

Utility Data Auditing

Introduction

Urjanet's audits can be split across many categorical lines. These variables are described below, and will be used to segment the list of audits below.

Auditing Stages

Urjanet audits data in 2 stages: Pre-Storage and Post-Storage. Pre-Storage Audits (PreSA) check the quality of data, as it relates to standards, and other information found on the same invoice. PreSA can stop a statement from storing, and can be used to force correction before data is sent to a customer.

Conversely, Post-Storage Audits (PostSA) occur after the invoice is stored in the core database. These audits check the quality of data against previously stored information for the same account. While more expansive, PostSA are more difficult to build into process workflows around individual statements, as those statements will already be sent to the customer. They are better for identifying trends, and strategically improving data quality.

Severity

Depending on accuracy, importance, and historical backing, each audit is grouped into one of 3 severity levels.

- 1. Error:** prevents statement from storing in production. Requires manual review by the audit team.
- 2. Warning:** results are periodically reviewed across providers and template changes are recommended.
- 3. Informational:** Testing ground for new audits.

Types

Urjanet's audits perform 4 types of quality control:

- 1. Validation:** check for required fields and confirm formatting.
- 2. Logical:** ensure that the values within a certain statement logically align with the other values captured in that statement
- 3. Arithmetic:** perform logical arithmetic to ensure numerical alignment of various components of the invoice.
- 4. Consistency:** data is aligned across many historical statements

Specific Content Areas

The line items listed below are segmented by table in the data model. In some cases, a content area will refer to many audits that occur for that object, and all related objects beneath it.

At a general level, each of these line items represents one or many audits. For example, the Usage: Rate Components line item contains many audits which verify the logical storage of rate components.

Legend

| Classification | Type |
|----------------|--------------|
| Bold | Error Level |
| <i>Italics</i> | Post-Storage |

Statement

- *Measurement Period - For all sub-components (Consistency)*
- *Total Cost - Higher or lower than usual for all sub-components (Consistency)*
- *Total Usage - Higher or lower than usual for all sub-components (Consistency)*
 - Consumption
 - Demand
 - Quantity of Usages
- *Source Type - PDF turns to HTML (Consistency)*
- *Time Period Gaps / Overlap - For all sub-components (Consistency)*

Account

- **Checksum (Arithmetic)**
- **Address (Logical & Validation)**
- **Dates (Logical & Validation)**
- **Balance Headers (Arithmetic & Validation)**

Meter

- **Service Type Compatibility - Meter vs Line Items**
- *Quantity - Number of extracted meter groups (Consistency)*
- *Tariff (Consistency)*
 - Specific to "Meter X"
 - Combination of all available meters
- *Charge Change - Change to the number and/or type of sub-charges (Consistency)*

Usage

- **Value (Arithmetic & Validation)**
 - Readings (Arithmetic)
 - Delta (Arithmetic)
 - Multiplier (Arithmetic)
- **Power Factor & Load Factor (Arithmetic)**
- **Rate Components (Logical)**

Charge

- **Amount (Arithmetic & Validation)**
- *Charge Name (Consistency)*
- *Charge Group Heading (Consistency)*
- *Charge Rate - Higher or lower than usual (Consistency)*