



z/OS Introduction and Workshop

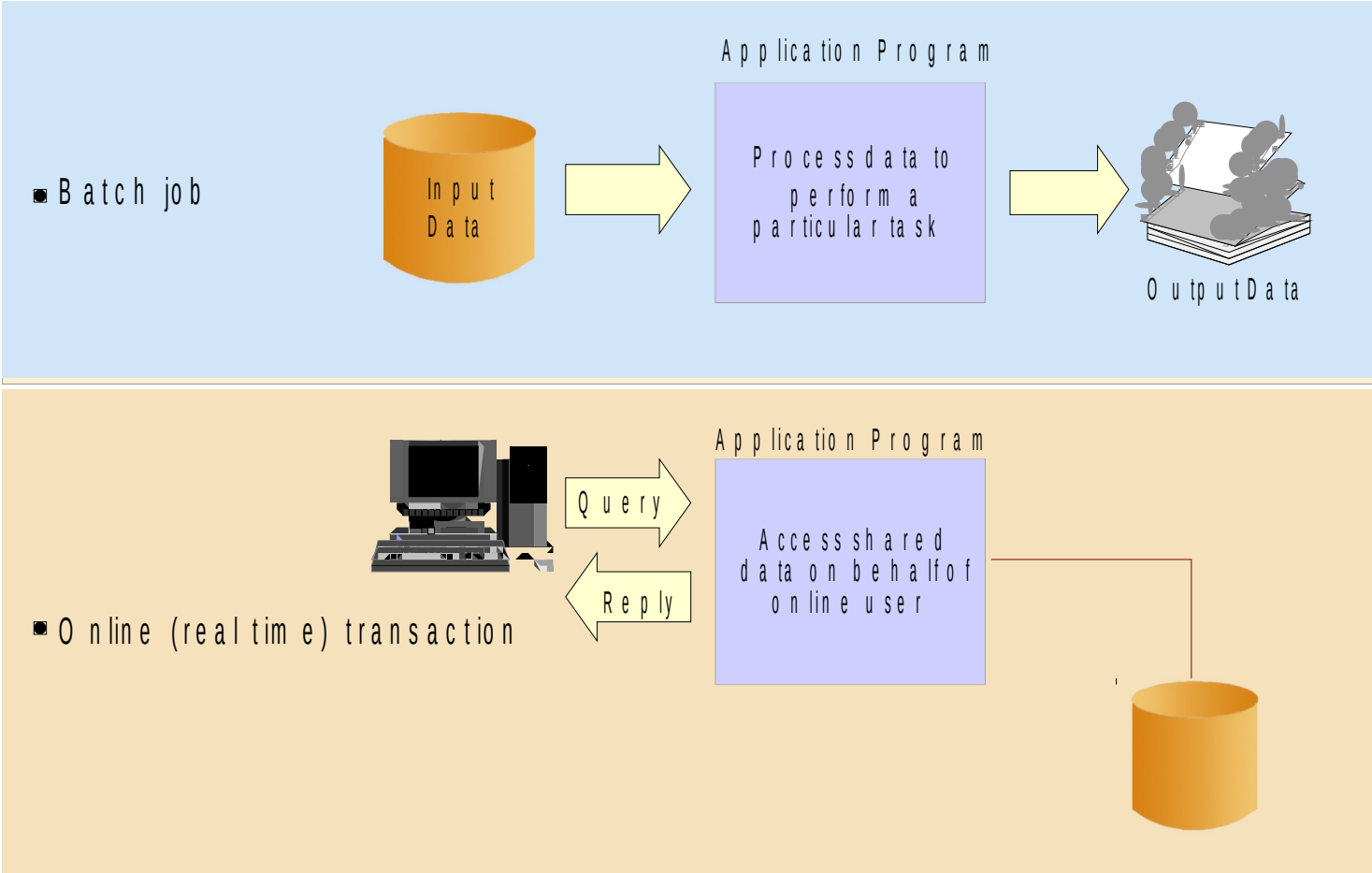
CICS

Unit Objectives

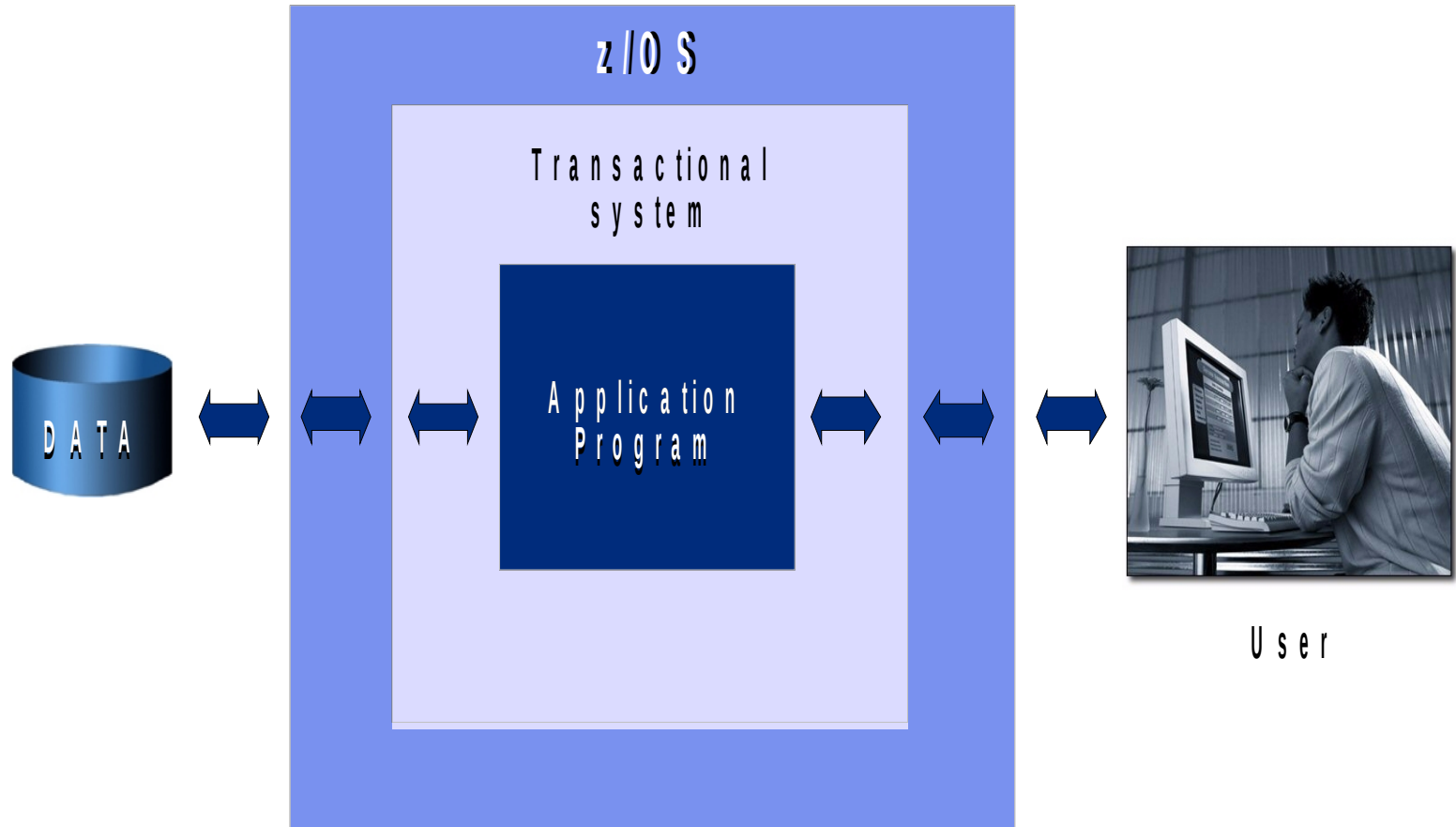
After completing this unit, you should be able to:

- Describe CICS Processing
- Describe CICS Application Programming Interface (API)
- List 6 Programming Languages used write CICS Applications
- List 2 CICS Programming Techniques
- Describe CICS System Definition
- List 3 types of CICS Supplied Transactions

Typical mainframe workloads (Batch and Online)



z/OS Transaction System



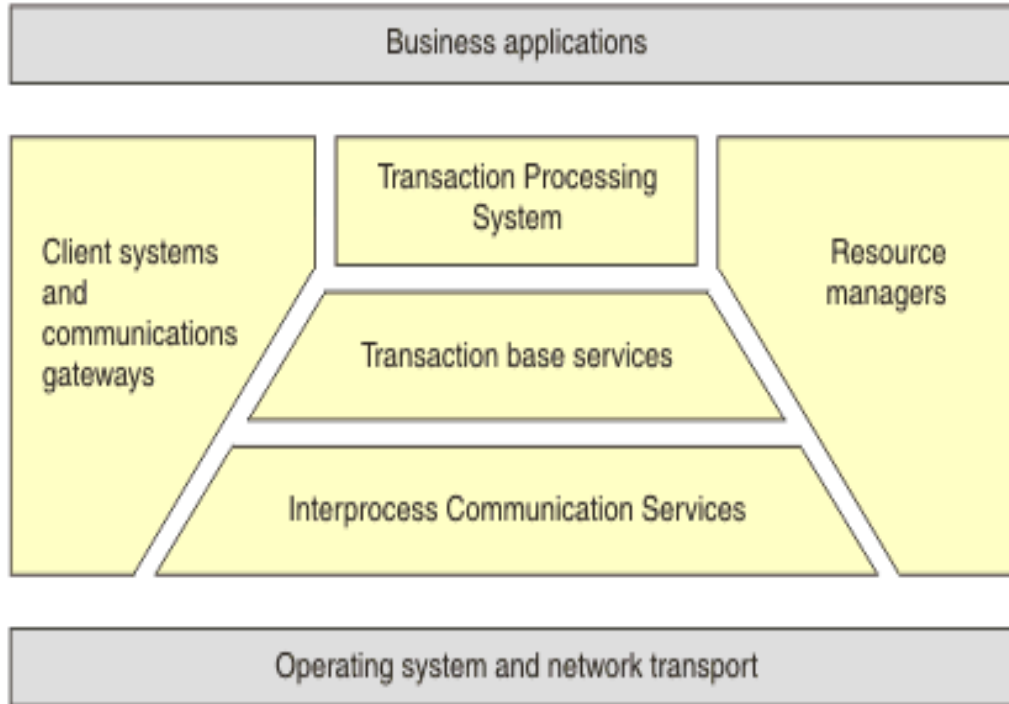
What is CICS?

Customer Information Control System

Transaction Processor:

- Run online applications
- Many sessions with the same application(s)
- Manages the sharing of resources
- Maintains integrity of data
- Prioritization of execution, with fast response

CICS Architecture



CICS functions:

- Application programming
- Web services
- Web interfaces
- Java applications in CICS
- Network services
- Database services
- External interfaces
- Customization
- System management
- Performance and monitoring
- Security
- Recovery and restart

CICS Message Format (DFHCCnnnn)

where **CC** is a CICS subcomponent

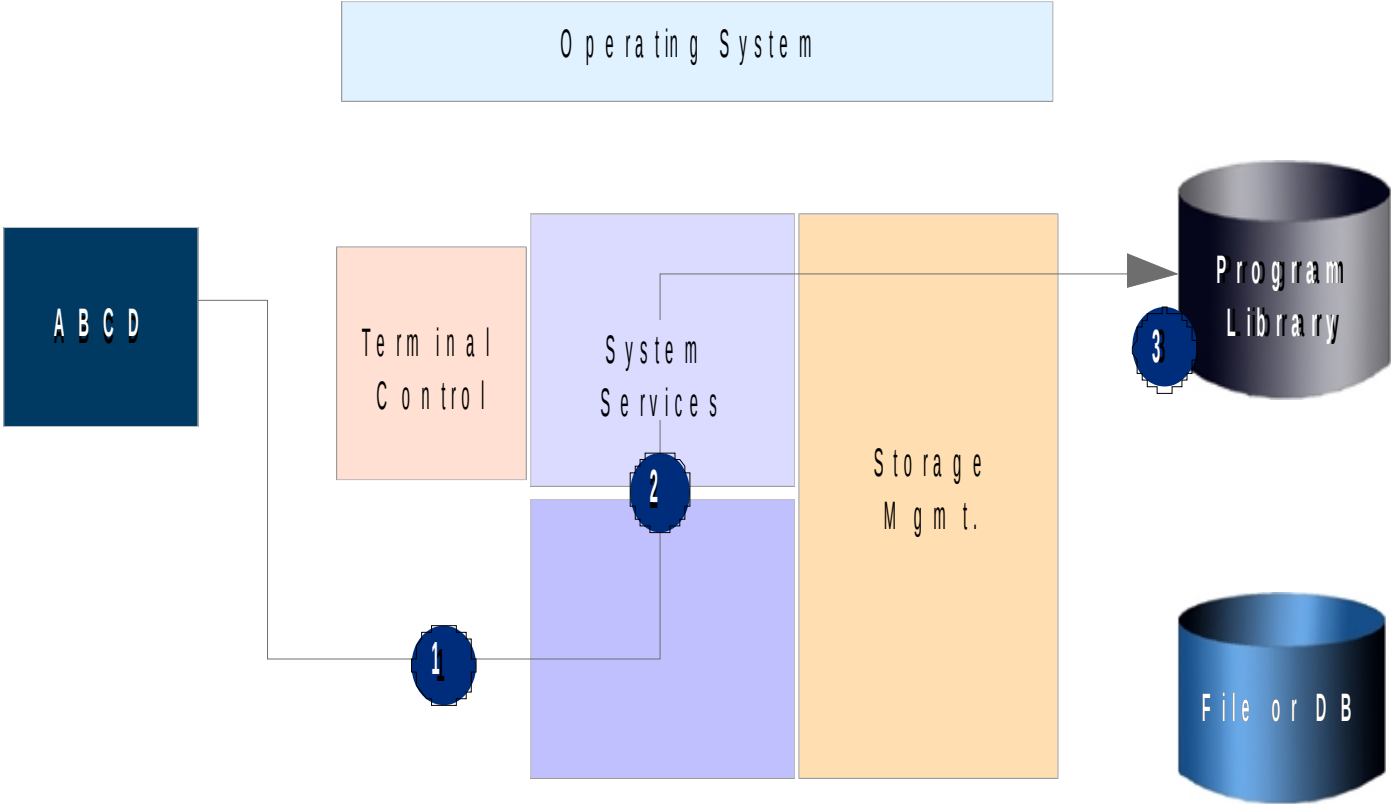
AC abnormal condition program component	EJ Enterprise Java domain
AD Development Deployment Tool messages	EM Event Manager domain
AI auto-install terminal model manager (AITM)	ER user backout program
AM RDO allocation manager	EX external CICS interface
AP application domain	FC file control component
BA business transaction services (BTS) domain	FE terminal test program component
BR Bridging to 3270 transactions	IC interval control program
CA RDO command utility routine	IE IP ECI domain
CC catalog domain (local and global)	II CORBA and IIOP domain
CE sign on program component	IN indoubt testing tool
CF coupling facility data tables server	IR interregion component
CP CPI Communications component	JC online journal control component
CQ CQ console messages	KC transaction/profile manager
CR ISC remote scheduler component	KE kernel domain
CZ class libraries domain	LD loader domain
DB CICS database control component	LG logger domain
DD directory manager	LM lock manager domain
DH Document handler component	MC BMS message control program component
DM domain manager domain	ME message domain
DP debugging profile domain	MN monitor domain
DS dispatcher domain	MU message editing utility program
DU dump domain	MV MVS™ RESMGR exit stub
DX database control component	NC Named counter sequence number server
	NQ enqueue manager domain

CICS Message Format (DFHCCnnnn)

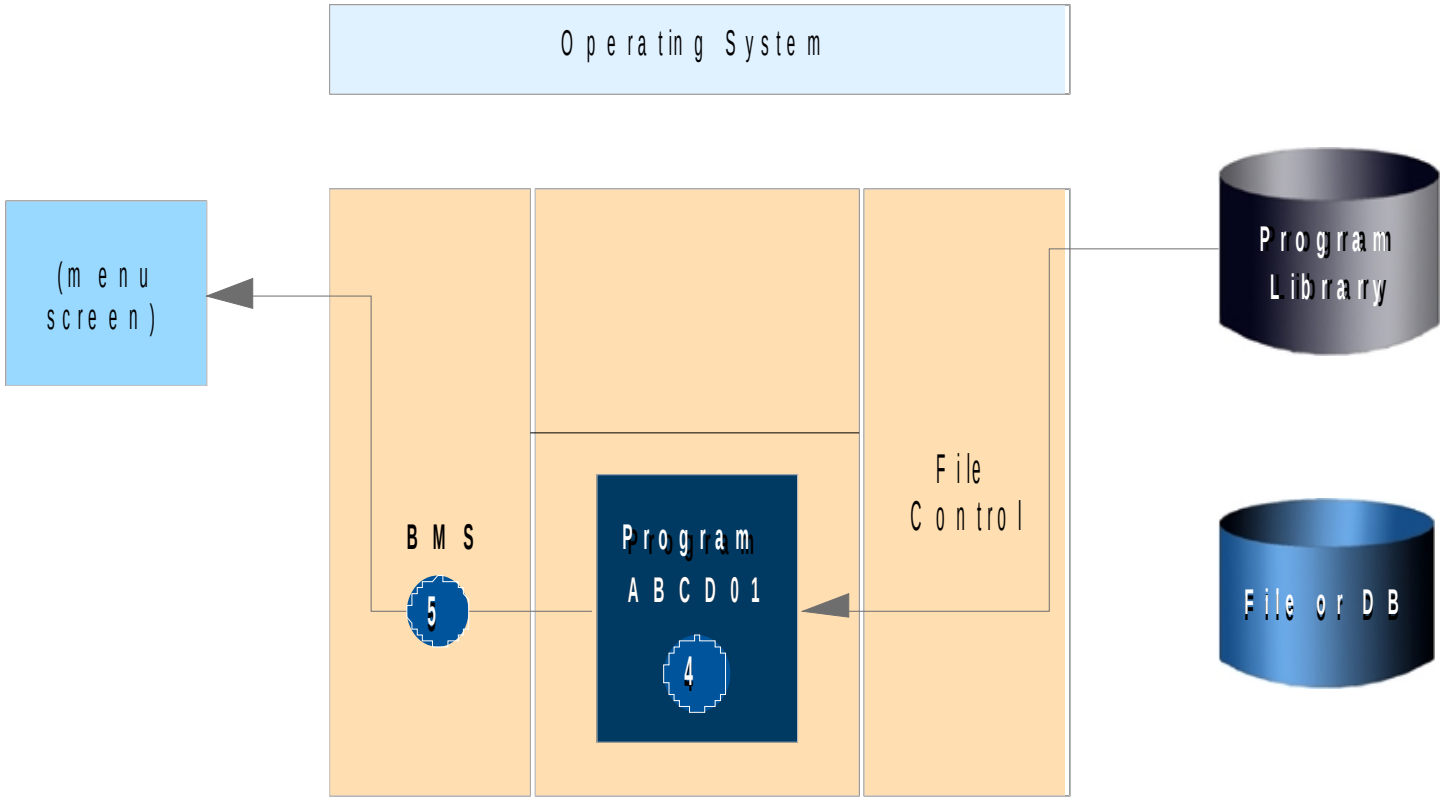
where **CC** is a CICS subcomponent

OT Object Transaction Services domain	ST statistics domain
PA parameter manager domain	SZ front end programming interface (FEPI)
PC program control program component	TC terminal control program component
PD print dump exit routine DFHPDX	TD transient data component
PG program manager domain	TF terminal facility manager
PI pipeline manager domain	TI timer domain
PR partner resource manager	TM system termination program component
PS system spooler interface control component	TO terminal object resolution program component
RD RDO allocation manager	TP BMS terminal page retrieval program component
RM recovery manager	TR trace domain
RP ONC RPC	TS temporary storage domain
RS communications resynchronization program	UP measured usage license charging support macro
RT ISC transaction routing component	US user domain
RU recovery utility program	WB Web Interface
RX RRS-coordinated EXCI domain	XA XRF alternate component
RZ Request Streams domain	XC XRF CICS availability manager
SH Scheduler domain	XG XRF general component
SI system initialization component	XM transaction manager
SJ Scaleable Java domain	XO XRF CICS availability manager
SK sub task control program component	XQ shared temporary storage queue pool server
SM storage manager domain	XS security component
SN signon component	ZC terminal control working set component
SO Sockets domain	ZE TCP error message writer component
SR system recovery component	ZN syncpoint component

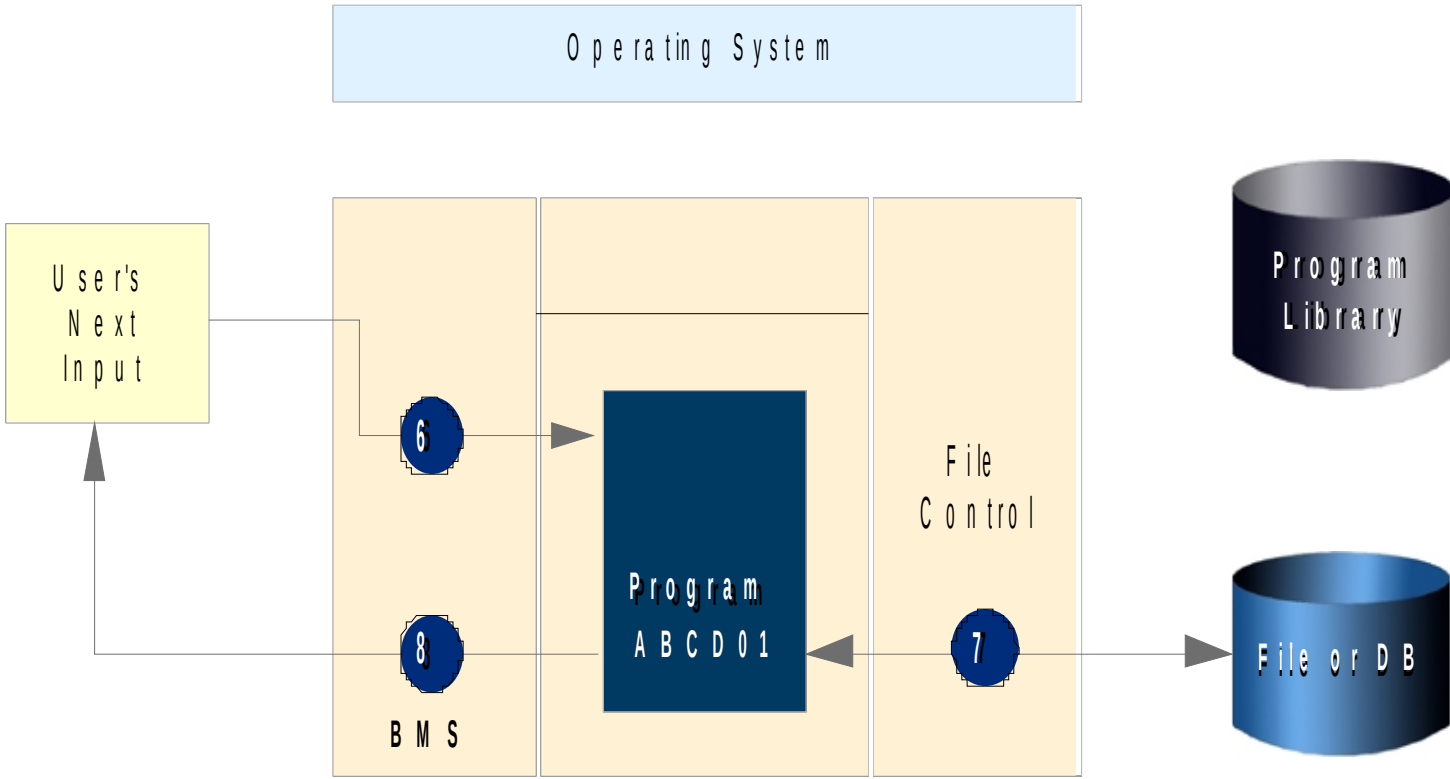
CICS transaction flow



CICS transaction flow (Cont...)



CICS transaction flow (Cont...)



CICS Application Programming



Languages

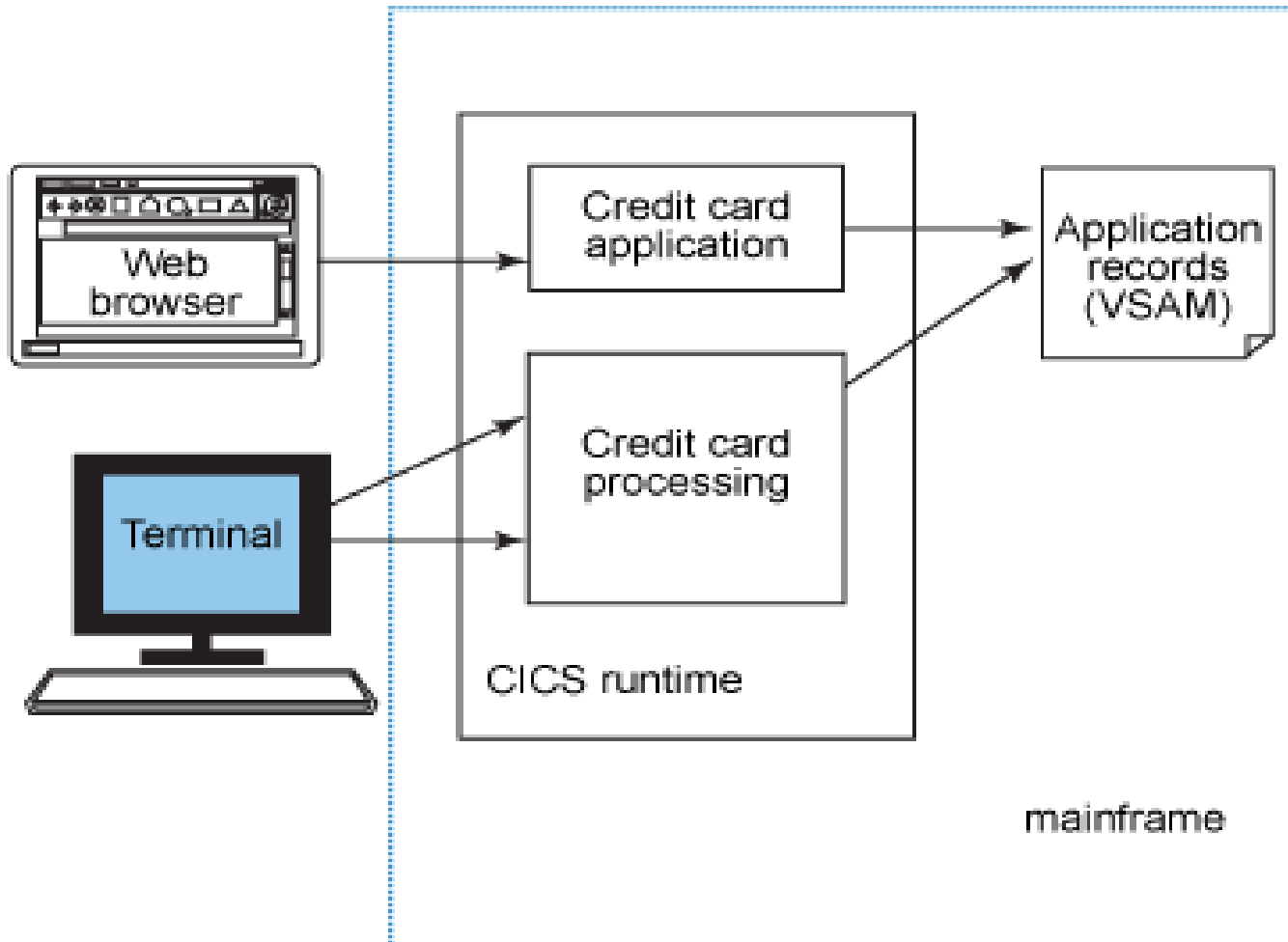
COBOL
Java
C/C++
REXX
Assembler
PL/I

Application Program Interface (API)

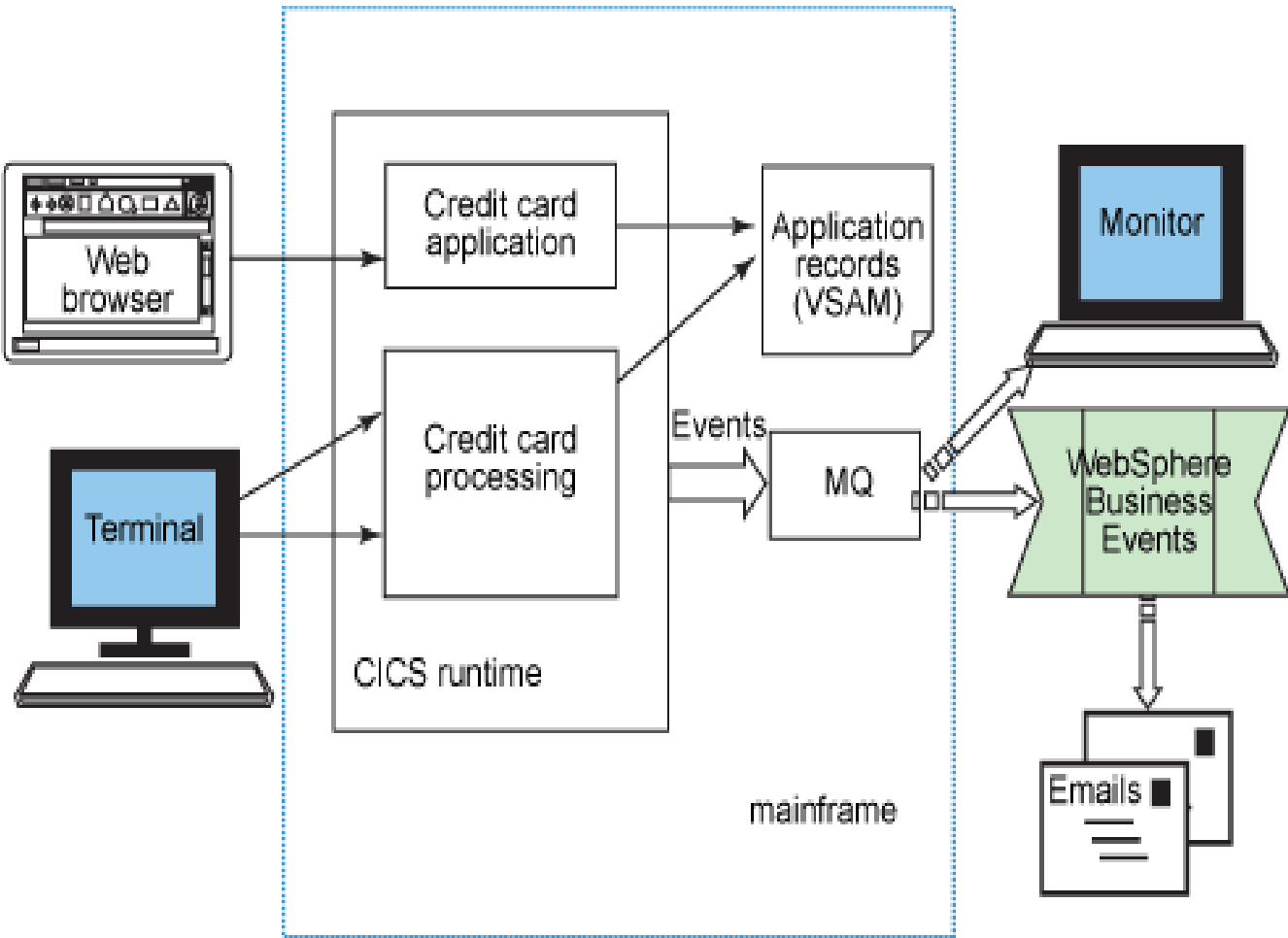
EXEC CICS

Abend support	File control services
APPC basic conversation	Interval control services
APPC mapped conversation	Journaling
Authentication	Monitoring
Batch data interchange	Named counter server
BMS	Program control
Built-in functions	Scheduling services
Business transaction services (BTS)	Security services
Channel commands	Spool Interface (JES)
Console support	Storage control
Diagnostic services	Syncpoint
Document services	Task control
Environment services	TCP/IP services
Event processing	Temporary storage control
Exception support	Terminal control
	Transient data
	Web support
	Web services

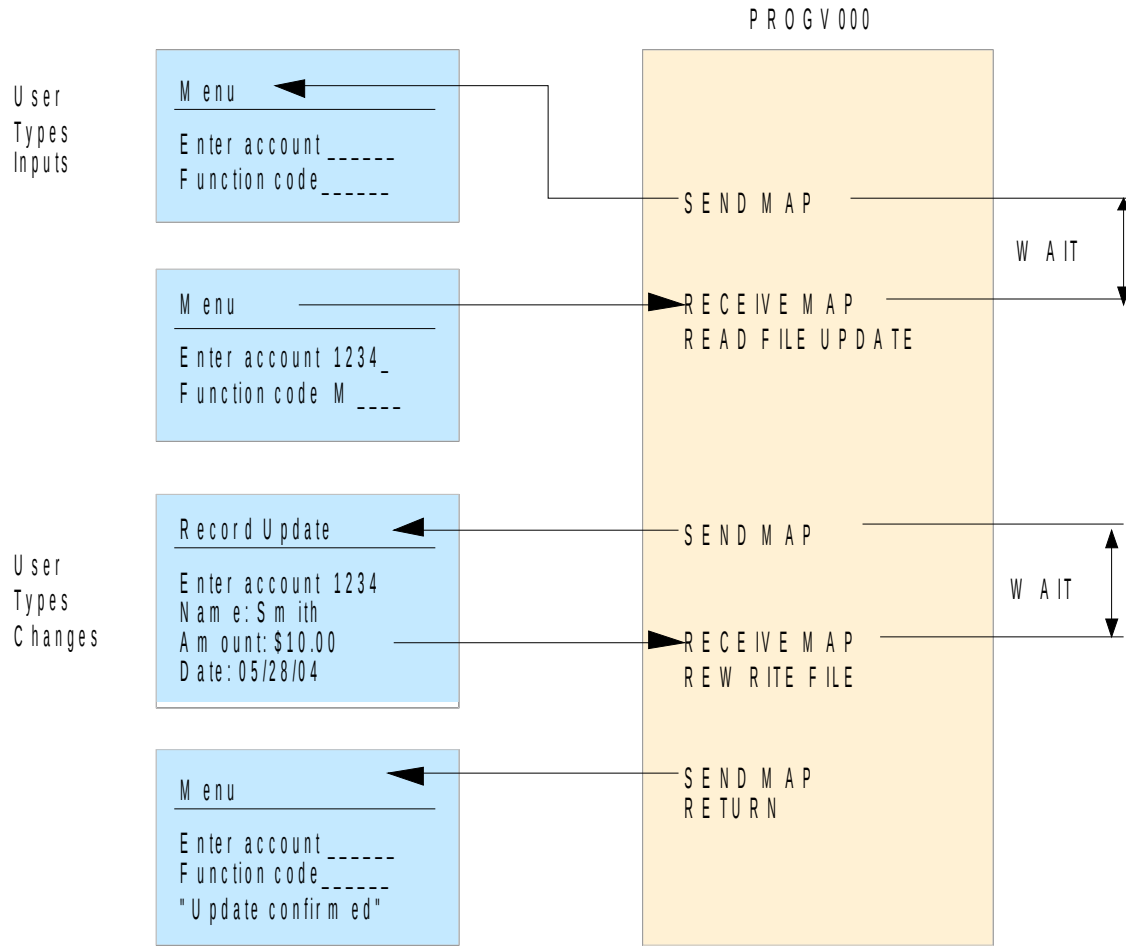
Typical CICS Business Application



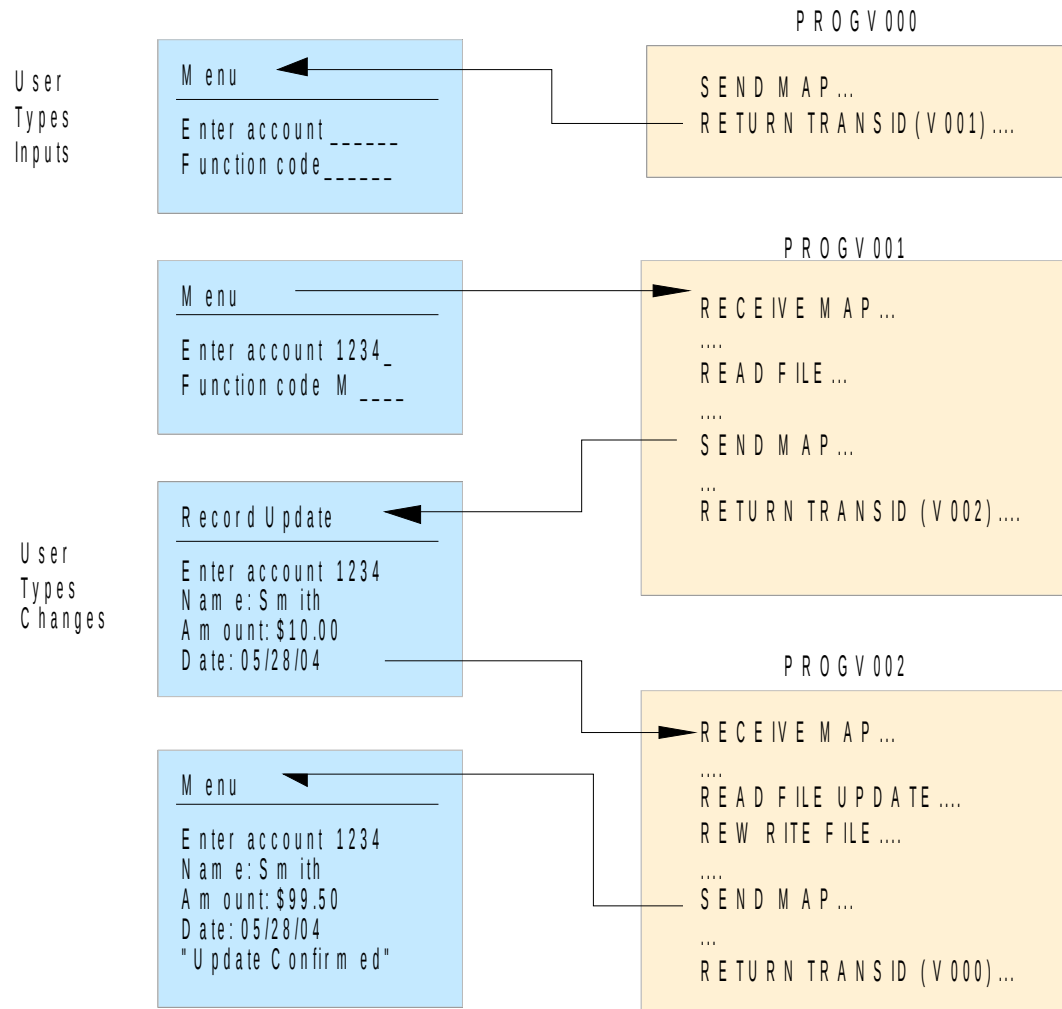
Typical CICS Business Application



CICS Programming Technique (Conversational)

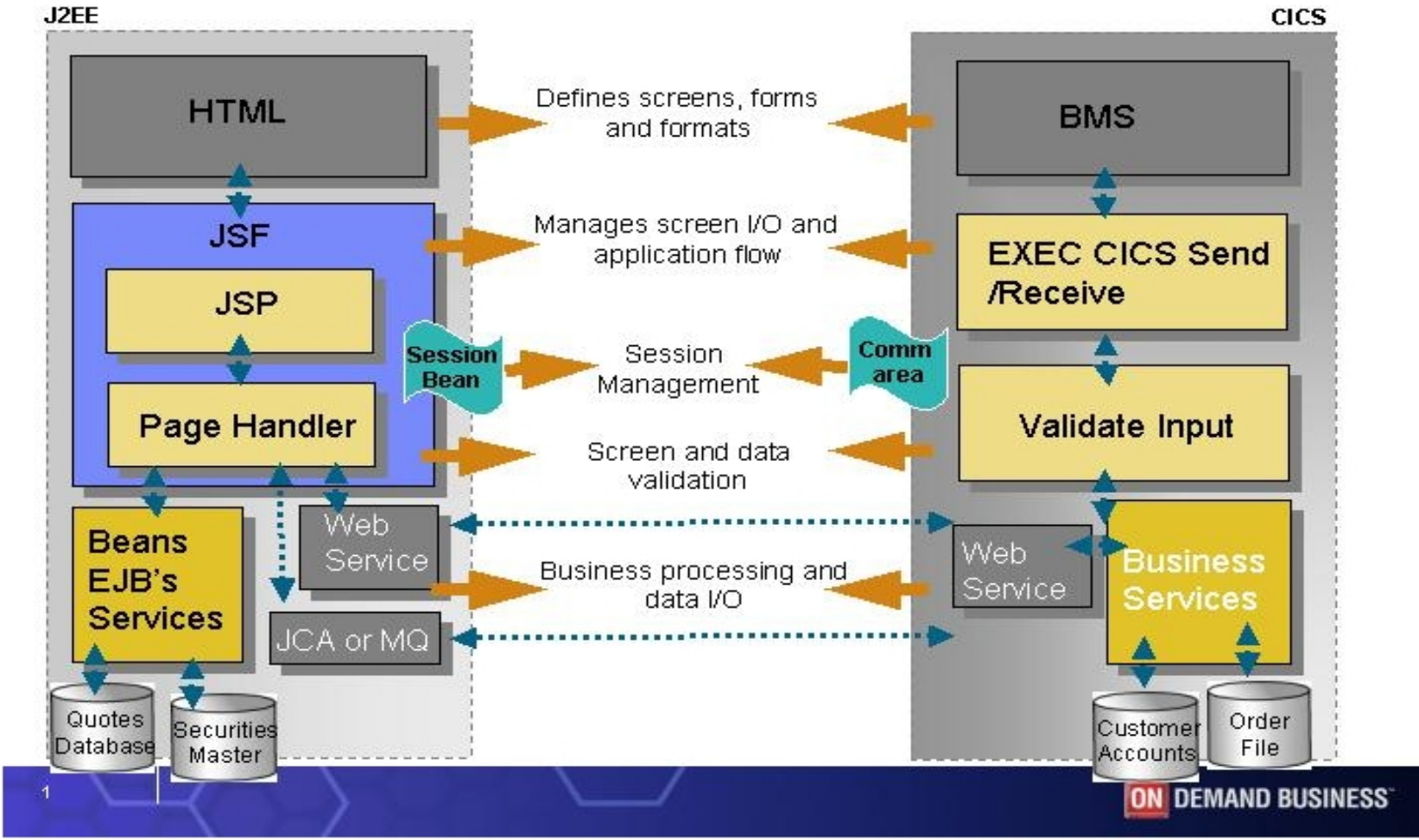


CICS Programming Technique (Pseudo-Conversational)



CICS vs. J2EE Model-View-Controller (MVC) organization

It's not that different



Start CICS Address Space

S CICSTS41,START=INITIAL

DFHPA1101	DFHSIT6\$ IS BEING LOADED.
DFHPA1103	END OF FILE ON SYSIN.
DFHSM0113I	Storage protection is not active.
DFHDM0101I	CICS is initializing.
DFHW20100I	Web2.0 domain initialization has started.
DFHWP0109I	Web domain initialization has started.
DFHSO0100I	Sockets domain initialization has started.
DFHEJ0101	Enterprise Java domain initialization has started. Java is a trademark of Sun Microsystems, Inc.
DFHHD0100I	Document domain initialization has started.
DFHXS1100I	Security initialization has started.
DFHSI1500	CICS startup is in progress for CICS Transaction Server Version 4.1.0
DFHXS1102I	Security is inactive.
DFHWP0110I	Web domain initialization has ended.
DFHSI1502I	CICS startup is Initial.
DFHW20101I	Web2.0 domain initialization has ended.
DFHFC0100I	File Control initialization has started.
DFHTD0100I	Transient Data initialization has started.
DFHFC0101I	File Control initialization has ended.
DFHWP1007I	Initializing CICS Web environment.
DFHWP1008	CICS Web environment initialization is complete.
DFHSI1517	Control is being given to CICS.
DFHEJ0102	Enterprise Java domain initialization has ended.

CICS Activity Messages Logged in MSGUSR

SDSF STATUS DISPLAY

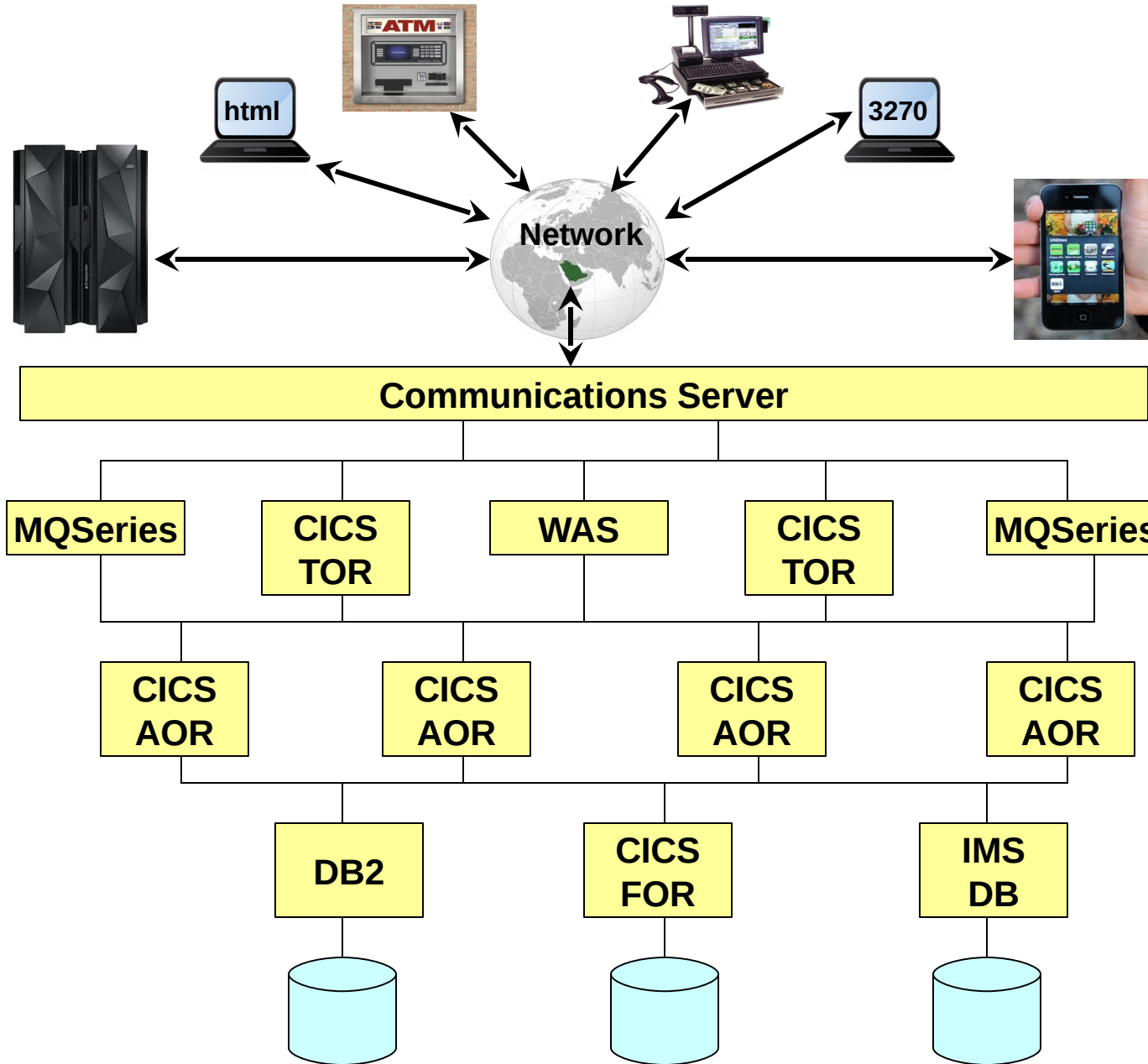
PREFIX=CICS* DEST=(ALL) OWNER=*

NP	JOBNAME	JobID	Queue
?	CICSTS41	STC00807	EXECUTION

SDSF JOB DATA SET DISPLAY - JOB CICSTS41

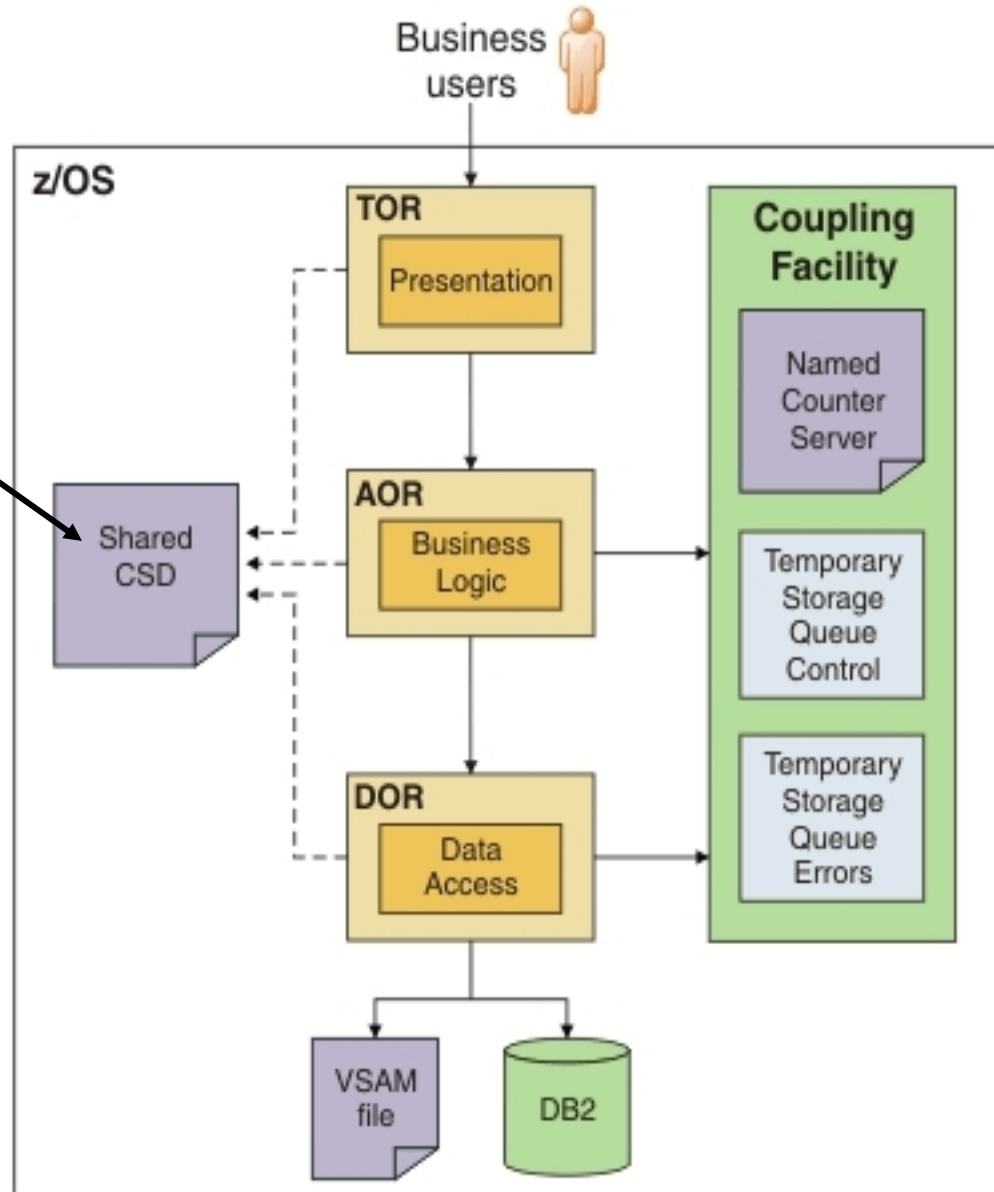
PREFIX=CICS* DEST=(ALL) OWNER=* SYSNAME=

NP	DDNAME	StepName
	JESMSGLG	JES2
	JESJCL	JES2
	JESYSMSG	JES2
	SYSPRINT	CICSTS41
	SYSPRINT	CICSTS41
	DFHCXRF	CICSTS41
S	MSGUSR	CICSTS41
	CEEMSG	CICSTS41
	CEEOUT	CICSTS41
	COUT	CICSTS41
	CRPO	CICSTS41



CICS Resource Definitions Administration

CICS
System
Definition



CICS 3270 Access

```

Class - svscmvx
File Edit View Communication Actions Window Help

=====  =====  =====  =====
=====  =====  =====  =====
===      ===      ===      =====
===      ==WELCOME==TO  THE=====
===      IBM Innovation Center - Dallas== ===
===      ===      =====  ===
=====  =====  =====  =====
=====  =====  =====  =====

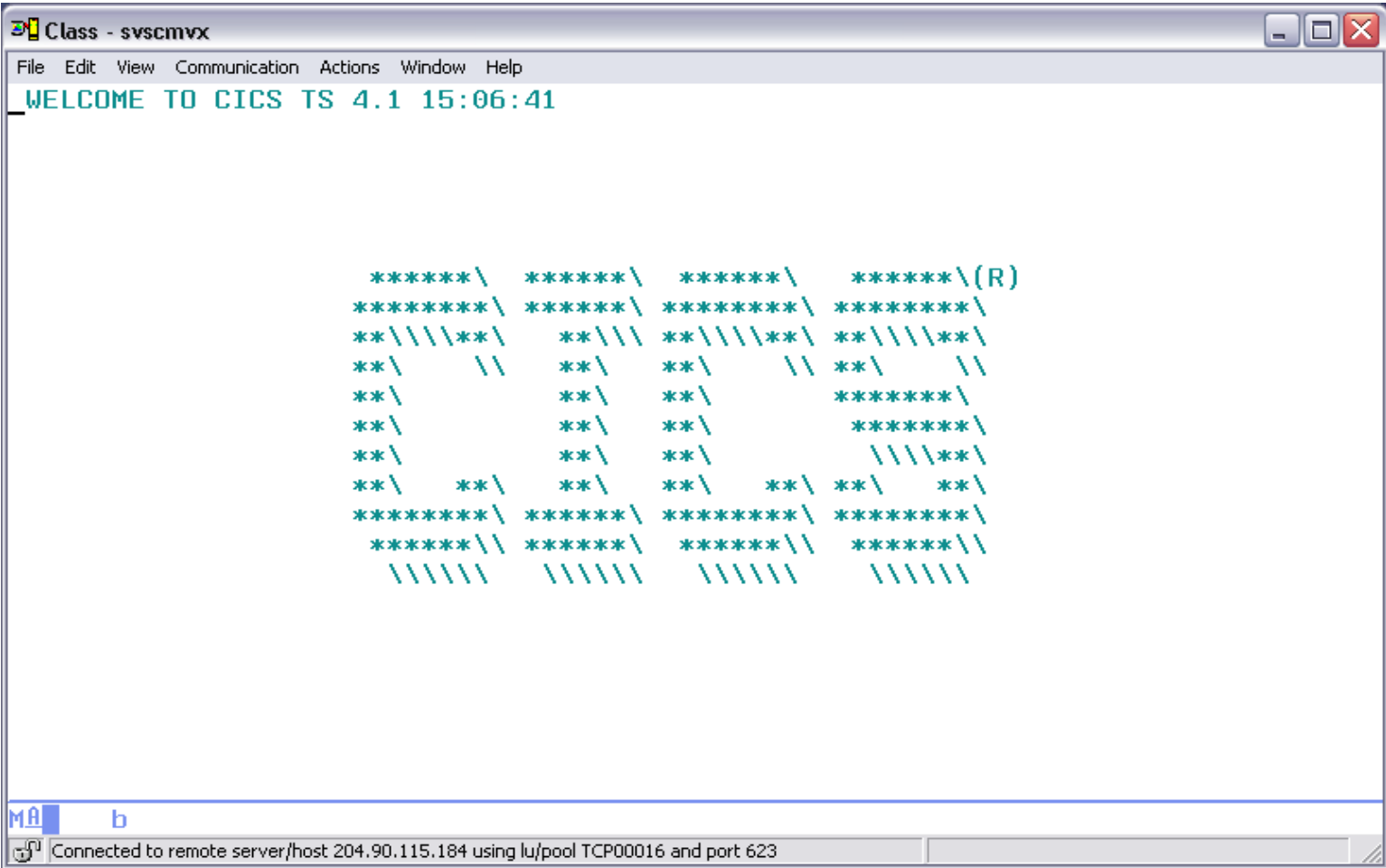
MVR11GA      ***  z/OS V1 R11  via TCPIP Telnet ***

Choose from the following commands:
(Not all applications are available in every system.)

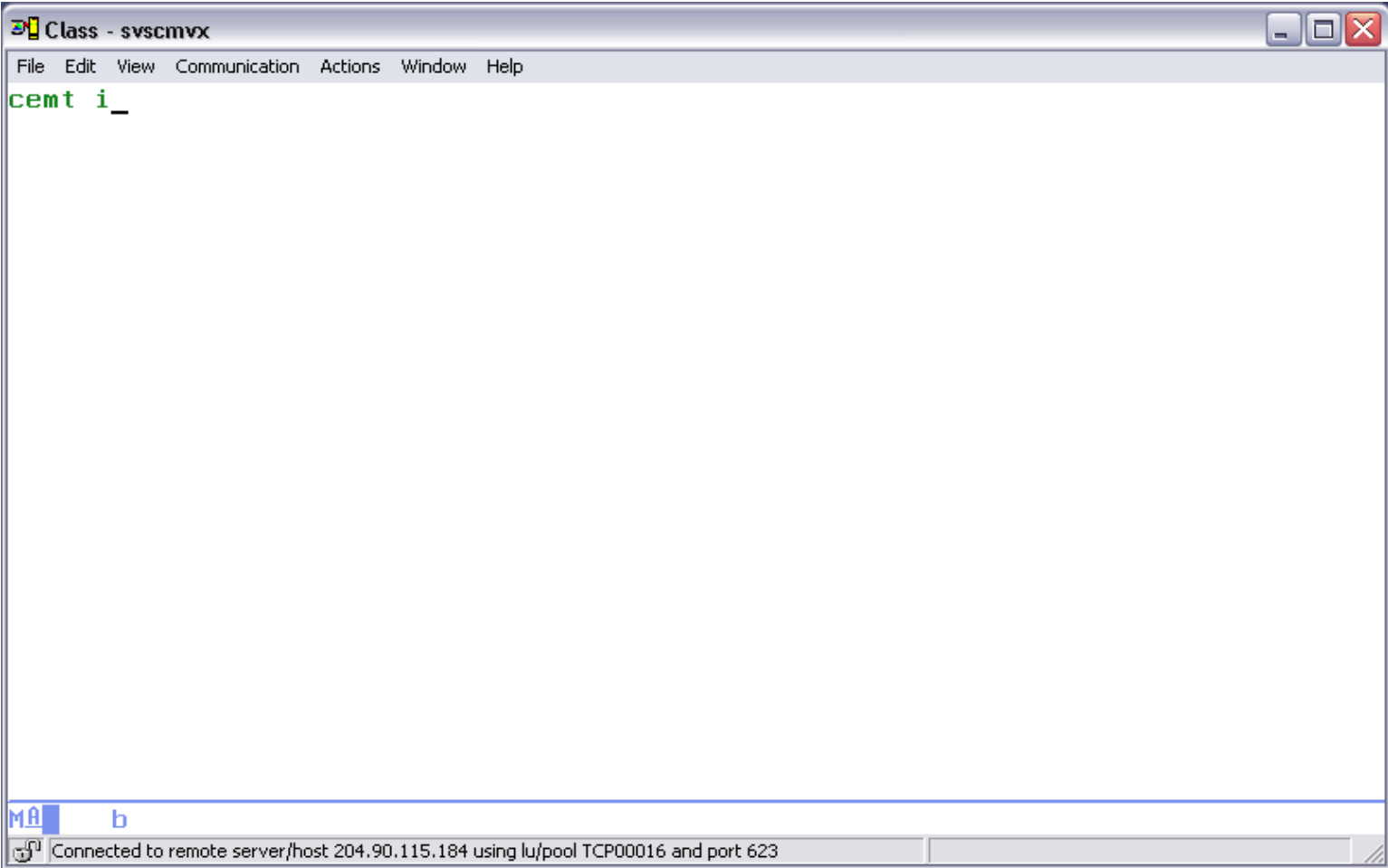
TSO      - Logon TSO (24x80)
IMS      - Logon IMS
CICS     - Logon CICS TS 4.1
CICS32  - Logon CICS TS 3.2

cics_
MA  b
Connected to remote server/host 204.90.115.184 using lu/pool TCP00016 and port 623
  
```

CICS 3270 Signon Screen – Authentication Disabled



CICS 3270 Access – CICS Supplied Operator Transaction



CICS 3270 Access – CICS Supplied Operator Transaction

```

Class - svscmvx
File Edit View Communication Actions Window Help
I
STATUS:  ENTER ONE OF THE FOLLOWING OR HIT ENTER FOR DEFAULT

ATomservice  DOctemplate  INttrace     PROCesstype  TSMoDel
AUTInstmodel DSAs          IPconn       PROFile      TSPool
AUTOinstall  DSName       IRC          PROGram      TSQueue
AUXtrace     DUmpds       JModel      REquestmodel UOW
BEan         ENQ          JOurnalname RRms         UOWdsnfail
BRfacility   ENQModel    JVM         STATistics   UOWLink
BUnDle      EVENTBinding JVMPool     STreamname  URimap
CFdtpool    EVENTProcess JVMServer   SYDumpcode  Vtam
CLasscache  EXci        LIBrary     SYStem       WEB
CONnecTion FEConnection LINE        TAsk        WEBSERVICE
CORbaserver FENode      MODename    TCLass       WOrkrequest
DB2Conn     FEPOol      MONitor     TCPIP        Xmltransform
DB2Entry    FEPropset   MQConn      TCPIPService
DB2Tran     FETarget    MQIni       TDqueue
DEletshipped File         Netname     TERminal
DISpatcher  Gtftrace    PARTner     TRAnSACTION
DJar        Host        PIPEline    TRDumPCODE

                                           SYSID=S660 APPLID=CICSTS41

PF 1 HELP      3 END      5 VAR      9 MSG
MA b
Connected to remote server/host 204.90.115.184 using lu/pool TCP00016 and port 623
  
```

CICS Supplied Transactions

CEMT (*Operations*)

CEDF (*Program Debug*)

CEDA (*Administration*)

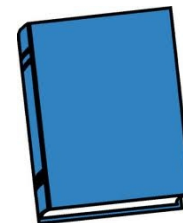
CEDB

CEDC

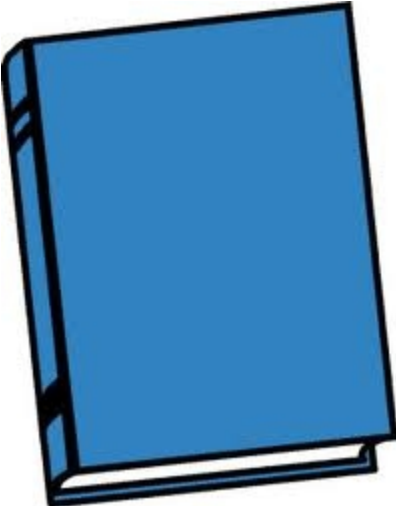
Many supplied CICS transactions exist for administration and operation

All supplied CICS transactions begin with C

Manual dedicated to CICS Supplied Transactions



CICS Professional Manuals and Documentation



Unit summary

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