# CWE Detail – CWE-498

## Description

The code contains a class with sensitive data, but the class is cloneable. The data can then be accessed by cloning the class.

## Extended Description

Cloneable classes are effectively open classes, since data cannot be hidden in them. Classes that do not explicitly deny cloning can be cloned by any other class without running the constructor.

## Threat-Mapped Scoring

Score: 0.0

Priority: Unclassified

## Modes of Introduction

**•** Implementation: N/A

## Common Consequences

**•** Impact: Bypass Protection Mechanism — Notes: A class that can be cloned can be produced without executing the constructor. This is dangerous since the constructor may perform security-related checks. By allowing the object to be cloned, those checks may be bypassed.

## Potential Mitigations

**•** Implementation: If you do make your classes clonable, ensure that your clone method is final and throw super.clone(). (Effectiveness: N/A)

## Applicable Platforms

**•** C++ (Class: None, Prevalence: Undetermined)

**•** Java (Class: None, Prevalence: Undetermined)

**•** C# (Class: None, Prevalence: Undetermined)

## Demonstrative Examples

**•** Make classes uncloneable by defining a clone function like: