The Manna Plug-In Architecture for Content-based Search of VM Clouds


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Applications
1) HyperFind – Image Search
2) ShingleFind – Source Code and Text Search
3) ClamFind – Virus and Vulnerability Search

Manna Overview
Goal: Provide efficient search, both index-based and non-index-based, of VM's
Provides:
• Indexed Search – Using standard database technology, and supporting custom index data structures
• Non-Indexed Search – Using the OpenDiamond Platform
• Deduplication of Data – Via Mirage, necessary for efficient search

Diamond
Goal: Provide efficient interactive search of non-indexed data
Provides:
• Discard-based search
• Scoping
• Transparent Access to Mirage
• API For Client and Plug-in Developers
• Distributed Search Based on Searchlets

Mirage
Goal: Provide efficient storage management of VM's
Provides:
• Deduplication – Takes advantage of VM similarity
• Indexing – Independent of VM vendor format, OS, and file system
• Central Store – Allows checkin and dynamic synthesis of VM on checkout

Evaluation

Carnegie Mellon