

Handling confidential data

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Encryption

- ▶ It is a method of protecting data from people you don't want to see it
- ▶ You have a message, you encrypt it using your cipher, and other people with the cipher can see it, anyone else sees gibberish

When should you encrypt your data?

At every stage of the data collection/analysis process.

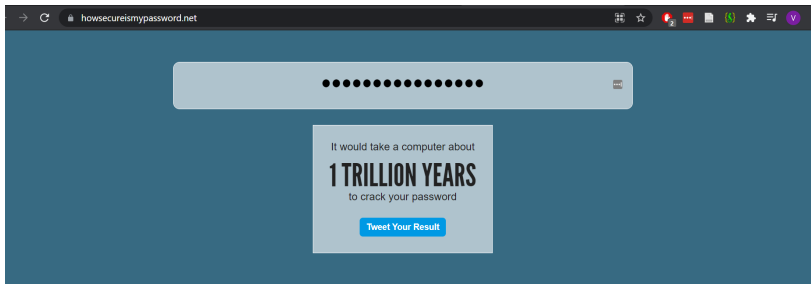
- ▶ Personal computer
- ▶ External hard drive
- ▶ Cloud

Passwords

Your encryption is only as strong as your password

- ▶ The longer the better (64 characters is great!)
- ▶ Look at NIST password guidelines (<https://auth0.com/blog/dont-pass-on-the-new-nist-password-guidelines/>)
- ▶ Never share by email, text, or WhatsApp
- ▶ Use a password manager!

How secure is my password?



LastPass

- ▶ A safe for all passwords and keys
- ▶ Only need to remember one password
- ▶ Available as chrome extension, website & app
- ▶ Generates secure passwords

LastPass

The screenshot shows the LastPass web interface in a browser window. The address bar displays the URL `https://lastpass.com/78bac1d8fromwebsite=1&newvault=1&nk=1`. The page header includes the LastPass logo, a search bar with the text "search my vault", and a user profile for "saurabh.bhagbhuk..." with the status "Free User".

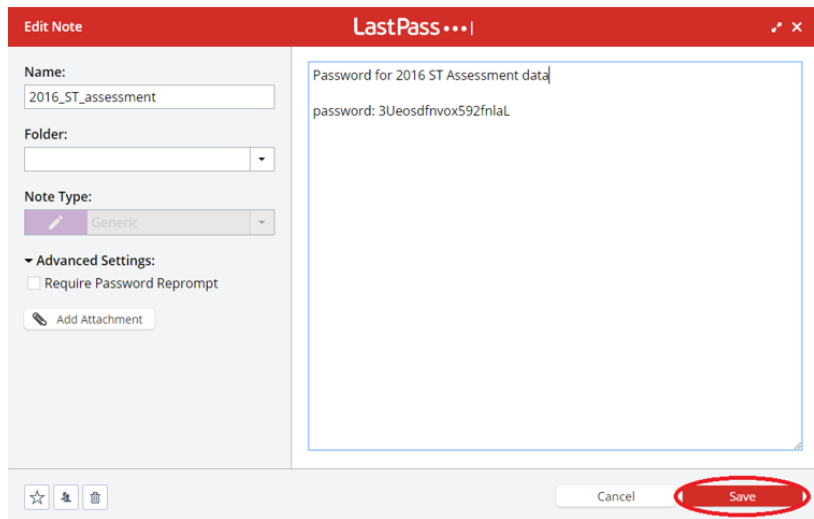
The main content area is titled "Sites" and shows a list of three items, each with a purple folder icon, a checkbox, and a pencil icon:

Item Name	Last used	Never
2016_ST_assessment	Last used	Never
KTK_phase_1_hh	Last used	Never
Prod_stats	Last used	Never

Below the list, there are several action buttons: "Add New Folder", "Share Item", "Add Secure Note" (circled in red), and "Add Site". To the right of these buttons are icons for folder, share, notes, and site creation.

On the right side of the interface, there is a sidebar for "LastPass... ENTERPRISE" with the text "The complete password management solution for your business." and a "Start a Trial" button. Below this, there is a message: "Tired of these ads? Go Premium".

LastPass



Edit Note LastPass


Name:
2016_ST_assessment

Folder:
▼

Note Type:
Generic ▼

▼ **Advanced Settings:**

Require Password Reprompt

 Add Attachment

Password for 2016 ST Assessment data
password: 3Ueosdfnvox592fnlaL

☆ 📎 🗑️ Cancel **Save**

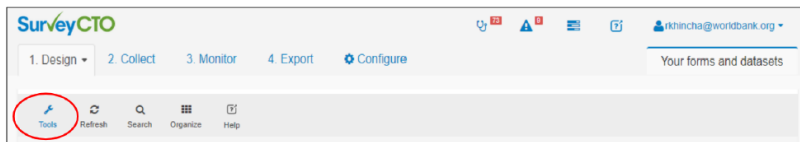
Encryption on SurveyCTO

Before you encrypt, make sure

- ▶ Tablets are password protected
- ▶ Separate account for enumerators, so they cannot download data

Encryption on SurveyCTO

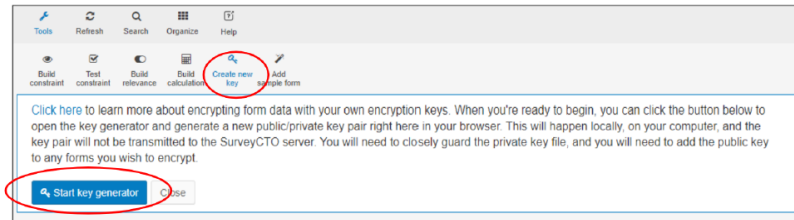
Generate public-private key



- ▶ Log-in to your SurveyCTO server
- ▶ On the design tab, select Tools

Encryption on SurveyCTO

Generate public-private key



- ▶ Select 'Create new key'
- ▶ Click on 'start key generator'

Encryption on SurveyCTO

Generate public-private key

Step 1. Choose a name for your private key

Please enter a short name for your encryption key. This will be used to name the encryption key files that you will download in the following steps.

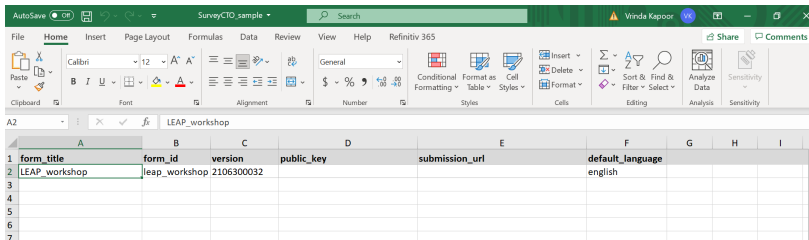
Key name:

[→ Next](#)

- ▶ Enter a name for the private key
- ▶ Download the two .pem files – private-public key pair
- ▶ Save it on LastPass

Encryption on SurveyCTO

Configure a form for encryption

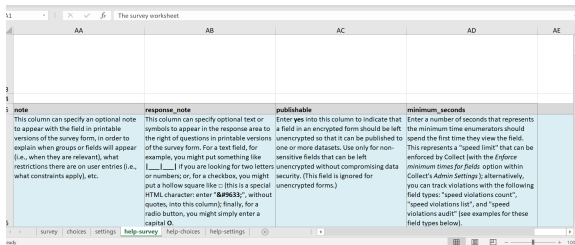


The screenshot shows the Microsoft Excel interface with a table containing form configuration data. The table has the following columns: form_title, form_id, version, public_key, submission_url, and default_language. The first row of data shows 'LEAP_workshop' for form_title, 'leap_workshop' for form_id, and '2106300032' for version. The default_language is set to 'english'.

	A	B	C	D	E	F	G	H	I
1	form_title	form_id	version	public_key	submission_url	default_language			
2	LEAP_workshop	leap_workshop	2106300032			english			
3									
4									
5									
6									
7									

Encryption on SurveyCTO

Configure a form for encryption



- ▶ Publishable field - accessible to those with access to server
- ▶ Non-publishable field - accessible to those with access to server AND private key
- ▶ Maybe you want to share parts of the data with the survey firm to do quick check on duplicates or number of surveys done.

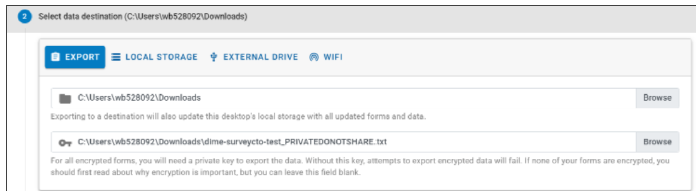
Encryption on SurveyCTO

Downloading dataset

- ▶ Data can be downloaded using the server or Desktop
- ▶ Copy paste the private key into a .txt and save on desktop
- ▶ Open SurveyCTO Desktop
- ▶ Add file path for
 - ▶ Where to download the data
 - ▶ Where you saved the private key
- ▶ Download the data
- ▶ Delete the private key

Encryption on SurveyCTO

Downloading dataset



VeraCrypt

- ▶ Disk encryption software
- ▶ Create an encrypted drive, cannot encrypt an existing folder
- ▶ Mount this encrypted drive through VeraCrypt
- ▶ Once mounted, you access files in the volume like in a normal flash drive
- ▶ Can mount and access encrypted data through Stata and R

VeraCrypt

▶ Demo

Test your encryption setup

- ▶ Always test your setup before collecting real data
- ▶ Check if the password or key is stored safely

Thank you!