



Cybersecurity

Project 1 Technical Brief

Make a copy of this document before you begin. Place your answers below each question. This completed document will be your deliverable for Project 1. Submit it through Canvas when you're finished with the project at the end of the week.

Your Web Application

Enter the URL for the web application that you created:

<https://joshsecurityresume.azurewebsites.net/>

Paste screenshots of your website created (Be sure to include your blog posts):

Joshua Dyke's Cyber Blog

Send Email



Hi, I'm Joshua!

This is my cybersecurity resume. On this website I will walk through and talk about two different blog posts about cybersecurity threats in 2024.

Blog Posts



Ransomware In 2024 What To Expect and How To Protect Yourself

Double Extortion, Data, Phishing, Extortion, Cybersecurity Education

As we enter 2024 the landscape has changed for ransomware. In 2023 we saw a rise of RaaS programs. This allowed low level threat actors the ability to perform attacks as if they were an offer. From AI to AI to further into 2024 we can expect trends and try to predict what is in store. We expect to see a rise in double extortion attacks. These attacks are especially ruthless as threat actors will encrypt data and threaten to publicly release any stolen information if not paid. Lastly with the proper training techniques you can help keep yourself and others protected. Having an incident response plan helps to get after regular employee training. This can help people learn how to recognize and respond to 2024 phishing attempts can look like it is their own responsibility to check devices and to also perform regular testing and updates. These lessons should be held off to keep it from potentially being compromised in an attack.



2024 The Cybersecurity Revolution Unmasked

AI, Cryptography, 2024 RSA, Digital Certificates

It happens to be this year's buzzword and now it has become the main focal point for cybersecurity in 2024. Offering better monitoring for in person and online threat detection that no human can compete with. It can be seen in both positive and negative ways with these updates and new secure protection coming from RSA encryption is now faced with new problems as it has become a target for many cybercriminals. 2024 has marked a big change for cybersecurity. Many businesses are scrambling to keep up with the short lifespan for digital certificates. This will change the current landscape as we will have to fundamentally change how security measures are put in place. Constant technological advancements will keep cybersecurity in an ever-evolving state.

Activate Windows
Go to Settings to activate Windows.



Day 1 Questions

General Questions

1. What option did you select for your domain (Azure free domain, GoDaddy domain)?

AZ Free domain

2. What is your domain name?

joshsecurityresume.azurewebsites.net

Networking Questions

1. What is the IP address of your webpage?

20.211.64.24

2. What is the location (city, state, country) of your IP address?

Australia (sydney)

3. Run a DNS lookup on your website. What does the NS record show?

primary name server = ns1-06.azure-dns.com

Web Development Questions

1. When creating your web app, you selected a runtime stack. What was it? Does it work on the front end or the back end?

Back End

2. Inside the `/var/www/html` directory, there was another directory called `assets`. Explain what was inside that directory.

Inside this directory are the files for images and the CSS. The CSS act as the template and the images are in a sub folder of the HTML directory allowing it to be put onto the webpage.

3. Consider your response to the above question. Does this work with the front end or back end?

Front End. CSS HTML and Images are all client side.

Day 2 Questions

Cloud Questions

1. What is a cloud tenant?

A cloud tenant is someone who uses a cloud service to store or use online software.

2. Why would an access policy be important on a key vault?

This allows the control of who can do what with sensitive data that is stored in the vault. This gives the ability to follow compliance requirements and allows the use of monitoring services of who is accessing what data and when.

3. Within the key vault, what are the differences between keys, secrets, and certificates?

Keys - These are cryptographic keys used for encryption or authentication
Secrets - Any sensitive data that needs additional protection (Password or 2FA)

Certificates- Digital documents that can authenticate a credible website that has signature from a trusted source. This helps to ensure integrity of all data that is transmitted on the website.

Cryptography Questions

1. What are the advantages of a self-signed certificate?

Self signed certificates are easily generated and can be deployed without the need of the Certificate Authority. Self signed certificates are usually free and are better for small scale operations.

2. What are the disadvantages of a self-signed certificate?

Lack of trust: these are usually not signed certificates that are validated by CA. One big disadvantage is that it can lead to man in the middle type attacks. Attackers can intercept data between the client and server side.

3. What is a wildcard certificate?

This is an SSL certificate that is designed to secure all domains and subdomains with one single certificate.

4. When binding a certificate to your website, Azure only provides TLS versions 1.0, 1.1, and 1.2. Explain why SSL 3.0 isn't provided.

3.0 is an older security certificate that now has many vulnerabilities. TLS is seen as its successor and has many improved security features that SSL 3.0 can't offer.

5. After completing the Day 2 activities, view your SSL certificate and answer the following questions:

- a. Is your browser returning an error for your SSL certificate? Why or why not?

No

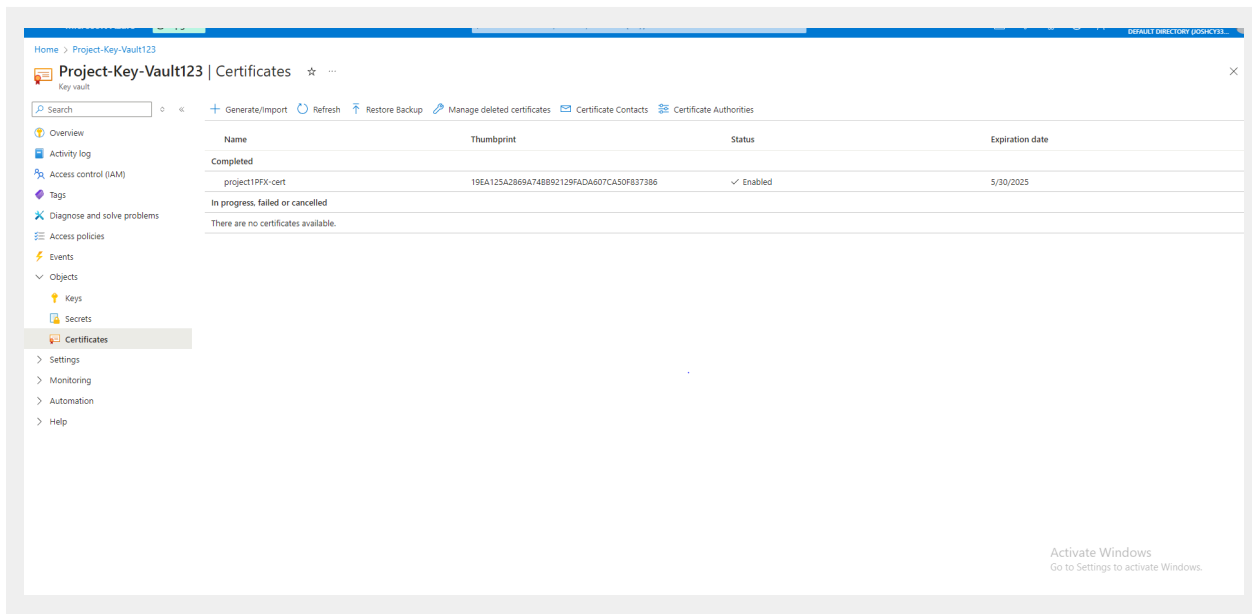
b. What is the validity of your certificate (date range)?

March 12 2024 - March 7 2025

c. Do you have an intermediate certificate? If so, what is it?

No

d. Do you have a root certificate? If so, what is it?



e. Does your browser have the root certificate in its root store?

Yes

f. List one other root CA in your browser's root store.

Certum CA

Day 3 Questions

Cloud Security Questions

1. What are the similarities and differences between Azure Web Application Gateway and Azure Front Door?

Azure web app and Azure front door have many similarities that they share. They all do HTTP load balancing, WAF, and provide SSL support. The difference between them is scale. Azure front door is tailored for the global level while azure web application is a smaller scope.

2. What is SSL offloading? What are its benefits?

This is the process of decrypting SSL and TLS encrypted traffic. Benefits include reduced server load and improved performance.

3. What OSI layer does a WAF work on?

OSI layer 7

4. Select one of the WAF managed rules (e.g., directory traversal, SQL injection, etc.), and define it.

SQL injection is a security exploit that allows malicious SQL code to be injected into a web application. The person who uses this exploit can view, modify or create/ delete data from the webs database.

5. Consider the rule that you selected. Could your website (as it is currently designed) be impacted by this vulnerability if Front Door wasn't enabled? Why or why not?

Without a WAF or a front door enabled then the web application is vulnerable to SQL attacks. Any potential input fields such as search bars and URL can be exploited to input SQL injection because the web app would not be able to validate user input.

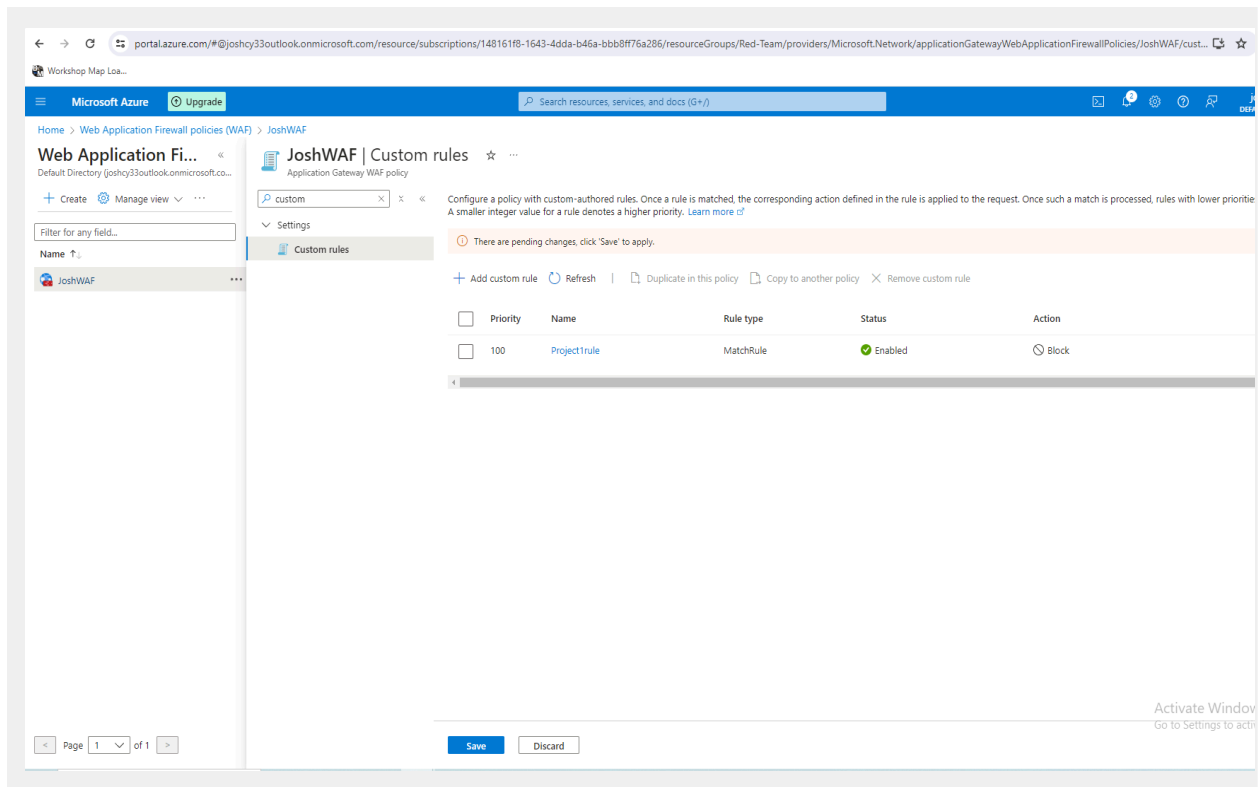
6. Hypothetically, say that you create a custom WAF rule to block all traffic from Canada. Does that mean that anyone who resides in Canada would not be able to access your website? Why or why not?

The creation of a WAF rule would prevent anyone from Canada from joining. If

users used a VPN they can get around this but the WAF rule would stop most legitimate web traffic from Canada.

7. Include screenshots below to demonstrate that your web app has the following:

a. A WAF custom rule



Disclaimer on Future Charges

Please type “YES” after one of the following options:

- ***Maintaining website after project conclusion:*** *I am aware that I am responsible for any charges that I incur by maintaining my website. I have reviewed the [guidance](#) for minimizing costs and monitoring Azure charges.*
- ***Disabling website after project conclusion:*** *I am aware that I am responsible for deleting all of my project resources as soon as I have gathered all of my web application screen shots and completed this document.*

Yes