E32

IMS ONLINE DIAGNOSTIC HINTS and TIPS

Judy Silva
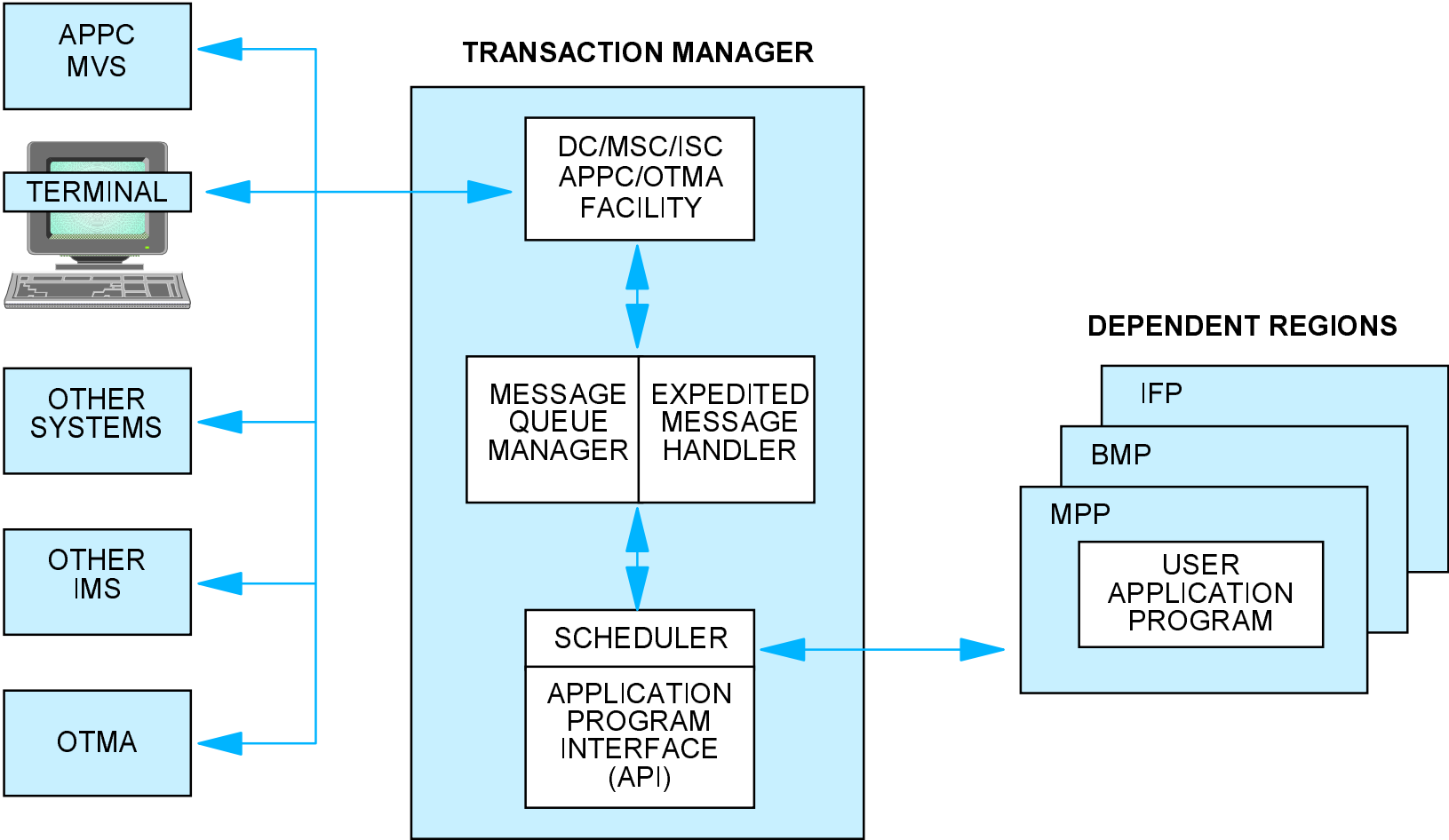
Anaheim, California   October 23 - 27, 2000

TOPICS

- OVERVIEW
- TRANSACTION MANAGER MESSAGE HANDLING FACILITIES
- TRANSACTION MANAGER ITASK PROCESSING
- LOGGING TRANSACTION MANAGER PROCESSING
- SAMPLE TRANSACTION FLOWS
- REFERENCE

OVERVIEW

IMS Technical Conference

Transaction Manager Overview

TRANSACTION MANAGER   Student Notes

The IMS Transaction Manager processes messages and schedules User Application
Programs within the Online IMS System.
The major components of the transaction manager
are:
  The Data Communication(DC),Multiple System Coupling(MSC), Inter System Communication
(ISC), OTMA and APPC Input facilities, route the messages to and from terminals, applications,
and other processing systems (including other IMS Systems)

 The Message Queue Manager(Full Function)or Expedited Message Handler (Fast Path) hold
these messages while they are waiting to be processed (and also holds the response
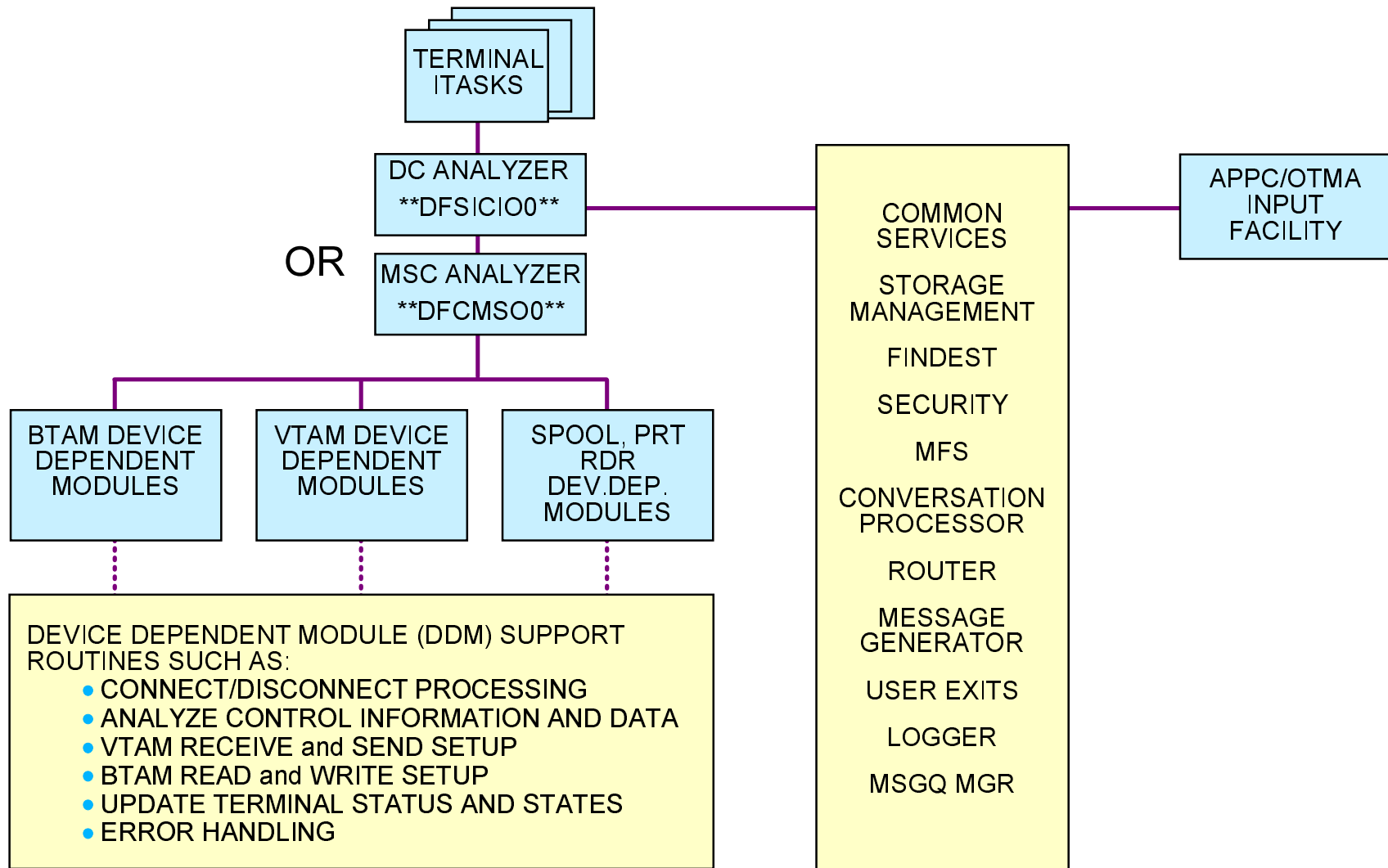messages waiting to be sent back to the inputting terminal or system)

 The Scheduler schedules the User Application Program into dependent regions and routes
control to it to process.

 The Application Program Interface (API) provides an interface to the user application program
to send and receive messages and to access data bases. This is accomplished through the
support of an application DL/I and DC call interface.

 Although not shown, the transaction manager also provides such services as message
recovery, message formatting, sync point and back out support for incorrect or incomplete
processing, statistical recording and other miscellaneous services.

TRANSACTION MANAGER MESSAGE HANDLING FACILITIES

IMS Technical Conference

DC Facility

TERMINAL ITASKS

DC ANALYZER **DFSICIO0**

OR

MSC ANALYZER **DFCMSO0**

BTAM DEVICE DEPENDENT MODULES

VTAM DEVICE DEPENDENT MODULES

SPOOL, PRT RDR DEV.DEP. MODULES

DEVICE DEPENDENT MODULE (DDM) SUPPORT ROUTINES SUCH AS:
- CONNECT/DISCONNECT PROCESSING
- ANALYZE CONTROL INFORMATION AND DATA
- VTAM RECEIVE and SEND SETUP
- BTAM READ and WRITE SETUP
- UPDATE TERMINAL STATUS AND STATES
- ERROR HANDLING

COMMON SERVICES

STORAGE MANAGEMENT

FINDEST

SECURITY

MFS

CONVERSATION PROCESSOR

ROUTER

MESSAGE GENERATOR

USER EXITS

LOGGER

MSGQ MGR

APPC/OTMA INPUT FACILITY

IBM.

IMS Technical Conference

DC Facility

The Data Communication(DC) is responsible for controlling the large selection of communications terminals and devices that IMS supports. The DC Analyzer (DFSICIO0) is a key routine to this support. It is invoked each time processing is required for a terminal defined to IMS. The communications analyzer processes as a terminal ITASK (also referred to as a DC ITASK)

DFSICIO0 determines which device dependent module (DDM) handls processing for the terminal type selected and routes control to that routine. The DDM will perform the necessary device dependent and return to the DC analyzer with the results. Some examples of device dependent processing are to analyze a data stream or control information received from the terminal, set up an I/O operation, update terminal's state or status, or handle an error. Depending on the terminal type, DDM support modules may be invoked to perform this processing.
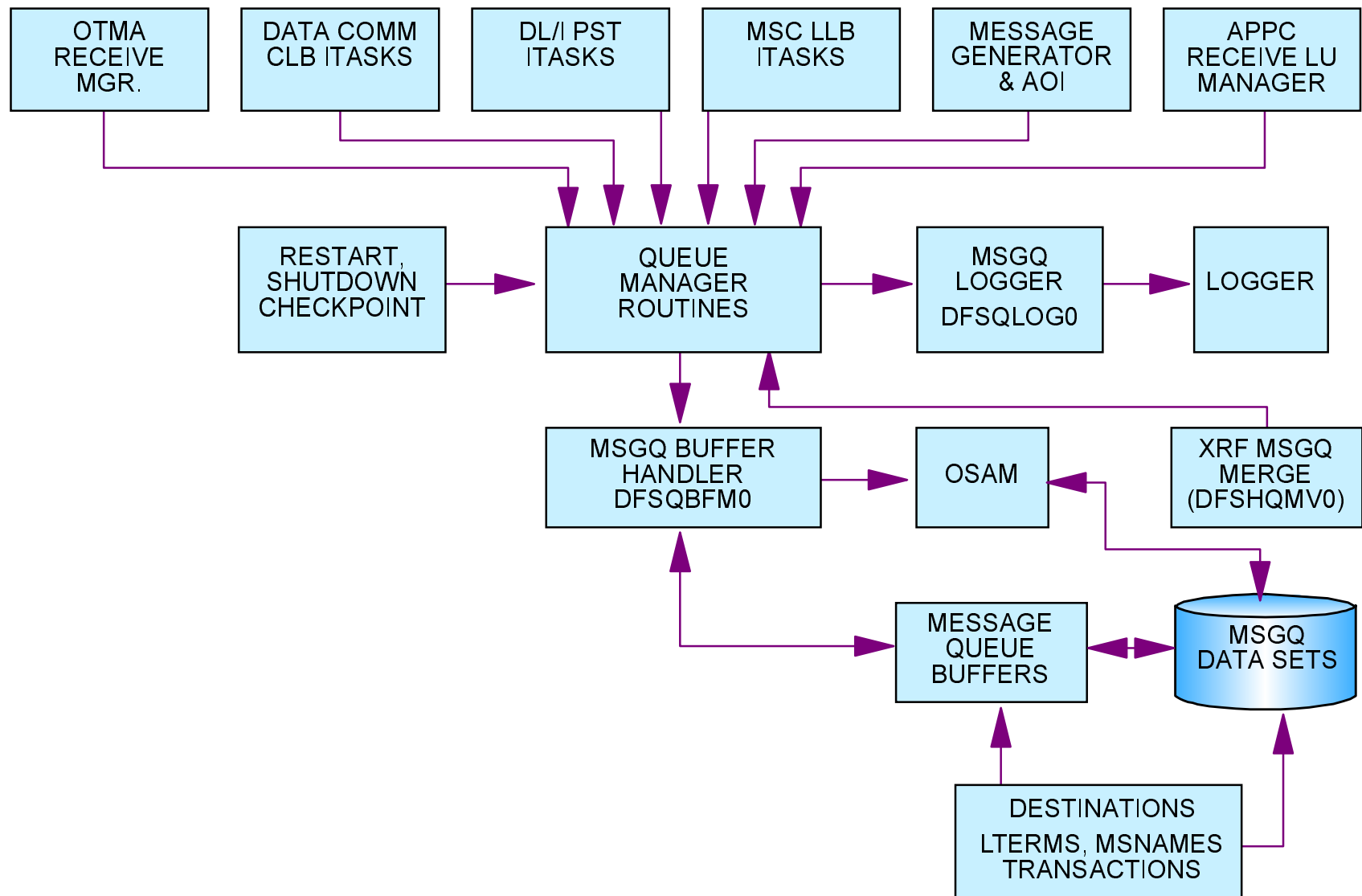
When the processing is complete, the DDM routine will return to the DC analyzer which will then return to the IMS dispatcher(not shown) to await being called again to process another terminal ITASK.

The DC Analyzer also interfaces with common services such as storage management, message format services (MFS), security, user exits, and other routines.

The same services are provided for MSC links by the MSC analyzer and for APPC and OTMA input by the respective input facilities for APPC and OTMA.

Message Queue Manager (Non shared queues)

OTMA RECEIVE MGR. · DATA COMM CLB ITASKS · DL/I PST ITASKS · MSC LLB ITASKS · MESSAGE GENERATOR & AOI · APPC RECEIVE LU MANAGER

RESTART, SHUTDOWN CHECKPOINT → QUEUE MANAGER ROUTINES → MSGQ LOGGER DFSQLOG0 → LOGGER

MSGQ BUFFER HANDLER DFSQBFM0 → OSAM ← XRF MSGQ MERGE (DFSHQMV0)

MESSAGE QUEUE BUFFERS ↔ MSGQ DATA SETS

DESTINATIONS LTERMS, MSNAMES TRANSACTIONS

IMS Technical Conference

Message Queue Manager   Student Notes

The message queue manager is responsible for storing messages until they are sent to their destinations. These destinations include terminal destinations (represented by LTERMS), application programs (represented by TRANSACTIONS), MSC links (represented by MSNAMES), and commands (represented by command processors).
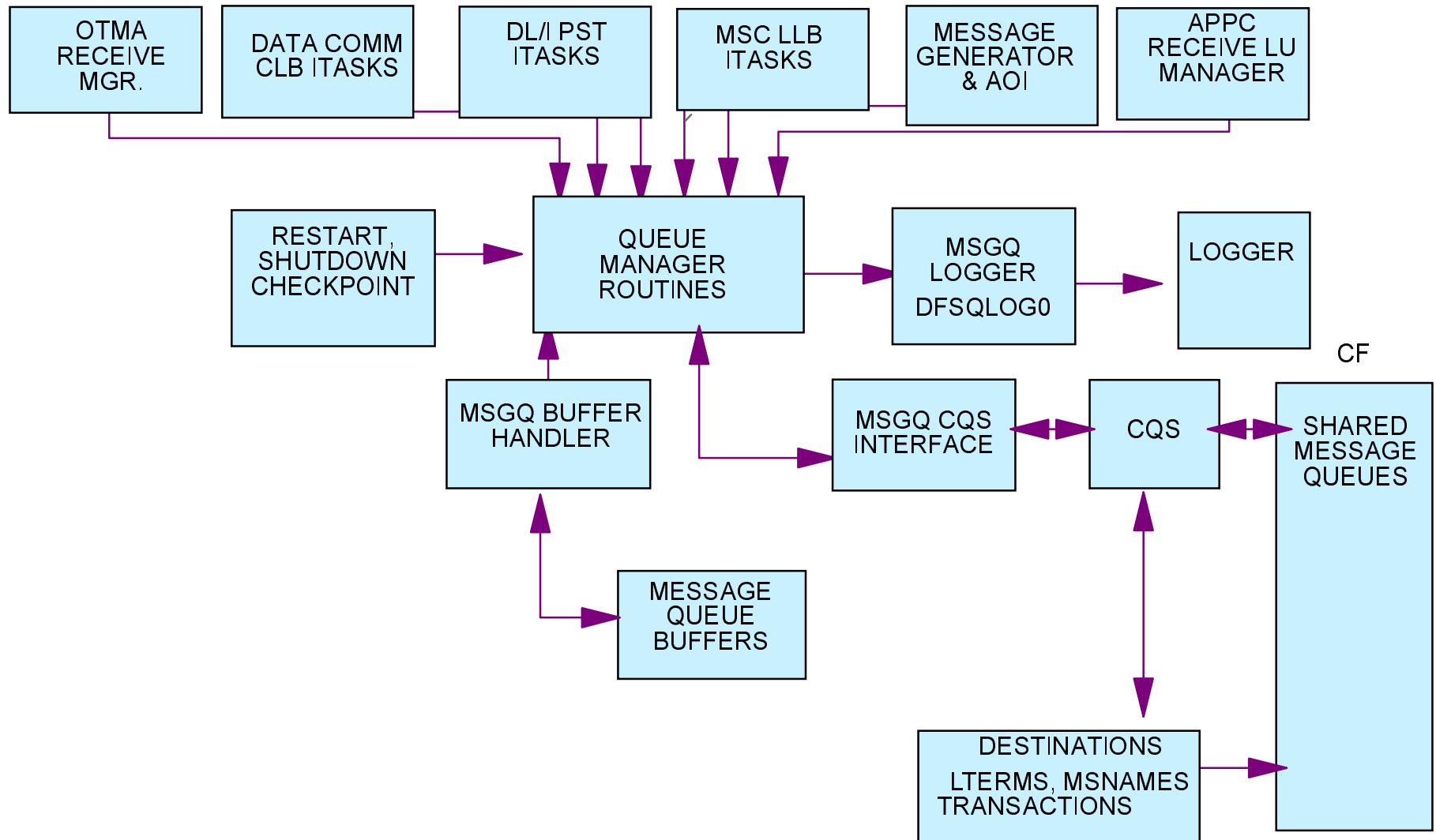
The main callers to DFSQMGR0 are:
(1) Data communications facility (CLB ITASKS)
(2) DL/I Callers (PST ITASKS)
(3) MSC Callers (LLB ITASKS)
(4) OTMA INPUT Facility
(5) APPC Receive Manager
(6)Message Generator and Automated Operator
    Facility.

  DFSQBFM0 is the routine that manages the allocation of queue buffers and writes them out to the message queue datasets when required.

DFSQLOG0 is responsible for writing the log records for queue manager activity and interfaces with the IMS Logger routines to accomplish this.
 In the non shared queues environment the messages are stored on the Message Queue datasets when necessary.

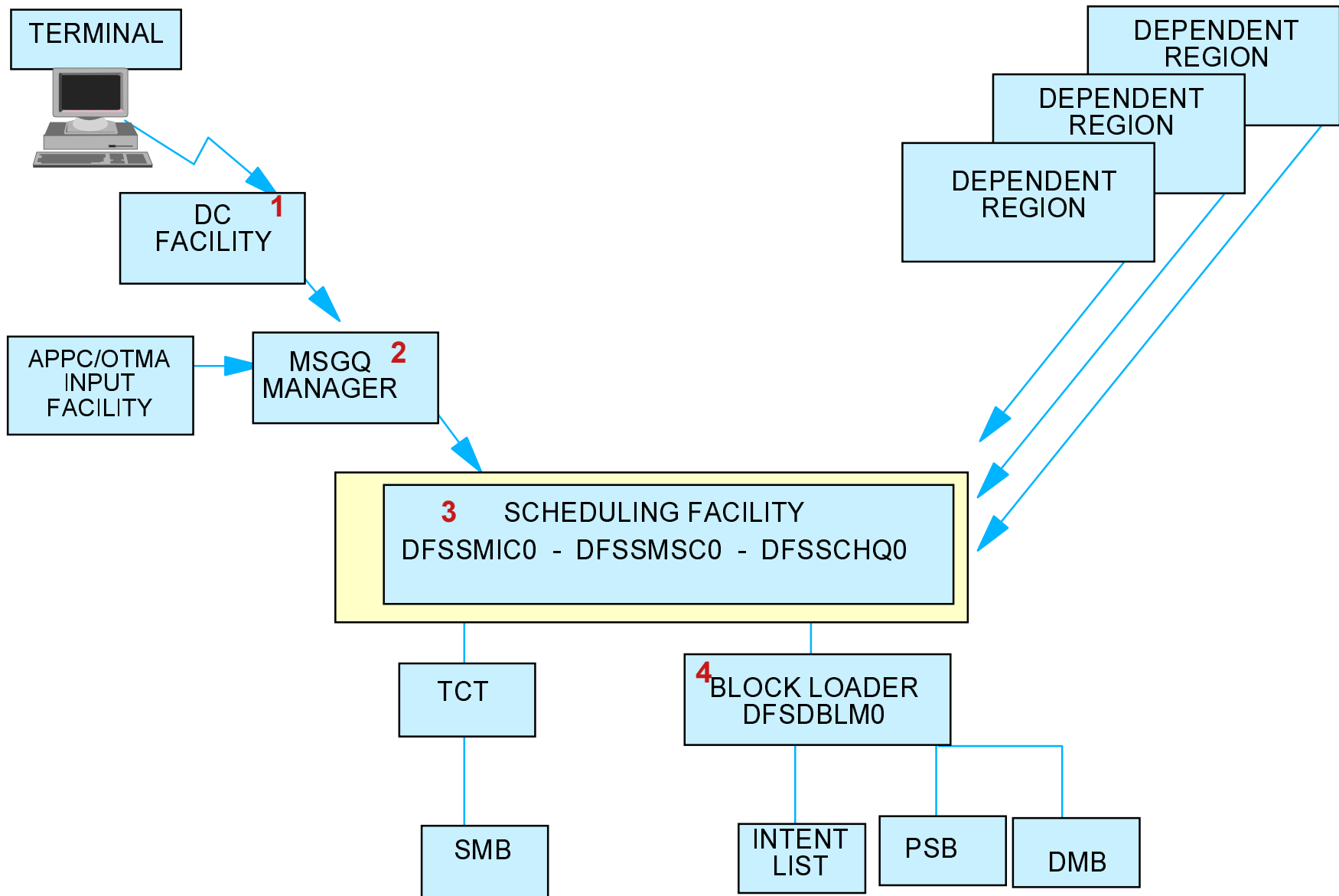# Message Queue Manager (With Shared Queues)

OTMA RECEIVE MGR.

DATA COMM CLB ITASKS

DL/I PST ITASKS

MSC LLB ITASKS

MESSAGE GENERATOR & AOI

APPC RECEIVE LU MANAGER

RESTART, SHUTDOWN CHECKPOINT

QUEUE MANAGER ROUTINES

MSGQ LOGGER DFSQLOG0

LOGGER

CF

MSGQ BUFFER HANDLER

MSGQ CQS INTERFACE

CQS

SHARED MESSAGE QUEUES

MESSAGE QUEUE BUFFERS

DESTINATIONS LTERMS, MSNAMES TRANSACTIONS

IMS Technical Conference

Message Queue Manager(shared)   Student Notes

The function of the Queue Manager is the same in the Shared Queues
environment. The difference is that the message queues reside on a
coupling facility and are accessed by way of the Common Queue Server (CQS)
code.

  Also, these messages can be processed on the same IMS that put them there or
any IMS in the Sysplex that has registered interest in the Destination associated
with a message that is on the shared queues.

IBM.

Scheduling Facility

TERMINAL

DC FACILITY **1**

APPC/OTMA INPUT FACILITY

MSGQ MANAGER **2**

DEPENDENT REGION

DEPENDENT REGION

DEPENDENT REGION

3 SCHEDULING FACILITY
DFSSMIC0 - DFSSMSC0 - DFSSCHQ0

TCT

4 BLOCK LOADER DFSDBLM0

SMB

INTENT LIST

PSB

DMB

IMS Technical Conference

Scheduling Facility   Student Notes

The scheduling facility is responsible for the orderly scheduling of user application programs when there are transaction messages to process and dependent regions available for the application programs to run.

These transactions are received from the DC Facility (or MSC,APPC,OTMA) (1) which calls the message queue manager to place them on the message queue (2) and then notifies the scheduler (3) there are messages to process. Transaction messages waiting to be processed are enqueued off the scheduler message block (SMB) for the transaction and the SMB in turn is enqueued off of the Transaction Class Table (TCT).
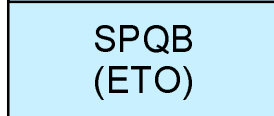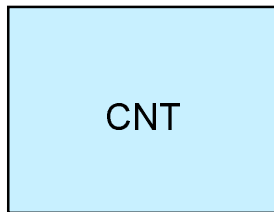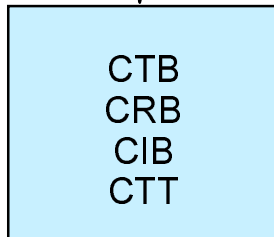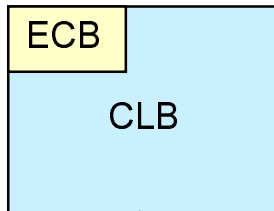
The scheduler interfaces with a varietyof services to acquire the resources the application program will need to access data bases and send and receive messages. This includes the block loader DFSDBLM0 (4) which analyzes the applications data base processing for intent conflicts with other applications currently executing, and allows the schedule to complete if there are no conflicts.

The block loader (DFSDBLM0) loads the program specification block(PSB) and data management block (DMB against
block (DMB) into storage. The PSB contains the application program PCB's for accessing the data bases as well as the terminals. The DMB contains information necessary to control processing against the data bases.
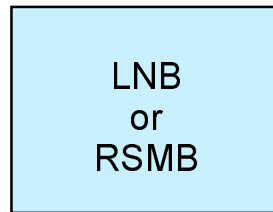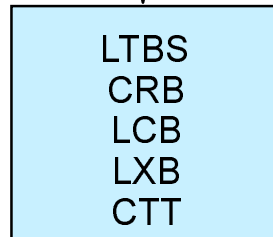
TRANSACTION MANAGER ITASK PROCESSING

IMS Technical Conference

Major Message Handling ITASKS

NODES/LINES	MSC LINKS	DEPENDENT REGIONS
ECB	ECB	ECB
CLB	LLB	PST
↕	↕	↕
CTB CRB CIB CTT	LTBS CRB LCB LXB CTT	PSB DMB INTENT LIST
↓	↓	↓
CNT	LNB or RSMB	SMB
SPQB (ETO)		

IMS Technical Conference
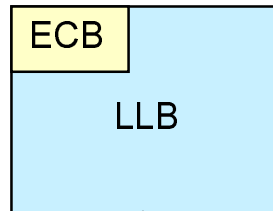
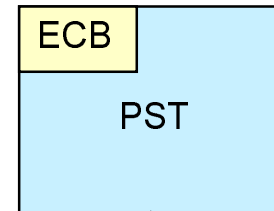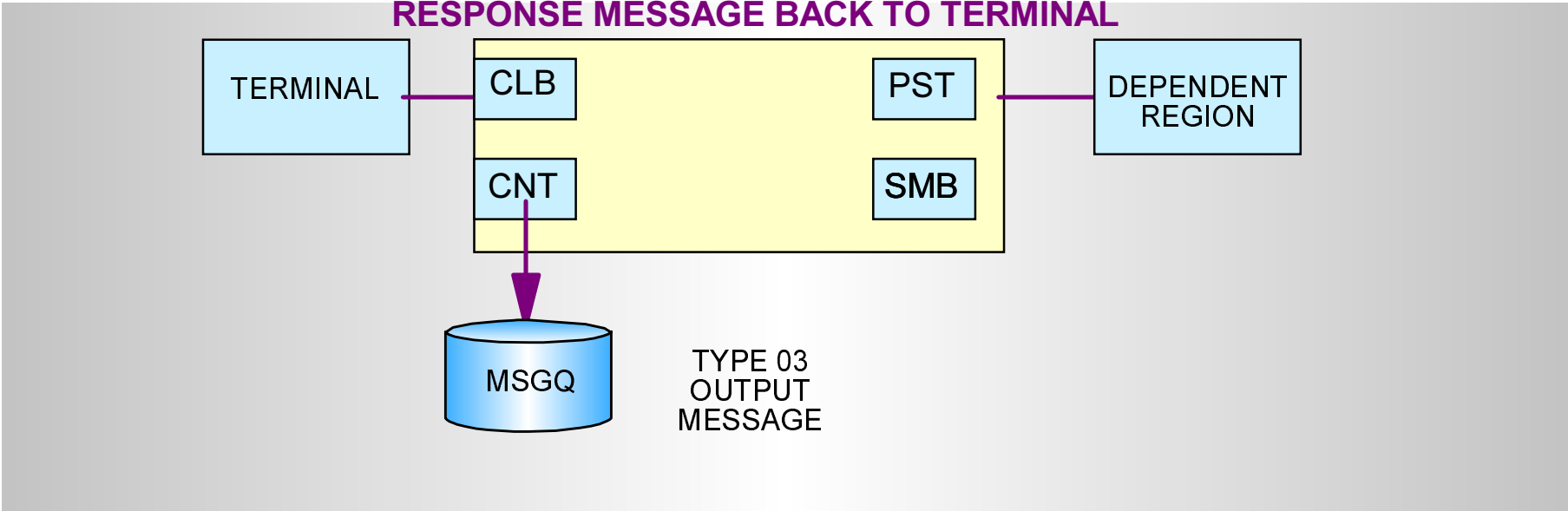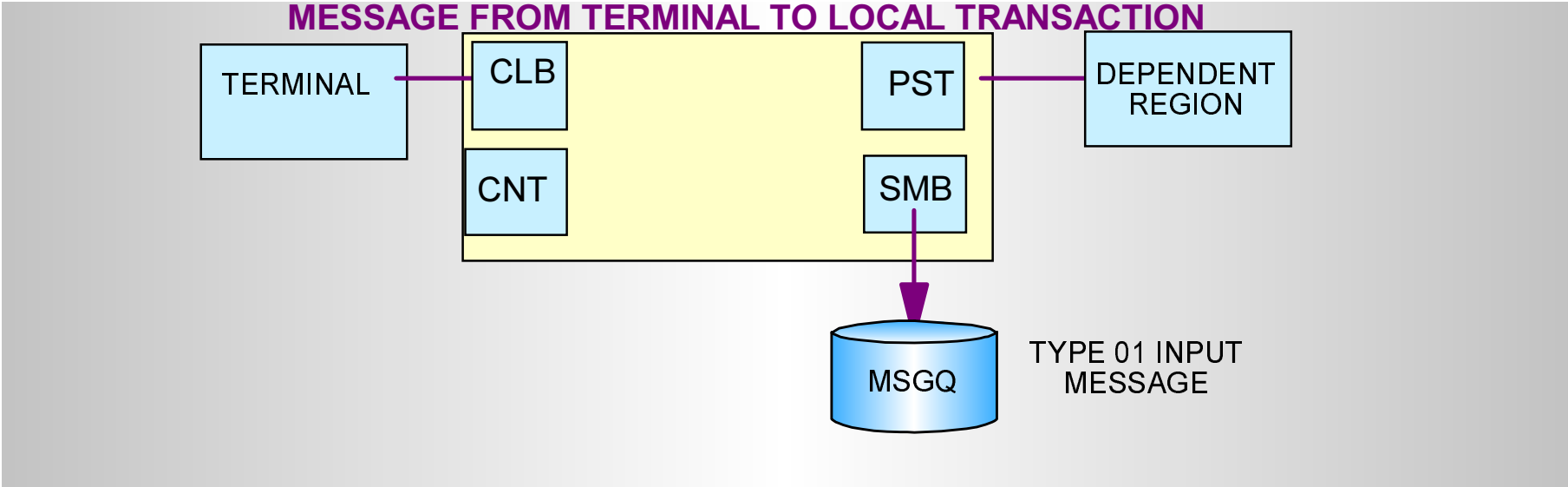# Major Message Handling Itasks   Student Notes
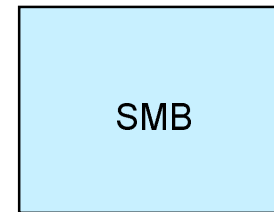
There are three major types of IMS tasks (called ITASKS) involved in the processing and routing of messages in the Transaction Manager:

1. The CLB ITASK processes the messages as they are sent to and from terminals. Each CLB contains an ECB which enables it to run as an ITASK in the online Control Region.
   Other control blocks such as the CTB, CRB, CIB, and CTT contain more information about the terminal its status. Each terminal (VTAM) and (BTAM) has a CLB and associated control blocks. For VTAM terminals these blocks together are referred to as a VTCB. The CNT represents the LTERM to which messages are queued to before being sent to the terminal.
    In an ETO environment there is also an SPQB that is built with the CNT when the USER signs on.

2, The LLB ITASK processes the messages as they are sent to other IMS systems. Other control blocks such as the LTBs, CRB, LXB, LCB and CTT contain more information about the link and its status
    Each MSC logical link is represented by a LLB and its associated control blocks.
    The LNB and RSMB anchor messages being sent across the link.

3. The PST ITASK performs processing in the control region on behalf of the application program.
    It receives control initially when the dependent region is scheduled and invokes the application program in the dependent region address space. Like the CLB, the PST contains the ITASK ECB.
    The SMB anchors transaction messages to be processed.

Local Transaction Input/Output Flow

MESSAGE FROM TERMINAL TO LOCAL TRANSACTION

TERMINAL — CLB
CNT
PST — DEPENDENT REGION
SMB → MSGQ

TYPE 01 INPUT MESSAGE

RESPONSE MESSAGE BACK TO TERMINAL

TERMINAL — CLB
CNT → MSGQ
PST — DEPENDENT REGION
SMB

TYPE 03 OUTPUT MESSAGE

IMS Technical Conference

Local Transaction Flow   Student Notes

MESSAGE FROM TERMINAL TO LOCAL TRANSACTION

- Transaction is received from terminal.
- SMB for transaction is located.
- Insert the message to the message queue and enqueue it to the SMB
  for the transaction (type 01 input message logged).

RESPONSE MESSAGE BACK TO TERMINAL

-Application program inserts message to input LTERM
 destination.
-Insert the message to the message queue and enqueue it to
 the CNT for LTERM (type 03 output message logged).
- Notify the DC facility there is a response message to send to the terminal.

Program-to-Program Switch

IMS Technical Conference

Program-to-Program Switch   Student Notes
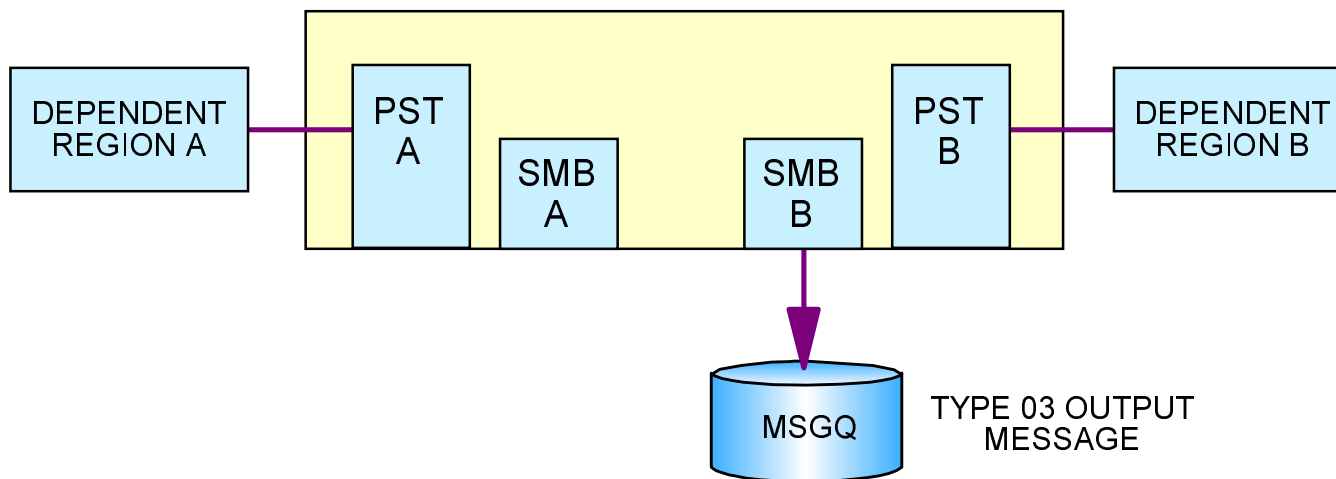
- Application program running in dependent region A inserts a message with a
  destination of   transaction B.

- The message is inserted to the message queue as a type 03 output message and
  and enqueued to the SMB for transaction B.

- The scheduler is notified and schedules pplication program B to process transaction B
   in dependent region B.

- Application program B begins executing

- Application A in dependent region A may terminate or continue to process more
   transaction A messages.

- Similarly, Application B may issue program-to-program switches to other
   applications including back to Application A, or send a response message back to the
   input terminal (if one exists)or some other terminal.

IBM.

Message Switch

MESSAGE FROM TERMINAL TO TERMINAL (MESSAGE SWITCH)

IMS Technical Conference
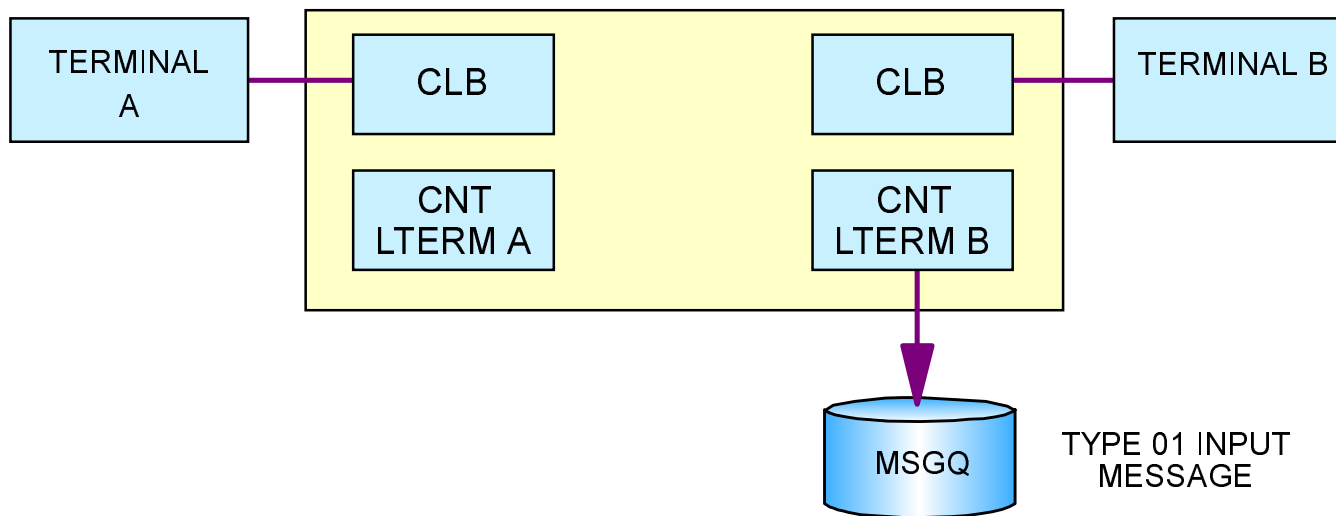
Message Switch

- Terminal A enters a message with a destination
   of LTERM B

- The CNT for destination LTERM B is located

- Insert the message to the message queue and
   enqueue it to the CNT for LTERM B
   (type 01 input message logged)

- Notify the Terminal ITASK for terminal B it has a
   message to send to the terminal

- Terminal B ITASK is dispatched and sends the
   message to terminal B

LOGGING TRANSACTION MANAGER PROCESSING

IMS Technical Conference

Logging in a Single IMS System

RECEIVE
INPUT
MESSAGES

LOG DATASET

01 INPUT MSG
35 ENQ MESSAGE

APPLICATION
PROGRAM

SCHEDULE

PROCESS
MESSAGES

UPDATE
DATA BASES

BUILD
MESSAGES

SYNC POINT

or

BACKOUT

APPL TERMINATE

08 SCHEDULE

31 GU INPUT
    MESSAGE

50 DATABASE
CHANGE

03 OUTPUT MSG
35 ENQUEUE

37 SYNCPOINT
33 FREE INPUT DRRN

38 REL MSGS
32 REJECT MSG
39 REL OUTPUT
33 DELETE INPUT MSG
50 DB BACKOUT

07 APPL TERM

31 GU MESSAGE
36 DEQ MESSAGE
33 FREE DRRN

SEND
OUTPUT
MESSAGES

IMS Technical Conference

Logging in a Single IMS System   Student Notes

IMS logs information related to the processing of transaction messages in order to recover work completed, and to back out the effects of incomplete processing, in the event of a failure.
The logging is accomplished issuing an ILOG call to write the log record out to the data set. These log records are referred to by log record type, which is a one byte numeric code at offset 4 into the record.

Here we see the major log records that are logged during application program processing.
By retrieving these records from the log data set,   much can be determined about the processing
 that occurred.

IBM.

IMS Technical Conference

Logging in Shared Queues Environment

RECEIVE INPUT
MESSAGES

01 INPUT MSG

35 ENQ MSG
  - MSG MOVED TO CF

33 FREE OF INPUT MSG

APPLICATION PROGRAM

08 SCHEDULE ← SCHEDULE

01 INPUT MSG PREFIX ← PROCESS MESSAGES

31 GU INPUT MSG

50 DATABASE CHANGE ← UPDATE DATABASES

03 OUTPUT MSG ← BUILD MESSAGES

37 TRANSFER TO FINAL
DEST ← SYNCPOINT

33 FREE INPUT

33 FREE OUTPUT

SEND OUTPUT
MESSAGES

03 OUTPUT PREFIX

35 ENQ OUTPUT TO CNT

31 GU OUTPUT MSG

36 DEQ OUTPUT FROM
   CNT

33 FREE OUTPUT

IBM.

IMS Technical Conference

Log Record Format

LL 2 BYTES	ZZ 2 BYTES	RECORD TYPE 1 BYTE	RECORD SUBTYPE 1 BYTE	RECORD CONTENT	STCK 8 BYTES	LSN 8 BYTES

⚠ **LL = length field**

► The value includes the 2 byte length of the LL field itself

⚠ **ZZ = this field usually contains zeroes**

⚠ **STCK = binary value from hardware clock**

⚠ **LSN = log seqence number**

SAMPLE TRANSACTION FLOWS

IMS Technical Conference

Glossary of Terms

CID   The VTAM/NCP communication ID. This value is given to IMS and used by VTAM and IMS to identify a session between IMS and a VTAM logical unit.

DRRN   device relative record number, refers to physical location on a dataset and is still used in shared queues for compatibility.

DEST   (destination) Represents an application program or a logical terminal, or an operator command associated with the control region.

UOW   unit of work associated with a message on the message queue. It comprises x'20' bytes. The first x'10' are associated with information that identifies the originating system (IMSID) and a UTC timestamp. The last x'10' bytes identify the processing system (IMSID) and the UTC time for that action.

SAMPLE LOG RECORD SEQUENCES

- Normal Conversation Tran without Shared Queues

- Tran entered with Shared Queues and processed Locally

- Tran entered with Shared Queues and processed on other System in Sysplex

- Sample Log Record 67D0

IBM.

IMS Technical Conference

NORMAL CONVERSATIONAL TRAN

User at node DT327001 and LTERM IMSUS01 enters message to be processed by Conversational Tran CONV21B0.

Tran CONV21B0 is scheduled and response message is sent to LTERM IMSUS01.

Associated log records for Tran processing are included along with the node trace records and the transaction trace.

IMS Technical Conference

Normal Conversational Tran

Log Record	LSN
D 04	00269
11	00273
01	00274
35	00275
08	00277
LA3A	0027A
31	0027E
LA3B	0027F
LA3A	0028E
LA3B	00292
LA3A	00297
LA3B	0029B

Normal Conversational Tran

Log Record	LSN
LA3A	0029F
LA3B	002A3
LA3A	002A7
LA3B	002AB
03	002B0
35	002B1
37	002B2
37	002B3
33	002B4
LA3A	002B7
LA3B	002BB

Normal Conversational Tran

Log Record	LSN
07	002C0
31	002CD
12	002EA
36	002EB
33	002EC

SHARED QUEUES EXAMPLE 1

User on node **DSW21096** and LTERM **DLU21096** enters a message for TRAN **SC2A**.

TRAN is scheduled and when message in enqueued IMS finds a region in IMS3 ready to run and process the TRAN.

TRAN is scheduled and reply message is sent to LTERM DLU21096 on node DSW21096.

Log records included to show the message input, TRAN being scheduled, and reply sent to LTERM.

SHARED QUEUES SAME SYSTEM

Log Record	LSN
01	007A49FB
35	007A49FC
08	007A49FD
56	007A49FE
31	007A49FF
50	007A4A24
50	007A4A8E
50	007A4AA3
03	007A4BA4
35	007A4BA5
37	007A4BA6

SHARED QUEUES SAME SYSTEM

Log Record	LSN
37	007A4C0F
33	007A4C10
03	007A4C13
35	007A4C14
31	007A4C15
33	007A4C16
56	007A4C1A
07	007A4C1E
36	007A4C21
33	007A4C24

SHARED QUEUES EXAMPLE 2

User on node **L3270B** and LTERM **T3270LB** is
on **SYS3** and enters a message to be
processed by TRAN **DEBSTRN1**. Message is
placed on the Shared Queues.

TRAN **DEBSTRN1** is scheduled on **IMS2** and
retrieves the message from the shared queues.
A response message is built and placed on the
shared queues.

LTERM **T3270LB** is notified of response message and
retrieves it from the shared queues.

Log records are included to show this activity.

IMS Technical Conference

SHARED QUEUES LTERM AND TRAN PROCESS on DIFFERENT SYSTEMS

SYS3

Log Record	LSN
63	000E2
01	000E3
35	000E4
33	000E5

IMS2

Log Record	LSN
08	000E3
56	000E4
01	000E5

SHARED QUEUES LTERM AND TRAN PROCESS on DIFFERENT SYSTEMS

IMS2

Log Record	LSN
31	000E6
03	000E7
35	000E8
37	000E9
37	000EA
33	000EB
33	000EC
56	000ED
07	000EE

SHARED QUEUES LTERM AND TRAN PROCESS on DIFFERENT SYSTEMS

SYS3

Log Record	LSN
03	000E6
35	000E7
31	000E8
36	000E9
33	000EA
63	000EB

EXAMPLE OF 67D0 LOG RECORD

Log record 67D0 with a subtype of 0A is provided
to show the contents when an error is detected by the
Queue Manager.

Contents include the return code and reason code
provided from the CQS request. The module that has
received the error and the module flow at the time the
error was detected.

More Info...

REFERENCE

IMS Technical Conference

REFERENCE DOCUMENTS

- **LOG RECORD TYPES**

- **SAMPLE DFSERA10 JCL**

- **SAMPLE DFSERA10 CONTROL CARDS**

- **DC APPLICATION CALLS**

- **DC STATUS CODES**

LOG RECORD TYPES

The different types of records that are logged by IMS are documented in the IMS/ESA DIAGNOSIS GUIDE AND REFERENCE
   LY37 - 3731

in Chapter 5 : SYSTEM SERVICE AIDS under   LOG RECORDS

SAMPLE DFSERA10 JCL

```
//JSERA10   JOB   (JMSILVA,A452,090,M31),'JMSILVA',
//          MSGCLASS=H,TIME=(15),MSGLEVEL=(1,1),
//          NOTIFY=JMSILVA,CLASS=A
//JOBLIB   DD  DSN=IMSBLD.I61R.RESLIB,DISP=SHR
//ERA10    EXEC PGM=DFSERA10
//PRINT    DD  SYSOUT=*
//SYSPRINT DD  SYSOUT=*
//SYSUT1   DD  DISP=SHR,DSN=JMSILVA.PM92612.SLIPLOG
//SYSIN    DD  *
```

SAMPLE DFSERA10 CONTROL CARDS

- *SELECT THE FIRST RECORD TO FIND ITS SEQUENCE NUMBER
  - CONTROL CNTL H=1
  - OPTION PRINT
  - END
  -

- *06 RECORD USUALLY LAST RECORD ON DATA SET
  - CONTROL CNTL
  - OPTION PRINT 0=5, V=06, L=1, E=DFSERA30
  - END
  -

- *SELECT PSEUDO ABEND RECORDS
  - CONTROL CNTL
  - OPTION   PRINT O=5,V=67FF,L=2,C=E,E=DFSERA30
  - ENDb

SAMPLE DFSERA10 CONTROL CARDS

- *APPLICATION PROGRAM START AND TERMINATION RECORDS
  - ▶ CONTROL CNTL
  - ▶ OPTION   PRINT   O=5,V=08,L=1,C=E,E=DFSERA30
  - ▶ OPTION   PRINT   O=5,V=07,L=1,C=E,E=DFSERA30
  - ▶
  - ▶ *SELECT SYSTEM CHECKPOINTS:
- **4001=BEGIN CHECKPOINT**
- **4098=END CHECKPOINT**
  - ▶ CONTROL CNTL
  - ▶ OPTION   PRINT O=5,V=4001,L=2,C=E,E=DFSERA30
  - ▶ OPTION   PRINT O=5,V=4098,L=2,C=E,E=DFSERA30b

SAMPLE DFSERA10 CONTROL CARDS

- *RUN SECOND PASS WITH SKIP (K) and STOPAFT (H) VALUES TO SELECT CERTAIN CHECKPOINT BLOCKS
  - ► CONTROL   CNTL   K=145320
  - ► OPTION   PRINT O=5,V=4003,L=2,C=E Lterms (CNTS) and Msnames
  - ► OPTION   PRINT O=5,V=4004,L=2,C=E TRANSACTIONS (SMBS)
  - ► OPTION   PRINT O=5,V=4005,L=2,C=E BTAM Terminals (CTBS)
  - ► OPTION   PRINT   O=5,V=4006,L=2,C=E DMB Directory (DDIR)
  - ► OPTION   PRINT   O=5,V=4007,L=2,C=E PSB Directory (PDIR)
  - ► OPTION   PRINT   O=5,V=4008,L=2,C=E BTAM CLB or MSC LLB
  - ► OPTION   PRINT   O=5,V=400D.L=2,C=E Conversation Control (CCBS)
  - ► OPTION   PRINT   O=5,V=4014,L=2,C=E Dynamic SPQBS and CNTS
  - ► OPTION   PRINT   O=5,V=4021,H=35,L=2, C=E VTAM NODES
  - ► END

SAMPLE DFSERA10 CONTROL CARDS

- **SELECT MESSAGES FOR LTERM 'MARYANNE'**
  - ► CONTROL   CNTL
  - ► OPTION   PRINT O=5,V=01,L=1,C=M
  - ► OPTION   PRINT O=97,V=MARYANNE,T=C,L=8,C=E,E=DFSERA30
  - ► OPTION   PRINT O=5,V=01,L=1,C=M
  - ► OPTION   PRINT O=105,V=MARYANNE,T=C,L=8,C=E,E=DFSERA30
  - ► OPTION   PRINT O=5,V=03,L=1,C=M
  - ► OPTION   PRINT O=97,V=MARYANNE,T=C,L=8,C=E,E=DFSERA30
  - ► OPTION   PRINT O=5,V=03,L=1,C=M
  - ► OPTION   PRINT O=105,V=MARYANNE,T=C,L=8,C=E,E=DFSERA30
  - ► END
  - ►

- ***SELECT DC TRACE RECORDS**
  - ► CONTROL   CNTL
  - ► OPTION   PRINT O=5,V=6701,L=2,C=M
  - ► ENDb

SAMPLE DFSERA10 CONTROL CARDS

- *SELECT DC TRACE RECORDS BY ID
  - CONTROL   CNTL
  - OPTION   PRINT   O=5,V=6701,L=2,C=M
  - OPTION   PRINT   O=9,V=CVCT,T=C,C=E,E=DFSERA30
  - OPTION   PRINT   O=5,V=6701,L=2,C=M
  - OPTION   PRINT   O=9,V=C140,L=2,C=E,E=DFSERA30
  - OPTION   PRINT   O=5,V=6701,L=2,C=M
  - OPTION   PRINT   O=9,V=C340,L=2,C=E,E=DFSERA30
  - OPTION   PRINT   O=5,V=6701,L=2,C=M
  - OPTION   PRINT   O=9,V=C440,L=2,C=E,E=DFSERA30
  - OPTION   PRINT   O=5,V=6701,L=2,C=M
  - OPTION   PRINT   O=9,V=AER,L=3,T=C,C=E,E=DFSERA30
  - OPTION   PRINT   O=5,V=6701,L=2,C=M
  - OPTION   PRINT   O=9,V=FM,L=2,T=C,C=E,E=DFSERA30
  - OPTION   PRINT   O=5,V=6701,L=2,C=M
  - OPTION   PRINT   O=9,V=COFC,L=4,T=C,C=E,E=DFSERA30

SAMPLE DFSERA10 CONTROL CARDS

- ***SELECT DC TRACE RECORDS BY ID (cont)**
  - ►OPTION   PRINT   O=5,V=6701,C=M
  - ►OPTION   PRINT   O=9,V=TRCE,L=4,T=C,C=E,E=DFSERA30
  - ►OPTION   PRINT   O=5,V=6701,C=M
  - ►OPTION   PRINT   O=9,V=DD,L=2,T=C,C=E,E=DFSERA30
  - ►OPTION   PRINT   O=5,V=6701,C=M
  - ►OPTION   PRINT   O=9,V=FE,L=2,T=C,C=E,E=DFSERA30
  - ►OPTION   PRINT   O=5,V=6701,C=M
  - ►OPTION   PRINT   O=9,V=SE,L=2,T=C,C=E,E=DFSERA30
  - ►

- ***SELECT TRACE AND ERROR RECORDS FOR NODE 'L3270C'**
  - ►CONTROL CNTL
  - ►OPTION   PRINT O=5,V=6701,L=2,C=M
  - ►OPTION   PRINT O=89,V=L3270C,L=6,T=C,C=E,E=DFSERA30

IMS Technical Conference

SAMPLE DFSERA10 CONTROL CARDS

- ■ *SELECT DIAGNOSTIC RECORDS FOR FAILURES IN QUEUE MANAGER
- ■ PROCESSING
  - ► CONTROL   CNTL
  - ► OPTION   PRINT O=5,V=67D00A,L=3,C=E,E=DFSERA30
  - ► END
  - ►

- ■ *SELECT ALL MESSAGES THAT CONTAIN UOW
  X'C9D4E2F340404040AFB24F64577721010'
  - ► CONTROL   CNTL
  - ► OPTION   PRINT E=DFSERA70,
  - ► PARM=(DATA=X'C9D4E2F340404040AFB24F6577721010')
  - ENDb

DC APPLICATION CALLS

The application calls that are available for
use for Transaction Manager processing are
listed in
IMS/ESA APPLICATION PROCESSING
   TRANSACTION MANAGER
SC26 - 8729

Chapter 3: Writing DL/I Calls for Transaction
            Manager
and
Chapter 4: Writing DL/I Calls for System Services

IBM.

DC STATUS CODES

Status codes that can be returned as the
result of transaction manager calls are
documented
IMS/ESA APPLICATION PROGRAMMING
       TRANSACTION MANAGER
SC26 - 8729

in Chapter 15 DL/I Status Codes
Status Code Explanations
Table 52   Message Calls