

The background of the slide features a large, faint watermark of the Uppsala University seal. The seal is circular and contains a sunburst in the center, with the word 'VERITAS' written across it. The outer ring of the seal contains the Latin text 'SIGILLUM ACADEMIAE UPSALENSIS' and the year '1527' at the bottom.

Designing a Virtual Security Layer for Cloud Content

Researching Copy-on-Write solutions

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Outline

Background

What has
been done

How to
proceed

- 1 **Background**
 - Uprise
 - Current system
 - Problem
 - Related Work
 - Solutions Idea
- 2 **What has been done**
- 3 **How to proceed**



UPPSALA
UNIVERSITET

UPRISE

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Uprise



VISCERAL



GHOST



Current system

Background

Uprise

Current system

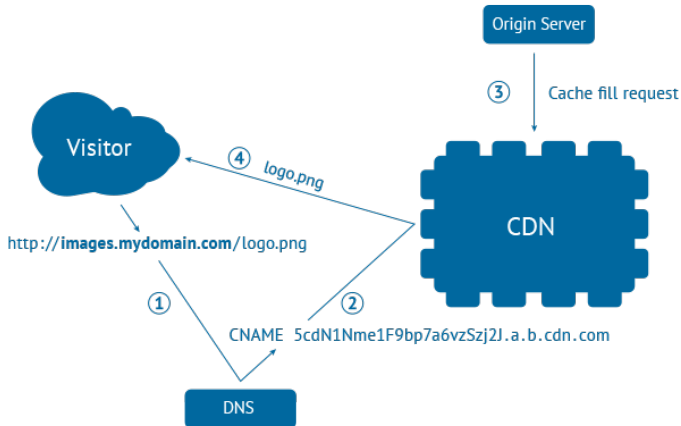
Problem

Related Work

Solutions Idea

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- Insecure
- Impractical
- Wont scale



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Related Work

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What has been done

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- Mach kernel
- Btrfs
- Programming Languages



Related Work

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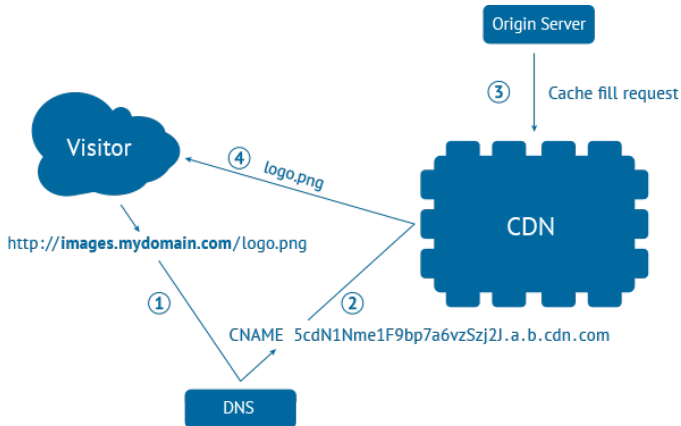
Solutions Idea

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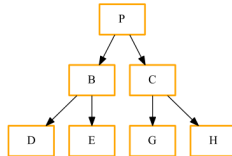
Example Operation

Background

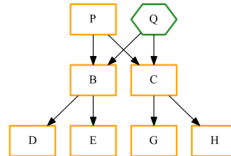
Uprise
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(a) Tree T_p



(b) T_p cloned to T_q

BTRFS: The Linux B-Tree Filesystem, O. Rodeh et al



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- Researching Copy-on-Write implementation
- Model checking implementation idea in JPF
- Implemented the fundamental back-end parts



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How to proceed

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- **Comparing Copy-on-Write implementations**
 - Fully implement and test the system
 - Writing more on the report...



How to proceed

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