Unit 6. Transient Data & Temporary Storage Control

Objectives

- **Transient Data Control**
- **Types of TDQ's**
- **Commands related to TDQ's**
- **Temporary Storage Control**
- **Commands related to TSQ's**
- **Differences between TDQ and TSQ**

Figure: 6-1. Objectives

Notes:

Transient Data Control

- **CICS Transient Data Control Program (TDP) allows a CICS Transaction to deal with sequential data called Transient Data Files.**
- **A Transient Data File can be used as either an input or an output file but not both.**
- **The Transient Data is called TDQ (Transient Data Queue) because the records are put sequentially (like a queue).**
- **Control Information of all TDQ's is registered in DCT.**

Figure: 6-2. Transient Data Control

Notes:

The word "Destination" is used because this sequential data is directed to other transactions.

Each TDQ is identified by a 1 to 4 character identifier called "destination id".

All destination ids must be registered in the Destination Control Table (DCT).

Types of TDQ’s

There are 2 types of TDQ’s

- **Intrapartition TDQ**
- **Extrapartition TDQ**

Figure: 6-3. Types of TDQ’s

Notes :

Intrapartition TDQ

- **Intrapartition TDQ is a group of sequential records which are produced and processed within CICS region.**
- **All Intrapartition TDQ's are stored in only one physical file in a CICS region.**
- **An application program can access the record sequentially and the record will be logically removed from the queue.**
- **Read of an Intrapartition TDQ is destructive.**

Figure: 6-4. Intrapartition TDQ

Notes :

The intrapartition TDQ is used for the various applications such as

Interface among CICS transactions

Automatic Task Initiation (ATI)

Message routing

Message broadcast

Extrapartition TDQ

Extrapartition TDQ is a group of records written sequentially which interfaces between transactions of the CICS region and the systems outside the CICS region.

Each Extrapartition TDQ is a separate physical file, which means that each file must be open within the CICS region when it is used by the CICS transaction.

Figure: 6-5. Extrapartition TDQ

Notes:

In the input Extrapartition TDQ, records are produced by the programs outside of the CICS region (e.g batch jobs, TSO, PC) to be processed by the CICS transaction as input, where as in the output Intrapartition TDQ, records are produced by the CICS transactions as output to be processed outside of CICS.

WRITEQ TD Command

```
EXEC CICS WRITEQ TD
     QUEUE ( name )
     FROM ( data_area )
     [LENGTH ( data_value )]
     [SYSID ( systemname )]
END-EXEC.
```

Figure: 6-6. WRITEQ TD Command

Notes :

This command writes data to a transient data queue (TDQ) sequentially.

The transient data queue name is a predefined symbolic destination defined in the DCT (Destination Control Table).

It should be noted that TD represents Transient Data, If this is omitted, Temporary Storage (TS) will be assumed.

READQ TD Command

```
EXEC CICS READQ TD
     QUEUE ( name )
     INTO ( data_area ) SET ( ptr_ref )]
     [LENGTH ( data_value )]
     [SYSID ( systemname )]
     [NOSUSPEND]
END-EXEC.
```

Figure: 6-7. READQ TD Command

Notes :

This command reads from- a transient data queue (TDQ) after which the record is no longer available.

INTO defines the area in the working storage section where data is to be placed.

LENGTH indicates the length of the record.

DELETEQ TD Command

```
EXEC CICS DELETEQ TD
     QUEUE ( name )
     [SYSID ( name )]
     [NOSUSPEND]
END-EXEC.
```

Figure: 6-8. DELETEQ TD Command

Notes:

This command deletes all data from an Intrapartition destination (queue), and releases(deallocates) all storage associated with the destination.

Once a transient data is processed it should be deleted because the space used is still allocated and therefore unavailable for use by other CICS users or transactions.

This command can be used on Extrapartition transient data queue.

Temporary Storage Control

- **CICS Temporary Storage Program (TSP) provides the application program with an ability to store and retrieve data in a Temporary Storage Queue(TSQ)**
- **TSQ is a queue of stored records which is created and deleted dynamically by the application programs.**
- **TSQ is identified by queue id and a record in it is identified by a relative position number called item number.**
- **Read on a TSQ is not destructive.**
- **TSQ can be written in the main storage or auxiliary storage.**
- **TSQ can be accessed by any transaction in the same CICS region.**

Figure: 6-9. Temporary Storage Control

Notes:

A TSQ is identified by the queue id 1 to 8 characters.

WRITEQ TS Command

```
EXEC CICS WRITEQ TS
     QUEUE ( name )
      FROM ( data_area )
      [LENGTH ( data_area )]
      [NUMITEMS ( data_area ) ITEM ( data_area ) [REWRITE]]
      [SYSID ( systemname ) ]
      [MAIN | AUXILLARY]
      [NOSUSPEND]
END-EXEC.
```

Figure: 6-10. WRITEQ TS Command

Notes:

This command writes temporary data (records) in a temporary storage queue in either main or auxiliary storage.

If the write is to a recoverable queue, then after issuing a DELETEQ TS , no WRITEQ TS can be issued until a sync point has occurred.

A halfword binary field (s9(4)) comp) should be provided to the ITEM parameter to which CICS places the actual item number of the record written.

READQ TS Command

```
EXEC CICS READQ TS
     QUEUE ( name )
      [INTO ( data _area ) | SET ( ptr_ref )]
      [LENGTH ( data_area )]
      [NUMITEMS ( data_area )]
      [ITEM ( data_area ) | NEXT]
      [SYSID ( systemname )]
END-EXEC.
```

Figure: 6-11. READQ TS Command

Notes:

This command reads data from specified temporary storage queue in main or auxiliary storage.

Item indicates the item number of the record to be read.

DELETEQ TS Command

```
EXEC CICS DELETEQ TS
     QUEUE ( name )
     [SYSID ( systemname )]
END-EXEC.
```

Figure: 6-12. DELETEQ TS Command

Notes:

This command will delete a temporary storage (TS) queue.

It will delete any data remaining in the TS queue and return all storage used by the TS queue to CICS, which then can be used by another transaction.

Differences between TDQ and TSQ

- **TDQS may be used by batch applications i.e. outside the CICS region,**

which is not possible with TSQs.

- **The read in a TDQ is destructive while in a TSQ it is not possible.**

FIgure: 6-13. Deferences between TDQ and TSQ

Notes:

TSQ names are dynamically defined in the application program while TDQ names must be defined first in the DCT.

When a TDQ contains a certain number of records (trigger level), a CICS transaction can be automatically started (ATI), which is not possible with TSQ.

The TDQ is actually a QSAM file. An existing item in a TSQ can be updated while that in a TDQ cannot be updated.

Records in a TSQ can be read randomly using item number while in TDQ it is not possible, Only sequential read is possible.