

The New and the Different: Northfield Analytics with Flexible Access

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Northfield Online Analytics Services

NEXUS – WEBUI - Risk, Optimization and Stress Testing

- **Single platform**, intuitive and relevant across various levels of investment management functions
- Use Portfolio **Optimization** and **Risk** Management as part of a single workflow...
- Perform **Stress Tests** based on different economic and market Scenarios
- Seamlessly integrate your holdings, market, and descriptive data through Nexus **Data Loader**
- Analyze your portfolios, point in time or across, using Northfield multifactor **Risk Models** with full factor and security Risk Decomposition at both relative and absolute levels
- With **Northfield EE** model, cover millions of assets across different countries, currencies, and regions

SAAS – distributed framework for Northfield analytics online

- Both hosted by Northfield & an SDK
- Optimizer, risk model data and downstream risk analytics

What is SAAS?

online implementation of NISASP (Analytics Services Platform):

Connection Control Service [CCS]

- granular product access control
- NISASP configuration mode (peer to peer vs remote on SAAS vs hybrid)
- distribution – given an access key, download the NISASP API or ask us for an SDK and host the service yourself: We support Windows, Mac, various flavors of Linux and AWS

Data Access Toolkits:

- Risk Models [ARC, MDL, ACES]
- Portfolios, Benchmarks via OFX [DAT]

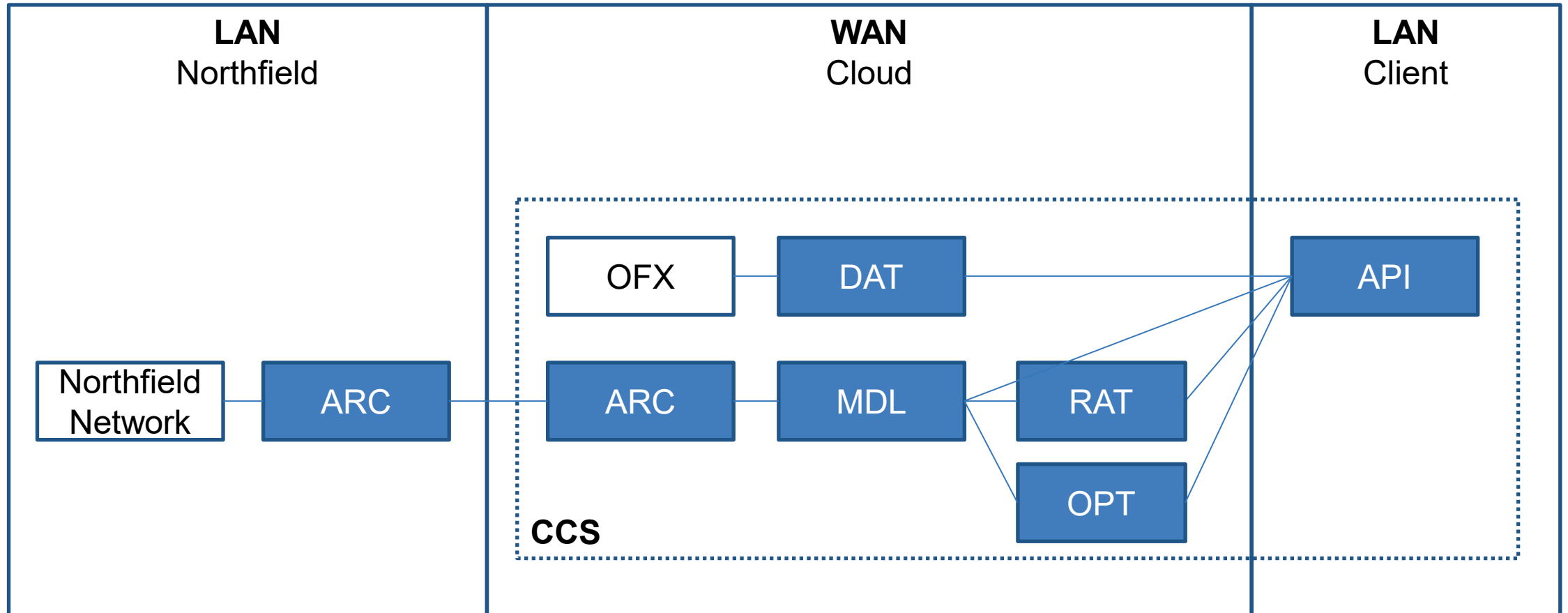
Risk Analytics Toolkit [RAT]

- scenario analysis
- expanded risk reports

Optimizer API [OPT]

- Northfield Optimizer as a distributed asynchronous web service

SaaS Component Overview



Why we care about SAAS

SAAS services can be quickly assembled into more complex applications and services...

applications

- Optimized Scenario Analysis - using OPT and RAT services
- any other desirable WUI application

analytics services

- RAMP – deliver previously defined risk reports on a schedule using MDL, DAT and RAT

data services – ACES (Asset Coverage Extension Service)

- risk model delivery and exceptions processing using MDL and integration with vendor web services like Refinitiv Datascope & CUSIP...
- deliver risk model record given client's identifiers, resolve xref ID issues, model or proxy exceptions for as complete coverage as possible
- Live on saas.northinfo.com for all Northfield Risk Models

ACES (Asset Coverage Extension Service)

- Currently Supports most Northfield models
- Get the subset of assets that matter to you
- Integrated ID cross reference for Equities and Bonds
- Downloads records referenced by client id...
- Automatic proxying of assets not covered wherever possible
- Downloads data via Refinitiv DSS
- Maps to one of about 300,000 precomputed proxies based on asset bucket type.
- Provides full coverage log – including which ids were cross referenced, which were proxied and why.

Why our clients (should) care about SAAS

Full service to render software / data wrangling obsolete (RAMP)

Access to applications without data / deployment hassle (Apps)

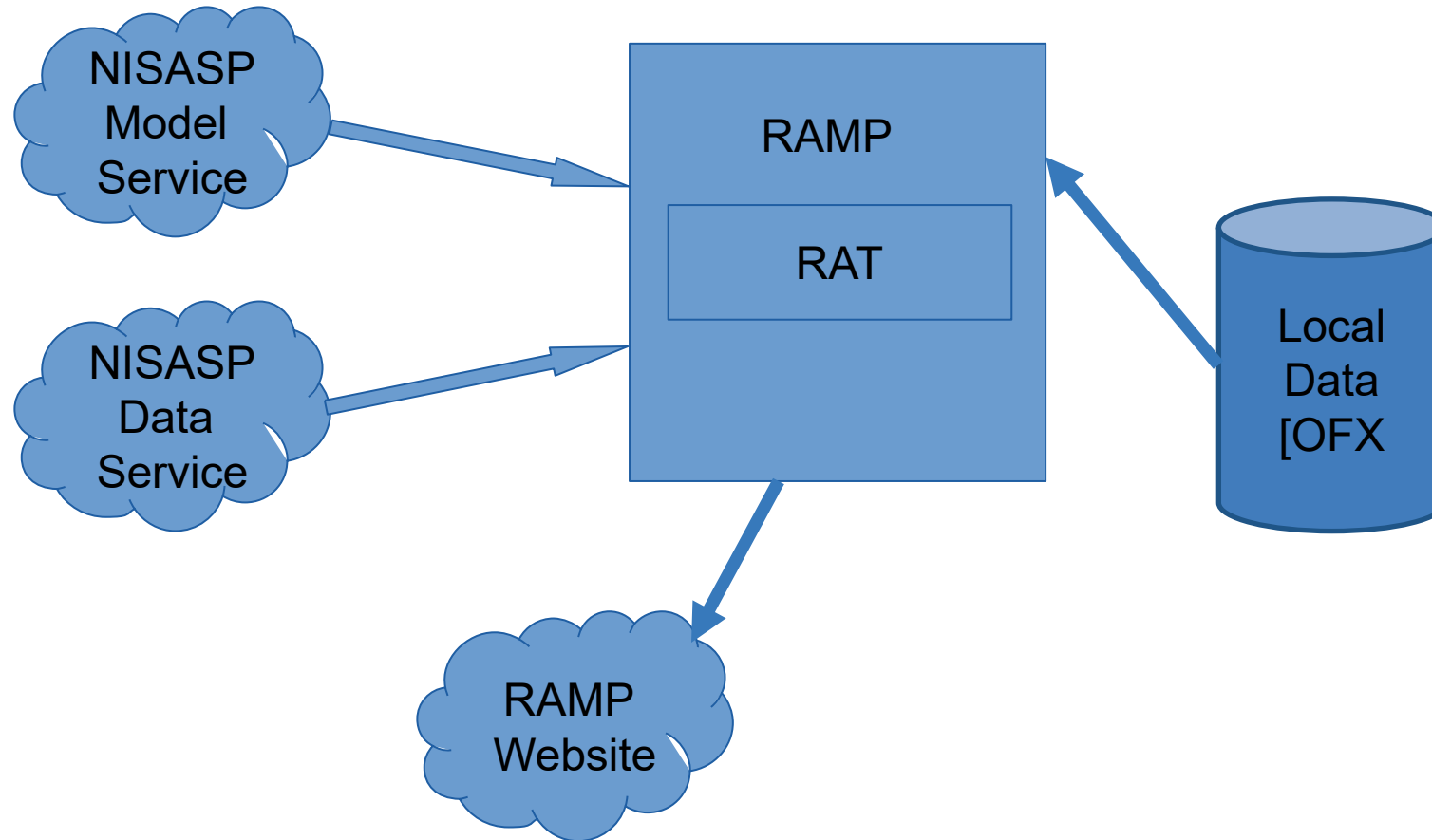
Architecture / Development Environment agnostic access to all our tools and data for integration.

- All tools available, hosted on saas.northinfo.com, via JAVA API or RESTful Web Service (JSON) API – any box with a web connection can, given the right authorization key, access our tools and data from any language;
- There's also a JAVA software development kit for local installations of the CCS, OPT and MDL services, supporting WIN64, OSX, Linux and AWS.

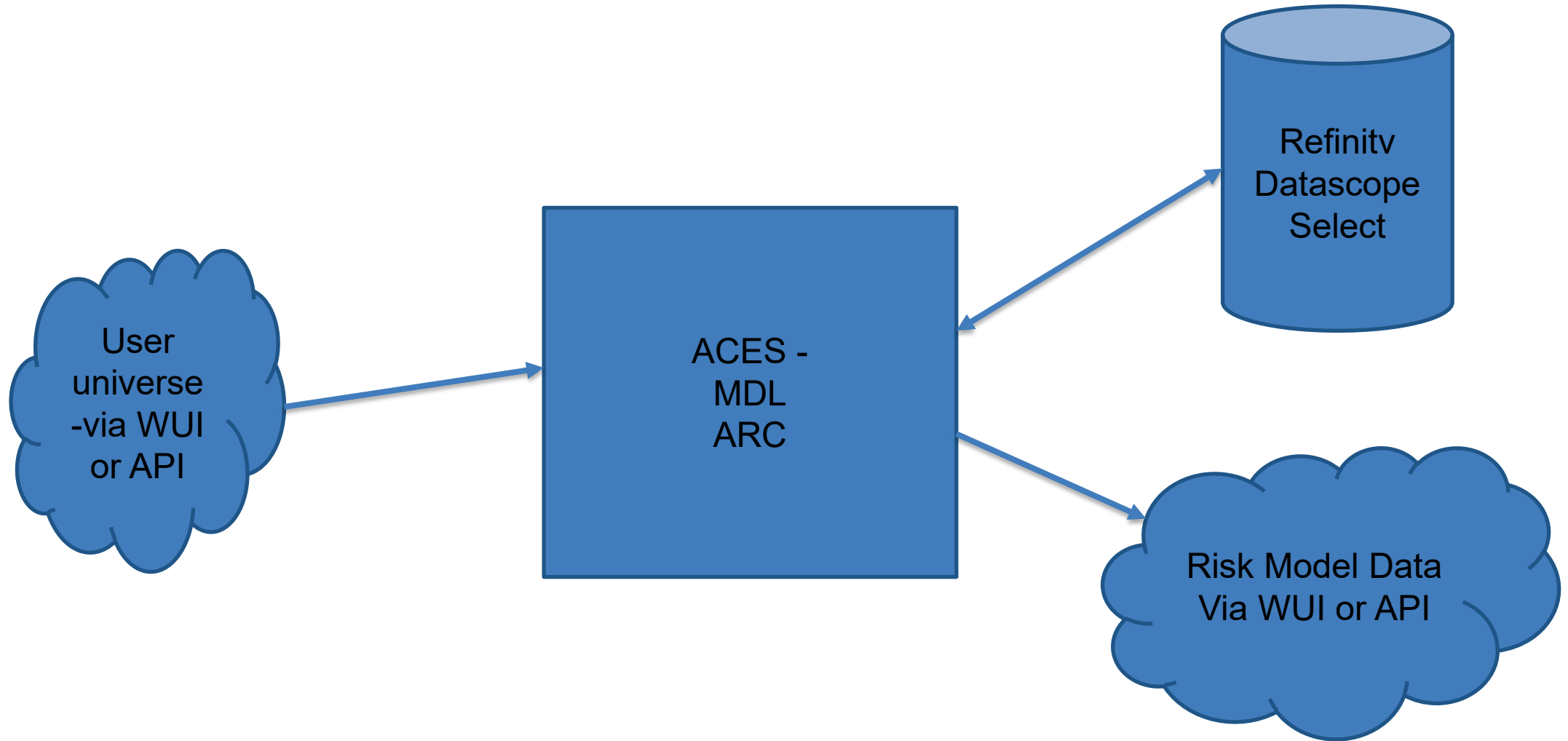
SAAS Future Roadmap

- Enable Portfolio Hierarchies (DIFI dependent)
- Enable realtime portfolio loading and management (DIFI dependent)
- Exchange traded derivatives (Q3)
- Persisting EENIAC output into SAAS (Q3)
- EENIAC integrated in ACES (2023)
- Performance Attribution (Q4)

RAMP Architecture



ACES Architecture



Optimized Scenario Analysis

