SUSE Linux Enterprise Server

Hardening SUSE Linux Enterprise with STIG

This document introduces you to auditing and hardening SUSE Linux Enterprise with the Security Technical Implementation Guide (STIG) by the Defense Information Systems Agency (DISA) .

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Contents

Important: Disclaimer

SUSE seeks to provide customers with quick and easy guides that can assist them in maintaining security compliance. Implementation of the settings contained within this guide without its prior testing in a non-operational environment is highly discouraged. The developers of these profiles and documentation have made reasonable efforts to ensure overall compliance. They assume no responsibility for its use by other parties, and make no guarantee, expressed or implied, about its quality, reliability or any other characteristic.

1 What is STIG?

STIG stands for `Security Technical Implementation Guide`. The Defense Information Systems Agency (DISA) organization, which is a parent agency of the United States Department of Defense (DoD) , approves and publishes `Security Technical Implementation Guides (STIGs)` and updates them every 90 days.

STIGs are a set of rules and best practices for configuring systems to defend against potential threats. Each implementation guide is tailored to a specific product and version, defining a configuration standard with cybersecurity requirements for this product and version.

These requirements must be met when the system connects to a DoD network. But Security Technical Implementation Guides are also used outside of the government sector.

2 Benefits

When a Security Technical Implementation Guide is implemented for a system, the system is hardened. The goals are to minimize attacks and to prevent system access (both physically and via a network) and to define processes for maintenance (applying software updates) and vulnerability patching. Security Technical Implementation Guides can also cover configuration settings, for example, for operating systems, routers, databases, firewall rules, domain name servers and switches.

STIGs are ubiquitous across all systems.

3 Hardening SUSE Linux Enterprise Server with STIG

There are several ways to harden your systems with the STIG.

During installation with YaST or AutoYaST

Starting with SUSE Linux Enterprise 15 SP4, YaST and AutoYaST let you check certain basic aspects of the system at installation time. You can also enable a full scan or scan and remediation, respectively, at first boot of the system.

For details, see *SUSE Linux Enterprise Server Deployment Guide* (https://documentation.suse.com/sles/15/html/SLES-all/cha-install.html#sec-yast-install-proposal-security-profile) ↗.

With OpenSCAP

You can scan or remediate an existing system to bring it to a compliant state. OpenSCAP can be used to check and remediate local systems as well as remote systems.

With STIG Viewer

You can manually review the rules from DISA and apply them to a dedicated system.

4 Applying a STIG profile

The contents delivered with the *SCAP Security Guide* can be used to check or check and remediate systems according to a specific profile.

Regarding STIG, SUSE supports the following *SCAP Security Guide* profiles:

- DISA STIG for SUSE Linux Enterprise 15
- DISA STIG for SUSE Linux Enterprise 12

The following sections give certain examples on how to scan SUSE Linux Enterprise with **`oscap`** for STIG compliance and how to perform a remediation. For more background on OpenSCAP and the *SCAP Security Guide*, see the article *Hardening SUSE Linux Enterprise with OpenSCAP* (https://documentation.suse.com/compliance/all/html/SLES-openscap/article-openscap.html) ↗.

4.1 Scanning a SLE system for STIG compliance

The following example shows how to scan SUSE Linux Enterprise 15 locally with **`oscap`** for vulnerability issues according to the profile `DISA STIG for SUSE Linux Enterprise 15`. You can save the results in XML format and generate an HTML report.

EXAMPLE 1: SCANNING SUSE LINUX ENTERPRISE WITH OSCAP

```
> sudo oscap xccdf eval❶ \
    --profile stig❷ \
    --results /tmp/results.xml❸ \
    --report /tmp/report.html❹ \
    /usr/share/xml/scap/ssg/content/ssg-sle15-ds.xml❺
```

❶ Calls the **`oscap xccdf`** module and tells it to perform an evaluation (vulnerability scan).

❷ Specifies the profile to use, in this case, `stig`.

❸ Saves the results of the evaluation to *`/tmp/results.xml`*.

❹ Generates an HTML report called *`/tmp/report.html`* in addition to the results in XML.

❺ Specifies the `SCAP Security Guide` policy file to use. In this example, we use a policy file in the `DataStream` format that applies to SUSE Linux Enterprise code 15. To list all available policies, run: **`ls -1 /usr/share/xml/scap/ssg/content/ssg-*-ds.xml`**. For more information about a particular policy, run **`oscap info`** on the file.

The evaluation process usually takes a few minutes, depending on the number of selected rules.

4.2 Making a SLE system STIG-compliant

The following examples show how to scan and remediate SUSE Linux Enterprise locally with **`oscap`** according to the profile `DISA STIG for SUSE Linux Enterprise 15`.

4.2.1 Remediating SUSE Linux Enterprise with oscap (on the fly)

For remediation with **`oscap`** on the fly, use the `--remediate` command-line option.

EXAMPLE 2: REMEDIATING SLE 15 WITH OSCAP (ON THE FLY)

```
> sudo oscap xccdf eval --remediate❶ \
      --profile stig❷ \
      --results /tmp/results.xml❸ \
      /usr/share/xml/scap/ssg/content/ssg-sle15-ds.xml❹
```

❶ Calls the **`oscap xccdf`** module and tells it to perform an evaluation plus a remediation of the target system in one go.

❷ Specifies the profile to use, in this case, `stig`.

❸ Saves the results of the evaluation to *`/tmp/results.xml`*.

❹ Specifies the `SCAP Security Guide` policy file to use. In this example, we use a policy file in the `DataStream` format that applies to SUSE Linux Enterprise code 15. To list all available policies, run: **`ls -1 /usr/share/xml/scap/ssg/content/ssg-*-ds.xml`**. For more information about a particular policy, run **`oscap info`** on the file.

In the resulting *`/tmp/results.xml`* file, the first `TestResult` element shows the result of the scan *before* the remediation. The second `TestResult` element shows the result of the scan *after* applying the remediation. In the second `TestResult` element, if the result of a rule is `fixed`, this means that the fix was successfully applied, and this rule now passes evaluation. If the result of a rule is `error`, this means that the remediation for this rule was not successful, and the rule still does not pass evaluation.

4.2.2 Remediating SUSE Linux Enterprise with oscap (after scanning)

In this example, we first execute a scan and then run the remediation as next step.

EXAMPLE 3: REMEDIATING SLE WITH OSCAP (AFTER SCANNING)

1.
```
> sudo oscap xccdf eval❶ \
        --profile stig❷ \
        --results /tmp/results.xml❸ \
        /usr/share/xml/scap/ssg/content/ssg-sle15-ds.xml❹
```

❶ Calls the **`oscap xccdf`** module and tells it to perform an evaluation.

❷ Specifies the profile to use, in this case, `stig`.

❸ Saves the results of the evaluation as an XCCDF file to *`/tmp/results.xml`*.

❹ Specifies the `SCAP Security Guide` policy file to use. In this example, we use a policy file in the `DataStream` format that applies to SUSE Linux Enterprise code 15. To list all available policies, run: **`ls -1 /usr/share/xml/scap/ssg/content/ssg-*-ds.xml`**. For more information about a particular policy, run **`oscap info`** on the file.

During this step, the system is only evaluated, and the results are stored in a `TestResult` element in *`/tmp/results.xml`*.

2.

```
> sudo oscap xccdf remediate❶ \
       --results /tmp/results.xml❷ \
       /tmp/results.xml❸
```

❶ Calls the **`oscap xccdf`** module and tells it to perform a remediation.

❷ Saves the results of the remediation to *`/tmp/results.xml`*.

❸ Uses the *`/tmp/results.xml`* XCCDF file from the first step (evaluation) as input file.

During this step, the results file from the first step is used as input for the **`oscap`** command. You can safely store the results from the second step in the same file that you use as input file, *`/tmp/results.xml`*. During this run, **`oscap`** creates a new `xccdf:TestResult` element in the file. The new element is based on the previous one and inherits all the data. The newly created `xccdf:TestResult` element differs only in the `rule-result` elements which failed in the first run. Only for those is the remediation executed.

4.2.3 Remediating a SLE system with Ansible

You can use the Ansible playbooks provided by the `SCAP Security Guide` to remediate a local system.

The `ansible` package is available from `SUSE Package Hub`. Register your SUSE Linux Enterprise system and enable the `SUSE Package Hub` extension. For SUSE Linux Enterprise 12, you additionally need to enable the `Public Cloud` module. Then install the package with **`sudo zypper in ansible`**.

EXAMPLE 4: REMEDIATING SLE 15 WITH ANSIBLE

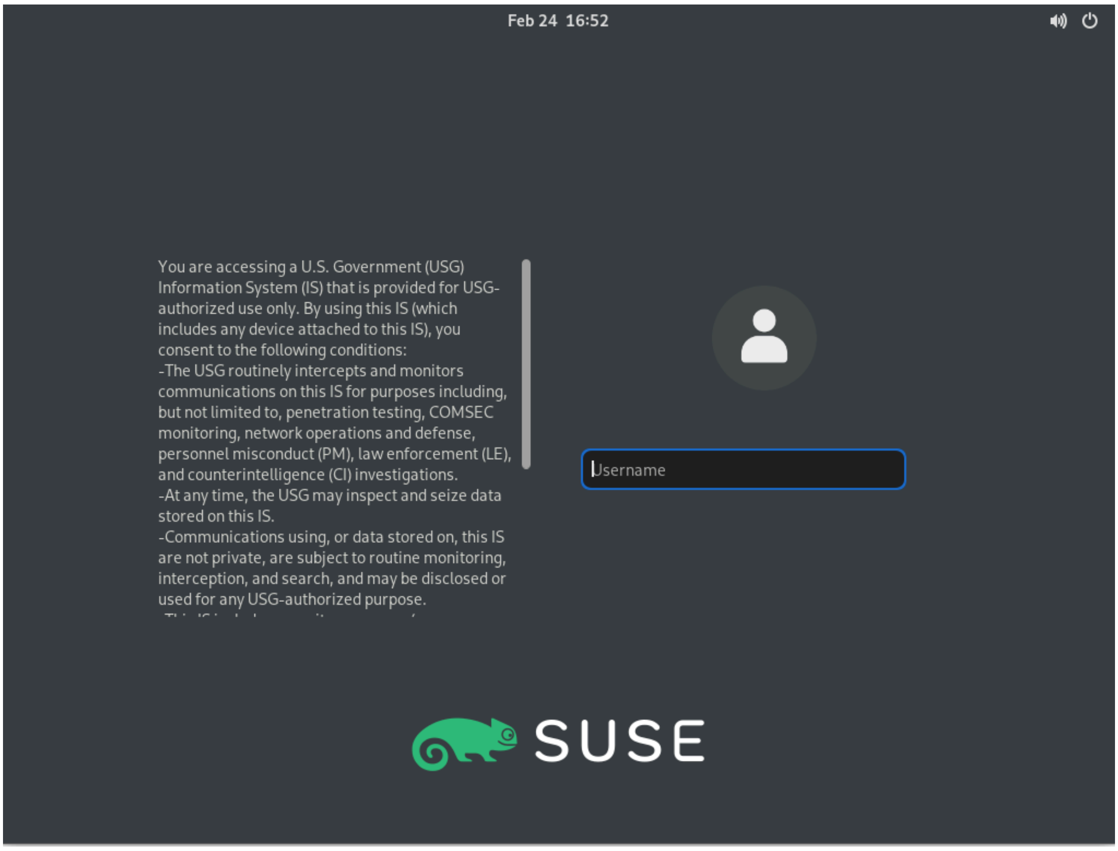
For example, to remediate your system using the STIG Ansible playbook for SUSE Linux Enterprise 15 provided by the `SCAP Security Guide`, use the following command.

Warning: System configuration changes

The following command alters the configuration of your system immediately. Make sure to test this thoroughly in a non-production system first.

```
> sudo ansible-playbook -i "localhost," -c local \
    /usr/share/scap-security-guide/ansible/sle15-playbook-stig.yml
```

After the playbook has finished, you are prompted to log in to your system, which is now compliant to the chosen policy.



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5 Using a tailored STIG profile

The standard or default STIG profile is sufficient for most deployments. In addition, you can create, use for evaluation and apply *tailoring files* to tailor SCAP Security Guide content. Using tailoring files, you can change the behavior of a profile without directly modifying its standard configurations.

The following sections provide examples of creating tailoring files using either SCAP Workbench or the `autotailor` command-line utility, and then applying the tailoring file using the `ssg-apply` command-line utility.

Tip: Generalized tailoring

Although the following sections provide examples of tailoring for the STIG profile, you use a similar procedure for tailoring other profiles that are valid for your target system.

5.1 Creating a tailoring file

Tailoring files are XML files containing information about the deviation from the standard SCAP Security Guide content for a profile. You create a tailoring file when you override certain default rules of a standard profile, and save that information along with necessary metadata as an XML file. Once created, you can apply the tailoring file using a suitable program such as the `ssg-apply` utility.

SUSE recommends using any of the following methods of creating a tailoring file:

- Manually, using the SCAP Workbench. This method is best suited when you are unsure of the rules that you want to override in the standard content of a profile, and would prefer the convenience of a graphical software.
- Automatically, using the `autotailor` command-line tool which is bundled with the `openscap-utils` package. This method is best suited when you are sure of all the information that you need to create a tailoring file.

5.1.1 Creating tailoring files using SCAP Workbench

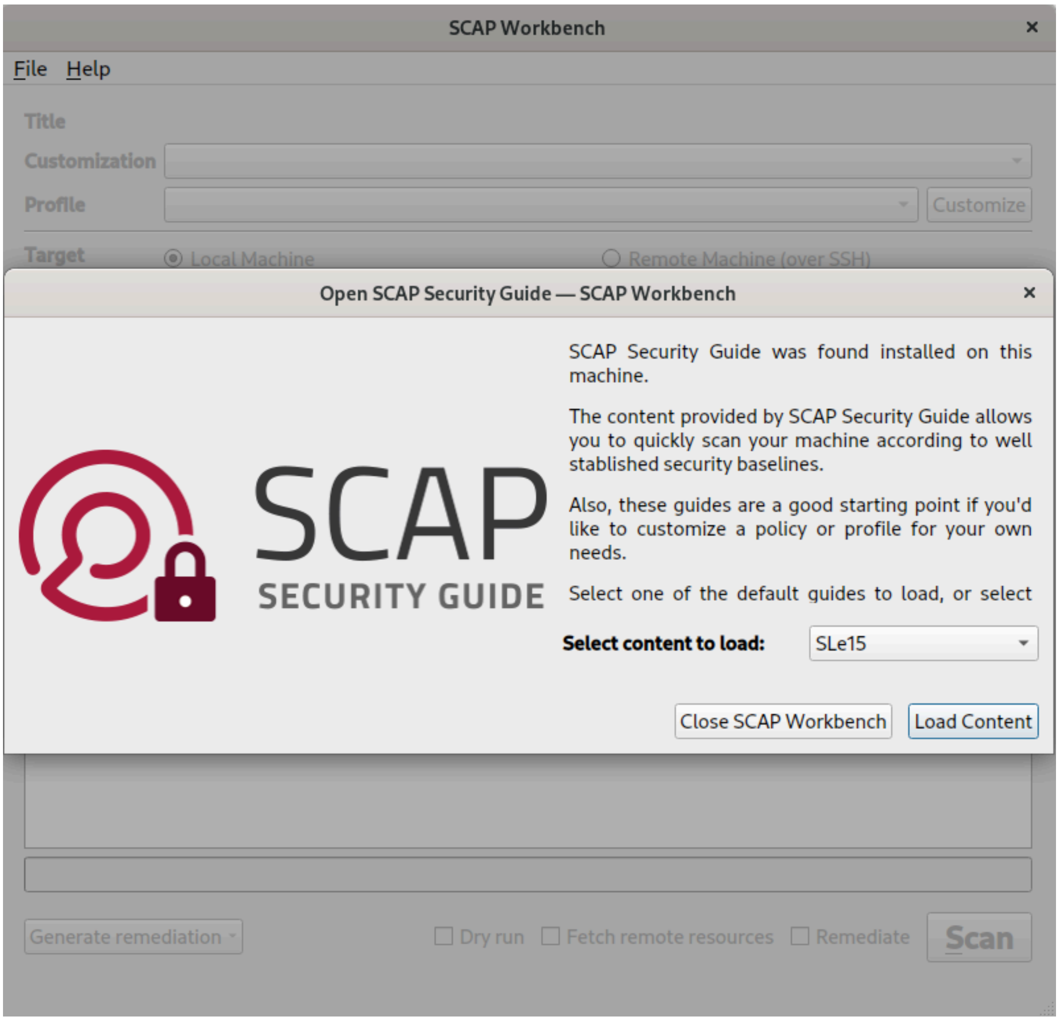
This section provides an example procedure for creating a tailoring file based on the standard STIG profile, using the SCAP Workbench graphical software. You can use a similar procedure to create tailoring files for any other valid profile.

As a prerequisite, ensure that you have installed the necessary packages, as described in the section https://documentation.suse.com/compliance/all/html/SLES-openscap/index.html#openscap-installation ↗.

1. Start SCAP Workbench by invoking it in the terminal:

```
> scap-workbench
```

2. Depending on whether you are using SUSE Linux Enterprise 15 or SUSE Linux Enterprise 12, select either *SLe15* or *SLe12* from the *Select content to load* drop-down list. In this example procedure, we select *SLe15*.



SCAP Security Guide was found installed on this machine.

The content provided by SCAP Security Guide allows you to quickly scan your machine according to well stablished security baselines.

Also, these guides are a good starting point if you'd like to customize a policy or profile for your own needs.

Select one of the default guides to load, or select

Select content to load: SLe15

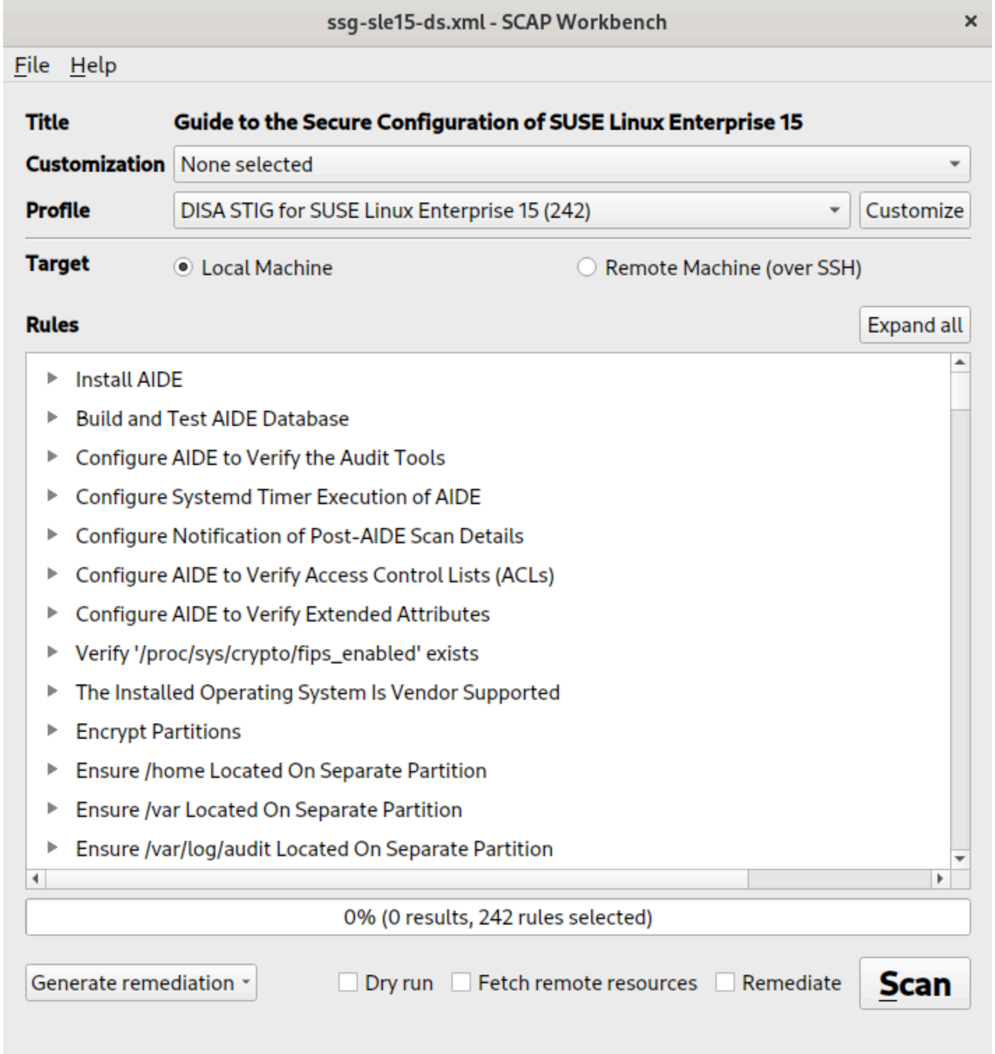
FIGURE 1: SCAP WORKBENCH—SELECT CONTENT TO LOAD

3. Click *Load Content*.

4. In the next window, titled *Guide to the Secure Configuation of SUSE Linux Enterprise 15*, perform the following steps:

   a. From the *Profile* drop-down list, select the profile that you want to customize. In this example, we select *DISA STIG for SUSE Linux Enterprise 15 (242)*. The number within parenthesis at the end of the profile name represents the number of rules that comprise your selected profile. For example, DISA STIG for SUSE Linux Enterprise 15 has 242 rules.

   b. *Optionally*, if your target is a remote system, select the *Remote Machine (over SSH)* and provide necessary information.
      In this example procedure, we assume that the target system is your *Local Machine*.



ssg-sle15-ds.xml - SCAP Workbench

Title Guide to the Secure Configuration of SUSE Linux Enterprise 15

Customization None selected

Profile DISA STIG for SUSE Linux Enterprise 15 (242)

Target ● Local Machine ○ Remote Machine (over SSH)

Rules

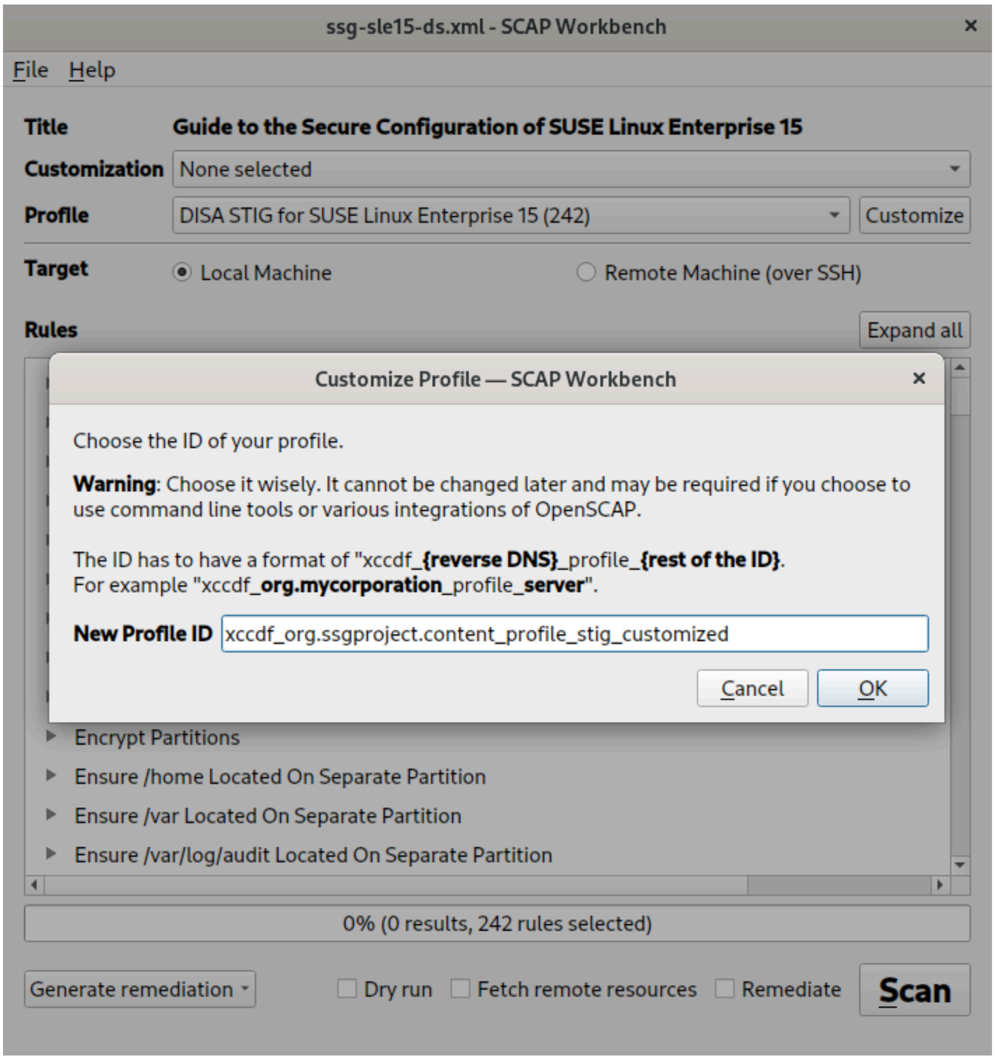
- Install AIDE
- Build and Test AIDE Database
- Configure AIDE to Verify the Audit Tools
- Configure Systemd Timer Execution of AIDE
- Configure Notification of Post-AIDE Scan Details
- Configure AIDE to Verify Access Control Lists (ACLs)
- Configure AIDE to Verify Extended Attributes
- Verify '/proc/sys/crypto/fips_enabled' exists
- The Installed Operating System Is Vendor Supported
- Encrypt Partitions
- Ensure /home Located On Separate Partition
- Ensure /var Located On Separate Partition
- Ensure /var/log/audit Located On Separate Partition

0% (0 results, 242 rules selected)

□ Dry run □ Fetch remote resources □ Remediate

FIGURE 2: SCAP WORKBENCH—DISA STIG PROFILE

c. Click *Customize*, edit the *New Profile ID* field if necessary, and click *OK*. The default *New Profile ID* provided by SCAP Workbench for the selected profile is `xccdf_org.ssgproject.content_profile_stig_customized`.



ssg-sle15-ds.xml - SCAP Workbench

Title: Guide to the Secure Configuration of SUSE Linux Enterprise 15

Customization: None selected

Profile: DISA STIG for SUSE Linux Enterprise 15 (242)

Target: ● Local Machine ○ Remote Machine (over SSH)

Customize Profile — SCAP Workbench

Choose the ID of your profile.

Warning: Choose it wisely. It cannot be changed later and may be required if you choose to use command line tools or various integrations of OpenSCAP.

The ID has to have a format of "xccdf_**{reverse DNS}**_profile_**{rest of the ID}**.
For example "xccdf_**org.mycorporation**_profile_**server**".

New Profile ID: xccdf_org.ssgproject.content_profile_stig_customized

Encrypt Partitions
Ensure /home Located On Separate Partition
Ensure /var Located On Separate Partition
Ensure /var/log/audit Located On Separate Partition

0% (0 results, 242 rules selected)

□ Dry run □ Fetch remote resources □ Remediate

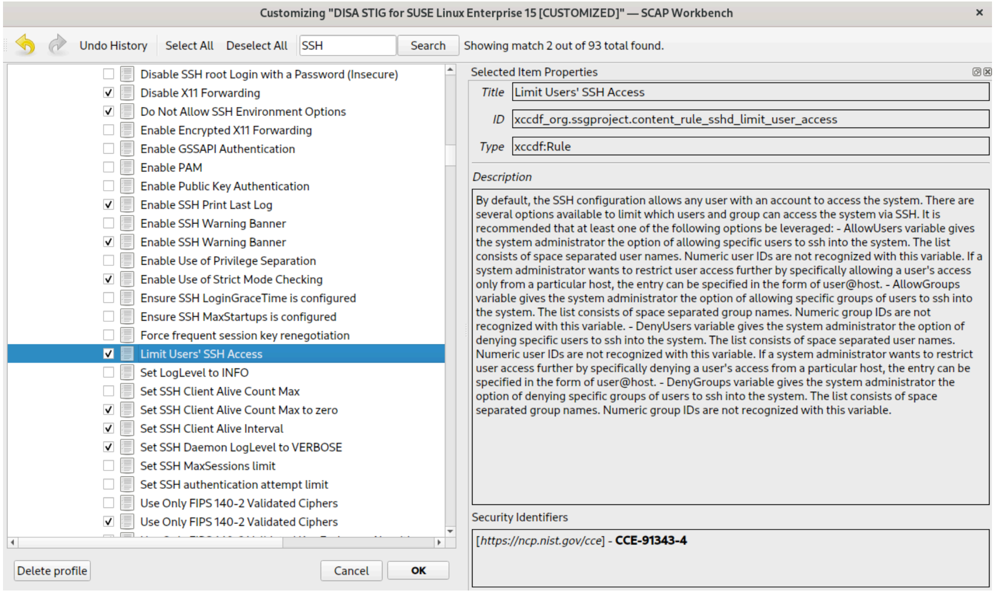
FIGURE 3: SCAP WORKBENCH—CUSTOMIZE STIG PROFILE

5. In the next window titled *Customizing "DISA STIG for SUSE Linux Enterprise 15 [CUSTOMIZED]"—SCAP Workbench*, perform the following steps:

a. Override the default rules by selecting or deselecting them. For example, we select the checkbox next to the rule *Limit Users' SSH Access* to further harden the target system's access over SSH. You can select or deselect multiple rules.

Tip: When unsure, read the rule's description

Before selecting or deselecting the checkbox next to the rule, you can click the rule and read the *Description* provide at the right pane of the window.



Customizing "DISA STIG for SUSE Linux Enterprise 15 [CUSTOMIZED]" — SCAP Workbench
×
Undo History
Select All
Deselect All
SSH
Search

Showing match 2 out of 93 total found.

- ☐ Disable SSH root Login with a Password (Insecure)
- ☑ Disable X11 Forwarding
- ☑ Do Not Allow SSH Environment Options
- ☐ Enable Encrypted X11 Forwarding
- ☐ Enable GSSAPI Authentication
- ☐ Enable PAM
- ☐ Enable Public Key Authentication
- ☑ Enable SSH Print Last Log
- ☐ Enable SSH Warning Banner
- ☑ Enable SSH Warning Banner
- ☐ Enable Use of Privilege Separation
- ☑ Enable Use of Strict Mode Checking
- ☐ Ensure SSH LoginGraceTime is configured
- ☐ Ensure SSH MaxStartups is configured
- ☐ Force frequent session key renegotiation
- ☑ Limit Users' SSH Access
- ☐ Set LogLevel to INFO
- ☐ Set SSH Client Alive Count Max
- ☑ Set SSH Client Alive Count Max to zero
- ☑ Set SSH Client Alive Interval
- ☑ Set SSH Daemon LogLevel to VERBOSE
- ☐ Set SSH MaxSessions limit
- ☐ Set SSH authentication attempt limit
- ☐ Use Only FIPS 140-2 Validated Ciphers
- ☑ Use Only FIPS 140-2 Validated Ciphers

Selected Item Properties

Title Limit Users' SSH Access

ID xccdf_org.ssgproject.content_rule_sshd_limit_user_access

Type xccdf:Rule

Description

By default, the SSH configuration allows any user with an account to access the system. There are several options available to limit which users and group can access the system via SSH. It is recommended that at least one of the following options be leveraged: - AllowUsers variable gives the system administrator the option of allowing specific users to ssh into the system. The list consists of space separated user names. Numeric user IDs are not recognized with this variable. If a system administrator wants to restrict user access further by specifically allowing a user's access only from a particular host, the entry can be specified in the form of user@host. - AllowGroups variable gives the system administrator the option of allowing specific groups of users to ssh into the system. The list consists of space separated group names. Numeric group IDs are not recognized with this variable. - DenyUsers variable gives the system administrator the option of denying specific users to ssh into the system. The list consists of space separated user names. Numeric user IDs are not recognized with this variable. If a system administrator wants to restrict user access further by specifically denying a user's access from a particular host, the entry can be specified in the form of user@host. - DenyGroups variable gives the system administrator the option of denying specific groups of users to ssh into the system. The list consists of space separated group names. Numeric group IDs are not recognized with this variable.

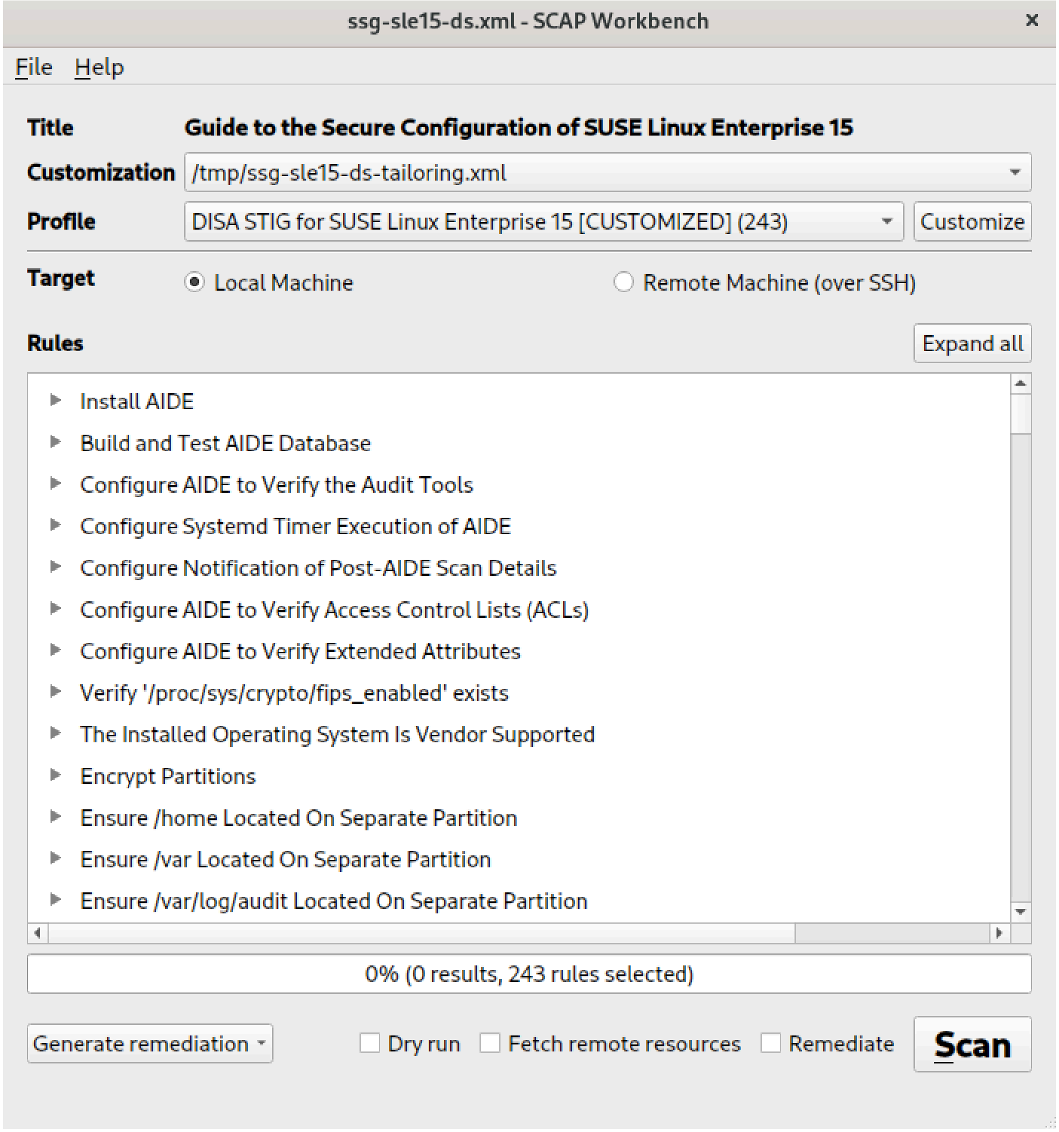
Security Identifiers

[*https://ncp.nist.gov/cce*] - **CCE-91343-4**

FIGURE 4: SCAP WORKBENCH—SELECT RULE

b. When you are sure about the override of rules, click *OK*.

6. On returning to the *home* window of SCAP Workbench, notice that the *Customization* field has changed to *(unsaved changes)*.
   Using the menu at the top left of the window, save the customization by clicking *File* › *Save Customization Only* and choosing the path of the tailoring file as `/tmp/ssg-sle15-ds-tailoring.xml`.
   When saved, the *Customization* field displays the path to the tailoring file. In addition, the name of the new *Profile* contains the suffix `(243)`, which indicates that an additional rule has been selected, as compared to the default of 242 rules.



ssg-sle15-ds.xml - SCAP Workbench

Title: Guide to the Secure Configuration of SUSE Linux Enterprise 15

Customization: /tmp/ssg-sle15-ds-tailoring.xml

Profile: DISA STIG for SUSE Linux Enterprise 15 [CUSTOMIZED] (243)

Target: ● Local Machine ○ Remote Machine (over SSH)

Rules

- Install AIDE
- Build and Test AIDE Database
- Configure AIDE to Verify the Audit Tools
- Configure Systemd Timer Execution of AIDE
- Configure Notification of Post-AIDE Scan Details
- Configure AIDE to Verify Access Control Lists (ACLs)
- Configure AIDE to Verify Extended Attributes
- Verify '/proc/sys/crypto/fips_enabled' exists
- The Installed Operating System Is Vendor Supported
- Encrypt Partitions
- Ensure /home Located On Separate Partition
- Ensure /var Located On Separate Partition
- Ensure /var/log/audit Located On Separate Partition

0% (0 results, 243 rules selected)

□ Dry run □ Fetch remote resources □ Remediate

FIGURE 5: SCAP WORKBENCH—SAVE TAILORING FILE

7. *Optionally*, inspect the tailoring file by opening it with a text editor of your choice. Based on the example override of rules, the tailoring file contains the following information.

```
<?xml version="1.0" encoding="UTF-8"?>
<xccdf:Tailoring xmlns:xccdf="http://checklists.nist.gov/xccdf/1.2" id="xccdf_scap-
workbench_tailoring_default">
  <xccdf:benchmark href="/tmp/scap-workbench-sbgnfq/ssg-sle15-ds.xml"/>
  <xccdf:version time="2024-01-25T07:21:34">1</xccdf:version>
  <xccdf:Profile id="xccdf_org.ssgproject.content_profile_stig_customized"
 extends="xccdf_org.ssgproject.content_profile_stig">
    <xccdf:title xmlns:xhtml="http://www.w3.org/1999/xhtml" xml:lang="en-US"
 override="true">DISA STIG for SUSE Linux Enterprise 15 [CUSTOMIZED]</xccdf:title>
```

```
    <xccdf:description xmlns:xhtml="http://www.w3.org/1999/xhtml" xml:lang="en-US"
 override="true">This profile contains configuration checks that align to the
DISA STIG for SUSE Linux Enterprise 15 V1R4.</xccdf:description>
    <xccdf:select idref="xccdf_org.ssgproject.content_rule_sshd_limit_user_access"
 selected="true"/>
  </xccdf:Profile>
</xccdf:Tailoring>
```

5.1.2 Creating tailoring files using **autotailor**

There might be deployments where installing a graphical software such as SCAP Workbench is not suitable. In even more sensitive deployments, the customization of a remote target machine over SSH from a client machine running SCAP Workbench might also not be an option.

In such situations, the **`autotailor`** command-line tool that comes bundled with the `openscap-utils` is a suitable choice. However, you must be sure of all the information necessary for creating the tailoring file.

To create a tailoring file with **`autotailor`**, use the following syntax:

```
> autotailor \
  --select RULE_ID ❶ \
  --unselect RULE_ID ❷ \
  --var-value VAR=VALUE ❸ \
  --output TAILORING_FILE ❹ \
  --new-profile-id NEW_PROFILE_ID ❺ \
  DS_FILENAME ❻ \
  BASE_PROFILE_ID ❼
```

❶ `--select RULE_ID` adds a rule with `RULE_ID`. To select multiple rules, you can use this argument multiple times.

❷ `--unselect RULE_ID` discards a rule with `RULE_ID`. To discard multiple rules, you can use this argument multiple times.

❸ `--var-value VAR=VALUE` specifies modification of the XCCDF value in the form `VARIABLE=VALUE`.

❹ `TAILORING_FILE` specifies the path of the tailoring file, which is the final *output* of the **`autotailor`** tool.

❺ Specifies the ID of the new customized profile that you want to create.

❻ Specifies the path to the SCAP source data stream that is tailored.

❼ Specifies the original or base profile ID that you want to customize.

- As an **example**, run the following command to generate a tailoring file that is similar to the one created by using SCAP Workbench in the previous section:

```
> autotailor \
  --select sshd_limit_user_access❶ \
  --output /tmp/ssg-sle15-ds-tailoring.xml❷ \
  --new-profile-id stig_customized❸ \
  /usr/share/xml/scap/ssg/content/ssg-sle15-ds.xml❹ \
  stig❺
```

❶ The ID of the *Limit Users' SSH Access* rule.

❷ The path to the tailoring file, which is the output.

❸ The ID of the new customized profile.

❹ The path to the SCAP Security Guide content of the original STIG profile.

❺ The name of the original STIG profile.

For more information about the `autotailor` tool, read its help information by running `autotailor -h` or refer to its man page by running `man autotailor`.

5.2 Scanning using a tailoring file

You can use a tailoring file and the `oscap` command-line tool to scan and evaluate your target system based on a customized data stream.

To evaluate your target system using a tailoring file created earlier, perform the following steps:

1. List the profiles in the tailoring file by running the following command:

```
> oscap info /tmp/ssg-sle15-ds-tailoring.xml❶
Document type: XCCDF Tailoring
Imported: TIMESTAMP
Benchmark Hint: /tmp/scap-workbench-VIdbAj/ssg-sle15-ds.xml
Profiles:
 Title: DISA STIG for SUSE Linux Enterprise 15 [CUSTOMIZED]
  Id: xccdf_org.ssgproject.content_profile_stig_customized
```

❶ The path to the tailoring file created earlier, using either SCAP Workbench or `autotailor`.

2. Evaluate the target system based on the tailoring file by running the following command:

```
> oscap xccdf eval \
--profile xccdf_org.ssgproject.content_profile_stig_customized❶ \
--tailoring-file /tmp/ssg-sle15-ds-tailoring.xml❷ \
--results /tmp/results.xml❸ \
/usr/share/xml/scap/ssg/content/ssg-sle15-ds.xml❹
```

❶ The ID reference of the new customized profile.

❷ The path to the tailoring file created earlier.

❸ The path to store the results of the evaluation in a machine-readable XML format.

❹ The path to the SCAP Security Guide content for the standard STIG profile.

Note: Redirection of results

Apart from storing the results of the scan in an XML file, **`oscap`** displays the results of the evaluation in a human-readable format on the screen. If you redirect the stream of human-readable results to a file, the debug logs are displayed on the screen.

5.3 Applying a tailoring file

After you create a tailoring file either using SCAP Workbench or **`autotailor`**, you must apply the custom profile to harden your target system. SUSE recommends using the **`ssg-apply`** command-line tool.

5.3.1 Applying tailoring file using **`ssg-apply`**

`ssg-apply` is a command-line tool maintained by SUSE and is part of the `ssg-apply` package. You can install it by running the following command:

```
> sudo zypper install -y ssg-apply
```

For detailed information on `ssg-apply`, refer to `/usr/share/doc/packages/ssg-apply/README`.

To apply the tailoring file that you have already created using SCAP Workbench or **`autotailor`**, perform the following steps:

1. As a best practice, create a copy of `/etc/ssg-apply/default.conf` with the name `/etc/ssg-apply/override.conf`. The new file must contain information pointing to the overridden or customized configuration.

   ```
   > sudo cp /etc/ssg-apply/default.conf /etc/ssg-apply/override.conf
   ```

2. Edit the `/etc/ssg-apply/override.conf` file to make its content similar to the following:

   ```
   #
   # This is the configuration file for the ssg-apply executable.
   #

   #
   # content-file - scap-security-guide content to be used for eval/remediation
   #
   content-file=/usr/share/xml/scap/ssg/content/ssg-sle15-ds.xml

   #
   # profile - profile as specified in content-file
   #
   profile=stig

   #
   # remediation setting - Take care before changing this setting to "yes",
   # as enabling remediation will likely make changes to the system.
   #
   remediate=no

   #
   # tailoring-file - tailoring file to disable specific rules
   #
   tailoring-file=/tmp/ssg-sle15-ds-tailoring.xml❶
   ```

   ❶ The path to the tailoring file created using SCAP Workbench or **`autotailor`**.

3. Apply the tailoring file by running the following command:

   ```
   > ssg-apply
   ```

4. *Optionally*, after running **`ssg-apply`**, you can observe the following:

   a. The output of OpenSCAP in the `/var/log/ssg-apply/ssg-apply-TIMESTAMP.out` files.
   For example, you can find the line number containing the mention of the *Limit Users' SSH Access* rule using the following command:

   ```
   > cat /var/log/ssg-apply/ssg-apply-TIMESTAMP.out | grep -n
    sshd_limit_user_access
   1180:xccdf_org.ssgproject.content_rule_sshd_limit_user_access
   ```

   Then you can locate the lines containing the status of the *Limit Users' SSH Access* rule in the `/var/log/ssg-apply/ssg-apply-TIMESTAMP.out` file:

   ```
   1179 Limit Users' SSH Access
   1180 xccdf_org.ssgproject.content_rule_sshd_limit_user_access
   1181 CCE-91343-4
   1182 faillt
   ```

   b. The debug logs in the `/var/log/ssg-apply/ssg-apply-TIMESTAMP.log` files.

6 Working with checklists in DISA STIG Viewer

DISA STIG Viewer is a Java-based graphical user interface to open content and create checklists for managing the STIG security settings on your system or network.

6.1 Installing DISA STIG Viewer

The *DISA STIG Viewer* application is available as a ZIP archive from https://public.cyber.mil/stigs/stig-viewing-tools/. Download the Linux version of the *DISA STIG Viewer*.

To install *DISA STIG Viewer*, unpack the ZIP archive. In the directory with the extracted files, start the *DISA STIG Viewer* with **`./STIGViewer`**.

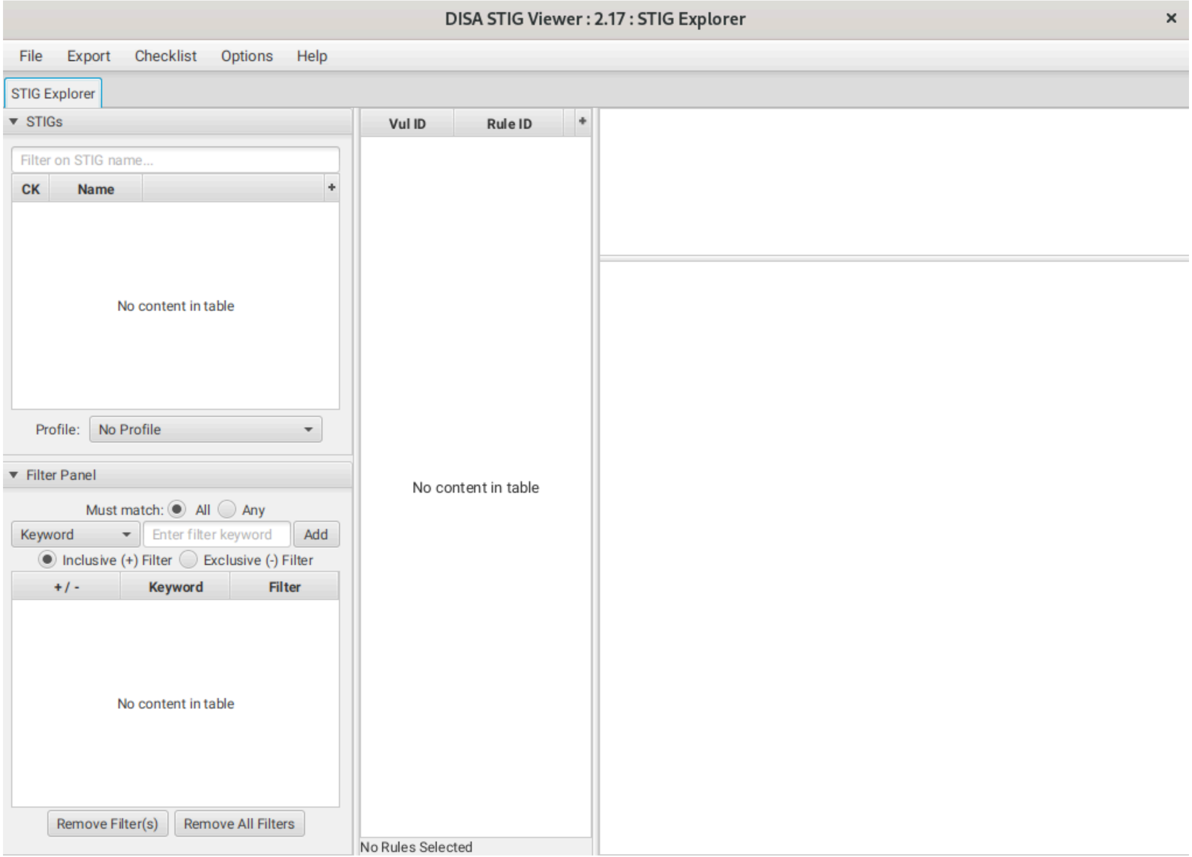


FIGURE 6: DISA STIG VIEWER—MAIN WINDOW

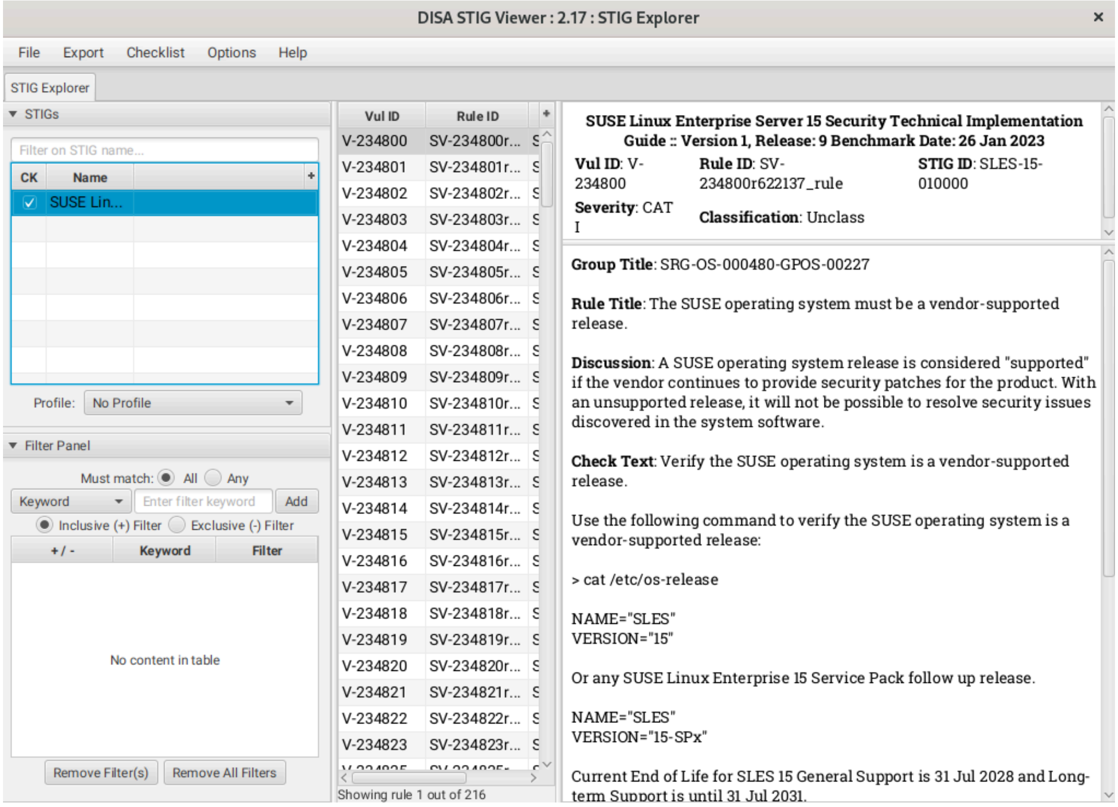
6.2 Using DISA STIG Viewer

To view a Security Technical Implementation Guide for SUSE Linux Enterprise, you have the following two options.

PROCEDURE 1: IMPORTING FROM A ZIP ARCHIVE

You can download a ZIP archive with the STIG checklist for your SUSE Linux Enterprise version (12 or 15).

1. Go to https://public.cyber.mil/stigs/downloads/ ↗.
2. In the *Search* field, enter SUSE and select and download the Security Technical Implementation Guide checklist that matches the SUSE Linux Enterprise system you want to harden.
3. In *DISA STIG Viewer*, click *File* › *Import STIG* and select the downloaded ZIP archive.
4. Enable the checkbox beneath the entry in the *STIG Explorer* panel to show the individual rules in the middle panel and details for each rule on the right-hand side.



Vul ID	Rule ID
V-234800	SV-234800r...
V-234801	SV-234801r...
V-234802	SV-234802r...
V-234803	SV-234803r...
V-234804	SV-234804r...
V-234805	SV-234805r...
V-234806	SV-234806r...
V-234807	SV-234807r...
V-234808	SV-234808r...
V-234809	SV-234809r...
V-234810	SV-234810r...
V-234811	SV-234811r...
V-234812	SV-234812r...
V-234813	SV-234813r...
V-234814	SV-234814r...
V-234815	SV-234815r...
V-234816	SV-234816r...
V-234817	SV-234817r...
V-234818	SV-234818r...
V-234819	SV-234819r...
V-234820	SV-234820r...
V-234821	SV-234821r...
V-234822	SV-234822r...
V-234823	SV-234823r...

SUSE Linux Enterprise Server 15 Security Technical Implementation Guide :: Version 1, Release: 9 Benchmark Date: 26 Jan 2023

Vul ID: V-234800 **Rule ID**: SV-234800r622137_rule **STIG ID**: SLES-15-010000

Severity: CAT I **Classification**: Unclass

Group Title: SRG-OS-000480-GPOS-00227

Rule Title: The SUSE operating system must be a vendor-supported release.

Discussion: A SUSE operating system release is considered "supported" if the vendor continues to provide security patches for the product. With an unsupported release, it will not be possible to resolve security issues discovered in the system software.

Check Text: Verify the SUSE operating system is a vendor-supported release.

Use the following command to verify the SUSE operating system is a vendor-supported release:

> cat /etc/os-release

NAME="SLES"
VERSION="15"

Or any SUSE Linux Enterprise 15 Service Pack follow up release.

NAME="SLES"
VERSION="15-SPx"

Current End of Life for SLES 15 General Support is 31 Jul 2028 and Long-term Support is until 31 Jul 2031.

PROCEDURE 2: IMPORTING FROM XCCDF XML

Use the `oscap` command-line tool to generate an XCCDF XML file that can be opened with *DISA STIG Viewer*.

1.
```
> sudo oscap xccdf eval❶ \
      --profile stig❷ \
      --stig-viewer /tmp/results_stig.xml❸ \
      /usr/share/xml/scap/ssg/content/ssg-sle15-ds.xml❹
```

❶ Calls the `oscap xccdf` module and tells it to perform an evaluation (vulnerability scan).

❷ Tells `oscap` to use the `stig` profile for the scan.

❸ Saves the results of the evaluation to `/tmp/results_stig.xml`. This is an XCCDF XML file that can be imported into *DISA STIG Viewer*.

❹ Specifies the `SCAP Security Guide` policy file to use. In this example, we use a policy file in the `DataStream` format that applies to SUSE Linux Enterprise code 15.

2. In *DISA STIG Viewer*, click *File* › *Import STIG* and select the XML file you generated.

3. Enable the checkbox beneath the entry in the *STIG Explorer* panel to show the individual rules in the middle panel.

For more information about *DISA STIG Viewer*, refer to the comprehensive *STIG Viewer 2.x User Guide*, which is available for download at https://public.cyber.mil/stigs/downloads/ ↗, or the README file that you can access from within *DISA STIG Viewer* by selecting *Help* › *View Readme*.

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