OASM ASSISTANT

SUPPORT IN MANAGING, MONITORING, AND PREVENTING ATTACK SURFACES

BUILT BY: TEAM OASM-PLATFORM

BACKGROUND AND MOTIVATION

Current Challenges

- High costs for pentesting and attack surface scanning services
- Lack of quality open source tools for attack surface management
- Difficulties in managing and monitoring digital assets

Project Origin

- Developed from experience at National Cybersecurity Monitoring Center
- Goal: To create a reputable open source product for the international community
- Reduce dependency on expensive commercial solutions

OASM ECOSYSTEM OVERVIEW

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Open-ASM (Core platform)

External Attack Surface Management

Microservices architecture

Discovery tools: Subfinder, Dnsx, Naabu, Httpx

Vulnerability scanning: Nuclei, Nessus

OASM-ASSISTANT (AI layer)

AI layer on top of core platform

Multi-agent system with LangGraph

Automation and optimization of security workflows

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SYSTEM ARCHITECTURE

OASM CORE (Central block)

- Asset Management
- Job Scheduling and Management
- Forward to OASM Assistant
- API Gateway
- MCP Integration
- Data Storage & Caching

MCP

gRPC APIs

RESTful APIs

SSE

OASM ASSISTANT (AI Layer)

- Domain Classifier
- Thread analyst agent
- Security researcher agent
- Vulnerbility assessor agent
- Orchestration agent
- Nuclei Generation agent

OASM WORKERS (Tools Execution Layer)

Execute tools and return result to OASM Core

- Discovery: Subfinder, dnsx, naabu, httpx
- Scan vuln: Nuclei, nessus

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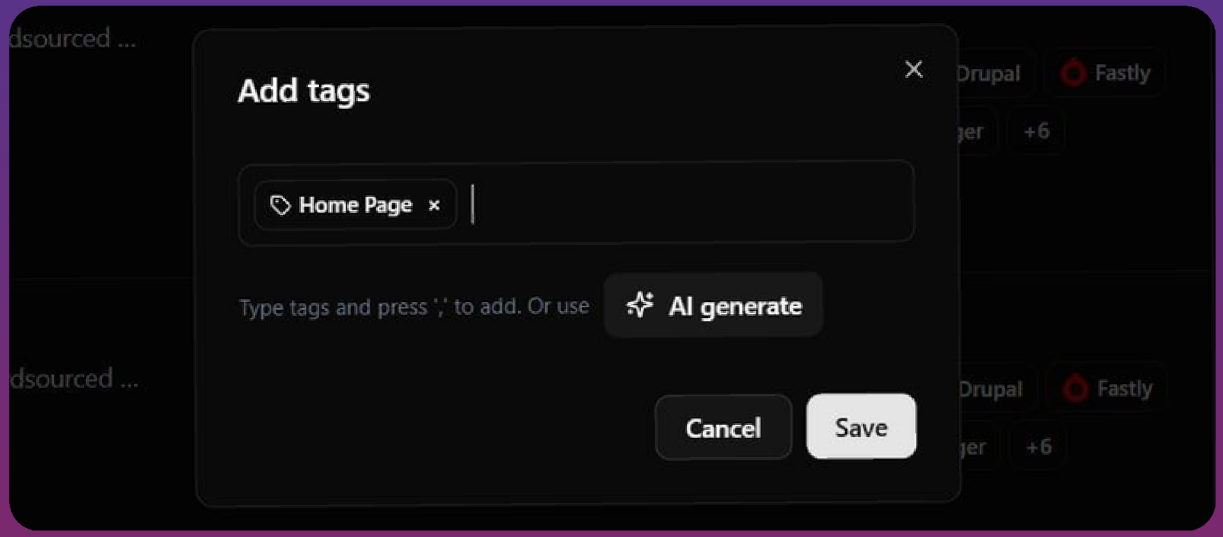
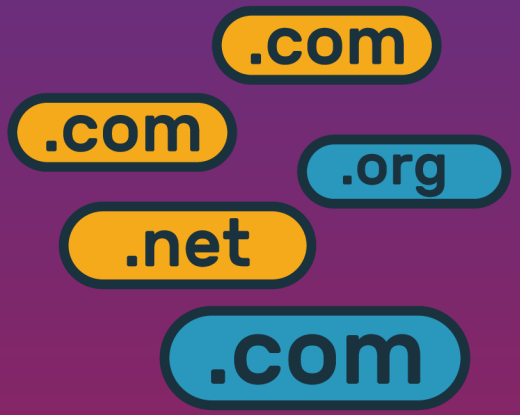
DOMAIN CLASSIFIER

Domain Classifier automatically classifies digital assets. It assigns labels based on the title and content of the HTML extracted by domain. It helps manage and identify whether the assets are the target of hacker attacks so that you can prioritize asset management and monitoring.





MULTI AGENT

- Threat Analyst: Correlates threat intelligence with assets, identifies active attacks
- Security Researcher: Deep-dives vulnerabilities, finds exploits, assesses exploitation risk
- Scan Analyzer: Aggregates scan results, detects patterns, tracks changes
- Vulnerbility Assessor: Context-aware risk scoring, prioritization, remediation planning
- Orchestrator: Parses queries, delegates tasks, synthesizes responses
- Nuclei Generation: Auto-generates Nuclei templates from descriptions using RAG

TECHNOLOGY STACK

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LangGraph: Building LLM-powered agents with tools

LLMs: GPT-4, Claude, Gemini, Llama, Mistral ... Transfer Learning, Reinforcement Learning

LangGraph: Building LLM-powered agents with tools

RAG: Using HNSW algorithm combined with full-text search and re-ranking to enhance data based on memory agent, knowledge base, nuclei template

gRPC: High-performance RPC between AI layer and Core platform

MCP: Provide real-time asset context to AI agents, SearXNG, ...

Data Storage & Processing: PostgreSQL as the primary database storage, use batch processing for embedding generation and extract content in file PDF, docx, yaml... and parallel vector search

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THANK YOU