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The Inherent Insecurity of Widgets and Gadgets

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Who are we?

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- Iftach Ian Amit
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Introduction - Widgets?

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- What is a widget?
  - Widgets are small applications
  - Provide visual information
  - Provide access to a frequently used functions
  - Hosted in an environment called a “Widget Engine”

Introduction - Types of widgets

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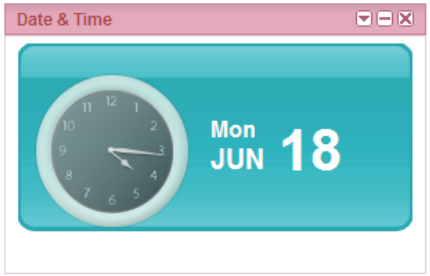
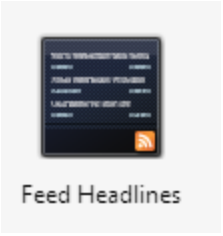
- Website widgets



- 3rd party application widgets

- OS integrated widgets



General Issues - Malicious Widgets

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- Widgets are applications
- Applications can include malicious code
- Hence, widgets can be malicious

General Issues - Vulnerabilities

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- Widgets are small applications
- Often considered too simple to represent a security threat
- Widgets are developed without security in mind
- Hence, widgets probably have security vulnerabilities

General Issues - Attack vectors

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- Downloadable malicious widgets
- Email attachments
- Vulnerable widgets
  - Command injection
  - Man in the middle attacks
  - Browser vulnerabilities
- Vulnerable websites
  - XSS
  - CSRF

General Issues - Impact

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- Session/Account hijacking
- Remote denial-of-service
- Information leakage
  - Personal
  - Corporate
- Remote code execution
  - Exploiting browser vulnerabilities
  - Download and execute

Web widgets - In the Wild

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- Personalized Portals
  - iGoogle
  - Microsoft Live
  - MyYahoo
- Blog systems
  - WordPress
  - TypePad
- Social networks
  - MySpace

Web widgets - iGoogle

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- Personalized Portal
- Requires a Google Account
- Based on HTML and javascript
- JS API for widget developers
- Mobile support

Web widgets - iGoogle - Malicious Widget

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Web widgets – Vulnerable Widget

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Widget Engines - 3rd party applications

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- Yahoo widgets (Konfabulator)
- Google Desktop
- DesktopX
- Opera browser

Widget Engines - Yahoo Widgets

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- Previously known as Konfabulator
- Recently released version 4.0
- Based on HTML like Markup Language and javascript
- Some of the widgets require Yahoo account
- Multiplatform API

Widget Engines - Yahoo Malicious Widget

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Widget Engines - Yahoo Vulnerable Widget

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OS Widgets - Out-of-The-Box Engines

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- Apple OSX
  - Dashboard
- Windows Vista
  - Sidebar
- Linux
  - KDE / GNOME

OS Widgets - Vista Sidebar

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- Installed by default on all Windows Vista editions
- Allows installation of external widgets
- Uses Internet Explorer 7.0 for rendering
- **DOES NOT** utilize IE7 Protected Mode!
- JS API for widget developers

OS Widgets - Vista Sidebar Malicious Widget

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OS Widgets - Vista Sidebar Vulnerable Widget

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Widgets on Mobile Devices

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- iGoogle and Live.com provide mobile interface
- Different widgets display from the PC version
- Only some of the widgets are allowed to be added
- Attack vectors:
  - Session/Account hijacking
  - Exploit mobile browsers vulnerabilities

Widgets and Browser Extensions

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- Actually not a lot different
- Browser integration vs. OS/Engine/Site integration
- Firefox browser extensions
  - Run in elevated privileges (Chrome)
  - Firebug
- Internet Explorer ActiveX
  - BHO
  - OS ActiveX

Solutions / Recommendations

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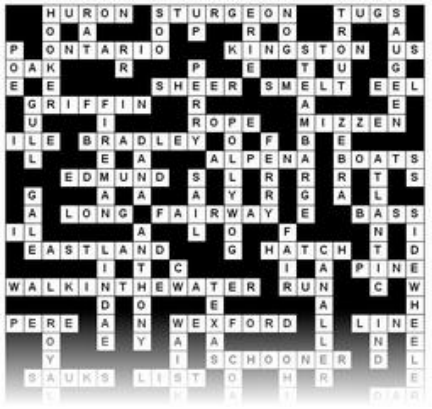
- Digital Signing for Widgets
- Trust no one
  - Do not install unofficial/unknown widgets
- If you don’t use, block it!
  - Block .widget and .gadget files
- Use Widget 1.0 implemented solutions



Solutions / Recommendations - Widgets 1.0

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- W3C standard for widgets development
  - Last draft version from November 2006
  - http://www.w3.org/TR/widgets/
- Object model based on Apple's Dashboard
- Implemented in Opera browser widgets
- Strict security model:
  - No access to user's file system
  - Explicit declarations of protocol usage
  - Explicit declarations of port usage
  - Intranet IP range restrictions

Questions

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