X- Force
Batch Management

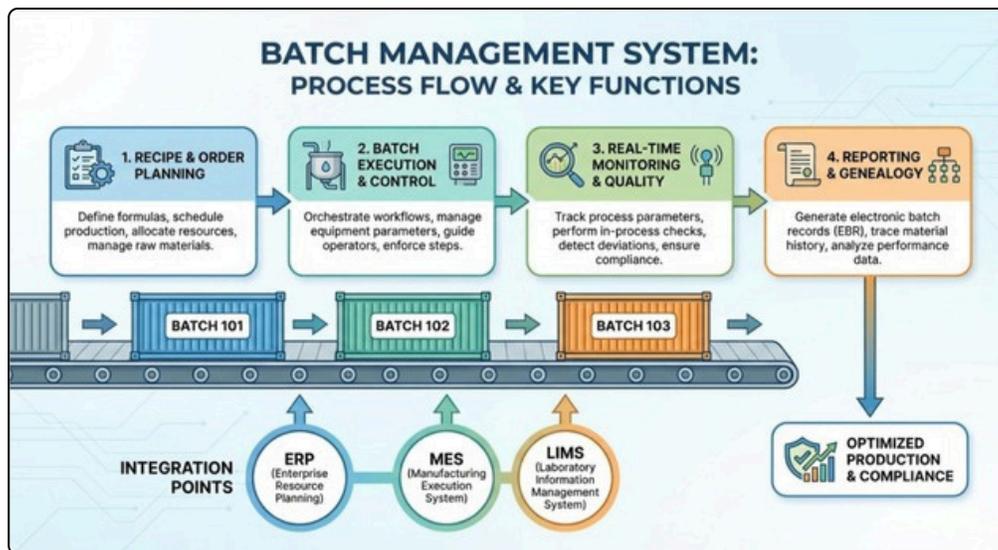**Plan. Execute. Track. Optimize.**

Overview

X-Force Batch Management System (X-Batch) is a comprehensive, web-based Batch Process Management Platform designed to digitize, control, and optimize batch manufacturing operations across industries such as Chemicals, Pharmaceuticals, Food & Beverage, Specialty Materials, Paints, Agrochemicals, and Process Manufacturing.

X-Batch enables organizations to:
- Plan and schedule production batches
- Manage recipes and formulations
- Capture critical process parameters (automatic + manual)
- Track raw material consumption and production output
- Monitor equipment status and utilities
- Maintain electronic logbooks and shift handovers
- Generate compliance-ready reports

Built on the X-Force Industrial Data Platform, X-Batch integrates seamlessly with PLC, DCS, ERP, Historians, and enterprise systems to provide real-time visibility, operational transparency, and data-driven decision-making.

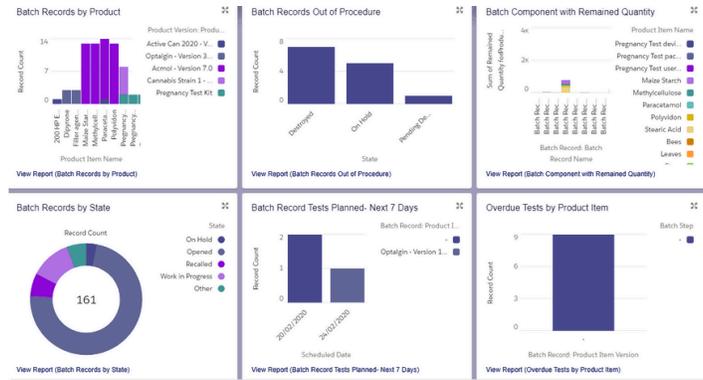## Key Capabilities

Batch Lifecycle Management

- Batch Planning & Scheduling
- New Batch Creation with Standard/Custom Size
- Real-time Batch Tracking (Current / Completed / Planned)
- Batch Change, Search & History Tracking
- Batch Transfer & Status Monitoring

Recipe & Process Management

- Standard Recipe Configuration (Raw Material & Quantity)
- Multi-step Process Configuration
- Activity & Operation Definition
- Time Cycle Management
- Version-Controlled Configuration History

Electronic Batch Records (EBR)

- Paperless Log Sheet Management
- Activity-wise Data Entry
- Quality Control Data Entry
- Data Cycle Sheet (15–30 min readings)
- Equipment Downtime Entry
- Shift Handover & General Information Logs
- Instruction & Waiving Records

Raw Material & Inventory Tracking

- RM Movement Tracking up to Root Level
- Batch-wise RM Consumption
- Scrap Disposal Management
- Stock Monitoring (RM & Finished Goods)
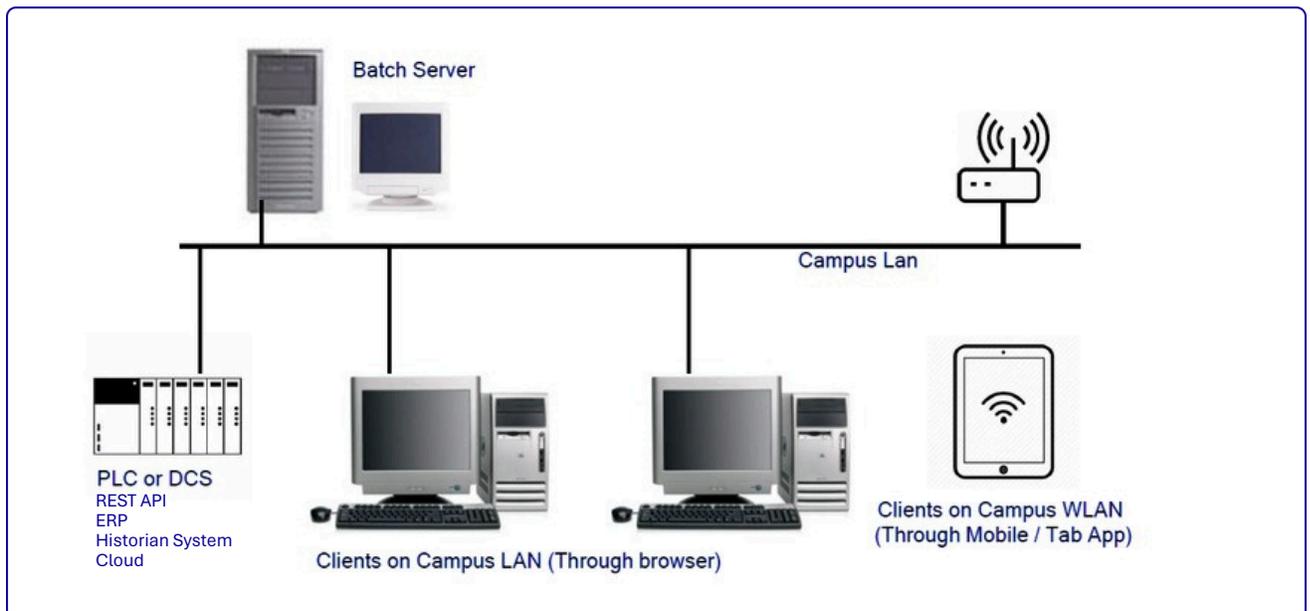- Supplier-Level Reporting

Equipment & Utility Monitoring

- **Equipment Status (Uptime / Downtime)**
- **Equipment Occupancy Reports**
- **Tank Farm Monitoring**
- **Manpower Utilization Tracking**
- **Utility & Resource Management**

Reporting & Analytics

- **Batch Detail Reports**
- **Batch Time Cycle Summary**
- **Production Reports (Daily / Monthly)**
- **Quality Control Reports**
- **Equipment Efficiency Reports**
- **Supplier & RM Analysis**
- **Plant-wise Performance Reports**
- **Graphical Trends & Dashboards**
- **Export to Excel / Word / PDF**

Integration & Architecture

Core Features

- Fully Web-Based Platform
- Role & Plant-Based User Permissions
- Change Management & Audit Trail
- Auto-fill Configurable Parameters
- Advanced Search Functionality
- File Upload (PDF, Excel, Word, Image)

- Email & SMS Notification Support
- Copy Configuration for Fast Deployment
- Centralized Data Center
- Multi-Plant Scalability
- Mobile App for Shopfloor Operators

Benefits

Operational Benefits

- Complete Computerization & Paperless Operations
- Real-Time Visibility of Batch Status
- Reduced Manual Errors
- Faster Batch Execution & Monitoring
- Improved Production Planning Accuracy

Business Benefits

- Increased Transparency Across Plant Operations
- Data-Driven Decision Making
- Improved Batch Traceability
- Reduced Production Losses
- Improved Equipment Utilization
- Standardized Process Execution Across Plants

Compliance & Governance

- Electronic Batch Record (EBR) Ready
- Role-Based Data Security
- Full Audit Trail & Change History

- Supports Internal & External Audit Requirements
- Secure Data Management

Conclusion

X-Force Batch Management System transforms traditional batch manufacturing into a structured, intelligent, and data-driven operation. It enables organizations to move from manual batch tracking to a centralized, scalable, and integrated digital batch ecosystem — ensuring operational excellence, compliance readiness, and improved profitability.