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# **GENERAL PURPOSE OPERATING SYSTEM (GPOS) SECURITY REQUIREMENTS GUIDE (SRG) TECHNOLOGY OVERVIEW**

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**Developed by DISA for the DoD**

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## 1. INTRODUCTION

### 1.1 Executive Summary

This General Purpose Operating System (GPOS) Security Requirements Guide (SRG) provides the technical security policies and requirements for applying security concepts to systems.

This SRG specifies security requirements for commercial-off-the-shelf (COTS) or government-off-the-shelf (GOTS) general purpose operating systems (GPOSs) in networked environments. An operating system conformant to this SRG may be operated as a server system within a data center or a client system used directly by one or more human users. This guide assumes operation within a single security domain. Cross-domain solution (CDS) and Multi-Level Security (MLS) requirements are beyond the scope of this guide.

Operating systems conformant to this security guide are assumed to operate in an environment that protects their supporting platform (hardware, devices, and firmware) from physical attacks and manipulation. In addition, it is assumed that all management activities are performed by knowledgeable and trustworthy users.

Conformant GPOSs must be capable of supporting system backups, but specific requirements for backup configuration and retention are not addressed in this guide. Similarly, anti-virus and IDS capabilities are mandatory, but their configurations are beyond the scope of this guide.

Specific requirements related to mobile devices and virtual operating environments can be found in the Mobile OS SRG and Virtual Machine Manager SRG, respectively. The use of an OS on an embedded system is beyond the scope of this guide.

The use of vendor-supported software is assumed in this SRG. If the operating system is no longer supported by the vendor, and patches are not available, then its use will be considered a finding.

#### 1.1.1 Security Requirements Guides (SRGs)

SRGs are collections of requirements applicable to a given technology family. SRGs represent an intermediate step between Control Correlation Identifiers (CCIs) and Security Technical Implementation Guides (STIGs). CCIs represent discrete, measurable, and actionable items sourced from Information Assurance (IA) controls defined in a policy, such as the National Institute of Standards and Technology (NIST) Special Publication (SP) 800-53. STIGs provide product-specific information for validating and attaining compliance with requirements defined in the SRG for that product's technology area.

There are four core SRGs: Application, Network, Operating System, and Policy. Each addresses the applicable CCIs in the context of the technology family. Subordinate to the core SRGs, there are Technology SRGs developed to address the technologies at a more granular level.

The General Purpose Operating System SRG is based on the Operating System core SRG. This General Purpose Operating System SRG contains general check and fix information that can be utilized for products for which STIGs do not exist.

The STIGs based on this SRG will provide the product-specific technical implementation guidance for that product. The STIG will contain the specific check and fix information for the product it covers.

### SRG Hierarchy example:

```
Application SRG
|__ Database SRG
    |__ MS SQL Server 2005 STIG
```

The SRG relationship and structure provides the ability to identify requirements that may be considered not applicable for a given technology family and provide appropriate justification. It also provides the structure to identify variations in specific values based on the technology family. These variations will be captured once and will propagate down to the Technology SRGs and then to the STIGs. This will eliminate the need for each product-specific STIG to address items that are not applicable.

### 1.1.2 SRG Naming Standards

In an effort to establish consistency across the SRGs, a naming standard for the Group Title and STIGIDs has been established.

#### Technology SRG Naming Standards

For Technology SRG Group Title and STIGIDs the following applies:

*{Core SRG value}-{Technology SRG}-{6-digit numeric sequence number}*

Examples:

```
SRG-NET-000001-RTR-000001
SRG-APP-000001-COL-000001
SRG-OS-000001-UNIX-000001
```

Checks/Fixes will be included at this level in a general form. These checks and fixes will apply for any STIGs that are created for products that do not have product-specific check and fix guidance.

## 1.2 Authority

DoD Instruction (DoDI) 8500.01 requires that “all IT that receives, processes, stores, displays, or transmits DoD information will be [...] configured [...] consistent with applicable DoD

cybersecurity policies, standards, and architectures” and tasks that Defense Information Systems Agency (DISA) “develops and maintains control correlation identifiers (CCIs), security requirements guides (SRGs), security technical implementation guides (STIGs), and mobile code risk categories and usage guides that implement and are consistent with DoD cybersecurity policies, standards, architectures, security controls, and validation procedures, with the support of the NSA/CSS, using input from stakeholders, and using automation whenever possible.” This document is provided under the authority of DoDI 8500.01.

Although the use of the principles and guidelines in these SRGs/STIGs provide an environment that contributes to the security requirements of DoD systems, applicable NIST SP 800-53 cybersecurity controls need to be applied to all systems and architectures based on the Committee on National Security Systems (CNSS) Instruction (CNSSI) 1253.

### 1.2.1 Relationship to STIGs

The SRG defines the requirements for various technology families and the STIGs are the technical implementation guidelines for specific products. A single SRG/STIG is not all inclusive for a given system, which may include, but is not limited to: Database, Web Server, and Domain Name System (DNS) SRGs/STIGs. For a given system, compliance with all (multiple) SRGs/STIGs applicable to a system is required.

## 1.3 Vulnerability Severity Category Code Definitions

Severity Category Codes (referred to as CAT) are a measure of vulnerabilities used to assess a facility or system security posture. Each security policy specified in this document is assigned a Severity Category Code of CAT I, II, or III.

**Table 1-1: Vulnerability Severity Category Code Definitions**

	DISA Category Code Guidelines
CAT I	Any vulnerability, the exploitation of which will, <b>directly and immediately</b> result in loss of Confidentiality, Availability, or Integrity.
CAT II	Any vulnerability, the exploitation of which <b>has a potential</b> to result in loss of Confidentiality, Availability, or Integrity.
CAT III	Any vulnerability, the existence of which <b>degrades measures</b> to protect against loss of Confidentiality, Availability, or Integrity.

## 1.4 SRG and STIG Distribution

Parties within the DoD and Federal Government’s computing environments can obtain the applicable STIG from the Cyber Exchange website at <https://cyber.mil/>. This site contains the latest copies of STIGs, SRGs, and other related security information. Those without a Common Access Card (CAC) that has DoD Certificates can obtain the STIG from <https://public.cyber.mil/>.

## 1.5 Document Revisions

Comments or proposed revisions to this document should be sent via email to the following address: [disa.stig\\_spt@mail.mil](mailto:disa.stig_spt@mail.mil). DISA will coordinate all change requests with the relevant DoD organizations before inclusion in this document. Approved changes will be made in accordance with the DISA maintenance release schedule.

## 1.6 Other Considerations

DISA accepts no liability for the consequences of applying specific configuration settings made on the basis of the SRGs/STIGs. It must be noted that the configurations settings specified should be evaluated in a local, representative test environment before implementation in a production environment, especially within large user populations. The extensive variety of environments makes it impossible to test these configuration settings for all potential software configurations.

For some production environments, failure to test before implementation may lead to a loss of required functionality. Evaluating the risks and benefits to a system's particular circumstances and requirements is the system owner's responsibility. The evaluated risks resulting from not applying specified configuration settings must be approved by the responsible Authorizing Official. Furthermore, DISA implies no warranty that the application of all specified configurations will make a system 100% secure.

Security guidance is provided for the Department of Defense. While other agencies and organizations are free to use it, care must be given to ensure that all applicable security guidance is applied both at the device hardening level as well as the architectural level due to the fact that some of the settings may not be able to be configured in environments outside the DoD architecture.

## 1.7 Product Approval Disclaimer

The existence of a STIG does not equate to DoD approval for the procurement or use of a product.

STIGs provide configurable operational security guidance for products being used by the DoD. STIGs, along with vendor confidential documentation, also provide a basis for assessing compliance with Cybersecurity controls/control enhancements, which supports system Assessment and Authorization (A&A) under the DoD Risk Management Framework (RMF). DoD Authorizing Officials (AOs) may request available vendor confidential documentation for a product that has a STIG for product evaluation and RMF purposes from [disa.stig\\_spt@mail.mil](mailto:disa.stig_spt@mail.mil). This documentation is not published for general access to protect the vendor's proprietary information.

AOs have the purview to determine product use/approval IAW DoD policy and through RMF risk acceptance. Inputs into acquisition or pre-acquisition product selection include such processes as:



- National Information Assurance Partnership (NIAP) evaluation for National Security Systems (NSS) (<http://www.niap-ccevs.org/>) IAW CNSSP #11
- National Institute of Standards and Technology (NIST) Cryptographic Module Validation Program (CMVP) (<http://csrc.nist.gov/groups/STM/cmvp/>) IAW Federal/DoD mandated standards
- DoD Unified Capabilities (UC) Approved Products List (APL) (<http://www.disa.mil/network-services/ucco>) IAW DoDI 8100.04

## **2. ASSESSMENT CONSIDERATIONS**

### **2.1 NIST SP 800-53 Requirements**

All applicable baseline technical NIST SP 800-53 requirements and security best practice requirements are included in this SRG.

CNSSI 1253 defines the required controls for DoD systems, based on confidentiality, integrity, and availability (baseline) of the given information system. In all cases, CNSSI 1253, along with required baselines, will serve as the policy requirement for any given asset or information system.

### **2.2 General Procedures**

This SRG has procedures that are intended to provide appropriate evaluation and remediation functions for a typically configured system. These procedures are not product specific and are intended for use when a product-specific STIG is not available.