

Architecture Document for Entry and Extraction Pipelines

1. Overview

This document outlines the **Entry and Extraction Pipelines** for integrating Tally with a backend API. The integration covers:

1. Server to Tally (Entry Pipeline):

- Data is periodically fetched by Tally using APIs **or** APIs are provided by Tally (TBD).
- Tally may be running on **localhost**, so API accessibility must be considered.

2. Tally to Server (Extraction Pipeline):

- Tally sends data directly to the backend.
- On the first installation, a **bulk sync** occurs.
- Subsequent updates are handled via **real-time sync**.

The **TDL (Tally Definition Language)** script in Tally will interact with these APIs.

2. Entry Pipeline (Server to Tally)

2.1 Flow

1. Data Source:

- JSON format (from the backend API)

2. API Availability:

- **Option 1:** Tally **fetches data periodically** via the API.
- **Option 2:** Backend **provides APIs for Tally** (TBD).
- Consideration: **Tally might be on localhost**, requiring a local API or a reverse proxy.

3. Processing & Transformation:

- JSON/Excel data is validated and imported directly into **Tally**.
- Required fields (e.g., `VoucherID`, `InvoiceDate`, `LedgerEntries`) are mapped.

4. Data Entry into Tally:

- Backend API sends a request to Tally via provided Tally APIs.
- Tally processes the data and confirms successful entry.

5. Error Handling and Logs:

- Errors (e.g., missing fields, connectivity issues) are logged.
- Failed submissions can be **retried** automatically or manually.

2.2 API Design

- **Endpoint:** `/api/v1/tally/sales`
- **Method:** `GET`
- **Request Body (Example):**

```
{"from_date":"20200101", "to_date":"20300101"}
```

- **Response:**

```
{
  "Data": [
    {
      "VoucherID": "700",
      "InvoiceDate": "2020-04-01",
      "InvoiceNumber": "1",
      "Reference": "",
      "ReferenceDate": "",
      "VoucherTypeName": "Sales",
      "PartyID": "470",
      "IsInvoice": "Yes",
      "PartyName": "Domestic Direct Client India",
    }
  ]
}
```

```

"Total_Amount": 1000.0,
"Remarks": "",
"BuyerAlias": "",
"Buyer_Country_Name": "India",
"Buyer_Email": "",
"Buyer_Gstin": "",
"Buyer_Mobile": "",
"Buyer_Name": "Domestic Direct Client India",
"Buyer_Pincode": "",
"Buyer_State": "Karnataka",
"Carrier_Name": "",
"ConsigneeCountryName": "India",
"ConsigneeGSTIN": "",
"ConsigneeName": "Domestic Direct Client India",
"ConsigneePinCode": "",
"ConsigneeState": "Karnataka",
"DeliveryNoteDate": "",
"DeliveryNoteNo": "",
"Destination": "",
"DispatchDocNo": "",
"DispatchThrough": "",
"LedgerEntries": [
  {
    "LedgerID": "470",
    "LedgerName": "Domestic Direct Client India",
    "GroupName": "Sundry Debtors",
    "IsPartyLedger": "Yes",
    "Debit": 27000.64,
    "Credit": 0,
    "BillAllocations": [
      {
        "Name": "1",
        "BillType": "New Ref",
        "Amount": 27000.64
      }
    ]
  }
]

```

```

    },
    {
      "LedgerID": "471",
      "LedgerName": "Event Service",
      "GroupName": "Indirect Incomes",
      "IsPartyLedger": "No",
      "Debit": 0,
      "Credit": 848
    },
    {
      "LedgerID": "472",
      "LedgerName": "Pure Agent Sale",
      "GroupName": "Indirect Expenses",
      "IsPartyLedger": "No",
      "Debit": 0,
      "Credit": 26000
    }
  ],
  {
    "LedgerID": "473",
    "LedgerName": "IGST",
    "GroupName": "Duties & Taxes",
    "IsPartyLedger": "No",
    "Debit": 0,
    "Credit": 152.64
  }
]
}

```

3. Extraction Pipeline (Tally to Server)

3.1 Flow

1. Initial Bulk Sync:

- On first installation, **Tally extracts all historical data**.
- Data includes: `Sales` , `Purchases` , `Inventory` , etc.
- Extracted data is structured and sent to the backend.

2. Real-Time Sync:

- Any new entry in Tally is **immediately sent** to the backend API.
- The sync process ensures **data consistency** across systems.

3. Data Transformation & Storage:

- The extracted data is formatted into **SQL-compatible format**.
- It is stored in a **relational database** for further analysis.

4. Error Handling & Logs:

- Failures (e.g., network issues, missing data) are logged.
- A retry mechanism ensures failed syncs are **reprocessed**.

3.2 API Design

- **Endpoint:** `/api/v1/tally/stockitem`
- **Method:** `POST`
- **Request Body**

```
{
  "Data": [
    {
      "id": 68,
      "name": "Wood Panel",
      "default_code": "FURN_7023",
      "list_price": 100.0,
```

```
"standard_price": 80.0,
"uom": "Units",
"categ": "Office Furniture",
"hsn_code": "",
"barcode": "",
"gst_rate": 10.0,
"stockinhand": "500 pcs",
"taxes": [
  {
    "id": 32,
    "name": "5% GST",
    "amount": 5.0,
    "type_tax_use": "sale"
  },
  {
    "id": 139,
    "name": "5% GST",
    "amount": 5.0,
    "type_tax_use": "sale"
  }
],
"bom_items": [
  {
    "id": 5,
    "product": "Wood Panel",
    "product_id": 68,
    "product_qty": 1.0,
    "bom_line_items": [
      {
        "id": 10,
        "product": "Ply Layer",
        "product_id": 65,
        "product_qty": 3.0,
        "product_uom": "Units"
      },
      {
```

```

        "id": 11,
        "product": "Wear Layer",
        "product_id": 66,
        "product_qty": 1.0,
        "product_uom": "Units"
      }
    ]
  }
]
}

```

Response:

```

{
  "status": "success",
  "message": "Data successfully received from Tally"
}

```

- **Endpoint:** `/api/v1/tally/sales`
- **Method:** `POST`
- **Request Body**

```

{
  "Data": [
    {
      "VoucherID": "700",
      "InvoiceDate": "2020-04-01",
      "InvoiceNumber": "1",
      "Reference": "",
      "ReferenceDate": "",

```

```
"VoucherTypeName": "Sales",
"PartyID": "470",
"IsInvoice": "Yes",
"PartyName": "Domestic Direct Client India",
"Total_Amount": 1000.0,
"Remarks": "",
"BuyerAlias": "",
"Buyer_Country_Name": "India",
"Buyer_Email": "",
"Buyer_Gstin": "",
"Buyer_Mobile": "",
"Buyer_Name": "Domestic Direct Client India",
"Buyer_Pincode": "",
"Buyer_State": "Karnataka",
"Carrier_Name": "",
"ConsigneeCountryName": "India",
"ConsigneeGSTIN": "",
"ConsigneeName": "Domestic Direct Client India",
"ConsigneePinCode": "",
"ConsigneeState": "Karnataka",
"DeliveryNoteDate": "",
"DeliveryNoteNo": "",
"Destination": "",
"DispatchDocNo": "",
"DispatchThrough": "",
"LedgerEntries": [
  {
    "LedgerID": "470",
    "LedgerName": "Domestic Direct Client India",
    "GroupName": "Sundry Debtors",
    "IsPartyLedger": "Yes",
    "Debit": 27000.64,
    "Credit": 0,
    "BillAllocations": [
      {
        "Name": "1",
```



```

        "BillType": "New Ref",
        "Amount": 27000.64
    }
]
},
{
    "LedgerID": "471",
    "LedgerName": "Event Service",
    "GroupName": "Indirect Incomes",
    "IsPartyLedger": "No",
    "Debit": 0,
    "Credit": 848
},
{
    "LedgerID": "472",
    "LedgerName": "Pure Agent Sale",
    "GroupName": "Indirect Expenses",
    "IsPartyLedger": "No",
    "Debit": 0,
    "Credit": 26000
}
,
{
    "LedgerID": "473",
    "LedgerName": "IGST",
    "GroupName": "Duties & Taxes",
    "IsPartyLedger": "No",
    "Debit": 0,
    "Credit": 152.64
}
]
}
]
}

```

- **Response:**

```
{
  "status": "success",
  "message": "Data successfully received from Tally"
}
```

- **Endpoint:** `/api/v1/tally/purchase`

- **Method:** `POST`

- **Request Body**

```
{
  "Data": [
    {
      "VoucherID": "700",
      "InvoiceDate": "2020-04-01",
      "InvoiceNumber": "1",
      "Reference": "",
      "ReferenceDate": "",
      "VoucherTypeName": "Purchase",
      "PartyID": "470",
      "IsInvoice": "Yes",
      "PartyName": "Domestic Direct Client India",
      "Total_Amount": 1000.0,
      "Remarks": "",
      "BuyerAlias": "",
      "Buyer_Country_Name": "India",
      "Buyer_Email": "",
      "Buyer_Gstin": "",
      "Buyer_Mobile": "",
      "Buyer_Name": "Domestic Direct Client India",
      "Buyer_Pincode": "",
      "Buyer_State": "Karnataka",
      "Carrier_Name": "",
      "ConsigneeCountryName": "India",
    }
  ]
}
```

```

"ConsigneeGSTIN": "",
"ConsigneeName": "Domestic Direct Client India",
"ConsigneePinCode": "",
"ConsigneeState": "Karnataka",
"DeliveryNoteDate": "",
"DeliveryNoteNo": "",
"Destination": "",
"DispatchDocNo": "",
"DispatchThrough": "",
"LedgerEntries": [
  {
    "LedgerID": "470",
    "LedgerName": "Domestic Direct Client India",
    "GroupName": "Sundry Debtors",
    "IsPartyLedger": "Yes",
    "Debit": 0,
    "Credit": 27000.64,
    "BillAllocations": [
      {
        "Name": "1",
        "BillType": "New Ref",
        "Amount": 27000.64
      }
    ]
  },
  {
    "LedgerID": "471",
    "LedgerName": "Event Service",
    "GroupName": "Indirect Incomes",
    "IsPartyLedger": "No",
    "Debit": 848,
    "Credit": 0
  },
  {
    "LedgerID": "472",
    "LedgerName": "Pure Agent Sale",

```

```

        "GroupName": "Indirect Expenses",
        "IsPartyLedger": "No",
        "Debit": 26000,
        "Credit": 0
    },
    {
        "LedgerID": "473",
        "LedgerName": "IGST",
        "GroupName": "Duties & Taxes",
        "IsPartyLedger": "No",
        "Debit": 152.64,
        "Credit": 0
    }
]
}
]
}

```

- **Response:**

```

{
  "status": "success",
  "message": "Data successfully received from Tally"
}

```

- **Endpoint:** `/api/v1/tally/production`

- **Method:** `POST`

- **Request Body**

```

{
  "Data": [
    {
      "VoucherId": "MO-5",
      "VoucherNumber": "WH/MO/00005",

```

```

    "VoucherDate": "20250301",
    "PartyName": "",
    "BuyerAddress": "",
    "StateName": "",
    "CountryName": "",
    "TransactionType": "Stock Journal",
    "TotalAmount": "",
    "Narration": "",
    "Reference": "",
    "ReferenceDate": "20250301",
    "OrderNo": "WH/MO/00005",
    "DeliveryReceiptNoteNo": "",
    "ManufacturedItems": [
      {
        "StockItemId": 33,
        "StockItemName": "Drawer",
        "Quantity": 5.0,
        "UOM": "Units"
      }
    ],
    "ConsumedItems": [
      {
        "StockItemId": 71,
        "StockItemName": "Drawer Black",
        "Quantity": 5.0,
        "UOM": "Units"
      },
      {
        "StockItemId": 72,
        "StockItemName": "Drawer Case Black",
        "Quantity": 5.0,
        "UOM": "Units"
      }
    ]
  }

```

```
]
}
```

- **Response:**

```
{
  "status": "success",
  "message": "Data successfully received from Tally"
}
```

4. TDL Responsibilities

- **Entry Pipeline:**

- Fetches data from the backend API periodically (if fetching is implemented).
- Converts API data into Tally voucher format.
- Inserts data into Tally.

- **Extraction Pipeline:**

- Extracts all relevant collections (`Sales` , `Purchases` , `Inventory` , etc.).
- Sends data to the backend API during **bulk sync** and **real-time sync**.