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Software Design Document

Best Platform to Use

To make Draw It or Lose It work well on different devices, The Gaming Room should use a Linux-based server, like Ubuntu Server or CentOS. Linux is great because it’s fast, safe, and doesn’t cost extra money. It also works well on cloud services like AWS, Microsoft Azure, or Google Cloud to help more people play the game at the same time.

How the System Works

Linux uses a monolithic kernel, which means everything needed to run the system is built together. Some important parts include:

Managing Programs: Helps the game run multiple tasks at once.

Saving Files: Uses ext4, XFS, or ZFS to keep files safe and organized.

Keeping Data Safe: Uses special security settings like RBAC and SELinux to block hackers.

The game should also work on Windows, macOS, Android, and iOS so more people can play.

How to Save Game Data

To keep track of game progress and player information, the system should use:

Databases: PostgreSQL or MySQL to save player info.

Cloud Storage: Amazon S3 or Google Cloud to store game images and logs.

File System: ZFS or Btrfs to protect and organize files.

How the System Uses Memory

To keep the game running smoothly, the Linux platform does:

Paging and Swapping: Uses extra space on the hard drive when memory is full.

Smart Memory Use: Uses slab allocation and buddy system to manage memory well.

Cleaning Up Unused Memory: Helps free up space when the game doesn’t need it anymore.

Protecting Memory: Uses ASLR to stop hackers from accessing memory.

Connecting Different Systems

To make Draw It or Lose It work on different devices, the system should use:

Load Balancing: Helps spread out users so the game doesn’t slow down.

Containers: Uses Docker or Kubernetes to make the game easy to run anywhere.

Fast Communication: Uses RESTful APIs and WebSockets to connect devices quickly.

Keeping the Game Running: Has backups so the game stays online even if something goes wrong.

Syncing Data: Uses Kafka or RabbitMQ to make sure all devices have the same information.

Keeping Players Safe

The game needs to be secure so that player information is protected. Some ways to do this include:

Encryption: Uses TLS/SSL to protect data and AES-256 for saving files.

Login Security: Uses OAuth 2.0 and JWT to make sure only the right people log in.

DDoS Protection: Uses Cloudflare or AWS Shield to stop hackers from crashing the game.

Regular Security Checks: Fixes security problems to keep everything safe.

User Privacy: Follows laws like GDPR and CCPA to protect player data.