### # WHY INFORMATICA? What is Informatica PowerCenter?

**Informatica PowerCenter** is an industry-leading **ETL (Extract, Transform, Load)** tool developed by Informatica, designed to handle data integration tasks such as extracting data from various sources, transforming it according to business rules, and loading it into target systems. It’s widely used for data migration, data warehousing, and data quality management, making it an ideal fit for FML’s needs.

**Key Components of Informatica PowerCenter**

1. **Repository**: A centralized database that stores metadata (e.g., mappings, workflows) for all ETL processes.
2. **PowerCenter Designer**: A graphical interface to create source-to-target mappings and transformations.
3. **Workflow Manager**: Tool to define and schedule ETL workflows (sequences of tasks).
4. **Workflow Monitor**: Real-time monitoring of ETL job execution, logs, and performance.
5. **Integration Service**: The engine that executes ETL processes on servers.
6. **Informatica Data Quality (IDQ)**: An add-on for profiling, cleansing, and ensuring data quality (often used with PowerCenter).

**How Informatica PowerCenter Helps FML’s Migration**

**1. Handling Large Data Volumes (1 TB, 1,257 Tables)**

* **Capability**: PowerCenter uses parallel processing and partitioning to efficiently process large datasets, such as FML’s 650 GB from IBM DB2, 300 GB from SQL Server/Oracle, and 2 GB from DAR.
* **Benefit for FML**: It can handle the 177 master data tables and 899 transaction data tables, including high-volume tables (>10M records), without performance bottlenecks.
* **Example**: Partitioning splits a 10M-record transaction table into smaller chunks, processing them simultaneously to meet the July 2025 deadline.

**2. Data Extraction from Heterogeneous Sources**

* **Capability**: PowerCenter supports native connectors (ODBC, JDBC) for diverse databases like IBM DB2, SQL Server, Oracle, and flat files.
* **Benefit for FML**: Extracts data seamlessly from Wipro CRM/DMS’s mixed systems (e.g., IBM DB2 for DMS, SQL Server for Warranty) into a staging environment.
* **Example**: A single workflow extracts customer data from DB2 and warranty claims from SQL Server for unified processing.

**3. Data Cleansing and Quality Assurance**

* **Capability**: With Informatica Data Quality (IDQ), PowerCenter profiles and cleanses data by removing duplicates, standardizing formats, and filling gaps.
* **Benefit for FML**: Ensures historical data meets Zoho’s requirements (e.g., no duplicates in 169 master data tables, consistent formats across 899 transaction tables).
* **Example**: IDQ identifies and removes duplicate customer records, standardizes dates (e.g., “YYYYMMDD” to “MM/DD/YYYY”), and generates quality reports for FML review.

**4. Data Transformation for Zoho Compatibility**

* **Capability**: PowerCenter’s transformation objects (e.g., Expression, Lookup, Aggregator) map and reformat data from source to target structures.
* **Benefit for FML**: Transforms Wipro data (e.g., field name “Cust\_ID”) into Zoho’s CSV format (e.g., “CustomerID”), validated with FML’s mapping document.
* **Example**: A mapping converts transaction amounts from INR to a Zoho-compatible currency format, aggregating totals where needed.

**5. Phased Migration (Bulk + Incremental)**

* **Capability**: PowerCenter supports reusable workflows and scheduling for both one-time bulk loads and incremental updates.
* **Benefit for FML**: Executes a full 1 TB historical migration by the cut-off date, followed by incremental loads (post-cut-off) for up to 5 phases.
* **Example**: Bulk load moves 10 years of data by June 2025, while daily incremental workflows sync new transactions starting July 2025.

**6. Error Handling and Logging**

* **Capability**: PowerCenter logs errors in real-time and supports auto-retry logic for failed records.
* **Benefit for FML**: Identifies and resolves migration issues (e.g., invalid records) without manual intervention, ensuring reliability.
* **Example**: If 1,000 records fail due to missing keys, PowerCenter logs them, retries processing, and alerts the team via Workflow Monitor.

**7. Data Validation (Pre- and Post-Load)**

* **Capability**: PowerCenter, with the Data Validation Option (DVO), compares source and target data for accuracy and tests system performance.
* **Benefit for FML**: Verifies data integrity before and after loading into Zoho (e.g., matching 1,257 tables’ record counts), meeting validation requirements.
* **Example**: DVO confirms that 1M customer records in staging match Zoho post-migration, and load tests ensure peak performance.

**8. Security and Compliance**

* **Capability**: PowerCenter supports AES-256 encryption, TLS 1.2+ for data transfer, and Role-Based Access Control (RBAC).
* **Benefit for FML**: Protects sensitive data (e.g., customer PII) during migration, complying with DPDP, IT Act 2000, and ISO 27001.
* **Example**: Encrypts data transfers to Zoho’s non-production server and masks sensitive fields (e.g., phone numbers) using Informatica Data Masking.

**9. On-Premise Deployment**

* **Capability**: PowerCenter is designed for on-premise installation, scalable to FML’s infrastructure (servers, OS).
* **Benefit for FML**: Aligns with their preference for on-premise migration, avoiding cloud dependencies.
* **Example**: Installed on FML servers (e.g., 16-core CPU, 64 GB RAM), PowerCenter processes 1 TB locally.

**10. Documentation and Sign-Off**

* **Capability**: PowerCenter’s Repository Manager exports detailed metadata (mappings, workflows) for documentation.
* **Benefit for FML**: Provides comprehensive reports and deliverables for business sign-off.
* **Example**: Exports a mapping document showing how “Cust\_Name” became “CustomerName” for FML approval.

**More About Informatica PowerCenter**

**Why It’s Popular**

* **Scalability**: Handles small to enterprise-scale migrations (e.g., FML’s 1 TB).
* **Flexibility**: Integrates with virtually any source/target system (databases, flat files, APIs).
* **User-Friendly**: Graphical interface reduces coding needs, speeding up development.
* **Robust Ecosystem**: Add-ons like IDQ and DVO enhance functionality for quality and validation.

**Technical Requirements for FML**

* **Hardware**: On-premise servers with 16+ cores, 64+ GB RAM, 2+ TB storage (staging + processing).
* **Software**: PowerCenter (v10.x), Java, database drivers (DB2, SQL Server, Oracle).
* **Licensing**: Perpetual on-premise license with annual maintenance fees.

**Limitations (and Mitigation)**

* **Cost**: High licensing cost mitigated by reusing workflows for incremental loads.
* **Learning Curve**: Requires trained staff (FML can rely on vendor expertise).
* **Cloud Preference**: Less cloud-native than competitors (e.g., AWS Glue), but FML wants on-premise, so this aligns perfectly.