**Green Pace Developer: Security Policy Guide Template**



# Green Pace Secure Development Policy

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## Overview

Software development at Green Pace requires consistent implementation of secure principles to all developed applications. Consistent approaches and methodologies must be maintained through all policies that are uniformly defined, implemented, governed, and maintained over time.

## Purpose

This policy defines the core security principles; C/C++ coding standards; authorization, authentication, and auditing standards; and data encryption standards. This article explains the differences between policy, standards, principles, and practices (guidelines and procedure): [Understanding the Hierarchy of Principles, Policies, Standards, Procedures, and Guidelines](https://www.linkedin.com/pulse/understanding-hierarchy-principles-policies-standards-wally-beddoe/).

## Scope

This document applies to all staff that create, deploy, or support custom software at Green Pace.

## Module Three Milestone

### Ten Core Security Principles

| **Principles** | Write a short paragraph explaining each of the ten principles of security. |
| --- | --- |
| 1. ValidateInput Data | Treat all input data as malicious until you can prove it is not. Ensure all data received from users or other systems is validated against the rules for data type, length, format, and all other appropriate rules. This should prevent vulnerabilities related to type mismatches, overflows, underflows, and injections. |
| 1. Heed Compiler Warnings | When finalizing builds, use the highest warning level available for your compiler. These warnings can help identify potential issues in your code. Eliminate all errors and warnings before finalizing the application. Warnings are typically issued for uninitialized variables, type mismatches, or unsafe constructs. Applications built with no warnings will be more robust and less vulnerable than applications where warnings remain. |
| 1. Architect and Design for Security Policies | Consider software architecture and design when implementing security policies, such as separating a system into sub-systems with different authorization or privilege levels. Using a zero-trust approach will guarantee that permissions are intentionally granted. Design systems with breaches in mind to minimize risk and damage should a security measure fail. |
| 1. Keep It Simple | Revise systems to remove complexity. The least complex version will likely have the fewest vulnerabilities. The simplest version will also benefit from others quickly understanding it and pointing out flaws. |
| 1. Default Deny | This security model denies all access to a system by default. It is the opposite of a traditional model, which allows everything until configured to deny something. If suitable, default deny has fewer security rules and should reduce the attack surface available to hackers. |
| 1. Adhere to the Principle of Least Privilege | Processes should be executed with the lowest possible privileges needed for the task. Elevated privileges should be active for only the tasks requiring them, then reduced to lower the chances of elevated privileges being able to execute code at an elevated privilege level. |
| 1. Sanitize Data Sent to Other Systems | Systems containing unused functions or out-of-context calls provide opportunities for injection attacks. It is crucial to ensure that all data passed to other systems is sanitized. This practice prevents injection attacks from being successful against command shells, relational databases, or commercial off-the-shelf components by supplying them with clean and safe data. |
| 1. Practice Defense in Depth | Build defensive strategies in multiple layers. Do not rely on a single layer of security to stop a threat. Employ a comprehensive approach that considers software, hardware, and people. Understand and leverage traditional tools and strategies while considering more modern and sophisticated techniques. A multi-layer defense may require both. |
| 1. Use Effective Quality Assurance Techniques | The quality assurance process should verify that software and systems meet established security requirements and standards. Testing should be executed with vulnerabilities, weaknesses, and potential threats in mind. This principle should also address regulatory compliance, legal requirements, and auditing. |
| 1. Adopt a Secure Coding Standard | Establish a standard for each language and platform used to set expectations and requirements for the development team. Standards prevent late-in-development confusion, questions, and oversights. |

### C/C++ Ten Coding Standards

Complete the coding standards portion of the template according to the Module Three milestone requirements. In Project One, follow the instructions to add a layer of security to the existing coding standards. Please start each standard on a new page, as they may take up more than one page. The first seven coding standards are labeled by category. The last three are blank so you may choose three additional standards. Be sure to label them by category and give them a sequential number for that category. Add compliant and noncompliant sections as needed to each coding standard.

#### Coding Standard 1

| **Coding Standard** | **Label** | **Name of Standard** |
| --- | --- | --- |
| **Data Type** | [STD-001-CPP] | Do not cast to an out-of-range enumeration value |

| **Noncompliant Code** |
| --- |
| This code attempts to check if a value is within a given range of accepted enumeration values. This issue with the code  is that it does this after casting to the enumeration type, which could potentially not support a given integer value. If  something outside of the range is casted, then the if statement would result in unspecified behavior. |
| enum EnumType {  First,  Second,  Third  };  void f(int intVar) {  EnumType enumVar = static\_cast<EnumType>(intVar);  if (enumVar < First || enumVar > Third) {  // Handle error  }  }  } |

| **Compliant Code** |
| --- |
| This solution creates compliant code by checking whether the value can be represented by the enumeration type before the conversion. This restricts it to only values that have specific enumeration representations. |
| enum EnumType {  First,  Second,  Third  };  void f(int intVar) {  if (intVar < First || intVar > Third) {  // Handle error  }  EnumType enumVar = static\_cast<EnumType>(intVar);  } |

**Note: Stop here for the milestone. Complete this section for Project One in Module Six.**

| **Principles(s):** [Name the principle and explain how it maps to this standard.] |
| --- |

**Threat Level**

| **Severity** | **Likelihood** | **Remediation Cost** | **Priority** | **Level** |
| --- | --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

**Automation**

| **Tool** | **Version** | **Checker** | **Description Tool** |
| --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
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#### Coding Standard 2

| **Coding Standard** | **Label** | **Name of Standard** |
| --- | --- | --- |
| **Data Value** | [STD-002-CPP] | Do not attempt to modify string literals |

| **Noncompliant Code** |
| --- |
| This code has a char pointer called str that is initialized to the address of a string literal. It then attempts to modify the string literal, which results in undefined behavior. |
| char \*str = "string literal";  str[0] = 'S'; |

| **Compliant Code** |
| --- |
| This code uses an array initializer with a string literal. Since the code creates a copy of the string literal in the space  allocated to the character array str instead of initializing the char pointer to the address of a string literal, the string  stored in str can be modified safely. |
| char str[] = "string literal";  str[0] = 'S'; |

**Note: Stop here for the milestone. Complete this section for Project One in Module Six.**

| **Principles(s):** [Name the principle and explain how it maps to this standard.] |
| --- |

**Threat Level**

| **Severity** | **Likelihood** | **Remediation Cost** | **Priority** | **Level** |
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| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

**Automation**

| **Tool** | **Version** | **Checker** | **Description Tool** |
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| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

#### Coding Standard 3

| **Coding Standard** | **Label** | **Name of Standard** |
| --- | --- | --- |
| **String Correctness** | [STD-003-CPP] | Do not attempt to create a std::string from a null pointer |

| **Noncompliant Code** |
| --- |
| This code uses std::getenv(), which returns a null pointer on failure while a string is constructed from its results. If an error occurs, the string will be formed with the null pointer and will cause undefined behavior, making this non-compliant. |
| #include <cstdlib>  #include <string>  void f() {  std::string tmp(std::getenv("TMP"));  if (!tmp.empty()) {  // ...  }  } |

| **Compliant Code** |
| --- |
| In order to create compliant code, check the results from std::getenv() for the null pointer before the string object is constructed. |
| #include <cstdlib>  #include <string>  void f() {  const char \*tmpPtrVal = std::getenv("TMP");  std::string tmp(tmpPtrVal ? tmpPtrVal : "");  if (!tmp.empty()) {  // ...  }  } |

**Note: Stop here for the milestone. Complete this section for Project One in Module Six.**

| **Principles(s):** [Name the principle and explain how it maps to this standard.] |
| --- |

**Threat Level**

| **Severity** | **Likelihood** | **Remediation Cost** | **Priority** | **Level** |
| --- | --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

**Automation**

| **Tool** | **Version** | **Checker** | **Description Tool** |
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| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

#### Coding Standard 4

| **Coding Standard** | **Label** | **Name of Standard** |
| --- | --- | --- |
| **SQL Injection** | [STD-004-CPP] | Avoid information leakage when passing a class object across a trust boundary |

| **Noncompliant Code** |
| --- |
| This code runs in kernel space and copies data from arg to user space. Since the object potentially has padding bits, copying data to user space could reveal sensitive information within the padding bits, no matter how the data is copied. |
| #include <cstddef>  struct test {  int a;  char b;  int c;  };  // Safely copy bytes to user space  extern int copy\_to\_user(void \*dest, void \*src, std::size\_t size);  void do\_stuff(void \*usr\_buf) {  test arg{1, 2, 3};  copy\_to\_user(usr\_buf, &arg, sizeof(arg));  } |

| **Compliant Code** |
| --- |
| The structured data should be serialized before it is copied elsewhere. This ensures that no uninitialized padding bits are copied to users who should not receive the data. This solution packs the data, so the copy function would have to pack it again on the receiving end to maintain the original padded structure of the data. |
| #include <cstddef>  #include <cstring>  struct test {  int a;  char b;  int c;  };  // Safely copy bytes to user space.  extern int copy\_to\_user(void \*dest, void \*src, std::size\_t size);  void do\_stuff(void \*usr\_buf) {  test arg{1, 2, 3};  // May be larger than strictly needed.  unsigned char buf[sizeof(arg)];  std::size\_t offset = 0;  std::memcpy(buf + offset, &arg.a, sizeof(arg.a));  offset += sizeof(arg.a);  std::memcpy(buf + offset, &arg.b, sizeof(arg.b));  offset += sizeof(arg.b);  std::memcpy(buf + offset, &arg.c, sizeof(arg.c));  offset += sizeof(arg.c);  copy\_to\_user(usr\_buf, buf, offset /\* size of info copied \*/);  } |

**Note: Stop here for the milestone. Complete this section for Project One in Module Six.**

| **Principles(s):** [Name the principle and explain how it maps to this standard.] |
| --- |

**Threat Level**

| **Severity** | **Likelihood** | **Remediation Cost** | **Priority** | **Level** |
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| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

**Automation**

| **Tool** | **Version** | **Checker** | **Description Tool** |
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#### Coding Standard 5

| **Coding Standard** | **Label** | **Name of Standard** |
| --- | --- | --- |
| **Memory Protection** | [STD-005-CPP] | Properly deallocate dynamically allocated resources |

| **Noncompliant Code** |
| --- |
| When a variable is passed as an expression to the “new” operator, the result of this is a pointer that is passed to ::operator delete(), which results in an undefined behavior due to ::operator delete() attempting to free memory that was not returned by ::operator new(). |
| #include <iostream>  struct S {  S() { std::cout << "S::S()" << std::endl; }  ~S() { std::cout << "S::~S()" << std::endl; }  };  void f() {  alignas(struct S) char space[sizeof(struct S)];  S \*s1 = new (&space) S;  // ...  delete s1;  } |

| **Compliant Code** |
| --- |
| The best way is to remove the call to ::operator delete(). By explicitly calling the destructor, you make the code compliant and remove the call to ::operator delete(). This is one of the few times explicitly invoking a destructor is appropriate. |
| #include <iostream>  struct S {  S() { std::cout << "S::S()" << std::endl; }  ~S() { std::cout << "S::~S()" << std::endl; }  };  void f() {  alignas(struct S) char space[sizeof(struct S)];  S \*s1 = new (&space) S;  // ...  s1->~S();  } |

**Note: Stop here for the milestone. Complete this section for Project One in Module Six.**

| **Principles(s):** [Name the principle and explain how it maps to this standard.] |
| --- |

**Threat Level**

| **Severity** | **Likelihood** | **Remediation Cost** | **Priority** | **Level** |
| --- | --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

**Automation**

| **Tool** | **Version** | **Checker** | **Description Tool** |
| --- | --- | --- | --- |
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| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

#### Coding Standard 6

| **Coding Standard** | **Label** | **Name of Standard** |
| --- | --- | --- |
| **Assertions** | [STD-006-CPP] | Use static assertion to test the values of constant expressions |

| **Noncompliant Code** |
| --- |
| This code uses assert() to assert a property concerning a memory-mapped structure that is essential for the code to  Function properly |
| #include <assert.h>  struct timer {  unsigned char MODE;  unsigned int DATA;  unsigned int COUNT;  };  int func(void) {  assert(sizeof(struct timer) == sizeof(unsigned char) + sizeof(unsigned int) + sizeof(unsigned int));  } |

| **Compliant Code** |
| --- |
| Static assertions allow incorrect assumptions to be diagnosed at compile time instead of resulting in malfunctions or runtime errors. Since this assertion is done at compile and not at runtime, no runtime cost is incurred. It can be used at the file or block scope, and failure results in meaningful and informative error messages. |
| #include <assert.h>  struct timer {  unsigned char MODE;  unsigned int DATA;  unsigned int COUNT;  };  static\_assert(sizeof(struct timer) == sizeof(unsigned char) + sizeof(unsigned int) + sizeof(unsigned int),  "Structure must not have any padding"); |

**Note: Stop here for the milestone. Complete this section for Project One in Module Six.**

| **Principles(s):** [Name the principle and explain how it maps to this standard.] |
| --- |

**Threat Level**

| **Severity** | **Likelihood** | **Remediation Cost** | **Priority** | **Level** |
| --- | --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

**Automation**

| **Tool** | **Version** | **Checker** | **Description Tool** |
| --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

#### Coding Standard 7

| **Coding Standard** | **Label** | **Name of Standard** |
| --- | --- | --- |
| **Exceptions** | [STD-007-CPP] | Handle all exceptions thrown before main() execution |

| **Noncompliant Code** |
| --- |
| The S constructor may throw an exception not caught when globalS is constructed during the program start. |
| struct S {  S() noexcept(false);  };  static S globalS; |

| **Compliant Code** |
| --- |
| In this example, globalS is turned into a local variable with a static storage duration. This allows exceptions to be thrown during object construction and caught since the constructor for S will be executed for the first time when the function globalS() is called rather than at program startup. To do this, modify the source code so that the previous uses of globalS are replaced by a function that calls globalS() instead. |
| struct S {  S() noexcept(false);  };  S &globalS() {  try {  static S s;  return s;  } catch (...) {  // Handle error - log and gracefully terminate the application.  }  // Unreachable.  } |

**Note: Stop here for the milestone. Complete this section for Project One in Module Six.**

| **Principles(s):** [Name the principle and explain how it maps to this standard.] |
| --- |

**Threat Level**

| **Severity** | **Likelihood** | **Remediation Cost** | **Priority** | **Level** |
| --- | --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

**Automation**

| **Tool** | **Version** | **Checker** | **Description Tool** |
| --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
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| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

#### Coding Standard 8

| **Coding Standard** | **Label** | **Name of Standard** |
| --- | --- | --- |
| [Student Choice] | [STD-008-CPP] | Do not allow exceptions to escape from destructors or deallocation functions |

| **Noncompliant Code** |
| --- |
| The global deallocation is declared noexcept(false) and throws an exception if some conditions are unmet. Throwing from a deallocation function results in undefined behavior. |
| #include <stdexcept>  bool perform\_dealloc(void \*);  void operator delete(void \*ptr) noexcept(false) {  if (perform\_dealloc(ptr)) {  throw std::logic\_error("Something bad");  }  } |

| **Compliant Code** |
| --- |
| This method does not throw exceptions upon deallocation failure. It fails without throwing an exception. |
| #include <cstdlib>  #include <stdexcept>  bool perform\_dealloc(void \*);  void log\_failure(const char \*);  void operator delete(void \*ptr) noexcept(true) {  if (perform\_dealloc(ptr)) {  log\_failure("Deallocation of pointer failed");  std::exit(1); // Fail, but still call destructors  }  } |

**Note: Stop here for the milestone. Complete this section for Project One in Module Six.**

| **Principles(s):** [Name the principle and explain how it maps to this standard.] |
| --- |

**Threat Level**

| **Severity** | **Likelihood** | **Remediation Cost** | **Priority** | **Level** |
| --- | --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

**Automation**

| **Tool** | **Version** | **Checker** | **Description Tool** |
| --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
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| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

#### Coding Standard 9

| **Coding Standard** | **Label** | **Name of Standard** |
| --- | --- | --- |
| [Student Choice] | [STD-009-CPP] | Do not modify the standard namespaces |

| **Noncompliant Code** |
| --- |
| The declaration of x in namespace std results in undefined behavior. |
| namespace std {  int x;  } |

| **Compliant Code** |
| --- |
| Instead of using the std namespace, place the declaration of x into a nonstandard namespace nonstd. This assumes the intention was to place x into a namespace to prevent collisions with global identifiers. |
| namespace nonstd {  int x;  } |

**Note: Stop here for the milestone. Complete this section for Project One in Module Six.**

| **Principles(s):** [Name the principle and explain how it maps to this standard.] |
| --- |

**Threat Level**

| **Severity** | **Likelihood** | **Remediation Cost** | **Priority** | **Level** |
| --- | --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

**Automation**

| **Tool** | **Version** | **Checker** | **Description Tool** |
| --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
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| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

#### Coding Standard 10

| **Coding Standard** | **Label** | **Name of Standard** |
| --- | --- | --- |
| Input / Output | [STD-010-CPP] | Close files when finished with them. |

| **Noncompliant Code** |
| --- |
| A file object is constructed in the beginning and the constructor for std::fstream calls std::basic\_filebuf<T>::open(). The default handler called by std::terminate does not call destructors, which results in the object that was opened never being properly closed. |
| #include <exception>  #include <fstream>  #include <string>  void f(const std::string &fileName) {  std::fstream file(fileName);  if (!file.is\_open()) {  // Handle error  return;  }  // ...  std::terminate();  } |

| **Compliant Code** |
| --- |
| To resolve this, std::fstream::close() is called before std::terminate() is called. This ensures that the file resources are  properly closed. |
| #include <exception>  #include <fstream>  #include <string>  void f(const std::string &fileName) {  std::fstream file(fileName);  if (!file.is\_open()) {  // Handle error  return;  }  // ...  file.close();  if (file.fail()) {  // Handle error  }  std::terminate();  } |

**Note: Stop here for the milestone. Complete this section for Project One in Module Six.**

| **Principles(s):** [Name the principle and explain how it maps to this standard.] |
| --- |

**Threat Level**

| **Severity** | **Likelihood** | **Remediation Cost** | **Priority** | **Level** |
| --- | --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

**Automation**

| **Tool** | **Version** | **Checker** | **Description Tool** |
| --- | --- | --- | --- |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
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| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

### Defense-in-Depth Illustration

This illustration provides a visual representation of the defense-in-depth best practice of layered security.



## Project One

There are seven steps outlined below that align with the elements you will be graded on in the accompanying rubric. When you complete these steps, you will have finished the security policy.

### Revise the C/C++ Standards

You completed one of these tables for each of your standards in the Module Three milestone. In Project One, add revisions to improve the explanation and examples as needed. Add rows to accommodate additional examples of compliant and noncompliant code. Coding standards begin on the security policy.

### Risk Assessment

Complete this section on the coding standards tables. Enter high, medium, or low for each of the headers, then rate it overall using a scale from 1 to 5, 5 being the greatest threat. You will address each of the seven policy standards. Fill in the columns of severity, likelihood, remediation cost, priority, and level using the values provided in the appendix.

### Automated Detection

Complete this section of each table on the coding standards to show the tools that may be used to detect issues. Provide the tool name, version, checker, and description. List one or more tools that can automatically detect this issue and its version number, name of the rule or check (preferably with link), and any relevant comments or description—if any. This table ties to a specific C++ coding standard.

### Automation

Provide a written explanation using the image provided.



Automation will be used for the enforcement of and compliance to the standards defined in this policy. Green Pace already has a well-established DevOps process and infrastructure. Define guidance on where and how to modify the existing DevOps process to automate enforcement of the standards in this policy. Use the DevSecOps diagram and provide an explanation using that diagram as context.

[Insert your written explanations here.]

### Summary of Risk Assessments

Consolidate all risk assessments into one table including both coding and systems standards, ordered by standard number.

| Rule | Severity | Likelihood | Remediation Cost | Priority | Level |
| --- | --- | --- | --- | --- | --- |
| STD-001-CPP | High | Unlikely | Medium | High | 2 |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
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| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

### Create Policies for Encryption and Triple A

Include all three types of encryption (in flight, at rest, and in use) and each of the three elements of the Triple-A framework using the tables provided***.***

* 1. Explain each type of encryption, how it is used, and why and when the policy applies.
  2. Explain each type of Triple-A framework strategy, how it is used, and why and when the policy applies.

Write policies for each and explain what it is, how it should be applied in practice, and why it should be used.

| 1. **Encryption** | **Explain what it is and how and why the policy applies.** |
| --- | --- |
| Encryption at rest | [Insert text.] |
| Encryption in flight | [Insert text.] |
| Encryption in use | [Insert text.] |

| 1. **Triple-A Framework\*** | **Explain what it is and how and why the policy applies.** |
| --- | --- |
| Authentication | [Insert text.] |
| Authorization | [Insert text.] |
| Accounting | [Insert text.] |

**\***Use this checklist for the Triple A to be sure you include these elements in your policy:

* User logins
* Changes to the database
* Addition of new users
* User level of access
* Files accessed by users

### Map the Principles

Map the principles to each of the standards, and provide a justification for the connection between the two. In the Module Three milestone, you added definitions for each of the 10 principles provided. Now it’s time to connect the standards to principles to show how they are supported by principles. You may have more than one principle for each standard, and the principles may be used more than once. Principles are numbered 1 through 10. You will list the number or numbers that apply to each standard, then explain how each of these principles supports the standard. This exercise demonstrates that you have based your security policy on widely accepted principles. Linking principles to standards is a best practice.

**NOTE:** Green Pace has already successfully implemented the following:

* Operating system logs
* Firewall logs
* Anti-malware logs

The only item you must complete beyond this point is the Policy Version History table.

## Audit Controls and Management

Every software development effort must be able to provide evidence of compliance for each software deployed into any Green Pace managed environment.

Evidence will include the following:

* Code compliance to standards
* Well-documented access-control strategies, with sampled evidence of compliance
* Well-documented data-control standards defining the expected security posture of data at rest, in flight, and in use
* Historical evidence of sustained practice (emails, logs, audits, meeting notes)

## Enforcement

The office of the chief information security officer (OCISO) will enforce awareness and compliance of this policy, producing reports for the risk management committee (RMC) to review monthly. Every system deployed in any environment operated by Green Pace is expected to be in compliance with this policy at all times.

Staff members, consultants, or employees found in violation of this policy will be subject to disciplinary action, up to and including termination.

## Exceptions Process

Any exception to the standards in this policy must be requested in writing with the following information:

* Business or technical rationale
* Risk impact analysis
* Risk mitigation analysis
* Plan to come into compliance
* Date for when the plan to come into compliance will be completed

Approval for any exception must be granted by chief information officer (CIO) and the chief information security officer (CISO) or their appointed delegates of officer level.

Exceptions will remain on file with the office of the CISO, which will administer and govern compliance.

## Distribution

This policy is to be distributed to all Green Pace IT staff annually. All IT staff will need to certify acceptance and awareness of this policy annually.

## Policy Change Control

This policy will be automatically reviewed annually, no later than 365 days from the last revision date. Further, it will be reviewed in response to regulatory or compliance changes, and on demand as determined by the OCISO.

## Policy Version History

| Version | Date | Description | Edited By | Approved By |
| --- | --- | --- | --- | --- |
| 1.0 | 08/05/2020 | Initial Template | David Buksbaum |  |
| 1.1 | 05/26/2024 | Added Principles & Standards | Eric Farkas |  |
| [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] | [Insert text.] |

## Appendix A Lookups

### Approved C/C++ Language Acronyms

| Language | Acronym |
| --- | --- |
| C++ | CPP |
| C | CLG |
| Java | JAV |