

## [MS-CMRP]: Failover Cluster: Management API (ClusAPI) Protocol

This topic lists the Errata found in the MS-CMRP document since it was last published. Since this topic is updated frequently, we recommend that you subscribe to these RSS or Atom feeds to receive update notifications.



Errata are subject to the same terms as the Open Specifications documentation referenced.

Errata below are for Protocol Document Version [V37.0 – 2020/03/04](#).

Errata Published *	Description								
2020/07/20	<p>In Section 3.1.4.2.129, ApiOnlineGroupEx (Opnum 130), revised processing rules.            Changed from:</p> <ul style="list-style-type: none"> <li>• If the CLUSAPI_GROUP_ONLINE_IGNORE_RESOURCE_STATUS flag is set in the dwOnlineFlags parameter, the server MUST ignore the locked mode value of the group designated by the hGroup parameter.</li> <li>• For each resource contained in the group designated by the hGroup parameter that is not in the ClusterResourceOnline state (section 3.1.4.2.13), the server MUST provide the buffer specified by the lpInBuffer parameter to the server implementation-specific object that controls the resource operation while bringing the resource online.</li> </ul> <p>The server MUST accept an ApiOnlineGroupEx request only if it is in the read/write state, as specified in section 3.1.1.</p> <p>The server MUST require that the access level associated with the hGroup parameter is "All" (section 3.1.4).</p> <pre>           error status t ApiOnlineGroupEx(               [in] HGROUP_RPC hGroup,               [in] DWORD dwOnlineFlags,               [in, size is(cbInBufferSize)] BYTE* lpInBuffer,               [in] DWORD cbInBufferSize,               [out] error status t *rpc status           );           </pre> <p>hGroup: An HGROUP_RPC context handle that was obtained in a previous call to ApiOpenGroup (section 3.1.4.2.42), ApiOpenGroupEx (section 3.1.4.2.118), or ApiCreateGroup (section 3.1.4.2.43).</p> <p>dwOnlineFlags: Either CLUSAPI_GROUP_ONLINE_IGNORE_RESOURCE_STATUS (0x00000001), if the client needs the server to ignore the locked mode for the group specified by the hGroup parameter (section 3.1.1.1.4), or zero.</p> <p>lpInBuffer: A pointer to a buffer that the server will provide to implementation-specific objects that control the resource operations for each resource in the group. The client SHOULD set this parameter to a PROPERTY_LIST (section 2.2.3.10). For each value in this list, the client SHOULD set the property name to the name of the resource type of one of the resources in the group. The client MAY provide a buffer that does not have a property value corresponding to each resource type in the group, and the client MAY provide a buffer that has multiple property values for the same resource type. Except for the following property values, the server MUST treat all property values provided by the client identically.</p> <table border="1" data-bbox="394 1745 1412 1894"> <thead> <tr> <th>Property Name</th> <th>CLUSTER_PROPERTY_FORMAT</th> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Virtual Machine</td> <td>CLUSPROP_FORMAT_DWORD</td> <td>0x00000004</td> <td>Reserved for local use.</td> </tr> </tbody> </table>	Property Name	CLUSTER_PROPERTY_FORMAT	Value	Description	Virtual Machine	CLUSPROP_FORMAT_DWORD	0x00000004	Reserved for local use.
Property Name	CLUSTER_PROPERTY_FORMAT	Value	Description						
Virtual Machine	CLUSPROP_FORMAT_DWORD	0x00000004	Reserved for local use.						

Errata Published *	Description								
			cbInBufferSize: The size in bytes of the buffer pointed to by the lpInBuffer parameter.						
	<p>rpc_status: A 32-bit integer used to indicate success or failure. The RPC runtime MUST indicate, by writing to this parameter, whether it succeeded in executing this method on the server. The encoding of the value passed in this parameter MUST conform to encoding for comm_status and fault_status, as specified in Appendix E of [C706].</p> <p>Return Values: This method MUST return the same error codes as specified for ApiOnlineGroup (section 3.1.4.2.50).</p> <p>Changed to:</p> <ul style="list-style-type: none"> <li>• If the CLUSAPI_GROUP_ONLINE_IGNORE_RESOURCE_STATUS flag is set in the dwOnlineFlags parameter, the server MUST ignore the locked mode value of the group designated by the hGroup parameter.</li> <li>• If the CLUSAPI_GROUP_ONLINE_SYNCHRONOUS flag is set in the dwOnlineFlags parameter, the server MUST perform the operation synchronously to bring the group designated by the hGroup parameter online.</li> <li>• If the CLUSAPI_GROUP_ONLINE_BEST_POSSIBLE_NODE flag is set in the dwOnlineFlags parameter, the server MUST determine the best possible node that will host the group designated by the hGroup parameter.</li> <li>• If the CLUSAPI_GROUP_ONLINE_IGNORE_AFFINITY_RULE flag is set in the dwOnlineFlags parameter, the server MUST ignore the affinity rule of the group designated by the hGroup parameter.</li> <li>• For each resource contained in the group designated by the hGroup parameter that is not in the ClusterResourceOnline state (section 3.1.4.2.13), the server MUST provide the buffer specified by the lpInBuffer parameter to the server implementation-specific object that controls the resource operation while bringing the resource online.</li> </ul> <p>The server MUST accept an ApiOnlineGroupEx request only if it is in the read/write state, as specified in section 3.1.1.</p> <p>The server MUST require that the access level associated with the hGroup parameter is "All" (section 3.1.4).</p> <pre> error_status_t ApiOnlineGroupEx(     [in] HGROUP_RPC hGroup,     [in] DWORD dwOnlineFlags,     [in, size is(cbInBufferSize)] BYTE* lpInBuffer,     [in] DWORD cbInBufferSize,     [out] error_status_t *rpc_status ); </pre> <p>hGroup: An HGROUP_RPC context handle that was obtained in a previous call to ApiOpenGroup (section 3.1.4.2.42), ApiOpenGroupEx (section 3.1.4.2.118), or ApiCreateGroup (section 3.1.4.2.43).</p> <p>dwOnlineFlags: A bitwise-OR of zero or more of the following flags.</p> <table border="1" data-bbox="394 1633 1414 1900"> <thead> <tr> <th>Value</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0x00000001 CLUSAPI_GROUP_ONLINE_IGNORE_RESOURCE_STATUS</td> <td>The server MUST ignore the locked mode of the group as specified in section 3.1.1.1.4.</td> </tr> <tr> <td>0x00000002 CLUSAPI_GROUP_ONLINE_SYNCHRONOUS</td> <td>The server MUST perform the operation synchronously to bring the group online.&lt;114&gt;</td> </tr> </tbody> </table>			Value	Description	0x00000001 CLUSAPI_GROUP_ONLINE_IGNORE_RESOURCE_STATUS	The server MUST ignore the locked mode of the group as specified in section 3.1.1.1.4.	0x00000002 CLUSAPI_GROUP_ONLINE_SYNCHRONOUS	The server MUST perform the operation synchronously to bring the group online.<114>
Value	Description								
0x00000001 CLUSAPI_GROUP_ONLINE_IGNORE_RESOURCE_STATUS	The server MUST ignore the locked mode of the group as specified in section 3.1.1.1.4.								
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	0x00000004 CLUSAPI_GROUP_ONLINE_BEST_POSSIBLE_NODE	The server MUST determine the best possible node that will host the group when it is brought online.<115>									
	0x00000008 CLUSAPI_GROUP_ONLINE_IGNORE_AFFINITY_RULE	The server MUST ignore the affinity rule of the group.<116> lpInBuffer: A pointer to a buffer that the server will provide to implementation-specific objects that control the resource operations for each resource in the group. The client SHOULD set this parameter to a PROPERTY_LIST (section 2.2.3.10). For each value in this list, the client SHOULD set the property name to the name of the resource type of one of the resources in the group. The client MAY provide a buffer that does not have a property value corresponding to each resource type in the group, and the client MAY provide a buffer that has multiple property values for the same resource type. Except for the following property values, the server MUST treat all property values provided by the client identically.									
	<table border="1"> <thead> <tr> <th data-bbox="365 1102 527 1218">Property Name</th> <th data-bbox="527 1102 885 1218">CLUSTER_PROPERTY_FORMAT</th> <th data-bbox="885 1102 1047 1218">Value</th> <th data-bbox="1047 1102 1421 1218">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="365 1218 527 1354">Virtual Machine</td> <td data-bbox="527 1218 885 1354">CLUSPROP_FORMAT_DWORD</td> <td data-bbox="885 1218 1047 1354">0x00000004</td> <td data-bbox="1047 1218 1421 1354">Reserved for local use. cbInBufferSize: The size in bytes of the buffer pointed to by the lpInBuffer parameter.</td> </tr> </tbody> </table>			Property Name	CLUSTER_PROPERTY_FORMAT	Value	Description	Virtual Machine	CLUSPROP_FORMAT_DWORD	0x00000004	Reserved for local use. cbInBufferSize: The size in bytes of the buffer pointed to by the lpInBuffer parameter.
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Virtual Machine	CLUSPROP_FORMAT_DWORD	0x00000004	Reserved for local use. cbInBufferSize: The size in bytes of the buffer pointed to by the lpInBuffer parameter.								
	<p>rpc_status: A 32-bit integer used to indicate success or failure. The RPC runtime MUST indicate, by writing to this parameter, whether it succeeded in executing this method on the server. The encoding of the value passed in this parameter MUST conform to encoding for comm_status and fault_status, as specified in Appendix E of [C706].</p> <p>Return Values: This method MUST return the same error codes as specified for ApiOnlineGroup (section 3.1.4.2.50), in addition to the following return value.</p> <table border="1"> <thead> <tr> <th data-bbox="365 1564 747 1617">Return value/code</th> <th data-bbox="747 1564 1421 1617">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="365 1617 747 1732">0x00000057 ERROR_INVALID_PARAMETER</td> <td data-bbox="747 1617 1421 1732">The dwOnlineFlags parameter is not one of the specified values.</td> </tr> </tbody> </table>			Return value/code	Description	0x00000057 ERROR_INVALID_PARAMETER	The dwOnlineFlags parameter is not one of the specified values.				
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0x00000057 ERROR_INVALID_PARAMETER	The dwOnlineFlags parameter is not one of the specified values.										
	<p>In Section 3.1.4.2.131, ApiMoveGroupEx (Opnum 132), revised processing rules, adding additional value to the dwMoveFlags field.</p> <p>Changed from:</p>										

Errata Published *	Description						
	<ul style="list-style-type: none"> <li>• If the CLUSAPI_GROUP_MOVE_HIGH_PRIORITY_START flag is set in the dwMoveFlags parameter, then on the destination node when bringing the group to its persistent state, the server SHOULD bring this group to its persistent state as soon as possible, regardless of other implementation-specific policies that govern the ordering and/or prioritization of bringing groups to their persistent states.</li> <li>• For each resource contained in the group designated by hGroup that is in the state ClusterResourceOnline (section 3.1.4.2.13), the server MUST provide the buffer designated by the lpInBuffer parameter to the server implementation-specific object that controls the resource operation while bringing the resource offline on the current node and when bringing the resource online on the destination node. How the server provides this buffer is implementation-specific.</li> </ul> <p>&amp;</p> <table border="1" data-bbox="394 632 1417 921"> <tr> <td data-bbox="394 632 954 921">           0x00000008            CLUSAPI_GROUP_MOVE_HIGH_PRIORITY_START         </td> <td data-bbox="954 632 1417 921">           When bringing the group to its persistent state on the destination node, the server SHOULD bring this group to its persistent state as soon as possible without regard to implementation-specific policies that govern the ordering and/or prioritization of bringing groups to their persistent states.         </td> </tr> </table> <p>Changed to:</p> <ul style="list-style-type: none"> <li>• If the CLUSAPI_GROUP_MOVE_HIGH_PRIORITY_START flag is set in the dwMoveFlags parameter, then on the destination node when bringing the group to its persistent state, the server SHOULD bring this group to its persistent state as soon as possible, regardless of other implementation-specific policies that govern the ordering and/or prioritization of bringing groups to their persistent states.</li> <li>• If the CLUSAPI_GROUP_MOVE_FAILBACK flag is set in the dwMoveFlags parameter, and if move group operation fails, the server MUST perform failback operation.</li> <li>• If the CLUSAPI_GROUP_MOVE_IGNORE_AFFINITY_RULE flag is set in the dwMoveFlags parameter, the server MUST ignore the affinity rule of the group designated by the hGroup parameter.</li> <li>• For each resource contained in the group designated by hGroup that is in the state ClusterResourceOnline (section 3.1.4.2.13), the server MUST provide the buffer designated by the lpInBuffer parameter to the server implementation-specific object that controls the resource operation while bringing the resource offline on the current node and when bringing the resource online on the destination node. How the server provides this buffer is implementation-specific.</li> </ul> <p>&amp;</p> <table border="1" data-bbox="394 1476 1417 1837"> <tr> <td data-bbox="394 1476 954 1734">           0x00000008            CLUSAPI_GROUP_MOVE_HIGH_PRIORITY_START         </td> <td data-bbox="954 1476 1417 1734">           When bringing the group to its persistent state on the destination node, the server SHOULD bring this group to its persistent state as soon as possible without regard to implementation-specific policies that govern the ordering and/or prioritization of bringing groups to their persistent states.         </td> </tr> <tr> <td data-bbox="394 1734 954 1837">           CLUSAPI_GROUP_MOVE_FAILBACK            0x00000010         </td> <td data-bbox="954 1734 1417 1837">           If move group operation fails, the server MUST perform failback operation.         </td> </tr> </table>	0x00000008 CLUSAPI_GROUP_MOVE_HIGH_PRIORITY_START	When bringing the group to its persistent state on the destination node, the server SHOULD bring this group to its persistent state as soon as possible without regard to implementation-specific policies that govern the ordering and/or prioritization of bringing groups to their persistent states.	0x00000008 CLUSAPI_GROUP_MOVE_HIGH_PRIORITY_START	When bringing the group to its persistent state on the destination node, the server SHOULD bring this group to its persistent state as soon as possible without regard to implementation-specific policies that govern the ordering and/or prioritization of bringing groups to their persistent states.	CLUSAPI_GROUP_MOVE_FAILBACK 0x00000010	If move group operation fails, the server MUST perform failback operation.
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CLUSAPI_GROUP_MOVE_FAILBACK 0x00000010	If move group operation fails, the server MUST perform failback operation.						

Errata Published *	Description					
	CLUSAPI_GROUP_MOVE_IGNORE_AFFINITY_RULE 0x00000020	The server MUST ignore the affinity rule while performing move group operation.<119>				
	<p>In Section 3.1.4.2.135, ApiOfflineResourceEx (Opnum 136), revised processing rules, adding dwOfflineFlags field values and a new return value.</p> <p>Changed from:</p> <ul style="list-style-type: none"> <li>• If the CLUSAPI_RESOURCE_OFFLINE_IGNORE_RESOURCE_STATUS flag is set in the dwOfflineFlags parameter, the server MUST ignore the locked mode value of the resource designated by the hResource parameter as well as the locked mode value of any of its dependent resources as specified in section 3.1.1.1.2.</li> <li>• If the resource designated by the hResource parameter is in the ClusterResourceOnline state (section 3.1.4.2.13), then the server MUST provide the buffer designated by the lpInBuffer parameter to the server implementation-specific object that controls the resource operation while bringing the resource offline. The server MUST also provide this buffer to the server implementation-specific objects for any of the designated resource's dependent resources that are also in the ClusterResourceOnline state. How the server provides this buffer is implementation-specific.</li> </ul> <p>&amp;</p> <p>dwOfflineFlags: The value CLUSAPI_RESOURCE_OFFLINE_IGNORE_RESOURCE_STATUS (0x00000001), if the client needs the server to ignore the resource locked mode as described in 3.1.1.1.1, or zero.</p> <p>&amp;</p> <p>Return Values: This method MUST return the same error codes returned by the ApiOfflineResource (section 3.1.4.2.19) method.</p> <p>Changed to:</p> <ul style="list-style-type: none"> <li>• If the CLUSAPI_RESOURCE_OFFLINE_IGNORE_RESOURCE_STATUS flag is set in the dwOfflineFlags parameter, the server MUST ignore the locked mode value of the resource designated by the hResource parameter as well as the locked mode value of any of its dependent resources as specified in section 3.1.1.1.2.</li> <li>• If the CLUSAPI_RESOURCE_OFFLINE_FORCE_WITH_TERMINATION flag is set in the dwOfflineFlags parameter, the server MUST shut down the resource designated by the hResource parameter.</li> <li>• If the CLUSAPI_RESOURCE_OFFLINE_DO_NOT_UPDATE_PERSISTENT_STATE flag is set in the dwOfflineFlags parameter, the server MUST not update the persistent state of the resource designated by the hResource parameter when it is brought offline.</li> <li>• If the resource designated by the hResource parameter is in the ClusterResourceOnline state (section 3.1.4.2.13), then the server MUST provide the buffer designated by the lpInBuffer parameter to the server implementation-specific object that controls the resource operation while bringing the resource offline. The server MUST also provide this buffer to the server implementation-specific objects for any of the designated resource's dependent resources that are also in the ClusterResourceOnline state. How the server provides this buffer is implementation-specific.</li> </ul> <p>&amp;</p> <p>dwOfflineFlags: A bitwise-OR of zero or more of the following flags.</p> <table border="1" data-bbox="397 1717 1421 1890"> <thead> <tr> <th data-bbox="397 1717 1193 1774">Value</th> <th data-bbox="1193 1717 1421 1774">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="397 1774 1193 1890">           0x00000001            CLUSAPI_RESOURCE_OFFLINE_IGNORE_RESOURCE_STATUS         </td> <td data-bbox="1193 1774 1421 1890">           The server MUST ignore the locked mode value of the resource as well         </td> </tr> </tbody> </table>		Value	Description	0x00000001 CLUSAPI_RESOURCE_OFFLINE_IGNORE_RESOURCE_STATUS	The server MUST ignore the locked mode value of the resource as well
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	0x00000002 CLUSAPI_RESOURCE_OFFLINE_FORCE_WITH_TERMINATION	The server MUST shut down the resource.				
	0x00000004 CLUSAPI_RESOURCE_OFFLINE_DO_NOT_UPDATE_PERSISTENT_STATE	The server MUST not update the persistent state of the resource when it is brought offline.<125> &				
	Return Values: This method MUST return the same error codes returned by the ApiOfflineResource (section 3.1.4.2.19) method, in addition to the following return value.					
	<table border="1"> <thead> <tr> <th data-bbox="394 915 748 961">Return value/code</th> <th data-bbox="748 915 1417 961">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="394 961 748 1075">0x00000057 ERROR_INVALID_PARAMETER</td> <td data-bbox="748 961 1417 1075">The dwOfflineFlags parameter is not one of the specified values.</td> </tr> </tbody> </table>		Return value/code	Description	0x00000057 ERROR_INVALID_PARAMETER	The dwOfflineFlags parameter is not one of the specified values.
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	In Section 7, Appendix B: Product Behavior, added version exceptions.					
	<p>Changed from:</p> <p>&lt;112&gt; Section 3.1.4.2.128: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;113&gt; Section 3.1.4.2.129: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;114&gt; Section 3.1.4.2.130: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;115&gt; Section 3.1.4.2.131: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;116&gt; Section 3.1.4.2.132: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;117&gt; Section 3.1.4.2.133: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;118&gt; Section 3.1.4.2.134: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;119&gt; Section 3.1.4.2.134: Windows Server v1909 and earlier operating systems do not support this value.</p> <p>&lt;120&gt; Section 3.1.4.2.135: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;121&gt; Section 3.1.4.2.137: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p>					
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	<p>&lt;112&gt; Section 3.1.4.2.128: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;113&gt; Section 3.1.4.2.129: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;114&gt; Section 3.1.4.2.129: Windows Server 2012 R2 operating system and earlier operating systems do not support this value.</p> <p>&lt;115&gt; Section 3.1.4.2.129: Windows Server 2012 R2 and earlier operating systems do not support this value.</p> <p>&lt;116&gt; Section 3.1.4.2.129: Windows Server v1909 and earlier operating systems do not support this value.</p> <p>&lt;117&gt; Section 3.1.4.2.130: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;118&gt; Section 3.1.4.2.131: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;119&gt; Section 3.1.4.2.131: Windows Server v1909 and earlier operating systems do not support this value.</p> <p>&lt;120&gt; Section 3.1.4.2.132: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;121&gt; Section 3.1.4.2.133: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;122&gt; Section 3.1.4.2.134: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;123&gt; Section 3.1.4.2.134: Windows Server v1909 and earlier operating systems do not support this value.</p> <p>&lt;124&gt; Section 3.1.4.2.135: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p> <p>&lt;125&gt; Section 3.1.4.2.135: Windows Server 2016 and earlier operating systems do not support this value.</p> <p>&lt;126&gt; Section 3.1.4.2.137: Windows Server 2008 and Windows Server 2008 R2 do not support this method and fail calls with RPC_S_PROCNUM_OUT_OF_RANGE (0x000006D1).</p>
2020/06/22	<p>In Section 3.1.4.2.134, ApiOnlineResourceEx (Opnum 135), added processing rules, revised dwOnlineFlags field adding a value table, and added a return table to the Return Values field.</p> <p>Changed from:</p> <p>The server MUST handle this method in the same manner as ApiOnlineResource (section 3.1.4.2.18) except as follows:</p> <ul style="list-style-type: none"> <li>• If the CLUSAPI_RESOURCE_ONLINE_IGNORE_RESOURCE_STATUS flag is set in the dwOnlineFlags parameter, the server MUST ignore the locked mode value of the resource designated by the hResource parameter as well as the locked mode value of any of its provider resources as specified in section 3.1.1.1.2.</li> <li>• If the resource designated by hResource is not already in the ClusterResourceOnline state (section 3.1.4.2.13), the server MUST provide the buffer designated by the lpInBuffer parameter to the server implementation-specific object that controls the resource operation while bringing the resource online and MUST provide this buffer to the server implementation-specific objects for any of the designated resource's provider resources that are not already in the ClusterResourceOnline state. How the server provides this buffer is implementation-specific. The server accepts an ApiOnlineResourceEx request only if it is in the read/write state, as specified in section 3.1.1.</li> </ul> <p>Changed to:</p> <p>The server MUST handle this method in the same manner as ApiOnlineResource (section 3.1.4.2.18) except as follows:</p>

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	<ul style="list-style-type: none"> <li>• If the CLUSAPI_RESOURCE_ONLINE_IGNORE_RESOURCE_STATUS flag is set in the dwOnlineFlags parameter, the server MUST ignore the locked mode value of the resource designated by the hResource parameter as well as the locked mode value of any of its provider resources as specified in section 3.1.1.1.2.</li> <li>• If the CLUSAPI_RESOURCE_ONLINE_DO_NOT_UPDATE_PERSISTENT_STATE flag is set in the dwOnlineFlags parameter, the server MUST not update the persistent state of the resource designated by the hResource parameter.</li> <li>• If the CLUSAPI_RESOURCE_ONLINE_NECESSARY_FOR_QUORUM flag is set in the dwOnlineFlags parameter, the server MUST bring the resource designated by the hResource parameter to online to maintain a quorum.</li> <li>• If the CLUSAPI_RESOURCE_ONLINE_BEST_POSSIBLE_NODE flag is set in the dwOnlineFlags parameter, the server MUST determine the best possible node that will host the resource designated by the hResource parameter.</li> <li>• If the CLUSAPI_RESOURCE_ONLINE_IGNORE_AFFINITY_RULE flag is set in the dwOnlineFlags parameter, the server MUST ignore the affinity rule of the resource designated by the hResource parameter.</li> <li>• If the resource designated by hResource is not already in the ClusterResourceOnline state (section 3.1.4.2.13), the server MUST provide the buffer designated by the lpInBuffer parameter to the server implementation-specific object that controls the resource operation while bringing the resource online and MUST provide this buffer to the server implementation-specific objects for any of the designated resource's provider resources that are not already in the ClusterResourceOnline state. How the server provides this buffer is implementation-specific. The server accepts an ApiOnlineResourceEx request only if it is in the read/write state, as specified in section 3.1.1.</li> </ul> <p>In this same section:</p> <p>Changed from:</p> <p>dwOnlineFlags: The value CLUSAPI_RESOURCE_ONLINE_IGNORE_RESOURCE_STATUS, if the client needs the server to ignore the Resource locked mode as described in 3.1.1.1.1, or zero.</p> <p>Changed to:</p> <p>dwOnlineFlags: A bitwise-OR of zero or more of the following flags.</p> <table border="1" data-bbox="394 1266 1414 1875"> <thead> <tr> <th data-bbox="394 1266 1182 1318">Value</th> <th data-bbox="1182 1266 1414 1318">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="394 1318 1182 1499">0x00000001 CLUSAPI_RESOURCE_ONLINE_IGNORE_RESOURCE_STATUS</td> <td data-bbox="1182 1318 1414 1499">The server MUST ignore the resource locked mode as specified in section 3.1.1.1.1.</td> </tr> <tr> <td data-bbox="394 1499 1182 1627">0x00000002 CLUSAPI_RESOURCE_ONLINE_DO_NOT_UPDATE_PERSISTENT_STATE</td> <td data-bbox="1182 1499 1414 1627">The server MUST not update the persistent state of the resource.</td> </tr> <tr> <td data-bbox="394 1627 1182 1782">0x00000004 CLUSAPI_RESOURCE_ONLINE_NECESSARY_FOR_QUORUM</td> <td data-bbox="1182 1627 1414 1782">The server MUST bring the resource to online to maintain a quorum.</td> </tr> <tr> <td data-bbox="394 1782 1182 1875">0x00000008 CLUSAPI_RESOURCE_ONLINE_BEST_POSSIBLE_NODE</td> <td data-bbox="1182 1782 1414 1875">The server MUST determine the best possible node that</td> </tr> </tbody> </table>	Value	Description	0x00000001 CLUSAPI_RESOURCE_ONLINE_IGNORE_RESOURCE_STATUS	The server MUST ignore the resource locked mode as specified in section 3.1.1.1.1.	0x00000002 CLUSAPI_RESOURCE_ONLINE_DO_NOT_UPDATE_PERSISTENT_STATE	The server MUST not update the persistent state of the resource.	0x00000004 CLUSAPI_RESOURCE_ONLINE_NECESSARY_FOR_QUORUM	The server MUST bring the resource to online to maintain a quorum.	0x00000008 CLUSAPI_RESOURCE_ONLINE_BEST_POSSIBLE_NODE	The server MUST determine the best possible node that
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	<p>In this same section:</p> <p>Changed from: Return Values: This method MUST return the same error codes as returned by the ApiOnlineResource (section 3.1.4.2.18) method.</p> <p>Changed to Return Values: This method MUST return the same error codes as returned by the ApiOnlineResource (section 3.1.4.2.18) method, except for the following additional return value.</p> <table border="1"> <thead> <tr> <th data-bbox="397 892 738 934">Return value/code</th> <th data-bbox="738 892 1421 934">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="397 934 738 1050">0x00000057 ERROR_INVALID_PARAMETER</td> <td data-bbox="738 934 1421 1050">The dwOnlineFlags parameter is not one of the specified values.</td> </tr> </tbody> </table> <p>In Section 3.1.4.2.143, ApiGetNotifyAsync (Opnum 147), revised the value description for the ERROR_INVLAID_FUNCTION value.</p> <p>Changed from: Return Values: This method MUST return one of the following values.</p> <table border="1"> <thead> <tr> <th data-bbox="397 1291 738 1333">Return value/code</th> <th data-bbox="738 1291 1421 1333">Description</th> </tr> </thead> <tbody> <tr> <td data-bbox="397 1333 738 1428">0x00000000 ERROR_SUCCESS</td> <td data-bbox="738 1333 1421 1428">The method completed successfully.</td> </tr> <tr> <td data-bbox="397 1428 738 1522">0x00000006 ERROR_INVALID_HANDLE</td> <td data-bbox="738 1428 1421 1522">The data that is pointed to by the hNotify parameter does not represent a valid HNOTIFY_RPC context handle.</td> </tr> <tr> <td data-bbox="397 1522 738 1596">0x00000103 ERROR_NO_MORE_ITEMS</td> <td data-bbox="738 1522 1421 1596">The notification port represented by the hNotify parameter has been closed.</td> </tr> <tr> <td data-bbox="397 1596 738 1785">0x00000001 ERROR_INVALID_FUNCTION</td> <td data-bbox="738 1596 1421 1785">Either the ApiUnblockedGetNotificationCall (section 3.1.4.2.107) method or the ApiCloseNotify (section 3.1.4.2.57) method has been called in another thread. The client SHOULD terminate the notification thread.</td> </tr> </tbody> </table> <p>Changed to: Return Values: This method MUST return one of the following values.</p>		Return value/code	Description	0x00000057 ERROR_INVALID_PARAMETER	The dwOnlineFlags parameter is not one of the specified values.	Return value/code	Description	0x00000000 ERROR_SUCCESS	The method completed successfully.	0x00000006 ERROR_INVALID_HANDLE	The data that is pointed to by the hNotify parameter does not represent a valid HNOTIFY_RPC context handle.	0x00000103 ERROR_NO_MORE_ITEMS	The notification port represented by the hNotify parameter has been closed.	0x00000001 ERROR_INVALID_FUNCTION	Either the ApiUnblockedGetNotificationCall (section 3.1.4.2.107) method or the ApiCloseNotify (section 3.1.4.2.57) method has been called in another thread. The client SHOULD terminate the notification thread.
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In Section 3.1.4.2.163, ApiCreateNetInterfaceEnum (Opnum 181), revised ApiCreateNetInterfaceEnums to ApiCreateNetInterfaceEnum.

Changed from:

```

error status t
ApiCreateNetInterfaceEnums {
    [ in ] HCLUSTER RPC hCluster,
    [ in, string ] LPCWSTR lpszNodeName,
    [ in, string ] LPCWSTR lpszNetworkName,
    [ out ] PENUM LIST *ReturnEnum,
    [ out ] error status t *rpc status
};

```

Changed to:

```

error_status_t
ApiCreateNetInterfaceEnum {
    [ in ] HCLUSTER_RPC hCluster,
    [ in, string ] LPCWSTR lpszNodeName,
    [ in, string ] LPCWSTR lpszNetworkName,
    [ out ] PENUM LIST *ReturnEnum,
    [ out ] error status t *rpc status
};

```

In Section 3.1.4.3.1.63, CLUSCTL\_RESOURCE\_NETNAME\_SET\_PWD\_INFOEX, added space between CLUS\_NETNAME\_PWD\_INFOEX and structure.

Changed from:

If nInBufferSize is less than the size of CLUS\_NETNAME\_PWD\_INFOEXstructure, the server MUST fail the request with ERROR\_INVALID\_PARAMETER.

If the length of the new password in Password field in CLUS\_NETNAME\_PWD\_INFOEXstructure is greater than 127, the server MUST fail the request with ERROR\_PASSWORD\_RESTRICTION.

Changed to:

Errata Published *	Description
	<p>If nInBufferSize is less than the size of CLUS_NETNAME_PWD_INFOEX structure, the server MUST fail the request with ERROR_INVALID_PARAMETER.</p> <p>If the length of the new password in Password field in CLUS_NETNAME_PWD_INFOEX structure is greater than 127, the server MUST fail the request with ERROR_PASSWORD_RESTRICTION.</p> <p>In Section 3.1.4.3.7.19, CLUSCTL_CLUSTER_CLEAR_UPGRADE_IN_PROGRESS, revised CLUSCTL_CLUSTER_CLEAR_UPGRADE_IN_PROGRESS to CLUSCTL_CLUSTER_CLEAR_UPGRADE_IN_PROGRESS.</p> <p>Changed from: The CLUSCTL_CLUSTER_CLEAR_UPGRADE_IN_PROGRESS control code SHOULD&lt;206&gt; be used to indicate that the current upgrade to the cluster operational version is no longer in progress.</p> <p>Changed to: The CLUSCTL_CLUSTER_CLEAR_UPGRADE_IN_PROGRESS control code SHOULD&lt;207&gt; be used to indicate that the current upgrade to the cluster operational version is no longer in progress.</p> <p>In Section 3.1.4.3.7.22, CLUSCTL_CLUSTER_SET_DNS_DOMAIN, revised CLUSTER_SET_DNS_DOMAIN to CLUSCTL_CLUSTER_SET_DNS_DOMAIN.</p> <p>Changed from: The server MUST accept a CLUSCTL_CLUSTER_SET_DNS_DOMAIN cluster control code request if its protocol server state is in the read/write state, as specified in section 3.1.1. The server MUST not accept a CLUSTER_SET_DNS_DOMAIN cluster control code request if its protocol server state is in the read only state.</p> <p>Changed to: The server MUST accept a CLUSCTL_CLUSTER_SET_DNS_DOMAIN cluster control code request if its protocol server state is in the read/write state, as specified in section 3.1.1. The server MUST not accept a CLUSCTL_CLUSTER_SET_DNS_DOMAIN cluster control code request if its protocol server state is in the read only state.</p> <p>In Section 3.2.4.4, ClusterNodes, Cluster Networks, and Cluster Network Interfaces, revised ApiCreaeNetInterfaceEnumEx to ApiCreateNetInterfaceEnum.</p> <p>Changed from:  <ul style="list-style-type: none"> <li>Enumerate the cluster network interfaces associated with this cluster network: ApiCreateNetworkEnum (section 3.1.4.1.85 for protocol version 2 or 3.1.4.2.85 for protocol version 3), or ApiCreateNetInterfaceEnumEx (section 3.1.4.2.163) for protocol version 3.</li> </ul> </p> <p>Changed to:  <ul style="list-style-type: none"> <li>Enumerate the cluster network interfaces associated with this cluster network: ApiCreateNetworkEnum (section 3.1.4.1.85 for protocol version 2 or 3.1.4.2.85 for protocol version 3), or ApiCreateNetInterfaceEnum (section 3.1.4.2.163) for protocol version 3.</li> </ul> </p>
2020/06/08	<p>In Section 3.1.4.2.143, ApiGetNotifyAsync (Opnum 147), in the table for Return Values, changed from:</p>

Errata Published *	Description				
	<table border="1" data-bbox="394 296 1417 453"> <tr> <td data-bbox="394 296 906 453">0x00000001 ERROR_INVALID_FUNCTION</td> <td data-bbox="906 296 1417 453">Either the ApiUnblockedGetNotificationCall (section 3.1.4.2.107) method or the ApiCloseNotify (section 3.1.4.2.57) method has been called in another thread. The client SHOULD terminate the notification thread.</td> </tr> </table> <p data-bbox="378 495 509 520">Changed to:</p> <table border="1" data-bbox="394 562 1417 720"> <tr> <td data-bbox="394 562 906 720">0x00000001 ERROR_INVALID_FUNCTION</td> <td data-bbox="906 562 1417 720">Either the ApiUnblockGetNotifyCall (section 3.1.4.2.107) method or the ApiCloseNotify (section 3.1.4.2.57) method has been called in another thread. The client SHOULD terminate the notification thread.</td> </tr> </table> <p data-bbox="378 793 1240 819">In Section 3.1.4.3.7.22, CLUSCTL_CLUSTER_SET_DNS_DOMAIN, changed from:</p> <p data-bbox="378 861 1398 961">The server MUST accept a CLUSCTL_CLUSTER_SET_DNS_DOMAIN cluster control code request if its protocol server state is in the read/write state, as specified in section 3.1.1. The server MUST not accept a CLUSTER_SET_DNS_DOMAIN cluster control code request if its protocol server state is in the read only state.</p> <p data-bbox="378 1003 509 1029">Changed to:</p> <p data-bbox="378 1071 1398 1171">The server MUST accept a CLUSCTL_CLUSTER_SET_DNS_DOMAIN cluster control code request if its protocol server state is in the read/write state, as specified in section 3.1.1. The server MUST not accept a CLUSCTL_CLUSTER_SET_DNS_DOMAIN cluster control code request if its protocol server state is in the read only state.</p>	0x00000001 ERROR_INVALID_FUNCTION	Either the ApiUnblockedGetNotificationCall (section 3.1.4.2.107) method or the ApiCloseNotify (section 3.1.4.2.57) method has been called in another thread. The client SHOULD terminate the notification thread.	0x00000001 ERROR_INVALID_FUNCTION	Either the ApiUnblockGetNotifyCall (section 3.1.4.2.107) method or the ApiCloseNotify (section 3.1.4.2.57) method has been called in another thread. The client SHOULD terminate the notification thread.
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