

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' on a banner across it. The outer ring of the seal contains the Latin text 'SIGILLUM ACADEMIAE UPSALIENSIS' and the year '1527' at the bottom.

Designing a Virtual Security Layer for Cloud Content

Researching Copy-on-Write solutions

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October 27, 2015



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

Background

Uprise

Current system

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Related Work

Solutions Idea

What has been done

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Uprise



VISCERAL



GHOST



Current system

Background

Uprise

Current system

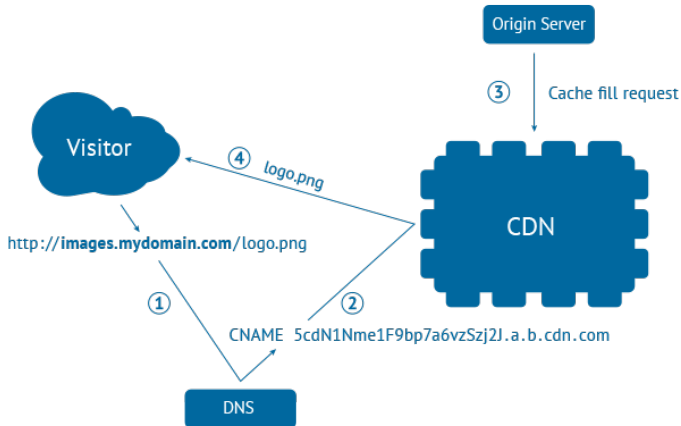
Problem

Related Work

Solutions Idea

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Problem

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Solutions Idea

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- Insecure
- Impractical
- Wont scale



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Related Work

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Solutions Idea

What has been done

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- Mach kernel
- Btrfs
- Programming Languages



Related Work

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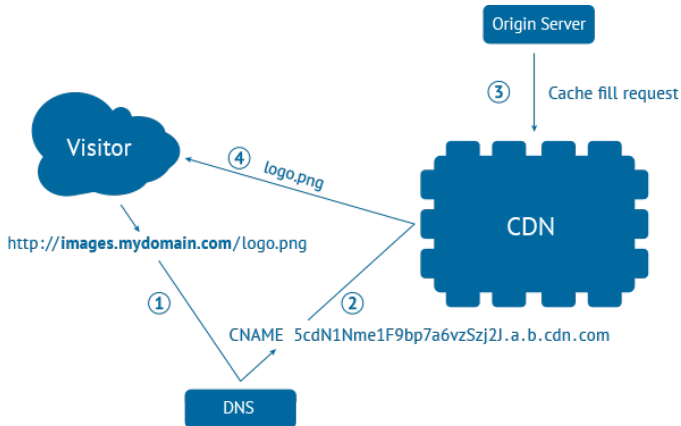
Solutions Idea

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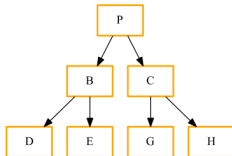
Example Operation

Background

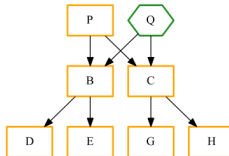
Uprise
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(a) Tree T_p



(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
- Implementing the fundamental back-end parts



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How to proceed

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- Comparing Copy-on-Write implementation
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- Fully implement and test the system



How to proceed

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