Here are basic steps to upgrade your domain controllers from Windows 2008 to Windows 2012R2, or even 2016. It’s basically the same process.

Step 1 Prep the forest

1. Open the Windows 2012 R2 DVD or mounted .iso file and type in adprep /forestprep for the domain prep it will be adprep /domainprep
2. Check the Schema version of Active Directory Directory Services after running adprep by running regedit, and going to:

Computer\HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\services\NTDS\Parameters and noting the current Schema version

Step 2. Add Windows 2012 R2 AD controller

1. Install a new Windows 2012 R2 domain controller with AD DS services, etc
2. Run DC promo to make it a new domain controller

Step 3. Verify your new Windows Server 2012 Domain Controller

1. There are 3 places you need to verify your new domain controller. These places are AD users and computers, DNS Manager, and AD sites and services.

Step 4 Transfer your FSMO roles

1. Within AD users and computers move your operation masters to the new AD controller

Step 5 Remove your Windows 2008 domain controller

1. Run DC promo and remote this domain controller
2. **This is critical. MAKE SURE** “**Delete the domain because this server is the last domain controller in the domain” is UNCHECKED**
3. Follow the remaining prompts
4. When done go to new domain controller and clean up AD old references to the old domain controller

Step 6. Raise Domain Functionality Level

1. When all your domain controllers are upgraded to 2012 R2. You can now raise the domain function level.

(Note: Personally, because it’s not always reversable, I don’t like to raise the domain functional level even though I may have the option to raise it, until all domain controllers have been upgraded.)

(Note: Windows 2016 likes to run on IPv6 over legacy IPv4. So if your infrastructure is not already running on IPv6, you should disable it on the new Windows 2016 domain controllers until your network is ready to run on IPv6. You will have issues like not being able to add machines to the domain, dns not working properly, etc.)