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A ColdFusion, Flex & AIR Conference

Working with Data in AIR

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www.cfunited.com

Adobe COMMUNITY EXPERT

Brief Introduction

- Software Engineer II, Universal Mind
- Adobe Community Expert
- Lead Author, *Adobe AIR 1.5 Cookbook*
- Contributor, Adobe News Flash Newsletter
- Contributor, InsideRIA
- Author, *AIR for Flash Developers* at Lynda.com

My Approach

- Explaining the API usage and implementation for a **beginner**
- Showing **intermediate** level examples
- Providing **advanced** tips for real applications

Agenda

Encrypted Local Store

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Local File System

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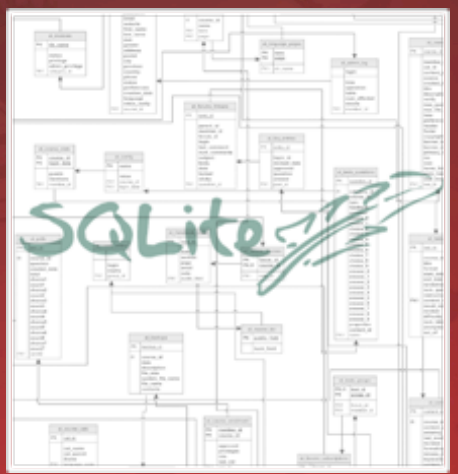

Embedded Database

ADOBE AIR API:

Encrypted Local Store

Definition

" The **encrypted local store** provides secure storage for binary data which can be retrieved via a string key. It utilizes the native operating system encryption store to secure data with 128-bit encryption. Data in the Encrypted Local Store is accessible only from your AIR application. "

OS-Specific Integration

Windows

DPAPI

Mac

Keychain

Linux

Keyring

KWallet

API Introduction

flash.data.EncryptedLocalStore - The class that handles all interaction with the Encrypted Local Store has four static methods for working with its data.

- **getItem**(name:String):ByteArray
- **removeItem**(name:String):void
- **reset**():void
- **setItem**(name:String, data:ByteArray, stronglyBound:Boolean = false):void

Store

Retrieve

Encrypted Local Store Performance Analysis

Encrypted Local Store Performance Analysis

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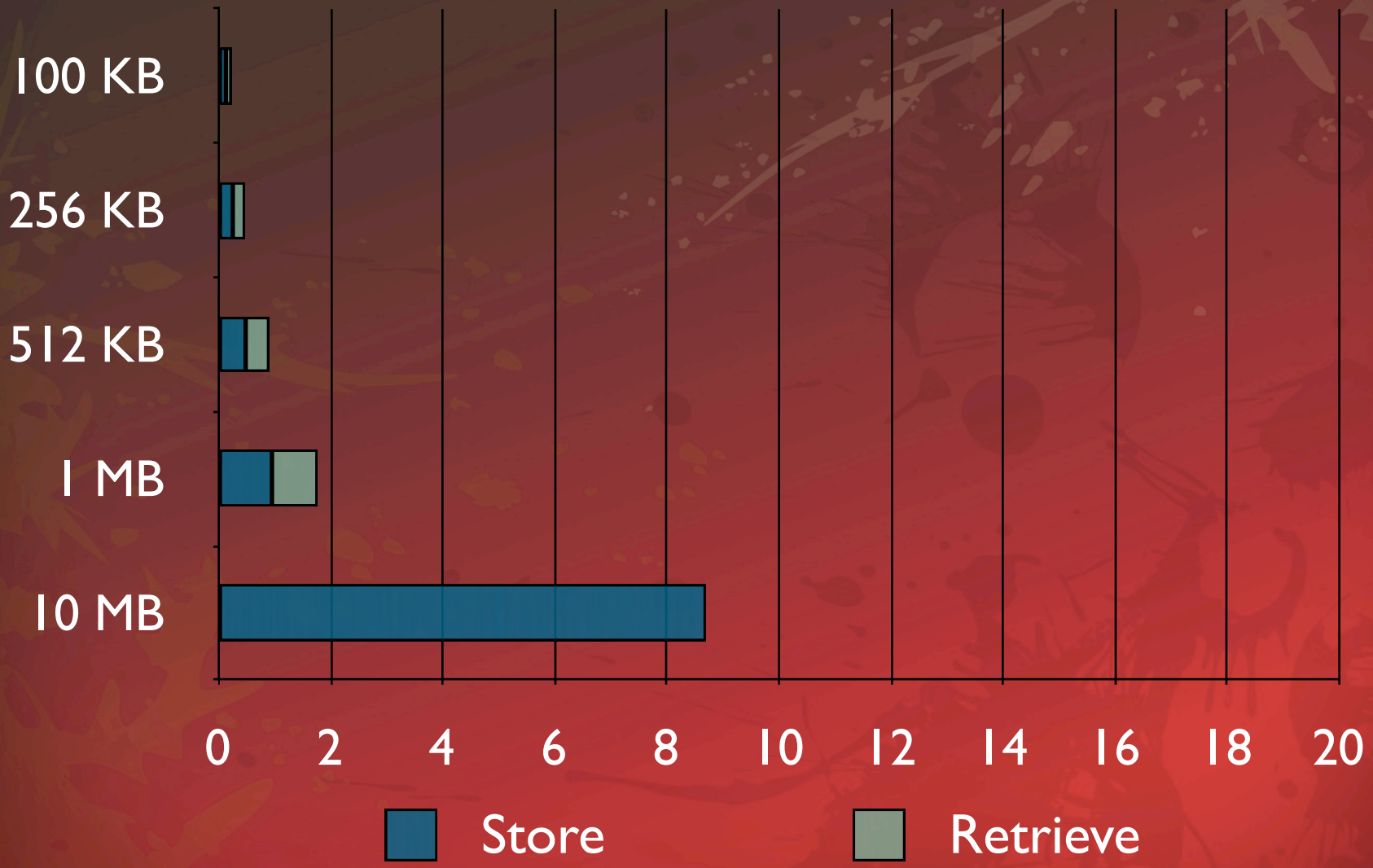
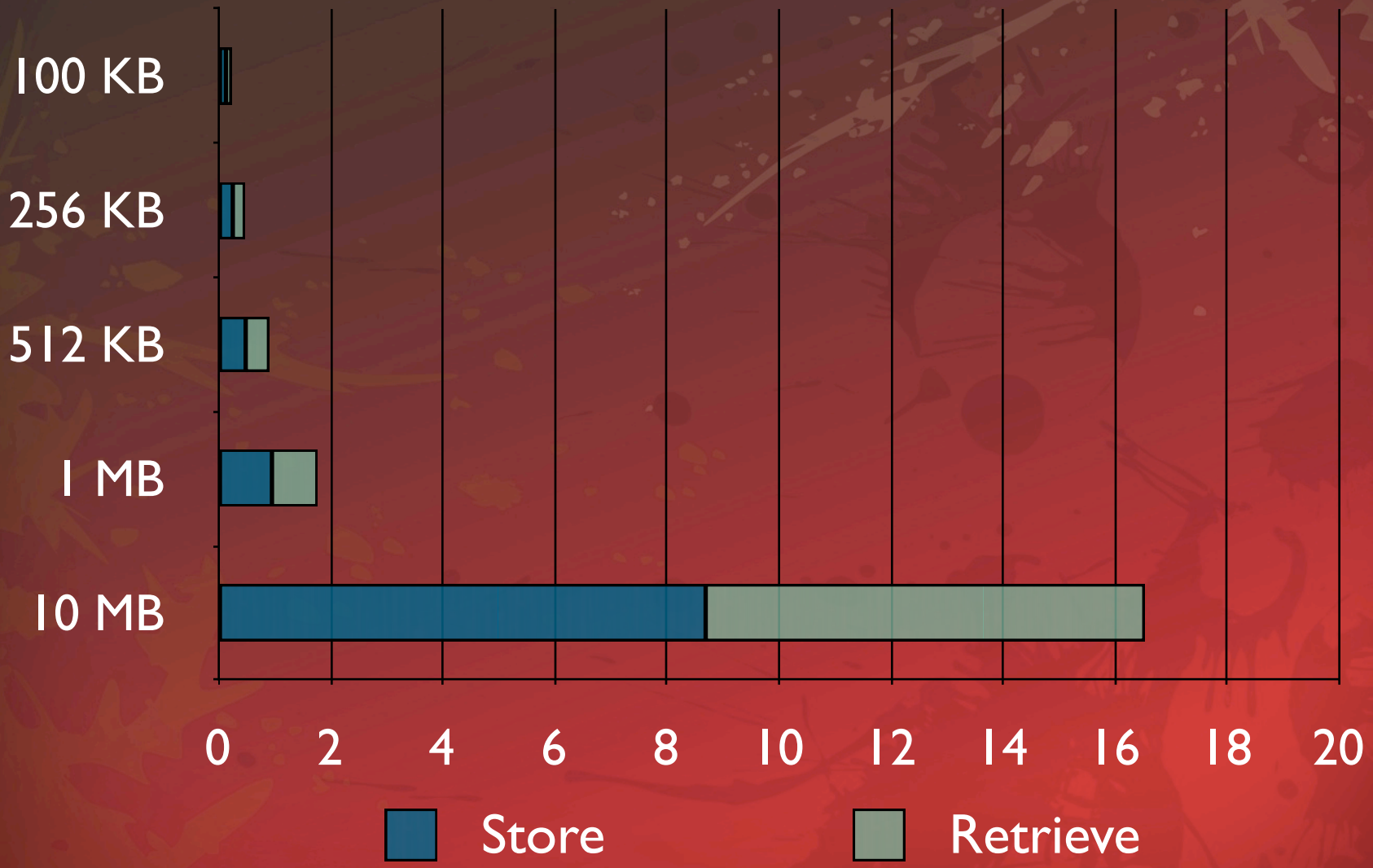


Encrypted Local Store Performance Analysis



Code Sample

ADOBE AIR API:

Local File System

API Dictionary

- **flash.filesystem.File** - The class that contains a reference to a file system object (either file or directory).
- **flash.filesystem.FileStream** - This class can read binary data into and out of a file on the filesystem.
- **flash.filesystem.FileMode** - A class of constants that defines the mode in which a file is opened.

Object Serialization

With the local file system, you are not limited to just storing binary data from files, you can also store complex object graphs by having your model **implement IExternalizable**.

Serializing Objects - DavidTucker.net

Local File System Tips

- Vista will not allow you to copy, update, or delete any files that exist in the application directory. Because of this, always utilize the application storage directory for storing application data.
- Utilize the constants defined in flash.filesystem.File to help preserve cross-platform compatibility. Utilize the **url** property when possible.

Code Sample

ADOBE AIR API:

Embedded Database

SQLite Tools

It can be very helpful to have an SQLite administration tool:

- SQLite Admin AIR Application
- SQLite Manager Firefox Extension
- SQLite Database Browser

API Dictionary

- **flash.data.SQLConnection** - The actual connection to a database stored either as a file or in memory
- **flash.data.SQLStatement** - The class that contains an SQL statement that will be executed on the database
- **flash.data.SQLResult** - The class that holds the result set for a given query.

Code Sample

Encrypted Databases

AIR 1.5 added the ability to have **encrypted databases**:

- Utilizes 128-bit AES-CCM encryption
- Requires that databases are encrypted from creation
- Can be used to encapsulate binary data in an encrypted format

Generating Keys

You will need to use an encryption library that will allow you to generate the required binary key for the encrypted database. Two common options are **as3corelib** and **as3crypto**.

Code Sample

ORM Solutions

There are two promising solutions for simplifying interaction with the SQLite database in AIR.

- **Flex ORM** - Provides a metadata-based ORM layer that will be familiar to Hibernate users. Handles all interaction with the database.
- **ColdFusion 9 ORM** - Allows for online/offline synchronization of application data through a CF9 server with CF9's Hibernate support.

Code Sample

Learn More About ORM and AIR

An entire session focusing on utilizing real ORM in AIR Applications - including using ColdFusion 9.

Resources

- Series on SQLite

  http://www.insideria.com/2008/03/air-api-introduction-to-the-sq.html
  http://www.insideria.com/2008/03/air-api-querying-a-local-datab.html
  http://www.insideria.com/2008/04/air-api-retrieving-results-fro.html
  http://www.insideria.com/2008/05/air-api-creating-tables-and-in.html

- Series on Using the Clipboard in AIR

  http://www.insideria.com/2008/02/unlocking-the-air-api-part-1.html
  http://www.insideria.com/2008/02/air-api-advanced-clipboard-tec.html
  http://www.insideria.com/2008/02/air-api-using-the-clipboard.html

- File System in AIR *by Rich Tretola*

  http://www.insideria.com/2008/03/beginning-air-accessing-the-fi.html
  http://www.insideria.com/2008/03/beginning-air-accessing-the-fi-1.html
  http://www.insideria.com/2008/04/beginning-air-accessing-the-fi-2.html

Questions?