Soar Architecture Siem Ti Integration Documentation

SECURAA Security Documentation

SOAR Platform Architecture and Integration

Executive Summary

The SOAR (Security Orchestration, Automation and Response) platform integrates SIEM tools, Threat Intelligence feeds, and vulnerability scanners through specialized TIP and CSAM services. The platform provides centralized orchestration, automated workflows, and unified dashboards for comprehensive security operations.

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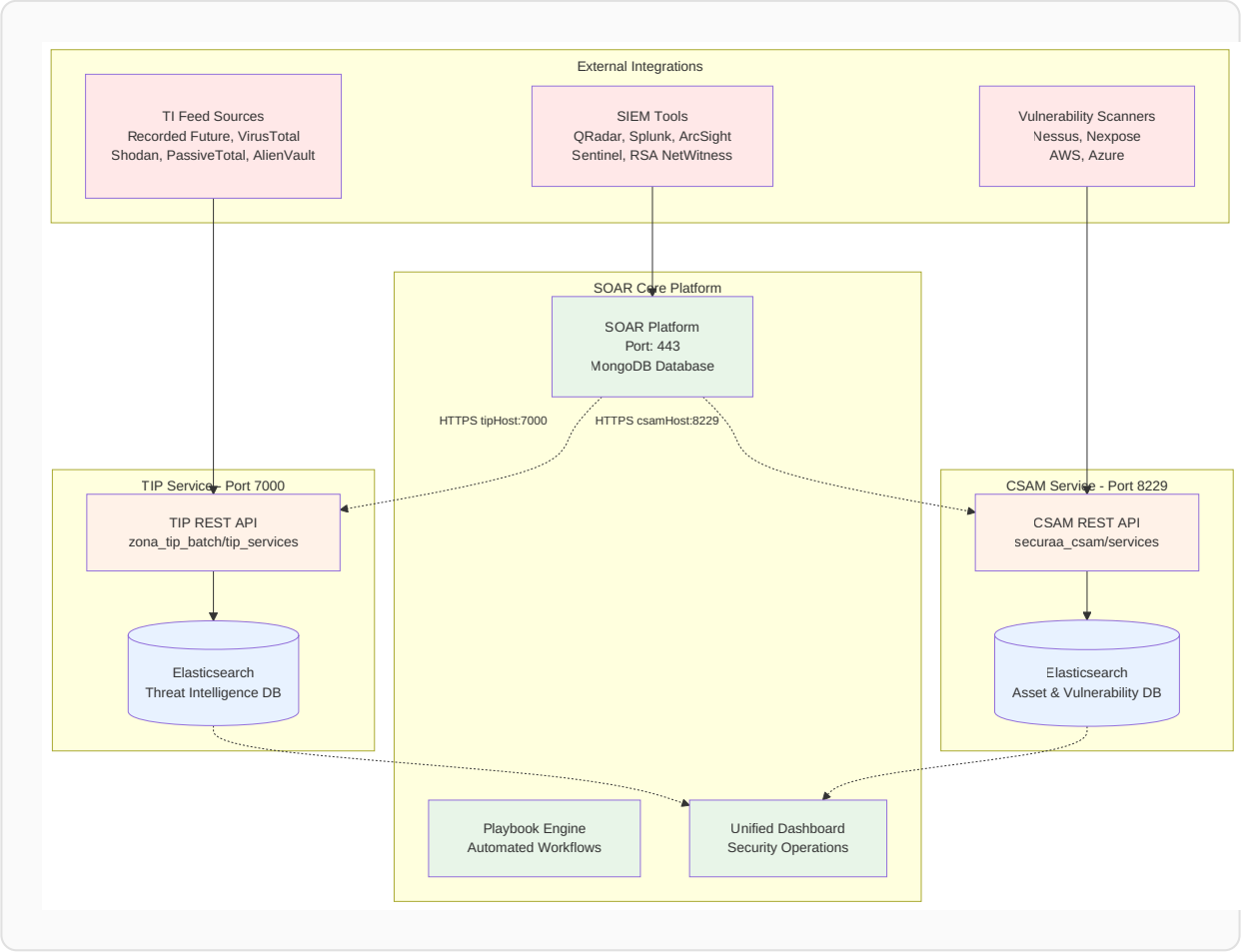
Platform Architecture

System Overview



Core Components

Component	Port	Database	Purpose
SOAR Platform	443	MongoDB	Central orchestration, case management, playbook execution
TIP Service	7000	Elasticsearch	Threat intelligence processing and API
CSAM Service	8229	Elasticsearch	Asset management and vulnerability tracking

SIEM Integration

Supported SIEM Platforms

The SOAR platform integrates with various SIEM tools for security event ingestion and incident management:

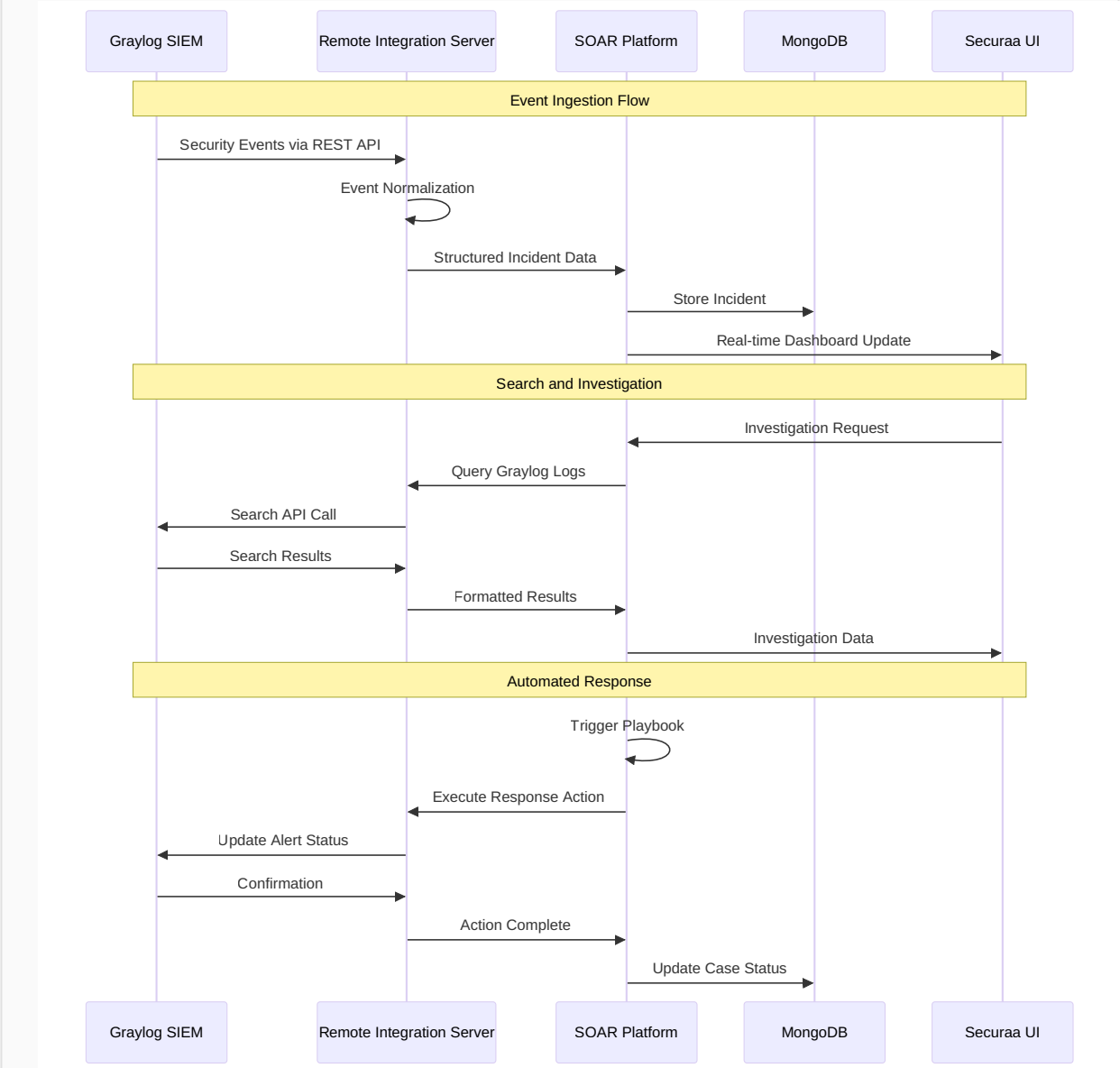
Enterprise SIEM Solutions

- **IBM QRadar**: Enterprise SIEM with threat detection
- **IBM QRadar on Cloud**: Cloud-based QRadar instances
- **Splunk**: Data platform for security monitoring
- **ArcSight ESM**: Enterprise security management
- **Microsoft Sentinel**: Cloud-native SIEM solution
- **RSA NetWitness**: Network detection and response
- **Chronicle Security**: Google Cloud SIEM
- **Elastic Security**: Elasticsearch-based security analytics

Integration Methods

- **REST API**: Direct API integration for event ingestion
- **Webhooks**: Real-time event notifications
- **Log Forwarding**: Syslog and structured log ingestion
- **Database Connections**: Direct database queries

SIEM Data Flow



SIEM Configuration Examples

QRadar Integration:

```
Connection_Type: "REST API"
Endpoint: "https://qradar.company.com/api/siem"
Authentication: "SEC Token"
Data_Format: "JSON"
Offenses: "Auto-import high severity offenses"
```

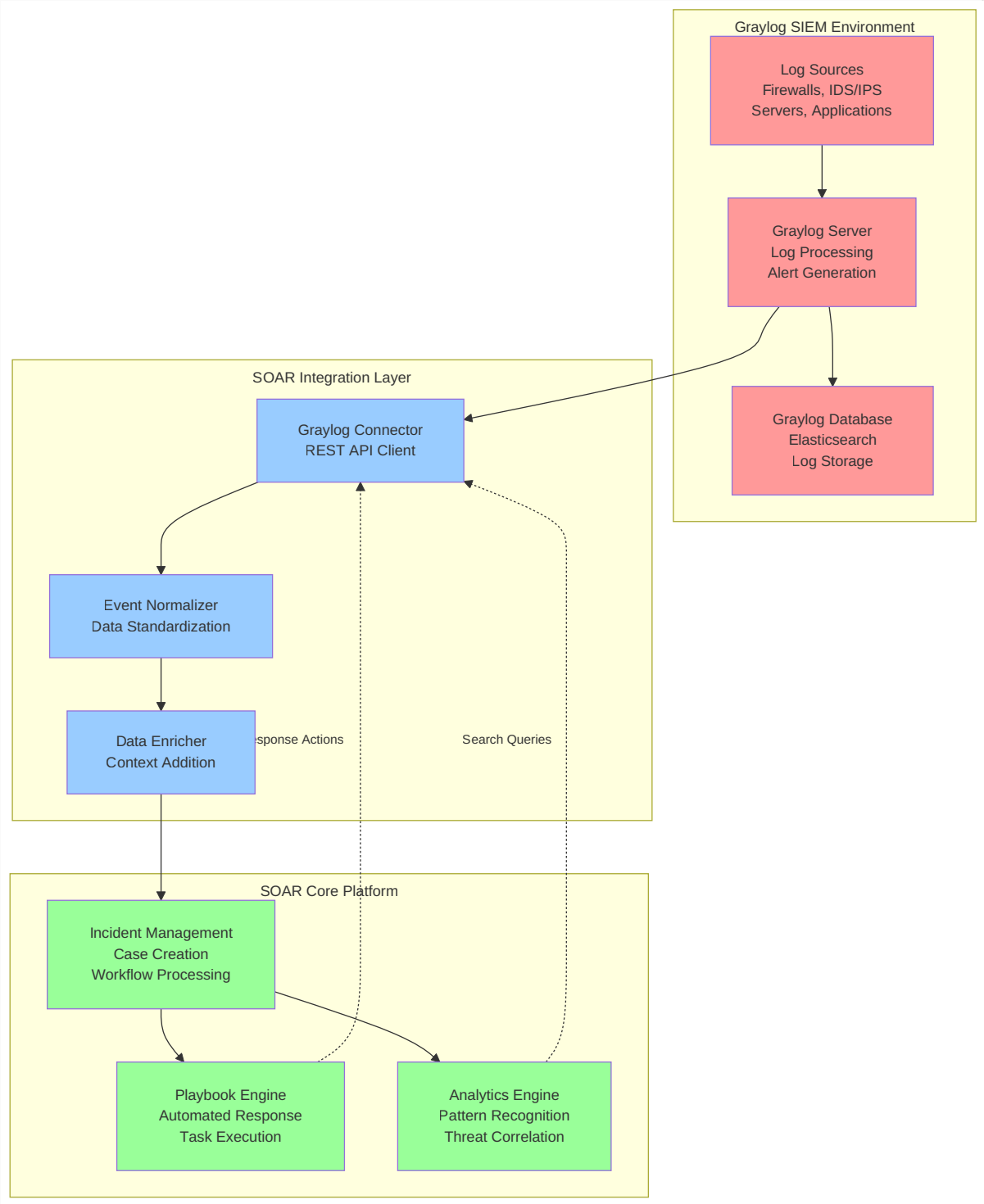
Splunk Integration:

```
Connection_Type: "REST API"
Endpoint: "https://splunk.company.com:8089/services"
Authentication: "Bearer Token"
Data_Format: "JSON"
Search_Queries: "SPL-based threat hunting"
```

Threat Intelligence Feeds

TI Feed Processing Architecture

The TIP service processes multiple threat intelligence sources through dedicated batch processors:



Supported Indicator Types

Indicator Type	Description	Sources
IP Addresses	Malicious IPs, C2 servers	Recorded Future, Abuse.ch, Blocklist.de, AbuseIPDB

Indicator Type	Description	Sources
Domain Names	Malicious domains, DGA domains	Recorded Future, MISP, Bambenek, Firebog
URLs	Malicious URLs, phishing sites	Recorded Future, MISP, URLScan.io, PhishTank
File Hashes	Malware hashes (MD5, SHA1, SHA256)	Recorded Future, MISP, Abuse.ch, VirusTotal, Hybrid Analysis
Email Addresses	Phishing/spam email addresses	Recorded Future, MISP, BotScout, HaveIBeenPwned

TI Feed Configuration

Batch Processing Schedule:

```
Recorded_Future:
  interval: 60  # minutes
  enabled: true
  endpoint: "RF API"

MISP_Local:
  interval: 30  # minutes
  enabled: true
  format: "STIX"

Abuse_ch:
  interval: 120 # minutes
  enabled: true
  feeds: ["malware", "botnet", "c2"]
```

TI Service API Endpoints

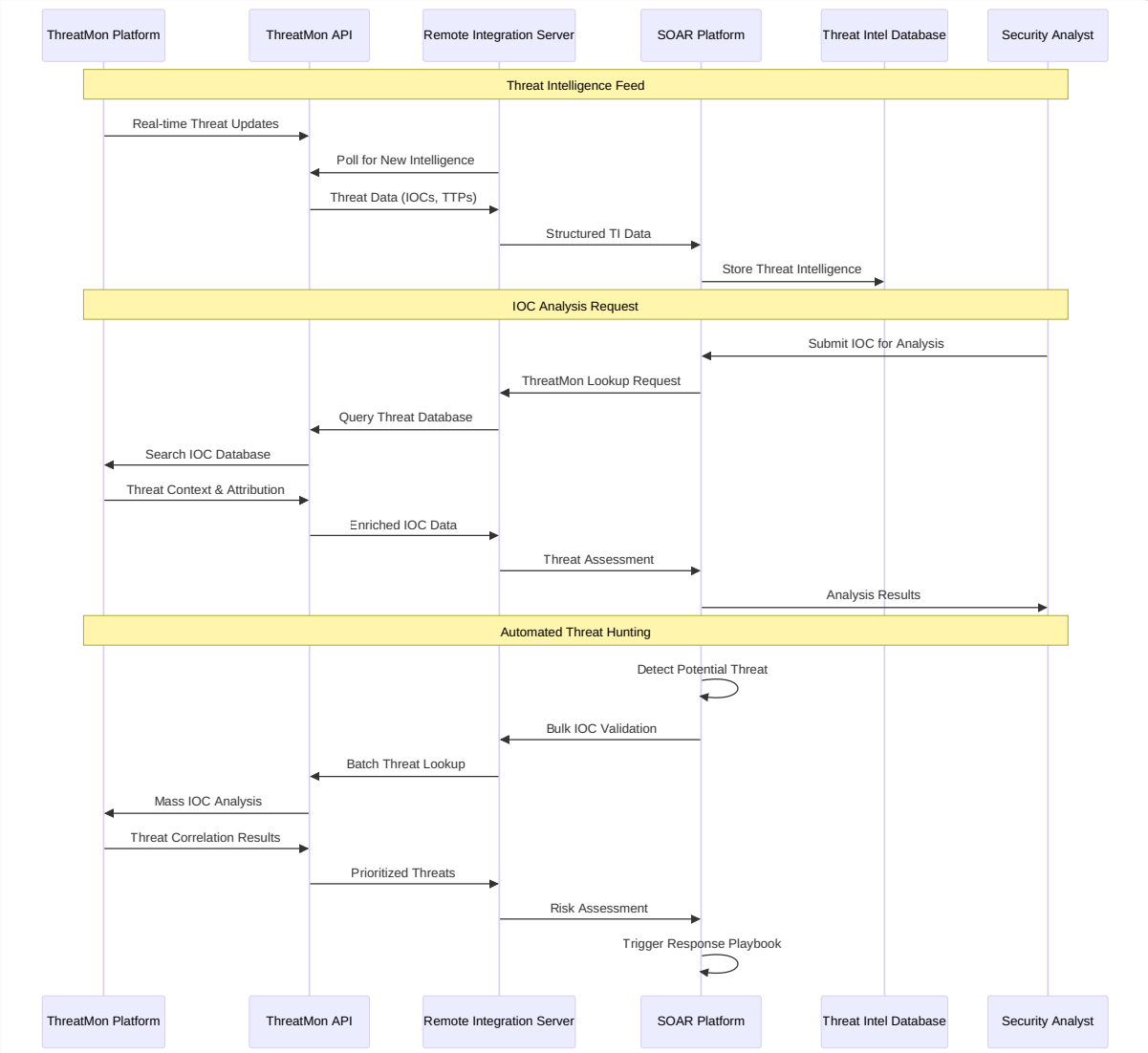
Endpoint	Method	Purpose
`/search/{userid}/{indicator}/{tiptype}/`	GET	Search indicators
`/datalist/`	POST	Retrieve indicator tables

Endpoint	Method	Purpose
`/importindicators/`	POST	Import custom indicators
`/addassociates/`	POST	Manage associations
`/exportindicator/`	POST	Export indicator data

Vulnerability Management

CSAM Service Architecture

The CSAM service integrates with various vulnerability scanners and cloud platforms for comprehensive asset management:



Asset Management Features

Cloud Asset Discovery: - **AWS**: EC2 instances, S3 buckets - **Azure**: Virtual machines, compute resources

Vulnerability Assessment: - **Nessus**: Comprehensive vulnerability scanning - **Nexpose**: Rapid7 vulnerability management - **CVE Database**: National Vulnerability Database integration - **Asset Criticality**: Business impact assessment - **Patch Management**: Vulnerability remediation tracking - **Compliance Mapping**: Regulatory compliance status

CSAM Service API Endpoints

Endpoint	Method	Purpose
`/assets`	GET	Retrieve asset information

Endpoint	Method	Purpose
`/vulnerability-details/{cve-id}`	GET	CVE vulnerability details
`/tasks/asset-info`	POST	Asset information tasks
`/assets/export`	POST	Export asset data
`/dashboarddata`	GET	Dashboard metrics

Comprehensive Integration Matrix

SIEM & Security Analytics (8 Platforms)

Platform	Category	Capabilities
IBM QRadar	Enterprise SIEM	Event correlation, offense management, search queries
IBM QRadar on Cloud	Cloud SIEM	Cloud-based threat detection and response
Splunk Enterprise	Data Analytics	Log analysis, dashboards, alert management
ArcSight ESM	Enterprise SIEM	Real-time correlation, case management
Microsoft Sentinel	Cloud SIEM	Azure-native security operations
RSA NetWitness	NDR Platform	Network detection and response
Chronicle Security	Cloud SIEM	Google Cloud security analytics
Elastic Security	Open Source	Elasticsearch-based security monitoring

Threat Intelligence Sources (19 Sources)

Source	Type	Feed Content
Recorded Future	Commercial	Comprehensive threat intelligence
VirusTotal	Freemium	File/URL reputation analysis
Shodan	Freemium	Internet-connected device intelligence
PassiveTotal	Commercial	DNS/WHOIS historical data
AlienVault OTX	Open Source	Community threat intelligence
IBM X-Force	Commercial	Enterprise threat intelligence
ThreatMiner	Open Source	Threat data mining
AbuseIPDB	Community	IP address reputation
URLScan.io	Freemium	URL analysis and screenshots
Hybrid Analysis	Freemium	Malware analysis sandbox
PhishTank	Open Source	Phishing URL database
HaveIBeenPwned	Freemium	Breach notification service
MISP Platform	Open Source	Structured threat sharing
Abuse.ch	Open Source	Malware and botnet feeds
Bambenek	Open Source	Domain and IP intelligence
Blocklist.de	Open Source	Attack source tracking
Team Cymru Bogons	Open Source	Invalid IP space tracking
Firebog	Open Source	DNS blocking lists
BotScout	Open Source	Bot and spam detection

Vulnerability Management (8 Tools)

Tool	Category	Capabilities
Nessus	Vulnerability Scanner	Comprehensive vulnerability assessment
Nexpose	Vulnerability Scanner	Rapid7 vulnerability management
CVE Database	Vulnerability DB	National Vulnerability Database
AWS EC2	Cloud Security	EC2 instance vulnerability scanning
AWS S3	Cloud Security	S3 bucket security assessment
Azure Compute	Cloud Security	Azure VM vulnerability management
Azure Security Center	Cloud Security	Azure security posture management
Neutrino API	IP Intelligence	IP geolocation and threat data

Network Security (3 Platforms)

Platform	Category	Capabilities
Palo Alto Networks	Next-Gen Firewall	Traffic analysis, policy management
Check Point	Security Gateway	Firewall management, threat prevention
Fortinet FortiGate	UTM Platform	Unified threat management

Endpoint Security (3 Solutions)

Solution	Category	Capabilities
Symantec Endpoint	Endpoint Protection	Antivirus, threat detection
Trend Micro Deep Security	Endpoint Security	Server and workstation protection
Microsoft Defender	Endpoint Detection	Windows endpoint security

Identity & Access Management (4 Systems)

System	Category	Capabilities
Active Directory	Identity Provider	User authentication, directory services
Microsoft Outlook	Email Security	Email threat detection
Azure Active Directory	Cloud Identity	Cloud-based identity management
Security Token Service	Authentication	Token-based authentication

Communication & Collaboration (1 Platform)

Platform	Category	Capabilities
Slack	Team Communication	Alert notifications, incident collaboration

ITSM Integration (1 Platform)

Platform	Category	Capabilities
ServiceNow	ITSM Platform	Ticket creation, workflow automation

Specialized Security Tools (12 Tools)

Tool	Category	Purpose
IPInfo	IP Intelligence	IP geolocation and ASN data
Cymon	Threat Intelligence	IP and domain reputation
DNSDB	DNS Intelligence	Historical DNS data
MXToolbox	Email Security	Email server analysis
StackPath IP Info	IP Intelligence	Enhanced IP data
URLVoid	URL Analysis	URL reputation checking

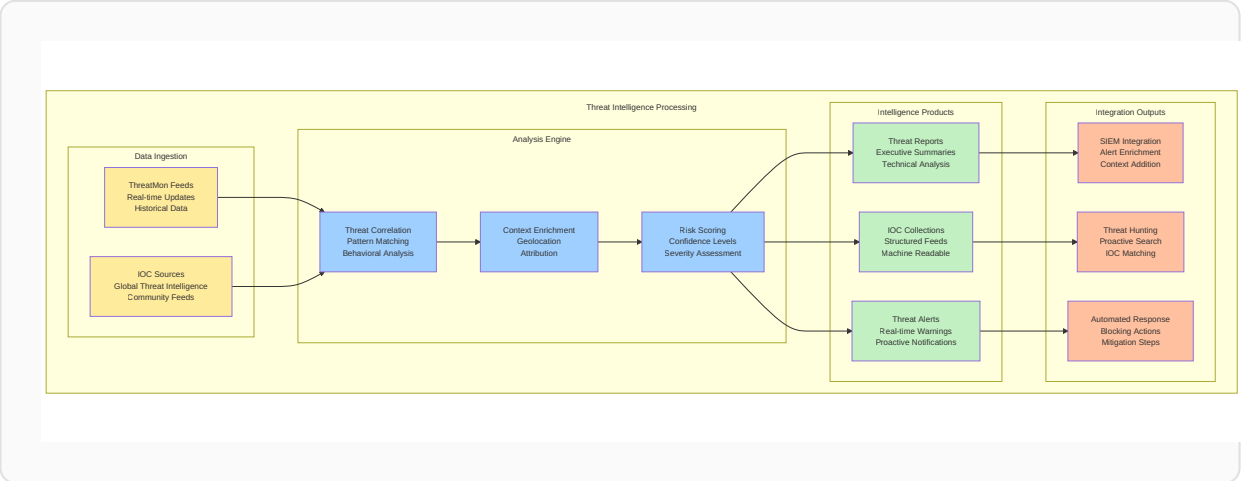
Tool	Category	Purpose
IPVoid	IP Analysis	IP reputation analysis
MalShare	Malware Samples	Malware sample sharing
Safe Browsing	Web Security	Google Safe Browsing API
Phishing Initiative	Anti-Phishing	Phishing URL detection
WhatIsMyBrowser	Browser Analysis	Browser fingerprinting
Alexa Traffic	Web Analytics	Website traffic analysis

Vulnerability Data Structure

```
Asset_Schema:
  asset_id: "unique identifier"
  ip_address: "asset IP"
  hostname: "asset hostname"
  os_type: "operating system"
  business_hierarchy: "organizational unit"
  vulnerabilities:
    - cve_id: "CVE-2023-XXXX"
      cvss_score: 9.8
      severity: "Critical"
      patch_available: true
      scanner_source: "Nessus"
```

Service Communication

Integration Architecture



Configuration Parameters

Service Endpoints:

```
TIP_Service:
  host: "${tipHost}"
  port: 7000
  protocol: "HTTPS"
  elasticsearch: "${ESHostURL}"

CSAM_Service:
  host: "${csamHost}"
  port: 8229
  protocol: "HTTPS"
  elasticsearch: "https://${csamHost}:9200"

SOAR_Platform:
  port: 443
  database: "MongoDB"
  protocol: "HTTPS"
```

Authentication: - **Service-to-Service**: HTTPS with TLS certificates - **Elasticsearch**: Basic authentication (username/password) - **External APIs**: Token-based authentication

Data Flow Patterns

1. **Real-time Integration**: Webhook-based event notifications
2. **Scheduled Polling**: Periodic data synchronization

3. **On-demand Queries**: User-initiated data retrieval
4. **Batch Processing**: Bulk data import and processing

Conclusion

The SOAR platform provides comprehensive security orchestration through:

- **SIEM Integration**: Multi-platform security event management
- **Threat Intelligence**: Automated TI feed processing and correlation
- **Vulnerability Management**: Cloud-native asset and vulnerability tracking
- **Unified Operations**: Centralized dashboard and workflow automation

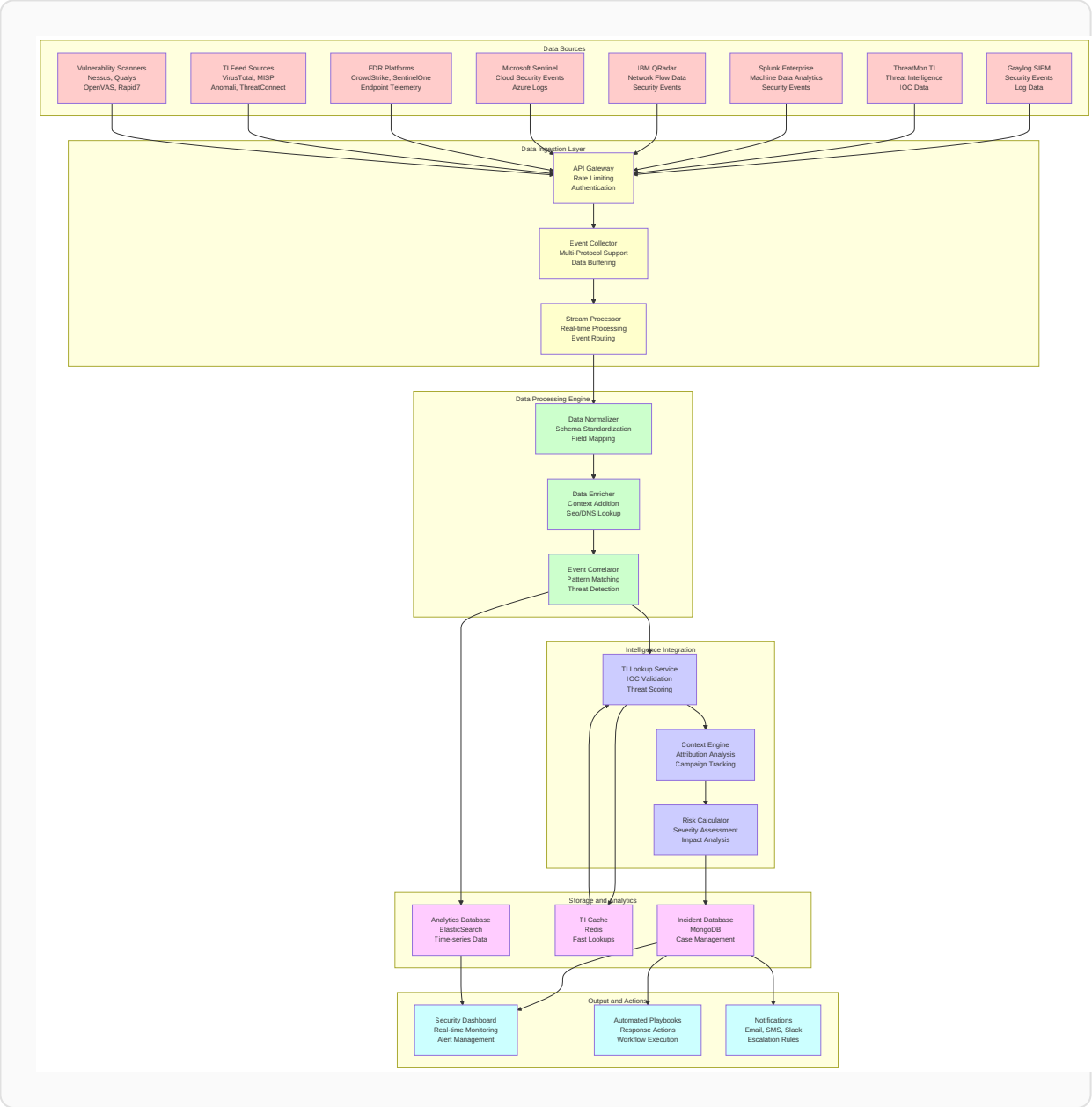
This architecture enables organizations to achieve integrated security operations with automated threat detection, investigation, and response capabilities.

Document reflects actual implementation based on zona_tip_batch and securaa_csam codebase analysis.

TIP and CSAM Service Integration

Integration Architecture

The SOAR platform integrates with TIP and CSAM services via HTTPS REST API calls. The integration configuration is managed through host configuration parameters.



Configuration Parameters

TIP Service Configuration: - **Host**: Configured via `tipHost` parameter - **Port**: 7000 (hardcoded in main.go) - **Protocol**: HTTPS with TLS certificates - **Elasticsearch**: Configurable ESHostURL (host:port)

CSAM Service Configuration: - **Host**: Configured via `csamHost` parameter - **Port**: 8229 (hardcoded in main.go) - **Protocol**: HTTPS with TLS certificates - **Elasticsearch**: https://csamHost:9200 (port 9200)

Service Integration Points

TIP Service Endpoints (Port 7000): - `/search/{userid}/{indicator}/{tiptype}/` - Indicator search - `/datalist/` - Table data retrieval - `/settags/{indicator}/{tiptype}/` - Tag management - `/gethistory/{userid}` - Search history - `/`

`importindicators/` - Indicator import - `/addassociates/` - Association management - `/exportindicator/` - Data export

CSAM Service Endpoints (Port 8229): - `/assets` - Asset data retrieval - `/assets/{asset-id}/attribute/{attribute-type}` - Asset attributes - `/tasks/asset-info` - Asset information tasks - `/assets/export` - Asset data export - `/vulnerability-details/{cve-id}` - Vulnerability information - `/dashboarddata` - Dashboard metrics

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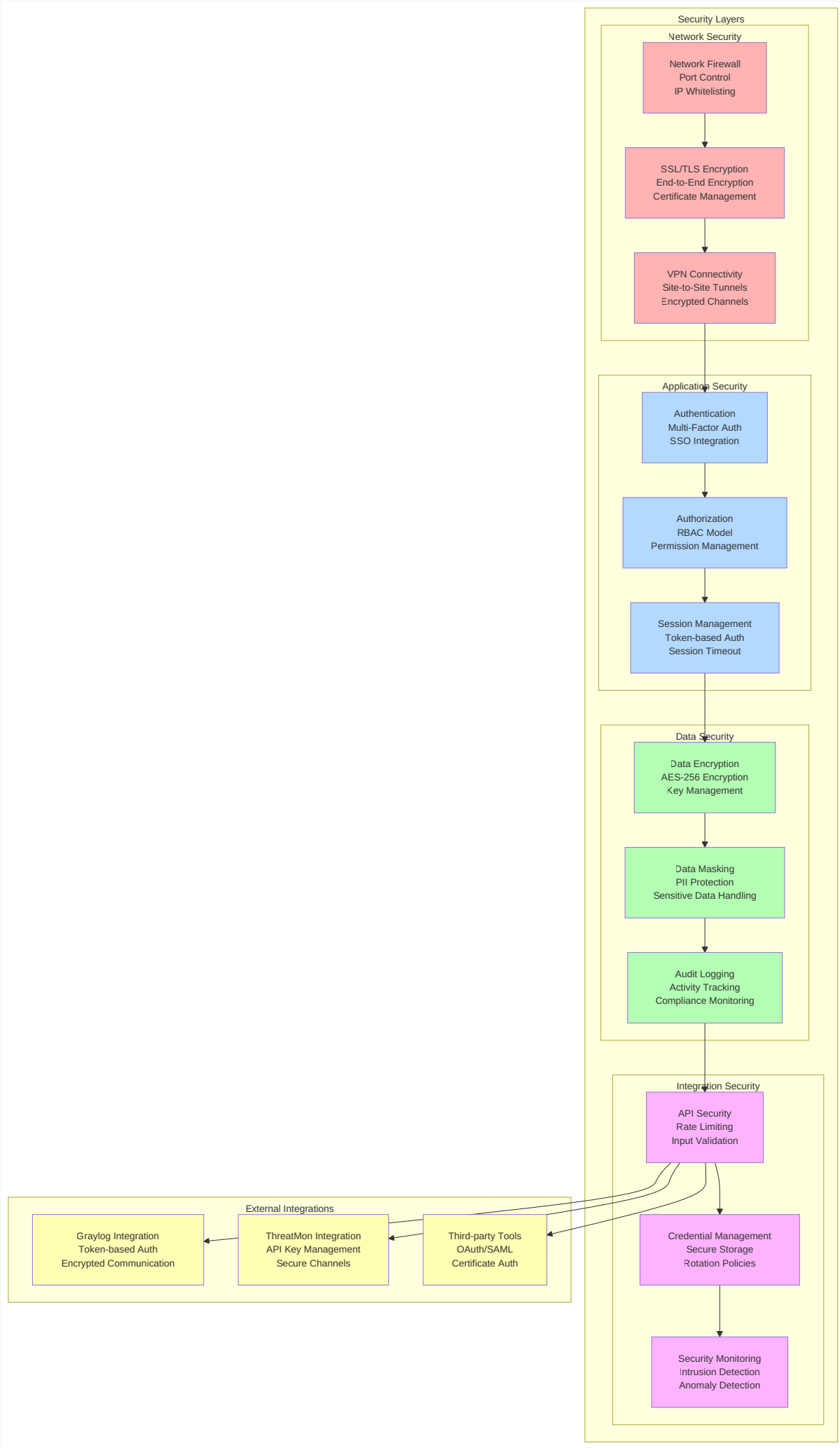
Threat Intelligence Processing

TIP Service Architecture

The TIP service (`zona_tip_batch/tip_services`) processes threat intelligence from multiple sources and stores data in Elasticsearch.


Security Layers
Network Security
Network Firewall
Port Control
IP Whitelisting
SSL/TLS Encryption
End-to-End Encryption
Certificate Management
VPN Connectivity
Site-to-Site Tunnels
Encrypted Channels
Application Security
Authentication
Multi-Factor Auth
SSO Integration
Authorization
RBAC Model
Permission Management
Session Management
Token-based Auth
Session Timeout
Data Security
Data Encryption
AES-256 Encryption
Key Management
Data Masking
PII Protection
Sensitive Data Handling
Audit Logging
Activity Tracking
Compliance Monitoring
Integration Security
API Security
Rate Limiting
Input Validation
Credential Management
Secure Storage
Rotation Policies
Security Monitoring
Intrusion Detection
Anomaly Detection
External Integrations
Graylog Integration
Token-based Auth
Encrypted Communication
ThreatMon Integration
API Key Management
Secure Channels
Third-party Tools
OAuth/SAML
Certificate Auth

Elasticsearch Schema

TIP Elasticsearch Configuration: - **Connection**: HTTP/HTTPS configurable via ESHostURL - **Authentication**: Basic auth with ESUsername/ESPassword - **Index**: Configurable index name (ESIndex constant) - **Data Structure**: Indicator data with sources, timestamps, associations

Key Data Fields: - `indicator` : The actual indicator value - `source` : Source of the intelligence (rf, misp, etc.) - `indicator_type` : Type (ip, domain, url, hash, email) - `updatedts` : Last update timestamp - `firstseen` : First seen timestamp - `othersources` : Array of additional sources for same indicator

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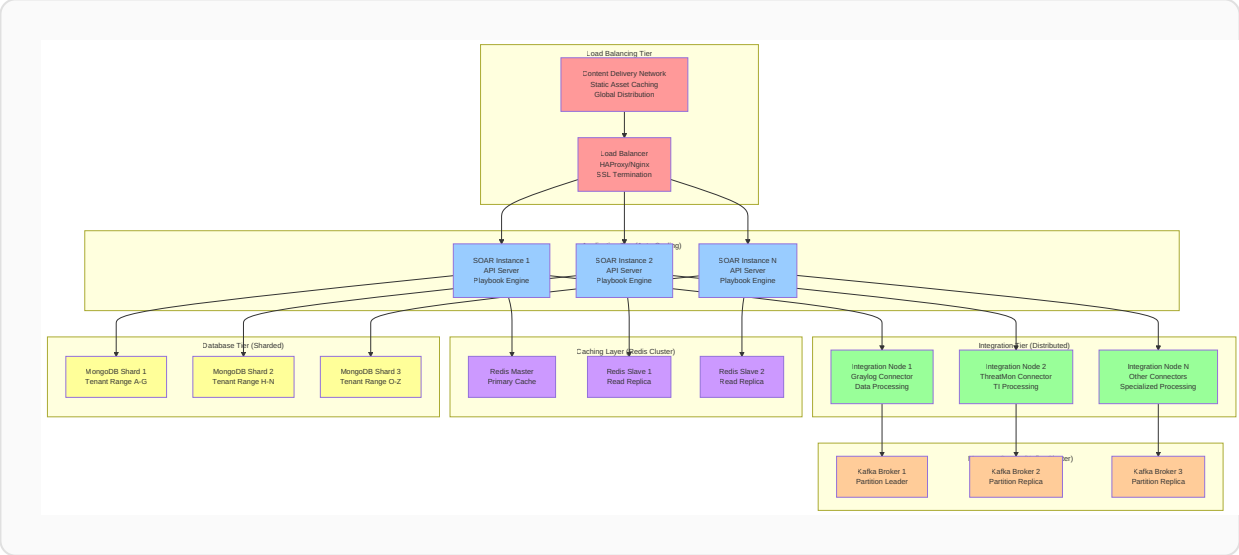
Asset and Vulnerability Management

CSAM Service Architecture

The CSAM service (`securaa_csam/services`) manages cloud assets and vulnerability data with Elasticsearch storage.



CSAM Elasticsearch Configuration

Database Setup: - **Connection**: https://csamHost:9200 - **Authentication**: Basic auth (ESUsername/ESPassword) - **Index Pattern**: `csam_{tenantcode}` for tenant isolation - **Configuration Index**: `csam_config_{tenantcode}`

Asset Data Structure: - **Asset Information**: IP, hostname, OS, business hierarchy - **Vulnerability Data**: CVE details, CVSS scores, scan results - **History Tracking**: Change

history in `csam_{tenantcode}_history` - **Compliance Data**: Security compliance and risk ratings

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Integration Patterns

SOAR-TIP Integration

Search Integration:

```
Endpoint: "https://{tipHost}:7000/search/{userid}/{indicator}/{tiptype}/"
Method: GET
Purpose: Real-time indicator lookups from SOAR platform
Response: Structured indicator data with sources and metadata
```

Playbook Task Integration:

```
URL_Construction: "https://" + configobj["tipHost"] + ":7000" + task.RestURL
Validation: URL must contain ":7000/" for TIP service identification
Task_Types: Search, import, export, association management
```

SOAR-CSAM Integration

Asset Query Integration:

```
Endpoint: "https://{csamHost}:8229/assets"
Method: GET
Parameters: filterquery for asset filtering
Purpose: Asset discovery and vulnerability assessment
Response: Asset data with vulnerability information
```

Task Execution Integration:

```
URL_Construction: "https://" + configobj["csamHost"] + ":8229" + task.RestURL
Task_Endpoint: "/tasks/asset-info"
Purpose: Asset information retrieval for playbook tasks
Response: Structured asset and vulnerability data
```

Service Communication Patterns

Authentication: - HTTPS with TLS certificates - Basic authentication for Elasticsearch - API key management for external integrations

Data Flow: - Pull-based integration (SOAR queries services) - RESTful API communication - JSON data format - Error handling and retry mechanisms

Configuration Management: - Host configuration via config files - Port configuration hardcoded in main.go files - Elasticsearch connection strings configurable - Service discovery via host:port patterns

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Conclusion

The SOAR platform provides a centralized orchestration layer that integrates with specialized TIP and CSAM services. The architecture supports:

Key Benefits

- **Service Separation**: TIP and CSAM services run independently with dedicated databases
- **Scalable Architecture**: Services can be deployed on same or different machines
- **RESTful Integration**: HTTPS API-based communication between services
- **Data Isolation**: Elasticsearch databases provide service-specific data storage
- **Flexible Configuration**: Configurable host settings for different deployment scenarios

This document reflects the actual implementation based on codebase analysis of zona_tip_batch and securaa_csam services.

Supported SIEM and Security Platforms

The SOAR platform provides native connectors and integration capabilities for a wide range of SIEM and security tools:

SIEM Platforms

- **Graylog**: Open-source log management with powerful search capabilities
- **Splunk**: Industry-leading data platform for search, monitoring, and analysis
- **IBM QRadar**: AI-powered SIEM with advanced threat detection
- **Microsoft Sentinel**: Cloud-native SIEM and SOAR solution

- **ArcSight ESM**: Enterprise security management with real-time correlation
- **LogRhythm**: Unified security analytics and incident response
- **AlienVault OSSIM**: Open-source security information management
- **Elastic Security**: Built on Elastic Stack for security analytics
- **RSA NetWitness**: Network and endpoint analysis platform
- **McAfee ESM**: Enterprise security manager with threat intelligence

Threat Intelligence Platforms

- **ThreatMon**: Real-time threat intelligence and IOC feeds
- **ThreatConnect**: Threat intelligence platform with automation
- **Anomali**: Threat intelligence management and analytics
- **MISP**: Open-source threat intelligence sharing platform
- **OpenCTI**: Open cyber threat intelligence platform
- **VirusTotal**: File and URL analysis with malware detection
- **ThreatQuotient**: Threat intelligence platform with data lake
- **Recorded Future**: Real-time threat intelligence and analytics
- **Intel 471**: Underground threat intelligence and monitoring
- **Digital Shadows**: Digital risk protection with threat intelligence

Endpoint Detection and Response (EDR/XDR)

- **CrowdStrike Falcon**: Cloud-native endpoint protection platform
- **SentinelOne**: AI-powered endpoint security and response
- **Carbon Black**: Advanced endpoint detection and response
- **Palo Alto Cortex XDR**: Extended detection and response platform
- **Microsoft Defender**: Integrated endpoint and cloud security
- **Trend Micro**: Endpoint security with machine learning
- **Symantec Endpoint Protection**: Enterprise endpoint security
- **FireEye HX**: Endpoint security and forensic analysis

Vulnerability Management Platforms

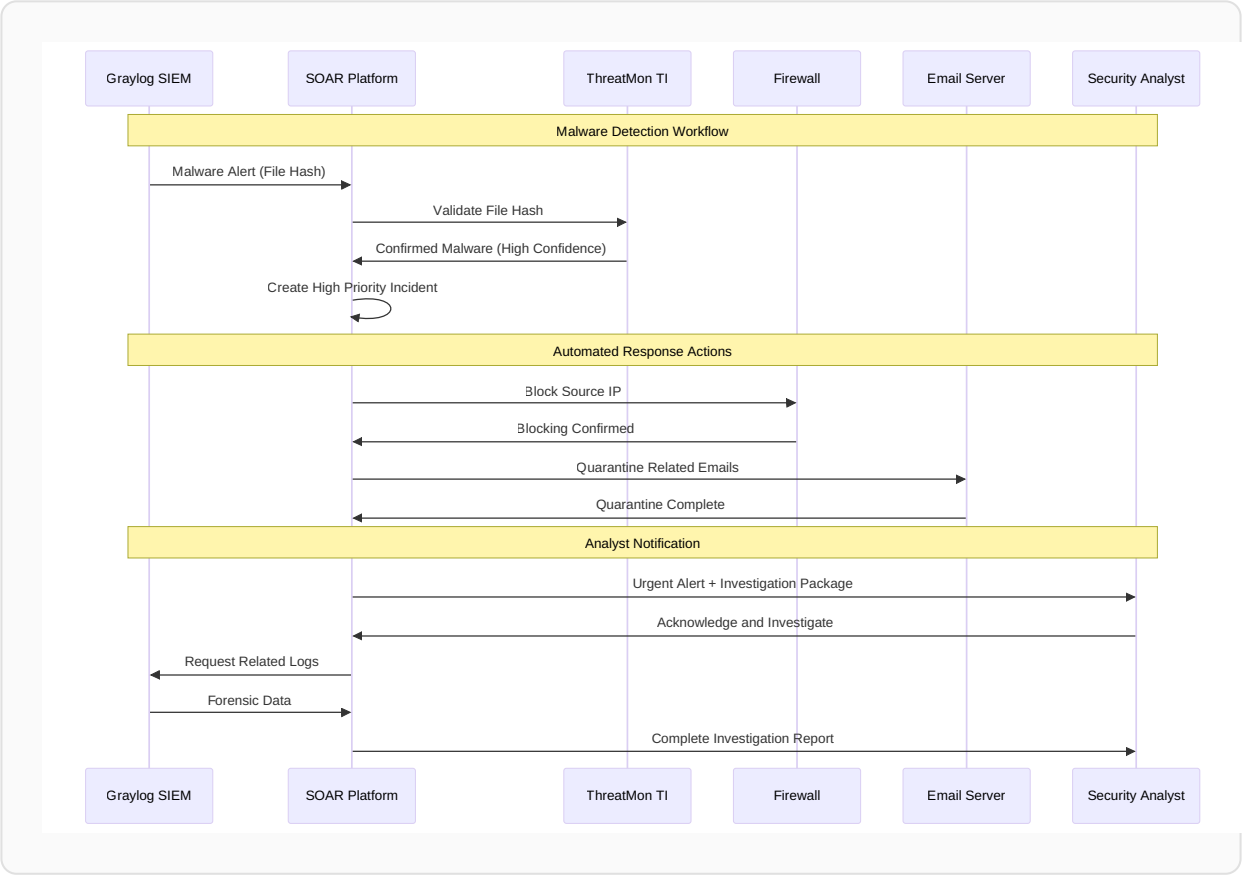
- **Tenable Nessus**: Comprehensive vulnerability assessment
- **Qualys VMDR**: Cloud-based vulnerability management
- **Rapid7 InsightVM**: Real-time vulnerability management
- **OpenVAS**: Open-source vulnerability scanner
- **Greenbone**: Enterprise vulnerability management

Network Security Tools

- **Palo Alto Firewalls**: Next-generation firewall with threat prevention
- **Cisco ASA/Firepower**: Network security and threat detection
- **Fortinet FortiGate**: Unified threat management platform
- **Check Point**: Advanced threat prevention and security management
- **Juniper SRX**: High-performance network security platform

Universal Integration Model

The SOAR platform employs a universal integration model that supports multiple communication protocols and data formats, enabling seamless connectivity with diverse security tools.



Integration Lifecycle Management

1. Discovery Phase - Automatic detection of available endpoints - Capability assessment and feature mapping - Security requirement analysis - Performance baseline establishment

2. Configuration Phase - Connection parameter setup - Authentication credential management - Data mapping and field correlation - Polling interval and threshold configuration

3. Testing and Validation - Connectivity testing with health checks - Data flow validation and integrity testing - Performance benchmarking - Error handling and retry mechanism testing

4. Deployment and Monitoring - Production deployment with monitoring - Real-time performance metrics - Alert configuration for integration failures - Automated failover and recovery procedures

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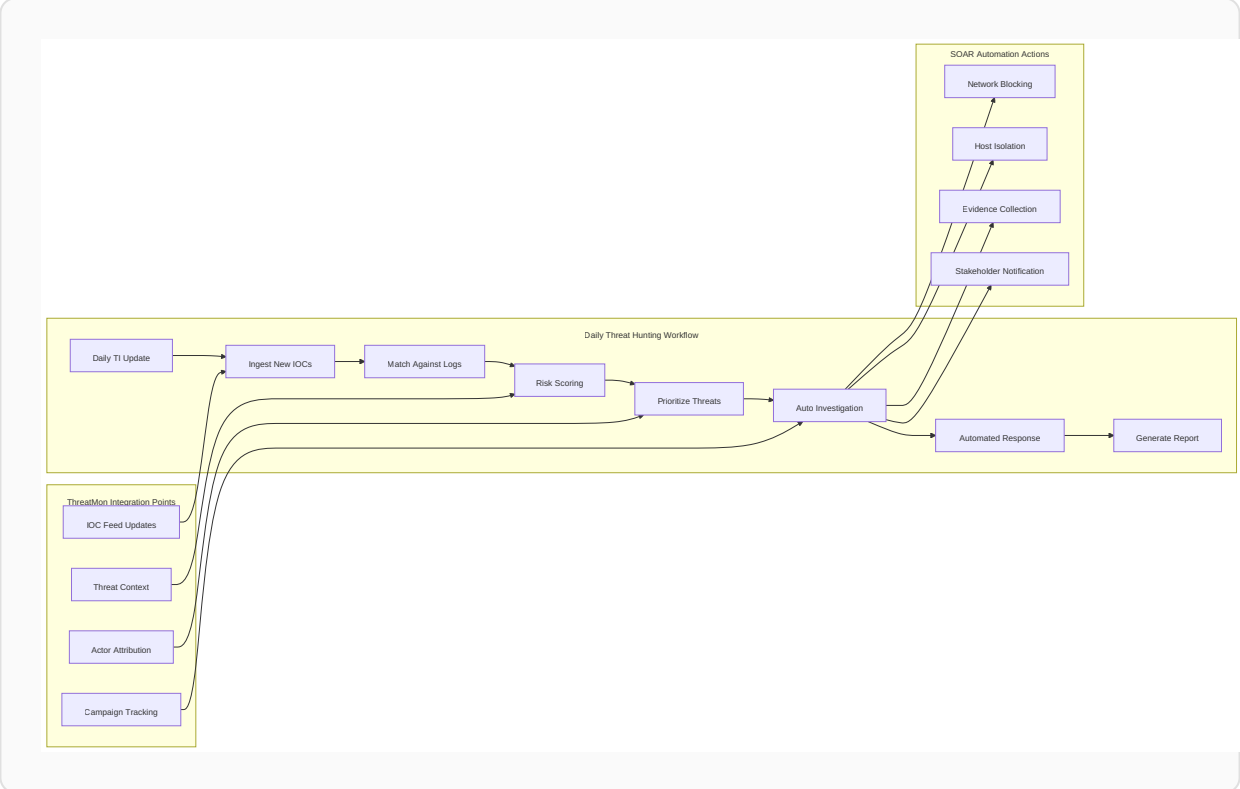
Graylog SIEM Integration

Overview

Graylog integration enables comprehensive log management, security event correlation, and incident response automation. The platform connects with Graylog's REST API to ingest security events, perform searches, and automate response actions.

Integration Architecture



Technical Integration Details

Configuration Parameters

Parameter	Type	Description	Example
Base URL	String	Graylog server endpoint	`https://graylog.company.com:9000`
Access Token	String	API authentication token	`2bnv8hu34l89sd6fghjk...`
Instance Name	String	Unique identifier for integration	`GraylogProduction`
Query Field	String	Custom search queries	`source:firewall AND level:error`
Incidents Fetch Limit	Integer	Maximum events per poll	`50`
Ingest Offense	Boolean	Auto-create cases from events	`true`

Supported Capabilities

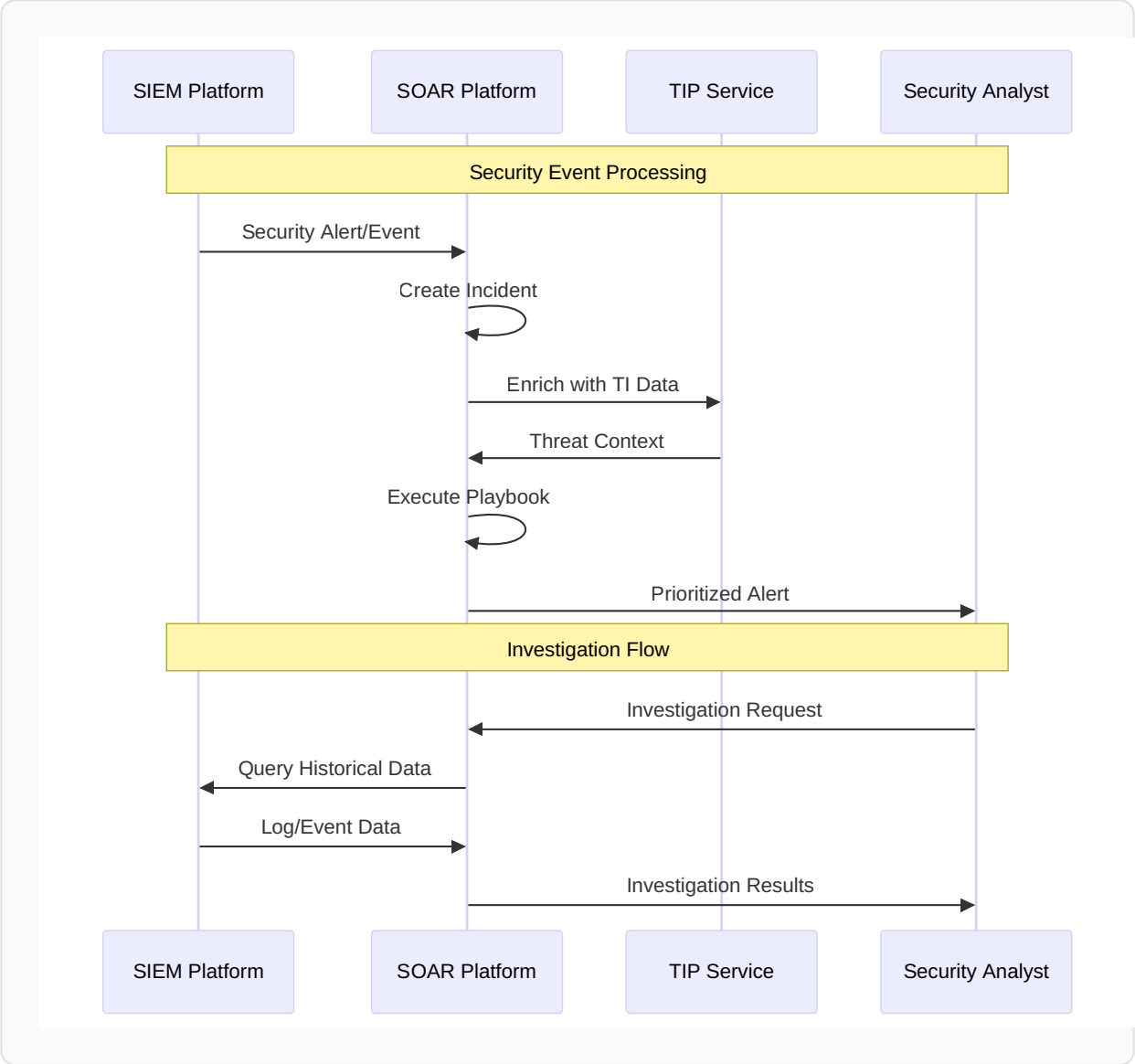
1. Event Ingestion - Real-time security event collection - Automated incident creation from Graylog alerts - Custom query-based event filtering - Multi-stream support for different log sources

2. Log Search and Analysis - Advanced search capabilities using Graylog's query language - Historical log analysis for forensic investigations - Pattern recognition and anomaly detection - Cross-correlation with other security tools

3. Alert Management - Bi-directional alert synchronization - Alert status updates and acknowledgments - Custom alert routing based on severity and type - Escalation workflows for unresolved alerts

4. Dashboards and Reporting - Integration with SOAR dashboard widgets - Custom report generation using Graylog data - Real-time metrics and KPI tracking - Executive summary reports with visual analytics

Data Flow and Processing

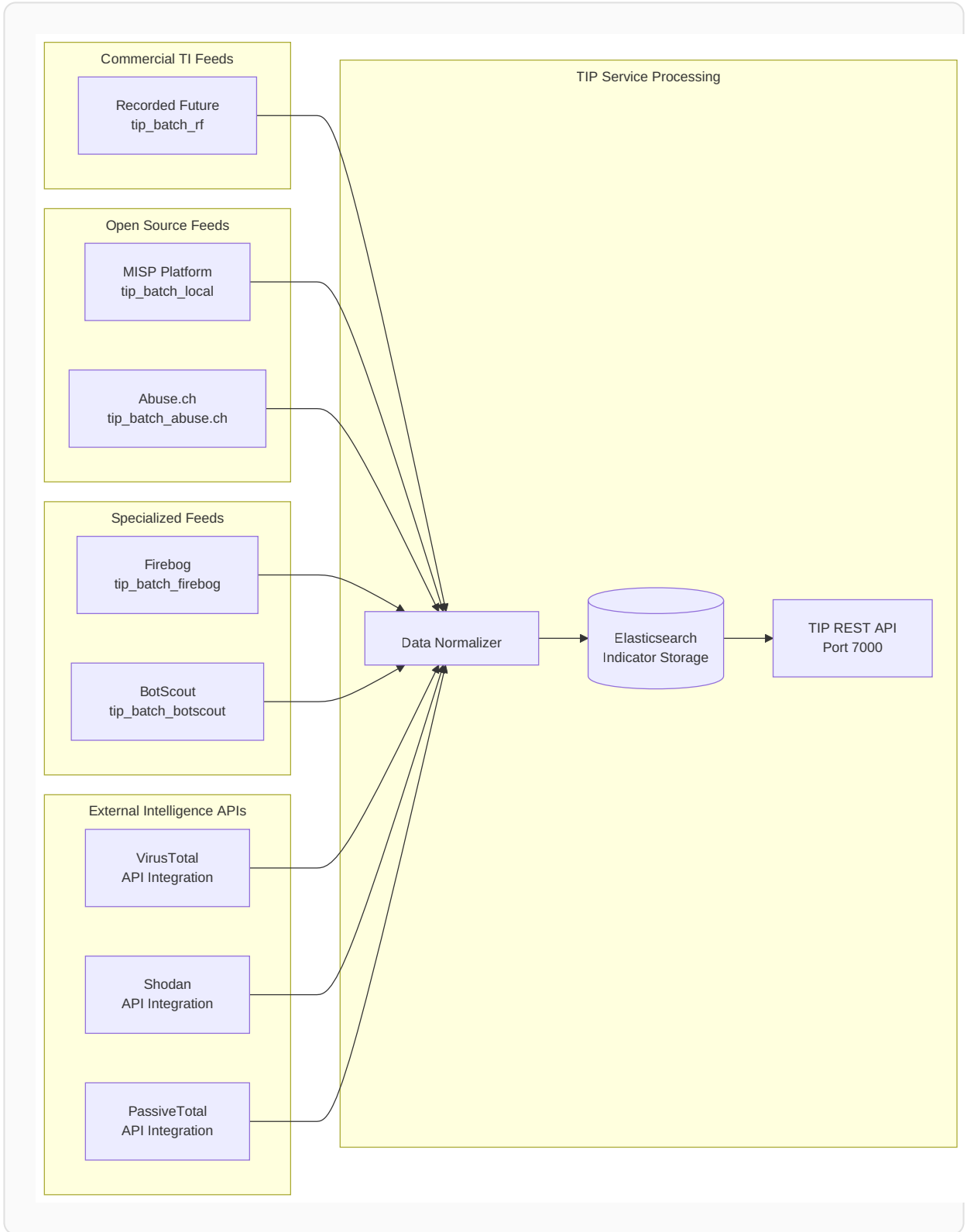


ThreatMon Threat Intelligence Integration

Overview

ThreatMon integration provides advanced threat intelligence capabilities, enabling the SOAR platform to leverage real-time threat feeds, IOC analysis, and contextual threat information for enhanced security decision-making.

Integration Architecture



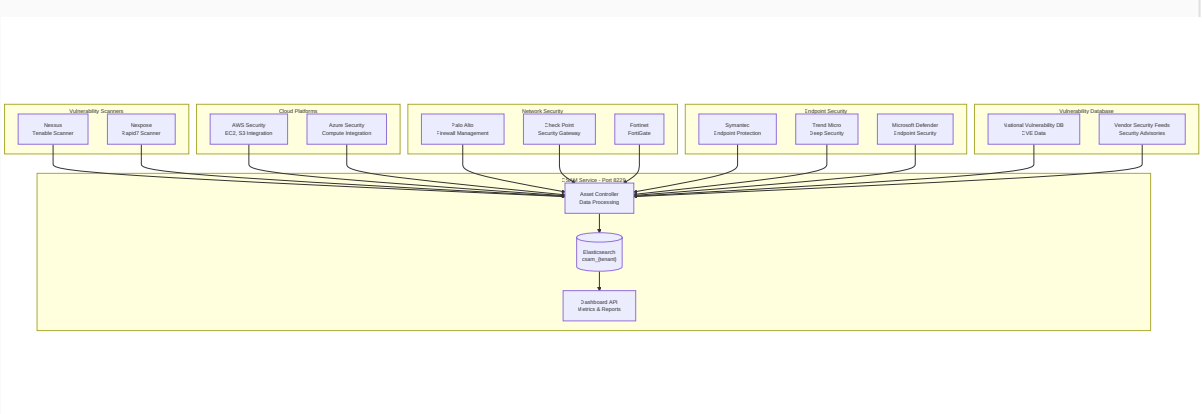
Threat Intelligence Capabilities

IOC (Indicators of Compromise) Management

1. Multi-Type IOC Support - **IP Addresses**: Malicious IP reputation and geolocation data - **Domain Names**: Suspicious domains and DNS analysis - **URL Analysis**: Malicious URL detection and categorization - **File Hashes**: Malware signature matching (MD5, SHA1, SHA256) - **Email Addresses**: Threat actor identification and phishing detection

2. Threat Attribution and Context - **Threat Actor Mapping**: Attribution to known threat groups - **Campaign Tracking**: Connection to active threat campaigns - **TTP Analysis**: Tactics, Techniques, and Procedures correlation - **Timeline Correlation**: Historical threat activity patterns

Advanced Threat Analysis Features



Configuration and API Integration

ThreatMon Configuration Parameters

Parameter	Type	Description	Security Notes
API Base URL	String	ThreatMon API endpoint	`https://api.threatmon.io/v1/`
API Key	String	Authentication token	Encrypted storage required
Access ID	String	Account identifier	Multi-tenant support
Feed Types	Array	Selected intelligence feeds	`["indicators", "reports", "alerts"]`

Parameter	Type	Description	Security Notes
Update Frequency	Integer	Polling interval (minutes)	`15` (minimum recommended)
IOC Types	Array	Supported indicator types	`["ip", "domain", "url", "hash"]`

Supported API Operations

1. Intelligence Retrieval - **Get Latest Threats**: Retrieve recent threat intelligence updates - **IOC Lookup**: Single and batch IOC validation - **Threat Reports**: Detailed threat analysis documents - **Campaign Information**: Active threat campaign details

2. Search and Query - **Advanced Search**: Complex queries across threat database - **Historical Analysis**: Time-based threat pattern analysis - **Correlation Queries**: Related threat indicator discovery - **Attribution Search**: Threat actor and group identification

3. Real-time Feeds - **Streaming Updates**: Real-time threat intelligence feeds - **Webhook Integration**: Event-driven threat notifications - **Custom Alerts**: Tailored threat monitoring rules - **Priority Feeds**: High-confidence, actionable intelligence

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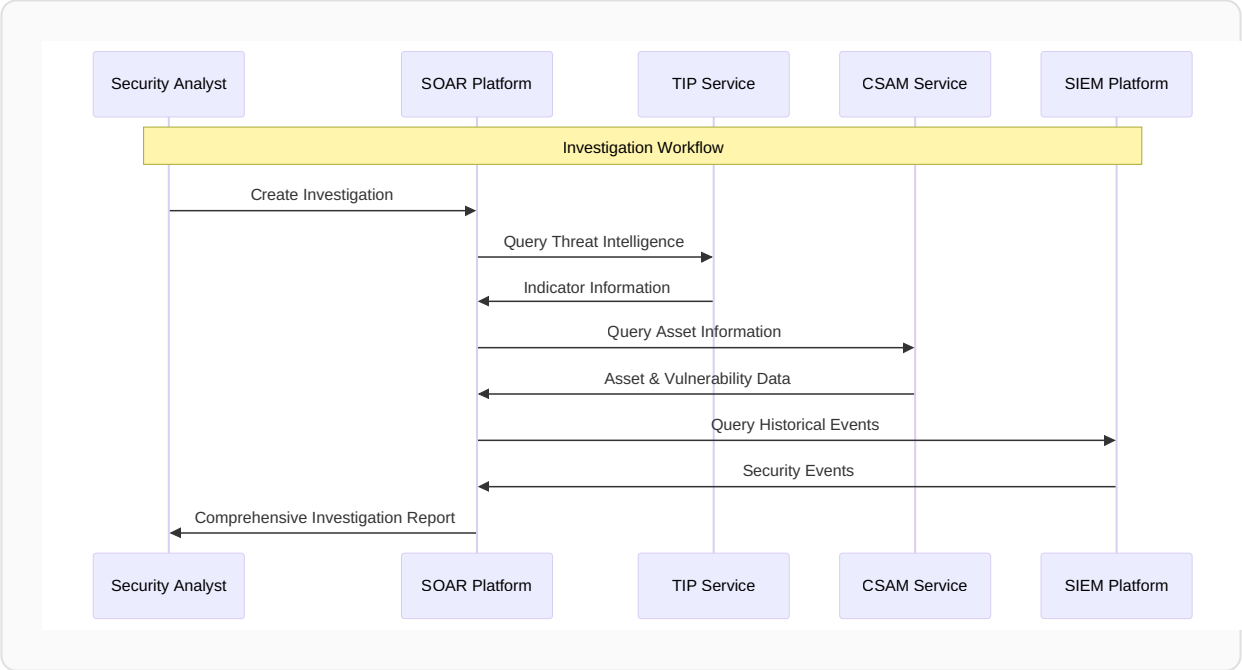
Data Flow and Processing

Unified Security Data Pipeline

The SOAR platform implements a sophisticated data processing pipeline that normalizes, enriches, and correlates security data from multiple sources including SIEM and threat intelligence platforms.



Event Processing Workflow

1. Event Ingestion and Normalization

Graylog Event Processing:

```
Input: Raw Graylog Alert
↓
Schema Validation → Field Mapping → Data Type Conversion
↓
Normalized Event: {
  "event_id": "unique_identifier",
  "timestamp": "ISO8601_datetime",
  "source": "graylog",
  "event_type": "security_alert",
  "severity": "high|medium|low",
  "description": "human_readable_text",
  "source_ip": "ip_address",
  "destination_ip": "ip_address",
  "indicators": ["ioc1", "ioc2"],
  "metadata": {...}
}
```

ThreatMon Intelligence Processing:

```
Input: ThreatMon IOC Data
↓
IOC Validation → Threat Scoring → Context Enrichment
↓
```

```
Processed Intelligence: {
  "ioc_id": "threat_indicator_id",
  "ioc_type": "ip|domain|url|hash",
  "ioc_value": "actual_indicator_value",
  "threat_type": "malware|phishing|c2",
  "confidence": "high|medium|low",
  "threat_actor": "apt_group_name",
  "campaign": "campaign_identifier",
  "first_seen": "timestamp",
  "last_seen": "timestamp",
  "references": ["url1", "url2"]
}
```

2. Correlation and Enrichment

Multi-Source Correlation: - **Temporal Correlation**: Events occurring within time windows - **Spatial Correlation**: Events from same network segments - **IOC Correlation**: Matching indicators across sources - **Behavioral Correlation**: Similar attack patterns and TTPs

Enrichment Process: - **Geolocation Data**: IP address to country/region mapping - **DNS Resolution**: Domain to IP resolution and vice versa - **Threat Intelligence**: IOC reputation and threat context - **Asset Information**: Internal asset identification and criticality

3. Incident Creation and Prioritization

Automated Incident Creation Rules:

```
Incident_Creation_Rules:
  - Rule: "High Severity TI Match"
    Condition: "TI_confidence >= 0.8 AND event_severity == 'high'"
    Action: "create_incident"
    Priority: "critical"

  - Rule: "Multiple IOC Correlation"
    Condition: "matched_iocs >= 3 AND time_window <= '1h'"
    Action: "create_incident"
    Priority: "high"

  - Rule: "Known Campaign Activity"
    Condition: "campaign_match == true AND threat_actor != 'unknown'"
    Action: "create_incident"
    Priority: "high"
```

Integration Examples and Use Cases

Multi-SIEM Environment Support

Enterprise Scenario: Hybrid SIEM Deployment

```
Integration_Configuration:
  Primary_SIEM: "Splunk Enterprise (On-Premises)"
  Secondary_SIEM: "Microsoft Sentinel (Cloud)"
  Legacy_SIEM: "IBM QRadar (Legacy Systems)"
  Log_Management: "Graylog (Cost-Effective Logs)"

Data_Flow_Strategy:
  Critical_Assets: "Splunk + Sentinel (Dual Processing)"
  Cloud_Workloads: "Microsoft Sentinel (Native Integration)"
  Legacy_Systems: "QRadar (Existing Investment)"
  High_Volume_Logs: "Graylog (Cost Optimization)"
```

Threat Intelligence Orchestration

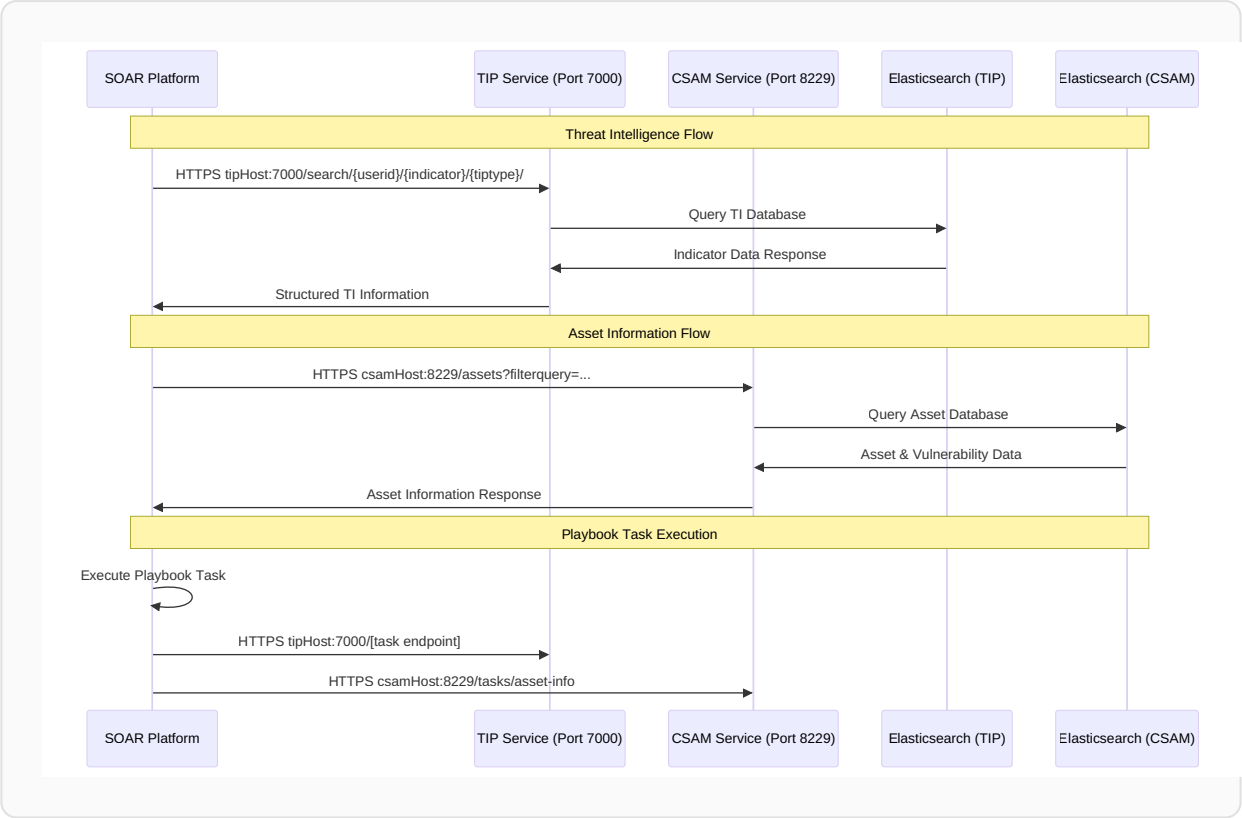
Multi-Feed Intelligence Fusion

```
TI_Feed_Hierarchy:
  Commercial_Feeds:
    - "ThreatMon (Primary IOC Source)"
    - "Recorded Future (Contextual Intelligence)"
    - "ThreatConnect (Campaign Tracking)"

  Open_Source_Feeds:
    - "MISP (Community Intelligence)"
    - "OpenCTI (Structured Threat Data)"
    - "VirusTotal (File/URL Analysis)"

  Government_Feeds:
    - "US-CERT Feeds (Government Alerts)"
    - "NCSC Feeds (National Cyber Security)"
    - "Industry ISAC Feeds (Sector-Specific)"

Processing_Logic:
  High_Confidence: "Commercial feeds take precedence"
  Volume_Processing: "Open source for bulk validation"
  Specialized_Intel: "Government feeds for APT attribution"
```

Security and Authentication

Multi-Layered Security Architecture

The SOAR platform implements comprehensive security measures to protect sensitive security data and ensure secure integration with external systems.



Authentication and Authorization Framework

1. Multi-Factor Authentication (MFA)

Supported Authentication Methods: - **Primary**: Username/Password with complexity requirements - **Secondary**: SMS OTP, Email OTP, TOTP (Google Authenticator) - **Advanced**: Hardware tokens, Biometric authentication - **Enterprise**: SAML 2.0, OAuth 2.0, LDAP/ Active Directory

2. Role-Based Access Control (RBAC)

Predefined Roles:

```
Security_Roles:
  - Role: "Security Administrator"
    Permissions:
      - "full_system_access"
```

```
      - "user_management"
      - "integration_configuration"
      - "playbook_modification"

  - Role: "Security Analyst"
    Permissions:
      - "incident_management"
      - "investigation_tools"
      - "report_generation"
      - "dashboard_access"

  - Role: "SOC Manager"
    Permissions:
      - "team_management"
      - "report_access"
      - "metrics_dashboard"
      - "audit_trail_access"

  - Role: "Integration Specialist"
    Permissions:
      - "integration_testing"
      - "connector_configuration"
      - "data_mapping"
      - "health_monitoring"
```

3. API Security and Rate Limiting

API Protection Mechanisms: - **Rate Limiting**: Configurable limits per user/integration - **Input Validation**: Schema validation and sanitization - **Output Filtering**: Sensitive data redaction - **Audit Logging**: Complete API access logging

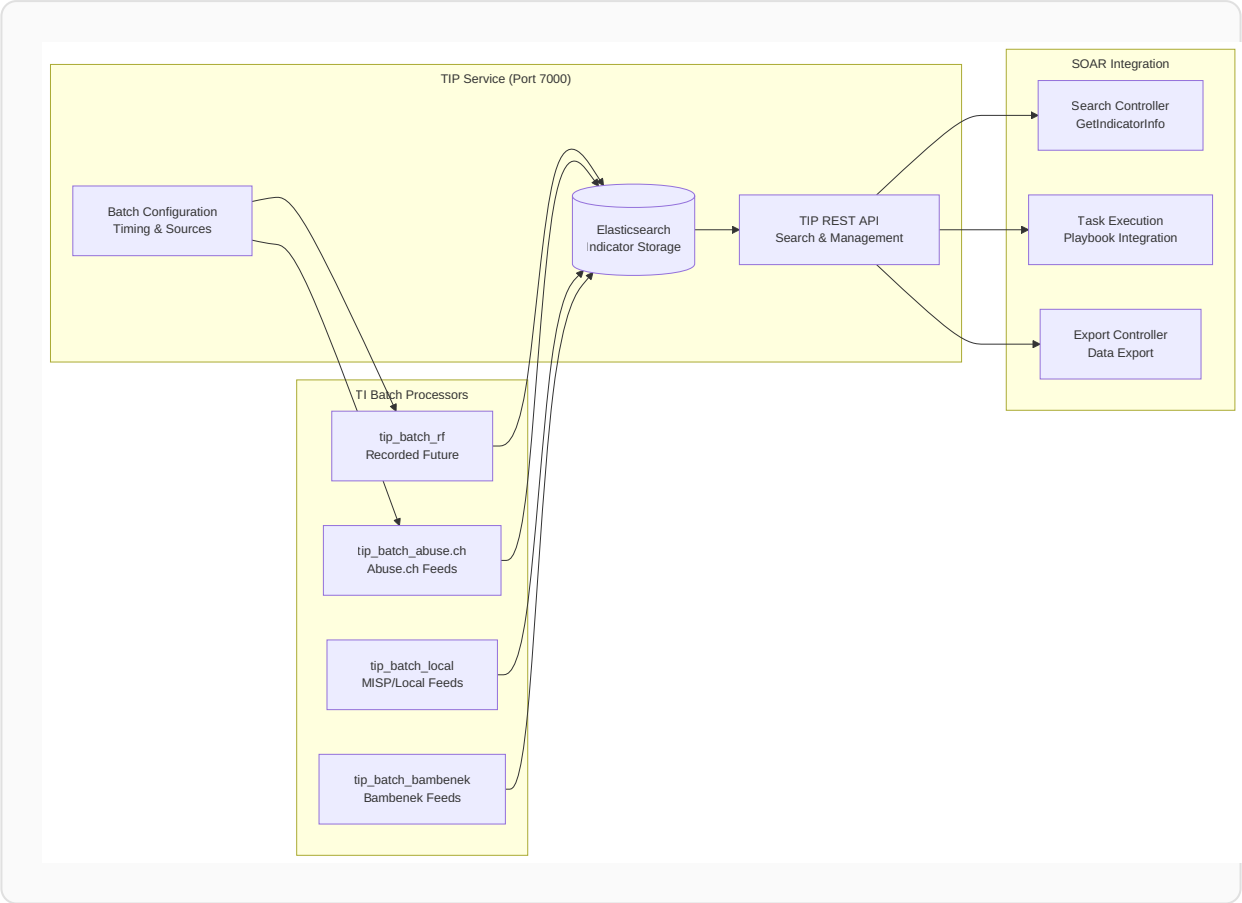
Integration-Specific Security:

```
Graylog_Integration_Security:
  Authentication: "Bearer Token"
  Encryption: "TLS 1.3"
  Rate_Limit: "100 requests/minute"
  Timeout: "30 seconds"
  Retry_Policy: "Exponential backoff"

ThreatMon_Integration_Security:
  Authentication: "API Key + Secret"
  Encryption: "TLS 1.3 + Certificate Pinning"
  Rate_Limit: "500 requests/hour"
  Timeout: "15 seconds"
  Data_Validation: "JSON Schema validation"
```

Scalability and Performance

Horizontal Scaling Architecture

The SOAR platform is designed for enterprise-scale deployments with support for high-volume security data processing and integration with multiple SIEM and TI sources.



Performance Optimization Strategies

1. Data Processing Optimization

Stream Processing Architecture: - **Apache Kafka**: High-throughput message streaming - **Event Partitioning**: Parallel processing across topics - **Consumer Groups**: Distributed event consumption - **Backpressure Handling**: Flow control for high-volume data

Caching Strategy: - **Multi-Level Caching**: Application, database, and CDN caching - **Intelligent Cache Warming**: Predictive cache population - **Cache Invalidation**: Event-driven cache updates - **Distributed Caching**: Redis cluster for session and data caching

2. Auto-Scaling Configuration

Scaling Triggers:

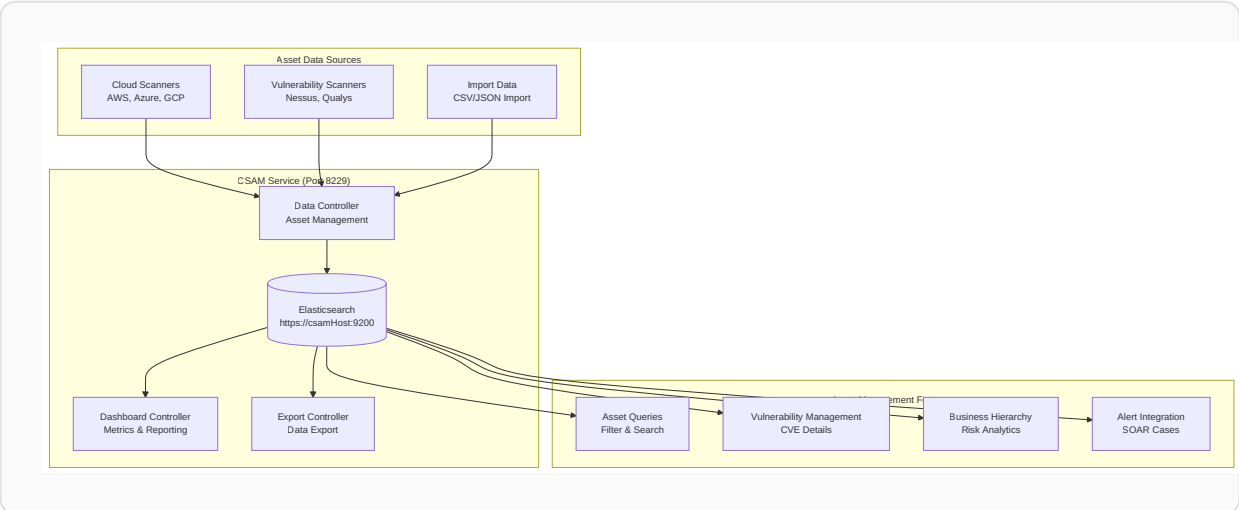
```
Auto_Scaling_Rules:
  CPU_Utilization:
    Scale_Up: "> 70% for 5 minutes"
    Scale_Down: "< 30% for 10 minutes"

  Memory_Utilization:
    Scale_Up: "> 80% for 3 minutes"
    Scale_Down: "< 40% for 15 minutes"

  Queue_Depth:
    Scale_Up: "> 1000 messages"
    Scale_Down: "< 100 messages for 10 minutes"

  API_Request_Rate:
    Scale_Up: "> 500 requests/second"
    Scale_Down: "< 100 requests/second for 10 minutes"
```

Use Cases and Benefits

1. Automated Incident Response

Graylog-Triggered Automation

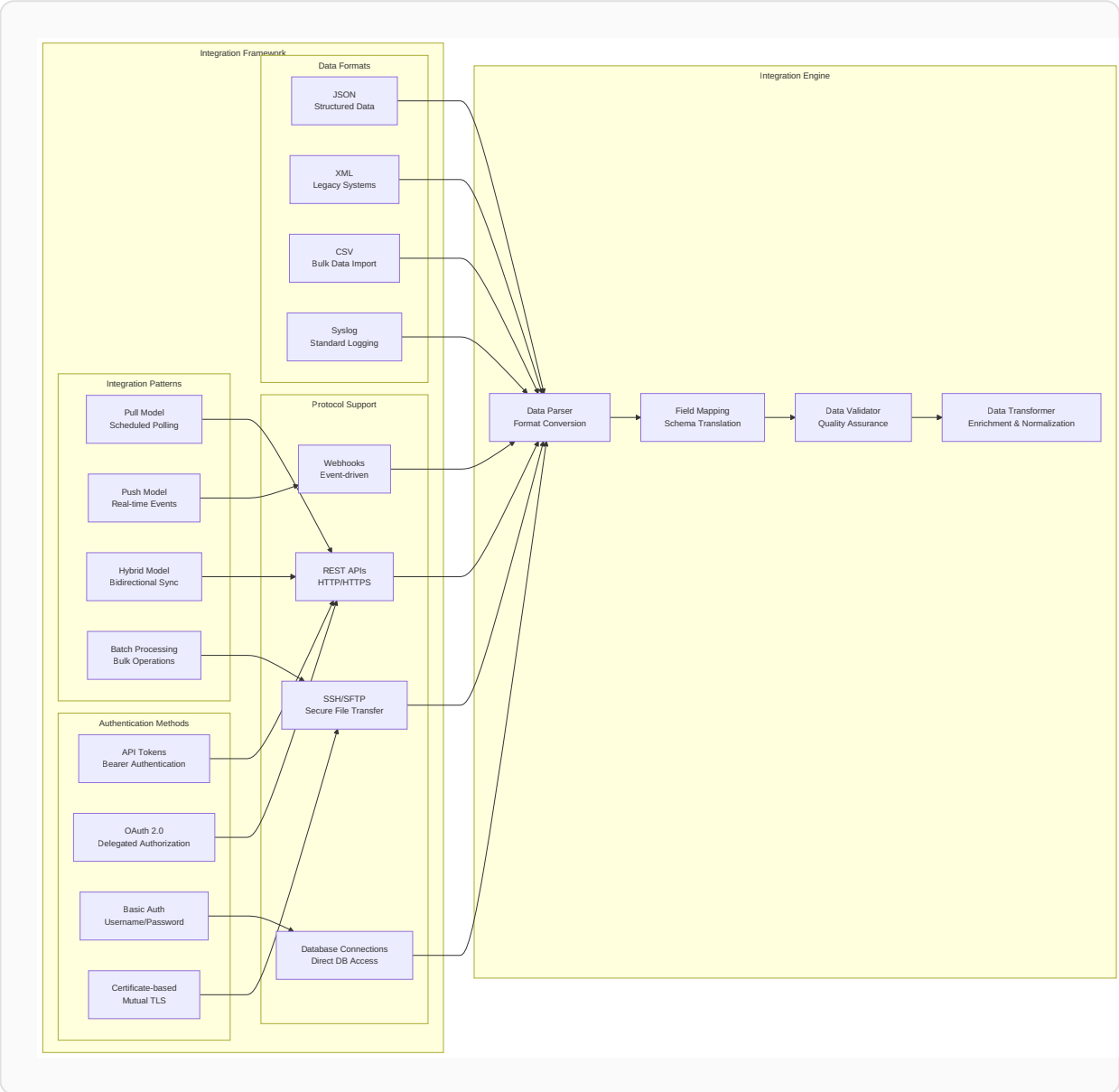
Use Case: Malware Detection and Response



Business Benefits: - **Faster Response**: Automated response reduces manual intervention time - **Consistency**: Standardized response procedures across all incidents - **Documentation**: Comprehensive incident documentation and audit trails - **Intelligent Escalation**: Context-aware escalation based on threat severity

ThreatMon-Enhanced Threat Hunting

Use Case: Proactive Threat Hunting



2. Security Operations Center (SOC) Enhancement

Unified Security Dashboard

Dashboard Capabilities: - **Real-time Threat Landscape**: Combined SIEM and TI intelligence - **Incident Management**: Centralized case tracking and workflow -

Performance Metrics: SOC efficiency and response time analytics - **Threat Intelligence Visualization**: IOC trends and threat actor activity

Analytics and Reporting

Executive Reporting Features: - **Monthly Security Posture Reports**: Combined metrics from all integrated tools - **Threat Intelligence Briefings**: ThreatMon-sourced executive summaries - **Incident Response Effectiveness**: SOAR automation impact analysis - **Compliance Reporting**: Automated compliance documentation

3. Cost Reduction and Efficiency Gains

Enhanced Security Operations

The integrated SOAR platform provides significant operational improvements through automation and centralized management:

Key Operational Benefits: - **Automated Threat Detection**: Continuous monitoring and analysis across all integrated tools - **Streamlined Incident Response**: Coordinated response workflows with minimal manual intervention - **Reduced False Positives**: Intelligent correlation reduces alert fatigue - **Enhanced Analyst Productivity**: Automation handles routine tasks, allowing focus on complex investigations - **Simplified Tool Management**: Single platform reduces complexity and training requirements

Return on Investment (ROI)

Cost Savings Areas: - **Personnel Efficiency**: Significant reduction in manual investigation and response time - **Tool Consolidation**: Single integrated platform reduces licensing and maintenance costs - **Operational Efficiency**: Automated workflows reduce human error and accelerate response - **Training Costs**: Unified platform reduces training complexity across multiple tools

Business Value: - **Faster Threat Detection**: Proactive identification reduces potential business impact - **Improved Security Posture**: Enhanced visibility and response capabilities - **Regulatory Compliance**: Automated documentation and reporting streamlines compliance - **Risk Mitigation**: Comprehensive threat intelligence reduces exposure to advanced threats

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Conclusion

The SOAR platform’s integration with Graylog SIEM and ThreatMon TI represents a comprehensive approach to modern security operations. By combining automated event

processing, intelligent threat analysis, and orchestrated response capabilities, organizations can achieve:

Key Platform Strengths

1. **Unified Security Operations**: Single platform for SIEM, TI, and response automation
2. **Advanced Threat Intelligence**: Real-time IOC validation and threat context
3. **Automated Response**: Rapid, consistent response to security threats
4. **Scalable Architecture**: Enterprise-ready platform with horizontal scaling
5. **Comprehensive Integration**: Support for industry-leading security tools

Strategic Business Value

- **Enhanced Security Posture**: Proactive threat detection and response
- **Operational Efficiency**: Automated workflows reduce manual effort
- **Cost Optimization**: Consolidated platform reduces tool sprawl
- **Compliance Readiness**: Automated documentation and reporting
- **Future-Proof Architecture**: Extensible platform for emerging threats

The combination of Graylog's comprehensive log management capabilities with ThreatMon's advanced threat intelligence, orchestrated through the SOAR platform, provides organizations with a powerful, integrated security operations solution that scales with business needs while maintaining the highest levels of security and performance.

This document provides a comprehensive overview of the SOAR platform's integration capabilities. For detailed implementation guidance, API documentation, or specific configuration assistance, please refer to the technical implementation guides or contact the integration support team.