Model N

An Enterprise-Grade Architecture for
Salesforce Native Applications

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Introduction

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Today, end users are truly in the driver's seat; the digitally empowered customer becomes the focus: business scenarios and their data sets span the entire organization and channels globally; and very complex high volume tasks need to be managed seemingly with ease. Companies are grappling with new technologies and new platforms to enable this change, while they seek to better leverage the core data and systems that are the backbone of their businesses today.

To be successful in this age of the customer, IT organizations require an enterprise grade architecture that supports 3 fundamental building blocks for transformational applications:

1 **End-to-End** — functionality that aligns and automates processes spanning multiple business organizations, that is inclusive of direct and indirect channels and that combines data and analysis from internal and external sources

2 **Robust and Interoperable** — with Master Data, CRM, and ERP leveraging these systems as part of the transformation, providing administration and management capabilities that simplify complexity and living up to enterprise IT standards

3 **Performance and Scalability** — the ability to deliver the expected performance and user experience even with high volumes and complex models

Salesforce in the Digital Transformation Landscape

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Digital transformation is ushering in a new world of technology into the corporate IT landscape. Salesforce has become a leading platform in digital transformation projects, and has also created a platform for 3rd party software companies to build "native" applications that interoperate with it. Building on the Salesforce platform provides customers with a diverse and rich set of applications on a secure, common cloud platform, sharing a common user and administration experience. But Salesforce is not without it's limitations.

The Gotcha's

Limitations on data volume — which come into play when dealing with big data such as managing transaction lines from distribution channels for chargeback and rebate calculations and processing.

Parallel execution and calculation duration — which affect applications such as pricing analysis and CPQ that may deal with large complex scenarios or models.

Limitations on caching — which can degrade performance for applications such as CPQ that deal with large, complex models.

View state limitations — that restrict the ability of the UI to incorporate advanced usability features to simplify complex user interactions.

Bringing Enterprise Grade to Salesforce

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For decades, Model N has been successfully delivering enterprise grade Revenue Management applications including pricing, quoting, contract life cycle management, rebates and channel management on a global scale. These applications manage over $700 billion in annual revenues across 100 countries and are designed to be interoperable with our customers ERP systems, in particular SAP.

Model N brings its proven expertise to the Salesforce platform with its Revenue Cloud suite. The Revenue Cloud architecture leverages the full capabilities of the Salesforce 1 platform. Model N applications are Salesforce native solutions deployed in the customer's Salesforce org. There is no "punching out" to a separate application.

The Model N architecture respects and follows the platform framework for data models, transactions and UI actions, utilizing standard APIs available in Salesforce.

Data Models are defined within Salesforce and stored within Salesforce.

Transactions are defined by the Salesforce platform, initiating and ending within Salesforce transparently to users.

The user experience is always within the Salesforce UI, enhanced by Lightning ready UI objects to deliver better usability.
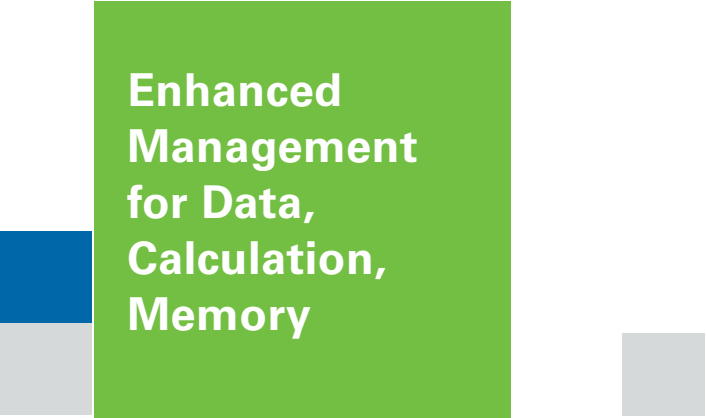
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Model N Advanced Salesforce Native Performance Architecture

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Model N set out to solve three fundamental architecture challenges for Salesforce native applications: storage, calculation resources and memory resources.

Enhanced Management for Data, Calculation, Memory

Model N applications have a unified data layer to store and share data using standard Salesforce objects. Big data types, such as channel sales lines are stored in enhanced Model N data services and surfaced as native Salesforce objects using Salesforce REST APIs and Lightning Connect technologies. To native Salesforce applications this approach is transparent.

To address the challenges of calculation or computing time and memory limitations, Model N uses stateless performance engines. The engines do not store any data, just accept and process requests from the applications. The engines operate within the Salesforce transaction and the service is completely transparent. The engines are mutli-tenant, clustered services that are highly scalable.

Model N built a Node.js implementation of the Rete algorithm into the configuration engine which caches models to improve response times. Any calls and rule chaining during the session are then evaluated in sub-second time, delivering instantaneous response for very large configuration models.

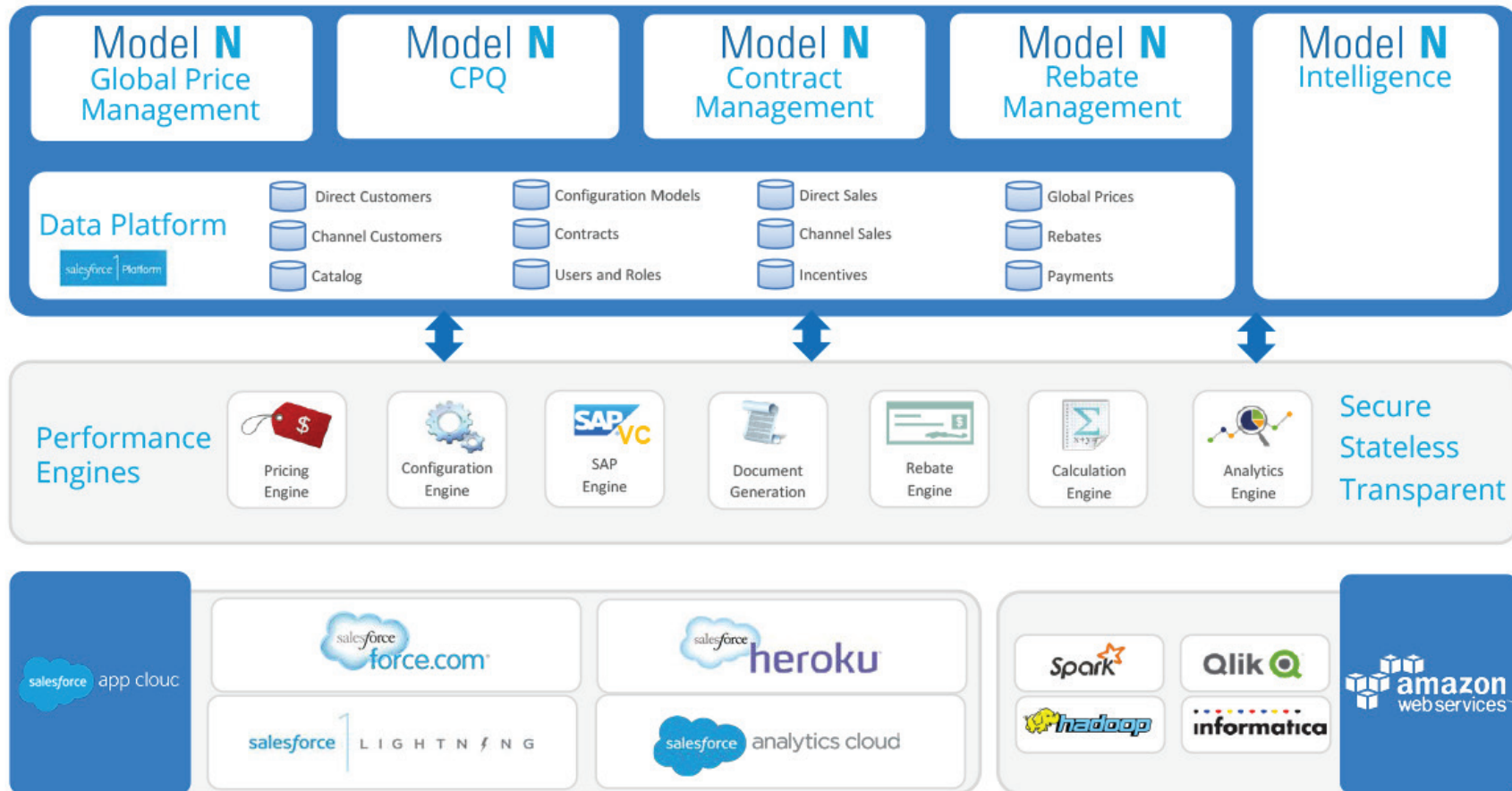Model N
Architecture
Overview

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Model N Advanced Salesforce Native Performance Architecture has three layers. The applications themselves are Salesforce native applications fully leveraging the Salesforce User experience. Model N has enhanced certain elements of the UI with Lightning ready UI components to enable capabilities like a patent-pending model navigator in CPQ to simplify complex configurations.

The second layer of the architecture is the Model N Data Platform which provides a unified data layer for the applications. The Data Platform unifies Sales Cloud with the Revenue Cloud Suite and enables seamless collaboration among the applications within the suite.

Model N Performance Engines provide high performance, specialized services for the Revenue Cloud applications. The engines use highly secure 2-way SSL certificates to ensure that access is only through the known Salesforce entity. The engines are mutli-tenant, clustered services that are highly scalable and are operated within Salesforce App Cloud on Heroku or in a Model N AWS environment.

MODEL N ARCHITECTURE OVERVIEW

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The architecture also includes world-class enterprise application integration (EAI) with robust high availability, monitoring and management tools, used to enable integration with many types of packaged applications and custom systems.

Delivering an Enterprise Grade Salesforce Architecture
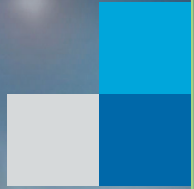
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Model N Advanced Salesforce Native Performance Architecture is designed to meet the expectations of enterprise customers implementing corporate-wide digital transformation initiatives.

Design Principle 1 — End-to-End

Model N architecture enables a suite of Salesforce native applications that span the entire revenue management lifecycle. The suite includes pricing, CPQ, contract lifecycle management, rebates and intelligence applications built to drive complexity out of the sales process.

Design Principle 2 — Robust and Interoperable

Model N architecture brings together critical master data and facilitates interoperability between multiple applications to create a foundation for transformation that leverages existing systems. Model N offers deep interoperability with ERP – particularly SAP – using specialized engines tuned to leverage the data and business logic in SAP Pricing and Variant Configuration.

In addition, Model N built out comprehensive tools to manage the complexities of the data, documents and products included in transformation projects.

Design Principle 3 — Performance and Scalability

Model N performance engines deliver a significant improvement in response time and scalability for the Salesforce platform. The performance engine's multi-tenant clustered design enables fast and efficient scalability as load increases, transparently offering computing cycles for specific functions to Salesforce native applications.

For more information, visit www.modeln.com