West Virginia
# Purchasing Division

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Charleston, WV 25305
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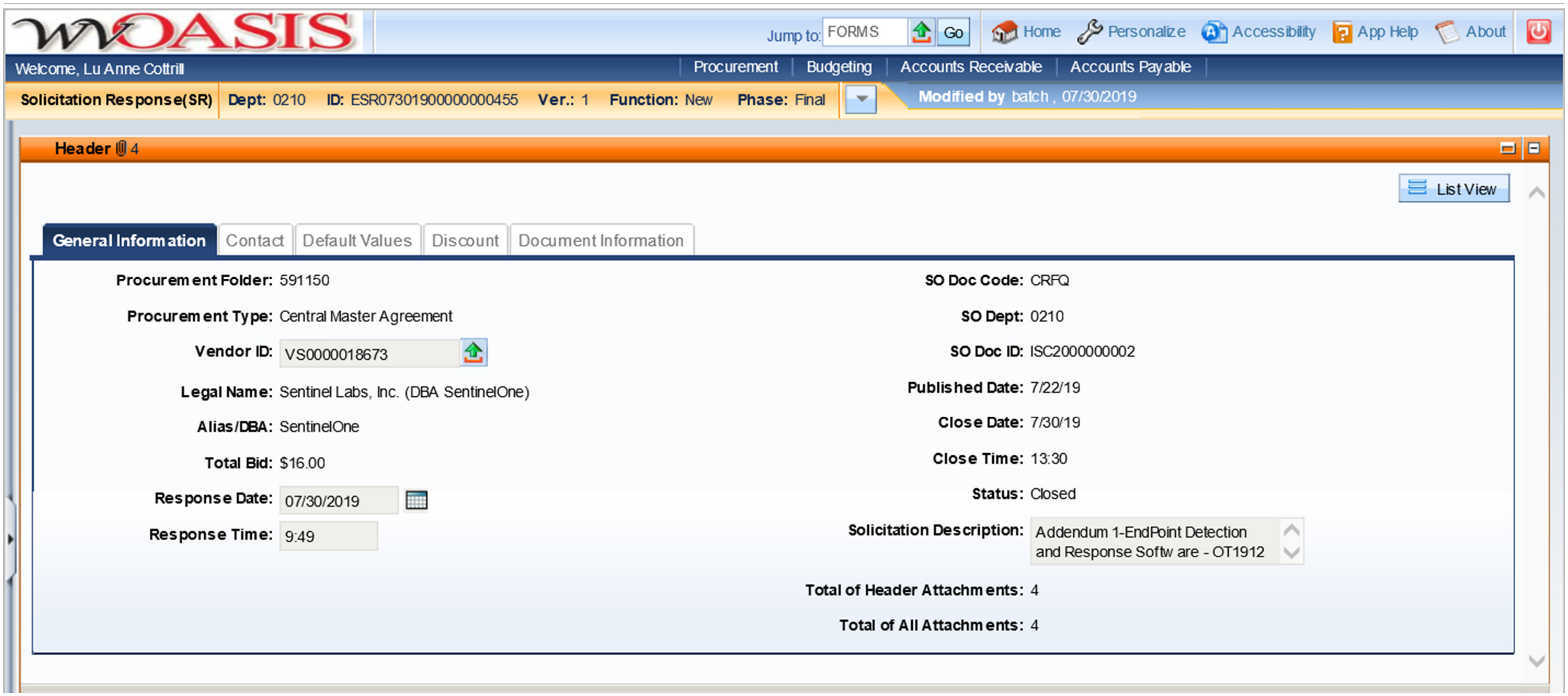
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at *wvOASIS.gov*. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at *WVPurchasing.gov* with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.



Welcome, Lu Anne Cottrill

**Solicitation Response(SR)** **Dept:** 0210 **ID:** ESR07301900000000455 **Ver.:** 1 **Function:** New **Phase:** Final

**Modified by** batch , 07/30/2019

| | | | |
|---|---|---|---|
| **Procurement Folder:** | 591150 | **SO Doc Code:** | CRFQ |
| **Procurement Type:** | Central Master Agreement | **SO Dept:** | 0210 |
| **Vendor ID:** | VS0000018673 | **SO Doc ID:** | ISC2000000002 |
| **Legal Name:** | Sentinel Labs, Inc. (DBA SentinelOne) | **Published Date:** | 7/22/19 |
| **Alias/DBA:** | SentinelOne | **Close Date:** | 7/30/19 |
| **Total Bid:** | $16.00 | **Close Time:** | 13:30 |
| **Response Date:** | 07/30/2019 | **Status:** | Closed |
| **Response Time:** | 9:49 | **Solicitation Description:** | Addendum 1-EndPoint Detection and Response Softw are - OT1912 |
| | | **Total of Header Attachments:** | 4 |
| | | **Total of All Attachments:** | 4 |

Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

# State of West Virginia
# Solicitation Response

**Proc Folder :** 591150

**Solicitation Description :** Addendum 1-EndPoint Detection and Response Software - OT1912

**Proc Type :** Central Master Agreement

| Date issued | Solicitation Closes | Solicitation Response | Version |
|---|---|---|---|
| | 2019-07-30<br>13:30:00 | SR 0210 ESR07301900000000455 | 1 |

**VENDOR**

VS0000018673

Sentinel Labs, Inc. (DBA SentinelOne)

SentinelOne

**Solicitation Number:** CRFQ 0210 ISC2000000002

**Total Bid :** $16.00 **Response Date:** 2019-07-30 **Response Time:** 09:49:26

**Comments:** Thank you for allowing SentinelOne to bid on the WV EDR RFP. We look forward to discussing our proposal with you.
Lane Vargo
Regional Sales Manager
SentinelOne
703-608-6223
lanev@sentinelone.com

**FOR INFORMATION CONTACT THE BUYER**

Jessica S Chambers
(304) 558-0246
jessica.s.chambers@wv.gov

**Signature on File** **FEIN #** **DATE**

**All offers subject to all terms and conditions contained in this solicitation**

| Line | Comm Ln Desc | Qty | Unit Issue | Unit Price | Ln Total Or Contract Amount |
|---|---|---|---|---|---|
| 1 | Overall Total for Contract Items 1 & 2 with Opt Renewals | 1.00000 | LS | $16.000000 | $16.00 |

| Comm Code | Manufacturer | Specification | Model # |
|---|---|---|---|
| 43233204 | | | |

**Extended Description :**

4.1.1 Contract Item 1: Containment & Remediation

4.1.1.1 The Vendor must provide a software and/or service that is capable of supporting a minimum of 2,000 endpoints throughout the State of West Virginia

SentinelOne RFP Response
State of West Virginia
July 29, 2019

SentinelOne™

# Table of Contents

# Contact Information

This RFP is being submitted by:

Lane Vargo

SentinelOne

lanev@sentinelone.com

703-608-6223

# Executive Summary

Thank you for this opportunity to respond to this RFP. SentinelOne thanks you for your interest and welcomes any questions or inquiries.

## Company

SentinelOne, founded in 2013 and headquartered in Mountain View, California, is a cybersecurity software company. Our 2,500+ customers, including 3 of the Fortune 10, come from many verticals including aviation, healthcare, finance, energy, entertainment, cosmetics, retail, government, law, manufacturing, services, and many others. SentinelOne is excited to have been chosen by Gartner as a Customer Choice award recipient in 2019's EDR (endpoint detect and respond) category and in 2018's EPP (endpoint protection platform) category.

## The Business Problem

Most organizations are re-thinking their security stack because the scourge of threats worsen each year. At the same time, organizations are competing for cybersecurity talent within a limited pool of candidates. We find that customers seek protection and visibility that keeps up with clever adversaries, but they also want solutions that are simpler to operate, not more complex. Organizations simply want more value. At SentinelOne, we build products that support these themes:

- Lowering total cost of ownership (TCO) with better technology that's simpler to operate by fewer staff thereby saving labor costs
- Reducing risk by handling today's newest threat vectors proactively. Our product protects data with prevention, detection, responses and threat hunting in one package.
- API integration of multi-vendor security tools to promote inter-tool automation and orchestration thereby providing faster, more consistent responses

- Making threat hunting easier by reducing guess work. With SentinelOne, hunting becomes an activity that even novice investigators can successfully execute. This is important in a tight IT personnel market.
- Providing assistance to the security operations center (SOC) through our optional Vigilance SOC service. Providing incident response services when needed.
- Compliance with global standards including GDPR and ISO 27001
- Flexibly management options. We offer Cloud, on-premise, or hybrid infrastructure options with clear policy settings.
- ActiveEDR threat hunting and response for autonomous (no cloud reliance) protection from file-based and file-less attacks

It is widely understood that legacy endpoint protection approaches that use static signature-based technology, are no match for today's advanced cyber threats. Furthermore, the lack of protection mechanisms alongside traditional incident response tools leaves a huge gap between detection and remediation during which organizations are highly vulnerable.

Furthermore, Security Operations Center (SOC) Teams are drowning in massive quantities of raw data produced by EDR-centric solutions that lack good protections. There is simply not enough time to investigate everything. Likewise, System Operations/Administration teams deal with the administration of multiple security agents as well as potential issues created by conflicting agent versions. This can cause missed detections and infections resulting in the user having to physically send their laptops back to the IT depot for repair and re-imaging. End user productivity suffers because their machines are bogged down by these agents or in extreme cases, not having a machine to work with at all while it's being repaired.

## Offering Overview

SentinelOne offers a fundamentally new, groundbreaking approach to server and workstation security. Built in-house from the ground up, the SentinelOne platform unifies prevention (EPP), detection & response (ActiveEDR), fast recovery, incident response threat hunting and security suite features into a single-agent solution for modern Windows, legacy Windows, Mac, and Linux. Customers use SentinelOne to protect user workstations and servers running natively or within VDI infrastructure or the cloud. Though SentinelOne is primarily a SaaS solution with data centers situated within AWS on three continents (North America, Europe, and Asia), an on-premise management solution is also offered for customers with closed networks. Our solution offers protection, visibility, simplicity and automation for all business or governmental organizations. SentinelOne use cases include:

- Replacement of legacy AV or sub-standard "nextgen" EPP
- Replacement of passive EDR products for customers buried in the alerts and the data these products produce

- Agent consolidation projects aimed at reducing the quantity of agents currently used at the endpoint
- As a complementary security control alongside other security stack components

SentinelOne's products identify and neutralize malware and fileless cyber threats while adding visibility and ease-of-use for threat hunters. SentinelOne solves these organizational business challenges:

- Protection and response automation to drastically reduce attacker dwell time
- Fast, automated remediation and recovery to get affected users working again in minutes
- Fewer alerts and more context for IT staff and Security personnel fatigued by their current products
- Threat hunting ease of use to aid in the overall shortage of highly skilled threat hunters
- Agent consolidation
- API integration with other products

When you take a look at SentinelOne, you will see that our product addresses these types of problems with an effective combination of EPP+EDR. First, SentinelOne is the most effective platform at system protection. Second, we offer a variety of responses including the unique ability to rollback Windows machines remotely, taking the chore of re-imaging off of everyone’s already full plate. Third, when you need detection and visibility for activities like threat hunting and Indicator of Compromise (IoC) identification, it’s there for you with our ActiveEDR feature that pre-correlates benign data at the endpoint. Pre-correlation makes hunting far simpler because related events maintain a contextual relationship making it easier for analysts to see attack flows.

SentinelOne’s core value is summarized as a proven ability to keep unauthorized, destructive code out of your environment while providing detailed “what if” searching capabilities for hunters and responders all in one agent.

# Services

SentinelOne supplements its products with a full menu of optional services including Managed Detect and Respond (MDR) to supplement customer Secure Operations Centers (SOC), Incident Response (IR) assistance, a variety of technical support plans and Technical Account Managers (TAM) for focused customer attention. SentinelOne is the fastest growing endpoint vendor on the market today.

# Differentiators

Based on the technical knowledge and understanding of our engineering team, SentinelOne continues to innovate the endpoint protection (EPP) and endpoint protection and response (EDR) market space to reflect customer requirements on both the technical and business fronts. Some of our innovations include the following:

**#1 SentinelOne is a Comprehensive Security Platform**

We deliver EPP + EDR + Security Suite features in a multi-tenant, multi-site platform with simple licensing. We offer SaaS, on prem and hybrid-cloud implementation. Our single agent, single code base architecture offers enterprises critical features allowing for the elimination of other product agents.

**#2 SentinelOne Agents are Smarter and Faster at Prevention, Detection, and Response**

SentinelOne agents feature exceptional tamper resistance and have their prevention, detection, and response logic local to the agent itself shrinking attack dwell time significantly. Our approach is in contrast to our competitors whose agents upload raw data to their clouds, process it for detections, then send a response command. All of this processing takes too much time and in some cases the adversary has pivoted and moved on. SentinelOne is not cloud reliant for detection and response. We encourage customers to perform sophisticated efficacy testing both online and offline.

**#3 Quick Recovery**

SentinelOne’s patented Remediation and Rollback capabilities get users working again with minimal downtime. We offer one-click remediation to reverse unwanted system changes and one-click Windows rollback to restore any affected data. This ease of use also aids overworked IT staff. Less re-imaging. Less tedious work. Fewer user complaints.

**#4 SentinelOne Aids Analysts by Eliminating Tedious Work**

Analysts are drowning in alerts and Threat Hunters can't piece together evidence fast enough. SentinelOne's approach delivers context quickly by automatically grouping related data and alerts. The result is faster situational awareness. SentinelOne's ActiveEDR hunting capability is engineered for experienced threat hunters that want to hunt on 90 days of historical benign data. Related benign data is stamped with a unique TrueContext ID at the agent before it is stored in our cloud for future customer use. TrueContext pre-correlation is a notable EDR technology evolution making it easier for analysts to pivot from an artifact of interest to a pre-correlated set of related events. This advancement is different from our competitors that simply upload a multitude of atomic, independent, non-correlated benign events requiring the analyst to have knowledge and intuition of what they should do next.

**#5 SentinelOne Vigilance (optional) Managed Detect & Respond Service**

Sleep better at night and handle the details in the morning. SentinelOne offers its Vigilance Managed Detect and Respond service but it is not required. This is in contrast to other vendors that require the purchase of their MDR service because it is their core detection capability. SentinelOne Vigilance complements our customer's SOC with monitoring, response assistance and deployment help.

**#6 SentinelOne's Powerful API Enables 3rd Party Integration**

SentinelOne can be run as a dedicated security point product or it can be integrated with your other tools to create a security machine. SentinelOne provides more ways to integrate with 3rd party products than our competitors. We include a single, well documented 2-way RESTful API with 300+ functions to automate almost every action found in the console. SentinelOne offers pre-built integrations or you can build your own with the tools we provide.

# 4.1.1.1 Containment and Remediation

### *4.1.1.2 The Vendor must provide a software and/or sevice that is capable of supporting 2000 endpoints throughout the State of West Virginia*

Yes

SentinelOne is more than capable of supporting 2000 endpoints on the platform. SentinelOne's SaaS solution can support up to 150,000 endpoints within a single cloud instance per cluster environment.

### *4.1.1.3 The Vendor must provide a software and/or sevice that can be centrally managed by a West Virginia Office of Technology Administrator*

Yes

SentinelOne's solution provides a central management console for the management of all State of West Virginia endpoints. Customer consoles, accessed via a web browser, are hosted in AWS on highly available infrastructure.

**4.1.1.4 The Vendor must provide a software and/or service that shall feature the following**

### *4.1.1.4.1 Automatically restrict potentially malicious activity to within an isolation container*

Yes

The SentinelOne solution is capable of automating the process of detection and network isolation based on policy configured.

### *4.1.1.4.2 Automatically isolate applications interacting with untrusted content from more trusted portions of the device outside the container*

While SentinelOne does not utilize application level isolation, the solution has a variety of automated and/or manual Response capabilities to control and remediate detected file-based and fileless attacks:

- Alert
- Isolate host from network. Only the console can interact with the device.
- Kill offending process or processes
- Quarantine malicious code
- Remediate (reverse unwanted system changes related to an incident, including artifact removal, droppers removed, registry keys restored, and scheduled tasks restored.
- Windows Rollback (restore affected data from Windows vss snapshot)
- Remote Shell for Incident Responders

Administrators have the ability to execute system commands remotely via the console or the API. These are examples of remote commands:

- Get configuration
- Configure firewall logging
- Decommission
- Disconnect from network / reconnect to network
- Fetch logs
- File fetch (any file)
- Initiate scan / abort scan
- Move to another site
- Reboot
- Remote shell
- Search on Deep Visibility
- Send message to agent OS UI
- Show applications
- Show agent passphrase
- Shut down

- Uninstall
- Update software
- View threats

### *4.1.1.4.3 Automatically detect and isolate potentially malicious code behavior*

Yes

SentinelOne offers real time detection and response to malicious events that occur on endpoints, including malicious scripts, abnormal PE execution, fileless malware, application and OS exploits, abnormal process activities, memory and credential scrapes, reverse shells, zero-day exploits, memory only attacks, and other attacks.

**Local Agent Logic is Not Cloud Reliant**

SentinelOne agent prevention, detect, and response logic is performed locally at the agent therefore our agents are not cloud reliant. Unlike other vendors, the agent does not have to upload data to the cloud to look for indicators of attack (IoA) nor does it need to send code to a cloud sandbox for dynamic analysis. Other vendor's cloud-centric approaches introduce a large time gap between infection to cloud detection to response at which point an infection may have spread. For example, certain Wannacry variants are shown to spread to 1000's of computers within 1 minute. SentinelOne's agent evaluates threats locally and can take automatic local responses at machine speed.

**ActiveEDR**

To identify and stop attacks, SentinelOne pioneered "ActiveEDR" that utilizes patented behavioral AI models for on-execution malicious behavioral analysis. The primary design goal of ActiveEDR is to detect evil in real time at the endpoint so that a protective response can be taken automatically. Our approach reduces attacker dwell time to milliseconds in contrast to other products that are cloud reliant for detection. SentinelOne ActiveEDR tracks and monitors all processes that load directly into memory as a set of related "stories." By maintaining story context through the life of the software execution, the agent can determine when processes turn malicious then execute the response specified in policy. ActiveEDR utilizes independent behavioral engines for different vectors including:

- Anti-exploitation & Fileless Attacks
- Abnormal PE execution
- Lateral movement
- Abnormal macros & scripts execution
- Intrusion detection

**Cryptominer Detection**

SentinelOne's approach to memory-based attack detection, unlocks a whole new class of attack-detection techniques. At RSA 2019, SentinelOne announced a partnership with Intel Corporation to combat cryptomining. Our partnership integrates Intel's Accelerated Memory Scanning techniques with the SentinelOne single-agent architecture. The primary design goal of faster, more efficient detection of memory anomalies is accomplished by offloading SentinelOne agent processing power from the CPU to the Intel integrated graphics processor unit (6th generation GPU or newer). By using the GPU, detection code can be even more sophisticated than what the industry is used to thus opening the door for the detection of cryptominers and other novel attacks all without latency or degradation of endpoint performance.

### *4.1.1.4.4 Continuosly detect and isolate threats based on machine learning, behavior analytics, and custom detection rules*

Yes

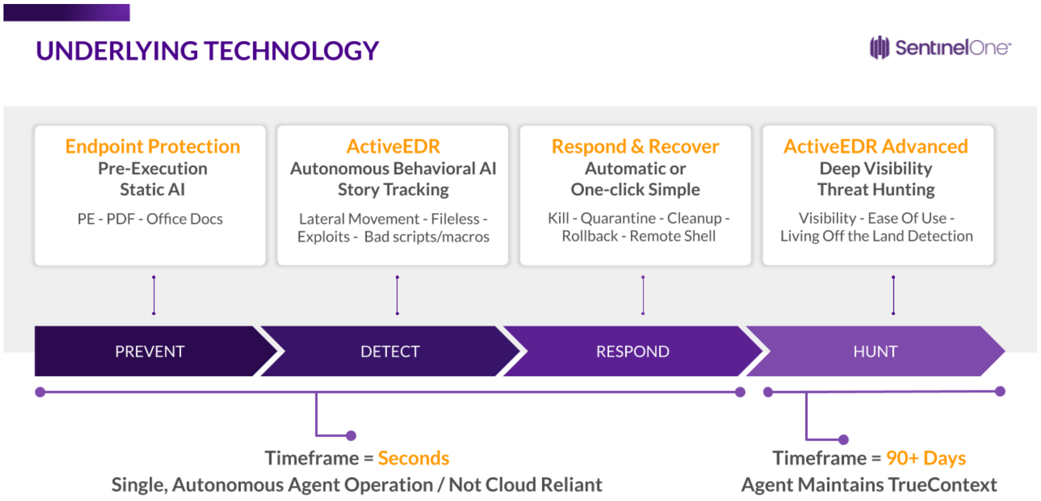
**Detection Flow**

SentinelOne utilizes multiple cascading engines: reputation, StaticAI, and ActiveEDR capabilities to prevent and detect different types of attacks at different phases. At a high level the agent processes in this order:

SentinelOne's agent will perform a simple hash lookup to the SentinelOne intelligence cloud if the agent is online. This lookup is computationally inexpensive and fast but we do not rely on cloud reachability. If the intelligence cloud is not available, Steps 2 and 3 below form the bulk of the prevention and detection mechanisms.

SentinelOne's Endpoint Prevention (EPP) component uses StaticAI Prevention to analyze (online or offline) portable executable (PE) files pre-execution and takes the place of traditional signatures. This engine also performs analysis on PDF, Microsoft OLE documents (legacy MS Office) and MS Office XML formats (modern MS Office). The goal of StaticAI in the product is to detect commodity and some novel malware with a compact, on-agent machine learning model that serves as a substitute for large signature databases as seen used in legacy AV products.

SentinelOne's ActiveEDR behavioral engine incorporates logic to detect on-execution techniques and tactics used across Initial Access, Execution, Persistence, Privilege Escalation, Defense Evasion, Credential Access, Discovery, Lateral Movement, Collection, and Command & Control. The goal of ActiveEDR behavioral in the product is to detect atypical OS story flows that are indicators of maliciousness.



UNDERLYING TECHNOLOGY

Endpoint Protection
Pre-Execution
Static AI
PE - PDF - Office Docs

ActiveEDR
Autonomous Behavioral AI
Story Tracking
Lateral Movement - Fileless - Exploits - Bad scripts/macros

Respond & Recover
Automatic or
One-click Simple
Kill - Quarantine - Cleanup - Rollback - Remote Shell

ActiveEDR Advanced
Deep Visibility
Threat Hunting
Visibility - Ease Of Use - Living Off the Land Detection

Timeframe = Seconds
Single, Autonomous Agent Operation / Not Cloud Reliant

Timeframe = 90+ Days
Agent Maintains TrueContext

## The Role of Machine Learning

SentinelOne develops machine learning models in-house as a mechanism for predicting when certain file types and OS story trees have exceeded what we know to be normal. Machine learning design goals:

Accurately predict whether something is "bad" even if its building blocks and/or tools, tactics, and procedures are net new and never before seen

Accurately predict what is truly bad while not simultaneously inaccurately tagging benign files and/or OS activities as bad (false positives)

Allow for ML modularity within the agent itself so that new, evolved models can be integrated with ease

SentinelOne Data Science Team creates ML models using structured techniques that balance efficacy increases while simultaneously keep FP rates the same or lower. Data Science achieves this using these these methods:

Good samples of diverse file types from multiple sources like Reversing Labs, VirusTotal, VirusShare, and dark arts colleagues. We also procure legitimate software and FP-prone problematic software for integration into training sets.

High variance, low bias training sets representative of what’s in the wild. The more sources we use, the less bias we introduce.

To increase variance, we cluster similar samples, remove duplicates, balance malicious and benign, and ensure all types are represented

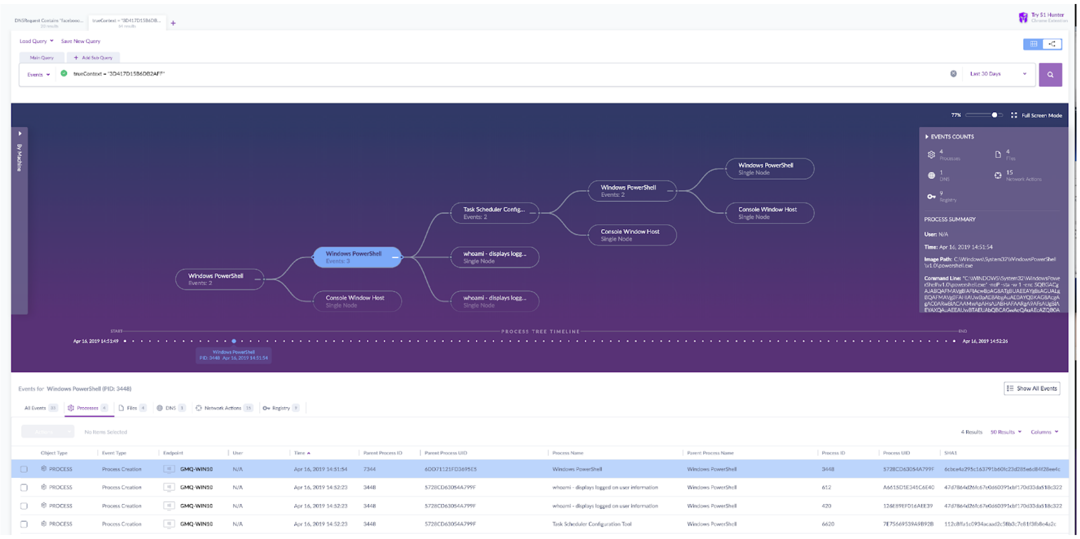
Good feature selection is a must and requires deep knowledge legitimate coding practices. SentinelOne employs thousands of features that help to form statistically accurate ML models.

## MITRE ATT&CK

If an exploit or other fileless attack is used to attack a system, indicators of how the system was exploited will be provided.  The SentinelOne indicators are also mapped to MITRE ATT&CK TTPs, which will provide an additional layer intelligence, allowing security personal to understand the attack more quickly.

If the attack is researched in our ActiveEDR Advanced tool, attack storylines will indicate which components are related to attacks found by our Static AI and Behavioral AI functions.

In addition to this, if an application was exploited within the attack, the SentinelOne agent takes a realtime inventory of all software installed including their versions.  This data is correlated against MITRE's CVE database to provide insight into a system's risk level to the environment and show which applications pose the most risk on those endpoints.



trueContext = "3D417D15B6DB2AFF"

PROCESS SUMMARY

**User:** N/A

**Time:** Apr 16, 2019 14:51:54

**Image Path:** C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe

**Command Line:** "C:\WINDOWS\System32\WindowsPowerShell\v1.0\powershell.exe" -noP -sta -w 1 -enc SQBGACgAJABQAFMAVgBIAFIAcwBoAGBATgBUAEEAYgBsAGUALgBQAFMAVgBFAHIAUwBpAEBAbgAuAE0AYQBKAGBAcgAgAC0ARwBlACAAMwApAHsAJABHAFAARgA9AFsAUgBlAEYAXQAuAEEAUwBTAEUAbQBCAGwAeQAuAEcAZQB0A

Events for Windows PowerShell (PID: 3448)

| | Object Type | Event Type | Endpoint | User | Time | Parent Process ID | Parent Process UID | Process Name | Parent Process Name | Process ID | Process UID | SHA1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ☐ | PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:51:54 | 7344 | 6DD71121FD3695E5 | Windows PowerShell | Windows PowerShell | 3448 | 5728CD63054A799F | 6cbce4a295c163791b60fc23d285e6d84f28ee4c |
| ☐ | PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:52:23 | 3448 | 5728CD63054A799F | whoami - displays logged on user information | Windows PowerShell | 612 | A6615D1E341C6E40 | 47d7864d26fc67e0d60391cbf170d33da518c322 |
| ☐ | PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:52:23 | 3448 | 5728CD63054A799F | whoami - displays logged on user information | Windows PowerShell | 420 | 126E89EF016AEE39 | 47d7864d26fc67e0d60391cbf170d33da518c322 |
| ☐ | PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:52:23 | 3448 | 5728CD63054A799F | Task Scheduler Configuration Tool | Windows PowerShell | 6620 | 7E75669539A9B92B | 112c8ffa1c0934acaad2c58b3c7e81f3fb8e4a2c |

### *4.1.1.4.5 Automatically capture necessary event details on all malicious activity, including but not limited to ports and protocols in use, running executables and services, and browser plug-ins occurring within the isolation container to support retrospective post-event analysis, threat analysis, and situational awareness*

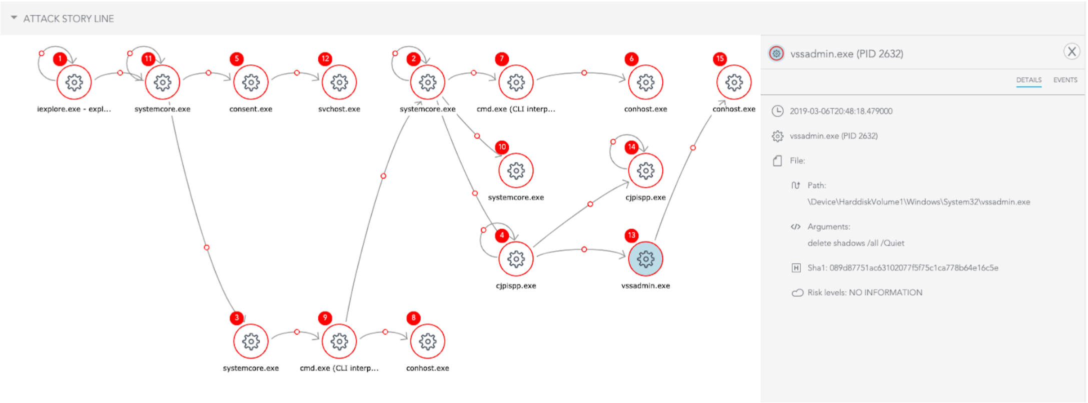
Yes

All benign, suspicious, and malicious activity is monitored and logged by the SentinelOne agent. Suspicious and Malicious activity, as well as forensic data is always sent up to the management console for review. With ActiveEDR Advanced capabilities, all benign activity that occurs on an endpoint is also sent up to the console for both manual and automated Threat Hunting. All data can either be viewed in a more raw format or can be visualized in a storyline (shown below).

SentinelOne automatically links all related events and activity together in a storyline with a TrueContext ID. This allows security teams to pivot and see the full context of what occurred within seconds rather than needing to spend hours, days, or weeks correlating logs and linking events manually.

Detected Threat Storyline

(Note that this style will be changed to the "Active EDR Advanced Storyline" style in August 2019)



vssadmin.exe (PID 2632)

2019-03-06T20:48:18.479000

vssadmin.exe (PID 2632)

File:

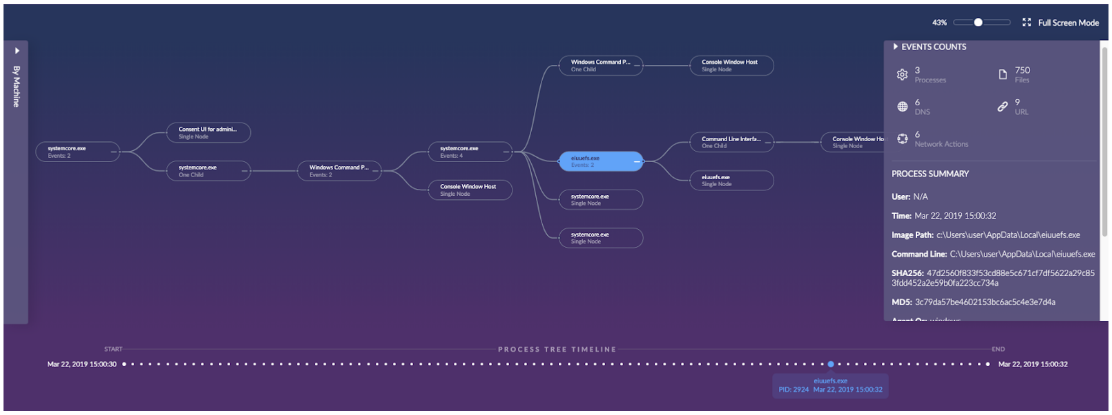
Path:
\Device\HarddiskVolume1\Windows\System32\vssadmin.exe

Arguments:
delete shadows /all /Quiet

Sha1: 089d87751ac63102077f5f75c1ca778b64e16c5e

Risk levels: NO INFORMATION

Active EDR Advanced Storyline



EVENTS COUNTS

3 Processes

750 Files

6 DNS

9 URL

6 Network Actions

PROCESS SUMMARY

**User:** N/A

**Time:** Mar 22, 2019 15:00:32

**Image Path:** c:\Users\user\AppData\Local\eiuuefs.exe

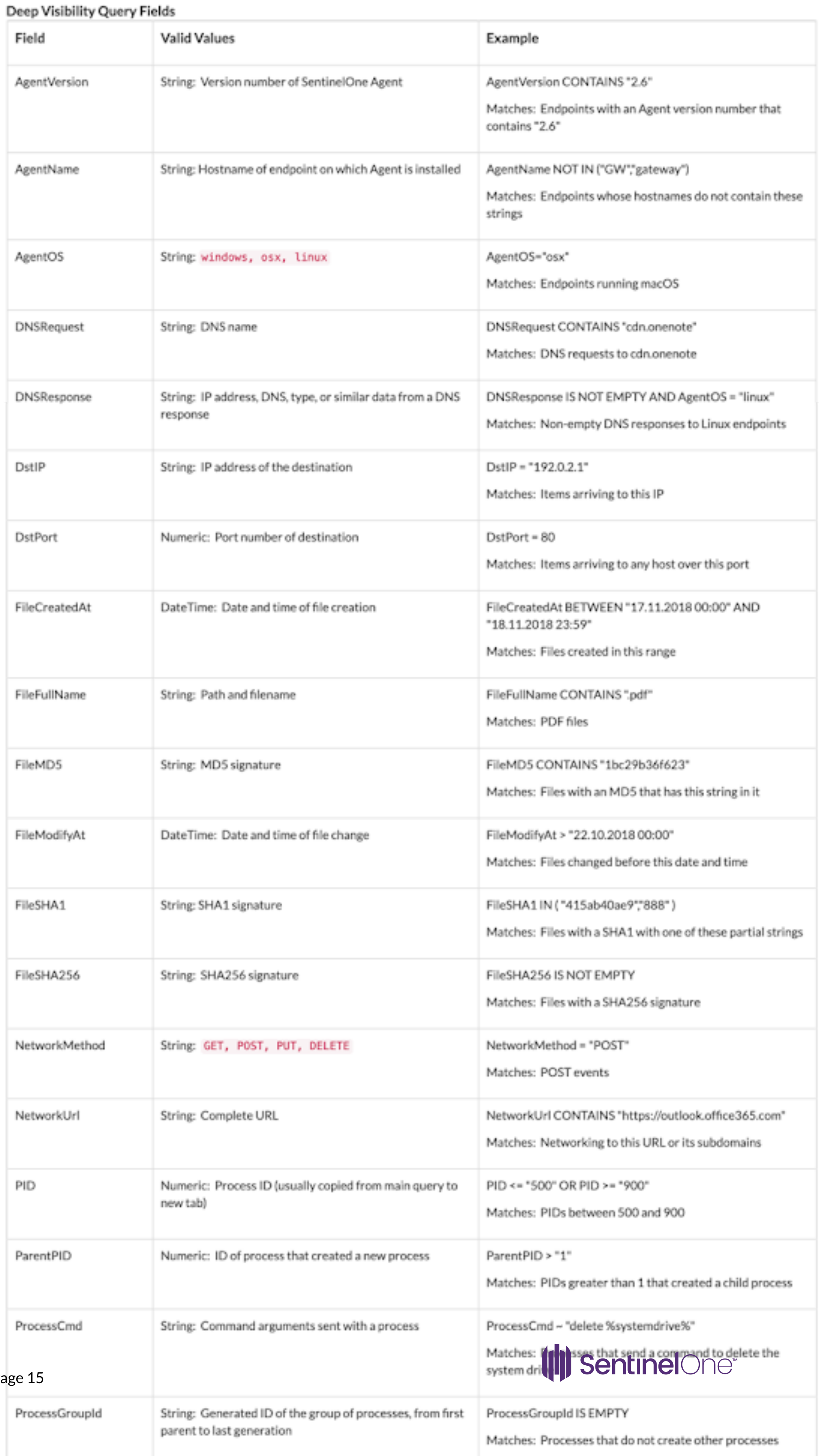
**Command Line:** C:\Users\user\AppData\Local\eiuuefs.exe

**SHA256:** 47d2560f833f53cd88e5c671cf7df5622a29c85 3fdd452a2e59b0fa223cc734a

**MD5:** 3c79da57be4602153bc6ac5c4e3e7d4a

Benign Data Attributes

List current as of May 2019. More attributes added quarterly. (See following page)



Deep Visibility Query Fields

| Field | Valid Values | Example |
|---|---|---|
| AgentVersion | String: Version number of SentinelOne Agent | AgentVersion CONTAINS "2.6"<br>Matches: Endpoints with an Agent version number that contains "2.6" |
| AgentName | String: Hostname of endpoint on which Agent is installed | AgentName NOT IN ("GW","gateway")<br>Matches: Endpoints whose hostnames do not contain these strings |
| AgentOS | String: `windows, osx, linux` | AgentOS="osx"<br>Matches: Endpoints running macOS |
| DNSRequest | String: DNS name | DNSRequest CONTAINS "cdn.onenote"<br>Matches: DNS requests to cdn.onenote |
| DNSResponse | String: IP address, DNS, type, or similar data from a DNS response | DNSResponse IS NOT EMPTY AND AgentOS = "linux"<br>Matches: Non-empty DNS responses to Linux endpoints |
| DstIP | String: IP address of the destination | DstIP = "192.0.2.1"<br>Matches: Items arriving to this IP |
| DstPort | Numeric: Port number of destination | DstPort = 80<br>Matches: Items arriving to any host over this port |
| FileCreatedAt | DateTime: Date and time of file creation | FileCreatedAt BETWEEN "17.11.2018 00:00" AND "18.11.2018 23:59"<br>Matches: Files created in this range |
| FileFullName | String: Path and filename | FileFullName CONTAINS ".pdf"<br>Matches: PDF files |
| FileMD5 | String: MD5 signature | FileMD5 CONTAINS "1bc29b36f623"<br>Matches: Files with an MD5 that has this string in it |
| FileModifyAt | DateTime: Date and time of file change | FileModifyAt > "22.10.2018 00:00"<br>Matches: Files changed before this date and time |
| FileSHA1 | String: SHA1 signature | FileSHA1 IN ( "415ab40ae9","888" )<br>Matches: Files with a SHA1 with one of these partial strings |
| FileSHA256 | String: SHA256 signature | FileSHA256 IS NOT EMPTY<br>Matches: Files with a SHA256 signature |
| NetworkMethod | String: `GET, POST, PUT, DELETE` | NetworkMethod = "POST"<br>Matches: POST events |
| NetworkUrl | String: Complete URL | NetworkUrl CONTAINS "https://outlook.office365.com"<br>Matches: Networking to this URL or its subdomains |
| PID | Numeric: Process ID (usually copied from main query to new tab) | PID <= "500" OR PID >= "900"<br>Matches: PIDs between 500 and 900 |
| ParentPID | Numeric: ID of process that created a new process | ParentPID > "1"<br>Matches: PIDs greater than 1 that created a child process |
| ProcessCmd | String: Command arguments sent with a process | ProcessCmd ~ "delete %systemdrive%"<br>Matches: Processes that send a command to delete the system drive |
| ProcessGroupId | String: Generated ID of the group of processes, from first parent to last generation | ProcessGroupId IS EMPTY<br>Matches: Processes that do not create other processes |

### *4.1.1.4.6 Be configurable to control the ability of applications running within the isolation container to access only specified system resources*

No

SentinelOne's architecture differs from container-based products. Our approach does not require the overhead of containerization but still tracks all running-code process relationships and convicts connected processes that have exceed a threshold considered normal. SentinelOne therefore provides protection with less overhead.

### *4.1.1.4.7 Provide the ability to restrict execution of high-risk applications and computer processing activities to an isolated environment*

N/A

SentinelOne's architecture differs from container-based products. Our approach does not require the overhead of containerization but still tracks all running-code process relationships and convicts connected processes that have exceed a threshold considered normal. SentinelOne therefore provides protection with less overhead.

### *4.1.1.4.8 Automatically eliminate and report all isolation containers artifacts of compromise and intrusion remnants*

N/A

SentinelOne's approach to protection enables systems to run in a reduced overhead way.

### *4.1.1.4.9 Provide continual verification of the integrity of the isolation container to ensure there is no unauthorized/malociousaccess or persistent modification*

N/A

SentinelOne's approach to protection enables systems to run in a reduced overhead way.

### *4.1.1.4.10 Automatically report potentially malicious events detected within the isolation container and provide actionable information*

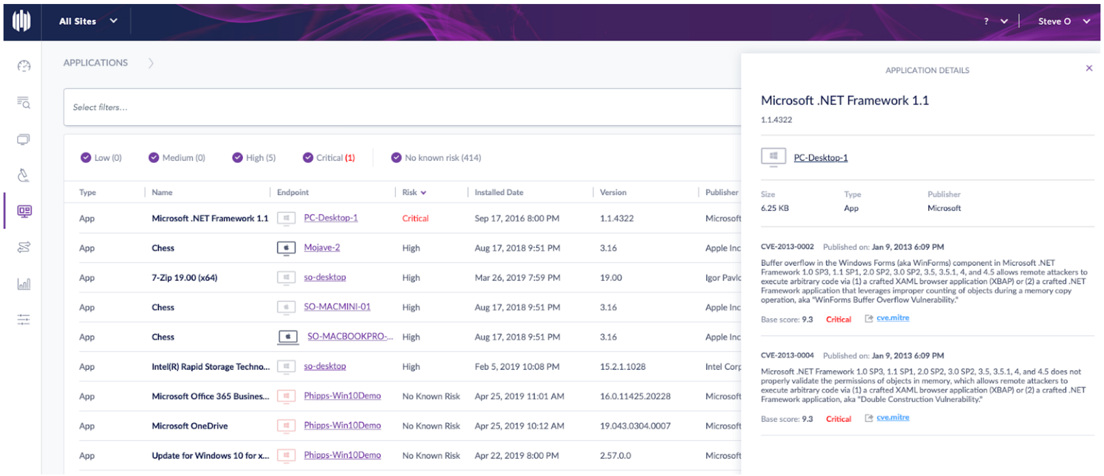
N/A

SentinelOne's approach to protection enables systems to run in a reduced overhead way.

### *4.1.1.4.11 Be capable of containing operating system kernel-level vulnerability information*

Yes

SentinelOne agent takes a realtime inventory of all software installed including their versions.  This data is correlated against MITRE's CVE database to provide insight into a system's risk level to the environment and show which applications pose the most risk on those endpoints.



✓ Low (0) ✓ Medium (0) ✓ High (5) ✓ Critical (1) ✓ No known risk (414)

| Type | Name | Endpoint | Risk | Installed Date | Version | Publisher |
|---|---|---|---|---|---|---|
| App | Microsoft .NET Framework 1.1 | PC-Desktop-1 | Critical | Sep 17, 2016 8:00 PM | 1.1.4322 | Microsoft |
| App | Chess | Mojave-2 | High | Aug 17, 2018 9:51 PM | 3.16 | Apple Inc |
| App | 7-Zip 19.00 (x64) | so-desktop | High | Mar 26, 2019 7:59 PM | 19.00 | Igor Pavlc |
| App | Chess | SO-MACMINI-01 | High | Aug 17, 2018 9:51 PM | 3.16 | Apple Inc |
| App | Chess | SO-MACBOOKPRO-... | High | Aug 17, 2018 9:51 PM | 3.16 | Apple Inc |
| App | Intel(R) Rapid Storage Techno... | so-desktop | High | Feb 5, 2019 10:08 PM | 15.2.1.1028 | Intel Corp |
| App | Microsoft Office 365 Busines... | Phipps-Win10Demo | No Known Risk | Apr 25, 2019 11:01 AM | 16.0.11425.20228 | Microsoft |
| App | Microsoft OneDrive | Phipps-Win10Demo | No Known Risk | Apr 25, 2019 10:12 AM | 19.043.0304.0007 | Microsoft |
| App | Update for Windows 10 for x... | Phipps-Win10Demo | No Known Risk | Apr 22, 2019 8:00 PM | 2.57.0.0 | Microsoft |

APPLICATION DETAILS

Microsoft .NET Framework 1.1

1.1.4322

PC-Desktop-1

| Size | Type | Publisher |
|---|---|---|
| 6.25 KB | App | Microsoft |

CVE-2013-0002 Published on: Jan 9, 2013 6:09 PM

Buffer overflow in the Windows Forms (aka WinForms) component in Microsoft .NET Framework 1.0 SP3, 1.1 SP1, 2.0 SP2, 3.0 SP2, 3.5, 3.5.1, 4, and 4.5 allows remote attackers to execute arbitrary code via (1) a crafted XAML browser application (XBAP) or (2) a crafted .NET Framework application that leverages improper counting of objects during a memory copy operation, aka "WinForms Buffer Overflow Vulnerability."

Base score: 9.3 Critical cve.mitre

CVE-2013-0004 Published on: Jan 9, 2013 6:09 PM

Microsoft .NET Framework 1.0 SP3, 1.1 SP1, 2.0 SP2, 3.0 SP2, 3.5, 3.5.1, 4, and 4.5 does not properly validate the permissions of objects in memory, which allows remote attackers to execute arbitrary code via (1) a crafted XAML browser application (XBAP) or (2) a crafted .NET Framework application, aka "Double Construction Vulnerability."

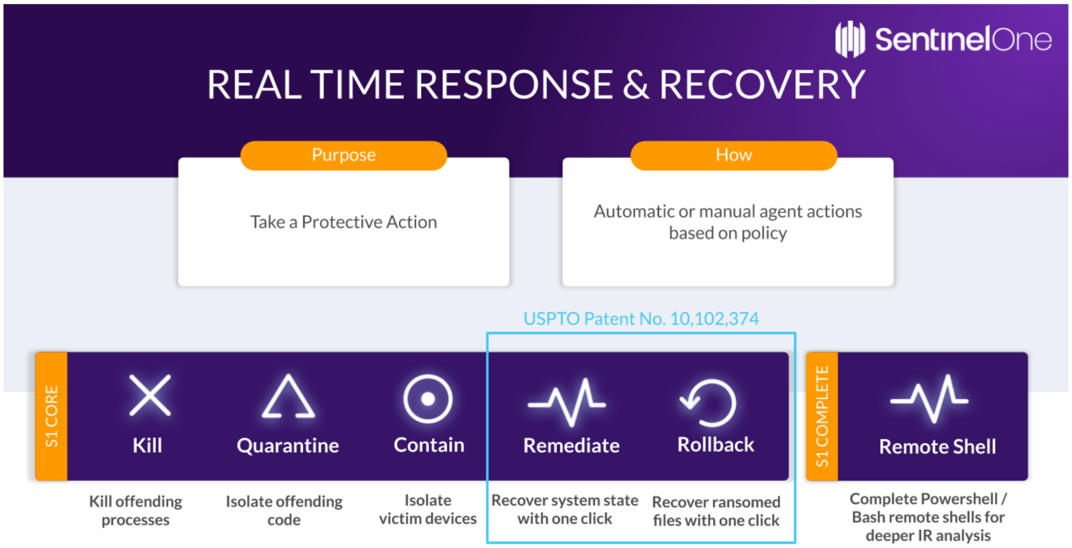
Base score: 9.3 Critical cve.mitre

### *4.1.1.4.12 Provide options for configurable automated or manual remediation actions in response to detected potentially malicious events*

Yes

SentinelOne has a variety of automated and/or manual Response capabilities to control and remediate detected file-based and fileless attacks:

- Alert
- Isolate host from network. Only the console can interact with the device.
- Kill offending process or processes
- Quarantine malicious code
- One-click Remediate (reverse unwanted system changes related to an incident, including artifact removal, droppers removed, registry keys restored, and scheduled tasks restored.
- One-click Windows Rollback (restore affected data from Windows vss snapshot)
- Remote Shell for Incident Responders



SentinelOne

REAL TIME RESPONSE & RECOVERY

Purpose: Take a Protective Action

How: Automatic or manual agent actions based on policy

USPTO Patent No. 10,102,374

S1 CORE

Kill – Kill offending processes

Quarantine – Isolate offending code

Contain – Isolate victim devices

Remediate – Recover system state with one click

Rollback – Recover ransomed files with one click

S1 COMPLETE

Remote Shell – Complete Powershell / Bash remote shells for deeper IR analysis

Administrators have the ability to execute system commands remotely via the console or the API. These are examples of remote commands:

- Get configuration
- Configure firewall logging
- Decommission
- Disconnect from network / reconnect to network
- Fetch logs
- File fetch (any file)
- Initiate scan / abort scan
- Move to another site
- Reboot
- Remote shell
- Search on Deep Visibility
- Send message to agent OS UI
- Show applications
- Show agent passphrase
- Shut down
- Uninstall
- Update software
- View threats

# 4.1.1.5 Reporting and Monitoring

### *4.1.1.6 The vendor must provide a software or service that shall interoperate with event monitoring and correlation systems to facilitate aggregated situational awareness*

Yes

SentinelOne easily integrates with data analytics tools such as SIEMs either through syslog feeds or via our API. Feeds and pushes can be encrypted. We support a variety of syslog message formats including: CEF, CEF2, STIX, IOC and RFC-5424 (rSyslog)

We offer several SIEM integration apps including Splunk, QRadar, and LogRhythm.

We support Splunk as a syslog receiver and also offer a Splunk app that enables customers to control the SentinelOne platform within the Splunk app that leverages our API. The app is listed on Splunkbase: https://splunkbase.splunk.com/app/3677/

### *4.1.1.7 The software shall support open standards for automated threat information sharing*

Yes

**Threat Intelligence Current Capabilities**

SentinelOne operates our own threat intel cloud that is comprised of data from Reversing Labs, Recorded Future, VirusTotal, and our own curated cloud data. Integration with 3rd party threat intelligence sources is comprised of live links to Recorded Future and VirusTotal directly within the console. SentinelOne uses threat intelligence as an IoC supplement to our machine-learning based StaticAI and ActiveEDR behavioral mechanisms that focus on accurate identification of the previously unknown malicious code.

SentinelOne can send syslog feeds in these formats: STIX, CEF, CEF2, IOC, rSyslog.

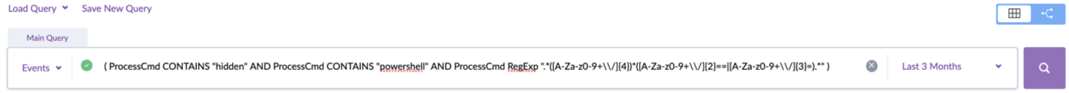
### *4.1.1.8 The software shall provide integrated and customizable search with, at minimum, the ability to search data from all systems for information relevant to an incident investigation or risk analysis*

Yes

ActiveEDR Advanced Threat Hunting is part of the "SentinelOne Complete" offering. It provides integrated and customizable search for threat hunters and incident responders. Searches can be performed on a history of 90 days (to be expanded in 2019). All benign, suspicious, and malicious activity is monitored and logged by the SentinelOne agent. With ActiveEDR Advanced capabilities, benign activity that occurs on an endpoint is also sent up to the console for both manual and automated Threat Hunting.  All data can either be viewed in a more raw format or can be visualized in a storyline (shown below).

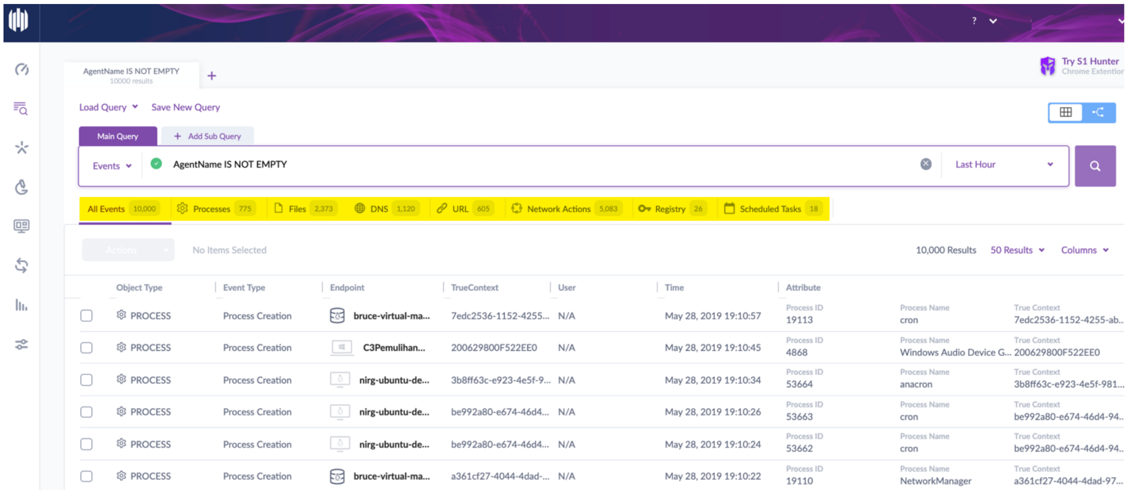
SentinelOne automatically links all related events and activity together in a storyline with a TrueContext ID.  This allows security teams to pivot and see the full context of what occurred within seconds rather than needing to spend hours, days, or weeks correlating logs and linking events manually.

Queries can be built using compound expressions (joined by AND / OR), contain regex strings, utilize sub queries to refine previous search results, be displayed as a graphical PID tree, saved for automatic scheduled use, and more.



Events ( ProcessCmd CONTAINS "hidden" AND ProcessCmd CONTAINS "powershell" AND ProcessCmd RegExp ".*([A-Za-z0-9+\\/]{4})*([A-Za-z0-9+\\/]{2}==|[A-Za-z0-9+\\/]{3}=).*" ) Last 3 Months

The following Visibility page screenshot is an examples of the provided benign data tracking. Our agent collects forensics related to Processes, Files, DNS, URL, Network Actions, Registry changes, and scheduled tasks. More data types are being added throughout 2019.



AgentName IS NOT EMPTY
10000 results

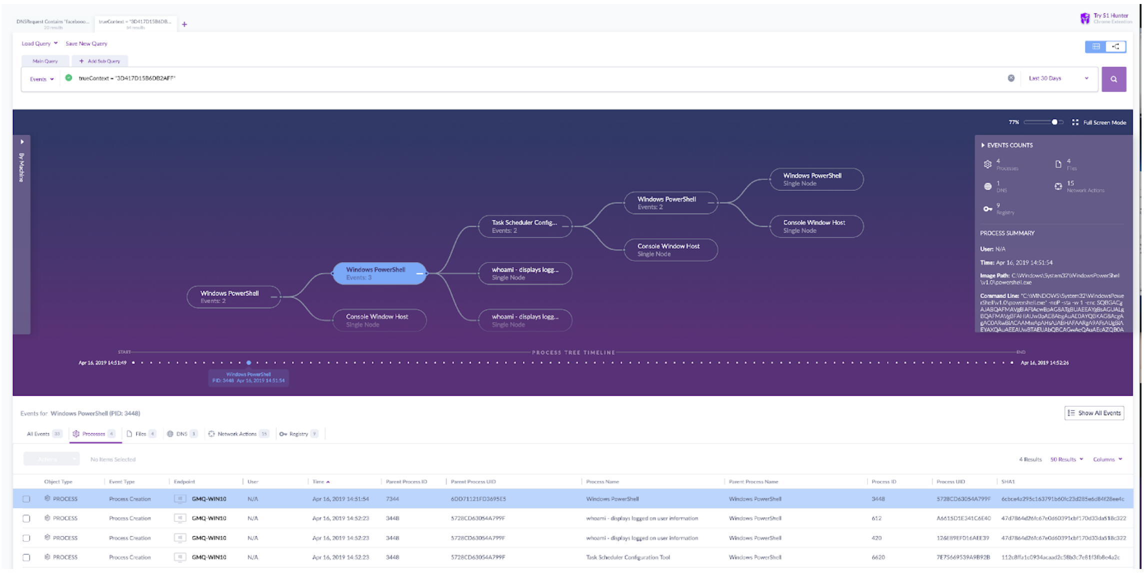
Events AgentName IS NOT EMPTY Last Hour

All Events 10,000 | Processes 775 | Files 2,373 | DNS 1,120 | URL 605 | Network Actions 5,083 | Registry 26 | Scheduled Tasks 18

No Items Selected

10,000 Results 50 Results Columns

| | Object Type | Event Type | Endpoint | TrueContext | User | Time | Attribute | | |
|---|---|---|---|---|---|---|---|---|---|
| □ | PROCESS | Process Creation | bruce-virtual-ma... | 7edc2536-1152-4255... | N/A | May 28, 2019 19:10:57 | Process ID<br>19113 | Process Name<br>cron | True Context<br>7edc2536-1152-4255-ab... |
| □ | PROCESS | Process Creation | C3Pemulihan... | 200629800F522EE0 | N/A | May 28, 2019 19:10:45 | Process ID<br>4868 | Process Name<br>Windows Audio Device G... | True Context<br>200629800F522EE0 |
| □ | PROCESS | Process Creation | nirg-ubuntu-de... | 3b8ff63c-e923-4e5f-9... | N/A | May 28, 2019 19:10:34 | Process ID<br>53664 | Process Name<br>anacron | True Context<br>3b8ff63c-e923-4e5f-981... |
| □ | PROCESS | Process Creation | nirg-ubuntu-de... | be992a80-e674-46d4... | N/A | May 28, 2019 19:10:26 | Process ID<br>53663 | Process Name<br>cron | True Context<br>be992a80-e674-46d4-94... |
| □ | PROCESS | Process Creation | nirg-ubuntu-de... | be992a80-e674-46d4... | N/A | May 28, 2019 19:10:24 | Process ID<br>53662 | Process Name<br>cron | True Context<br>be992a80-e674-46d4-94... |
| □ | PROCESS | Process Creation | bruce-virtual-ma... | a361cf27-4044-4dad-... | N/A | May 28, 2019 19:10:22 | Process ID<br>19110 | Process Name<br>NetworkManager | True Context<br>a361cf27-4044-4dad-97... |



trueContext = "3D417D15B6DB2AFF"

PROCESS SUMMARY

**User:** N/A

**Time:** Apr 16, 2019 14:51:54

**Image Path:** C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe

**Command Line:** "C:\WINDOWS\System32\WindowsPowerShell\v1.0\powershell.exe" -noP -sta -w 1 -enc SQBGACgAJABQAFMAVgBlAFIAcwBpAG8ATgBUAEEAYgBsAGUALgBQAFMAVgBFAHIAUwBpAE8ATgAuAE0AYQBKAG8AcgAgAC0ARwBlACAAMwApAHsAJABHAFAARgA9AFsAUgBlAEYAXQAuAEEAUwBTAEUAbQBCAGwAeQAuAEcAZQB0A

Events for Windows PowerShell (PID: 3448)

All Events 33 | Processes 4 | Files 4 | DNS 1 | Network Actions 15 | Registry 9

| | Object Type | Event Type | Endpoint | User | Time ▲ | Parent Process ID | Parent Process UID | Process Name | Parent Process Name | Process ID | Process UID | SHA1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| □ | PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:51:54 | 7344 | 6DD71121FD3695E5 | Windows PowerShell | Windows PowerShell | 3448 | 5728CD63054A799F | 6cbce4a295c163791b60fc23d285e6d84f28ee4c |
| □ | PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:52:23 | 3448 | 5728CD63054A799F | whoami - displays logged on user information | Windows PowerShell | 612 | A6615D1E341C6E40 | 47d7864d26fc67e0d60391cbf170d33da518c322 |
| □ | PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:52:23 | 3448 | 5728CD63054A799F | whoami - displays logged on user information | Windows PowerShell | 420 | 126E89EF016AEE39 | 47d7864d26fc67e0d60391cbf170d33da518c322 |
| □ | PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:52:23 | 3448 | 5728CD63054A799F | Task Scheduler Configuration Tool | Windows PowerShell | 6620 | 7E75669539A9B92B | 112c8ffa1c0934acaad2c58b3c7e81f3fb8e4a2c |

### *4.1.1.9 The software shall have the ability to execute manual and scheduled scans of specified systems for indicators derived from threat intelligence or other sources*

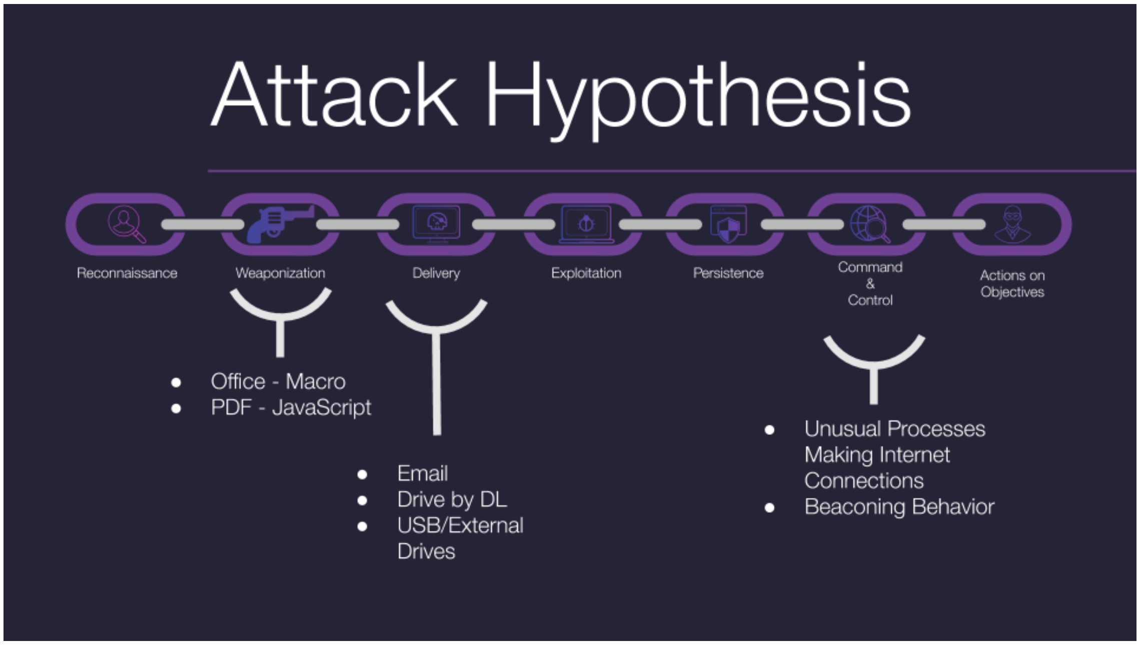
Yes

Full disk scan upon installation is optional. Subsequent full disk scans, if desired, can be triggered within the console or via API or at installation. Please note that continual, scheduled disk scans are not necessary because our architecture scans new and changed files as they arrive at the device. The SentinelOne solution does not rely on scanning techniques to maintain efficacy in detecting malicious files or activity thus keeping customer systems continuously clean.  Such scanning techniques are generally relevant for legacy anti-malware systems. Similarly, SentinelOne does not rely on reputation data in order to remain effective against threats.  Reputation data is consulted in situations where the endpoint happens to be connected to the cloud. The core of the product uses pre-execution static AI and on-execution ActiveEDR behavioral AI as pro-active engines that continuously detect and protect against even the most advanced forms of threats without relying on "scanning" the hard-drive because these engines operate in real-time and continuously monitor all running processes.

### *4.1.1.10 The software shall provide integrated analytics(including visualization) and support the creation of custom analytics, in order to identify anomalous endpoint behaviors, support incident investigation, and perform event analysis*

Yes

As described in previous sections, SentinelOne provides a multitude of incident-related raw data and visualizations to support an analysts understanding of an attack's origins. Additionally, our product enables ad hoc benign data searching (by default a 90 day historical windows with more history available as an option). This searching can be manual or performed automatically on a defined periodic basis as a watchlist. These tools support Incident Responders as they form Attack Hypotheses.



Attack Hypothesis

Reconnaissance

Weaponization

Delivery

Exploitation

Persistence

Command & Control

Actions on Objectives

- Office - Macro
- PDF - JavaScript

- Email
- Drive by DL
- USB/External Drives

- Unusual Processes Making Internet Connections
- Beaconing Behavior

### *4.1.1.11 The software shall provide administrative functions to be delegated to users based on roles/permissions and or grouping of endpoints they are responsible for managing*

Yes

SentinelOne currently offers several administrative console roles with more roles. General users do not need to access the administrative console.

Global Administrator RW and Viewer for customer with a dedicated cluster or onebox

Account Administrator is the Global Administrator equivalent for shared tenant environments

Site Administrator RW and Viewer

SentinelOne plans to introduce additional levels of RBAC in November 2019.

### *4.1.1.12 The software shall support delegation(i.e user specified) of who can access/view collected endpoint data*

Yes

See answer for 4.1.1.11 above.

### *4.1.1.13 The software shall have the capability to be tuned/configured to reduce alerts resulting from false positives*

Yes

The SentinelOne solution does provide an "Exclusion" function that addresses false positive alerts as well as potential application compatibility issues. Though SentinelOne cannot predict every interoperability issue that might arise, we do document known interop issues with major software providers. Furthermore, SentinelOne provides a robust exclusion function that can be easily configured to enable compatibility with other products.  SentinelOne encourages deployment strategies in order to preempt such potential interoperability. All guidelines and knowledge base articles can be access via the online customer portal. Exclusions may be needed for other products (on the box) that inject into memory (legacy AV products, privilege escalation control software, VPN software) or for software that is poorly written but acts powerfully. Other examples include server apps that are highly I/O intensive such as Microsoft applications. Microsoft itself recommends certain exclusion types for most security vendors, including SentinelOne.

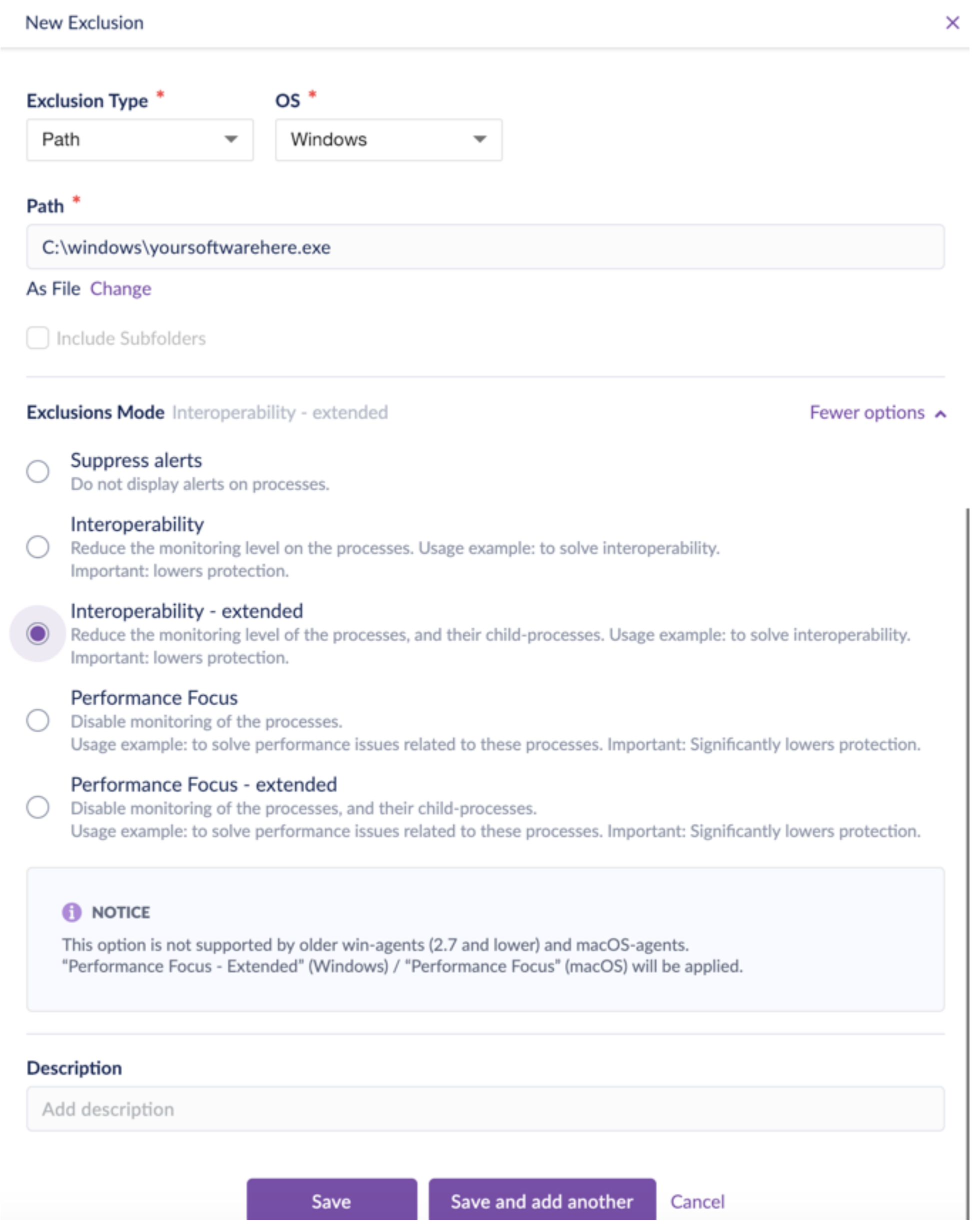
- Microsoft SQL Servers
- Microsoft Domain Controllers
- Backup servers
- Exchange servers

SentinelOne's robust exclusion function is easily configured to enable compatibility and remedy interoperability false positives. Exclusions can be applied at the global level, site level and group level for granular control. Blacklisting or whitelisting specific applications is not a requirement in order for the SentinelOne solution to operate. However, it is considered best practices to ensure that no other endpoint security solutions may be conflicting with SentinelOne and thus cause interoperability issues.  In such cases, it is advised that customers consider the use of exclusions to deal with 3rd part interoperability conflicts. SentinelOne is happy to discuss mass deployment strategies that include testing for potential interoperability issues and proactively handling them. SentinelOne agent exclusion mechanisms include:

- hash value
- path, path + subfolders, specific executable
- signer certificate identity
- file type
- browser type

The ability to not monitor certain executables as well as the option to use cascading exclusions. The latter is typically used by shops building code that use known-good compilers.

We also have multiple exclusion modes for highly specific (surgical) exclusions. Ability to turn on and off functionality for consideration of different deployment scenarios, including throttling of deployment. All guidelines and knowledge base articles can be access via the online customer portal.



Exclusion Type * Path

OS * Windows

Path * C:\windows\yoursoftwarehere.exe

As File Change

□ Include Subfolders

Exclusions Mode Interoperability - extended

○ Suppress alerts
Do not display alerts on processes.

○ Interoperability
Reduce the monitoring level on the processes. Usage example: to solve interoperability.
Important: lowers protection.

● Interoperability - extended
Reduce the monitoring level of the processes, and their child-processes. Usage example: to solve interoperability.
Important: lowers protection.

○ Performance Focus
Disable monitoring of the processes.
Usage example: to solve performance issues related to these processes. Important: Significantly lowers protection.

○ Performance Focus - extended
Disable monitoring of the processes, and their child-processes.
Usage example: to solve performance issues related to these processes. Important: Significantly lowers protection.

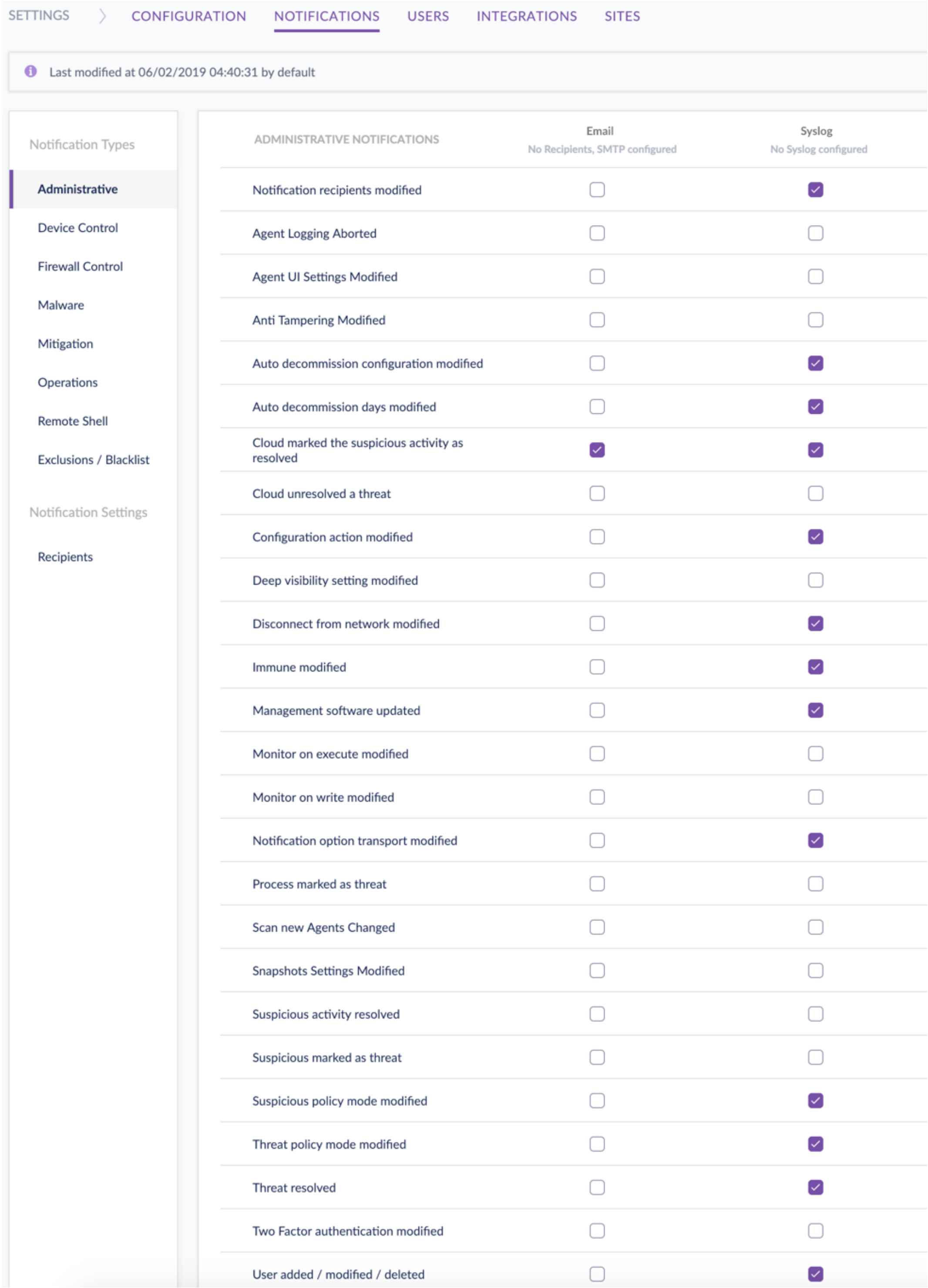
NOTICE
This option is not supported by older win-agents (2.7 and lower) and macOS-agents.
"Performance Focus - Extended" (Windows) / "Performance Focus" (macOS) will be applied.

Description
Add description

### *4.1.1.14 The software shall provide configurable alerting based upon administrator defined criteria*

Yes

Alerts are generated for a wide variety of system, administrative, and agent incident events. Alerts can also be generated for matches on benign data conditions of interest (aka watchlists). These alerts appear in the console. They may also be dispatched to configured SIEMs, can be pulled via API, and/or emailed. The following screenshot depicts some of the audit log settings available to administrators via syslog and/or email. More information is available on request.



Last modified at 06/02/2019 04:40:31 by default

Notification Types

- Administrative
- Device Control
- Firewall Control
- Malware
- Mitigation
- Operations
- Remote Shell
- Exclusions / Blacklist

Notification Settings

- Recipients

| ADMINISTRATIVE NOTIFICATIONS | Email<br>No Recipients, SMTP configured | Syslog<br>No Syslog configured |
|---|---|---|
| Notification recipients modified | ☐ | ☑ |
| Agent Logging Aborted | ☐ | ☐ |
| Agent UI Settings Modified | ☐ | ☐ |
| Anti Tampering Modified | ☐ | ☐ |
| Auto decommission configuration modified | ☐ | ☑ |
| Auto decommission days modified | ☐ | ☑ |
| Cloud marked the suspicious activity as resolved | ☑ | ☑ |
| Cloud unresolved a threat | ☐ | ☐ |
| Configuration action modified | ☐ | ☑ |
| Deep visibility setting modified | ☐ | ☐ |
| Disconnect from network modified | ☐ | ☑ |
| Immune modified | ☐ | ☑ |
| Management software updated | ☐ | ☑ |
| Monitor on execute modified | ☐ | ☐ |
| Monitor on write modified | ☐ | ☐ |
| Notification option transport modified | ☐ | ☑ |
| Process marked as threat | ☐ | ☐ |
| Scan new Agents Changed | ☐ | ☐ |
| Snapshots Settings Modified | ☐ | ☐ |
| Suspicious activity resolved | ☐ | ☐ |
| Suspicious marked as threat | ☐ | ☐ |
| Suspicious policy mode modified | ☐ | ☑ |
| Threat policy mode modified | ☐ | ☑ |
| Threat resolved | ☐ | ☑ |
| Two Factor authentication modified | ☐ | ☐ |
| User added / modified / deleted | ☐ | ☑ |

### *4.1.1.15 The software shall send alerts at administrator-definable intervals*

Yes

SentinelOne's ActiveEDR feature provides a mechanism to create "watchlists" that can be configured to send alerts based on intervals set by the administrator.  Once specified, a specific query configured by the administrator will run at the designated interval and will notify the administrator via email once a query returns results during the set interval.

### *4.1.1.16 The software shall provide the ability to automatically discover and alert on previously unknown external and/or internal hardware/peripheral devices (such as storage) connected to endpoints for the purpose of retrospective/post-event analysis*

Yes

SentinelOne has Device Control which allows our agent to control all USB device types for Windows and Mac as well as support for Bluetooth radio control. These functions are built natively into the agent and do not leverage 3rd party add-ons. We also plan to add USB Read Only/Read-Write control in August 2019.

**USB Details**

Policy can be set to permit or deny USB by Vendor ID, Class (24 Class types - for example, Audio, Printer, Mass Storage, Personal Healthcare, others), Serial ID, and/or Product ID.

**Bluetooth Details**

Policy can be set to permit or deny Bluetooth using Hardware Class Identifiers (Computer, Phone, Wearable, others) and Minor Class Identifiers (within Wearables, for example, Wristwatch, Pager, Jacket, Helmet, Glasses).  Policy can be set to permit or deny Bluetooth Version to eliminate device connectivity with vulnerabilities.

Once Device Control is enabled.  All USB and bluetooth device activity will be logged on the SentinelOne management console.

### *4.1.1.17 The software shall generate reports based on pre-saved user-defined formats and datasets to facilitate rapid analysis, decision making, and follow-up actions following events*

Yes

SentinelOne offers a variety of information to help track what is happening in the customers environment. Alerts are generated for agent incident events or matches on benign data conditions of interest (aka watchlists). These alerts appear in the console. They are also dispatched to configured SIEMs, can be pulled via API, and/or emailed.

Reporting is part of the product as well:

Several threat, application and Executive reports are available out of the box. The current list of default reports are:

- Vigilance Insights
- Threat Insights
- Mitigation and Response Insights
- Executive Insights
- Executive Insights by Groups
- Application Insights

New report types can be created for customers at their request and loaded into their console.

Incident data is downloadable in CSV and JSON format.

SentinelOne also provides an Excel plugin which utilizes existing API calls to retrieves all relevant data points that can then be sorted and displayed with the full features of Excel.

SentinelOne is continually adding new ways to access the data in your console for use in other tools. Please check back with our Team to learn what is most current.

Customized reports can be built using the SentinelOne built Excel plugin which utilizes existing API calls to retrieves all relevant data points that can then be sorted and displayed with the full features of Excel. Default reports can be scheduled either weekly or for the first of every month. Reports can be distributed either via PDF or HTML.

### *4.1.1.18 The software shall provide time stamping of all collected data and events based on a single time standard(e.g., coordinated universal time*

Yes

All event alerts and benign data captured will be time-stamped with UTC. Such data when viewed on the management console will then have the time be translated to the respective time per the browser/system being used to access the alert and EDR data.

### *4.1.1.19 The software shall have the ability to pull locally stored data from specified endpoints in near real time to support high priority hunt and forensic operations*

Yes

With SentinelOne CORE (our base offering) or higher, administrators can file fetch malware samples alerted by the agent (quarantined or not). With SentinelOne COMPLETE (our premium offering), administrators can additionally fetch any file on the system. All operations described here can be accomplished within the console or via API.

SentinelOne has a data graded data retention policy.  Benign data is deleted 90 days after collection. Data that contains indicators of malicious content is kept for 1 year. Data regarding configuration and audit logs are kept for traceability and audit purposes as lifetime records. The SentinelOne “filefetch” feature used to grab malicious binary objects from endpoints for analysis,  keeps the fetched data for 72 hours and then the data is irretrievably deleted. Upon termination of service, all of a customer's data is irretrievably deleted from SentinelOne storage.

### *4.1.1.20 The software shall provide automated analysis and visualization of an attack; including production of an event timeline and initial assessment of severity/impact*

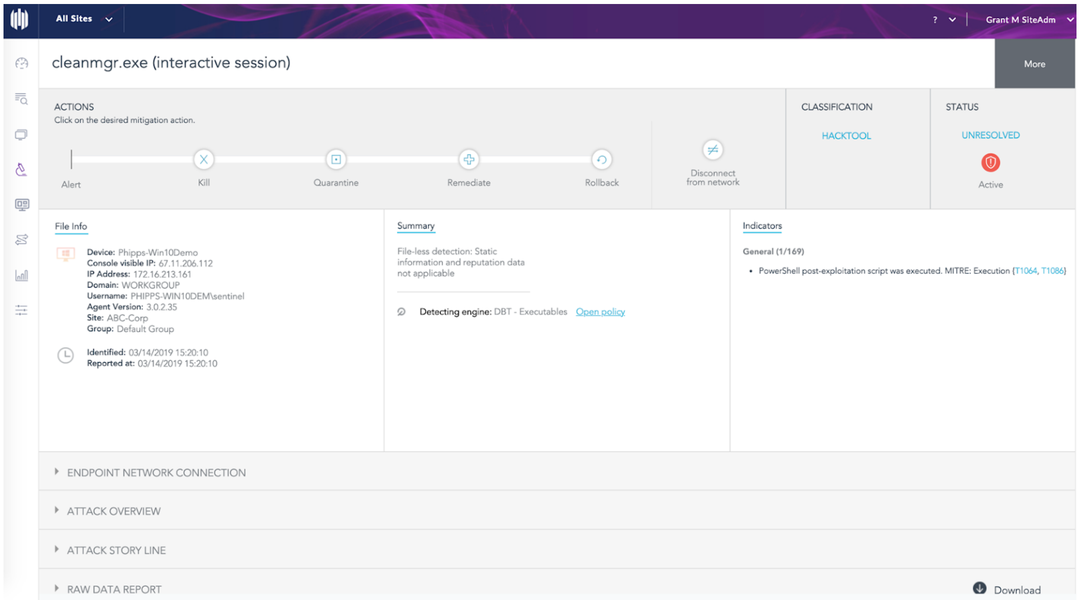
Yes

The local agent has prevention, detection, response, and threat hunting engines. If an incident occurs and the agent is not cloud connected, the agent can still take protective action. Events and forensics are queued until the agent is cloud connected whereupon the queued artifacts are streamed to the console.

The SentinelOne console has many attractive features for the administrator including visualizations and detailed forensics.

Analysis & Actions Summary

The following Analyze page screenshot is an examples of the provided forensic data. All incident forensic data is available as a CSV or JSON download.



cleanmgr.exe (interactive session)

ACTIONS
Click on the desired mitigation action.

CLASSIFICATION
HACKTOOL

STATUS
UNRESOLVED
Active

File Info

**Device:** Phipps-Win10Demo
**Console visible IP:** 67.11.206.112
**IP Address:** 172.16.213.161
**Domain:** WORKGROUP
**Username:** PHIPPS-WIN10DEM\sentinel
**Agent Version:** 3.0.2.35
**Site:** ABC-Corp
**Group:** Default Group

**Identified:** 03/14/2019 15:20:10
**Reported at:** 03/14/2019 15:20:10

Summary

File-less detection: Static information and reputation data not applicable

**Detecting engine:** DBT - Executables Open policy

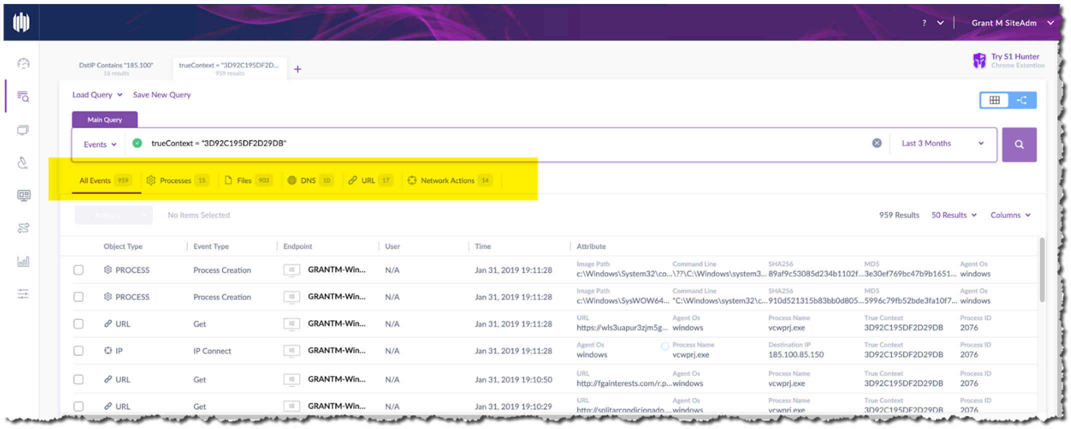
Indicators

**General (1/169)**

- PowerShell post-exploitation script was executed. MITRE: Execution {T1064, T1086}

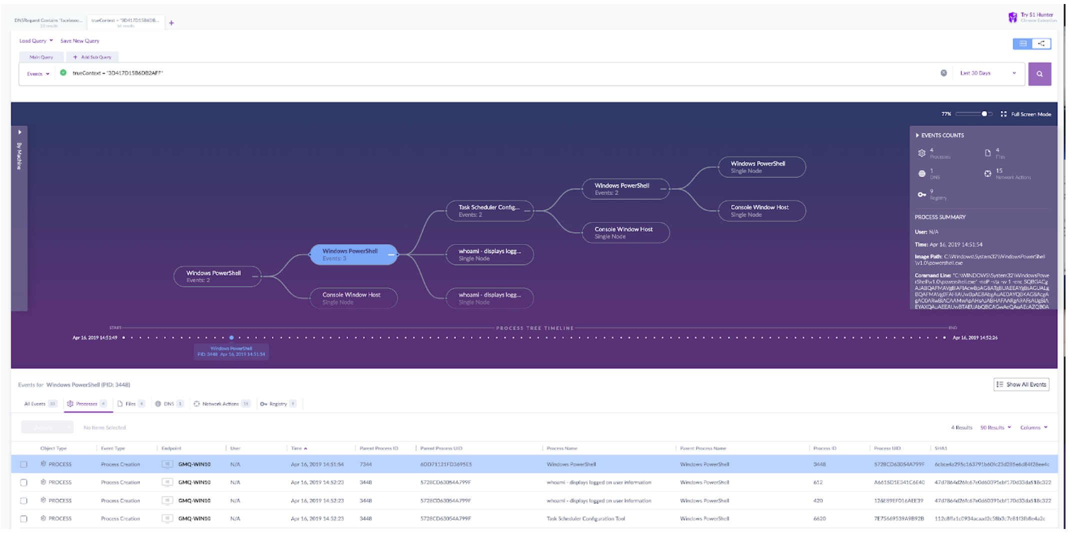
ActiveEDR Advanced Threat Hunting

The following Visibility page screenshot is an examples of the provided benign data tracking. Our agent collects forensics related to Processes, Files, DNS, URL, Network Actions, Registry changes, and scheduled tasks. More data types are being added throughout 2019.



trueContext = "3D92C195DF2D29DB"

| | Object Type | Event Type | Endpoint | User | Time | Attribute |
|---|---|---|---|---|---|---|
| □ | PROCESS | Process Creation | GRANTM-Win... | N/A | Jan 31, 2019 19:11:28 | Image Path c:\Windows\System32\co...<br>Command Line \??\C:\Windows\system3...<br>SHA256 89af9c53085d234b1102f...<br>MD5 3e30ef769bc47b9b1651...<br>Agent Os windows |
| □ | PROCESS | Process Creation | GRANTM-Win... | N/A | Jan 31, 2019 19:11:28 | Image Path c:\Windows\SysWOW64...<br>Command Line "C:\Windows\system32\c...<br>SHA256 910d521315b83bb0d805...<br>MD5 5996c79fb52bde3fa10f7...<br>Agent Os windows |
| □ | URL | Get | GRANTM-Win... | N/A | Jan 31, 2019 19:11:28 | URL https://wls3uapur3zjm5g...<br>Agent Os windows<br>Process Name vcwprj.exe<br>True Context 3D92C195DF2D29DB<br>Process ID 2076 |
| □ | IP | IP Connect | GRANTM-Win... | N/A | Jan 31, 2019 19:11:28 | Agent Os windows<br>Process Name vcwprj.exe<br>Destination IP 185.100.85.150<br>True Context 3D92C195DF2D29DB<br>Process ID 2076 |
| □ | URL | Get | GRANTM-Win... | N/A | Jan 31, 2019 19:10:50 | URL http://fgainterests.com/r.p...<br>Agent Os windows<br>Process Name vcwprj.exe<br>True Context 3D92C195DF2D29DB<br>Process ID 2076 |
| □ | URL | Get | GRANTM-Win... | N/A | Jan 31, 2019 19:10:29 | URL http://splitarcondicionado....<br>Agent Os windows<br>Process Name vcwprj.exe<br>True Context 3D92C195DF2D29DB<br>Process ID 2076 |



trueContext = "3D417D15B6DB2AFF"

EVENTS COUNTS

4 Processes

4 Files

1 DNS

15 Network Actions

9 Registry

PROCESS SUMMARY

User: N/A

Time: Apr 16, 2019 14:51:54

Image Path: C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe

Command Line: "C:\WINDOWS\System32\WindowsPowerShell\v1.0\powershell.exe" -noP -sta -w 1 -enc SQBGACgAJABQAFMAVgBlAFIAcwBpAG8ATgBUAEEAYgBsAGUALgBQAFMAVgBFAHIAUwBpAE8AbgAuAE0AYQBKAG8AcgAgAC0ARwBlACAAMwApAHsAJABHAFAARgA9AFsAUgBlAEYAXQAuAEEAUwBTAEUAbQBCAGwAeQAuAEcAZQB0A

Events for Windows PowerShell (PID: 3448)

| Object Type | Event Type | Endpoint | User | Time | Parent Process ID | Parent Process UID | Process Name | Parent Process Name | Process ID | Process UID | SHA1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:51:54 | 7344 | 6DD71121FD3695E5 | Windows PowerShell | Windows PowerShell | 3448 | 5728CD63054A799F | 6cbce4a295c163791b60fc23d285e6d84f28ee4c |
| PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:52:23 | 3448 | 5728CD63054A799F | whoami - displays logged on user information | Windows PowerShell | 612 | A6615D1E341C6E40 | 47d7864d26fc67e0d60391cbf170d33da518c322 |
| PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:52:23 | 3448 | 5728CD63054A799F | whoami - displays logged on user information | Windows PowerShell | 420 | 126E89EF016AEE39 | 47d7864d26fc67e0d60391cbf170d33da518c322 |
| PROCESS | Process Creation | GMQ-WIN10 | N/A | Apr 16, 2019 14:52:23 | 3448 | 5728CD63054A799F | Task Scheduler Configuration Tool | Windows PowerShell | 6620 | 7E75669539A9B92B | 112c8ffa1c0934acaad2c58b3c7e81f3fb8e4a2c |

# 4.1.2 Technical Details

### *4.1.2.1 The vendor must provide the minimum supported platforms including: Windows operating system, Linux operating system, and all virtual environments including but not limited to VMWare, Azure, Hyper-V*

Yes

SentinelOne supports a wide variety of Windows, Mac and Linux distributions as well as virtualization OSes. Common software exceptions are documented in our support portal.

**Windows Modern**

- Windows (32/64-bit): 10, 8.x, 7 SP1+
- Editions: Home, Pro, Pro for Workstations, Enterprise, Education, Pro Education, Enterprise LTSC
- Supported without Agent UI: Embedded, Windows 10 IoT Enterprise
  - Not supported: Mobile, Windows 10 IoT Core
- Windows Server: 2019, 2016, 2012 R2, 2012, 2008 R2 SP1
- Windows Server Core: 2019, 2016, 2012
- Windows Storage Server: 2016, 2012 R2, 2012

**Windows Legacy**

- Windows (32/64-bit): XP SP3+ (requires KB968730), Windows Server 2003 SP2+ or R2 SP2+ (requires KB968730), Windows 2008 (Pre-R2)
- Windows Embedded POSReady 2009 (with unofficial support for other versions)

**Mac**

- macOS 10.14 (Mojave), 10.13 (High Sierra), 10.12 (Sierra)
- OS X 10.11.6 (El Capitan)

**Linux (v2.x Agent)**

- Debian 8 (Jessie), 9 (Stretch)
- Fedora 23-28
- Amazon Linux (AMI) 2016.01+, 2017.01+, 2018.03
- Amazon 2 64-bit
- CentOS 5.5 - 5.11, 6.1 - 6.10, 7.0 - 7.6
- Oracle Linux (formerly known as Oracle Enterprise Linux or OEL) 5.8 - 5.11, 6.5 - 6.9, 7.0+
- Red Hat Enterprise Linux (RHEL) 5.5 - 5.11, 6.0 - 6.10, 7.0 - 7.6
- SUSE Linux Enterprise Server 12.0+ (SP1+)
- openSUSE 42.0+
- Ubuntu 12.04, 14.04, 16.04, 16.10, 17.04, 17.10, 18.04, 18.10
- Virtuozzo 6.8, 7
- HP ThinPro 6.2

**Linux (v3.x Agent / New Architecture / GA expected Summer 2019)**

- CentOS 7.x
- RHEL 7.x, 8.x
- Ubuntu 14.04, 16.04, 18.04
- Amazon Linux 2
- Debian 8,9
- Oracle 6.9, 7.x
- Other distros to come

**Virtualization & VDI**

- Citrix XenApp
- Citrix XenDesktop
- Oracle VirtualBox
- VMware vSphere
- VMware Workstation
- VMware Fusion
- VMware Horizon (Agent version 2.6.x)
- Microsoft Hyper-V (requires the VHD file)

**4.1.2.2 The software shall not impair authorized system operations nor shall degrade managed system performance in any way, which may adversely impact a systems primary business/mission functions.The following authorize system operations include but not limited to:**

***4.1.2.2.1 Patching, Scanning,Business software usage***
Yes

SentinelOne is always striving for great agent efficiency and to provide more functions within our single agent architecture while keeping performance within a set of reasonable bounds. Here are some examples:

Anecdotally speaking, our customers that migrate off of legacy AV tell us that our agent provides both better protection while decreasing endpoint load.

Specifically speaking, some of these customers are now able to use a full endpoint solution within their VDI infrastructure. VDI is notorious for being performance (I/O, RAM, disk size) sensitive; SentinelOne is light enough to be installed onto each persistent or non-persistent guest OS, something that is often not possible with legacy AV.

SentinelOne recently made efficiency improvements to its Windows installer and reduced its size from ~80 MB down to ~60MB, a 25% reduction.

SentinelOne monitors the agent performance in our labs and performance is part of our regression testing to ensure we are staying within our performance envelope.

SentinelOne has a demonstrated ability to work well in large distributed environments with 100,000 or more nodes. When rolling out the agent we suggest some due diligence on the target systems so that proper exclusions, if they are needed at all, can be put into place before the agent push. Doing so helps to minimize disruption to the user environment. Customers learn these techniques during POC and once you become a customer, our Vigilance Team can help further with our optional deployment services.

Our performance claims are proved in third-party performance testing by Passmark (www.passmark.com) that indicates faster browse times, faster file copies, moves and deletes, and faster network throughput than seven well-known competitors. See https://www.sentinelone.com/wp-content/uploads/2017/06/PassMark-Software-Performance-Benchmark-Test-Aug-17-2.pdf for more information.

**4.1.2.2.2 The following Information Assurance Tools/Initiatives include but not limited to:**

***4.1.2.2.2.1 Secure host baseline, and assured compliance assessment software.***
Yes

### *4.1.2.3 The software shall allow for patching and update of containerized applications through means of automated verification(i.e integration with automated patch management infrastructure/processes)*

Yes

### *4.1.2.4 All software components shall have the ability to be automatically deployed and configured based on pre-defined configurations*

Yes

The solution's components have the ability to be configured based on predefined configurations based on flags selected.

These flags include things like:

- Silent installation (no UI, no user interaction, no reboot).
- Sets the address of the Management Server to which the agent connects.
- Sets a proxy server between the Agent and its Management Server
- Sets credentials to authenticate with the Management proxy.
- Sets a proxy server between the Agent and the Deep Visibility EDR data server.
- Sets the username and password to authenticate with the Deep Visibility proxy.
- Prevents fallback to direct communication if the proxy is not available.
- Installs the Agent with the UI disabled (no tray icon or notifications).
- Disables Agent logging.
- Disables the Safe Boot Protection feature.
- Install on Virtual Desktop Infrastructure or VMs with a Golden (Master) Image.

### *4.1.2.5 The software shall securely store and transmit data that insures confidentiality, integrity, availability, and source authenticity of the data*

Yes

The SentinelOne solution provides end-to-end authentication and authorization for various communication types in order to ensure application confidentiality and integrity:

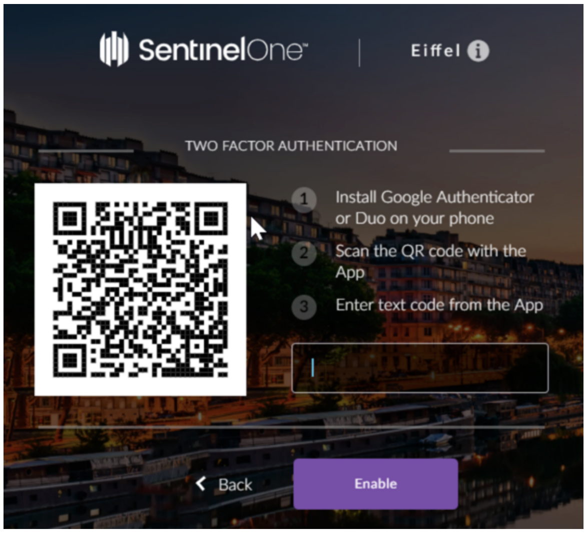
**Management Console and API Administrative Access**

Customer administrators log in through the web interface for the SentinelOne management console. Customers can also create API tokens for each administrative user if using the API for special purposes like 3rd party tool integration. Initially, an admin user is created for the customer and tied to the main administrator's email address. Once logged in, administrators can enable more advanced authentication mechanisms, such as SSO via SAML 2.0 (multi factor authentication) using a compatible application or built-in MFA. End users are not expected to log into the management console for any reason. A read-only user roles are provided if administrators would like to allow non-administrative users to access the console and view data.

Administrative users of the SentinelOne console can be authenticated in a variety of ways. The console offers a configurable authentication timeout setting. Attackers attempting a brute force attack will experience a slow down in console response after multiple unsuccessful attempts.

When using local username/password authentication, SentinelOne requires complex passwords comprised of 1) 10 to 25 characters; 2) Three or more of these character types: Upper-case letters, lower-case letters, numbers, special characters; 3) no whitespace.  The SentinelOne management console does not enforce password expiration, password history, or require the initial password to be changed for accounts. These features can be enforced through an SSO/SAML and/or multi-factor authentication integration.

Customers can increase their security with SentinelOne's built-in Two-Factor Authentication (2FA, Multi-Factor Authentication, MFA), which adds a second authentication method. For example, Google Authenticator and Duo Security send a code through a phone app. When SSO using SAML is configured on the Management console, MFA becomes the responsibility of the IDP.



SentinelOne
Eiffel
TWO FACTOR AUTHENTICATION
1 Install Google Authenticator or Duo on your phone
2 Scan the QR code with the App
3 Enter text code from the App
Back
Enable

The management console offers the ability to integrate with SSO via SAML 2.0. Identity as a Service (IDaaS) and Identity Provider (IdP) services like Okta, Ping, and Azure AD, can be configured to provide authentication services using elaborate access policies as supported by the IdP like unsuccessful login attempts lockout, time of day access, and permitted source IP. We validate the assertion that the IDP has signed using the IDP provided certificate. The certificate is provided by the IDP admin and uploaded to the Management Console. As such, the certificate is subject to the lifecycle settings that the IDP admin has defined. SentinelOne utilizes LDAPS (LDAP over SSL). The LDAP protocol is transmitted over port 636 and communications are encrypted utilizing TLS and no passwords are stored as part of the LDAP authentication. We support extraction of the following attributes from the SAML assertion:

- Name Id attribute (already contains the user id in email format)
- Full name (Displayable)

- Role - viewer or admin

**Agent to Management Network Communication**

SentinelOne supports secure communications via TLS 1.2 for modern OSes such as Windows 7 and newer, Windows Server 2008R2 and newer, OS X, macOS, and many Linux version. We also support the legacy OSes Windows XP, Windows Server 2003 / 2003R2, and Windows Server 2008. These older OSes are permitted to communicate via 3DES but these communications do not terminate directly onto the SaaS service. Instead, their weaker communications are proxied through application load balancers that receive the weak ciphers and convert them to TLS. We do this proxy function only to support the maximum capabilities of older OSes.

**Authorization to Backend Data via the UI**

The SentinelOne back end servers generate a unique "authToken" that resides on the back end. It governs a user's access to the data. The Javascript GUI interacts with the authToken indirectly via an isolated cookie. All application API calls use this authToken at the back end.

### *4.1.2.6 The software shall encrypyt all data in transit or data atvrest with FIPS 140-2 compliant cryptographic modules*

Yes

Please note that SentinelOne's Information Security Management System is ISO/IEC 27001:2013 compliant as of September 2018. This means that we have developed, implemented, and follow security best practices and that the security program has been audited and approved by a third party. Customer may access our ISO certificate here: https://www.schellman.com/certificate-directory.

**Summarized encryption practices**

In our corporate environment, all passwords are encrypted, all endpoints are encrypted. All data transfers are encrypted as well using VPN utilizing 256-bit encryption. Multi-factor authentication is required.

In our production environment, all data transfers are encrypted, passwords are encrypted. All access into the customer environment is encrypted as well using VPN utilizing 256-bit encryption. Multi-factor authentication is required.

Our shared tenant data at rest is encrypted

Our dedicated OneBox tenants data at rest can be encrypted upon request

**Physical Datacenter Security**

Physical security controls address physical data theft. Customer Production Data resides physically within several AWS global data centers. Customers choose the region where they want data hosted. AWS is SOC2 compliant and has highly stringent rules for persons accessing their facilities thus controlling who has physical access to that data.

## Encryption at Rest & Key Management

The SentinelOne product does not directly process customer data; SentinelOne processes customer metadata (data about the data) which is an abstraction of the statuses related to attacks, incidents, and core OS interactions all of which are used to respond to incidents or are used to research incidents related to a cyber investigation. Customers are most commonly deployed onto shared tenant hardware infrastructure (aka "shared clusters") which are teams of computers working to provide the SaaS service. Shared clusters commingle customer data within the AWS RDS system. In some cases the customer environment may be deployed onto dedicated hardware infrastructure due to the customer's size or because of a compliance requirement. The first and most common type of dedicated infrastructure is a "OneBox" where all SaaS components reside on a single computer. The second type is a dedicated cluster (typically for very large customers). In both cases, OneBox and dedicated cluster, only that customer's data resides on those systems. The mechanisms described below are valid regardless of whether the infrastructure is shared or dedicated.

Encryption at rest is another form of physical security. By default, SentinelOne encrypts certain data stores by default to ameliorate risk of exposure to highly structured data sets.

For all cluster environments, customer production data at rest is encrypted at the volume level using hardware assisted cryptographic mechanisms. Customer data resides within the Amazon Relational Database Service (RDS) that run on these encrypted volumes. The encryption process utilizes industry standard AES-256 algorithms. Keys to encrypted data are managed within the AWS Key Management Service (KMS). Access to the keys is governed by the AWS Identity and Access Management (IAM) service that controls access based on personnel role. If physical data volumes are stolen or misappropriated, they are not mountable somewhere else because the keys are not stored in the same place as the encrypted data.

For OneBox environments, by default customer production data is not encrypted at rest using the techniques described above. However, at customers request, encryption can be enabled.

## Encryption in Transit and Ensuring Proper Agent Communication

For Agent to Tenant communications these are some of the controls SentinelOne employs:

Communications between the agent and management are encrypted with TLS for OSes that support TLS. Older OSes that only support down-level cryptography have their communications proxied through a dedicated gateway so that the core SaaS system can maintain TLS 1.2 or better support.

Agent uses a management token unique to each customer site. Management token connects the agent to the correct site. Agent identifies itself with a unique UUID. No credentials are stored on the agent but instead in protected management space in our cloud. Agent communications to the SaaS using the token and the UUID and the management brokers the communication with the core database system on the agent's behalf.

If the token were to be stolen, it cannot be used to directly access data stored within the system.

The permissions assigned to the agent via this process tag and process data correctly to that customer and not another customer.

## Logical Product Security for Shared & Dedicated Tenants

Logical security controls are in place to prevent the leakage of one customer's data to another. For Administrators accessing the management UI, these are some of the controls SentinelOne employs:

Communications are encrypted with TLS and must use a modern browser

Administrators are authenticated with username/password, username/password + 2-factor authentication, or SSO. More details are available on this topic.

Administrators are authorized to sites based on their assigned role in the customer environment.

No direct credentials are stored locally. Instead, the SentinelOne back end servers generate a unique "authToken" that resides on the back end. It governs an administrator's access to the data. The local browser Javascript GUI interacts with the authToken indirectly via an isolated cookie. All application API calls use this authToken at the back end.

The permissions assigned to the administrator govern the data they see in the console so that they see their customer data and not other customer data.

for dedicated infrastructure, these mechanisms still apply but only that customer's data resides on those systems.

STATE OF WEST VIRGINIA
Purchasing Division

# PURCHASING AFFIDAVIT

**CONSTRUCTION CONTRACTS:** Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

**ALL CONTRACTS:** Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

**EXCEPTION:** The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

**DEFINITIONS:**

**"Debt"** means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

**"Employer default"** means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

**"Related party"** means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

**AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (*W. Va. Code* §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.**

**WITNESS THE FOLLOWING SIGNATURE:**

Vendor's Name: SentinelOne

Authorized Signature: ______________ Date: 7/30/19

State of Virginia

County of Loudoun, to-wit:

Taken, subscribed, and sworn to before me this 30 day of July, 2019.

My Commission expires 06/30, 2020

**AFFIX SEAL HERE**

JOHN KIJE KIM
NOTARY PUBLIC
REG. #7701945
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES JUNE 30, 2020

**NOTARY PUBLIC** ______________

## EXHIBIT A – Pricing Page
## EndPoint Detection and Response Services - OT19125
## Note to Vendors: The Pricing Page is locked with the exception of Unit Cost column.

| Line Items | Description | Unit of Measure | Estimated Quantity | Unit Cost | Extended Cost |
|---|---|---|---|---|---|
| 4.1 | **Contract Item:** Endpoint Detection and Response Software for approximately 2,000 EndPoints | LS | 2,000 | $16.00 | $ 32,000.00 |
| 4.1 | **Optional Renewal Year 2 Maintenance: Contract Item:** Endpoint Detection and Response Software | LS | 2,000 | $16.00 | $ 32,000.00 |
| 4.1 | **Optional Renewal Year 3 Maintenance: Contract Item:** Endpoint Detection and Response Software | LS | 2,000 | $18.00 | $ 36,000.00 |
| 4.1 | **Optional Renewal Year 4 Maintenance: Contract Item:** Endpoint Detection and Response Software | LS | 2,000 | $18.00 | $ 36,000.00 |
| | | | **Total Overall Cost** | | **$ 136,000.00** |

**Please note: This information is being captured for auditir**

**Contract will be evaluated on all lines but only awarded on first year. Renewal options for years 2, 3, and 4 will be initiated by the Agency, agreed to by the Vendor and processed by the WV**

Vendor Signature: Lane Vargo

**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

Lane Vargo Regional Sales Manager
(Name, Title)

(Printed Name and Title)
605 Fairchild Dr Mountain View CA 94043
(Address)
703-608-6223
(Phone Number) / (Fax Number)
lanev@sentinelone.com
(email address)

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Sentinel One
(Company)
Lane Vargo Regional Sales Manger
(Authorized Signature) (Representative Name, Title)
Lane Vargo
(Printed Name and Title of Authorized Representative)
7/30/19
(Date)
703-608-6223
(Phone Number) (Fax Number)