Web Application Pentesting

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CSRF Multi-Step Operation Handling

CSRF Multi-Step Handling

- Operation might span multiple steps
  - E.g. A confirmation screen
- If no CSRF protection is used e.g. Tokens then this is easy to beat
- Multi-step operations with CSRF protections
  - XSS

Complex Multi-Step Operations

- With CSRF Protection e.g. Tokens
- Output of one step needs to be used in second
  - Cannot be predicted by attacker
- Depending on the “Origin Policy” attacker needs to choose how to attack
  - Malicious website
  - Find Vulnerabilities on Victim website e.g. XSS

Demo

- OWASP WebGoat

https://github.com/WebGoat/WebGoat/wiki/Installation-(WebGoat-6.0)

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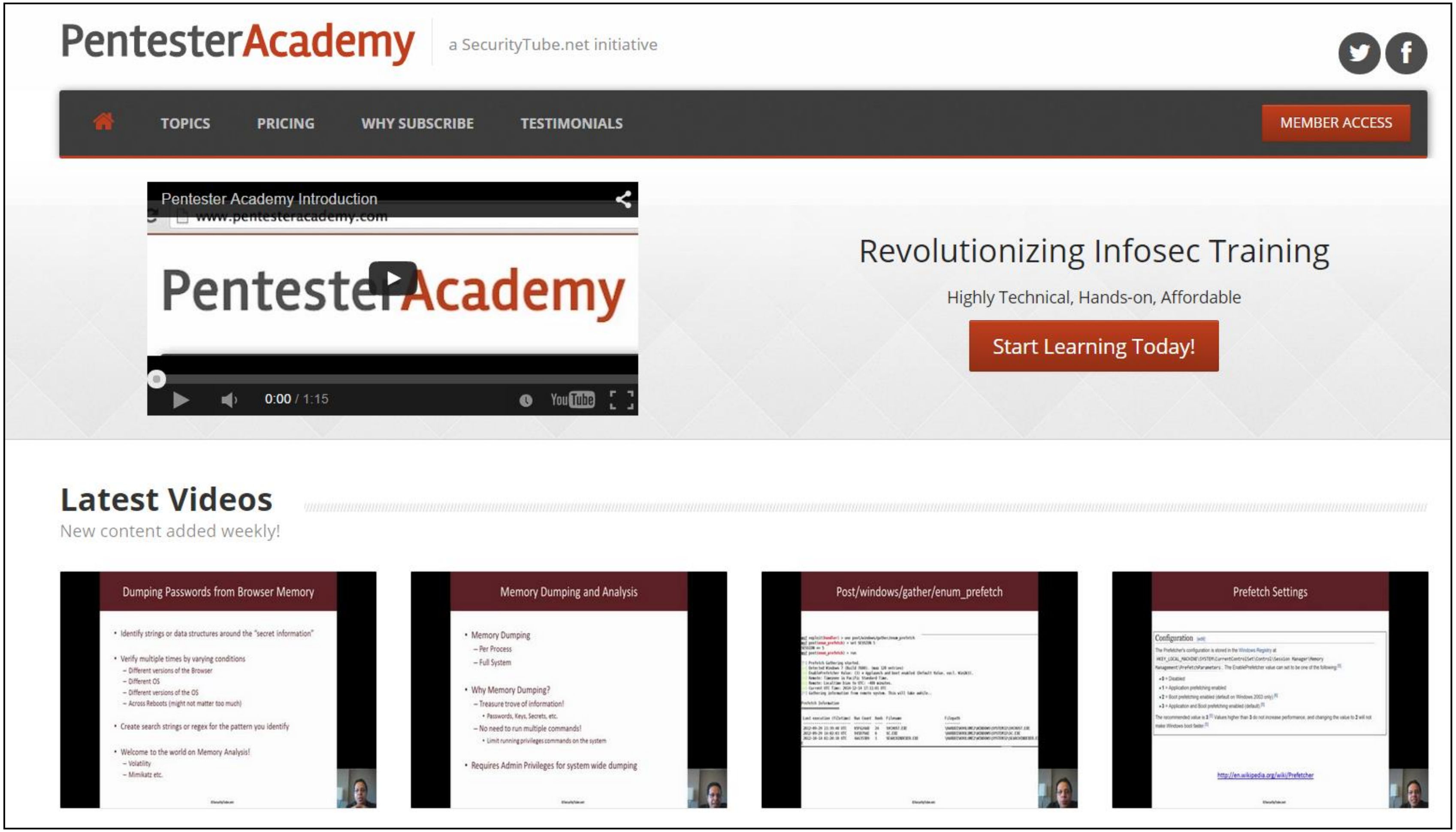

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Dumping Passwords from Browser Memory

- Identify strings or data structures around the "secret information"
- Verify multiple times by varying conditions
  - Different versions of the Browser
  - Different OS
  - Different versions of the OS
  - Across Reboots (might not matter too much)
- Create search strings or regex for the pattern you identify
- Welcome to the world on Memory Analysis!
  - Volatility
  - Mimikatz etc.

Memory Dumping and Analysis

- Memory Dumping
  - Per Process
  - Full System
- Why Memory Dumping?
  - Treasure trove of information!
    - Passwords, Keys, Secrets, etc.
  - No need to run multiple commands!
    - Limit running privileges commands on the system
- Requires Admin Privileges for system wide dumping

Post/windows/gather/enum_prefetch

```
msf exploit(handler) > use post/windows/gather/enum_prefetch
msf post(enum_prefetch) > set SESSION 1
SESSION => 1
msf post(enum_prefetch) > run

[*] Prefetch Gathering started.
[+] Detected Windows 7 (Build 7600). (max 128 entries)
[+] EnablePrefetcher Value: (3) = Applaunch and boot enabled (Default Value, excl. Win2k3).
[+] Remote: Timezone is Pacific Standard Time.
[+] Remote: Localtime bias to UTC: -480 minutes.
[+] Current UTC Time: 2014-12-14 17:11:01 UTC
[*] Gathering information from remote system. This will take awhile..

Prefetch Information
====================

Last execution (filetime)  Run Count  Hash  Filename        Filepath
-------------------------  ---------  ----  --------        --------
[illegible]
[illegible]
[illegible]
```

Prefetch Settings

Configuration [edit]

The Prefetcher's configuration is stored in the Windows Registry at HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\Session Manager\Memory Management\PrefetchParameters. The EnablePrefetcher value can set to be one of the following:[5]

- 0 = Disabled
- 1 = Application prefetching enabled
- 2 = Boot prefetching enabled (default on Windows 2003 only)[6]
- 3 = Application and Boot prefetching enabled (default)[5]

The recommended value is 3.[5] Values higher than 3 do not increase performance, and changing the value to 2 will not make Windows boot faster.[5]

http://en.wikipedia.org/wiki/Prefetcher