

Assignment 2 & Midterm Reviews

COS 316 Lecture 11

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Naming

Naming Scheme Components

- Names
- Values
- Allocation Algorithm
- Translation Algorithm

Know what each of these tell us about the naming system

Be able to analyze a naming system using these components

Case studies: UNIX File System, Git, DNS

Location-based vs. Content-based Names

What is a content-based name?

What is a location-based name?

When do we need location-based names?

When and how can content-based names be useful?

Git and UNIX file system use a several naming scheme to abstract lower-layers.

Understand why this is useful.

Understand why different each schemes makes sense for each layer

- Global vs. local
- Human readable vs. machine readable

Know to identify whether a name is global or local, human readable or machine readable.

Benefits and drawbacks of each choice—e.g. know to make a well-reasoned case for choosing one option over the other.

Caching

- Why do we cache?
 - Cheap and slow vs. expensive and fast storage
- What makes caching work? Locality:
 - Know to identify if workloads exhibit spatial and temporal locality

Properties of Cache Systems

- Look through vs Look aside
- Write through vs write back
- Write allocate vs write-no-allocate
- Eviction policy

What affect does each choice have on the cache semantics?

How does each choice affect performance?

Be prepared to answer questions that require synthesizing information.

E.g. recall questions about UNIX file system naming scheme choices impact on supportable file size.