## **Cluster-aware updating**

Cluster-aware updating (CAU) is a new feature in Windows Server 2012 that addresses the difficulty of performing software updates on failover cluster nodes. This difficulty stems from the fact that updating software normally requires a system restart. To maintain the availability of services hosted on failover clusters in previous versions of Windows, you needed to move all roles off one node, update the software on that node, restart the node, and then repeat the process on every other node, one at a time. Windows Server 2008 R2 failover clusters could include up to 16 nodes, so this process sometimes had to be repeated as many times. In Windows Server 2012, failover clusters can scale up to 64 nodes. At this point, the older, manual method of updating software on failover clusters is simply no longer practical.

Instead, Windows Server 2012 automates the process of updating software for you. To initiate the process of updating a failover cluster, simply right-click the cluster in the list of servers in Server Manager, and then select Update Cluster from the shortcut menu, as shown in Figure 10-7.

🗲 🗸 📢 Servers 🗸 🧭 🖌 Manage Tools View Help	THE OWNER WATER OF
Servers         Volumes         Disks         Storage Pools         Shares         iSCSI         CAUClustwij         Ifeilder         Fileserver1         Add other servers in the cluster to the server pool         NODE1         Update Cluster         NODE2         Manage As         Remove This Server and Remote Servers in This Cluster         All events   0 total	

FIGURE 10-7 Manually updating a cluster.

By default, only updates configured through Windows Update are performed. Updates are received as they normally would be, either directly from the Microsoft Update servers or through Windows Software Update Services (WSUS), depending on how Windows Update is configured. Beyond this default functionality, CAU can be extended through third-party plug-ins so that other software updates can also be performed.

The preceding step shows how to trigger an update to a cluster manually. Triggering updates manually might be too straightforward a task to appear on the 70-412 exam. More likely, you could see a question about configuring self-updates. You can access these self-update configuration settings in Failover Cluster Manager by right-clicking the cluster name in the console tree, pointing to More Actions, and then selecting Cluster-Aware Updating, as shown in Figure 10-8

Note: Manual updating is called *remote updating mode* when you use this method to update a failover cluster from a remote machine on which the failover cluster management tools have been installed.

	Failove	er Cluster Ma	anager				x
File Action View Help							
Failover Cluster Manager Roles on Node2 (1)					Actions		
ClusterA.adatum.loca <sup>1</sup> Roles Nodes	Configure Role Validate Cluster		Queries ▼		Node2 • Roles View	•	. ^
Node1	View Validation Report	Running	Type File Server	Priority	Hardware Summar		
Node2	Add Node			Pause		8	
Disks	Close Connection			Resume	•	8	
<ul> <li>☐ Pools</li> <li>▲ <sup>4</sup></li> <li>▲ Cluster Netwo</li> <li>▲ Cluster Events</li> </ul>	Reset Recent Events			Remote Desktop			
	More Actions	Configure Cluster Quorum Settings		Show Critical Events		=	
	Refresh	Migrate Roles		More Actions	•		
	Properties	Shut Down Cluster		View	•	2	
	Help	Destroy Cluster			Refresh		2
	<	Move Co	ore Cluster Resource	es 👘	+ Help		
	FileServer1	Cluster-/	Aware Updating		erver1	•	
	rile server i				😋 Start Role		
	Status: Runr	ning		^	G Stop Role		
	Priority: Med			=	Add File Share	•	5
	Owner Node: Node	e2		~	Change Startup Pri	-	
	Summary Resources Shares	5		>	Information Details.		~

FIGURE 10-8 Opening CAU actions.

3		ClusterA - Cluster-A	Aware Updating	D X
Connect to a faile	over cluster:			•
ClusterA			<ul> <li>Connect</li> </ul>	
Cluster nodes:			Cluster Actions	
Node name Node1 Node2	Last Run status Not Available Not Available	Last Run time Not Available Not Available	<ul> <li>Apply updates to this cluster</li> <li>Preview updates for this cluster</li> <li>Create or modify Updating Run Profil</li> <li>Generate report on past Updating Ru</li> <li>Configure cluster self-updating optio</li> <li>Analyze cluster updating readiness</li> </ul>	ns
Cluster name: Last Updating F	date Summary Log of Upda ClusterA Run: Not Available ttatus: Not Available	tes in Progress		

This step opens the Cluster-Aware Updating dialog box, shown in Figure 10-9.

FIGURE 10-9 CAU actions

To configure self-updating for the cluster, click Configure Self-Updating Options beneath Cluster Actions. This step will open the Configure Self-Updating Options Wizard. You can enable self-updating on the cluster on the second (Add Clustered Role) page of the wizard by selecting the option to add the CAU clustered role, with self-updating mode enabled (shown in Figure 10-10).

**NOTE** The Cluster-Aware Updating dialog box also allows you to perform the following actions:

- Apply updates to the cluster
- Preview updates for the cluster
- Create or modify Updating Run Profile directly (without running a wizard)
- Generate report on past Updating Runs
- Analyze cluster updating readiness

EIGURE 10-0 CALL actions

	ClusterA - Configure Self-Updating Options Wizard				
	ClusterA - Configure Self-Updating Options Wizard      X         ClusterA - Configure Self-Updating Chapter Self-Updating Enabled         Warning: This failover cluster is not configured with the Cluster-Aware Updating (CAU) clustered role.         You will be able to choose self-updating mode options after the cluster has been configured with the CAU clustered role. You will need to configure the cluster with this clustered role only once.         ✓ Add the CAU clustered role, with self-updating mode enabled, to this cluster         Your domain or IT policies might require you to prestage a computer account (object) in Active Directory for the CAU clustered role.         ☐ I have a prestaged computer object for the CAU clustered role				
< Previous Next > Apply Cancel					

FIGURE 10-10 Enabling self-updating mode for CAU.

The third (Self-Updating Schedule) page of the wizard lets you specify a schedule for updating. The fourth (Advanced Options) page lets you change profile options, as shown in Figure 10-11. These profile options let you set time boundaries for the update process and other advanced parameters.

	ClusterA - Configure Self-Up	dating Options Wizard	- 🗆 X	
Advanced Option				
Getting Started	Updating Run options based on: C:\Windows\system32\defaultparar	natara uni	<b>D</b>	
Add Clustered Role Self-updating schedule	Changes to make for this Updating	Browse		
Advanced Options Additional Options Confirmation Completion	Learn more about profile options StopAfter WarnAfter MaxRetriesPerNode MaxFailedNodes RequireAllNodesOnline NodeOrder RebootTimeoutMinutes	Type new value or use default.		
	PreUpdateScript PostUpdateScript	Type new value or use default. Type new value or use default. Previous Next > Apply	Cancel	

FIGURE 10-11 Configuring advanced options for Cluster-Aware Self-Updating.