# Customer Owned And Spare Parts Inventory Management

By

*Abstract* – **Original equipment manufacturers are increasingly responsible for not only producing high value assemblies such as aircraft engines and industrial servers but also maintaining and repairing them over extended service lifecycles. In many cases, these manufacturers are required to manage inventory that they do not own. Customer owned inventory is physically stored at the manufacturer's site, often for years, and is consumed during repair or overhaul.**

**Managing such inventory introduces a range of logistical, technical, and financial complexities. These include visibility, valuation, consumption tracking, insurance coverage, and revenue recognition. Enterprise resource planning systems such as Oracle NetSuite do not natively support non owned inventory within their asset management modules. As a result, manufacturers must develop reliable ways to track and manage customer owned parts while maintaining accurate financial separation.**

**This paper presents a detailed model for how OEMs can manage customer owned inventory within a NetSuite-based repair environment. Drawing from EpiphanyInc.net's implementation experience with aviation and technology customers, the paper outlines inventory intake, virtual warehousing, repair work order integration, billing models, and audit readiness. The result is a scalable and compliant approach that protects both operational performance and financial integrity.**

# I. INTRODUCTION

In highly regulated and safety-critical industries, the line between manufacturing and service is becoming increasingly blurred. Manufacturers are no longer only responsible for producing a finished product. In many cases, they are also contractually or strategically responsible for repairing, maintaining, and upgrading that product over time.

This is especially common in industries involving complex top assemblies. A top assembly refers to a fully integrated, high value product that includes multiple subassemblies and components. Examples include aircraft engines, electrical generators, and high performance servers.

These assemblies are rarely replaced outright. Instead, they are repaired and overhauled repeatedly throughout their usable life. A typical aircraft engine, for example, may remain in service for decades, undergoing hundreds of part replacements and scheduled overhauls.

Because of the cost and lead times associated with sourcing critical components, customers often choose to pre-purchase and store spare parts with the manufacturer. These parts are delivered to the OEM's repair facility, where they are warehoused and used as needed in future repair cycles.

At this point, the manufacturer must manage inventory it does not own. This inventory is physically present at the repair site but is not part of the manufacturer's financial assets. It cannot be recorded on the balance sheet, depreciated, or included in inventory valuations. However, it still must be visible, traceable, and usable in the repair process.

The handling of such customer owned inventory involves a hybrid model of inventory control and service operations. While the manufacturer is not the owner of the asset, it is responsible

for its security, condition, and traceability. When used, the manufacturer must record consumption and in some cases issue invoices or recognize deferred revenue.

This model presents a challenge for enterprise systems. Most ERP platforms, including Oracle NetSuite, assume that inventory is owned by the company operating the system. They are not designed to manage customer owned parts alongside financially recorded inventory. Without a solution, manufacturers are left using spreadsheets, siloed tracking systems, or inaccurate workarounds that compromise compliance and traceability.

EpiphanyInc.net has worked with several manufacturers and repair organizations to solve this problem. Using custom NetSuite configurations and workflows, the Epiphany platform supports a complete customer owned inventory lifecycle, from inbound delivery to consumption and billing.

The following sections present this lifecycle in detail.

## II.  OVERVIEW OF THE CUSTOMER OWNED INVENTORY LIFECYCLE

The lifecycle begins when a customer requests the storage of specific parts at the manufacturer's facility. This may be a formal part of a repair contract or a discretionary arrangement between the customer and the OEM. In either case, the customer sends physical inventory to the repair site, and the manufacturer must intake and store it.

The first system step is to record the customer's request. This is typically done using a sales order. The sales order does not indicate a purchase or sale, but rather functions as a record that the manufacturer is receiving and managing third party assets. It includes the part numbers, quantities, customer reference, and delivery information.

When the inventory arrives, warehouse staff receive it into a virtual location within the ERP system. This location is configured to record quantities, serial numbers, lot numbers, and condition codes, but does not assign any asset value. From an accounting standpoint, this location is outside the company's balance sheet.

Physically, the parts are stored in a designated non-owned section of the warehouse. This may be a shelf, bin, or rack area that is clearly marked for customer owned items. In some cases, inventory from multiple customers may be stored in the same physical area but separated by labels or containers.

All incoming parts are tagged with ownership data. Each item is linked to the originating customer account, and records include serial number, condition status, and any expiration or inspection dates. This ensures that items can be tracked individually or in groups.



*Figure 1 Customer Owned Inventory Lifecycle Flow*

Once the inventory is stored, it becomes available to the repair planning process. When a customer sends in a top assembly for service, the planning team creates a repair work order. During work order planning, the system checks available parts, including customer owned inventory. Planners or technicians can select from customer inventory if appropriate, using part numbers, serials, or condition filters.
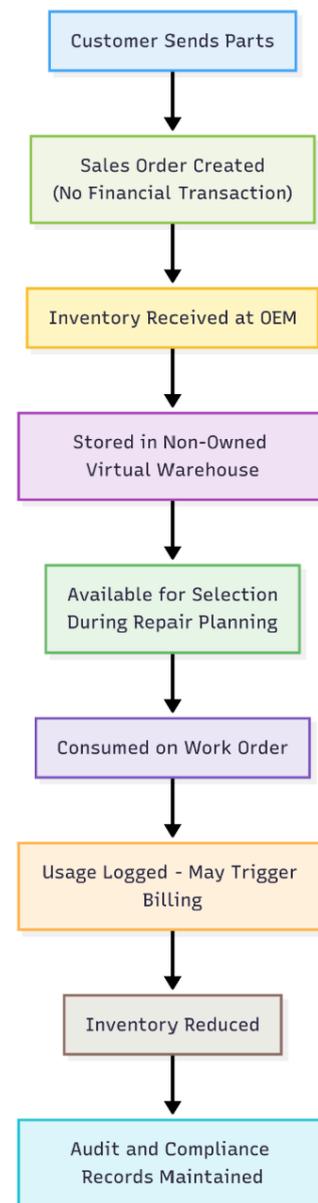
When a customer owned part is used, the system logs the usage on the work order and updates the quantity on hand. The transaction is recorded in both operational and financial history, though it does not affect asset balances. Depending on contract terms, the part may then be billed to the customer, deducted from prepaid inventory, or left unbilled.

The billing process varies by customer and contract. In some cases, the customer pays for the part up front, and no invoice is needed. In others, the part is considered sold only when it is consumed, at which point revenue must be recognized. This requires flexible billing and accounting logic that connects the work order to the original sales agreement.

If a part is lost or damaged while in storage, the system provides a full inventory log, including valuation for insurance purposes. Even though the part is not an owned asset, its loss may require reimbursement or a claim against facility insurance.

This entire lifecycle takes place outside of standard inventory accounting modules but requires the same level of rigor and traceability.

## III.  SYSTEM DESIGN FOR NON OWNED INVENTORY IN NETSUITE

Oracle NetSuite does not natively support customer owned inventory. To manage this requirement, EpiphanyInc.net developed a custom design that works entirely within the NetSuite framework while preserving financial integrity and audit traceability.

The foundation of this design is the use of a virtual warehouse location that functions operationally but is excluded from financial calculations. This warehouse holds items at zero cost. It allows warehouse staff to receive, store, and issue inventory just as they would with company-owned items, but without impacting the general ledger.

When a customer sends inventory, the receiving process begins with a sales order that references the incoming parts. The warehouse staff use a custom receipt transaction that mimics a purchase order receipt but without generating payable obligations or asset records. The parts are received against the sales order and moved into the customer inventory warehouse.
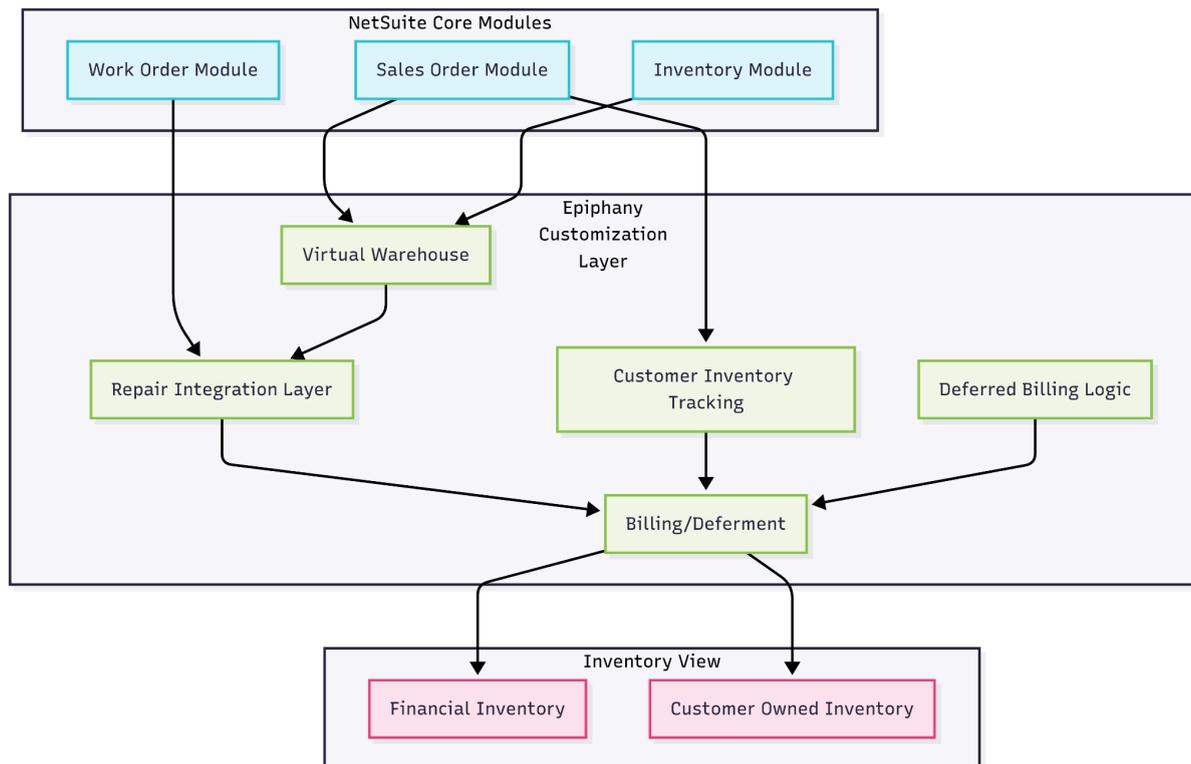


*Figure 2 System Architecture for Non-Owned Inventory in NetSuite*

Each item received is tagged with custom fields that define the customer of origin, the delivery date, the quantity received, and the current condition. Serialized and lot-controlled items are logged individually, ensuring full traceability at the item level.

The virtual warehouse allows for multiple customer inventories to coexist. For example, the system can simultaneously track spare parts for five different airlines, all within the same location, with clear separation of ownership and available quantities. Each customer's parts can be viewed through filtered reports or custom dashboards.

During work order planning, repair technicians and inventory coordinators can search both company-owned and customer-owned inventory. The search interface allows filters for part number, condition code, customer name, and availability. If the part selected belongs to the customer associated with the repair, the system marks it for use.

Once a part is issued to a repair work order, its status is updated to consumed. If the part is billable, a billing trigger is recorded, and the original sales order is updated. A NetSuite invoice may be created at that time, with part pricing based on the customer's agreement.

The repair work order itself contains a complete log of all inventory used, whether owned or customer provided. It includes timestamps, user names, and cost valuations. If the part was not billable, the system records usage for reporting but does not trigger revenue.

In the case of billing, Epiphany's extension includes deferred revenue logic. Some customers prepay for parts or store them for use over multiple repair events. The system supports recognition rules that only trigger revenue when the part is used, not when it is received. This ensures compliance with revenue recognition standards and prevents premature accounting.

All inventory movements are recorded in NetSuite with appropriate audit trails. Reports can show full history by item, by customer, or by repair event. In the case of insurance claims, inventory valuation reports can show the estimated replacement value of stored parts, even if they are not part of financial inventory.

The system also allows for customer notifications. Automated alerts can be configured to inform customers when their parts are received, consumed, or nearing expiration. This adds transparency and helps customers manage their own logistics without direct oversight.

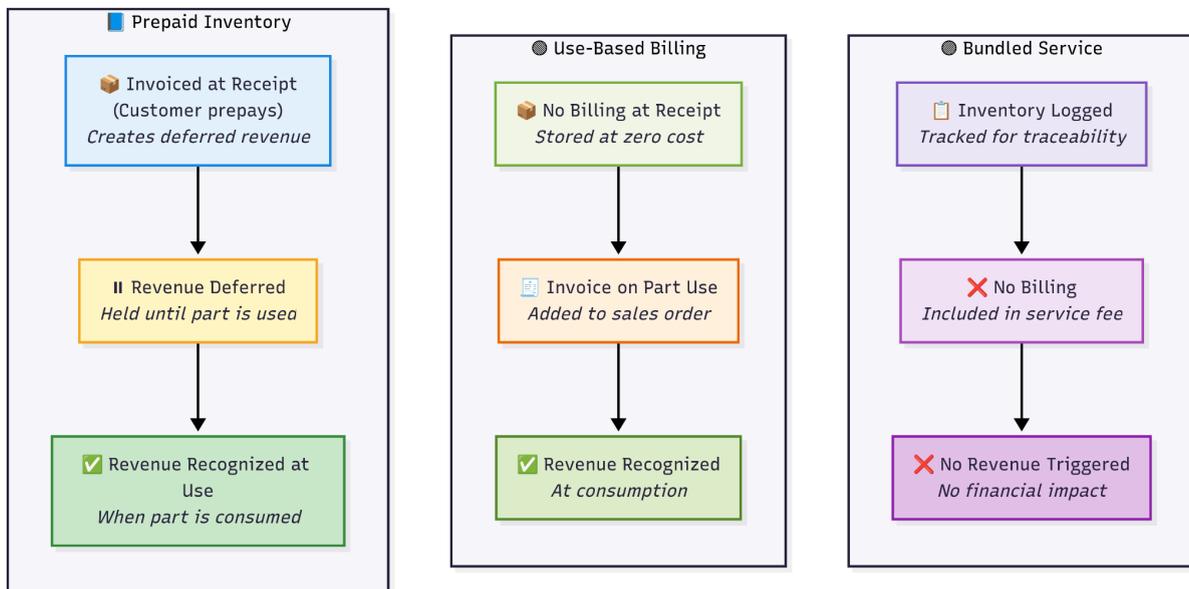# IV.   BILLING AND REVENUE RECOGNITION MODELS



*Figure 3 Billing Models for Customer Owned Inventory*

The financial handling of customer owned inventory is more complex than its physical tracking. Depending on the business model, billing may occur at the time of part delivery, at the time of use, or not at all. Epiphany's system supports several billing models commonly used by OEMs.

The most common model is use-based billing. In this model, the customer provides parts to the manufacturer for storage. No invoice is created upon receipt. Instead, the parts are tracked in the system with zero cost. When a part is consumed during a repair, the system creates a billable line item on the work order. That line item then flows to a sales order and invoice, and revenue is recognized at that time. This approach aligns with modern revenue recognition practices and avoids overstatement of revenue.

Another model involves prepaid inventory. The customer pays for parts in advance and delivers them to the manufacturer for future use. In this case, the sales order is created and

invoiced at the time of receipt, and payment is collected. However, because the part is not yet used, revenue is deferred. The system creates a journal entry to move the amount from revenue to deferred revenue. Once the part is used, a second entry moves the amount back to revenue, and the cycle is complete.

A third model involves internal consumption with no billing. In some high-value contracts, the cost of replacement parts is bundled into the total service fee. The customer provides inventory, and the OEM agrees to use it as needed without triggering separate invoices. In this model, the inventory is still tracked and consumed, but no financial transaction follows. This model is common in long-term maintenance agreements where all costs are included.

Epiphany's system allows users to select the billing model on a per-customer or per-contract basis. Billing logic is embedded into the repair work order process, so technicians do not need to decide whether to invoice or defer revenue. Financial controls are centralized, and reports allow controllers to monitor deferred balances, revenue timing, and invoice history.

Revenue recognition is compliant with modern standards including ASC 606, which requires that revenue be recognized only when performance obligations are satisfied. In the context of customer owned inventory, this performance obligation typically aligns with part consumption.

## V. USE CASES FROM INDUSTRY

To better understand how this customer owned inventory model functions in real operational environments, we examine three examples from distinct but related industries: aerospace maintenance, aviation component manufacturing, and cloud infrastructure service. Each

illustrates different use cases for tracking, storing, and consuming non-owned inventory, all of which are supported by Epiphany's custom configuration of NetSuite.

### A.  Aerospace Engine Overhaul:

In this case, a global aircraft operator sends its engines to the OEM's overhaul facility every 3,000 flight hours. To avoid delays, the customer prepositions key serialized components, including turbine blades, combustors, and casing kits. These parts are shipped months in advance, accompanied by condition tags and certificates.

The OEM receives these parts into a virtual customer owned inventory location in NetSuite. Each part is tagged by serial number, with an ownership link to the specific customer. During the next overhaul event, the planning team selects parts from this customer owned pool. Parts are issued against the repair work order, consumed during assembly, and tracked through inspection and quality steps.

In this contract, the customer is only billed for labor. Parts are prepaid and not re-invoiced. However, their usage must still be recorded for compliance and traceability. NetSuite, extended with Epiphany's tracking logic, provides a complete report of what customer owned parts were used, what remained unused, and what condition each part was in upon receipt.

### B.  Aviation Component Manufacturer:

A manufacturer of regional aircraft engines both builds and repairs its own assemblies. It also partners with third-party certified repair shops who are authorized to perform warranty repairs. These repair centers are allowed to stock OEM parts, provided by the OEM but legally owned by the airline customer.

In this case, the manufacturer uses Epiphany's customer owned inventory tracking to ensure that every part is properly stored and consumed by authorized parties. When a repair shop receives a customer engine, they check whether that customer has prepositioned parts at the site. If so, those parts are visible in the system and selectable by part number, lot, or serial. The repair center selects the required parts, completes the repair, and logs the consumption. The airline is then notified, and the OEM reconciles the part usage against the customer's purchase agreement.

Because the repair shop is a third-party agent, the manufacturer must maintain a clear record of part usage for warranty and billing back to the airline. This is accomplished with role-based access in NetSuite and external reporting workflows developed by Epiphany.

## C.  *Cloud Server Refurbishment:*

A data services company operates a private cloud platform using racks of servers distributed across multiple facilities. When servers age or fail, they are returned to a central location for refurbishment. Often, the customer has spare parts from old configurations that can be reused, but these parts are no longer part of the company's capital asset base because they have been fully depreciated.

Rather than reintroducing these parts into financial inventory, the company stores them as non-owned or zero-value assets. This allows them to be tracked operationally without affecting the balance sheet. Epiphany's platform manages this inventory in a spare parts warehouse within NetSuite, where technicians can view available components and draw from them when assembling refurbished systems.

This system supports both traceability and cost optimization. Although the parts have no book value, their reuse reduces the need for new purchases. Additionally, the company can document part provenance, which is critical for auditing and customer assurance in sensitive industries such as finance or healthcare.

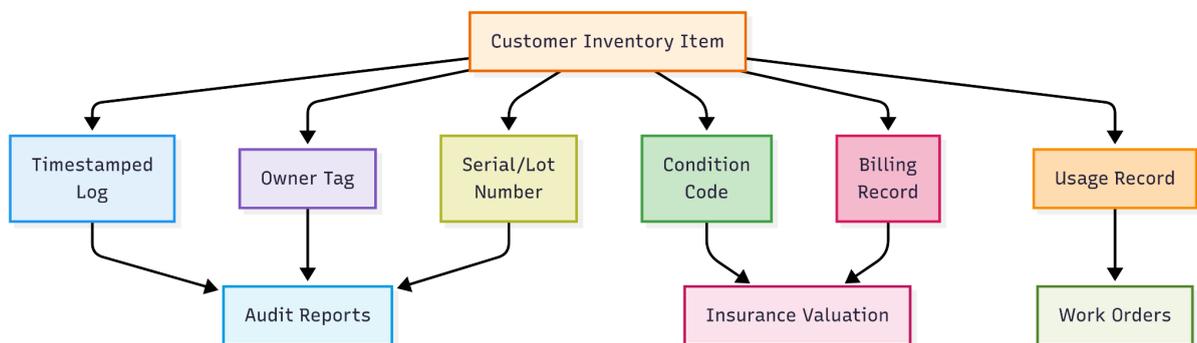## VI.  AUDIT, COMPLIANCE, AND INSURANCE CONSIDERATIONS



*Figure 4 Traceability and Compliance Framework*

While customer owned inventory is not included in the financial asset ledger, it must still be accounted for in other ways. Auditors, insurers, and customers require proof of inventory levels, transaction history, and physical security.

To support these needs, Epiphany's system maintains full logs of every transaction involving customer owned inventory. This includes receipts, transfers, usage events, write-offs, and adjustments. Each log entry records the user, timestamp, action taken, and affected quantity or serial number. These records can be exported for audit or compliance review.

For insurance purposes, a non-owned inventory valuation report is available. This report lists all inventory held on behalf of customers, including estimated replacement value, storage location, and item condition. In the event of a loss event such as fire, theft, or natural disaster, this report can be submitted to insurers to justify claims and calculate compensation.

Epiphany's system also supports physical cycle counts for customer inventory. Just like owned stock, customer owned parts can be scheduled for periodic verification. Discrepancies can be flagged, and corrections logged. This builds trust with customers and improves overall inventory accuracy.

Regulatory requirements such as FAA Part 145 in aerospace or ISO 27001 in data services may also mandate traceability of service parts. By logging part usage and linking it to specific work orders, technicians, and customers, the system supports documentation and compliance without introducing unnecessary manual work.

## VII.   BEST PRACTICES AND RECOMMENDATIONS

Based on field experience and system design, EpiphanyInc.net recommends the following best practices for managing customer owned inventory in MRO environments:

### A.      *Use virtual warehouses:*

Always store non-owned parts in a designated location separate from company-owned inventory. This applies both physically and in the ERP system.

### B.      *Receive inventory at zero cost:*

Customer inventory should not create asset entries or payable obligations. Use zero-cost receipts and custom tracking fields to maintain visibility.

### C.      *Tag all items by customer:*

Ensure each item is linked to a customer record, especially when multiple customers use the same site. This avoids confusion and enables proper usage tracking.

**D.**      *Integrate with work orders:*

Allow customer inventory to be selected during work order planning. Automate the flow from selection to consumption and billing.

**E.**      *Track usage with timestamps and users:*

Full traceability improves trust and enables audit readiness. Ensure that all part movements are logged.

**F.**      *Align billing rules with contracts:*

Support different models including prepaid, use-based, and bundled service. Apply billing triggers appropriately and maintain deferred revenue where needed.

**G.**      *Maintain insurance valuation reports:*

Even if parts are not owned, their value must be recorded for risk management. Maintain a list of quantities, values, and locations.

**H.**      *Educate warehouse and service teams:*

Make sure that everyone involved understands the distinction between owned and non-owned parts and follows standard handling procedures.

## VIII. CONCLUSION

As manufacturers increasingly take on service and repair responsibilities for their own high-value equipment, the management of customer owned inventory has become a core operational concern. Whether in aerospace, defense, telecommunications, or infrastructure,

the need to receive, store, consume, and bill for inventory that is physically present but not financially owned demands careful system design and business discipline.

Customer owned inventory is neither a niche exception nor a temporary workaround. In many industries, it is central to how equipment is maintained over its lifecycle. Yet traditional ERP systems are not built to handle non-owned inventory in a structured way. Without proper tooling, organizations are forced to use fragmented tracking methods that lack integration, auditability, and scalability.

EpiphanyInc.net's approach enables manufacturers and service organizations to handle customer owned inventory within NetSuite in a way that is robust, compliant, and operationally efficient. By using virtual warehouses, zero-cost receipts, linked ownership records, and integrated billing logic, organizations can achieve full visibility and control without distorting financial reporting.

The ability to trace every item from receipt to usage, to log all user activity, and to align revenue recognition with actual consumption enables a business model that is both customer friendly and financially sound. When combined with insurance-ready reporting, compliance documentation, and cycle count support, the system offers a complete solution to a historically complex challenge.

## IX.   ABOUT EPIPHANYINC.NET

EpiphanyInc.net is a leading NetSuite Alliance Partner focused on solving operational challenges for manufacturers, service providers, and MRO organizations. Our team brings deep domain expertise in complex asset management, inventory systems, and ERP

transformation. We design and implement custom NetSuite solutions for industries where traceability, compliance, and precision are non-negotiable.

From aviation engines to cloud servers, from warranty repairs to long-term overhaul cycles, Epiphany helps OEMs and service providers track what matters most.

To learn more about how Epiphany supports customer owned inventory in NetSuite and beyond, please visit https://www.epiphanyinc.net.

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