

**CONFIGURATION OF MQ COMMUNICATIONS FOR THE A2A COMMUNICATION INTERFACE**

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**I Background**

KDPW’s electronic communications via the A2A communication interface use MQ connections set up with the MQ manager A2Aenv, where env stands for the environment: PRD – production environment, TST – test environment. The test environment of the MQ communication layer may include several test environments for different services.

**II MQ manager configuration**

**II.1. A2Aenv queue manager configuration attributes**

Some of the A2Aenv queue manager configuration attributes are different from the IBM default values. The following are relevant to communications with third parties (Participants):

QM attribute	Default value	A2Aenv value
CCSID	<i>depends on platform</i>	819
MAXMSGL	4 194 304	104 857 600
VERSION	<i>none</i>	09020004

**II.2. A2Aenv queue manager network parameters**

Communications with A2Aenv MQ managers use TCP/IP protocols. The queue manager network parameters are as follows:

Service environment	Queue manager name	IP address	TCP port
PRD	A2APRD	195.136.21.56	1434
TSTA	A2ATST	195.136.21.57	1434
TSTB	A2ATST	195.136.21.57	1434

**III Available MQ connectivity options**

The A2Aenv MQ manager supports simultaneous MQ traffic for various services provided by KDPW. According to internal standards, each service available to Participants in each environment is assigned a different set of MQ channels, which gives KDPW more flexibility to align with Participants’ complex IT infrastructures.

KDPW’s internal standard includes two types of two-way MQ connections with third parties:

- 1) client-to-server, using one server connection channel (SVRCN)

In this configuration, KDPW A2Aenv queue manager defines an MQ channel and two local MQs: input (INP) which handles messages from Participants to KDPW, and output (OUT) which handles messages from KDPW to Participants. An MQ client on the Participant’s end connects with the queue manager via the channel.

- 2) server-to-server using two channels (SDR-RCVR)

In this configuration, a queue manager is used both on KDPW’s and on the Participant’s end. Two MQ channels are defined on KDPW end: sender and receiver. Participants’ queue managers handle

corresponding channels. Two MQs are handled on KDPW’s end: local input (INP) which handles messages from Participants to KDPW, and remote output (OUT) which handles messages from KDPW to Participants. Participants’ queue managers handle corresponding MQs: remote output (INP) which handles messages to KDPW and local input (OUT) which handles messages from KDPW.

**IV System user authentication**

The key MQ connection authentication mechanism is the TLS protocol with PKI certificates issued by KDPW’s Certification Body. A single certificate is issued to each Participant in both communication layer environments: PRD and TST. It can be used to authenticate the Participant system (MQ client or MQ manager) when setting up the connection to the *A2Aenv* queue manager for any service set up for the Participant.

**V MQ channel configuration**

**V.1. MQ channel configuration attributes**

Some of the MQ channel configuration attributes in the *A2Aenv* queue manager are different from the IBM default values. The following are relevant to communications with Participants:

QM attribute	Default value	A2Aenv channel value
COMPMSG	NONE	ZLIBFAST
DISCINT	999999	6000
MAXMSGL	4 194 304	104 857 600
SSLCIPH		TLS_AES_256_GCM_SHA384
SSLPEER		<i>Common name in the field: counterparty certificate holder</i>

For server-to-server connections, the same values must be set up in the Participants’ queue managers. In this configuration, to activate KDPW’s queue manager name verification, the following channel attributes must be set up on the Participants’ end:

Environment	MQ channel attribute	Participant’s MQ channel value
PRD	SSLPEER	CN=A2APRD
TSTA	SSLPEER	CN=A2ATST
TSTB	SSLPEER	CN=A2ATST

**V.2. MQ channel name schema**

The names of all MQ communication channels handled by *A2Aenv* queue managers must follow the schema below:

***srv.senv.code.con***

where:

*srv* - service

*serv* – service environment name (available values: PRD, TSTA, TSTB)

*code* – Participant code in the service

*con* – connection type:

C – server connection (\*SVRCN) for client-to-server,

KU – KDPW-Participant for server-to-server, receiver (\*RCVR) on Participants’ end,

UK – Participant-KDPW for server-to-server, sender (\*SDR) on Participants’ end.

**VI Handling COA for server-to-server connections**

Some of KDPW’s services use Confirmation of Arrival (COA) MQ reporting to log the arrival of MQ messages. To enable the transmission of confirmations to the A2Aenv queue manager, the queue manager on the Participant’s end must be configured as follows:

1) If the name of the transmission queue to the A2Aenv queue manager in KDPW is different than the manager name (depending on the PRD/TSTA/TSTB environment), set up a manager alias in the Participant’s queue manager.

Example for KDPW’s A2ATST queue manager:

```
DEFINE QREMOTE (A2ATST) RNAME(' ') RQMNAME(A2ATST)
```

```
XMITQ(name_of_transmission_queue_to_A2ATST)
```

2) Open +put and +passid access to the transmission queue for the user whose name is defined in the MCAUSER field of the \*RCVR channel handling communications with KDPW in the Participant’s queue manager.

**VII MQ configuration**

**VII.1. MQ configuration attributes**

Some of the MQ configuration attributes in the A2Aenv queue manager are different from the IBM default values. The following are relevant to communications with Participants:

MQ attribute	Default value	A2Aenv channel value
DEFPSIST	NO	YES
MAXMSGL	4 194 304	104 857 600

For server-to-server connections, the same values must be set up in the Participants’ queue managers.

**VII.2. MQ name schema**

The names of all message queues in MQ communications handled by A2Aenv queue managers must follow the schema below.

***srv.env.code.direction***

where:

*srv* - service

*senv* - environment name (available values: PRD, TSTA, TSTB)

*code* – TR participant code (Sender ID)

*direction* - MQ direction (available values: INP – messages from the Participant to KDPW, OUT – messages from KDPW to the Participant)

### **VIII Fixed values of MQ message MQMD header fields**

The following settings should be fixed when developing applications to handle MQ communications with KDPW on the Participant's end:

CodedCharSetId = 1208

### **IX Participant information required by KDPW**

To configure connections handling MQ communications for the Participant's selected service in a given KDPW environment, the Participant is required to provide the following information:

- the selected connectivity option (client-to-server or server-to-server)
- the contact details of the Participant's person responsible for MQ configuration
- the network to handle the connection (Internet/Frame-Relay/MPLS)
- the Participant's IP addresses for connections with A2Aenv
- the contact details of the Participant's person responsible for network configuration
- for the server-to-server configuration also the following:
  - the name of the Participant's queue manager
  - the IP address and the TCP port of the manager's listener. If the Participant has a back-up queue manager(s), their parameters should also be provided.

The information above should be provided by email to [di\\_serwis@kdpw.pl](mailto:di_serwis@kdpw.pl).

### **X Telecommunication line configuration**

Participants may connect with the A2Aenv queue manager via the following networks:

#### 1) Internet

Transmissions must be secured with VPN (Lan to Lan) as follows:

Protocol: IKE/IPSec (ESP)  
Authentication: pre-share key  
Encryption algorithm: AES-256  
Hash function: SHA256 (SHA-1)

#### 2) Frame-Relay

Supported operators: Exatel, Orange

Transmissions must be secured with VPN as follows:

Protocol: IKE/IPSec (ESP)  
Authentication: pre-share key  
Encryption algorithm: AES-256  
Hash function: SHA256 (SHA-1)

#### 3) MPLS

Supported operators: Exatel, Orange

Key MPLS parameters:

- L3 type network

- BGPv4 routing

Authentication: TLS protocol with PKI certificates, available in MQ managers.