



(12) **United States Patent**
Rosendahl et al.

(10) **Patent No.:** **US 11,106,784 B2**
(45) **Date of Patent:** **Aug. 31, 2021**

(54) **VERTICALLY INTEGRATED AUTOMATIC
THREAT LEVEL DETERMINATION FOR
CONTAINERS AND HOSTS IN A
CONTAINERIZATION ENVIRONMENT**

(58) **Field of Classification Search**
CPC .. G06F 21/53; G06F 21/577; G06F 2221/034;
G06F 21/51; G06F 21/563; G06F 8/61;
G06F 11/3616
See application file for complete search history.

(71) Applicant: **NeuVector, Inc.**, Milpitas, CA (US)
(72) Inventors: **Henrik Rosendahl**, Milpitas, CA (US);
Fei Huang, Fremont, CA (US); **Gang
Duan**, San Jose, CA (US)

(56) **References Cited**

U.S. PATENT DOCUMENTS

2018/0336351 A1* 11/2018 Jeffries G06F 21/53
2020/0097662 A1* 3/2020 Hufsmith H04L 67/10

* cited by examiner

Primary Examiner — Paul E Callahan

(74) *Attorney, Agent, or Firm* — Fenwick & West LLP

(73) Assignee: **NeuVector, Inc.**, San Jose, CA (US)
(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 423 days.

(57) **ABSTRACT**

A threat level analyzer probes for one or more threats within an application container in a container system. Each threat is a vulnerability or a non-conformance with a benchmark setting. The threat level analyzer further probes for one or more threats within a host of the container service. The threat level analyzer generates a threat level assessment score based on results from the probing of the one or more threats of the application container and the one or more threats of the host, and generates a report for presentation in a user interface including the threat level assessment score and a list of threats discovered from the probe of the application container and the host. A report is transmitted by the threat level analyzer to a client device of a user for presentation in the user interface.

(21) Appl. No.: **16/155,742**

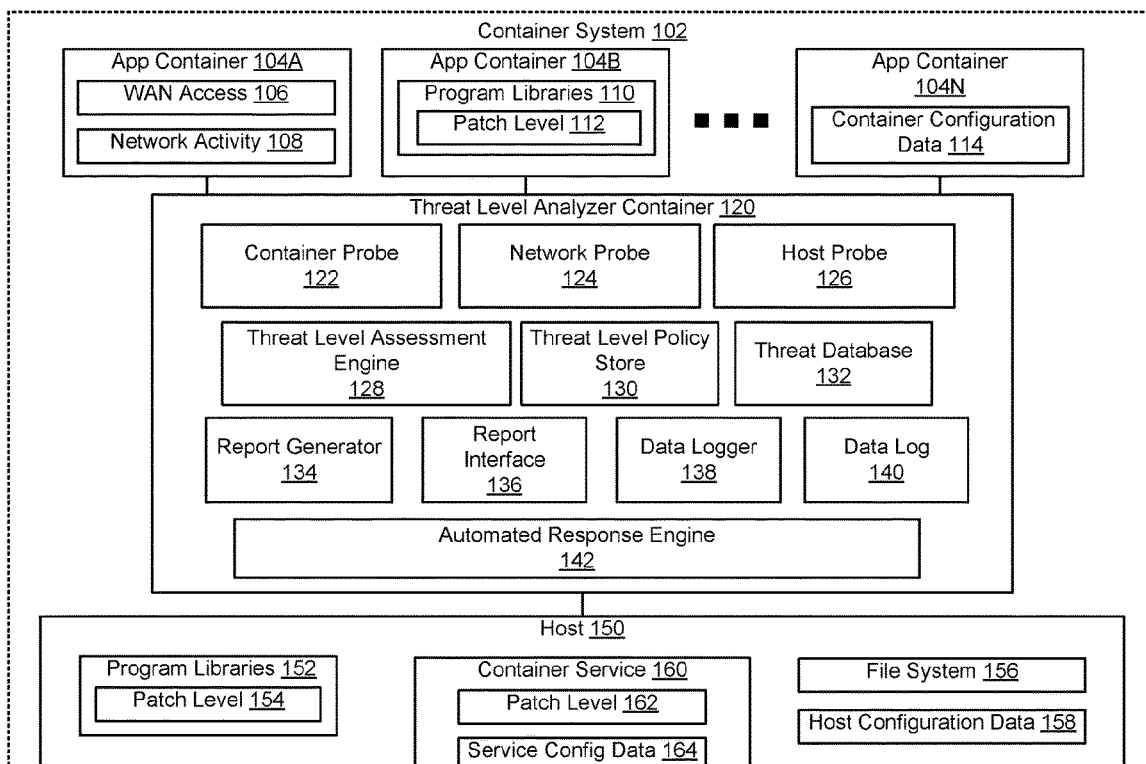
(22) Filed: **Oct. 9, 2018**

(65) **Prior Publication Data**
US 2020/0110873 A1 Apr. 9, 2020

(51) **Int. Cl.**
G06F 21/53 (2013.01)
G06F 21/57 (2013.01)

(52) **U.S. Cl.**
CPC **G06F 21/53** (2013.01); **G06F 21/577**
(2013.01); **G06F 2221/034** (2013.01)

18 Claims, 7 Drawing Sheets



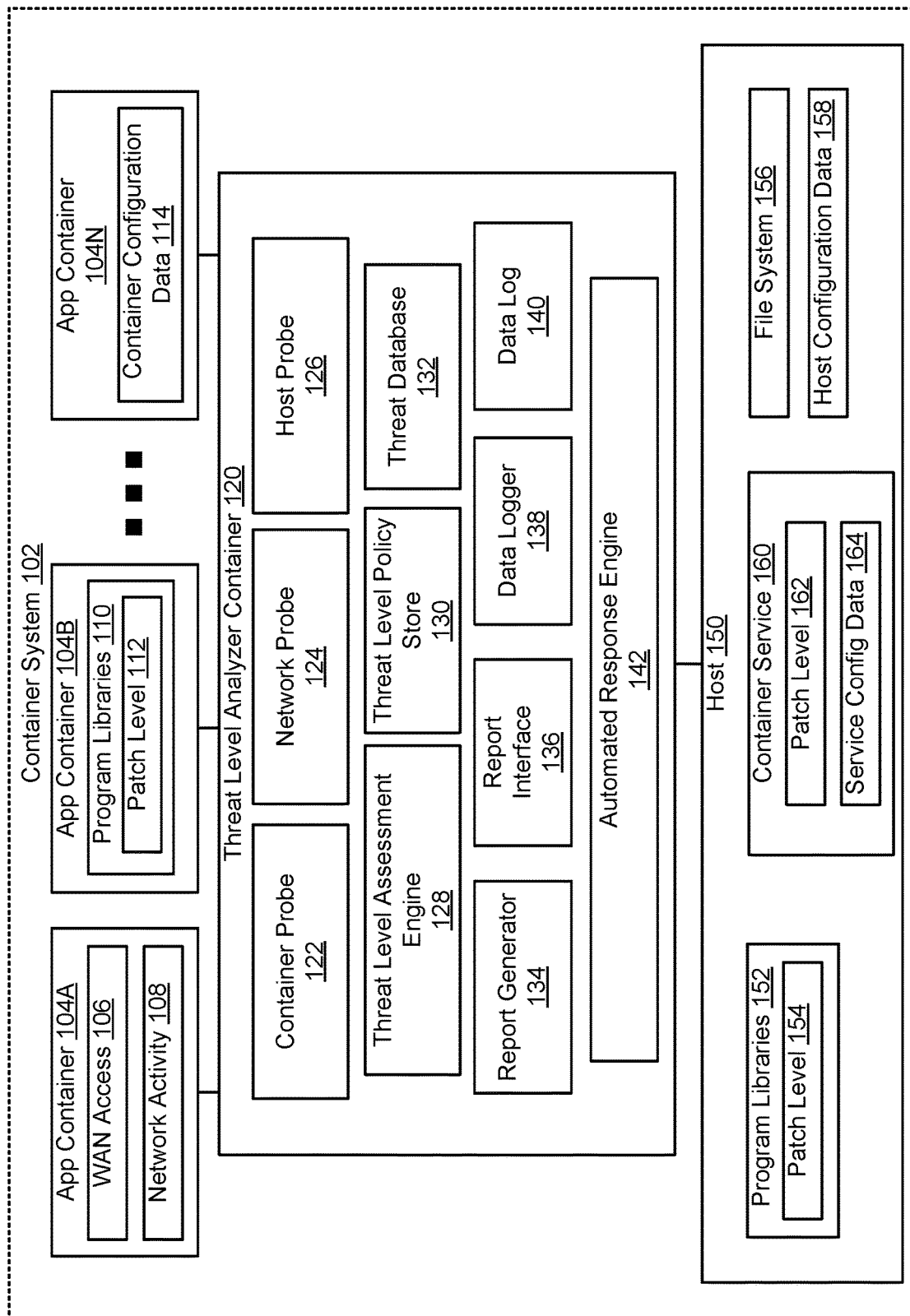
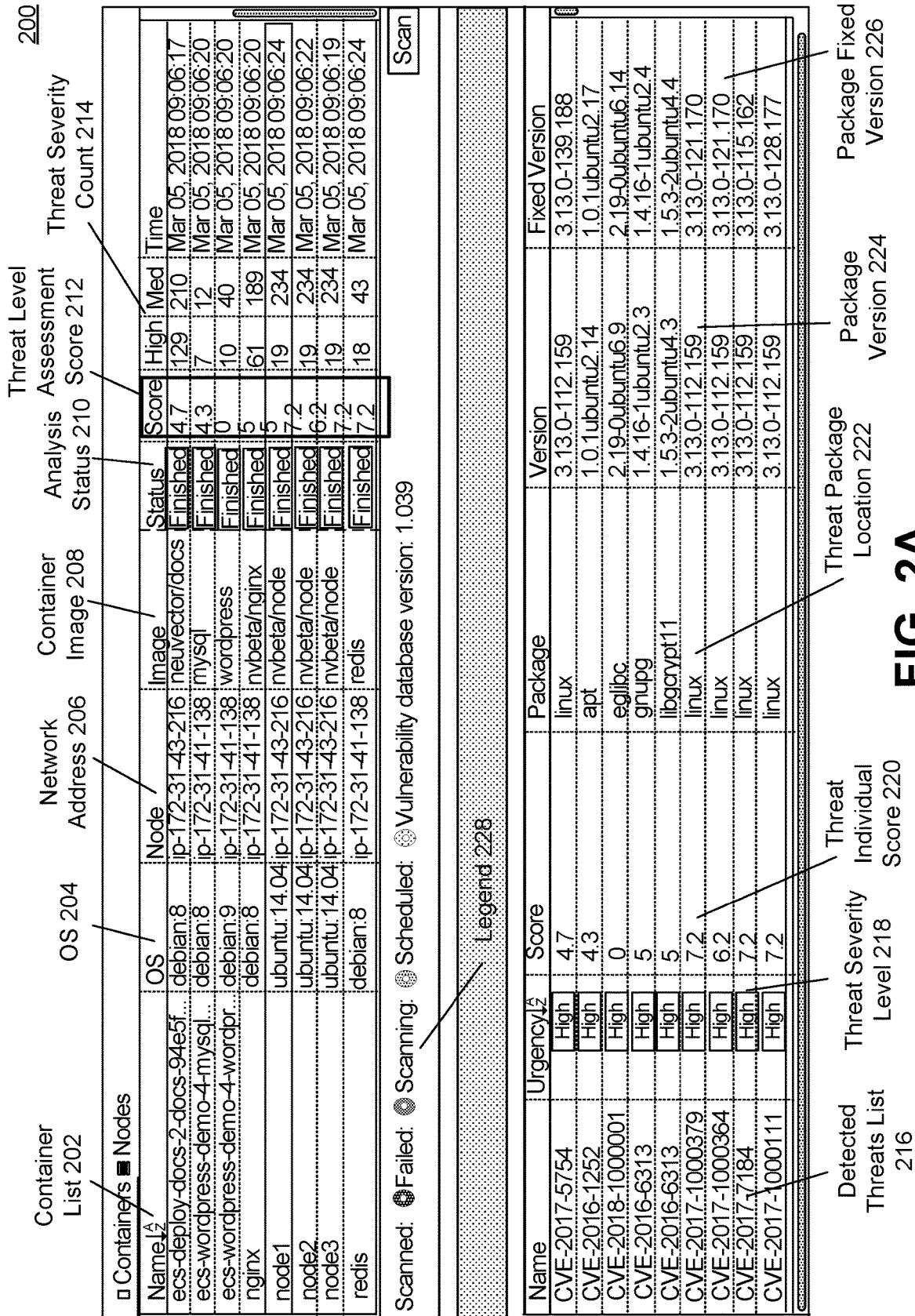


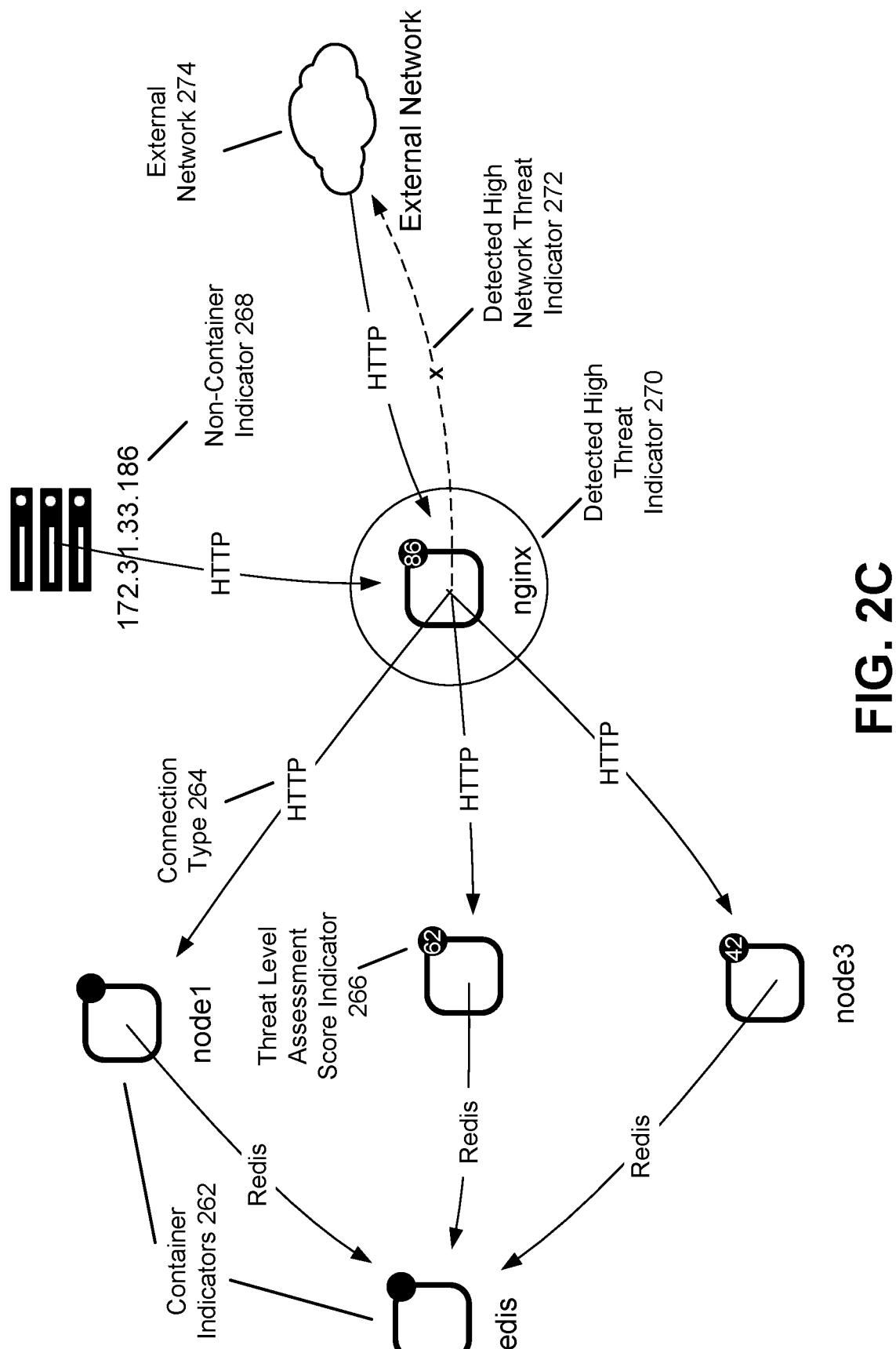
FIG. 1



Node List 232		OS 234	Platform 238		Hardware Info 240		230
Nodes							
Name	OS	Platform	CPUs	Memory			
ip-172-31-41-138	Amazon Linux AMI 2017.03	Amazon-ECS	1	993.5 MB			
ip-172-31-43-216	Amazon Linux AMI 2017.03	Amazon-ECS	1	993.5 MB			
ip-172-31-44-255	Amazon Linux AMI 2016.03	Amazon-ECS	1	993.5 MB			

DOCKET BENCHMARK		Threat Description 246	
Test number	Level	Message	
1.1(14)	INFO	Host Configuration	
1.1	WARN	Ensure a separate partition for containers has been created	
1.2	NOTE	Ensure the container host has been Hardened	
1.3(2)	INFO	Ensure Docker is up to date	
	INFO	Using 17.03.1 verify it is up to date as deemed necessary	
	INFO	Your operating system vendor may provide support and	
	INFO	Ensure only trusted users are allowed to control Docker	
1.4(1)	INFO	docker x.497.ec2-user	
1.5	WARN	Ensure auditing is configured for the Docker daemon	
1.6	WARN	Ensure auditing configured for files and dir. -/var/lib/docker	
1.7	WARN	Ensure auditing configured for files and dir. -/etc/docker	
1.8(1)	INFO	Ensure auditing configured for files and dir. - docker.service	
	INFO	File not found	
1.9(1)	INFO	Ensure auditing configured for files and dir. - docker.socket	
	INFO	File not found	
1.10(1)	INFO	Ensure auditing configured for files and dir. - /ect/default/doc	
	INFO	File not found	
1.11(1)	INFO	Ensure auditing configured for files and dir. - /ect/docker/dae	

FIG. 2B



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.