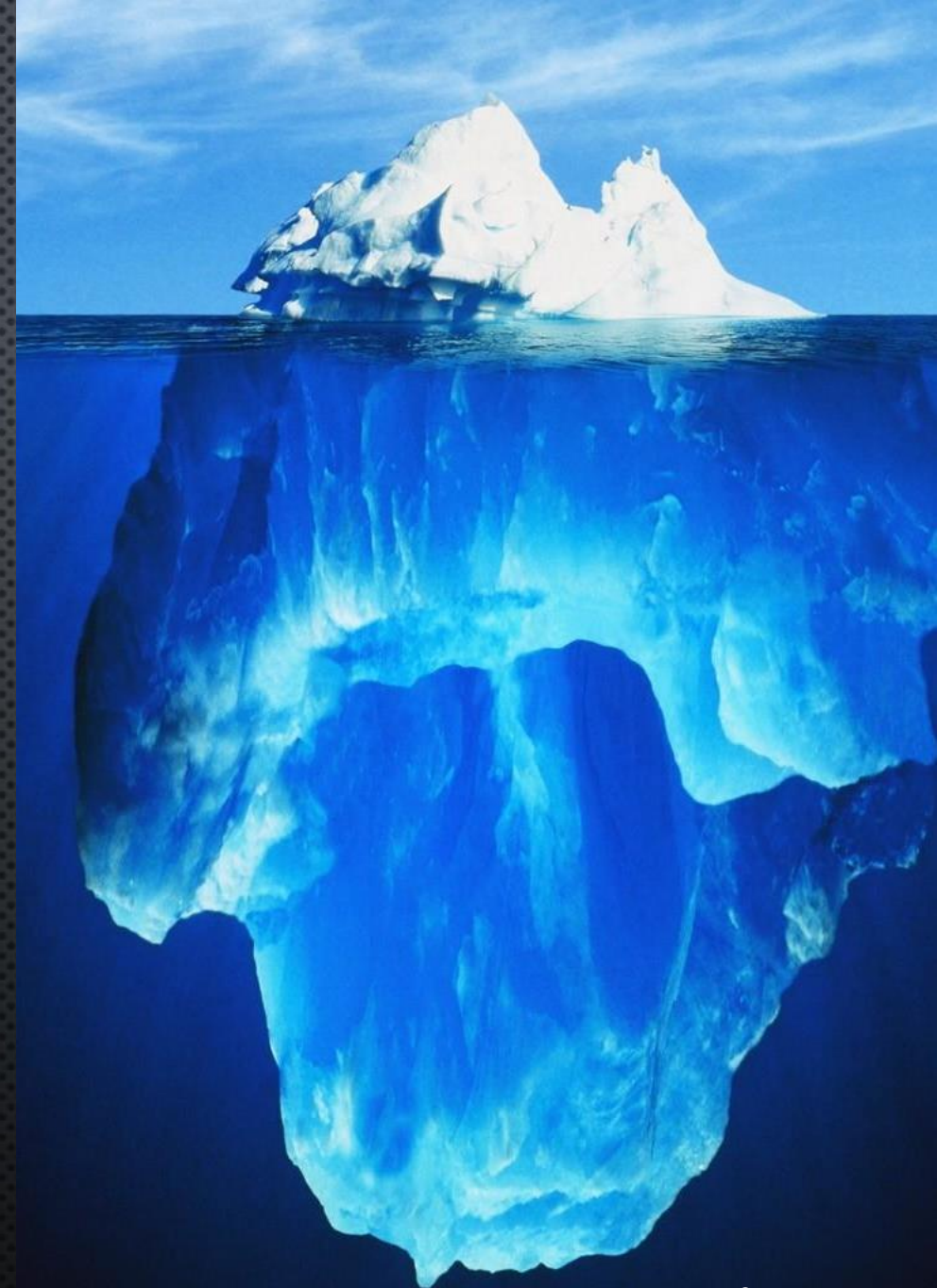


# THE DEEP AND DARK WEB

- SURFACE WEB
  - WEBPAGES THAT ARE INDEXED BY A SEARCH ENGINE
  
- DEEP WEB
  - WEBPAGES THAT ARE NOT INDEXED BY A SEARCH ENGINE
  
- DARK WEB
  - A SUBSET OF THE DEEP WEB (NON-INDEXABLE) THAT NEEDS EXTRA SOFTWARE TO ACCESS ITS CONTENTS



# SURFACE WEB

- WEBSITES DISPLAYED BY SEARCH ENGINES
  - FACEBOOK
  - YOUTUBE
  - INSTAGRAM
  - WIKIPEDIA
- CAN BE ACCESSED BY GOOGLE'S WEB CRAWLER
- CAN BE FOUND THROUGH THE DOMAIN NAME SYSTEM (DNS)



# DEEP WEB

- NON-INDEXABLE WEBSITES
  - FORUMS WHERE CONTENT IS BLOCKED BY A LOGIN SCREEN
  - CONTAINS A ROBOT.TXT FILE THAT STOPS SEARCH ENGINES FROM CRAWLING IT
  - ALGORITHM THAT STOPS INCOMING REQUESTS AFTER A CERTAIN AMOUNT OF VISITS

Login | Register


Email

Password

Login

# DARK WEB

- A SUBSET OF THE DEEP WEB
- ONLY ACCESSIBLE BY SOFTWARE SUCH AS TOR
- CONTAINS LEGAL AND ILLEGAL MATERIAL
- LEGAL (32%)
  - FORUMS
  - IRC SERVERS
  - RADIO SERVICES
- ILLEGAL (68%)
  - BLACK MARKET
  - SELLING DRUGS, CHILD PORNOGRAPHY, ASSASSINATION SERVICES
  - MALWARE SERVERS
  - WEAPONS



76qugh5bey5gum7l.onion Search

## Deep Web Radio

Administration Server Status I2P (beta) AnonyPlayer Info

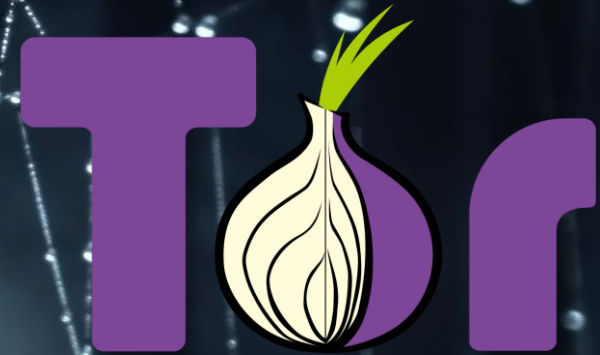
Mount Point / AnonyJazz M3U XSPF

Stream Title:	Anony JaZZ
Stream Description:	Really a lot of jazz...
Content Type:	audio/mpeg
Bitrate:	32
Current Listeners:	3
Peak Listeners:	12
Stream Genre:	Jazz and Latin
Stream URL:	<a href="http://76qugh5bey5gum7l.onion/AnonyJazz">http://76qugh5bey5gum7l.onion/AnonyJazz</a>
Current Song:	Miles Davis - All Blues

*Deep Web Radio for people who need to anonymously listen to jazz*

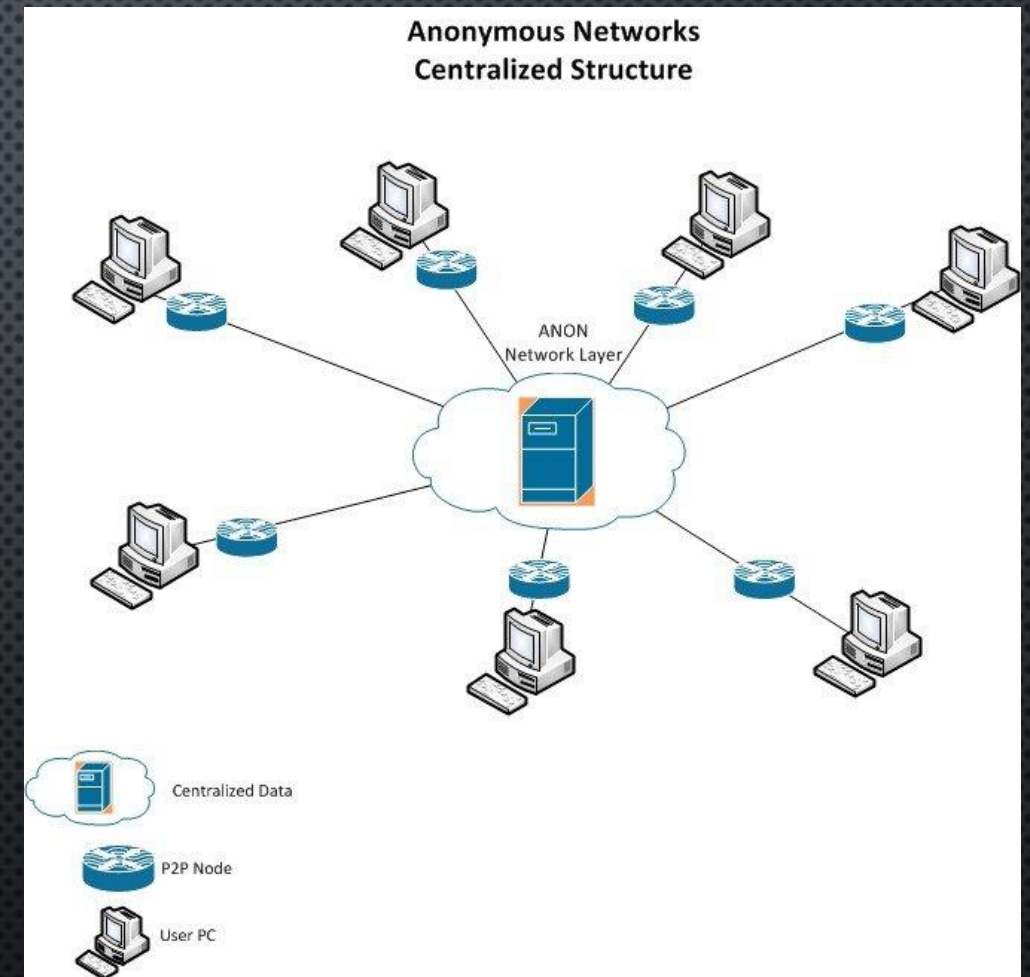
# DARK WEB ANONYMITY SYSTEMS

- TOR BROWSER (ANONYMITY NETWORK)
  - CLIENT-SERVER
  - ORBOT
  - HORNET (HIGH SPEED ONION ROUTING)
- I2P (INVISIBLE INTERNET PROTOCOL)
  - PEER TO PEER
  - ACTS LIKE A NETWORK LAYER
  - BUILDS ADDITIONAL LAYER WITHIN TCP/IP
- FREENET
  - MIX BETWEEN TOR AND I2P



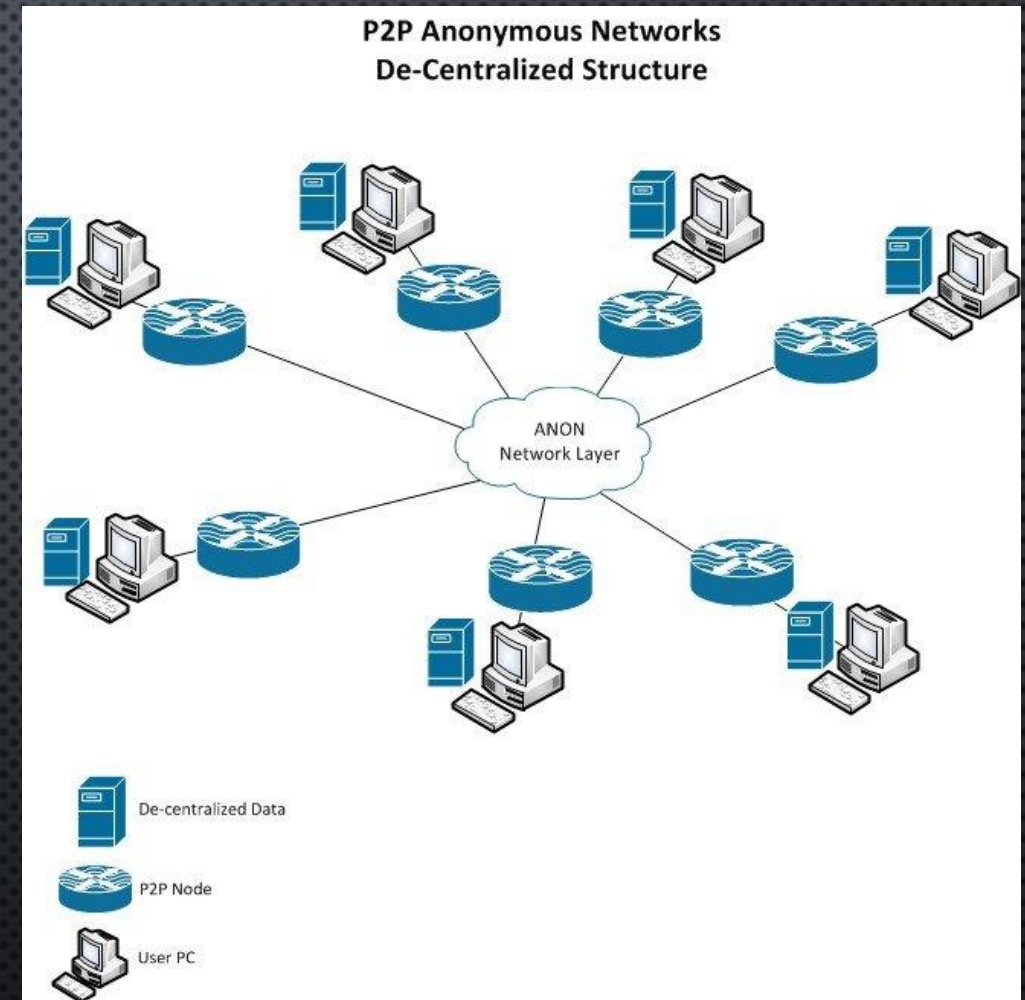
# TOR BROWSER

- SOFTWARE USED TO PROTECT USERS BY MAKING COMMUNICATIONS HARD TO TRACE
- BOUNCES COMMUNICATIONS TO DIFFERENT NODES LOCATED ALL AROUND THE WORLD
- USES ENCRYPTION IN THE APPLICATION LAYER
- HIDES LOCATION THROUGH MANY NETWORK RELAYS
- HIDDEN WEBSITES USE THE ".ONION" SUFFIX



# FREENET

- MIX BETWEEN PEER TO PEER AND CLIENT-SERVER
- DE-CENTRALIZED SERVERS & DATA
- USES PEERS TO HOST NODES WHICH STORE OTHER USER'S ENCRYPTED DATA
- NO WAY TO TELL IF DATA IS LEGAL OR ILLEGAL
- DE-CENTRALIZED DATA MAKES IT HARDER TO HACK INTO





# SILK ROAD RELOADED

- The original "Silk Road" website was located on Tor Servers
- Some think Tor has been compromised
- A new website "Silk Road Reloaded" appeared on a different dark web network called I2P
- I2P uses a peer-to-peer approach where "Essentially all peers participate in routing for others"
- Supports various online currencies other than Bitcoin such as Anoncoin, Darkcoin, Dogecoin and can convert currencies for users for a small fee

SilkRoadReLoaded™ Catalog Mailbox (0) Cart (฿0.0) Orders (0) Wallet ฿(0.000000) Support Welcome notdpr




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Product Details	Price	Ad Post Date	Stock(remaining)	Sold By (Vendor Rating)(Sales)	Product Feedback	Product Rating
 SomethingCool	฿4.585551 / \$1232.00	2014-10-02 18:22:31	92	SysAdmin (5.00/5.0)(2)	10	4.8/5.0
 theCoolest	฿0.03722 / \$10.00	2014-09-29 09:45:57	511	SysAdmin (5.00/5.0)(2)	1	5.0/5.0
 acid fun 2	฿1.277478 / \$343.22	2014-10-20 16:12:21	341	sofaking1 (5.00/5.0)(1)	0	5.0/5.0

# SOCIETAL IMPLICATIONS OF THE DARK WEB

- THE DARK WEB CAN BE SEEN AS BOTH GOOD AND BAD.
- INFORMATION CAN BE EXCHANGED WITHOUT HAVING A GOVERNMENT REPRESENTATIVE FINDING OUT.
- ALLOWS ACCESS TO REGION BLOCKED INFORMATION.
- HOWEVER, IT IS A PLATFORM FOR ILLEGAL ACTIVITY.
- ALLOWS THE PURCHASE OR SALE OF DRUGS, WEAPONS, AND HITMAN SERVICES.

# SECURITY PRECAUTIONS WHEN VISITING THE DARK WEB

- DON'T TRUST ANYONE
- COVER YOUR WEBCAM WITH TAPE
- DON'T DOWNLOAD ANYTHING
- DISABLE JAVASCRIPT ON YOUR BROWSER
- CHECK THAT YOUR VIRTUAL PRIVATE NETWORK (VPN) IS WORKING
- USE PROXIES
- ANONYMOUS OPERATING SYSTEMS
  - TAILS
  - WHONIX
  - JONDO
- INTERNET CAFE



# DIFFICULTIES IN REMOVAL OF THE DARK WEB

- IDENTITIES OF THE SITE OWNERS ARE PRESERVED WITH SOFTWARE.
- INVESTIGATING A SINGLE MARKET IS EXPENSIVE AND TIME CONSUMING.
- TRACING PAYMENT IS DIFFICULT.

# QUESTION 1

WHAT IS THE DIFFERENCE BETWEEN THE DEEP WEB AND THE DARK WEB?

ANSWER:

THE DARK WEB IS A SUBCOMPONENT OF THE DEEP WEB AND CAN ONLY BE ACCESSED BY A SPECIAL BROWSER OR UTILITY

## QUESTION 2

WHAT SAFETY PRECAUTIONS SHOULD YOU TAKE IF YOU WERE TO VISIT THE DARK WEB?

ANSWER:

DON'T TRUST ANYONE, COVER YOUR WEBCAM, DON'T DOWNLOAD ANYTHING, CHECK THAT YOUR VPN IS WORKING, AND DISABLE JAVASCRIPT.

## QUESTION 3

THROUGH WHAT METHODS DOES THE TOR BROWSER ATTEMPT TO ENSURE ANONYMITY OF ITS USERS IDENTITY AND INTERNET USAGE?

ANSWER:

THE TOR BROWSER ENCRYPTS COMMUNICATION DATA AND THEN SENDS THE INFORMATION THROUGH MULTIPLE RANDOM TOR RELAYS (NODES) SCATTERED ACROSS THE GLOBE BEFORE REACHING ITS DESTINATION

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