



# Supplier Traceability Requirements

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## Overview

Oracle Tracking Reliability Availability and Quality (OraTRAQ) is an Oracle-wide initiative to develop systems and processes to monitor Oracle product reliability through tracking product availability and quality data. To support these systems and processes, one of the OraTRAQ deliverables is an infrastructure for Oracle product traceability. Traceability allows Oracle and its suppliers to rapidly locate, contain, and replace potentially suspect Oracle product throughout the life cycle and within the customer-to-vendor supply chain. OraTRAQ continues to improve as more functionality is developed and benefits are realized within Oracle and its supply chain. This document is updated as the Oracle-internal OraTRAQ business requirements are revised.

Supplier traceability incorporates all of the OraTRAQ requirements. In this document, as well as in 7326396, *Supplier Traceability Data, CSV Data Feed Format* any reference to OraTRAQ is a reference to supplier traceability established by Oracle.

## Audience

Product Lifecycle and Technologies Process and Quality and Supplier Engineering

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## Introduction

Oracle must have the ability to rapidly locate, contain, and replace suspect material throughout the Supply Chain. This capability is referred to as *traceability*.

In order to fulfill OraTRAQ requirements, Oracle requires all suppliers to provide product traceability and quality data for all products containing Oracle part numbers (PNs) to an Oracle data repository.

The OraTRAQ project gives Oracle the traceability to enable rapid location, containment, and replacement of suspect material throughout its supply chain and the product life cycle (PLC).

## Business Case

The OraTRAQ program develops a traceability and quality data architecture to identify sales opportunities, proactive resolution services, and quality issues. OraTRAQ works together with Oracle's suppliers to make the architecture successful.

## 1. OraTRAQ Description

### 1.1 Benefits of OraTRAQ

OraTRAQ provides the following capabilities:

- Proactive customer service before product fails (field change orders)
- Effective control of stop ships, purges, and screens
- Reliable product information capture for development teams
- Greater product and service selling opportunities creation by providing system and component configuration data to the Global Single Instance Install Base (GSI IB)
- Warranty entitlement support
- Verification support of annual failure rate (AFR)
- Ability to trace issues back to the component and supplier level, for example, root cause corrective action (RCCA) and failure analysis (FA)

OraTRAQ benefits are realized not only by Oracle, but by each Oracle supplier implementing component traceability within their own facilities. This enables suppliers to rapidly locate suspect material within their own facilities, hubs, cross docks, and customers.

Oracle expects all suppliers to absorb the costs associated with implementing component traceability, as this provides continuous improvement to their own facilities by realizing cost benefits associated with the capabilities and opportunities described earlier.

## 1.2 Scope of OraTRAQ Traceability

The OraTRAQ traceability requirements apply to **all** products containing Oracle PNs.

It is especially critical for any asset identified by Oracle to be a High Value Asset (HVA) to have complete traceability.

Please see PROC-10090 for Security, Controls, and Traceability, and Destruction requirements.

Specific data element requirements and their associated reference materials are described in *Section 2.2.5.6*.

## 1.3 Objectives of OraTRAQ Traceability

For Oracle's suppliers, traceability starts with an Oracle bill of material (BOM) and ends with Oracle product shipment. Therefore, the supplier requirements of OraTRAQ are as follows:

1. Capture Oracle BOM level data for sub-assemblies and components consumed during the Oracle product assembly or manufacturing process at supplier sites.
2. Create an electronic record for Oracle products that ship to Oracle's manufacturing sites, distribution facilities, or customers. The electronic record must include detailed product information, shipment information, data control or integrity information, and any applicable quality information.
3. Transmit the electronic record as the products are shipped to Oracle's manufacturing sites, distribution facilities, or customers.
4. Store both the BOM level data and the electronic record after product shipment. These data must be retained for at least seven years from the date of shipment.
5. Support request for data retrieval, as applicable, of stored BOM data and electronic records.

# 2. OraTRAQ Approach

## 2.1 Overview

The overall methodology for OraTRAQ centers around the Oracle BOM. The general rule for Oracle product traceability is '*For a given Oracle BOM, OraTRAQ requires the supplier (who delivers a product to Oracle's manufacturing sites, distribution facilities, or customers) to collect and maintain a history of the components and sub-assemblies on the BOM.*'

Traceability is a requirement for all Oracle products that are directly shipped to Oracle's manufacturing sites, distribution facilities, or customers. This includes both production and unreleased products such as prototype or NPI (new product introduction) units.

For supplier-designed assemblies or purchased assemblies which do not have Oracle PNs, Oracle expects the supplier to track, collect, and maintain a record of items that may have an impact on quality. Components which do not have an Oracle PN are not sent to OraTRAQ.

The simple rule for OraTRAQ data collection is '*If a supplier ships an item with an Oracle PN or assembles an item with an Oracle PN into a higher level assembly, the supplier must collect, store, and transmit that configuration data to OraTRAQ.*' **This applies to all levels of part numbers on the Oracle BOM.** Oracle validates the data received through OraTRAQ against the published BOM for shipped PNs, and against the logistic history of what was physically shipped. In addition to configuration data, OraTRAQ requires the following:

1. All system and component PNs sent to OraTRAQ must be valid Oracle PNs. If the supplier uses proprietary PNs rather than Oracle PNs for manufacturing operations and a cross reference exists between the supplier PN and a corresponding Oracle PN, the substitution of the supplier PN with the Oracle PN must be made by the supplier and the data must be sent as part of the OraTRAQ data feed.
2. All system and component serial numbers must conform to one of the formats defined in 923-3383, *WWOPS Supplier Engineering: Embedded Logic in Serial Numbers, Lot Codes and Assembly Identifications (IDs)*. A serial number is **not** shorter than eight characters.
3. The supplier may be requested by Oracle to include known device identifiers (ID), such as media access control (MAC) address, Ethernet address, Host ID, World Wide Name (WWN) etc. in the OraTRAQ data record. If not specifically requested, this is optional for the supplier.

## 2.2 Functionality

### 2.2.3 OraTRAQ Data Elements

The data elements required in the CSV file for OraTRAQ are described in detail in 7326396 *Supplier Traceability Data, CSV Data Feed Format*. The elements include parent and component part and serial numbers as well as a supplier ID and supplier location identifier (supplied by Oracle).

### 2.2.4 Data Traceability Requirements

The following conditions help determine which OraTRAQ requirements for data capture, storage, retention, and transmission apply:

1. If the shipped top level product does not have an Oracle PN, there are no traceability requirements for OraTRAQ.
2. If the shipped top level product has an Oracle PN, the traceability requirements for that system for OraTRAQ is the following:

Oracle requires the supplier to capture, store, retain, and transmit the parent PN and serial number along with all associated serialized and lot coded child PNs assembled to the Oracle BOM through the suppliers manufacturing process.

If a serialized or lot coded item had any failure or rework processes applied to it during the manufacturing, assembly, or test processes, the supplier is required to create and retain a record of the repair activity and to provide the data upon request.

If a serialized item with an Oracle PN is scrapped or de-kitted, the serial number, PN, and process details must be recorded, retained and provided upon request.

### 2.2.5 Data Transmission Requirements

**Suppliers must transmit configuration data to OraTRAQ within 24 hours of the time the item ships from their factory.**

If the supplier shipment is direct to a customer, the ship to address is the address of the customer ship to destination. If the shipment is to an Oracle factory, cross dock, or hub, the ship to address is the address of the factory, cross dock, or hub.

OraTRAQ data is transmitted to Oracle through Oracle HTTPS B2B

Oracle IT provides Oracle B2B Connectivity Information instructions to suppliers during supplier setup.

Oracle expects suppliers to conduct data validation for completeness and accuracy prior to transmitting data to Oracle. Data validation and the mechanism for dealing with data rejection are detailed in the data feed specification 7326396, *Supplier Traceability Data, CSV Data Feed Format*.

Oracle also conducts data validation for completeness and accuracy of received data. Oracle provides acknowledgment reports to the supplier with details of any data missed or which was rejected by OraTRAQ. The supplier must correct and re-transmit the failed data within 14 days of notification of an error.

### 2.2.6 Hit Rate (Data Completeness) Reporting and Goal

Oracle publishes data completeness reports for data providers. These reports are often called Hit Rate reports and are intended to help both the data provider and Oracle maintain a complete traceability data set.

The traceability data completeness compares what the data provider ships to the corresponding data set sent in by the data provider.

**NOTE 1:** Shipments include items built on a purchase order (PO) where an Advanced Shipment Notice (ASN) is sent to Oracle as well as items that built and shipped to Oracle via a PO without an ASN or to another vendor or site on behalf of Oracle. This includes shipments to Oracle internal Manufacturing as well as spares to Oracle Services.

## 2.2.7 Data Retention Requirements

Oracle requires suppliers to meet ISO 9000 requirements for data retention for a minimum of seven years. There are no requirements for how a supplier stores OraTRAQ data.

## 2.2.8 Data Retrieval Requirements

The supplier must have the ability to provide OraTRAQ data in the OraTRAQ data format 7326396, *Supplier Traceability Data, CSV Data Feed* within a 24-business-hour period for data less than two years old and within 10 business days for data older than two years.

For situations when the supplier shipping the Oracle product must request OraTRAQ data from the next sub-tier level supplier, the time required for data retrieval reflects the number of respective supplier levels. For example, Oracle requests data from Supplier A, who requests the data from Supplier B, the expected retrieval time is 48 business hours.

**NOTE 2:** Requests for component trace data can be in the BOM format of *top down* (the components that were used on a specific assembly) or *bottom up* (the assemblies in which specific components were used).

## 2.2.9 Sub-tier Supplier Requirements

Sub-tier suppliers are expected to meet the component traceability requirements as described in this document. The supplier is responsible for ensuring that the requirements are met and getting the data to Oracle.

## 2.2.10 OraTRAQ Supplier Compliance

The supplier is OraTRAQ compliant when all eligible products from all eligible sites successfully meet the OraTRAQ requirements.

**NOTE 3:** OraTRAQ does not replace existing quality reporting systems between Oracle and the suppliers. Such systems are independent of OraTRAQ, although they transmit similar or the same data. Parallel systems include Test Data Management System (TDMS) for test logs and FRU ID Repository (FIR) for FRUID container data.

# 3. OraTRAQ Data Collection Requirements

## 3.1 Purpose of OraTRAQ Data Collection

OraTRAQ requires that certain parts to be traceable to meet Oracle's business needs. The documents 7326396, *WWOPS Process and Quality: Supplier Traceability Data, CSV Data Feed Format* defines which data elements are to be transmitted for different types of parts, whether serialized or lot coded.

### **3.2 Items Listed on Oracle's BOMs Which Require Serialized Data Collection**

Any part with a serial number label which is assembled or created in the supplier manufacturing process must be recorded by the supplier and sent to OraTRAQ. Items identified in Oracle's system as serial control = yes or on Oracle's BOM as serial controlled must be recorded by the supplier and sent to OraTRAQ. Items listed on Oracle's BOMs that require serialized data collection include the following:

- Each top level system, X-option, or FRU item

**NOTE 4: The marketing PN is included in the item BOM and printed on the shipping label.**

- Data storage devices (disk drives, tape drives, DVD drives, and solid state drives)
- Processor modules with either standard or 2D (high density) barcode scannable serial numbers (SPARC, AMD, and INTEL processors)
- Serialized board assemblies
- Serialized power supplies
- All PCIe cards including Network interface cards (NIC), Storage Controllers and Host Bus Adapters (HBA).

**NOTE 5:** The serial number of the card associated to the PN of the card must be provided.

**NOTE 6:** The 12-character MAC address of the NIC must be provided as the serial number of the module label PN when requested.

- Serialized memory modules (where the physical barcode serial number is available)
- Serialized third party hardware (switches, routers, monitors, and others)
- Serialized or lot coded software media (for example, a DVD with a unique PN and serial number [RedHat Linux, VMware, and others])
- Serialized fan assemblies and heat sinks
- Serialized cable assemblies
- High Value Assets

### **3.3 Items Listed on Oracle's BOMs Which Require Non-Serialized Data Collection**

Any part with a lot code, date code, or non-unique tracking ID label which is assembled or created in the supplier manufacturing process must be recorded by the supplier. If it is set to serial control on the BOM, the data must be sent to OraTRAQ. Items listed on Oracle's BOMs that require non-serialized data collection may include the following:

- Non-serialized memory modules with a barcoded non-unique tracking number

label

- Non-serialized parts which contain a firmware level

**NOTE 7:** Report the firmware level as the lot code.

- Non-serialized parts which contain a software level (for example, a DVD with a Solaris release level)

### **3.4 Items Listed on Oracle's BOMs Which May Not Require Serialized Data Collection**

- Serialized memory modules without a barcoded serial or unique tracking number label (for example, double data rate [DDR])
- Parts that perform primarily in a cosmetic or mechanical way:
  - Cabinet doors
  - Filler panels
  - Packaging material
- Specifications, drawings, manuals, guides, and other documents intended for internal use only:
  - Manufacturing, distribution, rework, or field repair instructions
  - Phantom assemblies
  - Items with a quantity of zero (0.000)
- Selected shipped items (packaging, packaging securing, or closing materials):
  - Content lists
  - Fasteners
  - Labels
  - Panels, covers, and bezels
  - Brackets and rails
  - Manuals and licenses
  - Un-serialized software media with no software release level:
    - Generic CD
    - Generic DVD

## **4 Additional Rules for OraTRAQ Data**

### **4.1 Additional Items for Data Transmission to OraTRAQ**

OraTRAQ 3.0 requires that if a supplier ships a serialized component, X-option, or system to Oracle, to another Oracle supplier or to an Oracle customer, and that part has an Oracle PN, the configuration data for that item must be sent to OraTRAQ in the CSV file for that part as well as for all serialized and lot coded component parts. See 7326396, *Supplier Traceability Data, CSV Data Feed* for details.

All assemblies which contain serialized parts are serialized in order to ensure traceability of the components. If the parent assembly of a serialized child item does not have a serial number, the Oracle product implementation team must review the parent part specification and resolve the issue.

- If the shipping level item has a known device ID (MAC address, Ethernet address, Host ID, WWN, and others), the supplier may be required to send the device ID as part of the OraTRAQ data record. For details refer to 7326396, *Supplier Traceability Data, CSV Data Feed Format*.
  - A system MAC address may be required for each system. If the system includes a service processor, the MAC address of the service processor may also be required.
  - A MAC address may be required for all storage trays.
  - A MAC address may be required for all systems, FRUs, and X-options, which contain an Ethernet port.
- 2. If there are serialized or lot coded items with Oracle PNs which were assembled into the shipping serial numbered system or into any of its serialized components in the supplier's process, the supplier is required to send the data to OraTRAQ. This requirement includes all serialized boards, power supplies, data storage devices, processor modules, DIMMs, and others, shipped as components of shipped systems, FRUs, X-options, or spare parts.
  - If the item is a serialized third party hardware which has an Oracle PN, the supplier is required to send the configuration data to OraTRAQ.
  - If the item is a serialized or licensed third party software which has an Oracle PN, the supplier is required to send the data to OraTRAQ.
  - If an item does not have an Oracle PN, the EM does not send the data for that item or any of its subcomponents of that item to OraTRAQ.

## 4.2 Validation Requirements for OraTRAQ Data

1. All serial number information for vendor codes and model identifiers are specified in 923-3383, *Embedded Logic in Serial Numbers, Lot Codes, and Assembly Identifications (IDs)*.
2. All supplier configuration data is validated against the Advanced Ship Notification (ASN). OraTRAQ requires configuration data to match the serialized components on the expected bill of material for each serialized ASN shipment record or each serialized purchase order shipment record where there is at least one serialized component on the BOM.
3. All OraTRAQ configuration data file entries have a valid Oracle PN and unique serial number.
4. All OraTRAQ accessory entries in the csv file have a valid Oracle PN and either a lot code, date code, or firmware revision, where available.

### 4.3 Exceptions to Validation Requirements for OraTRAQ Data

The following exceptions apply to the rules described in *Section 4.2 Validation Requirements for OraTRAQ Data* :

1. If a component has both a serial number and a lot code, OraTRAQ requires the serial number to be transmitted.
2. If an electro-mechanical assembly which must have a serial number but only has a lot code, OraTRAQ requires the lot code data to be transmitted.
3. If a serialized or lot coded part does not have a valid Oracle PN, an Oracle Supplier Engineer must be contacted.

**NOTE 8:** Serialized parts (assemblies or components) can also be referred to as FRUs.

### Related Information

#### Reference Documents and Records

REFERENCE DOCUMENTS AND RECORDS	
Embedded Logic in Serial Numbers, Lot Codes, and Assembly Identifications (IDs)	923-3383
Supplier Traceability Data, CSV Data Feed Format	7326396

### Document History

Rev	Date	Description of Change	Originator
01	15 Mar 2004	Initial release.	N/A
02	14 Dec 2006	Additions to the data collection table and HDD supplier requirements.	N/A
03	06 Aug 2009	<ul style="list-style-type: none"> <li>1. Updated to remove references to the Customer Information sheet (CIS).</li> <li>2. Updated to include Integrated Business Information System (IBIS) requirements.</li> <li>3. Rewrote <i>Section 3.3.1</i> to specify component types required to be recorded.</li> <li>4. Rewrote <i>Section 3.3.2</i> to specify class codes of components required for IBIS.</li> <li>5. Removed <i>Appendix A, SunTRAQ Data Collection by Part Number Class Code Guide</i>, <i>Appendix B, Supply Chain Model Information</i>, and <i>Appendix C, Hard Drive Model</i>.</li> <li>6. Removed reference to <i>Corp. Engineering Services: Part Numbering Conventions with Class Code Listing, 990-1010-xx</i>.</li> <li>7. Added reference to <i>WWOPS Quality: Policy and Procedure</i></li> </ul>	N/A

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		<p><i>for Setting Serialization Attribute in Oracle 11i</i>, 923-3666-xx.</p> <ol style="list-style-type: none"> <li>8. Rewrote Section 2.1 to add the three simple rules for SunTRAQ data collection.</li> <li>9. Rewrote Section 2.2.3 to specify SunTRAQ data transmission requirements.</li> <li>10. Applied editorial and format changes.</li> </ol>	
04	10 Feb 2012	<p>Replaced all references of SunExchange as transfer mechanism with Oracle B2B or Beehive Online.</p> <p>Changed SunTRAQ to OraTRAQ throughout the document. Changed Sun to Oracle throughout the document. Added two new optional data fields: Manufacturing Completion Date and SO Number to Figure 2-1. Removed Note 2 from Section 2.2.3 and the last paragraph of Section 1.1 on Oracle providing a Unix script. Added statement of Oracle's preference for XML over flat files to Section 4.1. Changed Sun ERP logistics to ASN in Section 4.2, Step 2.</p> <p>Removed nonfunctional link to Oracle Supplier Engineering list from Section 4.3.</p>	N/A
<b>Agile History</b>			
05	28 Jan 2014	<ol style="list-style-type: none"> <li>1. Removed Webdocs references and formatting throughout, including links.</li> <li>2. Removed references to 923-3408 <i>WWOPS Supply Engineering: Supplier Traceability Specifications for Hub Shipments</i></li> <li>3. Removed Oracle format preference statement from paragraph 4.1</li> <li>4. Modified 2.2.1 to reference both 923-3407 and 923-3409 for field definitions.</li> <li>5. Added 2.2.4 Oracle Hit Rate (Data Completeness) Reporting and Goal</li> <li>6. Added Agile serial control setting to section 3.2</li> <li>7. Added PCIe, HBA, Storage Controller to NIC statement in 3.2</li> <li>8. Clarified ASN statement in 4.2.2</li> <li>9. Streamlined title</li> <li>10. Updated title of 950-1419</li> </ol>	N/A
06	08 Sep 2016	<p>Added statement to 2.1 that data must be collected for all levels of the BOM. Added 7326396 CSV format document throughout. Added note to 4.1.1 that marketing part number is not required if using the CSV file format.</p>	N/A
<b>Fusion History</b>			
07	01 May 2021	<p>Updated title and removed WWOPS throughout.</p> <p>Removed Beehive reference from Note 2 and 1.1.4</p> <p>Removed references to Agile. Added High Value Asset to section 1.2</p>	N/A
08	17 Dec 2021	<p>Section 2.1 Overview - changed “optional for products in the development phases (unreleased products).”</p> <p>to:</p> <p>Traceability is a requirement for all Oracle products that are directly shipped to Oracle's manufacturing sites, distribution facilities, or customers. This includes both production and unreleased products such as prototype or NPI (new product introduction) units.</p>	N/A

## Supplier Traceability Requirements

09	12 Jan 2022	Corrected typo	N/A
10	01 Oct 2022	Removed 923-3666, 950-1037, 950-1419, 950-3757, 950-4477 from reference document list. Added paragraph 3 Device ID (MAC) is optional statement to section 2.1. Edited Note 7 and section 4-1 for MAC address/device id, making it optional.	N/A
11	08 Mar 2023	Corrected typo; no content change	N/A
12	26 Jun 2023	Removed references to 923-3407 Supplier Traceability Data, XML Data Feed Format	N/A
13	16 May 2025	Section 2.2.4 – removed .DAT anomaly sent in anomaly file. Removed from 2.2.5 reference to 923-3407/923-3409. Removed sending dekit/scrap details in configuration/process activity. 3.1 – replaced non-serialized with lot-coded. Clarified 3.3 non-serialized data collection by adding set to serial control on the BOM statement. Update 3.4 title to ‘may’. From 4.1 removed marketing part number and 923-3409 reference, “refer to 7326396 on marketing part numbers in file” Updated hit rate description. Updated 2.2.9 sub-tier – supplier must ensure that sub-tier meets traceability requirements and getting the data to Oracle.	N/A

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