Data Management for Non-Profits

The Cloud, Security, and Other Useful Things You Should Know About IT

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About Me: My History

- B.A in *Community Development* from *Covenant College*
- *Americorps* intern in Boston (Web Developer & Server Administrator)
- Infrastructure Engineer at Lamp Post Group for 2 years

About Me: Current

- *Founder & CEO of Develop CENTS*
  - Founded in 2013
  - Member of Chamber of Commerce
  - Business Affiliate Member of CNP
- Married since 2014

What Comes First?

- Technology for the Mission, not the other way around. Your processes should *always* come first.

- Your goal: Good stewardship

CRM Software

- What do you need to do?

  (Microsoft Excel probably doesn't do the job)

- NTEN + Idealware report: “A Consumer's Guide to Low Cost Donor Management Systems”

CRM Software

- CiviCRM
- Salesforce
- eTapestry
- Raiser's Edge

Introduction to “The Cloud”

- Online (or private intranet) services, software, and servers
- Sophisticated, highly available computer network (Sometimes)
  - If a single server crashes, your app or website still works
- Files backed up in multiple places

Types of Clouds

- **Public Cloud Services**
  - Website subscription services
  - Managed by a 3rd party
  - Multiple clients use the same service
  - Website Hosting
- **Private Cloud**
  - 2 or more servers setup so that if 1 server crashes, all your programs and data will still be available.

Public Cloud Examples

amazon web services™
eTapestry®
Google
G Suite
dp donorperfect
online fundraising software
salesforce
DonorSnap
Donor Management Made Easy

The Common Theme?
All of these are entirely web-based!

These websites and applications are only examples
of Cloud Services. I'm not necessarily endorsing these products.

G Suite for Nonprofts

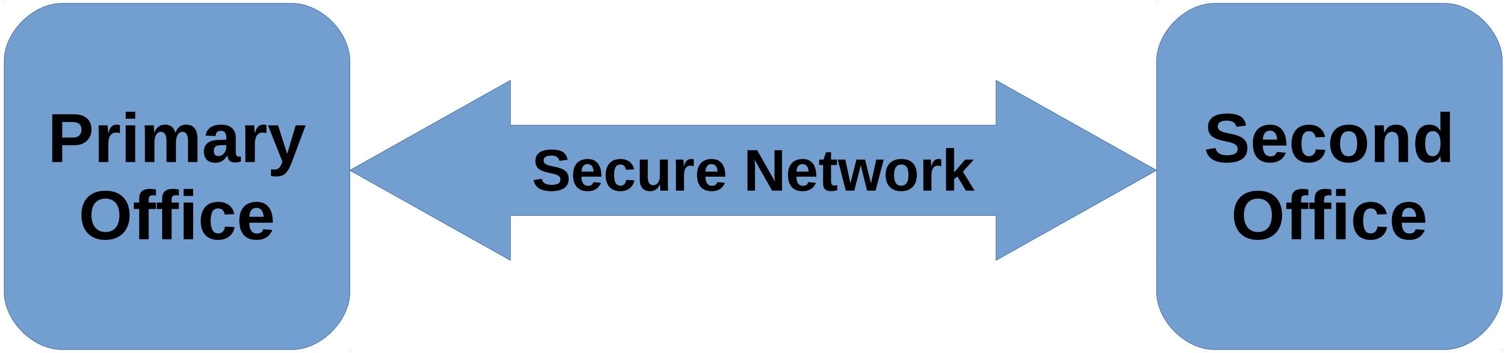
- **Free** for nonprofits
- *Can be* HIPPA compliant
  - You must sign paperwork

- Includes all the Google features you're used to: Drive, Gmail (for your domain), and more

- Signup at https://www.google.com/nonprofits/

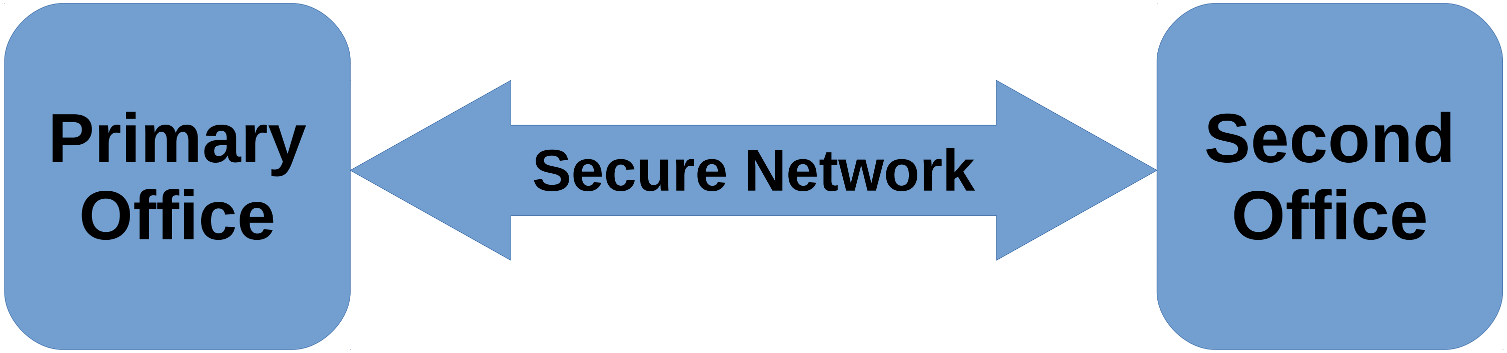
Private Cloud Example

- 2 Offices with a storage device in each office
  - Secure network between the two offices
  - Data is replicated (copied) from 1 device to the other



Example: Synology NAS

- “NAS” - **N**etwork **A**ttached **S**torage
- File server with several hard drives in a RAID array



Staying Secure in The Cloud

What is “Security”?

Preserving the integrity, availability, and confidentiality of Information System Resources.

(NIST Handbook: Special Publication 800-12)

Nothing is Secure!

“The only truly secure system is one that is powered off, cast in a block of concrete and sealed in a lead-lined room with armed guards – and even then I have my doubts.”

- Dr. Gene Spafford, Purdue University

We published an April Fool’s blog post about guarding your server in a bunker!

Security & The Cloud

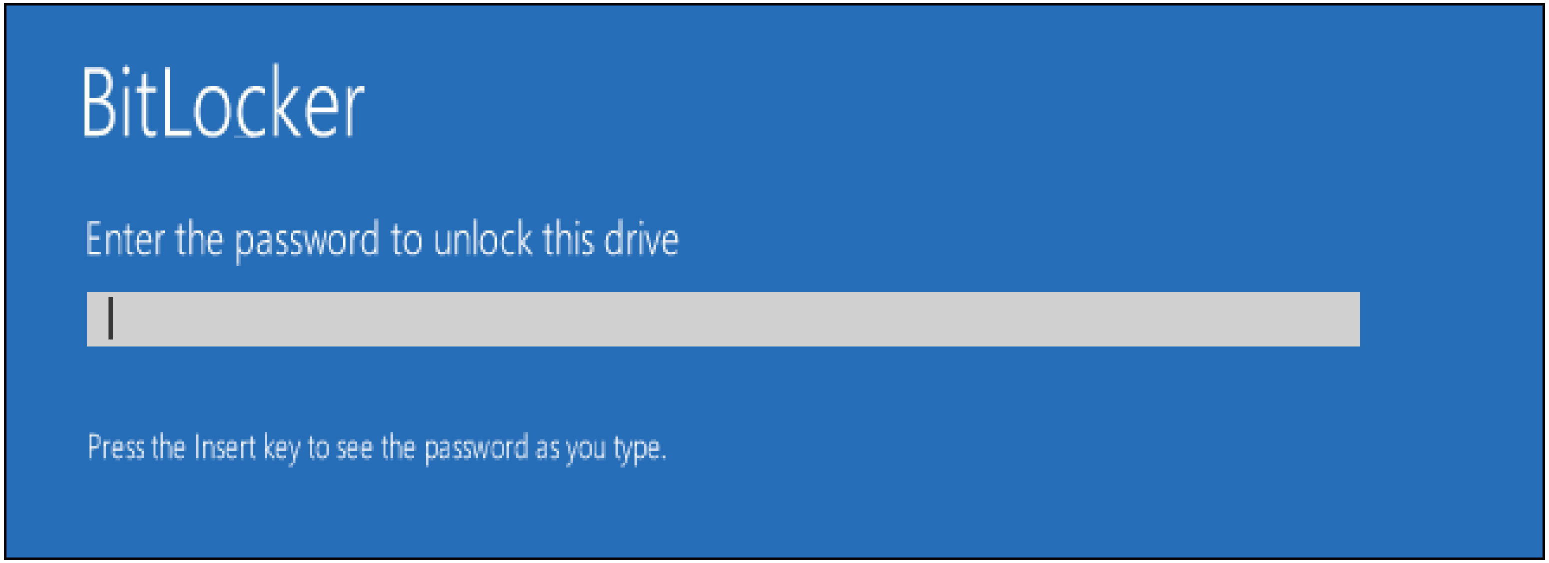
Use Encryption

- HIPAA requires “Data at Rest” <u>and</u> “Data in Transit” encryption

Security & The Cloud

Data at rest

File Encryption (BitLocker, 7-zip, etc...)



BitLocker

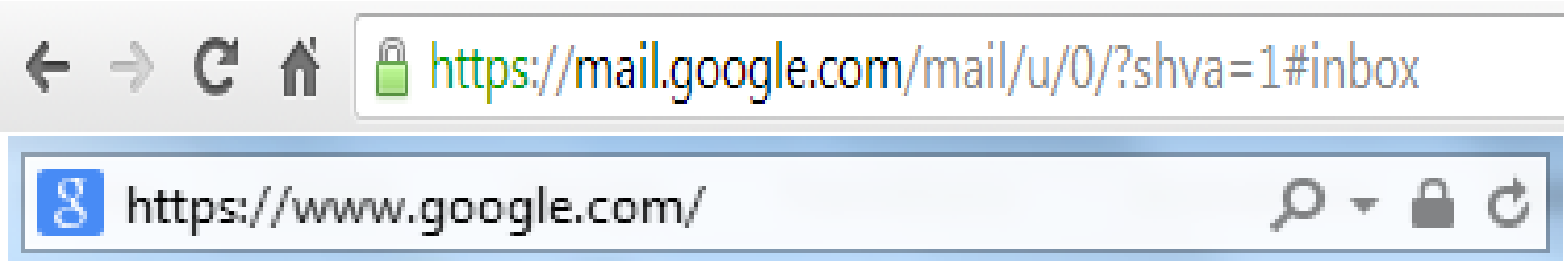
Enter the password to unlock this drive

Press the Insert key to see the password as you type.

Security & The Cloud

Data in Transit

- Use Secure Browsing (HTTPS)



https://mail.google.com/mail/u/0/?shva=1#inbox

https://www.google.com/

- Or use a VPN

How to be Secure

Strong Passwords

What’s a secure password?

- Combination of memorial phrases and numbers
  - “ILovetheCenter4Nonprofits”
- At least 15 characters & symbols

How to be Secure

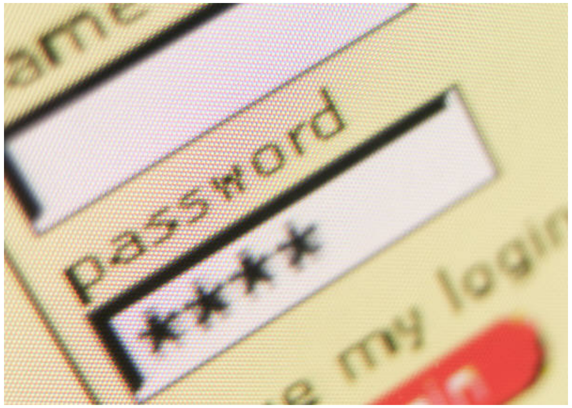
Password Management

- Use a password manager
  - LastPass, Keepass, 1Password are just a few examples (but be careful! Nothing is secure!)
  - Make a (very) secure Master Password – and memorize it
- <u>NEVER</u> use email to share passwords

How to be Secure?

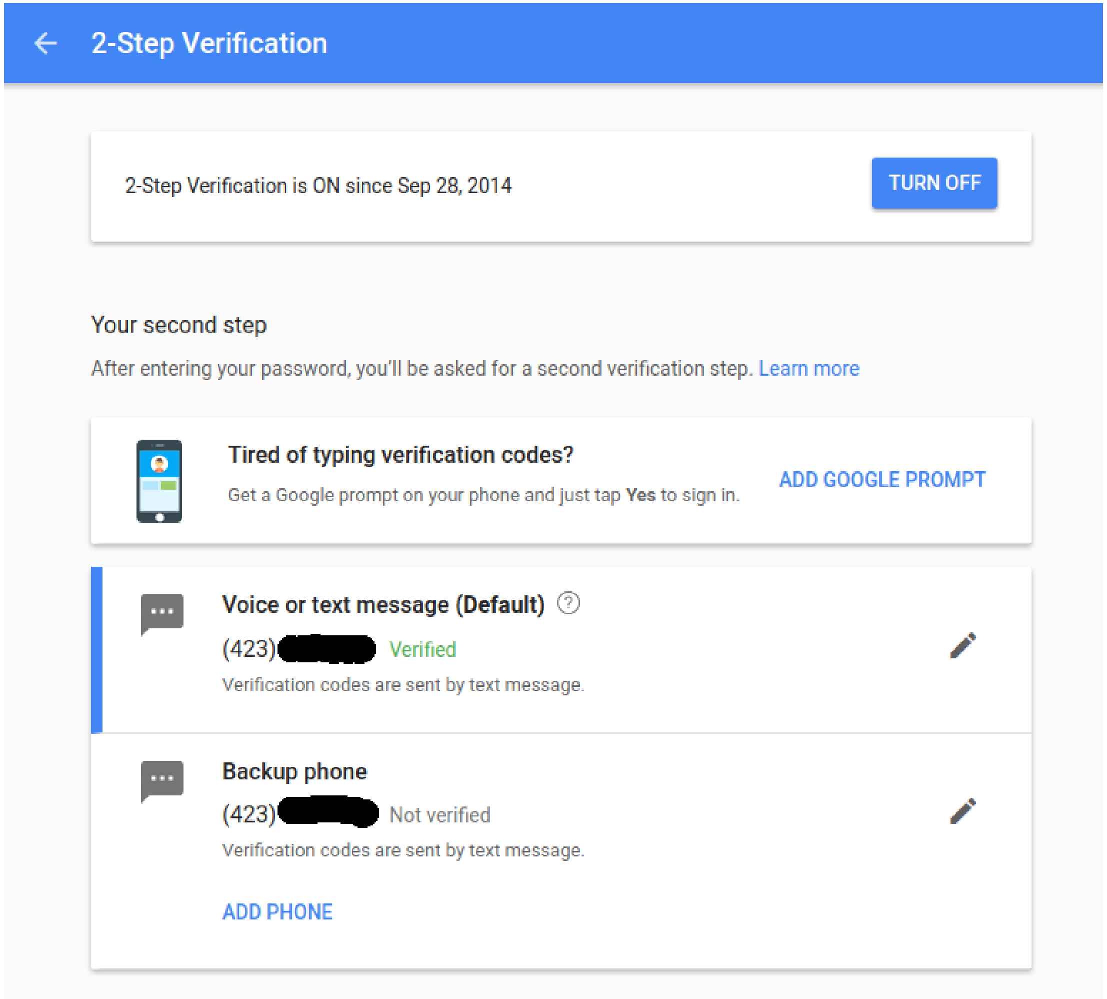
2-Factor Authentication

Authenticating (logging in) to a service via two or more of the different means of authentication:



- What you know (password)
- What you possess (token)
- What you are (biometrics)
- What you do (voice recognition)

Google's 2-Step Verification



2-Step Verification is ON since Sep 28, 2014

Your second step

After entering your password, you'll be asked for a second verification step. Learn more

Tired of typing verification codes?

Get a Google prompt on your phone and just tap **Yes** to sign in.

Voice or text message (Default)

(423)[redacted] Verified

Verification codes are sent by text message.

Backup phone

(423)[redacted] Not verified

Verification codes are sent by text message.

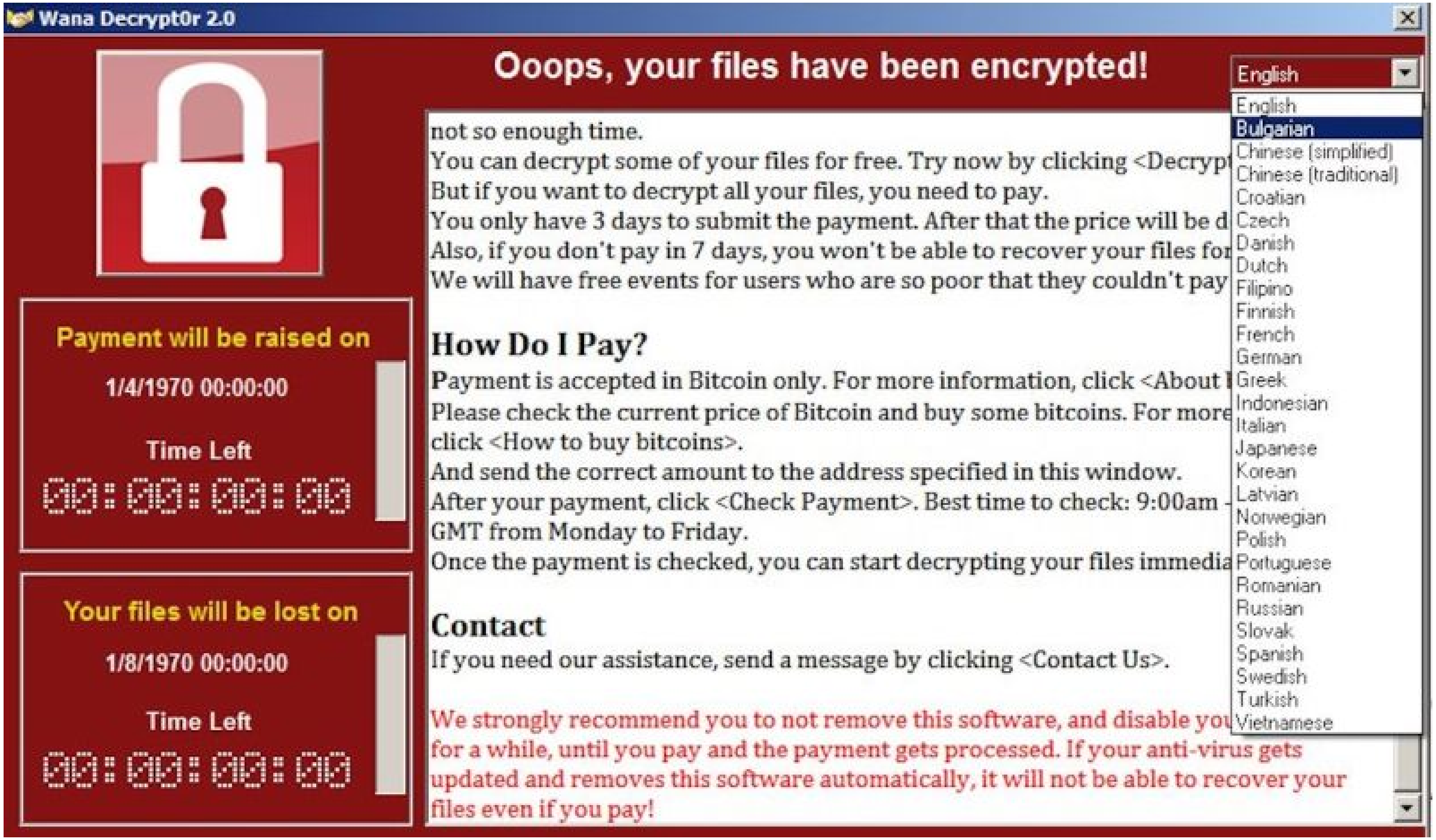
If your organization uses Google Apps, login to your account, and visit https://accounts.google.com/b/0/SmsAuthSettings.

Local Data Storage & Backups

- RAID – 2 (or more) hard drives that mirror each other, so that if 1 fails, the server keeps working
  - NOT the same thing as a backup
- You should *always* backup the data on your server
  - A “sync” is not a backup either!
    - Example: Dropbox, Google Drive (not a backup)

Ransomware

(1 reason why a “sync” isn’t a backup)



Ooops, your files have been encrypted!

Payment will be raised on

1/4/1970 00:00:00

Time Left

00:00:00:00

Your files will be lost on

1/8/1970 00:00:00

Time Left

00:00:00:00

not so enough time.
You can decrypt some of your files for free. Try now by clicking <Decrypt
But if you want to decrypt all your files, you need to pay.
You only have 3 days to submit the payment. After that the price will be d
Also, if you don't pay in 7 days, you won't be able to recover your files for
We will have free events for users who are so poor that they couldn't pay

How Do I Pay?

Payment is accepted in Bitcoin only. For more information, click <About I
Please check the current price of Bitcoin and buy some bitcoins. For more
click <How to buy bitcoins>.
And send the correct amount to the address specified in this window.
After your payment, click <Check Payment>. Best time to check: 9:00am -
GMT from Monday to Friday.
Once the payment is checked, you can start decrypting your files immedia

Contact

If you need our assistance, send a message by clicking <Contact Us>.

We strongly recommend you to not remove this software, and disable you
for a while, until you pay and the payment gets processed. If your anti-virus gets
updated and removes this software automatically, it will not be able to recover your
files even if you pay!

Security Summary

(In no particular order)

1. DO make sure your data is stored behind an encrypted (HTTPS) connection or VPN, and if you save locally, use data encryption

2. Keep your server *and* your Database software up-to-date, & make sure it is backed up (a sync isn’t a backup!)

3. Do not copy your data insecurely (email doesn’t count!)

4. Use a strong password (better yet, use a password manager!)

The End

(Questions & Comments)

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Online Resources:

G Suite for Nonprofits
https://www.google.com/nonprofits/

G Suite – HIPPA Compliance
https://support.google.com/a/answer/3407054?hl=en

Our Blog:
https://developcents.com/blog

The Slides to This Presentation
https://developcents.com/knowledge-base/#workshops

A Consumer’s Guide to Donor Management Systems
http://www.idealware.org/reports/consumers-guide-low-cost-donor-management-systems/

Security News Resources

Security on Stack Exchange:
http://security.stackexchange.com

Internet Storm Center:
https://isc.sans.edu/

US-CERT mailing lists:
http://www.us-cert.gov/mailing-lists-and-feeds

Freedom of the Press Foundation:
https://freedom.press/training/

Common Vulnerabilities and Exposures
http://cve.mitre.org/

RFC Database at IETF:
http://www.ietf.org/rfc.html

National Vulnerability Database:
http://nvd.nist.gov/

National Institute of Standards & Technology (NIST):
“Computer Security Handbook”
http://csrc.nist.gov/publications/nistpubs/800-12/800-12-html/

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