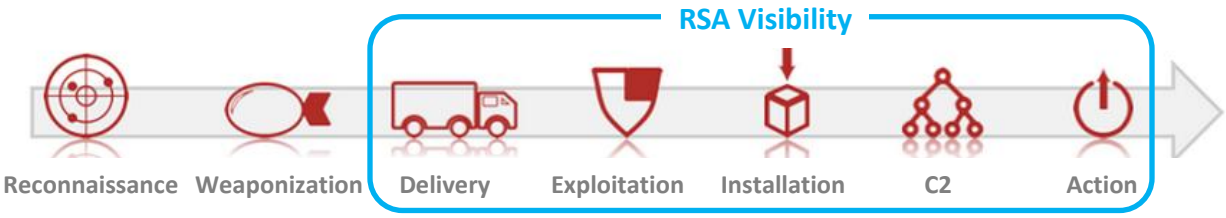
SPEAR PHISHING



WHAT IS SPEAR PHISHING?

Spear phishing is an attempt to entice a specifically targeted victim to open a malicious attachment or visit a malicious website with the intent of gaining insight into confidential data and/or acting on nefarious objectives against the victim's organization. A common tactic used by an attacker is a spoofed email address designed to look like it's coming from a source that is trusted by the victim. Reconnaissance and social engineering tactics may also help produce content and wording that makes the delivery email more believable to the victim.

A Typical Attack Scenario
A common tactic used in spear phishing campaigns is delivery of a malicious file as an email attachment. The attachment is often a common file format (zip, rtf, doc, xls) with an embedded executable or exploit that serves to provide the attacker a foothold in the environment. One common delivery mechanism is by way of an executable file embedded within an obfuscated zip:

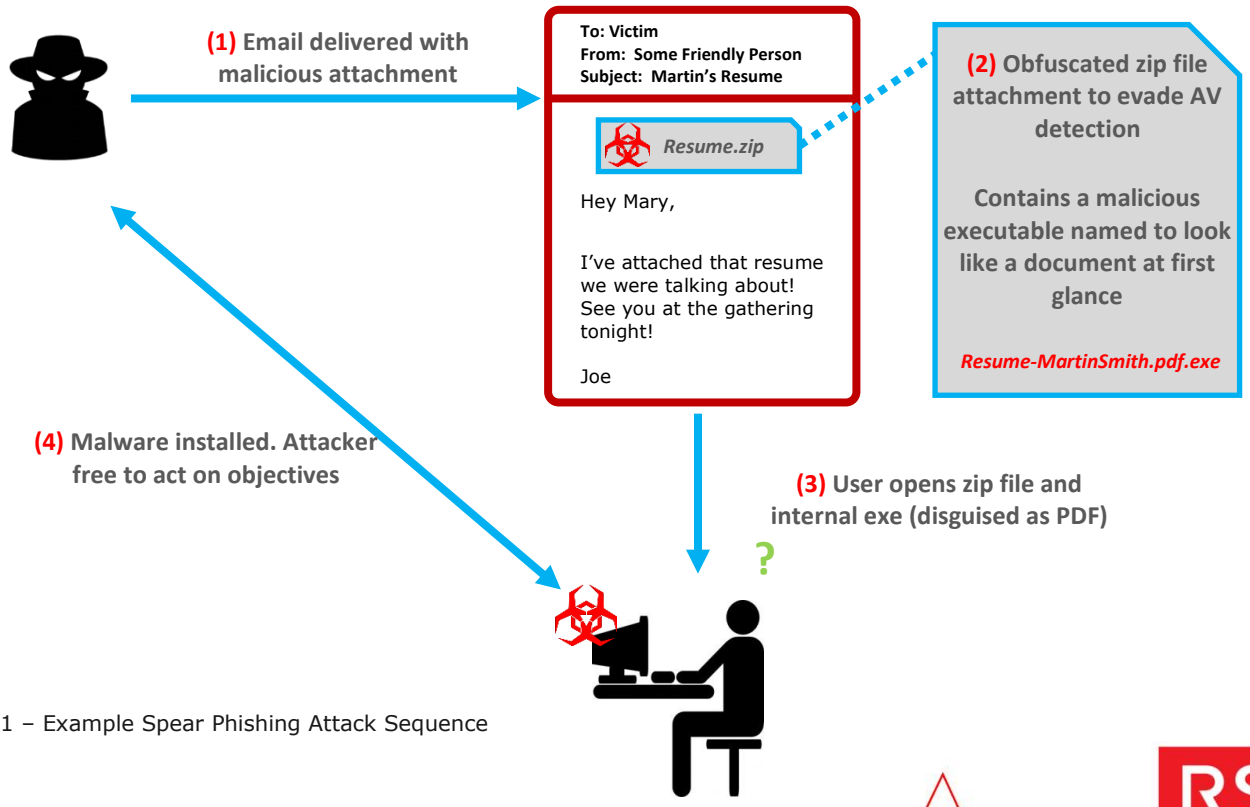


Figure 1 – Example Spear Phishing Attack Sequence

Detection and Response
A motivated attacker can get a weaponized file through traditional signature-based email security solutions. Traditional tools must rely on signatures and are easily left blind by intentional obfuscation of attachments and embedding of unique malicious code. In order to effectively respond to spear phishing attacks, defenders must maximize visibility into each stage of the attack lifecycle in order to understand the delivery mechanism, the infection (i.e. did the user fall for it), and the impact to the business by having full visibility into network, endpoint, and user activity. The following chart contrasts the visibility by attack stage into an attacker's tools, tactics, and procedures (TTPs) provided by traditional tools with the RSA Advanced SOC Portfolio:

	Delivery Targeted Email Attachment Embedded Links	**Exploit/Installation** Opening of targeted malware on the endpoint Installation and hooking into the system	**C2** Malware Beaconing	**Action** Data Exfiltration Lateral Movement Disruption
AV/FW/IDS/IPS:				
Traditional SIEM:				
RSA ASOC:				

No Visibility	Partial Visibility/Signature	Full Visibility

The ability to reconstruct the entire email session (analysts are great at confirming whether an email is truly phishing) as well as extract and perform analysis on all attachments is crucial to understanding the delivery mechanism. The ability to extract the initial payload is an invaluable way for investigators to perform deep analysis on potentially malicious files. Furthermore, the only way to truly determine whether or not an end user fell victim to the attack is to have deep visibility into the endpoint without relying on signature-based anti-virus solutions (a motivated attacker can easily evade AV).

SPEAR PHISHING VISIBILITY WITH RSA ASOC – DETAILS

Key solutions: RSA Security Analytics for Packets, RSA ECAT

In our example, RSA Security Analytics for Packets detects a suspicious zip file as an attachment to an email being sent to an employee:

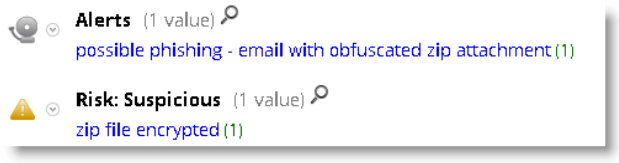


Figure 2 – RSA Security Analytics Alert

The analyst then drills through to view the entire email message to get a clearer picture:

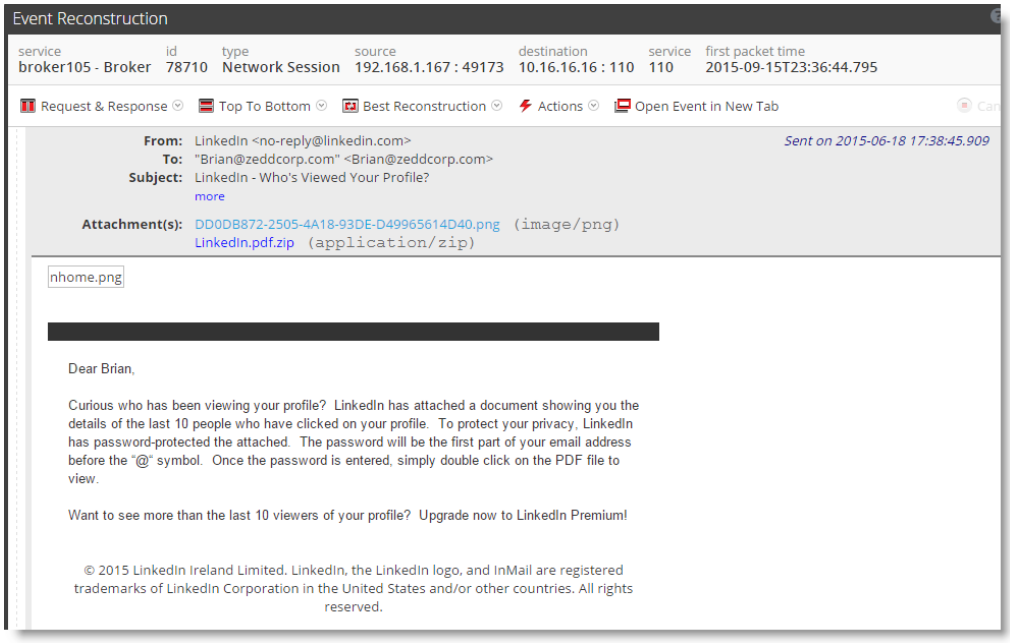


Figure 3 – A Closer Look at the Email Message

While this may look normal to an unsuspecting end user, the analyst can quickly see the suspicious nature of this email by examining the headers, paying attention to the wording of the email message, and examining the atypical attachment. The analyst may later choose to extract the attachments from the email for further analysis. Having confirmation that this is most likely a spear phishing attack, the next logical question is "did the user click on the attachment?" To answer that, the first thing the analyst needs to determine is which machine the user was working from when the email was received. Looking at the metadata of the reconstructed email, the analyst can see the username "bcline" has been associated with this email address through a context feed deployed in RSA Security Analytics:

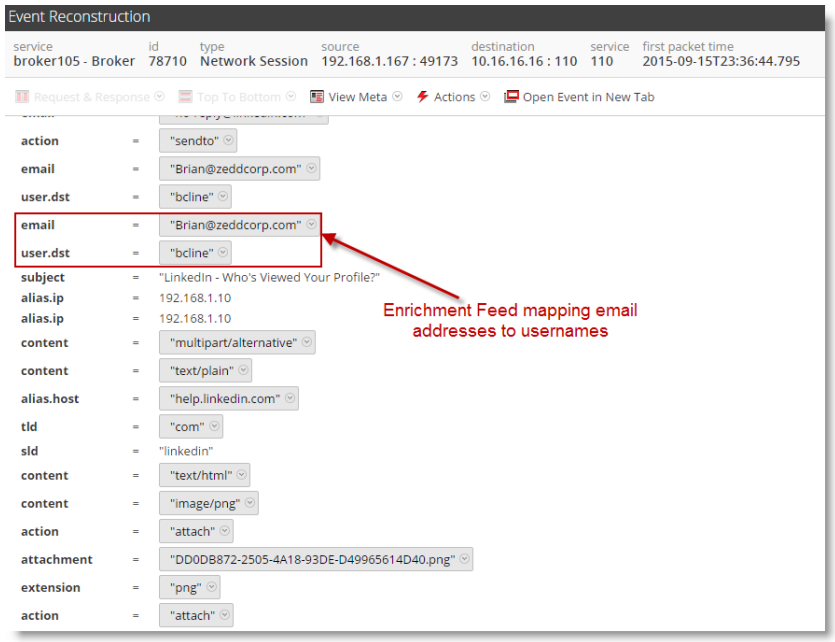


Figure 4 – Metadata from the Email

With the username determined, any related logon history can be retrieved from the domain controller logs in order to focus the investigation on the proper endpoint:

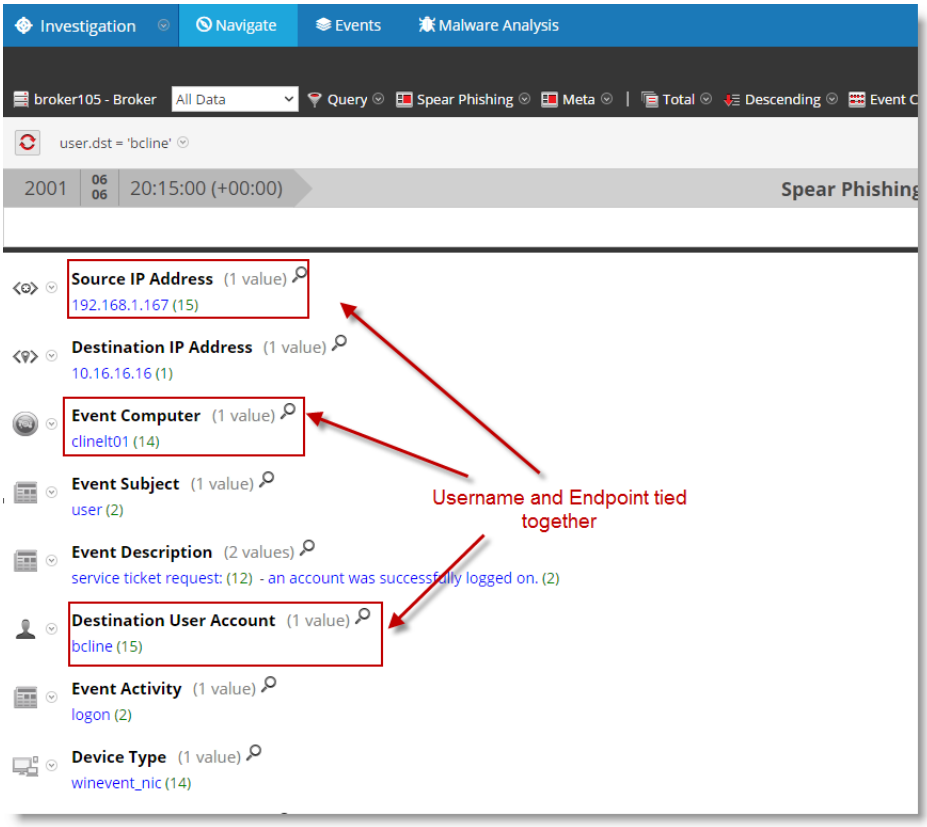


Figure 5 – Using Logs to Determine Where the User was Logged in at the Time of the Email

Next, knowing the machine name, the analyst can pivot directly into RSA ECAT see whether or not any malicious behavior has been detected:

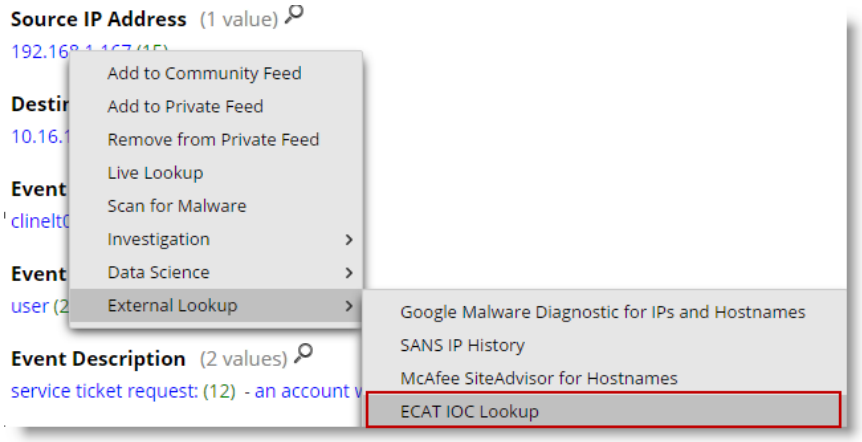


Figure 6 – Direct Pivot into ECAT

The pivot brings up the machine summary page for CLINELT01:

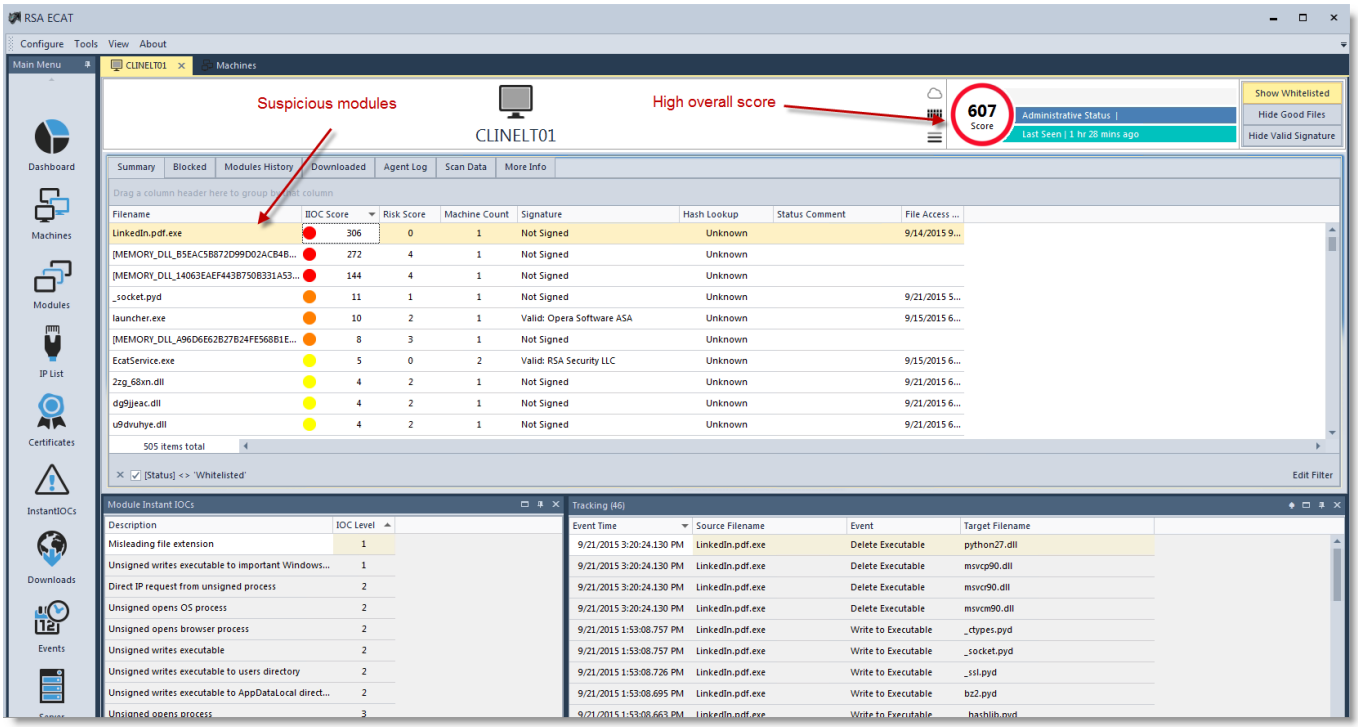
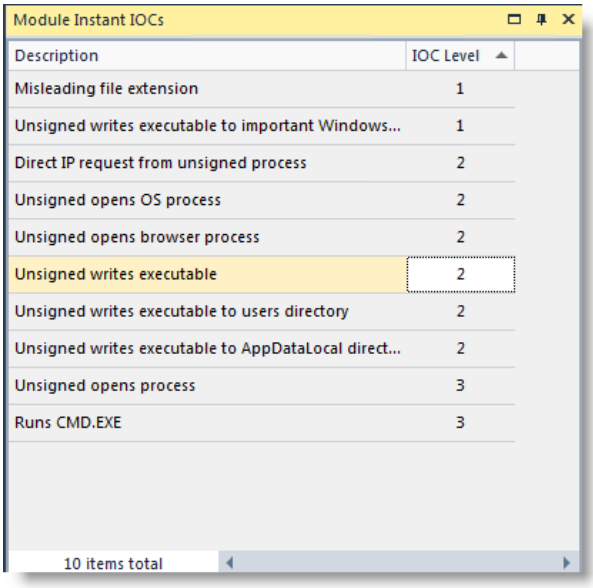


Figure 7 – Summary Information of What RSA ECAT Sees on CLINELT01

The analyst immediately notices that RSA ECAT is reporting a highly suspicious score. The summary table makes reference to a number of malicious processes (with high scores in red) including injected DLLs (top) that are all reporting bad behavior. Most notable is the attachment from the original email, Linkedin.pdf.exe. Drilling into LinkedIn.pdf.exe, the analyst can see a large number of suspicious properties, behaviors, and network connections:



Figures 8 – 11 Suspicious Instant IOCs Tied to Linkedin.pdf.exe's Behavior

The Module Instant IOCs show all things impacting the score of the executable and call out many suspicious behaviors such as opening a command shell, spawning browser processes, and making direct connections to an IP address on the internet. The analyst can get a timeline of many of these behaviors by opening up the "Tracking" and "Network" tabs:

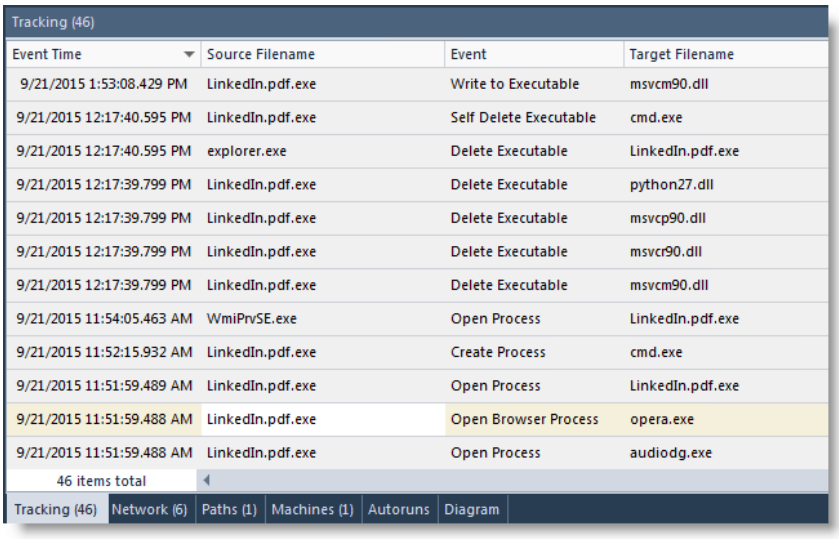


Figure 9 – Full Behavior Tracking Timeline

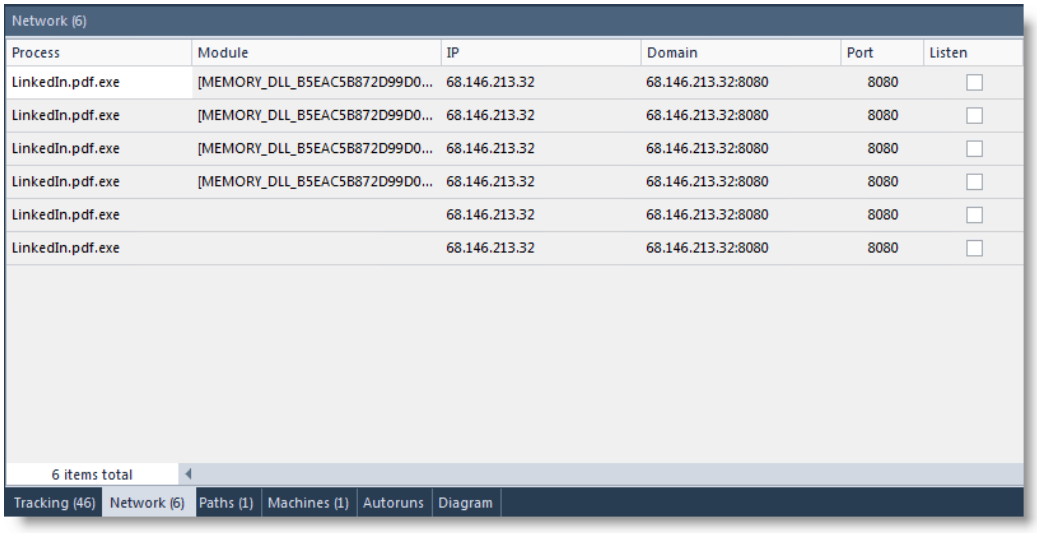


Figure 10 – Network Tracking for LinkedIn.pdf.exe

The analyst notices a lot of activity generated by the suspicious executable, using an injected DLL to connect to 68.146.213.32 over port 8080 and will pivot back into RSA Security Analytics to see if anything else can be gathered. Before doing that, however, the analyst quickly browses to the "Machines" tab to see if this executable has been seen on any other endpoints in the environment:

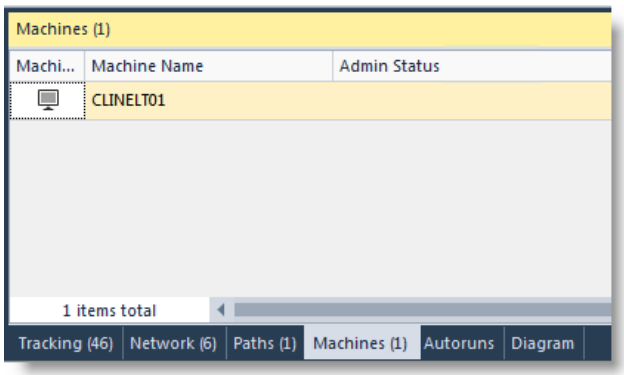


Figure 11 – Validating that CLINELT01 is the Only Endpoint with this Executable

Focusing back on the network data, the analyst can pivot back into RSA Security Analytics to investigate:

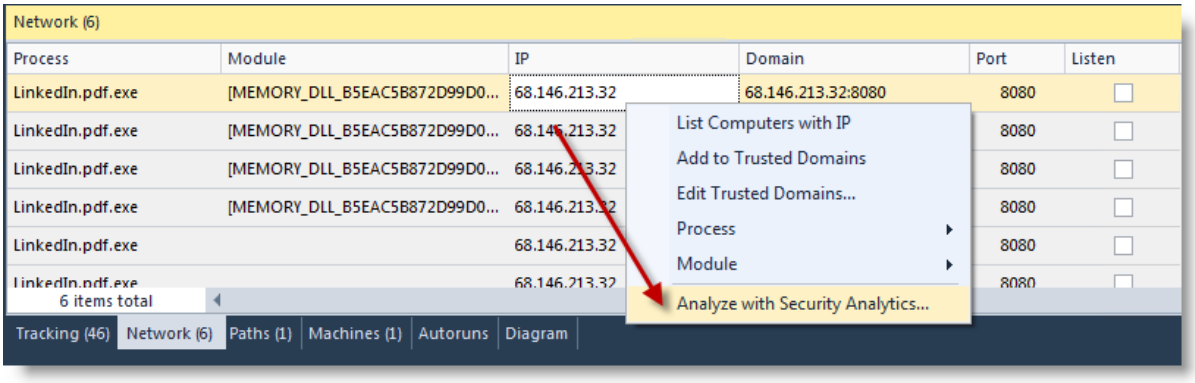


Figure 12 – Pivot into RSA Security Analytics to Investigate Network Traffic to 68.146.213.32

This drill will bring the analyst directly to a view of all network traffic destined to 68.146.213.32 in order to determine if anything else happened:

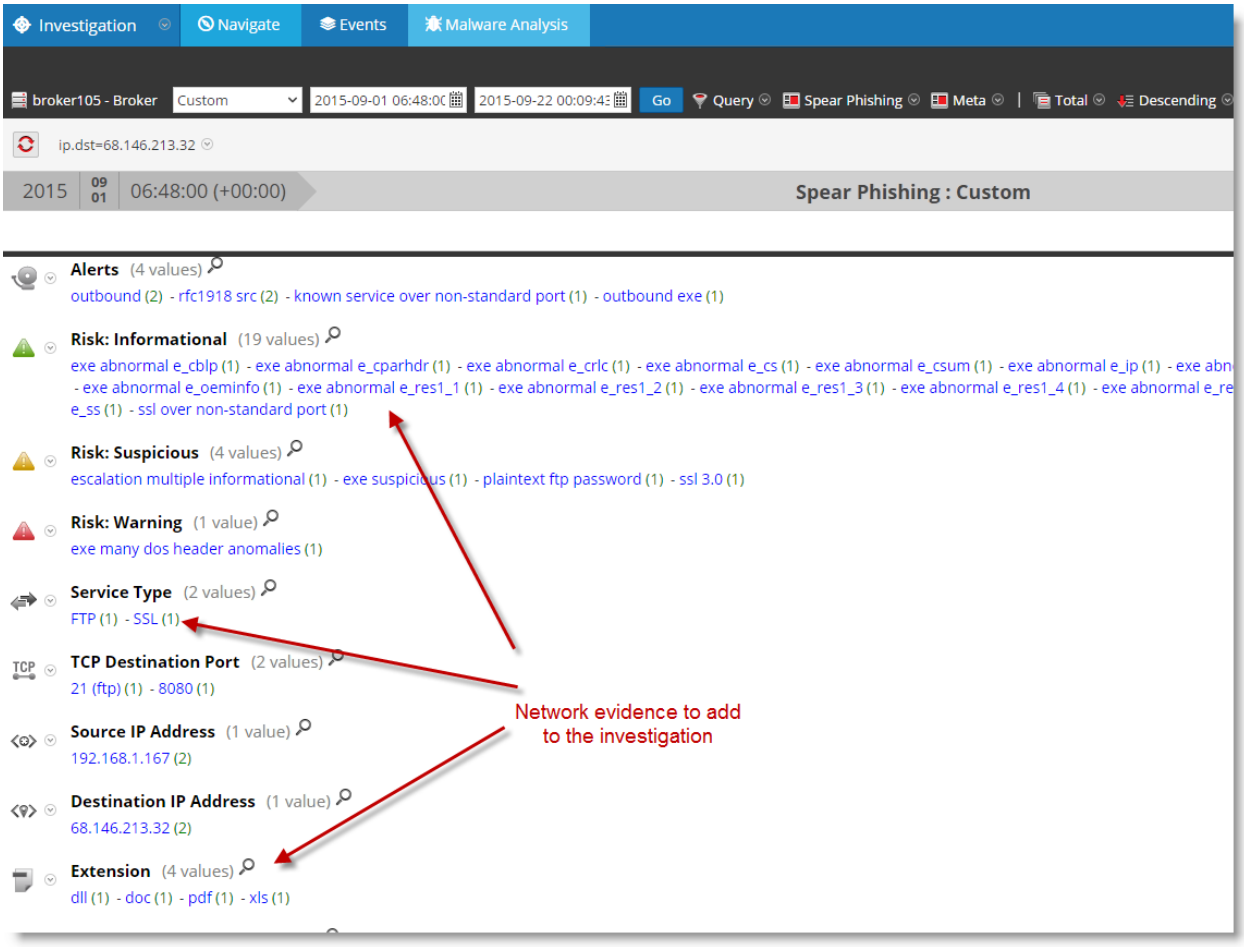


Figure 13 – Continuing the Network Investigation with New Information Gleaned from RSA ECAT

The analyst can now drill into the connection on port 8080 that was seen in RSA ECAT, or pivot to other notable activity, specifically the FTP connection outbound to the same implicated IP address. With a couple clicks, they open up the FTP session and reconstruct it to a human-friendly view:

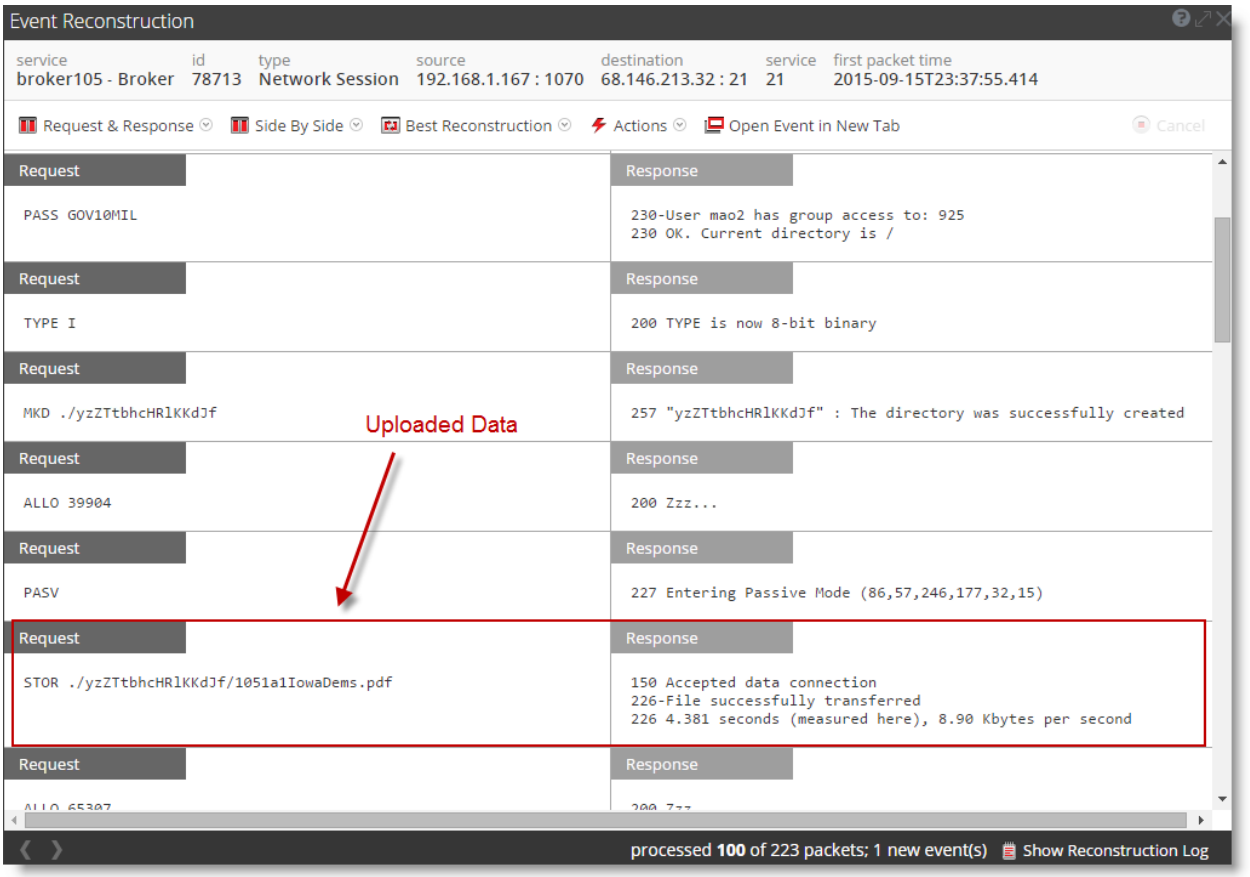


Figure 14 – Evidence of Data Exfiltration via an FTP Session to our Attacker at 68.146.213.32

Using RSA Security Analytics and RSA ECAT, the analyst was able to gain visibility into the Delivery, Exploitation, Installation, Command-and-Control, and Action phases of this attack.

REFERENCES

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