

Exercise: Virtual network simulation

Introduction

Now that you have learned about virtualization tools and how they are used to create virtual private servers or containers, it's time to do some exercises.

Scenario

A company is planning to host its web application on a physical server which is connected to the internet. So, they are planning to use a Virtual machine (VM) for the web server and another VM as a Database server. They also plan to use a third VM to host some containers to serve additional services required for this web application. Everything should be protected with a firewall and a virtual switch will be used to assign IP addresses to these VMs.

Your task is to create a diagram that reflects this scenario.

Objective

The objective of this exercise is to design a virtual network that connects the various virtual components on a physical server hosting the company's application, ensuring secure and efficient communication. You will be using the online version of Figma, a popular design tool which is available for free, to create this virtual network diagram. By now you should have set up a Figma account. If you haven't done so, go back to the Get started with Figma reading.

Instructions

Step 1: Start by creating a new file in Figma by clicking on the "New design file" at the top left.

Step 2: Download the icons in the provided zip folder. Unzip the folder and upload the images to Figma. To learn more about how to unzip folders visit the [Mac](#) or [Windows](#) support page. Learn how to import images to Figma [here](#).

Step 3: Draw a rectangle by pressing the R key and label it as physical server. You can always press the T key to type text.

Step 4: Take two VM icons and place them inside the upper half of the rectangle

Step 5: Take another VM icon and place it inside the rectangle but lower down and further away from the other two.

Step 6: Place two containers close to this third VM icon and connect them with lines to this VM because they are hosted inside of it. You can always press the L key to draw a line on Figma.

Step 7: Place that firewall icon inside the rectangle. With what do you think should the firewall be connected? The containers or the VMs?

Step 8: Place a virtual switch inside this rectangle. With what do you think it should be connected with? The firewall or the VMs?

Step 9: Place the internet icon on the canvas and connect it to the physical server that is represented by the rectangle.

Conclusion

By completing this exercise, you practiced designing a virtual network that incorporates various components such as virtual switches, VMs, containers, virtual firewalls, and a physical server hosting all the virtual items. This hands-on experience should help you understand how network components work together to create a secure and efficient network infrastructure to host a web application with virtual components.

Get started with Figma

Introduction

In the coming exercise, you will be required to create a diagram in Figma. Figma is free design tool with a desktop and web version.

Set up a Figma account

To set up a Figma account, go to: www.figma.com

Then, click the **Get started** button in the upper right corner.



Get started

You can create a new account by using your email address and creating a new password. You may also be asked if you want to create an account using a third-party login method.



Continue with Google

or

Email

Password

Create account

By clicking "Create account" or "Continue with Google", you agree to the [Figma TOS](#) and [Privacy Policy](#).

[Use single sign-on](#)

Already have an account? [Log in](#)

Then you'll be asked to type your name and indicate the kind of work you do by selecting from the dropdown. Select if you want to join Figma's mailing list. Next, click the Create account button.

Tell us about yourself



I agree to join Figma's mailing list

Create account

You will need to verify your email address by accessing your inbox and clicking the verify email link. You will be taken back to the Figma website to enter your password and log in.

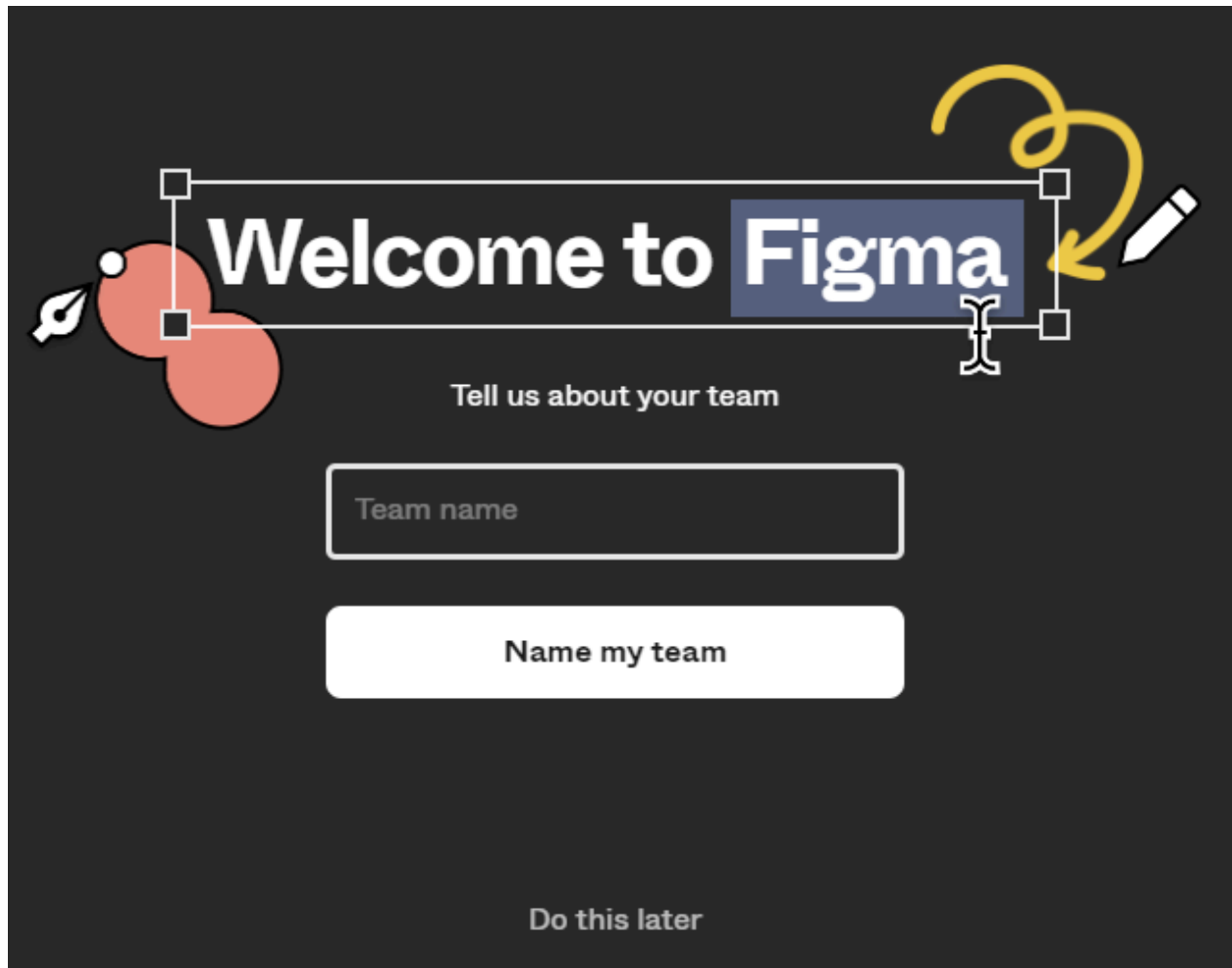
Log in

[Log in with SAML SSO](#)

[Forgot password?](#)

No account? [Create one](#)

After you successfully log in, you will be asked if you're part of a team. You can skip this step by clicking "Do this later" below.



Then, you'll be asked if you want to create a free or professional account. You may choose the free account option for now.

Choose a plan for your team

Starter

For teams trying Figma

- Unlimited files in Drafts
- 3 design files
- 3 FigJam files
- 1 project
- 30-day version history

Start for free

Professional

For professional teams

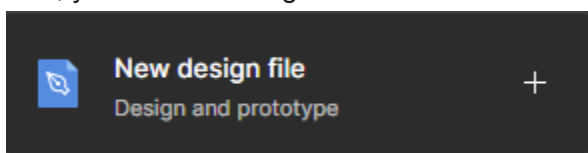
- Unlimited files
- Unlimited projects
- Shareable team libraries
- Unlimited version history

\$12/mo. per Figma editor

\$3/mo. per FigJam editor

Choose Professional

Next, you'll be presented with three options: "Design with Figma", "Whiteboard in Figma," or get started on your own (at the bottom). Choose the "I'll get started on my own" option at the bottom. Now, you are on the Figma main screen. To start designing, click the "New design file" at the top left.



Congratulations on creating your Figma file. You're ready to do the virtual network simulation exercise.