PowerShell

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About Josh

- Security Analyst with a Fortune 1000 --- Works with Dave
- Heavy experience in penetration testing, exploitation, web application security, vulnerability management, and incident response.
- Primary languages are Python…and now PowerShell ☺

About Dave

- Director of Regional Security for a Fortune 1000
- Heavy experience in penetration testing, exploitation, web application security, wireless and physical
- Creator of the Social-Engineer Toolkit, the Social-Engineer Framework.
- Heavy military background in Intelligence, deployed twice to Iraq and other middle east countries.

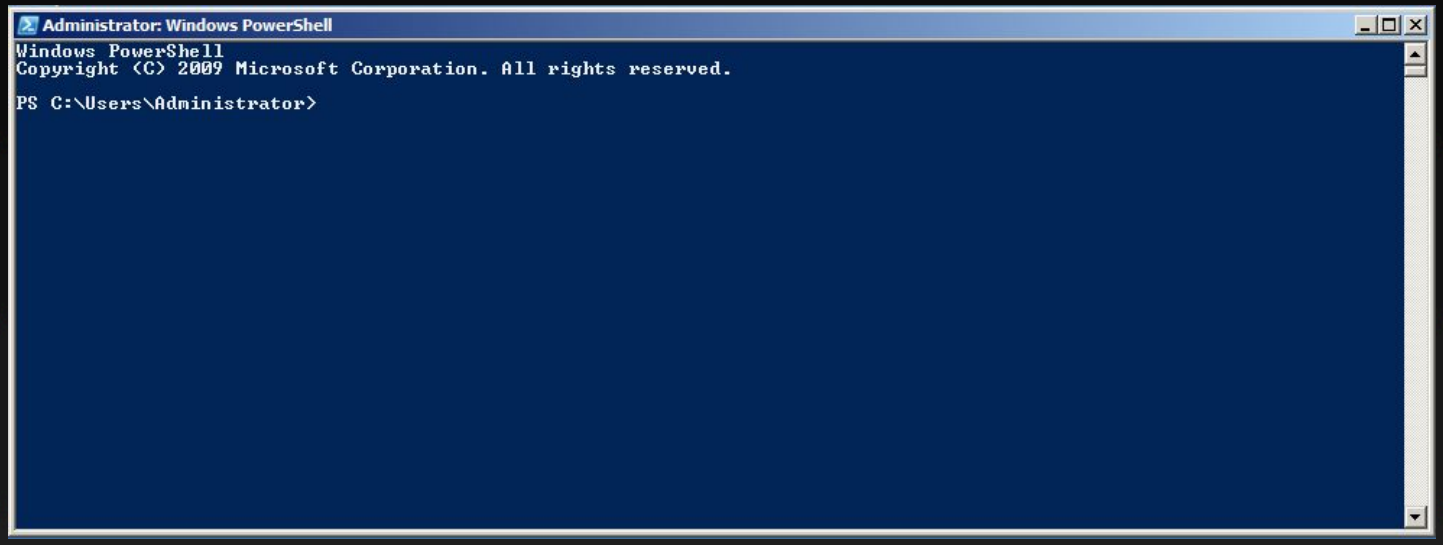
Special Thanks

Special thanks to IronGeek and Kathy Peters

Brief Intro to PowerShell

- Windows version of a bash shell in nix… Very powerful, flexible, and getting improved regularly.
- Installed by default on all Windows 7 and Server 2008 operating systems. Full integration for all new existing Microsoft products, including Exchange and AD integration.
- Full integration into the .NET framework and can be directly called when performing scripting.

If you haven’t seen it..



PowerShell for h4x0rs

- We will be the first ones to admit the usefulness and power of PowerShell in a positive manner. The ability to perform advanced tasks on Microsoft based operating systems is a huge leap forward.

- PowerShell for us as security researchers can be a great addition ranging from tool creation and automation when performing security assessments.

Execution Policies

- Restricted – Places it in a mode where only certain scripts and calls can be called.
- AllSigned – This script only allows signed scripts to be executed. Has to be from a trusted publisher. This is the most restrictive policy.
- RemoteSigned – Remote scripts must be signed by a trusted publisher, things run locally don't need to be signed.
- Unrestricted – Can run anything both remote and local.

Release of Metasploit Module 1 – PowerShell Debug

- Traditionally post-exploitation phase, if you didn't have direct access to memory, traditional methods of getting a payload onto a system was through Windows debug (now removed in all newer operating systems), vbscript, csc, TFTP, or FTP.

- These methods are now proving much more difficult with better A/V and HIPS detection (well kinda..) and TFTP and FTP blocked egress.

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DEMO – Metasploit Module

Small Example of Conversion

- Binary is converted to hexadecimal and placed onto the filesystem.
- Convert script is created to take the hexadecimal and rewrite it back in a byte array as binary.
- Payload is now on the system for execution.

Execution Restriction Policies

- Shouldn't be relied upon for protecting execution of PowerShell based commands.
- Execution restriction policies do not help from a post exploitation perspective…

CreateCMD Release

- Contents of a file are concatenated, compressed, and converted to base 64 into a single string.
- A boilerplate bootstrap code created for powershell –Command or –encodedCommand args then unpack the code and then perform an Invoke-Expression
- That will execute the script contents in the current shell context with all new functions that are in the script.

What's this mean…

- With the most restrictive policy set on PowerShell we can still execute whatever we want (again not a security prevention method).
- No need to disable execution restriction policies
- No registry interaction, no reboots, nothing.

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DEMO – CreateCMD

What we can do..

- Since we have full access to both PowerShell and the .NET libraries, we can do pretty much anything we want which is great…
- Releasing today both a bind and reverse shell programmed purely in PowerShell as PoC tools that you can create for security testing and to demonstrate the power of what we have...

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DEMO – PowerShell based SAMDump

PowerShell SAMDump

- Meterpreter based module, will dump the SAM database purely through powershell.
- Works on all operating systems, both x86 and 64 bit.

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SET v0.6 – Codename

“Arnold Palmer”

Basics of SET

- Open-Source purely Python driven.
- Integration into Metasploit for both the exploit repository for client-side attacks and payloads.
- Multiple attack vectors specifically designed for Social-Engineering.
- For good, not bad, help pentesters and organizations test their security program.

SET DEMO

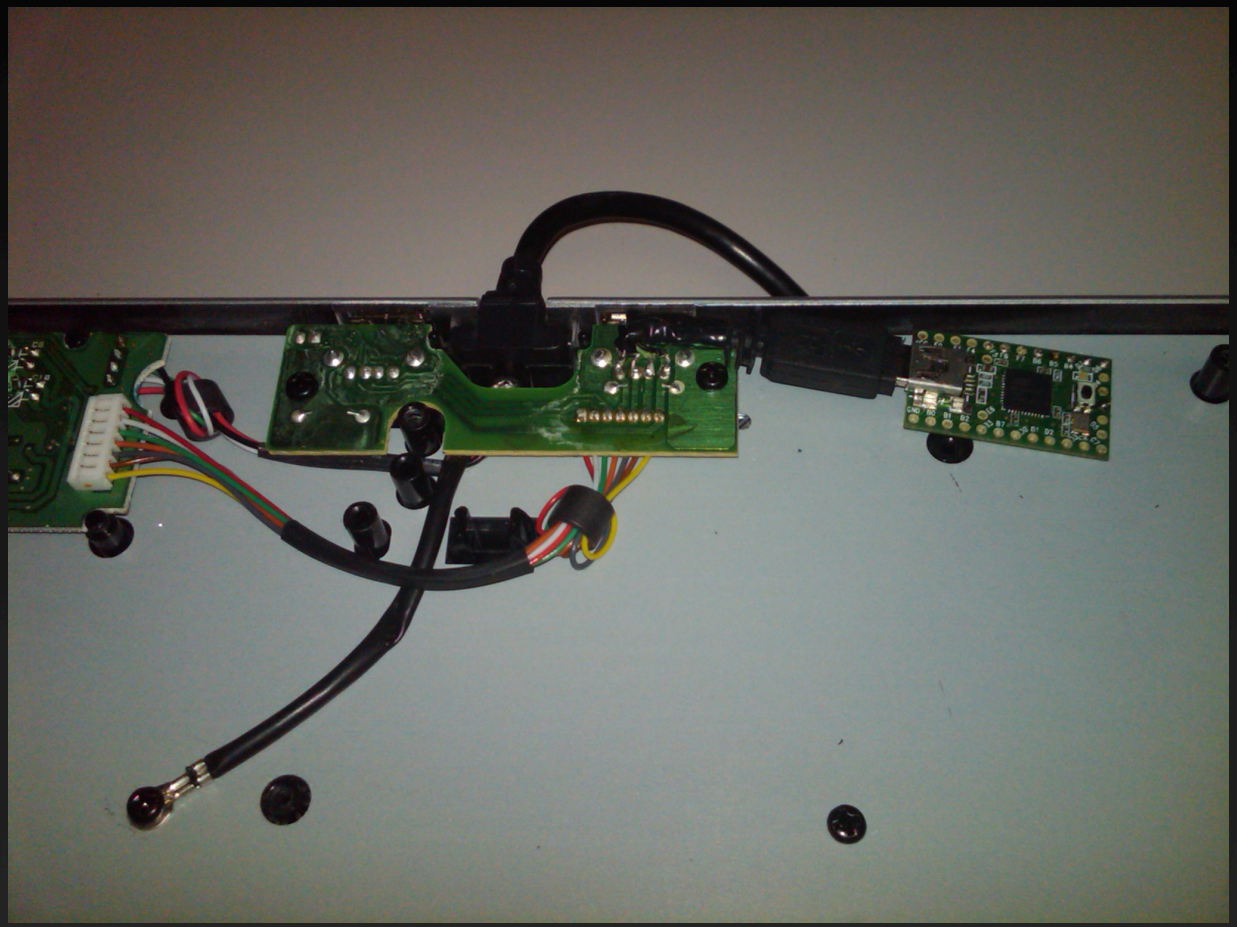
USB HID Attack Vector

USB HID Attack Vector

- Drop a payload onto a system either through PowerShell or WSCRIPT.
- Automatic creation of attack vector through SET

Integrating into Existing Hardware

- Most new keyboards have integrated USB Hubs.



All put together…

- Keyboard still works perfectly… We have our malicious stuff just sitting there waiting…

SET DEMO

Java Applet Attack Vector

Thomas Werth Attack Vector

- Released at ShmooCon, this attack vector allows you to create a malicious Java Applet.
- User hits “run” and the payload is executed on the victims machine.
- Redirects user back to original site to make attack less conspicuous.
- New in SET v0.6, heavy obfuscation of java and payload for A/V bypass and fixed major issues with Linux/OSX payload deployment. Applet source just opened today!

What does this mean?

- Anti-Virus and HIPS aren't picking up these types of attacks, which means it's a safe passage for exploitation.
- The usefulness of this really aids us in post-exploitation scenarios and for security research and analysis.

Future Plans

- Process injection and code injection capabilities within PowerShell.
- Ability to deploy security baselines to multiple systems and ensure enforcement.

Social-Engineer.org

- http://www.social-engineer.org

Thanks to Kathy Peters

Be sure to check out:

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