# Purpose

The purpose of this procedure is to define the process of migrating a software from development to production.

# Scope

It is applicable to all software systems in the Electronics Department.

# Definitions

In this document, information security related terms have been marked in *underlined* *italics*. For their definitions, refer to the standard *EE-ISMS-S001 Terms and Definitions*.

For software development related roles and acronyms, refer to *W1201 Software Development Roles and Responsibilities.*

* 1. An ***Environment*** is a set of hardware and software used for certain activities during the course of software development. For example, the Environment used to develop an application may consist of the following:
* physical or virtual machines used by developers to compile and build applications
* the development toolkits
* a database server (hardware + software)
* a web server (hardware + software)

# Entry Criteria

The release components (source code, documents etc) have been completed.

# Inputs

* Release components (source code, documents etc)

# Environments

* 1. The following environments must be established to develop any software system. However, in certain cases both the *Test* and *Pre-production* environments may not be required.
     + *Development*: Used for development work.
     + *Test*: For testing applications, and deployment process. Must not have development toolset (IDEs, compilers, libraries etc). It is mostly used to test installation.
     + *Pre-production*: For testing applications. Must be very similar to production environment
     + *Production*: For deployment of applications during operational use
  2. The aforementioned environment must have the following access controls:
     + *Development*: The software team has administrative privileges
     + *Test*: The software team has administrative privileges
     + *Pre-production*: The software team does not have administrative privileges, but has sudo privileges for few operations like installing/updating application packages, restarting services etc.
     + *Production*: The software team has normal user privileges, or may not have any access at all. The IT Group has administrative privileges
  3. Production environment must be hosted on a different logical and physical server than the other environments. The other environments (Development, Test, Pre-production) may be hosted on the same physical server, however, each must be on a different logical/virtual server. Development and Test machines will be treated as Category II machines, whereas Pre-production and Production as Category I.

# Procedure

* 1. The Development Team develops the application in a Development Environment
  2. The Release Team packages the application, and gives the package to the Test Team
  3. The Test Team installs and tests the application in a Test Environment. It documents problems in the defect list.
  4. If there are no major problems, the Test Team installs the application in Pre-Production Environment, and tests the application. The division of test cases, between Test and Pre-production Environments, is up to the discretion of the Test Team. It documents the defects in the defect list.
  5. Obtain approvals for deployment from the respective area managers.
  6. If approved for production release, the Release Team hands over the package and Installation Manual to the Deployment Team. The Deployment Team installs it in the Production Environment. The Deployment Team, in many cases, is from the Computer Department.

# Outputs

* The deployed package

# Exit Criteria

The Product Package has been deployed.

# Exceptions

All exceptions must be approved by the Electronics Department Head.

# References

* 1. *M01 NSCL Electronics Department ISMS Manual*, NSCL Document Server, Electronics Folder
  2. *P501 Information Security Policy,* NSCL Document Server, Electronics Folder
  3. *P1201 Information Systems Acquisition, Development, and Maintenance Policy*, NSCL Document Server, Electronics Folder
  4. *W1201 Software Development Roles and Responsibilities*, NSCL Document Server, Electronics Folder

# Revision History

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| --- | --- | --- |
| Revision  Level | Date | Revision Changes |
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# Reviews

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| --- | --- |
| Reviewer | Review Date |
| Information Security Working Group |  |

**Approved**

**Department Head:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Approval Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Effective Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**