[MS-WUSP]: Windows Update Services: Client-Server Protocol

Errata below are for Protocol Document Version V32.0 – 2021/10/06.

Errata Published*	Description
2022/04/04	**Section 2.2.2.2.4 SyncUpdates** **Changed From**: Behavior Note <20> Section 2.2.2.2.4: DeviceFlags are supported by Windows 11 v22H2 and later and by the down-level operating systems specified in [MSKB-5011563] and [MSKB-5011558], each with the corresponding KB article installed. **Changed To**: Behavior Note <20> Section 2.2.2.2.4: DeviceFlags are supported by the down-level operating systems specified in [MSKB-5011563], [MSKB-5011558], and [MSKB-5011831]; each with its related KB article download installed. DeviceFlags are also supported by Windows 11 v22H2 and later.

2022/02/28	**Section 2.2.2.2.4 SyncUpdates**
	Added **'DeviceFlags'** field to the 'SystemSpec' element in the SyncUpdates parameters to distinguish between detection of PNP and non-PNP devices.
	Updated **extensionDrivers** element and added new product behavior note specifying support for DeviceFlags in Windows 11 v22H2 and later and in down-level operating systems.
	Added **DriverRank** element to ensure parity with base installed driver type, and added new behavior note to indicate the operating systems (Windows 11 v22H2 and later) that support DriverRank.
	
	Changed From:
	"**Device**: The SystemSpec is an array of devices. Its format is as follows:
	<pre><s:complexType name="Device">
	  <s:sequence>
	    <s:element minOccurs="0" maxOccurs="1" name="HardwareIDs"
	      type="s1:ArrayOfString" />
	    <s:element minOccurs="0" maxOccurs="1" name="CompatibleIDs"
	      type="s1:ArrayOfString" />
	    <s:element minOccurs="0" maxOccurs="1" name="installedDriver"
	      type="s1:InstalledDriver" />
	    <s:element minOccurs="0" maxOccurs="1" name="extensionDrivers"
	       type="s1:ArrayOfExtensionDriver" />
	    <s:element minOccurs="0" maxOccurs="1" name="DriverRecoveryIDs"
	      type="s1:ArrayOfDriverRecoveryID" />
	    </s:sequence>
	</s:complexType></pre>

Errata Published*	Description

	HardwareIDs: An array of HardwareID values that identify the devices hardware supported by this driver."
	
	Changed To:
	Device: The SystemSpec is an array of devices. Its format is as follows:
	`<s:complexType name="Device">`
	 `<s:sequence>`
	  `<s:element minOccurs="0" maxOccurs="1" name="HardwareIDs"`
	   `type="s1:ArrayOfString" />`
	  `<s:element minOccurs="0" maxOccurs="1" name="CompatibleIDs"`
	   `type="s1:ArrayOfString" />`
	  `<s:element minOccurs="0" maxOccurs="1" name="installedDriver"`
	   `type="s1:InstalledDriver" />`
	  `<s:element minOccurs="0" maxOccurs="1" name="extensionDriver"`
	   `type="s1:ArrayOfExtensionDriver" />`
	  `<s:element minOccurs="0" maxOccurs="1" name="DriverRecoveryIDs"`
	   `type="s1:ArrayOfDriverRecoveryID" />`
	  `<s:element minOccurs="0" maxOccurs="1" name="DeviceFlags" type="xs:unsignedByte"/>`
	 `</s:sequence>`
	`</s:complexType>`
	HardwareIDs: An array of HardwareID values that identify the devices hardware supported by this driver."
	
	Changed From:
	"**extensionDrivers**: Extensions of a base driver. A base driver MAY have 0 or more associated extension drivers.
	`<s:complexType name="extensionDrivers">`
	 `<s:sequence>`
	  `<s:element name="ExtensionId" type="s:string" minOccurs="1" maxOccurs="1" />`
	  `<s:element name="DriverVerDate" type="s:dateTime" minOccurs="1" maxOccurs="1" />`
	  `<s:element name="DriverVerVersion" type="s:long" minOccurs="1" maxOccurs="1" />`
	  `<s:element name="Class" type="s:string" minOccurs="1" maxOccurs="1" />`
	 `</s:sequence>`
	`</s:complexType>`"
	
	Changed To:
	"**extensionDriver**: An extension of a base driver. A base driver MAY have 0 or more associated extension drivers.
	`<s:complexType name="extensionDriver">`
	 `<s:sequence>`
	  `<s:element name="ExtensionId" type="s:string" minOccurs="1" maxOccurs="1" />`
	  `<s:element name="DriverVerDate" type="s:dateTime" minOccurs="1" maxOccurs="1" />`
	  `<s:element name="DriverVerVersion" type="s:long" minOccurs="1" maxOccurs="1" />`
	  `<s:element name="Class" type="s:string" minOccurs="1" maxOccurs="1" />`
	  `<s:element name="DriverRank" type="xs:int" minOccurs="1" maxOccurs="1" />`
	  `<s:element name="MatchingComputerHWID" type="q4:guid" nillable="true"`
	   `xmlns:q4="http://microsoft.com/wsdl/types/" minOccurs="0" maxOccurs="1" />`
	 `</s:sequence>`
	`</s:complexType>`""

Errata Published*	Description

	Changed From:
	
	● "**Class**: The driver class (for example, Printer, Display, and so on), as specified by the driver during installation (typically in the driver INF file).ArrayofDriverRecoveryID: An optional array of driver IDs that allow the service to deploy a driver...."
	
	Changed To:
	
	● "**Class**: The driver class (for example, Printer, Display, and so on), as specified by the driver during installation (typically in the driver INF file).
	
	● **DriverRank**: The rank of the extension driver against a device. <product behavior note>
	
	● **MatchingComputerHWID**: The computer HardwareId to which the driver matches.
	
	ArrayofDriverRecoveryID: An optional array of driver IDs that allow the service to deploy a driver...."
	
	<product behavior note> The **DriverRank** element ensures parity with the base InstalledDriver type, by indicating the rank of the driver. The DriverRank element is supported in Windows 11 v22H2 and later."
	
	Changed From:
	
	"**DriverRecoveryID**: A string that indicates that the driver originated from WU. The WUA agent maintains a record of each driver it installs, so that it can be passed up to the server. The format of the string is the update ID of the driver that was installed. The WUA agent SHOULD omit this field for drivers that were installed via other mechanisms.
	
	CachedDriverIDs: The revision IDs of all driver revisions in the client cache. These IDs MUST have been obtained from the UpdateInfo.ID returned from previous calls to this method."
	
	Changed To:
	
	"**DriverRecoveryID**: A string that indicates that the driver originated from WU. The WUA agent maintains a record of each driver it installs, so that it can be passed up to the server. The format of the string is the update ID of the driver that was installed. The WUA agent SHOULD omit this field for drivers that were installed via other mechanisms.
	
	DeviceFlags: A bitmap of various flags for a device. Bit position 0 indicates enumerated by PNP. A value of 0 means a PNP device. A value of 1 indicates not enumerated by PNP device, for example, a printer device. <product behavior note>
	
	CachedDriverIDs: The revision IDs of all driver revisions in the client cache. These IDs MUST have been obtained from the UpdateInfo.ID returned from previous calls to this method.
	
	<product behavior note>**DeviceFlags** are supported by Windows 11 v22H2 and later and by the down-level operating systems specified in [MSKB-5011563] and [MSKB-5011558], each with the corresponding KB article installed."
	
	Section 2.2.2.2.10 GetExtendedUpdateInfo2 ~~(GEUI2)~~
	
	Added the **callerAttributes** element and definition to optionally enable the alignment of **SyncUpdates** and **GetExtendedUpdateInfo2** calls by sending **callerAttributes** in both calls. Added new product behavior note to specify the support for the callerAttributes element in Windows 11 v22H2 and later.
	
	Changed From:
	
	"**Request**:
	
	<s:element name="GetExtendedUpdateInfo2">
	  <s:complexType>
	    <s:sequence>
	      <s:element minOccurs="0" maxOccurs="1" name="cookie" type="tns:Cookie"/>
	      <s:element minOccurs="0" maxOccurs="1" name="updateIDs" type="tns:ArrayOfUpdateIdentity"/>

Errata Published*	Description

	<s:element minOccurs="0" maxOccurs="1" name="infoTypes" type="tns:ArrayOfXmlUpdateFragmentType"/>
	        <s:element minOccurs="0" maxOccurs="1" name="locales" type="tns:ArrayOfString"/>
	      </s:sequence>
	    </s:complexType>
	</s:element>"
	
	Changed To:
	"**Request**:
	<s:element name="GetExtendedUpdateInfo2">
	  <s:complexType>
	    <s:sequence>
	      <s:element minOccurs="0" maxOccurs="1" name="cookie" type="tns:Cookie"/>
	      <s:element minOccurs="0" maxOccurs="1" name="updateIDs" type="tns:ArrayOfUpdateIdentity"/>
	      <s:element minOccurs="0" maxOccurs="1" name="infoTypes" type="tns:ArrayOfXmlUpdateFragmentType"/>
	      <s:element minOccurs="0" maxOccurs="1" name="locales" type="tns:ArrayOfString"/>
	      <s:element minOccurs="0" maxOccurs="1" name="callerAttributes" type="s:string"/>
	    </s:sequence>
	  </s:complexType>
	</s:element>"
	
	Changed From:
	"**locales**: Optionally specifies the locales (2) for which localizable extended metadata MUST be returned. Localizable metadata are elements such as human-readable strings, which are represented differently between locales, as specified in [MS-LCID].
	Response:"
	
	Changed To:
	"**locales**: Optionally specifies the locales (2) for which localizable extended metadata MUST be returned. Localizable metadata are elements such as human-readable strings, which are represented differently between locales, as specified in [MS-LCID].
	
	callerAttributes: Optionally specifies the attributes of the caller. Enables the alignment of **SyncUpdates** and **GetExtendedUpdateInfo2** calls by sending callerAttributes in both calls. <product behavior note>
	Response:
	<product behavior note> The callerAttributes element is supported on Windows 11 v22H2 and later."
	
	Section 3.1.1.1 Populating the Data Model
	Specified the Windows 11 v22H2 and later operating systems and down-level operating systems that support the GeoId property.
	
	Changed From:
	"**GeoId**: Specifies the geographic region for which the end user license agreement (EULA) XML fragment is intended, if any. No GeoId or an empty GeoId indicates that the EULA is a "Rest of World" EULA with no region-specific targeting, as specified in the [ISO-3166] three-letter region codes
	
	Changed To:

Errata Published*	Description
	"**GeoId**: Specifies the geographic region for which the end user license agreement (EULA) XML fragment is intended, if any. No GeoId or an empty GeoId indicates that the EULA is a "Rest of World" EULA with no region-specific targeting, as specified in the [ISO-3166] three-letter region codes. <product behavior note> <product behavior note> The **GeoId** property is backported [MSKB-5005101] for support on Windows 10 v20H1, Windows 10 v20H2, Windows 10 v21H1, Windows Server v20H1_core, and Windows Server_20H2_core. It is also supported on Windows 11, v22H2 and later operating systems. **Section 6.2 Client Web Service WSDL** Updated this section in accordance with changes to WSDL definitions described in the earlier specified sections. **Changed From**: "<s:element minOccurs="0" maxOccurs="1" name="DriverRecoveryIDs" type="tns:ArrayOfDriverRecoveryID" /> </s:sequence></s:complexType>" **Changed To**: "<s:element minOccurs="0" maxOccurs="1" name="DriverRecoveryIDs" type="tns:ArrayOfDriverRecoveryID" /> <s:element minOccurs="0" maxOccurs="1" name="DeviceFlags" type="xs:unsignedByte"/> </s:sequence></s:complexType>" **Changed From**: "<s:element name="Class" type="s:string" minOccurs="1" maxOccurs="1 </s:sequence></s:complexType>" **Changed To**: "<s:element name="Class" type="s:string" minOccurs="1" maxOccurs="1 <s:element name="DriverRank" type="xs:int" minOccurs="1" maxOccurs="1" /> <s:element name="MatchingComputerHWID" type="q4:guid" nillable="true" xmlns:q4="http://microsoft.com/wsdl/types/" minOccurs="0" maxOccurs="1" /> </s:sequence></s:complexType>" **Changed From**: "<s:element minOccurs="0" maxOccurs="1" name="locales" type="tns:ArrayOfString"/> </s:sequence>" **Changed To**: "<s:element minOccurs="0" maxOccurs="1" name="locales" type="tns:ArrayOfString"/> <s:element minOccurs="0" maxOccurs="1" name="callerAttributes" type="s:string"/> </s:sequence>"