

***Message Pusher
(PUSHER)
Operation and
Installation Manual***



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1 Introduction

1.1 Overview

Message Pusher (PUSHER) is a MQ application that will move messages from an input queue to output queues under sync-point. PUSHER has been tested on Windows, Unix, Linux and z/OS environments.

PUSHER can move messages from a source queue to target queue. Messages put to each target queue are an exact replicate of the original message from the source queue (including the message's MQMD).

PUSHER performs each MQGET and the subsequent "n" MQPUT(s) under a Unit of Work (UOW), so that message integrity is kept.

2 Installing Message Pusher

This section describes how to install Capitalware's PUSHER.

2.1 Windows Installation

To install PUSHER on Windows, do the following instructions:

- Run the install program called: **pusher-setup.exe**
- The installer follows the standard Windows install procedures and provides default values for the user.
- When the install program has completed execution, there will be a newly created folder under *Start -> All Programs* called **PUSHER**.
- To run PUSHER, select the PUSHER icon from within the PUSHER folder.

The user may copy or ftp the pusher.exe and pusherc.exe files from one Windows server to another Windows server.

2.2 Unix and Linux Installation

To install PUSHER on Unix or Linux, first unzip the **pusher.zip** and then select the appropriate TAR file for the target platform. You will find 8 TAR files in the original ZIP file:

- **AIX/pusher_aix.tar**
- **HPUX_IA64 /pusher_hpux_ia64.tar**
- **HPUX_PA-RISC /pusher_hpux.tar**
- **Linux_x86/pusher_linux_x86.tar**
- **Linux_POWER/pusher_linux_power.tar**
- **Linux_zSeries//pusher_linux_zseries.tar**
- **Solaris_SPARC/pusher_solaris.tar**
- **Solaris_x86/pusher_solaris_x86.tar**

Steps to install the server-side security exit:

1. ftp or copy the selected TAR file to the target platform to the **/opt/capitalware/** directory.
2. Un-tar the pusher_XXX.tar file into the **/opt/capitalware/** sub-directory (XXX is either aix, hpux, solaris or linux)

```
cd /opt/capitalware/  
tar -xvf pusher_XXX.tar
```

2.3 IBM i Installation

To install the PUSHER on IBM i, first unzip the **pusher.zip** and then select the files in the IBM i (iSeries) directory.

- **pusher.savf** is the IBM i 'Save File' that contains PUSHER

Steps to install PUSHER:

1. Log onto the target IBM i server and do the following command:

```
CRTSAVF FILE(QGPL/PUSHER)
```

2. ftp the IBM i files to the IBM i server as follows:

```
ftp -s:pusher_iseries.ftp iseries_hostname
```

```
your-IBM i-userid  
your-IBM i-password  
  
binary  
cd QGPL  
put pusher.savf  
  
quit
```

3. Log onto the target IBM i server and do the following commands:

```
RSTLIB SAVLIB(PUSHER) DEV(*SAVF) SAVF(QGPL/PUSHER)  
CLRSVF FILE(QGPL/PUSHER)  
CHGOBJOWN OBJ(PUSHER) OBJTYPE(*LIB) NEWOWN(QMQM)
```

2.4 z/OS Installation

To install the PUSHER for z/OS, first unzip the **pusher.zip**. The zip file contains 1 z/OS XMIT prepared dataset.

- **PUSHER.LOAD.ZOS** is the XMIT dataset that contains the z/OS load-module.

Steps to install PUSHER:

1. ftp the z/OS XMIT prepared datasets to the z/OS LPAR.

ftp -s:pusher.ftp z/OS_hostname

```
your-z/OS-userid
your-z/OS-password

binary
quote SITE recfm=fb lrecl=80 blksize=3120
put PUSHER.LOAD.ZOS
quit
```

If the user receives the following error message then they will need to pre-allocate the z/OS dataset:

```
ftp> put PUSHER.LOAD.ZOS
200 Port request OK.
550-SVC99 RETURN CODE=4 S99INFO=0 S99ERROR=38656 HEX=9700 S99ERSN code X'000003F3'.
550 Unable to create data set xxxxx.PUSHER.LOAD.ZOS for STOR command.
```

To pre-allocate the XMIT dataset go to option 3.2 of ISPF and allocate the dataset: PUSHER.LOAD.ZOS.

Use the following dataset attributes when allocating the dataset:

Space	
Units	BLOCKS
Primary Quantity	40
Secondary Quantity	40
Directory Blocks	0
DCB Parameters	
RECFM	FB
LRECL	80
BLKSIZE	3120
DsnType	Blank

After the user has pre-allocated the dataset, they can redo the ftp commands.

2. Log on to z/OS LPAR and issue the following TSO RECEIVE commands:

TSO RECEIVE INDATASET(PUSHER.LOAD.ZOS)

After issuing the above commands, the following product dataset will appear:

- **+HLQ+.CPTLWARE.PUSHER.LOAD** is the dataset that contains the z/OS load-module.

3 Starting PUSHER

This section describes the various ways that the PUSHER can be started. Currently, PUSHER via WebSphere MQ's triggering system, manually or by a scheduling package.

3.1 Triggered Execution

If the local input queue has been setup for triggering (i.e. Trigger First) then when a message arrives on the input queue and the message count goes from 0 to 1 (trigger on first), the queue manager will start PUSHER. The Backup component will begin processing each message on the input queue and writing the message's content including MQMD to a file.

3.2 Manual Execution

PUSHER can be manually started from a Command Prompt. First change to the PUSHER directory (i.e. C:\Capitalware\PUSHER) and then type *pusher.exe* and then press *Enter*.

3.3 Scheduled Execution

PUSHER can be setup to be run under a scheduling package. (For example, Windows 2000 **Scheduled Task** service.) You may prefer to have PUSHER executed daily. Therefore, use the scheduling package's tools to setup the necessary parameters for daily execution.

3.4 Command-line parameters

This section describes the required and optional command-line parameters for the PUSHER.

```
pusher.exe [-i Path_FileName_for_inifile]
```

Required Parameter	Description
-i	The full path and filename of the PUSHER IniFile.

3.5 z/OS Batch Execution

Here is a sample JCL to run PUSHER:

```
//RUN01 EXEC PGM=PUSHER,PARM='-i PUSHERIN'
//STEPLIB DD DISP=SHR,DSN=+HLQ+.CPTLWARE.PUSHER.LOAD
//SYSPRINT DD SYSOUT=*
//SYSOUT DD SYSOUT=*
//PUSHERIN DD DISP=SHR,DSN=+HLQ+.CPTLWARE.INIFILE(PUSHER)
```

4 IniFile Parameters

4.1 Logging

- **LogFile** specifies the location of the log file. The default is as follows:

For Windows:

LogFile=C:\Capitalware\PUSHER\pusher.log

For Unix / Linux:

LogFile=/opt/capitalware/PUSHER/pusher.log

4.2 MQ

- **GetBufferSize** specifies the maximum message size to be retrieved from the input queue. GetBufferSize supports values from 1 to 104857600 (100MB). The default value is 65536.

GetBufferSize=65536

- **QMgrName** specifies the name of the queue manager. There is no default value.

QMgrName = MQA1

- **InputQName** specifies the name of the input queue. There is no default value.

InputQName = MQA1

- **OutputQName** specifies the name of the output queue. There is no default value.

OutputQName = TEST.OUT.QA

4.3 Other

- **SequenceNumberFlag** is a z/OS (OS/390) only flag. It states whether or not there are sequence numbers in columns 72 to 80. SequenceNumberFlag supports 2 values; [Y / N]. The default value is N.

SequenceNumberFlag = N

5 Log File

To verify that the process flow was successful, you can view the log file for the events that are generated.

5.1 Windows

The log file is located at the following (assuming a default install of C:\Capitalware\PUSHER):

C:\Capitalware\PUSHER\pusher.log

All log entries will be marked with **INFO**, **WARNING** or **ERROR** in columns 21 to 26.

```
2017/01/10 16:53:58 INFO #00652: PUSHER is now starting.
2017/01/10 16:53:58 INFO #00660: PUSHER version 1.0.0 (Windows)
2017/01/10 16:53:58 INFO #00663: Current Log file is pusher.log
2017/01/10 16:53:58 INFO #00784: The following are the parameters used for this execution.
2017/01/10 16:53:58 INFO #00794: Get Buffer Size : 1024000
2017/01/10 16:53:58 INFO #00812: Queue Manager Name: MQWT2
2017/01/10 16:53:58 INFO #00830: Input Queue Name : TEST.Q1
2017/01/10 16:53:58 INFO #00841: Output Queue Name : TEST.Q1
2017/01/10 16:53:58 INFO #01228: MQConn CC=0 RC=0 on connection to MQWT2
2017/01/10 16:53:58 INFO #01405: MQOpen CC=0 RC=0 for TEST.Q1
2017/01/10 16:53:58 INFO #01503: MQOpen CC=0 RC=0 for TEST.Q10
2017/01/10 16:54:19 WARNING #01892: MQGet CC=2 RC=2161 for TEST.Q1
2017/01/10 16:54:19 WARNING #01896: Queue manager is no longer available
2017/01/10 16:54:19 INFO #01589: MQClose CC=0 RC=0 for TEST.Q1
2017/01/10 16:54:19 INFO #01674: MQClose CC=0 RC=0 for TEST.Q10
2017/01/10 16:54:19 INFO #01310: MQDisc CC=0 RC=0 on disconnecting from MQWT2
2017/01/10 16:54:19 INFO #00886: Statistics of this executions:
2017/01/10 16:54:19 INFO #00896: Messages Read : 10
2017/01/10 16:54:19 INFO #00906: Messages Written : 10
2017/01/10 16:54:19 INFO #00912: PUSHER is now stopping.
```

5.2 Unix and Linux

The log file is located at the following (assuming a default install of /opt/capitalware/PUSHER/):

/opt/capitalware/PUSHER/pusher.log

All log entries will be marked with **INFO**, **WARNING** or **ERROR** in columns 21 to 26.

```
2017/01/10 16:53:58 INFO #00648: *****
2017/01/10 16:53:58 INFO #00652: PUSHER is now starting.
2017/01/10 16:53:58 INFO #00660: PUSHER version 1.0.0 (Linux)
2017/01/10 16:53:58 INFO #00663: Current Log file is pusher.log
2017/01/10 16:53:58 INFO #00784: The following are the parameters used for this execution.
2017/01/10 16:53:58 INFO #00794:   Get Buffer Size   : 1024000
2017/01/10 16:53:58 INFO #00812:   Queue Manager Name: MQWT2
2017/01/10 16:53:58 INFO #00830:   Input Queue Name  : TEST.Q1
2017/01/10 16:53:58 INFO #00841:   Output Queue Name : TEST.Q1
2017/01/10 16:53:58 INFO #01228: MQConn CC=0 RC=0 on connection to MQWT2
2017/01/10 16:53:58 INFO #01405: MQOpen CC=0 RC=0 for TEST.Q1
2017/01/10 16:53:58 INFO #01503: MQOpen CC=0 RC=0 for TEST.Q10
2017/01/10 16:54:19 WARNING #01892: MQGet  CC=2 RC=2161 for TEST.Q1
2017/01/10 16:54:19 WARNING #01896: Queue manager is no longer available
2017/01/10 16:54:19 INFO #01589: MQClose CC=0 RC=0 for TEST.Q1
2017/01/10 16:54:19 INFO #01674: MQClose CC=0 RC=0 for TEST.Q10
2017/01/10 16:54:19 INFO #01310: MQDisc CC=0 RC=0 on disconnecting from MQWT2
2017/01/10 16:54:19 INFO #00886: Statistics of this executions:
2017/01/10 16:54:19 INFO #00896:   Messages Read   : 10
2017/01/10 16:54:19 INFO #00906:   Messages Written: 10
2017/01/10 16:54:19 INFO #00912: PUSHER is now stopping.
```

5.3 IBM i

The log file is located at the following (assuming a default install of QIBM/UserData/capitalware/PUSHER/):

QIBM/UserData/capitalware/PUSHER/pusher.log

All log entries will be marked with **INFO**, **WARNING** or **ERROR** in columns 21 to 26.

```

2017/01/10 16:53:58 INFO #00648: *****
2017/01/10 16:53:58 INFO #00652: PUSHER is now starting.
2017/01/10 16:53:58 INFO #00660: PUSHER version 1.0.0 (iSeries)
2017/01/10 16:53:58 INFO #00663: Current Log file is pusher.log
2017/01/10 16:53:58 INFO #00784: The following are the parameters used for this execution.
2017/01/10 16:53:58 INFO #00794:   Get Buffer Size   : 1024000
2017/01/10 16:53:58 INFO #00812:   Queue Manager Name: MQWT2
2017/01/10 16:53:58 INFO #00830:   Input Queue Name  : TEST.Q1
2017/01/10 16:53:58 INFO #00841:   Output Queue Name : TEST.Q1
2017/01/10 16:53:58 INFO #01228: MQConn CC=0 RC=0 on connection to MQWT2
2017/01/10 16:53:58 INFO #01405: MQOpen CC=0 RC=0 for TEST.Q1
2017/01/10 16:53:58 INFO #01503: MQOpen CC=0 RC=0 for TEST.Q10
2017/01/10 16:54:19 WARNING #01892: MQGet  CC=2 RC=2161 for TEST.Q1
2017/01/10 16:54:19 WARNING #01896: Queue manager is no longer available
2017/01/10 16:54:19 INFO #01589: MQClose CC=0 RC=0 for TEST.Q1
2017/01/10 16:54:19 INFO #01674: MQClose CC=0 RC=0 for TEST.Q10
2017/01/10 16:54:19 INFO #01310: MQDisc CC=0 RC=0 on disconnecting from MQWT2
2017/01/10 16:54:19 INFO #00886: Statistics of this executions:
2017/01/10 16:54:19 INFO #00896:   Messages Read   : 10
2017/01/10 16:54:19 INFO #00906:   Messages Written: 10
2017/01/10 16:54:19 INFO #00912: PUSHER is now stopping.

```

5.4 z/OS

The log file is located at the following (assuming a default install of SYSPRINT):

All log entries will be marked with **INFO**, **WARNING** or **ERROR** in columns 21 to 26.

```
2017/01/10 16:53:58 INFO #00648: *****
2017/01/10 16:53:58 INFO #00652: PUSHER is now starting.
2017/01/10 16:53:58 INFO #00660: PUSHER version 1.0.0 (zOS)
2017/01/10 16:53:58 INFO #00663: Current Log file is SYSPRINT
2017/01/10 16:53:58 INFO #00784: The following are the parameters used for this execution.
2017/01/10 16:53:58 INFO #00794:   Get Buffer Size   : 1024000
2017/01/10 16:53:58 INFO #00812:   Queue Manager Name: MQWT2
2017/01/10 16:53:58 INFO #00830:   Input Queue Name  : TEST.Q1
2017/01/10 16:53:58 INFO #00841:   Output Queue Name : TEST.Q1
2017/01/10 16:53:58 INFO #01228: MQConn CC=0 RC=0 on connection to MQWT2
2017/01/10 16:53:58 INFO #01405: MQOpen CC=0 RC=0 for TEST.Q1
2017/01/10 16:53:58 INFO #01503: MQOpen CC=0 RC=0 for TEST.Q10
2017/01/10 16:54:19 WARNING #01892: MQGet CC=2 RC=2161 for TEST.Q1
2017/01/10 16:54:19 WARNING #01896: Queue manager is no longer available
2017/01/10 16:54:19 INFO #01589: MQClose CC=0 RC=0 for TEST.Q1
2017/01/10 16:54:19 INFO #01674: MQClose CC=0 RC=0 for TEST.Q10
2017/01/10 16:54:19 INFO #01310: MQDisc CC=0 RC=0 on disconnecting from MQWT2
2017/01/10 16:54:19 INFO #00886: Statistics of this executions:
2017/01/10 16:54:19 INFO #00896:   Messages Read   : 10
2017/01/10 16:54:19 INFO #00906:   Messages Written : 10
2017/01/10 16:54:19 INFO #00912: PUSHER is now stopping.
```

6 Appendix A – pusher.ini file

The table below is the supplied pusher.ini file. The IniFile supports the following keywords and their values:

```
SequenceNumberFlag = N
LogFile = pusher.log
GetBufferSize = 102400
QMgrName = MQA1
InputQName = TEST.IN.Q
OutputQName = TEST.OUT.Q1
```

Note: Keywords are case sensitive.

Initialization keyword definitions:

- **LogFile** specifies the location of the log file. The default is as follows:

For Windows:

LogFile=C:\Capitalware\PUSHER\pusher.log

For Unix / Linux:

LogFile=/opt/capitalware/PUSHER/pusher.log

- **GetBufferSize** specifies the maximum message size to be retrieved from the input queue. GetBufferSize supports values from 1 to 104857600 (100MB). The default value is 65536.

GetBufferSize=65536

- **QMgrName** specifies the name of the queue manager. There is no default value.

QMgrName = MQA1

- **InputQName** specifies the name of the input queue. There is no default value.

InputQName = TEST.IN

- **OutputQName** specifies the name of the output queue. There is no default value.

OutputQName01 = TEST.OUT.QA

- **SequenceNumberFlag** is a z/OS (OS/390) only flag. It states whether or not there are sequence numbers in columns 72 to 80. SequenceNumberFlag supports 2 values; [Y / N]. The default value is N.

SequenceNumberFlag = N

7 Appendix A – Technical Support

The support for PUSHER can be found at the following location (requires a support contract):

Online Help Desk Ticketing System at
www.capitalware.com/phpst/

By email at:
support@capitalware.com

By regular mail at:

Capitalware Inc.
Attn: PUSHER Support
Unit 11, 1673 Richmond Street, PMB524
London, Ontario N6G2N3
Canada

8 Appendix D – Summary of Changes

- PUSHHER v1.0.0
 - Initial release.

9 Appendix E – License Agreement

Apache License
Version 2.0, January 2004
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