

# proNX Optical Director Release Notes

**Release 1a**  
**02 January 2018**  
**Revision 1**

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## Introduction

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This release note accompanies the TCX Series Optical Transport System, Release 1.

It describes new and changed features, known behavior, and known and resolved problems in the software.

You can also find the TCX Series Optical Transport System release notes in the Juniper Networks TechLibrary, located at <https://www.juniper.net/techpubs/>.

## TCX Series Optical Transport System, Release 1

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The TCX Series optical transport system is a complete open packet optical layer solution, which includes hardware, open network management, and disaggregated optical software controls. Disaggregation of the software management and optical controls from the underlying hardware provides multiple benefits including flexible deployment, scalability, enhanced automation, best-of-breed hardware support and multi-layer optimization.

The TCX Series Optical Transport System is a portfolio of products that provide the foundation of a comprehensive, open, and programmable packet-optical transport network. This release of the TCX Series Optical Transport System includes the following products:

- TCX1000 Programmable ROADM, release x.x
- proNX Optical Director, Release x.x.x

### TCX1000 Programmable ROADM

At the center of the TCX Series Optical Transport System is the TCX1000 Programmable ROADM or TCX1000-RDM20, which works alongside amplifiers and multiplexers, such as the Juniper Networks BTI7800, to deliver the essential elements of an open line optical transport system. The TCX1000-RDM20 is a standalone, 20-port reconfigurable optical add-drop multiplexer (ROADM) that provides all features of a route and select ROADM node in a compact, disaggregated, stackable, form factor. The TCX1000-RDM20 supports a variety of network applications and topologies, including using it as a terminal node or as a single degree in a multi-degree node configuration. You can dynamically add, drop, or pass-through wavelengths. The TCX1000-RDM20 scales up to 25.6 Tbps per line. It is bit rate transparent and therefore agnostic to framing and modulation formats and uses a wavelength selective switch (WSS), which enables scalable, agile and automated networks.

Combining the TCX1000-RDM20 with integrated Coherent optics within Juniper Networks routing and switching platforms provides a very powerful and comprehensive end-to-end solution. Furthermore, you can extend the TCX Series optical line system capability to the BTI 7800 series Coherent interfaces providing flexibility to support a disaggregated model.

## proNX Optical Director

The proNX Optical Director is a software controller and management system for open line systems (OLS). It is an integral component of the TCX1000 Series optical transport solution. The proNX Optical Director provides the following functionality:

- Software control including dynamic real-time control of optical links in OLS networks. This includes automatic span loss management, automatic nodal loss management, and automatic channel power control.

In traditional optical networks, this control function resides on the ROADM斯 themselves where the ROADM斯 exchange proprietary control messages with each other on an optical supervisory channel (OSC). This makes interworking across vendor equipment difficult and often leads to the deployment of single-sourced networks. Moving this function to a centralized software controller makes heterogeneous networks with equipment from multiple vendors possible.

- Network management of OLS networks including network topology, network visualization, and network monitoring and troubleshooting.

The proNX Optical Director learns and displays the topology of the network and provides various visual indicators so that you can see the health of the network at a glance and deal with problem areas in a proactive manner.

- Device management of OLS elements including device configuration, device visualization, and device monitoring and troubleshooting.

The proNX Optical Director discovers OLS elements and reads and displays their configuration. You can change the configuration, view the equipment inventory, pull up a visual representation of the device, or view performance monitoring counters and alarm details. Additionally, you can use the proNX Optical Director to configure supported transponders attached to the OLS element.



**NOTE:** TCX Series elements do not support a built-in user interface such as a command line interface. You must use the proNX Optical Director to manage all TCX Series elements.

- Service management of optical services across an OLS network including service provisioning, service activation, and service monitoring and troubleshooting.

The proNX Optical Director supports A-to-Z provisioning and activation of optical services. You select the two service endpoints and the proNX Optical Director provides you a list of paths that you can choose for that service. When you activate the service, the proNX Optical Director automatically configures the service across all the devices in the path.

- Web-based user interface. You can access the proNX Optical Director user interface from supported web browsers.

## Interoperability

All products in the TCX Series Optical Transport System portfolio adhere to the Open ROADM multi-source agreement (MSA) found here . Therefore, the TCX1000-RDM20 is compatible with other ROADM s that adhere to this standard. In addition, the proNX Optical Director can also control and manage other ROADM s, multiplexers, and transponders that adhere to the Open ROADM MSA.

## Documentation Feedback

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We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can provide feedback by using either of the following methods:

- Online feedback rating system—On any page of the Juniper Networks TechLibrary site at <http://www.juniper.net/techpubs/index.html>, simply click the stars to rate the content, and use the pop-up form to provide us with information about your experience. Alternately, you can use the online feedback form at <http://www.juniper.net/techpubs/feedback/>.
- E-mail—Send your comments to [techpubs-comments@juniper.net](mailto:techpubs-comments@juniper.net). Include the document or topic name, URL or page number, and software version (if applicable).

## Requesting Technical Support

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Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or Partner Support Service support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at <http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf>.
- Product warranties—For product warranty information, visit <http://www.juniper.net/support/warranty/>.
- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

## Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: <http://www.juniper.net/customers/support/>
- Search for known bugs: <https://prsearch.juniper.net/>
- Find product documentation: <http://www.juniper.net/documentation/>

- Find solutions and answer questions using our Knowledge Base: <http://kb.juniper.net/>
- Download the latest versions of software and review release notes: <http://www.juniper.net/customers/csc/software/>
- Search technical bulletins for relevant hardware and software notifications: <http://kb.juniper.net/InfoCenter/>
- Join and participate in the Juniper Networks Community Forum: <http://www.juniper.net/company/communities/>
- Open a case online in the CSC Case Management tool: <http://www.juniper.net/cm/>

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: <https://entitlementsearch.juniper.net/entitlementsearch/>

## Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at <http://www.juniper.net/cm/>.
- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see <http://www.juniper.net/support/requesting-support.html>.

## Revision History

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02 January 2018 —Revision 1— TCX Series Optical Transport System.

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