ZEBRA CAPTURE YOUR EDGE

Zebra Warehousing Solutions

Ease Your Modernization Journey

Discover innovative solutions and useful tips

There's a Better Way to Modernize

Find out how with Zebra

You're Not Alone

We get it. Demand for higher levels of service is changing your business environment. Yet, change isn't easy, especially when there's so much at stake. We understand the complexities of modernizing and can bring your vision to life and even offer ways to enhance your plan. We've innovated and curated the industry's broadest and deepest portfolio, and collaborated with an expansive ecosystem of strategic partners to tackle your operational challenges. With such a wide array of choices, you have the flexibility to tailor your solutions to your environment, challenges and goals.

Accelerate Modernization at Your Pace

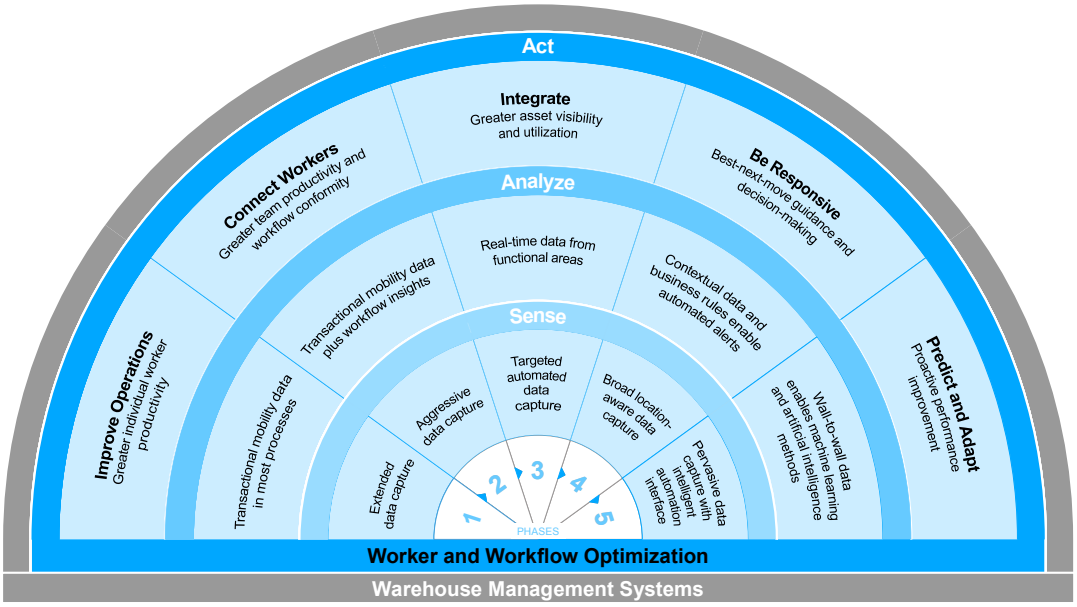
Consider taking a phased approach to increasing operational visibility—represented in our Zebra Warehouse Maturity Model. This allows you to migrate, upgrade or innovate at your own pace without upending operations. It also ensures that the necessary foundation is in place to increase the sophistication of your technology. That's how you reduce risk, while accelerating workflows.

Plan Your Next Move

Use our framework to identify where you are now and what opportunities lie ahead. We can help you create a roadmap to expedite your journey. Using our five-phase framework, we can help you increase real-time visibility of your business workflows, make better use of your workforce, gain early insights and create predictive and adaptive operations.

Zebra Warehouse Maturity Model

A strategic framework for accelerating modernization



Phase 1

Gain basic control of business operations

Increase productivity with ultra-rugged scanning, reliable printing and Android™ mobile computing.

Phase 2

Optimize the use of mobility

Achieve a best-in-class mobility strategy to optimize operations.

Phase 3

Target use of real-time visibility

Increase compliance and reduce delays with increased operational visibility.

Phase 4

Orchestrate wide-spread use of real-time visibility

Analyze, optimize and sequence real-time, edge data to direct resources and improve operations.

Phase 5

Achieve predictive and adaptative operations

Anticipate and adapt in real time to ever-changing supply chain and customer needs.

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Grasp the Possibilities

This is just the start of what Zebra can do for you

Each operation is unique

Your business varies from others and so should your technology options. You'll find our portfolio spans the entire spectrum of your unique modernization needs. Clearly, it's too vast to fit into one brochure. Instead, we've highlighted a selection of our innovative and optimal options and organized them by specific warehouse operational areas. There are even helpful tips from our industry experts, who consult with customers like you every day. Use this as a helpful snapshot and conversation starter to formulate your next move.

From inbound to outbound, look to Zebra for your performance edge.

When you think of Zebra, think of...

Mobile computing, scanning and printing built for your industry, environment, tasks and front-line workers

Radio-frequency identification (RFID), sensors and location technology for real-time visibility, greater asset utilization and best-next-move guidance

Embedded, intelligent software applications, utilities and developer tools that expand the capabilities of our hardware and your front-line workers

Multiple layers of security intrinsic to Zebra Technologies to give you peace of mind

Consistently exceptional supplies for barcode label printing, card printing and RFID printing and encoding to meet the demands of your warehouse applications

Intelligent-edge solutions that connect people, assets and inventory in collaborative workflows

A full range of professional services to help you accelerate success and maximize ROI

Unwavering support and visibility services that maximize device performance and uptime to keep your operations going, day-in and day-out

Learn about all our exciting possibilities and our Warehouse Maturity Model.

Zebra DNA

What's Inside Hardware Matters

Built-in intelligence gives Zebra devices greater power and performance

The extensive set of software, apps and utilities in Zebra DNA are what make Zebra mobile computers, scanners and printers enterprise-ready devices.

Mobility DNA

Made for Zebra Android mobile handheld, wearable, vehicle-mount computers and tablets

Mobility DNA makes Zebra Android devices enterprise-ready and secure out-of-the-box, as well as expands their development capabilities to integrate seamlessly with your business applications.

DataCapture DNA

Made for Zebra scanners

DataCapture DNA simplifies the scanning experience, from integration to deployment and ongoing management.

Print DNA

Made for Zebra desktop, mobile and industrial printers

Print DNA software tools make Zebra printers easy to set up, use, manage and secure.

Management Tools

Dramatically simplify deploying, maintaining, securing and troubleshooting front-line mobile computers, scanners and printers.

- Oversee your entire mobile device fleet by integrating with popular enterprise mobility management (EMM) solutions
- Remotely deploy, update and manage security and configurations
- Ensure full-shift uptime with battery analytics

Productivity Tools

Whether your warehouse workers use scanners, printers or mobile computers, help them get more done in less time.

- Speed up training with a graphical user interface on printers and mobile computers
- Increase accuracy; reduce delays and downtime
- Streamline time-consuming, multi-step processes

Development Tools

Reduce time and risk, using tools that help you create native apps across multiple platforms.

- Fast track programming with software development kits for scanners, mobile computers and printers
- Seamlessly integrate with the Android™ operating system, providing an end-to-end secure customized solution
- Create the most functional and efficient printing solutions possible

Inbound Operations

Put your inbound operations in our hands. Turn manual processes into efficient worker-driven or real-time, sensor-based data capture and retrieval. Detect issues straightaway and ensure items are correctly identified and put away. You'll value the compounding impact of our inbound solutions across your entire operations. Inventory accuracy will improve and subsequently so will metrics, such as on-time fulfillment rates.

Everything we've engineered is made to simplify your workflows, improve supplier management and speed-up your inbound processing.

Learn how Zebra can support your inbound operations

Tips to improve accuracy from dock to stock

Invest in supplier management for accurate one-touch or no-touch receipt.

Match the technology to the workflow and mobilize workers whenever possible.

Target inbound processes as a place to start utilizing RFID for automated data capture.

Explore all our solutions for receiving operations ›

Receiving Operations

Time is of the essence for inbound processes, but Zebra is your ally. Rapidly reconcile advance ship notices (ASNs), quickly sort materials and accurately locate each piece of a shipment. With our intuitive devices and innovative sensors, your workers can streamline receiving processes and solve virtually any unexpected issues.

MC9300 Mobile Computer

A versatile device for a versatile job

With eight field-replaceable keypads, the ability to scan 100 barcodes at once, photograph proof of condition and look up WMS data, the MC9300 can boost productivity up to 10%.[1]

DS3608-HP/DS3678-HP Ultra-Rugged Scanners

Unstoppable performance for superior data capture

Capture signatures, OCR data and documents. Ensure first time accurate scanning of virtually every barcode, even if damaged, under shrink wrap or torn.

ZD620 Desktop Printer

Premium print quality and state-of-the-art features

Label on the spot before put-away with a desktop printer that eliminates power cords. Rechargeable battery packs and larger label rolls keep workers efficiently receiving at their mobile work stations.

Modernization Tip

Increase Accuracy with Mobility DNA

Eliminate manual data entry into enterprise systems. Simply scan and Zebra's DataWedge software will fill the appropriate fields with the right barcode data.

FX9600 Fixed RFID Reader

Achieve low-touch receiving and increased accuracy

Get faster, accurate receiving with less manual tasks. With the highest throughput in its class, the FX9600 can read item, case and pallet barcodes as cargo passes through portal areas.

Visit zebra.com for RFID antennas

ZQ630 RFID Mobile Printer

RFID printing anytime, anywhere

Free workers to print and encode RFID tags on the go with the fast roaming and full shift power of this RFID mobile printer—exclusively by Zebra.

Zebra Certified Supplies

Quality, service, expertise

Label items accurately prior to put-away. Use the right materials certified for your use case. Count on Zebra for the largest range of labels, inlays and chips.

Zebra MotionWorks® Warehouse

Powered by Zebra Savanna™

Eliminate at least two touchpoints in the unloading process. Automate transactions, create an immediate receipt and audit trail for security and quality control. Move goods based on priority and instruct workers to make their best next move in the unloading and staging of received items.

Sensing Hardware	MotionWorks Warehouse Software	Business Application	Professional and Support Services
Sense the location, status and performance of inventory and assets in motion. It's possible with Zebra's ATR7000, Ultra Wideband RTLS and ZBR4000 passive RFID tags.	Manage zones; aggregate location data; identify assets, automate scanning and create historical reports.	See your operations in real time and manage from intuitive dashboards for visibility and facility management, in addition to creating electronic manifests, solution configuration and monitoring.	Ensure a smooth deployment with professional services that range from system design, training and implementation to ongoing Zebra OneCare Support Service that optimize uptime.

1. Performance improvements measured by a third-party testing laboratory versus competitive devices.

May not be available in all regions.
Contact your local Zebra sales representative or partner.

Explore all our solutions for returns management operations ›

Returns Management Operations

Eighty-five percent of warehouse leaders have plans to expand their returns management operations in the next five years, which 49% say is fueled by increased consumer demand.[2] Satisfying their demands hinges on the right technology. Quickly and accurately handle the flood of returns. Improve accountability to customers, by accurately documenting receipt of returned items. No matter what your particular processes, you'll find ways to advance them with our innovative solutions.

TC8300 Touch Computer

Document receipt and condition faster with one device

Speed up returns to recoup revenue faster. The hands-free, proximity scanner automatically triggers scanning. Use the touch screen and camera to easily document the condition of items right in the customer's order history.

DS3678-SR Ultra-Rugged Scanner

Capture data the first time, every time

Read barcodes in virtually any condition, no matter how damaged, with PRZM Intelligent Imaging. Use Bluethooth® to connect the scanner to a rugged Zebra tablet and gain the advantage of a large touch screen for item, component and order verification.

ET51 Enterprise Tablet

Confirm complex returns

The large touch screen allows for easy navigation of returns applications and look-up of descriptions or images to confirm items were returned in full. Rapidly connect to a Zebra printer with Bluetooth to label for next steps.

ZT230 Industrial Printer

Keep workflows going

Maximize up-time with a printer that's easy to use and maintain. Use your network-connected mobile computer to send a print command, so you can label goods for next steps. The ZT230 has a small footprint but is made for high-volume output.

MC3330xR RFID Handheld Reader

Track returned goods in repair or refurbishment

Generate a command to encode RFID tags upon receipt of returned goods to track items in repair from receipt to shipping. Automatically and accurately read RFID-tagged items to accelerate turn times.

ZD500R RFID Desktop Printer

Compact design with powerful RFID features

Experience one-touch printing/encoding of items for repair or refurbishment. Track them throughout the facility from receipt to reshipment. You'll appreciate its straightforward loading and automatic RFID calibration.

TC72 Touch Computer

The ultimate ultra-rugged in touch computing

Complete tasks faster with the reliable, ultra-rugged TC72. See more with the sizable 5 in/13 cm high-definition display, and add business-class accessories like a trigger handle for scanning returned items quickly into inventory.

ZQ630 Mobile Printer

Premium mobile printing for peak performance

Equip workers to print labels in motion as items are returned and route them immediately to the correct inspection center. Tap to pair with a mobile computer using NFC with Zebra Print Touch. Save valuable time and reduce errors.

Zebra IQ Color Labels

Quickly sort returns using color-coded labels

Know at-a-glance whether items need to be returned to manufacturer, repaired, recycled or restocked. Print labels in color on demand to correctly direct the flow of returned items and materials.

Modernization Tip

Targeted Use of RFID Digitizes Your Returns Process

Gain full visibility of useable returns to fulfill more orders. Print barcode labels and encode RFID tags with a mobile printer; use handhelds to lead you to those items even before they get re-shelved to expedite fulfillment.

2. Warehousing Asia Pacific Vision Study, Zebra Technologies, 2019

What Your Peers Recommend

"Forklift truck drivers have the ability to scan barcodes from a distance... It all sounds [like] a very simple thing, but if you can prevent a lift truck driver from getting on and off these lift trucks 30, 40, 50 times, that is an efficiency in itself."

– Tony Reynolds, Reynold's, Waltham Cross, Hertfordshire
Life of a Tomato Video Case Study

Explore all our solutions for put-away operations ›

Put-Away Operations

See how to eliminate put-away errors that directly impact all your warehouse processes—especially picking and replenishment. Zebra can help you safely and quickly put everything in its proper location so that when the time comes, picking the right item is effortless.

VC8300 Android Vehicle-Mount Computer

Lift safety and accuracy

Keep forklift drivers productive and safe. Convert green screens to touch screens for quick commands and programmable keys that limit keypad entry. Pair with an extended-range industrial scanner to verify proper shelving of goods.

DS3608-ER/DS3678-ER Ultra-Rugged Scanners

Scan more per shift

Eliminate unnecessary vehicle dismounting. There's no need for drivers to leave their lift truck, when they can use an extended-range scanner, paired with a vehicle-mount computer, to read barcode labels right from their seat.

Scan closer and farther

Lift truck drivers can scan more per shift with the advanced imager of the DS3600 Extended Range Scanner, which reads barcode labels **60% closer** and **35% farther** than similar models in its class.

ATR7000 RTLS Reader

Error-proof put-away

Automate the tracking of pallets in motion from receipt to their put-away location. With real-time location tracking, scanning is eliminated and their location can be verified.

May not be available in all regions. Contact your local Zebra sales representative or partner.

MC3390xR Long-Range RFID Handheld Reader

End the hunt for inventory, assets and putaway locations

Locate stationary assets or put-away aisles and racks with less effort. Thanks to an integrated long-range antenna, you can capture RFID tags more than 60 ft/18.2 m away to get inventory in the right location.

ZQ630 Mobile Printer

Label as you go

Label pallets and cases to identify their accurate location. Easily mount this Bluetooth mobile printer on a forklift and pair with your vehicle-mount computer for easy portability and non-stop put-away processing.

Zebra FulfillmentEdge™

Powered by Zebra Savanna™

HD4000 Enterprise Head-Mounted Display

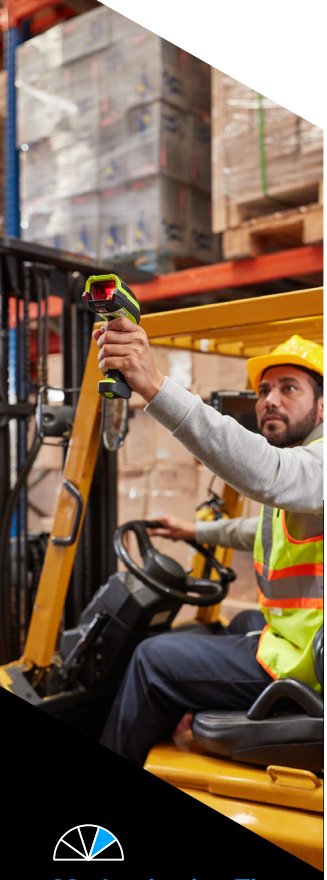
WT6000 Wearable Computer

RS5100 Bluetooth™ Ring Scanner

Take the guesswork and wasted time out of carton put-away processes. Use FulfillmentEdge and Zebra wearables, including the HD4000 Enterprise Head-Mounted Display, to present workers with a visual of racks, so they know exactly where to put away each carton. By scanning the location with a paired ring scanner, they'll receive an immediate confirmation that the item has been properly stocked.

Mobile Optimization Platform (server)	Application	Input Modalities	Hardware
Zebra FulfillmentEdge adds a technology layer onto your existing infrastructure and architecture to provide dynamic real-time workflows, without the need to modify your current WMS or ERP system.	Contextual, device and WMS/ERP data are analyzed and optimized through the Zebra FulfillmentEdge application and presented in a simple graphical user interface.	**Utilize a variety of data capture technologies to enrich your analytics** • Barcode • Speech recognition • Location and motion sensing • Radio-frequency Identification	**Connect workers to optimized put-away experiences** • Handheld touch mobile computer • Wearable mobile computer • Vehicle-mount computer • Enterprise head-mounted display • Ring scanner

May not be available in all regions. Contact your local Zebra sales representative or partner.



Cross-Docking Operations

Trailers are waiting in the yard to unload. Outbound trailers must leave by a certain time. Every minute counts in cross-docking. Turn to Zebra's mobile solutions to ensure that right shipments are put on the right trailer in the right order at the right time. You'll know where every piece of inventory is and have the immediate operational insight to correctly orchestrate the movement of your goods, equipment and workers in this busy area.

XPAD L10 Rugged Tablet

Speed up the flow of goods

Quickly and clearly instruct forklift drivers on their next move. With the XPAD L10, they know what to do, moment-by-moment. Integrate the tablets with a scanner to capture barcode data when not operating the forklift.

DS3608-ER/DS3678-ER Ultra-Rugged Scanners

Scanning certainty despite noise

Workers may be in dark trailers or loud environments. Give them three ways to confirm scanning–vibration, loud beep or red and green LEDs. Mix and match feedback modes to suit your needs.

MC3390xR RFID Handheld Reader

Quickly locate assets in fast-paced cross-dock operations

In large, cross-docking operations, having best-in-class read range and higher throughput is important. Capture RFID tags more than 60 ft./18.2m away.

ATR7000 RTLS Reader

Automate tracking processes

Catch errors before it's too late by automatically verifying shipping manifests as items are unloaded and loaded. Zebra's ATR7000 eliminates manual tracking of pallets and cartons and provides superior location accuracy within 2 ft./0.6m or less.

May not be available in all regions. Contact your local Zebra sales representative or partner.

ZT411 Industrial Printer

Print it all. Print it fast

This busy, time-sensitive area requires a printer with best-in-class performance that provides fast first label out and high throughput to make sure the label is ready when you need it. Field-upgradable to encode RFID tags and labels when you're ready.

Zebra IQ Color Labels

Use on-demand color-coding to eliminate guesswork

Create visual cues to increase sortation efficiency, reduce errors and easily identify a mis-routed package. Printing color labels on demand offers a fast and flexible way to ensure accuracy.

Modernization Tip

Extend Visibility beyond the Four Walls

Integrate your yard management systems into your entire warehouse management ecosystem. Zebra MotionWorks® Yard orchestrates and communicates the right dock moves in conjunction with internal activities.

Zebra MotionWorks® Warehouse

Powered by Zebra Savanna™

Many forklifts run empty 60 to 70% of the time, but you can change that. Real-time insight can alert you to which forklifts are closest to trailers ready to be unloaded and loaded.

Click here to learn more about the solution components in the Receiving Operations section.

May not be available in all regions. Contact your local Zebra sales representative or partner.

Zebra SmartPack™ Trailer

Powered by Zebra Savanna™

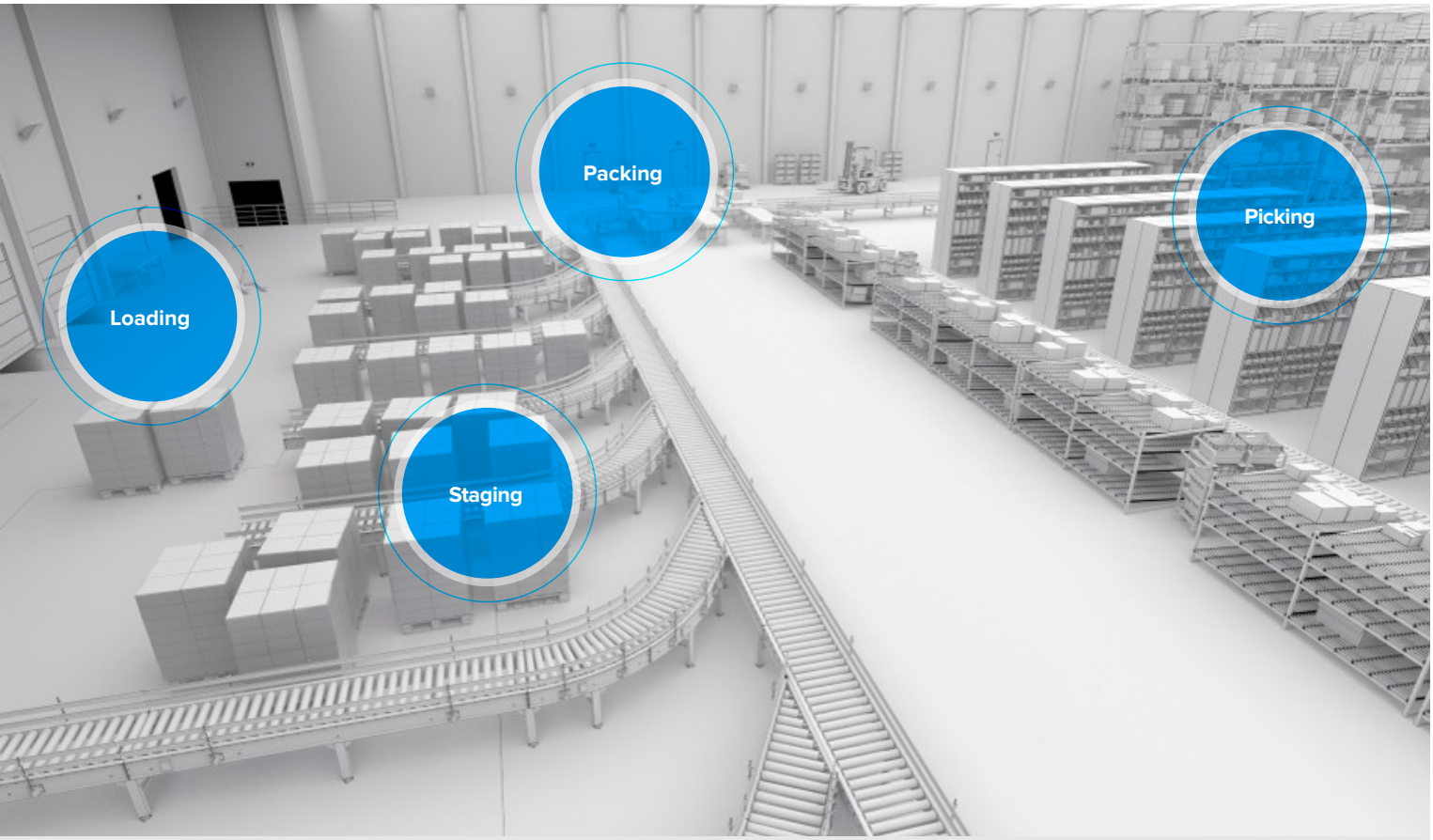
Monitoring every dock door of your cross-dock operations from a single dashboard makes everything run more smoothly. By capturing load density and in-depth analytics as multiple trailers are filling, managers can more accurately estimate when each trailer will be full and ready to depart. They can then notify the yard manager to have resources ready for the next trailer.

Sensing Hardware	Integrated 3D Analytics Software	Professional Services
Mounted at each bay door, a Load Monitoring Unit with a 3D depth sensor camera creates a 3D spatial image to calculate load metrics, while an RGB camera takes time-stamped photos as the load progresses. Wearable or handheld devices are used for scanning carton or pallet barcodes.	Automatically collect and send all data to the Zebra SmartPack Server Software, which analyzes the data and outputs the results to an easy-to-read dashboard. Plan downstream operations proactively.	Simplify deployment with our expertise and support. We'll ensure successful installation of your Load Monitoring Units, provision the software and oversee customization and integration.

Outbound Operations

How can you increase your order fulfillment without increasing your workforce? Optimize and orchestrate each of your workflows, from picking to loading. You'll be able to focus your resources on high-value priorities and ensure order accuracy at every step, elevating customer satisfaction and your competitive advantage. It starts by strengthening your workers' capabilities with hands-free and heads-up wearable solutions and touch-optimized devices that speed up tasks. Add to that mobile printers and supplies for even greater time savings. And with intelligent edge solutions revealing insights into your entire process, there's no stopping you. Now, you have the confidence that your team has picked, packed, staged and loaded with the utmost accuracy and compliance.

Learn how Zebra can support your outbound operations



Tips to keep up with increasing market pressures

Reduce average training time from 4.5 weeks[3] to days with a dynamic, optimized mobile user experience.

Decrease non-productive walking by introducing autonomous mobile robots to your mobile workforce.

Orchestrate operations based on the real-time location of your people, goods and assets.

3. Warehousing Vision Study: Tech that enhances human capabilities and drives modernization, Zebra Technologies, 2019

Explore all our solutions for picking operations ›

Picking Operations

Picking operations can account for almost 50% of warehouse labor and is often an area with frequent turnover—as high as 30% annually.[4] It's therefore an excellent place for you to optimize when modernizing your business. Implementing a mobile picking operation will increase your daily throughput and accuracy of orders and result in higher employee engagement. With Zebra's innovative, mobile devices, you'll accelerate onboarding, verify accuracy with every scan and keep everyone moving at a productive pace.

Zebra FulfillmentEdge™

Powered by Zebra Savanna™

Increase picking productivity up to 24% with dynamic workflows. Workers receive a consolidated electronic work order to fulfill multiple orders within their zone. Using the latest in wearable technology, pick-orders are in the user's line-of-sight using rich content such as step-by-step directions, flow rack layout and item photos for accuracy. No WMS upgrades necessary. The result: training time is reduced up to 90%.

HD4000 Enterprise Head-Mounted Display

WT6000 Wearable Computer

RS5100 Bluetooth™ Ring Scanner

Mobile Optimization Platform (server)	Application	Input Modalities	Hardware
This technology layer integrates easily into your existing infrastructure and architecture to provide dynamic real-time workflows, without the need to modify your current WMS or ERP system.	Give workers a simple graphical user interface that provides a contextual view along with step-by-step picking instructions.	Utilize a variety of data capture technologies to drive analytics—barcode, speech recognition, location and motion sensing or radio-frequency identification.	Increase order processing with a complete wearable solution that puts clear instructions in workers' field of view and enable hands-free scanning for easy handling of goods.

May not be available in all regions. Contact your local Zebra sales representative or partner.

Modernization Tip

Plan for a Smooth Peak Season Device Deployment

Picking operations will increase significantly during busy season. Give IT the tools they need to quickly configure, deploy and manage large fleets of mobile computers, scanners and printers remotely or with a barcode scan. Zebra DNA management tools simplify the peak-season rush.

XSLATE L10 Rugged Tablet

Drive efficiency in pallet picking

Give your lift truck drivers plenty of computing power and a touch screen to easily access enterprise systems and locate goods for picking. The tablet's pairing capabilities make it simple to sync with an ultra-rugged, extended-range scanner for non-stop productivity.

DS3608/DS3678-SR and -ER Ultra-Rugged Scanners

Scan nearer and farther

There is little time for mistakes. Ensure pickers are capturing the right barcode information the first time. Program DataCapture DNA Multi-Code Data Formatting to recognize and capture the right barcode from multiple located in the same area on packaging.

ZQ600 Series Mobile Printers

Immediately label picked items

Why risk mistakes by waiting to print labels? Print on the spot and properly assign labels to picked orders throughout the fulfillment cycle. The ZQ600 Series instantly wakes-up the moment a user sends a print job, so no time is lost.

MC3390xR RFID Handheld Reader

Use one mobile computer to locate RFID tags and capture critical data

Eliminate the search for items, with read rates 25% faster and over 40% more accurate . Prioritize picking over hunting. The MC3390xR guides workers to a pick location, verifies their scans and can direct them to the next location.

MC3300x Mobile Computer and HS3100 Headset

Adaptable for your picking environment

Support this scan- and data-entry-intensive operation. Scan as close as 3 in./7.62 cm and as far as 70 ft./21.4 m. away; choose from three keypads, four form factors and utilize a large touch screen to give users the best experience and comfort. Connect headsets for voice-directed picking applications.

4. Commissioned McKinsey Intelligent Automation Study for Zebra Technologies, 2019

Explore all our solutions for packing operations ›

Packing Operations

Packing is your last chance to verify order accuracy. Let us help you digitize this part of your operations to confirm that each item matches your pick list. Your system can then inform you what carton to use to minimize the risk of damage in shipping, as well as provide the proper customer address to increase throughput and customer satisfaction.

WT6000 Wearable Computer RS5100 Ring Scanner

Work this hands-on job hands-free

Enable workers to stay productive and focused on accuracy. Quickly pack and verify orders in this high-velocity operation where there is little time to keep track of a handheld device.

ET51 Enterprise Tablet

Do more with a larger screen and greater versatility

View complete packing lists and instructions, verify order quantities and confirm contents and shipping details. WorryFree Wi-Fi keeps you constantly connected to critical data and network printers, while Bluetooth pairing to scanners ensures you accurately capture customer data for shipping labels.

DS3678-SR Ultra-Rugged Scanner

Ensure accuracy with every scan

Meet customers' expectations for same day deliveries. Avoid bottlenecks in packing operations. With DataCapture DNA's PRZM Intelligent Imaging, packers have performance enhancing technology to capture barcodes in virtually any condition.

FX9600 Fixed RFID Reader

Validate outbound shipments

Retail or wholesale distribution centers can avoid disruption and chargebacks with pack validations. As all the goods in a carton pass by the fixed reader, it provides a final record of the UPCs and irrefutable proof of delivery.

Visit zebra.com for RFID antennas

ZT610 Industrial Printer

Keep up with the high volumes

Handle the escalating volume of orders with a printer that just won't quit. Output 4" shipping labels and crisp quality, thanks to Zebra's best-in-class print registration. That's how you ensure accurate tracking throughout your supply chain.

Zebra Z-Slip

Save time with all-in-one packing slip

Traditional packing slips take time to fold, insert and adhere to the package, or if inserted in the carton they could be hard to find. With the all-in-one Z-Slip packing slip solution you can save up to 29 seconds per package and you just need to simply print, peel and apply to the outer carton.

Modernization Tip

Protect sensitive data

As a gateway to your network, thermal printers need protection. With Print DNA PrintSecure, you can defend against security breaches.

Zebra FulfillmentEdge™

Powered by Zebra Savanna™

As picked orders are delivered to the packing station, workers at the put-wall can effortlessly sort the multiple orders to ensure goods are consolidated into a single carton for shipment to customers.

Mobile Optimization Platform (server)	Application	Input Modalities	Hardware
Zebra FulfillmentEdge integrates easily into your existing infrastructure and architecture to provide dynamic real-time workflows, without the need to modify your current WMS or ERP systems.	Provide workers with an intuitive, graphical user interface that provides contextual information of the put-wall and the step-by-step instructions on how to sort each item into customer orders.	**Utilize a variety of data capture technologies to drive analytics** • Barcode • Speech recognition • Location, motion sensing • Radio-frequency Identification	**Workers have their hands free to sort and consolidate multiple picked orders. Use with a complete wearable solution that includes** • Wearable mobile computer • Enterprise head-mounted display • Ring scanner for maximum benefit

May not be available in all regions. Contact your local Zebra sales representative or partner.

Explore all our solutions for staging operations ›

Staging Operations

Parcels that end up on the wrong trailer because of improper staging can cause a great deal of disruption once a driver is on the road and ultimately lead to customer dissatisfaction. That's why it's critical that you set yourself up for success, by modernizing your staging operations. With advanced technology, you'll ensure that everything is properly organized to be loaded onto the right trailer with the right carrier. Plus, you'll be able to quickly find any missing pallets to make sure all your orders are complete.

MC3300x Mobile Computer

Streamline staging

Direct and confirm pallet movements with this versatile mobile computer. Choose from four different form factors and three keypads to optimize it for your scanning and key-entry needs. Attach it to a holster or belt clip for hands-free mobility.

VC80x Android Vehicle-Mount Computer

Give operators mobile access to staging data

For larger boxes and pallets that require a forklift to move them, pair the vehicle-mount computer to a rugged scanner for fast, accurate data capture and workflows.

DS3678-ER Ultra-Rugged Scanner

Scan and confirm every step

Untether workers. Equip them with cordless, extended- and standard-range scanning, for an all-in-one device. With PowerPrecision+ batteries, they're ensured uninterrupted power. Its analytics reveal insight into the status and health of your device batteries to preempt disruptions and stage efficiently.

Modernization Tip

Automatically verify staging accuracy

When you add a real-time location system to your outbound dock area, you automatically verify staging accuracy, but more importantly loading accuracy is verified as well.

ATR7000 RTLS Reader

Instantly cross-check trailer assignments

Monitor in real time the flow of assets from packing stations to staging lanes and ensure orders are properly placed for loading.

May not be available in all regions. Contact your local Zebra sales representative or parter.

Zebra IQ™ Color Labels and ZQ600 Series Mobile Printers

Know immediately where items go

Avoid shipment mistakes and lost or separated orders. Print color-coded labels on demand and on the spot to keep orders grouped together. Zebra's patented IQ Color labels make it easy to highlight important information for your best next action.

Zebra MotionWorks® Warehouse

Powered by Zebra Savanna™

Automatically identify outbound shipments in real time in each staging location; account for all pallets and cartons that belong in completed orders before loading. Have an automatic alert sent to the staging manager if any orders are incomplete to find what is missing.

Sensing Hardware	MotionWorks Warehouse Software	Business Application	Professional and Support Services
Sense the location, status and performance of inventory and assets in motion or sitting stationary in staging lanes. It's possible with Zebra's ATR7000, Ultra Wideband RTLS and ZBR4000 passive RFID tags.	Manage zones; aggregate location data; identify assets, automate scanning and create historical reports.	See your operations in real time and manage tasks from intuitive dashboards for visibility and facility management. Create electronic manifests, configure solutions and monitor it all from your computer.	Ensure a smooth deployment with professional services that range from system design, training and implementation to ongoing Zebra OneCare Support Service that optimize uptime.

May not be available in all regions. Contact your local Zebra sales representative or partner.

Explore all our solutions for loading operations ›

Loading Operations

Given the rising volume of packages and shrinking delivery schedules, there's no room for errors or delays. Speed and accuracy are yours with Zebra guiding your best next move on the loading dock. You'll meet critical shipment times, optimize trailer space to pack more goods and reduce labor with more efficient workflows.

Modernization Tip

Increase load compliance
Ensure the right carton or pallet is on the right truck, using Bluetooth Low Energy (BLE) beacons. A good point of entry into real-time tracking in a targeted area, they are optimized for Zebra MotionWorks location solutions, so you can scale your use of the technology over time.

VC80x Android Vehicle-Mount Computer

Timely and accurate pallet loading
Execute multiple steps with a single touch, using the 12 programmable keys. Easy to see indoors and outside, the large screen offers drivers clear instructions and immediate access to essential information of every door you're loading. Leverage Zebra MotionWorks solution with this vehicle-mount computer, and you can make better use of drivers with real-time notifications.

DS3678-SR Ultra-Rugged Scanner

Scan without interruptions
Give workers the necessary mobility of untethered scanners without diminishing the peak performance of your wireless network. Our exclusive Wi-Fi Friendly Mode mitigates the potential of interference between our Bluetooth cordless scanners and your Wi-Fi network —essential to confirming order numbers, customer addresses and correct trailers.

FX9600 Fixed RFID Reader

Instantly cross-check pack lists
Instantly verify the accuracy of each pallet or carton loaded on your trailers. When you wirelessly connect your FX9600 RFID readers to your Wi-Fi, you increase its flexibility, processing speed and application performance. Rugged mount available for use in forklifts and other warehouse material handling vehicles.

Visit zebra.com for RFID antennas

MB4000 Ruggedized Bluetooth® Beacon

Verify the right parcel gets on the right trailer

This industrial beacon is sealed against the elements (waterproof), operates over an extreme temperature for many years, and is ruggedized for use in harsh in-vehicle environments. These beacons serve as location sensors that can be used as part of a solution verifying manual trailer load-out accuracy and reduce expensive misloads. They've been designed with low transmit power and can serve to provide a location in less than a second. They can work effectively within the close confines of modern warehouses and distribution centers where dock doors are only separated by a couple feet.

Zebra MotionWorks® Warehouse

Powered by Zebra Savanna™

No need to manually confirm trailer load accuracy. MotionWorks Warehouse automatically creates an electronic manifest to verify and validate loading accuracy. That can lead to fewer missed shipments and more satisfied customers.

Click here to learn more about the solution components in the Receiving Operations section.

May not be available in all regions. Contact your local Zebra sales representative or partner.

Zebra SmartPack™

Powered by Zebra Savanna™

A combination of 3D-sensor technology with an RGB camera, edge-device data capture and analytics increases your ROI. Reduce transportation costs through better management of your trailers and containers. Dynamically balance timelines and costs to achieve higher efficiencies. This cutting-edge technology allows you to capture and view multiple dock doors from one dashboard. You'll see load density, trailer and container fullness, load quality, wall-by-wall build profiles and images of loads in progress.

Sensing Hardware	Integrated 3D Analytics Software	Professional Services
Mounted at each bay door, a Load Monitoring Unit with a 3D depth sensor camera creates a 3D spatial image of the inside of the trailer as it is loaded, while its RGB camera captures time-stamped photos as the load progresses. Wearables allow workers to load hands-free and scan each parcel or pallet for improved data analytics.	The SmartPack Analytics Software analyzes your operations on the dock in real time. It can also integrate with your systems to capture additional data, such as package weights. Use this real time analysis available via a centralized dashboard to proactively plan with yard operations.	Simplify deployment with our expertise and support. We'll ensure successful installation of your Load Monitoring Units, provision the software and oversee customization and integration.

Explore all our solutions for inventory management ›

Inventory Management

Have you ever reached a location only to discover it is missing inventory or low in quantity? You are not alone. Warehouse leaders report their average item-level inventory accuracy is about 86.5%.[5] This equates to approximately 15 out of 100 locations missing stock or lower quantities than reported in the WMS, which makes it difficult to fulfill orders quickly and efficiently. There are, however, opportunities to overcome these challenges as you modernize your warehouse operations with Zebra devices and real-time technology solutions:

- Ensure data capture at all your touch points, such as put-away, replenishment and picking, with either mobile transactional scans and data entry or real-time sensors to accurately record each inventory move.
- Make cycle counting more productive and efficient with modern devices that allow for faster more frequent counts.
- Automate counts with radio-frequency identification and sensors when possible.

Manage inventory with the right tech for your environment and workflow

Replace manual counting with mobile computers and handheld scanners that help workers verify inventory count efficiently, locate discrepancies and update upon manager approval.

Deploy devices that are built to stand up to environmental conditions such as freezers, humidity or temperature changes to ensure inventory is managed in all areas of your warehouse.

Utilize real-time data capture, machine learning and artificial intelligence to predict preferred slotting location of incoming inventory for future accessibility.

5. Warehouse Modernization Survey, Zebra Technologies, 2019

Explore all our products and solutions for cycle counting operations ›

Cycle Counting Operations

With same-day deliveries and an upsurge in e-commerce business, the stakes are high for inventory to be one-hundred percent accurate. Avoid out-of-stocks and low stock. Begin automating reorders for must-have inventory assets. Employ regular cycle counting practices that best fit the size and volume of your business—whether it is worker-driven transactional scanning or sensor-driven for wall-to-wall constant visibility–keeping a close eye on available inventory is a critical component to ensuring you are prepared to support the velocity of both expected and unexpected order volume.

MC3300x Mobile Computer

Accelerate data entry

Mobility DNA All-Touch Terminal Emulation allows for faster inventory cycle counting as workers have a more intuitive graphical interface to quickly enter quantities and verify prompts.

XSLATE L10 Rugged Tablet with RS5100 Bluetooth Ring Scanner

Display more data

Work hands-free with a single-finger Bluetooth® ring scanner paired with our versatile, rugged tablet mounted to a mobile workstation to access key inventory data.

DS3608-ER/DS3678-ER Ultra-Rugged Scanners

Let nothing stop cycle counts

For inventory cycle counting, accurate scanning is imperative. DataCapture DNA PRZM Intelligent Imaging Platform allows for farther, faster and smarter imaging to capture virtually any barcode in any condition the first time, every time.

MC3390xR Long-Range RFID Handheld Reader

Count inventory on high shelves without the lift truck

Gain control of critical inventory by automating data capture with RFID handhelds that allow you to find and verify tagged goods more than 60 ft./18.2 m away.

ZT400 Series RFID Industrial Printers

Output RFID tags or barcode labels from one printer

Expertly print human-readable labels and encode RFID tags together to have an extra layer of product identification necessary to verify contents accurately during cycle counting operations.

Z-Perform 1500T and 1500D

Consistency leads to accuracy

Barcode data can make or break your inventory counts, so start with labels rigorously tested for consistency, clarity and exceptional quality.

Supplies names may vary by region. Contact your Zebra Sales representative or Partner.

Modernization Tip

Speed up inventory counts

One distribution company cut monthly inventory counting from 12 hours to just two hours by replacing manual counts with Zebra's MC3300. They customized the interface with enlarged color-coded text and on-screen buttons and incorporated voice guidance using a Google programming tool.

See how they did it ›

Read the case study ›

Explore all our products and solutions for cold chain operations ›

Cold Chain Management

Increase consumer safety and reduce inventory waste with rugged, mobility solutions made to work in freezers and refrigerators. Give your front-line workers the technology they need to quickly and accurately enter and retrieve data. They'll be able to communicate with team members, as well as reference proper handling instructions and temperature requirements for your inventory. You'll gain an invaluable resource to track goods, instruct workers and prevent loss and product degradation.

VC8300 Vehicle-Mount Computer

Continue to track inventory moves with frost-and-condensation-free mobility

Lift truck drivers have confidence their devices will perform regardless of extreme changes in temperature or humidity. Ultra-rugged construction with internal heaters and smart temperature sensors keep the display, sensitive electronics and batteries functioning in extreme cold and heat, while the heated keyboard avoids icing.

DS3608-SR/DS3678-SR Ultra-rugged Scanners

No need to compromise data capture in cold environments

Never miss an inventory transaction due to harsh environments. Scan labels that have frost on them with these cold-rated scanners. The corded model has freezer-rated cables and works in environments -30°C (-22°F), while the cordless option withstands -20°C (-4°F). Add a heated scanner holder, and you reduce condensation and downtime even more.

MC9300 Freezer Mobile Computer

Keep inventory in check with the mobile computer that goes to extremes

With operating temperature down to -30°C (-22° F), condensation is no match for this mobile computer. Integrated heaters protect internal electronics from damage, and a heated scanner window ensures accurate data capture. The touch screen enables workers to operate with gloved hands to keep up-to-date status of perishable goods.

FX9600 Fixed RFID Reader

Add real-time data capture to cold chain operations

Minimize workers' exposure to cold by automating data capture. Place this highly sensitive RFID reader outside of freezer portals to automatically update your inventory counts and track the movement of goods as they enter and leave freezer areas.

Visit zebra.com for RFID antennas

ZQ500 Series Mobile Printers

Chilling reliability

Workers using these mobile printers don't need to be concerned with removing them before entering cold environments down to -20°C (-4° F). They can count on cold-temperature compensation to automatically optimize and balance print speed and quality in cold temperatures to get the job done.

Zebra Certified Supplies

Adhering to a higher standard

Missing barcode labels on cartons, goods or shelving can cause inventory inaccuracy and false out-of-stocks. Our most durable cold temperature label adheres to corrugate, paper, metal and glass surfaces in temperatures as low as -40°C (-40° F) and stay adhered even if temperatures dip to -54°C (-65° F).

Supplies may vary by region. Contact your local Zebra sales representative or partner for applicable supplies for cold chain.

Avoid Waste

Global food industry losses total **$750 billion** primarily because of improper facilities, handling procedures and training of personnel working in the cold chain.[6]

Use Cases and Deployment Environments

Before you select a device, assess how and where you will be deploying it. Use the descriptions below to guide the type of device you should consider.

Cold-rated Devices	Condensation-resistant Devices	Condensation-free Devices
Designed for working in a single temperature zone and minimal movement between cold and warm environments. Temperature shock and condensation are not an issue.	Designed to withstand moderate temperature shock and condensation, ideal for constant movement between refrigerators/cooler and temperature-controlled, less humid areas.	Designed to withstand severe condensation occurring from the constant travel between the freezer and warm areas with high humidity.

6. International Trade Administration, 2016 Top Markets Report Cold Chain, 2016

Worker Safety in the Warehouse

Your most valuable asset is your workforce and protecting them is a high priority. This, however, requires rethinking many of your operations to maintain social distancing, sanitize devices as well as work areas and communicate effectively albeit remotely. A good place to start is by looking at your mobility strategy with Zebra. From on-device training to contact tracing and social distancing mechanisms, Zebra offers solutions that can help you disrupt the disrupters of your business.

Modernization Tip

Use AMRs to heighten safety
By combining autonomous mobile robots (AMR) with Zebra mobile computers, wearables and optimization applications, you can keep workers in their zones, relying on AMR's to move between zones and to other functions. This can improve social distancing and productivity.

Zebra Workforce Connect™

Powered by Zebra Savanna™

Stay connected at a safe distance
Being apart does not have to mean being out of touch. Replace face-to-face interactions with Wi-Fi® -enabled, push-to-talk and text messaging. By giving employees access to mobile computing devices, you can communicate with groups of individuals, remotely resolve issues and allocate tasks from a safe distance.

Video on Device

Remotely train workers
Eliminate the risk of large groups and the need to train them in a single room. Zebra's Learning-as-a-Service professional team can develop training videos specific to your applications and make them accessible to workers at any time on their device, including "how to" demo videos about the device.

Zebra FulfillmentEdge™

Powered by Zebra Savanna™

Optimize workflows to minimize congestion

Increase pick rates up to 24% by optimizing workflows and instructing workers through their mobile computing devices and heads-up display to pick multiple orders based on their aisle location. Congestion, employee contact and travel time will fall, while productivity will rise.
See solution details here

May not be available in all regions. Contact your local Zebra sales representative or partner.

WT6000 with accessories

RS5100 Single-Finder Ring Scanner

RS5100 Detachable Trigger Only

Sanitize Shared Devices; Personalize Accessories

Minimize the spread of germs

To help you regularly and thoroughly sanitize your Zebra devices, we have published guidelines online that are easy to follow. Zebra's Video on Device application allows you to play our pre-loaded cleaning demo videos on our Android mobile computers so workers can access instructions any time.

Add an extra layer of protection between the worker and the device with accessories such as wrist mounts, ring scanner trigger assemblies and head-mounted display glasses that can be assigned to individuals for the peace of mind that they are the only user of these accessories.

Zebra MotionWorks® Proximity

Powered by Zebra Savanna™

Turn work zones into safe zones without adding new infrastructure. The software-as-a-service (SaaS), cloud-based application leverages Wi-Fi® and Bluetooth® Low Energy (BLE) in Zebra mobile computing devices to help you reinforce safety protocols. Alert workers through their devices when they're too close to each other. Give authorized managers insight into workers' distancing activities that need correcting.

Proximity Alerts	Proximity Events	Contact Tracing	Device Disinfection
Alert and Prevent Zebra's unique algorithm triggers an alert after 60 seconds of close proximity to another worker. This minimizes false alerts, while allowing workers to correct their distance.	**Report & Enforce** Generate proximity events whenever an employee violates the social distance for more than five minutes. Use the event dashboard to spot patterns and enforce compliance.	**Identify & Isolate** Our web-based contact tracing report gives you a full and detailed view of employee contacts, number of interactions, duration and timestamps of each event.	**Sanitize & Protect** At the end of each shift, the device's screen will indicate that it requires cleaning. This protects workers from using unsanitary devices on the next shift.

Global Services and Support

Maintain optimal operations with support and visibility services to keep your workflows efficient. Optimize uptime with comprehensive support ranging from system design to training and from implementation guidance to ongoing post-sale service and support.

Zebra Signature Services

Data insights from technology can help you achieve new commercial opportunities. But without the right resources, your data remains unused and you can miss out on your full benefits. Zebra Signature Services unlocks intelligence from your data and puts it to work, so you can run your business more efficiently.

- Software Integration
- Learning as a Service
- Workflow and Design Consulting
- Program Management
- Solution Jumpstart
- Solution Validation
- RFID Design Signature Service
- Voice Enablement Signature Service
- Zebra MotionWorks Signature Service

Discover more of Signature Services featured with our Intelligent Edge Solutions: **Zebra MotionWorks™ Warehouse**, **Zebra SmartPack™ Trailer and Container** and **Zebra FulfillmentEdge™**.

Some Signature Services may not be available in all regions. Contact your local Zebra sales representative or partner.

Zebra OneCare™ Support and Maintenance Services

Whether you need comprehensive coverage, assistance with technical issues, visibility into your contracts and operational reports or on-site support, there's a Zebra OneCare support service that's right for you.

Zebra OneCare Essential
Core Assurance

Zebra OneCare Select
Maximum Protection

Additional right-for-you support plans also available. Contact your Zebra sales representative or partner.

Zebra VisibilityIQ™

Get a clear view into how your devices are performing and know what steps can improve productivity and drive down costs.

- **Zebra VisibilityIQ™ DNA**
  Peer inside your hardware for answers to key DNA efficiency.
- **Zebra VisibilityIQ™ Foresight**
  Go beyond a MDM and view full operation of your mobile computing devices from a single cloud-base business intelligence tool.
- **Zebra VisibilityIQ™ OneCare™**
  Provides cloud-based status of mobile computing and scanning device repairs, technical issues, contracts, case reports, software and LifeGuard security status visibility.

Modernization Tip

Replace reactive with proactive device management

When all your device data is aggregated into one color-coded, cloud-based view with VisibilityIQ™ Foresight, Zebra business intelligence tool, you can have actionable insight, plan for seasonal trends and right-size device inventory.

Products and Services Portfolio

Use Case	Receiving	Returns Management	Put Away	Cross-Docking	Cycle Counting	Cold Management	Picking	Packing	Staging	Loading
Enterprise Mobile Computing										
MC9300 Handheld Mobile Computer	•	•	•	•	•	•	•	•	•	•
TC8300 Touch Mobile Computer	•	•	•		•	•	•	•	•	
MC3300x Handheld Mobile Computer	•	•	•	•	•		•	•	•	•
MC2200/MC2700 Handheld Mobile Computer	•	•	•	•	•		•	•	•	•
TC72 Touch Mobile Computer	•	•			•		•	•		
XSLATE L10 Rugged Tablet	•	•	•	•	•	•	•	•	•	•
XPAD L10 Rugged Tablet	•	•	•	•	•	•	•		•	•
ET51 Enterprise Rugged Tablet	•	•	•	•	•	•	•	•	•	•
VC8300 Vehicle-Mount Computer	•		•	•	•	•	•		•	•
VC80/80X Vehicle-Mount Computer	•		•	•	•	•	•		•	•
WT6300 Wearable Mobile Computer	•	•		•	•	•	•	•	•	•
RS6000 Bluetooth® Ring Scanner	•	•		•	•	•	•	•	•	•
RS5100 Bluetooth® Ring Scanner	•	•		•	•	•	•	•	•	•
HD4000 Enterprise Head-Mounted Display	•	•	•				•	•	•	•
Data Capture Solutions										
LI3600-SR Ultra-Rugged Handheld Scanner (1D)	•	•	•	•	•	•	•	•	•	•
LI3600-ER Ultra-Rugged Handheld Scanner (1D)			•	•	•	•	•		•	•
DS3600-SR Ultra-Rugged Handheld Scanner (1D/2D)	•	•	•	•	•	•	•	•	•	•
DS3600-HP Ultra-Rugged Handheld Scanner (1D/2D)	•	•		•	•	•	•	•		
DS3600-ER Ultra-Rugged Handheld Scanner (1D/2D)			•	•	•	•	•		•	•
Printing										
ZQ600 Series Mobile Printers	•	•	•	•		•	•		•	
ZQ500 Series Mobile Printers	•					•	•		•	
ZT600 Series Industrial Printers	•			•				•		
ZT400 Series Industrial Printers	•	•		•				•		
ZT200 Series Industrial Printers	•	•	•	•				•		
ZD420 Desktop Printers	•	•	•	•				•		
ZD620 Desktop Printers	•	•	•	•				•		
Zebra Certified Supplies**										
Z-Perform 1500T	•	•	•	•	•		•			
Z-Perform 1000T 7.5 mil Tag							•		•	
Z-Perform 2000T Floodcoated					•		•	•		
Z-Perform 1000D	•	•	•	•	•		•	•	•	
Z-Perform 2000D Floodcoated					•					
Z-Slip								•		
Z-Perform 2000D All-temp						•				
PolyPro 4000D						•				
IQ Color		•		•	•			•	•	
Radio-Frequency Identification (RFID)										
MC3330xR Handheld RFID Reader	•	•	•	•	•	•	•		•	•
MC3390xR Handheld RFID Reader			•	•	•		•		•	•
FX9600 (see zebra.com for antennas)	•		•	•	•	•		•	•	•
ZQ630 RFID Mobile Printer	•	•	•	•					•	
ZQ511 / ZQ521 RFID Mobile Printer		•				•				
ZD500R RFID Desktop Printer	•	•								
ZT600 Series RFID Industrial Printers	•									
ZT400 Series RFID Industrial Printer	•									
ZBR2000 RFID inlay	•	•	•	•		•			•	
ZBR4000 RFID inlay	•	•	•	•		•			•	
Intelligent Edge Solutions										
Zebra FulfillmentEdge™*			•				•	•	•	
Zebra MotionWorks™ Proximity	•	•	•	•	•	•	•	•	•	•
Zebra MotionWorks™ Warehouse*	•		•	•		•			•	•
Zebra MotionWorks™ Yard	•				•					•
SmartPack™ Trailer and Container				•						•
Real-Time Location Technology										
ATR7000 RTLS Reader*	•		•	•					•	•
Bluetooth® Low Energy	•			•					•	•
WhereNet Real-time Locationing System (RTLS)	•			•					•	•
Ultra-wideband Technology	•			•					•	•

**Supplies names may vary by region. Contact your Zebra Sales representative or Partner.

*May not be available in all regions. Contact your local Zebra sales representative or partner.

Modernize Your Warehouse the Right Way – Your Way

The possibilities are endless with Zebra

From gaining basic control of your operations to achieving proactive predictability and agility, Zebra is your partner to guide you on your warehouse modernization journey.

From inbound operations to outbound fulfillment, we have the complete and comprehensive portfolio to improve accuracy, productivity and worker safety, while keeping pace with a rapidly evolving market.

To learn more, please visit
www.zebra.com/warehouse

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