

Windows 11 Enterprise Activation – KMS Connectivity Investigation Report

1. Background

Devices are Entra-joined and enrolled in Microsoft Intune. An Intune Edition upgrade and mode switch profile upgrades Windows 10/11 Pro to Windows 11 Enterprise using the generic Enterprise GVLK (partial key 2YT43). This configuration makes clients function as KMS clients (VOLUME_KMSCLIENT channel)[1].

Some devices activate successfully as Enterprise; however, others fail with activation errors (for example, error code 0xC004F074 with the message "we can't connect to your organization's activation server") and revert to "Windows not activated" after the profile applies[2][3].

2. Findings on a Working Device

When running `slmgr /dlv` on a successfully activated device, the output shows:

- **Name:** Windows(R), Enterprise edition
- **Description:** VOLUME_KMSCLIENT channel
- **Product Key Channel:** GVLK, partial key 2YT43
- **License Status:** Licensed
- **Key Management Service client information section contains:**
 - KMS machine name (for example, kms8.msguide.com) and IP address
 - Activation interval and Renewal interval values populated with time remaining[1][3]

This output proves the device can reach a functioning KMS host on TCP port 1688 and is receiving 180-day KMS activations as designed[1][4].

3. Findings on Affected Devices

On multiple failing devices, after the same Intune profile has applied:

- `slmgr /dlv` output shows:
 - Windows 11 Enterprise, VOLUME_KMSCLIENT channel, GVLK key (2YT43)
 - License Status: Not activated or notification state[3]
 - No "most recent activation information" section (no KMS machine name, IP, or activation interval values)
- Connectivity tests to the KMS host show failure:
 - Test-NetConnection <KMSHost> -Port 1688 returns **TcpTestSucceeded = False**
 - Connection attempts timeout when trying to reach the KMS server[4]
- When testing from these clients, ping/TCP connectivity to the KMS host fails, while other internet and enterprise traffic functions normally, indicating a path or firewall rule problem specifically affecting TCP port 1688 communication to the KMS server network[2][4]

4. Technical Conclusion

All devices are correctly configured as KMS clients by the Intune Enterprise upgrade policy[1]. They use the same edition, same GVLK key (2YT43), and same channel as successfully activating devices. However:

- Devices that can reach the KMS host on TCP port 1688 activate successfully[3]
- Devices that cannot reach TCP port 1688 remain unlicensed and show activation errors[2][3]

Therefore, the activation issue is not caused by:

- Intune policy configuration
- Windows licensing
- Device settings or KMS client configuration

Instead, the root cause is **network reachability from certain client networks or segments to the KMS server on TCP port 1688**[4].

5. Requested Actions for Network/Firewall Team

Please verify and, if necessary, adjust firewall and routing rules so that:

1. All subnets and VPN ranges used by Windows 10/11 Enterprise clients can **resolve the KMS host name** via DNS SRV record _vlmcs._tcp or standard A record for the KMS host[1][4]
2. **Outbound TCP port 1688** from client networks to the KMS host IP is **allowed** without firewall, intrusion prevention system (IPS), or proxy blocking or intercepting this traffic[2][4]
3. The KMS host itself is listening on TCP port 1688 and is not blocked by a local host firewall[1][4]

6. Validation Steps

After firewall rules are adjusted, validation can be performed from any affected client:

1. Run `Test-NetConnection <KMSHost> -Port 1688` – expect **TcpTestSucceeded = True**[4]
2. Run `slmgr /ato` to trigger activation immediately[3]
3. Run `slmgr /dlv` again and verify:
 - License Status now shows **Licensed**[3]
 - "Key Management Service client information" section is populated with machine name, IP, and activation interval values[3]

7. Expected Outcome

Once TCP port 1688 connectivity is consistently available from all affected client networks to the KMS host, Windows 11 Enterprise activation should succeed on all devices upgraded by the Intune edition upgrade profile[1][3][4].

References

- [1] Microsoft Learn. (2025, May 13). Windows edition upgrade. Retrieved from <https://learn.microsoft.com/en-us/windows/deployment/upgrade/windows-edition-upgrades>
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- [3] Microsoft Learn. (2025, May 13). Activate using Key Management Service. Retrieved from <https://learn.microsoft.com/en-us/windows/deployment/volume-activation/activate-using-key-management-service-vamt>
- [4] One Click Technologies. (2025, October 21). Fix the Activation Error Code 0xC004F074 on Windows. Retrieved from <https://oneclicktechnologies.us/blog/fix-activation-error-code-0xc004f074-windows/>