## About

This procedure documents the technical process for capturing daily order snapshots from Acumatica, calculating deltas between snapshots, and maintaining traceability of new, modified, and deleted order lines. It covers both the **SQL database layer** and the **Acumatica assets** that feed it.

## Purpose

* Provide a reproducible, auditable process for order lifecycle tracking.
* Ensure visibility into new, modified, and deleted order lines.
* Support reporting and reconciliation by maintaining both **baseline snapshots** and **delta records**.

## Policy Description

* **Snapshots** are ingested daily from Acumatica via an Export Scenario.
* **Deltas** are calculated in SQL Server using a stored procedure (PopulateOrderDelta).
* **Deletions** are represented as negative deltas and annotated in the previous snapshot for traceability.
* **Run logs** are maintained for every stored procedure execution.

## Database Documentation

### Tables

* **OrderSnapshot**
  + Stores daily exports of all order lines.
  + Primary Key: (SnapshotDate, OrderNbr, LineNbr)
  + Columns: OrderNbr, LineNbr, InventoryID, OrderQty, OpenQty, UnitPrice, ExtPrice, CustomerID, OrderDate, RequestedShipDate, WarehouseID, SalespersonID, OrderStatus, Notes
* **OrderDelta**
  + Stores only differences between two snapshots.
  + Primary Key: (SnapshotDate, OrderNbr, LineNbr)
  + Columns: SnapshotDate, OrderNbr, LineNbr, DeltaOpenQty, DeltaUnitPrice, DeltaExtPrice, DeltaPct, DeltaStatusChange, IsSignificant, Notes
* **OrderDeltaRunLog**
  + Audit log of stored procedure runs.
  + Columns: RunID (PK), RunStartTime, RunEndTime, SnapshotDate, PrevSnapshotDate, RowsInserted, RunStatus, ErrorMessage

### Stored Procedure

* **PopulateOrderDelta**
  + Parameters: @SnapshotDate, @PrevSnapshotDate
  + Steps:
    1. Insert log start into OrderDeltaRunLog.
    2. Insert **Modified/New** deltas (cur vs prev).
    3. Insert **Deleted** deltas (prev exists, cur missing → negative values).
    4. Update previous snapshot rows with "Deleted" in Notes.
    5. Update run log with row counts and status.

## Acumatica Assets

* **Data Provider**
  + Configured to expose Sales Orders and Lines for export.
  + Includes all relevant fields: OrderNbr, LineNbr, InventoryID, Qty, Price, Status, etc.
* **Generic Inquiry (GI)**
  + Defines the dataset for export.
  + Filters by SnapshotDate (parameterized).
  + Ensures one row per (OrderNbr, LineNbr).
* **Export Scenario**
  + Uses the Data Provider and GI to generate daily extracts.
  + SnapshotDate is passed as a constant or parameter.
  + Output is ingested into SQL OrderSnapshot.

## User ID and Passwords

* Managed via Acumatica integration credentials.
* SQL Server access restricted to service accounts.

## Network Configuration

* Acumatica → SQL Server data flow via scheduled export/import.
* SQL Agent job (future) will automate stored procedure execution.

## Administration

* DBA responsible for SQL schema and stored procedure maintenance.
* Acumatica admin responsible for GI and Export Scenario.

## Server Dependencies

* SQL Server instance hosting Peerless\_Order\_History database.
* Acumatica instance with configured GI and Export Scenario.

## Background Jobs

* Manual execution in test phase.
* Planned SQL Agent job for daily automation.

## Network Layout

Perfect, Dan. Let’s scaffold a **flow diagram** in Markdown that visually shows the lifecycle from Acumatica → SQL Snapshot → Delta → RunLog. This will make it easier to explain to non‑DBA stakeholders and keep the process transparent.

# 🔄 Order Snapshot & Delta Tracking Flow

┌───────────────────────┐

│ Acumatica │

│ (GI + ExportScenario)│

└───────────┬───────────┘

│

▼

┌───────────────────────┐

│ Data Export File │

│ (CSV/XML via Provider)│

└───────────┬───────────┘

│

▼

┌───────────────────────┐

│ SQL Import Process │

│ (Manual load / SSIS) │

└───────────┬───────────┘

│

▼

┌───────────────────────┐

│ OrderSnapshot Table │

│ (Baseline per date) │

└───────────┬───────────┘

│

▼

┌───────────────────────────────┐

│ Stored Procedure: │

│ dbo.PopulateOrderDelta │

│ - Compare @Prev vs @Current │

│ - Insert Modified/New deltas │

│ - Insert Deleted (negative) │

│ - Update prev Notes=Deleted │

└───────────┬───────────────────┘

│

▼

┌───────────────────────┐

│ OrderDelta Table │

│ (Only changes tracked)│

└───────────┬───────────┘

│

▼

┌───────────────────────┐

│ OrderDeltaRunLog │

│ (Audit of each run) │

└─────────────────────┘

## 🧭 Narrative Walkthrough

1. **Acumatica**
   * Generic Inquiry (GI) defines the dataset.
   * Export Scenario runs daily, producing a file.
2. **Data Export File**
   * CSV/XML output via Data Provider.
   * Saved to staging for SQL import.
3. **SQL Import**
   * File loaded into OrderSnapshot.
   * Each row stamped with SnapshotDate.
4. **OrderSnapshot**
   * Full baseline of orders/lines for that day.
   * Immutable record of “what existed.”
5. **PopulateOrderDelta**
   * Compares current vs previous snapshot.
   * Inserts **Modified/New** rows.
   * Inserts **Deleted** rows as negative values.
   * Updates previous snapshot rows with "Deleted".
6. **OrderDelta**
   * Stores only differences.
   * Supports reporting and reconciliation.
7. **OrderDeltaRunLog**
   * Captures run start/end, row counts, status, errors.
   * Provides audit trail.

✅ This diagram + walkthrough gives you a **visual anchor** for the procedure doc.

Would you like me to also scaffold a **“Roles & Responsibilities” matrix** (RACI‑style) so it’s clear who owns Acumatica assets, SQL jobs, and monitoring? That would round out the documentation for handoff and onboarding.

* .

## How To.. (Procedure links)

Great — let’s extend the draft procedure with a **“How To Run in Test”** section so anyone on your team can follow the steps without needing your context. I’ll keep it structured, checkpointed, and reproducible.

# 🧪 How To Run in Test

### Purpose

This section provides step‑by‑step instructions for running the **Order Snapshot and Delta Tracking** process manually in a test environment. It ensures that new team members can validate the workflow end‑to‑end before automation is introduced.

## 1. Prepare Acumatica Export

1. **Log into Acumatica** with integration credentials.
2. Navigate to **Generic Inquiry (GI)** configured for order export.
   * Confirm it returns one row per (OrderNbr, LineNbr).
   * Verify the SnapshotDate parameter is set to the intended test date.
3. Run the **Export Scenario** linked to the GI.
   * Ensure the **Data Provider** is mapped correctly to output all required fields:  
     OrderNbr, LineNbr, InventoryID, OrderQty, OpenQty, UnitPrice, ExtPrice, CustomerID, OrderDate, RequestedShipDate, WarehouseID, SalespersonID, OrderStatus.
4. Save the export file to the designated staging location (e.g., \\SQLServer\Imports\OrderSnapshot\).

## 2. Load Snapshot into SQL

1. Open **SQL Server Management Studio (SSMS)**.
2. Run the import script or use SSIS/BCP to load the exported file into dbo.OrderSnapshot.
3. Verify the load:
4. SELECT SnapshotDate, COUNT(\*) AS RowsLoaded
5. FROM dbo.OrderSnapshot
6. WHERE SnapshotDate = '2025-09-30'
7. GROUP BY SnapshotDate;

## 3. Run Delta Calculation

1. In SSMS, execute the stored procedure manually:
2. EXEC dbo.PopulateOrderDelta
3. @SnapshotDate = '2025-10-01',
4. @PrevSnapshotDate = '2025-09-30';
5. Confirm execution succeeded by checking the run log:
6. SELECT \*
7. FROM dbo.OrderDeltaRunLog
8. WHERE SnapshotDate = '2025-10-01';

## 4. Validate Results

1. Review inserted deltas:
2. SELECT \*
3. FROM dbo.OrderDelta
4. WHERE SnapshotDate = '2025-10-01';
   * **Modified** rows: show differences in qty/price/status.
   * **NewLine** rows: appear only in current snapshot.
   * **DeletedLine** rows: negative values, flagged as deleted.
5. Confirm previous snapshot rows were annotated:
6. SELECT OrderNbr, LineNbr, Notes
7. FROM dbo.OrderSnapshot
8. WHERE SnapshotDate = '2025-09-30'
9. AND Notes = 'Deleted';

## 5. Troubleshooting

* **No deltas appear** → Verify both snapshots exist and dates are correct.
* **Duplicate key error** → Ensure OrderDelta was cleared for that snapshot date before rerun.
* **Missing deletions** → Confirm the GI includes all orders/lines, not filtered out by status.

## 6. Next Steps

* Once validated in test, schedule the procedure via **SQL Agent** to run after the Acumatica export completes.
* Document the job name, schedule, and owner in this procedure.

✅ This section now gives you a **repeatable test harness**: export → load → run → validate.

Would you like me to also scaffold a **flow diagram** (in text/markdown) that visually shows the path from Acumatica → Snapshot → Delta → RunLog, so the process is easier to explain to non‑DBA stakeholders?

## Additional IT Members Responsible

| **Name** | **Date of last Formal Review** |
| --- | --- |
| Dan Zabinski | 9-30-2025 |
|  |  |
|  |  |