PRODUCTIVITY THROUGH METADATA VISIBILITY

Managing metadata security in SAS® software platforms

6th October 2016

Personal Data - Responsibility & Accountability

Data Protection Impact Assessments (DPIA)

"Data protection by design and by default"

"Data protection by design and by default"

Essential elements in EU data protection rules

Keep personal data secure

A few questions…

- What is the impact/cost to your organization of someone getting access to data/reports they shouldn't?

- When was your last SAS platform security project?

- When was it last tested? How extensive? How long did it take?

- Have there been any changes since it was last tested?
  - Deliberate, accidental, expected, unexpected?

- How do you know if it's still secure today?

Where do we fit?
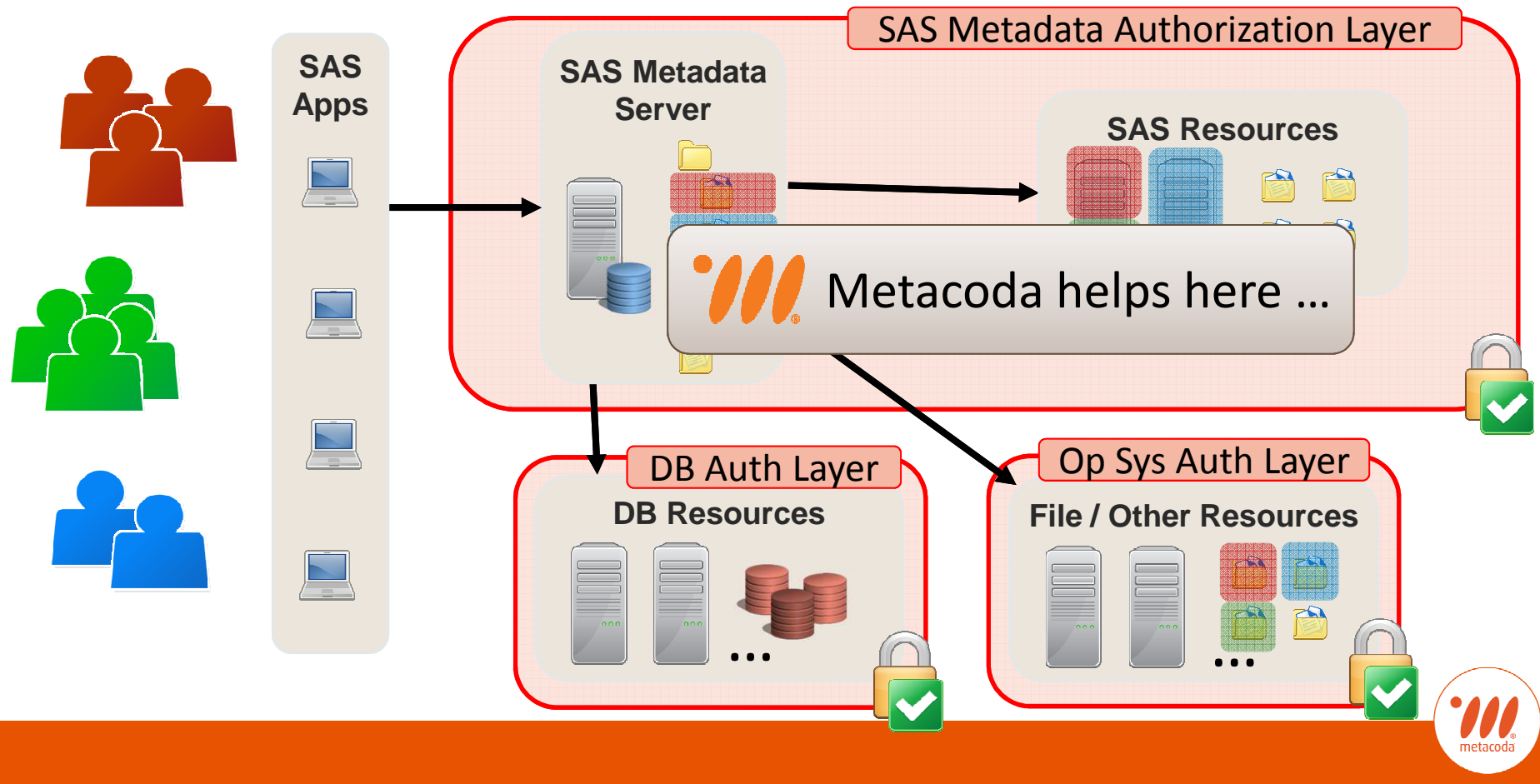
About Metacoda

- **SAS Silver Partner** … since 2007

- Provide add-ons to SAS® Software for enhanced metadata visibility and exploitation
  - Metacoda Identity Sync
  - Metacoda Security Plug-ins
  - Metacoda Testing Framework
  - Metacoda Utility Plug-ins - free
  - Custom Tasks (for SAS Enterprise Guide & AMO) - free

- Goals:
  - Improve your productivity through enhanced metadata visibility
  - Helping to keep your SAS® platform secure
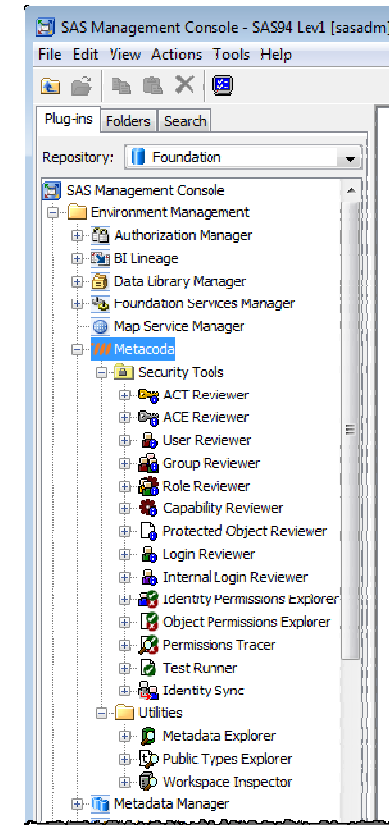
A few social media quotes....

David Moors
@moorsd
⚙ Following

@metacoda your plug-ins have saved me days not hours with validating metadata for the LBG upgrade. Customer service is also totes amaze 😊

Quentin Baudewijns 1st
Consultant at SAS Belgium & Luxembourg

Loading metadata identities into SAS Metadata from AD using the tool was very easy. It worked like a charm. This is a great tool!

Wouter Germishuys 1st
Analytics Operations Manager at Telstra

I wish all software companies had the customer engagement that Metacoda has. Their tools are excellent and is industrial strength. Keep on building awesome tools and we will buy them :-)

Wouter Germishuys 1st
Analytics Operations Manager at Telstra

The Metacoda set of plugins is worth it's weight in gold if you have SAS deployment. We couldn't have migrated our system without the plugins. Please keep building excellent tools.

Leslie Shroot 1st
Senior Consultant at Servian

Used this with a client yeasterday. All I can say is WOW!

See more at http://www.metacoda.com/en/products/testimonials/

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Business Problems We Solve

- Keeping SAS Users & Groups in sync with Active Directory
    - Including large & complex directories ... all without code!
    - **Metacoda Identity Sync**

- Knowing/documenting your SAS Metadata Security
    - Easily showing an Auditor ...
        - » ... what someone has access to
        - » ... who has access to something
    - **Metacoda Security Plug-ins**

- Verifying & proving to an Auditor your SAS Metadata Security is still intact and you can quickly detect and act on changes
    - **Metacoda Testing Framework**

Metacoda Plug-ins

- Designed for SAS Platform Administrators

- Install into SAS Management Console (or run in batch)

- Available for SAS 9.4, SAS 9.3, SAS 9.2 (VA, EBI, etc)

- Metacoda Identity Sync (easy Active Directory sync)

- Metacoda Security Plug-ins (review & document security)

- Metacoda Testing Framework (automated security testing)
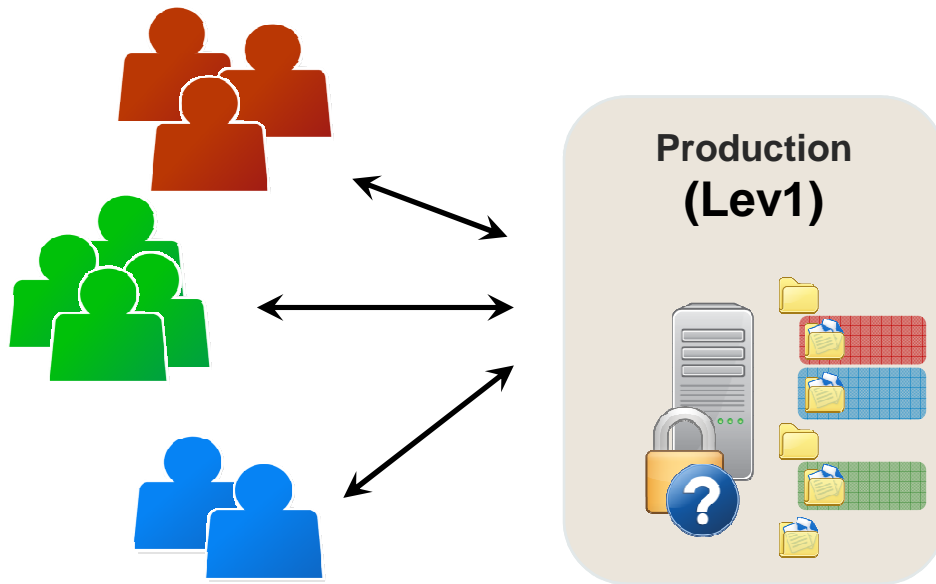
- Metacoda Utility Plug-ins (a few free utilities)

Metacoda Testing Framework

Helping keep a SAS platform secure over time.
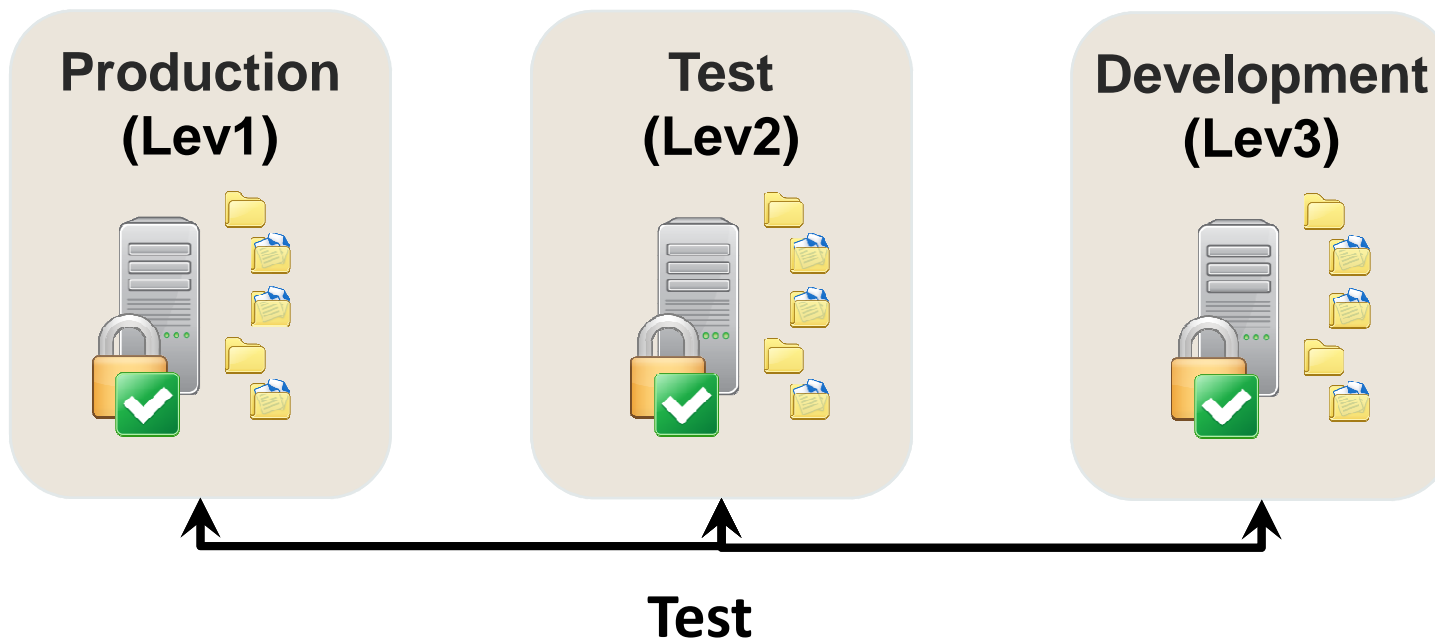
Metadata Security Testing: Why?

Over time we get changes from various user roles …

Production (Lev1)

- … is it still adequately secured?
  - tomorrow?
  - next week?
  - next month?

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Metadata Security Testing: Why?

- Test for consistency across multiple environments …

**Production
(Lev1)**

**Test
(Lev2)**

**Development
(Lev3)**

Test

Metadata Security Testing: Why?

- Test for consistency during SAS version upgrades …
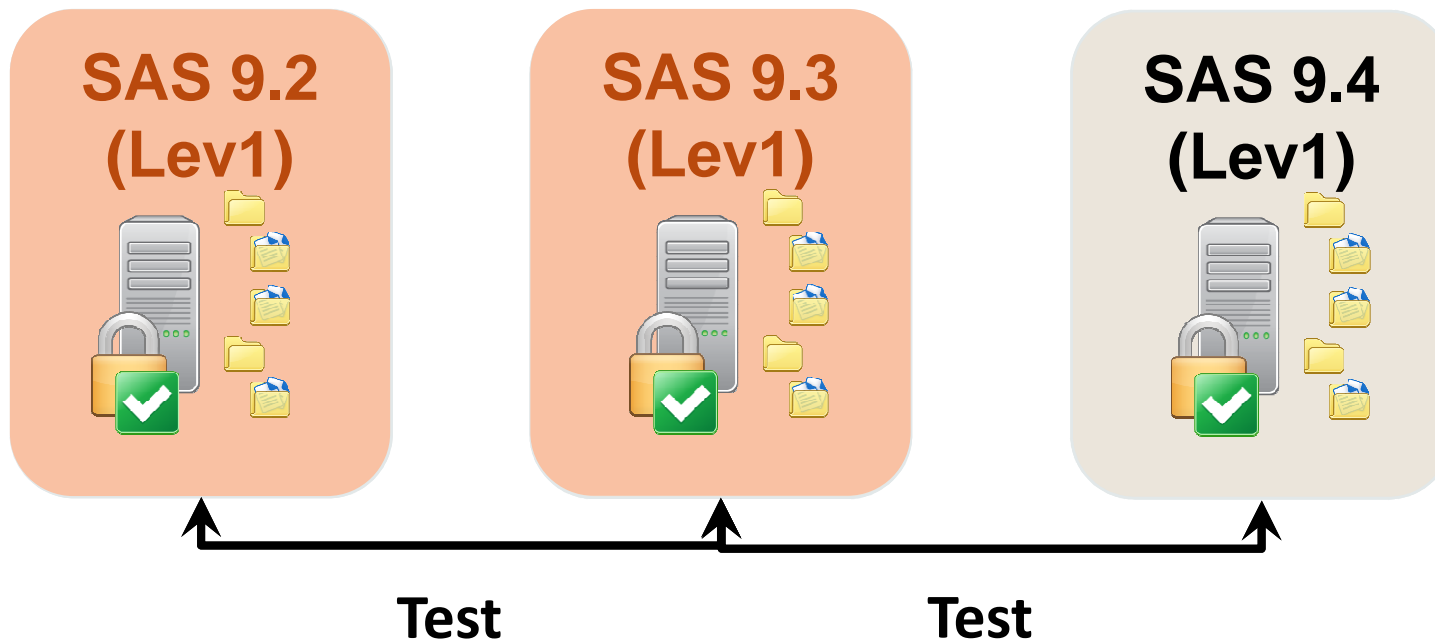
Problems with Manual Testing

- From our experience:
    - It's almost exclusively an **ad-hoc manual** process
    - It takes **too long**, it's **inconsistent** & it's **error-prone**

- Consequently it's not done …
    - with enough **coverage** & **reliability** to detect problems
    - with enough **frequency** to detect them promptly

- So we looked at how we could **automate** it ….

Metadata Security Testing

- An automated SAS metadata security testing framework includes:

    - Ability to export metadata security test specifications, as XML files, from an existing metadata server.

    - Test Runner: a new plug-in used to interactively run metadata security test specifications from XML files.

    - A batch interface for automated scheduled metadata security tests with HTML results and alert emails.
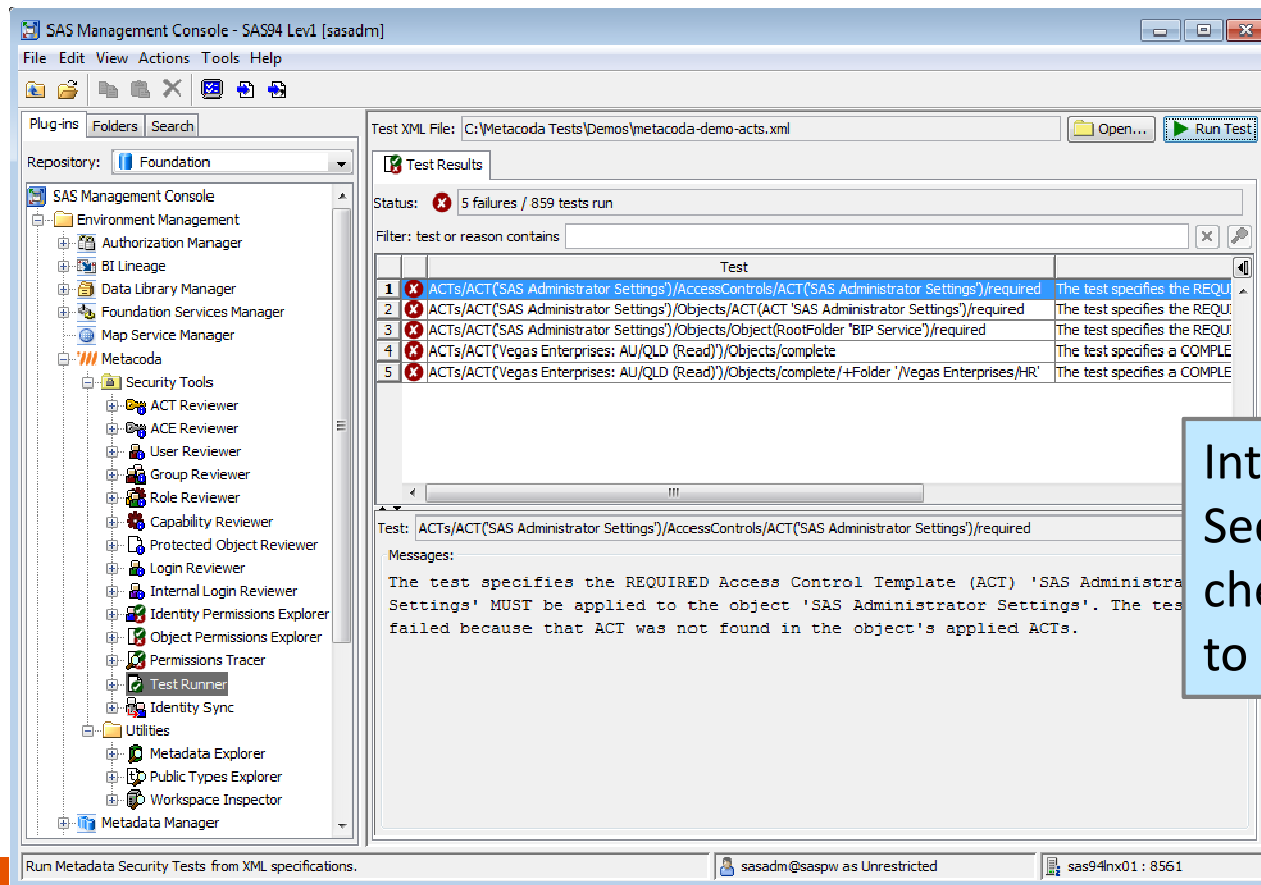
Metadata Security Test XML Export
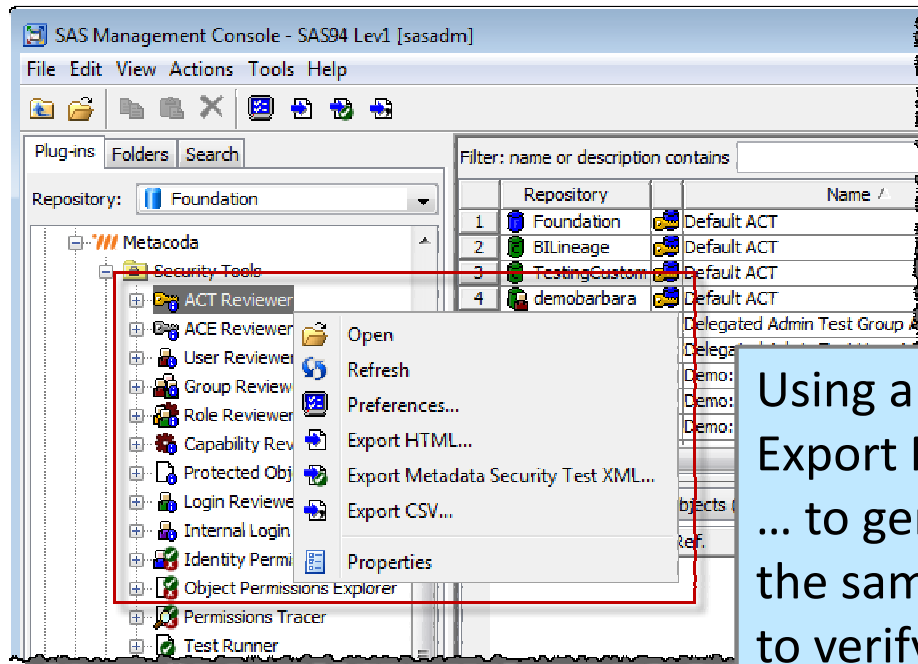
Using a known-good implementation …
Export Metadata Security Test XML
… to generate test scripts for future testing of
the same installation (or a similar installation)
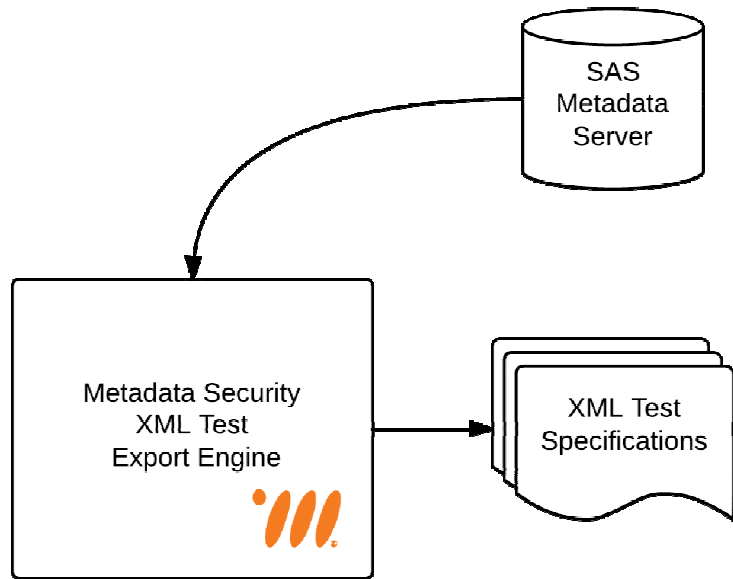to verify no significant changes.

Test Runner

Interactively run Metadata Security Test XML scripts to check for no failures prior to scheduling tests in batch.

Metadata Security Testing: Export Tests

SAS Metadata Server

Metadata Security XML Test Export Engine

XML Test Specifications

Export definition & usage:
- **ACTs**
- **Users (& Logins)**
- **Groups (& Logins)**
- **Roles**
- **Capabilities**
- **Applied Access Controls (Protected Objects)**
- **Internal Logins**

Set of Starter Tests
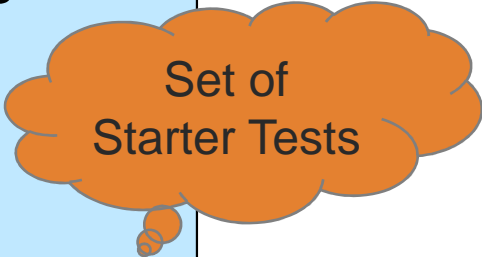
An engine that exports metadata as XML Test Specifications

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Metadata Security Testing: Run Tests

An engine that tests metadata against XML Test Specifications

SAS Metadata Server

- ACTs
- Users (& Logins)
- Groups (& Logins)
- Roles
- Capabilities
- Applied Access Controls (Protected Objects)
- Internal Logins
- Effective Permissions
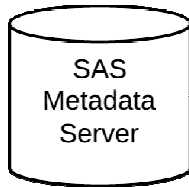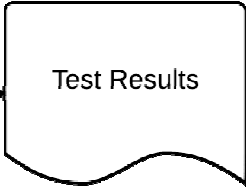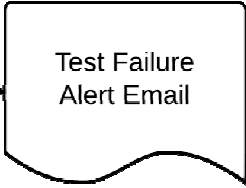
Metadata Security Testing Engine

Test Results

Test Failure Alert Email

- Interactive
- Batch

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Testing a Single Environment: Test & Repeat

SAS Metadata Server

Metadata Security XML Test Export Engine

XML Test Specifications

Metadata Security Testing Engine

Test Results
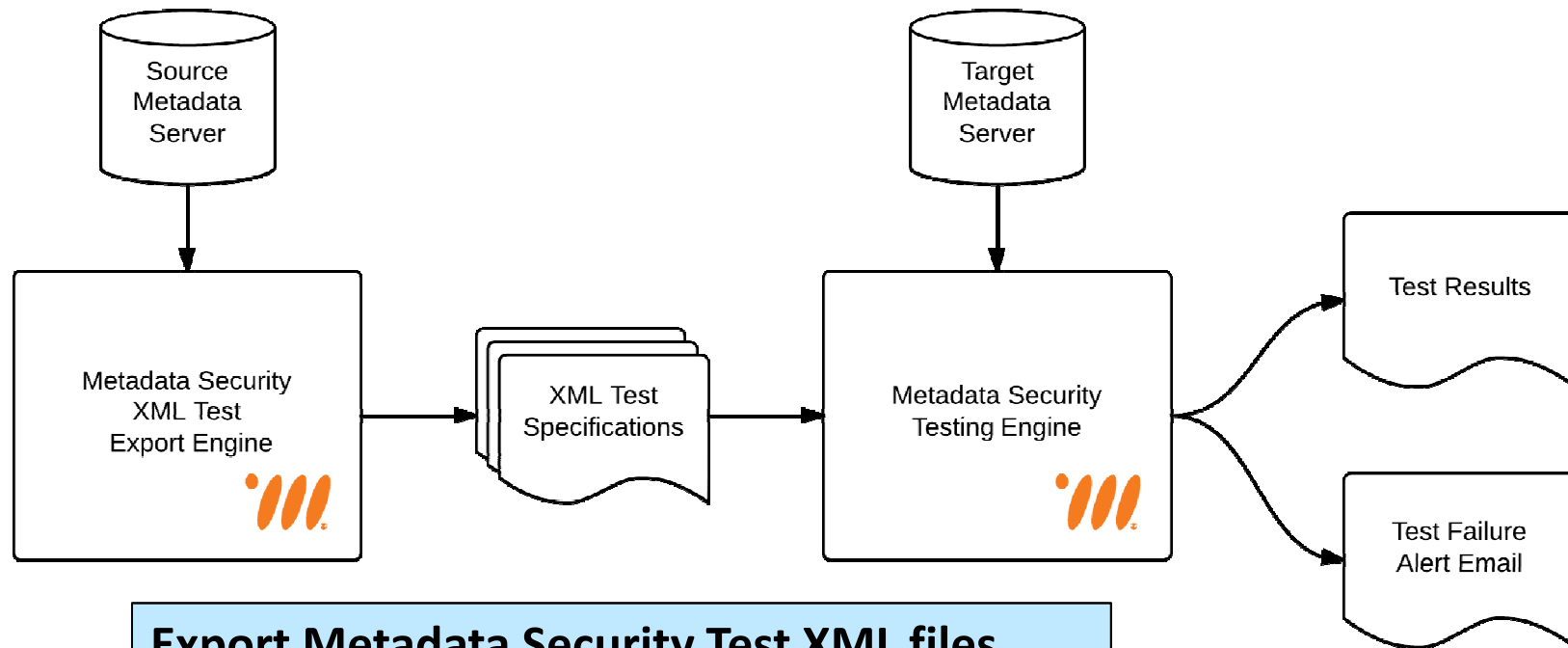
Test Failure Alert Email
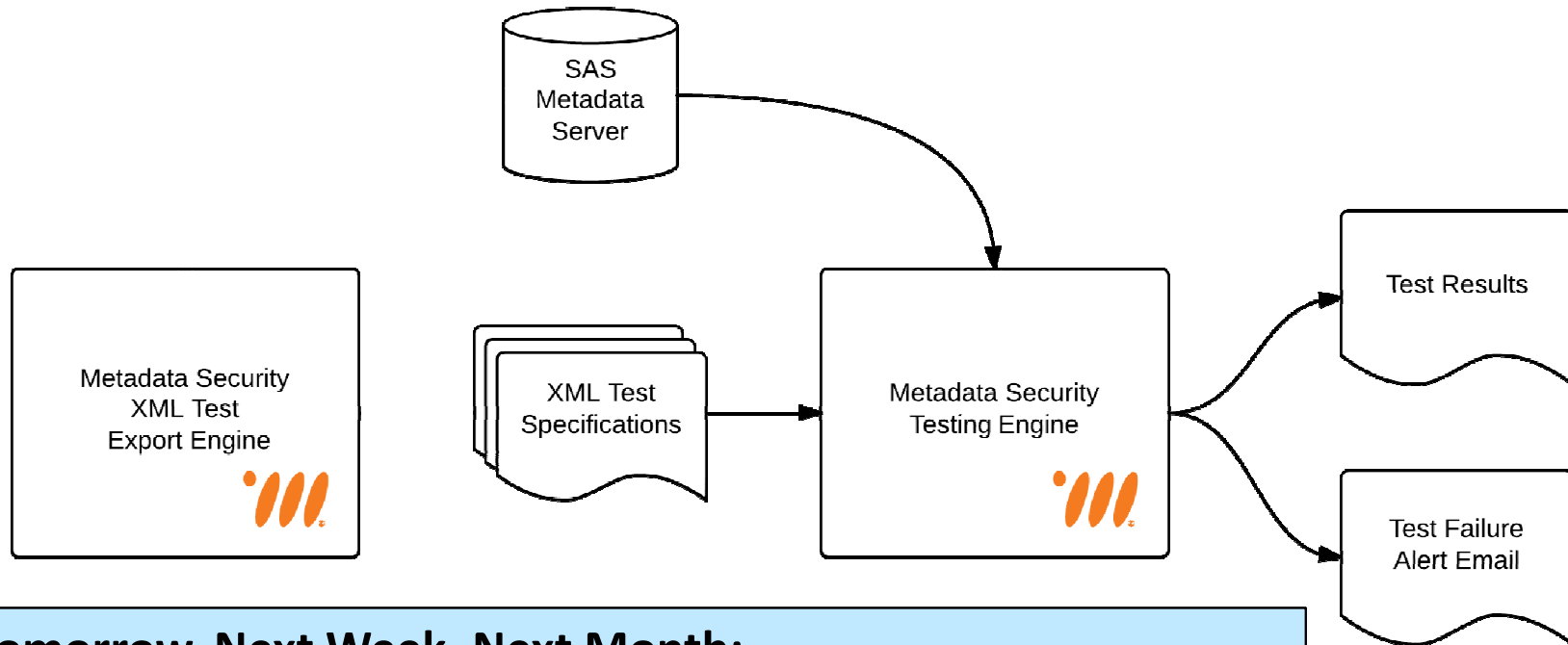
Tomorrow, Next Week, Next Month:
Compare current state to desired state using previously exported Metadata Security Test XML files

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Consistency Testing Different Environments

Export Metadata Security Test XML files from source environment to test for consistency in target environment.

Testing Best Practices

- U.S. & Danish Models: similar with differences…

- U.S. Model as seen in the Security Admin Guide
    - Combination of ACTs and Explicit Permissions (ACEs) applied to folders

- Danish Model as used by SAS Denmark (and many others)
    - Best Practice Implementation of SAS Metadata Security at Customer Sites in Denmark, Cecily Hoffritz & Johannes Jørgensen, SAS Global Forum 2011 Paper 376-2011
    http://support.sas.com/resources/papers/proceedings11/376-2011.pdf
    - ACTs only (no ACES): "Green & Grey is Great!"
    - "6 Golden Rules"

Best Practices: Overview

- Prior knowledge & planning essential

- Apply security for Groups vs Users (use identity hierarchy)

- Apply security to Folders vs Objects (use inheritance paths)

- Prefer ACTs over Explicit Permissions (ACEs)

- Deny permissions only to PUBLIC or SASUSERS

- Org Groups only ever grant access (never deny)

- Automated scheduled testing with Metacoda Security Testing Framework

Best Practices & Metacoda Testing Framework

- Testing Framework supports automated scheduled testing of conformance to best practices including the Danish "Golden Rules"

- Only Groups in ACTs (No Users)

- Only Groups in ACEs (No Users)

- Only Implicit Group Denials (PUBLIC/SASUSERS)

- No (Unexpected) ACEs

- No Unprotected ACTs

- No Group Membership Loops

- … and more …

Posts/Papers about Testing …

- Blog: Testing Conditional Grants in SAS Visual Analytics
  http://platformadmin.com/blogs/paul/2015/09/testing-conditional-grants-sas-va/

- Blog: Testing Recommended Practices with SAS Metadata Security
  http://platformadmin.com/blogs/paul/2015/06/testing-recommended-practices/

- Blog: SAS Metadata Security Testing
  http://platformadmin.com/blogs/paul/2014/03/sas-metadata-security-testing/

- SAS Global Forum 2014 Paper
  http://support.sas.com/resources/papers/proceedings14/1761-2014.pdf

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Helping to keep your SAS® platform secure

Keep personal data secure

Time to invest in security - warns EC official Paul Nemitz

https://iapp.org/news/a/invest-in-security-to-comply-with-gdpr-warns-ec-official/

Contact Us

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▶ YouTube: www.youtube.com/user/metacoda

Hej
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