DURACLOUD™

A Technical Overview

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Agenda

- Introduction
- Storage
- Services
- Reporting
- UI
- Security
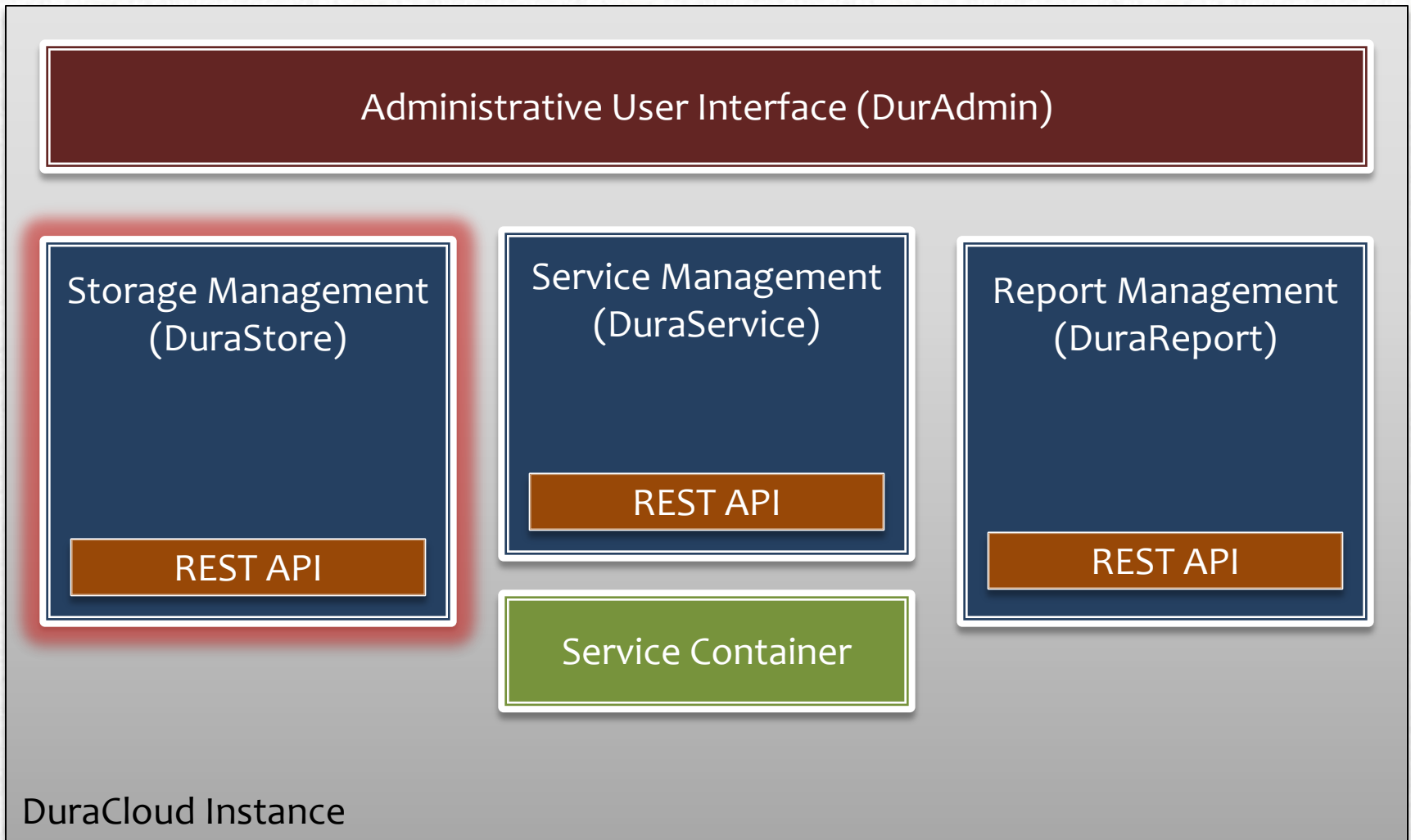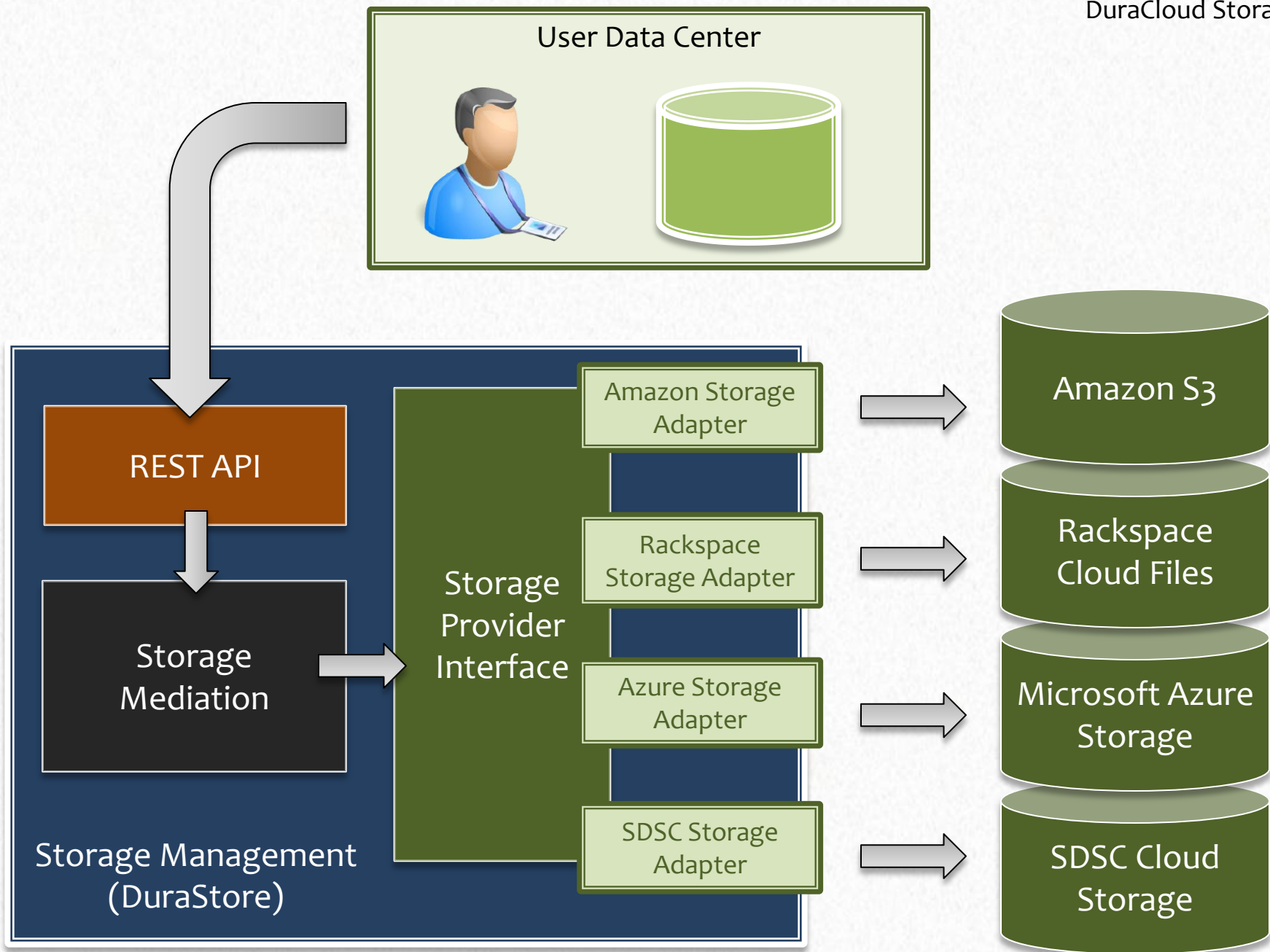- Tools
- Roadmap

Introduction

- DuraCloud is:
  - Hosted service
    - Runs on cloud-based compute systems
    - Connects to cloud-based storage systems
    - Provides a service platform
  - Open source software suite

- Webinar Focus:
  - Components of software platform
  - Interacting with hosted DuraCloud
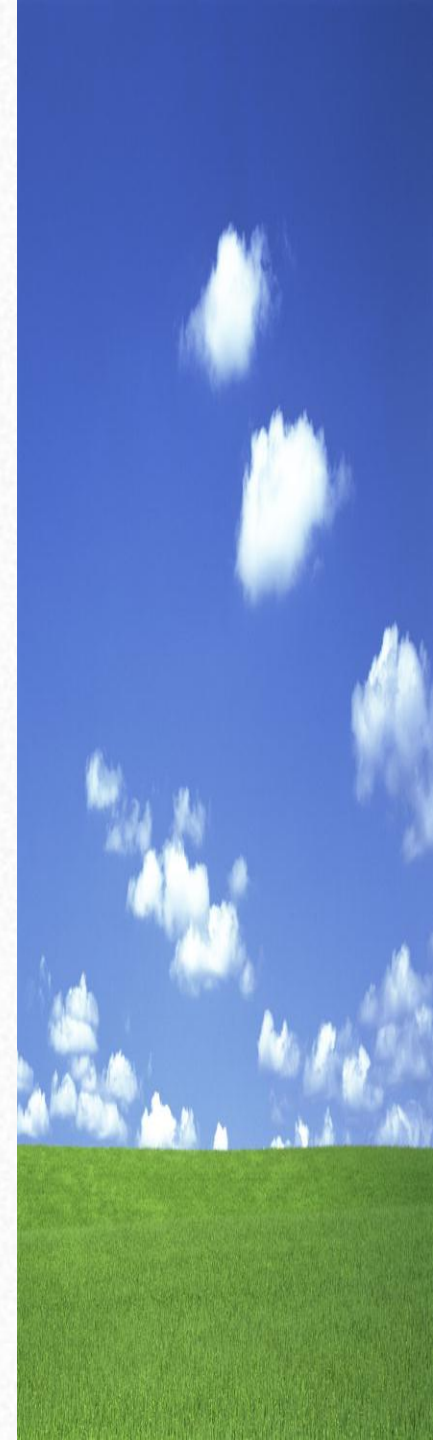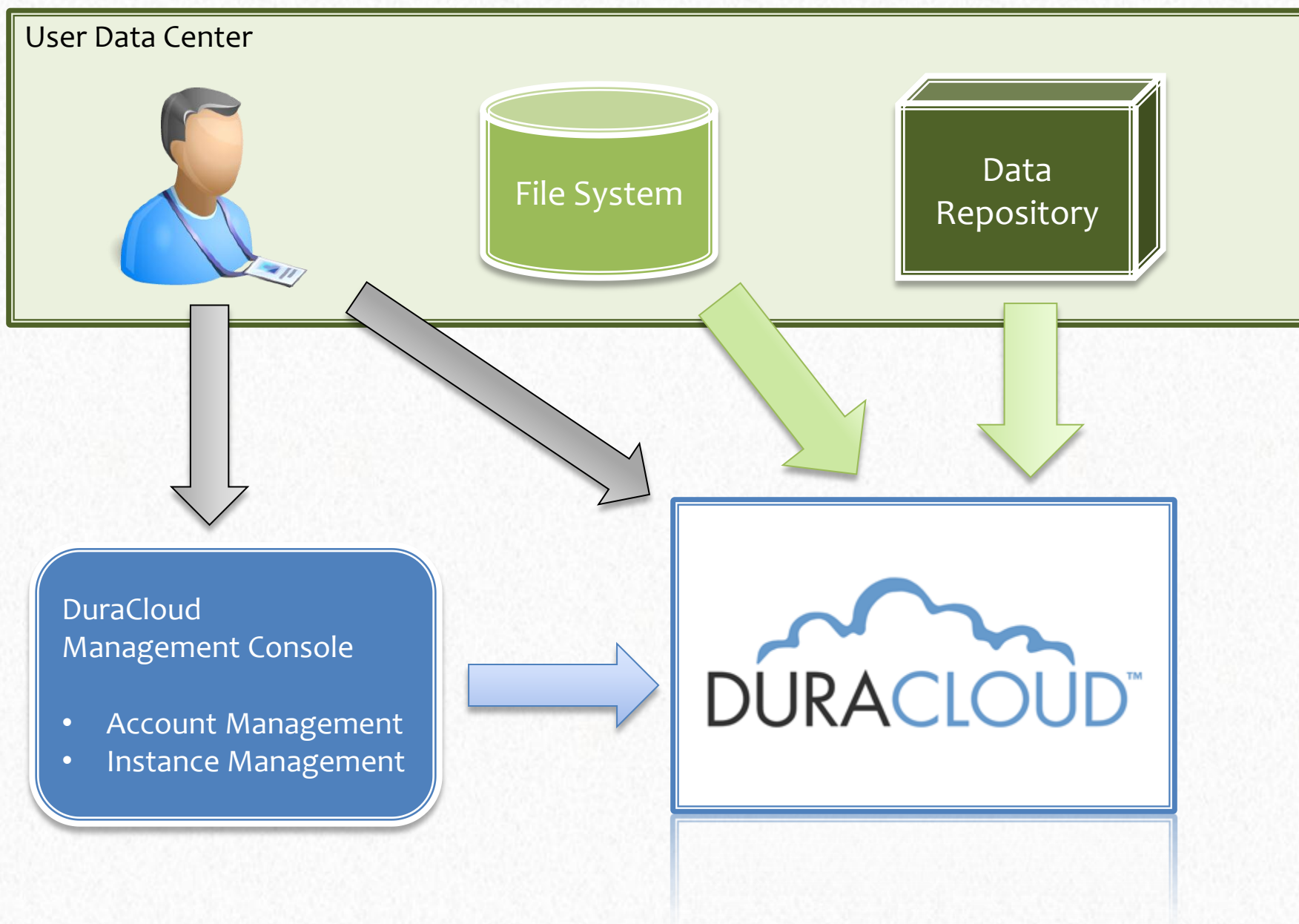
DuraCloud Storage

Storage REST Interface

Space Actions

- Add Space
- Get/Set Space Properties
- Get Spaces List
- Get Space Content List
- Get/Set Space Access
- Delete Space

Content Actions

- Add Content
- Get/Set Content Properties
- Get Content
- Copy Content
- Delete Content

Storage Provider Interface

Other Actions
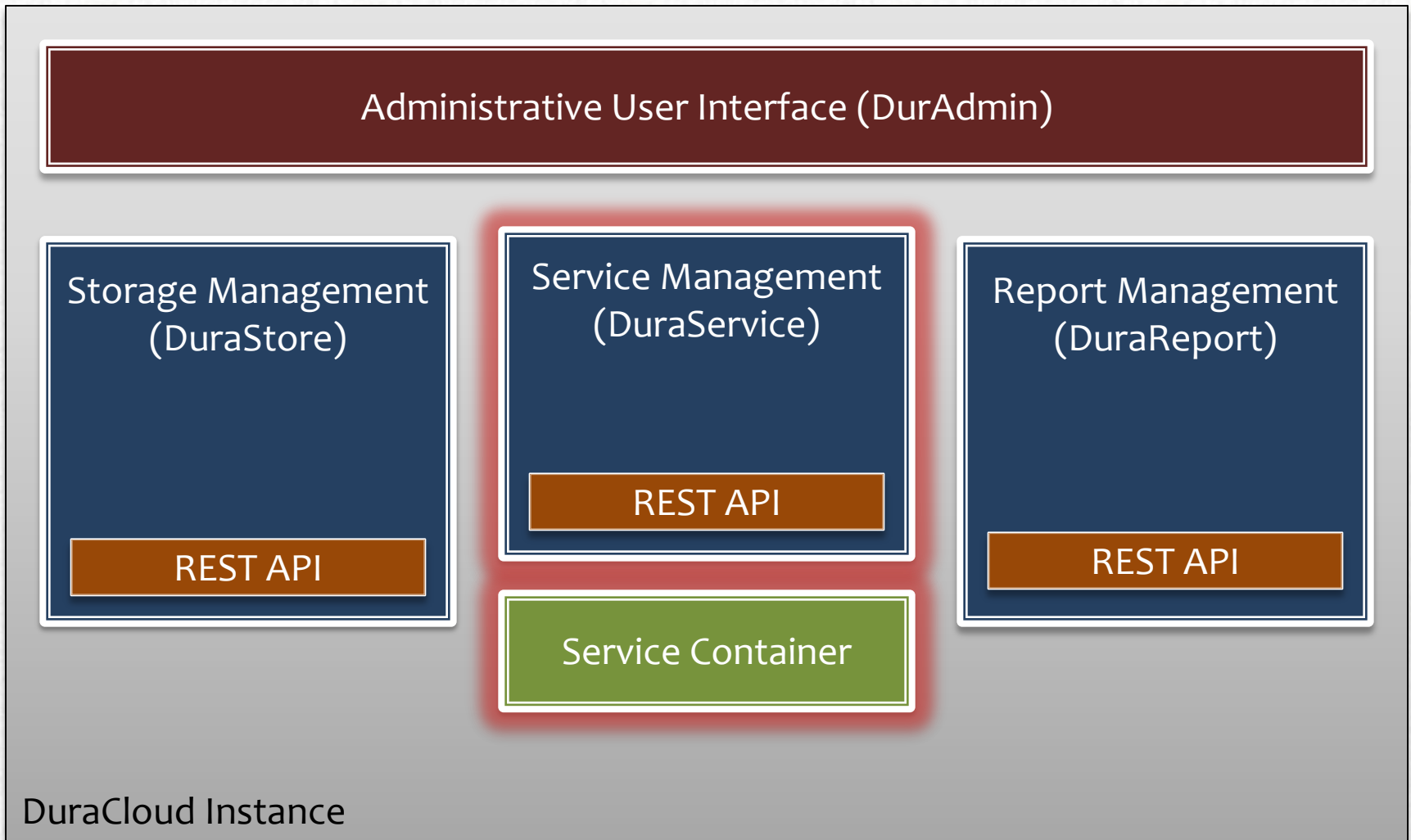
- Get Stores
- Get Tasks List
- Perform Task

Storage Adapters

Transform calls from DuraCloud interface into calls understood by a specific storage provider

- Determine how DuraCloud "spaces" translate into top level provider containers (buckets)

- Define how space and content properties are stored and retrieved

- Manage eventual consistency concerns

DuraCloud Services

Administrative User Interface (DurAdmin)

Storage Management
(DuraStore)

REST API

Service Management
(DuraService)

REST API

Service Container

Report Management
(DuraReport)

REST API

DuraCloud Instance

DuraCloud Services

Media
Streamer

Duplicate
on
Demand

Duplicate
on
Change

Bit
Integrity
Checker
Tools

Bit
Integrity
Checker

Bit
Integrity
Checker
Bulk

Image
Transformer
Bulk

Image
Transformer

Image
Server

… so how are they deployed?

Services Available?

①

Service Management
(DuraService)

REST API

②

Service Manager

Service List

④

Services In Plan?

Service List

③

Service Registry

Service Bundle

Service Config

Service Plan

Part 1:
Ask which services are available

Deploy
Service

1 Service
Config

Service Management
(DuraService)

REST API

Service Manager

2

Retrieve
Service
Bundle

Part 2:
Deploy Service

Deploy Service **4**

Service
Bundle | Service
Config

Service
Bundle

3 Service
Bundle

Service Container

Service Registry

**Deployed
Service**

Service Configurator

Deployed
Service Config

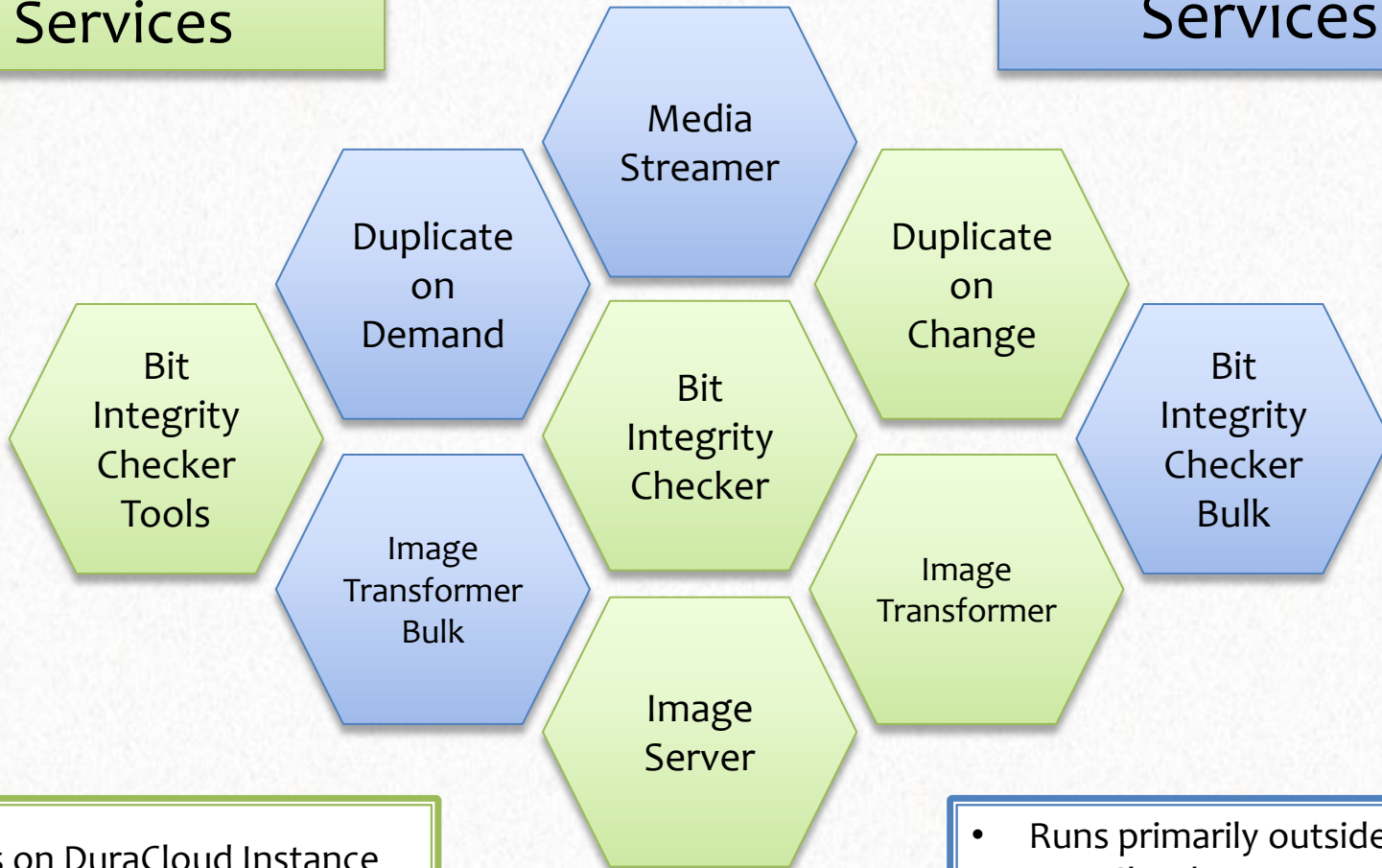Service Bundle

Service Config

Service Plan

Service REST Interface

- Get Services
- Deploy Service
- Get (Deployed) Service
- Get Deployed Service Properties
- Update Service Configuration
- UnDeploy Service

DuraCloud Instance Services

DuraCloud Distributed Services

Media Streamer

Duplicate on Demand

Duplicate on Change

Bit Integrity Checker Tools

Bit Integrity Checker

Bit Integrity Checker Bulk

Image Transformer Bulk

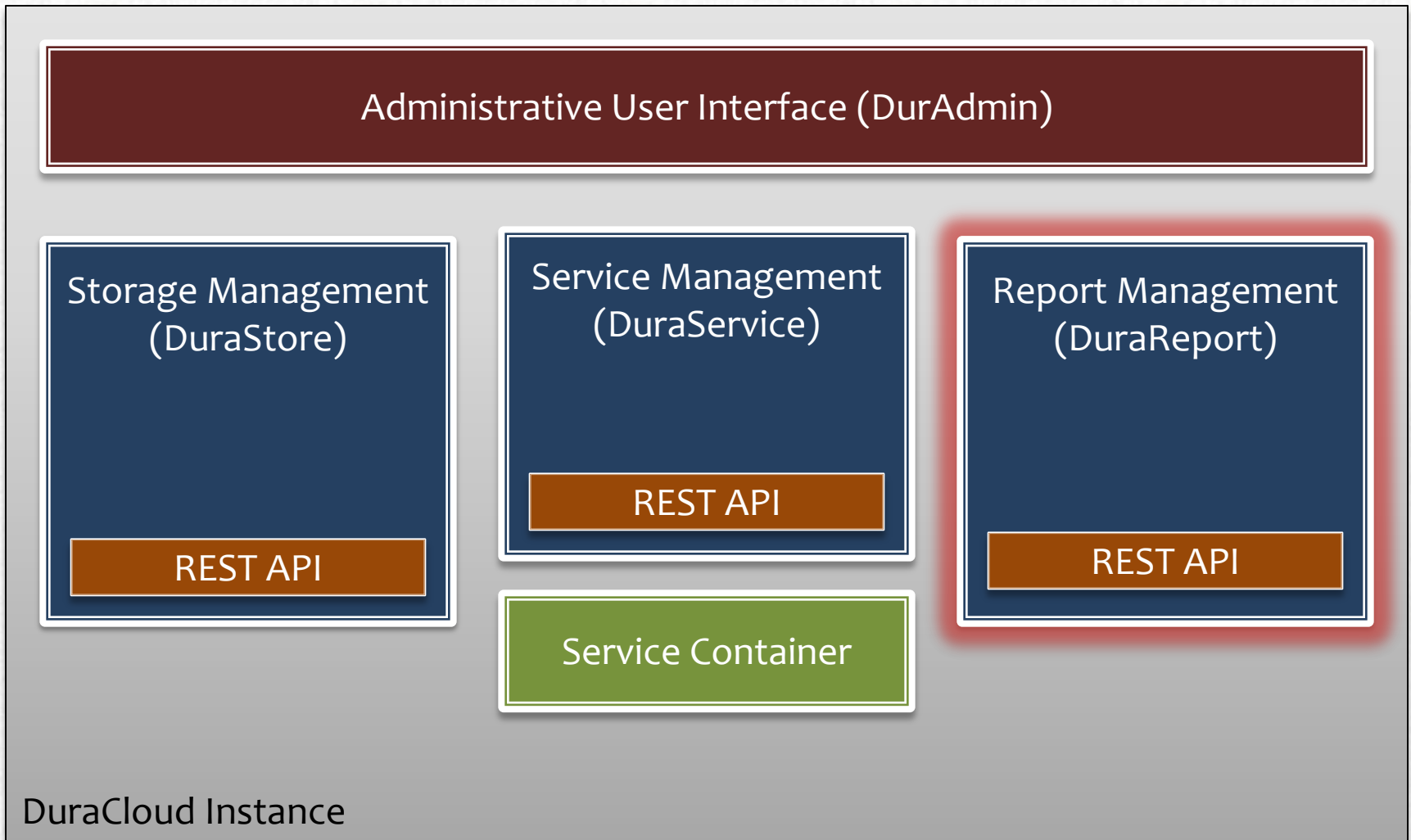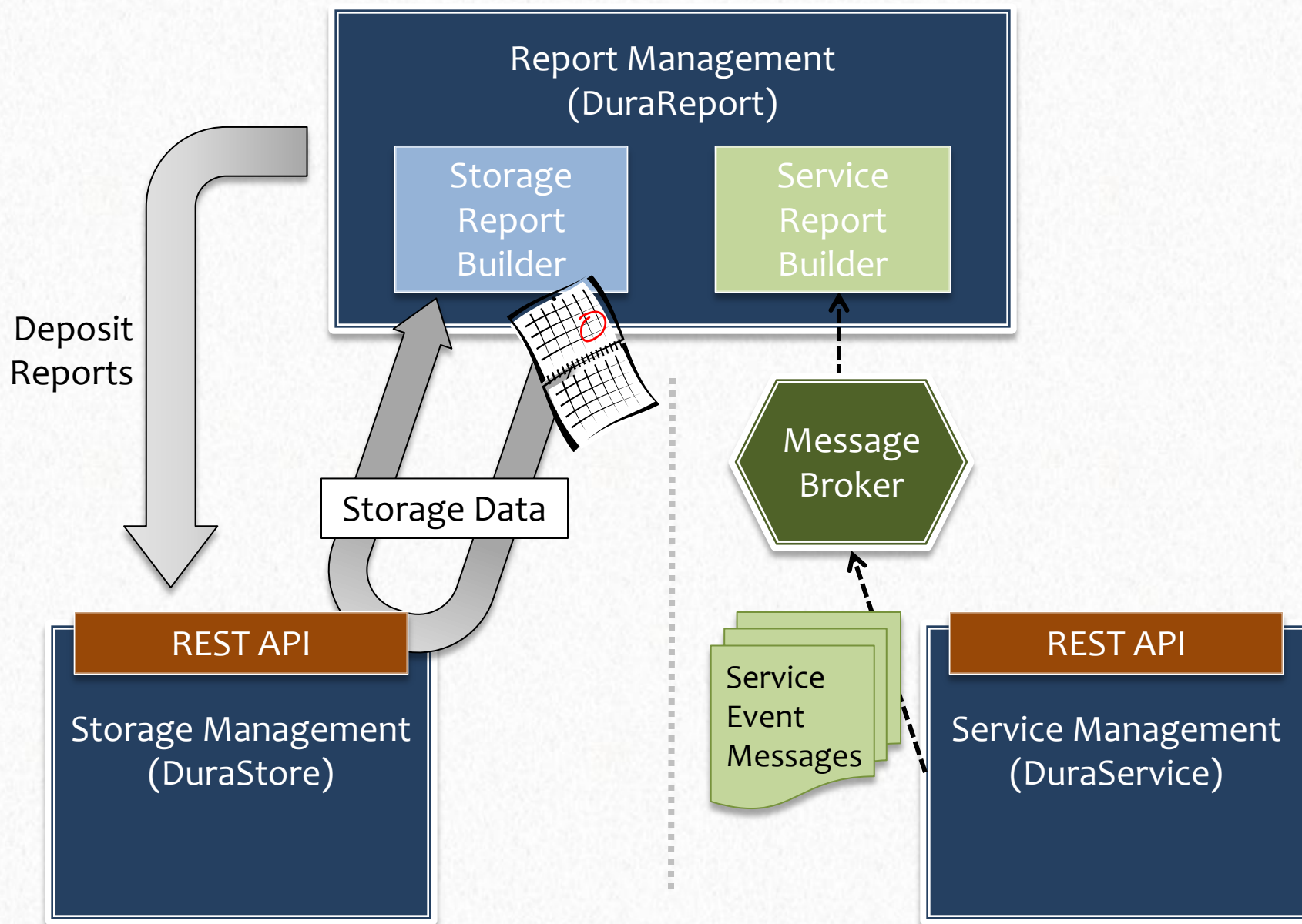Image Transformer

Image Server

- Runs on DuraCloud Instance
- Connects to DuraStore
- Can be direct Java service
- Can be deployed web app

- Runs primarily outside of DuraCloud Instance
- Connects to DuraStore
- Makes use of cloud network or computation features
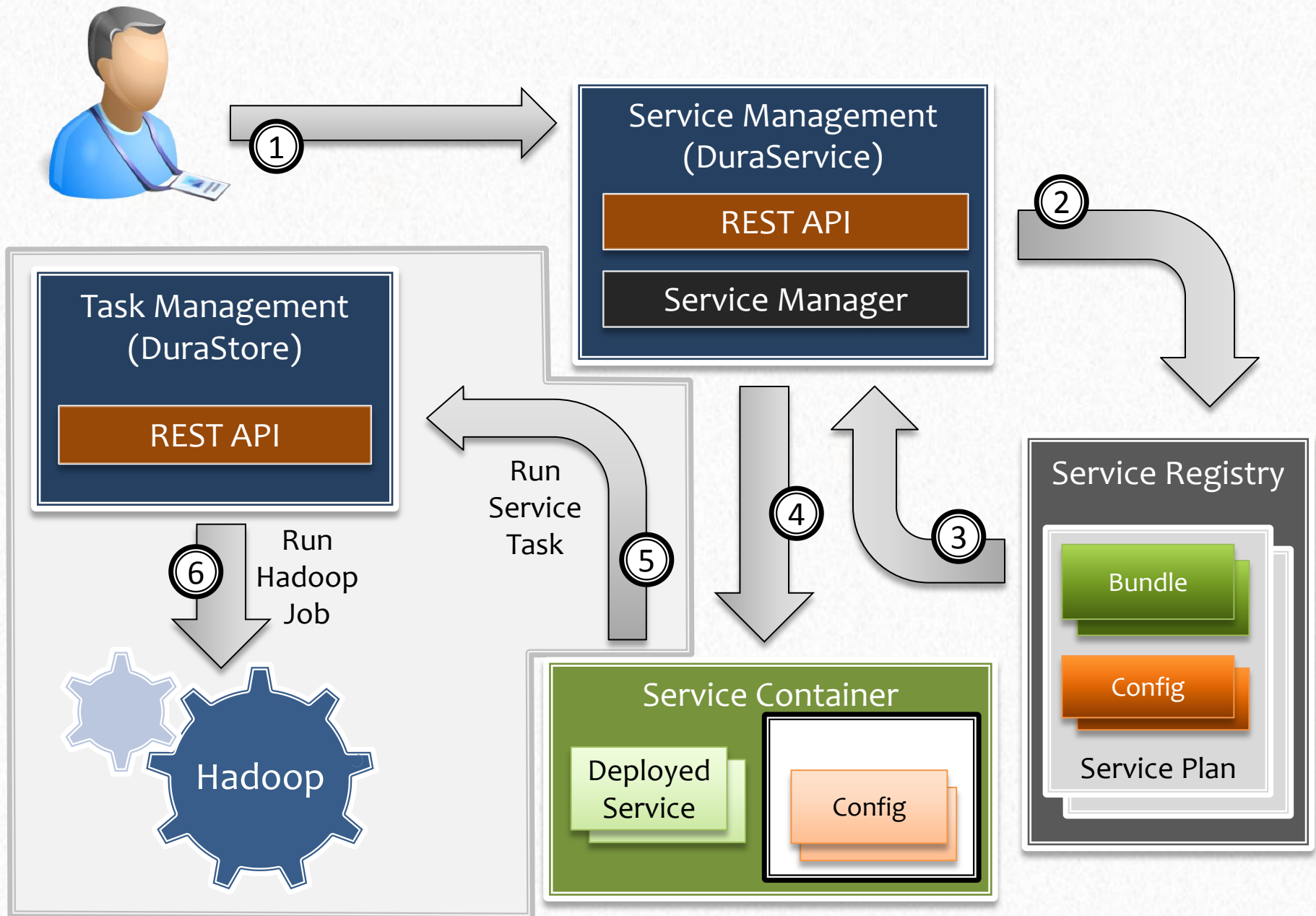
DuraCloud Reporting
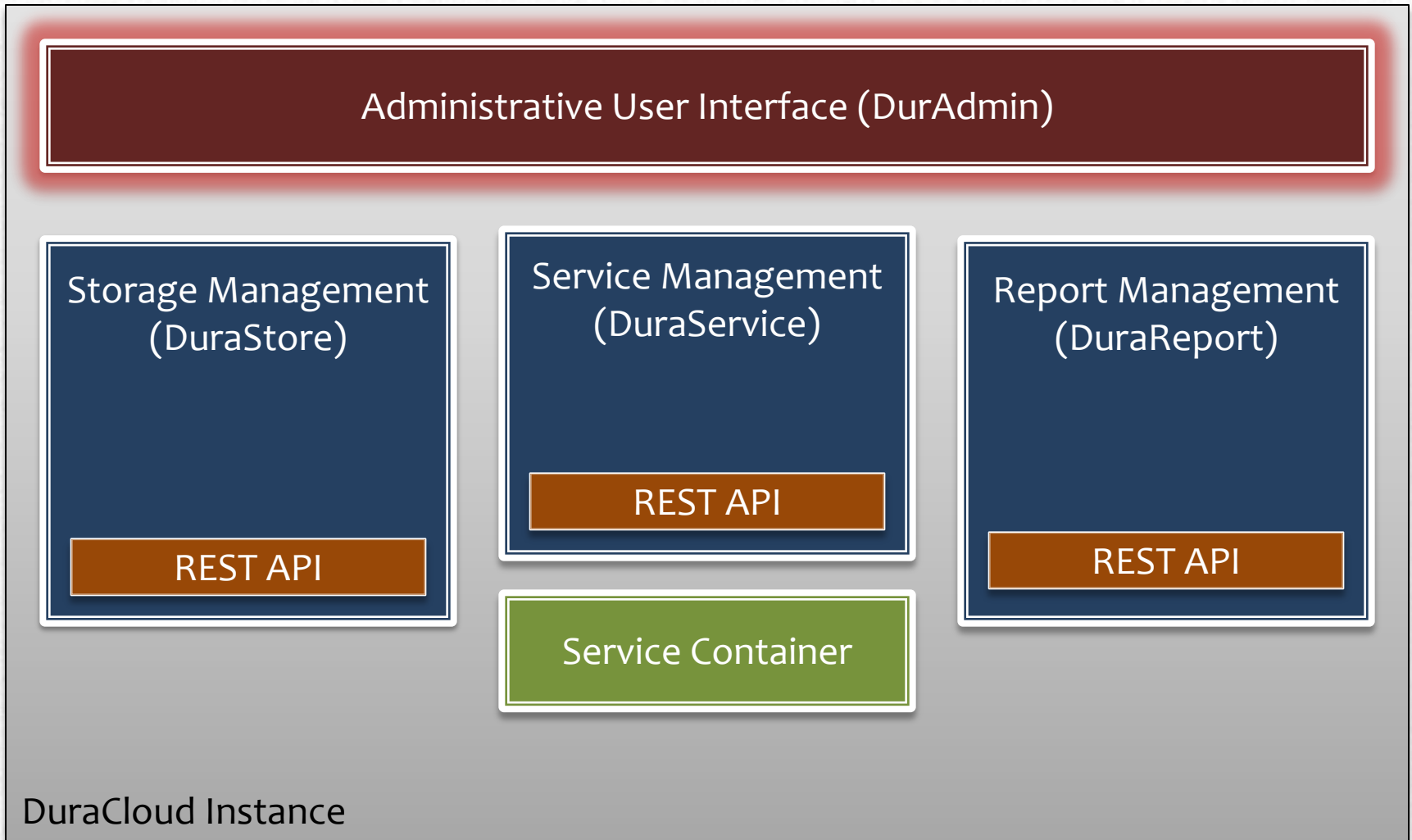
Report REST Interface

Storage Report

- Start Storage Report
- Get Latest Storage Report
- Get Storage Report List
- Get Storage Report
- Get Storage Report Info
- Cancel Storage Report
- Schedule Storage Report
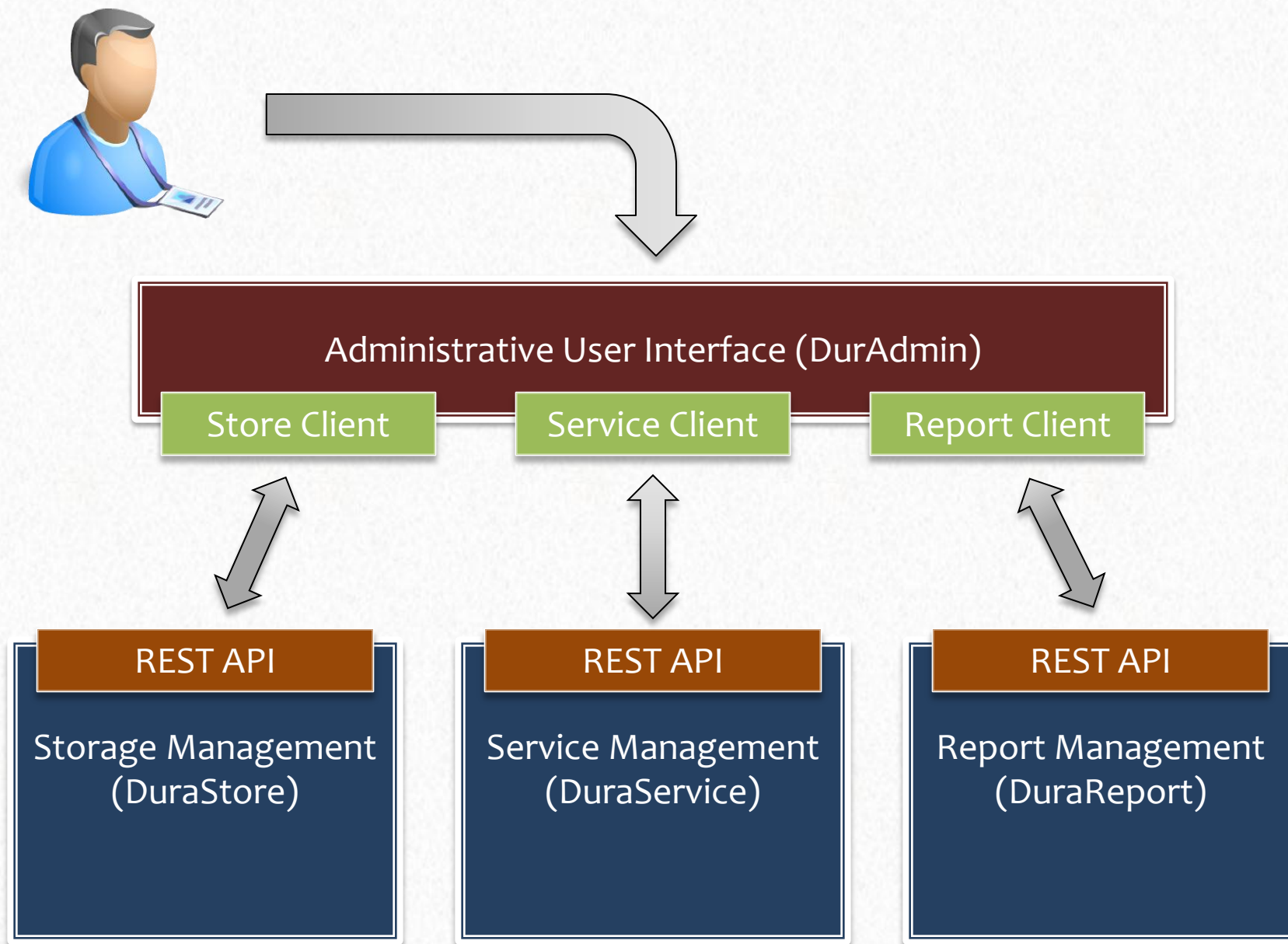- Cancel Storage Report Schedule

Service Report

- Get Deployed Services Report
- Get Latest Completed Services Report
- Get Completed Services Report List
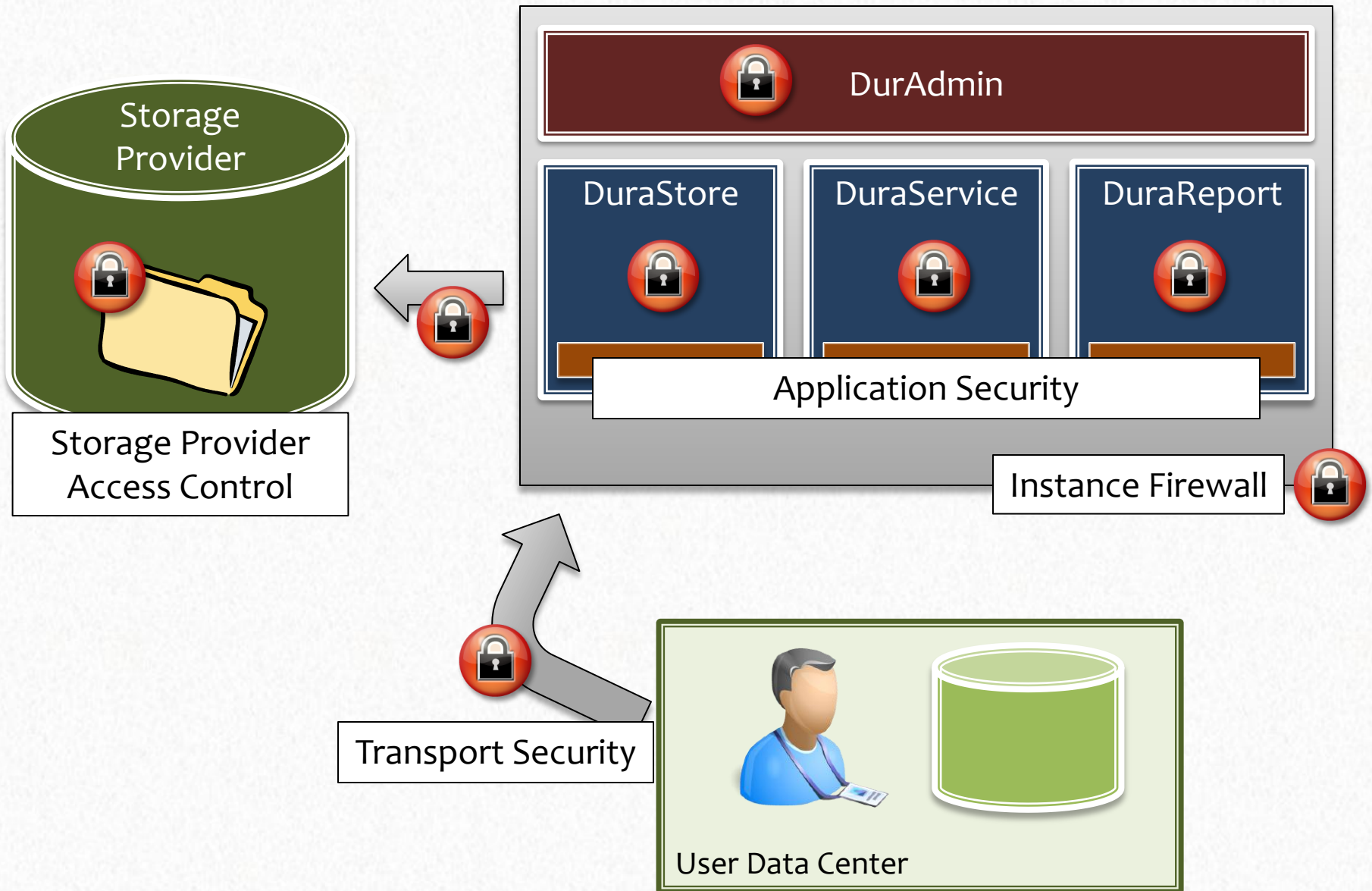- Get Services Report

DuraCloud UI

Administrative User Interface (DurAdmin)

Storage Management (DuraStore)

REST API

Service Management (DuraService)

REST API

Service Container

Report Management (DuraReport)

REST API

DuraCloud Instance

DuraCloud Security

Storage Provider

DurAdmin

DuraStore

DuraService

DuraReport

Application Security

Storage Provider Access Control

Instance Firewall

Transport Security

User Data Center
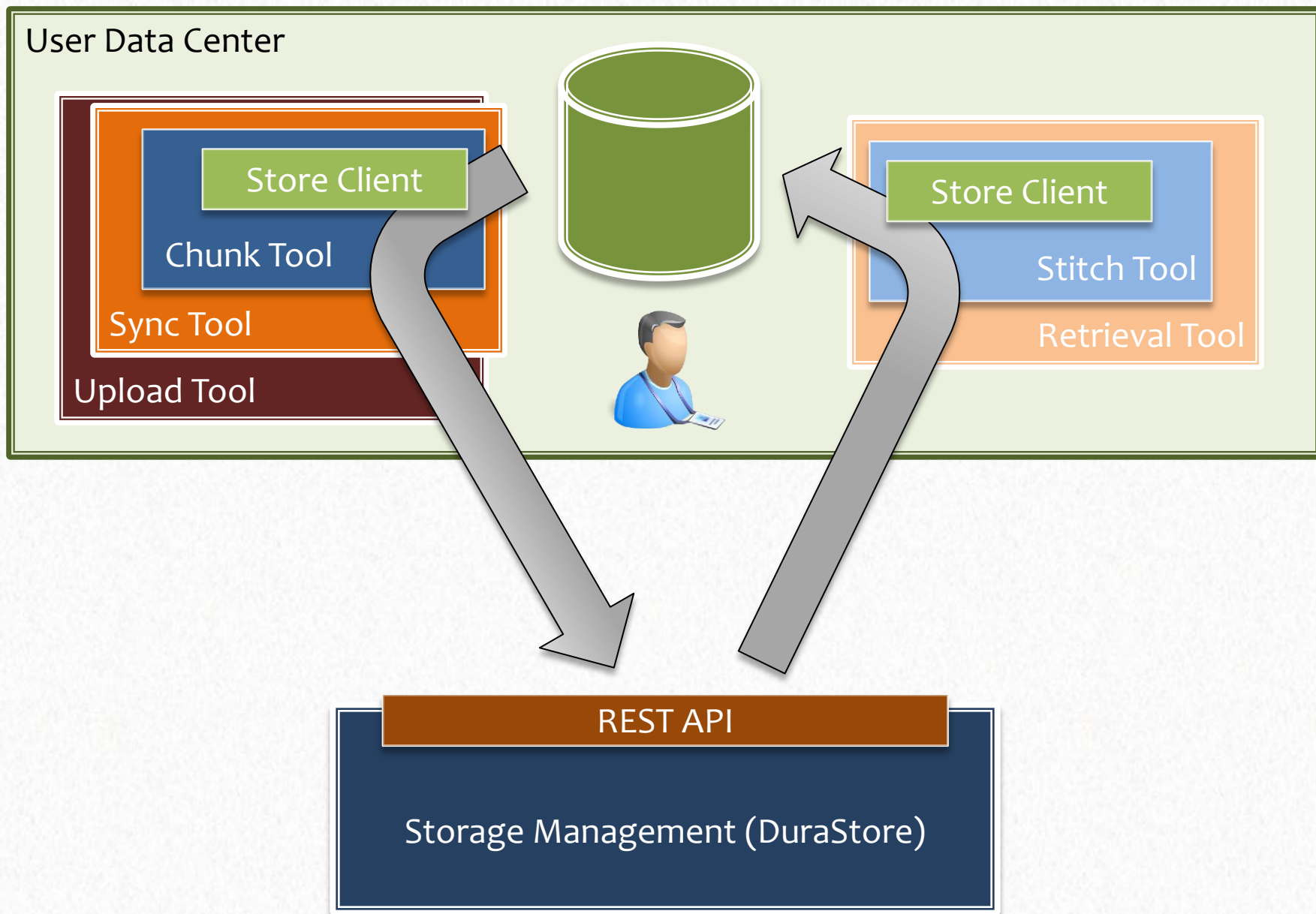
DuraCloud Tools

Transfer to DuraCloud

- Upload Tool
  - GUI to select files and folders
  - Visual transfer progress
- Sync Tool
  - Monitors for changes
  - Run one time or continually
- Chunk Tool
  - Transfer large files
  - Acts on a single file

Transfer from DuraCloud

- Retrieval Tool
  - Retrieve files from one, selected, or all spaces
- Stitch Tool
  - Retrieve large files
  - Acts on a single file

User Data Center

Store Client

Chunk Tool

Sync Tool

Upload Tool

Store Client

Stitch Tool

Retrieval Tool

REST API

Storage Management (DuraStore)

Near Term Road Map

New features

- Access control at the space level
- Improved format identification
- Automated bit integrity checking
- Email notification on service completion
- Multi-Account DuraCloud instances
- Content indexing and Search
  - Improved discovery
  - Improved content browsing
- Folder-based navigation
- Improved handling of very large files
- Multi-Item updates/deletes

Integrations

- SDSC storage provider (production version)
- Fedora-in-the-cloud prototype
- DSpace-in-the-cloud prototype

Long Term Road Map

New Features

- Video transcoding
- Document format transformation
- Improved image support services
- Media streaming access controls
- Metadata extraction services

Integrations

- Azure storage provider (production version)
- Eucalyptus Walrus storage provider
- Rackspace compute instances
- Managed Fedora-in-the-cloud
- Managed DSpace-in-the-cloud
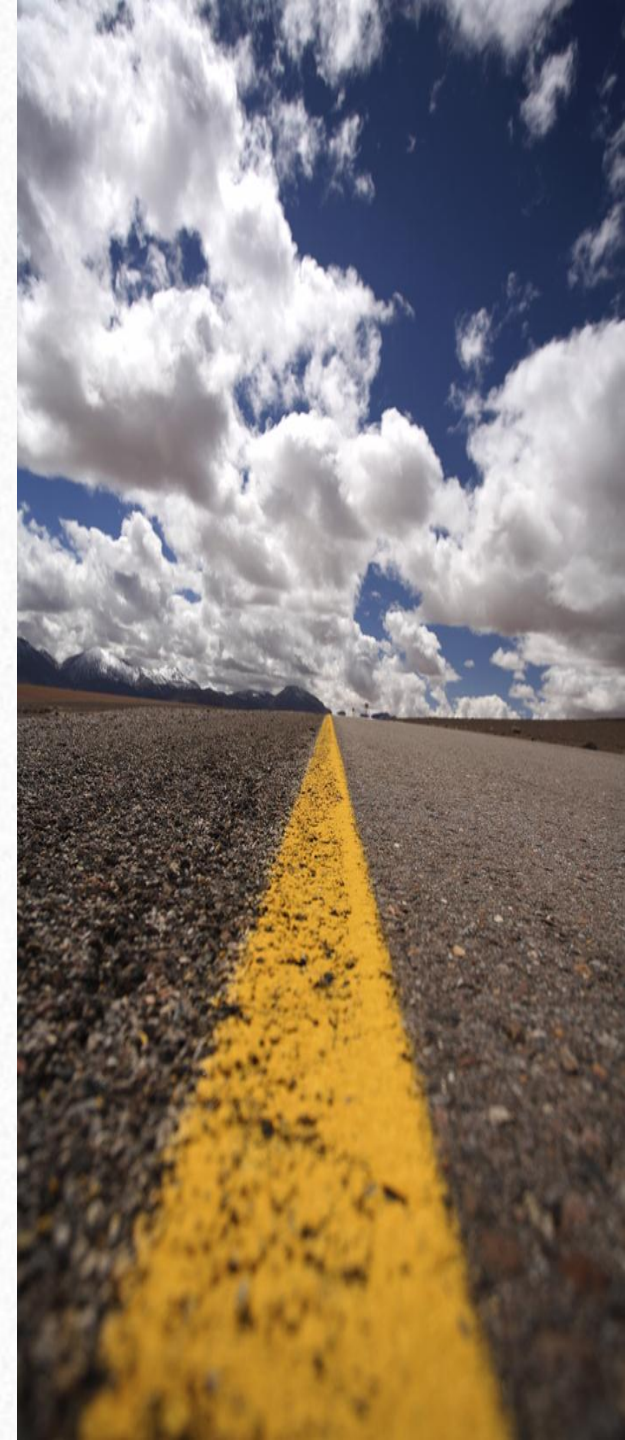
Questions?

Upcoming DuraCloud Webinars

DSpace and DuraCloud
November 30, 2011 at 1pm ET

Fedora and DuraCloud
January 11, 2012 at 1pm ET

Thank You!

Further Questions?

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