

PACMED SERVER +™

INTERFACE SPECIFICATION

Version 2

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1. Introduction

PACMED Server +™ interfaces with Pharmacy Information Systems (PIS) using text files, more commonly known as flat files. The PIS must be able to produce text files to transfer information to Pacmed Server+™. The different options of transfer are described in Section 3 – File transfer options of the present document.

1.1 Acronyms used in document

PS+	Pacmed Server+™
PIS	Pharmacy Information System
PRN	<i>Pro re nata</i> meaning “take pill as required”, “as needed” or “when needed”

2. Interfaces

The interfaces are file based type. It consists of a file sent by the PIS to PS+ to be processed. It is a one way exchange. PS+ receives only. It does not send any response – no acknowledgement and no data.

2.1 Type of Interfaces

Two (2) types of interfaces are available.

2.1 Order Interface

This interface is used to transfer orders from the PIS to PS+ application.

PS+ has 4 types of orders available:

1. **Unitdose:** This is a patient specific order that is specific to a date and time of administration. Only one pill (or drug - configurable) per bag.
2. **Multidose:** This is a patient specific order that is administration date and time specific, to be packaged along with other orders that go to the same patient at the same date and time of administration.
3. **PRN:** This is a patient specific order with no fixed date and time of administration, to be taken when needed by the patient.
4. **Prepack:** This is non-patient specific order, usually used for stock like first doses.

2.2 Drug interface

This interface is used to synchronize the list of drugs of both systems. It is optional, as not every PIS supports this interface.

If it is not used, McKesson will populate the initial drug list and it will be up to the pharmacist to edit or add the drugs manually in PS+ using the built-in Drug Editor.

3. File Transfer options

PS+ can access the data files (order and/or drug files) by the following ways:

1. **FTP:** The PIS can send the data file through FTP to PS+ workstation. In this case a FTP server is setup on the PS+ workstation.
2. **Network drive:** A drive can be located on the local network and accessed by both systems through the network. In this case, the PIS save or copy the data file on this network drive location where PS+ will be able to read it.
3. **PS+ Shared drive/folder:** The PIS deposits the data file in a folder that is shared on the PS+ workstation.
4. **Manual copy:** A user can manually copy the data file to the designated folder on the PS+ workstation.
5. **Browse for file:** A user can browse the computer or local network to open the file from the PS+ workstation.

If PS+ reads the file at the same location it is transferred, it will wait 5 seconds after the last size change to the file before attempting to read it, to make sure the transfer or copy is complete. It is also possible to work based on the file locking state.

4. Interface Files specification

4.1 Interface File format

All interfaces are using the following file type

Format - Character delimited - Each field is delimited by a tilde character ("~"). The field is defined by its position in a line of the file.

Ex: Field1~Field2~Field3~...~Fieldn

End of line characters – Each line (record) in the file ends with a <CR><LF> (0D 0A in hex).

4.2 Order file specification

In the order file, each line is a dose to be administered.

For example, if 1 week of medication must be administered, twice a day, say 8:00 AM and 2:00 PM, then the file must contain 14 lines, one line for each patient-drug-administration date / time.

4.2.1 File name

Filename - *.dat – The order file can have any name using the extension ".dat".

Example: Order12345.dat

4.2.2 List of fields

All fields are present in the file. Non-required fields are left empty if their respective data is not available. If the length of the data string in a field is greater than its maximum value, it will be truncated.

Field No.	Field Name	Description	Required	Data type	Max Length
1	PATIENT NAME	Patient first and last name.	YES ⁽¹⁾	String	30
2	PATIENT ID	Patient unique identifier. Used when 2 patients have the same name.	NO	String	15
3	PATIENT FACILITY	Used to determine the bag configuration. If not supplied, all bags will have the same format. Can be the department, wing, floor, home, etc.	NO	String	15
4	PATIENT UNIT	Patient's unit.	NO	String	30
5	PATIENT LOCATION	Patient's location.	NO	String	30
6	PATIENT ROOM	Patient's room.	NO	String	15
7	PATIENT BED	Patient's bed.	NO	String	15
8	MNEMONIC	Mnemonic - used as the unique identifier for the drug.	YES	String	20
9	ADMINISTRATION DATE	Date the dose must be administered.	YES ⁽¹⁾	Date Format: yyyyMMd	8
10	ADMINISTRATION TIME	Time the dose must be administered at.	YES ⁽¹⁾	Time Format: HHmm	4
11	QUANTITY	Number of pills for that date and time. Fractions are accepted, with up to 2 decimals. Ex: 0.5, 1, 1.66, 2.25	YES	Numeric	-
12	DOCTOR NAME	Doctor's name.	NO	String	25
13	ORDER NUMBER	Order or <i>RX</i> number.	NO	String	15
14	ORDER COMMENTS	Comments for the order. Ex: Warning can cause sleepiness	NO	String	40
15	INSTRUCTIONS	Instructions for the order. Ex: Take while eating.	NO	String	30
16	FREE FORM TEXT 1	Custom information. Any information the customer wishes to use.	NO	String	50
17	FREE FORM TEXT 2	Custom information.	NO	String	50
18	FREE FORM TEXT 3	Custom information.	NO	String	50
19	FREE FORM TEXT 4	Custom information.	NO	String	50
20	ORDER TYPE (BAG TYPE)	Type of bag to use to package the order Possible values are: U(Unitdose), M(Multidose), P(PRN) or K(Prepack)	NO ⁽²⁾	String	1

⁽¹⁾ Mandatory fields for Multidose or Unitdose orders. Not mandatory for PRN and Prepack orders.

⁽²⁾ If the order type is not specified, the facility default bag configuration will be in effect.

4.2.3 File Examples

Example 1 - Default

The following order file example reflects 2 days worth of orders for patients John Smith and Jane Doe, beginning on July 7th 2008.

The order for John Smith is 1 Tylenol and 1 Advil on Monday at 8AM and 2PM and 1 Tylenol on Tuesday at 8AM and 2PM respectively.

The order for Jane Doe is 1 Tylenol and 1 Advil on Monday at 9AM and 4PM and 1 Advil on Tuesday at 9AM and 4PM respectively.

```
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080707~0800~1.0~~~~~
SMITH, JOHN~123~FLOOR 2~~~200~A~0281182~20080707~0800~1.0~~~~~
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080707~1400~1.0~~~~~
SMITH, JOHN~123~FLOOR 2~~~200~A~0281182~20080707~1400~1.0~~~~~
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080708~0800~1.0~~~~~
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080708~1400~1.0~~~~~
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080707~0900~1.0~~~~~
DOE, JANE~123~FLOOR 2~~~201~B~0280305~20080707~0900~1.0~~~~~
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080707~1600~1.0~~~~~
DOE, JANE~123~FLOOR 2~~~201~B~0280305~20080707~1600~1.0~~~~~
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080708~0900~1.0~~~~~
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080708~1600~1.0~~~~~
```

Notes:

1. All fields are present in the file. Non-required fields are left empty.
2. The order type (Unitdose or Multidose) will be determined by the packaging configuration that includes the "FLOOR 2" facility.

Example 2 - Unitdose

The following order file reflects 2 days worth of order for patients John Smith (Room 200 bed A) and Jane Doe (Room 201 bed B) beginning on July 7th 2008. This time the order type is set to Unitdose and only 1 pill will be packaged per bag. An instruction for the drug has also been added.

The order for John Smith is 1 Tylenols and 1 Advil on Monday at 8AM and 2PM respectively – must be taken while eating and 1 Tylenol on Tuesday at 8AM and 2PM – must be taken while eating.

The order for Jane Doe is 1 Tylenols and 1 Advil on Monday at 9AM and 4PM respectively – must be taken while eating and 1 Advil on Tuesday at 9AM and 4PM – must be taken while eating.

```
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080707~0800~1.0~~~~TAKE WHILE EATING~~~~~U
SMITH, JOHN~123~FLOOR 2~~~200~A~0281182~20080707~0800~1.0~~~~TAKE WHILE EATING~~~~~U
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080707~1400~1.0~~~~TAKE WHILE EATING~~~~~U
SMITH, JOHN~123~FLOOR 2~~~200~A~0281182~20080707~1400~1.0~~~~TAKE WHILE EATING~~~~~U
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080708~0800~1.0~~~~TAKE WHILE EATING~~~~~U
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080708~1400~1.0~~~~TAKE WHILE EATING~~~~~U
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080707~0900~1.0~~~~TAKE WHILE EATING~~~~~U
DOE, JANE~123~FLOOR 2~~~201~B~0280305~20080707~0900~1.0~~~~TAKE WHILE EATING~~~~~U
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080707~1600~1.0~~~~TAKE WHILE EATING~~~~~U
DOE, JANE~123~FLOOR 2~~~201~B~0280305~20080707~1600~1.0~~~~TAKE WHILE EATING~~~~~U
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080708~0900~1.0~~~~TAKE WHILE EATING~~~~~U
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080708~1600~1.0~~~~TAKE WHILE EATING~~~~~U
```

Example 3 - Multidose

The following order file reflects 2 days worth of order for patients John Smith (Room 200 bed A) and Jand Doe (Room 201 bed B) beginning on July 7th 2008. This time the order type is Multidose and more than 1 pill will be packaged per bag.

The order for John Smith is 1 Tylenols and 1 Advil on Monday at 8AM and 2PM respectively – must be taken while eating and 1 Tylenol on Tuesday at 8AM and 2PM – must be taken while eating.

The order for Jane Doe is 1 Tylenols and 1 Advil on Monday at 9AM and 4PM respectively – must be taken while eating and 1 Advil on Tuesday at 9AM and 4PM – must be taken while eating.

```
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080707~0800~1.0~~~~TAKE WHILE EATING~~~~~M
SMITH, JOHN~123~FLOOR 2~~~200~A~0281182~20080707~0800~1.0~~~~TAKE WHILE EATING~~~~~M
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080707~1400~1.0~~~~TAKE WHILE EATING~~~~~M
SMITH, JOHN~123~FLOOR 2~~~200~A~0281182~20080707~1400~1.0~~~~TAKE WHILE EATING~~~~~M
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080708~0800~1.0~~~~TAKE WHILE EATING~~~~~M
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~20080708~1400~1.0~~~~TAKE WHILE EATING~~~~~M
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080707~0900~1.0~~~~TAKE WHILE EATING~~~~~M
DOE, JANE~123~FLOOR 2~~~201~B~0280305~20080707~0900~1.0~~~~TAKE WHILE EATING~~~~~M
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080707~1600~1.0~~~~TAKE WHILE EATING~~~~~M
DOE, JANE~123~FLOOR 2~~~201~B~0280305~20080707~1600~1.0~~~~TAKE WHILE EATING~~~~~M
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080708~0900~1.0~~~~TAKE WHILE EATING~~~~~M
DOE, JANE~123~FLOOR 2~~~201~B~0281182~20080708~1600~1.0~~~~TAKE WHILE EATING~~~~~M
```

Example 4 - PRN

The following order file reflects 2 days worth of order for patients John Smith and Jand Doe beginning on July 7th 2008. This time the order type is Multidose and more than 1 pill will be packaged per bag.

The order for John Smith is 4 Tylenols to be taken anytime during the day

The order for Jane Doe is 4 Advils to be taken anytime during the day

```
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~~~1.0~~~~~P
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~~~1.0~~~~~P
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~~~1.0~~~~~P
SMITH, JOHN~123~FLOOR 2~~~200~A~0280305~~~1.0~~~~~P
DOE, JANE~123~FLOOR 2~~~201~B~0281182~~~1.0~~~~~P
DOE, JANE~123~FLOOR 2~~~201~B~0281182~~~1.0~~~~~P
DOE, JANE~123~FLOOR 2~~~201~B~0281182~~~1.0~~~~~P
DOE, JANE~123~FLOOR 2~~~201~B~0281182~~~1.0~~~~~P
```

Notes:

1. The date and time fields are not mandatory when packaging PRN. If present, they will be disregarded.

4.3 Drug file specification

In the drug file, each line is a drug to be added or updated, if already present in the database.

4.3.1 File name

Filename - *.drg – The order file can have any name using the extension “.drg”.

Example: Drugs12345.drg

4.3.2 List of fields

Field No.	Field Name	Description	Required	Type	Max Length
1	MNEMONIC	Mnemonic is used as the unique identifier for the drug.	YES	String	20
2	GENERIC NAME	Generic name of the drug	YES ⁽¹⁾	String	30
3	COMMERCIAL NAME	Commercial (brand) name of the drug	YES ⁽¹⁾	String	30
4	DIN/NDC	Drug unique identifier, DIN in Canada and NDC in the US. Please provide all 11 digits of the NDC code if in the US.	NO	String	15
5	STRENGTH	Strength of the drug (Ex: 10 MG)	NO	String	15
6	MANUFACTURER	Drug manufacturer	NO	String	15
7	DRUG DESCRIPTION	Physical description of the drug, Ex : WHT, RND for White, Round	NO	String	50
8	DRUG INSTRUCTIONS	Specific drug instructions. Ex: Do not take with milk	NO	String	255
9	COST	Unitary cost of 1 dose. Set to “0” if not used.	YES	Numeric	-
10	REMINDER	Flag to specify if this drug is packaged by the PACMED™ machine. If set to 1, a bag will be produced with the drug-patient info printed on it, but the bag will be empty. This is used as a reminder for the nurse doing the distribution to also dispense that drug. Set to “0” if not used.	YES	Boolean Values: 1 or 0	1
11	PACK ALONE	Flag to specify if that drug must be packed alone in its bag, even if in a Multidose packaging mode. Set to “0” if not used.	YES	Boolean Values: 1 or 0	1
12	Action Type	Action to do in the PS+ database: Add/Update [U] or Delete [D] a drug	YES	String Values: U or D	1

⁽¹⁾ Only one of the 2 names is mandatory.

4.3.3 File Examples

The following file will insert or update the drugs in the PS+ database.

Example 1

Here is a list of drug to create or update in the PS+ database.

COMMERCIAL NAME	GENERIC NAME	MNEMONIC	DIN/NDC	MANUFACTURER	STRENGTH	REMINDER
TYLENOL	ACETAMINOPHEN	0280305	0482323	MCNE	325 MG	N
ADVIL	IBUPROFEN	0281140	0441643	WAC	200 MG	N
ASPIRIN	ACETYLSALICYLIC ACID	0280534	2237726	STER	325 MG	N
POLYSPORIN	GRAMICIDIN/POLYMYXIN	1234445	0035335	WARL	1.5%	Y

To be noted that the last drug, Polysporin, is a topic cream and will be set as a reminder drug. In this case, the PACMED will only produce an empty bag with the Polysporin info if this drug is included in an order file for a patient.

Here is the file to send to add/update the list of drugs in PS+ :

```
0280305~TYLENOL~ACETAMINOPHEN~0482323~325 MG~MCNE~~~0~0~0~U
0281140~ADVIL~IBUPROFEN~0441643~200 MG~WAC~~~0~0~0~U
0280534~ASPIRIN~ACETYLSALICYLIC ACID~02237726~325 MG~STER~~~0~0~0~U
1234445~GRAMICIDIN/POLYMYXIN~POLYSPORIN~0035335~1.5%~WARL~PASTE~TAKE WITH FOOD~0~1~0~U
```

Notes :

1. The fields 9, 10 and 11 have the value "0" if they are not used. Do not leave those fields empty.

Example 2 – Deleting drugs

Same drugs as in example 1 but this time for deletion from the PS+ database.

Only the mnemonic field is mandatory in this case.

```
0280305~~~~~0~0~0~D
0281140~~~~~0~0~0~D
0280534~~~~~0~0~0~D
1234445~~~~~0~0~0~D
```