Polaris Sight RESEARCH

March 22, 2018

Version 1.0

STUDENTS

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## Research Documentation

This section of our project consists of an analysis of similar products and a survey with relevant individuals that would be interested in our product.

Additionally, a quick summary of the attributes needed when investigating different incident scenarios. Regarding our survey; an Incident response team has been contacted that would be available to review our initial plans for the product.

The aim of this research will be to identify:

* Analysis of similar products
* Survey of relevant customers
* A list of optimal open source incident response tools
* Designs and functionality that fulfil use cases

The outcomes of the research will be fully incorporated into the design.

|  |  |  |
| --- | --- | --- |
| Story ID | Story Title | Story Points |
| 1 | Elicitation, Requirement Analysis and Project Scoping |  |
| 2 | Analysis of market and similar products |  |
| 3 | Revenue model |  |
| 4 | Formal literature review |  |
| 5 | Survey of customers |  |
| 6 | Creation of holistic view of the product; project management, report and presentation |  |
|  | Story Point Sub-Total: |  |

**Incident Response System Analysis**

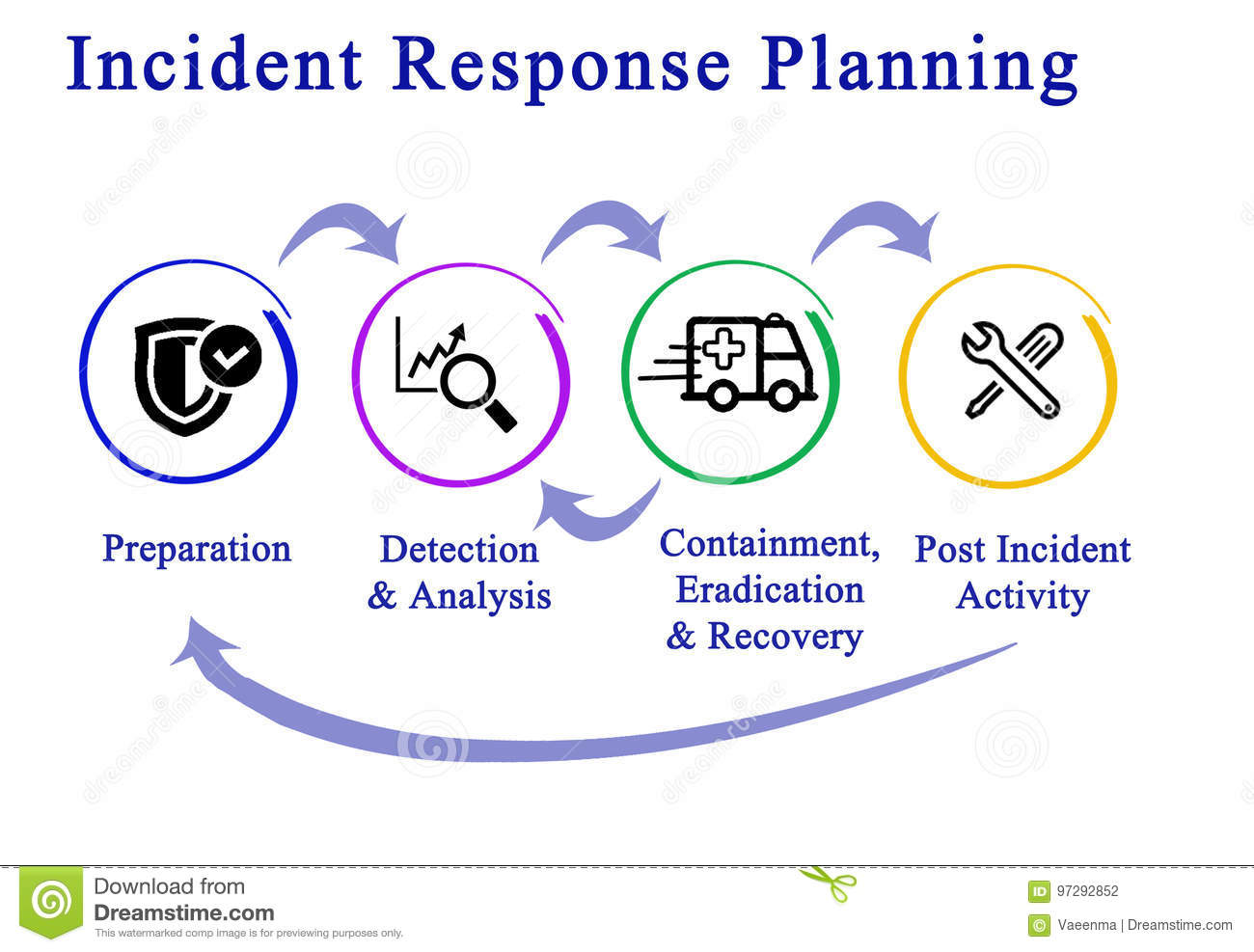
The incident response system analysis for our product has been restricted to the following:

* All researched incident response systems must be open source
* Is the incident response system supported on all operating systems?
* Can the tool perform all the key tasks of an incident response system?

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Open Source –  Incident Response System | GRR Rapid Response | CimSweep | CIRTkit | Kolide | MozDef | TheHive | OSquery | ELK Stack |
| Ease of Use | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |
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| Network Monitoring | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  |
| Perform Forensic Hunt | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  |
| Perform Log Queries |  |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |
| Log Storage | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |
| IOC Analysis |  |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  |  |  |  |  |
| Log Visualisation |  |  |  |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |
| Real Time Feed | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |  |  | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) | [Image result for green tick](https://www.google.com.au/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=2ahUKEwjdn_CIif7ZAhVCFJQKHe-vCHwQjRx6BAgAEAU&url=http://www.i2clipart.com/clipart-green-tick-28a8&psig=AOvVaw237gYnaseZmmQ4aF-qv7BV&ust=1521744094444794) |

**Incident Response Life Cycle – Relevant Tools**

A list of possible tools that could improve our incident response tool has been collected. These tools have been selected keeping in mind what is involved in an incident response. Below is a typical life cycle diagram used to demonstrate how an incident response system works.



**Detection & Analysis**

**Evidence Collection**

[bulk\_extractor](https://github.com/simsong/bulk_extractor) - bulk\_extractor is a computer forensics tool that scans a disk image, a file, or a directory of files and extracts useful information without parsing the file system or file system structures. Because of ignoring the file system structure, the program distinguishes itself in terms of speed and thoroughness.

Status: Open Source | Supports: Windows, Linux & OS X

**Incident Management**

[FIR](https://github.com/certsocietegenerale/FIR/) - Fast Incident Response (FIR) is a cybersecurity incident management platform designed with agility and speed in mind. It allows for easy creation, tracking, and reporting of cybersecurity incidents and is useful for CSIRTs, CERTs and SOCs alike.

Status: Open Source | Supports: Windows, Linux & OS X

**Log Analysis Tool**

[Lorg](https://github.com/jensvoid/lorg) - a tool for advanced HTTPD logfile security analysis and forensics. Useful for websites that have been compromised.

Status: Open Source

**Sandboxing**

[Virustotal](https://www.virustotal.com/) - Virustotal, a subsidiary of Google, is a free online service that analyzes files and URLs enabling the identification of viruses, worms, trojans and other kinds of malicious content detected by antivirus engines and website scanners

**Attributes of Compromise:**

Domains

* **High**
  + Same Actor Controlled 2nd-level
* **Medium**
  + Watering Hole
  + Compromised
* **Low**
  + Same Dynamic DNS Provider
  + Network Comms

IP Addresses

* **High**
  + Domain Resolutions
* **Medium** 
  + IPv4 Address
  + Server IP Port Combination
* **Low**
  + Same Netblock

Email

* **High**
  + Actor-Owned Email
* **Medium**
  + Spear-Phishing Sender
  + Domain Registrant Email
* **Low**
  + Phishing target

Malware

* **High**
  + Same Compile Time
  + Custom Tool, in use by one group
* **Medium**
  + Unique Strings
  + Mutex
* **Low**
  + Publicly Available Tool
  + Tool Author

Victim

* **High**
  + Same computer / host
* **Medium**
  + Same compromised account
* **Low**
  + Same victim organisation

Methodology

* **High**
  + Registry Key change
* **Medium**
  + Unique Password or File path
* **Low**
  + Overall methodology