Why You Shouldn’t Fear Your Firewall Upgrade

The Evolution and How-to Guide

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BRKSEC-2929

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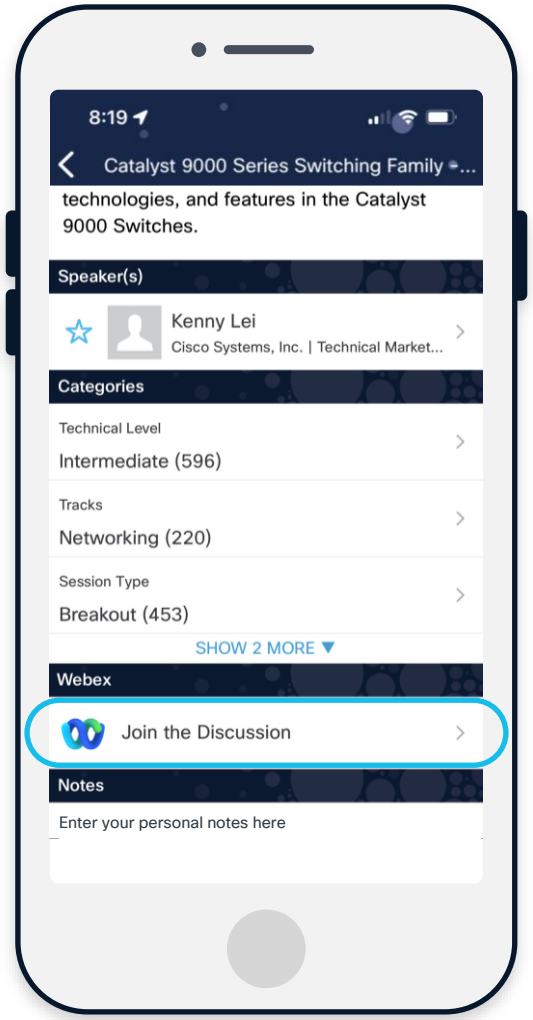


About Me...

- 2018 – CCNA
- 2020 – CCNP Security
- 2019 – 2021 – Cisco POC Lab Lead
- 2022 – 2025 – Technical Marketing Engineer, Secure Firewall

New Jersey to North Carolina

- Have 2 Miniature Dachshunds
- Avid Golfer
- Originally from New Jersey and moved to North Carolina

Agenda

01 Why Upgrade?

02 Where We Came From

03 Upgrade Planning & Preparation

04 Upgrade Steps – What actually happens?

05 Upgrade Steps – How to

06 Where We Are Going

07 Best Practices

AI generated image

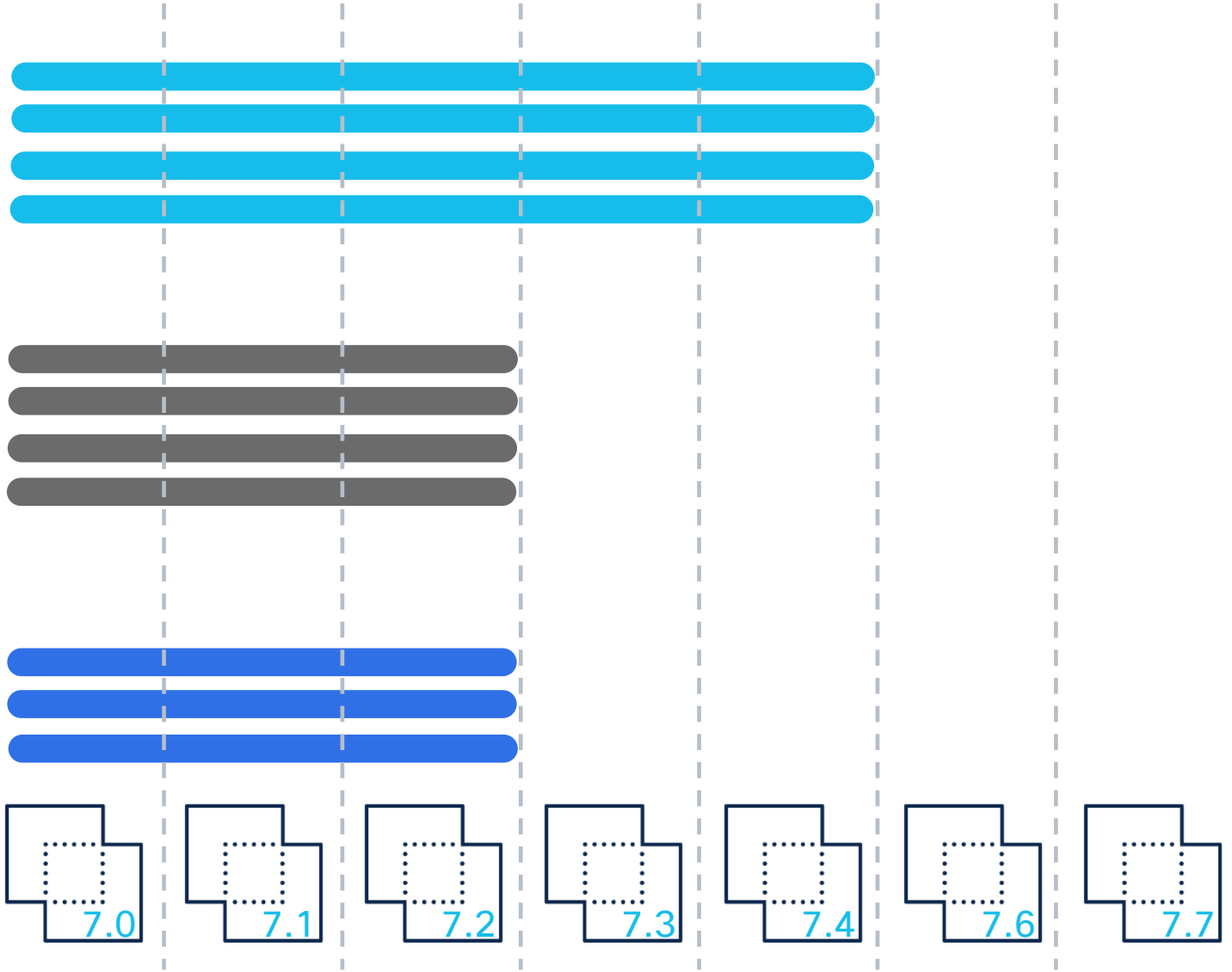
Reminder

Firewall Platforms

Firepower 2110
Firepower 2120
Firepower 2130
Firepower 2140

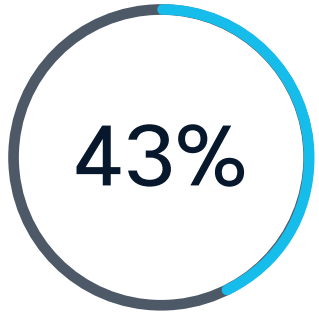
Firepower 4110
Firepower 4120
Firepower 4140
Firepower 4150

Firepower 9300: SM-24
Firepower 9300: SM-36
Firepower 9300: SM-44

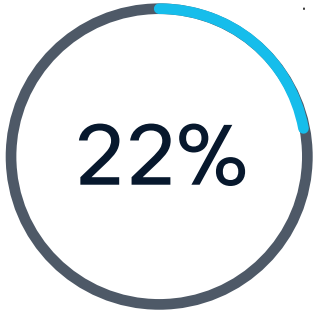


Why Upgrade?

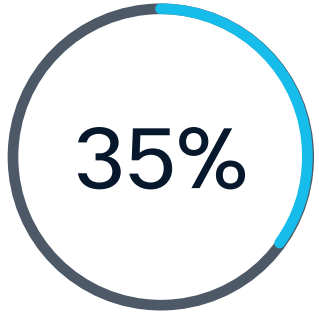
Release Adoption



Running Threat Defense Code
0 – 2 years



Running Threat Defense Code
older than 3 years



Running Threat Defense Code
older than 4 years

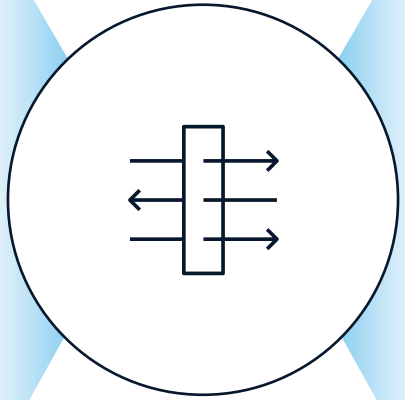
Low adoption prevents you from benefiting form the latest features and increased risk of potential quality and security issues.

New Features!

Encrypted Visibility Engine
AI/ML-driven detection of apps and malware in encrypted traffic, without decrypting

AI Assistant for Firewall
Enables quick discovery of policies with fast, rich data responses on-demand

SnortML
Deep neural network engine to detect exploits, trained on malicious and benign traffic



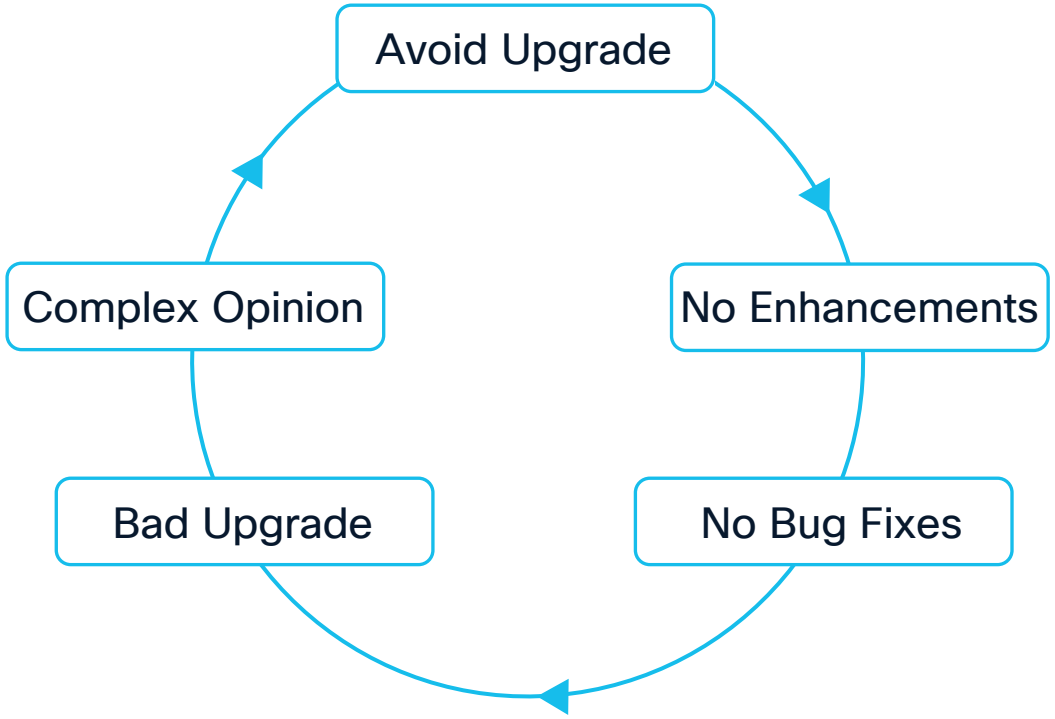
Firewall

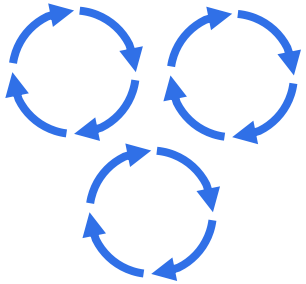
Intelligent Decryption Bypass
Risk-based intelligent decryption bypass, powered by the Encrypted Visibility Engine and Talos Server Reputation

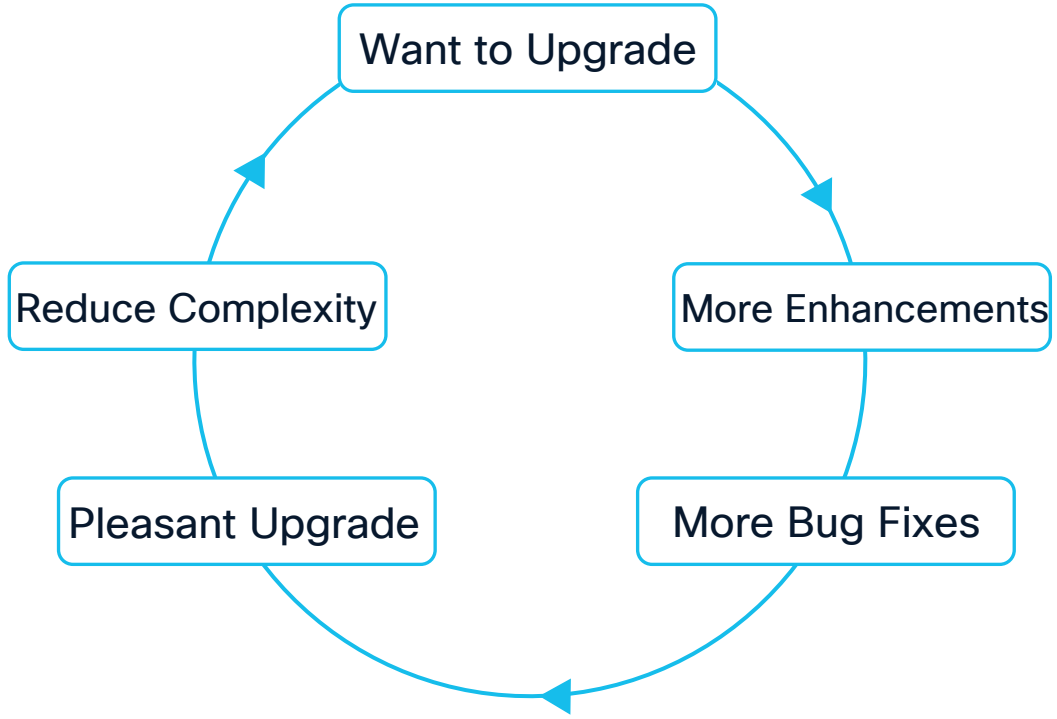
Bulk Branch Pre-Provisioning
Apply pre-provisioned configurations to many devices at the time of registration

Geolocation-based RAVPN
Manage remote access VPN connections of users based on their geolocation

Don’t fall into a trap...







Where We Came From...

Upgrade Enhancements Over Releases

7.0

- Fleet Upgrade Improvements
- Requirement for devices to pass Compatibility Check

7.2

- Package Management for FMC & FTD (7.2.6/7.4.1)
- Peer-to-peer Sync for Upgrade Packages
- Unattended FTD Upgrades (7.2.6)
- Upgrade-related Defects

7.4

- Reduced backup time
- FMC: New Upgrade Wizard for FTD & FMC (7.2.6/7.4.1)
- FMC: In product notifications for suggested releases
- FMC: Automatically generate configuration change report post-FMC upgrade

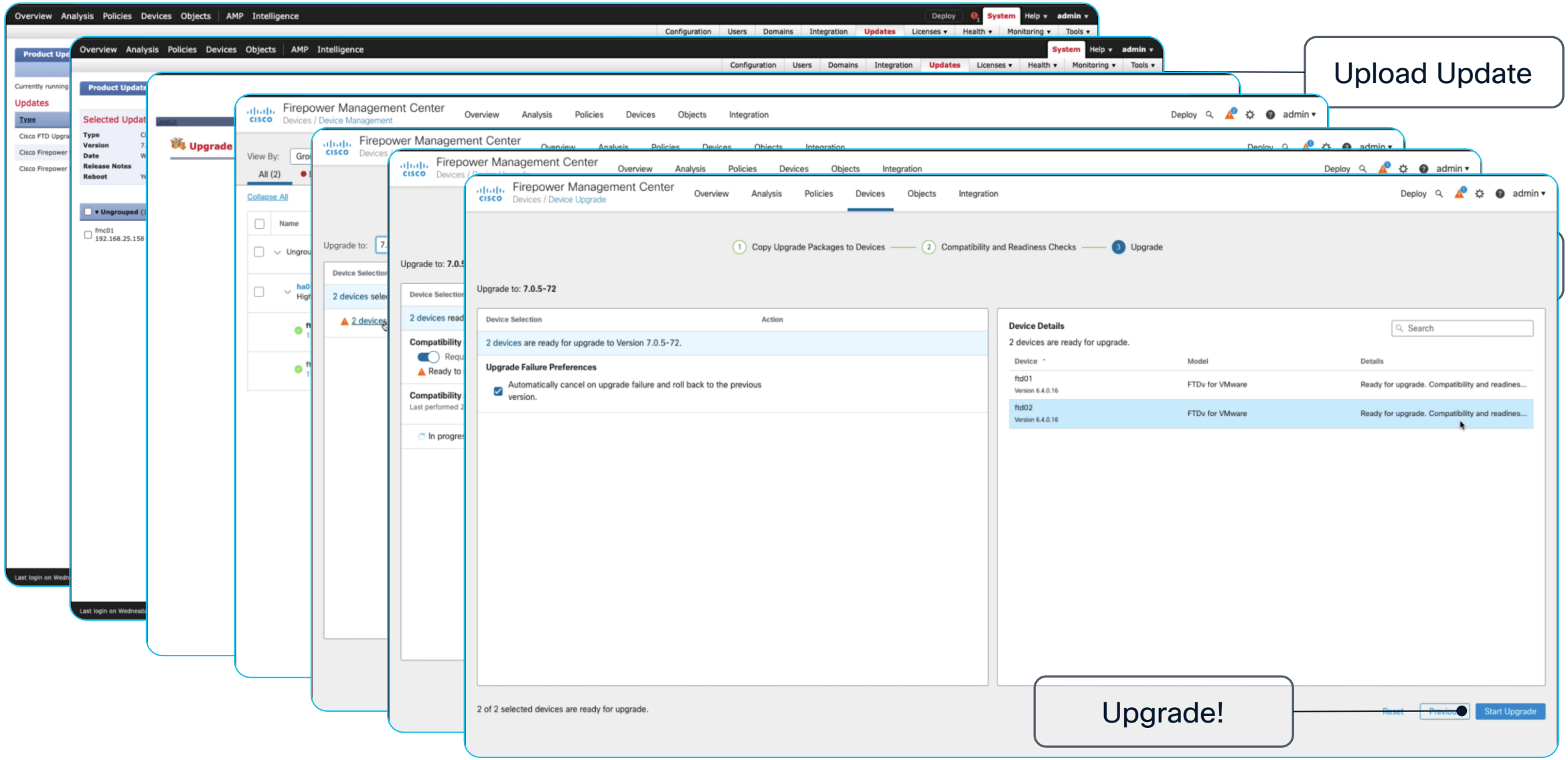
7.6

- FMC HA Upgrade Simplification – Eliminates manual upgrade needs on both Management Center peers
- Upgrade Optimizations – Reduce failures
- Reduce Upgrade time to 23 minutes

7.7

- Start FTD Upgrades without upgrade package – devices automatically obtain package from the internet
- Readiness check optimization
- Upgrade times reduced by 33%
- User input reduced by 50%

Firewall Upgrades in Version 6.x to 7.x



Upgrade Planning & Preparation

Deployment Assessment

What appliances and Cisco Secure Firewall versions do I have?

Am I using a standalone Cisco Secure Firewall Management Center, or a high availability pair?

Are my managed devices standalone, clustered, or high availability pairs of devices?

Do I have FXOS in my environment? (4100/9300)

What version do I want to run, and how do I determine that?

FMC to Device Compatibility

FMC Version	Device Version										
	7.7	7.6.x	7.4.x	7.3.x	7.2.x	7.1.x	7.0.x	6.7.x	6.6.0	6.5.0	6.4.0
7.7	Yes	Yes	Yes	Yes	Yes	-	–	–	–	–	–
7.6.x	–	Yes	Yes	Yes	Yes	Yes	–	–	–	–	–
7.4.x	–	–	Yes	Yes	Yes	Yes	Yes	–	–	–	–
7.3.x	–	–	–	Yes	Yes	Yes	Yes	Yes	–	–	–
7.2.x	–	–	–	–	Yes	Yes	Yes	Yes	Yes	–	–
7.1.x	–	–	–	–	–	Yes	Yes	Yes	Yes	Yes	–
7.0.x	–	–	–	–	–	–	Yes	Yes	Yes	Yes	Yes
6.7.x	–	–	–	–	–	–	–	Yes	Yes	Yes	Yes
6.6.x	–	–	–	–	–	–	–	-	Yes	Yes	Yes
6.5.0	–	–	–	–	–	–	–	-	–	Yes	Yes
6.4.0	–	–	–	–	–	–	–	-	–	–	Yes

Supported Upgrade Paths

Current Version	Target Version
7.7.x	Any later 7.7.x release (future)
7.6.x	Any later 7.6.x release (future)
7.4.x	Any later 7.4.x release + 7.6.x + 7.7.x
7.3.x	Any later 7.3.x release + 7.4.x + 7.6.x + 7.7.x
7.2.x	Any later 7.2.x release + 7.3.x + + 7.4.x + 7.6.x + 7.7.x
7.1.x	Any later 7.1.x release + 7.2.x + 7.3.x + 7.4.x + 7.6.x
7.0.x	Any later 7.0.x release + 7.1.x + **7.2.x** + 7.3.x + 7.4.x
6.6.x	Any later 6.6.x release + 6.7.x + 7.0.x + 7.1.x + 7.2.x
6.5	6.6.x + 6.7.x + 7.0.x + 7.1.x
6.4.x	6.5 + 6.6.x + 6.7.x + **7.0.x**

Upgrade Checklist

- Plan upgrade path.
- Ensure no more than 2 DNS servers are configured for **FDM-Managed Devices**.
- Check disk space.
- Confirm connectivity to remote back up servers (if applicable) and back up FTD and FMC configurations.
- Upload FMC and FTD upgrade packages to an Internal Server or FMC.
- Check bandwidth.
- Schedule maintenance window(s).
- Check configurations.
- Upgrade FXOS. (For Firepower 4100/9300)
- Run FMC Readiness Checks.
- Upgrade Standalone or High-Availability FMC(s).
- Redeploy configurations to managed devices.
- Run FTD Readiness Checks.
- Upgrade Standalone or High-Availability FTD.
- Redeploy configurations to upgraded devices.

Upgrade Steps – Step by Step

FMC Upgrade Flow

Image Download

- Start on the Standby Unit first
- User triggers download action using the Product Upgrades page

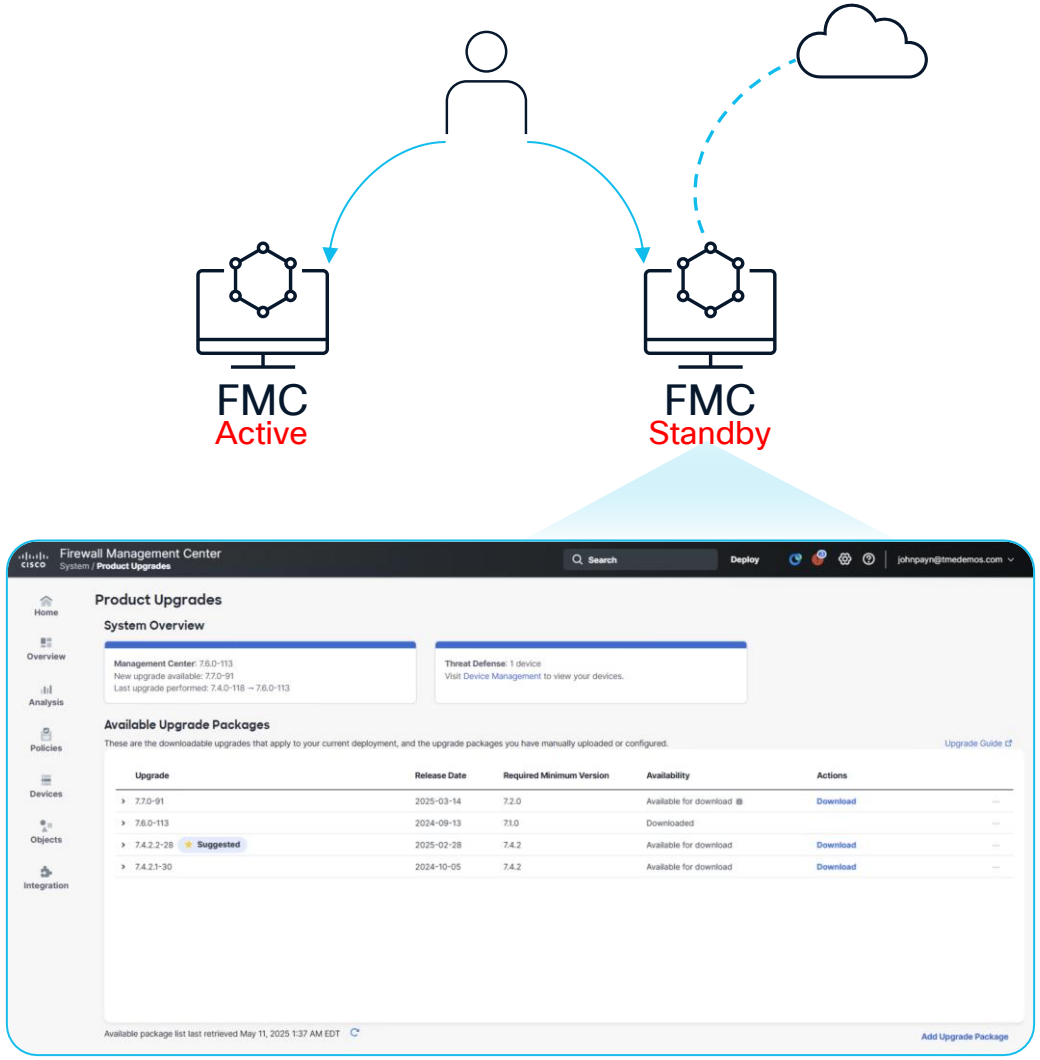
Launch Upgrade Wizard

FMC Selected for Upgrade

Run Readiness Check

Start Upgrade

Next Steps



FMC Upgrade Flow

Image Download

Launch Upgrade Wizard

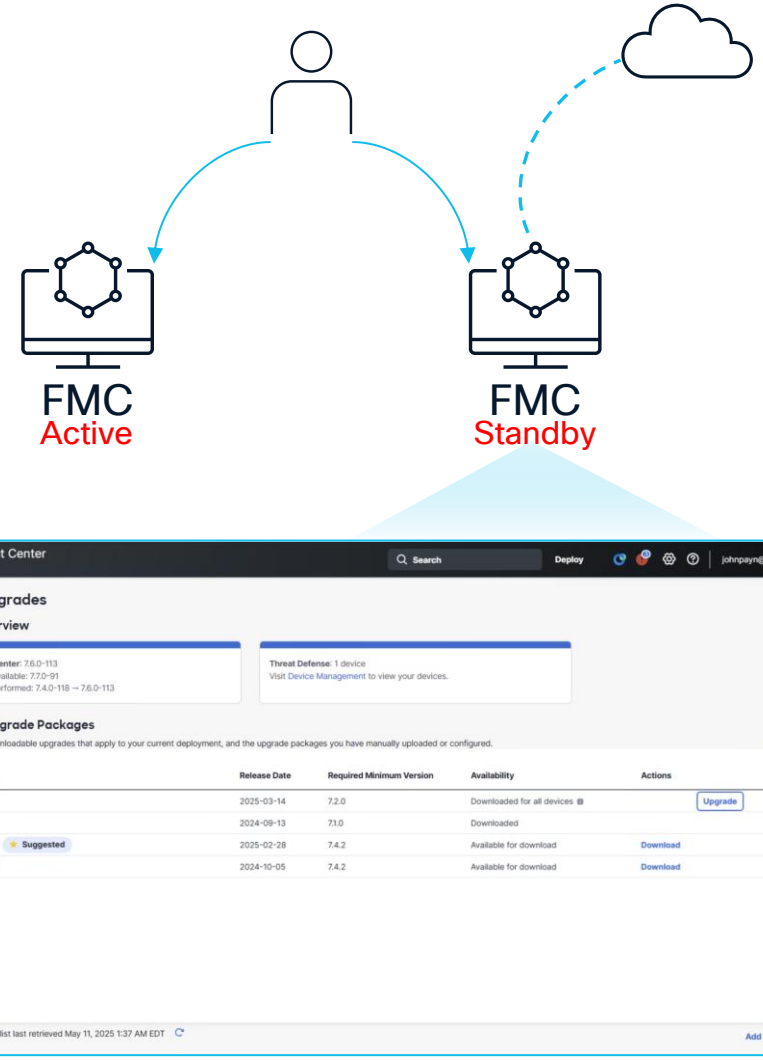
- Choose your target version
- Prechecks are ran automatically; Disk space & Compatibility
- Run Readiness Check

FMC Selected for Upgrade

Run Readiness Check

Start Upgrade

Next Steps



FMC Upgrade Flow

Image Download

Launch Upgrade Wizard

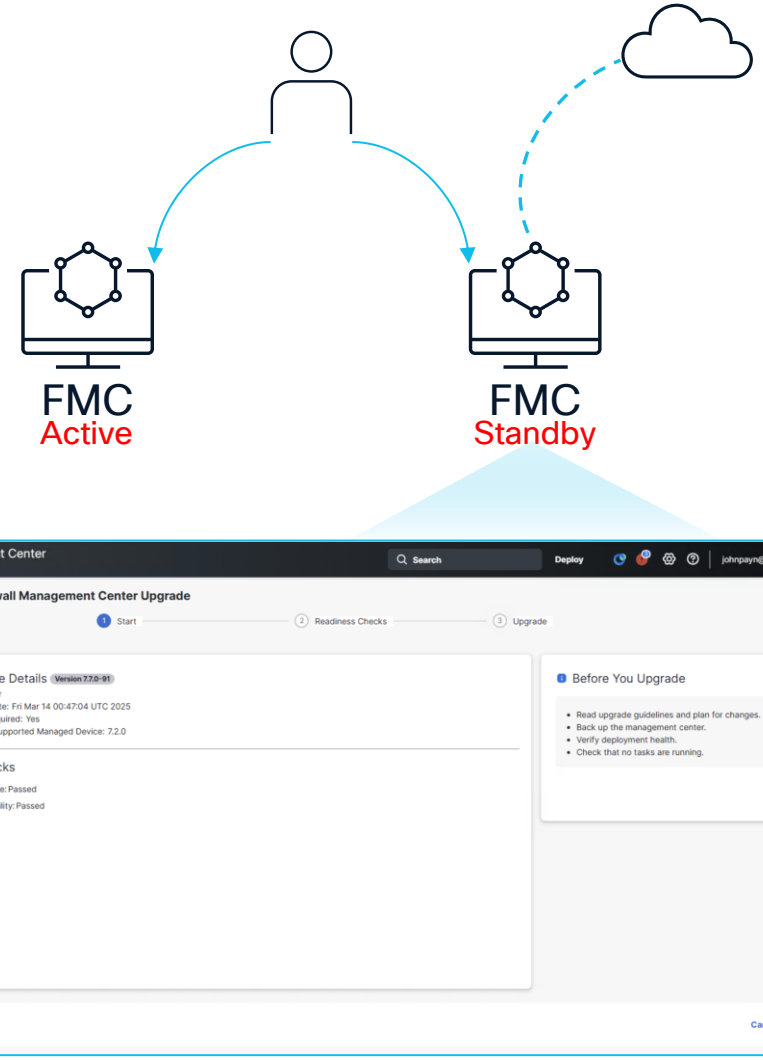
FMC Selected for Upgrade

- Target version selected
- Ensure Green check marks next to Prechecks

Run Readiness Check

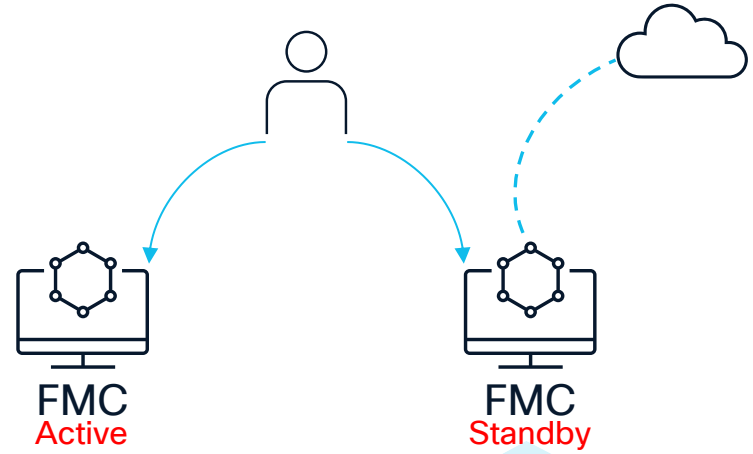
Start Upgrade

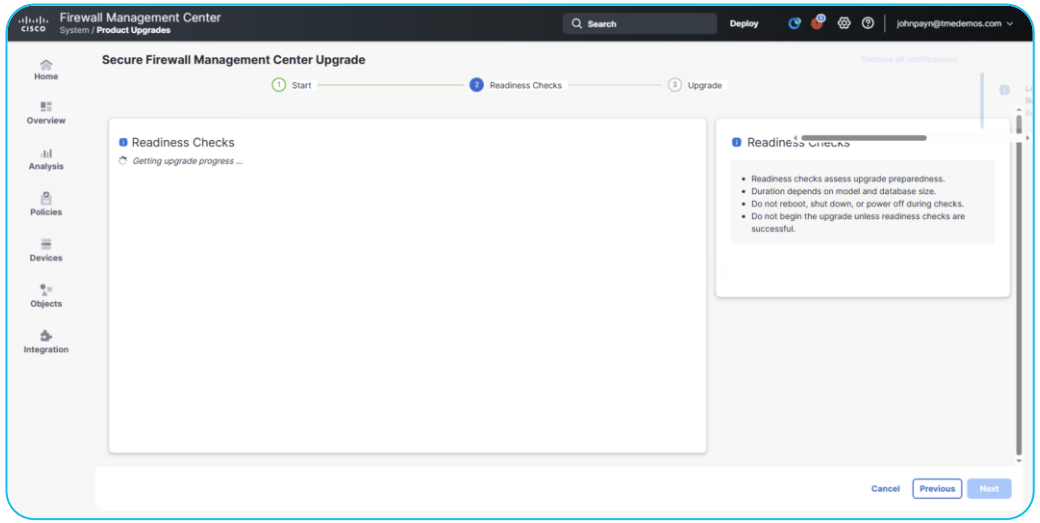
Next Steps



FMC Upgrade Flow

- Image Download
- Launch Upgrade Wizard
- FMC Selected for Upgrade
- Run Readiness Check
  - Assess Upgrade preparedness
  - Ensure Green check marks next to Prechecks
- Start Upgrade
- Next Steps

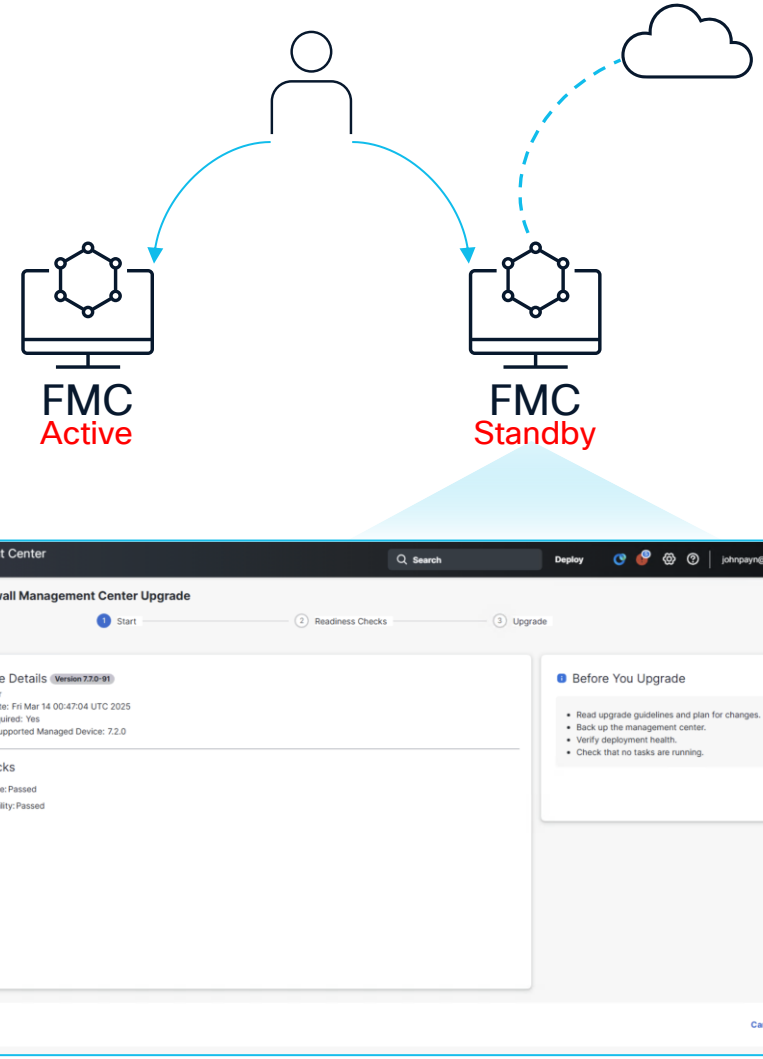




FMC Upgrade Flow

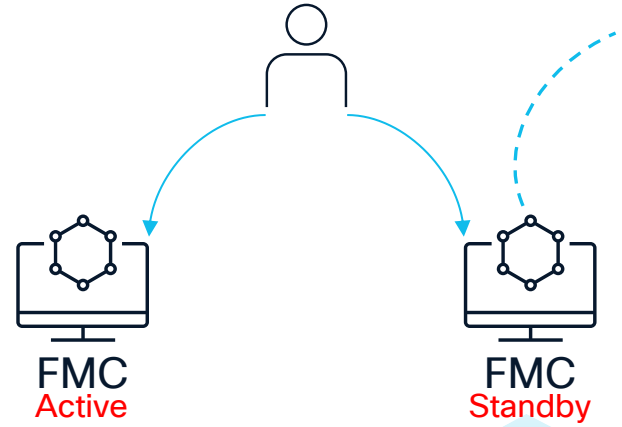
- Image Download
- Launch Upgrade Wizard
- FMC Selected for Upgrade
- Run Readiness Check
- Start Upgrade
- Next Steps

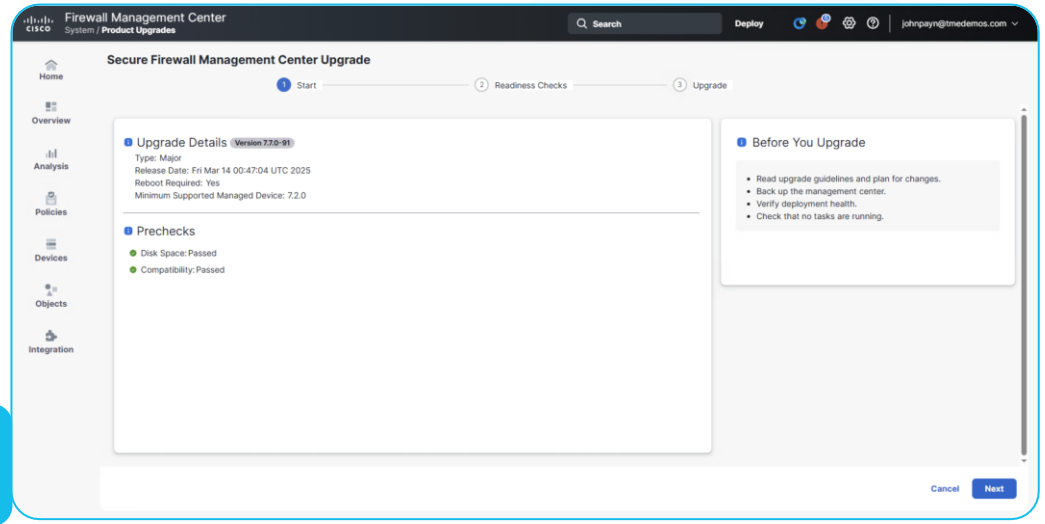
- Install FMC version with a single click
- Perform actions on standby before moving to active FMC



FMC Upgrade Flow

- Image Download
- Launch Upgrade Wizard
- FMC Selected for Upgrade
- Run Readiness Check
- Start Upgrade
- Next Steps
  - Upgrade Active FMC
  - Upgrade the managed devices

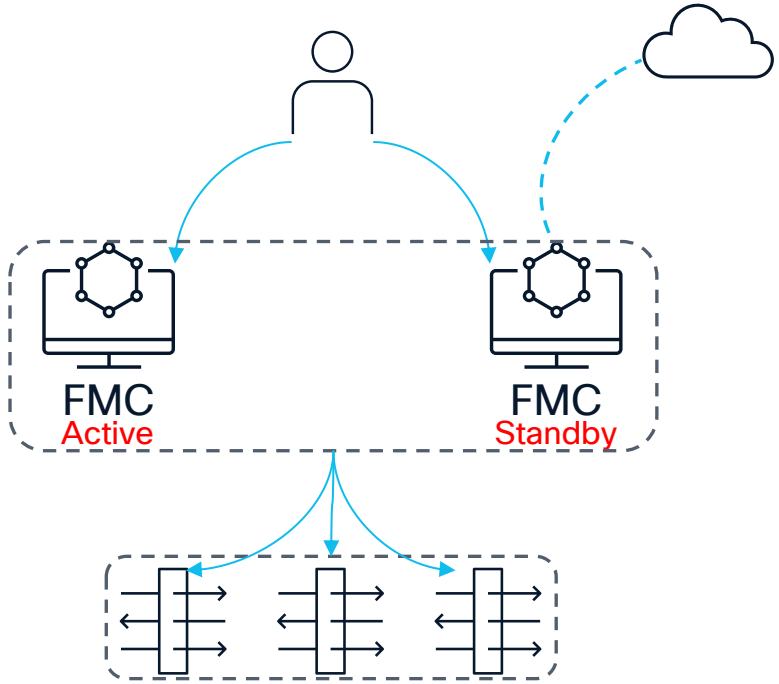




FTD Upgrade Architecture

FTD Upgrade Flow

- **Image Download**
  - User triggers download action using the Product Upgrades page
  - Image directly pulled from software repository
- **Launch Upgrade Wizard**
- **Select Devices for Upgrade**
- **Copy Packages and Run Readiness**
- **Start Upgrade**
- **Next Steps**



FTD Upgrade Flow

Image Download

Launch Upgrade Wizard

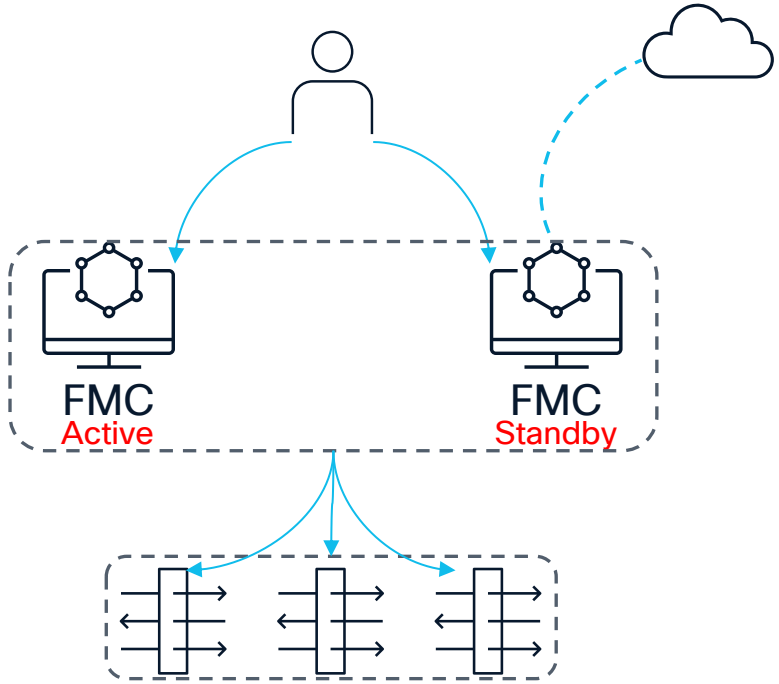
- Select target version next to Threat Defense
- Select devices from Device Selection pane

Select Devices for Upgrade

Copy Packages and Run Readiness

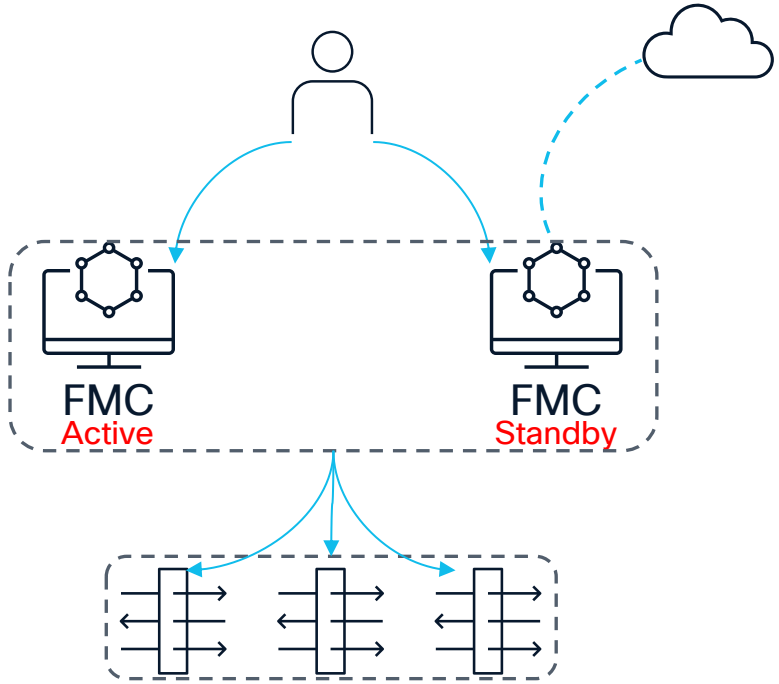
Start Upgrade

Next Steps



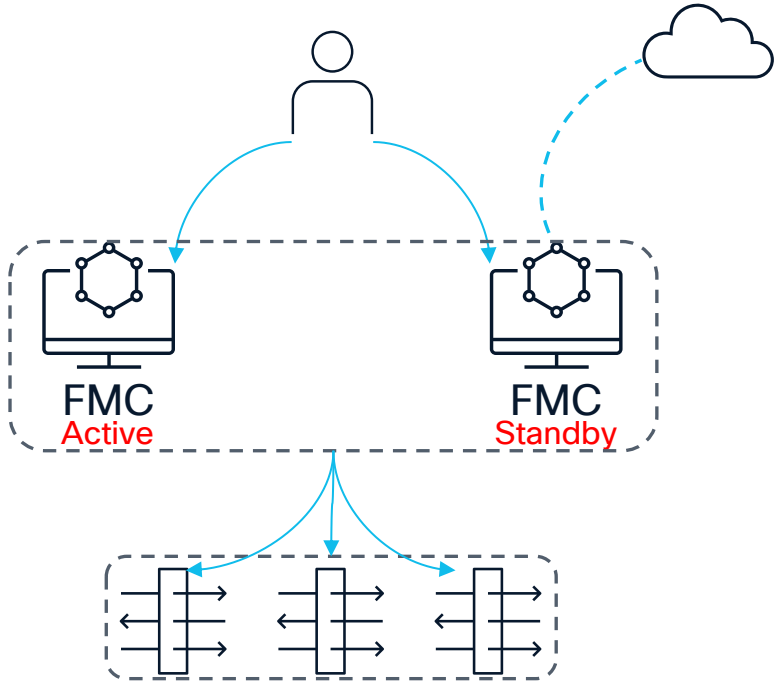
FTD Upgrade Flow

- Image Download
- Launch Upgrade Wizard
- Select Devices for Upgrade
  - Use device links to toggle device details
  - Some devices may be ineligible for upgrades
- Copy Packages and Run Readiness
- Start Upgrade
- Next Steps



FTD Upgrade Flow

- Image Download
- Launch Upgrade Wizard
- Select Devices for Upgrade
- Copy Packages and Run Readiness
  - Upgrade packages must be present on the device
  - Passing readiness checks reduces the chance of upgrade failure
  - Contact TAC if the readiness check exposes any issues
- Start Upgrade
- Next Steps



FTD Upgrade Flow

Image Download

Launch Upgrade Wizard

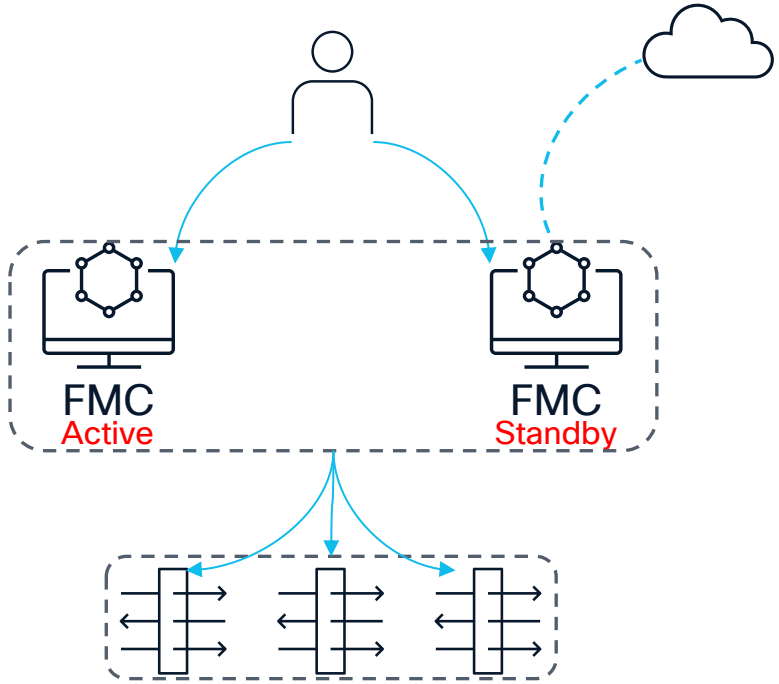
Select Devices for Upgrade

Copy Packages and Run Readiness

Start Upgrade

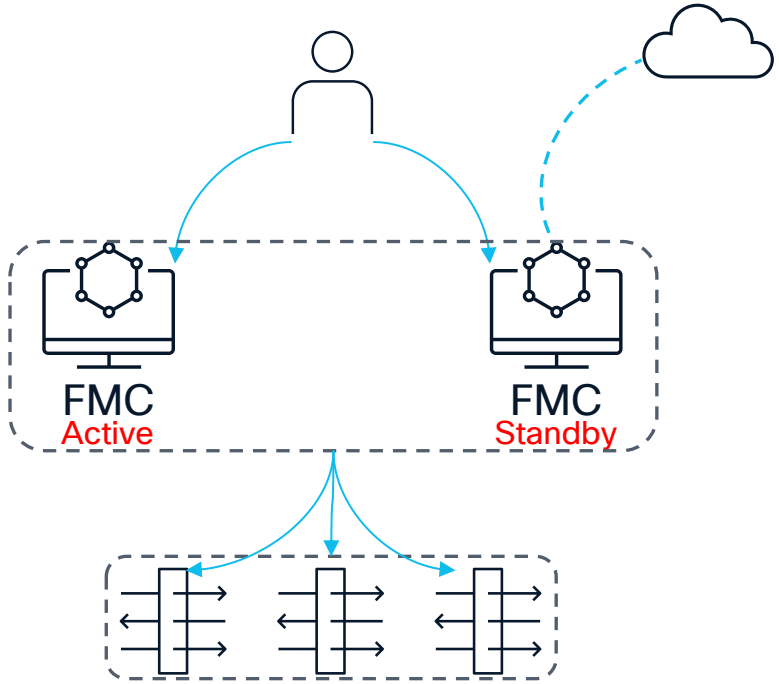
- Wizard shows overall upgrade process
- For high availability devices, the standby unit occurs first and then the active unit is upgrade. A failover does occur.

Next Steps



FTD Upgrade Flow

- Image Download
- Launch Upgrade Wizard
- Select Devices for Upgrade
- Copy Packages and Run Readiness
- Start Upgrade
- Next Steps
  - Verify success
  - For high availability devices, ensure device roles are correct
  - Update intrusion rules, VDB, and deploy post-upgrade

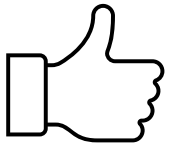


Upgrade Steps – How to

Demo

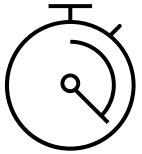
Where We Are Going...

Future of Firewall Upgrades



Simple

Less than 10 clicks from anywhere in the UI to a fully upgraded environment. Including running a backup, executing the upgrade and final deployment.



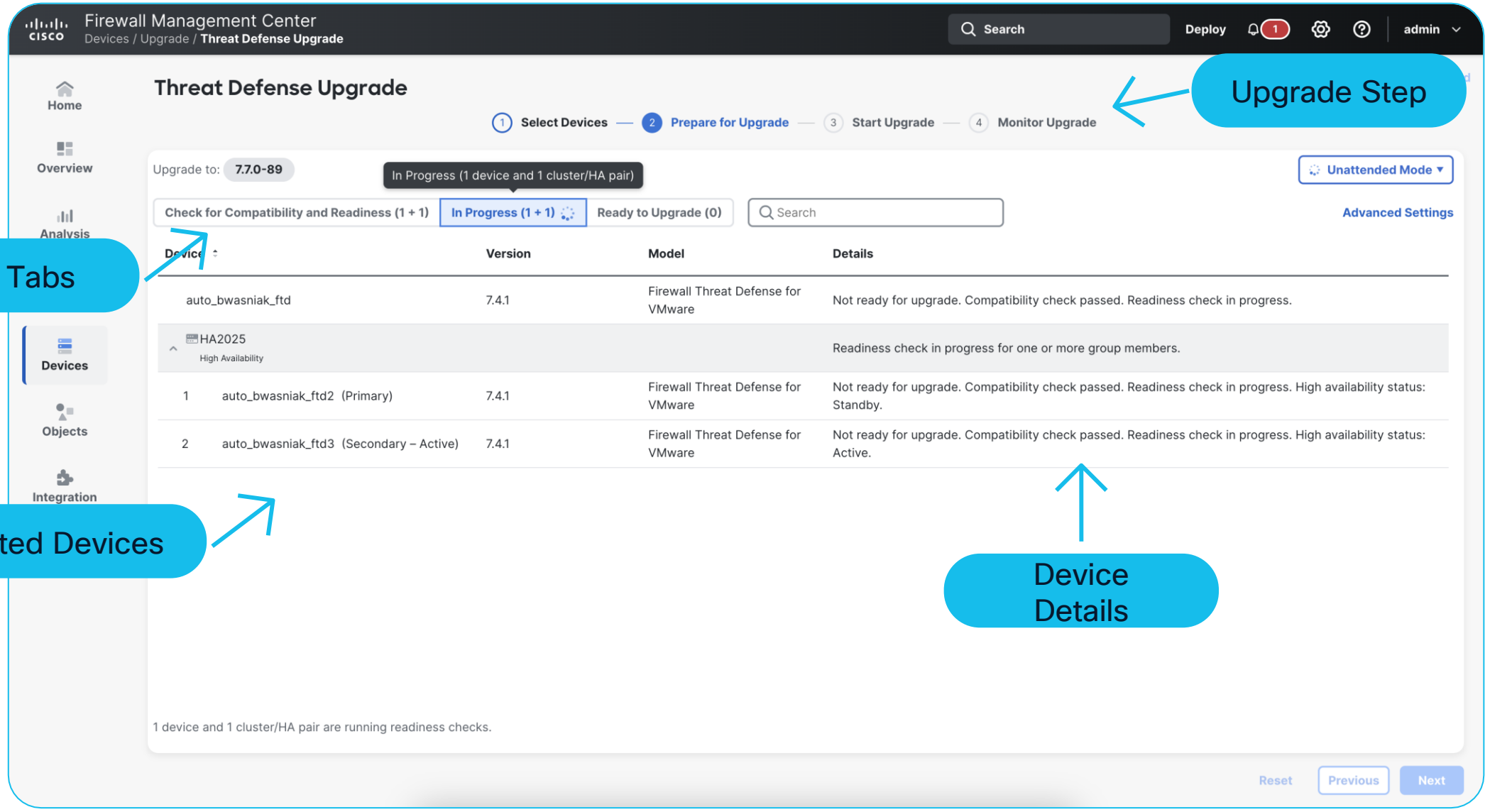
Swift

Less than 1 hour to upgrade entire environment, from wanting to execute the upgrade to being able to arriving at the UI of new release and completing tasks.

Error-free

Users will no encounter failures during the upgrade process, including back up and deployment

Upgrade Workflow Layout – Step Navigation

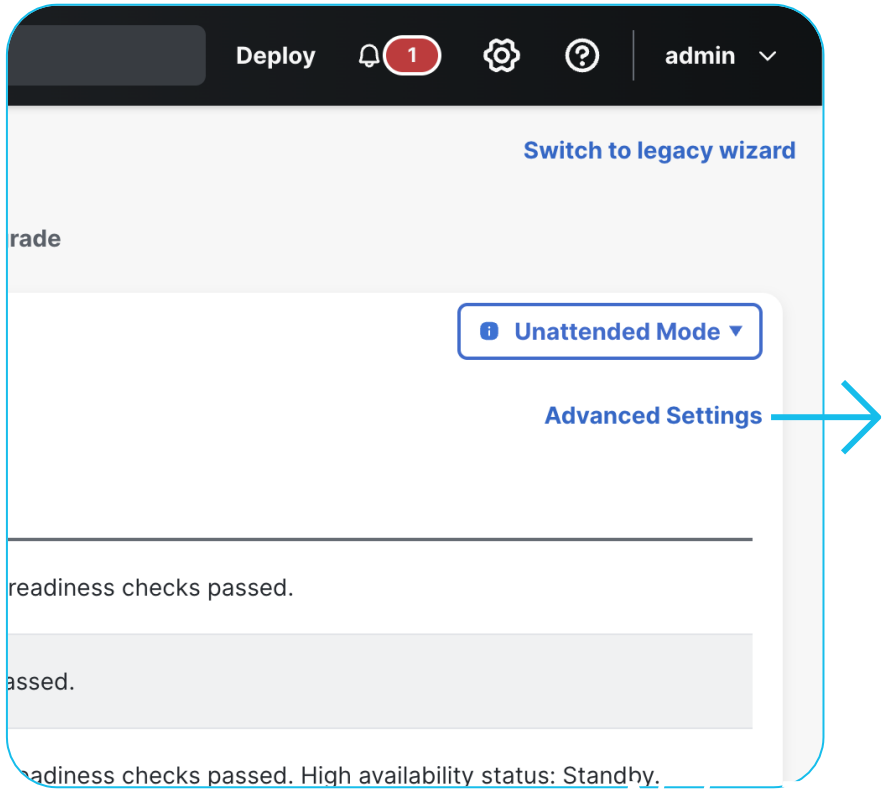


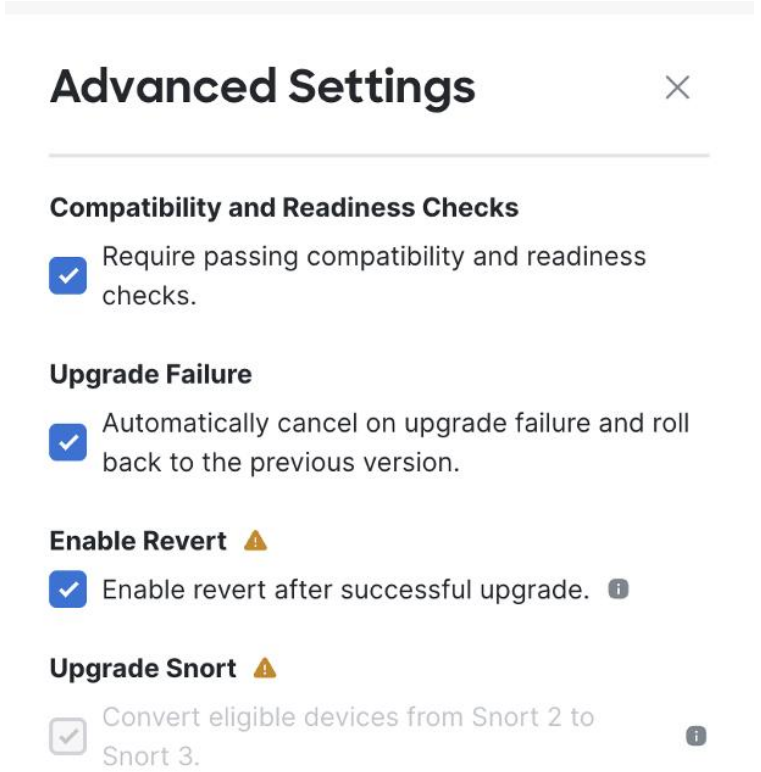
Upgrade Workflows - Advanced Settings

Click on ‘Advanced Settings` in the towards the upper right to open Advanced Settings on the right side (like a drawer).

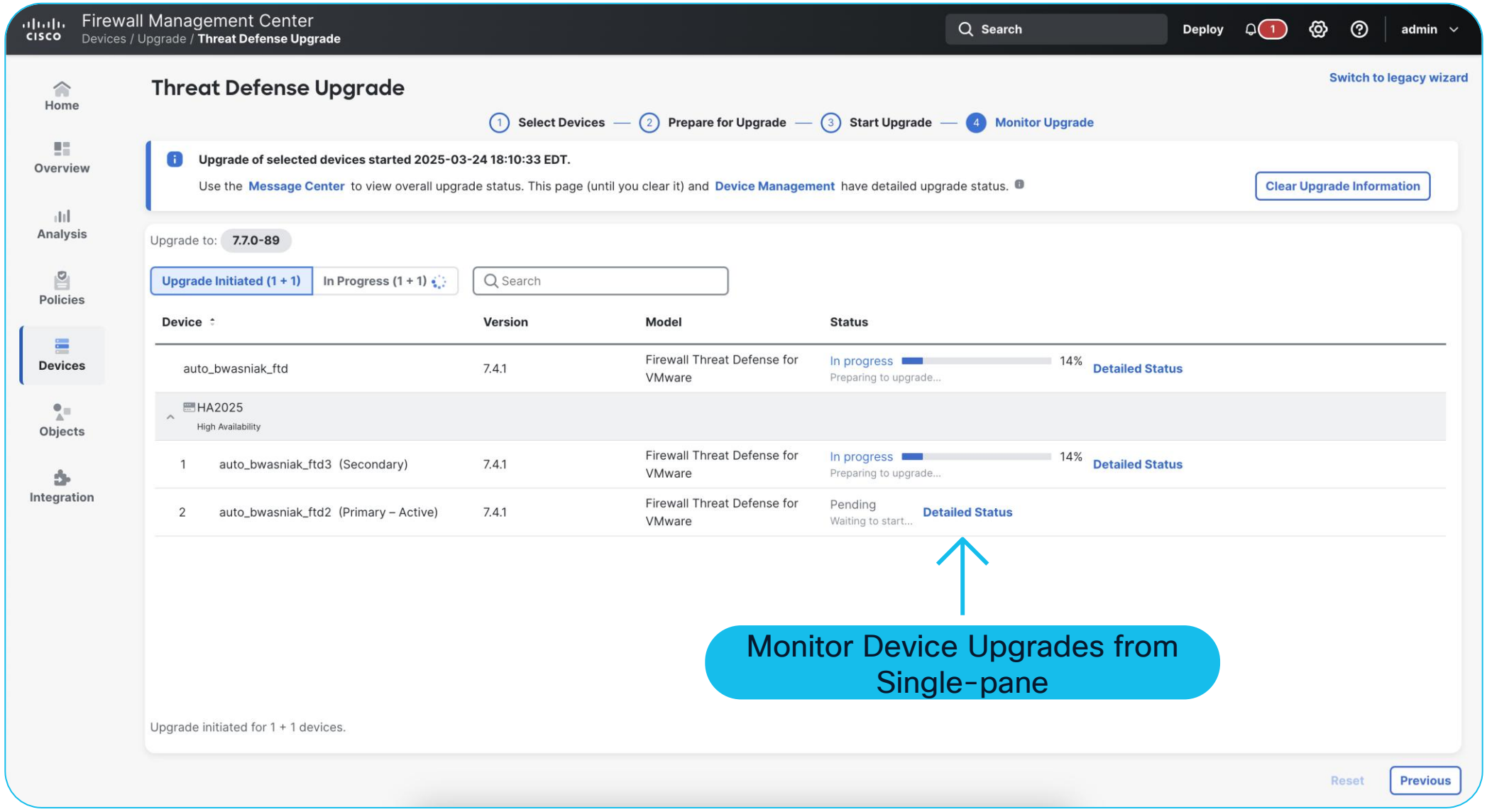
Clicking on an option will change the setting immediately.

To close the “drawer”, click away from it.





Upgrading FTDs – Monitor Upgrade



Best Practices

What to keep in mind...

- Understand how the upgrade process works
- Always make sure to verify your upgrade path prior to kicking off an upgrade
- Effective planning and preparation is essential for a successful upgrade
- Upgrading your firewall not only enhances stability, but also improves performance enabling you to leverage the latest feature-set
- Always schedule a maintenance window

Call to Action

- Don’t allow fears to overshadow your motivation for the upgrade. Start planning for the upgrade now!
- Embrace the recommended best practices for the upgrade.

Reference

- Secure Firewall Essentials

  https://secure.cisco.com/secure-firewall/

- Secure Firewall YouTube Channel

  https://www.youtube.com/@CiscoNetSec/videos

- Upgrade Threat Defense Guide

  https://www.cisco.com/c/en/us/td/docs/security/secure-firewall/upgrade/management-center/770/upgrade-management-center-77.html

- Secure Firewall Management Center – New Features by Release

  https://www.cisco.com/c/en/us/td/docs/security/secure-firewall/roadmap/management-center-new-features-by-release.html

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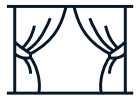

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