WAREHOUSING · OUTBOUND FULFILLMENT OPERATIONS

Automated shipping label generation

Automatically generates and assigns shipping labels when orders are ready for shipment, integrating with carrier systems and warehouse management to ensure accurate delivery information and optimal shipping methods.

01 WORKFLOW TRIGGER

Order status changes to 'picked and packed' in the warehouse management system

BLUEPRINT OVERVIEW

What this workflow accomplishes

This workflow connects SAP Extended Warehouse Management, Blue Yonder rate shopping, and the FedEx, UPS, and USPS label APIs to the Zebra printers on the pack line. Automation pulls order and package data, selects the carrier and service level, buys the label, and writes tracking back to the order record. Shipping supervisors keep authority over carrier rules, oversize and hazmat exceptions, void and reprint decisions, and the final trailer release.

01

OUTPUTS

Printed label with tracking number, Order record updated with carrier, Pack line shipment ready alert

02

SUCCESS MEASURES

Label generation time per order, Shipping method accuracy rate, Orders shipped per hour

03

CORE SYSTEMS

SAP Extended Warehouse Management, Blue Yonder WMS, FedEx API, UPS API, USPS API, Zebra Printer

HOW TO USE THIS BLUEPRINT

Shipping supervisors: set the carrier rules and service level thresholds the decision stage reads, and own every manual override.

Implementation teams: map SAP delivery and handling unit fields to each carrier API payload, and test label rendering on every Zebra model on the floor.

Warehouse leads: work the exception queue for failed labels and address rejects before the last carrier cutoff of the shift.

THE WORKFLOW

End-to-end stage map

Seven stages run from the picked and packed status change to the pallet staged for carrier pickup. The single decision point at stage 3 governs which carrier API receives the shipment and at what service level.

01 TRIGGER

Order Ready for Shipment

Fire workflow on picked and packed status

SAP Extended Warehouse Management

02 ACTION

Retrieve Order Details

Pull address, dimensions, weight, item detail

SAP Extended Warehouse Management

03 DECISION

Determine Shipping Method

Select carrier and service level from rules

Blue Yonder WMS

PARCEL CARRIER · GROUND FREIGHT · MANUAL RATE REVIEW

04 ACTION

Generate Shipping Label

Buy label through selected carrier API

FedEx API · UPS API · USPS API

05 ACTION

Update Order with Tracking

Write tracking and carrier back to order

SAP Extended Warehouse Management

06 ACTION

Print and Attach Label

Print label at pack station, notify packer

Zebra Printer · SAP Extended Warehouse Management

07 OUTPUT

Label Ready for Shipment

Mark order staged for carrier pickup

SAP Extended Warehouse Management

LEGEND TRIGGER ACTION DECISION OUTPUT

IMPLEMENTATION DETAIL

Stage-by-stage breakdown

Each stage states the operational intent, the human control point, and the systems likely to take part. System names are examples, not a required architecture.

01 TRIGGER

Order Ready for Shipment

The warehouse management system triggers the workflow when an order's status is updated to 'picked and packed' with all items confirmed. This indicates the order is ready for the shipping label generation process.

CONTROL POINT

The pack station operator confirms all handling units are closed and scanned before releasing the status change that starts the workflow.

SYSTEMS SAP Extended Warehouse Management

02 ACTION

Retrieve Order Details

Extract complete order information including customer shipping address, package dimensions, weight, and item details from the WMS. This data is required for accurate shipping label creation.

CONTROL POINT

Warehouse leads review any order flagged for missing dims, zero weight, or an unverified ship-to address before it moves forward.

SYSTEMS SAP Extended Warehouse Management

03 DECISION

Determine Shipping Method

Analyze package weight, dimensions, destination, and customer shipping preferences to select the optimal carrier and service level. Routes to appropriate carrier API based on the decision.

CONTROL POINT

Shipping supervisors own the rate and service rule table and can override the selected carrier on any shipment before the label is bought.

SYSTEMS Blue Yonder WMS

04 ACTION

Generate Shipping Label

Create the shipping label through the selected carrier's API with all package and destination details. Receives tracking number and label file in return.

CONTROL POINT

Human control: a lead approves any reprint or void request, since each purchase creates a billable carrier transaction.

SYSTEMS FedEx API UPS API USPS API

COMPLETION AND MEASUREMENT

Closing stages and results

The closing stages record tracking against the order, put a readable label in the packer's hand, and post the shipment to the operations dashboard for the pickup window.

05 ACTION

Update Order with Tracking

Record the tracking number, carrier information, and shipping method back into the warehouse management system. Links the generated label to the specific order record.

CONTROL POINT

The shipping clerk verifies the tracking number is attached to the correct delivery number before the order leaves the pack line.

SYSTEMS

SAP Extended Warehouse Management

06 ACTION

Print and Attach Label

Send the shipping label to the designated warehouse printer for immediate printing. Warehouse staff receives notification to attach the label to the packaged order.

CONTROL POINT

The packer confirms the printed label scans clean and matches the carton before applying it and clearing the alert.

SYSTEMS Zebra Printer

SAP Extended Warehouse Management

07 OUTPUT

Label Ready for Shipment

The order is marked as ready for carrier pickup with the shipping label attached and tracking information recorded. Generates confirmation for warehouse operations dashboard.

CONTROL POINT

The dock supervisor signs off on the staged load and closes the manifest against the carrier pickup window.

SYSTEMS

SAP Extended Warehouse Management

DELIVERABLES

- Printed label with tracking number
- Order record updated with carrier
- Pack line shipment ready alert

KEY METRICS

- Label generation time per order
- Shipping method accuracy rate
- Orders shipped per hour

IMPLEMENTATION CHECKS

- Carrier API credentials scoped per account
- Void window rules for unused labels
- Printer queue mapped to pack station
- Address validation before label purchase
- Audit trail on every override

NEXT STEP

Turn this blueprint into an implementation plan.

Map each stage to your own systems, permissions, and approval routing before selecting tools or building automation.

packfoundry.app/assessment

WAREHOUSING WORKFLOW PACKS AND A FREE ASSESSMENT