



## aspensONE<sup>®</sup> Planning & Scheduling for Refining & Marketing

*Maximize refinery margins  
by optimizing the planning  
and scheduling work  
processes for the  
downstream petroleum  
supply chain*

### ||||||| Overview

*aspensONE Planning & Scheduling for Refining & Marketing* is a collaborative optimization solution that improves refinery operational and financial performance by integrating production planning, operations scheduling, and blend scheduling. It maximizes profitability by:

- Optimizing feedstock selection and scheduling
- Maximizing plant performance, throughput, and efficiency
- Reducing “plan versus actual” gap
- Achieving more accurate crude and product scheduling
- Increasing visibility and optionality within the plant and across the downstream supply chain

### ||||||| The Challenge: Keeping Pace in a Constantly Changing Industry

Refineries operate in volatile and complex environments. Production plans must keep pace with ever-changing demand. Refineries must comply with more stringent safety and environmental regulations. Fluctuating feedstock and production costs make it difficult to predict profit margins. Global competition has increased, while regional imbalances and political instability disrupt the global supply chain. To remain competitive, refiners need a solution that integrates and optimizes planning and scheduling across the supply chain.

*“During a recent hurricane, several major crude pipelines were shut down. With **aspenONE Planning & Scheduling** we had a 45-day view of our intermediate feedstock inventory. This visibility helped maintain throughput during a very challenging time.”*

— Phillip Koenig, Manager of Engineering & Analytical Services, Marathon Petroleum Company

## aspenONE® Planning & Scheduling for Refining & Marketing

### ||||||| The AspenTech® Solution: Integrating Processes to Reduce Costs

*aspenONE Planning & Scheduling for Refining & Marketing* optimizes end-to-end refinery operations by integrating key processes. Refiners typically save \$10 to \$20 million for a 200,000 BPD refinery:

- \$0.15–\$0.20/bbl savings from feedstock/production optimization
- \$0.03–\$0.06/bbl savings from reduced blending give-away
- \$1–\$3M per year savings from reduced demurrage and inventory costs

*aspenONE Planning & Scheduling* is comprised of best-of-breed integrated products:

Advanced features of **Aspen PIMS** facilitate enterprise-wide planning by enabling access to linear planning and the creation of multi-plant and multi-period requirements. Aspen PIMS also includes:

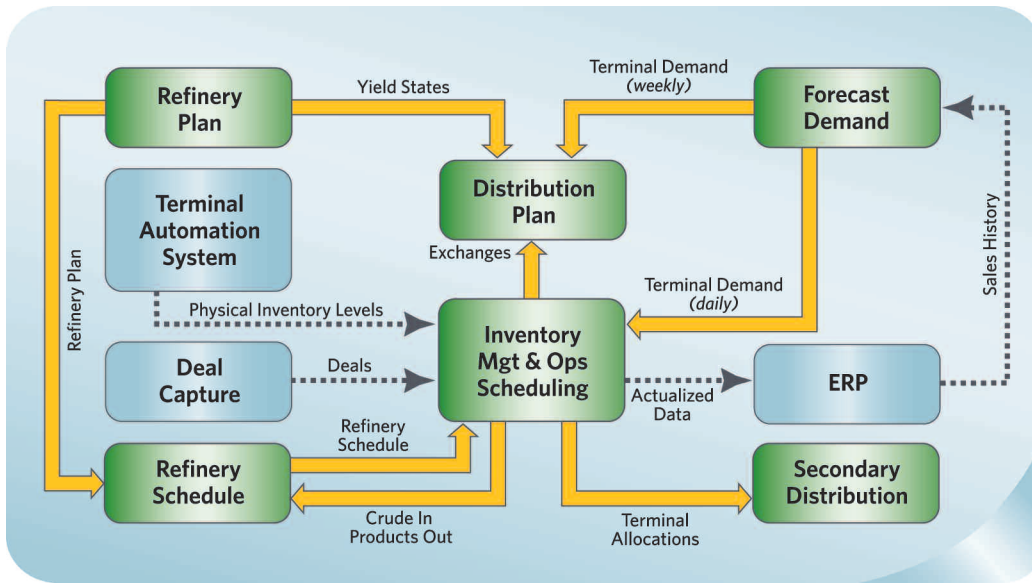
- **Aspen PIMS Advanced Optimization**—allows access to linear non-linear planning and shares data and models with *Aspen Petroleum Scheduler* and *Aspen Petroleum Supply Chain Planner*
- **Aspen PIMS Solution Analyzer**—enables global optimization, solution ranging, goal programming, parametric programming, and high-fidelity crude distillation
- **Aspen PIMS Distributed Processing**—runs multiple Aspen PIMS cases simultaneously on multiple servers, reducing analysis efforts
- **Aspen PIMS Sub-model Calculator**—performs matrix calculations on sub-models without running Aspen PIMS; provides efficient sub-model validation and post-optimal data analysis

**Aspen Petroleum Scheduler** supports comprehensive scheduling and optimization of refinery activities, including crude receipts, process operations, product blending and shipping. Companies achieve more accurate crude and product scheduling and better coordination between planning, scheduling, blending operations, and marketing. *Aspen Petroleum Scheduler* shares data and models with *Aspen PIMS-AO* and *Aspen Inventory Management & Operations Scheduling (IMOS)* for integrated planning and scheduling.

**Aspen Refinery Multi-Blend Optimizer** shares industry-standard non-linear blend models with *Aspen PIMS*. Its seamless integration with *Aspen Petroleum Scheduler* delivers event-based, multi-blend product optimization across the scheduling horizon.

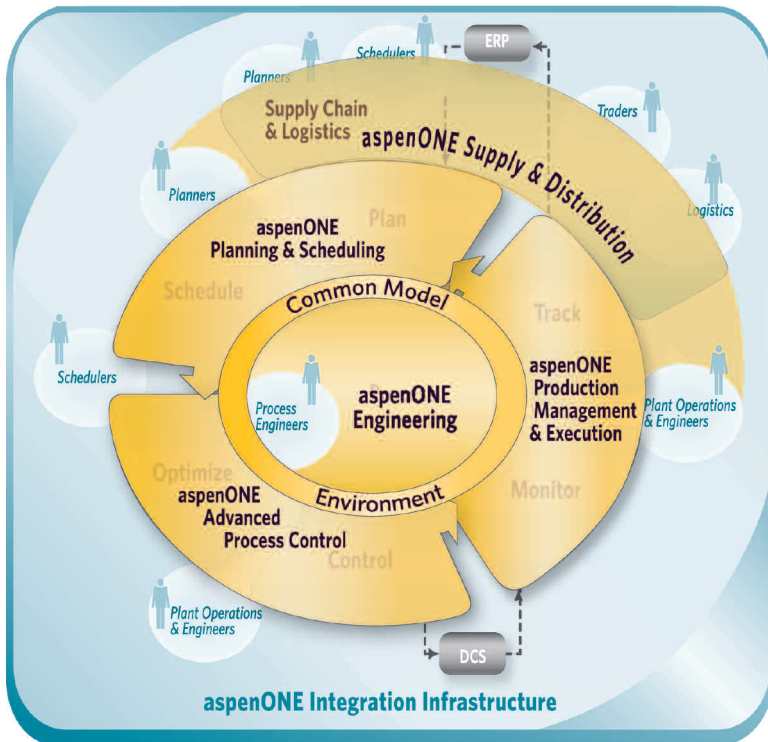
**Aspen Integration Infrastructure** enables these applications to work together while supporting real-time data in a visual context, allowing users to make collaborative decisions based on common data.

## Integrated Petroleum Supply Chain Optimization with aspenONE for Refining & Marketing



*aspenONE Planning & Scheduling for Refining & Marketing* helps employees optimize refinery planning and scheduling work processes.

Function	Benefit
<ul style="list-style-type: none"> <li>Common planning and scheduling models for sharing information</li> </ul>	<ul style="list-style-type: none"> <li>Provides a more accurate representation of the plant and improves model reliability and team collaboration</li> </ul>
<ul style="list-style-type: none"> <li>Accurate and timely feedstock and product data, including inventory, compatibility, prices, and blending specifications</li> </ul>	<ul style="list-style-type: none"> <li>Improves profitability by extending production runs and by reducing feedstock transition</li> <li>Aligns inventory to production</li> <li>Identifies viable feedstock alternatives</li> </ul>
<ul style="list-style-type: none"> <li>Event-based scheduling</li> </ul>	<ul style="list-style-type: none"> <li>Increases uptime by closing the gap between planning and scheduling and proactively identifying issues</li> </ul>
<ul style="list-style-type: none"> <li>Event-based, multi-blend optimization for gasoline, diesel, and fuel oil</li> </ul>	<ul style="list-style-type: none"> <li>Helps schedulers better manage inventory and reduce blend recipe and blend quality giveaways</li> </ul>
<ul style="list-style-type: none"> <li>Automated export of optimized blend recipes to blend control systems</li> </ul>	<ul style="list-style-type: none"> <li>Facilitates the sharing of blending and scheduling knowledge and enables better decision-making</li> </ul>
<ul style="list-style-type: none"> <li>Superior simulation techniques for complex and proprietary solution ranging</li> </ul>	<ul style="list-style-type: none"> <li>Optimizes throughput with automated identification of the maximum profitability solution</li> </ul>
<ul style="list-style-type: none"> <li>Support for tools and proprietary technologies that include linear and non-linear modeling capabilities</li> </ul>	<ul style="list-style-type: none"> <li>Reduces planning time by quickly identifying the optimal solution for the best margins</li> </ul>
<ul style="list-style-type: none"> <li>Refinery-wide and downstream supply chain visualization</li> </ul>	<ul style="list-style-type: none"> <li>Improves decision-making as different functional groups can make decisions based on the same data</li> </ul>



||||||| **aspenONE Planning & Scheduling for Refining & Marketing**

*aspenONE Planning & Scheduling for Refining & Marketing* is part of AspenTech's integrated aspenONE solutions for energy companies. AspenTech's aspenONE solutions are designed to align with key industry business processes, providing manufacturers the capabilities they need to optimize operational performance, make real-time decisions, and synchronize the plant and supply chain.

||||||| **About AspenTech**

AspenTech is a leading supplier of software that optimizes process manufacturing—including oil and gas, petroleum, chemicals, pharmaceuticals and other industries that manufacture and produce products from a chemical process. With integrated aspenONE solutions, process manufacturers can implement best practices for optimizing their engineering, manufacturing and supply chain operations. As a result, AspenTech customers are better able to increase capacity, improve margins, reduce costs and become more energy efficient. To see how the world's leading process manufacturers rely on AspenTech to achieve their operational excellence goals, visit [www.aspentech.com](http://www.aspentech.com).

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