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TypeScript static code analysis

Unique rules to find Bugs, Vulnerabilities, Security Hotspots, and Code Smells in your TYPESCRIPT code

All rules 279 | Vulnerability 27 | Bug 51 | Security Hotspot 43 | Code Smell 158 | Quick Fix 50

Tags

Search by name...

added

Code Smell

Primitive types should be omitted from initialized or defaulted declarations

Code Smell

Non-null assertions should not be used

Code Smell

"undefined" should not be assigned

Code Smell

Trailing commas should not be used

Code Smell

Array constructors should not be used

Code Smell

Quotes for string literals should be used consistently

Code Smell

Statements should end with semicolons

Code Smell

Comments should not be located at the end of lines of code

Code Smell

Loops should not contain more than a single "break" or "continue" statement

Code Smell

Variable, property and parameter names should comply with a naming convention

Code Smell

Lines should not end with trailing whitespaces

Code Smell

Using hardcoded IP addresses is security-sensitive

Analyze your code

Security Hotspot Minor owasp

Hardcoding IP addresses is security-sensitive. It has led in the past to the following vulnerabilities:

- CVE-2006-5901
- CVE-2005-3725

Today's services have an ever-changing architecture due to their scaling and redundancy needs. It is a mistake to think that a service will always have the same IP address. When it does change, the hardcoded IP will have to be modified too. This will have an impact on the product development, delivery, and deployment:

- The developers will have to do a rapid fix every time this happens, instead of having an operation team change a configuration file.
- It misleads to use the same address in every environment (dev, sys, qa, prod).

Last but not least it has an effect on application security. Attackers might be able to decompile the code and thereby discover a potentially sensitive address. They can perform a Denial of Service attack on the service, try to get access to the system, or try to spoof the IP address to bypass security checks. Such attacks can always be possible, but in the case of a hardcoded IP address solving the issue will take more time, which will increase an attack's impact.

Ask Yourself Whether

The disclosed IP address is sensitive, e.g.:

- Can give information to an attacker about the network topology.
- It's a personal (assigned to an identifiable person) IP address.

There is a risk if you answered yes to any of these questions.

Recommended Secure Coding Practices

Don't hard-code the IP address in the source code, instead make it configurable with environment variables, configuration files, or a similar approach. Alternatively, if confidentially is not required a domain name can be used since it allows to change the destination quickly without having to rebuild the software.

Sensitive Code Example

```
ip = "192.168.12.42"; // Sensitive

const net = require('net');
var client = new net.Socket();
client.connect(80, ip, function() {
  // ...
});
```

Compliant Solution

Files should contain an empty newline at the end

Code Smell

An open curly brace should be located at the end of a line

Code Smell

Tabulation characters should not be used

Code Smell

Function and method names should comply with a naming convention

Code Smell

```
ip = process.env.IP_ADDRESS; // Compliant

const net = require('net');
var client = new net.Socket();
client.connect(80, ip, function() {
  // ...
});
```

Exceptions

No issue is reported for the following cases because they are not considered sensitive:

- Loopback addresses 127.0.0.0/8 in CIDR notation (from 127.0.0.0 to 127.255.255.255)
- Broadcast address 255.255.255.255
- Non routable address 0.0.0.0
- Strings of the form `2.5.<number>.<number>` as they often match Object Identifiers (OID).

See

- OWASP Top 10 2021 Category A1 - Broken Access Control
- OWASP Top 10 2017 Category A3 - Sensitive Data Exposure

Available In:

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