

# From Theory to Practice: Engaging Future Network Engineers Through Simulation

by Yolandi Cloete, 2024

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START

MENU

# Crisis in Connectivity: The Growing Shortage of Network Engineers

## Initial Indicators (2014):

The issue of a shortage in skilled network engineering professionals was highlighted in a Cisco report from 2014, which projected a shortfall of at least 1.2 million skilled IP networking professionals globally.

(MacVittie, 2015)

## Retirement and Aging Workforce

Research indicates that a notable percentage of senior network engineers are nearing retirement age, with estimates suggesting that up to 25% of U.S. network engineers are expected to retire within the next five years.

(Business Reporter, 2024)

## Decline in New Talent

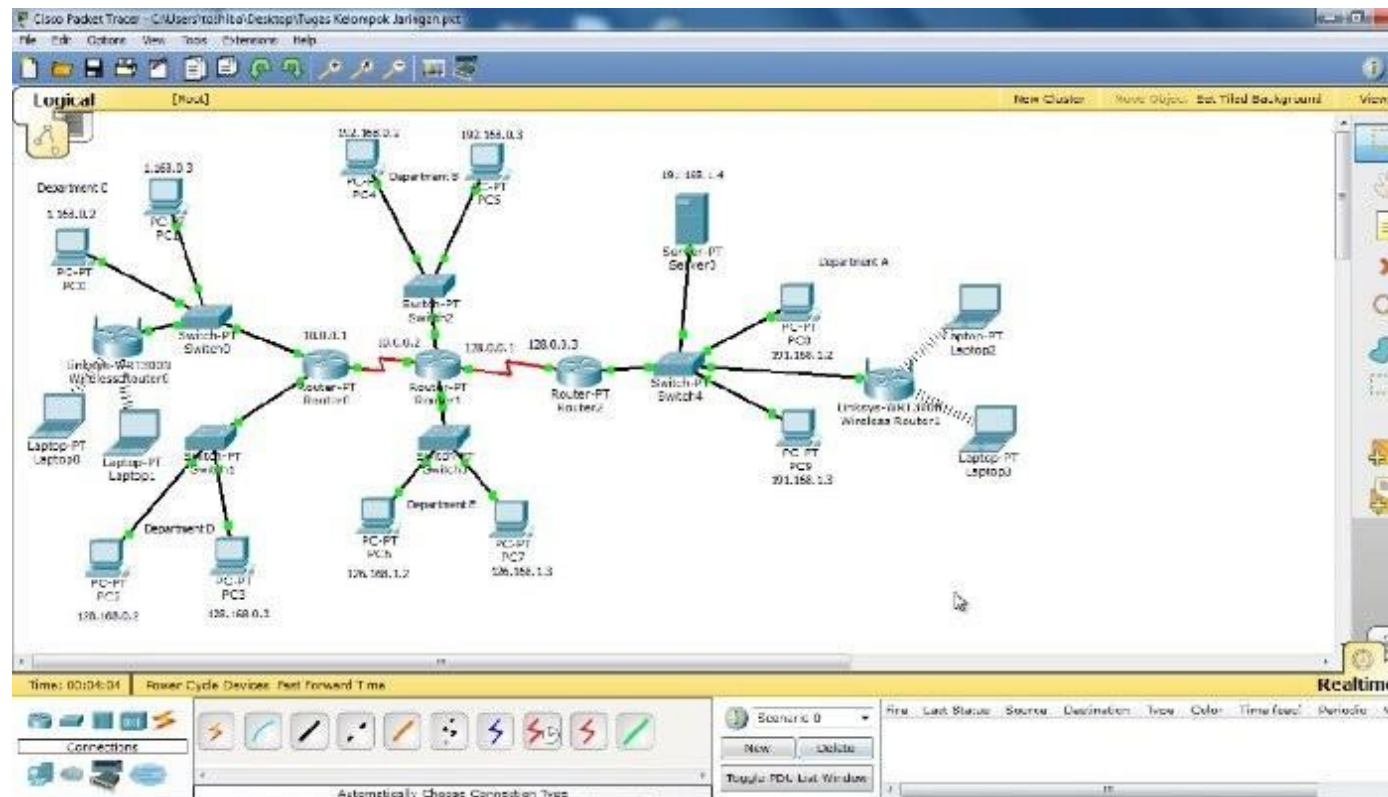
The perception of network engineering as a less attractive career option compared to emerging tech roles in cloud computing and cybersecurity has exacerbated the talent shortage.

(Ellis-Barker, 2024)

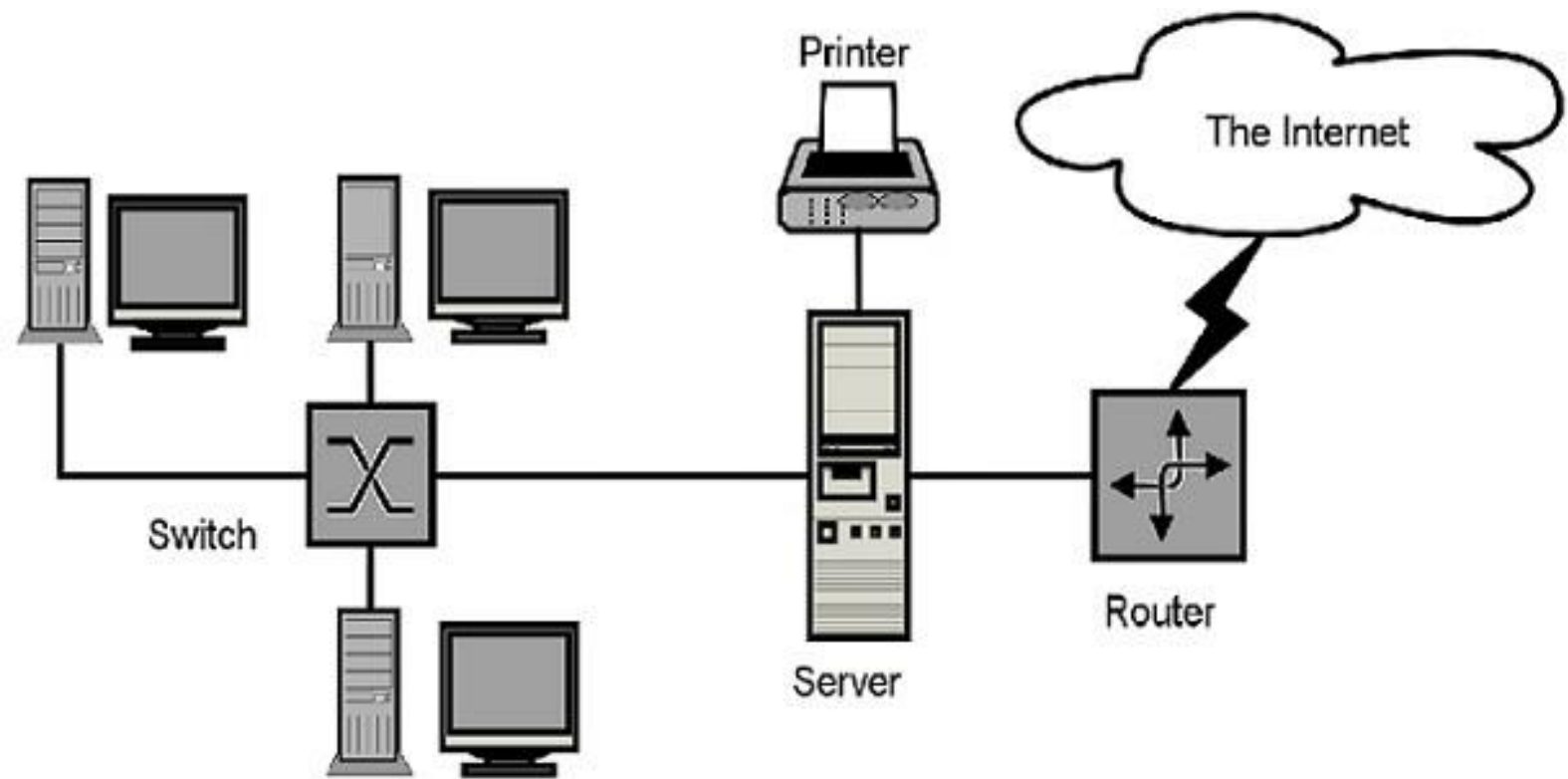


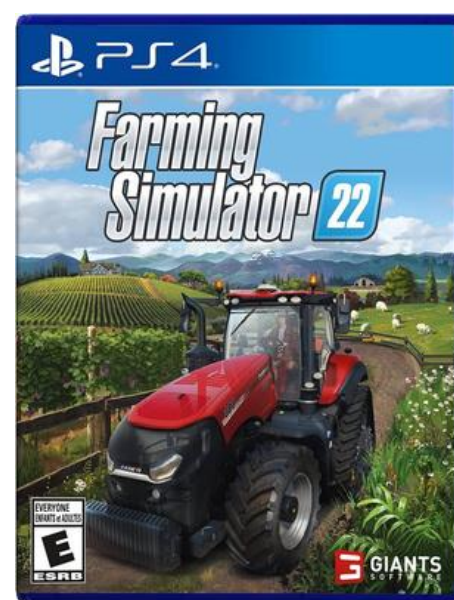
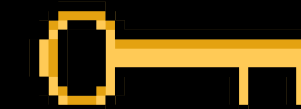
# When I say simulator...

This is not what I mean



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## What is the purpose of simulator games?

Designed for training, analysis, prediction, or entertainment by simulating real-life activities.

(Raman, 2023)

# Did you know that these existed??



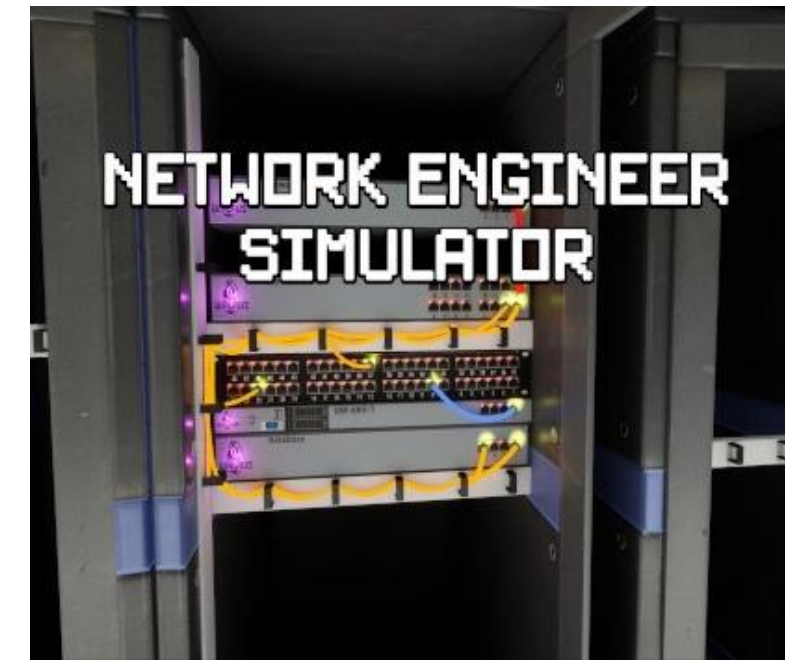
Cisco Aspire Networking  
Academy Edition

(Updatestar.com, 2024)



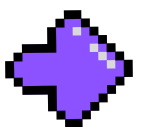
ISP - The Game

(Js13kgames.com, 2018)



Network Engineer  
Simulator

(Steampowered.com, 2021)





# Goals

Make Networking Interesting

Teach the basics of Networking

Simulate real-world scenarios

Modernize and Visualise





The client is experiencing an issue with their internet connection.  
How do you respond?

Have you tried rebooting?

I suspect your internet is just playing hard to get.

Is the router's 'I'm tired' light on?



# Cisco Asp

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Premium Content contains purchasable content such as instructional activities, lessons, and quiz packs that may help you solve issues that you may have with completing contracts. To purchase an item, click on the link of item that you want to purchase under the Item column. Upon purchase, the content will load immediately. Cisco Aspire CCNA Edition will keep an inventory of items that you have already purchased, so if you decide to view an item again that you have already purchased, you will not be charged for the item again. To view the a purchased item again, just click on the same link that was used to purchase the item.

<i>Item</i>	<i>Description</i>	
Network ID	Activity: Identify the routers with public class B addresses	50
Subnet ID	Activity: Identify the number of IP addresses in a subnet	50
NAT	Lesson: Understanding and Configuring Network Address Translation (NAT)	50
Default Routes	Lesson: Understanding and Configuring Default Routes	50
RIP	Lesson: Understanding and Configuring Routing Information Protocol (RIP)	50
Wireless	Lesson: Installing and Securing a Linksys Wireless Router	50
Quiz Pack 1	Test your knowledge with a set of 24 of quiz questions.	1080
Quiz Pack 2	Test your knowledge with a set of 22 of quiz questions.	990



Walrus Game Studio founded in 2019.

3-person company and has released their first project this year

Network Engineering Simulator came about as a joke.

## Future Plans for Network Engineering Simulator

### Creative Mode

This mode allows players to roam around and provides a more educational experience.

### Story Mode

This mode allows users to experience the career journey of a network engineer.

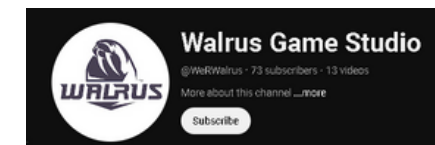
## How can we as the Tech Industry get involved?

The Walrus team welcomes comments, feedback, insights and conversations!

**Email: [matthew@walrusgamestudio.com](mailto:matthew@walrusgamestudio.com)**



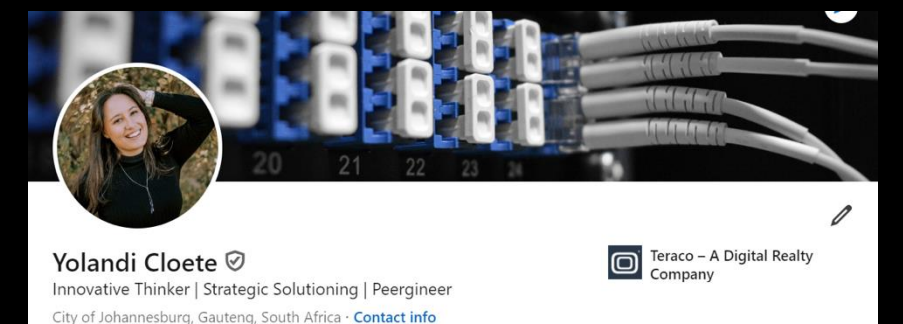
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# The End


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Yolandi Cloete 

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 Teraco – A Digital Realty Company

The profile card features a circular profile picture of Yolandi Cloete on the left. The background of the card is a network switch with several cables plugged in. The text is white on a dark background.