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Sixfold Network Diagram V1.0

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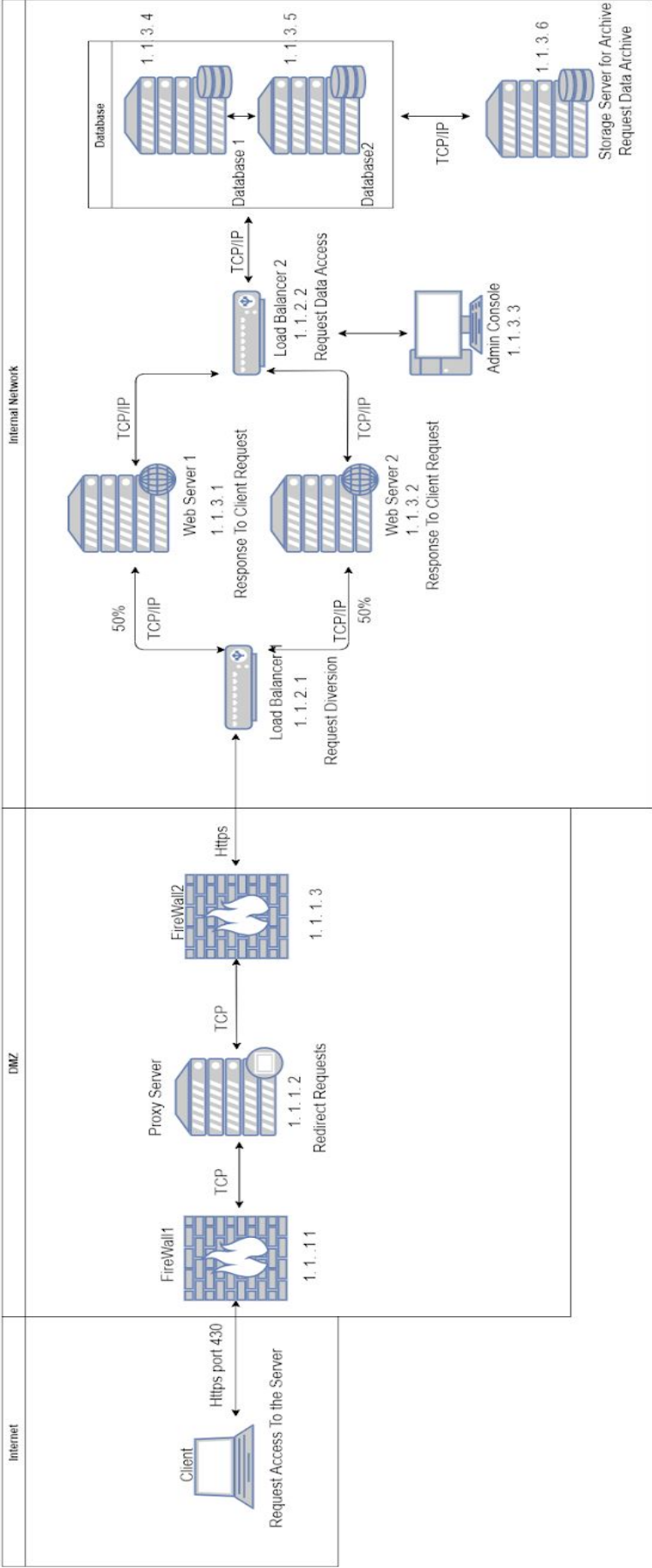
Version History

Version	Date	Author(s)	Comments
V1.0	11/12/2019	Jingyan Du	-Original document

Overview

This diagram is made to show the contribution and traffic process of our network system. Important network components such as Server, Firewall and Load Balancer shall be included. All machine information, including ip addresses, is estimated and will change as future plans change.

Ideal Network Diagram



Ideal Network Diagram

The design of network based on ideal conditions with enough budget, time and labors.

Client: Browser on users' machine. All requests from clients and our application only accept request through https, port 443.

FireWall 1(Ip address: 1.1.1.1): The software based firewall which holds the gate to protect the network. Requests can only enter Demilitarized Zone first. Only HTTPS request shall be accepted.

Proxy Server(Ip address: 1.1.1.2): In order to improve network performance and security, we use a proxy server to redirect client requests.

Proxy Server Information

IP Address	1.1.1.2
Machine Type:	Physical
CPU:	8
RAM:	16 GB
Storage:	300 GB
Drive:	C, D, E
Operation System:	Window Server 2019

FireWall 1(Ip address: 1.1.1.3): The software based firewall which holds the gate to protect the internal network. All requests from the DMZ must through this firewall to enter the internal network.

Load Balancer 1(Ip address: 1.1.2.1): To keep a good traffic for the requests, we use a load balancer to send requests to two different servers, 50% each.

Web Server 1&2(Ip address: 1.1.3.1 & 1.1.3.2): Servers that accept requests from HTTPS and give responses to client's requests. Based on requests from clients, web server shall gather required data or lead client to required web pages.

Web Server 1 Information

IP Address	1.1.3.1
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Machince Type:	Physical
CPU:	16
RAM:	32 GB
Storage:	500GB
Drive:	C, D, E
Operration System:	Window Server 2019

Web Server 2 Information

IP Address	1.1.3.2
Machince Type:	Physical
CPU:	16
RAM:	32GB
Storage:	500 GB
Drive:	C, D, E
Operration System:	Window Server 2019

Load Balancer 2(Ip address: 1.1.2.2): This balancer shall observe the status of two databases, when database 1 is full, no data shall be stored into database 1, balancer shall then start to send data to database 2.

Admin Console (Ip address: 1. 1. 3. 3): The machine that help system admin to understand the status of the entire network. Admin shall be notified for important error.

Admin Console Information

IP Address	1.1.3.3
Machince Type:	Physical
CPU:	16
RAM:	32GB
Storage:	500 GB
Drive:	C, D, E
Operration System:	Window Server 2019

Database 1 & 2(Ip address: 1.1.3.4 & 1.1.3.5): Database servers that store all data and give responses to requests that require certain data.

Database Server 1 Information

IP Address	1.1.3.4
Machince Type:	Physical
CPU:	8
RAM:	16 GB
Storage:	2 TB
Drive:	C, D, E
Operration System:	Window Server 2019

Database Server 2 Information

IP Address	1.1.3.5
Machince Type:	Physical
CPU:	8
RAM:	16 GB
Storage:	2 TB
Drive:	C, D, E
Operration System:	Window Server 2019

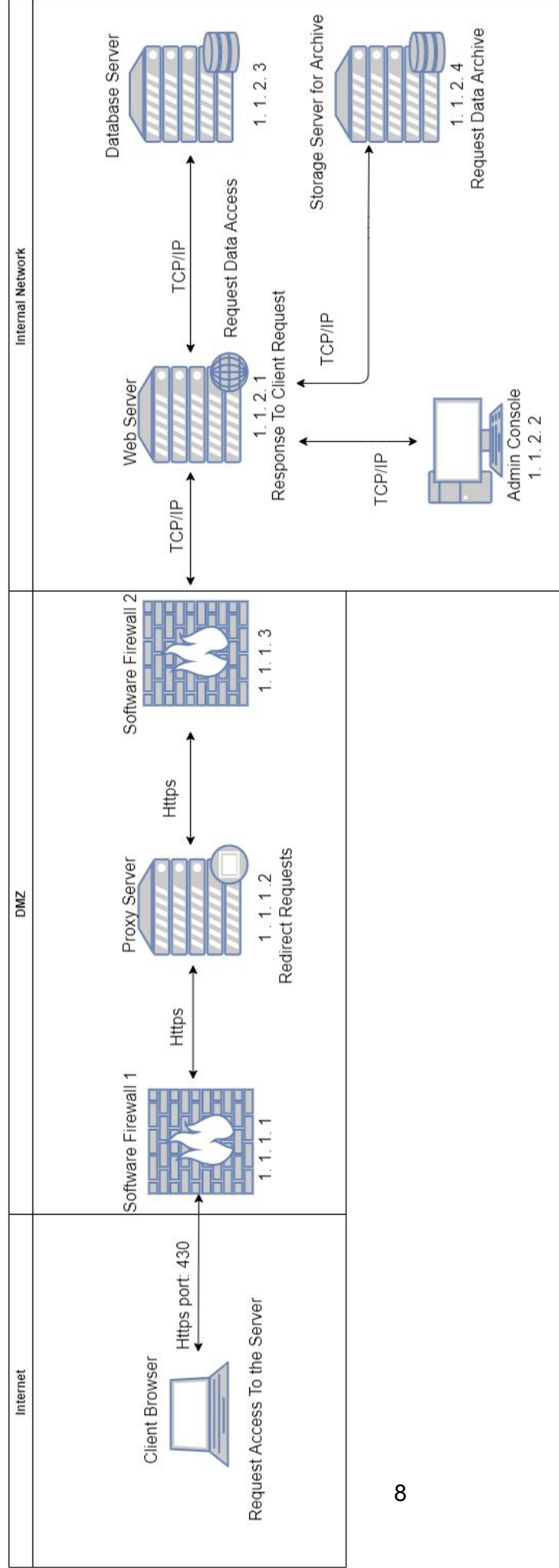
Storage Server for Archive(Ip address: 1.1.3.6): To use the storage space efficiently, we decide to have a separate storage machine for flat file data archive.

Storage Server for Archive Information

IP Address	1.1.3.6
Machince Type:	Physical
CPU:	8
RAM:	16 GB

Storage:	2 TB
Drive:	C, D, E
Operration System:	Window Server 2019

Actual Network Diagram



Actual Network Diagram

The ideal network diagram is for future development, and the actual network is made based on a limited budget (time and labor).

Client: Browser on users' machine. All requests from clients and our application only accept request through https, port 443.

FireWall 1(Ip address: 1.1.1.1): The software based firewall which holds the gate to protect the network. Requests can only enter Demilitarized Zone first. Only HTTPS request shall be accepted.

Proxy Server(Ip address: 1.1.1.2): In order to improve network performance and security, we use a proxy server to redirect client requests.

Proxy Server Information

IP Address	1.1.1.2
Machine Type:	Virtual
CPU:	4
RAM:	8 GB
Storage:	20 GB
Drive:	C
Operation System:	Window Server 2019

FireWall 1(Ip address: 1.1.1.3): The software based firewall which holds the gate to protect the internal network. All requests from the DMZ must through this firewall to enter the internal network.

Web Server (Ip address: 1.1.2.1): Servers that accept requests from HTTPS and give responses to client's requests. Based on requests from clients, web server shall gather required data or lead client to required web pages.

Web Server Information

IP Address	1.1.2.1
Machine Type:	Virtual

CPU:	4
RAM:	16 GB
Storage:	50 GB
Drive:	C
Operation System:	Window Server 2019

Admin Console (Ip address: 1. 1. 2.2): The machine that help system admin to understand the status of the entire network. Admin shall be notified for important error.

Admin Console Information

IP Address	1.1.2.2
Machince Type:	Physical
CPU:	4
RAM:	16GB
Storage:	50 GB
Drive:	C
Operation System:	Window Server 2019

Database (Ip address: 1.1.2.3): Database servers that store all data and give responses to requests that require certain data.

Database Server Information

IP Address	1.1.2.3
Machince Type:	Virtual
CPU:	4
RAM:	8 GB
Storage:	1 TB
Drive:	C, D, E
Operation System:	Window Server 2019

Storage Server for Archive(Ip address: 1.1.2.4): To use the storage space efficiently, we decided to have a separate storage machine for flat file data archive.

Storage Server for Archive Information

IP Address	1.1.2.4
Machine Type:	Virtual
CPU:	4
RAM:	8 GB
Storage:	1 TB
Drive:	C, D, E
Operation System:	Window Server 2019