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- 1.1. Memory
 - 1.1.1. Addressing
 - 1.1.1.1. Logical
 - 1.1.1.2. Physical
 - 1.1.2. Management
 - 1.1.2.1. Loading
 - 1.1.2.2. Shared Libraries
 - 1.1.2.3. Paging
 - 1.1.2.3.1. Page Tables
 - 1.1.2.4. Swapping
 - 1.1.3. Virtual
 - 1.1.3.1. Page Replacement
 - 1.1.3.2. Compression
- 1.2. Management
 - 1.2.1. Process
 - 1.2.1.1. Creation
 - 1.2.1.2. Termination
 - 1.2.2. Scheduling
 - 1.2.2.1. Queues
 - 1.2.2.2. Context Switching

- 1.2.3. States
- 1.2.4. Threads
- 1.2.5. Synchronization
 - 1.2.5.1. Mutex
 - 1.2.5.2. Semaphore
 - 1.2.5.3. Monitors
 - 1.2.5.4. Hardware
- 1.3. IPC
 - 1.3.1. Shared Memory
 - 1.3.2. Message Passing
 - 1.3.3. Client-Server
 - 1.3.3.1. Sockets
 - 1.3.3.1.1. Procotocls
 - 1.3.3.1.1.1. TCP
 - 1.3.3.1.1.2. UDP
 - 1.3.3.1.1.3. Others
 - 1.3.3.2. RPC
- 1.4. System Services

2. System Calls

- 2.1. Process Control
 - 2.1.1. Create Process
 - 2.1.2. Exit Process
- 2.2. File Management

- 2.2.1. Create File
- 2.2.2. Read File
- 2.2.3. Write File
- 2.2.4. Close Handle
- 2.3. Device Management
 - 2.3.1. Read Console
 - 2.3.2. Write Console
- 2.4. Information Maintainence
 - 2.4.1. GetCurrentProcessID
 - 2.4.2. SetTimer
 - 2.4.3. Sleep
- 2.5. Communication
 - 2.5.1. Create Pipe
 - 2.5.2. Create File Mapping
- 2.6. Protection
 - 2.6.1. SetFileSecurity
 - 2.6.2. InitlializeSecurityDescriptor
 - 2.6.3. SetSecurityDescriptorGroup

3. Storage

- 3.1. HDD
 - 3.1.1. Management
 - 3.1.2. Partitioning
 - 3.1.2.1. Volumes
 - 3.1.2.2. Formatting

- 3.1.2.2.1. Blocks
- 3.1.3. Interfaces
- 3.2. Volatile Memory
- 3.3. Nonvolatile Memory

4. Virtual Machines

- 4.1. Hypervisor
- 4.2. Emulator
- 4.3. Paravirtualization

5. Interfaces

- 5.1. CLI
- 5.2. GUI

6. Linkers & Loaders

7. System Architecture

- 7.1. Single Processor
- 7.2. Multi-Processor

8. Security

- 8.1. Threat Model
 - 8.1.1. Systems
 - 8.1.1.1. Access Controls
 - 8.1.1.1.1 DAC
 - 8.1.1.1.2. RBAC
 - 8.1.1.1.3. MAC
 - 8.1.1.1.4. CBS
 - 8.1.1.1.5. Others

- 8.1.1.1.5.1. Sandboxing
- 8.1.1.1.5.2. Syscalls Filtering
- 8.1.1.2. Domains
- 8.1.1.3. Rings
 - 8.1.1.3.1. Ring-0
 - 8.1.1.3.1.1. Kernel
 - 8.1.1.3.2. Ring-1
 - 8.1.1.3.2.1. Other OS Components that do not fit in Ring-0
 - 8.1.1.3.3. Ring-2
 - 8.1.1.3.3.1. Device drivers
 - 8.1.1.3.4. Ring-3
 - 8.1.1.3.4.1. User applications
- 8.1.2. Network
 - 8.1.2.1. OSI Model
 - 8.1.2.1.1. 1. Physical layer
 - 8.1.2.1.2. 2. Data link layer
 - 8.1.2.1.3. 3. Network layer
 - 8.1.2.1.4. 4. Transport layer
 - 8.1.2.1.5. 5. Session layer
 - 8.1.2.1.6. 6. Presentation layer
 - 8.1.2.1.7. 7. Application layer

- 8.1.3. Encryption
 - 8.1.3.1. DES
 - 8.1.3.2. 3DES
 - 8.1.3.3. Blow fish
 - 8.1.3.4. AES
 - 8.1.3.5. RSA
 - 8.1.3.6. TLS
- 8.1.4. Authentication
 - 8.1.4.1. Password/Tokens
 - 8.1.4.1.1. PAP
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 - 8.1.4.1.4. Kerberos
 - 8.1.4.1.5. LDAP
 - 8.1.4.2. Biometrics
 - 8.1.4.2.1. Fingerprint Scanner
 - 8.1.4.2.2. Iris Scanner
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 - 8.1.4.2.4. Facial recognition
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 - 8.1.4.3. Smartcard
- 8.2. Policies & Procedures

9. File Systems

- 9.1. File
 - 9.1.1. Attributes
 - 9.1.2. Operations
 - 9.1.3. Types
 - 9.1.4. Structure
- 9.2. Allocation Methods
 - 9.2.1. Contiguous
 - 9.2.2. Linked
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- 9.3. Access Methods
 - 9.3.1. Sequential
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- 9.4. Directory Structure
- 9.5. Types
 - 9.5.1. Structure
 - 9.5.1.1. Mounting
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