



adaptTo()

EUROPE'S LEADING AEM DEVELOPER CONFERENCE
28th – 30th SEPTEMBER 2026

Stop Messing with Index Definitions:
Index Optimizer and Simplified Index Management in AEM
Paul Chibulcuteanu, Benjamin Habegger, Adobe

Past: Index Management was Hard

- 2 sources: OOTB + customizations
- Many manual steps: copy → modify → merge
- Complicated versioning & naming
- Differences between Cloud and Quickstart

Past: Index Management was Hard

damAsset-12

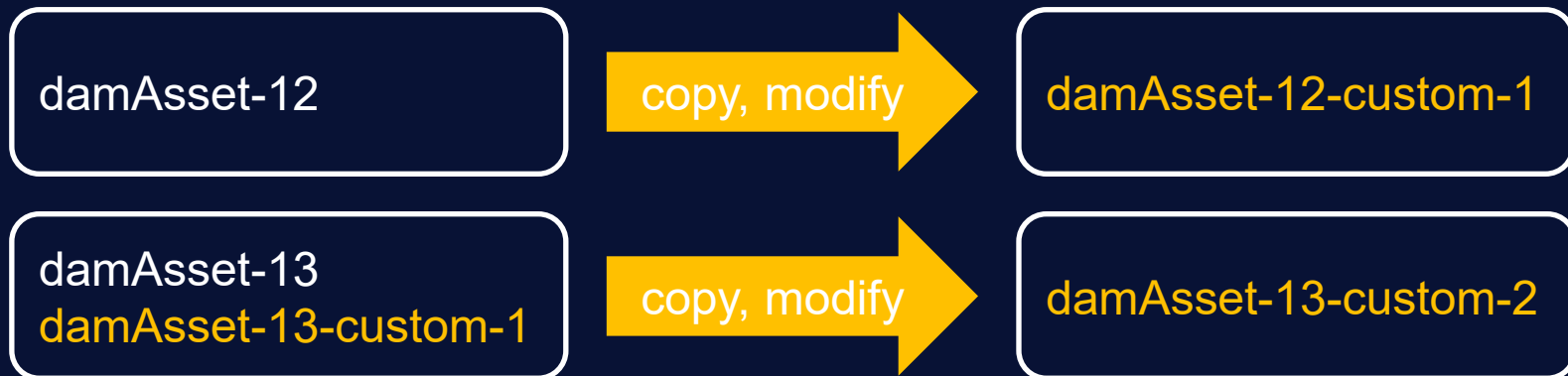
Past: Index Management was Hard



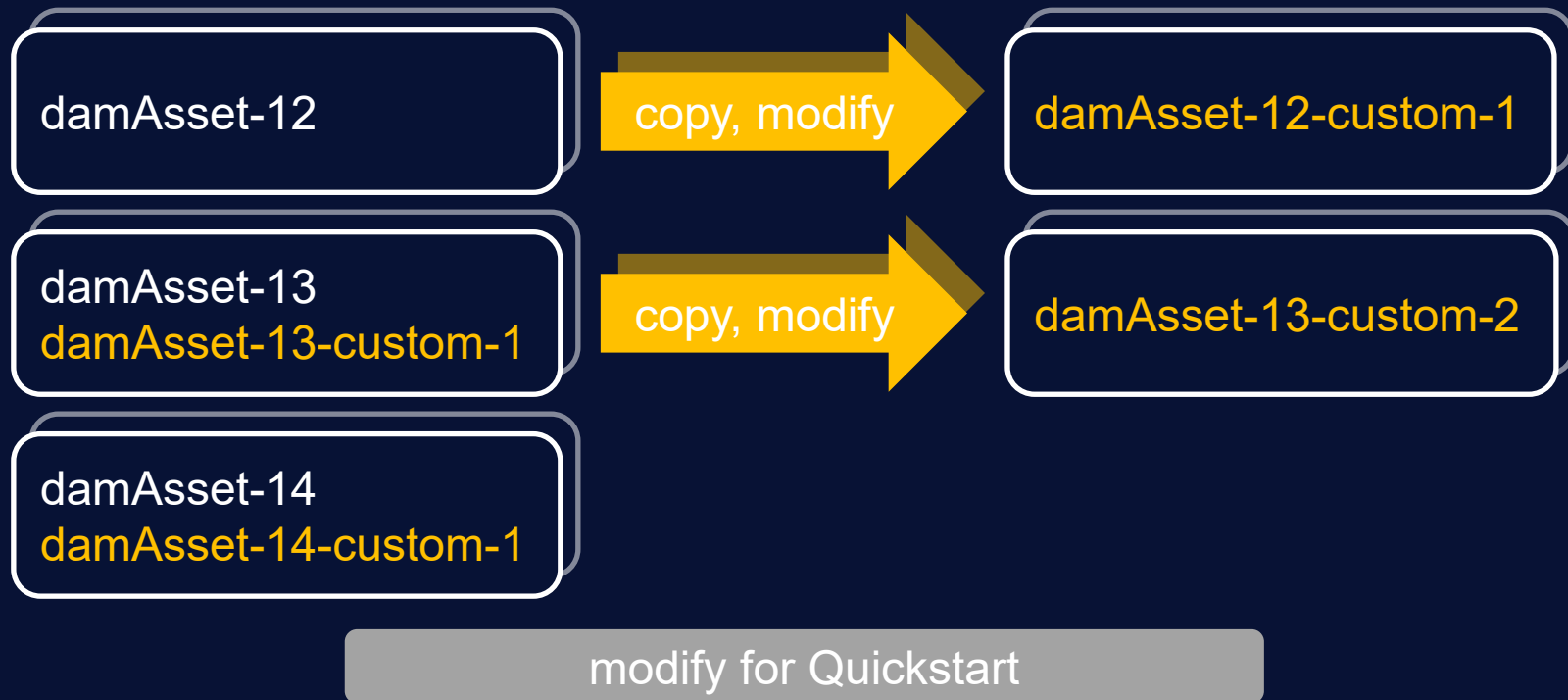
Past: Index Management was Hard



Past: Index Management was Hard



Past: Index Management was Hard



Simplified Index Management

Simplified Index Management

NEW

index.diff

with customizations

Simplified Index Management

NEW

index.diff

with customizations

same for Quickstart

diff.json in Practice

Complicated .content.xml

```
<?xml version="1.0" ...  
<jcr:root ...  
  <damAssetLucene-14-custom-2>  
    400 lines of XML  
  </damAssetLucene-14-custom-2>  
</jcr:root>
```

Simple diff.json

```
{  
  "damAssetLucene": {  
    10 lines of JSON  
  }  
}
```

diff.json in Practice

Complicated .content.xml

```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
```

```
<jcr:root xmlns:jcr="http://www.jcp.org/jcr/1.0" xmlns:dam="http://www.day.com/jcr/dam/1.0" ?>
```

```
  <dam:AssetLucene-14-custom-2>
```

400 lines of XML

```
  </dam:AssetLucene-14-custom-2>
```

```
</jcr:root>
```

Deprecated

Simple diff.json

```
{
```

```
  "damAssetLucene": {
```

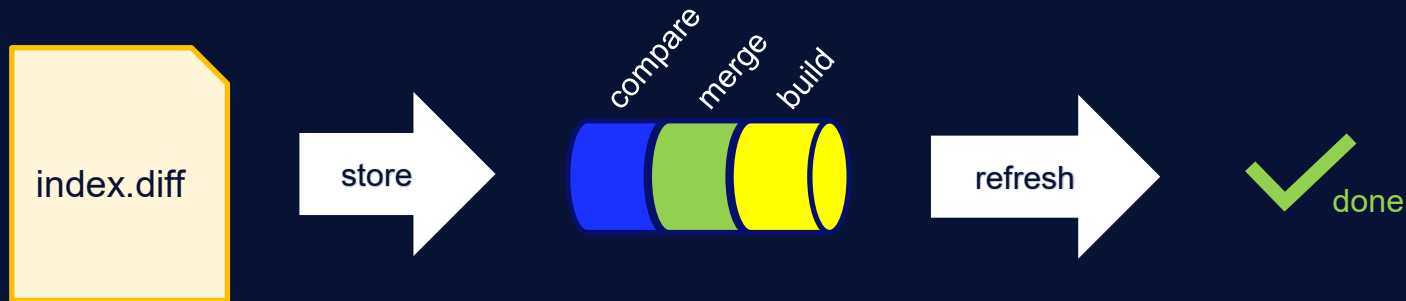
10 lines of JSON

```
  }
```

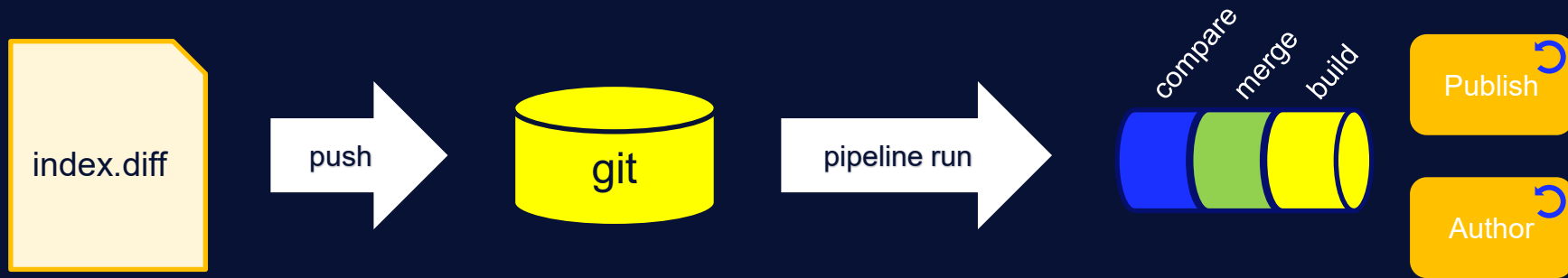
```
}
```

Demo time

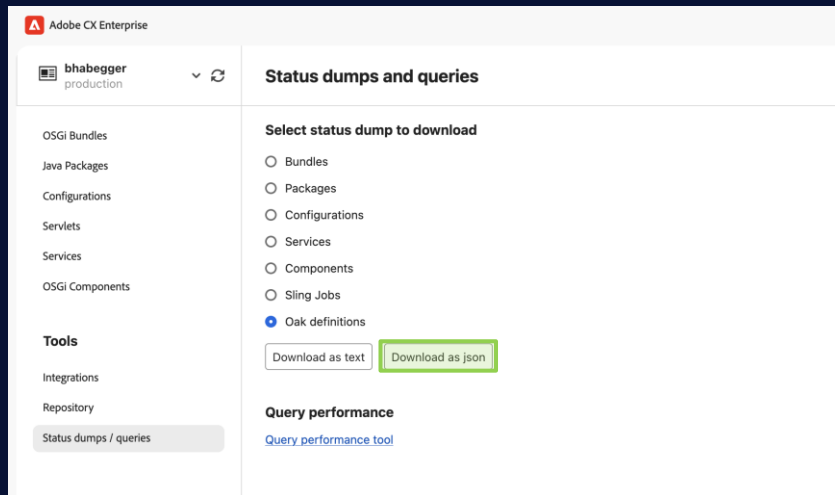
How to Deploy: Quickstart



How to Deploy: Cloud Service



Migration & Tooling





< Diff Index Verifier

Diff Index

```
{
  "damAssetLucene": {
    "indexRules": {
      "dam:Asset": {
        "properties": {
          "cq:tags": {
            "analyzed": true
          }
        }
      }
    }
  }
}
```

Enter a JSON object mapping index names to fragments.

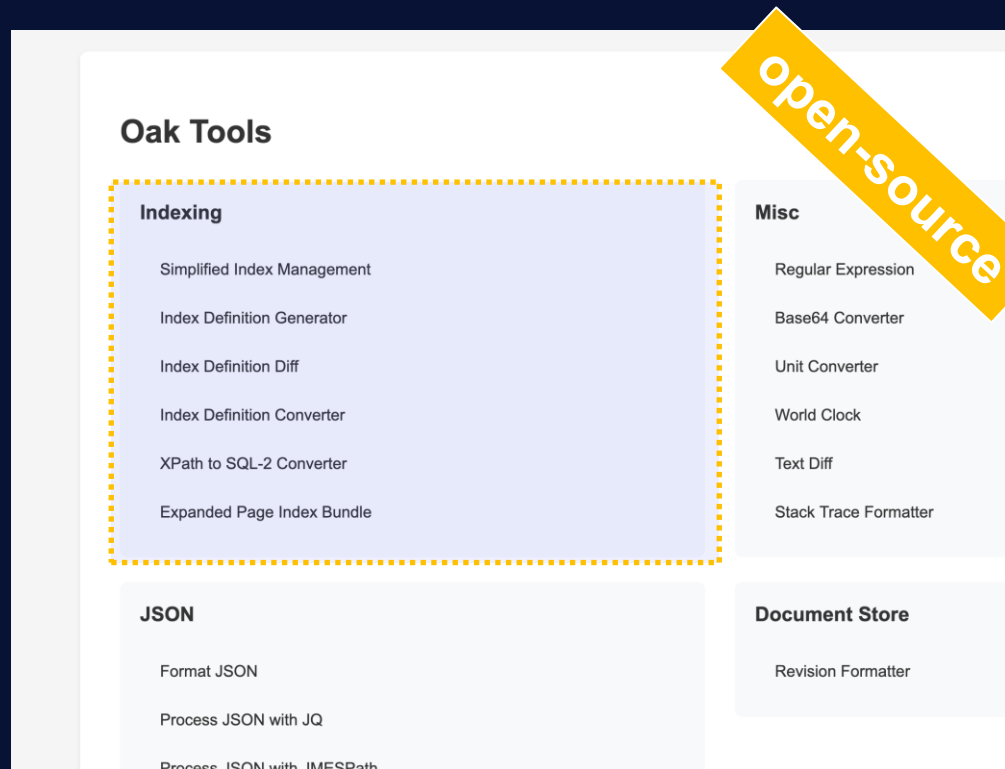
Result

```
Valid JSON
validateIncludedPath: OK
validateCustomizableIndex: OK
verifyName: OK
validateQueryPaths: OK
validateTikaConfig: OK
validateFacetConfig: OK
validateFullyCustomIndex: OK
validateKeyName: OK
validateNonEmpty: OK
```



checks pass

Migration & Tooling



The screenshot shows the Oak Tools website interface. A yellow banner with the text "open-source" is tilted across the top right. The page is titled "Oak Tools" and features three main sections: "Indexing", "JSON", and "Misc". The "Indexing" section is highlighted with a dashed orange border and contains a list of tools: Simplified Index Management, Index Definition Generator, Index Definition Diff, Index Definition Converter, XPath to SQL-2 Converter, and Expanded Page Index Bundle. The "JSON" section contains: Format JSON, Process JSON with JQ, and Process JSON with JMESPath. The "Misc" section contains: Regular Expression, Base64 Converter, Unit Converter, World Clock, Text Diff, and Stack Trace Formatter. The "Document Store" section contains: Revision Formatter.

Oak Tools

Indexing

- Simplified Index Management
- Index Definition Generator
- Index Definition Diff
- Index Definition Converter
- XPath to SQL-2 Converter
- Expanded Page Index Bundle

JSON

- Format JSON
- Process JSON with JQ
- Process JSON with JMESPath

Misc

- Regular Expression
- Base64 Converter
- Unit Converter
- World Clock
- Text Diff
- Stack Trace Formatter

Document Store

- Revision Formatter

oak-indexing.github.io/oakTools



From Toil to Automation

PAST



Cumbersome XML definitions
Easy to get wrong



Manual, error-prone
versioning & merging



Poor definitions
Unindexed queries, slow performance

NOW / FUTURE



Simple JSON configuration
With online tooling



Automatic versioning & merging



Index Optimizer
Query Optimizer

Index Optimizer



Slow Query Alert

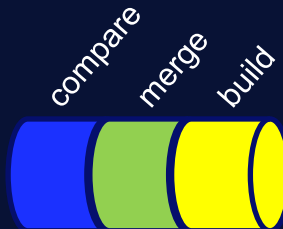
Index Optimizer



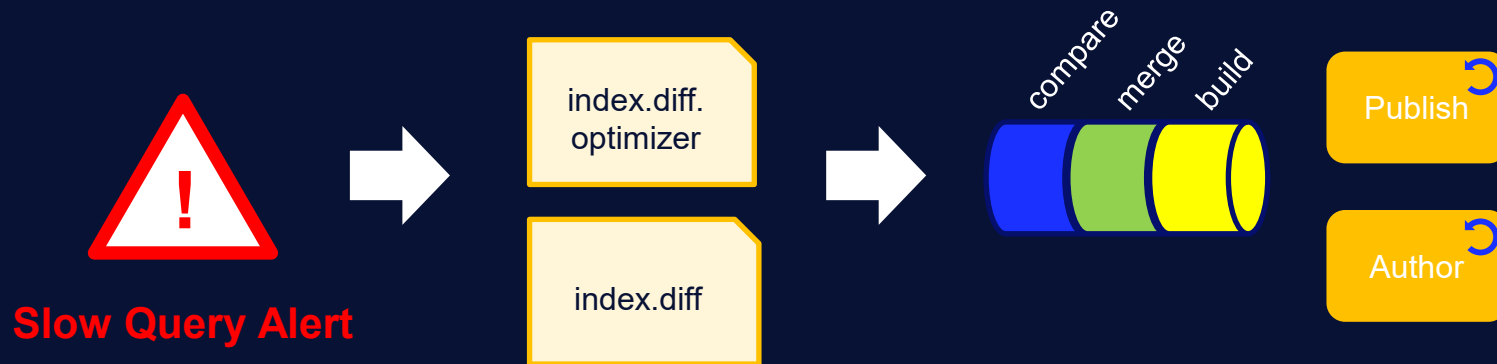
index.diff.
optimizer

Slow Query Alert

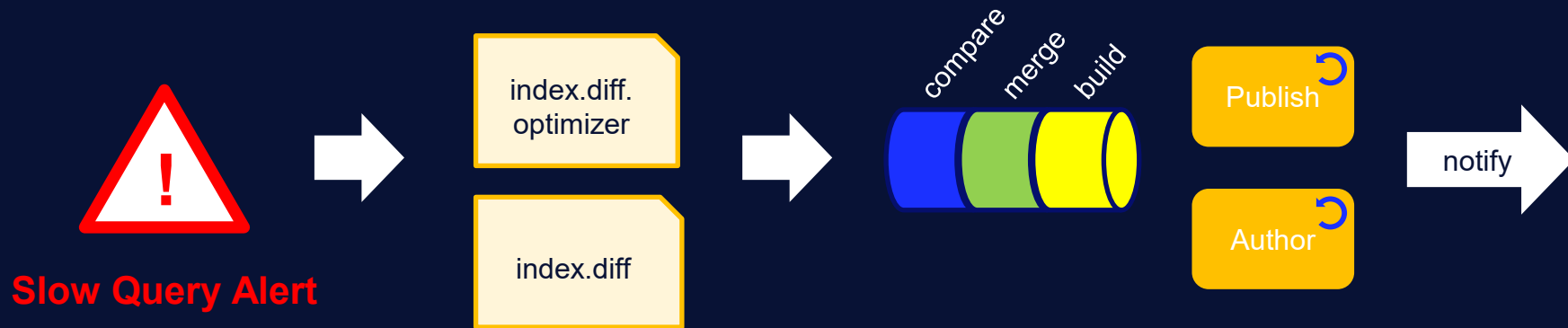
Index Optimizer



Index Optimizer



Index Optimizer



Future: Query Optimizer

- Query Optimizer
 - Problem: Some queries can not be made faster with index changes, e.g. “read all assets”, or immediate action is needed
 - Generate find & replace pattern, e.g. append “option(limit 1000)”
 - Update live environment immediately (no restart)
 - Queries are replaced at runtime
 - Work in progress

Limitations, Takeaways & Q&A

- Current limitations:
 - cqPageLucene → use cqPageContent
 - No /apps or /libs in includedPaths; can't change a property's index method after creation
- Takeaways:
 - Delta, not copies
 - Automatic merge & versioning
 - Closed loop: Identify → Optimize → Apply

Thank you!