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Khimaira

A unified user-interface for AFS and Kerberos credentials management for Microsoft Windows

Overview

- Introduction
- afscreds
- Leash32
- Khimaira
- Architecture
  - Overview
  - User interface & Configuration
- Conclusion

Introduction

- Credentials management on Windows
  - OAFSfW provides afscreds
  - MIT KfW provides Leash32

afscreds

- Provided by OpenAFS for Windows
- Allows user to
  - Obtain new tokens
  - View/delete existing tokens
  - Receive notifications of token expiration
  - Manage drive mappings
  - Invoke the AFS client configuration applet

Leash32

- Provided by MIT Kerberos for Windows
- Allows user to:
  - Obtain, view and manage Kerberos tickets and AFS tokens
  - Receive notifications of ticket/token expiration
  - Manage Kerberos and AFS configuration
    - AFS configuration through invocation of AFS client configuration applet

Issues

- Two applications with overlapping functionality
  - Confuses users
  - Additional work to maintain two applications
- Extensibility
  - Not feasible to add extensive Kerberos support to afscreds
  - Leash32 not extensible for additional credential types

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Khimaira

- Origin
  - “Khimaira” is Greek spelling of “Chimera”
    - WordNet says of Chimera; “fire-breathing she-monster with a lion’s head and a goat’s body and a serpent’s tail; daughter of Typhon”
  - Developed at **Massachusetts Institute of Technology, Information Services & Technology**

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- Goals
  - Provide functionality of afscreds and Leash32
  - User friendly
    - Minimize required knowledge (“Shield” user)
    - Intuitive
  - Extensible
    - Additional credential types
    - Additional functionality
  - Easy to maintain
    - Independent maintenance of Kerberos/AFS/other application areas
    - Robust

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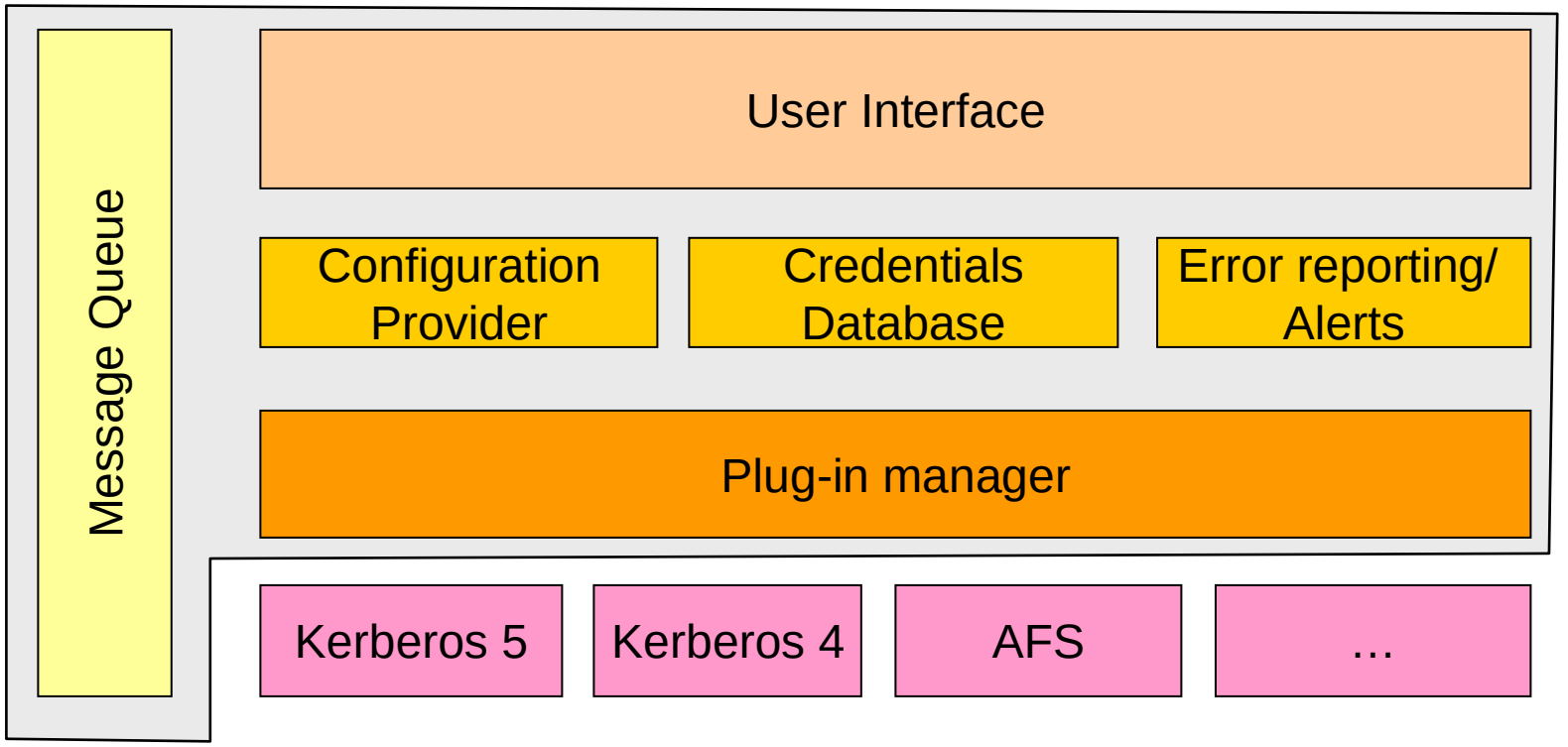
- Design
  - “Clean” user interface
    - Identity centric
    - Customizable views
  - Plug-in based architecture
    - Main application has no knowledge about Kerberos or AFS
    - Kerberos and AFS support provided through different plug-ins
  - Comprehensive configuration (…)

Architecture - Overview



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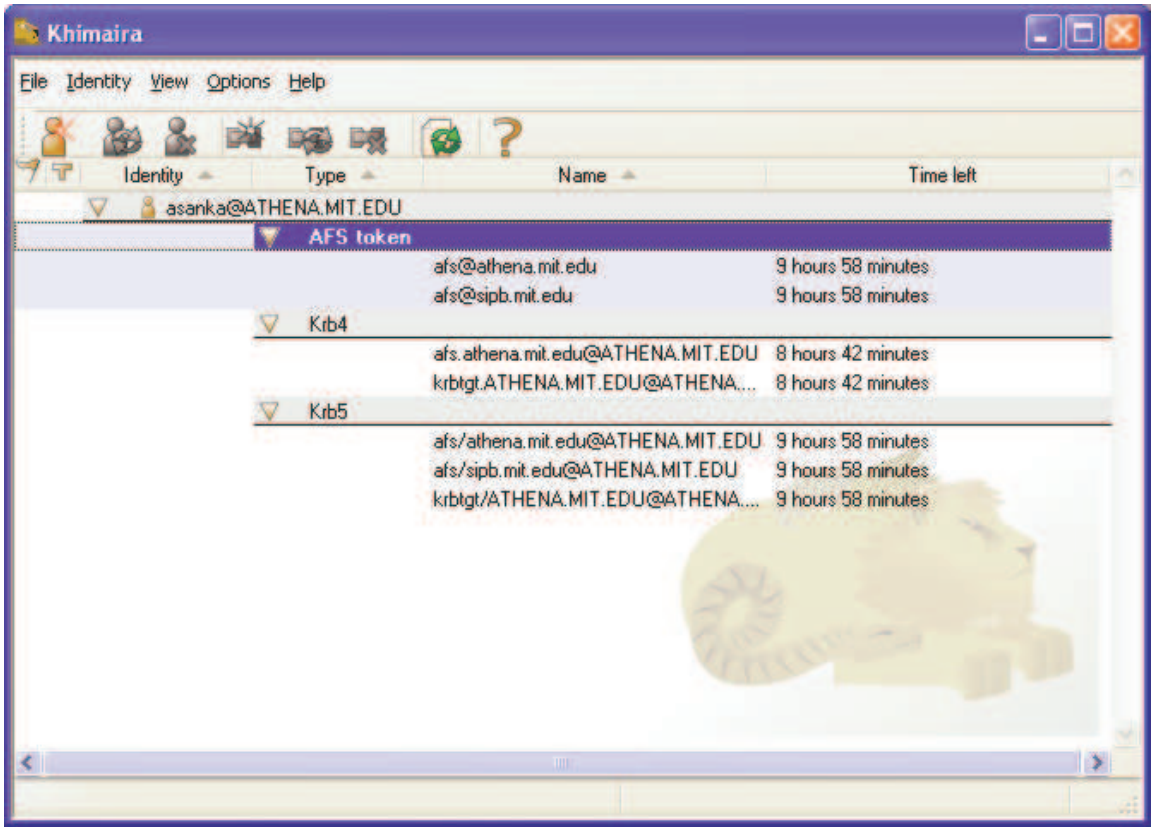
User Interface

- Identity centric
  - Identities correspond to Kerberos principals
  - Defined by an “Identity provider” plug-in (currently Kerberos 5)
- Hierarchical views
  - Uncluttered view of useful information
  - Configurable
- Modular design
  - Extensible

User Interface



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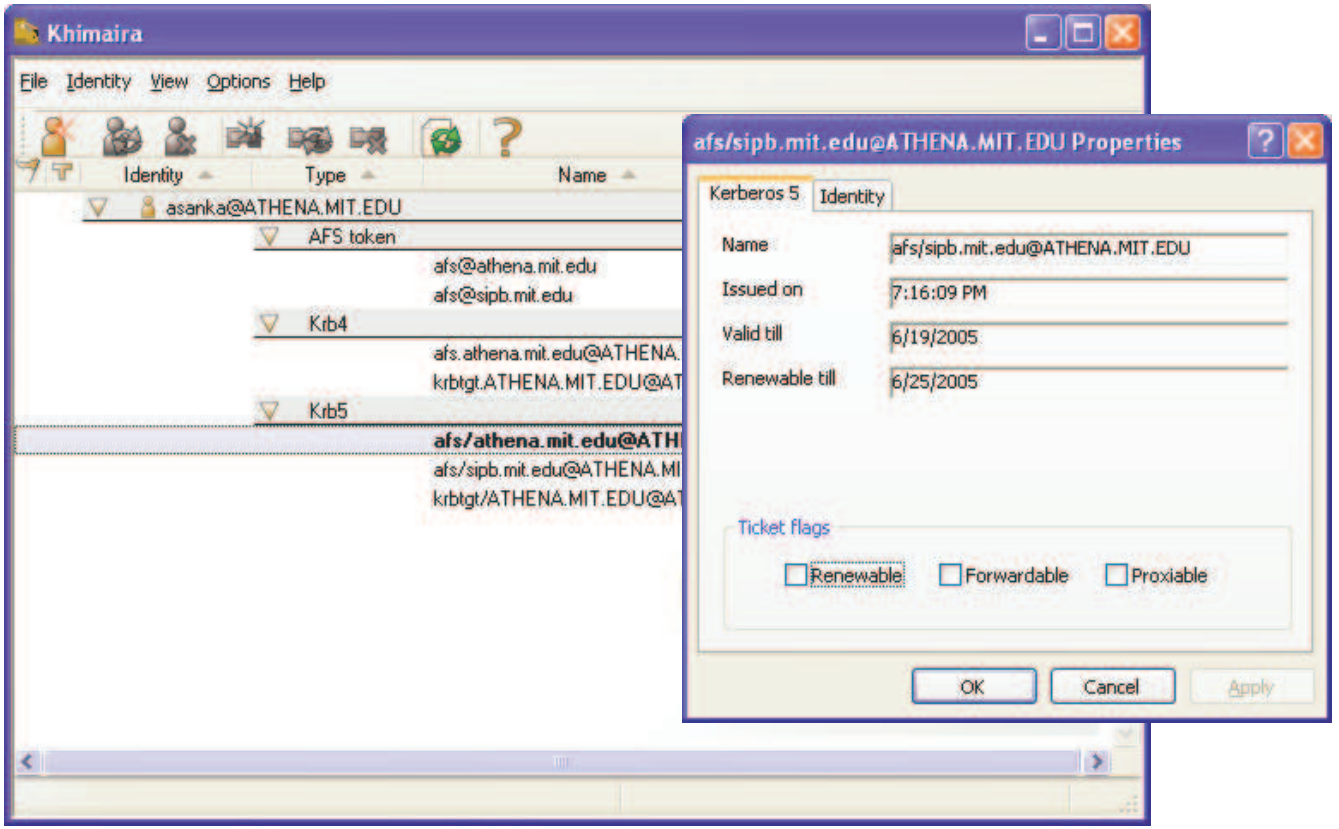
User Interface



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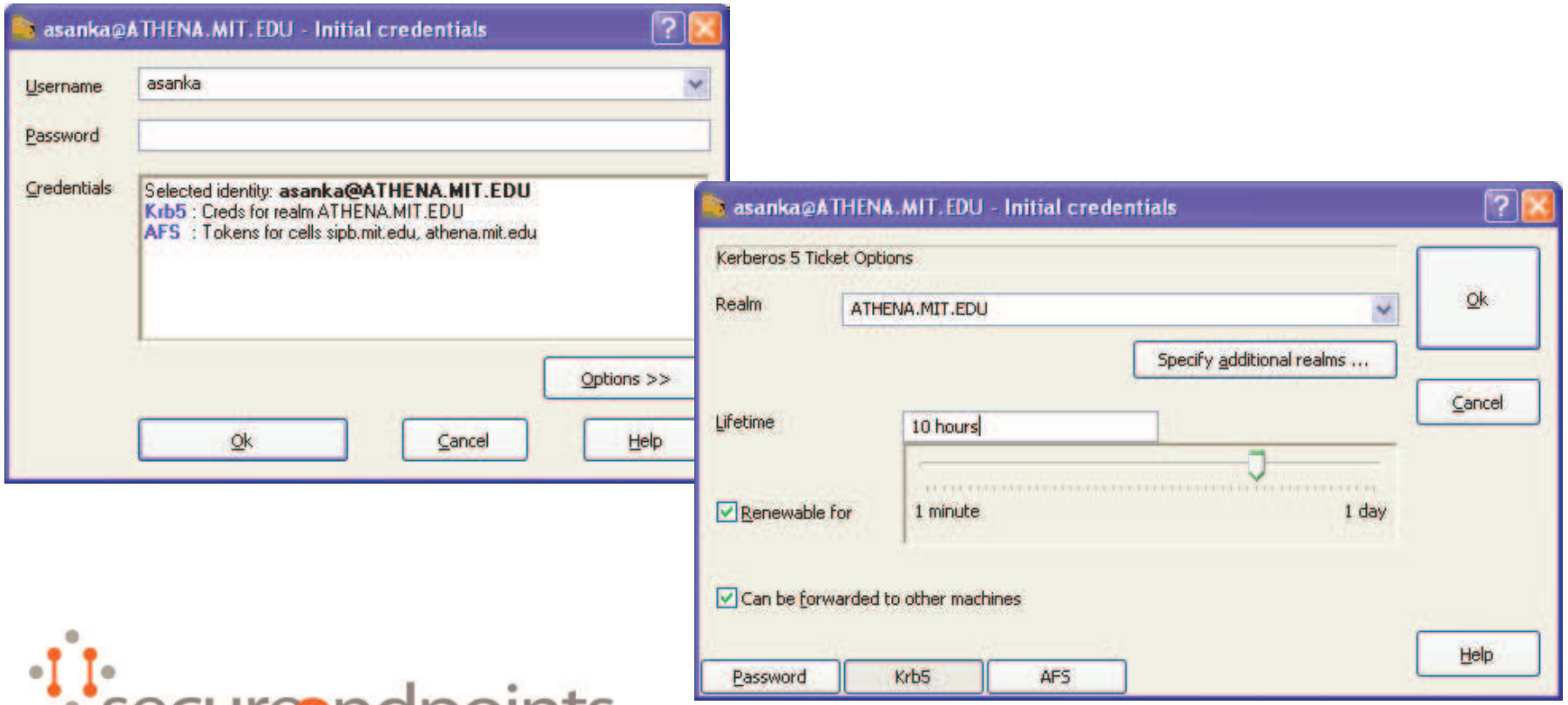
User Interface



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Plug-ins

- Message based communication
- Several “weak” types
  - Credentials Provider / Identity Provider / Configuration Provider / etc…
- Plug-ins for plug-ins
- Run in isolated threads

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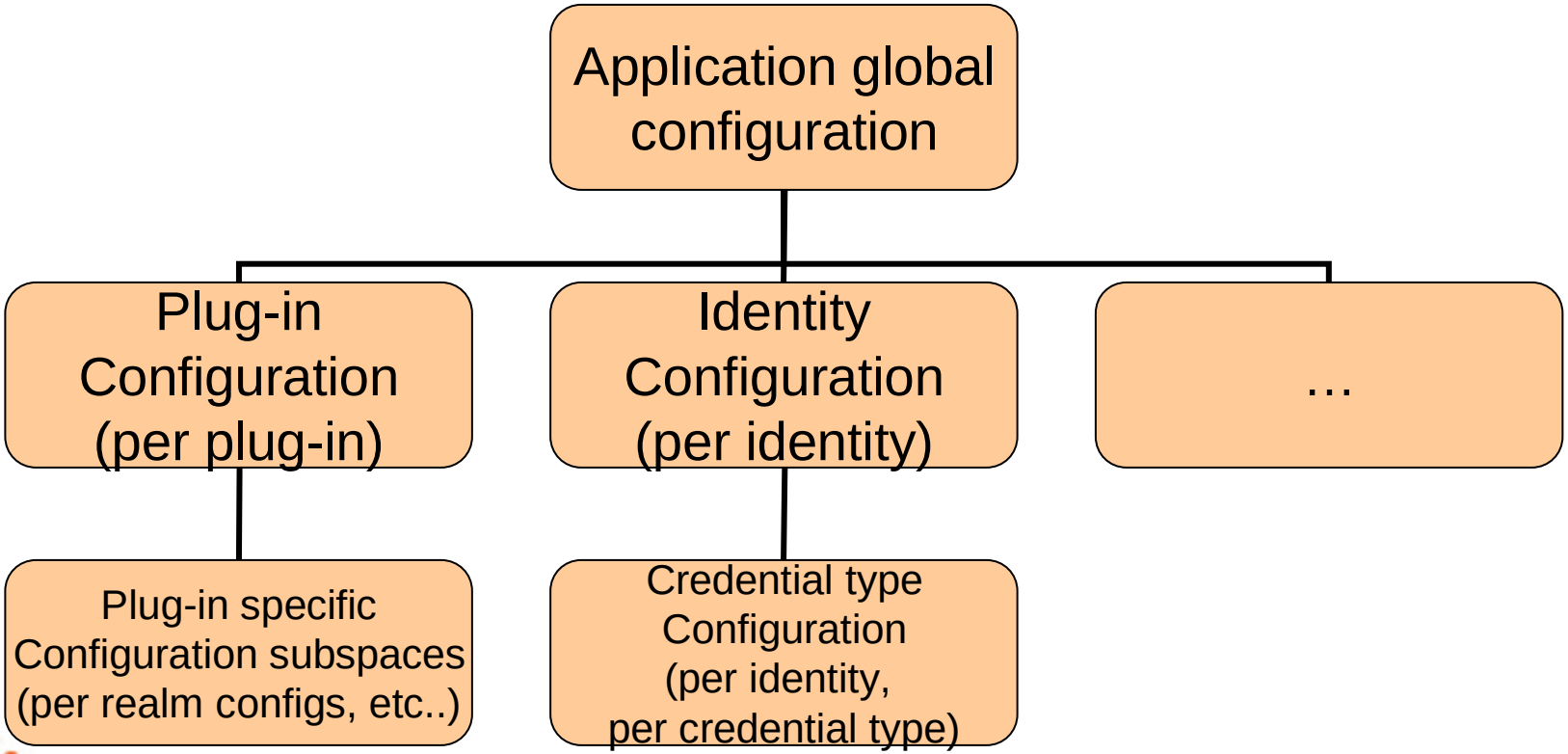
Configuration Provider



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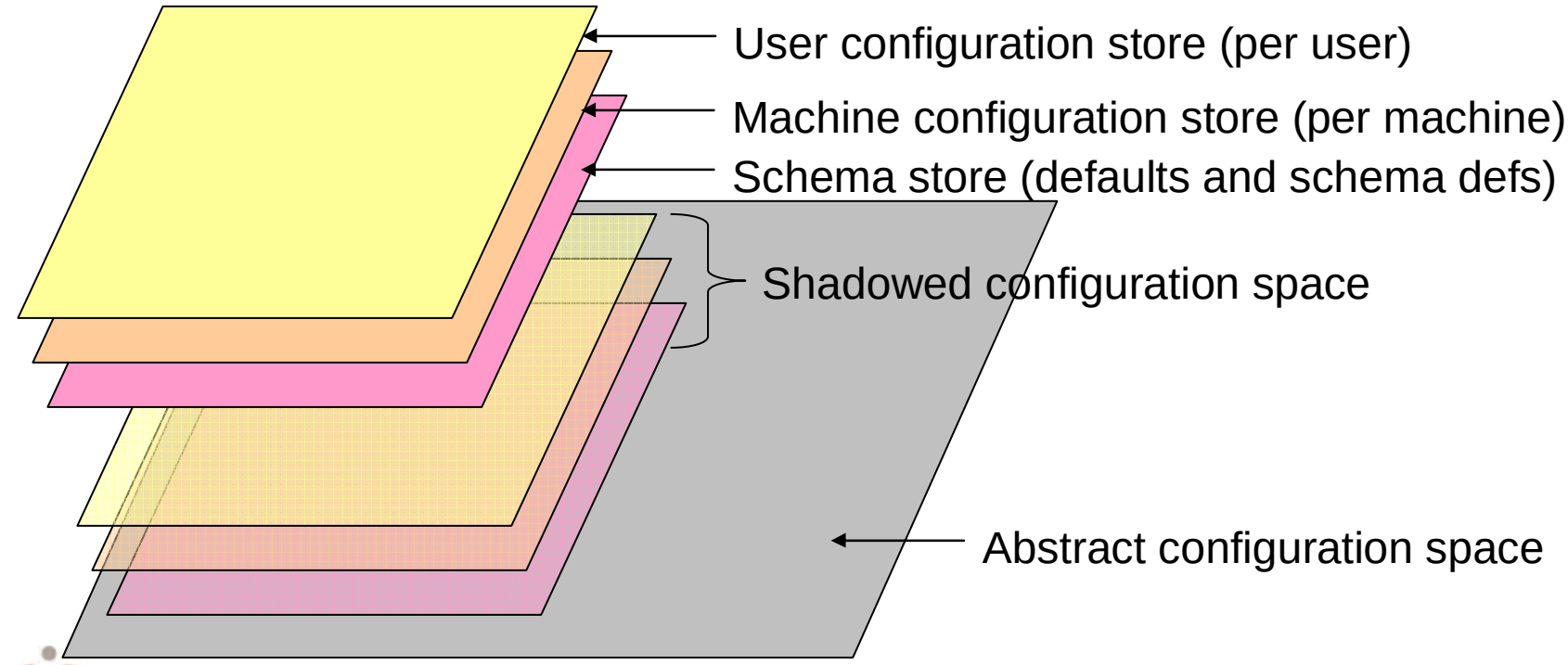
Configuration Provider



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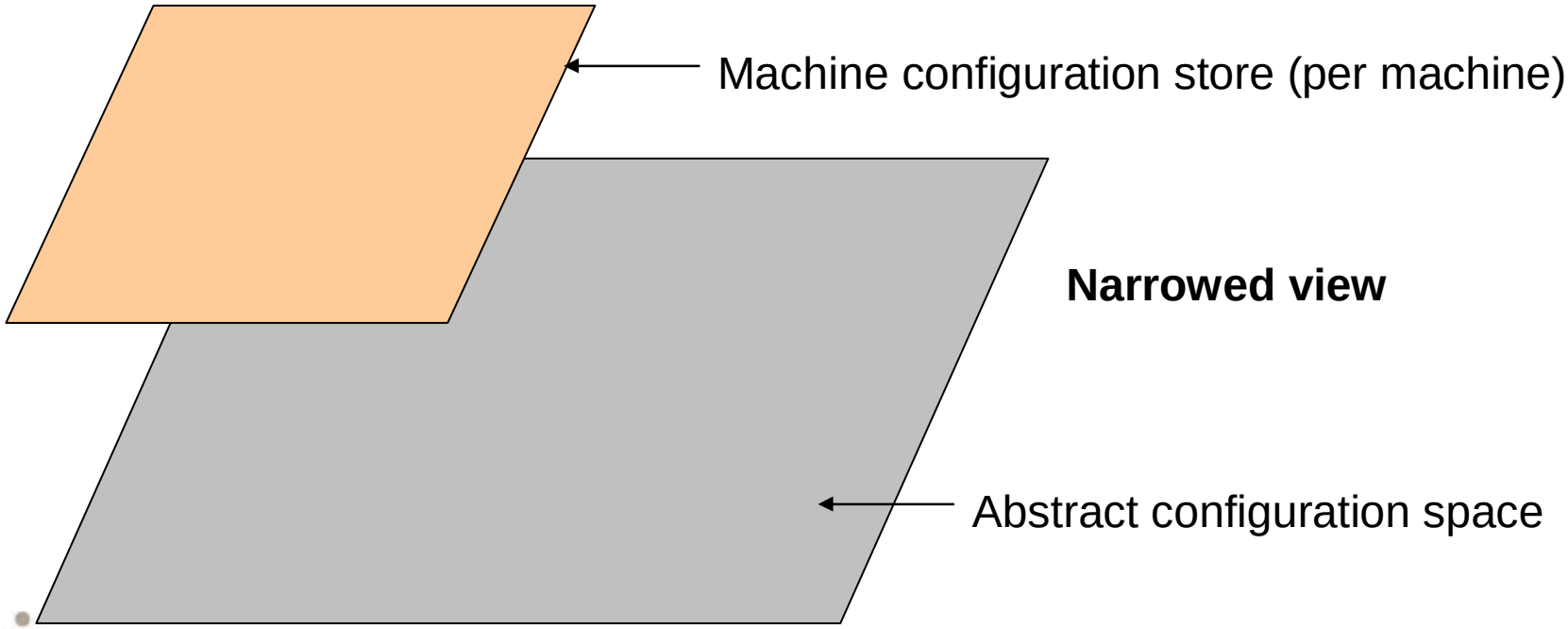
Configuration Provider



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Configuration Provider

- Transparent handling of user specific and per machine settings
  - Easy for plug-in developers to manage configuration
  - Easy to push global settings in a managed environment
- Hierarchical organization with shadow configuration spaces
  - Granular settings (per identity etc…) with useful failover
  - Local settings failover to global settings
- Abstract / extensible
  - By default, each configuration space maps to a registry key
  - “Configuration Provider” plug-ins can provide computed configuration parameters

Documentation

- Inline
  - Using Doxygen

Maintenance Plan

Component	Maintained in
Main application and core-components	MIT Kerberos source tree
Krb5 plug-in	Krb5 source tree
Krb4 plug-in	Krb4 source tree
AFS plug-in	OpenAFS source tree

Summary

- Better for users
- Better for developers
- Better for administrators

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Availability

- Platforms
  - Windows 2000/XP/2003
- Distributed with
  - MIT Kerberos for Windows 3.0
  - OpenAFS for Windows 2.0

Questions?

Thank you

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