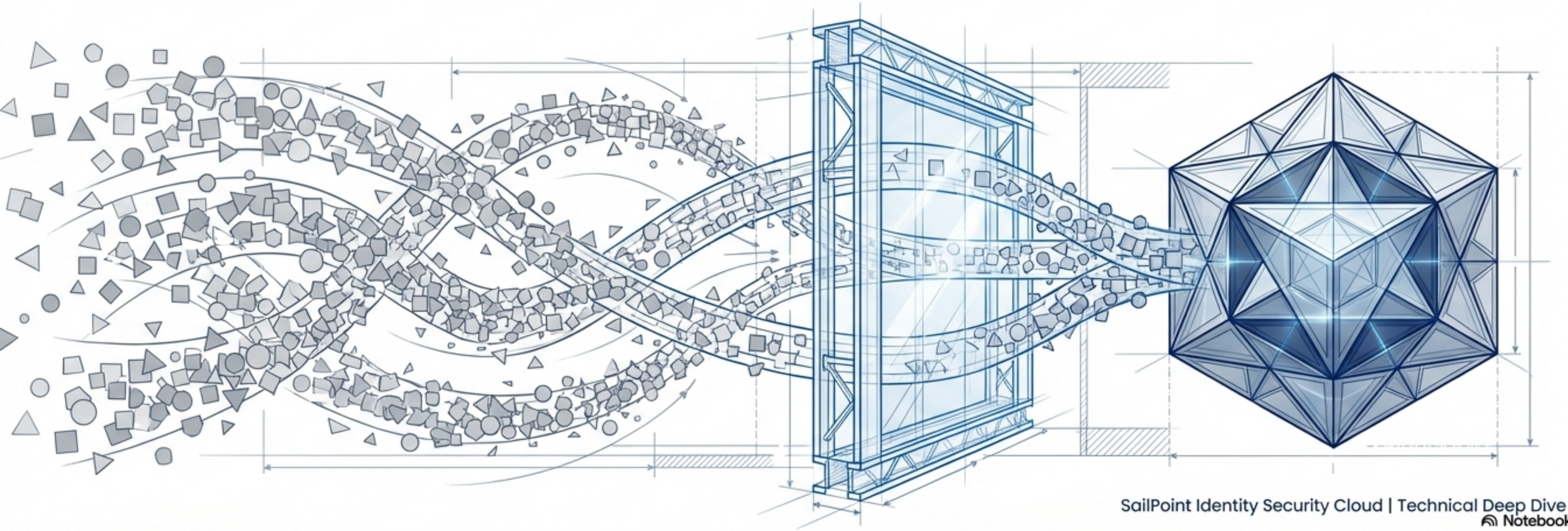
Identity Fusion NG: Architecting Identity Integrity

Advanced Deduplication, Attribute Management, and Unique Identifier Generation for **Identity Security Cloud**



SailPoint Identity Security Cloud | Technical Deep Dive

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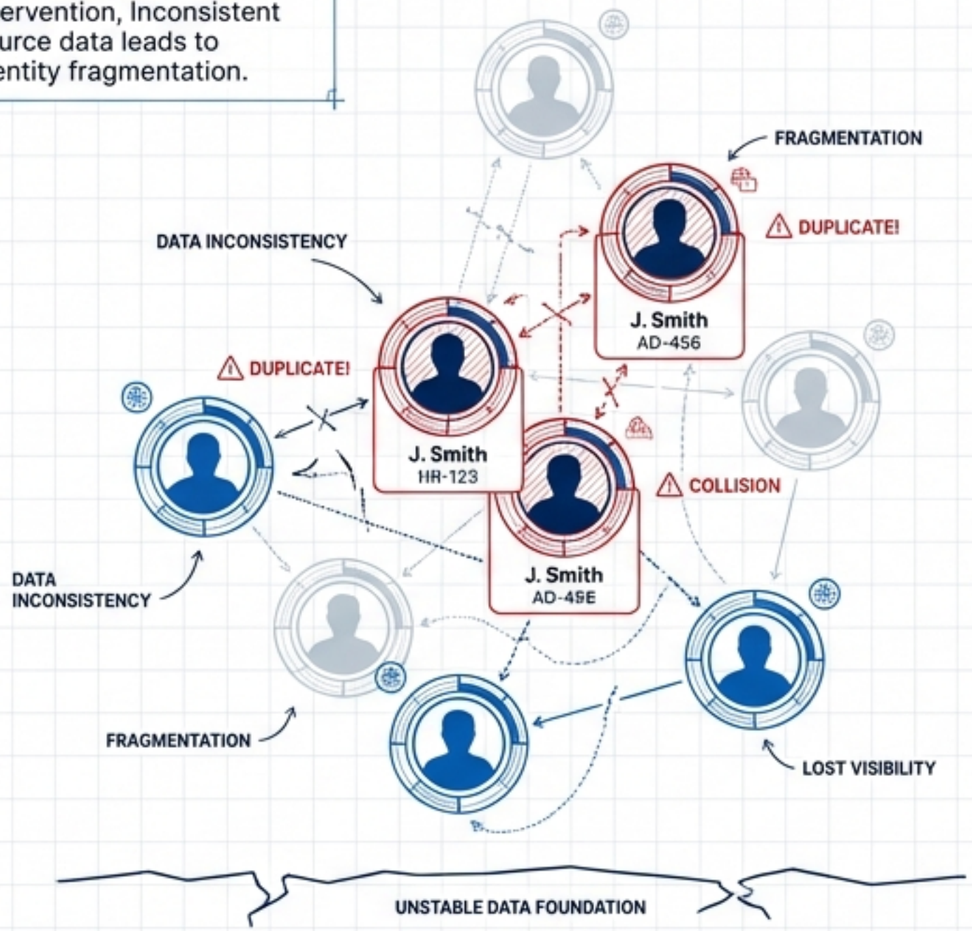
THE ENTROPY PROBLEM: WHY STANDARD CORRELATION ISN'T ENOUGH

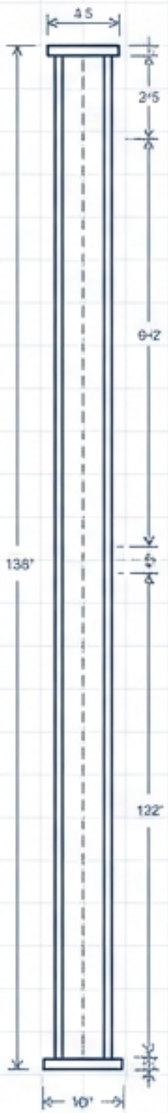
CONTEXT: Identity Security Cloud (ISC) lacks native mechanisms for complex unique ID generation or colllsion handling. WIthout intervention, Inconsistent source data leads to identity fragmentation.

STANDARD AGGREGATION

BEFORE: FRAGMENTED IDENTITY LANDSCAPE

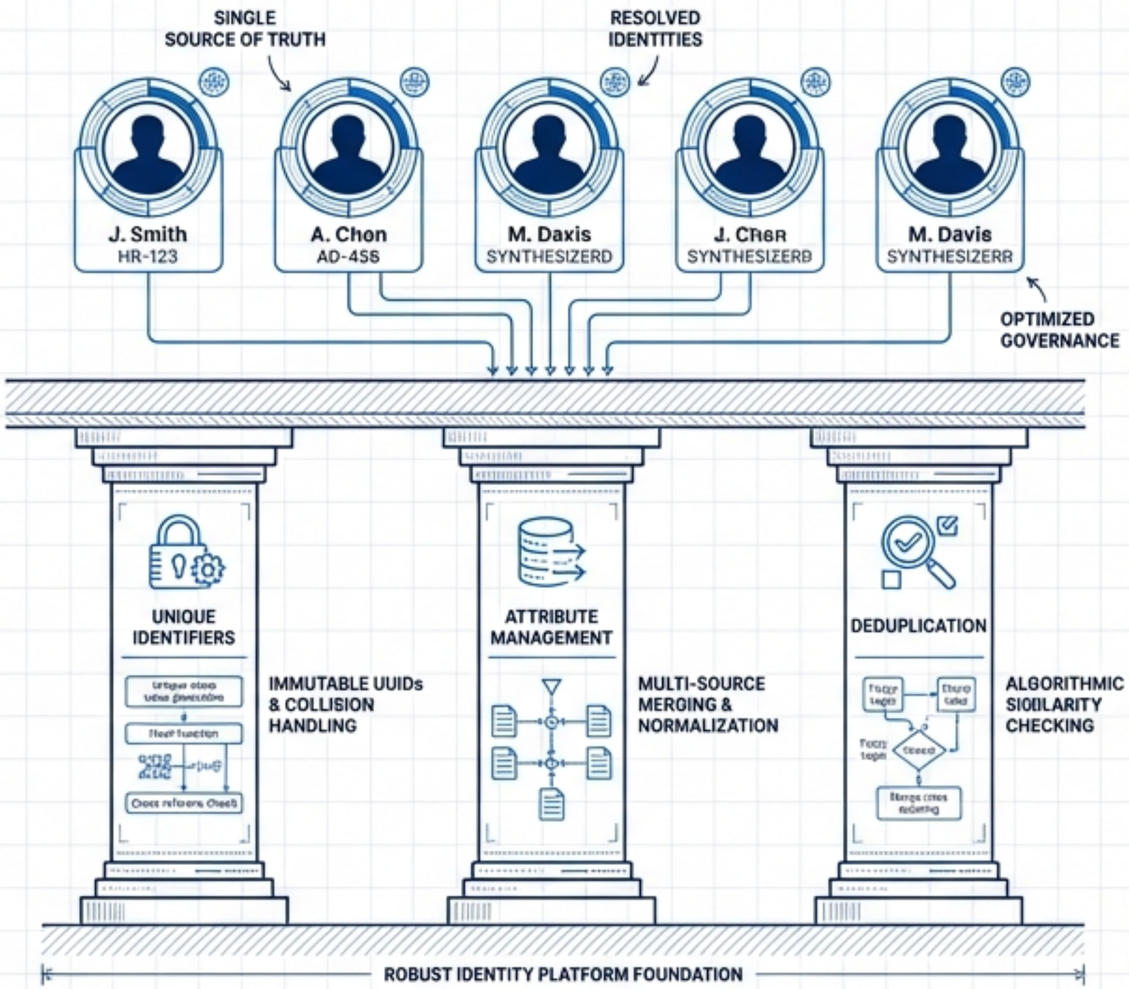


STANDARD AGGREGATION



FUSION NG ARCHITECTURE

AFTER: UNIFIED IDENTITY FRAMEWORK



FUSION NG ARCHITECTURE

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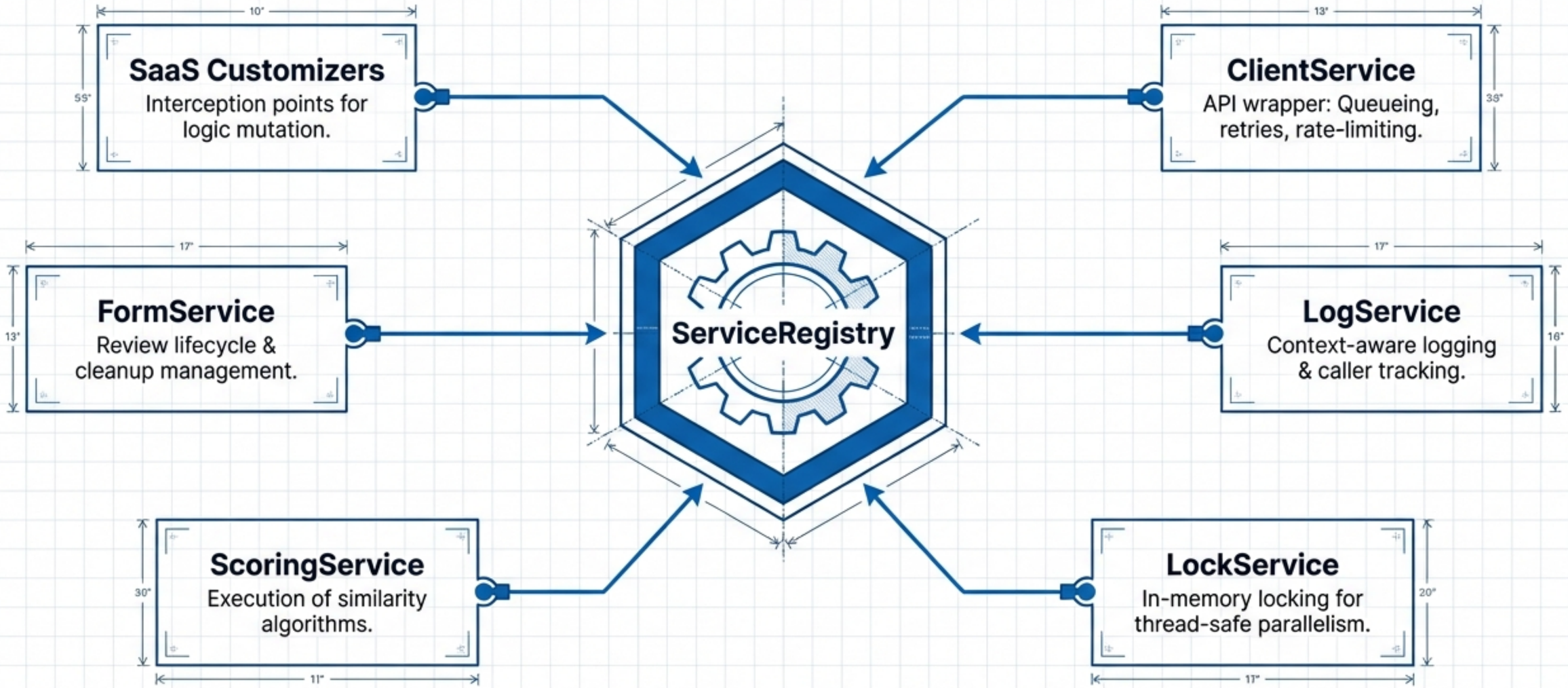
THE SERVICE ENGINE ARCHITECTURE

Moving from monolithic scripts to a modular, dependency-injected Service Registry.



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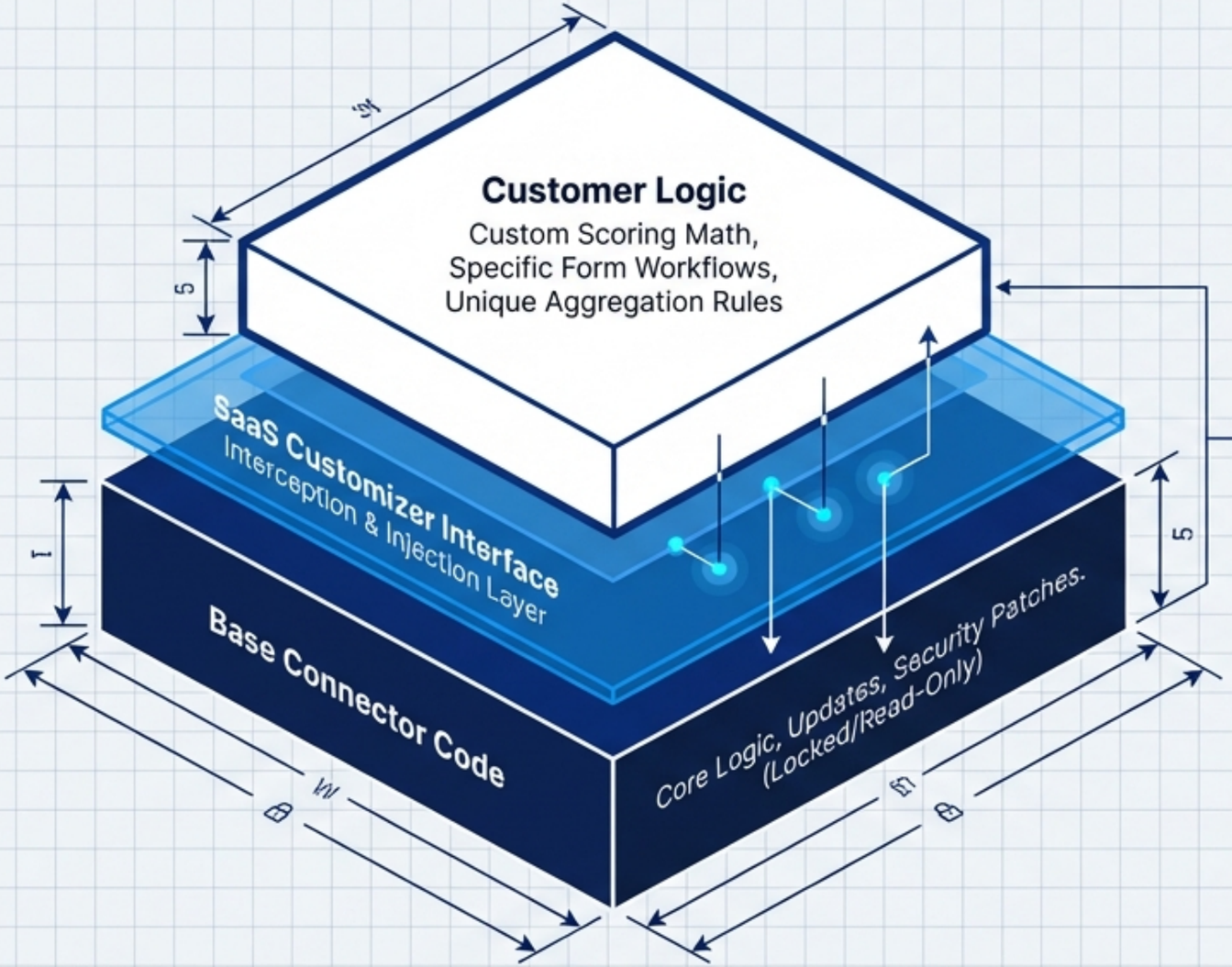
EXTENSIBILITY VIA SAAS CUSTOMIZERS

Customize behavior without forking the code base. Maintain full supportability.



- **Override Services**
  Replace `ScoringService` or `MessagingService`.
- **Override Operations**
  Inject logic into aggregation/correlation.
- **Result**
  Base code remains pristine and updatable.

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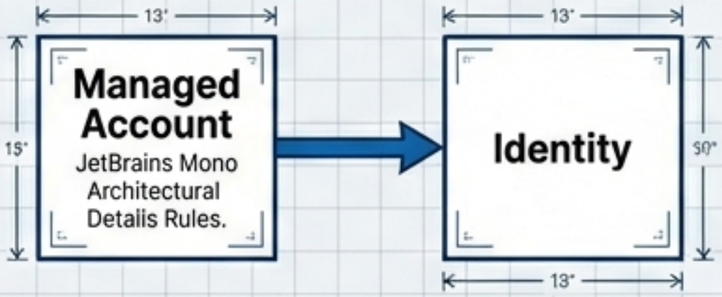
SETTING THE SCOPE: THE ‘FUSION ACCOUNT’ MODEL

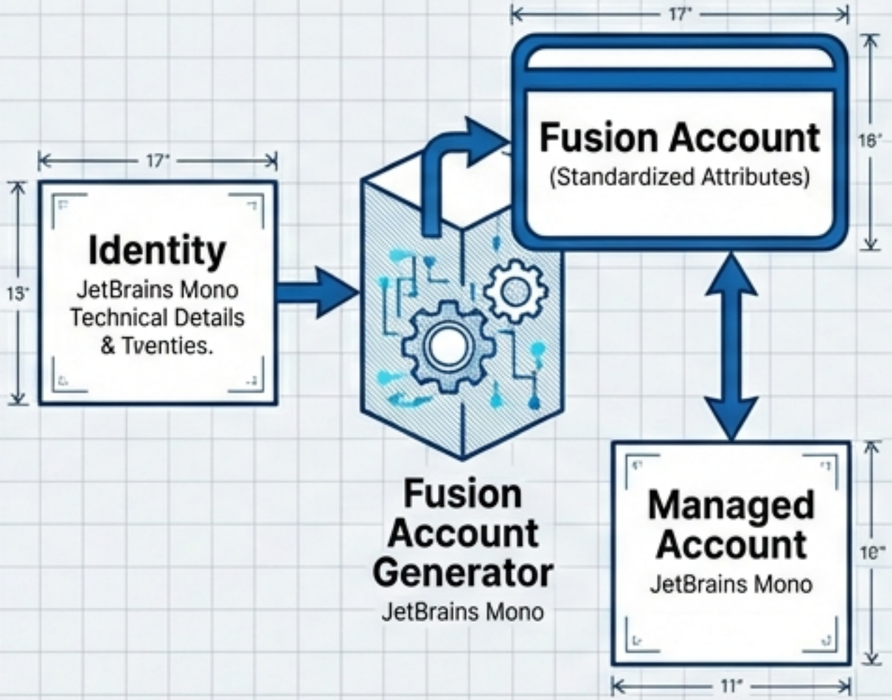
Comparing the legacy approach with the new standardized fusion model.

v1 Legacy Approach



Direct Comparison. Hard to normalize.
Limited by authoritative source rules.

NG Fusion Model



- **Paradigm Shift**
  Comparisons happen Fusion-to-Fusion, not Account-to-Identity.
- **Benefit 1**
  Enables Non-Authoritative use cases (ID generation for existing ISC identities).
- **Benefit 2**
  Supports Cross-Profile Standardization.

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Context-RICH ATTRIBUTE MANAGEMENT

Leverage dynamic context and helper functions for powerful attribute transformation.

Velocity Template Configuration

```
#set($name = $identity.attributes.firstname)
#set($phone = $tools.Normalize($identity.attributes.phone, "US"))
#set($dept = $sources["HR_Source"].attributes.department)

{
    "uid": "$tools.Datefns.now()_$name",
    "cleanPhone": "$phone",
    "fullContext": "$previous.uid"
}
```

Computed Output

UID	"20231025_Jonathan"
CleanPhone	+1 (555) 019-2834
Context	Access to previous values for audit history.

Context & Helpers

$identity
Full Attributes

$sources
Source-specific access

AddressParse
City/State extraction

Normalize
Standardize casing/formats

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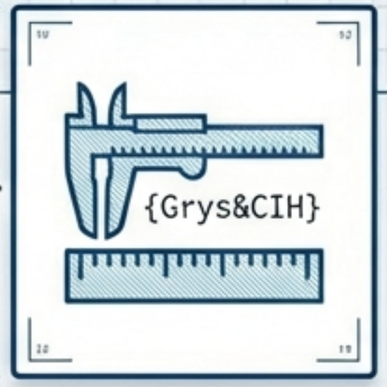
The Deduplication Engine: Five Scoring Algorithms

Precision matching configurable by attribute type. Thresholds set via Similarity Score (0-100).

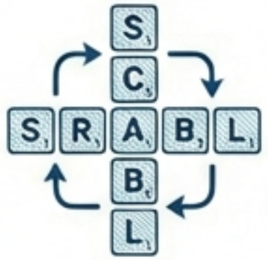


LIG3

Levenshtein distance. The baseline for general string similarity.

Jaro-Winkler

Optimized for short strings. Tolerates typos. Weights prefix matches.



Dice Coefficient

Bigram-based. Ideal for Addresses (insensitive to word order).

Double Metaphone

Phonetic matching. Handles 'Smith' vs 'Smyth' and cross-lingual sounds.

Enhanced Name Matcher

Cultural awareness. Handles First/Last swaps and Nicknames.

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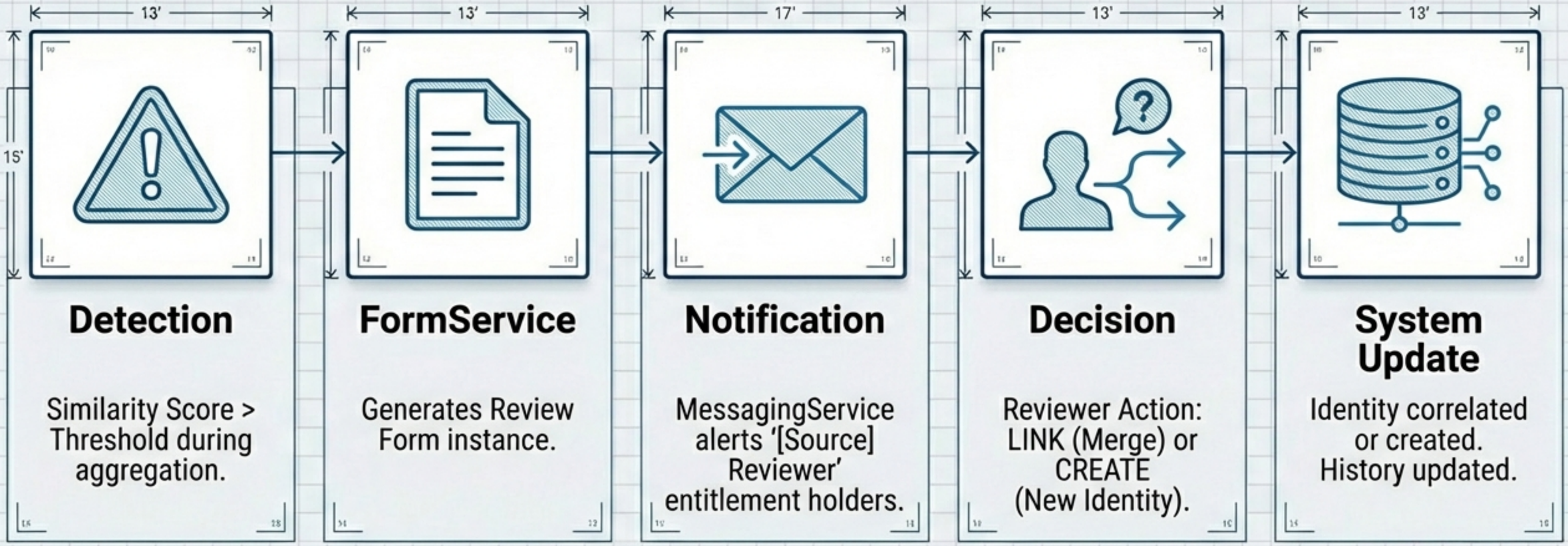
The Remediation Lifecycle: Forms and Decisions



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Schema Discovery and Data Merging

Creating a ‘Super Schema’ from multiple sources.

Source A (HR)

Email: j.doe@company.com
Dept: Sales

Source B (AD)

Email: jonathan.doe@company.com
Dept: Marketing

Merge Logic

- **First Found** (Priority Order)
- **Make Multi-Valued** (Unique List)
- **Concatenate** (String)

Proxy Account

Email: "j.doe@company.com" (Rule: First Found)
Dept: "[Sales, Marketing]" (Rule: Concatenate)

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Operational Modes: Authoritative vs. Regular

Authoritative Source Mode	Regular Source Mode
• **Purpose:** Deduplication & Identity Governance. • **Behavior:** Acts as the primary baseline. New proxy accounts created as **Disabled** to allow correlation logic to run. • **Requirement:** Must set correlation between Identity UID and Account ID.	• **Purpose:** Unique ID Generation only. • **Behavior:** Generates IDs for accounts without enforcing fusion. Uses "Include existing identities". • **Scope:** Unique ID scope set to "Source" or "Platform".

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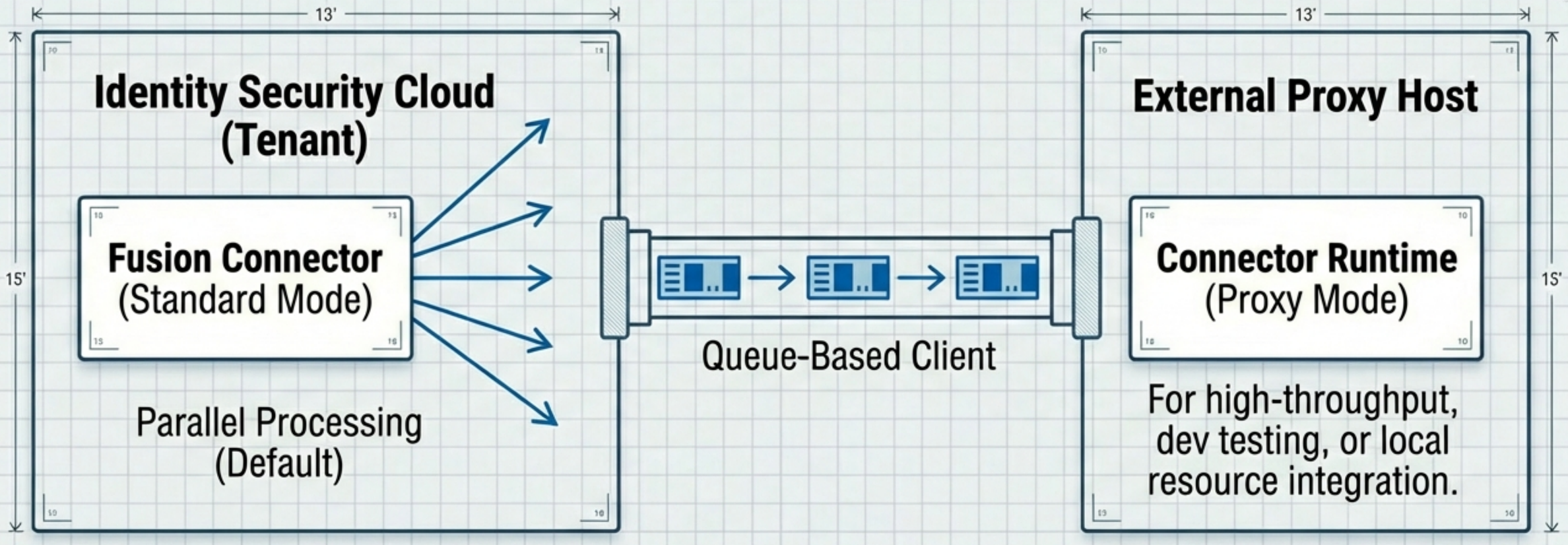
Deployment Flexibility: Proxy Mode & Parallelism



Performance Control: Configurable Batch Limits per source to manage API rate limits while maintaining parallel throughput.

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Operational Enhancements & Tooling

Built-in Admin

Automated Reset toggle cleans up accounts, forms, and counters. No external scripts required.

Auto-Cleanup

`FormService` automatically manages expiration and deletion of old review forms.

Correlation Timing

- **Automatic**: During aggregation.
- **Enforced**: Role-based trigger (lighter runs).
- **Deferred**: Manual execution for sensitive environments.

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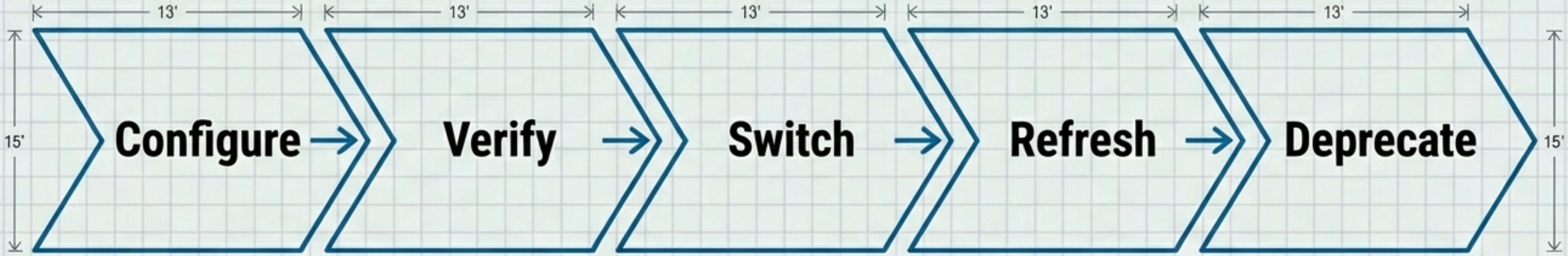
Migrating from v1 to Identity Fusion NG

Parallel deployment model ensuring zero data loss.



Add NG as new source. Align attribute mappings.

First aggregation copies data. Verify against v1 baseline.

Create new Identity Profile (Higher Priority).

Run Identity Refresh to move identities to new profile.

Disable old connector after stability confirmation.

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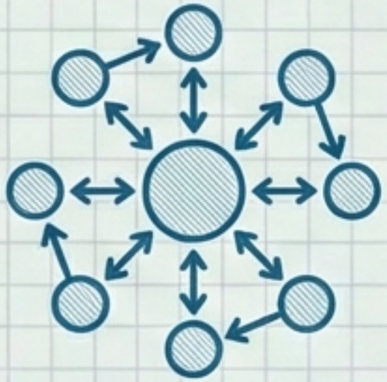
Advanced Use Cases



Non-Authoritative ID Gen

Generate consistent identifiers for Federated environments without owning the identity lifecycle.

Complex Deduplication

Industry Logic via `ScoringService`:

- Banking: Priority on Account Numbers.
- Healthcare: Priority on SSN.

Audit & History

Use `$previous` context variables to track attribute changes over time for compliance.

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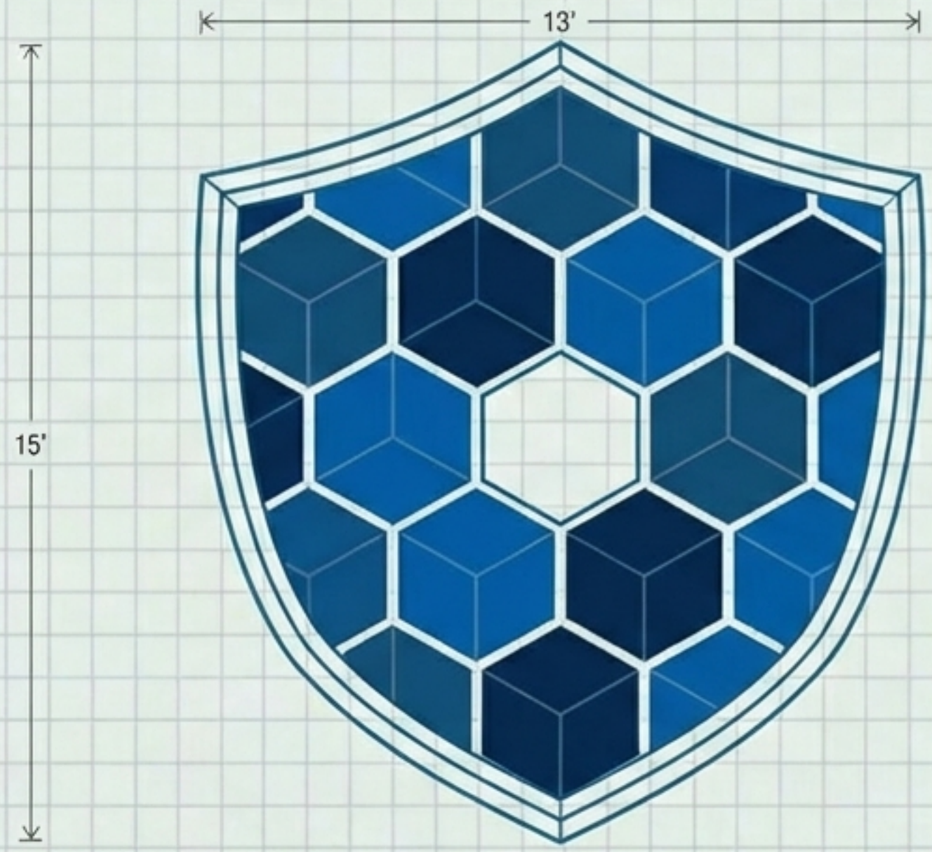
“The Future of Identity Consistency”



1. **“Production-Hardened”:** Modular Service Architecture.
2. **“Algorithmically Superior”:** Five distinct matching engines.
3. **“Future-Proof”:** Extensible via SaaS Customizers.

Identity Fusion NG transforms the connector from a passive pipe into an active engine for identity integrity.

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