documentation.

iii. The UAT shall be conducted **online** after which a certificate of acceptance shall be signed off by both parties. The taxpayer shall be issued with a certificate of acceptance to allow him/her set up the production environment following the same process highlighted step 3 above using the production URLs below;

a) the production portal https://efris.ura.go.ug/

b) Production **API URL** when connecting directly is;
https://efrisws.ura.go.ug/ws/taapp/getInformation

Please ensure that the version installed is for production and **NOT the test environment.**

iv. Register thumbprint and device number on the production by using **Appendix 6**.

v. In case the person being tested is **a software integrator** and not an individual company integrating their own ERP;

a) the software integrator is required to present 3 companies, for the UAT.

b) When the 3 companies pass the UATs, in addition to the certificate of acceptance, the software integrator through registered email address (where applicable) shall receive a **Certificate of Accreditation for EFRIS Software Integration** signed by the commissioner.

The certificate is issued under Issued under Regulation 5(1) of the Tax Procedures Code (e-Invoicing and e-Receipting) Regulation, 2020 and shall be used by the integrator to engage potential clients for the adoption and implementation of EFRIS.

c) All accredited Software integrators shall be required to sign an MOU with URA after paying stamp duty of Ugandan Shillings 15,000per agreement/copy) to onboard their clients on to EFRIS.

d) To onboard the rest of your clients herein referred to as the taxpayers on EFRIS, as an accredited software integrator, you are required to install the offline mode enabler (for taxpayers who have opted to use the offline mode) or setting up the production environment (for taxpayers using the online mode).

Your client(s) herein referred to as the taxpayer using the email address registered on the TIN profile are required to submit;

i. A confirmation letter that he/she has appointed you to complete this integration using your e-invoicing system.
ii. the completed EFRIS Digital Self-Signed Certificate form (for taxpayers who have opted to use self-signed certificates) or upload CA signed certificate (for taxpayers who have opted not to use self-signed certificates) .

Please note:

i. All the three (03) should be submitted at once.
ii. The taxpayer shall receive a notification through the registered email address when the installation and configuration process is completed from your side.

iii. The taxpayer will also be able to download the offline mode enabler for production for Windows, Ubuntu, or CentOS from the Web portal https://efris.ura.go.ug/ under downloads>>Applications (Software).

Appendixes

Appendix 1: Form for Submission of EFRIS Digital Certificate

EFRIS - 1001 - SUBMISSION OF EFRI

Appendix 2: Offline-Mode Enabler (For System to System Users) Installation Guide

EFRIS+--+Offline-Mode+Enabler_Installation

Appendix 3

https://efris.ura.go.ug/

Appendix 4: EFRIS System to System Integration UAT Readiness Checklist

EFRIS SYSTEM TO SYSTEM UAT READINI

Appendix 5: How to generate Keys using KeyStore Explorer.



Appendix 6: Step by step guide on system to system integration.

