



Junos[®] Space

Ethernet Design User Guide

Release

1.4



Published: 2010-08-25

Juniper Networks, Inc.
1194 North Mathilda Avenue
Sunnyvale, California 94089
USA
408-745-2000
www.juniper.net

This product includes the Envoy SNMP Engine, developed by Epilogue Technology, an Integrated Systems Company. Copyright © 1986-1997, Epilogue Technology Corporation. All rights reserved. This program and its documentation were developed at private expense, and no part of them is in the public domain.

This product includes memory allocation software developed by Mark Moraes, copyright © 1988, 1989, 1993, University of Toronto.

This product includes FreeBSD software developed by the University of California, Berkeley, and its contributors. All of the documentation and software included in the 4.4BSD and 4.4BSD-Lite Releases is copyrighted by the Regents of the University of California. Copyright © 1979, 1980, 1983, 1986, 1988, 1989, 1991, 1992, 1993, 1994. The Regents of the University of California. All rights reserved.

GateD software copyright © 1995, the Regents of the University. All rights reserved. Gate Daemon was originated and developed through release 3.0 by Cornell University and its collaborators. Gated is based on Kirton's EGP, UC Berkeley's routing daemon (routed), and DCN's HELLO routing protocol. Development of Gated has been supported in part by the National Science Foundation. Portions of the GateD software copyright © 1988, Regents of the University of California. All rights reserved. Portions of the GateD software copyright © 1991, D. L. S. Associates.

This product includes software developed by Maker Communications, Inc., copyright © 1996, 1997, Maker Communications, Inc.

Juniper Networks, Junos, Steel-Belted Radius, NetScreen, and ScreenOS are registered trademarks of Juniper Networks, Inc. in the United States and other countries. The Juniper Networks Logo, the Junos logo, and JunosE are trademarks of Juniper Networks, Inc. All other trademarks, service marks, registered trademarks, or registered service marks are the property of their respective owners.

Juniper Networks assumes no responsibility for any inaccuracies in this document. Juniper Networks reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

Products made or sold by Juniper Networks or components thereof might be covered by one or more of the following patents that are owned by or licensed to Juniper Networks: U.S. Patent Nos. 5,473,599, 5,905,725, 5,909,440, 6,192,051, 6,333,650, 6,359,479, 6,406,312, 6,429,706, 6,459,579, 6,493,347, 6,538,518, 6,538,899, 6,552,918, 6,567,902, 6,578,186, and 6,590,785.

Junos Space Ethernet Design User Guide
Copyright © 2010, Juniper Networks, Inc.
All rights reserved. Printed in USA.

Revision History
August 2010—Junos Space Ethernet Design, Release 1.4, Revision 1

The information in this document is current as of the date listed in the revision history.

YEAR 2000 NOTICE

Juniper Networks hardware and software products are Year 2000 compliant. The Junos OS has no known time-related limitations through the year 2038. However, the NTP application is known to have some difficulty in the year 2036.

END USER LICENSE AGREEMENT

READ THIS END USER LICENSE AGREEMENT ("AGREEMENT") BEFORE DOWNLOADING, INSTALLING, OR USING THE SOFTWARE. BY DOWNLOADING, INSTALLING, OR USING THE SOFTWARE OR OTHERWISE EXPRESSING YOUR AGREEMENT TO THE TERMS CONTAINED HEREIN, YOU (AS CUSTOMER OR IF YOU ARE NOT THE CUSTOMER, AS A REPRESENTATIVE/AGENT AUTHORIZED TO BIND THE CUSTOMER) CONSENT TO BE BOUND BY THIS AGREEMENT. IF YOU DO NOT OR CANNOT AGREE TO THE TERMS CONTAINED HEREIN, THEN (A) DO NOT DOWNLOAD, INSTALL, OR USE THE SOFTWARE, AND (B) YOU MAY CONTACT JUNIPER NETWORKS REGARDING LICENSE TERMS.

1. **The Parties.** The parties to this Agreement are (i) Juniper Networks, Inc. (if the Customer's principal office is located in the Americas) or Juniper Networks (Cayman) Limited (if the Customer's principal office is located outside the Americas) (such applicable entity being referred to herein as "Juniper"), and (ii) the person or organization that originally purchased from Juniper or an authorized Juniper reseller the applicable license(s) for use of the Software ("Customer") (collectively, the "Parties").

2. **The Software.** In this Agreement, "Software" means the program modules and features of the Juniper or Juniper-supplied software, for which Customer has paid the applicable license or support fees to Juniper or an authorized Juniper reseller, or which was embedded by Juniper in equipment which Customer purchased from Juniper or an authorized Juniper reseller. "Software" also includes updates, upgrades and new releases of such software. "Embedded Software" means Software which Juniper has embedded in or loaded onto the Juniper equipment and any updates, upgrades, additions or replacements which are subsequently embedded in or loaded onto the equipment.

3. **License Grant.** Subject to payment of the applicable fees and the limitations and restrictions set forth herein, Juniper grants to Customer a non-exclusive and non-transferable license, without right to sublicense, to use the Software, in executable form only, subject to the following use restrictions:

- a. Customer shall use Embedded Software solely as embedded in, and for execution on, Juniper equipment originally purchased by Customer from Juniper or an authorized Juniper reseller.
- b. Customer shall use the Software on a single hardware chassis having a single processing unit, or as many chassis or processing units for which Customer has paid the applicable license fees; provided, however, with respect to the Steel-Belted Radius or Odyssey Access Client software only, Customer shall use such Software on a single computer containing a single physical random access memory space and containing any number of processors. Use of the Steel-Belted Radius or IMS AAA software on multiple computers or virtual machines (e.g., Solaris zones) requires multiple licenses, regardless of whether such computers or virtualizations are physically contained on a single chassis.
- c. Product purchase documents, paper or electronic user documentation, and/or the particular licenses purchased by Customer may specify limits to Customer's use of the Software. Such limits may restrict use to a maximum number of seats, registered endpoints, concurrent users, sessions, calls, connections, subscribers, clusters, nodes, realms, devices, links, ports or transactions, or require the purchase of separate licenses to use particular features, functionalities, services, applications, operations, or capabilities, or provide throughput, performance, configuration, bandwidth, interface, processing, temporal, or geographical limits. In addition, such limits may restrict the use of the Software to managing certain kinds of networks or require the Software to be used only in conjunction with other specific Software. Customer's use of the Software shall be subject to all such limitations and purchase of all applicable licenses.
- d. For any trial copy of the Software, Customer's right to use the Software expires 30 days after download, installation or use of the Software. Customer may operate the Software after the 30-day trial period only if Customer pays for a license to do so. Customer may not extend or create an additional trial period by re-installing the Software after the 30-day trial period.
- e. The Global Enterprise Edition of the Steel-Belted Radius software may be used by Customer only to manage access to Customer's enterprise network. Specifically, service provider customers are expressly prohibited from using the Global Enterprise Edition of the Steel-Belted Radius software to support any commercial network access services.

The foregoing license is not transferable or assignable by Customer. No license is granted herein to any user who did not originally purchase the applicable license(s) for the Software from Juniper or an authorized Juniper reseller.

4. **Use Prohibitions.** Notwithstanding the foregoing, the license provided herein does not permit the Customer to, and Customer agrees not to and shall not: (a) modify, unbundle, reverse engineer, or create derivative works based on the Software; (b) make unauthorized copies of the Software (except as necessary for backup purposes); (c) rent, sell, transfer, or grant any rights in and to any copy of the Software, in any form, to any third party; (d) remove any proprietary notices, labels, or marks on or in any copy of the Software or any product in which the Software is embedded; (e) distribute any copy of the Software to any third party, including as may be embedded in Juniper equipment sold in the secondhand market; (f) use any 'locked' or key-restricted feature, function, service, application, operation, or capability without first purchasing the applicable license(s) and obtaining a valid key from Juniper, even if such feature, function, service, application, operation, or capability is enabled without a key; (g) distribute any key for the Software provided by Juniper to any third party; (h) use the

Software in any manner that extends or is broader than the uses purchased by Customer from Juniper or an authorized Juniper reseller; (i) use Embedded Software on non-Juniper equipment; (j) use Embedded Software (or make it available for use) on Juniper equipment that the Customer did not originally purchase from Juniper or an authorized Juniper reseller; (k) disclose the results of testing or benchmarking of the Software to any third party without the prior written consent of Juniper; or (l) use the Software in any manner other than as expressly provided herein.

5. **Audit.** Customer shall maintain accurate records as necessary to verify compliance with this Agreement. Upon request by Juniper, Customer shall furnish such records to Juniper and certify its compliance with this Agreement.

6. **Confidentiality.** The Parties agree that aspects of the Software and associated documentation are the confidential property of Juniper. As such, Customer shall exercise all reasonable commercial efforts to maintain the Software and associated documentation in confidence, which at a minimum includes restricting access to the Software to Customer employees and contractors having a need to use the Software for Customer's internal business purposes.

7. **Ownership.** Juniper and Juniper's licensors, respectively, retain ownership of all right, title, and interest (including copyright) in and to the Software, associated documentation, and all copies of the Software. Nothing in this Agreement constitutes a transfer or conveyance of any right, title, or interest in the Software or associated documentation, or a sale of the Software, associated documentation, or copies of the Software.

8. **Warranty, Limitation of Liability, Disclaimer of Warranty.** The warranty applicable to the Software shall be as set forth in the warranty statement that accompanies the Software (the "Warranty Statement"). Nothing in this Agreement shall give rise to any obligation to support the Software. Support services may be purchased separately. Any such support shall be governed by a separate, written support services agreement. TO THE MAXIMUM EXTENT PERMITTED BY LAW, JUNIPER SHALL NOT BE LIABLE FOR ANY LOST PROFITS, LOSS OF DATA, OR COSTS OR PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES, OR FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES ARISING OUT OF THIS AGREEMENT, THE SOFTWARE, OR ANY JUNIPER OR JUNIPER-SUPPLIED SOFTWARE. IN NO EVENT SHALL JUNIPER BE LIABLE FOR DAMAGES ARISING FROM UNAUTHORIZED OR IMPROPER USE OF ANY JUNIPER OR JUNIPER-SUPPLIED SOFTWARE. EXCEPT AS EXPRESSLY PROVIDED IN THE WARRANTY STATEMENT TO THE EXTENT PERMITTED BY LAW, JUNIPER DISCLAIMS ANY AND ALL WARRANTIES IN AND TO THE SOFTWARE (WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE), INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. IN NO EVENT DOES JUNIPER WARRANT THAT THE SOFTWARE, OR ANY EQUIPMENT OR NETWORK RUNNING THE SOFTWARE, WILL OPERATE WITHOUT ERROR OR INTERRUPTION, OR WILL BE FREE OF VULNERABILITY TO INTRUSION OR ATTACK. In no event shall Juniper's or its suppliers' or licensors' liability to Customer, whether in contract, tort (including negligence), breach of warranty, or otherwise, exceed the price paid by Customer for the Software that gave rise to the claim, or if the Software is embedded in another Juniper product, the price paid by Customer for such other product. Customer acknowledges and agrees that Juniper has set its prices and entered into this Agreement in reliance upon the disclaimers of warranty and the limitations of liability set forth herein, that the same reflect an allocation of risk between the Parties (including the risk that a contract remedy may fail of its essential purpose and cause consequential loss), and that the same form an essential basis of the bargain between the Parties.

9. **Termination.** Any breach of this Agreement or failure by Customer to pay any applicable fees due shall result in automatic termination of the license granted herein. Upon such termination, Customer shall destroy or return to Juniper all copies of the Software and related documentation in Customer's possession or control.

10. **Taxes.** All license fees payable under this agreement are exclusive of tax. Customer shall be responsible for paying Taxes arising from the purchase of the license, or importation or use of the Software. If applicable, valid exemption documentation for each taxing jurisdiction shall be provided to Juniper prior to invoicing, and Customer shall promptly notify Juniper if their exemption is revoked or modified. All payments made by Customer shall be net of any applicable withholding tax. Customer will provide reasonable assistance to Juniper in connection with such withholding taxes by promptly: providing Juniper with valid tax receipts and other required documentation showing Customer's payment of any withholding taxes; completing appropriate applications that would reduce the amount of withholding tax to be paid; and notifying and assisting Juniper in any audit or tax proceeding related to transactions hereunder. Customer shall comply with all applicable tax laws and regulations, and Customer will promptly pay or reimburse Juniper for all costs and damages related to any liability incurred by Juniper as a result of Customer's non-compliance or delay with its responsibilities herein. Customer's obligations under this Section shall survive termination or expiration of this Agreement.

11. **Export.** Customer agrees to comply with all applicable export laws and restrictions and regulations of any United States and any applicable foreign agency or authority, and not to export or re-export the Software or any direct product thereof in violation of any such restrictions, laws or regulations, or without all necessary approvals. Customer shall be liable for any such violations. The version of the Software supplied to Customer may contain encryption or other capabilities restricting Customer's ability to export the Software without an export license.

12. **Commercial Computer Software.** The Software is "commercial computer software" and is provided with restricted rights. Use, duplication, or disclosure by the United States government is subject to restrictions set forth in this Agreement and as provided in DFARS 227.7201 through 227.7202-4, FAR 12.212, FAR 27.405(b)(2), FAR 52.227-19, or FAR 52.227-14 (ALT III) as applicable.

13. **Interface Information.** To the extent required by applicable law, and at Customer's written request, Juniper shall provide Customer with the interface information needed to achieve interoperability between the Software and another independently created program, on payment of applicable fee, if any. Customer shall observe strict obligations of confidentiality with respect to such information and shall use such information in compliance with any applicable terms and conditions upon which Juniper makes such information available.

14. **Third Party Software.** Any licensor of Juniper whose software is embedded in the Software and any supplier of Juniper whose products or technology are embedded in (or services are accessed by) the Software shall be a third party beneficiary with respect to this Agreement, and such licensor or vendor shall have the right to enforce this Agreement in its own name as if it were Juniper. In addition, certain third party software may be provided with the Software and is subject to the accompanying license(s), if any, of its respective owner(s). To the extent portions of the Software are distributed under and subject to open source licenses obligating Juniper to make the source code for such portions publicly available (such as the GNU General Public License ("GPL") or the GNU Library General Public License ("LGPL")), Juniper will make such source code portions (including Juniper modifications, as appropriate) available upon request for a period of up to three years from the date of distribution. Such request can be made in writing to Juniper Networks, Inc., 1194 N. Mathilda Ave., Sunnyvale, CA 94089, ATTN: General Counsel. You may obtain a copy of the GPL at <http://www.gnu.org/licenses/gpl.html>, and a copy of the LGPL at <http://www.gnu.org/licenses/lgpl.html>.

15. **Miscellaneous.** This Agreement shall be governed by the laws of the State of California without reference to its conflicts of laws principles. The provisions of the U.N. Convention for the International Sale of Goods shall not apply to this Agreement. For any disputes arising under this Agreement, the Parties hereby consent to the personal and exclusive jurisdiction of, and venue in, the state and federal courts within Santa Clara County, California. This Agreement constitutes the entire and sole agreement between Juniper and the Customer with respect to the Software, and supersedes all prior and contemporaneous agreements relating to the Software, whether oral or written (including any inconsistent terms contained in a purchase order), except that the terms of a separate written agreement executed by an authorized Juniper representative and Customer shall govern to the extent such terms are inconsistent or conflict with terms contained herein. No modification to this Agreement nor any waiver of any rights hereunder shall be effective unless expressly assented to in writing by the party to be charged. If any portion of this Agreement is held invalid, the Parties agree that such invalidity shall not affect the validity of the remainder of this Agreement. This Agreement and associated documentation has been written in the English language, and the Parties agree that the English version will govern. (For Canada: Les parties aux présentes confirment leur volonté que cette convention de même que tous les documents y compris tout avis qui s'y rattache, soient rédigés en langue anglaise. (Translation: The parties confirm that this Agreement and all related documentation is and will be in the English language)).

Table of Contents

	About the Documentation	xiii
	Junos Space Documentation and Release Notes	xiii
	Documentation Conventions	xiii
	Documentation Feedback	xiv
	Requesting Technical Support	xiv
	Self-Help Online Tools and Resources	xv
	Opening a Case with JTAC	xv
Part 1	Ethernet Design	
Chapter 1	Ethernet Design Overview	3
	Ethernet Design Overview	3
	Ethernet Design Overview	3
	User Roles Required for Ethernet Design	4
Chapter 2	Ethernet Design Dashboard Overview	5
	Ethernet Design Dashboard Overview	5
	Ethernet Design Workspaces	6
	Ethernet Design Dashboard Gadgets	6
Part 2	Campus Analyzer	
Chapter 3	Campus Analyzer Overview	9
	Campus Analyzer Overview	9
Chapter 4	Locating End Hosts	11
	Locating End Hosts	11
Chapter 5	Viewing Spare Network Ports	13
	Viewing Spare Network Ports	13
Part 3	EZ Campus Design	
Chapter 6	EZ Campus Design Overview	17
	EZ Campus Design Overview	17
Chapter 7	Port Profiles	19
	Port Profile Overview	19
	Customizing Port Profiles	24
	Creating Customized Port Profiles	24
	General Settings	24
	CoS Settings	25

	Ethernet Switching Options	26
	Creating a Customized Desktop Port Profile	27
	Creating a Customized Desktop and Phone Port Profile	28
	Creating a Customized Switched Uplink Port Profile	29
	Creating a Customized Switched Downlink Port Profile	30
	Creating a Customized Server Port Profile	31
	Managing Port Profiles	32
	Viewing Port Associations	32
	Modifying Customized Port Profiles	33
	Deleting a Customized Port Profile	34
Chapter 8	Port Profile Provisioning	35
	Port Profile Provisioning Overview	35
	Provisioning a Port Profile	38
	Applying Port Profiles to a Port	39
	Applying Port Profiles to an Aggregated (AE) Port	44
	Applying Port Profiles to EX8200 Switches	46
	Specifying Parameters for Applying a Desktop Port Profile to a Port	48
	Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port	50
	Specifying Parameters for Applying a Switched Uplink Port Profile to a Port	52
	Specifying Parameters for Applying a Switched Downlink Port Profile to a Port	54
	Specifying Parameters for Applying a Server Port Profile to a Port	56
	Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port	58
Chapter 9	Port Profile CLI Reference	61
	Port Profile CLI Reference	61
	Desktop Port Profile CLI	62
	Desktop and Phone Port Profile CLI	63
	Switched Uplink Port Profile CLI	65
	Switched Downlink Port Profile CLI	66
	Server Port Profile CLI	68
	Wireless Access Point Port Profile CLI	70
Part 4	Using the Ethernet Design Getting Started Assistant	
Chapter 10	Ethernet Design Getting Started Assistant Overview	73
	Ethernet Design Getting Started Assistant Overview	73
Chapter 11	Getting Started: Provision Port Profile	75
	Provision Port Profile	75
Chapter 12	Getting Started: Create Port Profile	81
	Create Port Profile	81
Part 5	Index	
	Index	89

List of Figures

Part 1	Ethernet Design	
Chapter 2	Ethernet Design Dashboard Overview	5
	Figure 1: Ethernet Design Dashboard	5
Part 2	Campus Analyzer	
Chapter 3	Campus Analyzer Overview	9
	Figure 2: Campus Analyzer Landing Page	10
Chapter 4	Locating End Hosts	11
	Figure 3: Locate End Hosts	11
Chapter 5	Viewing Spare Network Ports	13
	Figure 4: View Spare Network Ports	13
Part 3	EZ Campus Design	
Chapter 6	EZ Campus Design Overview	17
	Figure 5: Port Profile Distribution over the Campus	18
Chapter 7	Port Profiles	19
	Figure 6: Port Profiles Main Page	22
	Figure 7: Port Profile Summary	23
	Figure 8: Create Port Profile: General Settings	25
	Figure 9: Create Port Profile: CoS Settings	26
	Figure 10: Create Port Profile: Ethernet Switching Options	27
	Figure 11: View Port Associations	33
Chapter 8	Port Profile Provisioning	35
	Figure 12: Select Device	35
	Figure 13: Provision Port Profile- Chassis View	38
	Figure 14: Select Devices- Tabular View	39
	Figure 15: Provision Port Profile	40
	Figure 16: Provision Port Profile- Grouped by Model	41
	Figure 17: Profile Details Dialog Box	42
	Figure 18: Port Profile Provisioning-Info Dialog Box	43
	Figure 19: Conflicts List Dialog Box	43
	Figure 20: Configuring an AE Bundle	45
	Figure 21: Chassis View of an EX8200 Ethernet Switch	47
	Figure 22: Configuring an EX8200 Line Card	47
	Figure 23: Port Configuration Parameters Dialog Box	49
	Figure 24: Profile Details Dialog Box	50

	Figure 25: Port Configuration Parameters Dialog Box	51
	Figure 26: Profile Details Dialog Box	52
	Figure 27: Port Configuration Parameters Dialog Box	53
	Figure 28: Port Details Dialog Box	54
	Figure 29: Port Configuration Parameters Dialog Box	55
	Figure 30: Port Details Dialog Box	56
	Figure 31: Port Configuration Parameters Dialog Box	57
	Figure 32: Profile Details Dialog Box	58
	Figure 33: Port Configuration Parameters Dialog Box	59
	Figure 34: Port Details Dialog Box	60
Part 4	Using the Ethernet Design Getting Started Assistant	
Chapter 11	Getting Started: Provision Port Profile	75
	Figure 35: Select Devices- Tabular View	75
	Figure 36: Provision Port Profile- Ungrouped	76
	Figure 37: Provision Port Profile- Grouped by Model	77
	Figure 38: Profile Details Dialog Box	78
Chapter 12	Getting Started: Create Port Profile	81
	Figure 39: Create Port Profile: General Settings	81
	Figure 40: Create Port Profile: CoS Settings	82
	Figure 41: Create Port Profile: Ethernet Switching Options	83

List of Tables

	About the Documentation	xiii
	Table 1: Notice Icons	xiv
Part 1	Ethernet Design	
Chapter 2	Ethernet Design Dashboard Overview	5
	Table 2: Workspace Icons	6
Part 2	Campus Analyzer	
Chapter 4	Locating End Hosts	11
	Table 3: Locate End Host Column Names and Descriptions	11
Chapter 5	Viewing Spare Network Ports	13
	Table 4: View Spare Network Ports Column Names and Descriptions	14
Part 3	EZ Campus Design	
Chapter 7	Port Profiles	19
	Table 5: Port Profile Descriptions and Customization Options	20
Chapter 8	Port Profile Provisioning	35
	Table 6: Port Profile Column Descriptions	35
Part 4	Using the Ethernet Design Getting Started Assistant	
Chapter 12	Getting Started: Create Port Profile	81
	Table 7: Port Profile Descriptions and Customization Options	84

About the Documentation

- Junos Space Documentation and Release Notes on page xiii
- Documentation Conventions on page xiii
- Documentation Feedback on page xiv
- Requesting Technical Support on page xiv

Junos Space Documentation and Release Notes

For a list of related Junos Space documentation, see

http://www.juniper.net/techpubs/en_US/release-independent/junos-space/index.html .

If the information in the latest release notes differs from the information in the documentation, follow the *Junos Space Release Notes*.

To obtain the most current version of all Juniper Networks technical documentation, see the technical documentation page at the Juniper Networks website at

<http://www.juniper.net/techpubs/> .

Juniper Networks supports a technical book program to publish books by Juniper Networks engineers and subject matter experts with book publishers around the world. These books go beyond the technical documentation to explore the nuances of network architecture, deployment, and administration using the Junos operating system (Junos OS) and Juniper Networks devices. In addition, the Juniper Networks Technical Library, published in conjunction with O'Reilly Media, explores improving network security, reliability, and availability using Junos OS configuration techniques. All the books are for sale at technical bookstores and book outlets around the world. The current list can be viewed at <http://www.juniper.net/books> .

Documentation Conventions

Table 1 on page xiv defines notice icons used in this documentation.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can send your comments to techpubs-comments@juniper.net, or fill out the documentation feedback form at <https://www.juniper.net/cgi-bin/docbugreport/>. If you are using e-mail, be sure to include the following information with your comments:

- Document or topic name
- URL or page number
- Software release version (if applicable)

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or JNASC 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: <http://www2.juniper.net/kb/>
- Find product documentation: <http://www.juniper.net/techpubs/>
- 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: <https://www.juniper.net/alerts/>
- 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://tools.juniper.net/SerialNumberEntitlementSearch/>

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> .

PART 1

Ethernet Design

- Ethernet Design Overview on page 3
- Ethernet Design Dashboard Overview on page 5

CHAPTER 1

Ethernet Design Overview

- Ethernet Design Overview on page 3

Ethernet Design Overview

- Ethernet Design Overview on page 3
- User Roles Required for Ethernet Design on page 4

Ethernet Design Overview

Ethernet Design is an application on the Junos Space Platform that provides an easy and efficient way to configure switches in the access and distribution layers based on port profiles defined by Juniper Networks. It enables you to deploy and maintain an entire enterprise network as easily as you would deploy and maintain a single switch.

Ethernet Design provides you with a workspace called EZ Campus Design where you can customize and apply port profiles, and a workspace called Campus Analyzer where you can view information about endpoint devices and ports that are available for configuration. Ethernet Design also provides you with a shortcut to the Job Management and Devices workspaces.

The EZ Campus Design workspace of Ethernet Design provides the following features:

- Management and customization of port profiles defined by Juniper Networks. For more information, see “Port Profile Overview” on page 19.
- Application of port profiles to ports on multiple devices. For more information, see “Port Profile Provisioning Overview” on page 35.

The Campus Analyzer workspace of Ethernet Design provides the following features:

- View information about free ports existing on devices that were discovered in a network as part of the Discover Topology job. For more information, see “Viewing Spare Network Ports” on page 13.
- View information about endpoint devices, such as a PC or an IP phone, that were discovered in a network as part of the Discover Topology job. For more information, see “Locating End Hosts” on page 11.

The Ethernet Design also provides you with a **Getting Started** section which is a section in the sidebar that displays instructions on how you can perform common tasks such as

creating and applying a port profile. For more information about the **Getting Started** assistant, see “Ethernet Design Getting Started Assistant Overview” on page 73.

As a Junos Space administrator, you can install, upgrade, or uninstall the Ethernet Design application while Junos Space and other applications are still running. For more information, see Adding a Junos Space Application and Uninstalling a Junos Space Application. You can also generate and upload license key files to reactivate your Junos Space account after your 60 day trial license expires. For more information on Junos Space license management, see Generating and Uploading the Junos Space License Key File.

User Roles Required for Ethernet Design

In order to access and work in the Junos Space Ethernet Design application, you need to assign the role of a **Network Engineer** to your user account. If you require access to the **Device** workspace, you need to assign the **Device Manager** role in addition to the existing **Network Engineer** role in your account. For more information on assigning a role to your user account, see Modifying a User.

- Related Topics**
- Port Profile Overview on page 19
 - Port Profile Provisioning Overview on page 35
 - Viewing Spare Network Ports on page 13
 - Locating End Hosts on page 11
 - Ethernet Design Getting Started Assistant Overview on page 73

CHAPTER 2

Ethernet Design Dashboard Overview

- Ethernet Design Dashboard Overview on page 5

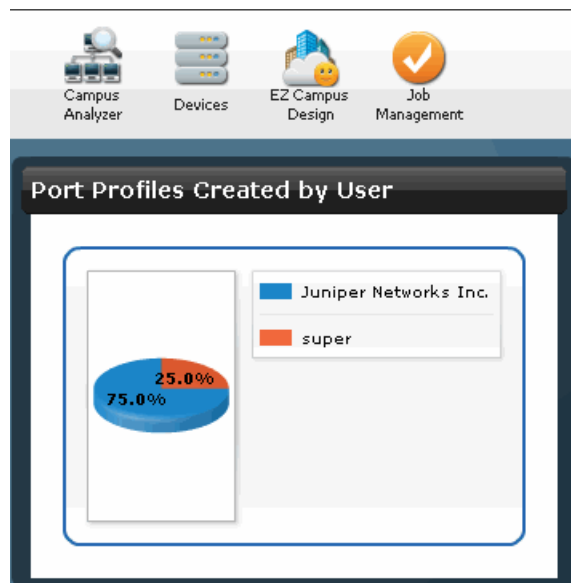
Ethernet Design Dashboard Overview

The Ethernet Design dashboard provides a single-page snapshot of the current status of your network. The Ethernet Design dashboard displays a graphical representation of the number of port profiles predefined by Juniper Networks and user defined port profiles according to their creator. You can get to the Ethernet Design dashboard by:

- Clicking **Ethernet Design** from the **Junos Space** main page
- Selecting **Ethernet Design** from the **Application Switcher** drop down list

Figure 1 on page 5 is an example of the Ethernet Design dashboard.

Figure 1: Ethernet Design Dashboard






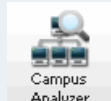
The sections that follow describe the parts of the Ethernet Design Dashboard.

- Ethernet Design Workspaces on page 6
- Ethernet Design Dashboard Gadgets on page 6

Ethernet Design Workspaces

Along with the link to the EZ Campus Design workspace, Ethernet Design also provides you with a shortcut to the Job Management workspace by including them in the Ethernet Design task ribbon. Table 2 on page 6 describes the task ribbon icons.

Table 2: Workspace Icons

Icon	Workspace Name	Task
	EZ Campus Design	Configure and maintain the devices in an enterprise network
	Job Management	Monitor the progress of ongoing jobs
	Devices	Manage devices, including adding, discovering, importing, and updating them.
	Campus Analyzer	View information about discovered endpoint devices and spare ports.

Ethernet Design Dashboard Gadgets

The dashboard contains gadgets that display information that is dynamically updated. You can move gadgets on the dashboard and change their sizes. These changes persist even after you log back into the system. The **Ethernet Design** dashboard displays a graph of the port profiles arranged according to their creators.

Port Profile Created by User

This gadget is a graphical representation of the port profiles based on who created the port profiles. The predefined port profiles were created by Juniper Networks.

You can filter the port profiles that are displayed on the **Port Profiles** page by their creators. To do so, select the graph element representing the creator whose port profiles you want to view. This opens the **Port Profiles** workspace that displays only the port profiles that were created by the user that you selected.

- Related Topics**
- Port Profile Overview on page 19

PART 2

Campus Analyzer

- Campus Analyzer Overview on page 9
- Locating End Hosts on page 11
- Viewing Spare Network Ports on page 13

CHAPTER 3

Campus Analyzer Overview

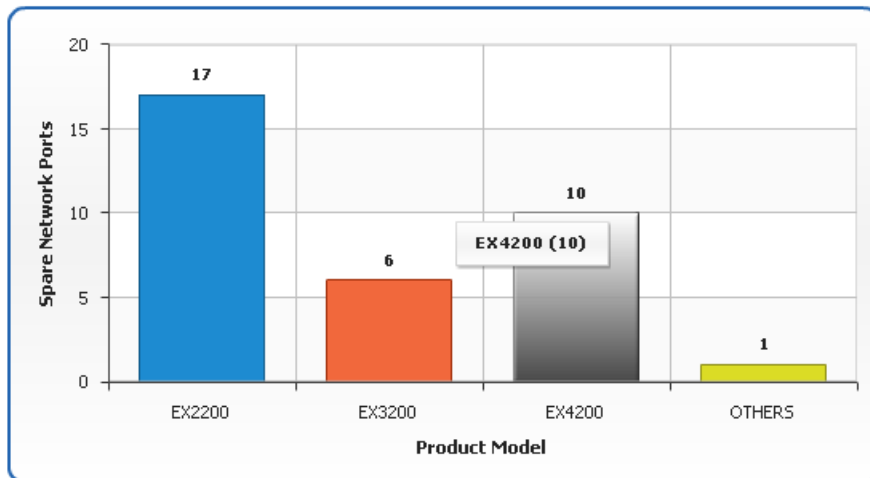
- Campus Analyzer Overview on page 9

Campus Analyzer Overview

Campus Analyzer is a workspace provided by Ethernet Design that helps you view information about the endpoint devices and the switch ports that are available for configuration in a network that was discovered as part of the Discover Topology job. After Junos Space has discovered and connected to a device, it creates objects in the Junos Space database that represent the free ports available on that device. Similarly, after Junos Space has discovered and connected to an endpoint device, it creates an object in the Junos Space database that represents that endpoint device. Using Junos Space Ethernet Design, you can view detailed information about these endpoint devices and switch ports and use this information whenever you want to configure a free port, diagnose a endpoint connectivity issue, and so on.

The landing page of the Campus Analyzer workspace (Figure 2 on page 10) displays a graphical representation of the distribution of spare ports in the network and provides you with the links to Campus Analyzer tasks. The information on the landing page is dynamically updated. You can move gadgets on the landing page and modify their size. These changes persist even when you log back in to the system.

Figure 2: Campus Analyzer Landing Page

Spare Network Ports Distribution by Product Model

You can get to the Campus Analyzer landing page by clicking **Campus Analyzer** from task ribbon on the **Junos Space Ethernet Design** landing page.

The Campus Analyzer workspace of Ethernet Design provides the following features:

- View information about endpoint devices, such as a PC or an IP phone, that are discovered in a network as part of the Discover Topology job. For more information, see “Locating End Hosts” on page 11.
- View information about free ports existing on devices that are discovered in a network as part of the Discover Topology job. For more information, see “Viewing Spare Network Ports” on page 13.

Related Topics

- Locating End Hosts on page 11
- Viewing Spare Network Ports on page 13
- Topology Discovery Overview

CHAPTER 4

Locating End Hosts

- Locating End Hosts on page 11

Locating End Hosts

You can use Junos Space to view information about the endpoint devices, such as a PC or an IP phone, that were discovered in a network as part of the Discover Topology job. During the discovery, Junos Space connects to an endpoint device and retrieves its status information. After Junos Space has discovered and connected to an endpoint device, it creates an object in the Junos Space database that represents that endpoint device. Using Junos Space Ethernet Design, you can view information such as IP and MAC addresses of the endpoint devices, port names and connected switch information. You need to re-run the topology discovery job whenever you want to update the database. The information in the database is automatically updated whenever you run a Discover Topology job.

To view information about endpoint devices, click **Ethernet Design** from the application chooser. From the resulting task ribbon, click **Campus Analyzer > Locate End Host**. The **Locate End Host** page displays the information as shown in Figure 3 on page 11. Table 3 on page 11 describes the information that is displayed.

Figure 3: Locate End Hosts

End Host PhysAddress	End Host IPAddress	End Host Name	Switch Name	Switch IP Address	Switch PhysAddress	Switch Port Name
02:00:1f:12:34:3e:41	-	02:00:1f:12:34:3e:41	h-test-ssw7	10.204.32.8	00:1f:12:36:75:40	ge-0/0/27
00:17:cb:70:10:3e	-	00:17:cb:70:10:3e	e48p2-nmsft	10.204.97.6	00:1f:12:32:d4:c0	ge-0/0/2
00:30:48:d4:d5:6c	-	00:30:48:d4:d5:6c	h-test-ssw8	10.204.32.9	00:1f:12:36:69:c0	ge-0/0/18
02:00:1f:12:35:34:3f	-	02:00:1f:12:35:34:3f	h-test-ssw7	10.204.32.8	00:1f:12:36:75:40	ge-0/0/21
02:00:10:db:ff:21:e0	-	02:00:10:db:ff:21:e0	h-test-msw1	10.204.32.1	00:1f:12:35:2f:c0	ge-0/0/23

Table 3: Locate End Host Column Names and Descriptions

Column Name	Description
End Host PhysAddress	Physical address of the endpoint device.
End Host IPAddress	IP address of the endpoint device.

Table 3: Locate End Host Column Names and Descriptions (*continued*)

Column Name	Description
End Host Name	Name of the endpoint device.
Switch Name	Name of the switch that is connected to the endpoint device.
Switch IP Address	IP address of switch that is connected to the endpoint device.
Switch PhysAddress	MAC address of the switch that is connected to the endpoint device.
Switch Port Name	Name of the port on the switch that connects to the endpoint device.

You can double click a row in the table to open a summary dialog box that displays more detailed information about the selected endpoint device.

- Related Topics**
- Campus Analyzer Overview on page 9
 - Viewing Spare Network Ports on page 13
 - Topology Discovery Overview

CHAPTER 5

Viewing Spare Network Ports

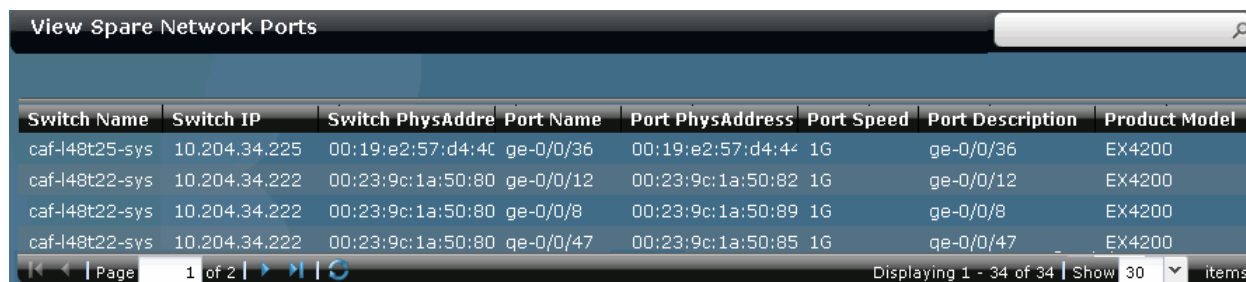
- Viewing Spare Network Ports on page 13

Viewing Spare Network Ports

You can use Junos Space to view information about the free ports existing on EX Series Ethernet Switches and other vendor switches that are discovered in a network as part of the Discover Topology job. These free ports are switch ports whose administrative status is down. During discovery, Junos Space connects to a switch and retrieves its configuration and status information. After Junos Space has discovered and connected to a switch, it creates objects in the Junos Space database that represent the free ports available on the device. Using Junos Space Ethernet Design, you can view detailed information about the available switch ports in the network. The **View Spare Network Ports** page displays port information such as, the name and IP address of devices with the free ports, port name, MAC address, port speed, and descriptions of the ports. You need to re-run the topology discovery job whenever you want to update the database. The information in the database is automatically updated whenever you run a Discover Topology job.

To view information about free ports in a network, click **Ethernet Design** from the application chooser. From the resulting task ribbon, click **Campus Analyzer > View Spare Network Ports**. The **View Spare Network Ports** page opens and the information is displayed as shown in Figure 4 on page 13. Table 4 on page 14 describes the information that is displayed.

Figure 4: View Spare Network Ports



Switch Name	Switch IP	Switch PhysAddress	Port Name	Port PhysAddress	Port Speed	Port Description	Product Model
caf-l48t25-sys	10.204.34.225	00:19:e2:57:d4:40	ge-0/0/36	00:19:e2:57:d4:44	1G	ge-0/0/36	EX4200
caf-l48t22-sys	10.204.34.222	00:23:9c:1a:50:80	ge-0/0/12	00:23:9c:1a:50:82	1G	ge-0/0/12	EX4200
caf-l48t22-sys	10.204.34.222	00:23:9c:1a:50:80	ge-0/0/8	00:23:9c:1a:50:89	1G	ge-0/0/8	EX4200
caf-l48t22-sys	10.204.34.222	00:23:9c:1a:50:80	ge-0/0/47	00:23:9c:1a:50:85	1G	ge-0/0/47	EX4200

Page 1 of 2 | Displaying 1 - 34 of 34 | Show 30 items

Table 4: View Spare Network Ports Column Names and Descriptions

Column Name	Description
Switch Name	Name of the switch that has free ports.
Switch IP	IP address of the switch that has free ports.
Switch PhysAddress	MAC address of the switch that has free ports.
Port Name	Name of the free port.
Port PhysAddress	MAC address of the free port.
Port Speed	Speed of the port that is available for configuration.
Port Description	Description of the port that is available for configuration.
Product Model	Switch model. For example, EX4200.

You can double click a row in the table to open a summary dialog box that displays more detailed information about the selected port.

- Related Topics**
- Campus Analyzer Overview on page 9
 - Locating End Hosts on page 11
 - Topology Discovery Overview

PART 3

EZ Campus Design

- EZ Campus Design Overview on page 17
- Port Profiles on page 19
- Port Profile Provisioning on page 35
- Port Profile CLI Reference on page 61

CHAPTER 6

EZ Campus Design Overview

- EZ Campus Design Overview on page 17

EZ Campus Design Overview

EZ Campus Design is a workspace provided by Ethernet Design that helps you deploy and maintain an entire enterprise network as easily as you would deploy and maintain a single switch.

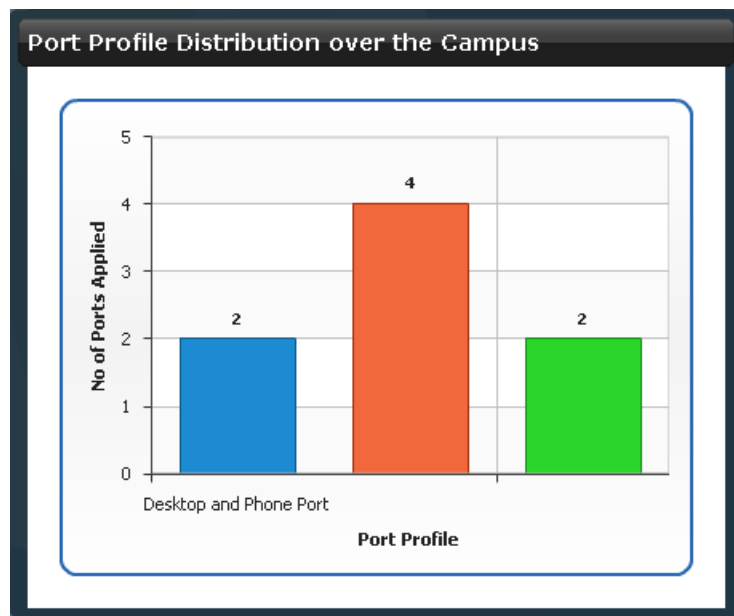
You can get to the EZ Campus Design landing page by clicking **EZ Campus Design** from the **Junos Space Ethernet Design** landing page.

The EZ Campus Design workspace of Ethernet Design provides the following features:

- Customization and management of port profiles predefined by Juniper Networks. For more information, see “Port Profile Overview” on page 19.
- Application of port profiles to ports of multiple devices. For more information, see “Port Profile Provisioning Overview” on page 35.

The EZ Campus Design landing page displays a graphical representation of the distribution of port profiles over the network and provides you with the links to EZ Campus Design tasks. The landing page contains gadgets that display information that is updated automatically and instantaneously. You can move gadgets on the statistical landing page and change their sizes. These changes persist even when you log back into the system. Currently the only one gadget displayed on the **EZ Campus Design** landing page is a graph displaying the distribution of the port profiles over the network (Figure 5 on page 18). If none of the port profiles were applied to any device, a link to the **Provision Port Profile** task is displayed on the landing page instead of the graph.

Figure 5: Port Profile Distribution over the Campus



- Related Topics**
- Port Profile Overview on page 19
 - Port Profile Provisioning Overview on page 35

CHAPTER 7

Port Profiles

- Port Profile Overview on page 19
- Customizing Port Profiles on page 24
- Managing Port Profiles on page 32

Port Profile Overview

In Junos Space, a port profile is a pre-defined set of configuration parameters that were created based on best practices as defined by Juniper Networks, which when configured on to a port, enables the port to play a specific role in the network. A port profile applies a set of commands to the port that defines the port's role thereby simplifying the configuration job on the port. Junos Space also enables you to customize certain parameters of these port profiles, such as bandwidth, broadcast limit, and so on based on your network requirements. By using the port profile work flow provided in Junos Space user interface, you can simultaneously configure a number of ports with specific network connection roles. You can choose to apply these profiles to one or more ports of a single device at a time, or to one or more ports of a group of devices that belong to the same platform.

For example, suppose there are twenty-five EX3200-48T devices in a branch office or headquarters campus network, and you want to configure the ports ge-/0/0/0 to ge-/0/0/7 as desktop and phone ports, and the ports ge-0/0/8 to ge-0/0/47 as desktop ports and the ports xe-0/1/0, xe-0/1/1 as switched uplink ports. You can use the provision port profiles feature to select the devices you want to provision to, group them according to model type (which, in this case, is EX3200-48T), select the ports and the port profiles that you want to apply to the selected ports, and then apply that configuration to all the EX3200-48T devices in that network. Thus, by using the port profiles feature, you are able to manage and deploy an entire enterprise network just as easily as you would manage and deploy a single device.

Junos Space provides you with six predefined port profiles that are based on the network components that you want to connect to the switch port. The Junos Space Ethernet Design user interface also provides you with a workflow where you can customize the CoS settings and ethernet switching options of these predefined port profiles based on your network requirements. The description of these six port profiles and the settings that are available for customization is provided in Table 5 on page 20.

Table 5: Port Profile Descriptions and Customization Options

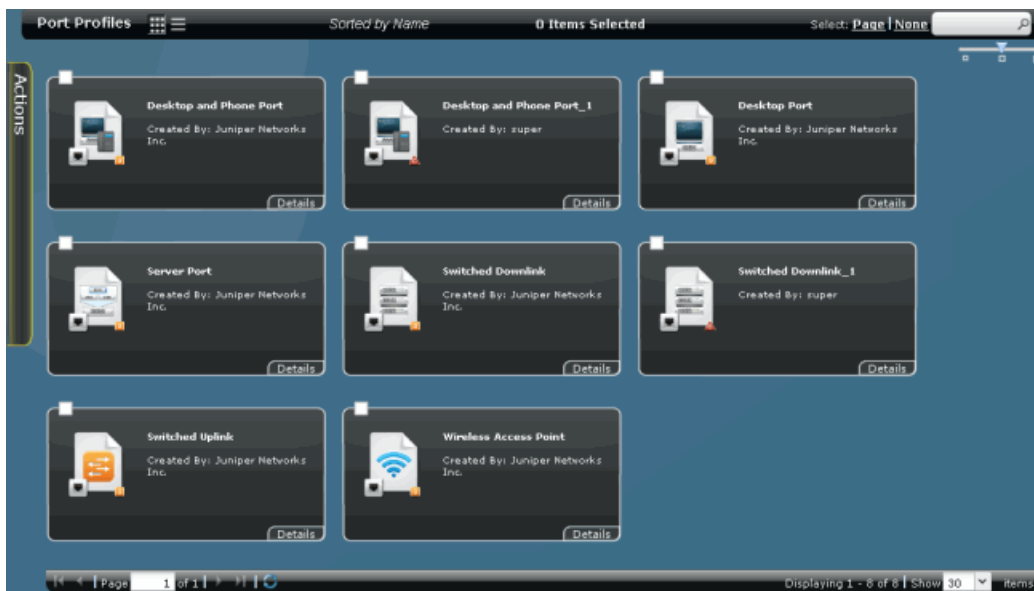
Port Profile	Description and Customization Options
Desktop Port	<p>A desktop port enables you to connect a desktop to a switch port. By applying this profile to the port, you are configuring the VLAN, port security, and RSTP settings of the port.</p> <p>For more information about the CLI commands used in a desktop port profile, see “Desktop Port Profile CLI” on page 62.</p> <p>The options that are available for customization on this profile are:</p> <ul style="list-style-type: none"> • General Settings. • Ethernet Switching Options. <p>For more information on customizing options, see “Creating Customized Port Profiles” on page 24.</p> <p>For more information on customizing a desktop port profile, see “Creating a Customized Desktop Port Profile” on page 27.</p>
Desktop and Phone Port	<p>A desktop and phone port enables you to connect a desktop and phone port to a switch port. By applying this profile to the port, you are configuring the port security, RSTP, and CoS settings of the port.</p> <p>For more information about the CLI commands used in a desktop and phone port profile, see “Desktop and Phone Port Profile CLI” on page 63.</p> <p>The options that are available for customization on this profile are:</p> <ul style="list-style-type: none"> • General Settings. • CoS Settings. • Ethernet Switching Options. <p>For more information on customizing options, see “Creating Customized Port Profiles” on page 24.</p> <p>For more information on customizing a desktop and phone port profile, see “Creating a Customized Desktop and Phone Port Profile” on page 28.</p>
Switched Uplink Port	<p>A switched uplink port enables you to connect a switch port on the access layer to a switch port on another access layer switch or to a switch port on the upper (distribution or core) layer. By applying this profile to the port, you are configuring the VLAN, port security, and CoS settings of the port.</p> <p>For more information about the CLI commands used in a switched uplink port profile, see “Switched Uplink Port Profile CLI” on page 65.</p> <p>The options that are available for customization on this profile are:</p> <ul style="list-style-type: none"> • General Settings. • CoS Settings. <p>For more information on customizing options, see “Creating Customized Port Profiles” on page 24.</p> <p>For more information on customizing a switched uplink port profile, see “Creating a Customized Switched Uplink Port Profile” on page 29.</p>

Table 5: Port Profile Descriptions and Customization Options (*continued*)

Port Profile	Description and Customization Options
Switched Downlink Port	<p>A switched downlink port enables you to connect desktops and phones in a campus or branch environment, or servers in a data center environment. By applying this profile to the port, you are configuring the VLAN, port security, and CoS settings of the port.</p> <p>For more information about the CLI commands used in a switched downlink port profile, see “Switched Downlink Port Profile CLI” on page 66.</p> <p>The options that are available for customization on this profile are:</p> <ul style="list-style-type: none"> • General Settings. • CoS Settings. <p>For more information on customizing options, see “Creating Customized Port Profiles” on page 24.</p> <p>For more information on customizing a switched downlink port profile, see “Creating a Customized Switched Downlink Port Profile” on page 30.</p>
Server Port	<p>A server port is a trunk port that enables users from multiple VLANs to connect to a machine with virtual servers. By applying this profile to the port, you are configuring the VLAN, RSTP, and CoS settings of the port.</p> <p>For more information about the CLI commands used in a server port profile, see “Server Port Profile CLI” on page 68.</p> <p>The options that are available for customization on this profile are:</p> <ul style="list-style-type: none"> • General Settings. • CoS Settings. • Ethernet Switching Options. <p>For more information on customizing options, see “Creating Customized Port Profiles” on page 24.</p> <p>For more information on customizing a server port profile, see “Creating a Customized Server Port Profile” on page 31.</p>
Wireless Access Point Port	<p>A wireless access point port enables you to connect a wireless access point, which is a device that enables wireless communication devices to connect to a wireless network using Wi-Fi, Bluetooth or related standards, to a switch port. By applying this profile to the port, you are configuring the VLAN, RSTP, and CoS settings.</p> <p>For more information about the CLI commands used in a wireless access point port profile, see “Wireless Access Point Port Profile CLI” on page 70.</p> <p>NOTE: Junos Space does not allow you to customize a wireless access point port profile.</p>

The landing page of the **Port Profile** workflow is the **Port Profiles** page which displays all the Juniper Networks predefined and user defined port profiles (Figure 6 on page 22). You can choose to view them in either the tabular view or image view. When viewing in tabular form, all the port profiles have either an **S** overlay icon at the bottom right corner of the icon or a **C** overlay icon. An **S** overlay icon means that the indicated port profile is one of the six system defined port profiles. A **C** overlay icon means that the indicated port profile was created by a user. The tabular view displays the names of all the port profiles along with their creator's name and a description of the port profile.

Figure 6: Port Profiles Main Page



From this page you can modify and delete existing port profiles. You can also use this page to navigate to the **View Port Associations** page which displays the devices and the ports that are associated with the selected port profile, as well as their member VLANs. If you want to view details of the port profile, double click the port profile. This opens the **Port Profile Summary** dialog box which displays the various settings of that port profile. An example of a desktop port profile summary is shown in Figure 7 on page 23.

Figure 7: Port Profile Summary

Port Profile Summary

Summary | Configuration XML

Profile name: Desktop Port

Profile description: A desktop port is a physical switch port on a device that connects to a desktop.

Profile details: After you apply this profile, the port will be configured to perform the following functions:
 - As an Access Port
 - To carry data traffic for Member VLAN with security settings enabled

Security Settings

MAC limit: 1
ARP inspection: enabled
DHCP snooping: enabled
MAC limit exceeds action: drop

Ethernet Switching Options

Broadcast limit: 5%

RSTP

Edge: enabled
Root guard: enabled
BPDU guard: enabled

OK

Using these port profiles predefined by Juniper Networks, you can perform one or more of the following actions:

- Customize port profiles. For more information, see “Creating Customized Port Profiles” on page 24.
- Modify customized port profiles. For more information, see “Modifying Customized Port Profiles” on page 33.
- Delete customized port profiles. For more information, see “Deleting a Customized Port Profile” on page 34.
- View port associations. For more information, see “Viewing Port Associations” on page 32.



NOTE: You can only modify or delete customized port profiles. These actions are not enabled for predefined port profiles.

- Related Topics**
- Creating Customized Port Profiles on page 24
 - Viewing Port Associations on page 32
 - Modifying Customized Port Profiles on page 33
 - Deleting a Customized Port Profile on page 34

Customizing Port Profiles

- Creating Customized Port Profiles on page 24
- Creating a Customized Desktop Port Profile on page 27
- Creating a Customized Desktop and Phone Port Profile on page 28
- Creating a Customized Switched Uplink Port Profile on page 29
- Creating a Customized Switched Downlink Port Profile on page 30
- Creating a Customized Server Port Profile on page 31

Creating Customized Port Profiles

Although you cannot modify predefined port profiles, Junos Space does allow you to customize existing port profiles according to your network requirements. These profiles retain the values of the original port profile until you change it. To customize a port profile, you need to configure one or more of the following settings:

- General Settings on page 24
- CoS Settings on page 25
- Ethernet Switching Options on page 26

General Settings

To customize a port profile, select **EZ Campus Design** from the task ribbon and click **Port Profile > Create Port Profile**. This opens the **Create Port Profile** wizard. Configuring general settings for a customized port profiles (Figure 8 on page 25) includes specifying a name and description for the profile, and selecting the port profile that you want to customize. Junos Space automatically generates a profile name for the new customized profile. For example, DesktopPort_1.

Figure 8: Create Port Profile: General Settings

Create Port Profile: General Settings

Profile name:

Profile type:

- Desktop Port
- Desktop and Phone Port
- Switched Uplink
- Switched Downlink
- Server Port

Profile description:

Profile details: Please select a profile type to view details.

CoS Settings

The scheduler map configuration block specifies the buffer size, bandwidth, and priority for a queue. By defining schedulers, you can configure the properties of output queues that determine the transmission service level for each queue. These properties include the amount of interface bandwidth that is assigned to the queue, the size of the memory buffer allocated for storing packets, and the priority of the queue. After defining schedulers, you associate them with forwarding classes by means of scheduler maps. By default, the schedulers values are already set.

Forwarding classes allow you to group packets for transmission. You then associate each scheduler map with an interface, and configure the hardware queues and packet schedulers that operate according to this mapping.

Figure 9 on page 26 shows the CoS settings that you can set while customizing a port profile.

Figure 9: Create Port Profile: CoS Settings

	High Priority	Bandwidth reserved(%)	Buffer size(%)
Voice	<input checked="" type="checkbox"/>	10 (0)	5 (5)
Expedited forwarding	<input type="checkbox"/>	30 (30)	30 (30)
Assured forwarding	<input type="checkbox"/>	25 (25)	25 (25)
Best effort forwarding	<input type="checkbox"/>	35 (35)	40 (40)
		Total (90)	Total (100)

Note: The cumulative bandwidth or buffer allocation must be 100% or less. Reduce the allocation of one of the bandwidth or buffer categories in order to increase the allocation of another.

voice
expedited-forwarding
assured-forwarding
best-effort

Bandwidth allocation Buffer size allocation

Back Next Create Cancel

The schedulers and their settings are:

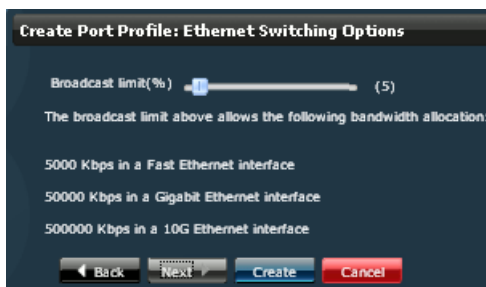
- Voice— Gets low-latency, strict priority treatment through the fabric and where the packet was sent. Transmission rate is set to 10 percent and buffer size to 5 percent.
- Expedited forwarding— Delivers assured bandwidth, low loss, low delay, and low delay variation (jitter) end-to-end for packets in this service class. For an expedited scheduler, the transmission rate is set to 30 percent, the buffer size to 30 percent, and priority is set to low.
- Assured forwarding— Offers a high level of assurance that the packets are delivered as long as the packet flow from the customer stays within a certain service profile that you define. For assured scheduler, the transmission rate is set to 25 percent, the buffer size to 25 percent, and priority is set to low.
- Best effort forwarding— Is a backward compatibility feature. TFor a best effort scheduler, the transmission-rate is set to 35 percent, the buffer size to 40 percent, and priority is set to low.

These are the settings for the port profiles predefined by Juniper Networks. While customizing, you can optimize your communication with the network by changing the transmission rate and buffer size. You must ensure that the cumulative bandwidth and buffer percentages is always be 100 percent or less. For example, if the total bandwidth percentage already adds up to 100, you must reduce the bandwidth of one of the categories to increase the bandwidth of another.

Ethernet Switching Options

You can use the Ethernet Switching Options page (Figure 10 on page 27) to set the broadcast limit for network traffic. The broadcast limit is the theoretical maximum of network bandwidth in percent that can be used for broadcast and multicast traffic. Any broadcast or multicast traffic exceeding that limit is dropped. A zero value (0) indicates that the feature is disabled.

Figure 10: Create Port Profile: Ethernet Switching Options



- Related Topics**
- Port Profile Overview on page 19
 - Creating a Customized Desktop Port Profile on page 27
 - Creating a Customized Desktop and Phone Port Profile on page 28
 - Creating a Customized Switched Uplink Port Profile on page 29
 - Creating a Customized Switched Downlink Port Profile on page 30
 - Creating a Customized Server Port Profile on page 31

Creating a Customized Desktop Port Profile

A desktop port enables you to connect a desktop to a switch port.

To create a customized desktop port profile:

1. From the task ribbon, select **EZ Campus Design > Port Profile > Create Port Profile**. This opens the **Create Port Profile** wizard.
2. Enter a name for the profile in the **Profile Name** field.
3. Select **Desktop Port** from the **Profile type** drop down list. The **Profile Details** field appears showing information about the customized profile such as the roles or actions that the port can perform after the port profile has been applied to it.
4. Enter a description for the customized profile in the **Profile Description** field.
5. Click **Next** to open the **Ethernet Switching Options** dialog box. Alternatively, you can click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. You can also click **Cancel** to go back to the **Port Profile** page without creating a new port profile.
6. From the **Ethernet Switching Options** dialog box, use the **Broadcast limit** horizontal slider to vary the maximum network bandwidth that can be used for broadcast and multicast traffic. For example, a broadcast limit of 5 percent indicates that the bandwidth allocated is 5,000 Kbps in a Fast Ethernet interface, 50,000 Kbps in a Gigabit Ethernet interface, and 500,000 Kbps in a 10 Gigabit Ethernet interface.
7. Click **Back** to go to the previous step of the **Customize Desktop Port Profile** wizard. Click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. Click **Cancel** to go back to the **Port Profile** page without creating a new port profile.

- Related Topics**
- Desktop Port Profile CLI on page 62
 - Creating a Customized Desktop and Phone Port Profile on page 28
 - Creating a Customized Switched Uplink Port Profile on page 29
 - Creating a Customized Switched Downlink Port Profile on page 30
 - Creating a Customized Server Port Profile on page 31

Creating a Customized Desktop and Phone Port Profile

A desktop and phone port enables you to connect a desktop and phone port to a switch port.

To create a customized desktop and phone port profile:

1. From the task ribbon, select **EZ Campus Design > Port Profile > Create Port Profile**. This opens the **Create Port Profile** wizard.
2. Enter a name for the profile in the **Profile Name** field.
3. Select **Desktop and Phone Port** from the **Profile type** drop down list. The **Profile Details** field appears showing information about the customized profile such as the roles or actions that the port can perform after the port profile has been applied to it.
4. Enter a description for the customized profile in the **Profile Description** field.
5. Click **Next** to open the **CoS Settings - Scheduler Map Configuration** dialog box. Alternatively, you can click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. You can also click **Cancel** to go back to the **Port Profile** page without creating a new port profile.
6. From the **CoS Settings - Scheduler Map Configuration** dialog box, use the horizontal slider to vary the bandwidth and buffer size for each scheduler category. You can also select the **High Priority** checkbox for each category. This causes delay-sensitive traffic, such as voice traffic, to be de-queued and forwarded with minimum delay.



NOTE: The cumulative bandwidth and buffer percentages for scheduler categories must always be 100 percent or less. For example, if the total bandwidth percentage already adds up to 100, you must reduce the bandwidth of one of the categories to increase the bandwidth of another.

7. Click **Back** to go to the previous step of the **Customize Desktop and Phone Port Profile** wizard. Alternatively, you can click **Next** to open the **Ethernet Switching Options** dialog box. You can also click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. Click **Cancel** to go back to the **Port Profile** page without creating a new port profile.
8. From the **Ethernet Switching Options** dialog box, use the **Broadcast limit** horizontal slider to vary the maximum network bandwidth that can be used for broadcast and

multicast traffic. For example, a broadcast limit of 5 percent indicates that the bandwidth allocated is 5,000 Kbps in a Fast Ethernet interface, 5,0000 Kbps in a Gigabit Ethernet interface, and 5,00000 Kbps in a 10 Gigabit Ethernet interface.

9. Click **Back** to go to the previous step of the **Customize Desktop and Phone Port Profile** wizard. Alternatively, you can click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. You can also click **Cancel** to go back to the **Port Profile** page without creating a new port profile.

- Related Topics**
- Desktop and Phone Port Profile CLI on page 63
 - Creating a Customized Desktop Port Profile on page 27
 - Creating a Customized Switched Uplink Port Profile on page 29
 - Creating a Customized Switched Downlink Port Profile on page 30
 - Creating a Customized Server Port Profile on page 31

Creating a Customized Switched Uplink Port Profile

A switched uplink port enables you to connect a switch port on the access layer to a switch port on another access later switch or switch port on the upper (distribution or core) layer.

To create a customized switched uplink port profile:

1. From the task ribbon, select **EZ Campus Design > Port Profile > Create Port Profile**. This opens the **Create Port Profile** wizard.
2. Enter a name for the profile in the **Profile Name** field.
3. Select **Switched Uplink Port** from the **Profile type** drop down list. The **Profile Details** field appears showing information about the customized profile such as the roles or actions that the port can perform after the port profile has been applied to it.
4. Enter a description for the customized profile in the **Profile Description** field.
5. Click **Next** to open the **CoS Settings - Scheduler Map Configuration** dialog box. Alternatively, you can click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. You can also click **Cancel** to go back to the **Port Profile** page without creating a new port profile.
6. From the **CoS Settings - Scheduler Map Configuration** dialog box, use the horizontal slider to vary the bandwidth and buffer size for each scheduler category. You can also select the **High Priority** checkbox for each category. This causes delay-sensitive traffic, such as voice traffic, to be de-queued and forwarded with minimum delay.



NOTE: The cumulative bandwidth and buffer percentages for scheduler categories must always be 100 percent or less. For example, if the total bandwidth percentage already adds up to 100, you must reduce the bandwidth of one of the categories to increase the bandwidth of another.

7. Click **Back** to go to the previous step of the **Customize Switched Uplink Port Profile** wizard. Alternatively, you can click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. You can also click **Cancel** to go back to the **Port Profile** page without creating a new port profile.

Related Topics

- Switched Uplink Port Profile CLI on page 65
- Creating a Customized Desktop Port Profile on page 27
- Creating a Customized Desktop and Phone Port Profile on page 28
- Creating a Customized Switched Downlink Port Profile on page 30
- Creating a Customized Server Port Profile on page 31

Creating a Customized Switched Downlink Port Profile

A switched downlink port enables you to connect desktops and phones in a campus or branch environment, or servers in a data center environment.

To create a customized switched downlink port profile:

1. From the task ribbon, select **EZ Campus Design > Port Profile > Create Port Profile**. This opens the **Create Port Profile** wizard.
2. Enter a name for the profile in the **Profile Name** field.
3. Select **Switched Downlink Port** from the **Profile type** drop down list. The **Profile Details** field appears showing information about the customized profile such as the roles or actions that the port can perform after the port profile has been applied to it.
4. Enter a description for the customized profile in the **Profile Description** field.
5. Click **Next** to open the **CoS Settings - Scheduler Map Configuration** dialog box. Alternatively, you can click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. You can also click **Cancel** to go back to the **Port Profile** page without creating a new port profile.
6. From the **CoS Settings - Scheduler Map Configuration** dialog box, use the horizontal slider to vary the bandwidth and buffer size for each scheduler category. You can also select the **High Priority** checkbox for each category. This causes delay-sensitive traffic, such as voice traffic, to be de-queued and forwarded with minimum delay.



NOTE: The cumulative bandwidth and buffer percentages for scheduler categories must always be 100 percent or less. For example, if the total bandwidth percentage already adds up to 100, you must reduce the bandwidth of one of the categories to increase the bandwidth of another.

7. Click **Back** to go to the previous step of the **Customize Switched Downlink Port Profile** wizard. Alternatively, you can click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. You can also click **Cancel** to go back to the **Port Profile** page without creating a new port profile.

Related Topics

- Switched Downlink Port Profile CLI on page 66
- Creating a Customized Desktop Port Profile on page 27
- Creating a Customized Desktop and Phone Port Profile on page 28
- Creating a Customized Switched Uplink Port Profile on page 29
- Creating a Customized Server Port Profile on page 31

Creating a Customized Server Port Profile

A server port is a trunk port that enables users from multiple VLANs to connect to a machine with virtual servers.

To create a customized server port profile:

1. From the task ribbon, select **EZ Campus Design > Port Profile > Create Port Profile**. This opens the **Create Port Profile** wizard.
2. Enter a name for the profile in the **Profile Name** field.
3. Select **Server Port** from the **Profile type** drop down list. The **Profile Details** field appears showing information about the customized profile, such as the roles or actions that the port can perform after the port profile has been applied to it.
4. Enter a description for the customized profile in the **Profile Description** field.
5. Click **Next** to open the **CoS Settings - Scheduler Map Configuration** dialog box. Alternatively, you can click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. You can also click **Cancel** to go back to the **Port Profile** page without creating a new port profile.
6. From the **CoS Settings - Scheduler Map Configuration** dialog box, select the **Enable** checkbox to be able to customize the CoS parameters. After you have enabled CoS settings customization, use the horizontal slider to vary the bandwidth and buffer size for each scheduler category. You can also select the **High Priority** checkbox for each category. This causes delay-sensitive traffic, such as voice traffic, to be de-queued and forwarded with minimum delay.

To disable this customization option, deselect the **Enable** checkbox. You cannot customize any of the CoS parameters.



NOTE: The cumulative bandwidth and buffer percentages for scheduler categories must always be 100 percent or less. For example, if the total bandwidth percentage already adds up to 100, you must reduce the bandwidth of one of the categories to increase the bandwidth of another.

7. Click **Next** to open the **Ethernet Switching Options** dialog box. Alternatively, you can click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. You can also click **Cancel** to go back to the **Port Profile** page without creating a new port profile.
8. From the **Ethernet Switching Options** dialog box, use the **Broadcast limit** horizontal slider to vary the maximum network bandwidth that can be used for broadcast and multicast traffic. For example, a broadcast limit of 5 percent indicates that the bandwidth allocated is 5,000 Kbps in a Fast Ethernet interface, 5,0000 Kbps in a Gigabit Ethernet interface, and 5,00000 Kbps in a 10–Gigabit Ethernet interface.
9. Click **Back** to go to the previous step of the **Customize Server Port Profile** wizard. Alternatively, you can click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. You can also click **Cancel** to go back to the **Port Profile** page without creating a new port profile.

Related Topics

- Server Port Profile CLI on page 68
- Creating a Customized Desktop Port Profile on page 27
- Creating a Customized Desktop and Phone Port Profile on page 28
- Creating a Customized Switched Uplink Port Profile on page 29
- Creating a Customized Switched Downlink Port Profile on page 30

Managing Port Profiles

- Viewing Port Associations on page 32
- Modifying Customized Port Profiles on page 33
- Deleting a Customized Port Profile on page 34

Viewing Port Associations

Junos Space provides you with an interface where you can view the devices and ports that were associated with a port profile and their member VLANs.

To view port associations:

1. From the task ribbon, select **EZ Campus Design > Port Profile**. The **Port Profile** page appears.
2. Select a port profile and click **View Port Associations**. The **Port Associations** page appears (Figure 11 on page 33) displaying the devices that were associated with the selected port profile and the VLANs that are associated to the port of these devices.



NOTE: All existing port associations are lost when you modify or delete a customized port profile.

Figure 11: View Port Associations

Return to Port Profile View		
Device/Port	Profile Name	Member VLANs
bng-dist-grande2	ge-2/0/0	Desktop Port default
	ge-2/0/1	Desktop Port default
	ge-2/0/10	Desktop Port default
	ge-2/0/11	Desktop Port default
	ge-2/0/12	Desktop Port default

3. Click **Return to Port Role Profile View** to close the **Port Associations** page and return to the Port Profile page.

Related Topics

- Port Profile Overview on page 19
- Creating Customized Port Profiles on page 24
- Modifying Customized Port Profiles on page 33
- Deleting a Customized Port Profile on page 34

Modifying Customized Port Profiles

You can use Junos Space Ethernet Design to modify a customized port profile. This option is only available for customized port profiles. You cannot modify a predefined port profile.

To modify a customized port profile:

1. From the task ribbon, select **EZ Campus Design > Port Profile**. Select the customized port profile that you want to modify and click **Modify Profile**. The **General Settings** dialog box of the **Modify Profile** wizard appears.
2. Enter the desired values of the port profile in the appropriate fields. For more information on modifying customized port profiles, see “Creating Customized Port Profiles” on page 24.



NOTE: You lose all existing port associations when you modify a customized port profile.

Related Topics

- Port Profile Overview on page 19
- Creating Customized Port Profiles on page 24
- Deleting a Customized Port Profile on page 34
- Viewing Port Associations on page 32

Deleting a Customized Port Profile

You can use JUNOS Space Ethernet Design to delete a customized port profile from the Junos Space database. This option is only available for customized port profiles. You cannot delete a predefined port profile.

To delete a customized port profile:

1. From the task ribbon, select **EZ Campus Design > Port Profile**. Select the customized port profile(s) that you want to delete and click **Delete Profile**. The **Confirm Delete Port Profiles** dialog appears displaying the profiles that you have selected for deletion.
2. Click **Delete** to delete the selected port profile(s) and remove it from the list.



NOTE: You lose all existing port associations when you delete a customized port profile.

Related Topics

- Port Profile Overview on page 19
- Creating Customized Port Profiles on page 24
- Modifying Customized Port Profiles on page 33
- Viewing Port Associations on page 32

CHAPTER 8

Port Profile Provisioning

- Port Profile Provisioning Overview on page 35
- Provisioning a Port Profile on page 38

Port Profile Provisioning Overview

In Junos Space, a port profile is a collection of predefined configuration parameters that can be applied to a port. When you select a port profile and apply it to a port on a device, Junos Space invokes CLI commands to modify the port configuration according to the configuration specified in the applied port profile. Once the profile has been applied to the port, that port can perform according to the role that was defined in the applied profile.

Junos Space provides a user interface where you can select the port profile and the devices to which you want to apply these profiles. Junos Space devices are displayed on the **Select Devices** page. You can choose to display the devices either as a table arranged according to device name, OS version, platform, IP address, connection status, and managed status, or as icons (Figure 12 on page 35).

Figure 12: Select Device



Table 6: Port Profile Column Descriptions

Column Name	Description
Device Name	Displays the host name configured by the user.

Table 6: Port Profile Column Descriptions (*continued*)

Column Name	Description
OS Version	Displays the version of the Junos operating system that is running on the device.
Platform	Displays the model number of the device. For example, EX 3200-24p
IP Address	Displays the management IP address of the device.
Connection Status	<p>Displays the connection of the device in Junos Space. The possible options and their definitions are:</p> <ul style="list-style-type: none"> • Up— The device is connected to Junos Space. When the connection status is Up, the Managed status can be either Out of Sync, Synchronizing, In Sync, or Sync Failed. • Down— The device is not connected to the Junos Space platform or that an event has occurred, either due to administrative intervention or automatically by the flow of a type of traffic, which disconnected the device. When Connection status is down, the managed status can be either None or Connecting.
Managed Status	<p>Displays the status of the devices that are managed in Junos Space. The possible options and their definitions are:</p> <ul style="list-style-type: none"> • Connecting— Junos Space has sent a connection remote procedure call (RPC) and is waiting for the first connection from the device. • In Sync— Junos Space and the device are synchronized. • None— Although the device was discovered, Junos Space had not sent the connection RPC yet. • Out of Sync— Although the device has connected to Junos Space, the sync operation was not initiated. • Synchronizing— The sync operation has started either because of device discovery, a manual re-sync operation, or an automatic re-sync operation. • Sync Failed - This means that the sync operation has failed.



NOTE: You cannot provision to a device whose Managed Status is Sync Failed.

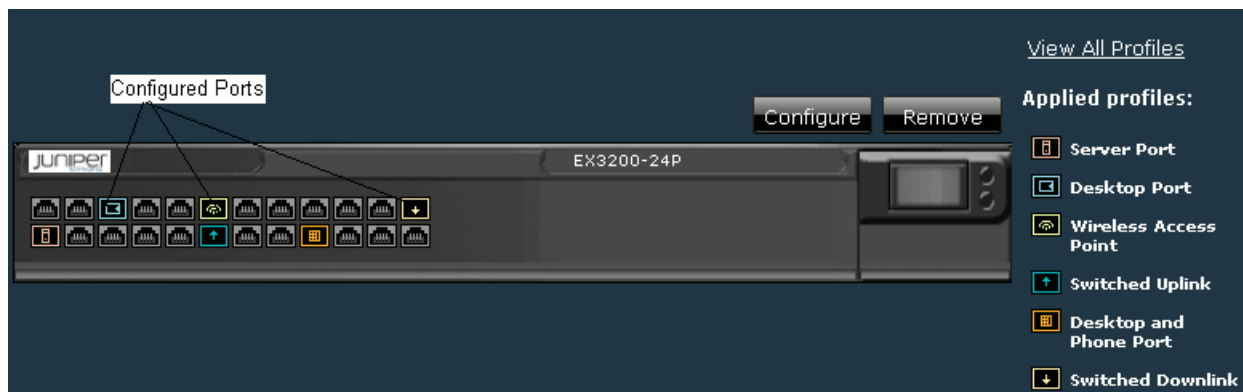


NOTE: Port profiles can only be provisioned to EX platform access devices. This feature is only supported for JUNOS Release 9.6 and later. The supported device platforms are:

- EX2200-24P
- EX2200-48T
- EX2200-48P
- EX2200-24T
- EX3200-24T
- EX3200-24P
- EX3200-48T
- EX3200-48P
- EX4200-24T
- EX4200-24P
- EX4200-24F
- EX4200-48T
- EX4200-48P
- EX 4200- Virtual Chassis
- EX8200-48T
- EX8200-48F
- EX8200-8XS

The Junos Space user interface also enables you to view an representation of the ports , as shown in Figure 13 on page 38. This chassis view is a high-level, view of the selected device to which you want to apply the port profile. The chassis view shows the dynamic display of all the profiles that have been applied to the ports of that device. Ports that have been configured with port profiles are displayed in different colors. You can use this representation to select the port(s) to which you want to apply a port profile.

Figure 13: Provision Port Profile- Chassis View



The devices whose ports are to be provisioned to, are displayed on the left side of the screen. By default, Junos Space displays the chassis representation of the first device on the device list.

You can choose to view these devices individually or grouped according to model number. The **Group** option helps you apply port profiles to multiple devices belonging to the same platform (for example, EX3200), by simply configuring a single chassis representation.

For example, if you want to configure all the EX3200-48T devices in a large branch office or headquarter campus network with certain specified port profiles, you can click the **Group** button, select **EX3200-48T** from the Device list on the left side of the screen, and follow the steps given in “Applying Port Profiles to a Port” on page 39. When you click **Provision**, all the EX3200-48T devices in that campus network are configured according to the port profiles you had selected.



NOTE: Any configuration that you make at the group level overrides the existing device level configurations. Similarly, any configuration that you make at the device level overrides the existing group level configurations.

Related Topics

- Applying Port Profiles to a Port on page 39
- Applying Port Profiles to an Aggregated (AE) Port on page 44
- Applying Port Profiles to EX8200 Switches on page 46
- Port Profile Overview on page 19

Provisioning a Port Profile

- Applying Port Profiles to a Port on page 39
- Applying Port Profiles to an Aggregated (AE) Port on page 44
- Applying Port Profiles to EX8200 Switches on page 46
- Specifying Parameters for Applying a Desktop Port Profile to a Port on page 48

- Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port on page 50
- Specifying Parameters for Applying a Switched Uplink Port Profile to a Port on page 52
- Specifying Parameters for Applying a Switched Downlink Port Profile to a Port on page 54
- Specifying Parameters for Applying a Server Port Profile to a Port on page 56
- Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port on page 58

Applying Port Profiles to a Port

When you select a port profile and apply it to a port on a device, Junos Space modifies the configuration of that port according to the port profile that was applied to it. Once the profile has been applied or provisioned to the port, that port can perform according to the role that was defined in the applied profile.

To apply a desktop port profile to a device port:

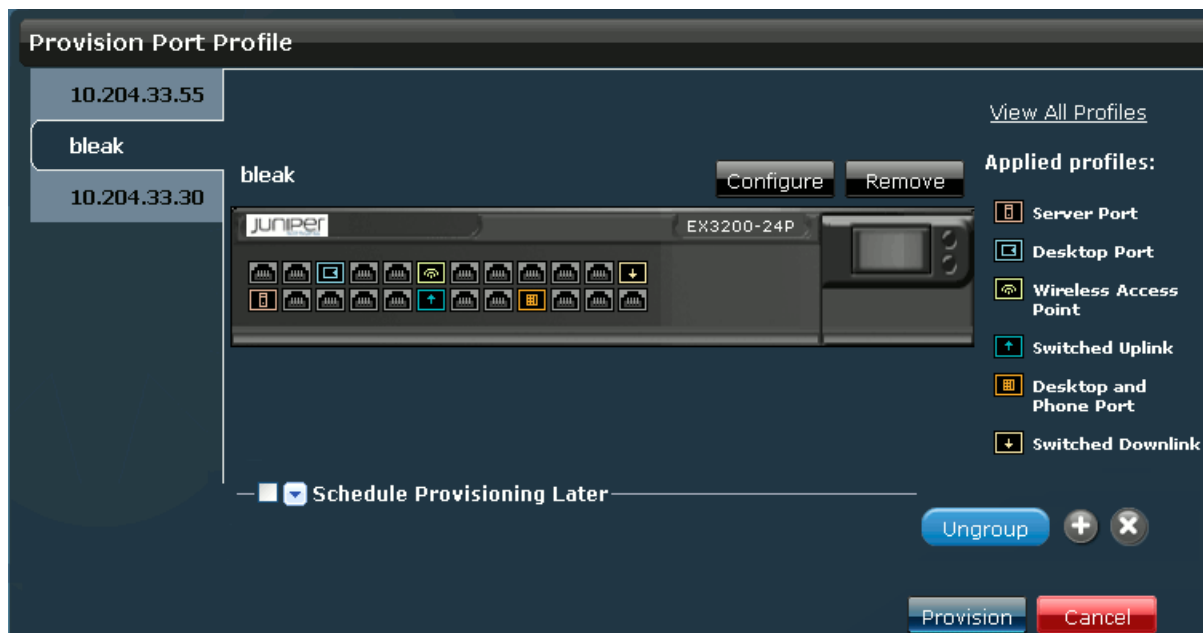
1. From the task ribbon, select **EZ Campus Design** > **Provision Port Profile**. The **Provision Port Profile** page appears displaying all the available devices arranged according to device name, OS version, platform, device IP address, connection status, and managed status, as shown in Figure 14 on page 39.

Figure 14: Select Devices- Tabular View

Name	OS Version	Platform	IP Address	Connection Status	Managed Status
10.204.33.30	10.0R1.2	EX4200-24T	10.204.33.30	up	In Sync
10.205.2.1	10.0R2.10	EX2200-48T-4G	10.205.2.1	up	Out Of Sync
10.205.2.10	10.0R2.10	EX2200-48T-4G	10.205.2.10	up	Out Of Sync
10.205.2.100	10.0R2.10	EX3200-24T	10.205.2.100	up	In Sync
10.205.2.102	10.0R2.10	EX3200-24T	10.205.2.102	up	In Sync
10.205.2.103	10.0R2.10	EX3200-24T	10.205.2.103	up	In Sync

2. Select the device(s) to which you want to apply a port profile, and click **Provision Port Profile**. To select all the devices in the page, click **Page**. To clear all your selections, click **None**. The **Provision Port Profile** dialog box appears as shown in Figure 15 on page 40.

Figure 15: Provision Port Profile



3. In addition to selecting multiple devices from the device list on the **Provision Port Profile** main page, you can also add devices to the **Selected Devices** list by clicking **Add (+)**. The **Add Devices to the Selected List** dialog box appears. Select the device(s) from the **Add Devices to the Selected List** and click **OK**. These device(s) appear in the **Selected Devices** panel. The maximum number of devices that you can select for provisioning is 50.

If you want to delete a device from the **Selected Devices** panel, select the device that you want to delete, and click **x** to remove the device from the list.

You can also choose to group the devices by their model number. To group devices according to their model number, click **Group**. As shown in Figure 16 on page 41, the **Group** option enables you to apply port profiles to any number of devices that belong to the same platform (for example, EX3200), by configuring a single chassis model.

Figure 16: Provision Port Profile- Grouped by Model



NOTE: The facility to add more devices to the **Selected Devices** list in the current workflow is disabled when you select the **Group** option.



NOTE: Any configuration that you make at the group level overrides the existing device level configurations.

4. Select the device whose ports you want to configure from the device list on the left pane. A representation of the device and its ports appears on the right side of the window.
5. Select the port to which you want to apply the port profile and click **Configure**. The **Port Configuration Parameters** dialog box opens.

If you want to simultaneously provision a port profile to a group of ports on the device, click and drag the cursor over the ports and click **Configure**. The **Port Configuration Parameters** dialog box opens.

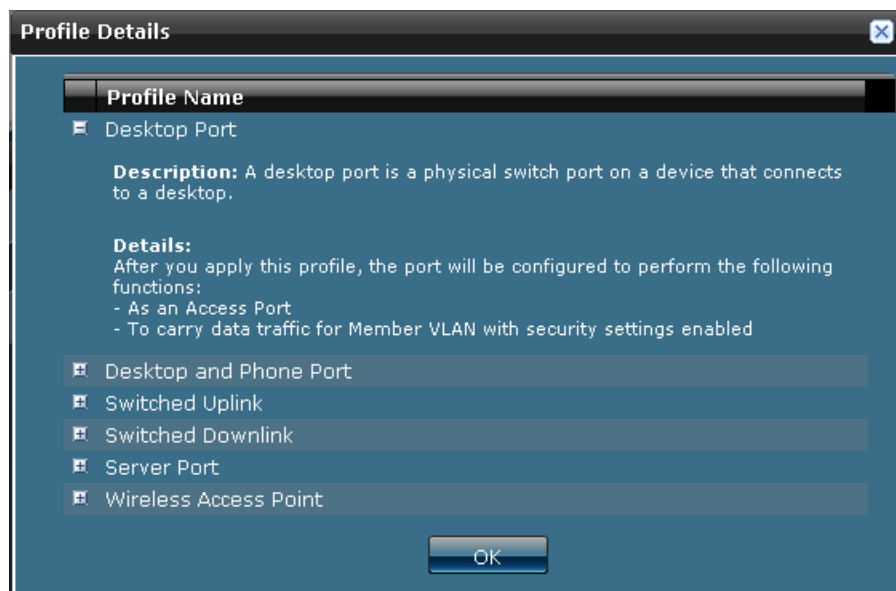
6. From the **Profile** drop down list, select the port profile that you want to apply to the selected port. The parameters vary depending on the profile that you have selected. The available options are:
 - Desktop port. For more information, see “Specifying Parameters for Applying a Desktop Port Profile to a Port” on page 48.
 - Desktop and Phone port. For more information, see “Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port” on page 50.

- Switched Uplink port. For more information, see “Specifying Parameters for Applying a Switched Uplink Port Profile to a Port” on page 52.
 - Switched Downlink port. For more information, see “Specifying Parameters for Applying a Switched Downlink Port Profile to a Port” on page 54.
 - Server port. For more information, see “Specifying Parameters for Applying a Server Port Profile to a Port” on page 56.
 - Wireless Access Point port. For more information, see “Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port” on page 58.
7. After you have selected the parameters, click **OK**. The selected port(s) is now displayed in a different color.

The **Applied Profiles** list displays all the profiles that have been applied to the ports of the device. Double click a profile on the **Applied Profile** list to view the summary of the selected port profile.

Click **View All Profiles** to open the **Profile Details** dialog box Figure 17 on page 42 that lists out all the available port profiles. Click a port profile to view a description of the port profile along with details about the functions that can be performed by a port that is configured with this profile.

Figure 17: Profile Details Dialog Box



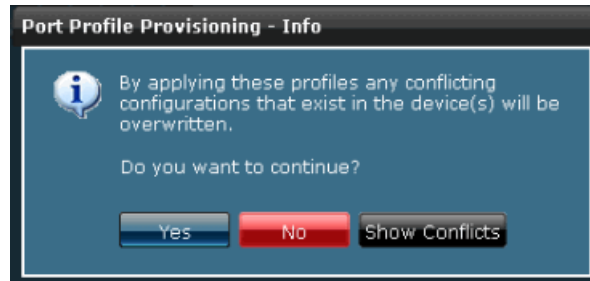
To remove a port profile from a port, select the port(s) on the chassis representation and click **Remove**.

8. If you want schedule the profile provision to a later date and time, select the **Schedule Provisioning Later** checkbox and select the date from the pop out calendar and the time from the drop down list.

Alternatively, you can click **Cancel** to go back to the EZ Campus Design workspace.

9. Click **Provision** to apply the selected profile to the selected ports. The **Port Profile Provisioning-Info** dialog box appears (Figure 18 on page 43) informing you that all the conflicting configurations on the devices are overwritten by the applied port profile.

Figure 18: Port Profile Provisioning-Info Dialog Box



NOTE: When you apply a port profile to a device, the CLI commands in the port profile are bundled together and applied to the device ports as a config-group. Junos Space compares the applied port profile with the current configurations existing on the devices to check for conflicts. Junos Space does not consider CLI commands of user defined config-groups applied at the interface level while computing port profile conflicts. Also, all interface level configurations are overwritten by the applied port profile without further prompting. For more information on the CLI commands used in port profiles, see “Port Profile CLI Reference” on page 61.

10. Here, in the **Port Profile Provisioning-Info** dialog box (Figure 18 on page 43), you can do one of the following:
 - Click **Yes** to continue with the provisioning job.
 - Click **No** to cancel the provisioning job.
 - Click **Show Conflicts** to open Conflicts List dialog box (Figure 19 on page 43) that lists out all the devices with configurations that are in conflict with the applied port profile. If there are no conflicting configurations, the option to show conflicts is disabled.

Figure 19: Conflicts List Dialog Box



The **Show Conflicts** dialog box displays all the devices with conflicting configurations. All devices are selected by default. Here, you can choose to clear certain devices from the list and cancel the provisioning job on those selected devices. This means that the port profiles are not applied to the devices that you have cleared from the list.

You can also select certain devices from the list and continue the provisioning job on those selected devices. All the conflicting device configurations on these devices are overwritten by the applied port profile.

- Related Topics**
- Port Profile Provisioning Overview on page 35
 - Applying Port Profiles to an Aggregated (AE) Port on page 44
 - Applying Port Profiles to EX8200 Switches on page 46
 - Specifying Parameters for Applying a Desktop Port Profile to a Port on page 48
 - Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port on page 50
 - Specifying Parameters for Applying a Switched Uplink Port Profile to a Port on page 52
 - Specifying Parameters for Applying a Switched Downlink Port Profile to a Port on page 54
 - Specifying Parameters for Applying a Server Port Profile to a Port on page 56
 - Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port on page 58

Applying Port Profiles to an Aggregated (AE) Port

An aggregated port is a set of physical interfaces that are grouped logically to function as a single interface in order to increase throughput. For example, if you have a 4-port Fast Ethernet PIC on two Juniper Networks devices, you can use all four ports together as one logical interface by aggregating them, yielding a much higher bandwidth of up to 400 Mbps.

An aggregated (AE) bundle can be spread across the multiple ports on a single device, or in the case of a virtual chassis, spread across multiple ports on multiple devices. However, one side of the AE bundle must always be spread across one or more ports on a single device.

Using Junos Space Ethernet Design, you can apply port profiles to an AE bundle, configuring all the ports in an AE bundle with a specific network connection role in a single workflow.

The workflow for applying a port profile to an AE bundle is similar to applying a port profile to a port. Whenever you select a port that is associated to an AE bundle, all the other ports that belong to that AE bundle are selected automatically, irrespective of whether the AE bundle is spread across one or many devices.

You can only configure the ports of an AE bundle with one of these port profiles:

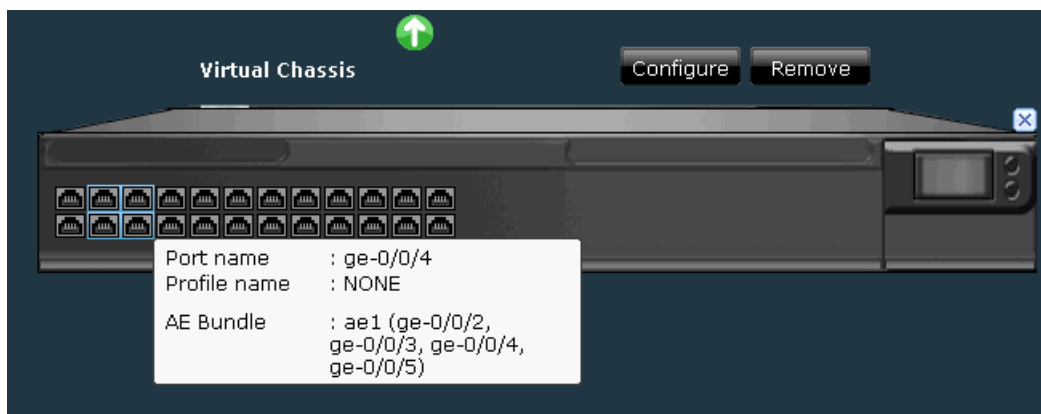
- Desktop Port Profile. For more information see “Specifying Parameters for Applying a Desktop Port Profile to a Port” on page 48.
- Switched Uplink Port Profile. For more information, see “Specifying Parameters for Applying a Switched Uplink Port Profile to a Port” on page 52.
- Switched Downlink Port Profile. For more information, see “Specifying Parameters for Applying a Switched Downlink Port Profile to a Port” on page 54.
- Server Port Profile. For more information, see “Specifying Parameters for Applying a Server Port Profile to a Port” on page 56.

For information on how to apply a port profile to an AE bundle, see “Applying Port Profiles to a Port” on page 39.

The chassis representation shows the dynamic display of all the profiles that have been applied to the ports of the selected device. It also displays the total number of device ports that you have selected for the provisioning job. If the AE bundle is spread across many devices, the virtual chassis displays the number of ports (both AE and non-AE ports) that were selected for provisioning for each device. The total number of selected ports is displayed at the bottom of the virtual chassis.

When you place your cursor over an AE bundle, a message displaying information about the AE bundle automatically appears. It displays information such as the port name, the profile that was applied to it, the AE bundle to which it is assigned, and the other ports that belong to the AE bundle as shown in Figure 20 on page 45.

Figure 20: Configuring an AE Bundle



NOTE: Junos Space allows you to only apply port profiles to an AE bundle. It does not provide you with an interface to associate ports to an AE bundle.

Related Topics

- Applying Port Profiles to a Port on page 39
- Port Profile Provisioning Overview on page 35

Applying Port Profiles to EX8200 Switches

Using Junos Space, you can apply port profiles to chassis-based modular switches, specifically the Juniper Networks EX8200 line of Ethernet switches.

EX8200 switches provide high performance, scalable connectivity, and carrier-class reliability for high and ultra-high density environments such as datacenter networks, campus aggregation, and high performance core switching environments. These switches are modular systems providing high availability and redundancy for all the major hardware components. This means that no single point of failure can be responsible for bringing down the whole switch. EX8200 switches come in two models – EX8208 and EX8216 Ethernet switches.

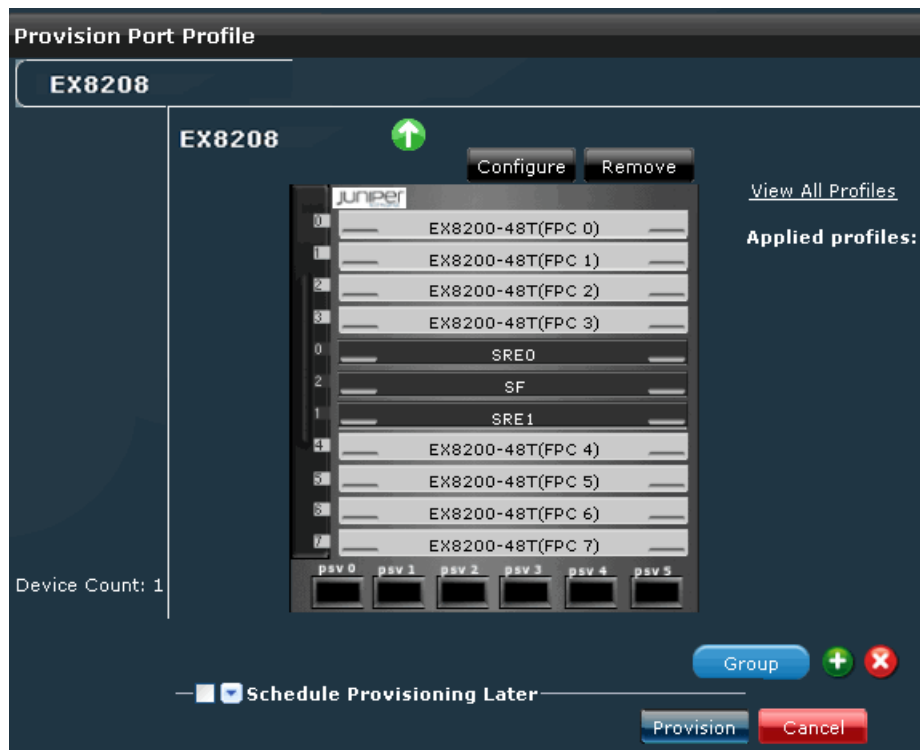
The EX8208 Ethernet Switch features eight horizontal line card slots and supports the line rate for each line card. The EX8216 Ethernet Switch features 16 horizontal line card slots and supports wire-rate performance for all packet sizes for the installed line cards.

The following line cards are available for EX8200 switches:

- 8-port 10-Gigabit Ethernet SFP+ line card
- 48-port 10/100/1000 RJ-45 line card
- 48-port 100/1000 SFP line card

You can apply all the port profiles available in Junos Space to EX8200 devices. After you have selected an EX8200 device from the **Select Device(s)** page in the **Provision Port Profile** task, click **Next** to go open the **Provision Port Profile** page. Here, the selected device is represented by a chassis with slots displaying descriptions of each of the line cards available on the device as shown in Figure 21 on page 47.

Figure 21: Chassis View of an EX8200 Ethernet Switch



Click on a slot to open a more detailed image of the selected line card as shown in Figure 22 on page 47.

Figure 22: Configuring an EX8200 Line Card



This image is similar to the chassis images that are displayed when you provision to EX2200, EX3200, and EX4200 devices. You can use this chassis image to configure one or more ports with your desired port profile. For more information on how to apply a port profile to an EX8200 device, see “Applying Port Profiles to a Port” on page 39.



NOTE: You can select only one line card at a time. Also, you cannot group EX8200 devices based on their model. You must configure and apply port profiles to individual devices one at a time.

- For information on applying a desktop port profile, see “Specifying Parameters for Applying a Desktop Port Profile to a Port” on page 48.
- For information on applying a desktop and phone port profile, see “Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port” on page 50.
- For information on applying a switched uplink port profile, see “Specifying Parameters for Applying a Switched Uplink Port Profile to a Port” on page 52.
- For information on applying a switched downlink port profile, see “Specifying Parameters for Applying a Switched Downlink Port Profile to a Port” on page 54.
- For information on applying a server port profile, see “Specifying Parameters for Applying a Server Port Profile to a Port” on page 56.
- For information on applying a wireless access point port profile, see “Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port” on page 58.



NOTE: Access port security features such as address resolution protocol (ARP) inspection, dynamic host configuration protocol (DHCP) snooping, MAC limit, MAC limit action, and DHCP trust are only supported by EX8200 devices running on Junos OS Release 10.3 and later. Therefore, the port profiles that are applied to EX8200 devices running on Junos OS Release 10.2 and earlier do not include these security features.

Related Topics

- Applying Port Profiles to a Port on page 39
- Port Profile Provisioning Overview on page 35

Specifying Parameters for Applying a Desktop Port Profile to a Port

By provisioning a desktop port profile to a port on the device, you are configuring settings such as the VLAN, port security, and RSTP settings on the port so that you can connect a desktop to a switch port.

To specify parameters in order to apply a desktop port profile to a port:

1. From the **Profile** drop down list in the **Port Configuration Parameters** in the **Port Configuration Parameters** dialog box, select **Desktop Port**. The **Parameters** panel (Figure 23 on page 49) appears.

Figure 23: Port Configuration Parameters Dialog Box

Port Configuration Parameters

Profile: Desktop Port

Note: Applying port-profiles on the selected port(s) will remove its existing configuration.

Parameters

Member VLAN: vlan2

OK Cancel

2. Select the VLAN for data traffic that you want to associate with the port from the **Member VLAN** drop down list.
3. After you have selected the parameters, click **OK**. The provisioned port is displayed in a different color.

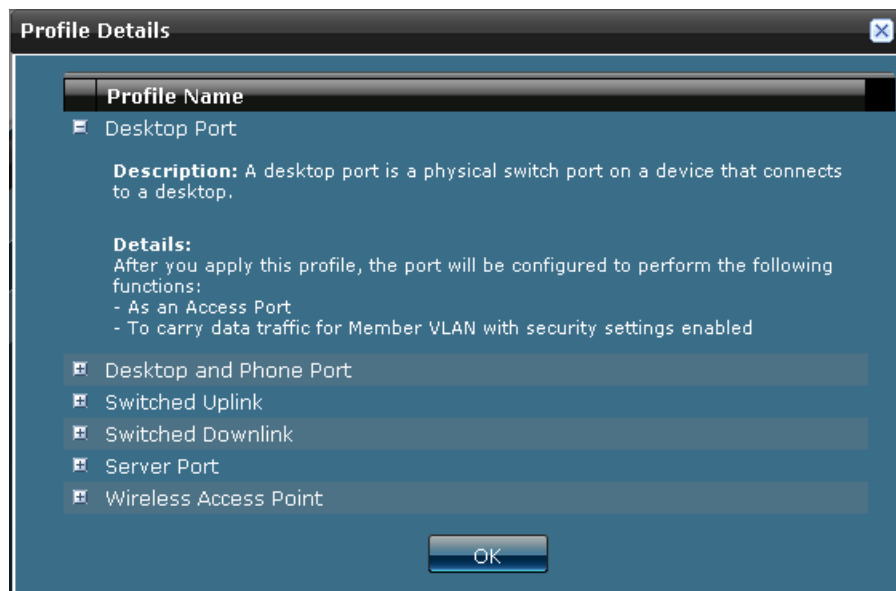


NOTE: When you click **Configure**, all existing configurations on the selected port are permanently removed. The selected port only has the newly applied configuration.

The **Applied Profiles** list displays all the profiles that have been applied to the ports of the selected device. Double click a profile on the **Applied Profile** list to view the summary of the selected port profile.

Click **View All Profiles** to open the **Profile Details** dialog box (Figure 24 on page 50) which lists out all the available port profiles. Click a port profile to view a description of the port profile along with details about the functions that can be performed by a port that is configured with this profile.

Figure 24: Profile Details Dialog Box



To remove a port profile from a port, select the port on the chassis view and click **Remove**.

- Related Topics**
- Port Profile Provisioning Overview on page 35
 - Applying Port Profiles to a Port on page 39
 - Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port on page 50
 - Specifying Parameters for Applying a Switched Uplink Port Profile to a Port on page 52
 - Specifying Parameters for Applying a Switched Downlink Port Profile to a Port on page 54
 - Specifying Parameters for Applying a Server Port Profile to a Port on page 56
 - Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port on page 58

Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port

By provisioning a desktop port profile to a port on the device, you are configuring settings such as the port security, RSTP, and CoS settings on the port so that you can connect a desktop and phone port to a switch port.

To specify parameters in order to apply a desktop and phone port profile to a port:

1. From the **Profile** drop down list in the **Port Configuration Parameters** dialog box, select **Desktop and Phone Port**. The **Parameters** panel (Figure 25 on page 51) appears.

Figure 25: Port Configuration Parameters Dialog Box

Port Configuration Parameters

Profile: Desktop and Phone Port

Note: Applying port-profiles on the selected port(s) will remove its existing configuration.

Parameters

Member VLAN: default

Voice VLAN: vlan2

OK Cancel

2. Select the VLAN for data traffic and the VoIP VLAN that you want to associate with the port from the **Member VLAN** and **Voice VLAN** drop down lists respectively.
3. After you have selected the parameters, click **OK**. The provisioned port is displayed in a different color.

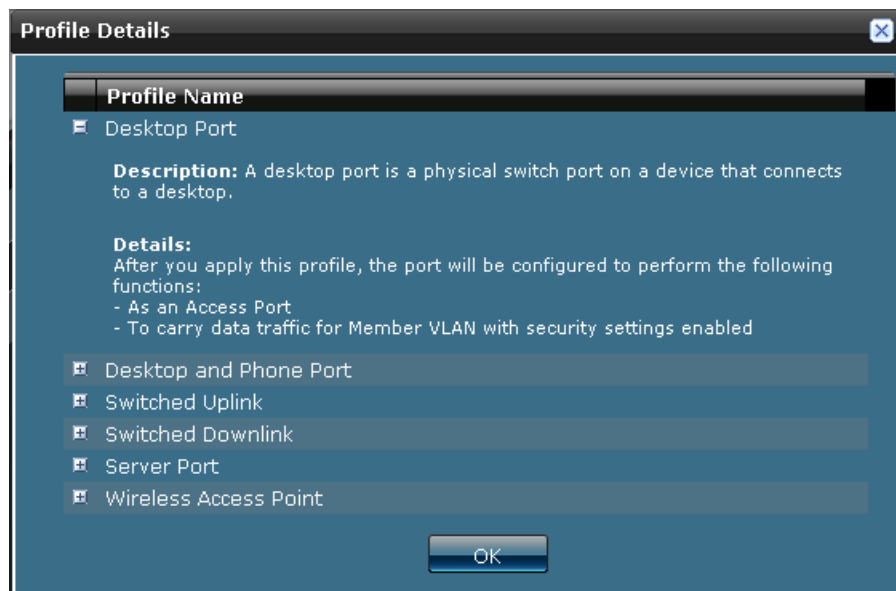


NOTE: When you click **Configure**, all existing configurations on the selected port are permanently removed. The selected port only has the newly applied configuration.

The **Applied Profiles** list displays all the profiles that have been applied to the ports of the selected device. Double click a profile on the **Applied Profile** list to view the summary of the selected port profile.

Click **View All Profiles** to open the **Profile Details** dialog box (Figure 26 on page 52) which lists out all the available port profiles. Click a port profile to view a description of the port profile along with details about the functions that can be performed by a port that is configured with this profile.

Figure 26: Profile Details Dialog Box



To remove a port profile from a port, select the port on the chassis view and click **Remove**.

- Related Topics**
- Port Profile Provisioning Overview on page 35
 - Applying Port Profiles to a Port on page 39
 - Specifying Parameters for Applying a Desktop Port Profile to a Port on page 48
 - Specifying Parameters for Applying a Switched Uplink Port Profile to a Port on page 52
 - Specifying Parameters for Applying a Switched Downlink Port Profile to a Port on page 54
 - Specifying Parameters for Applying a Server Port Profile to a Port on page 56
 - Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port on page 58

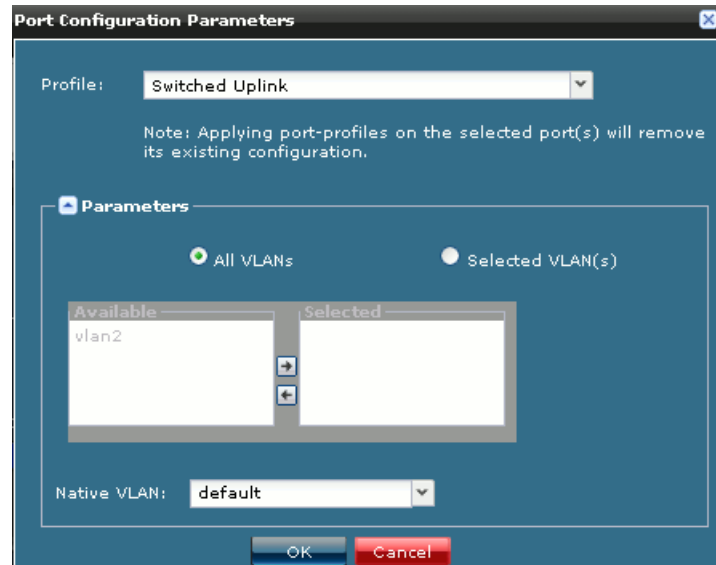
Specifying Parameters for Applying a Switched Uplink Port Profile to a Port

By provisioning a switched uplink port profile to a port on the device, you are configuring settings such as the VLAN, port security, and CoS settings on the port so that you can connect an access layer switch to an aggregation or a core switch.

To specify parameters in order to apply a switched uplink port profile to a port:

1. From the **Profile** drop down list in the **Port Configuration Parameters** dialog box, select **Switched Uplink Port**. The **Parameters** panel (Figure 27 on page 53) appears.

Figure 27: Port Configuration Parameters Dialog Box



2. Select the VLANs that you want to associate with the port. You can choose to associate multiple VLANs with the port.
 - To associate all the available VLANs with the port, select the **All VLANs** option button.
 - To associate selected VLANs with the ports, select the **Selected VLAN(s)** option button, select the VLANs from the **Available** column and click the right arrow button to add it to the **Selected** column. Hold down the **Shift** key and click to select multiple VLANs from the **Available** column.

To remove VLANs from the **Selected** column, select the VLAN and click the left arrow button. Hold down the **Shift** key and click to select multiple VLANs from the **Selected** column.

3. Select the native VLAN that you want to associate with the port from the **Native VLAN** drop down list.
4. After you have selected the parameters, click **OK**. The provisioned port is displayed in a different color.

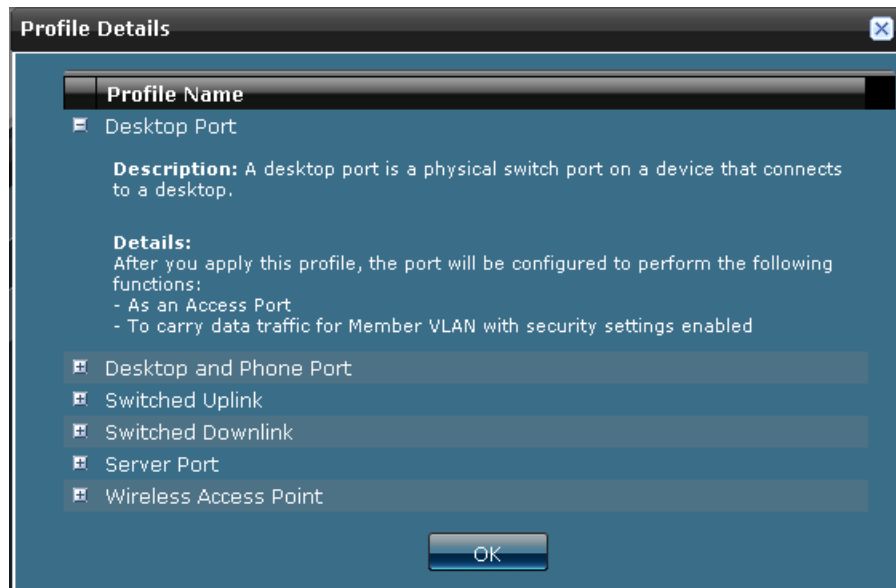


NOTE: When you click **Configure**, all existing configurations on the selected port are permanently removed. The selected port only has the newly applied configuration.

The **Applied Profiles** list displays all the profiles that have been applied to the ports of the selected device. Double click a profile on the **Applied Profile** list to view the summary of the selected port profile.

Click **View All Profiles** to open the **Profile Details** dialog box (Figure 28 on page 54) which lists out all the available port profiles. Click a port profile to view a description of the port profile along with details about the functions that can be performed by a port that is configured with this profile.

Figure 28: Port Details Dialog Box



To remove a port profile from a port, select the port on the chassis view and click **Remove**.

- Related Topics**
- Port Profile Provisioning Overview on page 35
 - Applying Port Profiles to a Port on page 39
 - Specifying Parameters for Applying a Desktop Port Profile to a Port on page 48
 - Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port on page 50
 - Specifying Parameters for Applying a Switched Downlink Port Profile to a Port on page 54
 - Specifying Parameters for Applying a Server Port Profile to a Port on page 56
 - Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port on page 58

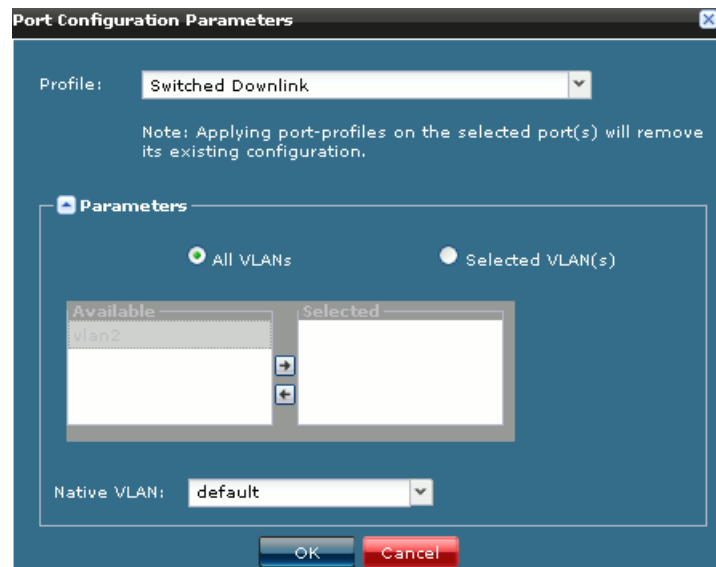
Specifying Parameters for Applying a Switched Downlink Port Profile to a Port

By provisioning a switched downlink port profile to a port on the device, you are configuring settings such as the VLAN, port security, and CoS settings on the port so that you can connect desktops and phones in a campus or branch environment, or servers in a data center environment.

To specify parameters in order to apply a switched downlink port profile to a port:

1. From the **Profile** drop down list in the **Port Configuration Parameters** dialog box, select **Switched Downlink Port**. The **Parameters** panel (Figure 29 on page 55) appears.

Figure 29: Port Configuration Parameters Dialog Box



2. Select the VLANs that you want to associate with the port. You can choose to associate multiple VLANs with the port.
 - To associate all the available VLANs with the port, select the **All VLANs** option button.
 - To associate selected VLANs with the ports, select the **Selected VLAN(s)** option button, select the VLANs from the **Available** column and click the right arrow button to add it to the **Selected** column. Hold down the **Shift** key and click to select multiple VLANs from the **Available** column.

To remove VLANs from the **Selected** column, select the VLAN and click the left arrow button. Hold down the **Shift** key and click to select multiple VLANs from the **Selected** column.

3. Select the native VLAN that you want to associate with the port from the **Native VLAN** drop down list.
4. After you have selected the parameters, click **OK**. The provisioned port is displayed in a different color.

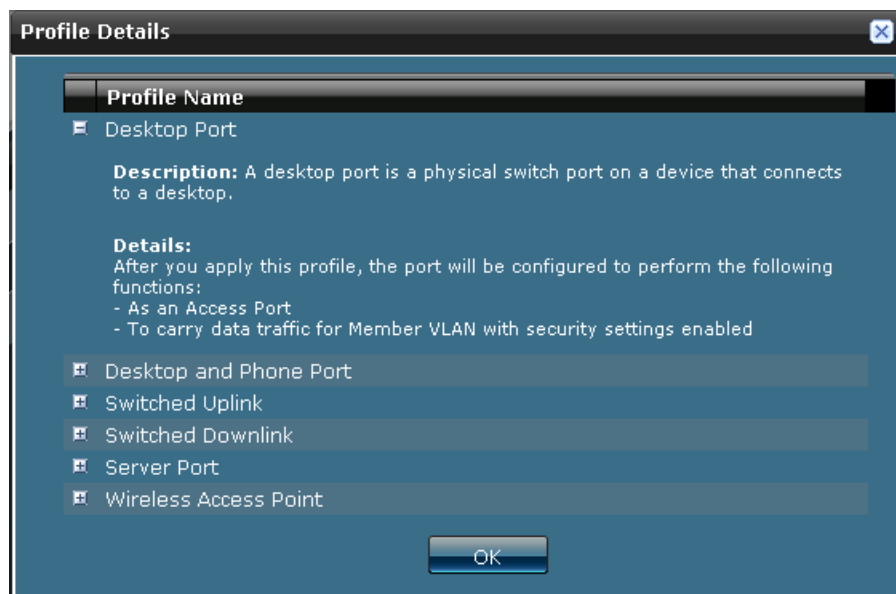


NOTE: When you click **Configure**, all existing configurations on the selected port are permanently removed. The selected port only has the newly applied configuration.

The **Applied Profiles** list displays all the profiles that have been applied to the ports of the selected device. Double click a profile on the **Applied Profile** list to view the summary of the selected port profile.

Click **View All Profiles** to open the **Profile Details** dialog box (Figure 30 on page 56) which lists out all the available port profiles. Click a port profile to view a description of the port profile along with details about the functions that can be performed by a port that is configured with this profile.

Figure 30: Port Details Dialog Box



To remove a port profile from a port, select the port on the chassis view and click **Remove**.

- Related Topics**
- Port Profile Provisioning Overview on page 35
 - Applying Port Profiles to a Port on page 39
 - Specifying Parameters for Applying a Desktop Port Profile to a Port on page 48
 - Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port on page 50
 - Specifying Parameters for Applying a Switched Uplink Port Profile to a Port on page 52
 - Specifying Parameters for Applying a Server Port Profile to a Port on page 56
 - Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port on page 58

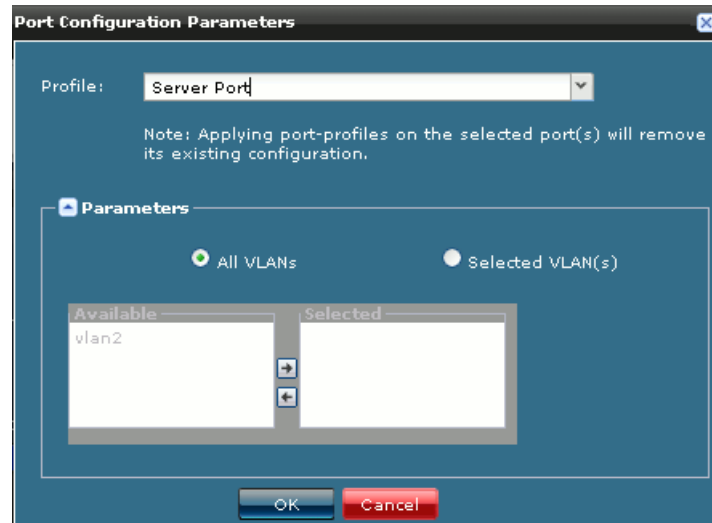
Specifying Parameters for Applying a Server Port Profile to a Port

By provisioning a switched downlink port profile to a port on the device, you are configuring settings such as VLAN, RSTP, and CoS settings on the port so that users from multiple VLANs can connect to a machine with virtual servers.

To specify parameters in order to apply a server port profile to a port:

1. From the **Profile** drop down list in the **Port Configuration Parameters** dialog box, select **Server Port**. The **Parameters** panel appears as shown in Figure 31 on page 57.

Figure 31: Port Configuration Parameters Dialog Box



2. Select the VLANs that you want to associate with the port. You can choose to associate multiple VLANs with the port.
 - To associate all the available VLANs with the port, select the **All VLANs** option button.
 - To associate selected VLANs with the ports, select the **Selected VLAN(s)** option button, select the VLANs from the **Available** column and click the right arrow button to add it to the **Selected** column. Hold down the **Shift** key and click to select multiple VLANs from the **Available** column.

To remove VLANs from the **Selected** column, select the VLAN and click the left arrow button. Hold down the **Shift** key and click to select multiple VLANs from the **Selected** column.

3. Select the native VLAN that you want to associate with the port from the **Native VLAN** drop down list.
4. After you have selected the parameters, click **OK**. The provisioned port is displayed in a different color.

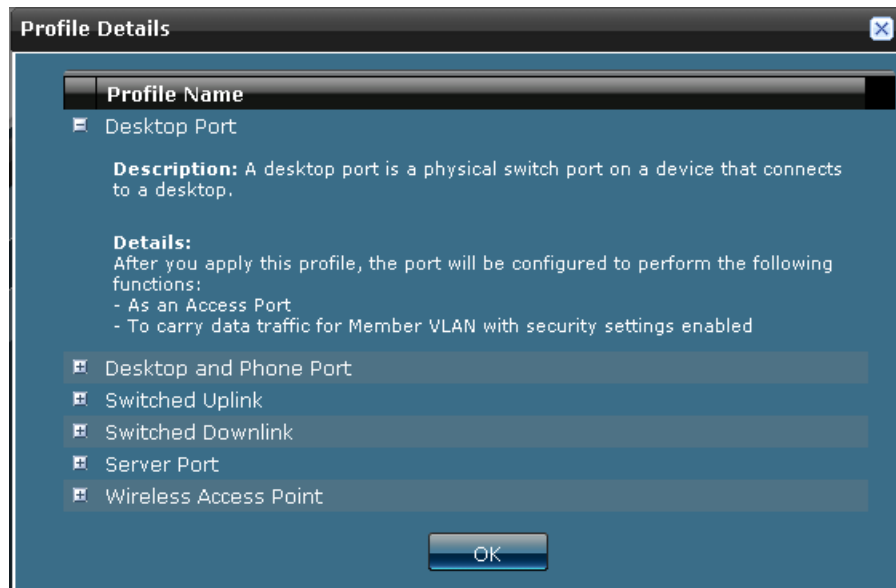


NOTE: When you click **Configure**, all existing configurations on the selected port are permanently removed. The selected port only has the newly applied configuration.

The **Applied Profiles** list displays all the profiles that have been applied to the ports of the selected device. Double click a profile on the **Applied Profile** list to view the summary of the selected port profile.

Click **View All Profiles** to open the **Profile Details** dialog box (Figure 32 on page 58) which lists out all the available port profiles. Click a port profile to view a description of the port profile along with details about the functions that can be performed by a port that is configured with this profile.

Figure 32: Profile Details Dialog Box



To remove a port profile from a port, select the port on the chassis view and click **Remove**.

- Related Topics**
- Port Profile Provisioning Overview on page 35
 - Applying Port Profiles to a Port on page 39
 - Specifying Parameters for Applying a Desktop Port Profile to a Port on page 48
 - Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port on page 50
 - Specifying Parameters for Applying a Switched Uplink Port Profile to a Port on page 52
 - Specifying Parameters for Applying a Switched Downlink Port Profile to a Port on page 54
 - Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port on page 58

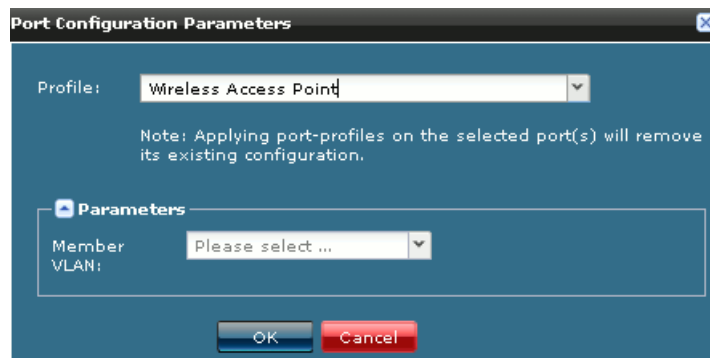
Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port

By provisioning a wireless access point port profile to a port on the device, you are configuring settings such as the VLAN, RSTP, and CoS settings on the port so that you can connect a wireless access point port to a switch port.

To specify parameters in order to apply a wireless access point port profile to a port:

1. From the **Profile** drop down list in the **Port Configuration Parameters** dialog box, select **Wireless Access Point Port**. The **Parameters** panel appears as shown in Figure 33 on page 59.

Figure 33: Port Configuration Parameters Dialog Box



2. Select the VLAN configuration for data traffic that you want to associate with the port, from the **Member VLAN** drop down list.
3. After you have selected the parameters, click **OK**. The provisioned port is displayed in a different color.

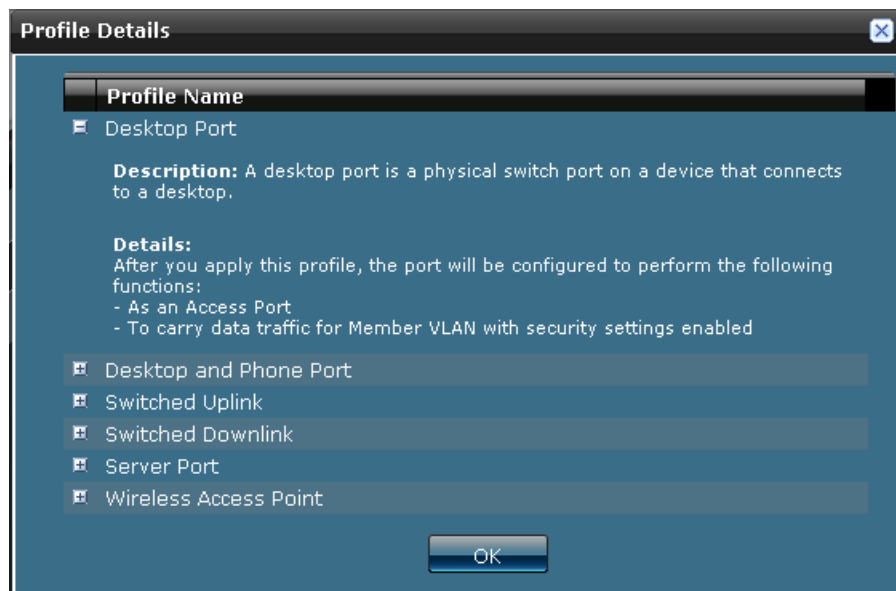


NOTE: When you click **Configure**, all existing configurations on the selected port are permanently removed. The selected port only has the newly applied configuration.

The **Applied Profiles** list displays all the profiles that have been applied to the ports of the selected device. Double click a profile on the **Applied Profile** list to view the summary of the selected port profile.

Click **View All Profiles** to open the **Profile Details** dialog box (Figure 34 on page 60) which lists out all the available port profiles. Click a port profile to view a description of the port profile along with details about the functions that can be performed by a port that is configured with this profile.

Figure 34: Port Details Dialog Box



To remove a port profile from a port, select the port on the chassis view and click **Remove**.

- Related Topics**
- Port Profile Provisioning Overview on page 35
 - Applying Port Profiles to a Port on page 39
 - Specifying Parameters for Applying a Desktop Port Profile to a Port on page 48
 - Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port on page 50
 - Specifying Parameters for Applying a Switched Uplink Port Profile to a Port on page 52
 - Specifying Parameters for Applying a Switched Downlink Port Profile to a Port on page 54
 - Specifying Parameters for Applying a Server Port Profile to a Port on page 56

CHAPTER 9

Port Profile CLI Reference

- [Port Profile CLI Reference on page 61](#)
- [Desktop Port Profile CLI on page 62](#)
- [Desktop and Phone Port Profile CLI on page 63](#)
- [Switched Uplink Port Profile CLI on page 65](#)
- [Switched Downlink Port Profile CLI on page 66](#)
- [Server Port Profile CLI on page 68](#)
- [Wireless Access Point Port Profile CLI on page 70](#)

Port Profile CLI Reference

In Junos Space, a port profile is a defined set of configuration parameters that allows you define the role of a port on a device. When you apply a port profile to a device, the CLI commands in the port profile are bundled together and applied to the device ports as a config-group. Once the profile has been applied to the port, that port will be able to perform according to the parameters that was defined in the applied port profile.

Click on the links below to view the CLI commands for the predefined port profiles.

- [Desktop Port Profile CLI on page 62](#)
- [Desktop and Phone Port Profile CLI on page 63](#)
- [Switched Uplink Port Profile CLI on page 65](#)
- [Switched Downlink Port Profile CLI on page 66](#)
- [Server Port Profile CLI on page 68](#)
- [Wireless Access Point Port Profile CLI on page 70](#)

Related Topics

- [Port Profile Provisioning Overview on page 35](#)
- [Port Profile Overview on page 19](#)
- [Desktop Port Profile CLI on page 62](#)
- [Desktop and Phone Port Profile CLI on page 63](#)
- [Switched Uplink Port Profile CLI on page 65](#)

- Switched Downlink Port Profile CLI on page 66
- Server Port Profile CLI on page 68
- Wireless Access Point Port Profile CLI on page 70

Desktop Port Profile CLI

Interface Config:

```
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching port-mode access
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching vlan members <vlan_name>
```

Access Secure Config:

```
set groups <config_group_name> ethernet-switching-options secure-access-port interface
<logical_interface_name> mac-limit 1
set groups <config_group_name> ethernet-switching-options secure-access-port interface
<logical_interface_name> mac-limit action drop
set groups <config_group_name> ethernet-switching-options secure-access-port vlan
<vlan_name> examine-dhcp
set groups <config_group_name> ethernet-switching-options secure-access-port vlan
<vlan_name> arp-inspection
set groups <config_group_name> ethernet-switching-options storm-control interface
<logical_interface_name> bandwidth <5,0000>
set groups <config_group_name> ethernet-switching-options secure-access-port vlan
<vlan_name> ip-source-guard
set groups <config_group_name> protocols dot1x authenticator
authentication-profile-name <authentication-profile-name> interface
<logical_interface_name>
set groups <config_group_name> protocols dot1x authenticator interface
<logical_interface_name> mac-radius
set groups <config_group_name> services captive-portal authentication-profile-name
<authentication-profile-name> interface <logical_interface_name>
```

RSTP Config:

```
set groups <config_group_name> protocols rstp interface <logical_interface_name> edge
set groups <config_group_name> protocols rstp bpdv-block-on-edge
set groups <config_group_name> protocols rstp interface <logical_interface_name>
no-root-port
```

Apply Config Group:

```
set apply-groups <config_group_name>
```

Related Topics

- Creating a Customized Desktop Port Profile on page 27
- Specifying Parameters for Applying a Desktop Port Profile to a Port on page 48

Desktop and Phone Port Profile CLI

Interface Config:

```
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching port-mode access
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching vlan members <vlan_name>
set groups <config_group_name> ethernet-switching-options voip interface
<logical_interface_name> vlan <voip_vlan_name>
```

Access Secure Config:

```
set groups <config_group_name> ethernet-switching-options secure-access-port interface
<logical_interface_name> mac-limit 2
set groups <config_group_name> ethernet-switching-options secure-access-port interface
<logical_interface_name> mac-limit action drop
set groups <config_group_name> ethernet-switching-options secure-access-port vlan
<vlan_name> examine-dhcp
set groups <config_group_name> ethernet-switching-options secure-access-port vlan
<vlan_name> arp-inspection
set groups <config_group_name> ethernet-switching-options storm-control interface
<logical_interface_name> bandwidth <50000>
set groups <config_group_name> ethernet-switching-options secure-access-port vlan
<vlan_name> ip-source-guard
set groups <config_group_name> protocols dot1x authenticator
authentication-profile-name <authentication-profile-name> interface
<logical_interface_name>
set groups <config_group_name> protocols dot1x authenticator interface
<logical_interface_name> mac-radius
set groups <config_group_name> services captive-portal authentication-profile-name
<authentication-profile-name> interface <logical_interface_name>
```

RSTP Config:

```
set groups <config_group_name> protocols rstp interface <logical_interface_name> edge
set groups <config_group_name> protocols rstp bpdu-block-on-edge
set groups <config_group_name> protocols rstp interface <logical_interface_name>
no-root-port
```

CoS Config:

```
set groups <config_group_name> class-of-service forwarding-classes class voice
queue-num 7
set groups <config_group_name> class-of-service forwarding-classes class
expedited-forwarding queue-num 5
set groups <config_group_name> class-of-service forwarding-classes class
assured-forwarding queue-num 1
set groups <config_group_name> class-of-service forwarding-classes class best-effort
queue-num 0
set groups <config_group_name> class-of-service classifiers ieee-802.1
juniper_ieee_classifier import default forwarding-class voice loss-priority low code-points
101
```

```
set groups <config_group_name> class-of-service classifiers dscp juniper_dscp_classifier
import default forwarding-class voice loss-priority low code-points 101110
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-strict-priority-scheduler buffer-size percent 5
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-strict-priority-scheduler priority strict-high
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler transmit-rate percent 30
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler buffer-size percent 30
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler priority low
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler transmit-rate percent 25
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler buffer-size percent 25
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler priority low
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler transmit-rate percent 35
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler buffer-size percent 40
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler priority low
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class voice scheduler
juniper-port-profile-strict-priority-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class expedited-forwarding scheduler
juniper-port-profile-expedited-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class assured-forwarding scheduler
juniper-port-profile-assured-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class best-effort scheduler
juniper-port-profile-best-effort-scheduler
set groups <config_group_name> class-of-service interfaces <interface_name>
scheduler-map juniper-port-profile-map
set groups <config_group_name> class-of-service interfaces <interface_name> unit 0
classifiers ieee-802.1 juniper_ieee_classifier
set groups <config_group_name> class-of-service interfaces <interface_name> unit 0
classifiers dscp juniper-dscp-classifier
```

Apply Config Group:

```
set apply-groups <config_group_name>
```

Related Topics

- [Creating a Customized Desktop and Phone Port Profile on page 28](#)
- [Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port on page 50](#)

Switched Uplink Port Profile CLI

Interface Config:

```
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching port-mode trunk
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching native-vlan-id <native_vlan_name>
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching vlan members <all_the_vlans>
```

Access Secure Config+ Loop Guard+ 802.3ah:

```
set groups <config_group_name> ethernet-switching-options secure-access-port interface
<interface_name> dhcp-trusted
set groups <config_group_name> ethernet-switching-options secure-access-port vlan
<native_vlan_name> examine-dhcp
set groups <config_group_name> ethernet-switching-options secure-access-port vlan
<native_vlan_name> arp-inspection
set groups <config_group_name> protocols rstp interface <logical_interface_name>
bpdu-timeout-action block
set groups <config_group_name> protocols oam ethernet link-fault-management interface
<logical_interface_name> link-discovery <active/passive>
```

CoS Config:

```
set groups <config_group_name> class-of-service forwarding-classes class voice
queue-num 7
set groups <config_group_name> class-of-service forwarding-classes class
expedited-forwarding queue-num 5
set groups <config_group_name> class-of-service forwarding-classes class
assured-forwarding queue-num 1
set groups <config_group_name> class-of-service forwarding-classes class best-effort
queue-num 0
set groups <config_group_name> class-of-service classifiers ieee-802.1
juniper_ieee_classifier import default forwarding-class voice loss-priority low code-points
101
set groups <config_group_name> class-of-service classifiers dscp juniper_dscp_classifier
import default forwarding-class voice loss-priority low code-points 101110
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-strict-priority-scheduler buffer-size percent 5
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-strict-priority-scheduler priority strict-high
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler transmit-rate percent 30
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler buffer-size percent 30
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler priority low
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler transmit-rate percent 25
```

```
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler buffer-size percent 25
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler priority low
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler transmit-rate percent 35
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler buffer-size percent 40
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler priority low
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class voice scheduler
juniper-port-profile-strict-priority-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class expedited-forwarding scheduler
juniper-port-profile-expedited-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class assured-forwarding scheduler
juniper-port-profile-assured-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class best-effort scheduler
juniper-port-profile-best-effort-scheduler
set groups <config_group_name> class-of-service interfaces <interface_name>
scheduler-map juniper-port-profile-map
set groups <config_group_name> class-of-service interfaces <interface_name> unit 0
classifiers ieee-802.1 juniper_ieee_classifier
set groups <config_group_name> class-of-service interfaces <interface_name> unit 0
classifiers dscp juniper-dscp-classifier
```

Apply Config Group:

```
set apply-groups <config_group_name>
```

- Related Topics**
- [Creating a Customized Switched Uplink Port Profile on page 29](#)
 - [Specifying Parameters for Applying a Switched Uplink Port Profile to a Port on page 52](#)

Switched Downlink Port Profile CLI

Interface Config:

```
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching port-mode trunk
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching native-vlan-id <native_vlan_name>
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching vlan members <all_the_vlans>
```

Access Secure Config+ Loop Guard+ + Root Guard+ 802.3ah:

```
set groups <config_group_name> ethernet-switching-options secure-access-port interface
<interface_name> dhcp-trusted
```

```

set groups <config_group_name> ethernet-switching-options secure-access-port vlan
<native_vlan_name> examine-dhcp
set groups <config_group_name> ethernet-switching-options secure-access-port vlan
<native_vlan_name> arp-inspection
set groups <config_group_name> protocols rstp interface <logical_interface_name>
bpdu-timeout-action block
set groups <config_group_name> protocols rstp interface <logical_interface_name>
no-root-port
set groups <config_group_name> protocols oam ethernet link-fault-management interface
<logical_interface_name> link-discovery <active/passive>

```

CoS Config:

```

set groups <config_group_name> class-of-service forwarding-classes class voice
queue-num 7
set groups <config_group_name> class-of-service forwarding-classes class
expedited-forwarding queue-num 5
set groups <config_group_name> class-of-service forwarding-classes class
assured-forwarding queue-num 1
set groups <config_group_name> class-of-service forwarding-classes class best-effort
queue-num 0
set groups <config_group_name> class-of-service classifiers ieee-802.1
juniper_ieee_classifier import default forwarding-class voice loss-priority low code-points
101
set groups <config_group_name> class-of-service classifiers dscp juniper_dscp_classifier
import default forwarding-class voice loss-priority low code-points 101110
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-strict-priority-scheduler buffer-size percent 5
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-strict-priority-scheduler priority strict-high
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler transmit-rate percent 30
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler buffer-size percent 30
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler priority low
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler transmit-rate percent 25
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler buffer-size percent 25
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler priority low
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler transmit-rate percent 35
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler buffer-size percent 40
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler priority low

```

```
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class voice scheduler
juniper-port-profile-strict-priority-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class expedited-forwarding scheduler
juniper-port-profile-expedited-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class assured-forwarding scheduler
juniper-port-profile-assured-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class best-effort scheduler
juniper-port-profile-best-effort-scheduler
set groups <config_group_name> class-of-service interfaces <interface_name>
scheduler-map juniper-port-profile-map
set groups <config_group_name> class-of-service interfaces <interface_name> unit 0
classifiers ieee-802.1 juniper_ieee_classifier
set groups <config_group_name> class-of-service interfaces <interface_name> unit 0
classifiers dscp juniper-dscp-classifier
```

Apply Config Group:

```
set apply-groups <config_group_name>
```

- Related Topics**
- Creating a Customized Switched Downlink Port Profile on page 30
 - Specifying Parameters for Applying a Switched Downlink Port Profile to a Port on page 54

Server Port Profile CLI

Interface Config:

```
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching port-mode trunk
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching native-vlan-id <native_vlan_name>
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching vlan members <all_the_vlans>
```

Access Secure Config:

```
set groups <config_group_name> ethernet-switching-options storm-control interface
<logical_interface_name> bandwidth <100000>
```

RSTP Config:

```
set groups <config_group_name> protocols rstp interface <logical_interface_name> edge
set groups <config_group_name> protocols rstp bpdu-block-on-edge
set groups <config_group_name> protocols rstp interface <logical_interface_name>
no-root-port
```

CoS Config [Trusted or Untrusted]:

```
set groups <config_group_name> class-of-service forwarding-classes class voice
queue-num 7
```

```
set groups <config_group_name> class-of-service forwarding-classes class
expedited-forwarding queue-num 5
set groups <config_group_name> class-of-service forwarding-classes class
assured-forwarding queue-num 1
set groups <config_group_name> class-of-service forwarding-classes class best-effort
queue-num 0
set groups <config_group_name> class-of-service classifiers ieee-802.1
juniper_ieee_classifier import default forwarding-class voice loss-priority low code-points
101
set groups <config_group_name> class-of-service classifiers dscp juniper_dscp_classifier
import default forwarding-class voice loss-priority low code-points 101110
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-strict-priority-scheduler buffer-size percent 5
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-strict-priority-scheduler priority strict-high
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler transmit-rate percent 30
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler buffer-size percent 30
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-expedited-scheduler priority low
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler transmit-rate percent 25
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler buffer-size percent 25
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-assured-scheduler priority low
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler transmit-rate percent 35
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler buffer-size percent 40
set groups <config_group_name> class-of-service schedulers
juniper-port-profile-best-effort-scheduler priority low
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class voice scheduler
juniper-port-profile-strict-priority-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class expedited-forwarding scheduler
juniper-port-profile-expedited-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class assured-forwarding scheduler
juniper-port-profile-assured-scheduler
set groups <config_group_name> class-of-service scheduler-maps
juniper-port-profile-map forwarding-class best-effort scheduler
juniper-port-profile-best-effort-scheduler
set groups <config_group_name> class-of-service interfaces <interface_name>
scheduler-map juniper-port-profile-map
set groups <config_group_name> class-of-service interfaces <interface_name> unit 0
classifiers ieee-802.1 juniper_ieee_classifier
```

```
set groups <config_group_name> class-of-service interfaces <interface_name> unit 0
classifiers dscp juniper-dscp-classifier
```

Apply Config Group:

```
set apply-groups <config_group_name>
```

- Related Topics**
- Creating a Customized Server Port Profile on page 31
 - Specifying Parameters for Applying a Server Port Profile to a Port on page 56

Wireless Access Point Port Profile CLI

Interface Config:

```
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching port-mode access
```

```
set groups <config_group_name> interfaces <interface_name> unit 0 family
ethernet-switching vlan members <vlan_name>
```

RSTP Config:

```
set groups <config_group_name> protocols rstp interface <logical_interface_name> edge
```

```
set groups < config_group_name > protocols rstp bpdu-block-on-edge
```

```
set groups < config_group_name > protocols rstp interface < logical_interface_name>
no-root-port
```

Apply Config Group:

```
set apply-groups <config_group_name>
```

- Related Topics**
- Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port on page 58

PART 4

Using the Ethernet Design Getting Started Assistant

- Ethernet Design Getting Started Assistant Overview on page 73
- Getting Started: Provision Port Profile on page 75
- Getting Started: Create Port Profile on page 81

CHAPTER 10

Ethernet Design Getting Started Assistant Overview

- Ethernet Design Getting Started Assistant Overview on page 73

Ethernet Design Getting Started Assistant Overview

The **Getting Started** assistant is a section in the sidebar that provides instructions on how you can perform common tasks. Topics in the **Getting Started** section are workspace specific that is, the content displayed on the **Getting Started** section varies according to the workspace to which you have navigated.

To get to the Ethernet Design **Getting Started** section, click **Ethernet Design** from the **Application Chooser** and click **EZ Campus Design** from the resulting task ribbon that appears. If **Show Getting Started on Startup** checkbox is selected, the **Getting Started** section automatically displays the most frequently performed tasks relevant to that workspace when you log in. If this checkbox was not selected, click the **Help** icon and expand the **Getting Started** topic link from the resulting sidebar that appears.

For the **Ethernet Design EZ Campus Design** workspace, the **Getting Started** section displays instructions on how to provision a port profile. Click on the **Provision Port Profile** link to view the required and optional tasks you must perform in order to provision a port profile.

The required step is:

- Provision Port Profile. For more information, see “Provision Port Profile” on page 75.

The optional step is:

- Create Port Profile. For more information, see “Create Port Profile” on page 81.

- Related Topics**
- Provision Port Profile on page 75
 - Create Port Profile on page 81

Getting Started: Provision Port Profile

- Provision Port Profile on page 75

Provision Port Profile

When you select a port profile and apply it to a port on a device, Junos Space modifies the configuration of that port according to the port profile that you have applied to it. Once the profile has been applied or provisioned to the port, that port is able to perform according to the role that was defined in the applied profile.

To apply a port profile to a device port:

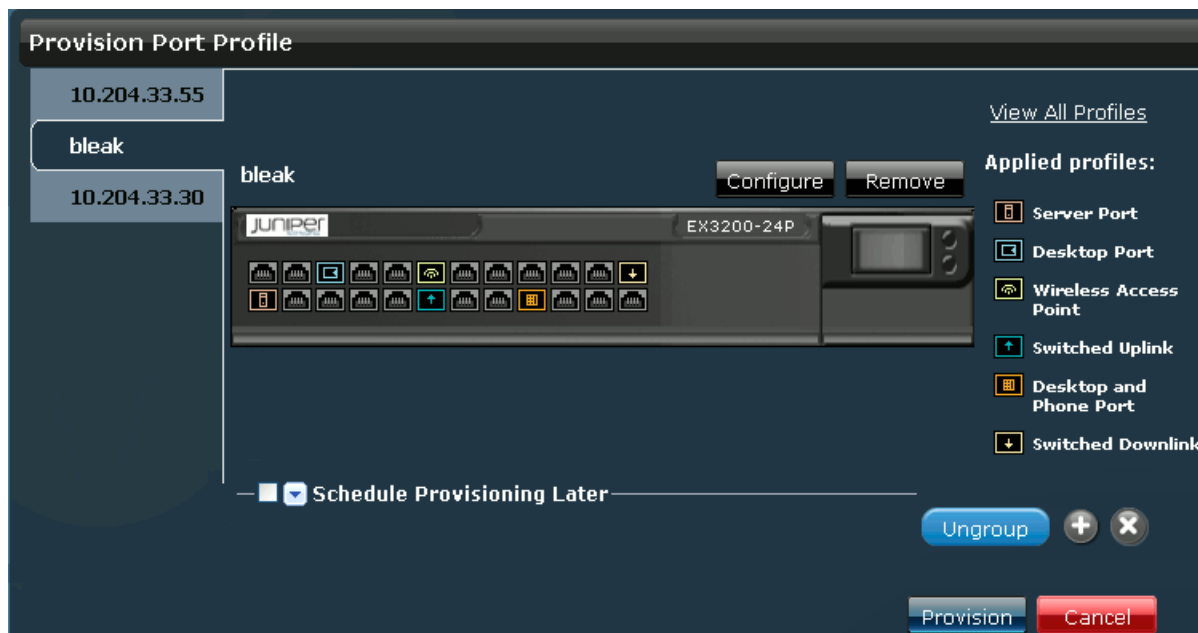
1. From the task ribbon, select **EZ Campus Design** > **Provision Port Profile**. The **Provision Port Profile** page (Figure 35 on page 75) appears displaying all the available devices arranged according to device name, OS version, platform, device IP address, connection status, and managed status.

Figure 35: Select Devices- Tabular View

Name	OS Version	Platform	IP Address	Connection Status	Managed Status
10.204.33.30	10.0R1.2	EX4200-24T	10.204.33.30	up	In Sync
10.205.2.1	10.0R2.10	EX2200-48T-4G	10.205.2.1	up	Out Of Sync
10.205.2.10	10.0R2.10	EX2200-48T-4G	10.205.2.10	up	Out Of Sync
10.205.2.100	10.0R2.10	EX3200-24T	10.205.2.100	up	In Sync
10.205.2.102	10.0R2.10	EX3200-24T	10.205.2.102	up	In Sync
10.205.2.103	10.0R2.10	EX3200-24T	10.205.2.103	up	In Sync

2. Select the device(s) to which you want to apply a port profile, and click **Provision Port Profile**. To select all the devices in the page, click **Page**. To clear all your selections, click **None**. The **Provision Port Profile** dialog box appears as shown in Figure 36 on page 76.

Figure 36: Provision Port Profile- Ungrouped



3. In addition to selecting multiple devices from the device list on the **Provision Port Profile** main page, you can also add devices to the **Selected Devices** list by clicking **+**. The **Add Devices to the Selected List** dialog box appears. Select the device(s) from the **Add Devices to the Selected List**. These device(s) appears in the **Selected Devices** panel. The maximum number of devices that you can select for provisioning is 50.

If you want to delete a device from the **Selected Devices** panel, select the device that you want to delete, and click **x** to remove the device from the list.

You can also choose to group the devices by their model number (Figure 37 on page 77). To group devices according to their model number, select the **Group** checkbox. The **Group** option helps you apply port profiles to any number of devices belongs to the same platform (Ex: EX3200), by configuring a single chassis model.

Figure 37: Provision Port Profile- Grouped by Model



NOTE: The facility to add more devices to the **Selected Devices** list in the current workflow is disabled when you select the **Group** option.

Any configuration that you make at the group level overrides the existing device level configurations.

4. Select the device whose ports you want to configure from the device list on the left pane. A graphical representation of the device and its ports appears on the right side of the window.

5. Select the port to which you want to provision the port profile and click **Configure**. The **Port Configuration Parameters** dialog box opens.

If you want to simultaneously provision a port profile to a group of ports on the device, click and drag the cursor over the selected ports and click **Configure**. The **Port Configuration Parameters** dialog box opens.

6. From the **Profile** drop down list, select the port profile that you want to apply to the selected port. The parameters vary depending on the profile that you have selected. The available options are:

- Desktop port. For more information, see “Specifying Parameters for Applying a Desktop Port Profile to a Port” on page 48
- Desktop and Phone port. For more information, see “Specifying Parameters for Applying a Desktop and Phone Port Profile to a Port” on page 50
- Switched Uplink port. For more information, see “Specifying Parameters for Applying a Switched Uplink Port Profile to a Port” on page 52

- Switched Downlink port. For more information, see “Specifying Parameters for Applying a Switched Downlink Port Profile to a Port” on page 54
 - Server port. For more information, see “Specifying Parameters for Applying a Server Port Profile to a Port” on page 56
 - Wireless Access Point port. For more information, see “Specifying Parameters for Applying a Wireless Access Point Port Profile to a Port” on page 58
7. After you have selected the parameters, click **OK**. The provisioned port is now be displayed in a different color.

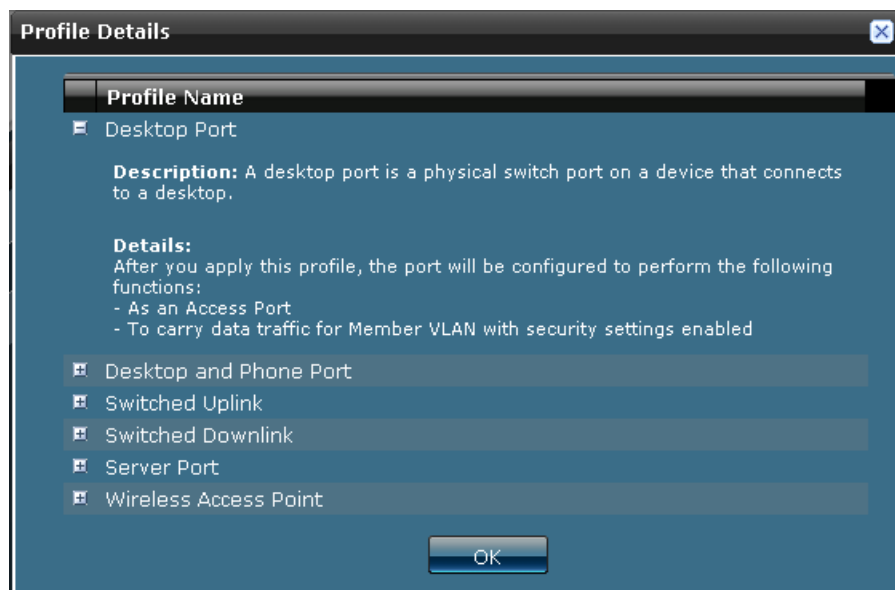


NOTE: When you click **Configure**, all existing configurations on the selected port are permanently removed. The selected port only has the newly applied configuration.

The **Applied Profiles** list displays all the profiles that have been applied to the ports of the device. Double click a profile on the **Applied Profile** list to view the summary of the selected port profile.

Click **View All Profiles** to open the **Profile Details** dialog box (Figure 38 on page 78) which lists out all the available port profiles. Click a port profile to view a description of the port profile along with details about the functions that can be performed by a port that is configured with this profile.

Figure 38: Profile Details Dialog Box



To remove a port profile from a port, select the port on the chassis view and click **Remove**.

8. If you want schedule the profile provision to a later date and time, select the **Schedule Provisioning Later** checkbox and select the date from the pop out calendar and the time from the drop down list.
9. Click **Provision** to apply the selected profile to the selected ports. If you have selected the **Schedule Provisioning Later** checkbox, the profile is provisioned to the ports at the time you specified.

Click **Cancel** to go back to the EZ Campus Design workspace.



NOTE: If there is a conflict between the applied profile and the parameters of the port to which you are applying the profile, a dialog box containing a conflict message is displayed when you click **Provision**. This dialog box displays a list of all the devices and the conflicts. You can choose to override the existing configuration and apply the profile to the port, or cancel the provisioning job and keep the existing configuration.

Related Topics • [Create Port Profile on page 81](#)

Getting Started: Create Port Profile

- Create Port Profile on page 81

Create Port Profile

While you cannot modify predefined port profiles, Junos Space does allow you to create new port profiles that are similar to the predefined profiles but with a few parameters that you can customize. These profiles retain the values of the original port profile until you change it. To create a customized port profile, you need to configure one or more of the following settings:

General Settings

To customize a port profile, select **EZ Campus Design** from the task ribbon and click **Port Profile > Create Port Profile**. This opens the **Create Port Profile** wizard. Configuring general settings for a customized port profile (Figure 39 on page 81) includes specifying a name and description for the profile, and selecting the port profile that you want to customize. Junos Space automatically generates a profile name for the new customized profile. For example, DesktopPort_1.

Figure 39: Create Port Profile: General Settings

CoS Settings

The scheduler map configuration block specifies the buffer size, bandwidth, and priority for a queue. By defining schedulers, you can configure the properties of output queues that determine the transmission service level for each queue. These properties include the amount of interface bandwidth that is assigned to the queue, the size of the memory buffer allocated for storing packets, and the priority of the queue. After defining schedulers, you associate them with forwarding classes by means of scheduler maps. By default, the schedulers values are already set.

Forwarding classes allow you to group packets for transmission. You then associate each scheduler map with an interface, and configure the hardware queues and packet schedulers that operate according to this mapping.

Figure 40 on page 82 shows the CoS settings that you can set while customizing a port profile.

Figure 40: Create Port Profile: CoS Settings

	High Priority	Bandwidth reserved(%)	Buffer size(%)
Voice	<input checked="" type="checkbox"/>	10 (0)	5 (5)
Expedited forwarding	<input type="checkbox"/>	30 (30)	30 (30)
Assured forwarding	<input type="checkbox"/>	25 (25)	25 (25)
Best effort forwarding	<input type="checkbox"/>	35 (35)	40 (40)
		Total (90)	Total (100)

Note: The cumulative bandwidth or buffer allocation must be 100% or less. Reduce the allocation of one of the bandwidth or buffer categories in order to increase the allocation of another.

voice
expedited-forwarding
assured-forwarding
best-effort

Bandwidth allocation
Buffer size allocation

Back Next Create Cancel

The schedulers and their settings are:

- Voice- The transmission rate is set to 10 percent and buffer size to 5 percent.
- Expedited-forwarding - The transmission rate is set to 30 percent, the buffer size to 30 percent, and priority is set to low.
- Assured-forwarding - The transmission rate is set to 25 percent, the buffer size to 25 percent, and priority is set to low.
- Best-effort - The transmission-rate is set to 35 percent, the buffer size to 40 percent, and priority is set to low.

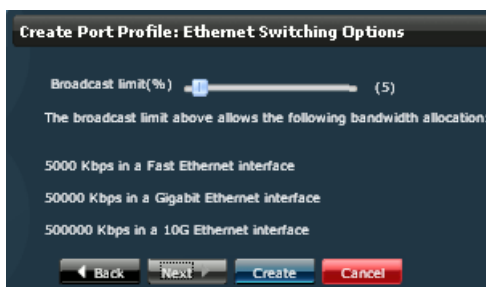
These are the settings for the Juniper Networks predefined port profiles. While customizing, you can change the transmission rate and buffer size to optimize your communication with the network. You must ensure that the cumulative bandwidth and buffer percentages is always be 100 percent or less. For example, if the total bandwidth percentage already

adds up to 100, you must reduce the bandwidth of one of the categories to increase the bandwidth of another.

Ethernet Switching Options

You can use the Ethernet Switching Options page (Figure 41 on page 83) to set the broadcast limit for network traffic. The broadcast limit is the theoretical maximum of network bandwidth in percent that can be used for broadcast and multicast traffic. Any broadcast or multicast traffic exceeding that limit is dropped. A zero value (0) indicates that the feature is disabled.

Figure 41: Create Port Profile: Ethernet Switching Options



To create a customized port profile:

1. From the task ribbon, select **EZ Campus Design > Port Profile > Create Port Profile**. This opens the **Create Port Profile** wizard.
2. Enter a name for the profile in the **Profile Name** field.
3. Select the port profile that you want to customize from the **Profile type** drop down list. The **Profile Details** field appears showing information about the customized profile, such as the roles or actions that the port can perform after the port profile has been applied to it.
4. Enter a description for the customized profile in the **Profile Description** field.
5. The settings that are available for customization vary based on the port profile. The description of the six port profiles and the settings that are available for customization is provided in Table 7 on page 84.

Table 7: Port Profile Descriptions and Customization Options

Port Profile	Description and Customization Options
Desktop Port	<p>A desktop port enables you to connect a desktop to a switch port. By applying this profile to the port, you are configuring the VLAN, port security, and RSTP settings of the port.</p> <p>For more information about the CLI commands used in a desktop port profile, see “Desktop Port Profile CLI” on page 62.</p> <p>The customizing options that are available for this profile are:</p> <ul style="list-style-type: none"> • General Settings. • Ethernet Switching Options. <p>For more information on customizing a desktop port profile, see “Creating a Customized Desktop Port Profile” on page 27.</p>
Desktop and phone port	<p>A desktop and phone port enables you to connect a desktop and phone port to a switch port. By applying this profile to the port, you are configuring the port security, RSTP, and CoS settings of the port.</p> <p>For more information about the CLI commands used in a desktop and phone port profile, see “Desktop and Phone Port Profile CLI” on page 63.</p> <p>The customizing options that are available for this profile are:</p> <ul style="list-style-type: none"> • General Settings. • CoS Settings. • Ethernet Switching Options. <p>For more information on customizing a desktop and phone port profile, see “Creating a Customized Desktop and Phone Port Profile” on page 28.</p>
Switched Uplink Port	<p>A switched uplink port enables you to connect a switch port on the access layer to a switch port on the distribution layer. By applying this profile to the port, you are configuring the VLAN, port security, and CoS settings of the port.</p> <p>For more information about the CLI commands used in a switched uplink port profile, see “Switched Uplink Port Profile CLI” on page 65.</p> <p>The customizing options that are available for this profile are:</p> <ul style="list-style-type: none"> • General Settings. • CoS Settings. <p>For more information on customizing a switched uplink port profile, see “Creating a Customized Switched Uplink Port Profile” on page 29.</p>

Table 7: Port Profile Descriptions and Customization Options (*continued*)

Port Profile	Description and Customization Options
Switched Downlink Port	<p>A switched downlink port enables you to connect a switch port on the distribution layer to a switch layer on the access layer. By applying this profile to the port, you are configuring the VLAN, port security, and CoS settings of the port.</p> <p>For more information about the CLI commands used in a switched downlink port profile, see “Switched Downlink Port Profile CLI” on page 66.</p> <p>The customizing options that are available for this profile are:</p> <ul style="list-style-type: none"> • General Settings. • CoS Settings. <p>For more information on customizing a switched downlink port profile, see “Creating a Customized Switched Downlink Port Profile” on page 30.</p>
Server Port	<p>A server port is a trunk port that enables users from multiple VLANs to connect to a machine with virtual servers. By applying this profile to the port, you are configuring the VLAN, RSTP, and CoS settings of the port.</p> <p>For more information about the CLI commands used in a server port profile, see “Server Port Profile CLI” on page 68.</p> <p>The customizing options that are available for this profile are:</p> <ul style="list-style-type: none"> • General Settings. • CoS Settings. • Ethernet Switching Options. <p>For more information on customizing a server port profile, see “Creating a Customized Server Port Profile” on page 31.</p>
Wireless Access Point Port	<p>A wireless access point port enables you to connect a wireless access point, which is a device that enables wireless communication devices to connect to a wireless network using Wi-Fi, Bluetooth or related standards, to a switch port. By applying this profile to the port, you are configuring the VLAN, RSTP, and CoS settings of the port.</p> <p>For more information about the CLI commands used in a wireless access point port profile, see “Wireless Access Point Port Profile CLI” on page 70.</p> <p>NOTE: Junos Space does not allow you to customize a wireless access point port profile.</p>

- Click **Back** to go to the previous step of the Customize Port Profile wizard. Alternatively, you can click **Create** to save your changes and create a new customized profile. The customized port profile appears on the **Port Profile** page. You can also click **Cancel** to go back to the **Port Profile** page without creating a new port profile.

Related Topics • Provision Port Profile on page 75

PART 5

Index

- Index on page 89

Index

C

Campus Analyzer	
locate end hosts.....	11
overview.....	9
view spare network ports.....	13
conventions	
notice icons.....	xiii
customer support.....	xiv
contacting JTAC.....	xiv
Customizing port profiles.....	24
customizing desktop and phone port profile.....	28
customizing desktop port profile.....	27
customizing server port profile.....	31
customizing switched downlink port profile.....	30
customizing switched uplink port profile.....	29

D

documentation	
comments on.....	xiv

E

Ethernet Design	
dashboard overview.....	5
getting started.....	73
overview.....	3
EZ Campus Design	
overview.....	17

M

Managing port profiles	
deleting customized port profile.....	34
modifying customized port profiles.....	33
viewing port associations.....	32
manuals	
comments on.....	xiv

N

notice icons.....	xiii
-------------------	------

P

Port Profile	
overview.....	19
Port profile CLI.....	61
desktop and phone port profile CLI.....	63
desktop port profile CLI.....	62
server port profile CLI.....	68
switched downlink port profile CLI.....	66
switched uplink port profile CLI.....	65
wireless access point port profile CLI.....	70
Provisioning port profiles	
applying port profiles to a port.....	39
applying a desktop and phone port profile.....	50
applying a desktop port profile.....	48
applying a server port profile.....	56
applying a switched downlink port profile.....	54
applying a switched uplink port profile.....	52
applying a wireless access point port profile.....	58
applying port profiles to an AE port.....	44
applying port profiles to EX8200 switches.....	46
overview.....	35

S

support, technical See technical support

T

technical support	
contacting JTAC.....	xiv

