3: Setting Up Your Foundation

Before you can install your first application, we need to set up the basic infrastructure that Infinity Tools needs to work properly. Don't worry - Infinity Tools will handle most of this automatically!

This chapter also covers **foundational apps** that most Infinity Tools require—the most essential of them is Traefik, on which many other apps rely. You do not strictly *need* the back-tool Borgmatic, however, we **highly recommend** that you install it to automatically create **backups** of your data. And to use Borgmatic, you have to install Apprise, a notification system, which is why we also cover it in this chapter.

What We'll Set Up

In this chapter, we'll prepare:

- **Docker** - The system that runs all your applications
- **Docker Network** - How applications talk to each other
- **System Requirements** - Making sure everything is ready
- **Basic Security** - Simple firewall setup (optional)

Time needed: About 10-15 minutes

What is Docker? (Simple Explanation)

Docker is like a shipping container system for software. Just like how shipping containers make it easy to move goods around the world, Docker makes it easy to run applications on any computer.

Why we need it:

- Applications run in isolated "containers" - they can't interfere with each other
- Everything is pre-configured and ready to go
- If something goes wrong, you can easily restart or replace just that application
- It's the standard way modern applications are deployed

Think of it like this: Instead of installing WordPress directly on your server (which can be complicated), Docker runs WordPress in a container that has everything it needs already set up. If you install Portainer, you get a convenient web app to see what's going on with your Docker containers and administrate them.

Step 1: Run the Readiness Check

Infinity Tools has a built-in system that checks if everything is ready and installs what's missing. Let's run it!

Start Infinity Tools

First, make sure you're connected to your server via SSH, then start Infinity Tools:

```
sudo infinity-tools
```

What You'll See in the GUI

When you start Infinity Tools, you'll see a beautiful, modern interface with:

- **Colorful headers** - Easy to identify different sections
- **Progress indicators** - Shows what's happening during installation
- **Status messages** - Tells you if things are working or if there are problems
- **Interactive prompts** - Asks you questions when needed

Don't worry if it looks complex! The GUI is designed to guide you through everything step by step.

What Happens Next

Infinity Tools will automatically run a "readiness check" that:

- Checks if Docker is installed
- Installs Docker if it's missing
- Sets up the Docker network
- Installs other required tools
- Verifies everything is working

You'll see messages like:

```
∞  INFINITY TOOLS READINESS CHECK

Ensuring all prerequisites are met...

This will check and install:
• Docker & Docker Compose
```

```
• Docker Network for services
• GUM for modern UI
• Dialog for compatibility
• System requirements
```

If Docker Needs to be Installed

If Docker isn't installed yet, you'll see a message asking if you want to install it:

```
□□DOCKER INSTALLATION REQUIRED

Infinity Tools requires Docker to run containerized services.

Docker will be installed and configured automatically.
This includes Docker Engine and Docker Compose.

⚠□  This requires internet connection and may take a few minutes.

Install Docker now?
```

Answer "Yes" to continue. The installation will take a few minutes.

Docker Network Setup

After Docker is installed, you'll be asked about setting up a network:

```
□□DOCKER NETWORK SETUP

Infinity Tools services need a Docker network to communicate.

This network allows containers to find each other by name
and enables features like Traefik reverse proxy.

Default network name: proxy
```

Press Enter to use the default network name "proxy" (recommended).

Step 2: Verify Everything is Working

After the readiness check completes, you should see:

```
 READINESS CHECK COMPLETE


All prerequisites are satisfied!
Infinity Tools is ready to use.
```

What Was Installed

If everything went well, you now have:

- **Docker Engine** - The main Docker system
- **Docker Compose** - Tool for managing multiple containers
- **Docker Network** - A network called "proxy" for your services
- **GUM** - The modern interface you're using
- **Dialog** - Backup interface (just in case)

Step 3: Understanding What Happened

Docker Installation

Docker was installed and configured to:

- Start automatically when your server boots
- Run containers securely
- Manage storage for your applications
- Handle networking between containers

Docker Network

The "proxy" network was created to:

- Allow applications to find each other by name
- Enable Traefik (our reverse proxy) to route traffic
- Keep your applications isolated from the internet
- Make it easy to add new services later

Step 4: Optional - Basic Security Setup

Now that the basics are ready, you can optionally set up basic security. This is recommended but not required to get started.

What is a Firewall?

A **firewall** is like a security guard for your server. It controls which connections are allowed in and out.

Why it's important: Without a firewall, your server is like a house with all doors unlocked - anyone can try to access it.

Setting Up the Firewall

In the Infinity Tools menu, you'll see a "Security & Networking" section. You can set up the firewall later, but here's what it does:

- Allows SSH connections (so you can still connect)
- Allows HTTP and HTTPS traffic (for websites)
- Blocks other unwanted connections
- Protects against common attacks

For now: You can skip this and set it up later. Your server is reasonably safe as long as you keep your passwords strong.

Step 5: Understanding Your System

What's Running Now

Right now, your server has:

- **Infinity Tools** - The management system
- **Docker** - Ready to run applications
- **Docker Network** - Ready for services
- **No Applications Yet** - This is what we'll install next!

What's Next

You're now ready to install your first application! The most important one to install first is **Traefik** - it handles secure connections and routing for all your other applications.

Troubleshooting

Docker Installation Failed

If Docker installation fails:

- Check your internet connection
- Make sure you have enough disk space (at least 1GB free)
- Try running the readiness check again
- If it keeps failing, contact support with the error message

Network Creation Failed

If the Docker network creation fails:

- Make sure Docker is running: `sudo systemctl status docker`
- Try restarting Docker: `sudo systemctl restart docker`
- Run the readiness check again

Can't Connect to Server

If you lose connection during setup:

- Reconnect via SSH
- Run `sudo infinity-tools` again
- The readiness check will continue where it left off

Quick Reference

Check if Docker is running:

```
sudo systemctl status docker
```

Check Docker networks:

```
docker network ls
```

View Docker containers:

```
docker ps
```

Restart Docker if needed:

```
sudo systemctl restart docker
```

You're Ready!

Congratulations! You now have:

- A working Docker system
- A network for your applications
- All the tools Infinity Tools needs
- A solid foundation for your applications

Next step: Install Traefik - the reverse proxy that will handle secure connections and routing for all your applications.

What You Learned

- **Docker** - A system for running applications in containers
- **Docker Network** - How applications communicate with each other
- **Readiness Check** - Infinity Tools' automatic setup system
- **Infrastructure** - The foundation that makes everything else possible

You're now ready to install your first application! In the next chapter, we'll install Traefik, which is essential for running other applications securely.

Next: Installing Traefik - Your Reverse Proxy (Chapter 4)

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