ASSESSMENT 3: FINAL PRESENTATION VIDEO

CYB6014.2 CYBER PROJECT 3

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## I AM FROM TRANSCEND IT SERVICES AND I AM HERE TODAY TO EXPLAIN TO YOU OUR 2 STEP AUTHENTICATION SOLUTION FOR YOUR CORPORATE NETWORK

**IN TODAYS WORLD WE ARE CONSTANTLY UNDER ATTACK FROM UNSCRUPULOUS INTERNAL AND EXTERNAL ACTORS TRYING TO ACCESS OUR NETWORK SYSTEMS FOR INFORMATION WITH THE INTENTION OF GAINING ACCESS TO YOUR INTELECTUAL PROPERTY WITH INTENTIONS OF MONETARY PROFITS.**

**CONSEQUENTLY YOUR SECURITY NEEDS ARE BECOMING MORE AND MORE COMPLEX ON A DAILY BASIS**

**Our solution incorporates a process that requires the user to input a password and 6 digit pin number generated from a dongle to access your corporate network.**

**This 2 step solution will harden your network and make it very difficult for internal and external actors to gain access to your network given that they will need to have access to a user password and a pin number provided by the server at logon which will last 5 seconds and then will automatically change requiring the user to generate another pin to match the server pin.**

**we believe this simple solution will benefit your organisation bringing you online and up to date with todays technology.**

**The overall process only adds about 5 seconds to the login process and will not have any significant impact on current users.**

**Accessibility features included in the windows operating system login screen will help users with impairments alleviate most of the difficulties associated with eyesight and hearing issues.**

**Windows workstation software already includes the Narrator, Magnifier and Screen Enlargers. Screen magnifiers work like a magnifying glass by enlarging a portion of the screen as the user moves the focus. Voice input aids or speech recognition assist people who have difficulty using a mouse or keyboard. Voice aids allow users to control computers with their voice instead of a mouse or keyboard. Screen reviewers and screen readers make on-screen information available as synthesized speech or a refreshable Braille display**

**An on-screen keyboard can help those unable to use a standard keyboard to select keys using a pointing method such as a mouse, or Morse-code input systems. Keyboard enhancement utilities help users with typing issues.**

**Assistive technology can compensate for erratic motion, tremors, slow response time, and other related conditions.   
Users with impairments will have access to all the accessibility features built into the windows operating system which are available at the login screen.**

**Our solution eliminates the need for users to carry their mobile phones to receives an sms message as required by Microsoft Authentication or Google Authentication methods.**

**Thank you very much for your time and have a great day.**

## FUTURE ENHANCEMENTS WOULD INCLUDE a Voice recognition option that would generate a voice print ALONG WITH A PASSWORD OR PIN AS REQUIRED.

## An IRIS Scan option could also be incorporated keeping this process a 2 step process with the option of using a password or pin to keep the solution simple and pain free for all users.

## Our aim at Transcend IT solutions is to keep this process and uncomplicated as possible making the user experience as pain free as possible.

Several companies, Government and Military groups do not allow mobile telephones or other electronic devices inside the building or workplace thus eliminating the transmission of an sms pin number being sent to the user to complete this type of authentication.

## **Objective**

The objective of this prototype is to provide a more secure solution to the login process. A password and pin generated from a dongle will be utilised for the login process. The results of this prototype tests are to facilitate a positive login result from the 2 step authentication process that will be utilised network wide across the entire company (Parker, 2022).

## Scope

2SAS Two Step Authentication Solution: Passwords with access to organizational systems and networks are vulnerable and open to hackers and compromise the network system. Many organizations fail to secure or implement strong passwords for users. This presents a problem when you consider many government and military organisations prohibit the use of mobile phones in the office or in some cases the building (Parker, 2022). Accessibility features will be a prominent addition to this project given the amount of potential users in the workforce with disabilities.

## Methodology

To prepare a virtual lab consisting of 2 servers running Microsoft Server 2022 and 5 client machines running Microsoft Windows 11 mentioned in the following table 1. Evaluation ISO images were downloaded from the Microsoft Evaluation download centre. VM Ware Workstation software was provided by ECU University, downloaded and installed on the host machine (Dell 9010 SSF workstation). The first virtual machine which will be the first Domain Controller (DC01) was created in VMWare. Installation was performed by an automated .xml file. Once installed this server was promoted as a Domain Controller in the widget LLC Forest with Active Directory services installed. The second Domain Controller (DC02) was then installed in Vmware and promoted to the widget LLC domain (Mark, 2016).

Two-factor authentication is a part of modern authentication technologies. It is also called multifactor authentication or in short 2FA. Traditional one-factor authentication processes provide only one factor, typically something on what an individual can memorize. Personal numbers (PIN) and passwords are typical examples of these kinds of authentication methods. Two-factor authentication needs more input from the individual. This authentication is based on the assumption that two of the three factors of authentication are used. For this project we will use the authentication process of a password and pin number generated by a dongle to authenticate the user credentials (Parker, 2022).

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## Goal of the Project

The goal of this project is to deliver a more secure login solution the client to prevent unauthorised access to the corporate network system. Users of the corporate network will be required to use a password and a 6 digit pin number generated by a dongle to logon to the corporate network. Users with hearing and eyesight disabilities will be able to utilise the built in accessibility features at the logon screen in windows to help them with the logon process. At this stage the prototype is progressing very well with only minor problems in relation to the acquisition of a dongle to proceed with testing. Extra funding has been acquired which will be used to purchase the endpoint dongle for the entire company .

## Deadlines and Milestones

Milestones so far have been reached and only final product testing is incomplete. At his point in time we are on schedule and will meet our deadline on time. The acquisition of our endpoint equipment with the curveball funding will expedite this process in order for us to meet our targets. The acquisition and testing stages are indicated in the below table.

## Statement of work Required

This project includes a 2 step logon authentication using a password and pin generated from a dongle to access the corporate network. The purpose of the project is to harden the security of the corporate network to protect against theft and internal and external attacks. The Client IT Department will engage in the acquisition of the endpoint equipment to be used in the testing process. The Project Manager ill co-ordinate testing using the endpoint equipment once delivered to the lab for testing. Testing will continue over a 3 week period to eliminate any problems identified in the testing process.

## Strategy

The main priority of this stage of the project is to determine total functionality of the endpoint equipment and confirm the logon process is as seamless as possible for all the network users, including users with hearing and eyesight disabilities. Our solution currently is taking hold in the marketplace and is becoming more popular in the corporate arena and other available options include fingerprint scanning , iris scanning, face recognition, chip technology via a swipe card option and voice options. Based on price and performance our solution is economical with ease of use, implementation into the corporate network system and compatibility with network systems. Our solution takes the next step towards security in the corporate environment, including Banks, Online Payment Systems, Communications etc. (Ometov et al., 2018).

## Visual Action Plan

This project will introduce a 2 step authentication logon process using a dongle to generate a pin number to be used in conjunction with a password to access the corporate network. Next steps include acquiring a dongle to initiate final testing by the IT team to complete the final stage of the project. Extra funding has been provided by an investor and will be used in the acquisition process to purchase dongles for the client user base. The testing stage with the acquired dongle will require intense procedures using the pin generated from the dongle and will include accessibility options being tested to facilitate the users with disability issues.

1. Acquire dongle using extra funding from curveball
2. Test logon procedure.
3. Test logon procedure using accessibility functions for users with hearing and eyesight disabilities.
4. Finalise testing.
5. Deliver and implement the project into the corporate system of the client
6. Sign off

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## References

Mark, H. G. (2016). Installing and Configuring Windows Server 2016 Hands-on Guide.

Ometov, A., Bezzateev, S., Mäkitalo, N., Andreev, S., Mikkonen, T., & Koucheryavy, Y. (2018). Multi-Factor Authentication: A Survey. *Cryptography, 2*(1). <https://doi.org/10.3390/cryptography2010001>

Parker, R. (2022). Prototype\_\_Activity\_Report\_V1.4.