Oracle® Communications Network Integrity

Licensing Information User Manual

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Contents

Introduction

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Licensing Information

Product	Subproduct	Licensing Description
Oracle Communications Network Integrity	Oracle Communications Network Integrity	Core Network Integrity platform that uses cartridges for Network and Inventory integration and use device licenses to discover network devices. All devices are priced by Network Integrity whether directly connected or managed via EMS/NMS. This includes Discrepancies detection between Imported Inventory data and Discovered network data, Discrepancies Reconciliation to maintain an accurate and up-to-date Inventory. Oracle Communications Network Integrity provides you the ability: • Discovery Manager which includes create, schedule, run, and manage discovery scans, blackout windows, browse and manage scan results, including historical data about successful and failed scans; access the discovered data via the GUI or through programmatic interfaces. • Add generally available Cartridges from Oracle to the scan. Note that each cartridge must be individually licensed o Oracle Communications Network Integrity Cartridge for RESTCONF/ NETCONF o Oracle Communications Network Integrity Cartridge for MIB II SNMP o Oracle Communications Network Integrity Cartridge for Optical TMF 814 CORBA o Oracle Communications Network Integrity Cartridge for CORBA o Oracle Communications Network Integrity Cartridge for TL1 o Oracle Communications Network Integrity Cartridge for FileTransfer and Parsing License Subscription • Assimilation Manager includes the ability to use data from multiple scans or sources to deduce other information and create records of Assimilated data (for example, use device data from two discovery scans to determine circuits or topologies that exist between those devices & ports). • Use and extend the Cartridge for IP/MPLS Topology Links Assimilation as a reference for the creation of data relating to Layer-2 and Layer-3 Topologies discovered from SNMP, RESTCONF and NETCONF. This reference is based upon the Cartridge for SNMP Discovery, RESTCONF/NETCONF Network Discovery which are required for full out-of-the-box functionality. • Use and extend the Cartridge for Optical Circuit Assimilation as a reference for the creation of data relating to SDH and DWDM circuits discovered from TMF814, or other sources. This reference is based upon the Cartridge for Optical TMF814 CORBA, which is required for full out-of-the-box functionality.

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		- Reconciliation Manager which includes create, schedule, run, and manage discrepancy detection scans to compare data from two different sources and create discrepancies based on rules defined in cartridges. Typically, the two data sources are the discovered network (using the discovered results from Network Integrity Discovery Manager) and Unified Inventory Management (UIM), MetaSolv Solution (MSS) or a network operator's inventory system, but any two data sources can be compared such as Billing, Customer Relationship Management, or two inventory systems. - Access the comparison results via the GUI or through programmatic interfaces; correct one data source (where applicable) or trigger the publishing of an event. - Use the Reference Integration with Oracle Communications UIM; this includes the ability to: - Use and extend the reference integration with Oracle Communications Unified Inventory Management (UIM) for importing inventory data and resolving discrepancies. This reference is based upon the Cartridge for MIB-II SNMP or Cartridge for Router and Switch SNMP Cartridge, or the Cartridge for Optical TMF814 CORBA one of which is required for full out-of-the-box functionality. - Prerequisites for Unified Inventory Management (UIM) Integration Cartridge: - Oracle Communications Unified Inventory Management (UIM) - Optional Prerequisites for Unified Inventory Management (UIM) Integration Cartridge: - Oracle Communications Network Integrity, Cartridge for MIB-II SNMP - Oracle Communications Network Integrity, Cartridge for Router and Switch SNMP Discovery - Oracle Communications Network Integrity, Cartridge for RESTCONF/NETCONF Discovery - Oracle Communications Network Integrity, Cartridge for Optical UIM - Oracle Communications Network Integrity, Cartridge for Optical TMF814 CORBA - Oracle Communications Network Integrity , Cartridge for DWDM Layers and Service Discovery and Assimilation - Oracle Communications Network Integrity, Cartridge for FTP SDH Logical Resource Discovery and Assimilation - Oracle Communications Network Integrity , Cartridge for IP Network Links Assimilation and Reconciliation - Oracle Communication Network Integrity, Cartridge for RAN and MW FTP Discovery and UIM Integration - Oracle Communication Network Integrity, Cartridge for IMS FTP Discovery UIM Integration

Product	Subproduct	Licensing Description
		• Use the Reference integration with Oracle Communications MetaSolv Solution (MSS), which includes the ability to:
		o Use the reference cartridge for integrating Network Integrity with Oracle Communications MetaSolv Solution (MSS). The cartridge can be extended and compiled using Oracle Communications Service Catalog and Design to create a deployable cartridge for Network Integrity.
		o Import data from a MetaSolv Solution (MSS) instance via prescribed methods in the Network Integrity MSS Integration Cartridge Guide.
		o Resolve discrepancies for devices and circuits into MetaSolv Solution (MSS), subject to limits documented in the Network Integrity MSS Integration Cartridge Guide.
		o Use the TMF814 model for integration; changing the model, or not having the cartridge for Optical TMF814 CORBA, will require extensibility.
		o Resolve discrepancies into MetaSolv Solution (MSS), requiring the Oracle Communication Network Integrity Cartridge for MSS Integration.
		• Prerequisites for MetaSolv Solution (MSS) Cartridge:
		o Oracle Communications MetaSolv Solution (MSS)
		• Optional Prerequisites for MetaSolv Solution (MSS) Integration Cartridge:
		o Oracle Communications Network Integrity, Cartridge for CORBA
		o Oracle Communications Network Integrity, Cartridge for Optical Circuit Assimilation
		o Oracle Communications Network Integrity, Cartridge for Optical TMF814 CORBA
		• Use the Network Integrity Plugin for Oracle Communications Service Catalog and Design (SCD) to build new discovery cartridges and extend the data modeling of the discovery results. The Developer's Guide includes instructions about how to do this. Note that Oracle Communications Service Catalog and Design is a separately licensed product.
		• Use the Oracle Communications Network Integrity Software Developer Kit and its documentation.
		• Use the provided Oracle OAS Publisher template reports. Note that using the report templates is optional; if used they require Oracle OAS Publisher which is a separately licensed product.
		Inclusions:

Product	Subproduct	Licensing Description
		• Oracle Enterprise Scheduler: Oracle Communications Network Integrity customers are granted the restricted free license for Oracle Enterprise Scheduler. This license includes the ability to schedule and manage Network Integrity jobs for the discovery, reconciliation, assimilation, or resolution of data controlled from within the Network Integrity application only (as outlined in Licensing Notes above). Any use of this component outside of Oracle Communications Network Integrity requires the purchase of the appropriate licenses from Oracle. Prerequisites: • Oracle Database (Oracle RDBMS) Enterprise Edition • Oracle WebLogic Server Enterprise Edition • Oracle Communications Service Catalog and Design (SCD) • Oracle OAS Publisher (if you would like to use the optional template network discovery reports provided with Network Integrity)
Oracle Communications Network Integrity	Oracle Communications Network Integrity Large Devices (CORE/TRANSPORT)	Oracle Communications Network Integrity Large Devices (CORE/TRANSPORT) are defined as A core network is a telecommunication network's core part, which offers numerous services to the customers who are interconnected by the access network. Its key function is to direct telephone calls over the public switched telephone network. In general, this term signifies the highly functional communication facilities that interconnect primary nodes. The core network delivers routes to exchange information among various sub-networks. When it comes to enterprise networks that serve a single organization, the term backbone is often used instead of core network, whereas when used with service providers the term core network is prominent. Transport layer Devices irrespective of layer 1/2/3 Prerequisites: • Oracle Communications Network Integrity
Oracle Communications Network Integrity	Oracle Communications Network Integrity Medium Devices (Access Device/RAN/OLT)	Oracle Communications Network Integrity Medium Devices (Access Device/RAN/OLT) defined as In telecommunications, an access device is any piece of equipment that connects an end-user to a service provider's network to enable communication. This network segment is often called the "last mile" and includes consumer-side devices like modems and routers, as well as provider-side devices that aggregate customer connections. Key functions include Signal modulation, Routing, network Segmentation and Aggregation. A radio access network (RAN) is a major component of a wireless telecommunications system that connects individual devices to other parts of a network through a radio link. The RAN links user equipment, such as a cellphone, computer or any remotely controlled machine, over a fiber or wireless backhaul connection. That link goes to the core network, which manages subscriber information, location and more. The RAN, which is sometimes also called the access network, is the radio element of the cellular network. A cellular network is made up of land areas called cells. A cell is served by at least one radio transceiver, although the standard is typically three for cell sites.

Product	Subproduct	Licensing Description
		A RAN is made up of three essential elements:
		1. Antennas convert electrical signals into radio waves.
		2. Radios transform digital information into signals that can be sent wirelessly and ensure that transmissions are in the correct frequency bands with the right power levels.
		3. Baseband units (BBUs) provide a set of signal processing functions that make wireless communication possible. Traditional baseband uses custom electronics combined with multiple lines of code to enable wireless communication, typically using the licensed radio spectrum. BBU processing detects errors, secures the wireless signal and ensures that wireless resources are used effectively.
		An Optical Line Terminal (OLT) is a device at the service provider's central office that serves as the central hub for a passive optical network (PON), such as those used for Fiber-to-the-Home (FTTH) services. It aggregates traffic from the provider's core network and manages the distribution of high-speed fiber-optic signals to multiple end-users
		An OLT works as the master device in a PON system, communicating with the slave devices, which are the Optical Network Terminals (ONTs) or Optical Network Units (ONUs) at each customer's location
		Prerequisites: • Oracle Communications Network Integrity
Oracle Communications Network Integrity	Oracle Communications Network Integrity Small Devices (IoT/NID/CPE/ONT)	Oracle Communications Network Integrity Small Devices (IoT/NID/CPE/ONT) defined as
		Internet of Things (IOT) Devices are defined as simple input Devices operated by humans, or remotely managed or fully automated Devices collecting information or responding to commands issued from centralized control points. IOT Devices include but are not limited to smart mobiles, smart fire alarms, smart door locks, smart bicycles, medical sensors, fitness trackers, and smart security systems.
		In telecommunications, a network interface device (NID; also known by several other names) is a device that serves as the demarcation point between the carrier's local loop and the customer's premises wiring. Outdoor telephone NIDs also provide the subscriber with access to the station wiring and serve as a convenient test point for verification of loop integrity and of the subscriber's inside wiring.
		a customer-premises equipment or customer provided equipment (CPE) is any terminal and associated equipment located at a subscriber's premises and connected with a carrier's telecommunication circuit at the demarcation point ("demarc"). The demarc is a point established in a building or complex to separate customer equipment from the equipment located in either the distribution infrastructure or central office of the communications service provider.
		CPE generally refers to devices such as telephones, routers, network switches, residential gateways (RG), set-top boxes, fixed mobile convergence products, home networking adapters and Internet access gateways that enable consumers to access providers' communication services and distribute them in a residence or enterprise with a local area network (LAN).

Product	Subproduct	Licensing Description
		An Optical Network Terminal (ONT) is a device used in fiber-optic communication that serves as the interface between the service provider's Passive Optical Network (PON) and the customer's premises. It is the endpoint of the fiber network at the user's location, translating the high-speed light signals from the fiber into electrical signals that consumer devices can understand ONT devices are also commonly referred to by a few other names like ONU (Optical Network Unit), Fiber modem, Fiber box or Residential Gateway if integrated Prerequisites: Oracle Communications Network Integrity
Oracle Communications Network Integrity	Oracle Communications Network Integrity Cartridge for RESTCONF/ NETCONF	Oracle Communications Network Integrity Cartridge for RESTCONF/ NETCONF offers • NETCONF protocol with YANG Model based network discovery o A YANG model details the syntax and structure of data, such as the settings for an interface, routing protocols like BGP, or other network services o This cartridge provides ability to discover routers, switches device details such as Chassis, Shelf, Slot, Cards, ports and Interfaces from device o Discovers configuration parameters from those resources like IP address, software version, hardware version, Part number, Serial number, Rate codes, OSPF, RIP, BGP, VPN and A-end and Z-End configurations in the Interface to further use of Network Topology Assimilation • RESTCONF protocol with YANG Model based network discovery o A YANG model details the syntax and structure of data, such as the settings for an interface, routing protocols like BGP, or other network services o This cartridge provides ability to discover routers, switches device details such as Chassis, Shelf, Slot, Cards, ports and Interfaces from device o REST API fetch network information and provide extension add new parameters o Discovers configuration parameters from those resources like IP address, software version, hardware version, Part number, Serial number, Rate codes, OSPF, RIP, BGP, VPN and A-end and Z-End configurations in the Interface to further use of Network Topology Assimilation o The ability to extend the cartridges by configuring a new YANG model profile to discover from RESTCONF/NETCONF network (as described in the Cartridge and Developer's Guides). • IP Network Topology Assimilation:

Product	Subproduct	Licensing Description
		o LLDP (Link Layer Discovery Protocol) provides a standard way to map network topology, offering a comprehensive view of how switches, routers, and other devices are interconnected. This is invaluable for network administrators for documentation and troubleshooting o IP Link Assimilation Cartridge uses discovered LLDP details such as (System name, Chassis ID, Port/Interface ID, Device Capability, MAC and management IP address) to assimilate Topology and Reconcile to UIM Inventory system • Discrepancy Detection and Reconciliation o This cartridge provides ability to detect the discrepancies between discovered network devices, topologies and Inventory data, allow to reconcile and update Inventory system **Prerequisites:** • Oracle Communications Network Integrity and choose the available Options for Device Capacity Licenses o Oracle Communications Network Integrity Large Devices (CORE/TRANSPORT) o Oracle Communications Network Integrity Medium Devices (Access Device/RAN/OLT) o Oracle Communications Network Integrity Small Devices (IoT/NID/CPE/ONT)
Oracle Communications Network Integrity	Oracle Communications Network Integrity Cartridge for MIB-II SNMP Cartridges	This cartridge provides: • The ability to discover multi-vendor network devices (Routers, Switches) information (such as IP address (IPv4, IPv6), name, and logical interfaces and its configuration such as A-End device/Interface, Z-End device/Interface, Static Routing, OSPF neighbor, BGP, Rate code, BGP, MPLS VPN and others from the Devices that supports MIB II using a pre-configured SNMP poll profile. • Pre-configured modeling and publishing of the discovered results from the poll list. • Ability to discover OSPF, BGP LLDP protocols (Link Layer Discovery Protocol) provides a standard way to map network topology, offering a comprehensive view of how switches, routers, and other devices are interconnected. • IP Link Assimilation Cartridge uses discovered LLDP details such as (System name, Chassis ID, Port/Interface ID, Device Capability, MAC and management IP address) to assimilate Topology and Reconcile to UIM Inventory system • Pre-Integrated UIM Inventory to detect discrepancies between network and Inventory, offers discrepancies reconciliation to have accurate and up-to-date Inventory. Allow to extend to create reconciliation and resolution actions through Oracle Communications Service Catalog and Design (as described in the Cartridge and Developer's Guides). • The ability to extend the cartridge by configuring a new SNMP poll profile to discover from an SNMP MIB (as described in the Cartridge and Developer's Guides).

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Product	Subproduct	Licensing Description
		Prerequisites: • Oracle Communications Network Integrity and choose the available Options for Device Capacity Licenses o Oracle Communications Network Integrity Large Devices (CORE/TRANSPORT) o Oracle Communications Network Integrity Medium Devices (Access Device/RAN/OLT) o Oracle Communications Network Integrity Small Devices (IoT/NID/CPE/ONT)
Oracle Communications Network Integrity	Oracle Communications Network Integrity Cartridge for Generic SNMP Cartridge	This cartridge provides: • The ability to discover Multi-Vendor network Devices information from the network vendors router or switch using a pre-configured SNMP poll profile based on the SNMP MIBs. This SNMP poll profile discovers significantly more information than the MIB-II SNMP Cartridge poll profile including detailed physical device information (such as device, shelves, slots, sub-slots, cards, card under card, physical ports). • Pre-configured modeling and publishing of the discovered results from the poll list. • Pre-Integrated UIM Inventory to detect discrepancies between network and Inventory, offers discrepancies reconciliation to have accurate and up-to-date Inventory. Allow to extend to create reconciliation and resolution actions through Oracle Communications Service Catalog and Design (as described in the Cartridge and Developer's Guides). • The ability to extend the cartridge by adding to the SNMP poll profile (as described in the Cartridge and Developer's Guides). **Prerequisites:** • Oracle Communications Network Integrity and choose the available Options for Device Capacity Licenses o Oracle Communications Network Integrity Large Devices (CORE/TRANSPORT) o Oracle Communications Network Integrity Medium Devices (Access Device/RAN/OLT) o Oracle Communications Network Integrity Small Devices (IoT/NID/CPE/ONT)
Oracle Communications Network Integrity	Oracle Communications Network Integrity Cartridge for Optical TMF814 CORBA	This cartridge provides: • OOB ability to discover Optical domains such as SDH, DWDM Managed Elements (ME), Topologies from one or more TMF814-compliant systems (NMS/EMS) using a pre-configured CORBA APIs • CORBA poll profile discovers detailed device information (such as device, shelves, slots, sub-slots, cards, card under card, physical ports, Interfaces). • Pre-configured modeling and publishing of the discovered results from the CORBA API list. • The ability to add support for new CORBA API calls (as described in the Cartridge and Developer's Guides).

Product	Subproduct	Licensing Description
		• Pre-Integrated Inventory system to quickly populate discovered SDH, DWDM MEs and Topology • NMS/EMS notifications-based discovery and reconciliation to avoid full network discovery specifically when Optical network resources consumption at peak. Such as ○ ME's level - Card change, Port change, Interface change / speed change, configuration change ○ Topology level– End device or port / interface change, configuration change • Ability to do The Multi-Domain circuit topology stitching Discovery using CORBA API to discover your network Synchronous digital hierarchy (SDH) and Dense wavelength-division multiplexing (DWDM) topologies from NMS/EMS system. • Discover topology configurations such as name, native EMS name, rate, A-End TP, Z-End TP, directions and others and ability to reconcile multi-domain topologies to Inventory system. For more details visit Cartridge guide • The ability to create reconciliation and resolution actions through Oracle Communications Service Catalog and Design (as described in the Cartridge and Developer's Guides). **Prerequisites:** • Oracle Communications Network Integrity and choose the available Options for Device Capacity Licenses ○ Oracle Communications Network Integrity Large Devices (CORE/TRANSPORT) ○ Oracle Communications Network Integrity Medium Devices (Access Device/RAN/OLT) ○ Oracle Communications Network Integrity Small Devices (IoT/NID/CPE/ONT)
Oracle Communications Network Integrity	Oracle Communications Network Integrity Cartridge for File Transfer and Parsing	This cartridge provides: • The ability to retrieve information, in a known file format, from systems using FTP, SFTP, or from local server directories. • The ability to parse ASCII-Delimited and XML files and to extend the parser processors through Oracle Communications Service Catalog and Design (as described in the Cartridge and Developer's Guides). • Reference cartridges for ASCII and XML parsing • FTP SDH Topology, Trails, Tunnel and Service Discovery • IMS FTP Discovery • Optical FTP Discovery • RAN and MICROWAVE FTP Discovery • The ability to extend the cartridge by adding a custom parsing processor through Oracle Communications Service Catalog and Design (as described in the Cartridge and Developer's Guides). • The ability to create reconciliation and resolution actions through Oracle Communications Service Catalog and Design (as described in the Cartridge and Developer's Guides).

Product	Subproduct	Licensing Description

		Prerequisites:
		
		• Oracle Communications Network Integrity and choose the available Options for Device Capacity Licenses
		
		   o Oracle Communications Network Integrity Large Devices (CORE/TRANSPORT)
		
		   o Oracle Communications Network Integrity Medium Devices (Access Device/RAN/OLT)
		
		   o Oracle Communications Network Integrity Small Devices (IoT/NID/CPE/ONT)

Oracle Communications Network Integrity	Oracle Communications Network Integrity Cartridge for CORBA	This cartridge provides:
		
		• An abstract cartridge for creating a deployable cartridge that uses the CORBA protocol for communication. The cartridge is extended and compiled using Oracle Communications Service Catalog and Design to create a deployable cartridge for Network Integrity.
		
		• A reference DWDM Layers and Service discovery cartridge extend this CORBA cartridge to discover WDM layers & service with configurations:
		
		   o Optical Layers (Layer 0)
		      ▪ Optical Transport Section (OTS)
		      ▪ Optical Multiplex Section (OMS)
		      ▪ Optical Channel (OCH)
		
		   o Electrical layers (Layer 1)
		      ▪ Optical Data Unit (ODU)
		      ▪ Optical Transport Unit (OTU)
		
		   o Ability to discover Complete DWDM SNCs and hanging circuits from NMS/EMS system
		
		   o Supports NMS/EMS notifications-based discovery and reconciliation
		
		• Out of the box ability to discover and reconciliation these layers with UIM Inventory.
		
		• The ability to build and extend the cartridge by modifying and adding to the framework (as described in the Cartridge and Developer's Guides).
		
		Prerequisites:
		
		• Oracle Communications Network Integrity and choose the available Options for Device Capacity Licenses
		
		   o Oracle Communications Network Integrity Large Devices (CORE/TRANSPORT)
		
		   o Oracle Communications Network Integrity Medium Devices (Access Device/RAN/OLT)
		
		   o Oracle Communications Network Integrity Small Devices (IoT/NID/CPE/ONT)

Oracle Communications Network Integrity	Oracle Communications Network Integrity Cartridge for TL1	This cartridge provides: • An abstract cartridge for creating a deployable cartridge that uses the TL1 protocol for communication. The cartridge is extended and compiled using Oracle Communications Service Catalog and Design to create a deployable cartridge for Network Integrity.

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		• The ability to discover device information on managed elements (ME) from one or more TL1 compliant systems either directly or via a gateway. • The ability to add support for new TL1 calls/versions (as described in the Cartridge and Developer's Guides). • The ability to create reconciliation and resolution actions through Oracle Communications Service Catalog and Design (described in Network Integrity TL1 Cartridge Guide and Network Integrity Developer's Guide). • The ability to build and extend the cartridge by modifying and adding to the framework (as described in the Cartridge and Developer's Guides). **Prerequisites:** • Oracle Communications Network Integrity and choose the available Options for Device Capacity Licenses o Oracle Communications Network Integrity Large Devices (CORE/TRANSPORT) o Oracle Communications Network Integrity Medium Devices (Access Device/RAN/OLT) o Oracle Communications Network Integrity Small Devices (IoT/NID/CPE/ONT)

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Provider	Component(s)	Functionality	Licensing Information
Apache Software Foundation	Jackson Databind 2.18.3	Basic data binding (mapping) functionality that allows for reading JSON content into Java Objects (POJOs) and JSON Trees (JsonNode), as well as writing Java Objects and trees as JSON.	Licensed under the Apache License, Version 2.0 (the "License"); you may not use this file except in compliance with the License. You may obtain a copy of the License at: http://www.apache.org/licenses/LICENSE-2.0. For a copy of the license, see Apache License, Version 2.0.
	OpenCSV 5.10	Csv to Java de-serialization and vice versa	
	poi-ooxml 5.4.1	Used for excel to Java deserialization and vice-versa.	
	log4j-core 2.24.3	Helps application in logging messages for debugging purposes.	
	Mina SSHD-mina 2.15.0	Used for SSH connections	
	Commons Net 3.11.1	Apache Commons Net™ library implements the client side of many basic Internet protocols. The purpose of the library is to provide fundamental protocol access, not higher-level abstractions.	
	Apache FreeMarker 2.3.33	Apache FreeMarker is a template engine: a Java library to generate text output (HTML web pages, e-mails, configuration files, source code, etc.) based on templates and changing data.	
	Mina SSHD-sftp 2.15.0	Library to support the SSH protocols on both the client and server	

Provider	Component(s)	Functionality	Licensing Information
		side. Specifically, SFTP connection	
	SNMP4J 3.9.1	SNMP4J is a Java library that lets users to build applications which communicate with network devices (like routers, switches, servers, printers, IoT devices) using the Simple Network Management Protocol (SNMP).	
Jsch License	jsch-0.2.26.jar	The jsch library is a pure Java implementation of SSH2, allowing Java applications to establish secure connections to SSH servers.	Licensed under the Atsuhiko Yamanaka, JCraft,Inc License, you may not use this file except in compliance with the License. For a copy of the license, see Jsch License.
Eclipse Public License 1.0	yang-parser-impl-14.0.13.jar	YangTools is a Java library (by the OpenDaylight project) that provides tools for working with the YANG modeling language.	Licensed under the Eclipse Public License - version 1.0, you may not use this file except in compliance with the License. For a copy of the license, see Eclipse Public License 1.0.

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