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IXP Manager Workshop Installation, Configuration

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IXP Manager Workshop

IXP Manager Walk-Through Tutorial

- Live walk-through of IXP Manager installation
  - Ubuntu server 18.04 running on ESXi
  - Username: ixpmanager
  - Password: ixpmanager99
  - IP addresses: 185.6.38.10 - 185.6.38.25
- Goals:
  - Set up basic IXP parameters
  - Set up Customer + Ports
  - Set up Simple Route Server configuration
  - Implement basic graphing using MRTG

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IXP Manager Software Install

- cd /srv
- sudo bash
- git clone https://github.com/inex/ixp-manager /srv/ixpmanager
- cd ixpmanager
- ./tools/installers/ubuntu-lts-1804-ixp-manager-v5.sh
- Fill in values as appropriate
- Make a note of the username and password at the end. You'll need this.

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IXP Manager Software Install

- cd /srv/ixpmanager
- cat .ixp-manager-installer-settingsrc

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Basic Infrastructure

- Step 1: Create a new data centre using the Facilities menu
  - Name: Dataspace Services Ltd
  - Short Name: Dataspace
  - Tag: dataspace
  - Peering DB Facility: select your favourite facility from the dropdown list
- Step 2: Create a Rack
  - Name: My IXP Cabinet
  - Facility: Dataspace
  - Colocation Ref: X1Y1
  - U's Count From: Bottom

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Add a Patch Panel

- Step 1: Click on Patch Panels
  - Patch Panel Name: PP-0001
  - Colocation Reference: PP-0001
  - Rack: “IXP Cabinet”
  - Cable Type: UTP
  - Connector Type: RJ45
  - Number of ports: 12
  - Click Add

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Adding a Switch

- Step 1: Add a new Switch
  - Click the + sign at the top right-hand side to add by SNMP
  - Hostname: 185.6.38.4
  - SNMP Community: ixpmanager
  - Click: Next >>

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Adding a Switch

- Step 2:
  - Scroll to bottom and click: Add by SNMP
  - Name: myswitch
  - Hostname: 185.6.38.4
  - Type: Switch
  - Rack: My IXP Cabinet
  - Infrastructure: Infrastructure #1
  - Click: Next

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Setting Port Types

- Select drop-down arrow on right-hand side
  - Select View / Edit Ports

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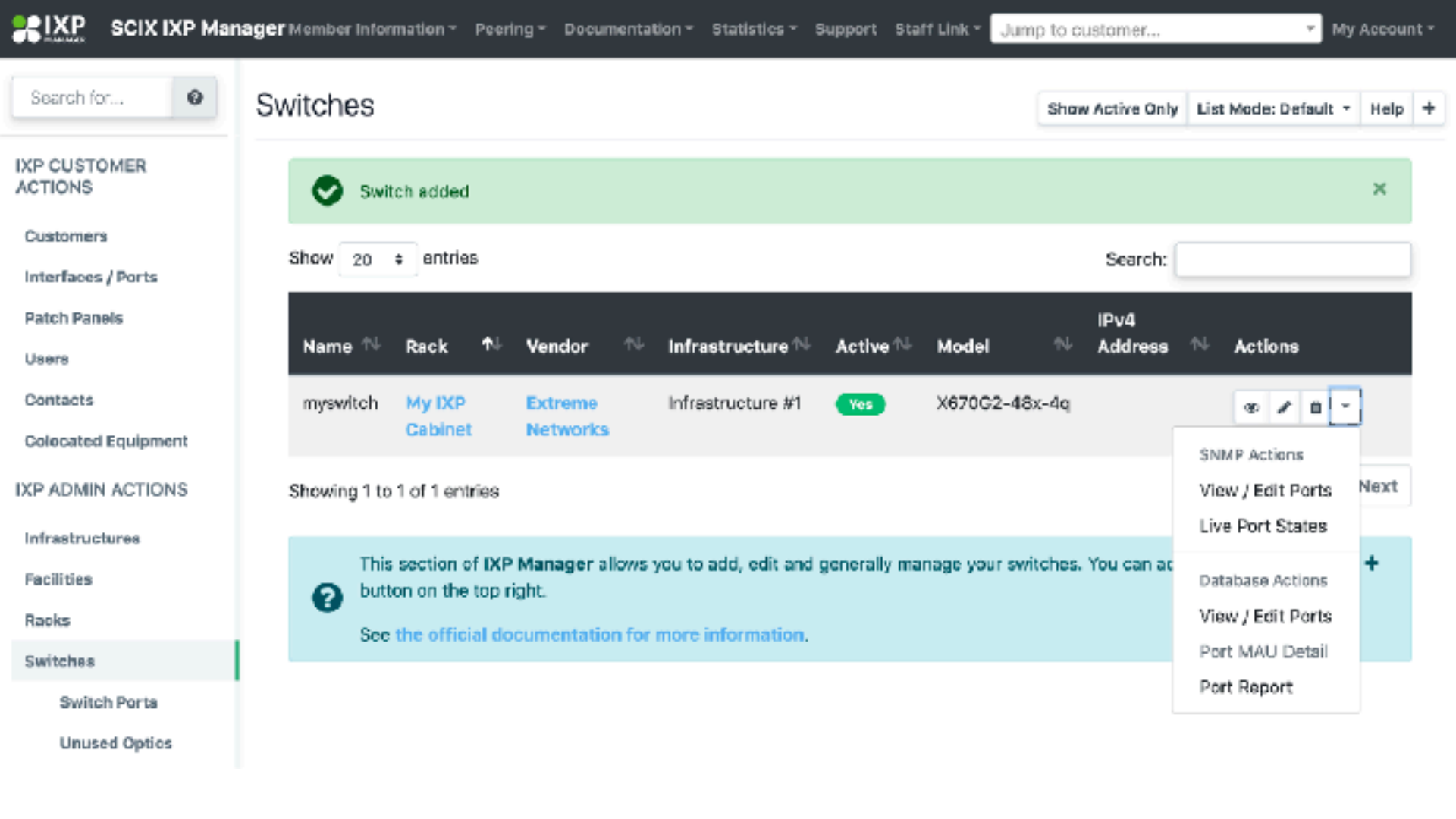
SCIX IXP Manager
Member Information
Peering
Documentation
Statistics
Support
Staff Link
Jump to customer...
My Account
Search for...
IXP CUSTOMER ACTIONS
Customers
Interfaces / Ports
Patch Panels
Users
Contacts
Colocated Equipment
IXP ADMIN ACTIONS
Infrastructures
Facilities
Racks
Switches
Switch Ports
Unused Optics
Switches
Show Active Only
List Mode: Default
Help
Switch added
Show 20 entries
Search:
Name
Rack
Vendor
Infrastructure
Active
Model
IPv4 Address
Actions
myswitch
My IXP Cabinet
Extreme Networks
Infrastructure #1
Yes
X670G2-48x-4q
SNMP Actions
View / Edit Ports
Live Port States
Database Actions
View / Edit Ports
Port MAU Detail
Port Report
Showing 1 to 1 of 1 entries
Next
This section of IXP Manager allows you to add, edit and generally manage your switches. You can ad
button on the top right.
See the official documentation for more information.

IXP Manager Workshop Walkthrough

Setting Port Types

- Step 1: Configure Peering Ports
  - Change Type for ports 1:1 to 1:8 to Peering
  - Click tickboxes on the left-hand side
  - With Selected, select type “Peering”
- Step 2: Configure Core Ports
  - Change Type for ports 1:31 1:32 to Core
- Step 2: Configure Management Port
  - Change Type for “Management” to be “Management” from pull-down list

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Create a Peering VLAN

- Step 1: Click on VLANs
  - Name: Peering VLAN 01
  - 802.1q Tag: 200
  - Infrastructure #1
  - Config Name: peering_vlan_01
- Click Add

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Adding IP Addresses - IPv4

- Step 1: Click IP Addresses
  - Select “Peering VLAN 01”
  - Click “Switch to IPv4”
  - Click “Add some…” to add new IPv4 addresses
- Step 2: Add addresses
  - Set Network to “192.168.0.0/27”
  - Click “Add Addresses”

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Adding IP Addresses - IPv6

- Step 1: Click IP Addresses
  - Select “Peering VLAN 01”
  - Click “Switch to IPv6”
  - Click “Add some…” to add new IPv6 addresses
- Step 2: Add addresses
  - Set Network to “2001:db8::/123”
  - Click “Enter decimal values only”
  - Click Add Addresses

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Add Your First Customer

- Step 1: Click IXP Customer Actions | Customers
  - Click + at top Right-Hand Side to add a new Customer
- Step 2: fill in Customer Details
  - Name: Internet Widgets
  - Type: Full
  - Short Name: internetwidgets
  - Date Joined: click today's date
  - Status: Normal
  - MD5 Support: Yes

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IXP Manager Workshop Walkthrough

Add Your First Customer

- Step 3: fill in Peering Details
  - AS Number: 2128
  - Max Prefixes: 20
  - IPv4 Peering Macro: AS-INEXIE
  - Email: peering@example.com
  - IPv6 Peering Macro: AS-INEXIE
  - Peering Policy: Open
  - IRRDB Source: RIPE
  - NOC Email: noc@example.com
  - Click “Add”, then click “Save Changes”

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Workflow: Adding a Customer Port

- Step 1: Click on Cog, select “Provision New Port…”
  - VLAN: Peering VLAN 01
  - Switch: select “myswitch”
  - Switch Port: select “X670G2-48x-4q Port 1 (Peering)”
  - Status: “Awaiting X-connect”
  - Speed: 10G
  - Tick “Route Server Client”
  - Tick “Apply IRRDB Filtering”
  - Tick “AS112 Client”

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Workflow: Configuring IP Addresses

- Step 1: Click “IPv6 Enabled”
  - IPv6 Address: 2001:db8::10
  - IPv6 hostname: internetwidgets6.example.com
  - IPv6 MD5: click on icon to generate random password
- Step 1: Click “IPv4 Enabled”
  - IPv4 Address: 192.168.0.10
  - IPv4 hostname: internetwidgets4.example.com
  - IPv4 MD5: click on icon to generate random password
- Click “Add”

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Workflow: Adding a Cross-Connect

- Step 1: Create a new cross-connect
  - Click on Patch Panels
  - Click “PP-0001” hotlink to get list of Patch Panel ports
  - On port 1, select “Allocate” from Action menu
  - Colocation Reference: 12345
  - Switch: select “myswitch”
  - Switch Port: select Port 1
  - IXP Manager should automatically assign this to Customer: Internet Widgets
  - Click “Save Changes”

Workflow: Completing the Customer Install

- Step 1: Change all links from “Waiting X-Connect” to “Connected”
  - Click on Customers
  - Click on Internet Widgets to get into the customer view
  - Click on Ports tab
  - Click the Pencil Icon to edit
  - Under the Physical Interfaces menu click the pencil icon to edit customer
  - Change Status: to “Connected”
- Step 2 Teaser:
  - Do the same for Internet Widgets’ cross-connect

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Advanced: Adding a Route Server

- Step 1: Click on Routers on Right Hand Side
  - Click + to add a new Router
  - Handle: rs1-lan1-ipv4
  - VLAN: Peering VLAN 01
  - Protocol: IPv4
  - Type: Route Server
  - Name: IXP Route Server #1
  - Short Name: RS1 - VLAN01 - IPv4
  - Router ID: 192.168.0.2
  - Peering IP: 192.168.0.2
  - ASN: 43760
  - Software: BIRD v2
  - Management Host: 192.168.0.1
  - Tick “BGP LC” to enable BGP Large Community support
  - Tick “RPKI” to enable RPKI support
  - Template: api/v4/router/server/bird2/standard

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Advanced: Testing the Route Server

- Step 1: Click on Routers on Right Hand Side
  - Click the Paper Icon on the Left to see the generated configuration
  - Note that the session is set up with empty prefix filters
- Step 2: Add prefix filters
  - # ./artisan irrdb:update-asn-db
  - # ./artisan irrdb:update-prefix-db
- Step 3: Check generated route server configuration:
  - http://185.6.38.XX/api/v4/router/gen-config/rs1-lan1-ipv4

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IXP Manager Workshop Walkthrough

Adding Graphs with MRTG

- Open up Documentation Page on docs.ixpmanager.org
- From the command line:
  - sudo bash
  - mkdir /srv/mrtg
  - mkdir /var/www/mrtg
  - Edit /srv/ixpmanager/.env and add

```
GRAPHER_BACKENDS="mrtg"
GRAPHER_CACHE_ENABLED=true
GRAPHER_BACKEND_MRTG_DBTYPE="log"
GRAPHER_BACKEND_MRTG_WORKDIR="/srv/mrtg"
GRAPHER_BACKEND_MRTG_LOGDIR="/srv/mrtg"
```

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Adding Graphs with MRTG

- Generate MRTG configuration file using
  - php artisan grapher:generate-configuration -B mrtg -O /etc/mrtg.cfg
  - cp /srv/ixpmanager/tools/runtime/mrtg/ubuntu-mrtg-initd /etc/init.d/mrtg
  - chmod +x /etc/init.d/mrtg
  - update-rc.d mrtg defaults
  - /etc/init.d/mrtg start

THANK YOU

Thanks!

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