Trend Micro™

DEEP SECURITY™ SMART CHECK

Continuous protection for your container images, automated within your CI/CD pipeline

Traditional security for development teams has been functionally separated, with different tools for different departments operated by different resources. However, this monolithic approach is changing rapidly as organizations look to transition development operations to cloud and container platforms.

Security solutions need to be designed to succeed across environments (physical, virtual, cloud, and containers). This provides synergy between IT security and DevOps practices to help with tool consolidation and collaboration of security and compliance requirements without interfering in continuous implementation/ continuous deployment (CI/CD) development cycles.

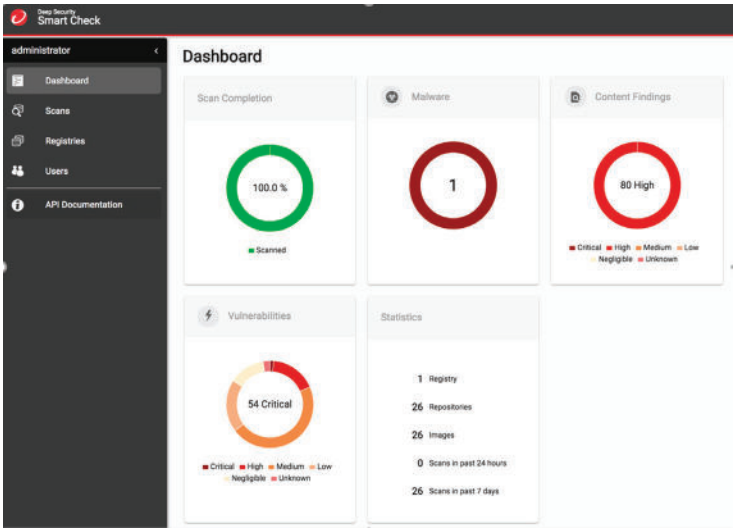
Trend Micro™ Deep Security™ Smart Check delivers automated build-time and registry image scanning with detection for malware, vulnerabilities, secrets, and policy compliance. This is designed to secure images earlier in the CI/CD pipeline without negatively impacting the ability for DevOps teams to continuously deliver production-ready applications and meet the needs of the business.

Continuous scanning optimized for DevOps

Deep Security Smart Check helps DevOps teams adopt frictionless security with immediate, continuous scanning for threats, vulnerabilities, secrets, and compliance, as well as provides dashboard visibility, notifications, and scanning logs for compliance assistance. Deep Security Smart Check is optimized for leading container platforms and can be seamlessly integrated into your existing toolchain.

Automate processes with APIs

Deep Security Smart Check provides complete automated product functionality using a comprehensive catalog of application programming interfaces (APIs), purposely built to be integrated into your CI/CD pipeline. Deep Security Smart Check allows application architects and developers to bake security as code into applications prior to runtime. Effective security earlier in the software build pipeline helps to achieve consistent results earlier in the development cycle, while reducing manual security steps by automatically scanning images against new vulnerabilities and malware.

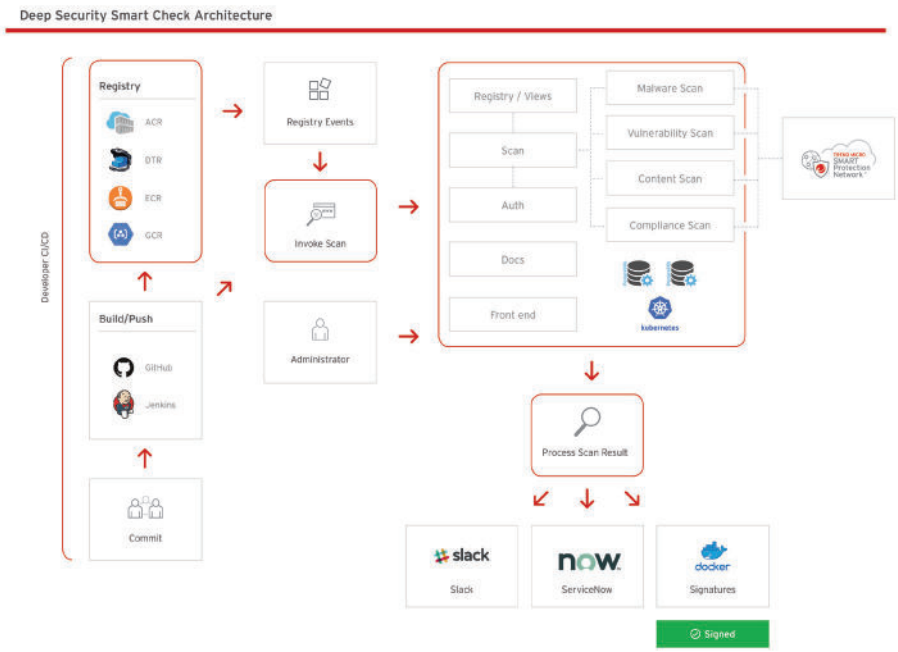


Smart protection

Deep Security Smart Check reduces disruption of development schedules and workflows with unmatched research and detection of threats, along with non-intrusive security for the CI/CD pipeline. Deep Security Smart Check eliminates the complexity and volume of threats with detection of vulnerabilities, secrets, and zero-day malware using Trend Micro™ Smart Protection Network™.

Compliance-ready protection

Deep Security Smart Check allows security engineers to meet compliance requirements without impacting productivity and interfering in the CI/CD pipeline. Deep Security Smart Check delivers policy compliance scanning, with customizable policies to meet compliance and governance needs. Its detailed log history allows for easy reporting and auditing.



Key Advantages

Prevent exploits prior to runtime

Protect against malware, vulnerabilities, and secrets with build-time and registry scanning of Docker® images. Ensure threats are detected before applications are deployed.

Protection optimized for DevOps

Implement frictionless security early in the CI/CD workflow with security as code and automated protection that won't slow down your DevOps processes.

Full life cycle container protection

Trend Micro™ Deep Security™ provides leading runtime protection, complementing Deep Security Smart Check for full life cycle container security.

DEEP SECURITY SMART CHECK CAPABILITIES

Advanced image scanning

When scanning, Deep Security Smart Check unpacks each layer of the image and performs detailed scans on the content. Ensure issues are fixed early on and filter out false positives by correlating patch layers with packages that are vulnerable in the same image. Deep Security Smart Check will scan images for:

- Malware detection
- Vulnerability assessment
- Scanning for secrets, such as private keys and passwords
- Policy compliance scanning

Continuous protection

Smart Check scans can be invoked when images are first built, and will continually scan in the registry for new malware and vulnerabilities. This ensures your golden images are secured from the first build, and remain protected from future threats. Scan your images across multiple cloud environments from a single Deep Security Smart Check deployment.

Automated pipeline security

The full functionality of Deep Security Smart Check is available via APIs for fully-automated integration with your CI/CD pipeline.

- Add registries and target repositories with tags for scanning
- Subsequent image re-scans to check against new vulnerabilities are auto-initiated when updates are received
- Invoke scans at any stage of the pipeline using the Deep Security Smart Check API
- Ensure that only clean images proceed through the pipeline and block bad images using image assertion
- Results can be delivered from Deep Security Smart Check, via Webhook, to accommodate specific automated workflows. For example, a Docker image signing service could be written to sign and promote images based on scan results

Enforce compliance

Deep Security Smart Check provides advanced compliance scanning, with customizable policies to ensure you meet both internal and external requirements. Deep Security Smart Check's scan logs support business and audit needs with detailed scan history and results.

Console management and access control

Deep Security Smart Check provides an extensive graphical user interface (GUI) management console that includes a scan coverage dashboard, scan results, and scan target (view) configuration, along with user and view management for role-based access control (RBAC).

- Content sources: Shows a list of configured registries which are being scanned/monitored
- Active scans: Shows the status of any scans in progress
- Protection coverage: Shows what portion of the total images in a target registry that has been scanned
- Scan alarms: Shows results that include detections of malware, vulnerabilities, and secrets

Scanned image details

Deep Security Smart Check provides DevOps with security details and output, allowing for immediate response to any issues.

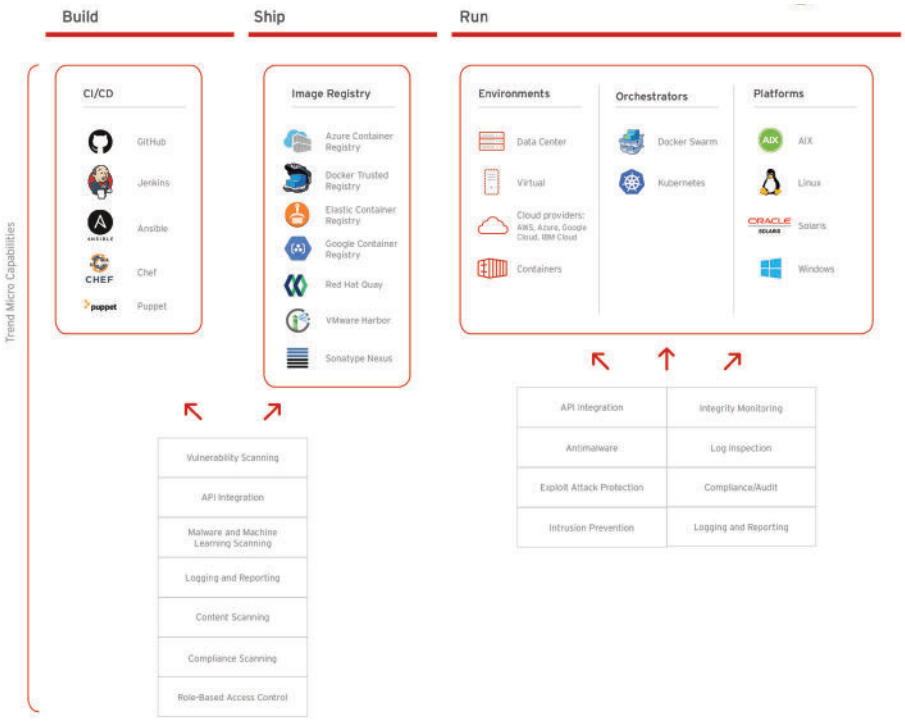
- List of image layers that have been scanned
- Malware flag, including file name and location
- Content findings, including secrets or indicators of compromise (IOCs)
- Vulnerability details including:
  - The number of common vulnerabilities and exposures (CVEs) by L/M/H CVSS rating
  - Layer and package information for each CVE
  - CVE and link to CVE file
  - Fix/patch version

World-class threat feed

Deep Security Smart Check receives up-to-date threat feeds from both private Trend Micro sources and public sources for scanning performance.

- Provided by Trend Micro via the Smart Protection Network infrastructure for malware detection
- Machine learning algorithms to detect zero-day threats

DEEP SECURITY COMPLEMENTS DEEP SECURITY SMART CHECK BY PROVIDING LEADING HOST PROTECTION OF THE OPERATING SYSTEM



Protection across the container life cycle

Complementing Deep Security Smart Check's image scanning capabilities, Deep Security provides advanced protection for runtime containers, with real-time malware protection, container vulnerability shielding, container traffic inspection, and more.

DEEP SECURITY SMART CHECK SECURITY ARCHITECTURE

Installation

Deep Security Smart Check is supported on the Kubernetes platform within a Kubernetes cluster.

- *Public:* **https://github.com/deep-security/smartcheck-helm**

Deep Security Smart Check users are given access to a shell script and a suite of Kubernetes resources in the Deep Security GitHub® repository. The images that comprise the application are available in Docker Hub.

Deployment and Integration

Deep Security Smart Check provides a valuable step in your CI/CD pipeline.

It scans Docker images in any registry that implements the Docker Registry API. All Deep Security Smart Check operations are available through a documented collection of APIs to simplify integration into your CI/CD pipeline. Deep Security Smart Check APIs can be invoked automatically by your CI/CD system to start scans when an image is pushed to a Docker registry. Scan results are also available through the API.

The Deep Security Smart Check API includes a Webhook facility that allows CI/ CD components to register in order to receive notifications of scan events, including 'scan-completed', allowing you to automate workflows.

Deep Security Smart Check includes an administrator console that provides:

- A dashboard (system-wide summary of scan information, including metrics)
- A view summary (including scan results and metrics for the view)
- User management
- Registry and view configuration
- Access to scan results
- Scan history

BUILD SECURE. SHIP FAST. RUN ANYWHERE.

Ready on:

Kubernetes & Docker: Deep Security Smart Check deploys as a helm chart for easy installation within a Kubernetes cluster, and provides advanced build-time and registry Docker image scanning for malware, vulnerabilities, secrets, and policy compliance. Deep Security will provide additional protection for containers at runtime as well as monitor for changes in Docker and Kubernetes files and processes, ensuring full protection across the container life cycle.

Amazon Web Services (AWS): Deep Security Smart Check deploys to Amazon Elastic Container Service for Kubernetes (EKS) for container image scanning, with additional runtime container and Amazon Machine Image (AMI) workload protection available through Deep Security for protection across your AWS environment.

Microsoft® Azure®: Deep Security Smart Check deploys to Azure Kubernetes Service (AKS) for container image scanning, with additional runtime container and Azure VM protection available through Deep Security for full Azure protection.

Google Cloud™: Deploy Deep Security Smart Check to your Google Kubernetes Engine (GKE) for build pipeline image scanning, with additional runtime container and VM instance protection available through Deep Security. Deploy Deep Security Smart Check in GKE to provision scanning across multiple cloud environments.

Red Hat OpenShift: Deep Security Smart Check can be deployed into your OpenShift environments and secures your applications with advanced scanning during the software build pipeline. Runtime containers can be secured through Deep Security (on supported hosts) to ensure full life cycle container protection.

VMware Cloud™: Deep Security's strong integration across VMware® services ensures consistent protection across your virtual and cloud-based workloads, with broad platform and kernel support, automated policy management, and hypervisor-based security.

SYSTEM REQUIREMENTS

Deep Security Smart Check requires:

- Kubernetes 1.8.7 or higher
- Helm/Tiller 2.8.1 or higher
- Docker 17.06 or higher
- OpenShift 3.11.82

Supported registries

Deep Security Smart Check supports scanning in any registry that supports the Docker V2 API and allows catalog listing.

- Docker Trusted Registry
- Amazon Elastic Container Registry
- Azure Container Registry
- Google Container Registry
- Red Hat Quay
- Harbor
- Nexus

For more information visit
trendmicro.com/smartcheck

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