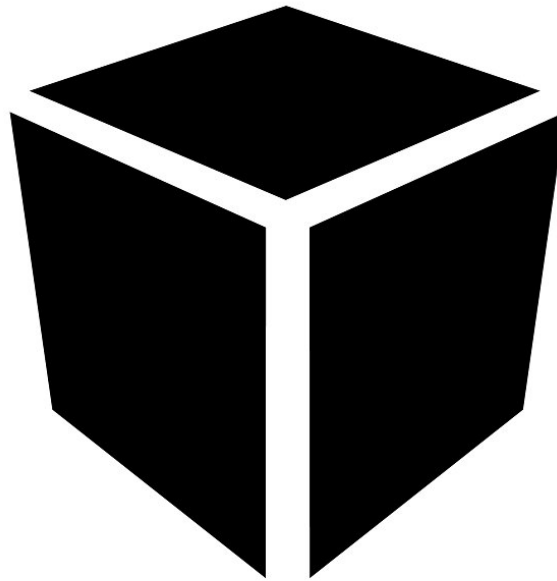


Forget Password Function:

Testing Plan Overview (TPO)



<http://www.blackhillsinfosec.com/?p=4813>

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6. Forgot Password Application

Marymount University is designing and implementing a Forgot Password application to replace the old, unsecured and easily hacked change password application. The only security requirements for the previous change password method are a Marymount University ID and date of birth. This new Forgot Password application will remedy the poor security of the past password reset function through use of a personal identification number.

This Forgot Password application is a giant leap for Marymount students in keeping their MU accounts secure. Once the PIN has been set and with the help of tight lips among users to keep that PIN secret, all MU accounts will be secure.

7. Test Environment

These tests are designed to run on Apple OSX Yosemite Version 10.10.5, with a 2.5 GHz Intel Core i7 processor, 16 GB 1600 MHz DDR3 memory, and an AMD Radeon R9 M370x 2048 MB graphics processor. The tests are designed to use Google Chrome Version 50.0.2661.102 (64-bit) web browser for the display and execution of tests. The current ISP is Verizon Fios with two-way bandwidth speeds in excess of 80 Mbps. This web browser is used due, in part, that Marymount University uses Google Mail Services as their email service. These tests may be executed using any OS/hardware/internet connection rate/web browser configuration as long as it has sufficient capacity to run the specified web browser.

8. Test Summary

This test plan is partitioned into three main groups all comprised of **black box** testing methodologies. These methodologies include **Equivalence Partitioning**, **Boundary Analysis**, and **Error Guessing**. This test should be run over the course of two (2) days, with an estimated total time for completion of four (4) hours.

The purpose of these tests is to confirm that the Forgot Password Application does not meet the specified requirements. This will be accomplished through testing each non-function portion, such as does the page and or text fields load, and functional,

for each input entered the expected result is given, requirements of the application. Most of the inputs will be invalid data to test the bounds and discover if the programs is mishandling data.

9. Entrance and Exit Criteria

In order to run this test plan, there needs to be at least two (2), or more, test MU IDs created. For the purposed of this test we will use the name Joe Name Sample with a Marymount student number 6782020, and Samantha Hillary Doe – 6791010 with the pertinent information added in the student database. With this student name and number combination will constitute and create in the normal fashion the MU IDs and passwords: “jns82020—123Four8!0” and “shd91010—123Five8!0”. The only difference will be shd91010 will have previously created a PIN: “12Aa”. The tester must have access to multiple IP addresses or execute certain test portions with a 24-hour window and notify. IT may also be helpful to notify the Marymount University IT department and have a representative’s number on had to unlock any locked accounts as a result of these tests.

Exit criteria that must be completed for testing to end are as follows:

- All test cases must be run.
- No high priority or sever bugs are left outstanding

10. Test Cases

6. Test Case Group 1: Create Forgot Password PIN

6.1. Application Requirements

- 6.1.1. With successful validation of the MU ID, the application will determine if a PIN has been created
- 6.1.2. If no PIN created, the user will be provided with a link to login with their MU ID and existing password
- 6.1.3. Upon successful login, allow the user to create a Forgot Password PIN.
- 6.1.4. PIN requirements:
 - 6.1.4.1. Must be four (4) case sensitive, alphanumeric characters (no symbols)
 - 6.1.4.2. Must be comprised of 2 alpha characters and 2 numbers
 - 6.1.4.2.1. Note: this requirement is under evaluation by the developers and may result in this requirement changing to – Must be comprised of at least 1 alpha character 1 number
 - 6.1.4.3. The new pin is entered twice (2 times)
 - 6.1.4.4. Captcha validation

Test Case Group 1

TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
CFPN_ UI_ 1	Non-Functional	Load myMarymount login web page ¹	N/A	Web Page will load and display sign in area— “Username and Password” fields, login button, and “Forgot Password” and “First Time Users” links		

¹ <https://shib.marymount.edu/idp/Authn/UserPassword>

TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
CFPN_MUID_1	Functional	Enter MU ID for student that has not created a PIN	Username: “jns82020” Password: “123Four8!0”	Web page will load that will prompt tell user that they have not created a PIN and must create one now followed by a link		
CFPN_MUID_2	Functional Valid Equivalence Partitioning	Enter MU ID for student that has created a PIN	Username “shd91010” Password “123Five8!0”	myMarymount ² home page loads		
CFPN_UI_PIN_2	Non-Functional	Click “Create PIN” link	N/A	Create PIN web page loads with the following fields: “Enter PIN”, “Reenter PIN”, and Captcha validation application		
TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
CFPN_PIN_1.1	Functional Invalid Boundary Analysis	Enter New PIN	“12aZ”, “12Az”, and correct Captcha input	Warning message stating that the two PINs must match prompting user to reenter PINs		

² <https://my.marymount.edu/home>

TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
CFPN _ PIN_ 1.2	Functional Invalid Boundary Analysis	Enter New PIN	“1234”, “1234”, and correct Captcha input	Warning message stating that PIN must contain 2 alpha and 2 numeric characters		
CFPN _ PIN_ 1.3	Functional Invalid Boundary Analysis	Enter New PIN	“AbCd”, “AbCd”, and correct Captcha input	Warning message stating that PIN must contain 2 alpha and 2 numeric characters		
CFPN _ PIN_ 2	Functional Valid Equivalence Partitioning and Boundary Analysis	Enter New PIN	“12Az”, “12Az”, and correct Captcha input	Webpage or message stating that PIN creation was successful		
CFPN _ PIN_ 3	Functional Invalid Error Guessing	Enter New PIN with incorrect Captcha input	“12Az”, “12Az”, and incorrect Captcha input	Error message stating incorrect input in Captcha verification and prompt to try Captcha again		
CFPN _ PIN_ ALT_1.1	Functional Invalid Boundary Analysis	Enter New PIN (Alternate Requirement)	“1234”, “1234”, and correct Captcha input	Warning message stating that PIN must contain at least 1 alpha and 1 numeric characters		
CFPN _ PIN_ ALT_1.2	Functional Invalid Boundary Analysis	Enter New PIN (Alternate Requirement)	“AbCd”, “AbCd”, and correct Captcha input	Warning message stating that PIN must contain at least 1 alpha and 1 numeric characters		

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TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
CFPN _ PIN_ ALT_2.1	Functional Valid Boundary Analysis	Enter New PIN (Alternate Requirement)	“123z”, “123z” and correct Captcha input	Webpage or message stating that PIN creation was successful		
CFPN _ PIN_ ALT_2.1	Functional Valid Boundary Analysis	Enter New PIN (Alternate Requirement)	“asD1”, “asD1” and correct Captcha input	Webpage or message stating that PIN creation was successful		

7. Test Case Group 2: Confirm Identity and Update Password and Multiple Invalid PIN

7.1. Application Requirements

7.1.1. Confirm Identity and Update Password

7.1.1.1. With the successful validation of the user's MU ID and PIN, the application allows the user to create a new password.

7.1.1.2. The new password is entered twice

7.1.1.3. Password Requirements

7.1.1.3.1. Cannot be same as the last password

7.1.1.3.2. Must be at least 8 case sensitive, alphanumeric characters, including symbols

7.1.1.4. Captcha Validation

7.1.2. Multiple Invalid PIN

7.1.2.1. If the PIN validation fails three (3) times, then the IP address will be locked from Forgot Password for a specific period of time (currently 24 hours).

7.2. Test ID

7.2.1. TC ID:

7.2.1.1. CIUP

7.2.1.2. MIPN

7.2.1.3. UI

7.2.1.4. PW

Test Case Group 2

TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
CIUP_UI_1	Non-Functional	Clicking on the "Forgot Password" link	N/A	Web page with an area to enter a MU ID and PIN		
CIUP_PW_1.1	Functional Invalid Error Guessing	Enter in a invalid MU ID and valid pin	Username: shd91011 PIN: 12Aa	Message that states invalid MU ID and PIN combination		

TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
MIPN_ PW_ 1	Functional Invalid Error Guessing	Enter in a valid MU ID and invalid correct pin	Username: shd91010 PIN: 12AA	Message that states invalid MU ID and PIN combination		
MIPN_ PW_ 2	Functional Invalid Error Guessing	Enter in a valid MU ID and invalid correct pin	Username: shd91010 PIN: 12AA	Message that states invalid MU ID and PIN combination		
MIPN_ PW_ 3	Functional Invalid Error Guessing	Enter in a valid MU ID and invalid correct pin	Username: shd91010 PIN: 12AA	Message that states invalid MU ID and PIN combination and that IP address has been locked from this function		
MIPN_ PW_ 4	Functional Invalid Error Guessing	Enter in a valid MU ID and invalid correct pin	Username: shd91010 PIN: 12AA	Does not allow access and displays an error message that this function is not available, contact MU IT department		
CIUP_ PW_ 1.3	Functional Valid Error Guessing	Enter in a valid MU ID and valid correct pin	Username: shd91010 PIN: 12Aa	Displays (or unlocks) an area to enter new password		
CIUP_ PW_ 2.1	Functional Invalid Equivalence Partitioning	Enter the previous password in both fields	123Five8!0	Error message stating the user cannot use the previous password prompting them to reenter new password		

TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
CIUP_PW_2.2	Functional Invalid Equivalence Partitioning	Enter two (2) different passwords	12Three4! And "21Three4!	Error message stating the two password do not match		
CIUP_PW_2.3	Functional Invalid Equivalence Partitioning	Enter password with only one type of character	In both areas 1234567890	Error message stating password requirements		
TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
CIUP_PW_2.4	Functional Invalid Error Guessing	Enter password with less than required characters in both fields	1234F6!9	Error message stating password requirements		
CIUP_PW_2.5	Functional Invalid Error Guessing	Enter password with an "=" in both fields	12=34F89	Error message stating password requirements with the added "=" is an invalid symbol"		
CIUP_PW_2.6	Functional Invalid Equivalence Partitioning	Enter a correct password combination in both fields	One234!569876	Message stating password has been changed		

8. Test Group 3: Update Forgot Password PIN and Multiple Invalid Password

8.1. Application requirements

8.1.1. Update Forgot Password

8.1.1.1. If users need to update their Forgot Password PIN, they will be provided with a link to login with their MU ID and existing password

8.1.1.2. Upon successful login, allow the user to update their Forgot Password PIN

8.1.1.3. PIN requirements

8.1.1.3.1. Cannot be the same as the last PIN

8.1.1.3.2. Must be case sensitive, alphanumeric characters (no symbols)

8.1.1.3.3. Must be comprised of 2 alpha characters and 2 numbers

8.1.1.3.3.1. Note: this requirement is under evaluation by the developers and may result in this requirement changing to – Must be comprised of at least 1 alpha character 1 number

8.1.1.3.4. The new pin is entered twice (2 times)

8.1.1.4. Captcha validation

8.1.2. Multiple Invalid Password

8.2. Test IDs

8.2.1. UFPP

8.2.2. MIPW

8.2.3. UI

8.2.4. PIN

8.2.4.1. ALT

Test Case Group 3

TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
UFPP_ UI_ 1	Non- Functional	Click provided “Update Forgot Password PIN” link	N/A	Web page loads with areas to enter the user’s MU ID and existing password		

TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
MIPW_ PIN_ 1	Functional Invalid Equivalence Partitioning	Enter valid username and invalid password	Username: shd91010 Password: 123Five8!1	Error message stating invalid username/password combination		
MIPW_ PIN_ 2	Functional Invalid Equivalence Partitioning	Enter valid username and invalid password	Username: shd91010 Password: 123Five8!1	Error message stating invalid username/password combination		
MIPW_ PIN_ 3	Functional Invalid Equivalence Partitioning	Enter valid username and invalid password	Username: shd91010 Password: 123Five8!1	Error message stating invalid username/password combination with the added message to call MU IT department to unlock account		
MIPW_ PIN_ 4	Functional Valid Equivalence Partitioning	Enter valid username and valid password	Username: shd91010 Password: 123Five8!0	Error message stating the account is locked contact MU IT department		
UFPP_ UI_ 1	Non- Functional	User enters in valid MU ID and password combination	Username: shd91010 Password: 123Five8!0	Web page or text areas load to enter new PIN		
UFPP_ PIN_ 1	Functional Valid Equivalence Partitioning	Enter valid username and valid password	Username: shd91010 Password: 123Five8!0	Web page with two text areas and user prompt to enter in new PIN and confirm		

TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
UFPP _ PIN_ 2.1	Functional Invalid Boundary Analysis	Enter New PIN	“12aZ”, “12Az”, and correct Captcha input	Warning message stating that the two PINs must match prompting user to reenter PINs		
UFPP _ PIN_ 2.2	Functional Invalid Boundary Analysis	Enter New PIN	“1234”, “1234”, and correct Captcha input	Warning message stating that PIN must contain 2 alpha and 2 numeric characters		
UFPP _ PIN_ 2.3	Functional Invalid Boundary Analysis	Enter New PIN	“AbCd”, “AbCd”, and correct Captcha input	Warning message stating that PIN must contain 2 alpha and 2 numeric characters		
UFPP _ PIN_ 3	Functional Valid Equivalence Partitioning and Boundary Analysis	Enter New PIN	“12AZ”, “12Az”, and correct Captcha input	Webpage or message stating that PIN creation was successful		
UFPP _ PIN_ 4	Functional Invalid Error Guessing	Enter New PIN with incorrect Captcha input	“12AZ”, “12Az”, and incorrect Captcha input	Error message stating incorrect input in Captcha verification and prompt to try Captcha again		
UFPP _ PIN_ ALT_1.1	Functional Invalid Boundary Analysis	Enter New PIN (Alternate Requirement)	“1234”, “1234”, and correct Captcha input	Warning message stating that PIN must contain at least 1 alpha and 1 numeric characters		

TC ID	Type of Test	Test Scenario	Test Data	Expected Result	Test Results	Status
UFPP _ PIN_ ALT_1.2	Functional Invalid Boundary Analysis	Enter New PIN (Alternate Requirement)	“AbCd”, “AbCd”, and correct Captcha input	Warning message stating that PIN must contain at least 1 alpha and 1 numeric characters		
UFPP _ PIN_ ALT_2.1	Functional Valid Boundary Analysis	Enter New PIN (Alternate Requirement)	“123z”, “123z” and correct Captcha input	Webpage or message stating that PIN creation was successful		
UFPP _ PIN_ ALT_2.1	Functional Valid Boundary Analysis	Enter New PIN (Alternate Requirement)	“asD1”, “asD1” and correct Captcha input	Webpage or message stating that PIN creation was successful		

6. Appendix

Glossary

ALT – Alternate password requirements

Black box testing – a data test constructed from applications/system requirements that is only concerned with input/output data and the expected results.

Boundary Analysis – a black box test that takes each data boundary and designs a test with data values on and around the boundary consisting of valid and invalid data.

CIUP – Confirm Identity and Update Password

Equivalence Partitioning – a black box test that is accomplished through examining application/system requirements defining different functional classes, separating valid from invalid data and designing interesting test cases to cover the greatest amount of functional classes in the least amount of tests.

Error Guessing – tests are designed with no inherent structure, but are derived from creativity to find errors.

MUID – Multiple Invalid PIN

PIN – Personal Identification Number

TC ID – Test Case Identification Number

UI – User Interface

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Word Count: 2495