**ROP-Hunt：在应用程序中检测返回导向编程(ROP)攻击**

摘要:

Return-oriented Programming (ROP) is a new exploitation technique that can perform arbitrary unintended operations by constructing a gadget chain reusing existing small code sequences.

返回导向编程(ROP) 是一种新型漏洞利用技术，该技术通过重复使用已有的小代码序列(gadget)构造出一条gadget链，从而执行任意的非法操作。

Although many defense mechanisms have been proposed, some new variants of ROP attack can easily circumvent them.

尽管很多防御机制已经被提出，但是一些新的ROP攻击的变种能够轻易绕过这些机制防御。

In this paper, we present a new tool, ROP-Hunt, that can defend against ROP attacks based on the differences between normal program and ROP malicious code.

在本文中，我们将介绍一个新工具ROP-Hunt，它能依据正常程序与恶意ROP代码间的差异来防御ROP攻击。

ROP-Hunt leverages instrumentation technique and detects ROP attack at runtime.

ROP-Hunt利用仪表\*(instrumentation)技术并在程序运行时检测ROP攻击。

In our experiment, ROP-Hunt can detect all types of ROP attack from real-world examples.

在我们的实验中，ROP-Hunt可以在众多真实例程中检测出所有类型的ROP攻击。

We use several unmodified SPEC2006 benchmarks to test the performance and the result shows that it has a zero false positive rate and an acceptable overhead.

我们使用了几个原版的SPEC2006标准来测试ROP-Hunt的性能，结果表明它具有零误报率和可接受的系统开销。