

SULU CMS

The New Content Storage for Sulu CMS 3.0



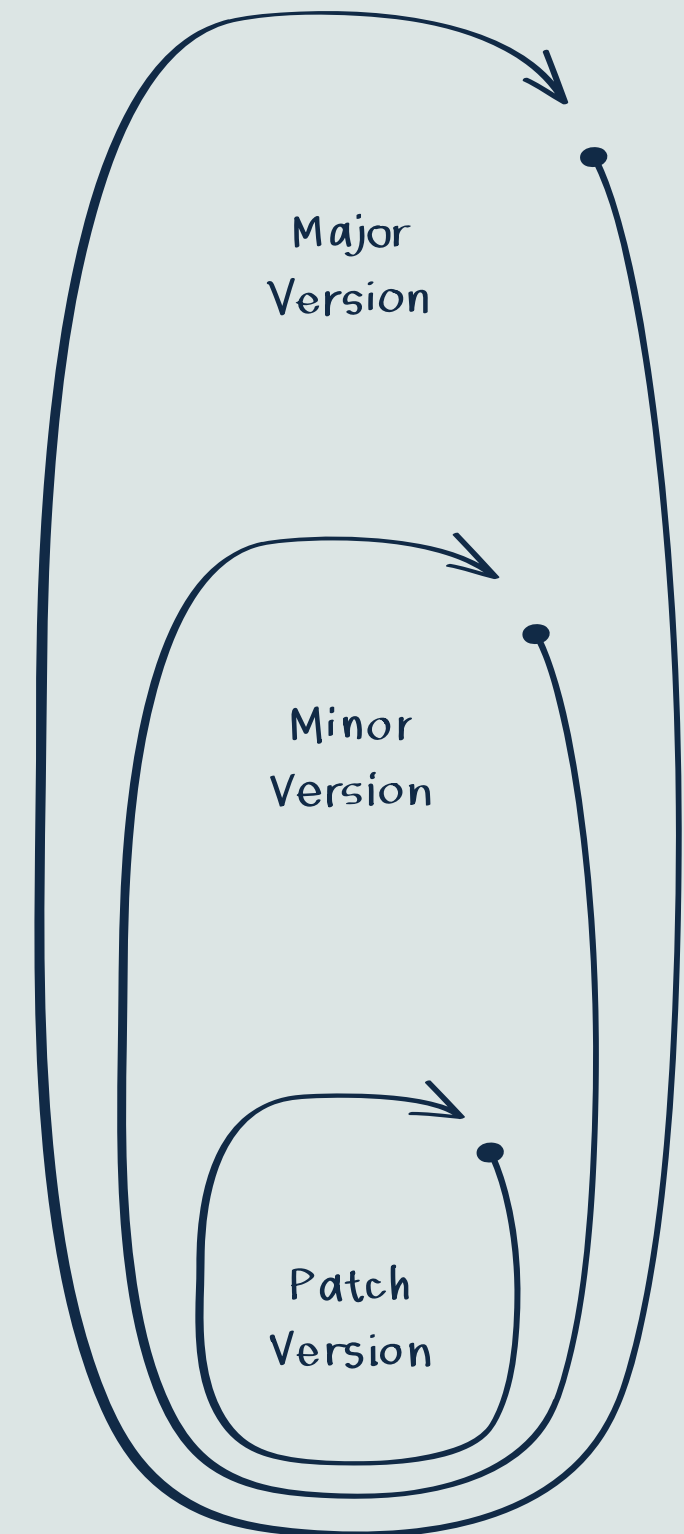
A New Era with Sulu 3.0

- Sulu 3.0 marks the next big chapter in our journey
- This release has been long in the making, but we finally see the light at the end of the tunnel
- Replacing the content storage was a monumental operation – now it's ready to redefine how we manage content



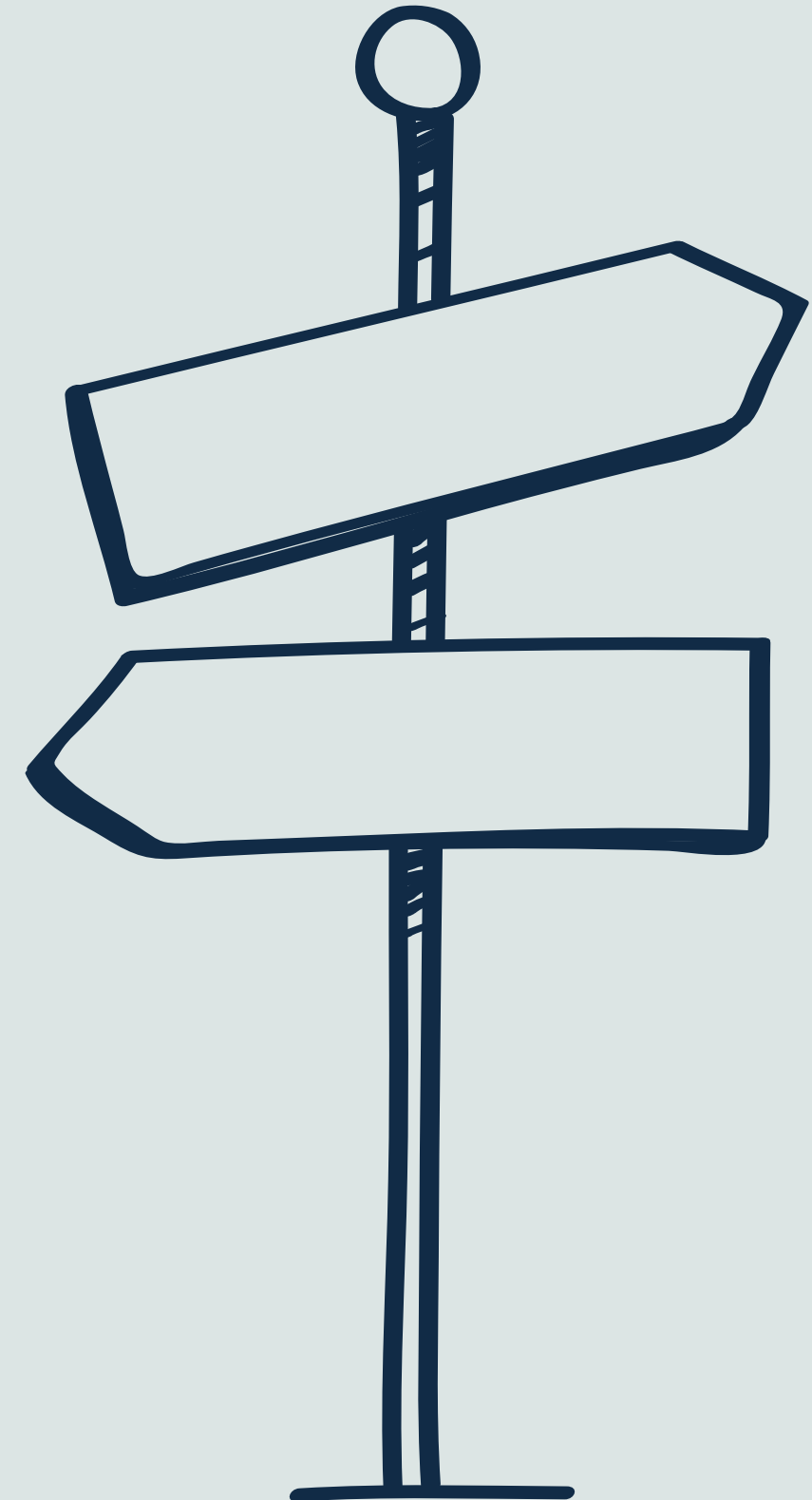
How the Sulu Release Cycle Works

- **Major Releases:** Focused primarily on maintenance and stability, ensuring a solid foundation without introducing new features
- **Minor Updates:** Bringing new features and incremental improvements while maintaining backward compatibility
- **Patch Releases:** Released as needed to address bugs and ensure smooth operation



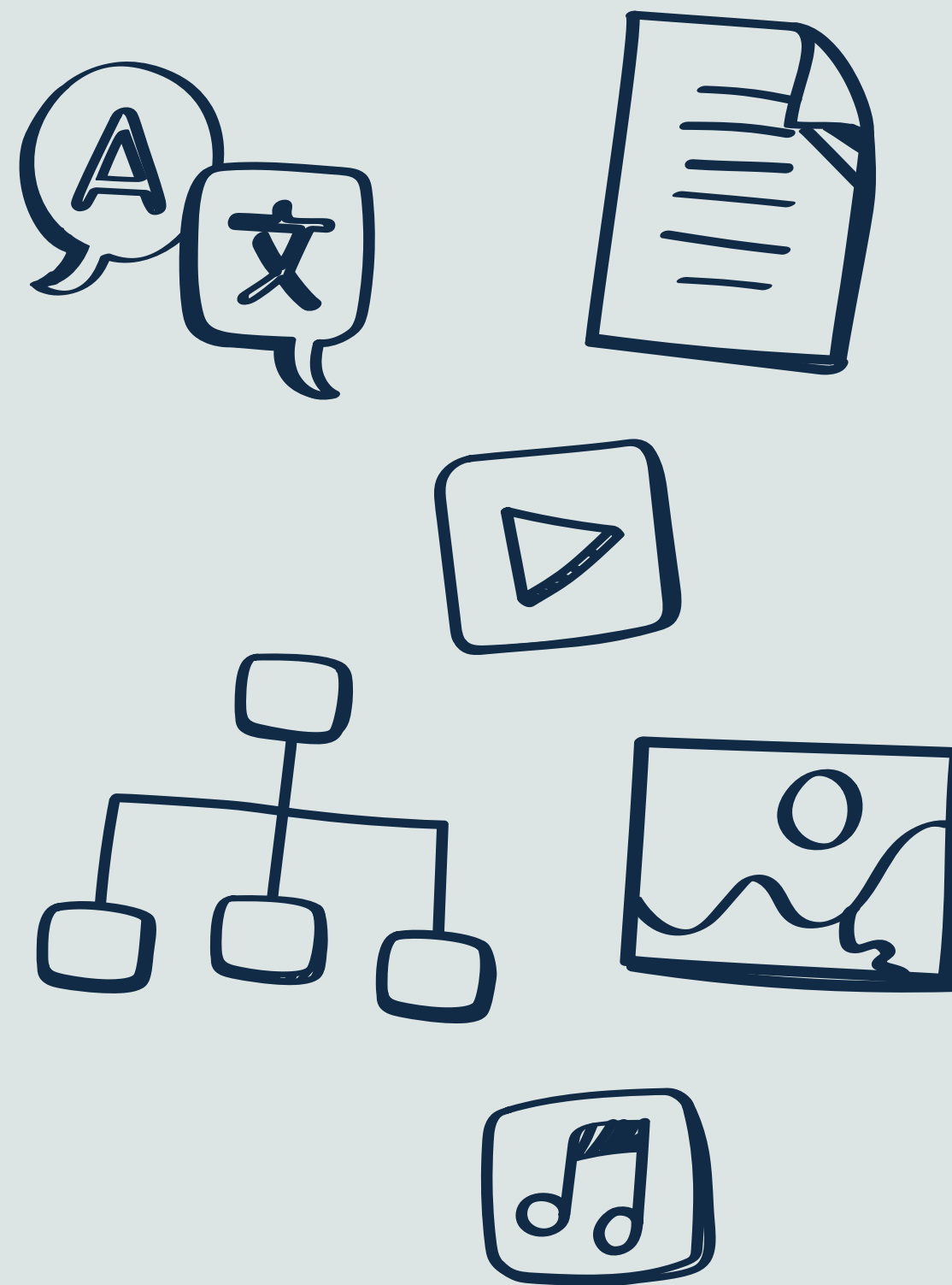
How We Got Here

- We started with PHPCR, inspired by the Java Content Repository (JCR)
- PHPCR allowed us to build quickly without creating storage from scratch
- Today, however, we need a solution that is faster, more straightforward, and seamlessly integrated with the PHP and Symfony ecosystem



Why Storing Content Is Hard

- CMS content is **unstructured** and **hierarchical** – it doesn't fit neatly into traditional tables
- Relational databases struggle with complex hierarchies and dynamic schemas
- Content storage needs to evolve with the needs of modern CMS



Why PHPCR Needs Replacement

- **Performance issues:** Doctrine DBAL transport struggles at scale
- **Inconsistent features:** DBAL transport lacks full support compared to Jackrabbit
- **Operational headaches:** Running Java-based Jackrabbit introduces operational complexity in predominantly PHP-based environments



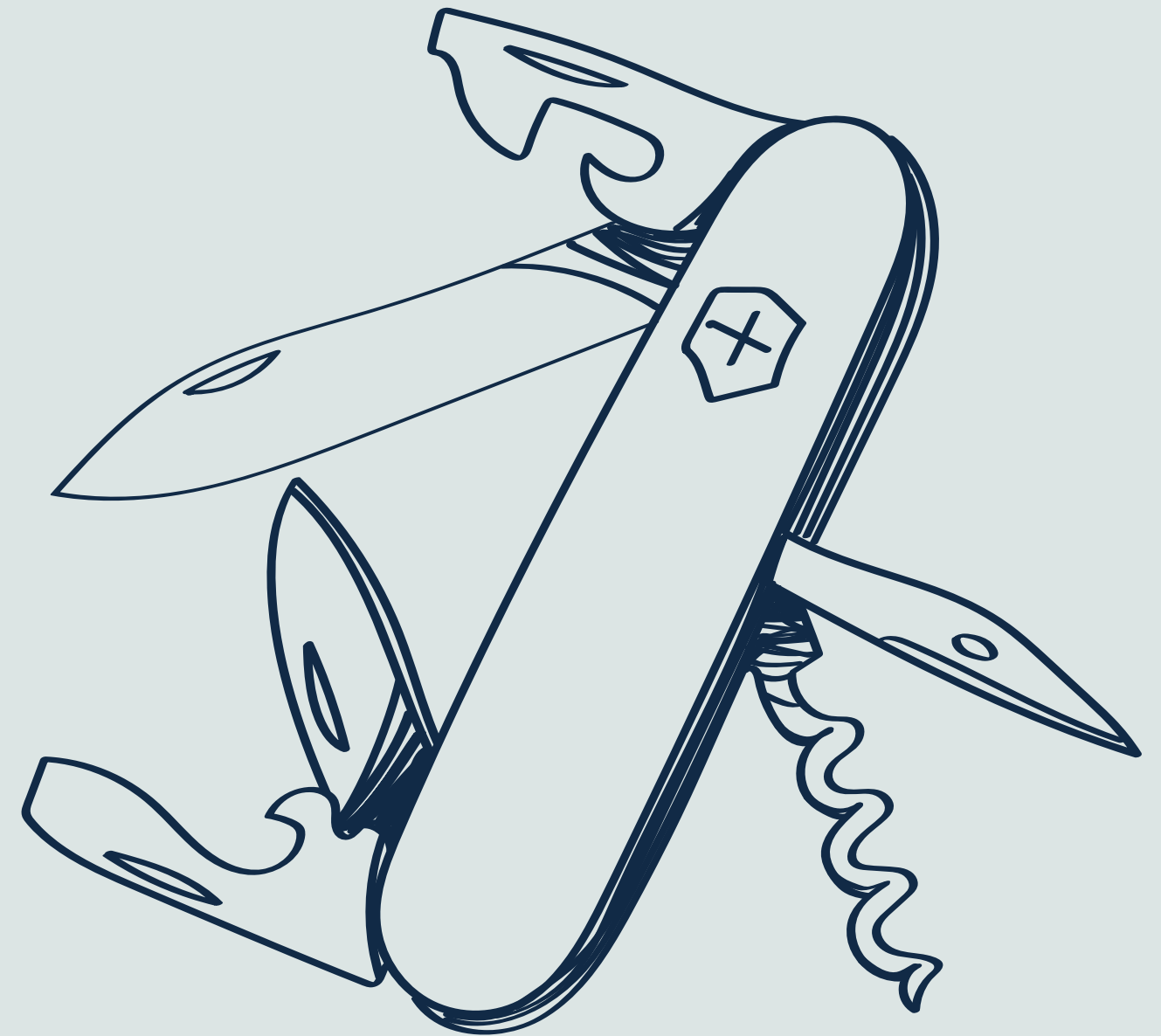
Lessons Learned from PHPCR

- **Flexibility in Content Modeling:** PHPCR's adaptable approach inspired our new, more streamlined storage design
- **Hierarchical Data Structures:** The tree-like structure of PHPCR remains a core concept, optimized for performance



Evolving Technology and User Needs

- Relational databases now **support JSON**, bridging the gap for flexible and high-performance storage
- Modern needs demand better tools for personalization, querying, and modeling



Introducing the New Content Storage

- Sulu 3.0 introduces a new content storage solution, built from the ground up for performance and flexibility
- Already running in production for some time, proving its reliability and performance in real-world scenarios



Built for Performance and Flexibility

- Designed for seamless integration with **Symfony** and **Doctrine**
- Optimized for semi-structured data
- Future-proofed to handle evolving content workflows and needs



Benefits for Developers and Users

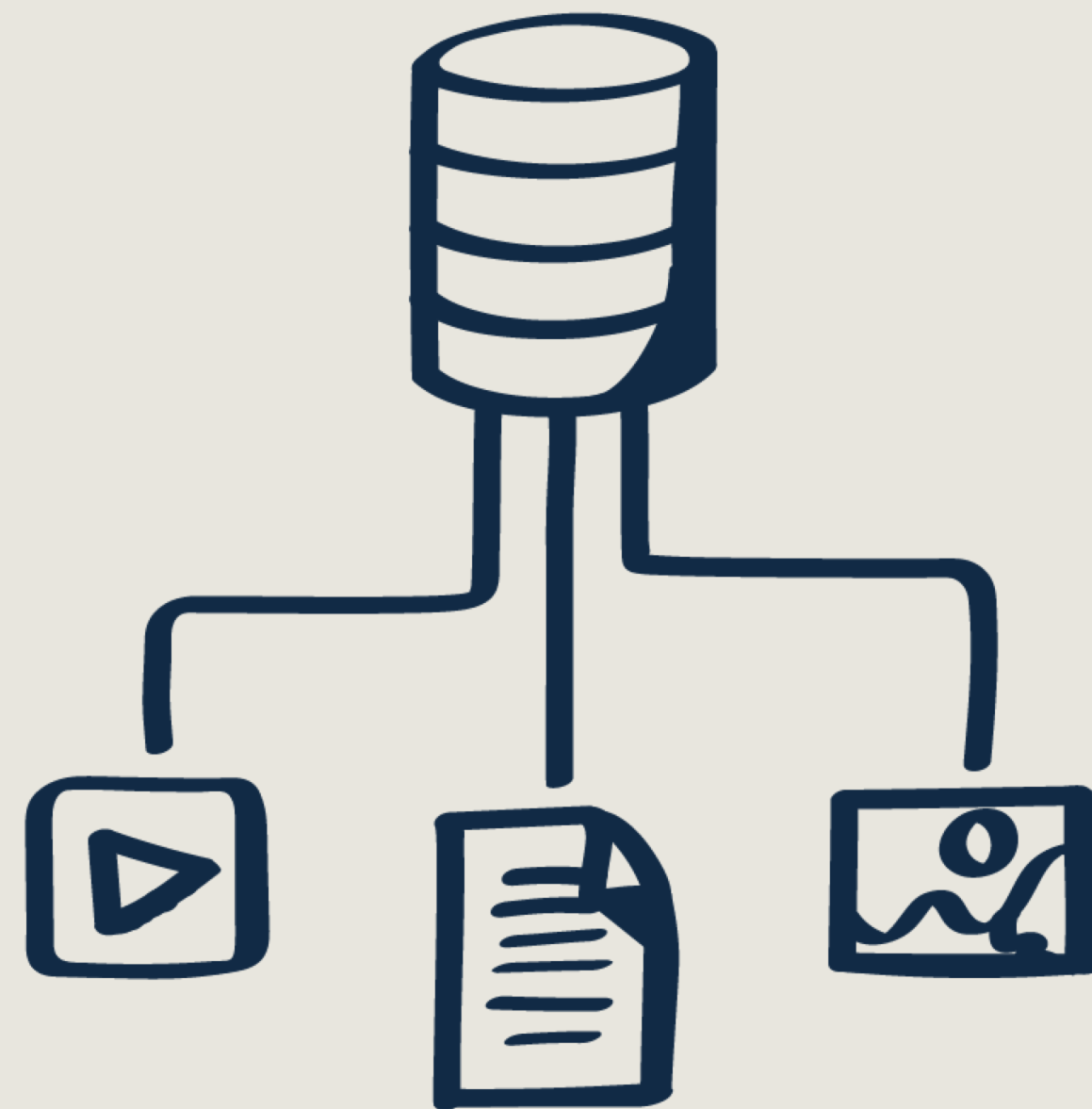
- Faster content retrieval
- More reliable and scalable systems
- Designed to be tailored and optimized to fit your specific needs
- Enhancing your business objects with content behaviors



Architecture and Design Principles

Requirements

- **Optimized Loading:** Fetch only the content and languages you need – no overfetching
- **Built-in Features:** No additional services required for versioning, drafting, and other essential capabilities
- **Flexible Architecture:** Pages and Articles are simply Doctrine ORM entities
- **Content-Ready for Entities:** Any entity can be enhanced to support content
- **Powerful Queries:** Access content seamlessly using SQL or DQL queries



Introducing Dimensions



Page Dimension

id	locale	stage	version	content
1	de	edit	0	{"description": "..."}
2	en	edit	0	{"description": "..."}
3	NULL	edit	0	{"key": "..."}
4	de	version	1726605235	{"description": "..."}
5	en	version	1726605235	{"description": "..."}
6	NULL	version	1726605235	{"key": "..."}
7	de	live	0	{"description": "..."}
8	en	live	0	{"description": "..."}
9	NULL	live	0	{"key": "..."}

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Merging Dimensions

Page Dimension

id	locale	stage	version	content
7	de	live	0	{"description": "..."} ...
9	NULL	live	0	{"key": "..."} ...



	de	live	0	{"key": "...", "description": "..."} ...
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Consistent Public Interface, Evolving Under the Hood

JSON API Response

```
{  
  "id": 1,  
  "locale": "de",  
  "key": "...",  
  "description": "..."  
}
```

TWIG Rendering Content

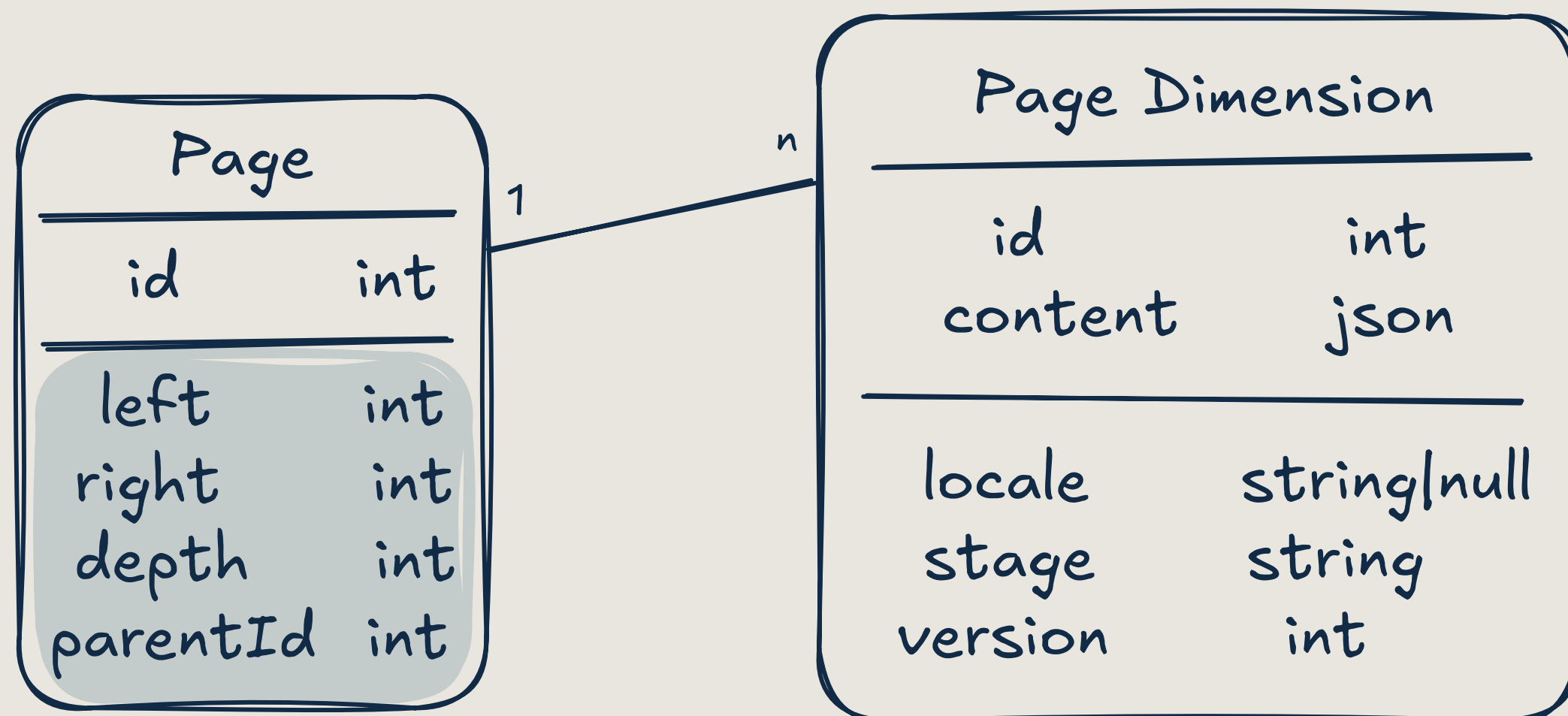
```
<div id="{{ content.key }}">  
    {{ content.description|raw }}  
</div>
```

Adding Database Columns to Optimize Query Performance

Page Dimension

id	locale	stage	version	content	authorId	workflowPlace
1	de	edit	0	{"description": "..."} 	1	review
2	en	edit	0	{"description": "..."} 	1	published
3	NULL	edit	0	{"key": "..."} 	NULL	NULL

Enhance the Main Entity with Structure Related Information

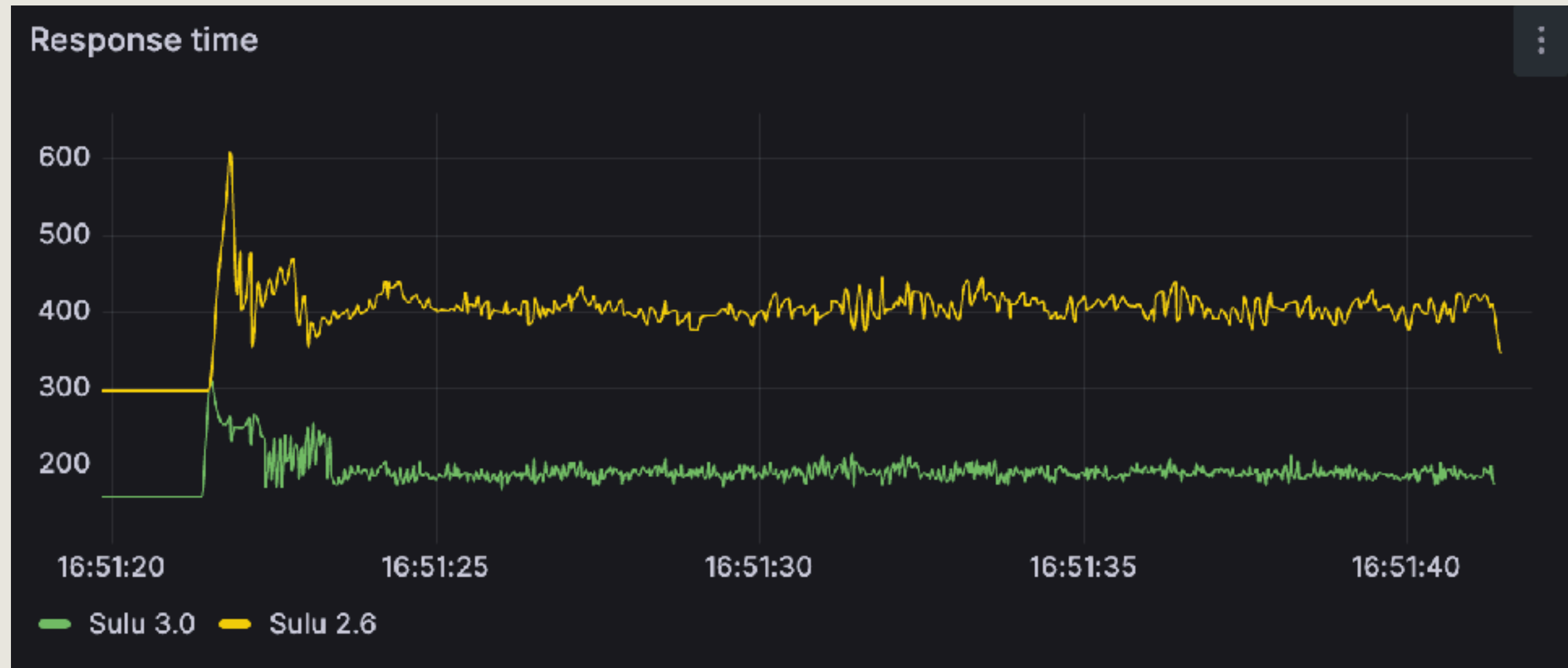


Benchmarking the New Content Storage

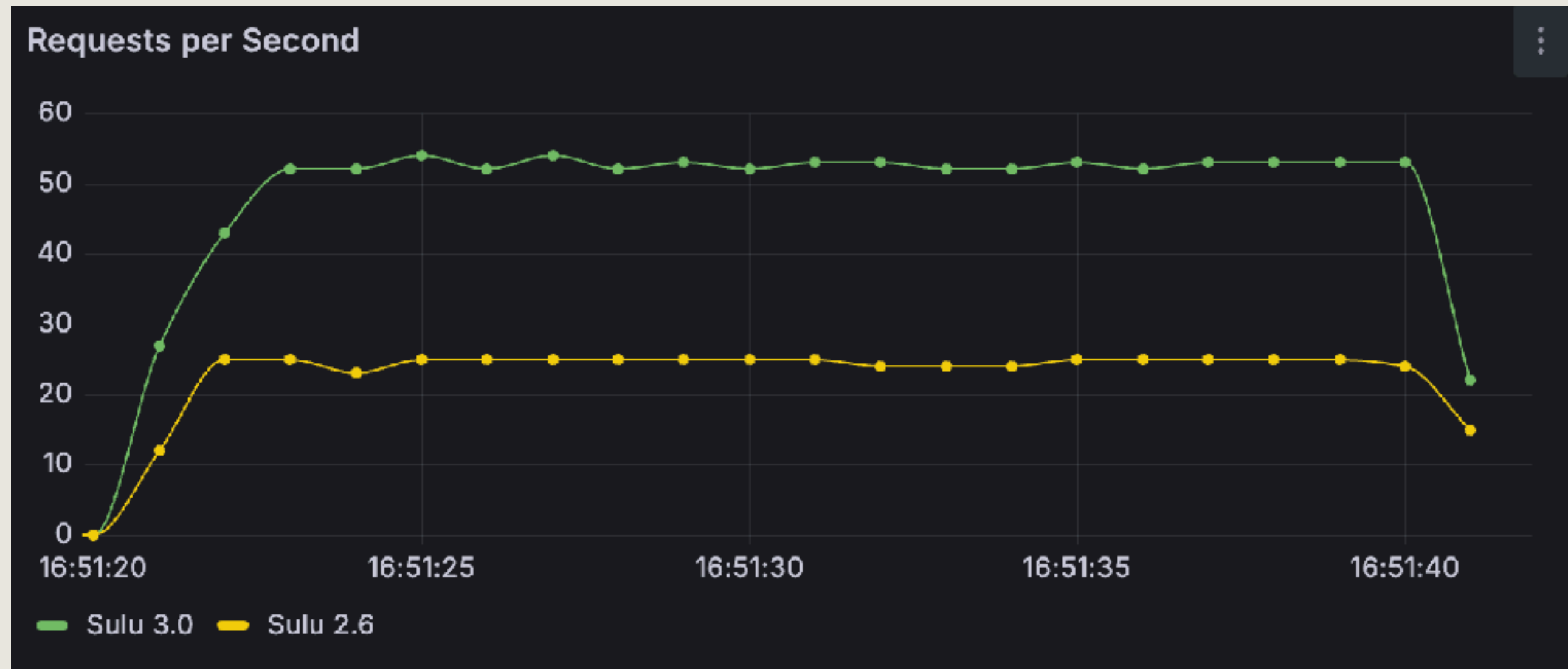
- Production Environment **Without** HTTP Caching
- Page with Complex Content Structure
- More than 30 Languages
- 10 Concurrent Users
- 20 Seconds



Let the Numbers Speak

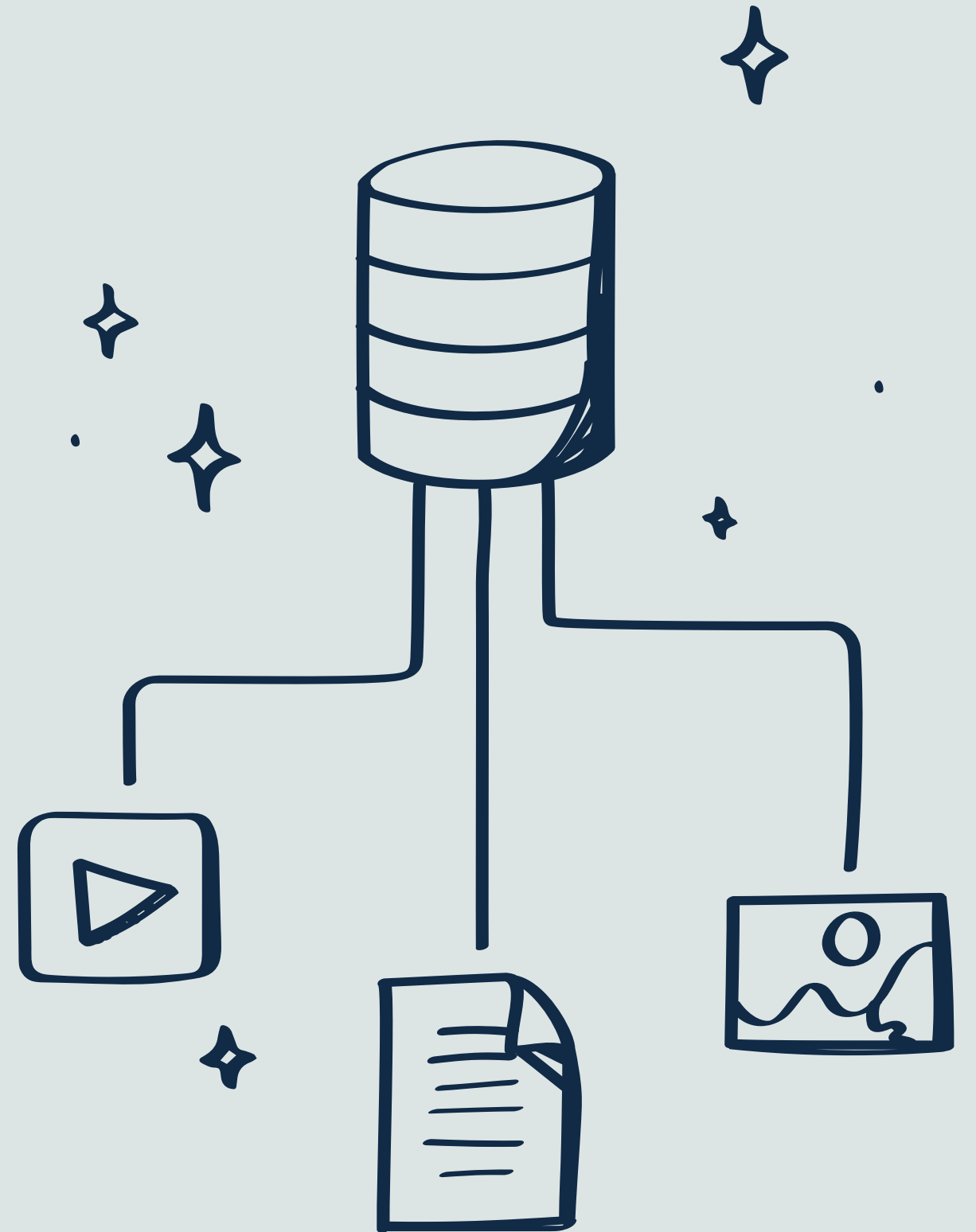


Let the Numbers Speak



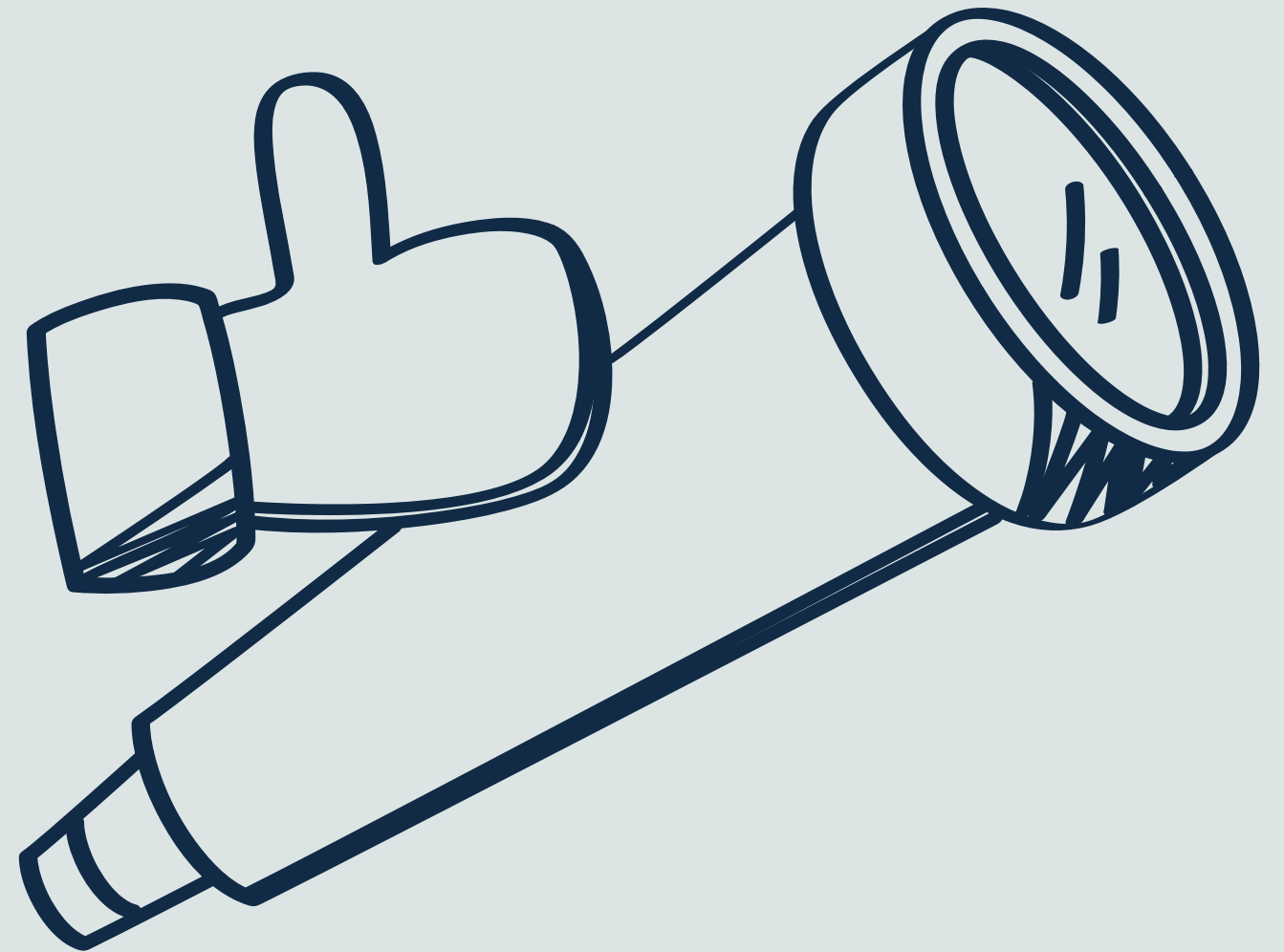
Migration Path for Existing Content

- A smooth migration path makes switching from PHPCR straightforward
- Tools, documentation, and guides ensure you can adapt without hassle



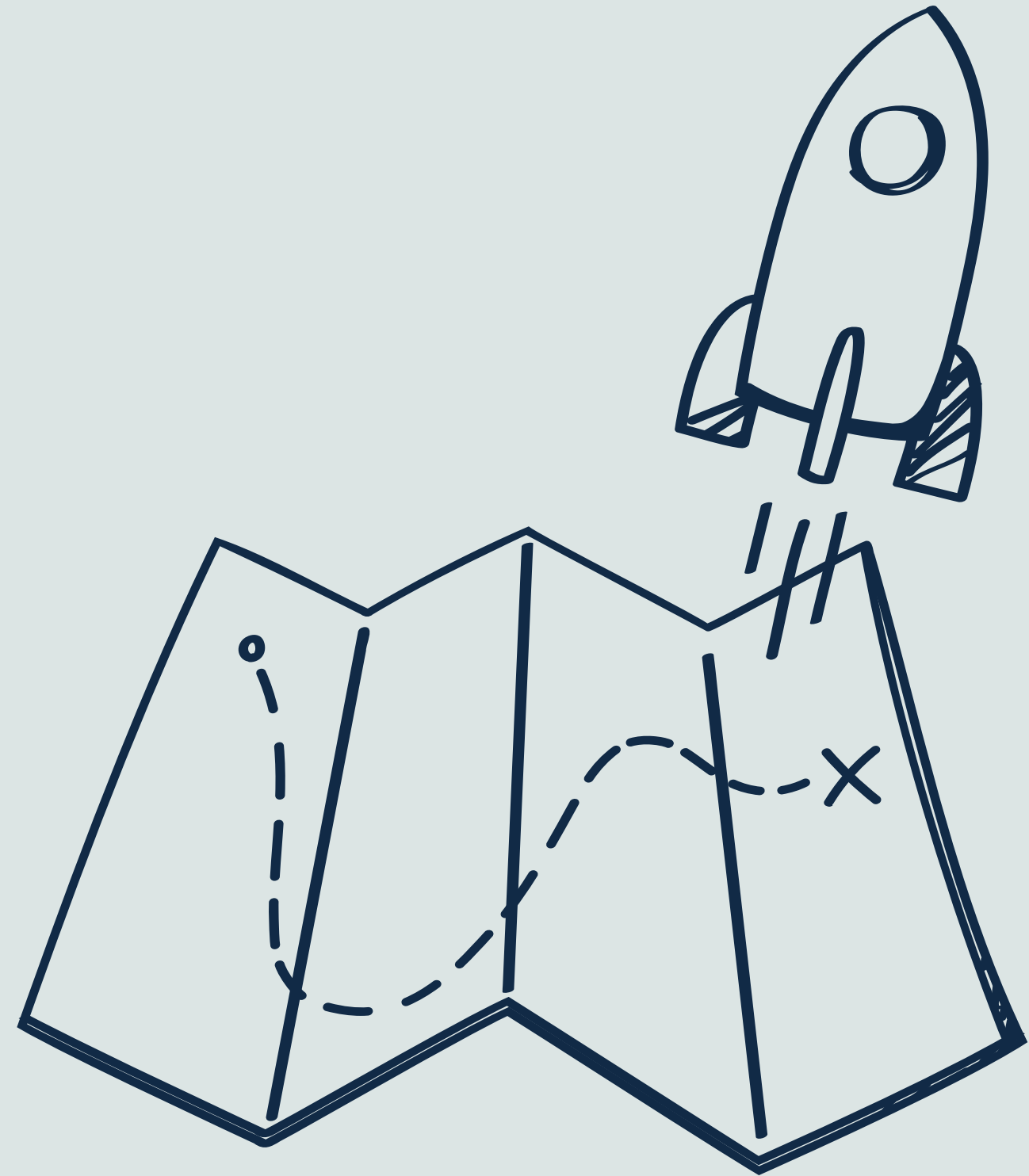
A Platform for the Future

- This is just the beginning – our vision is to continually innovate and optimize
- Alongside the new content storage, we're undertaking significant cleanups across the platform
- Dependencies are being updated, including pumping up versions of Symfony, PHP, and others, to stay modern and secure



What's Next

- The alpha version is coming soon – your feedback will shape the final release
- Full release is targeted for Q1 2025





Q&A

SULU.IO

Thank you!