1-13：域功能和林功能级别

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域功能级别影响的是特定的域。

林功能级别影响的是整个林。

了解域和林功能级别　https://technet.microsoft.com/zh-cn/library/cc771294.aspx

将林功能或者域功能级别升级之后，可以支持：

1）新的功能特性；

2）新产品的部署，例如exchange的部署对林和域功能级别是有要求的。

域功能级别

域功能启用了可影响整个域以及仅影响该域的功能。下表列出域功能级别及其相应支持的域控制器：

域功能级别	支持的域控制器操作系统
Windows Server 2003	Windows Server 2012
	Windows Server 2008 R2
	Windows Server 2008
	Windows Server 2003
Windows Server 2008	Windows Server 2012
	Windows Server 2008 R2
	Windows Server 2008
Windows Server 2008 R2	Windows Server 2012
	Windows Server 2008 R2
Windows Server 2012	Windows Server 2012

例如：windows 2012的功能级别下，只支持server 2012以上版本的操作系统提升为DC。

Understanding Active Directory Functional Levels https://technet.microsoft.com/en-us/library/understanding-active-directory-functional-levels(ws.10).aspx

Guidelines for raising domain and forest functional levels

The following guidelines apply to raising the domain or forest functional levels:

- You must be a member of the **Domain Admins** group to raise the domain functional level.

- You must be a member of the **Enterprise Admins** group to raise the forest functional level.

- **You can raise the domain functional level on the primary domain controller (PDC) emulator operations master only.** The AD DS administrative tools that you use to raise the domain functional level (the Active Directory Domains and Trusts snap-in and the Active Directory Users and Computers snap-in) automatically target the PDC emulator when you raise the domain functional level.

- **You can raise the forest functional level on the schema operations master only.** Active Directory Domains and Trusts automatically targets the schema operations master when you raise the forest functional level.

• You can raise the functional level of a domain only if all domain controllers in the domain run the version or **versions** of Windows Server that the new functional level **supports.**

• You can raise the functional level of a forest only if all domain controllers in the forest run the version or versions of Windows Server that the new functional level supports.

• You cannot set the **domain functional level to a value that is lower than the forest functional level,** but you can set it to a value that is equal to or higher than the forest functional level.

• With **versions of Windows Server that are earlier than Windows Server 2008 R2, you cannot roll back** or lower a functional level under any circumstances. If you have to revert to a lower functional level with a version of Windows Server that is earlier than Windows Server 2008 R2, you must rebuild the domain or forest or restore it from a backup copy.

• After you set the domain functional level, you cannot roll back or lower the domain functional level except in the cases listed in the following table. The domain functional level can be lowered only by using Windows PowerShell. For more information, see Set-ADDomainMode.

Current domain functional level	Current forest functional level	Rollback options
Windows Server 2012 R2	Windows Server 2012 R2	None unless you first lower forest functional level
Windows Server 2012 R2	Windows Server 2012	Windows Server 2012
Windows Server 2012 R2	Windows Server 2008 R2	Windows Server 2012 or Windows Server 2008 R2
Windows Server 2012 R2	Windows Server 2008	Windows Server 2012, Windows Server 2008 R2, or Windows Server 2008
Windows Server 2012	Windows Server 2012	None unless you first lower forest functional level
Windows Server 2012	Windows Server 2008 R2	Windows Server 2008 R2
Windows Server 2012	Windows Server 2008	Windows Server 2008 R2 or Windows Server 2008
Windows Server 2008 R2	Windows Server 2008 R2	None unless you first lower forest functional level
Windows Server 2008 R2	Windows Server 2008	Windows Server 2008
Windows Server 2008 or lower	Windows Server 2008 or lower	None

• After you set the forest functional level, you cannot roll back or lower the forest functional level except in the cases listed in the following table. The forest functional level can be lowered only by using Windows PowerShell. For more information, see Set-ADForestMode. For more information about the Active Directory Recycle Bin, see What's New in AD DS: Active Directory Recycle Bin (http://go.microsoft.com/fwlink/?LinkId=141392).

Current forest functional level	Recycle Bin enabled?	Rollback options
Windows Server 2012 R2	Yes	Windows Server 2012 or Windows Server 2008 R2
Windows Server 2012 R2	No	Windows Server 2012, Windows Server 2008, or Windows Server 2008 R2
Windows Server 2012	Yes	Windows Server 2008 R2
Windows Server 2012	No	Windows Server 2008 R2 or Windows Server 2008
Windows Server 2008 R2	Yes	None
Windows Server 2008 R2	No	Windows Server 2008

Current forest functional level	Recycle Bin enabled?	Rollback options
Windows Server 2012 R2	Yes	Windows Server 2012 or Windows Server 2008 R2
Windows Server 2012 R2	No	Windows Server 2012, Windows Server 2008, or Windows Server 2008 R2
Windows Server 2012	Yes	Windows Server 2008 R2
Windows Server 2012	No	Windows Server 2008 R2 or Windows Server 2008