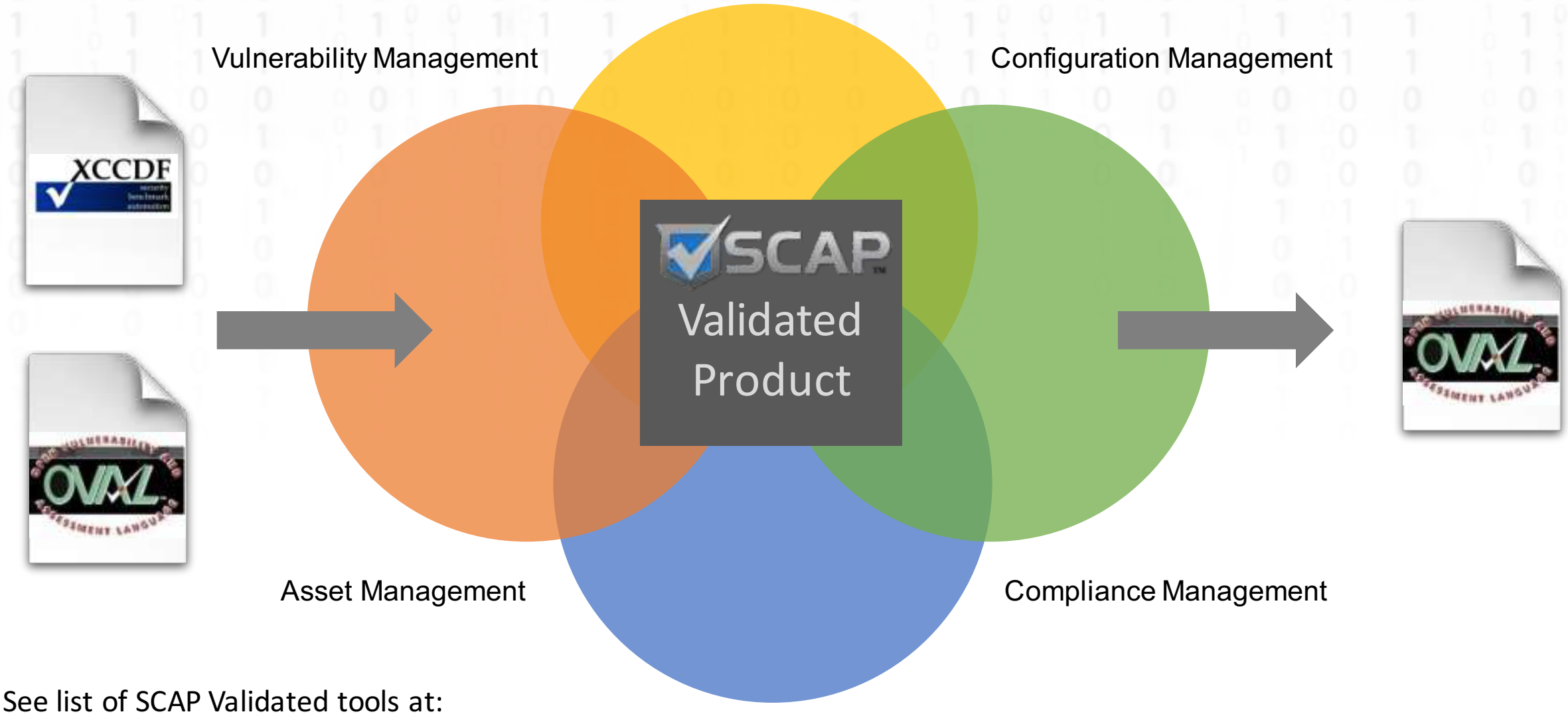
The Enhanced SCAP Editor (eSCAPe) and Libraries

It All Depends on SCAP Content



See list of SCAP Validated tools at:
http://nvd.nist.gov/scapproducts.cfm

Manual SCAP Content Creation

- Requires significant understanding of SCAP
  - Protocols
  - Schemas
  - Specifications
- Can be error prone
- Time consuming

XCCDF Document Structure


```
<Benchmark id="malware_testing_content">
    <status date="2010-06-09">draft</status>
    <title>Malware Testing Content</title>
    <description>File content for OVAL file malware_file_check-oval.xml</description>
    <platform idref="cpe:/o:microsoft:windows_xp" />
    <version>v0.0</version>
    <Profile id="malware_content_2010">
        <title>Malware Content 2010</title>
        <description>Malware dontent 2010 description</description>
        <select idref="MAL-49" selected="true" />
    </Profile>
    <Group id="windows_malware_content">
        <title>Windows Malware Content</title>
        <description>Windows Malware Content description</description>
        <Rule id="MAL-49">
            <title>File test for malicious file 34564.exe</title>
            <description>File content that checks C:\WINDOW\temp for file
34564.exe</description>
            <check>
                <check-content-ref href="file_version_check-oval.xml"
name="oval:test.g2.com:def:1" />
            </check>
        </Rule>
    </Group>
</Benchmark>
```

OVAL Document Structure

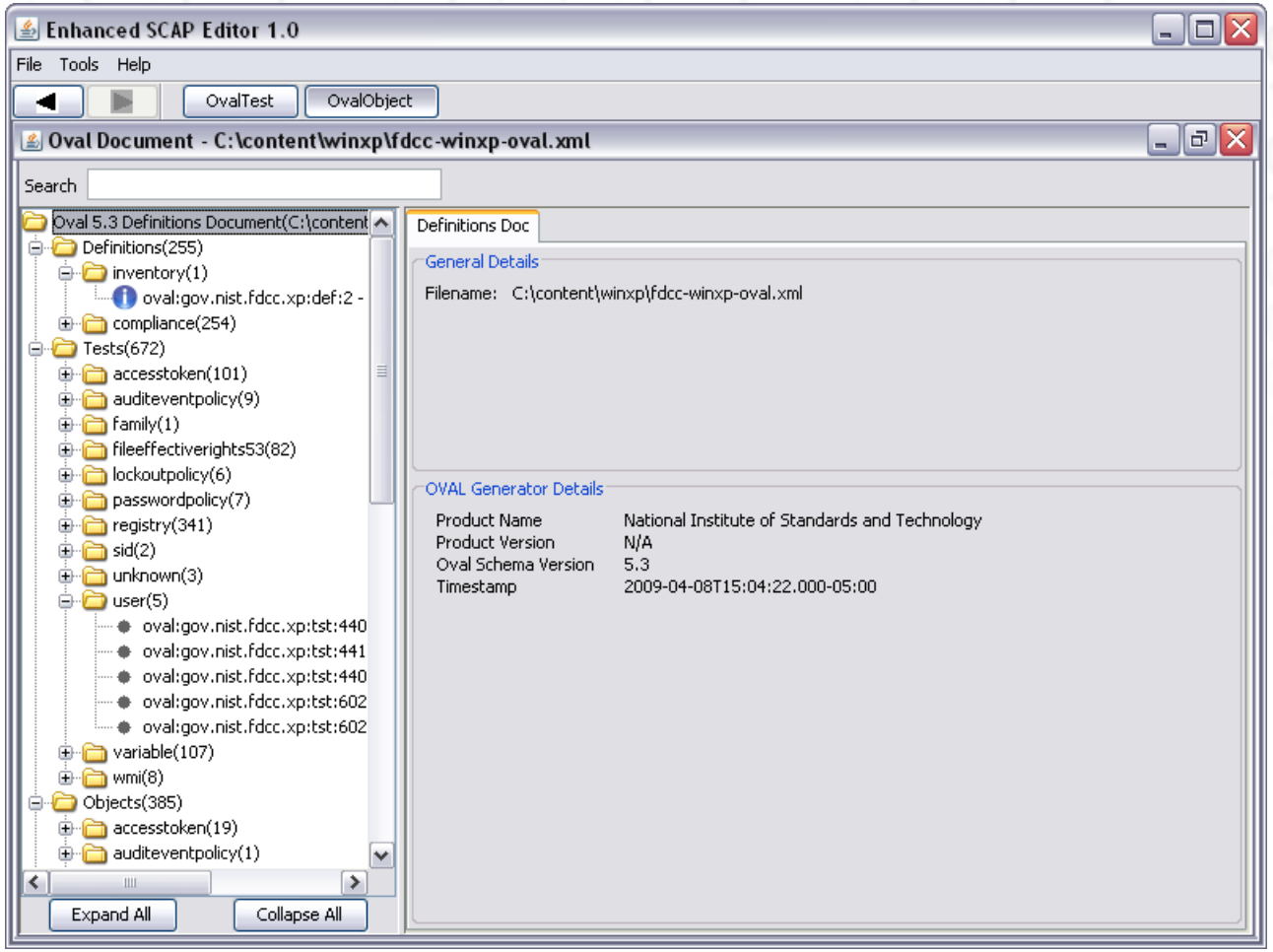

```
<definitions>
    <definition id="oval:test.g2.com:def:1" class="vulnerability">
        <metadata>
            <title>File test for malicious file 34564.exe</title>
            <description>Checking for malicious file named 34564.exe</description>
            <affected family="windows">
                <platform>Microsoft Windows XP</platform>
            </affected></metadata>
        <criteria operator="AND">
            <criterion comment="File test for 34564.exe" test_ref="oval:test.g2.com:tst:1"/></criteria>
    </definition></definitions>
<tests>
    <file_test id="oval:test.g2.com:tst:1" comment="File test for files named 34564.exe">
        <object object_ref="oval:test.g2.com:obj:1"/>
        <state state_ref="oval:test.g2.com:ste:1"/>
    </file_test></tests>
<objects>
    <file_object id="oval:test.g2.com:obj:1" comment="Check C:\WINDOW\temp for file">
        <path datatype="string">C:\WINDOW\temp</path>
        <filename datatype="string">34564.exe</filename>
    </file_object></objects>
<states>
    <file_state id="oval:test.g2.com:ste:1" comment="Check for file size”>
        <size datatype="int" operation="equals">89829</size>
    </file_state></states>
```

The Enhanced SCAP Editor (eSCAPe)

- Friendly interface for creating and editing SCAP documents
- Full OVAL file creation
  - Creation of definitions, tests, objects, states and variables
  - Support for OVAL versions 5.3 – 5.6
- Full OVAL file editing
  - Support for OVAL versions 5.3 – 5.6
- Searching inside OVAL documents
- Partial XCCDF file creation and editing
- Rapid OVAL and XCCDF creation with wizards
- CPE OVAL and CPE Dictionary viewing and creation
- Regular Expression Editor Tool and Validator Tool
- OVAL document merging
- Schema validation of OVAL and XCCDF documents
- SCAP Data Stream support and SCAP 1.0 validation

eSCAPe Editor – OVAL Editor

- Allows for viewing and editing of opened OVAL files. This is the standard editor and provides full editing of OVAL documents.
- Elements: Breadcrumb Toolbar, Document Tree, Information Area, Search Bar



W32/Conficker

- “Conficker’s $9.1 billion estimated economic cost”[1]
- “French fighter planes grounded by computer virus”[2]

Heat Map of W32/Conficker – 1 April 2009

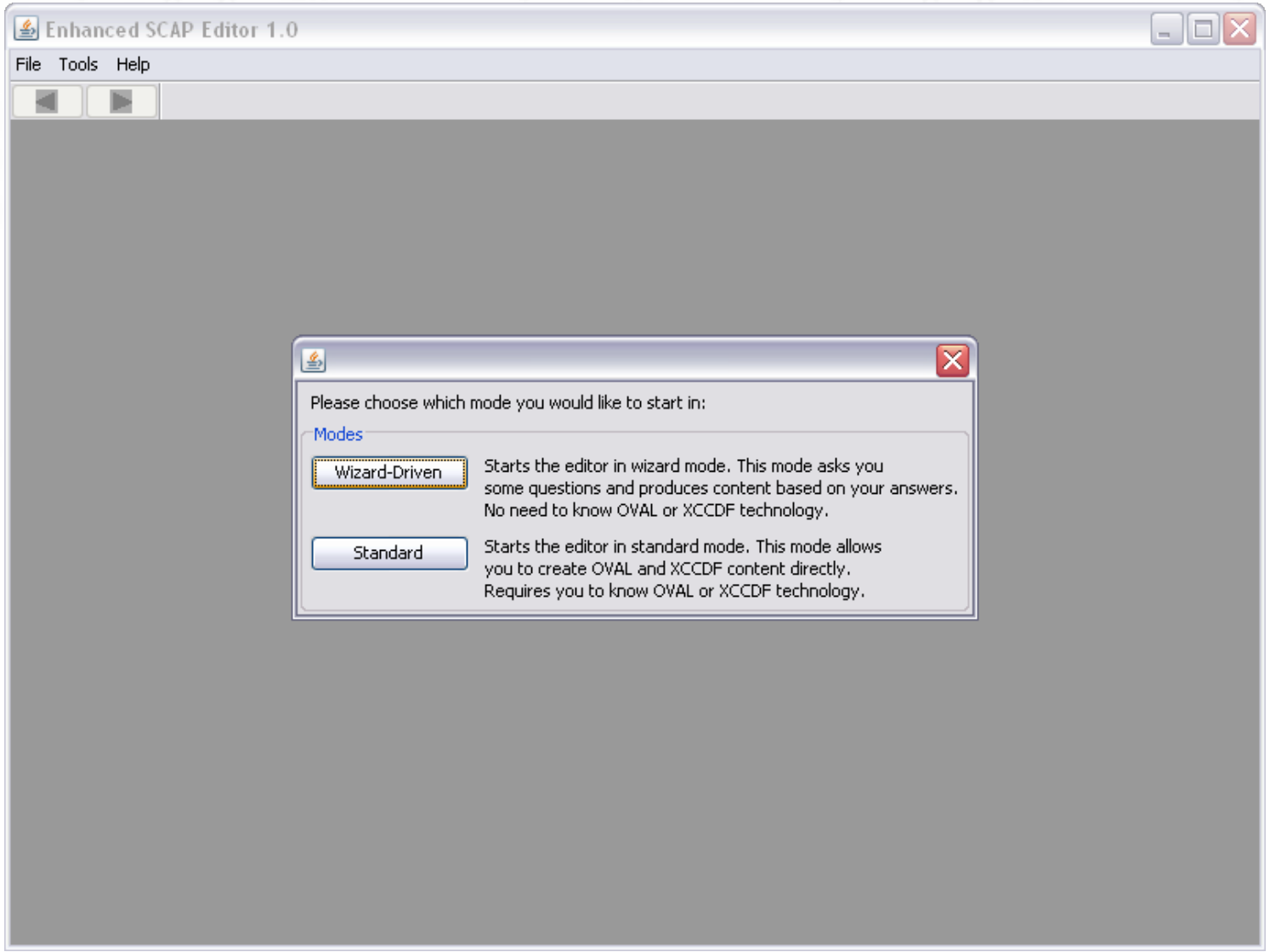
1. Cyber Secure Institute, April 20th, 2009 (source http://cybersecureinstitute.org/blog/?p=15)
2. CNET News, February 8, 2009 (source http://news.cnet.com/8301-17852_3-10159186-71.html)

Example: Win32/Conficker.A

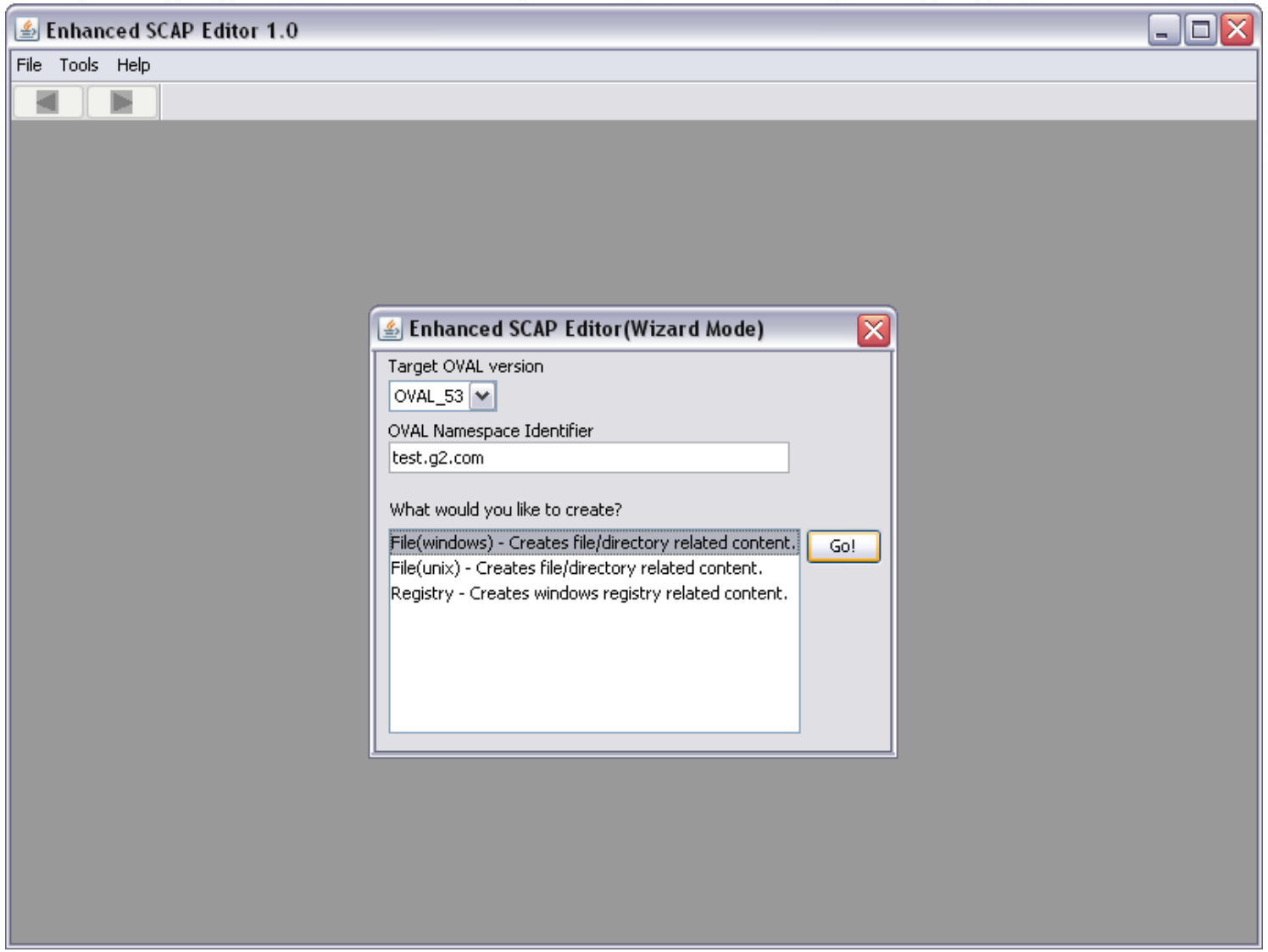
Looking to asses 2 things with SCAP:

- If we are vulnerable to the Microsoft Server Service Remote Code Execution Vulnerability, MS08-067, CVE-2008-4250
- If any of our assets have been infected with the Win32/Conficker.A worm

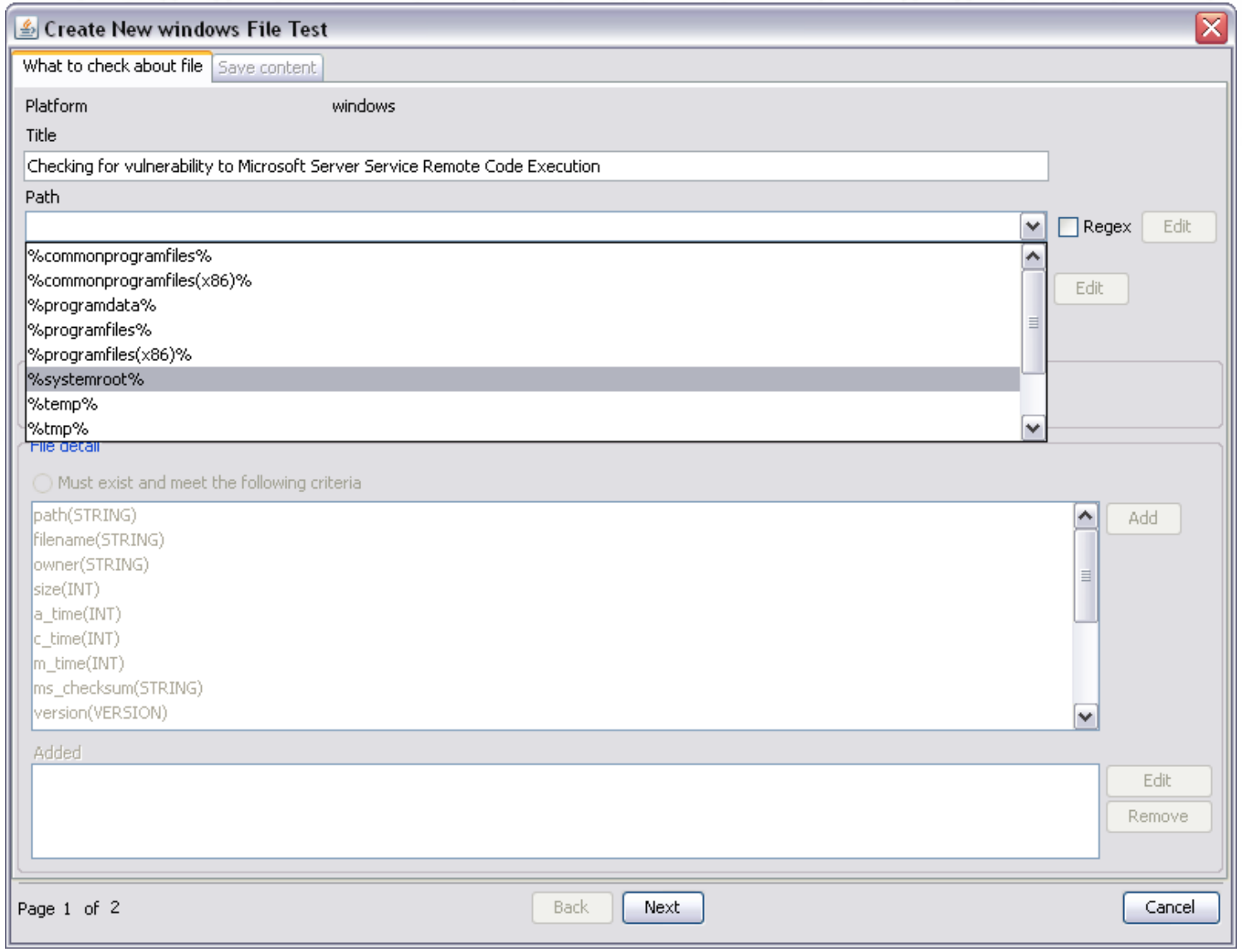
Start eSCAPe & Enter Wizard Mode



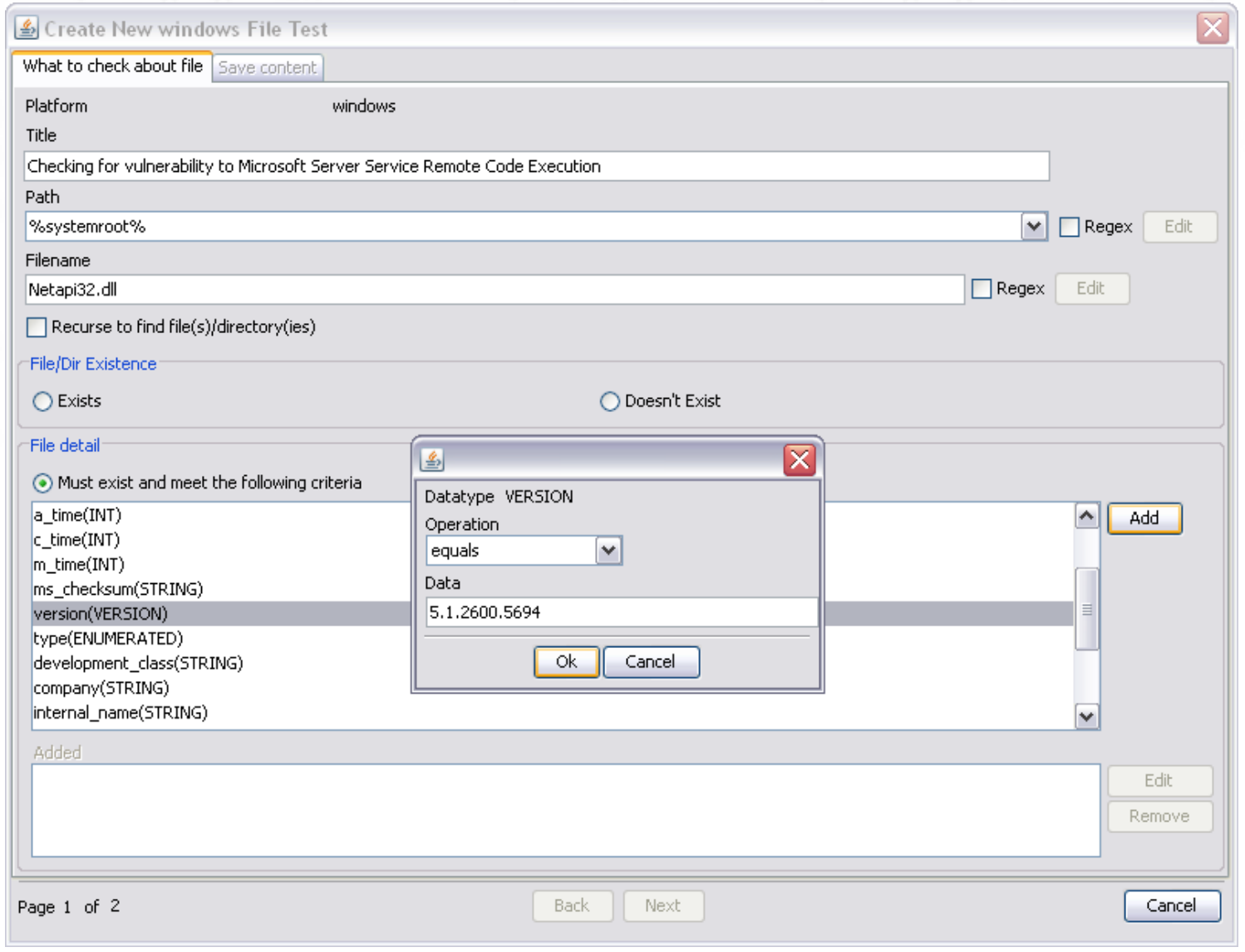
Select the File Wizard



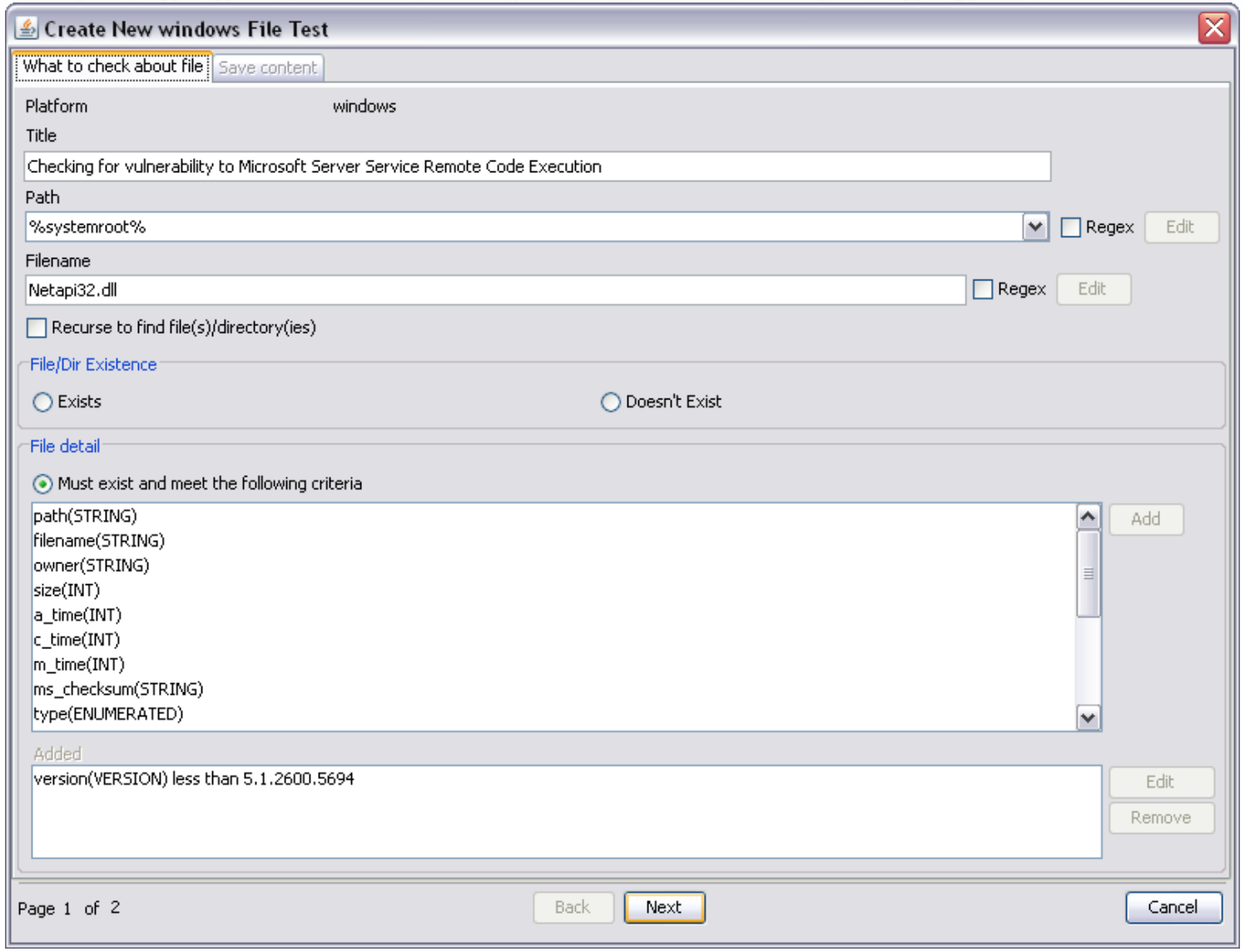
Enter Test Information



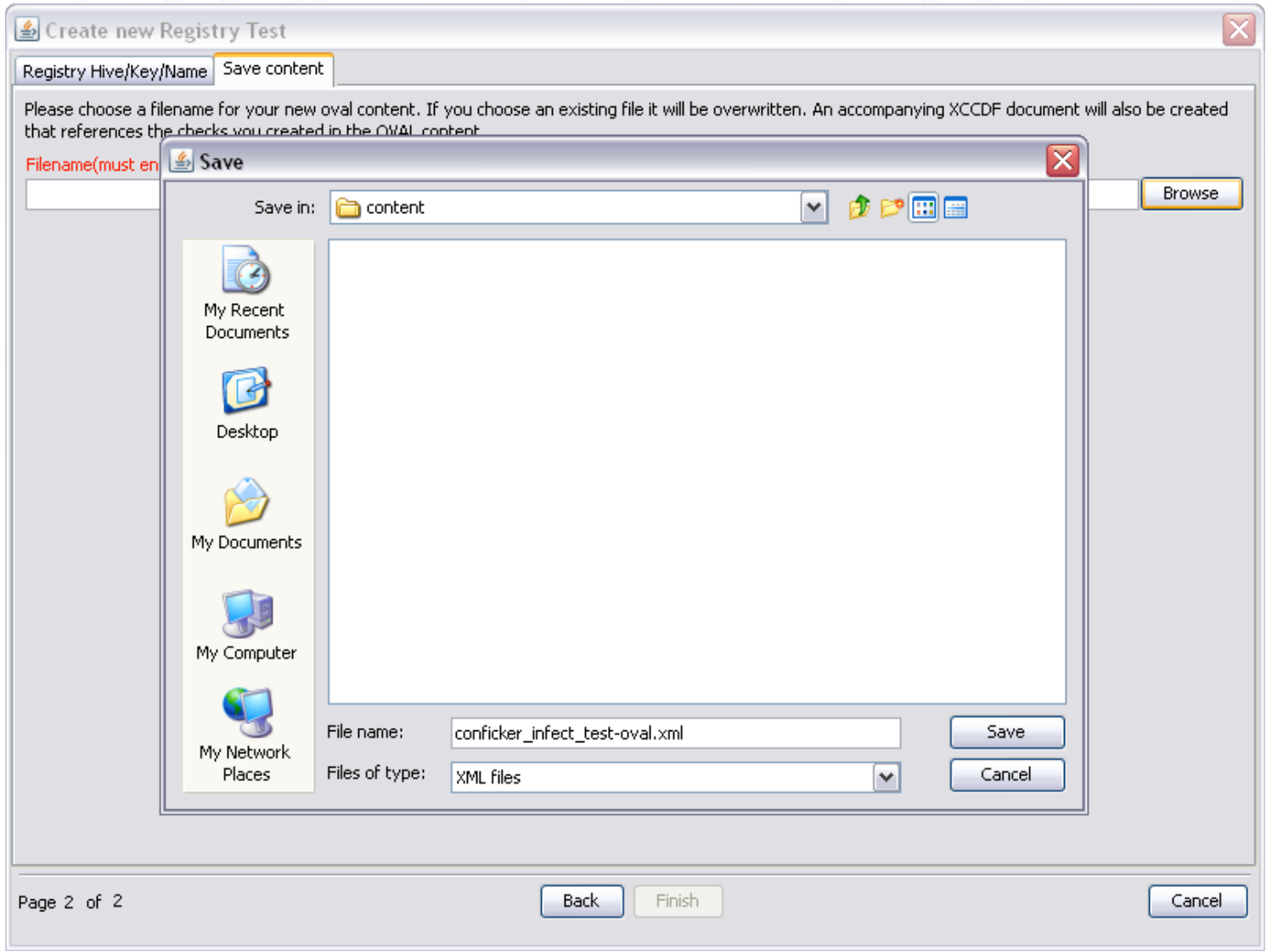
Enter Test Information (2)



Enter Test Information (3)



Save OVAL File – Create XCCDF

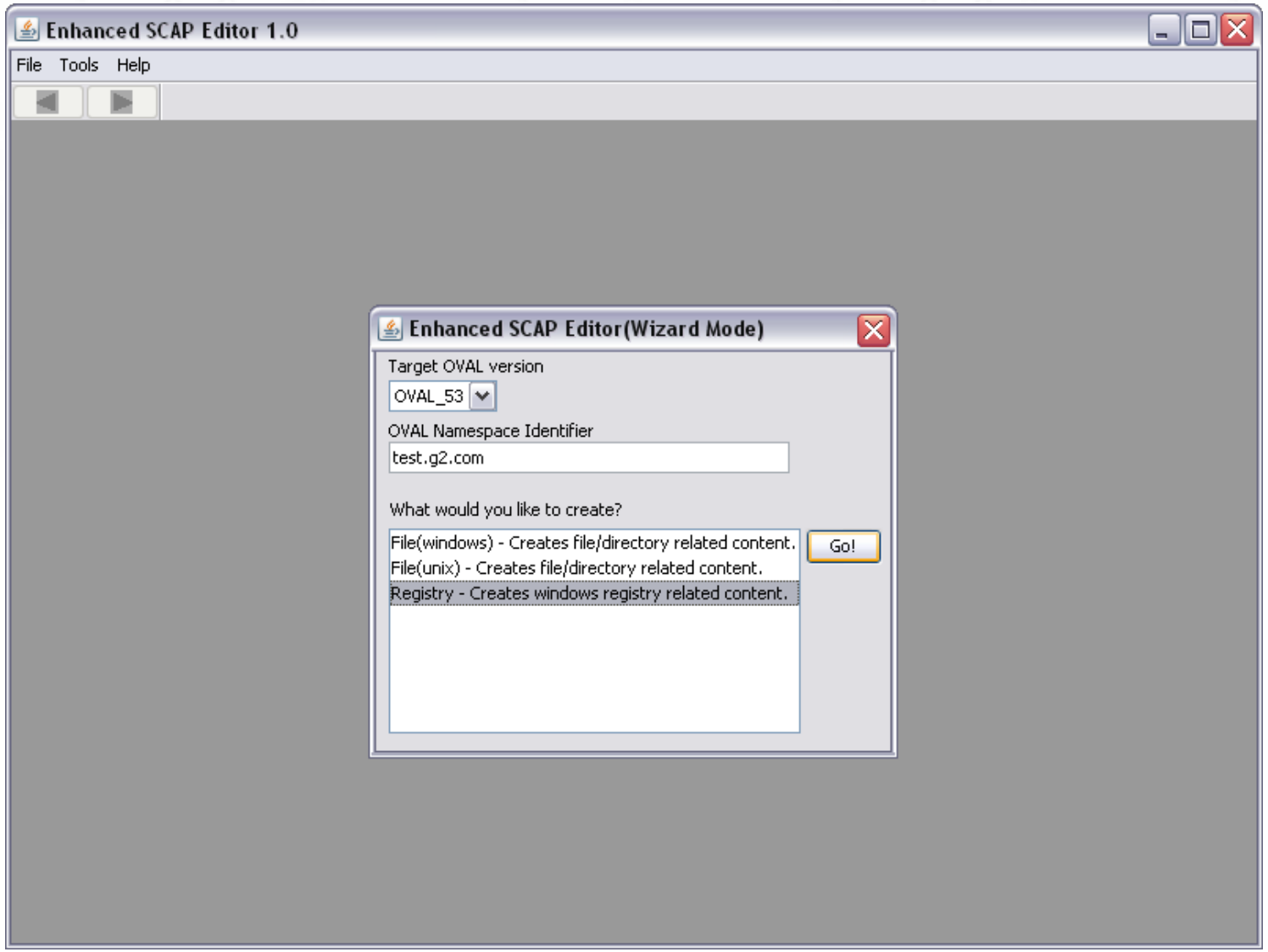


Checking Win32/Conficker.A Infection

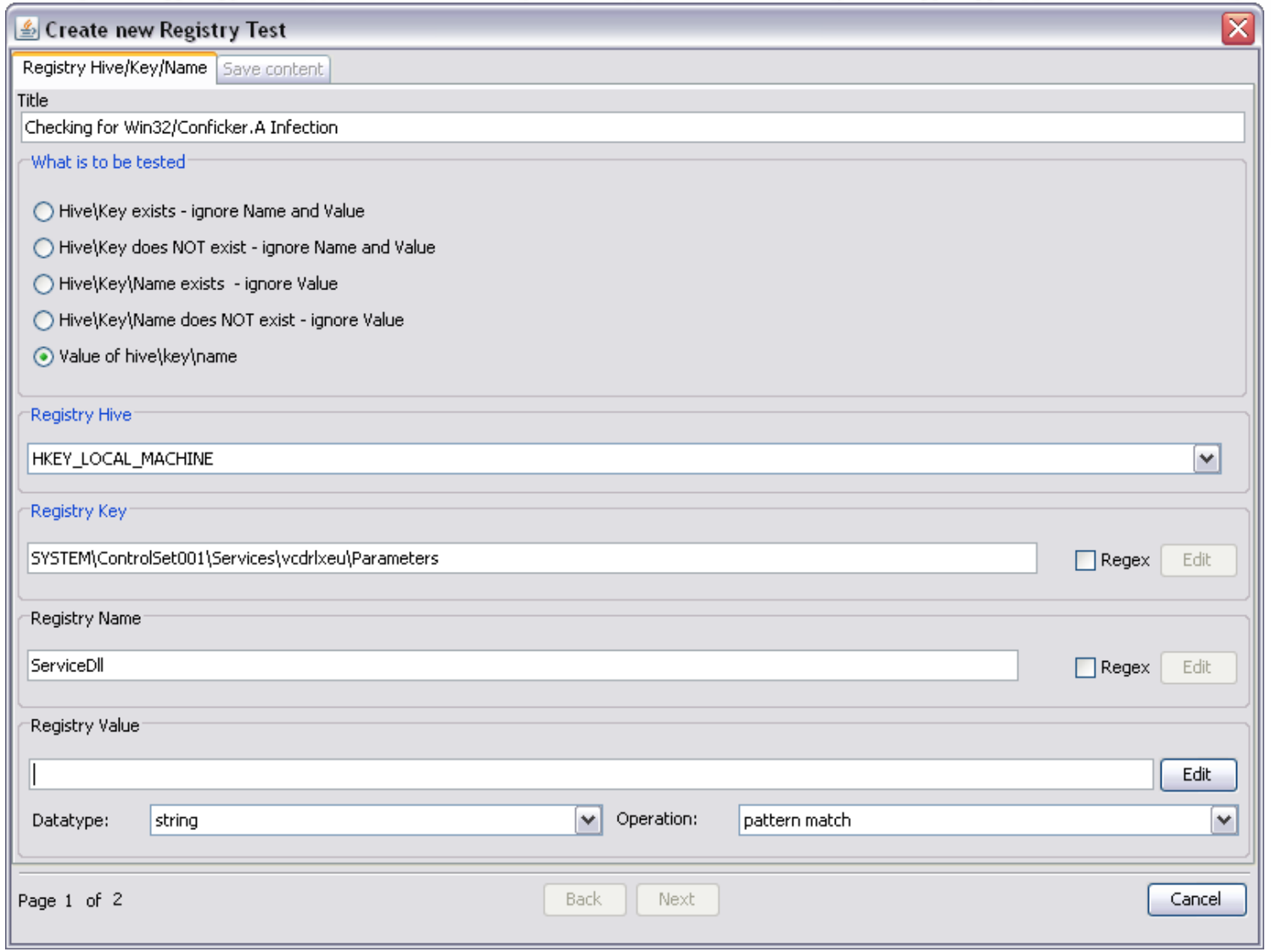
1. Hive\Key: HKLM\SYSTEM\CurrentControlSet\Services\vcdrlxeu
   Name: DisplayName
   Value (data): 0
2. Hive\Key:
   HKLM\SYSTEM\ControlSet001\Services\vcdrlxeu\Parameters
   Name: ServiceDll
   Value (data): %systemroot%\nxyme.dll
3. where 'nxyme.dll' is <random>.dll, with <random> as a 5-8 character lowercase alphabetic name.

1. Microsoft (source http://www.microsoft.com/security/portal/Threat/Encyclopedia/Entry.aspx?Name=Worm%3aWin32%2fConficker.A)

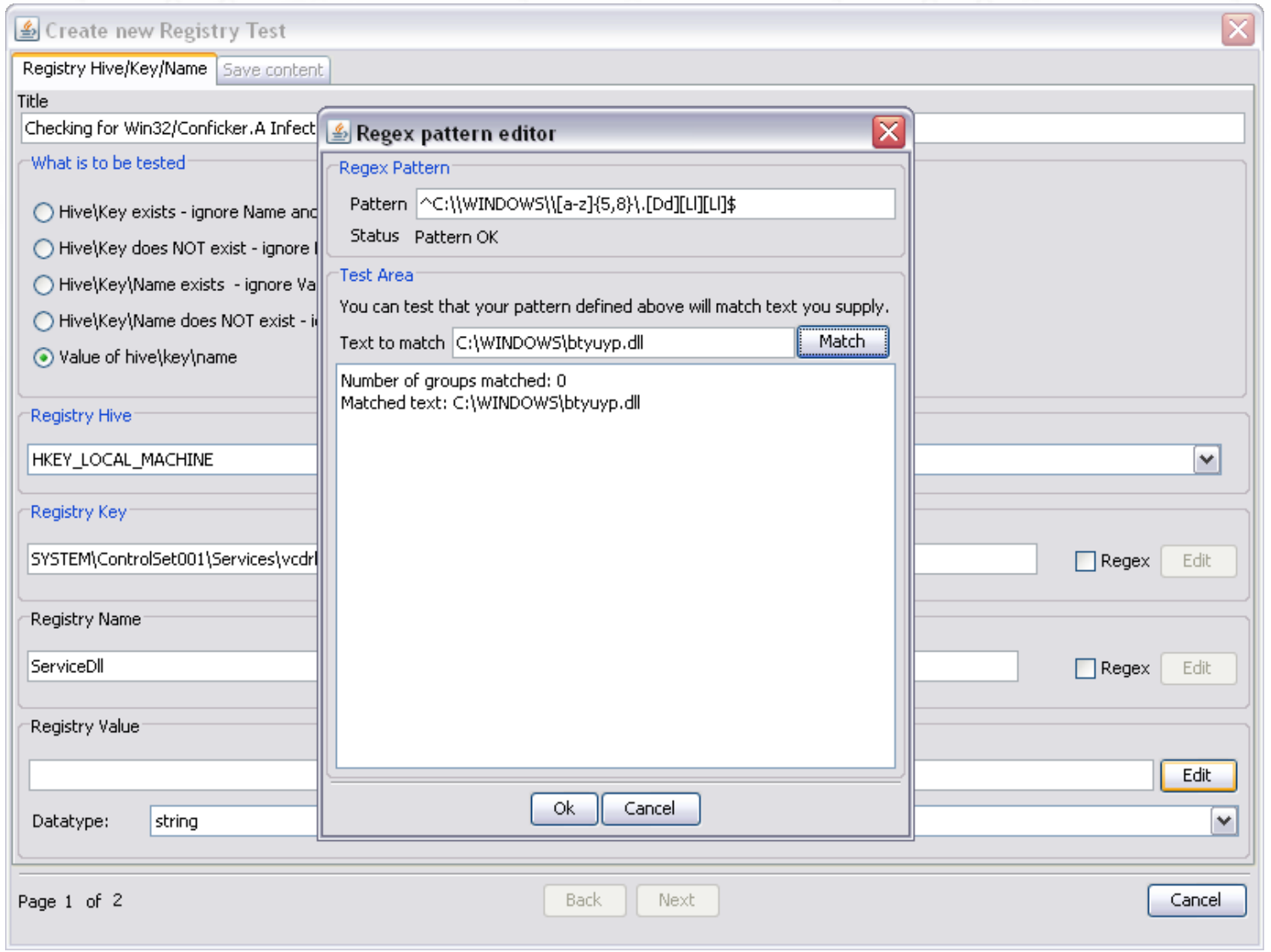
Select the Registry Wizard



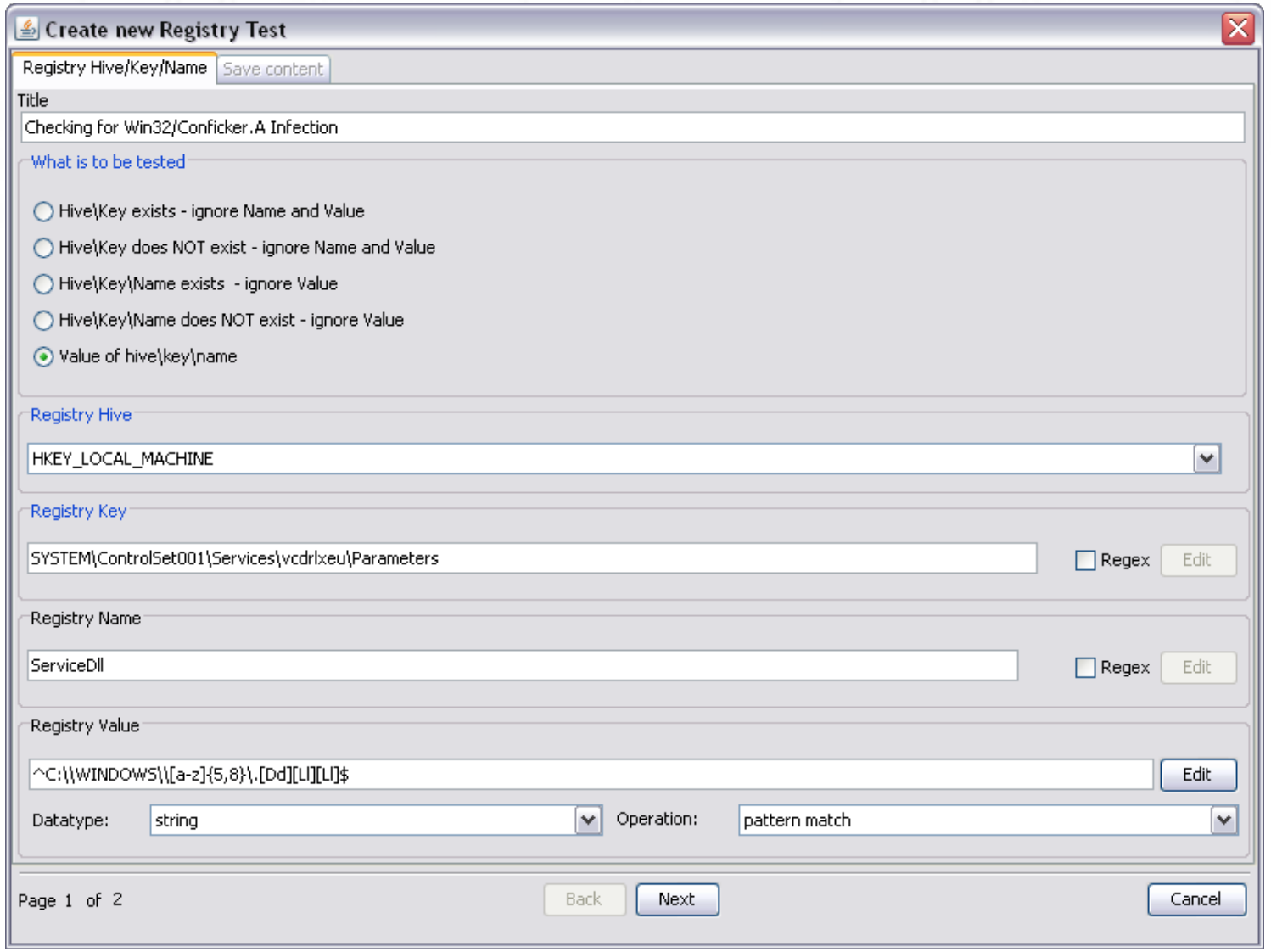
Enter Test Information



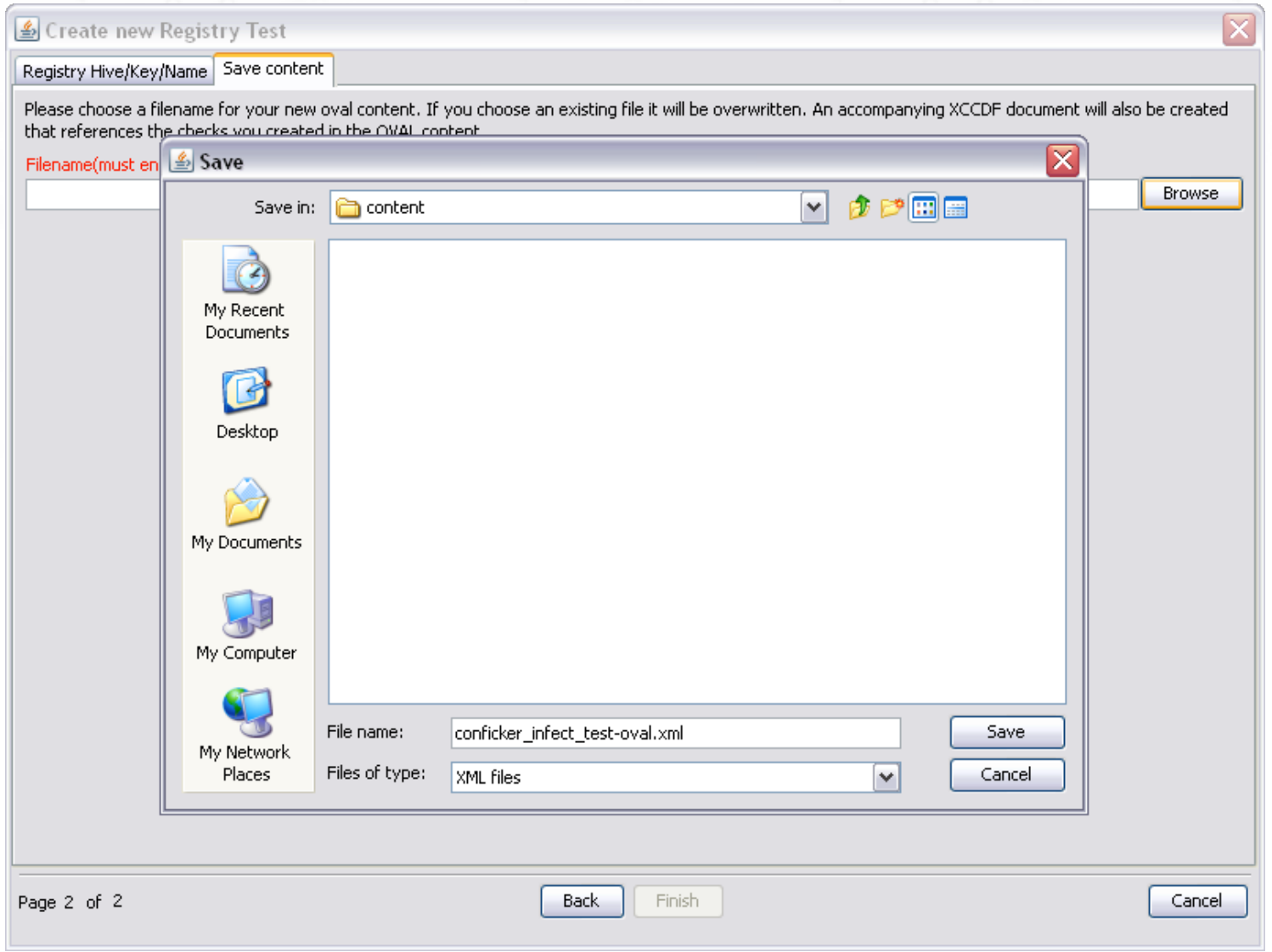
Enter Test Information (2)



Enter Test Information (3)



Save OVAL File – Create XCCDF

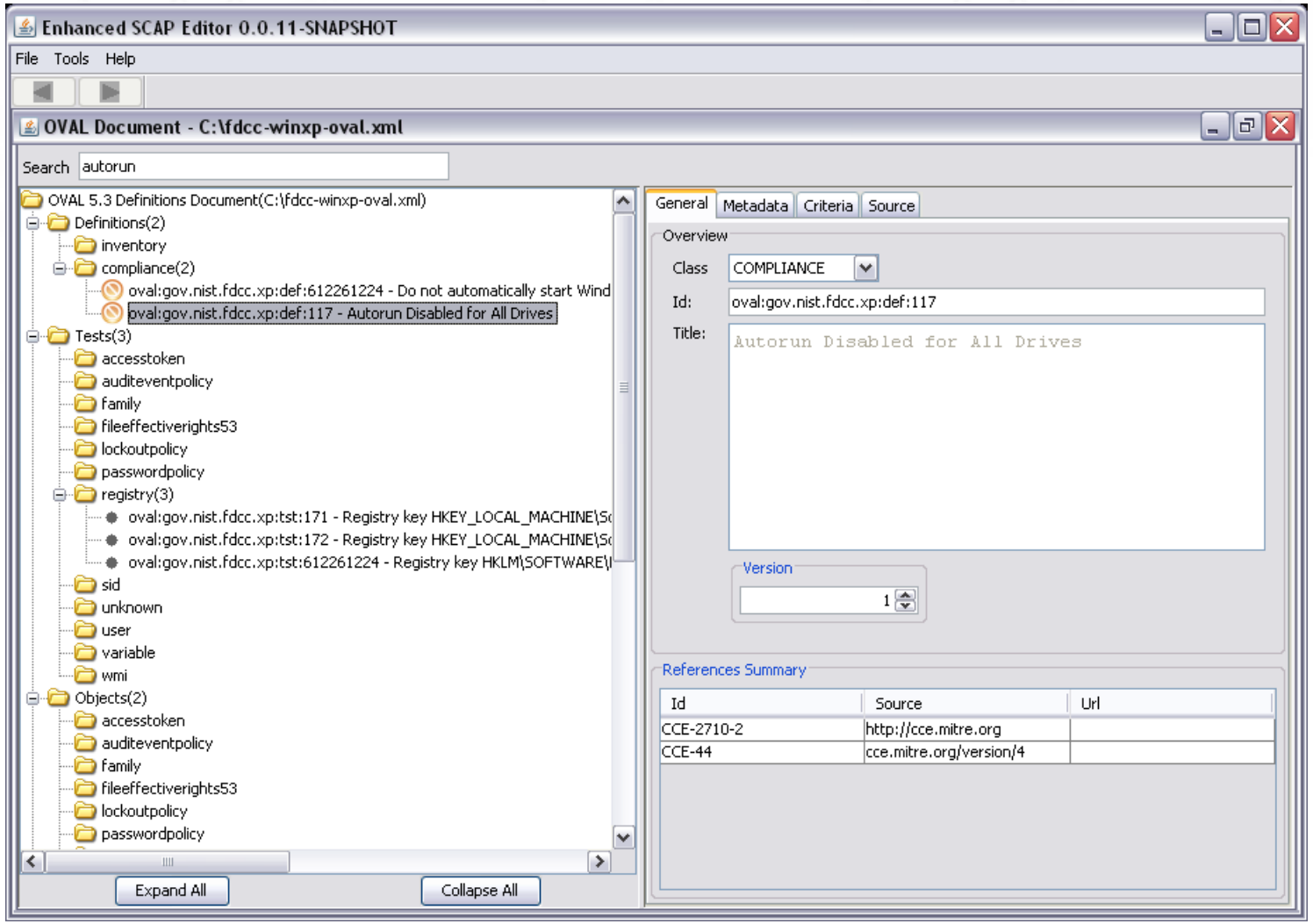


Benchmark “Critical-Controls” Tailoring Using eSCAPe

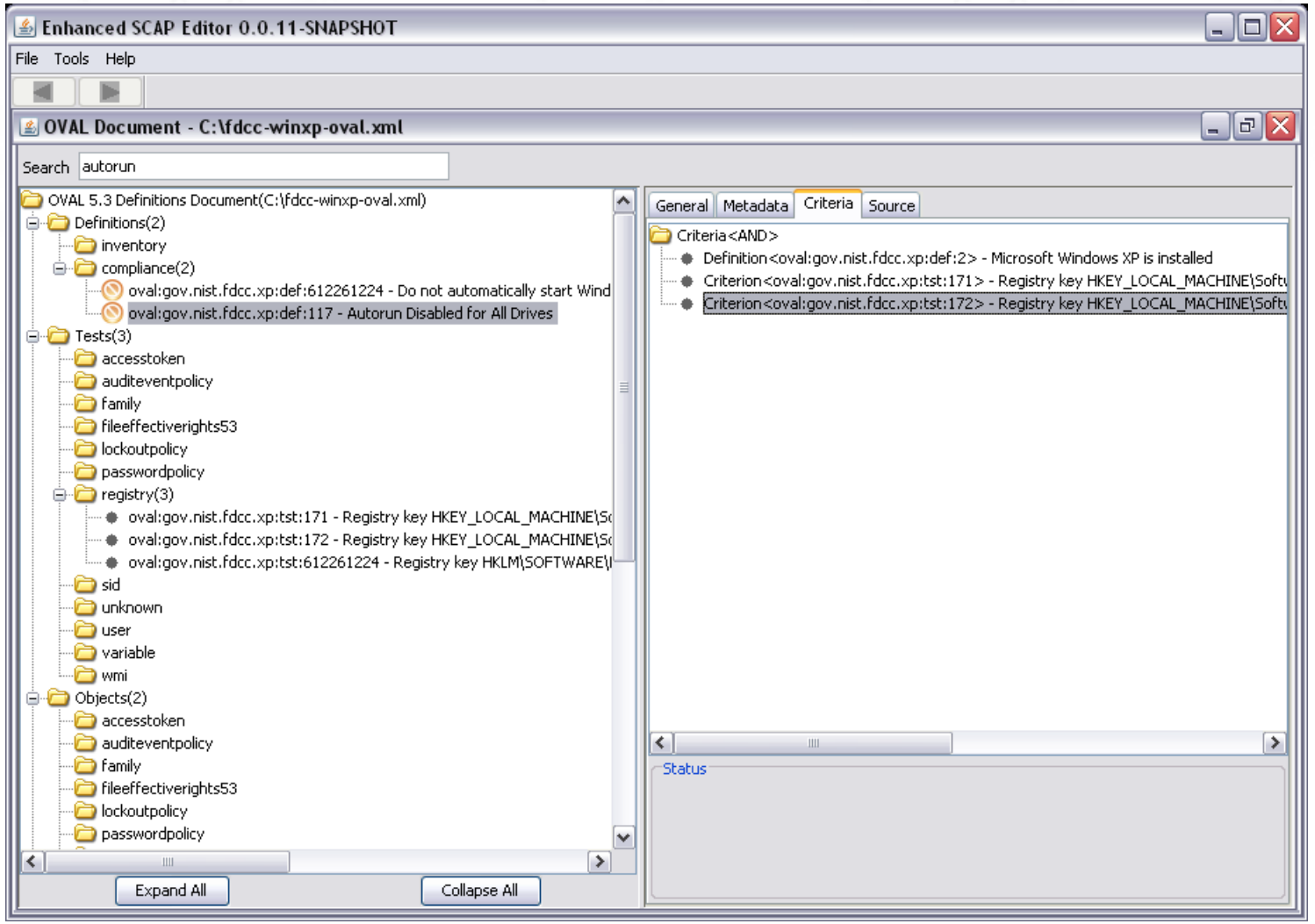
Need to tailor FDCC benchmark for our organization

- Want to allow auto-run for all devices, except thumb drives (removal devices)
- Will need to edit the FDCC OVAL file
- We can use eSCAPe to make the needed changes

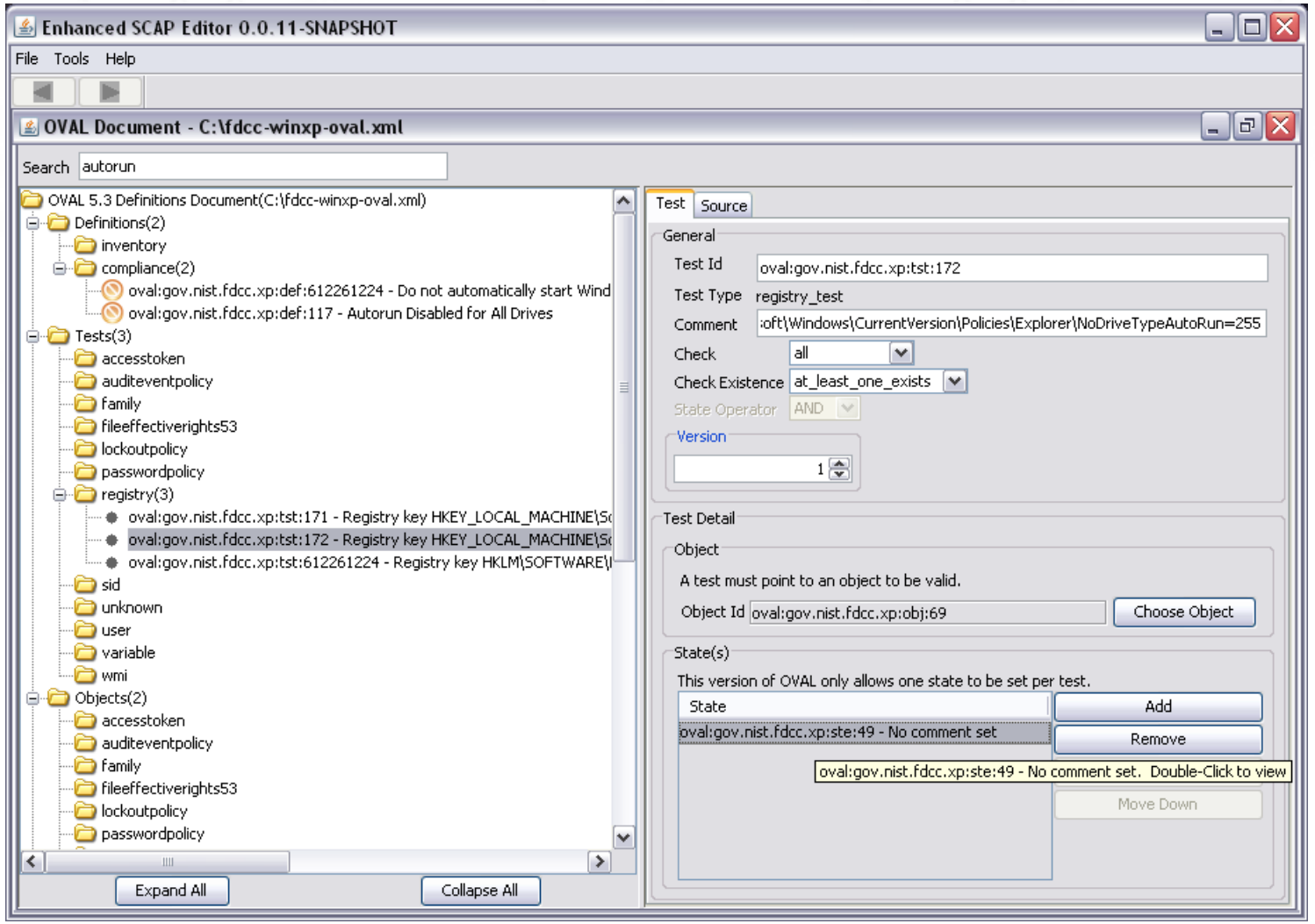
Open OVAL File in eSCAPe



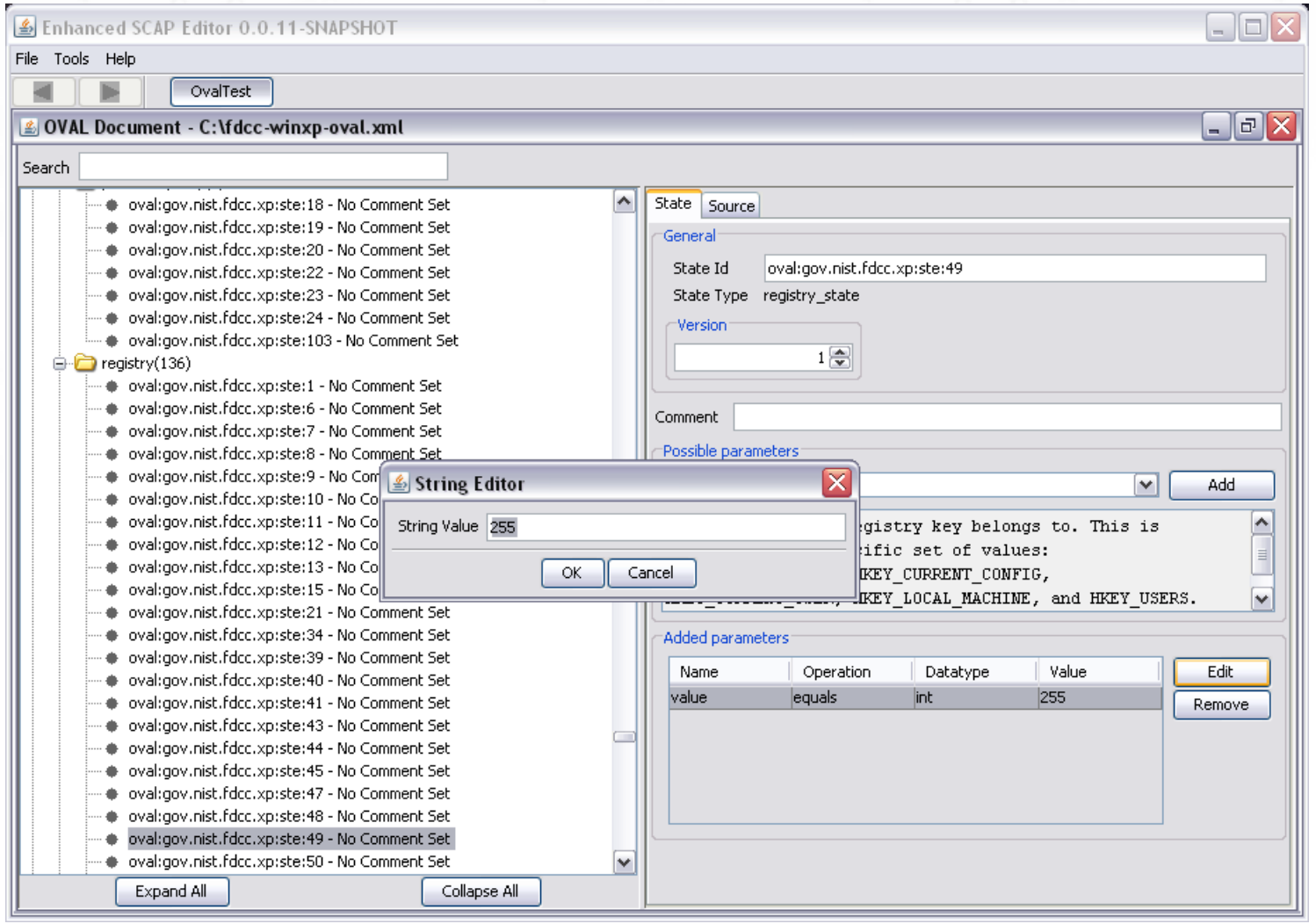
Identify Test to be Adjusted



Select OVAL Test State to Edit



Navigate to State and Click “Edit”

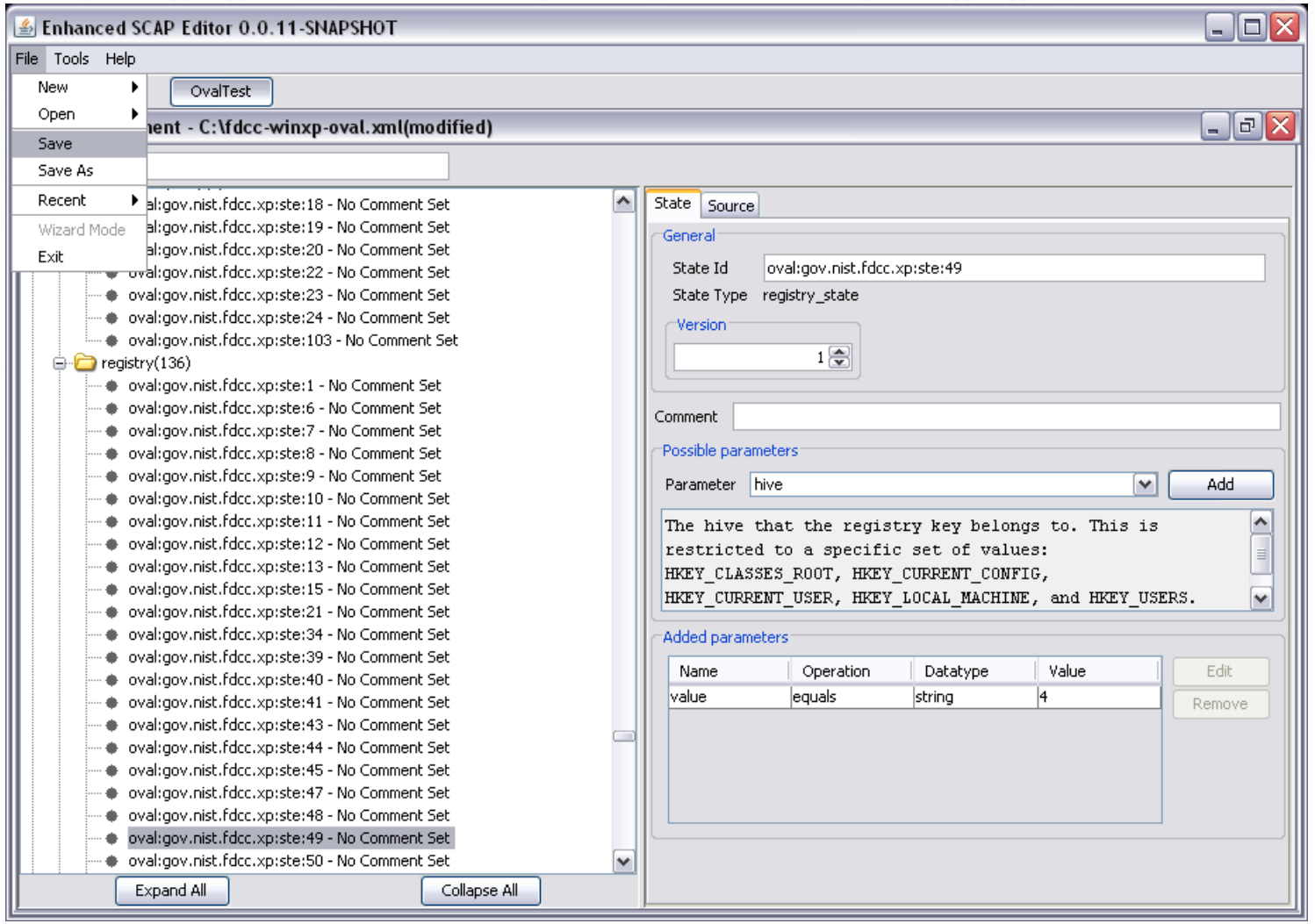


AutoPlay Setting Values

- Microsoft documentation of AutoPlay registry value settings

Value	Setting
0X1	Disables AutoPlay on drives of unknown type.
0X4	**Disables AutoPlay on removable drives.**
0X8	Disables AutoPlay on fixed drives.
0X10	Disables AutoPlay on network drives.
0X20	Disables AutoPlay on CD-ROM drives.
0X40	Disables AutoPlay on RAM drives.
0X80	Disables AutoPlay on drives of unknown type.
0X55	Disables AutoPlay on all types of drives.

Save Customized Benchmark



The eSCAPe Libraries

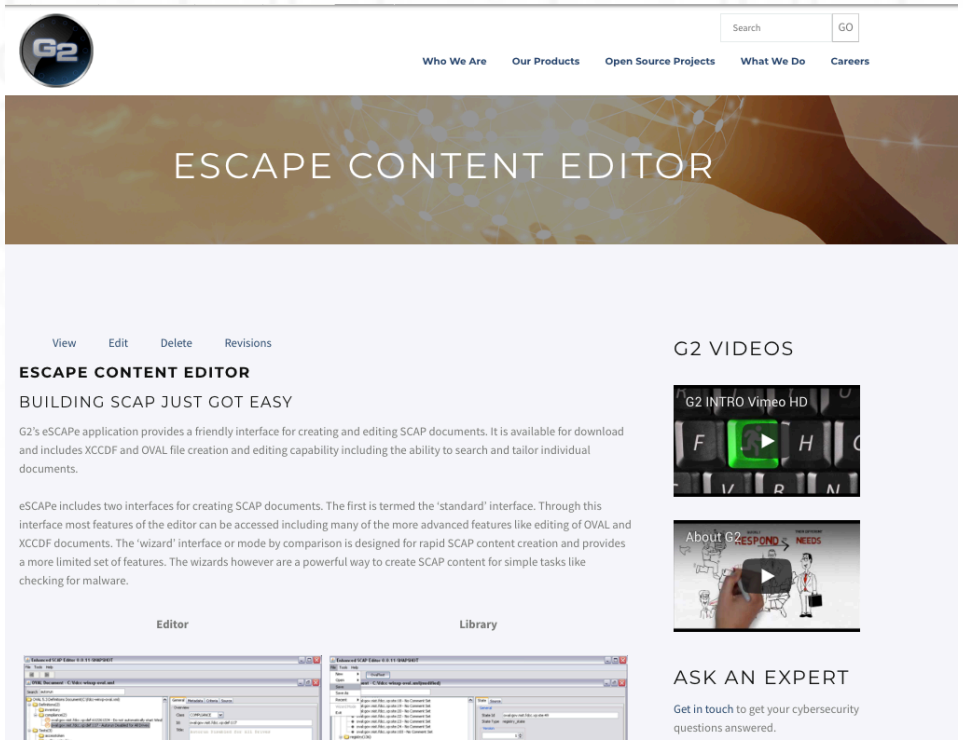
- Can be used to script the creation and editing of SCAP content
- Used to build the eSCAPe Editor
- Coded in Java (1.6)
- Released as open source software under the GPLv3 license

Using the eSCAPe Libraries

1. Download the libraries (https://www.g2-inc.com/escape-content-editor)
2. Choose a development environment (Example: Eclipse)
3. Install the Java Development kit (JDK)
4. See the documentation on the G2 eSCAPe page under ‘Library-Source’ files

How to get eSCAPe

Released as FREE open source software under the GPLv3 license



https://www.g2-inc.com/escape-content-editor

http://scap.nist.gov/revision/index.html

Contact Information

G2 Support
info@g2-inc.com

How to get eSCAPe
https://www.g2-inc.com/escape-content-editor