



---

## PROGRAMME & DEVELOPMENT SERVICES

---

# XML Services

Version 10.0.36

**Toolkit**

---



---

This document is published by, and remains the property of, DHL Express. It contains confidential and proprietary information. The customer shall hold this information in confidence and may not make any copies or disseminate this document to any third party. The customer may not disclose this information internally to its employees or agents except on a need-to-know basis and shall instruct all such employees or agents to comply with the DHL confidentiality requirement implied by this statement.

This document is furnished for informational use only and is subject to change without notice. DHL Express assumes no responsibility or liability for any errors or inaccuracies that may appear in this document.

DHL Express  
All Rights Reserved

Published: May 2026



---

## Table of Contents

<b>Revision History</b>	4
<b>1 Introduction</b>	16
1.1 XML Services	16
1.2 XML Services Toolkit	17
<b>2 Structure of Tool Kit</b>	19
2.1 Overview	20
2.2 clientSoftware	20
2.2.1 lib folder	20
2.2.2 logs folder	21
2.2.3 TransformXMLtoPDF	21
2.3 Documents folder – Reference Documents	21
2.4 Documents folder – Unit Test Plan	22
2.4.1 Unit Test Plan - Pickup	22
2.4.2 Unit Test Plan - Routing	23
2.4.3 Unit Test Plan - Shipment Validation	23
2.4.4 Unit Test Plan - Tracking	23
2.4.5 Unit Test Plan - Capability and Quote Service	24
2.4.6 Unit Test Plan - Image Upload Service	24
2.5 xsd	24
<b>3 Scripts usage</b>	25
3.1 DHLClient software to send request to XML Services	25
3.1.1 Pre requisites	25
3.1.2 Settings in runDHLClient script	26
3.1.3 runDHLClient script Retry Function	27
3.1.4 runDHLClient script UTF-8 Functionality	28
3.1.5 runDHLClient script DNS Flusher	29
3.1.6 runDHLClient script with additional logging details	29



## Revision History

XML Services version	Release Date	Comments
5.2	24 <sup>th</sup> April 2016	Minor changes on all schemas for shipment validation to bypass rating when EprocShip flag is on and value is Y.  Refer to XMLServices5.2_ShipmentValidationService.pdf section 3.2 for more information.
5.2	9 <sup>th</sup> June 2016	Minor changes on pickup route code validation and removal of ChargeCard field. Refer to XMLServices5.2_Pickup.pdf revision history for more information.  Minor changes on Shipment validation ECCN field and added LabelRegText elements. Please refer to the XMLServices5.2_ShipmentValidationService.pdf revision history.
5.2	22 <sup>nd</sup> July 2016	Updates on XMLServices5.2_CapabilityAndQuoteService.pdf on section 1.2. on DCT usages. Refer to the document revision history
5.2	10 <sup>th</sup> Nov 2016	Updates on XMLServices5.2_ShipmentValidationService.pdf, Reference_Data.XLS, ToolKit_v5.2.pdf and Shipment UTP document and folders contents.
5.2	8 <sup>th</sup> Dec 2016	Updates on XMLServices5.2_ShipmentValidationService.pdf
6.0	14 <sup>th</sup> Feb 2017	Updates on XMLServices6.0_ShipmentValidationService.pdf XMLServices6.0_Pickup.pdf
6.1	21 <sup>st</sup> June 2017	Updates on a) Toolkit_v6.1.pdf b) XMLServices6.1_ShipmentValidationService.pdf c) XMLServices6.1_CapabilityAndQuoteService.pdf d) XMLServices6.1_CapabilityAndQuoteService_UTP.pdf e) XMLServices6.1_ShipVal_UTP.pdf  No changes and rename the version from v6.0 to v6.1: f) XMLServices6.1_Tracking.pdf g) XMLServices6.1_ShipmentPreparationGuide.pdf h) XMLServices6.1_Routing.pdf i) XMLServices6.1_Pickup.pdf
6.2	21 <sup>st</sup> Nov 2017	Updates on: a) Toolkit_v6.2.pdf b) XMLServices6.2_ShipmentValidationService.pdf c) XMLServices6.2_ShipVal_UTP.pdf d) XMLServices6.2_Pickup.pdf e) XMLServices6.2_Pickup_UTP.doc f) XMLServices6.2_Tracking_UTP.doc g) XMLServices6.2_Tracking.pdf



		<p>No changes and rename the version from v6.1 to v6.2:</p> <ul style="list-style-type: none"> <li>h) XMLServices6.2_ShipmentPreparationGuide.pdf</li> <li>i) XMLServices6.2_Routing.pdf</li> <li>j) XMLServices6.2_CapabilityAndQuoteService.pdf</li> <li>k) XMLServices6.2_CapabilityAndQuoteService_UTP.pdf</li> </ul>
6.3	19 <sup>th</sup> Oct 2018	<p>Updates on:</p> <ul style="list-style-type: none"> <li>a) XMLServices6.3_ShipmentValidationService.pdf</li> <li>b) XMLServices6.3_ShipVal_UTP.pdf</li> </ul> <p>No changes and rename the version from v6.2 to v6.3:</p> <ul style="list-style-type: none"> <li>a) XMLServices6.3_Pickup.pdf</li> <li>b) XMLServices6.3_Pickup_UTP.doc</li> <li>c) XMLServices6.3_Tracking_UTP.doc</li> <li>d) XMLServices6.3_Tracking.pdf</li> <li>e) XMLServices6.3_ShipmentPreparationGuide.pdf</li> <li>f) XMLServices6.3_Routing.pdf</li> <li>g) XMLServices6.3_Routing_UTP.pdf</li> <li>h) XMLServices6.3_CapabilityAndQuoteService.pdf</li> <li>i) XMLServices6.3_CapabilityAndQuoteService_UTP.pdf</li> </ul>
10.0	17 <sup>th</sup> Apr 2020	<p>Updated the special service code SF (Direct Signature) Reference_Data.xlsx</p> <p>No changes and rename the version from v6.3 to v10.0:</p> <ul style="list-style-type: none"> <li>a) XMLServices10.0_CapabilityAndQuoteService.pdf</li> <li>b) XMLServices10.0_Pickup.pdf</li> <li>c) XMLServices10.0_Routing.pdf</li> <li>d) XMLServices10.0_ShipmentPreparationGuide.pdf</li> <li>e) XMLServices10.0_ShipmentValidationService.pdf</li> <li>f) XMLServices10.0_Tracking.pdf</li> <li>g) XMLServices10.0_CapabilityAndQuoteService_UTP.pdf</li> <li>h) XMLServices10.0_ImageUpload_UTP.pdf</li> <li>i) XMLServices10.0_Pickup_UTP.pdf</li> <li>j) XMLServices10.0_Routing_UTP.pdf</li> <li>k) XMLServices10.0_ShipVal_UTP.pdf</li> <li>l) XMLServices10.0_Tracking_UTP.pdf</li> </ul>
10.0	7 <sup>th</sup> Dec 2020	<ol style="list-style-type: none"> <li>1) New schema v10 published for Shipment Validation service with new VAT22 fields, Loose BBX and Labelless functionalities</li> <li>2) Rename the v10.0 to v10.0 for other services than Shipment Validation service: <ul style="list-style-type: none"> <li>a) ToolKit_v10.0.pdf</li> <li>b) XMLServices10.0_CapabilityAndQuoteService.pdf</li> <li>c) XMLServices10.0_Pickup.pdf</li> <li>d) XMLServices10.0_Routing.pdf</li> <li>e) XMLServices10.0_ShipmentPreparationGuide.pdf</li> <li>f) XMLServices10.0_ShipmentValidationService.pdf</li> <li>g) XMLServices10.0_Tracking.pdf</li> <li>h) XMLServices10.0_CapabilityAndQuoteService_UTP.pdf</li> <li>i) XMLServices10.0_ImageUpload_UTP.pdf</li> </ul> </li> </ol>



		j) XMLServices10.0_Pickup_UTP.pdf k) XMLServices10.0_Routing_UTP.pdf l) XMLServices10.0_ShipVal_UTP.pdf m) XMLServices10.0_Tracking_UTP.pdf
10.0	19 <sup>th</sup> March 2021	datatypes_global_v10.xsd file updated: 1) DeclaredValue field datatype with restriction 2) ExportLineItem/Value field datatype with restriction 3) ExportLineItem/Weight/Weight field datatype with restriction 4) ExportLineItem/GrossWeight/Weight field datatype with restriction 5) ExportLineItem/Weight/Weight field datatype with restriction 6) SpecialService/ChargeValue field datatype with restriction
10.0.1	25 <sup>th</sup> March 2021	Including revision history for document changes: 1) XMLServices10.0.1_ShipmentValidationService.PDF updates on Incorporating feedback on Total Line Item value derive logic – updated in section 3.15.48.5
10.0.2	5 <sup>th</sup> April 2021	Updating the XML Services Test server for customer certification – <a href="https://xmlpitest-ea.dhl.com/XMLShippingServlet">https://xmlpitest-ea.dhl.com/XMLShippingServlet</a> in below files: 1) runDHLClient.cmd 2) label.properties
10.0.3	20 <sup>th</sup> April 2021	1) XMLServices10.0.2_ShipmentValidationService.PDF a. Updated with new Roles “Seller” and “Payer”  2) Updated datatypes_global_v10.xsd, ship-val-global-req-10.0.xsd and ship-val-global-res-10.0.xsd a. Updated with new Roles “Seller” and “Payer”. b. Enumeration Update for element <InvoiceReferenceType>, <ItemReferenceType>, <OtherChargeType> and <NumberTypeCode>. c. Removed non supported GREF data from <ItemReferenceType> i.e. ECN.
	8 <sup>th</sup> July 2021	1. XMLServices10.0.2_ShipmentValidationService.PDF  a. Updated Importer description on section 4.58 and 3.37 by remove the LBBX restriction. It is generic for all shipments. b. Updated Line Number description on the sequence number details on section 3.15.54 and 3.15.48.1
10.0.4	22 <sup>nd</sup> July 2021	A) XMLServices10.0.3_ShipmentValidationService.pdf: 1. Removed the <InsuredAmount> field in Shipment response which is not applicable (Problem ticket: PRB0144921) 2. Update reference data for: a) <NumberTypeCode> added with DLI, NID, PAS and MID b) <InvoiceReferenceType> added with AAM,ABT,ACL,ADA,AES,AFD,ANT,BKN,BOL,CDN,COD,DSC,FF,FN,FTR,HWB,IBC,IPP,LLR,MAB,MWB,NLR,OBC,PD,PRN,RMA,RTL,SID,SS,SWN c) <ItemReferenceType> - added with AAM,CFR,DOM,FOR,USG,MAT d) <CustomsDocumentType> added with ELP e) <CustomsPaperworkType> added with ELP  B) XMLServices10.0.1_Pickup.pdf:



		<p>1. Updated &lt;RemotePickupFlag&gt; with more details</p> <p>C) Reference_Data.xlsx Updated 'RegistrationNumberTypeCode', 'InvoiceReferenceType', 'ItemReferenceType', 'CustomsDocumentType', 'CustomsPaperworkType' tab sheet for VAT22 CI Mask v1.24.2 related reference data.</p>
10.0.5	3 <sup>rd</sup> December 2021	<p>XMLServices10.0.4_ShipmentValidationService.pdf: Removed &lt;DocumentFunction&gt; field in Shipment request and response</p>
10.0.6	10 <sup>th</sup> Jan 2022	<p>A) XMLServices10.0.1_Routing.pdf 1) Updated element &lt;City&gt; maximum length 2) Updated 'Cyrillic' with transliteration or extended characters if applicable.</p> <p>B) XMLServices10.0.2_Pickup.pdf 1) Updated below elements length: a. PackageLocation b. GlobalProductCode c. SpecialService d. InsuredAmount e. Piece/Weight f. Piece/Depth g. Piece/Width h. Piece/Height i. Updated Roles: ConsigneeDetails, RequestorContact, PickupContact i. PersonName ii. CompanyName iii. Phone iv. City v. Suburb</p> <p>2) Updated 'Cyrillic' with transliteration or extended characters if applicable.</p> <p>C) XMLServices10.0.5_ShipmentValidationService.pdf 1. Introduced new element "PieceIdentificationNumberDataIdentifier" at Section 3.17.1 2. Updated field length for below elements: a. GlobalProductCode b. ShipmentCharges c. SpecialServiceType d. ChargeValue e. DeclaredValue f. Piece/Weight g. Piece/PieceContents h. Piece/Depth i. Piece/Width j. Piece/Height k. Roles: Shipper, Consignee, Exporter, Importer, BillTo, Seller, Payer i. &lt;Role&gt;/Contact/PersonName ii. &lt;Role&gt;/Contact/CompanyName iii. &lt;Role&gt;/Contact/PhoneNumber iv. &lt;Role&gt;/Contact/Email v. &lt;Role&gt;/Contact/MobilePhoneNumber vi. &lt;Role&gt;/StreetName</p>



		<ul style="list-style-type: none"> <li>vii. &lt;Role&gt;/BuildingName</li> <li>viii. &lt;Role&gt;/StreetNumber</li> <li>ix. &lt;Role&gt;/City</li> <li>x. &lt;Role&gt;/Suburb</li> <li>l. ExportDeclaration children elements: <ul style="list-style-type: none"> <li>i. OtherChargeValue</li> <li>ii. InvoiceTotalNetWeight</li> <li>iii. InvoiceTotalGrossWeight</li> <li>iv. Description</li> <li>v. Value</li> <li>vi. ExportLineItem/Weight/Weight</li> <li>vii. ExportLineItem/GrossWeight/Weight</li> </ul> </li> <li>3. Updated 'Cyrillic' with transliteration or extended characters if applicable.</li> <li>4. Updated 'Cyrillic' wording to transliteration or extended characters if applicable.</li> <li>5. Removed element DocumentFunction from Request and Response</li> <li>6. Update reference data for: <ul style="list-style-type: none"> <li>a) &lt;InvoiceReferenceType&gt;: removed NLR as no longer supported</li> <li>b) &lt;ItemReferenceType&gt;: added with NLR</li> </ul> </li> </ul> <p>D) XMLServices10.0.1_ShipVal_UTP with additional sample for element "PieceIdentificationNumberDataIdentifier".</p> <p>E) XSD Schema files updates:</p> <ul style="list-style-type: none"> <li>1) datatypes_global_v10.xsd</li> <li>2) pickupdatatypes_global-3.0.xsd</li> <li>3) book-pickup-global-req-3.0.xsd</li> <li>4) modify-pickup-global-req-3.0.xsd</li> <li>5) datatypes_global_v62b.xsd – New file reference by pickupdatatypes_global-3.0.xsd</li> </ul> <p>F) Log4j library file updates</p>
10.0.7	14 <sup>th</sup> April 2022	<p>A) XMLServices10.0.6_ShipmentValidationService.pdf</p> <ul style="list-style-type: none"> <li>SR6 – Label-less rename to Label-Free</li> <li>SR7 – Returns Invoice Commercial Invoice template</li> <li>SR8 – 100% Image Capture</li> </ul>
10.0.8	5 <sup>th</sup> August 2022	<p>A) XMLServices10.0.7_ShipmentValidationService.pdf</p> <ul style="list-style-type: none"> <li>SR1 – Introduced UltimateConsignee Role</li> <li>SR2 – Introduced Buyer Role</li> <li>SR5 – DCTv7 Upgrade</li> <li>SR6 – Perfect Invoice with indicative Import Customs Duties or/and Taxes value</li> </ul> <p>B) XMLServices10.0.1_CapabilityAndQuoteService.pdf</p> <ul style="list-style-type: none"> <li>SR5 – DCTv7 Upgrade</li> </ul> <p>C) XSD Schema files updates:</p>





		<ol style="list-style-type: none"> <li>1) datatypes_global_v10.0.xsd</li> <li>2) DCT-req_global-3.0.xsd</li> <li>3) DCT-Response_global-3.0.xsd</li> <li>4) DCTResponsesdatatypes_global.xsd</li> <li>5) ship-val-global-req-10.0.xsd</li> <li>6) ship-val-global-res-10.0.xsd</li> </ol> <p>D) XMLServices10.0.2_ShipVal_UTP with additional samples for element “UltimateConsignee”, “Buyer” and Perfect Invoice with indicative Import Customs Duties or/and Taxes value</p> <p>E) XMLServices10.0.1_CapabilityAndQuoteService_UTP with additional samples for new element introduced in request message “StrictValidation” and response message “MrkSrvMutuallyExclusiveGroups”, “MrkSrvDependencyRuleGroups”.</p>
10.0.9	1 <sup>st</sup> Sept 2022	<p>A) XMLServices10.0.8_ShipmentValidationService.pdf</p> <ol style="list-style-type: none"> <li>1) Dangerous Good Custom Description field</li> </ol> <p>B) XMLServices10.0.2_CapabilityAndQuoteService.pdf</p> <ol style="list-style-type: none"> <li>1) Support Estimated Delivery Date Type in request level</li> </ol> <p>C) XSD Schema files updates:</p> <ol style="list-style-type: none"> <li>1) datatypes_global_v10.0.xsd</li> <li>2) DCT-req_global-3.0.xsd</li> </ol> <p>D) XMLServices10.0.3_ShipVal_UTP with additional sample for element Dangerous Goods Custom Description</p> <p>E) XMLServices10.0.2_CapabilityAndQuoteService_UTP with additional sample for new element introduced in request message for Estimated Delivery Date Type</p> <p>F) Remove toolkit Label Utility information as Label Utility has been decommissioned and no longer supported.</p>
10.0.10	26 <sup>th</sup> Feb 2023	<p>A) XMLServices10.0.9_ShipmentValidationService.pdf</p> <ol style="list-style-type: none"> <li>1) Updated with new DG_UNCodes Element details</li> </ol> <p>B) XSD Schema files updates:</p> <ol style="list-style-type: none"> <li>1) datatypes_global_v10.0.xsd</li> </ol> <p>C) XMLServices10.0.4_ShipVal_UTP with additional sample for multiple DG_UNCodes element</p>
10.0.11	7 <sup>th</sup> May 2023	<p>A) XMLServices10.0.10_ShipmentValidationService.pdf</p> <ol style="list-style-type: none"> <li>1) Introduced element &lt;PreCalculatedLineItemTotalValue&gt;, &lt;PreCalculatedTotalGoodsValue&gt;, &lt;PreCalculatedTotalInvoiceValue&gt;, &lt;TotalWithImportDutiesAndTaxes&gt;</li> <li>2) Updated &lt;CurrencyCode&gt; cardinality to Optional</li> <li>3) Updated &lt;TermsOfTrade&gt; cardinality to Optional</li> </ol>



		<p>4) Introduced element &lt;RequestShipmentDataValidation&gt;</p> <p>B) XSD Schema files updates:</p> <ol style="list-style-type: none"> <li>1) datatypes_global_v10.0.xsd</li> <li>2) ship-val-global-req-10.0.xsd</li> <li>3) ship-val-status-res.xsd</li> </ol> <p>C) XMLServices10.0.5_ShipVal_UTP with additional sample for &lt;RequestShipmentDataValidation&gt;</p> <p>D) Updated XMLServices10.0.6_ShipmentPreparationGuide.pdf</p>
10.0.12	11 <sup>th</sup> June 2023	<p>A) XSD Schema files updates:</p> <ol style="list-style-type: none"> <li>1) datatypes_global_v10.0.xsd</li> <li>2) ship-val-global-res-10.0.xsd</li> </ol> <p>B) XMLServices10.0.11_ShipmentValidationService.pdf</p> <ol style="list-style-type: none"> <li>1) Shipment Response in section 4: Updated &lt;Piece&gt; cardinality to Optional</li> </ol> <p>C) XMLServices10.0.7_ShipmentPreparationGuide.pdf</p> <p>Updated the LBBX label template name</p>
10.0.13	2 <sup>nd</sup> July 2023	Updated Reference_Data.XLS to include Ireland (IE) country supported City Postcode location type.
10.0.14	20 <sup>th</sup> August 2023	<p>A) Updated XMLServices10.0.12_ShipmentValidationService.pdf</p> <ol style="list-style-type: none"> <li>1) Section 3.17.1: Weight – added note on value must be greater than zero.</li> <li>2) Section 3.15.58: Added details on Freight Cost and Insurance Cost having highest precedence when displaying in Customs Invoice.</li> <li>3) Section 4.40.54.3: added minLength=1 and whitespace=collapse</li> <li>4) Section 3.14 BypassPLTError remove the additional notes.</li> </ol> <p>B) Updated Reference_Data.XLS to include Error Messages on SR7 Pickup error alignment with SOAP error message.</p> <p>C) XMLServices10.0.1_Pickup_UTP.pdf to include new error message introduced in SR7</p> <p>D) Updated XMLServices10.0.3_CapabilityAndQuoteService on TaxTypeCode with valid value.</p>
10.0.15	22 <sup>nd</sup> Oct 2023	<p>A) XMLServices10.0.13_ShipmentValidationService.pdf: Global Shipment Receipt template enhancement</p> <ol style="list-style-type: none"> <li>1) Section 3: added new fields DHLShipmentReceiptLanguageCode, DHLShipmentReceiptLanguageScriptCode and DHLShipmentReceiptLanguageCountryCode</li> <li>2) Section 3.30: updated ReceiptTemplate and ShipmentReceiptWithLabels</li> </ol> <p>B) Section 3.46 till 3.48: Added new section for DHLShipmentReceiptLanguageCode, DHLShipmentReceiptLanguageScript Code</p> <p>C) XMLServices10.0.2_Tracking.pdf</p>



		<p>1) Updated GQS or GGA-X wording to DHL backend system.</p> <p>D) XSDs</p> <p>1) Updated ship-val-global-req-10.0.xsd and datatypes_global_v10.xsd</p> <p>E) MessageTime time field description and sample value updates for:</p> <p>1) XMLServices10.0.2_Routing.pdf</p> <p>2) XMLServices10.0.3_Pickup.pdf</p> <p>3) XMLServices10.0.2_Tracking.pdf</p> <p>4) XMLServices10.0.4_CapabilityAndQuoteService.pdf</p> <p>F) Updated error sample test cases, request and response XMLs for UTP:</p> <p>1) XMLServices10.0.2_ImageUpload_UTP.pdf</p> <p>2) XMLServices10.0.3_CapabilityAndQuoteService_UTP.pdf</p> <p>3) XMLServices10.0.2_Pickup_UTP.pdf</p> <p>4) XMLServices10.0.1_Tracking_UTP.pdf</p> <p>5) XMLServices10.0.1_Routing_UTP.pdf</p> <p>6) XMLServices10.0.6_ShipVal_UTP.pdf</p> <p>G) Reference_Data.XLS updates for new error message</p> <p>H) XMLServices10.0.8_ShipmentPreparationGuide.pdf: updated with latest shipment validation service guide version number</p>
10.0.16	3 <sup>rd</sup> Dec 2023	<p>Reference_Data.XLS updates</p> <p>Updated &lt;RegistrationNumberTypeCode&gt; with latest Registration Number Type - mainly updates on Malaysia with SDT type code.</p>
10.0.17	14 <sup>th</sup> Jan 2024	<p>A) XMLServices10.0.14_ShipmentValidationService.pdf: updated InvoiceNumber minimum length of 1 character.</p> <p>B) XMLServices10.0.7_ShipVal_UTP.pdf updated with XMLServices10.0.14_ShipmentValidationService.pdf</p>
10.0.18	31 <sup>st</sup> Mac 2024	<p>A) XMLServices10.0.15_ShipmentValidationService.pdf.</p> <p>1) Section 4.48.1.1: PieceNumber Element – Added description for an existing field.</p> <p>2) Updated 3.1 data element definition table to include Broker and LinkLabelsByPieces elements.</p> <p>3) Section 3.45 Broker Element – Added new request element.</p> <p>4) Section 3.45 LinkLabelsByPieces Element – Added new request element.</p> <p>5) Section 4.51.3.4 PieceNumber Element – Added new response element.</p> <p>6) Section 4.51.3.1. DocName Element – Added details on default behavior and when LinkLabelsByPieces contains value 'Y'.</p> <p>7) Remove legacy fields from shipment request fields</p> <p>8) Section 3.26.4 CustomsInvoiceTemplate element – updated with shipping role precedence information for Broker role in COMMERCIAL_INVOICE_P_10 and COMMERCIAL_INVOICE_L_10 template.</p> <p>B) XMLServices10.0.9_ShipmentPreparationGuide.pdf: updated with Link Labels By Pieces section.</p> <p>C) XMLServices10.0.8_ShipVal_UTP.pdf updated with sample LinkLabelsByPieces scenario and Broker role scenario.</p> <p>D) Reference_Data.XLS updates for new error message.</p> <p>E) XMLServices10.0.3_Tracking.pdf</p> <p>1) Section 2, Known Tracking request</p>



		<ul style="list-style-type: none"> <li>a. Added new field RequestControlledAccessDataCodes</li> <li>b. Added new field RequestControlledAccessData</li> <li>c. Added new field RequestGMTOffsetPerEvent</li> <li>2) Section 4, Tracking response <ul style="list-style-type: none"> <li>a. Section 4.2.3.17.3 added new field GMTOffset under ShipmentEvent</li> <li>b. Section 4.2.4.1.2.3 added new field GMTOffset under PieceEvent</li> </ul> </li> </ul>
10.0.19	26 <sup>th</sup> May 2024	<ul style="list-style-type: none"> <li>A) XMLServices10.0.16_ShipmentValidationService.pdf: <ul style="list-style-type: none"> <li>1) Section 3 Shipment Validation Request Schema – Added Manufacturer role.</li> <li>2) Section 3.1 Shipment validation request Data Element Definitions – Added Manufacturer role.</li> <li>3) Section 3.26 Label Element – Added new ECOM26_64_LBBX_001 template.</li> <li>4) Section 3.37 Manufacturer Element – Added Manufacturer role.</li> <li>5) Section 4.55 Label Element – Added new ECOM26_64_LBBX_001 template.</li> </ul> </li> <li>B) XMLServices10.0.10_ShipmentPreparationGuide.pdf: <ul style="list-style-type: none"> <li>1) Updated 3.3 'How to prepare a Loose BBX shipment' section to include label template ECOM26_64_LBBX_001.</li> </ul> </li> <li>C) XMLServices10.0.5_CapabilityAndQuoteService.pdf <ul style="list-style-type: none"> <li>1) Updated PickupCutoffTime field description updated with additional information that this field is pickup cutoff time in origin's time zone.</li> </ul> </li> </ul>
10.0.20	30 <sup>th</sup> May 2024	<ul style="list-style-type: none"> <li>XMLServices10.0.17_ShipmentValidationService.pdf: <ul style="list-style-type: none"> <li>1) Shipment Validation Request Schema and Response schema missing ShipperID field which is mandatory field</li> </ul> </li> </ul>
10.0.21	16 <sup>th</sup> June 2024	<ul style="list-style-type: none"> <li>A) XMLServices10.0.18_ShipmentValidationService.pdf: <ul style="list-style-type: none"> <li>1) Shipment Validation Request Schema and Response schema – remove ShipperID field as it is optional field in application level</li> <li>2) Remove EPROC legacy field from request message</li> </ul> </li> <li>B) Reference_Data.XLS updates on &lt;Tracking Event Codes&gt; for customer visible checkpoint and with service area code - IC,PY,SD,SM,TR</li> </ul>
10.0.22	28 <sup>th</sup> July 2024	<ul style="list-style-type: none"> <li>A) XMLServices10.0.19_ShipmentValidationService.pdf: <ul style="list-style-type: none"> <li>1) Section 3.12 and 3.12.6 InvoiceDate Element – updated description</li> </ul> </li> <li>B) Reference_Data.xlsx updates: <ul style="list-style-type: none"> <li>1) Updated &lt;RegistrationNumberTypeCode&gt; on Malaysia (MY) e-Invoice regulatory changes request - added FED, NID, PAS, EOR and updates for VAT registration type code for MY.</li> </ul> </li> </ul>
10.0.23	29 <sup>th</sup> Sept 2024	<p>Note: 'IMS' code will be available in Production by the end of March 2025.A)</p> <ul style="list-style-type: none"> <li>XMLServices10.0.20_ShipmentValidationService.pdf: <ul style="list-style-type: none"> <li>1. Added new Registration Number Type Code &lt;NumberTypeCode&gt; with 'IMS'</li> </ul> </li> <li>B) Reference_Data.xlsx updates: <ul style="list-style-type: none"> <li>Updated &lt;RegistrationNumberTypeCode&gt; on registration number code of 'IMS' for GB</li> </ul> </li> </ul>
10.0.24	29 <sup>th</sup> Oct 2024	<ul style="list-style-type: none"> <li>A) XMLServices10.0.21_ShipmentValidationService.pdf: <ul style="list-style-type: none"> <li>1. Updated list of valid value for QuantityUnit field</li> <li>2. Remove enumeration value of 'FTSR' field</li> </ul> </li> <li>B) XMLServices10.0.4_Pickup.pdf <ul style="list-style-type: none"> <li>Added notes for cancel and modify pickup of previous successful pickup requests are subject to entire consolidated booking if applicable.</li> </ul> </li> </ul>
10.0.25	19 <sup>th</sup> Jan 2025	<ul style="list-style-type: none"> <li>A) XMLServices10.0.22_ShipmentValidationService.pdf:</li> </ul>



		<ol style="list-style-type: none"> <li>1. Added new Registration Number Type Code &lt;NumberTypeCode&gt; with 'EIC'</li> <li>2. Updated &lt;ItemReferenceType&gt; with new item reference type of 'DDS'</li> </ol> <p>B) Reference_Data.xlsx updates:</p> <ol style="list-style-type: none"> <li>1. Updated &lt;RegistrationNumberTypeCode&gt; on registration number code of 'EIC' for TW and 'PAS', 'NID' enablement for EG,</li> <li>2. updated &lt;ItemReferenceType&gt; on new reference type of 'DDS'</li> </ol>
10.0.26	26 <sup>th</sup> Mar 2025	<p>A) XMLServices10.0.23_ShipmentValidationService.pdf:</p> <ol style="list-style-type: none"> <li>1. Section 3.12.27 ExportLineItem Updated with additional notes for GrossWeight and Weight field</li> <li>2. Section 4.40.27 ExportLineItem Updated with additional notes for GrossWeight and Weight field</li> </ol> <p>B) Reference_Data.xlsx updates:</p> <ol style="list-style-type: none"> <li>1. Updated &lt;DHL Country or Region&gt; for SSA region update on Somalia government: DHL Country Code: Current DHL Country Name, Target Country Name a) XS: SOMALILAND, REP OF (NORTH SOMALIA), SOMALIA HARGEISA b) SO: SOMALIA, SOMALIA MOGADISHU c) SZ: SWAZILAND, ESWATINI</li> </ol> <p>C) XMLServices10.0.6_CapabilityAndQuoteService</p> <ol style="list-style-type: none"> <li>1. Updated DCTResponsesdatatypes_global.xsd: <ol style="list-style-type: none"> <li>a) Updated Section 4.2.1: <ol style="list-style-type: none"> <li>1) Added element &lt;ChargeTaxRate&gt;</li> <li>2) Added &lt;PickupNonDHLCourierCode&gt;</li> <li>3) Added &lt;DeliveryNonDHLCourierCode&gt;</li> <li>4) Uncommented &lt;QtdShpExChrgDisc/DiscAmt&gt;</li> <li>5) Updated &lt;QuotedWeightUOM&gt; enumeration: <ol style="list-style-type: none"> <li>a) remove 'Lbs' from enumeration</li> <li>b) added 'LB'</li> </ol> </li> <li>6) Section 4.2.3.41: QtdShpExChrgDisc/DiscAmt Updated data type for to decimal (18,3)</li> </ol> </li> </ol> </li> </ol>
10.0.27	6 <sup>th</sup> Apr 2025	<p>A) Reference_Data.xlsx updates:</p> <p>Updated &lt;Error Messages&gt; to include 7156 and 7157</p>
10.0.28	1 <sup>st</sup> June 2025	<p>A) XMLServices10.0.24_ShipmentValidationService.pdf:</p> <ol style="list-style-type: none"> <li>1. Updated &lt;NumberTypeCode&gt; enumeration to add new value "FTN"</li> </ol> <p>B) Reference_Data.xlsx updates:</p> <ol style="list-style-type: none"> <li>1. Updated &lt;RegistrationNumberTypeCode&gt; on registration number code of FTN for MX, CIC for ZA, NID &amp; PAS for QA, JO and ZA, DUN for EE, VAT for ZA.</li> </ol>
10.0.29	13 <sup>rd</sup> July 2025	<p>A) XMLServices10.0.25_ShipmentValidationService.pdf:</p> <ol style="list-style-type: none"> <li>1) Section 3.14.1 Pieces Element, 3.14.1.4 Width Element, 3.14.1.5 Height Element, 3.14.1.6 Depth Element Updated "PackageType" valid values and Width, Height and Depth field's cardinality to optional</li> <li>2) Section 3.12.27 ExportLineItem Element, 3.12.27.7 Weight Element, 3.12.27.8 GrossWeight Element Updated Weight and GrossWeight field cardinality to optional as it is either one of this field can be provided in item level.</li> <li>3) Section 3.14 ShipmentDetails Element Added new "areMorePackagesToBeAddedLater" optional field</li> </ol> <p>B) Reference_Data.xlsx updates:</p>

		<p>1) Added error message for error codes: 7159,7160, 7161,7162,7170</p> <p>2) Added new tabsheet &lt;Global Package Type Code&gt;</p> <p>3) &lt;RegionorCountry_PostcodeFormat&gt; for CA postcode format update</p> <p>C) Schema updates:</p> <p>1) Updated datatypes_global_v10.xsd for Shipment Validation service changes</p> <p>2) Updated DCTRequestdatatypes_global.xsd for Capability &amp; Quote service on removal of enumeration on 'PackageTypeCode'</p> <p>D) XMLServices10.0.7_CapabilityAndQuoteService.pdf</p> <p>1) Section 3.3.14.1 PieceType Element and 3.3.14.1.2 PackageTypeCode ElementUpdated</p> <p>Updated "PackageTypeCode" valid values and remove enumeration</p>
10.0.30	17 <sup>th</sup> August 2025	<p>A) XMLServices10.0.26_ShipmentValidationService.pdf:</p> <p>1) Update reference data for:</p> <p>a) &lt;ItemReferenceType&gt;</p> <p>- added with ARN, OP, OSC,TAR,TCO</p> <p>b) &lt;InvoiceReferenceType&gt;</p> <p>- added with TAR,TCO,PX</p> <p>c) &lt;CustomsDocumentType&gt; added with ORD</p> <p>d) &lt;CustomsPaperworkType&gt; added with ORD</p> <p>B) Reference_Data.xlsx updates:</p> <p>Updated &lt;RegistrationNumberTypeCode&gt; on DCP, EOR regex format updates for Europe countries, updated &lt;InvoiceReferenceType&gt; for TAR, TCO and PX, updated &lt;ItemReferenceType&gt; for ARN, OP, OSC, TAR and TCO and updated &lt;CustomsDocumentType&gt; &amp; &lt;CustomsPaperworkType&gt; for ORD</p>
10.0.31	12 <sup>th</sup> October 2025	<p>A) XMLServices10.0.27_ShipmentValidationService.pdf</p> <p>1) Updated 3.26.4 CustomsInvoiceTemplate COMMERCIAL_INVOICE_P_10 and COMMERCIAL_INVOICE_L_10 for the shipper roles sequence orders details</p> <p>2) Updated 3.14.1.4 Width Element, 3.14.1.5 Height Element and 3.14.1.6 Depth Element</p> <p>Added 'Piece_Dimension' schema details</p> <p>B) Reference_Data.xlsx updates:</p> <p>Added &lt;Error Messages&gt; for error codes: 8037 and 8038</p>
10.0.32	2 <sup>nd</sup> Nov 2025	<p>A) XMLServices10.0.27_ShipmentValidationService.pdf</p> <p>1) Update reference data for:</p> <p>a) &lt;InvoiceReferenceType&gt; added with PTA</p> <p>b) &lt;ItemReferenceType&gt; added with AEI,EXN,AFK,AEA,PTA</p> <p>c) &lt;CustomsDocumentType&gt; added with OEI,RGR,CHA,CP2</p> <p>d) &lt;CustomsPaperworkType&gt; added with OEI,RGR,CHA,CP2</p> <p>&lt;NumberTypeCode&gt; enumeration to add new value "PEP"</p> <p>B) Reference_Data.xlsx updates:</p> <p>a) Updated &lt;InvoiceReferenceType&gt; for PTA</p> <p>b) Updated &lt;ItemReferenceType&gt; for AEI,EXN,AFK,AEA,PTA</p> <p>c) Updated &lt;CustomsDocumentType&gt; &amp; &lt;CustomsPaperworkType&gt; for OEI,RGR,CHA,CP2</p> <p>d) Added &lt;RegistrationNumberTypeCode&gt; for PEP, enablement of NID and PAD for TR, updated VAT regex format for TR &amp; SK</p>
10.0.33	05 <sup>th</sup> Jan 2026	<p>A) XMLServices10.0.11_ShipmentPreparationGuide.pdf:</p> <p>1) Section 5.1 How to prepare a Dangerous Goods shipment</p>



		<p>UNCode field value is optional for DG Content ID of 'HH'.</p> <p>B) XMLServices10.0.29_ShipmentValidationService.pdf</p> <p>1) &lt;NumberTypeCode&gt; removed for MID, GST and DLI</p> <p>C) Reference_Data.xlsx updates:</p> <p>1) Remove 'MID' registration number type.</p> <p>2) &lt;Countries with No PostalCode&gt; updates</p>
10.0.34	15 <sup>th</sup> Feb 2026	<p>A) XMLServices10.0.4_Tracking.pdf</p> <p>1) Updated section 3 Shipment Unknown Tracking Request</p> <p>2) Schema on new PayerAccountNumber</p> <p>3) Added section 3.7 PayerAccountNumber Element</p> <p>B) Reference_Data.xlsx updates:</p> <p>Added &lt;Error Messages&gt; for new error code 7182</p>
10.0.35	15 <sup>th</sup> Mac 2026	<p>A) XMLServices10.0.30_ShipmentValidationService.pdf</p> <p>Update reference data for:</p> <p>a) &lt;ItemReferenceType&gt; added with CLN</p> <p>b) &lt;CustomsDocumentType&gt; added with BLI,ICD,EAD,ETD</p> <p>c) &lt;CustomsPaperworkType&gt; added with BLI,ICD,EAD,ETD</p> <p>d) &lt;NumberTypeCode&gt; enumeration to add new value "FII"</p> <p>B) Reference_Data.xlsx updates:</p> <p>e) Updated &lt;ItemReferenceType&gt; for CLN</p> <p>f) Updated &lt;CustomsDocumentType&gt; &amp; &lt;CustomsPaperworkType&gt; for BLI,ICD,EAD,ETD</p> <p>g) Added &lt;RegistrationNumberTypeCode&gt; for FII, updated VAT regex format for KE,BE, updated EOR regex format for KW</p>
10.0.36	31 <sup>th</sup> May 2026	<p>A) XMLServices10.0.31_ShipmentValidationService.pdf</p> <p>a) Updated Section 3.48</p> <p>Added new 'BypassLabelfreeError' element</p> <p>b) Updated Section 3.28.1.2, 3.28.1.6, 4.5.1 and 4.54.1.6</p> <p>c) Updated DG_Description maximum length from 200 to 1000 chars</p> <p>d) Added new DG_PackagesCount field</p> <p>B) Schema updates:</p> <p>a) ship-val-global-req-10.0.xsd</p> <p>New 'BypassLabelfreeError' field</p> <p>b) datatypes_global_v10.xsd</p> <p>New 'DG_PackagesCount' field and update on 'DG_LabelDesc' field maximum length from 200 to 1000 characters</p> <p>C) XMLServices10.0.12_ShipmentPreparationGuide.pdf</p> <p>Updated guide with maximum length for custom description with 1000 characters and new 'PackagesCount' field</p> <p>D) Reference_Data.xlsx updates:</p> <p>a) Added error cods: 7132, 7183, 7184, 7980, 7981</p> <p>b) Updated &lt;DHL Country or Region&gt; for BG - ISO Currency Code as EUR</p>

Note: Only Major changes will increase the version number.





# 1 Introduction

## 1.1 XML Services

DHL offers XML based online integration platform that provides Product Availability, Transit time and Rating, Shipment Booking, Courier Pickup Booking and Tracking services for DHL Express customers globally from over 140 countries.

Here is how XML services can help DHL customers and vendor partners:

- They can use their shipping and warehouse management systems and still provide access to complete set of DHL shipping services
- They can provide DHL capabilities from their internal shipping sites, Shopping carts and Commerce web sites
- No DHL hardware or software deployed on their site and they can still get visibility to DHL's latest products and service offerings
- They have a standard (XML) and secured (HTTPS and User Authentication) platform to integrate with DHL and they can control the implementation timelines

Below are list of available services or operations:

- Capability Service – Provides list of available product and services for given shipment criteria along with Booking cut-off, Pickup cut-off and Transit times
- Quote Service – Provides total cost along with breakdown of charges for requested product and service combinations
- Routing Service - Validates the origin and destination city and postcodes. Note that these validations are now better performed in Capability Service and hence we recommend users to stop using Routing Service and instead use Capability Service.
- Shipment Validation - Validates shipment data and return Waybill, License Plate and data for label printing
- Image Upload - to upload and re-upload of PLT images to a previously created shipment. The PLT images for the shipment can be uploaded before the shipment has been physically collected by DHL courier.
- Label Image utility – Generates DHL compliant label image using the XML response from Shipment Validation
- Pickup Booking – Can request, modify or delete courier pick-up
- Tracking - Obtain shipment details and event visibility filtered by Waybill, License Plate, or Reference Number and Account Number

Here is the process of implementing XML integration with DHL

1. Register via XMLPI Portal to download the latest XMLPI Toolkit.  
Make sure that you have the programming resources experienced with Web Services and XML to work with this toolkit
2. Test Environment Access: Contact DHL Sales to request access to Testing and Certification environment





3. Development: Complete development and XML integration work
4. Certification: Contact DHL to request certification by providing Label image and Request and Response XML messages as recommended in Test Plan in the toolkit. These are validated by the DHL eCommerce team and then customer is certified as production-ready.
5. Go-Live: After passing certification you will receive access to production environment and then can start using DHL Web Services
6. Production Support: Contact DHL Technical Support team for production support
7. For installing or renewing certificate for XML Services, please refer to Reference\_Data.xls – XML Services Certificate tab sheet.

## 1.2 XML Services Toolkit

This toolkit is provided to DHL clients to help them understand and implement integration with XML Services application.

It contains a detailed description for the format of the request XML messages and response XML messages for each service. Sample request and response XML messages that help understand the structure of the request and response messages are also included. These messages also help to understand the conditions/data values that might result in an error response from XML-PI server.

A Java tool, detailed below.

1) DHLClient: To send an XML request message to the XML Services application.

This can be directly integrated with the client application or it can be used to understand the method to establish a connection with XML Services.

XML Services is available in three regions and is slightly customized for each region. All three regions are supported by a central application and accessible by same web server address.

- AP-EM Region - Supports countries in Asia, Africa, Australia and Pacific.
- EU Region - Supports countries in Europe.
- AM Region - Supports USA and other countries in North and South Americas.

Please refer to Reference\_Data.xls for the list of countries in each region of supported country deployment. XML Services offers Global XSD schema which available for Pickup, Shipment Validation, Image Upload, Routing, Tracking, DCT Capability & Quote and Image Upload services.

Note: Image Upload service is leveraging the same Shipment Validation schema, refer to Shipment Validation documentation for details.

### **Special Notes:**

XML Services clients must upgrade to use Tool Kit v6.3 will only utilize the UTF8 feature for extended characters for Shipments Validation and Tracking services. Extended characters that being sent in all other service requests will be treated same as per in v4.6.

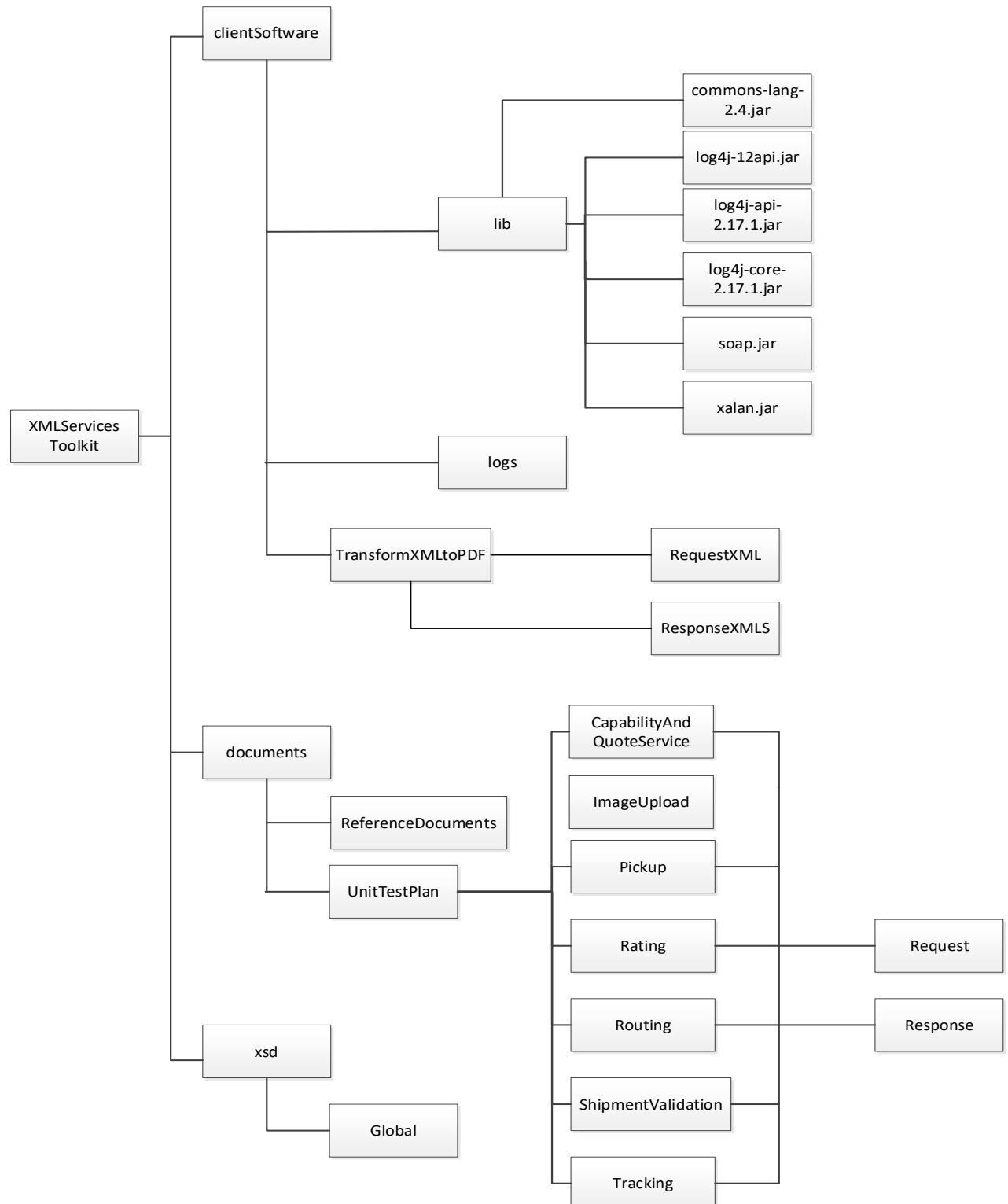


---

XML Services clients that using all other Tool Kit versions than v4.6 cannot utilize UTF-8 feature for any of the services. Tracking response with its shipment event description will be always in English translation.

## 2 Structure of Tool Kit

The toolkit will have the directory structure as shown below: The contents and description of each folder will be explained in the subsequent sections.





## 2.1 Overview

The following section will detail the content of each folder and give a brief description of the contents.

Along with this ToolKit\_v10.0.36.pdf document, there is a Reference Data excel sheet (Reference\_Data.xls) consisting of reference data for each country, currency code, product lists, services list, error messages for each service and other information relevant to the XML Services.

## 2.2 clientSoftware

This folder has the following files:

- 1) DHLClient.java – Simulates a condition where an XML message is sent and received to XML-PI application over HTTP or HTTPS source file
- 2) DHLClient.class – Compiled class file of DHLClient.java source file.
- 3) runDHLClient.cmd – Used to run the DHLClient class to send request messages and receive response messages.
- 4) setClassPath.cmd – Used to set the class path.
- 5) The TransformXMLtoPDF directory - The contents of this folder are detailed in section 2.2.3.
- 6) log4j2.properties – log4j2 setting to include additional logging at client application level.

A detail of the scripts to execute the tools is included in section 3 – Scripts usage.

### 2.2.1 lib folder

This folder has the following files:

- 1) xalan.jar: XML Libraries
- 2) soap.jar : SOAP / base64 library.
- 3) log4j-12api.jar, log4j-api-2.17.1.jar, log4j-core-2.17.1.jar: log4j logging library
- 4) commons-lang-2.4.jar: Java utility class



### 2.2.2 logs folder

This folder contains the log file that DHLClient.log that generated via toolkit runDHLClient.cmd sample program with the designated log level.

DHLClient.log filename convention is DHLClient.logMMDD, example: DHLClient.log0623

Note: DHLClient.log filename without MMDD indicates current day log file.

### 2.2.3 TransformXMLtoPDF

This folder has the following files/directories:

1) RequestXML

This directory has the request XML that needs to be sent to the XML Services application. This is used only when the runDHLClient.cmd script is used. If the client is using some other software to send a request XML than this may not be used.

2) ResponseXMLS

This directory stores the response XML's that are to be processed for transformation to PDF's. If runDHLClient.cmd script is used, the response XML is directly stored under this directory.

## 2.3 Documents folder – Reference Documents

This folder has the following files/directories:

ReferenceDocuments – This has the reference documents for all the services offered by XML Services.

1) Pickup Service Guide (XMLServices10.0.4\_Pickup.pdf):

This would help the XML Services client to understand the pickup service field elements definition and its usage offered in XML Services Pickup service.

2) Routing Service Guide (XMLServices10.0.1\_Routing.pdf):

This would help the XML Services client to understand the routing service field elements definition and its usage offered in XML Services Routing service.

3) Shipment Validation Service Guide

(XMLServices10.0.31\_ShipmentValidationService.pdf):

This would help the XML Services client to understand the Shipment Validation service and Image Upload service field elements definition and its usage offered in XML Services Shipment Validation & Image Upload service.

4) Tracking Service Guide (XMLServices10.0.4\_Tracking.pdf):

This would help the XML Services client to understand the tracking service field



elements definition and its usage offered in XML Services Tracking service.

- 5) Capability and Quote Service Guide (XMLServices10.0.7\_CapabilityAndQuoteService.pdf):  
This would help the XML Services client to understand the capability and quote service field elements definition and its usage offered in XML Services Capability and Quote service.
- 6) Shipment Preparation Guide (XMLServices10.0.12\_ShipmentPreparationGuide.pdf):  
This would help the XML Services client to understand the preparation guide for new BBX shipment, PLT shipment, regular shipment and Label-Free shipment offered in XML Services Shipment Validation service.

## 2.4 Documents folder – Unit Test Plan

This folder has the following files/directories:

- 1) UnitTestPlan – This would have the unit test plans and the sample request and response XMLs for each type of messages supported. The details of each directory are described in the subsequent section.

### 2.4.1 Unit Test Plan - Pickup

This directory will have the following files/directories:

For Pickup service, please refer to below documentations:

XMLServices10.0.2\_Pickup\_UTP.pdf - This is the unit test plan for testing the pickup service. The XML messages that are to be used for testing are in the directories below.

The Request and Response directory has further sub directories respectively”

- i. \Request\Global\BookPickup – Contains sample request XML messages that can be used to test the book pickup functionality.
- ii. \Request\Global\CancelPickup – Contains sample request XML messages to test cancel pickup functionality. (Not applicable for EA region)
- iii. \Request\Global\ModifyPickup – Contains sample request XML messages to test modify pickup functionality. (Not applicable for EA region)
- iv. \Response\Global\BookPickup– contains sample response XML messages corresponding to each request message for book pickup.
- v. \Response\Global\CancelPickup – contains sample response XML messages corresponding to each request message for cancel pickup.
- vi. \Response\Global\ModifyPickup– contains sample response XML messages corresponding to each request message for modify pickup. (Not applicable for EU



region).

## 2.4.2 Unit Test Plan - Routing

This directory will have the following files/directories:

XMLServices10.0\_Routing\_UTP.pdf - This is the unit test plan for testing the routing service. The XML messages that are to be used for testing are in the directories below.

The Request and Response directory has further sub directories respectively:

- i. \Request\Global – Contains sample request XML messages to test the routing functionality.
- ii. \Response\Global – Contains sample response XML messages for routing service request messages in above directory.

## 2.4.3 Unit Test Plan - Shipment Validation

This directory will have the following files/directories:

XMLServices10.0.8\_ShipVal\_UTP.pdf - This is the unit test plan for testing the shipment validation service. The XML messages that are to be used for testing are in the directories below.

The Request and Response directory has further sub directories respectively:

- i. \Request\Global – Contains sample request XML messages to test the shipment validation functionality.
- ii. \Response\Global – Contains sample response XML messages for shipment validation service request messages in above directory.

## 2.4.4 Unit Test Plan - Tracking

This directory will have the following files/directories:

XMLServices10.0.1\_Tracking\_UTP.pdf - This is the unit test plan for testing the tracking service.

The XML messages that are to be used for testing are in the directories below.

- i. Request - Contains sample request XML messages to test the tracking functionality.



- ii. Response – Contains sample response XML messages for tracking service request messages in above directory.

### 2.4.5 Unit Test Plan - Capability and Quote Service

This directory will have the following files/directories:

XMLServices10.0.3\_CapabilityAndQuoteService\_UTP.pdf - This is the unit test plan for testing the Capability and Quote service.

The XML messages that are to be used for testing are in the directories below.

- i. Request - Contains sample request XML messages to test the capability and quote functionality.
- ii. Response – Contains sample response XML messages for capability and quote service request messages in above directory.

### 2.4.6 Unit Test Plan - Image Upload Service

XMLServices10.0.2\_ImageUpload\_UTP.pdf - This is the unit test plan for testing the image upload service.

The XML messages that are to be used for testing are in the directories below.

- i. \Request\Global – Contains sample request XML messages to test the image upload functionality.
- ii. \Response\Global – Contains sample response XML messages for image upload service request messages in above directory.

## 2.5 xsd

This will contain the global schema for Pickup, Routing, Shipment Validation, Pickup, Capability & Quote and Routing service.

- i. \Global – Contains global xsd schema for above mentioned services.
- ii. readme.txt - Note for developer Usage on the schema version



### 3 Scripts usage

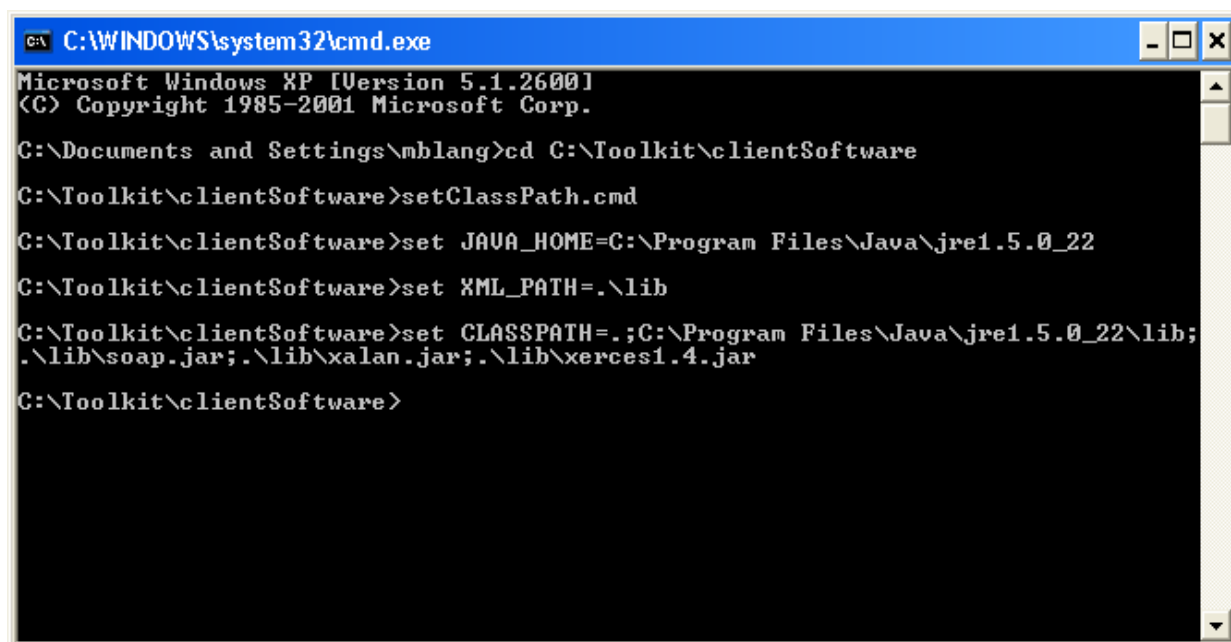
This section gives a detailed description for using the scripts for sending the request XML message to XML Services and to transform the response shipment XML to Transport label and Archive document.

#### 3.1 DHLClient software to send request to XML Services

This script should be run from the directory where the DHLClient.class file is kept. If this script is run from the same directory as provided in the tool kit then no changes need to be done for the directory paths. If the name of the shipment validation request XML file is not 'ShipmentValidation\_v10.0\_US-DE\_request.xml', change the script to reflect the correct request xml filename.

##### 3.1.1 Pre requisites

- 1) Java environment must be there in PATH variable.
- 2) Make sure following folders are present inside Customer Tool Kit-
  - a) TransformXMLtoPDF/ResponseXMLS
  - b) TransformXMLtoPDF/ProcessedXMLS
  - c) TransformXMLtoPDF/PDFReports
- 3) Set the JAVA\_HOME directory path in setClassPath.cmd
- 4) Check and update the path for soap.jar, xalan.jar, xerces.jar, commons-lang-2.4.jar in SetClassPath.cmd
- 5) Run the setClassPath.cmd script.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\mblang>cd C:\Toolkit\clientSoftware
C:\Toolkit\clientSoftware>setClassPath.cmd
C:\Toolkit\clientSoftware>set JAVA_HOME=C:\Program Files\Java\jre1.5.0_22
C:\Toolkit\clientSoftware>set XML_PATH=.\lib
C:\Toolkit\clientSoftware>set CLASSPATH=.;C:\Program Files\Java\jre1.5.0_22\lib;
.\lib\soap.jar;.\lib\xalan.jar;.\lib\xerces1.4.jar
C:\Toolkit\clientSoftware>
```



### 3.1.2 Settings in runDHLClient script

1) These variable needs to be set before running the script.

a) `RESPONSE_PATH=TransformXMLtoPDF\ResponseXMLS\`

This path points to the directory where the response XMLs are to be stored. This by default is set to the folder “..\TransformXMLtoPDF\ResponseXMLS\” present in the toolkit. If you need the response XMLs to be stored at some other location please change this path to point to destination accordingly. The directory path may be complete/ relative path.

b) `SERVER_URL=https://xmlpitest-ea.dhl.com/XMLShippingServlet`

This path points to the XML-PI URL which the request must be submitted. This by default points to the XMLShippingTest installation. This can be changed to point to some other XMLPI installation if required.

c) `INPUT_FILE=TransformXMLtoPDF\RequestXML\ShipmentValidation_v10.0_US-DE_request.xml`

This path points to the input XML file location. This by default points to “..\TransformXMLtoPDF\RequestXML\ ShipmentValidation\_v10.1\_US-DE\_request.xml” present in the toolkit. This can be changed to point to some other request file location if required. The file path may be complete/ relative path.

d) `FUTURE_DAY=false`

This parameter indicates to replace the XML request with “\*date’ element with future day or remaining as per the request XML value.

i) With default value of false, it means the “\*date’ element value will be remaining same as per request XML value.

ii) With value of true, it means the “\*date’ element will be overwritten with current date + 1 days.

Example:

`<Date>2020-12-20</Date>` in request XML

Current date is 2020-12-21

Overwritten value will be: `<Date>2020-12-22</Date>`

2) Execute the runDHLClient.cmd by double click in Window Explorer or in command prompt as below.



```

C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\mblang>cd C:\Toolkit\clientSoftware
C:\Toolkit\clientSoftware>setClassPath.cmd
C:\Toolkit\clientSoftware>set JAVA_HOME=C:\Program Files\Java\jre1.5.0_22
C:\Toolkit\clientSoftware>set XML_PATH=.\lib
C:\Toolkit\clientSoftware>set CLASSPATH=.;C:\Program Files\Java\jre1.5.0_22\lib;
.\lib\soap.jar;.\lib\xalan.jar;.\lib\xerces1.4.jar
C:\Toolkit\clientSoftware>runDHLClient.cmd

```

- 3) If XML Services Servlet URL is down, runDHLClient.cmd will initiate retry function.

### 3.1.3 runDHLClient script Retry Function

If XML Services Servlet is down, runDHLClient.cmd will initiate retry function. Since 3DNS/ Big IP take about 60 sec approximately to understand the unavailability of XML Services Servlet. Hence, DHLClient is enhanced to auto-retry in the same transaction after 60 seconds to handle IOException. There will be 3 retries for re-connection.

Client's integration application that does not use dhlclient program is recommended to build this function in order to cater server failover/ fallback scenario.

The sample code may refer to DHLClient.java which published in Toolkit.

```

try {
    System.out.println("===== Please Wait for " + (timeToSleep / 1000L) + " seconds; Retry
in progress ..... ===== \n");

    Thread.sleep(timeToSleep);
} catch (InterruptedException e1) {
    System.out.println("Exception while suspending execution of current thread for" + (timeToSleep / 1000L)
+ "seconds : " + e1);
    e1.printStackTrace(); }

```

First retry when connection exception occurred.



```

C:\> Administrator: C:\windows\system32\cmd.exe - runDHLClient.cmd

opening the connection .... :http://xmlpitest-ea.dhl.com/XMLShippingServlet
IOException http://xmlpitest-ea.dhl.com/XMLShippingServlet?isUTF8Support=true

===== Please Wait for 60 seconds; Retry in progress =====

WINDOWS OS -> ipconfig /flushdns ->
Windows IP Configuration

Successfully flushed the DNS Resolver Cache.

```

There will be 3 times re-connect to XML Services Servlet URL.

```

C:\> Administrator: C:\windows\system32\cmd.exe

===== Please Wait for 60 seconds; Retry in progress =====

WINDOWS OS -> ipconfig /flushdns ->
Windows IP Configuration

Successfully flushed the DNS Resolver Cache.

RETRY =====> 1
opening the connection .... :http://xmlpitest-ea.dhl.com/XMLShippingServlet
IOException http://xmlpitest-ea.dhl.com/XMLShippingServlet?isUTF8Support=true

RETRY =====> 2
opening the connection .... :http://xmlpitest-ea.dhl.com/XMLShippingServlet
IOException http://xmlpitest-ea.dhl.com/XMLShippingServlet?isUTF8Support=true

RETRY =====> 3
opening the connection .... :http://xmlpitest-ea.dhl.com/XMLShippingServlet
IOException http://xmlpitest-ea.dhl.com/XMLShippingServlet?isUTF8Support=true

===== Three (3) retries are done - please contact DHL Support Team =====

Total time taken to process request and respond back to client : 62990ms

```

### 3.1.4 runDHLClient script UTF-8 Functionality

To enable the UTF-8 functionality, you may add “isUTF8Support=true” on the servlet URL.

For example:

<http://xmlpitest-ea.dhl.com/XMLShippingServlet?isUTF8Support=true>

Please note that UTF-8 functionality only applicable for Shipments Validation and Tracking services.

Extended characters that being sent manually (Not via Toolkitv6.1) in all other service requests may experience unexpected result.

User may refer to DHLClient.java file for more information on source coding.

```

if (isUTF8Support) {
    String query = "isUTF8Support=true";
    servletURL = new URL(httpURL + "?" + query);
} else {
    servletURL = new URL(httpURL);
}

```



Please note that in this release, the DHLClient is enabled to send UTF-8 characters to XMLPI application for below Services:

1. Shipment Validation
2. Tracking
3. Capability and Quote
4. Pickup
5. Routing

XML Services application behavior will be vary based on which Toolkit is used, which contains isUTF8Support=true parameter in the request header. Toolkit before version 4.6 does not support UTF-8 request, whereas 4.7 to 10.1 support UTF-8 for Shipment Validation and Tracking Service. Toolkit v10.1 added Capability, Quote, Pickup and Routing Service to support UTF-8 request.

### 3.1.5 runDHLClient script DNS Flusher

When XML Services Servlet is down, DHLClient has been updated to flush DNS explicitly in underlying user's machine OS (Operating System). It supports Windows, Unix, Linux and MAC OS. If required utility (which trigger OS command) is not installed in client machine, DNS flushing might not work as expected.

DHLClient is using different command for each OS respectively. When encounter "IO Exception" after 3 times retry, please execute below commands from local terminal and retry:

MAC OS: dscacheutil -flushcache (or) killall -HUP mDNSResponder  
WINDOWS OS: ipconfig /flushdns  
Linux/Unix OS: nscd -l hosts (or) dnsmasq restart (or) rndc restart

Note: If encounter any issue while executing above commands, please contact DHL XML Services support team.

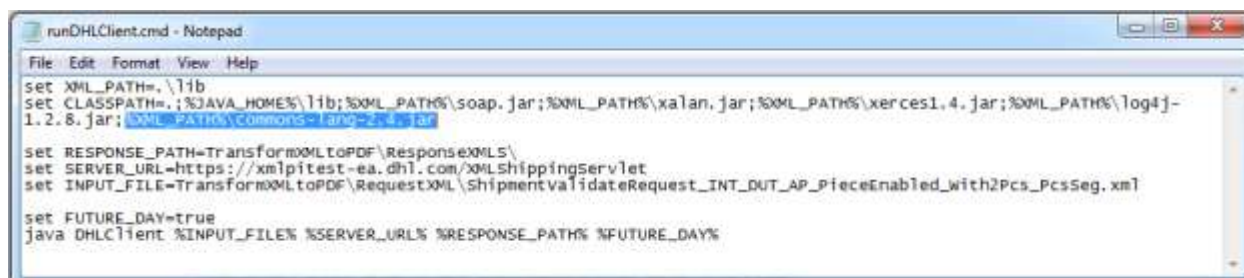
### 3.1.6 runDHLClient script with additional logging details

In XML Services v10.1 toolkit, **log4j2.properties** with additional logging feature is published in toolkit.

This will allowed the XML Services client to further analyze the response time from sending the XML request to XML Services application and receiving the XML response from XML Services application.

**Pre-requisite:**

“%XML\_PATH%\commons-lang-2.4.jar” must be added on runDHLClient.cmd classpath.



```
runDHLClient.cmd - Notepad
File Edit Format View Help
set XML_PATH=.\lib
set CLASSPATH=;%JAVA_HOME%\lib;%XML_PATH%\soap.jar;%XML_PATH%\xalan.jar;%XML_PATH%\xerces1.4.jar;%XML_PATH%\log4j-1.2.8.jar;%XML_PATH%\commons-lang-2.4.jar
set RESPONSE_PATH=TransformXMLtoPDF\ResponseXML5\
set SERVER_URL=https://xmlpitest-ea.dhl.com/XMLShippingServlet
set INPUT_FILE=TransformXMLtoPDF\RequestXML\ShipmentValidateRequest_INT_OUT_AP_PieceEnabled_with2Pcs_PcsSeg.xml
set FUTURE_DAY=true
java DHLClient %INPUT_FILE% %SERVER_URL% %RESPONSE_PATH% %FUTURE_DAY%
```

Example of log4j2.properties file:



```
log4j2.properties - Notepad
File Edit Format View Help
name=PropertiesConfig
property.filename = ./logs/DHLClient.log
appenders = console, file

appender.console.type = Console
appender.console.name = STDOUT
appender.console.layout.type = PatternLayout
appender.console.layout.pattern = %d{yyyy-MM-dd HH:mm:ss,SSS} %X{Delimiter} %-5p %X{Delimiter} %X{IP} %X{Delimiter} %c[%t] %X{Delimiter} %X{messageReference} %X{Delimiter} %n%n

appender.file.type = File
appender.file.name = LOGFILE
appender.file.fileName = ${filename}
appender.file.layout.type = PatternLayout
appender.file.layout.pattern = %d{yyyy-MM-dd HH:mm:ss,SSS} %X{Delimiter} %-5p %X{Delimiter} %X{IP} %X{Delimiter} %c[%t] %X{Delimiter} %X{messageReference} %X{Delimiter} %n%n

appender.rolling.type = RollingFile
appender.rolling.name = RollingFile
appender.rolling.fileName = ${filename}
appender.rolling.filePattern = ./logs/DHLClient.log-%d{MMdd}
appender.rolling.policies.type = Policies
appender.rolling.policies.time.type = TimeBasedTriggeringPolicy
appender.rolling.policies.time.interval = 1
appender.rolling.policies.time.modulate = true

#rootlogger.level = debug
rootlogger.level = debug
rootlogger.appenderRefs = LOGFILE
rootlogger.appenderRef.stdout.ref = LOGFILE
```

- 1) Only rootLogger.level = debug logging parameter can be used.

This log level designates additional informational messages for debug the application.  
This is the value in log4j2.properties.

Example:

rootLogger.level = debug

Sample log file generated:

- 2) Sample log file contents with debug log level:



```

DHLClientLog-Notepad
File Edit Format View Help
2022-02-16 18:46:56,820 INFO 23.250.23.213 DHLClient[main] | START DHLClient
2022-02-16 18:46:56,829 INFO 23.250.23.213 DHLClient[main] | futureDate set to :: false
2022-02-16 18:47:01,617 INFO 23.250.23.213 DHLClient[main] | 1234567890123456789012345678901 Connecting to Server IP: 105.72.285.280 URL: https://salphost-ea.dhl.com/WB.ShippingServlet
2022-02-16 18:47:02,557 INFO 23.250.23.213 DHLClient[main] | 1234567890123456789012345678901 Connected to IP: 105.72.285.280 URL: https://salphost-ea.dhl.com/WB.ShippingServlet | 931
2022-02-16 18:47:02,547 INFO 23.250.23.213 DHLClient[main] | 1234567890123456789012345678901 Begin sending request to XML App
2022-02-16 18:47:02,552 INFO 23.250.23.213 DHLClient[main] | 1234567890123456789012345678901 Finish sending request to XML App | 4
2022-02-16 18:47:02,553 INFO 23.250.23.213 DHLClient[main] | 1234567890123456789012345678901 Begin receiving reply from XML App
2022-02-16 18:47:04,258 INFO 23.250.23.213 DHLClient[main] | 1234567890123456789012345678901 Finished receiving reply from XML App | 1705
2022-02-16 18:47:05,893 INFO 23.250.23.213 DHLClient[main] | 1234567890123456789012345678901 Response received and saved successfully at :transform08.xml[0/ResponseXML]
2022-02-16 18:47:05,895 INFO 23.250.23.213 DHLClient[main] | 1234567890123456789012345678901 The file name is :ShipmentsResponse_2022_02_16_06_47_05_056.xml
2022-02-16 18:47:05,902 INFO 23.250.23.213 DHLClient[main] | 1234567890123456789012345678901 Total time taken to process request and respond back to client | 6371
2022-02-16 18:47:05,906 INFO 23.250.23.213 DHLClient[main] | 1234567890123456789012345678901 END DHLClient

```

3) Do not make any changes on log4j2 .appender.file parameter.