

Nextcloud

Self-hosted Nextcloud file storage and collaboration platform with MariaDB, Redis caching, automatic HTTPS, and EBS data persistence. Production ready.

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Nextcloud AMI Documentation

Self-hosted cloud storage and collaboration platform on AWS.

Overview

This AMI provides a production-ready Nextcloud installation with MariaDB database, Redis caching, and optional HTTPS via Let's Encrypt. All data is stored on a separate EBS volume for easy backup and persistence.

Requirements

Resource	Minimum	Recommended
Instance Type	t3.small	t3.medium or larger
RAM	2 GB	4 GB+
Root Volume	8 GB	10 GB
Data Volume (EBS)	20 GB	50 GB+ (based on storage needs)

Quick Start

Option 1: Interactive Configuration

1. Launch the AMI with an attached EBS volume for data storage
2. SSH into the instance:

```
ssh -i your-key.pem ubuntu@your-instance-ip
```

3. Run the configuration script:

```
sudo /opt/nextcloud/configure-nextcloud.sh
```

4. Follow the prompts to set up your admin account and domain

Option 2: Automated Configuration (User-Data)

Launch the instance with JSON user-data for automatic configuration:

```
{
  "admin_user": "admin",
  "admin_password": "YourSecurePassword123",
  "domain": "nextcloud.example.com",
  "https": "yes",
  "email": "admin@example.com"
}
```

User-Data Parameters

Parameter	Required	Description
admin_user	No	Admin username (default: admin)
admin_password	Yes	Admin password (minimum 8 characters)
domain	No	Domain name or IP (default: public IP)
https	No	Enable HTTPS with Let's Encrypt (yes/no)
email	Required for HTTPS	Email for Let's Encrypt notifications

Network Ports

Port	Protocol	Description
22	TCP	SSH access
80	TCP	HTTP web interface
443	TCP	HTTPS web interface (when enabled)

Configure your Security Group to allow these ports from appropriate sources.

Management Commands

The `nextcloud-cli` utility provides easy management of your Nextcloud installation:

```
# Check service status
sudo nextcloud-cli status

# View logs
sudo nextcloud-cli logs

# View logs for specific service
sudo nextcloud-cli logs nextcloud

# Show configuration info
sudo nextcloud-cli info

# Start/stop/restart services
sudo nextcloud-cli start
sudo nextcloud-cli stop
sudo nextcloud-cli restart

# Update to latest version
sudo nextcloud-cli update

# Create backup
sudo nextcloud-cli backup

# Run Nextcloud occ commands
sudo nextcloud-cli occ status
sudo nextcloud-cli occ files:scan --all
sudo nextcloud-cli occ user:list

# Toggle maintenance mode
sudo nextcloud-cli maintenance

# Open shell in Nextcloud container
sudo nextcloud-cli shell

# Open database shell
sudo nextcloud-cli db-shell

# Reset configuration (WARNING: deletes all data)
sudo nextcloud-cli reset
```

HTTPS Configuration

Automatic HTTPS with Let's Encrypt

When configuring with a domain name, you can enable automatic HTTPS:

1. Ensure your domain's DNS A record points to your instance's public IP
2. Open ports 80 and 443 in your Security Group
3. Enable HTTPS during configuration and provide a valid email address

The SSL certificate will be automatically obtained and renewed.

Requirements for HTTPS

- Valid domain name (not an IP address)
- DNS properly configured
- Ports 80 and 443 open
- Valid email address for Let's Encrypt notifications

Data Storage

All Nextcloud data is stored on the attached EBS volume at `/mnt/nextcloud-data/`:

```
/mnt/nextcloud-data/  
├─ html/          # Nextcloud application files  
├─ data/          # User files and data  
├─ db/           # MariaDB database files  
├─ certs/        # SSL certificates (if HTTPS enabled)  
├─ acme/         # Let's Encrypt ACME data  
└─ backups/      # Backup files (created by backup command)
```

Backup and Restore

Creating Backups

```
sudo nextcloud-cli backup
```

This creates timestamped backups in `/mnt/nextcloud-data/backups/`:

- Database dump (SQL)
- Data directory archive
- Configuration archive

Manual Backup

For EBS snapshot backups:

1. Enable maintenance mode:

```
sudo nextcloud-cli occ maintenance:mode --on
```

2. Create an EBS snapshot from the AWS Console
3. Disable maintenance mode:

```
sudo nextcloud-cli occ maintenance:mode --off
```

Restore from Backup

1. Stop Nextcloud:

```
sudo nextcloud-cli stop
```

2. Restore database:

```
docker exec -i nextcloud-db mysql -u nextcloud -p"${(grep DB_PASSWORD /opt/nextcloud/.credentials | cut -d= -f2)}" nextcloud < backup_db.sql
```

3. Restore data:

```
sudo tar -xzf backup_data.tar.gz -C /mnt/nextcloud-data/
```

4. Start Nextcloud:

```
sudo nextcloud-cli start
```

Updating Nextcloud

To update to the latest stable version:

```
sudo nextcloud-cli update
```

This command will:

1. Enable maintenance mode
2. Pull the latest Docker images
3. Restart all containers
4. Run any required upgrades
5. Disable maintenance mode

Troubleshooting

Check Container Status

```
sudo nextcloud-cli status
docker ps -a
```

View Logs

```
# All logs
sudo nextcloud-cli logs

# Specific service logs
sudo nextcloud-cli logs nextcloud
sudo nextcloud-cli logs nextcloud-db
sudo nextcloud-cli logs nginx-proxy
```

Common Issues

Nextcloud not accessible after launch:

- Wait 2-3 minutes for initial setup to complete
- Check that Security Group allows ports 80/443
- Verify EBS volume is properly attached and mounted

HTTPS certificate not working:

- Ensure DNS is properly configured
- Check that ports 80 and 443 are both open
- View acme-companion logs: `sudo nextcloud-cli logs acme-companion`

Database connection errors:

- Check database container: `docker logs nextcloud-db`
- Verify database credentials in `/opt/nextcloud/.credentials`

Permission issues with files:

- Run file scan: `sudo nextcloud-cli occ files:scan --all`
- Check data directory ownership

Reset Installation

If you need to start fresh:

```
sudo nextcloud-cli reset
```

WARNING: This deletes all data and configuration!

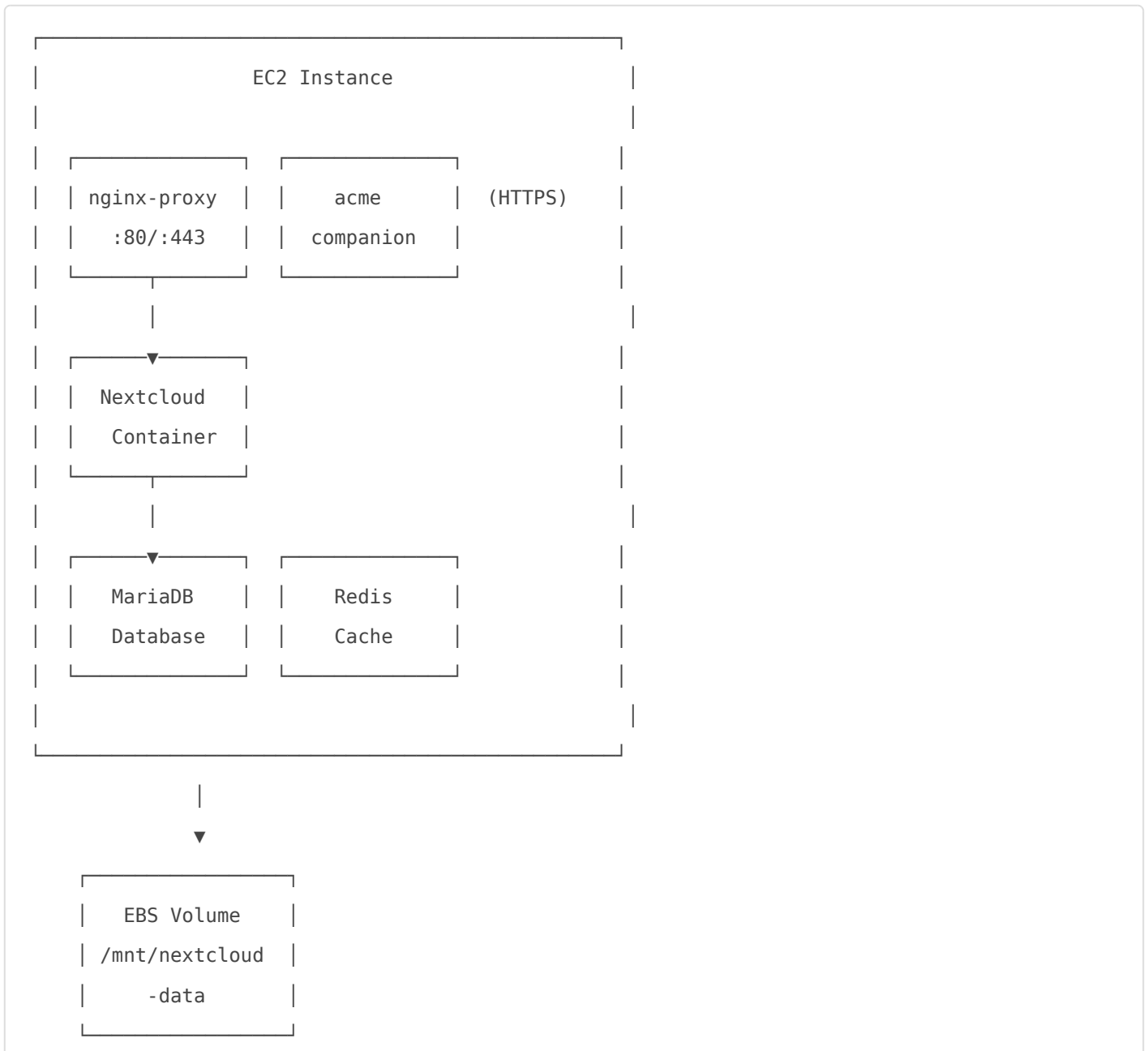
File Locations

Path	Description
<code>/opt/nextcloud/</code>	Main configuration directory
<code>/opt/nextcloud/docker-compose.yml</code>	Docker Compose configuration
<code>/opt/nextcloud/.credentials</code>	Stored credentials (chmod 600)
<code>/opt/nextcloud/config-info.txt</code>	Configuration summary
<code>/mnt/nextcloud-data/</code>	All persistent data
<code>/var/log/nextcloud-firstboot.log</code>	First boot log

Security Recommendations

1. **Change default admin password** after first login
2. **Enable two-factor authentication** for admin accounts
3. **Regular backups** using EBS snapshots or the backup command
4. **Keep Nextcloud updated** using the update command
5. **Restrict SSH access** in Security Group to your IP only
6. **Use HTTPS** with a valid domain name in production

Architecture



Support

For issues specific to this AMI deployment, check:

- First boot log: `/var/log/nextcloud-firstboot.log`
- Docker logs: `sudo nextcloud-cli logs`
- Service status: `sudo nextcloud-cli status`

For Nextcloud-specific questions, refer to the official documentation:

- <https://docs.nextcloud.com/>

Version Information

- Base OS: Ubuntu 24.04 LTS
- Nextcloud: Latest stable release
- MariaDB: 10.11
- Redis: 7 (Alpine)
- nginx-proxy: Latest
- acme-companion: Latest