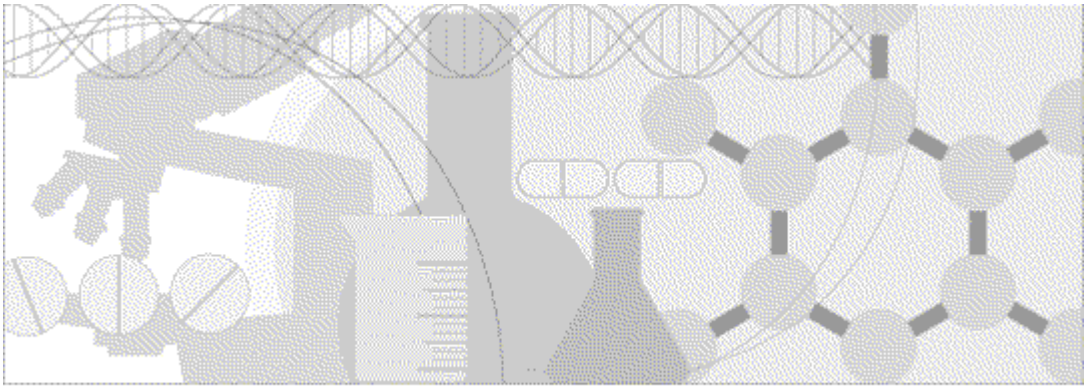
Specification for the HL7 Lab Data Interface

Oracle® Health Sciences LabPas
Release 3.1



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About this guide

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Overview of this guide

The *Specification for the HL7 Lab Data Interface* provides the information that is needed to set up jobs and exchange files automatically between LabPas facilities and the labs that process their samples. The LabPas application uses the HL7 interface, as described in this guide, to export orders from and import results to the LabPas database.

This document includes a checklist that outlines the workflow, criteria for selecting orders to export, validation criteria for importing result files, and a detailed specification of the LabPas HL7 file formats.

Audience

This guide is for Oracle® Health Sciences LabPas users and outside lab system users who set up, configure, and monitor the exchange of data using the HL7 lab interface. This audience includes the LabPas administrator, study manager, or other persons who are assigned these tasks at your facility.

Documentation

All documentation is available from the Oracle Software Delivery Cloud (https://edelivery.oracle.com) and the Oracle Technology Network (http://www.oracle.com/technetwork/documentation).

All documents may not be updated for every LabPas release. Therefore, the version numbers for the documents in a release may differ. For a complete list of the documents in this LabPas release, their release version numbers, and part numbers, see the *Release Notes*.

Item	Description	Last updated
Release Notes	The *Release Notes* document presents information about new features, enhancements, and updates for the current release.	3.1
Known Issues	The *Known Issues* document presents information about known issues for the current release.	3.1
User Guide	The *User Guide* provides online access to all tasks you can perform from the LabPas application, as well as supporting concepts and reference information. You can access the *User Guide* from the Help button in the LabPas application.	3.1
Administration Guide	This guide provides a roadmap for configuring and setting up the LabPas application, setting up the LabPas Recruiting module, and viewing and printing reports. This guide contains step-by-step instructions and field definitions you can use to perform tasks such as setting up roles and permissions; setting up various aspects of a facility, such as instruments, samples, and vessels; and configuring the LabPas user interface and messaging.	3.1
Clinical Trial Design and Resource Management Guide	This guide provides a roadmap and step-by-step instructions for a variety of tasks, such as creating clinics, creating studies, planning clinic schedules, planning staff assignments, configuring and setting up the LabPas application, designing a clinical trial and recruitment, and viewing and printing reports and labels.	3.1
Recruiting User Guide	This guide provides step-by-step instructions for setting up and managing recruitment, including adding and contacting volunteers, scheduling, managing advertising campaigns, and performing other related operations. It also includes instructions for screening volunteers in a clinical trial.	3.1
Sample Management Guide	This guide provides step-by-step instructions for processing and tracking samples in the lab.	3.1
Clinical Data Entry Guide	This guide describes how to use the LabPas application to accomplish the typical tasks you would perform while gathering data during a clinical trial. It contains step-by-step instructions and field definitions you can use to perform data entry while capturing data about doses, samples, tests, adverse events, and other observations.	3.1

Item	Description	Last updated
Data Qualification Guide	This guide provides step-by-step instructions for reviewing data that is collected in LabPas CT studies.	3.1
Installation Guide	This guide provides step-by-step instructions for installing the LabPas application.	3.1
Secure Configuration Guide	This guide provides essential secure configuration considerations for the LabPas application.	3.1
Ad Hoc Reports Database Views Guide	This document provides details of the database views used in ad hoc reports. The descriptions include the details of each view as well as corresponding fields where you can verify data.	3.1
Specification for the HL7 Lab Data Interface	This document provides the information that is needed to set up jobs and exchange files automatically between LabPas facilities and the labs that process their samples.	3.1
Specification for the Mortara E-Scribe Interface	This document provides the information needed to set up jobs and import Mortara ECG files.	3.1
Third Party Licenses and Notices	This document includes licenses and notices for third party technology that may be included in or distributed with the LabPas software.	3.1

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CHAPTER 1

LabPas lab interface processing overview

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Setup of the LabPas and lab applications

The LabPas application and the laboratory system must be configured to export and import jobs using the HL7 lab interface.

- The LabPas administrator sets up a directory structure for orders and results.
- An administrator for the lab system sets up the lab system to read and write from these same directories.

Within the LabPas application:

- An administrative user specifies the job schedules for processing order exports and results imports. Import jobs may also be initiated manually in the LabPas application, primarily for troubleshooting purposes.
- Each instance of the lab interface is configured on the facility screen, and each instance of the lab interface can be assigned to a clinical lab sample type during study setup. These setup options support the use of multiple clinical labs for a given study.

Checklist—Exporting and importing data using the LabPas HL7 lab interface

☑		Workflow step	Performed by	Where to get more information
❑	1	Create the directory structure for HL7 exports and imports.	System administrator	*Installation Guide* and *Secure Configuration Guide*
❑	2	Configure system to allow the LabPas application read and write access to the HL7 export and import directories.	System administrator	***Setting up the lab import and export feature*** (in the *Installation Guide*).
❑	3	Enable the lab interfaces option in the sql.properties file.	System administrator	***Setting up the lab import and export feature*** (in the *Installation Guide*).
❑	4	Set up the Clinical Lab Export and Clinical Lab Import jobs.	LabPas administrator	***Jobs*** (in the *Administration Guide*)
❑	5	For each facility that will exchange data with an external lab, set up the lab interfaces.	LabPas administrator	***Adding and editing a facility*** (in the *Administration Guide*)
❑	6	In a study, specify the sample types that will be sent from each facility to a specific lab.	Study manager	***Assigning a facility and sample type to a lab*** (in the *Clinical Trial Design and Resource Management Guide*)

☑		Workflow step	Performed by	Where to get more information
❑	7	Monitor activity and troubleshoot as necessary.	LabPas administrator	Error logs in the error directory for the lab.
❑	8	Review and approve lab results.	Principal investigator or delegate	***Reviewing results for a clinical event*** (in the *Clinical Trial Design and Resource Management Guide*)

Exporting orders to an external lab system

At configured intervals the following activities occur in the LabPas application.

1 A connection to the export file location is established. If a connection cannot be made:

- An error is logged and the export function terminates.
- The export is tried again at the next configured interval.

2 The database is polled. For each sample found in the database that meets the established ***criteria*** (on page 4), the LabPas application creates an order in the HL7 format specified in this document, and writes it to a file in the export file location (the directory specified by *<lab_interface_base_directory>*/*<lab_name>*/export/).

- There is one sample per file.
- The file name is generated using a timestamp, in the format YYYYMMDDHHMMssss####.hl7
  where the hash signs indicate an optional sequence number.

3 If the export job completes successfully, the sample is marked as exported in the LabPas database. The sample will not be exported again unless it is selected manually in the LabPas application.

- A sample is processed for export by the automated interface one time only. Any changes to the sample, including adding or removing tests, do not generate a new order.
- If a sample that has been exported to the lab is cancelled, a cancellation order is not placed.

At configured intervals, the lab system picks up the orders from the designated directory. To prevent duplicate processing, the lab system is expected to delete the order files after retrieving them.

Criteria for exporting samples

Clinical lab samples that meet the following criteria can be exported automatically:

- The sample must not have been exported already.
- The sample must match the specified facility and sample type.
- The sample must have already been drawn and must not be cancelled.
- If sample logging is required by the facility, the sample must have been logged.

Importing results from an external lab system

At configured intervals the following activities occur in the LabPas application.

1 A connection to the import file location (<*lab_interface_base_directory*>/<*lab_name*>/import/) is established. If a connection cannot be made:

- An error is logged and the import function terminates.
- The file is not deleted. It is available to be retried when the import job runs at the next configured interval.

2 For each import file found, the LabPas application translates and validates the content using the driver associated with the lab interface that was specified in the study setup.

- The file must contain a screening number, sample ID, and study ID that match an actual sample within the LabPas application. If the LabPas application cannot match on the sample ID, it matches on the lab specimen ID if the tubes have been relabeled in the LabPas application and the specimen ID matches uniquely back to a LabPas lab specimen ID.
- Each file is validated. For more information, see ***Import file validation*** (on page 6).
  - If the file fails validation, it is moved to an error directory (<*lab_interface_base_directory*>/<*lab_name*>/export/errors).
  - If the file contains records for tests that were not ordered and that are not optional tests for that sample, the import of the entire sample file fails.

3 If a result already exists in the LabPas database, the result value in the database is overwritten with the new value.

- If the result value has changed, an audit trail record is generated in the LabPas application in the SR or CT Change Log, as appropriate.
- New comments are appended (comma-delimited) to previous comments for that result. If the resulting comment would exceed the maximum size, the file is written to the error directory.

4 Clinical significance is not overwritten for any result, even when there is a repeat load.

- The LabPas application exports repeat tests and imports repeat test results. If a results file for a repeat sample contains test results that are not associated with tests that were flagged for repeat, the file is written to the error directory.
- If a sample fails any validation, the file is not imported.

5 If results for a clinical lab sample with an Approval Status of Approved are imported:

- The Approval Status for the sample is set to Not Approved.
- The Approval Date and Approved By fields are cleared.
- An entry is recorded in the appropriate Change Log (SR or CT) with a source of Study Data Approval.
- The comment for the audit record states that approved data has changed.

6 If results for a clinical lab sample with a Monitor Review Status of Reviewed are imported:

- The Monitor Review Status for the sample is changed to Not Reviewed.
- An entry is recorded in the appropriate Change Log (SR or CT) with a source of Study Data Approval.
- The comment for the audit record states that reviewed data has changed.

7 If results for a screening sample are imported:

- The Eligibility Review for the participant associated with the sample is set to Pending if the Eligibility Review was set to Completed.
- An entry will be recorded in the Recruiting Change Log with a source of Study Participant Approval.
- The comment for the audit record states that approved data has changed

When the import job completes successfully, the LabPas application deletes the results files from the import location.

The LabPas application also supports the manual lab IMPORT button. This is used primarily for troubleshooting files with errors.

Import file validation

The LabPas application validates import (results) files to ensure that they meet the following criteria.

- The file contains the results for one sample.
- The format of the file adheres to the LabPas HL7 specification.
- The test units match the units configured for the test in the LabPas application.
- Each imported value matches the type and length of the equivalent field in the LabPas database.
- The result value is present and is not blank.
- For test type Pos/Neg/???, the value is equal to or contains one of the following:
  - +
  - -
  - ?
  - POSITIVE
  - POS
  - NEGATIVE
  - NEG
  - UNKNOWN
  - UNK

- For test type Pass/Fail, the value is equal or contains one of the following:
  - PASS
  - P
  - FAIL
  - F
- For test type List, the value matches one of the list values that is configured the LabPas application.

  Note: List values are case insensitive.

- For test type Numeric, the value is numeric.
- For test type Text, the value is no larger than configured length.
- For all test types except Text, the maximum length is 30 characters.

CHAPTER 2

LabPas HL7 specification

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LabPas HL7 file format

HL7 files consist of the following segments:

- **MSH**—Message Header. There is one MSH segment per file.
- **PID**—Patient Identification. There is one PID segment per file.
- **ORC**—Common Order. There is one ORC segment per file.
- **OBR**—Order Detail. There are one or more OBR segments, as necessary.
- **OBX**—Observation/Result. There are one or more OBX segments, as necessary.
- **NTE**—Notes and Comments, result level or sample level. There are one or more NTE segments, as necessary.
- **SPM**—Specimen. There is one SPM segment per file.
- **CTI**—Clinical Trial Identification. There is one segment per file.

The format is:

```
MSH
PID
ORC
   {OBR
   {OBX
   [{NTE} result level]
      }
      }
   SPM
   [{NTE} sample level]
CTI
```

Order file format

This section describes the fields in each segment of an HL7 order message that is exported from the LabPas application to an external lab.

- The Data column contains one of the following:
  - N/A, which indicates that the column is blank.
  - Required value, which appears in the file exactly as indicated in the table.
  - Definitions and field names are provided when the field will contain the value for the element described.
- Timestamp values are formatted using the local date and time plus or minus the UTC offset (YYYYMMDDhhmmss + or – hhmm offset from UTC).

  For example, Pacific Time would display as 20110314180000-0800.
- The pipe symbol (|) is used as the separator between fields.
- The caret symbol (^) is used for certain encoded fields.

Example: HL7 order file

This example is an HL7 order file that is exported from the LabPas application:

```
MSH|^~\&|LabPAS|CUSTOMER|||20110120143317+0100|| OML^O21|1|P|2.5||||||8859/1|EN
PID|1||1111||JJ||19750716|M||^American Indian or Alaska Native|||||||||||^Not
Hispanic or Latino|||||||
ORC|NW|LabPasId||A|||||20110120143112+0100|||||||||
OBR|1|LabPasId||P1^Description^LabPas|||20110120143112+0100|||||||||||||||||||
|||||||||||||||
OBX|1|ST|T1^Description^LabPas||^mmol||||||I||||||
SPM|1|LabPasId||^Blood|||||||||||||||||||||^Collection Tube||
NTE|1||1051 comment
CTI|study1|^1|^10_EventPlan1
```

MSH segment—Order

The MSH segment is required and non-repeating.

Example:

```
MSH|^~\&|LabPAS|Facility| | |20110120143317+0100||
OML^O21|1|P|2.5||||||8859/1|EN
```

MSH field	Name	Data
0	Segment ID	MSH
1	Encoding Characters	^~\&
2	Sending Application	LabPAS
3	Sending Facility	Contains the LabPas Facility Code.
4	Receiving Application	N/A
5	Receiving Facility	N/A

MSH field	Name	Data
6	Date/Time of Message	Contains the local date and time formatted as YYYYMMDDhhmmss + or – hhmm offset from UTC.
7	Security	N/A
8	Message Type	OML^O21
9	Message Control ID	Contains a sequential number.
10	Processing ID	P
11	Version ID	2.5
12	Sequence Number	N/A
13	Continuation Pointer	N/A
14	Accept Acknowledgement Type	N/A
15	Application Acknowledgement Type	N/A
16	Country Code	N/A
17	Character Set	8859/1
18	Language	EN

PID segment—Order

The PID segment is required and non-repeating.

Example:

```
PID|1||1111||JJ||19750716|M||^Race||||||||||||^Ethnicity||||||||
```

PID field	Name	Data
0	Segment ID	PID
1	Set ID – Patient ID	1
2	Patient ID (external)	N/A
3	Patient ID (internal)	Contains the LabPas Screening Number.
4	Alternate Patient ID	N/A
5	Patient Name	Contains the Candidate Initials.
6	Mother's Maiden Name	N/A
7	DOB	Contains the patient's birth date in the format YYYYMMDD.

PID field	Name	Data
8	Patient Gender	Contains one of the following: • M—Male • F—Female • U—Unknown
9	Patient Alias	N/A
10	Race	Candidate Race
11	Patient Address	N/A
12	Country Code	N/A
13	Phone Number – Home	N/A
14	Phone Number – Business	N/A
15	Primary Language	N/A
16	Marital Status	N/A
17	Religion	N/A
18	Patient Account Number	N/A
19	SSS Number – Patient	N/A
20	Driver's License Number – Patient	N/A
21	Mother's Identifier	N/A
22	Ethnic Group	Candidate Ethnic Group
23	Birth Place	N/A
24	Multiple Birth Indicator	N/A
25	Birth Order	N/A
26	Citizenship	N/A
27	Veterans Military Status	N/A
28	Nationality	N/A
29	Patient Death Date and Time	N/A
30	Patient Death Indicator	N/A

ORC segment—Order

The ORC segment is required and non-repeating.

Example:

```
ORC|NW|LabPasId|SpecId|A|||||20110120143112+0100|||||||||
```

ORC field	Name	Data
0	Segment ID	ORC
1	Order Control	NW
2	Placer Order Number	Contains the LabPas Sample Id (barcode).
3	Filler Order Number	Contains the Lab system Specimen Id. **Note:** This is provided only if tubes are relabeled in LabPas.
4	Placer Group Number	Contains the LabPas study group associated with the subject/sample.
5	Order Status	N/A
6	Response Flag	N/A
7	Quantity / Timing	N/A
8	Parent	N/A
9	Date/Time of Transaction	Contains the local date and time formatted as YYYYMMDDhhmmss + or – hhmm offset from UTC.
10	Entered By	N/A
11	Verified By	N/A
12	Ordering Provider	N/A
13	Enterer's Location	N/A
14	Call Back Phone Number	N/A
15	Order Effective Date/Time	N/A
16	Order Control Reason	N/A
17	Entering Organization	N/A
18	Entering Device	N/A

OBR segment—Order

The OBR segment is required and repeating. Each OBR segment represents one panel of tests requested.

Example:

```
OBR|1|LabPasId|SpecId|P1^Description^LabPas|||20110120143112+0100|||||||||||||
||||||||||||||||||||
```

OBR field	Name	Data
0	Segment ID	OBR
1	Set ID	Contains a sequential number.
2	Placer Order Number	Contains the LabPas Sample Id (barcode). This is the same value as ORC field 2.
3	Filler Order Number	Contains the Lab system Specimen Id. **Note:** This is provided only if tubes are relabeled in LabPas.
4	Universal Service Identifier	Contains a coded element in the following format: Panel Id^Description^LabPas where: • Panel Id maps to a LabPas Panel Code, which is required by the LabPas application. It maps to the Panel Code 2 field for the panel on the Test Panels screen. • LabPas denotes the coding system. Example: P1^Description^LabPas
5	Priority	N/A
6	Requested Date/Time	N/A
7	Observation Date/Time	Contains the LabPas Sample Date/Time, formatted as YYYYMMDDhhmmss + or – hhmm offset from UTC.
8	Observation End Date/Time	N/A
9	Collection Volume	N/A
10	Collector Identifier	N/A
11	Specimen Action Code	N/A
12	Danger Code	N/A
13	Relevant Clinical Info.	N/A
14	Specimen Received Date/Time	N/A
15	Specimen Source	N/A

OBR field	Name	Data
16	Ordering Provider	N/A
17	Order Callback Phone Number	N/A
18	Placer Field 1	N/A
19	Placer Field 2	N/A
20	Filler Field 1	N/A
21	Filler Field 2	N/A
22	Results Rpt/Status Chng – Date/Time	N/A
23	Charge To Practice	N/A
24	Diagnostic Serv Sect ID	N/A
25	Result Status	N/A
26	Parent Result	N/A
27	Quantity / Timing	N/A
28	Result Copies To	N/A
29	Parent	N/A
30	Transportation Mode	N/A
31	Reason For Study	N/A
32	Principal Result Interpreter	N/A
33	Assistant Result Interpreter	N/A
34	Technician	N/A
35	Transcriptionist	N/A
36	Scheduled Date/Time	N/A
37	Number of Sample Containers	N/A
38	Transport Logistics of Collected Sample	N/A
39	Collector's Comment	N/A
40	Transport Arrangement Responsibility	N/A
41	Transport Arranged	N/A
42	Escort Required	N/A
43	Planned Patient Transport Comment	N/A

OBX segment—Order

The OBX segment is required and repeating. It represents one result requested.

Example:

```
OBX|1|ST|T1^Description^LabPas|||^mmol|||||I|||||||
```

OBX field	Name	Data
0	Segment ID	OBX
1	Set ID	Contains a sequential number.
2	Value Type	ST
3	Observation Identifier	Contains a coded element formatted as follows: Test Code^Description^LabPas where: • Test Code maps to a LabPas Test Code, which is required by the LabPas application. It maps to the Test Code 2 field for the test on the Tests page.) • LabPas denotes the coding system. Example: T1^Description^LabPas
4	Observation Sub-Id	N/A
5	Observation Value	N/A
6	Units	Contains the unit that the LabPas application expects to be associated with the result value, in the format: ^Unit Example: ^mm
7	Reference Range	N/A
8	Abnormal Flags	N/A
9	Probability	N/A
10	Nature of Abnormal Test	N/A
11	Result Status	I This status means the file is awaiting a result.
12	Date of Last Normal Values	N/A
13	User Defined Access Checks	N/A
14	Date/Time of the Observation	N/A
15	Producer's Id	N/A
16	Responsible Observer	N/A
17	Observation Method	N/A

SPM segment—Order

The SPM segment is required and non-repeating. It provides data about the sample.

Example:

```
SPM|1|LabPasId||^Blood|||||||||||||||||||||^Collection Tube||
```

SPM field	Name	Data
0	Segment ID	SPM
1	Set ID	1
2	Specimen Id	Contains the LabPas Sample Id (barcode). This is the same value as ORC field 2.
3	Specimen Parent Id	N/A
4	Specimen Type	Contains the LabPas Sample Type.
5	Specimen Type Modifier	N/A
6	Specimen Additives	N/A
7	Specimen Collection Method	N/A
8	Specimen Source Site	N/A
9	Specimen Source Site Modifier	N/A
10	Specimen Collection Site	N/A
11	Specimen Role	N/A
12	Specimen Collection Amount	N/A
13	Grouped Specimen Count	N/A
14	Specimen Description	N/A
15	Specimen Handling Code	N/A
16	Specimen Risk Code	N/A
17	Specimen Collection Date/Time	N/A
18	Specimen Received Date/Time	N/A
19	Specimen Expiration Date/Time	N/A
20	Specimen Availability	N/A
21	Specimen Reject Reason	N/A
22	Specimen Quality	N/A
23	Specimen Appropriateness	N/A
24	Specimen Condition	N/A
25	Specimen Current Quantity	N/A
26	Number of Specimen Containers	N/A

SPM field	Name	Data
27	Container Type	Contains the LabPas Vessel Type.
28	Container Condition	N/A
29	Specimen Child Role	N/A

NTE segment—Order

The NTE segment is optional and non-repeating. It represents the comment associated with the draw event in the LabPas database.

Example:

```
NTE|1||1051 comment
```

NTE field	Name	Data
0	Segment ID	NTE
1	Set ID	N/A **Note:** If multiple NTE segments are included for an OBX segment, this field contains a sequence number.
2	Source of Comment	N/A
3	Comment	Contains the comment captured by the clinician at the point of draw.

CTI segment—Order

The CTI segment is required and non-repeating.

Example:

```
CTI|study1|^1|^10_EP1
```

CTI field	Name	Data
0	Segment ID	CTI
1	Sponsor Study ID	Contains the LabPas Study Id.
2	Study Phase Identifier	Contains the LabPas Study Period for this sample.

CTI field	Name	Data
3	Study Scheduled Time Point	Contains the LabPas Time Point, which is created by concatenating the event number and the event plan of the sample, separated by an underscore character. • For an ad hoc sample, the event number is blank. • For a screening visit, the event plan is blank. Example: ^10_EP1

Result file format

The interface design assumes that each LabPas clinical testing event is tied to one barcode and one tube type:

One Lab Specimen ID = One LabPas ID = One Tube = One Time Point

Therefore:

- There is one MSH, PID, ORC, SPM, and CTI segment for each event or sample.
- There is one OBR record for each panel on the event.
- There is one OBX record for each test on each panel.

The sections that follow are a suggested HL7 message structure for importing results into the LabPas database.

- Unless stated otherwise, a value other than N/A in the Data column indicates that the field is required. N/A in the Data column indicates that the LabPas application ignores any data in that field.
- All timestamp values must be formatted using the local date and time plus or minus the UTC offset (YYYYMMDDhhmmss + or – hhmm offset from UTC). For example, a Pacific Time would display as 20110314180000-0800.
- The pipe symbol (|) is used as the separator between fields.
- Import files that contain European characters should use UTF-8 encoding.
- If no reference ranges are included on the Results Import file, no reference range will be stored for that sample in the LabPas database.
- Any demographic information imported from an external lab will not update the demographic information for the candidate that is stored in the LabPas database.

Example: HL7 result file

Following is an example of an HL7 result message imported from a lab system.

```
MSH|^~\&|LIMS|CUSTOMER|LabPas|Facility|20110120143317+0100||ORU^R01|1|P|2.5||||
|BE|8859/1|EN
PID|1|ScnNo|CAPatientId||JJ||19750716|M||^American Indian or Alaska
Native|||||EN|||||||^Not Hispanic or Latino|||||||
ORC|SC|LabPasId|CALabId|1|||||20110120143112+0100|||||||||
OBR|1||LabId|P1^Panel
Desc|||20110120143112+0100|||||||||||||||||||||||||||||||||||
OBX|1||3000^Glucose^LIS||5.00|^mmol/l|3.90 - 6.10|N|||F|||20110120143112
+0100|||
NTE|1||1051 Comment
SPM|1|LabPasId||^Blood|||||||||||||||||||||^Collection Tube||
CTI|study1|^1|^10_EP1
```

MSH segment—Result

The MSH segment is required and non-repeating.

Example:

```
MSH|^~\&|LIMS|CUSTOMER|||20110120143317+0100||ORU^R01|1|P|2.5|||||BE|8859/1|EN
```

MSH field	Name	Data
0	Segment ID	MSH
1	Encoding Characters	^~\&
2	Sending Application	Lab System **Note:** Not used by the LabPas application
3	Sending Facility	Contains the Customer Lab Identifier, which is mapped to Performed By and External Source in the LabPas application
4	Receiving Application	LabPAS
5	Receiving Facility	Contains the LabPas Facility Code.
6	Date/Time of Message	Contains the local date and time formatted as YYYYMMDDhhmmss + or – hhmm offset from UTC.
7	Security	N/A
8	Message Type	ORU^R01
9	Message Control ID	Contains a sequential number.
.10	Processing ID	P
11	Version ID	2.5
12	Sequence Number	N/A
13	Continuation Pointer	N/A
14	Accept Acknowledgement Type	N/A
15	Application Acknowledgement Type	N/A
16	Country Code	N/A
17	Character Set	N/A
18	Language	N/A

PID segment—Result

The PID segment is required and non-repeating.

Example:

```
PID|1|ScnNo|LIMSPatientId||JJ||19750716|M||^Race|||||EN|||||||^Ethnicity
|||||||
```

PID field	Name	Data
0	Segment ID	PID
1	Set ID – Patient ID	1
2	Patient ID (external)	Contains the LabPas Screening Number. Required by the LabPas application.
3	Patient ID (internal)e	N/A
4	Alternate Patient ID	N/A
5	Patient Name	Contains the Candidate Initials. Optional.
6	Mother's Maiden Name	N/A
7	DOB	Contains the patient's birth date in the format YYYYMMDD. Optional. Not used by LabPas.
8	Patient Gender	Contains M (Male), F (Female), or U (Unknown). Optional. Not used by LabPas.
9	Patient Alias	N/A
10	Race	Candidate Race
11	Patient Address	N/A
12	Country Code	N/A
13	Phone Number – Home	N/A
14	Phone Number – Business	N/A
15	Primary Language	N/A
16	Marital Status	N/A
17	Religion	N/A
18	Patient Account Number	N/A
19	SSS Number – Patient	N/A
20	Driver's License Number – Patient	N/A
21	Mother's Identifier	N/A

PID field	Name	Data
22	Ethnic Group	Candidate Ethnic Group
23	Birth Place	N/A
24	Multiple Birth Indicator	N/A
25	Birth Order	N/A
26	Citizenship	N/A
27	Veterans Military Status	N/A
28	Nationality	N/A
29	Patient Death Date and Time	N/A
30	Patient Death Indicator	N/A

ORC segment—Result

The ORC segment is required and non-repeating.

Example:

```
ORC|SC| LabPasId|LIMSLabId|1|||||20110120143112+0100|||||||||
```

ORC field	Name	Data
0	Segment ID	ORC
1	Order Control	N/A
2	Placer Order Number	Contains the LabPas Sample ID (barcode). Required by the LabPas application.
3	Filler Order Number	Contains the Lab System Specimen ID.
4	Placer Group Number	Contains the LabPas study group associated with the subject/sample.
5	Order Status	N/A
6	Response Flag	N/A
7	Quantity / Timing	N/A
8	Parent	N/A
9	Date/Time of Transaction	Contains the local date and time formatted as YYYYMMDDhhmmss + or – hhmm offset from UTC.
10	Entered By	N/A
11	Verified By	N/A
12	Ordering Provider	N/A
13	Enterer's Location	N/A

ORC field	Name	Data
14	Call Back Phone Number	N/A
15	Order Effective Date/Time	N/A
16	Order Control Reason	N/A
17	Entering Organization	N/A
18	Entering Device	N/A

OBR segment—Result

The OBR segment is required and repeating. Each OBR segment represents one panel of tests.

Example:

```
OBR|1||LabId|P1^Panel
Desc|||20110120143112+0100|||||||||||||||||||||||||||||||||||
```

OBR field	Name	Data
0	Segment ID	OBR
1	Set ID	Contains a sequential number.
2	Placer Order Number	N/A
3	Filler Order Number	N/A
4	Universal Service Identifier	Contains a coded element in the following format: Panel Id^Description^LabPas where: • Panel Id maps to the LabPas Panel Code 2 field for the panel on the Test Panels page. This field is check, but it is not required by the LabPas application. • LabPas denotes the coding system. It is optional and is ignored by the LabPas application.
5	Priority	N/A
6	Requested Date/Time	N/A
7	Observation Date/Time	N/A
8	Observation End Date/Time	N/A
9	Collection Volume	N/A
10	Collector Identifier	N/A
11	Specimen Action Code	N/A
12	Danger Code	N/A

OBR field	Name	Data
13	Relevant Clinical Info.	N/A
14	Specimen Received Date/Time	N/A
15	Specimen Source	N/A
16	Ordering Provider	N/A
17	Order Callback Phone Number	N/A
18	Placer Field 1	N/A
19	Placer Field 2	N/A
20	Filler Field 1	N/A
21	Filler Field 2	N/A
22	Results Rpt/Status Chng – Date/Time	N/A
23	Charge To Practice	N/A
24	Diagnostic Serv Sect ID	N/A
25	Result Status	N/A
26	Parent Result	N/A
27	Quantity / Timing	N/A
28	Result Copies To	N/A
29	Parent	N/A
30	Transportation Mode	N/A
31	Reason For Study	N/A
32	Principal Result Interpreter	N/A
33	Assistant Result Interpreter	N/A
34	Technician	N/A
35	Transcriptionist	N/A
36	Scheduled Date/Time	N/A
37	Number of Sample Containers	N/A
38	Transport Logistics of Collected Sample	N/A
39	Collector's Comment	N/A
40	Transport Arrangement Responsibility	N/A
41	Transport Arranged	N/A
42	Escort Required	N/A
43	Planned Patient Transport Comment	N/A

OBX segment—Result

The OBX segment is required and repeating. Each OBX segment represents one result.

The Study ID (CTI field 1), Screening Number (PID field 2), Test Code (OBX field 3), and Units (OBX field 6) in the import files must match the same data in the LabPas database for the sample (ORC field 3).

- If all fields match, the result is imported and saved in the LabPas database.
- If the fields do not all match, an error is reported and the file is not imported.

Example:

```
OBX|1||3000^Glucose^LIS||5.00|^mmol/l|3.90 - 6.10|N|||F|||20110120143112
+0100|||
```

OBX field	Name	Data
0	Segment ID	OBX
1	Set ID	Contains a sequential number.
2	Value Type	N/A The LabPas application treats all results as String values.
3	Observation Identifier	Contains a coded element formatted as follows: Test Code^Description^LabPas where: • Test Code maps to a LabPas Test Code, which is required by the LabPas application. It maps to the Test Code 2 field for the test on the Tests page.) • LabPas denotes the coding system. It is optional and ignored by the LabPas application.
4	Observation Sub-Id	N/A
5	Observation Value	Contains the result value. Any possible values in this field should match the data type specified for the test in the LabPas application. (For example, a LabPas Numeric test will reject any non-numeric values.)
6	Units	Contains the unit associated with the result value, in the format: ^Unit It must match the units configured for the test in the LabPas application.

OBX field	Name	Data
7	Reference Range	Contains the result value, which will be copied verbatim into the Reference Range field for display in the LabPas application and on reports. For Numeric and Text tests, the format must be: • |LL – UL|, or • |<UL| or |>LL|. LL is the lower limit of the reference range. UL is the upper limit of the reference range. Example: |6.5 – 7.5| or |<10| or |>=49|
8	Abnormal Flags	Contains a value that is written verbatim to the Alert Code field in the LabPas application. For normal results, this field should be left blank to avoid unnecessary alerts.
9	Probability	N/A
10	Nature of Abnormal Test	N/A
11	Result Status	A standard set of values is expected in this field, such as: • F—Final result • X—Cannot get result • I—Awaiting result • P—Preliminary result • C—Corrected The result status is not used by the LabPas application or stored in the database.
12	Date of Last Normal Values	N/A
13	User Defined Access Checks	N/A
14	Date/Time of the Observation	Result Date/Time formatted as YYYYMMDDhhmmss + or – hhmm offset from UTC.
15	Producer's Id	N/A
16	Responsible Observer	N/A
17	Observation Method	N/A

NTE segment—Result

The NTE segment is optional and repeating. Each NTE segment represents one comment to associate with the result in the previous OBX segment.

Example:

```
NTE|1||1051 comment
```

NTE field	Name	Data
0	Segment ID	NTE
1	Set ID	N/A **Note:** If multiple NTE segments are included for an OBX segment, this field contains a sequence number.
2	Source of Comment	N/A
3	Comment	The content of this field is prepended and separated with a comma (,) to the LabPas Result Comment for the test result in the OBX segment

SPM segment—Result

The LabPas application ignores the SPM segment for messages that are imported.

If an SPM segment is included, it should be identical to the SPM segment that is exported from the LabPas application. For more information, see *SPM segment—Order* (on page 18).

CTI segment—Result

The CTI segment is required and non-repeating.

Example:

```
CTI|study1|^1|^10_EP1
```

CTI field	Name	Data
0	Segment ID	CTI
1	Sponsor Study ID	Contains the LabPas Study ID. Required by the LabPas application.
2	Study Phase Identifier	N/A
3	Study Scheduled Time Point	N/A