

IBM MQ Token Based Authentication

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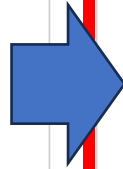
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What is JWT?

Encoded

PASTE A TOKEN HERE

```
eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJ1bWVtYWlsIjoicGFycm9iZUB1ay5pYm0uY29tIiwiaWF0IjoxNTE2MjM5ODQ5LCJpdiI6InBhcnJvYmUifQ.nkzpb8mCiBtpZP503b5Sw_R-fItbBBVpuVD5359GKR0
```



Decoded

EDIT THE PAYLOAD AND SECRET

HEADER: ALGORITHM & TOKEN TYPE

```
{  
  "alg": "HS256",  
  "typ": "JWT"  
}
```

PAYLOAD: DATA

```
{  
  "name": "Rob Parker",  
  "email": "parrobe@uk.ibm.com",  
  "iat": 1516239022,  
  "exp": 1699631790,  
  "muser": "parrobe"  
}
```

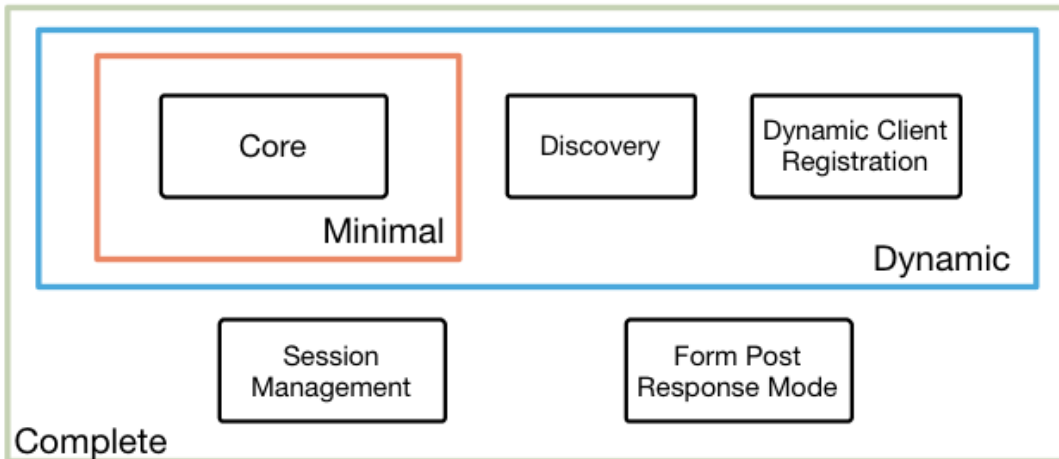
VERIFY SIGNATURE

```
HMACSHA256(  
  base64UrlEncode(header) + "." +  
  base64UrlEncode(payload),  
  your-256-bit-secret  
)  secret base64 encoded
```

4 Feb 2014

OpenID Connect Protocol Suite

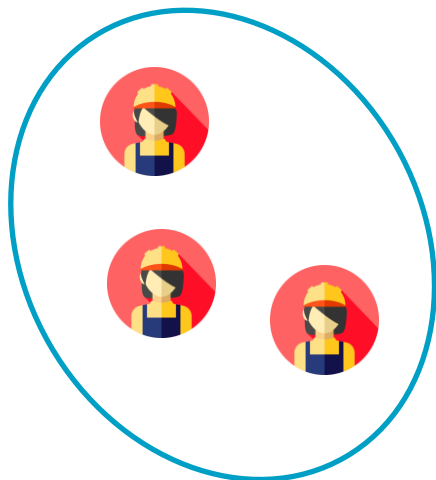
<http://openid.net/connect>



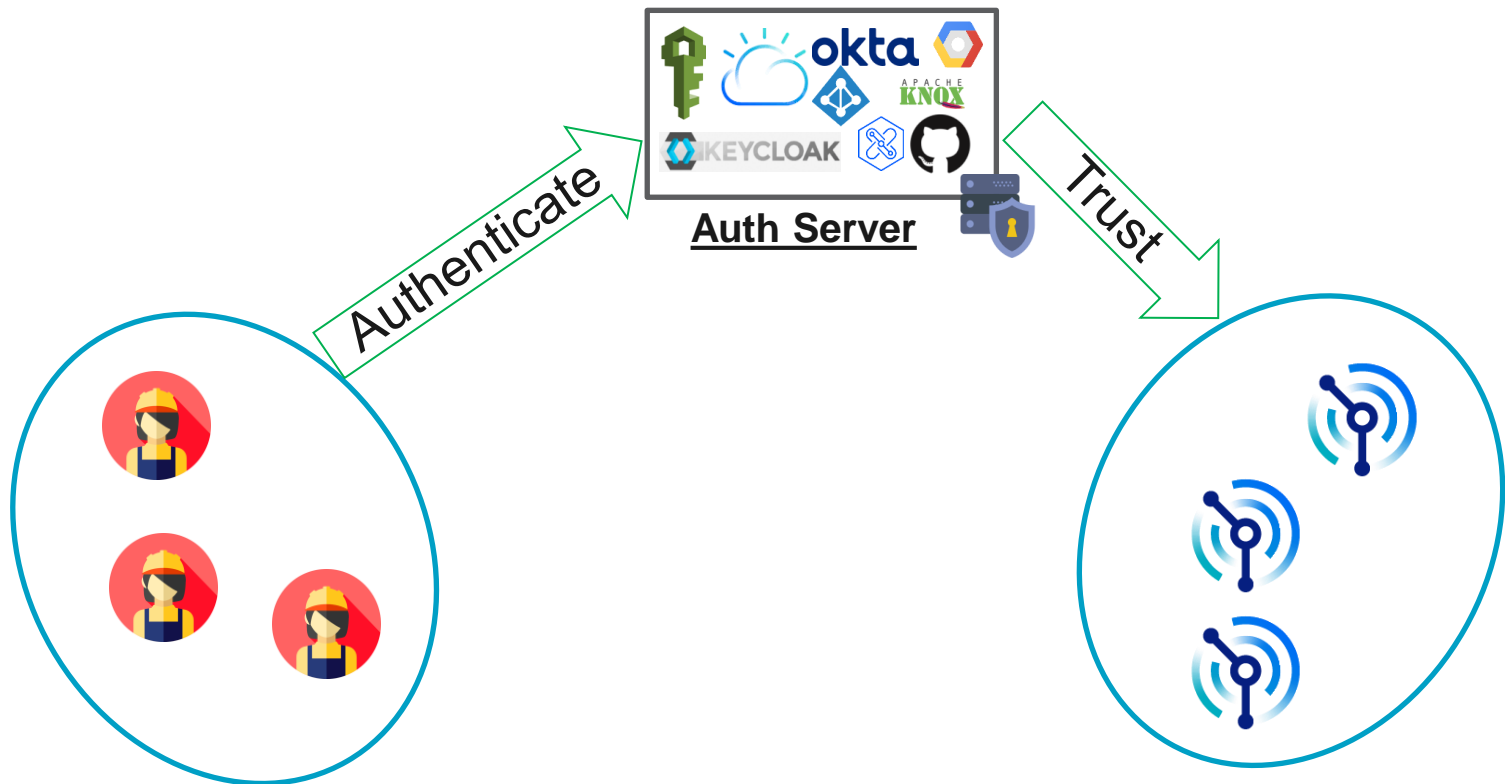
Underpinnings



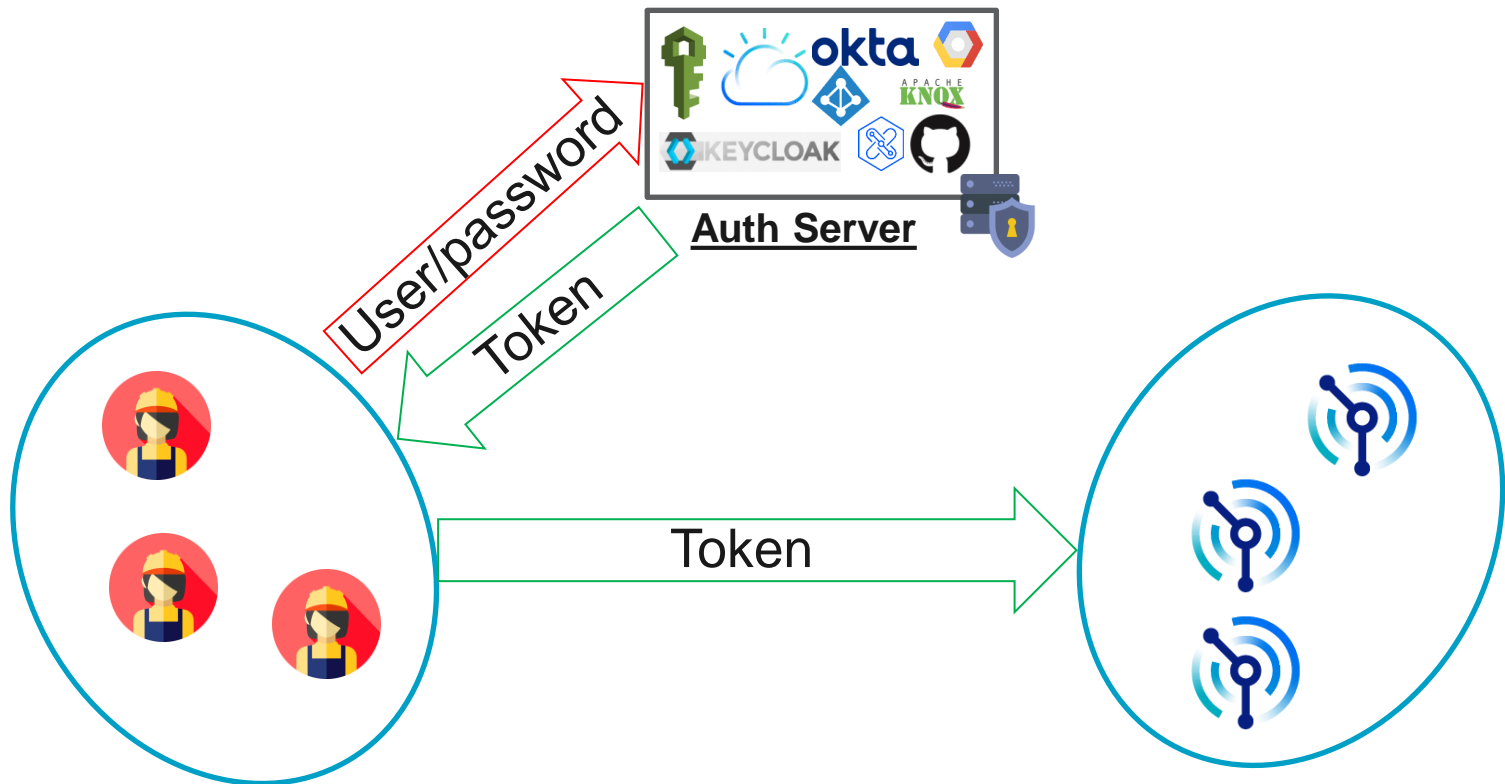
Benefits



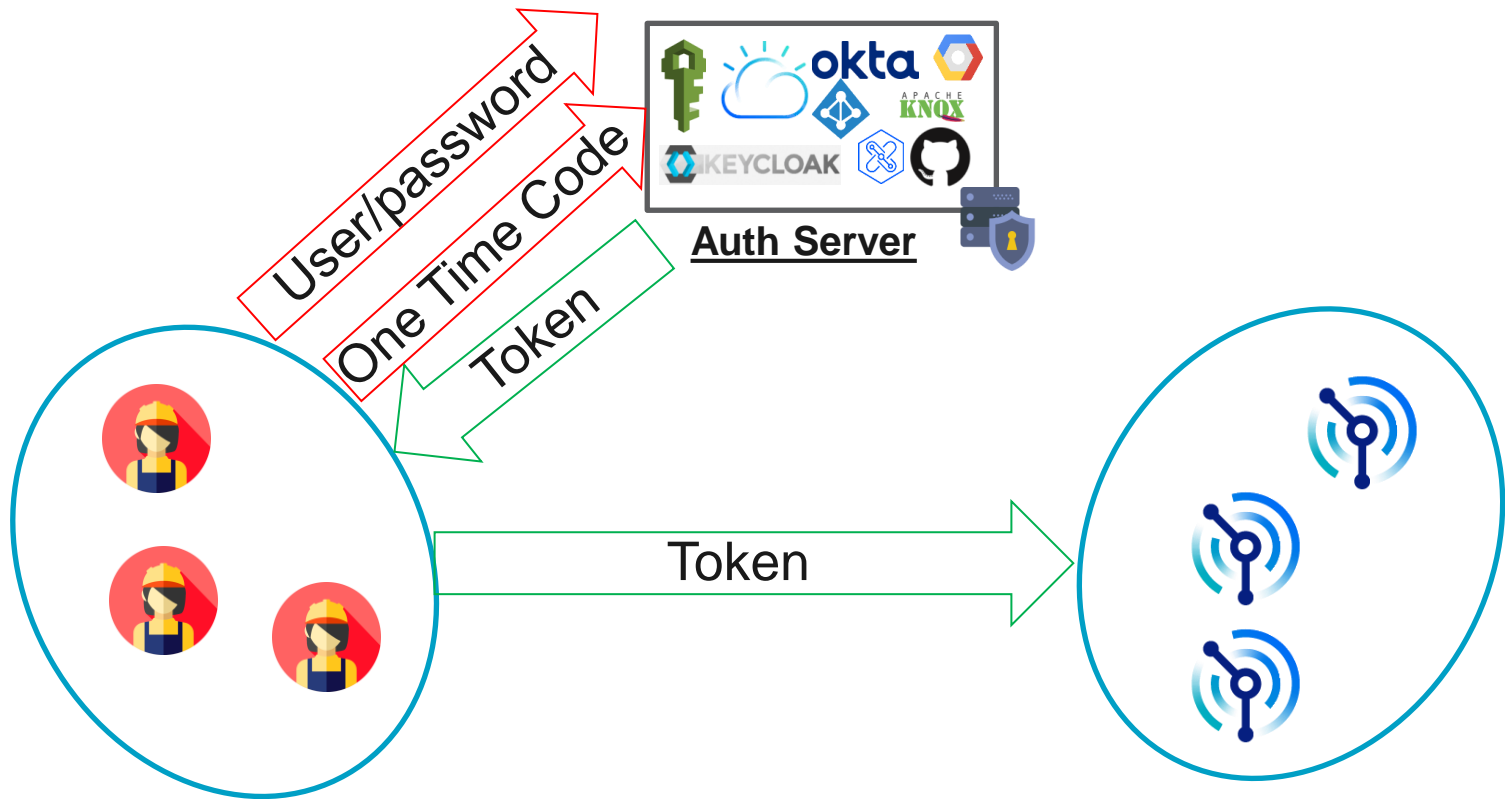
Centralized Authentication



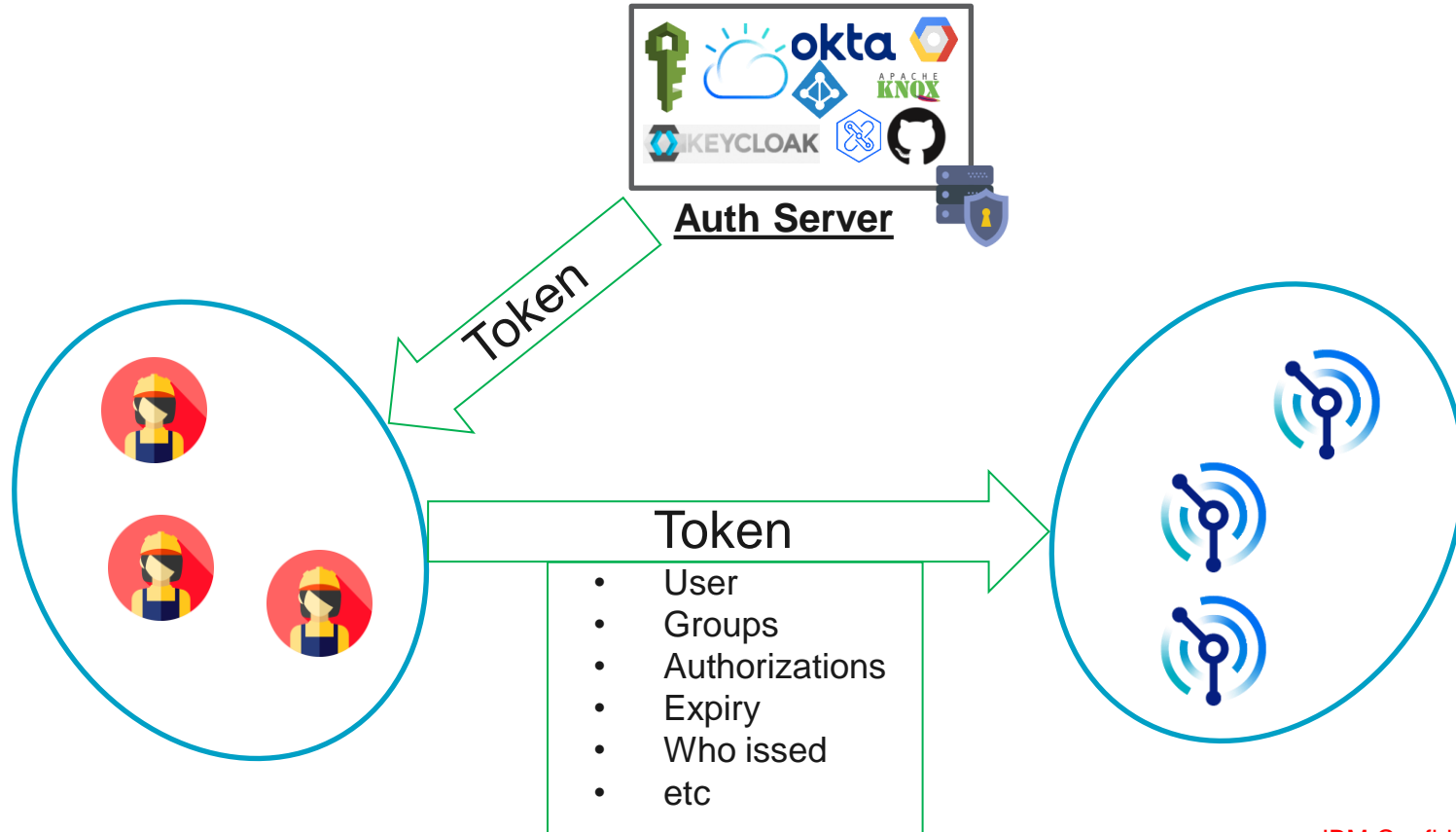
Credentials only go to authentication server



Authenticate how you choose



Tokens contain information



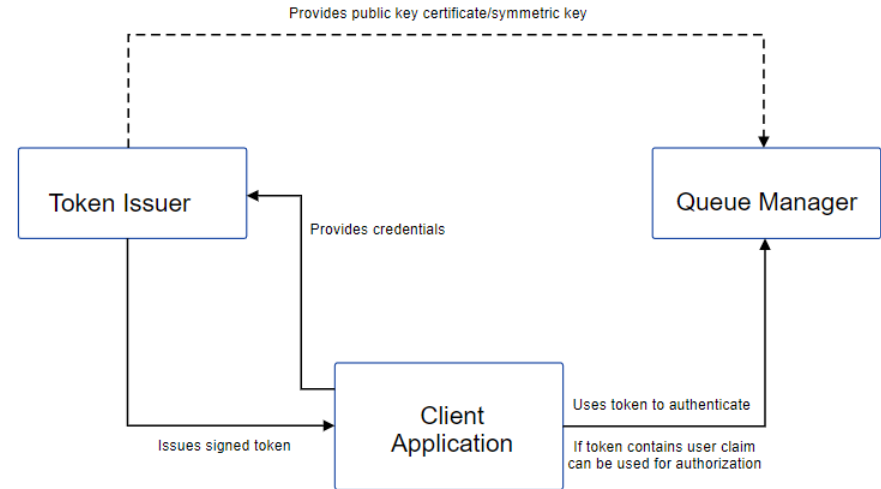
How does JWT work in MQ?

IBM MQ 9.3.4 – Token-based authentication

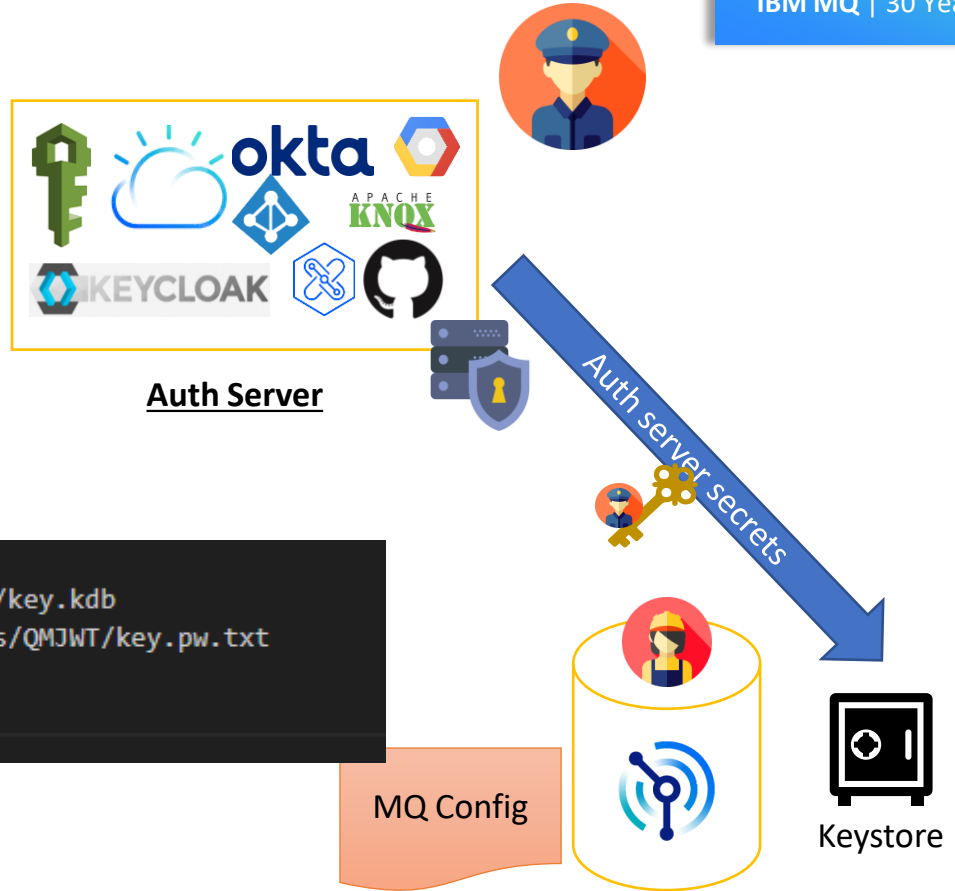


From IBM MQ 9.3.4, client applications can provide tokens to authenticate with a queue manager. The queue manager must be configured to accept authentication tokens.

- Token-based authentication is supported by queue managers that run on AIX®, Linux®, and OpenShift® Container Platforms.
- IBM MQ MQI clients written in C present tokens on connection and can be authenticated.
- The client application can run on any platform.
- Both IBM MQ MQI clients and Java clients can remain unchanged and use security exits to send authentication tokens to the queue manager.



Queue Manager



```

56  v AuthToken:
57      KeyStore=/var/mqm/qmgrs/QMJWT/key.kdb
58      KeyStorePwdFile=/var/mqm/qmgrs/QMJWT/key.pw.txt
59      CertLabel=mykey
60      UserClaim=mquser
61

```

Identity adoption

```
56  ✓ AuthToken:  
57     KeyStore=/var/mqm/qmgrs/QMJWT/key.kdb  
58     KeyStorePwdFile=/var/mqm/qmgrs/QMJWT/key.pw.txt  
59     CertLabel=mykey  
60     UserClaim=mquser  
61
```

PAYLOAD: DATA

```
{  
  "exp":1856489461,  
  "mquser": "parrobe"  
}
```

Must be 12 characters or less

Application Changes

- C Clients
- Network bound

```
MQCNO    cno = {MQCNO_DEFAULT};
MQCSP    csp = {MQCSP_DEFAULT};
Char    * Token;

...

cno.SecurityParmsPtr = &csp;
cno.Version = MQCNO_VERSION_5;

Token = myOAuthLogin(User,Pass);

csp.Version = MQCSP_VERSION_3;
csp.AuthenticationType = MQCSP_AUTH_ID_TOKEN;

csp.TokenPtr = Token;
csp.TokenLength = (MQLONG)strlen(Token);

MQCONN(XQMName,
        &cno,
        &Hcon,
        &CompCode,
        &Creason);
```

eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJzdWIiOiJwYXJyb2JlQHVrLmliS5jb20iLCJuYW1lIjoiUm9iIFBhcmtlciIsIlJvbGVzIjoibXFhZG1pbixzdGFmZix1c2VyIiwiaXNzIjoibS05PWFN

TTyIsIm1hdCI6MTY1NjIzOTAyMiwiZXhwIjojNjY2MjM5MDIyfQ.MKxuT8K03gYD6jtcZ7pPho-0IVKhs5dP-3h0HqXNBRU

Security exits



Demo?

Thank you.

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