



# API Security Fundamentals

# Table of Contents

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## Introduction

API security fundamentals	3	How do you protect internal APIs and business-to-business APIs?	16
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## API Basics

What is a web API?	4	Do API gateways have built-in security?	17
What are the most common types of APIs and API terms?	4	What are the most common API misconfiguration errors?	17
What is the difference between APIs and endpoints?	4	What are API attacks?	19
What is a north-south API?	7	What is credential stuffing for APIs?	19
What is an east-west API?	7	What is data exfiltration through APIs?	19
What are the differences between B2C APIs and B2B APIs?	8		
What are the differences between private APIs and public APIs?	9		

## API Security Explained

What is API security?	10	<b>API Security Solutions and Trends</b>	
How big is the API security problem?	12	What are the latest trends in API security?	20
How is API security different from application security?	12	What is signature-based API security?	20
What are the best practices for protecting APIs?	13	What is API detection and response?	21
		What is advanced API threat protection?	21
		What is an API security platform?	22
		What is an API company?	22
		What is threat hunting in APIs?	23
		What is WAAP?	23

## API Security Risks and Abuse

What is an API vulnerability?	14	<b>API Security Best Practices</b>	
How can APIs be abused?	15	What is an API documentation example?	24
What is a zombie API?	15	Is there an API security checklist businesses should follow?	24
How can I find the various types of shadow APIs?	16	Is there an API taxonomy that security teams should understand?	25





# Introduction

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## API security fundamentals

API security is one of the fastest-growing priorities for security executives. But it's also arguably one of the least understood. The evolution of application programming interfaces (APIs) from implementation detail to strategic enabler of innovation has been a rapid one. As a result, many security teams are scrambling to increase the sophistication of their API security strategies and practices.

APIs are enabling business operations, but they also carry the crown jewels of an organization's data. Even perfect APIs can be abused by hackers, so it's essential to know the fundamentals of API security to protect your business from evolving threats. As more customer interactions and business processes use APIs, enterprise security teams are reworking their security strategies to put API risks at the forefront.

Whether you're looking to touch up on your basics or unsure of what questions to ask, read our guide for everything you need to know about API security threats, trends, and best practices. You'll get an in-depth look at:

- The different types of APIs
- What API security means for businesses today
- Best practices for mitigating API security risks
- Common API attacks and abuse methods

## API Basics

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### What is a web API?

A web API is a programmatic interface consisting of one or more endpoints to a defined request–response message system, typically expressed in JSON or XML, which are publicly exposed via the web — most commonly by means of an HTTP-based web server.

In other words, a web API is what most people think of when they hear “API.” It’s a collection of endpoints. Endpoints consist of resource paths, the operations that can be performed on these resources, and the definition of the resource data (in JSON, XML, protobuf, or another format).

The term is useful to differentiate web APIs from other APIs, such as those exposed by the operating system or by libraries to applications running on the same machine. But we all understand “APIs” to mean HTTP-based (web) APIs when we talk about the enterprise digital transformation and API security.

### What are the most common types of APIs and API terms?

It is helpful for security teams to be familiar with the following terms that refer to different usage models and technology approaches for API implementations. Web APIs are defined as being based on HTTP, and the four main types of web APIs seen today are RESTful, SOAP, GraphQL, and gRPC. The following table defines these four common types, among others.

