RELAX,
WE CARE

CISCO UMBRELLA

PROTECTION AND VISIBILITY FOR ENTERPRISE NETWORKS

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ABOUT

NTS

ANDREA DAINESE - SENIOR SYSTEMS ENGINEER

- Network and Security Architect (15+ years' exp.)
- Security Evangelist (Blue Team)
- Automation Addicted/Developer (UNetLab)
- Cisco CCIE #38620/VMware VCP/Red Hat RHCE


andrea.dainese@nts.eu


www.linkedin.com/in/adainese


@adainese

INTRODUCTION

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You cannot protect what you don't know

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WHAT ABOUT ENDPOINTS?

- Where users navigate?
- What they download?
- What they execute?
- What they attach to the computer/laptop?
- Where they are used to work?
- Are endpoints left unattended?

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Multi layered security approach

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PREREQUISITES FOR A WEB CONTENT FILTER

Must:

- Categorized web sites
- Set policies for user groups (AD integration)
- Protect on premises and mobile users

Should:

- Work for all protocols
- Easy to setup and maintain

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WEB CONTENT FILTER COMPARISON

	SWG	SIG
Protection	Enterprise Networks	Everywhere
Control	Granular web usage*	Any protocol
Setup Time	Days	Minutes
User experience	Can break some sites/apps**	No latency

*: Encrypted websites require a MITM approach
**: Some applications do not work behind a proxy server

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BRIEF HISTORY

- 2006: OpenDNS Founded
- 2012: Umbrella enters the enterprise market
- 2015: Cisco squires OpenDNS/Umbrella

WHAT IS OPENDNS/UMBRELLA?

The largest cloud-based DNS service (and more)

TODAY

- 100B requests/day
- 85M daily users
- 12k Enterprise Customers

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Threat prevention for:

- **Homes (OpenDNS)***
- **Enterprises (Umbrella)**

*: Dynamic IP Internet connection require to update the OpenDNS account using a DDNS protocol (link).

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CISCO UMBRELLA PROTECT AGAINST:

- Unwanted Websites
- Suspicious Websites
- Advertising
- Malware
- Phishing Attacks
- Newly Seen Domains (and DGA*)
- Command and Control Callbacks
- DNS Tunnelling VPN**

*: www.iuqerfsodp9ifjaposdfjhgosurijfaewrwergwea.com
**: A MRZGS3TLEBWW64TFEBXXMYLMOR.t.example.com
CNAME WW2IDPOZQWY5DJNZSQ.t.example.com

VISIBILITY

VISIBILITY

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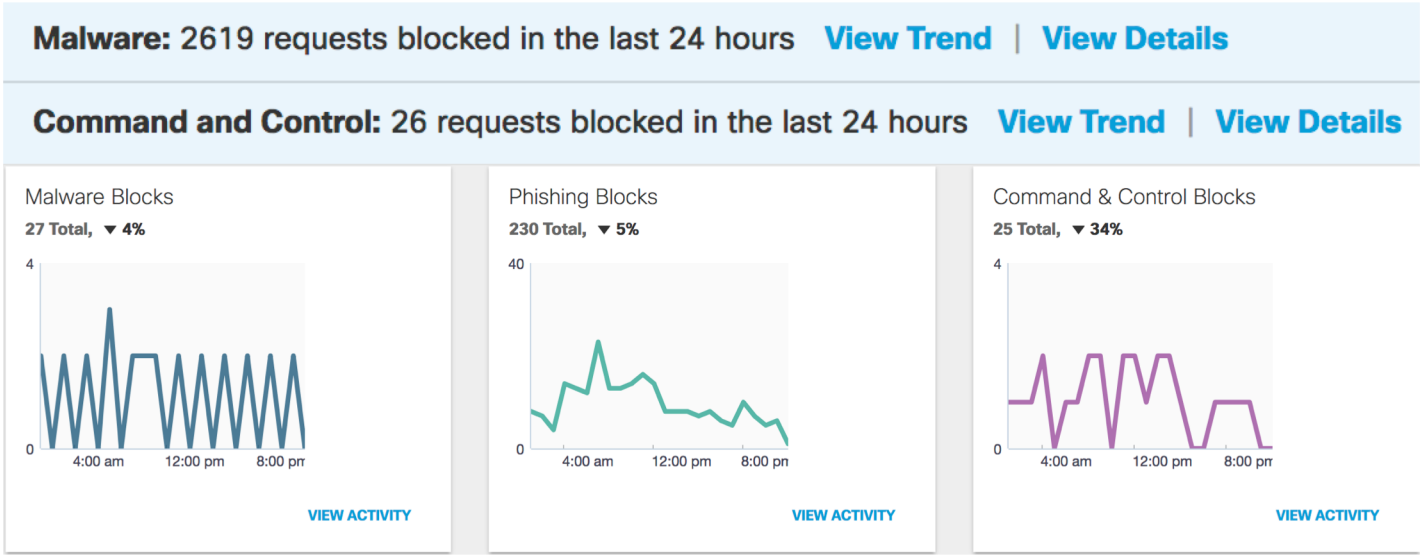
DASHBOARD

Cisco Umbrella v1 - Instant Demo @ Cisco dCloud



VISIBILITY

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ACTIVITY SEARCH (C&C)

Identity	Identity Type	Destination
kayleighrogersgUs	Roaming Computers	so7bet7ob.net
William Neal	AD Users	syk3qe022.ru
William Neal	AD Users	so7bet7ob.net
johnathongravesXFu	Roaming Computers	hffmzplu.com
briannecomptonV2x	Roaming Computers	zjzhuji.com
NYC Office	Networks	t0pm0b1l3.com

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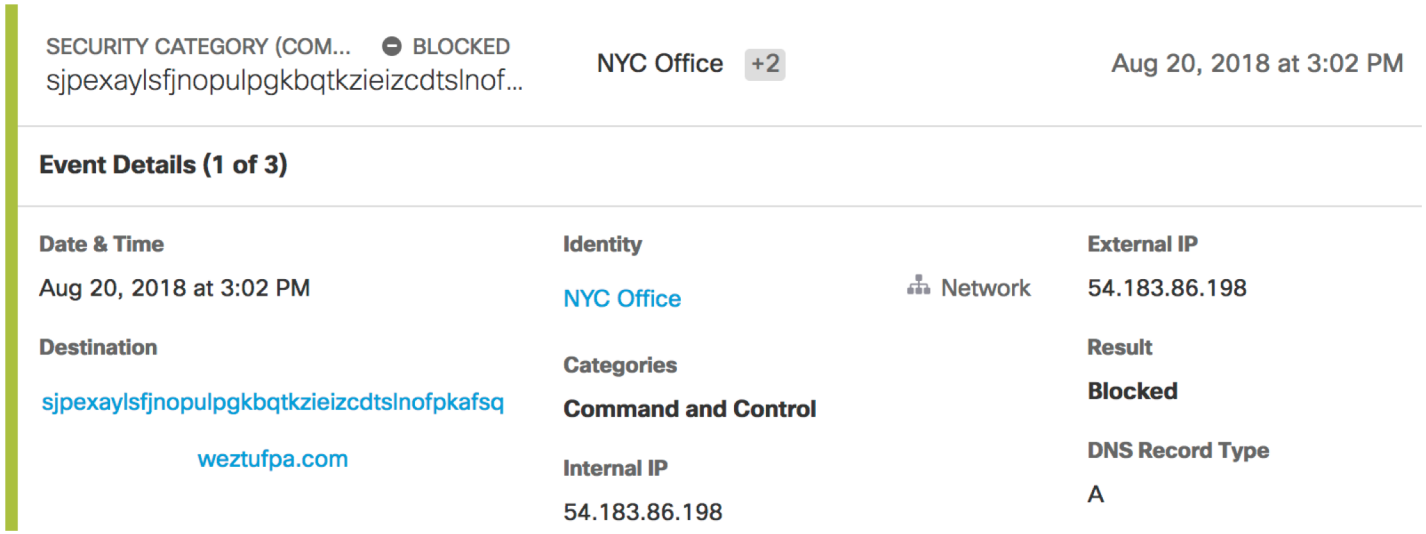
ACTIVITY SEARCH (DETAIL)



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ACTIVITY SEARCH (GENERIC)

Identity	Identity Type	Destination	Categories
keilarobertsu7c	Roaming Computers	binarycousins.com	**Malware**
keilarobertsu7c	Roaming Computers	binarycousins.com	**Malware**
keilarobertsu7c	Roaming Computers	chart.apis.google.com.ref.ualibrary.org	**Malware,** Research/Reference
keilarobertsu7c	Roaming Computers	binarycousins.com	**Malware**
Irvin McCarthy	AD Users	manualdohomemmoderno.com.br	**Nudity,** News/Media, Fashion
keilarobertsu7c	Roaming Computers	bookmyoffer.com	**Malware**
Marie Smith	AD Users	sexyteenboys.net	**Nudity, Pornography**

VISIBILITY

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CLOUD SERVICES

Name	Classification	Identit...	Trend	Requ...	Blocked
QNAP	Cloud Data Services, B...	14	↑ 6	23	8%
Intermedia	Cloud Data Services, IT...	13	↑ 7	23	4%
Sina Weibo	Communication, Collab...	12	– 0	355	0%
BMC	IT Services	12	↑ 6	18	0%
Solidfiles	Cloud Data Services, St...	12	↑ 5	20	0%
GoToMeeting	Collaboration, Web Con...	11	↓ 8	28	3%
SaltStack	IaaS, IT Services	11	↑ 5	14	7%
Dropbox	File Sharing, Collaborati...	10	↑ 4	19	0%
Teamviewer	IT Services, Collaboration	10	– 0	17	11%

A FAMOUS CRYPTOLOCKER

#WANNACRY

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A BRIEF STORY

- A Long Time Ago: EternalBlue by NSA
- March 14th, 2017: Microsoft Security Bulletin (MS17-010)
- April 15th, 2017: Shadow Brokers release

- May 12th, 2017 | 07:24 UTC: #WannaCry Patient Zero
- May 12th, 2017 | 07:30 UTC: @MalwareTechBlog Post
- May 12th, 2017 | 07:43 UTC: Kill Switch on Umbrella

UMBRELLA INVESTIGATE

INVESTIGATE

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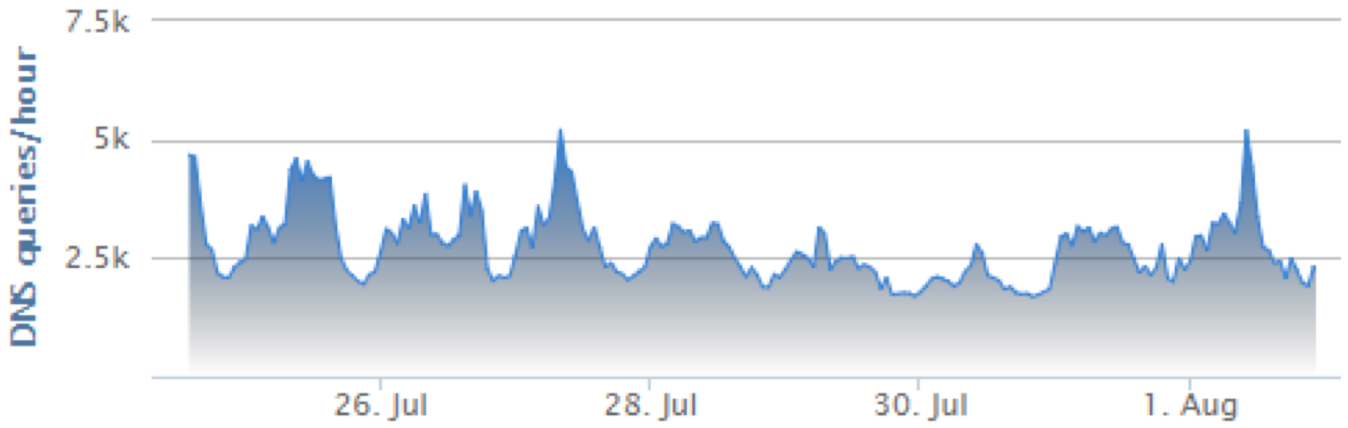
#WANNACRY (SUMMER 2017)



INVESTIGATE

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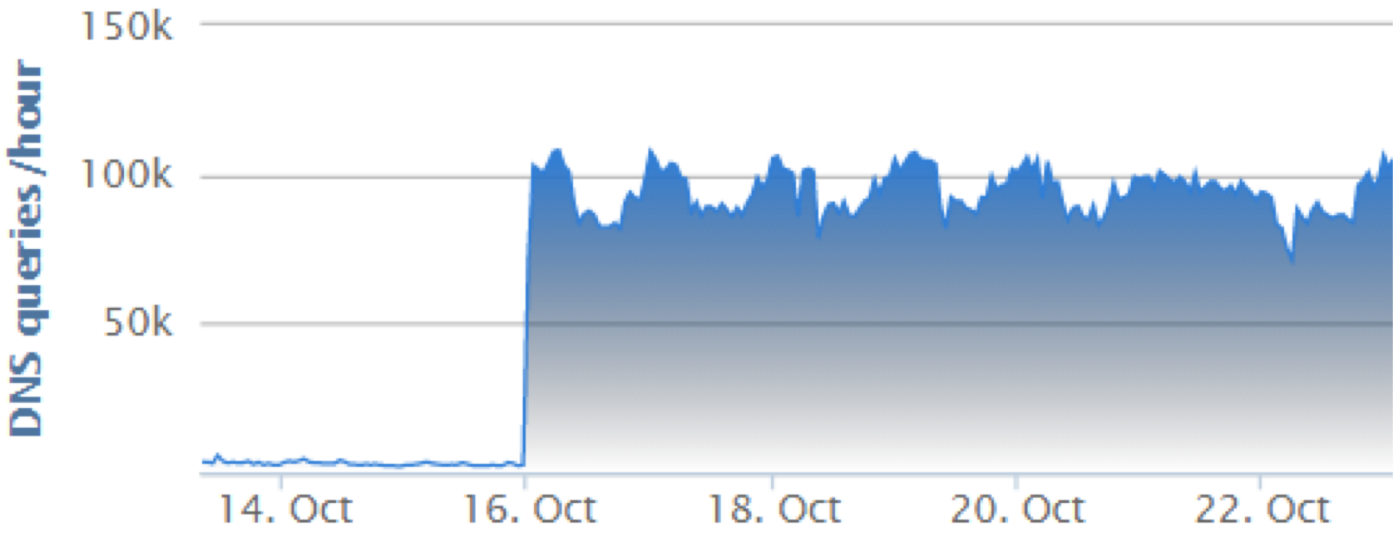
#WANNACRY (AUTUMN 2017)



INVESTIGATE

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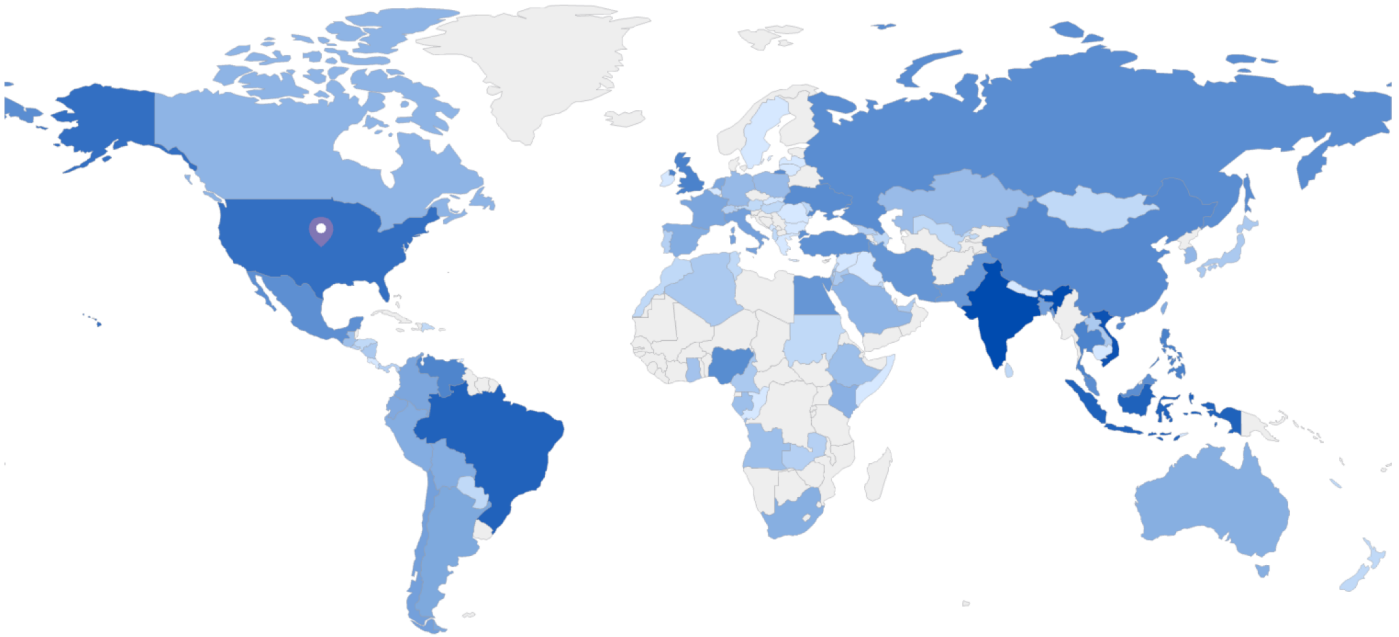
#WANNACRY (GEOGRAPHIC DISTRIBUTION)



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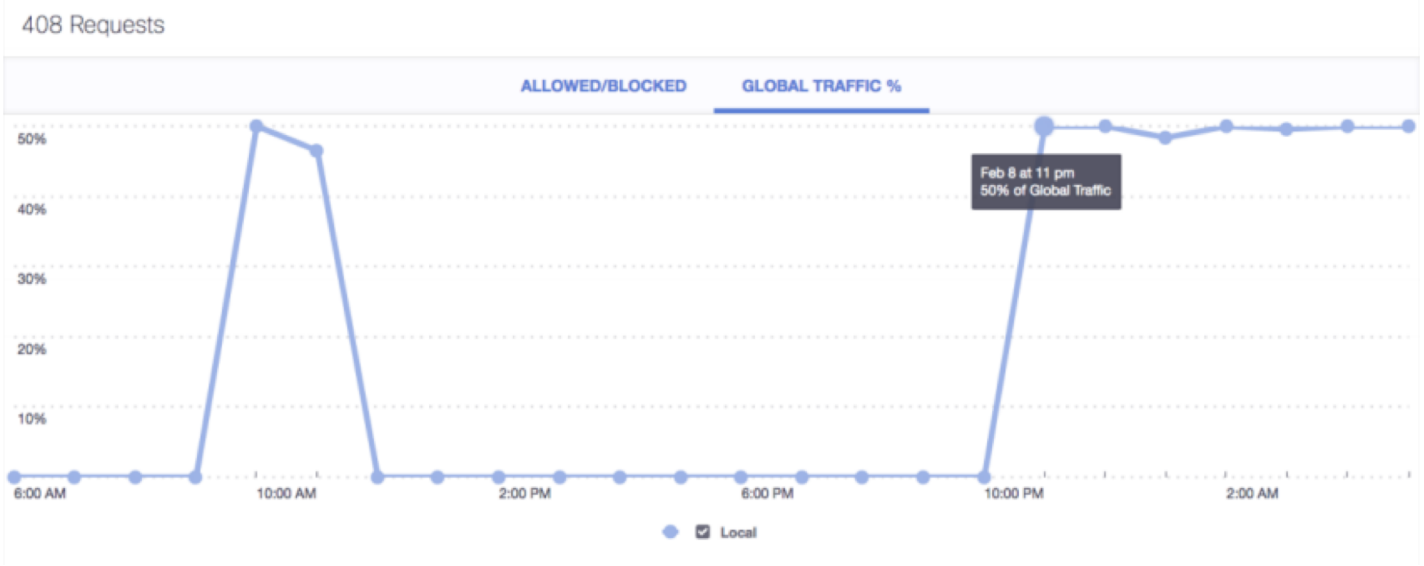
TARGETED MALWARE



ARCHITECTURE

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DEPLOYMENT MODES

- Networks
- Internal Networks (VA)
- Network Devices
  Roaming Computers
- Mobile Devices

ARCHITECTURE

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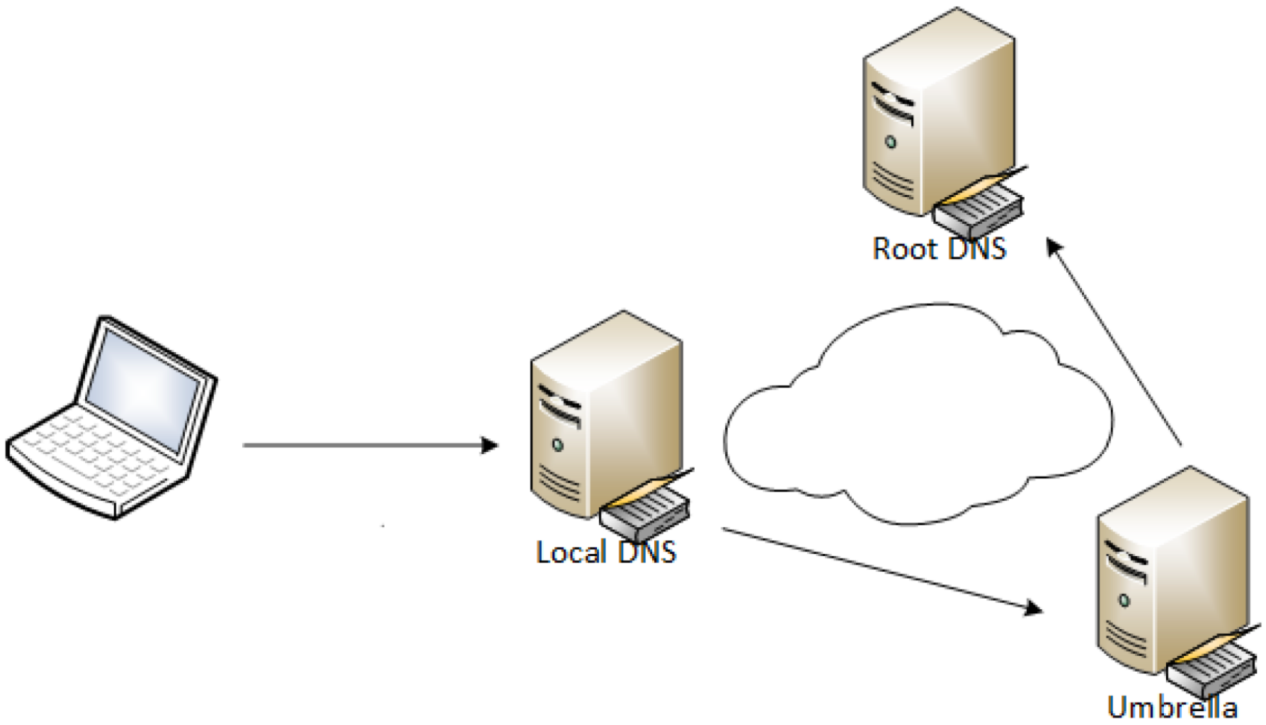
NETWORKS



ARCHITECTURE

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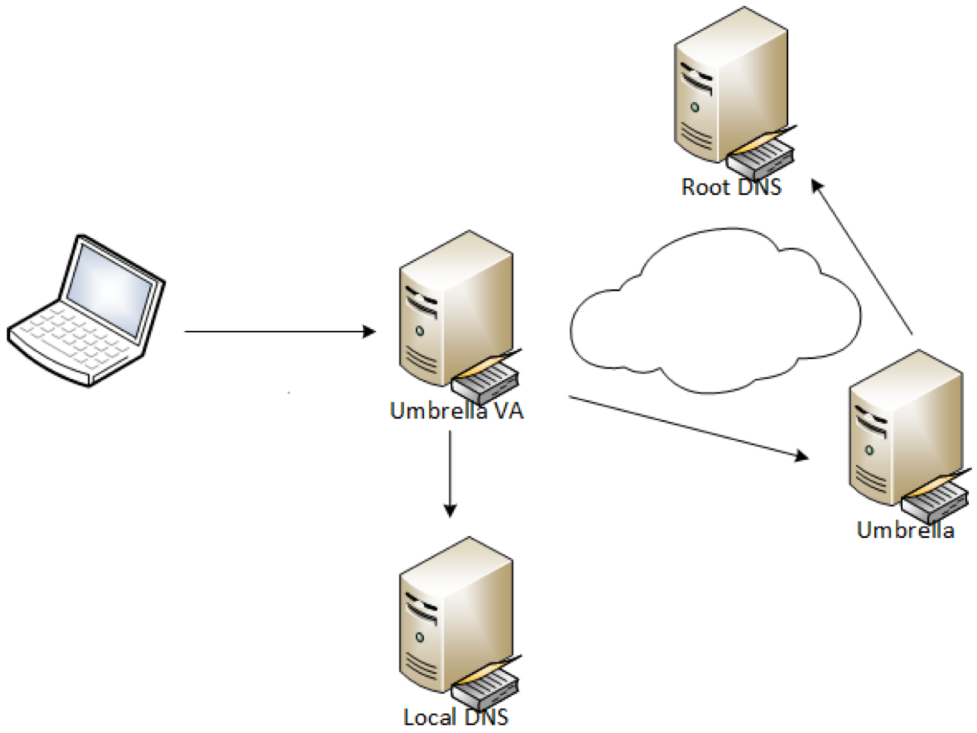
INTERNAL NETWORKS



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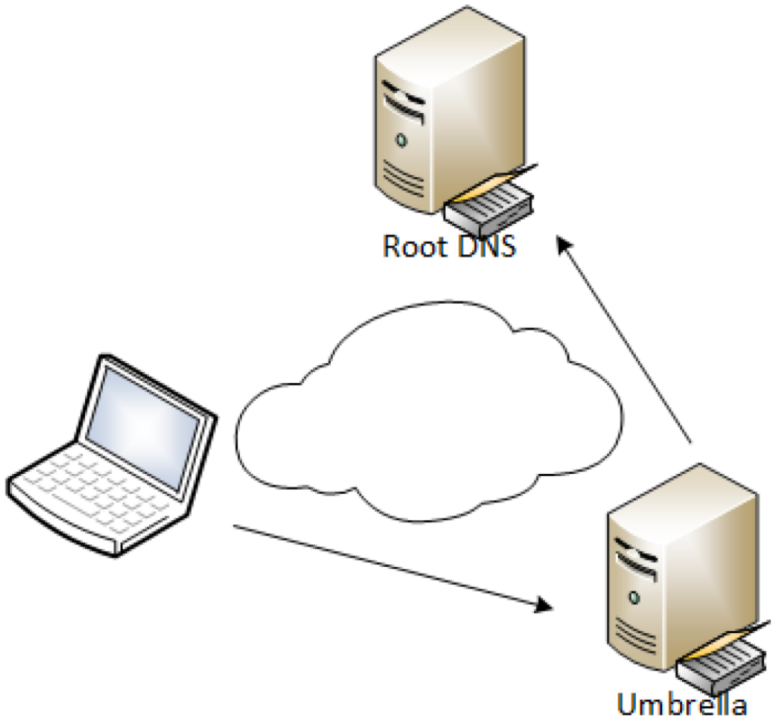
ROAMING CLIENTS



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HIGH AVAILABILITY (GLOBAL)

Anycast:

- 208.67.220.0/24 (.220 and .222)
- 298.67.222.0/24 (.220 and .222)

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HIGH AVAILABILITY (LOCAL)

Windows:

- timeout 1s
- attempts 1
- use the last one for 15m

OS X:

- timeout 1s
- attempts 2
- use the last one for 10m

Linux:

- timeout 5s
- attempts 2
- use always the first one

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~~Know your network~~

or

Start with non blocking policy

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Multi-Layer Security

1. DNS: Cisco Umbrella
2. Url Filtering

DEMO


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