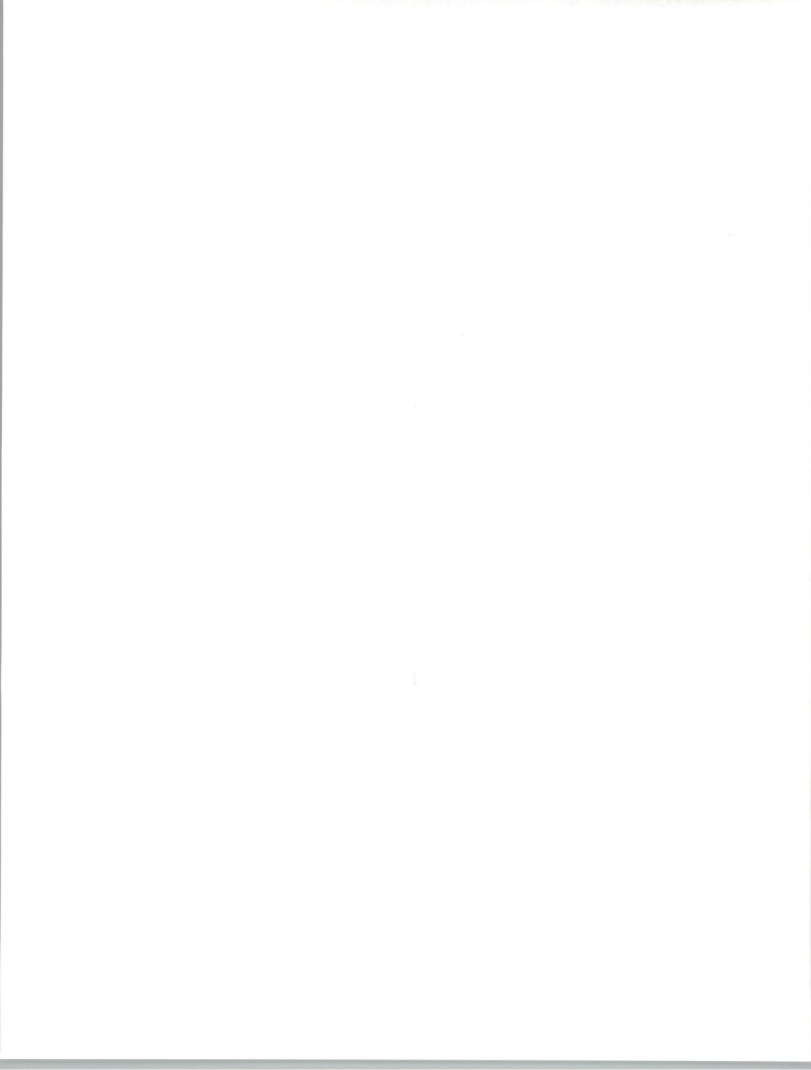


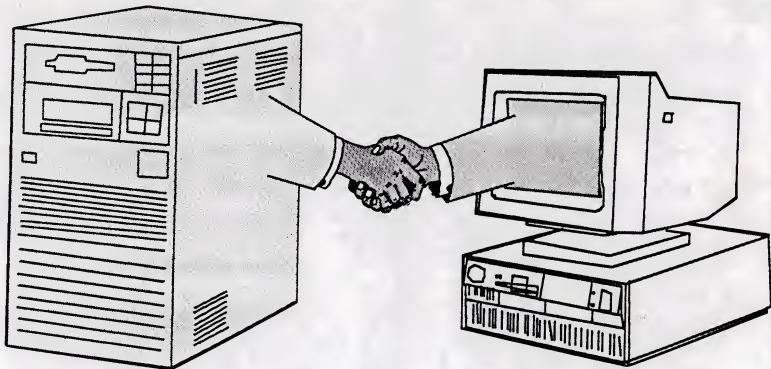
# **The AS/400 as a Client/Server Machine**

---

**Richard Kiscaden**  
Client/Server Solution Manager  
Application Business Systems  
IBM



## CLIENT/SERVER COMPUTING

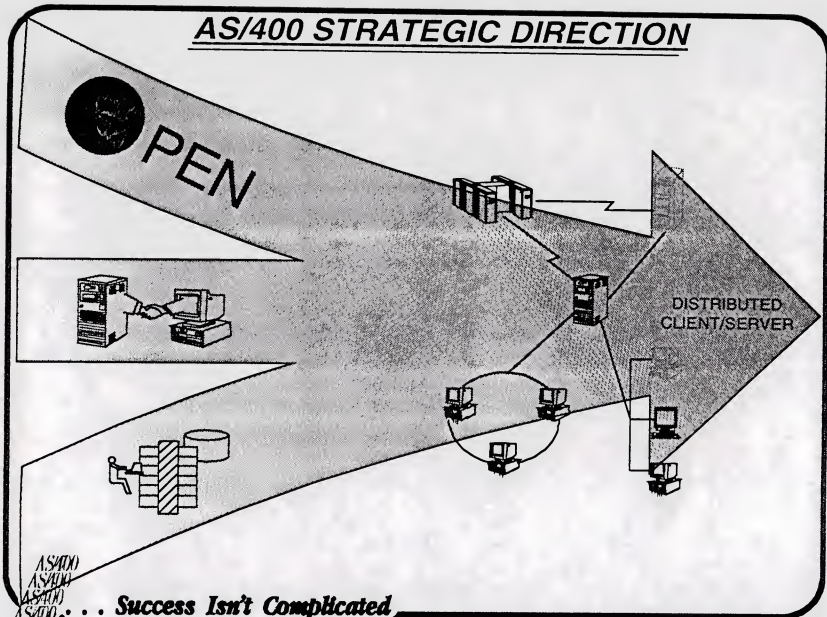


AS/400  
AS/400  
AS/400  
AS/400  
RCK216.CH3

WITH THE AS/400®  
... *Success Isn't Complicated*

1000

# AS/400 STRATEGIC DIRECTION



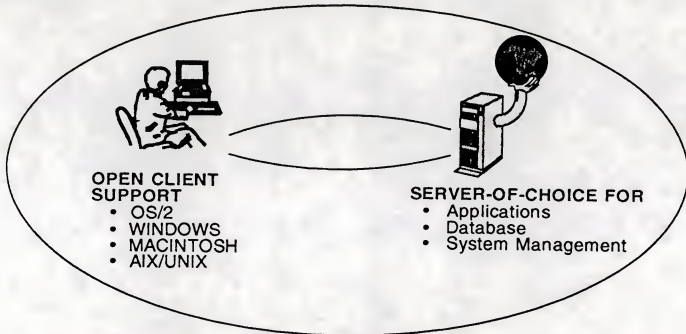
AS/400  
AS/400  
AS/400  
AS/400  
RCK157.CH3

*... Success Isn't Complicated*





## DISTRIBUTED CLIENT/SERVER STRATEGY



### OPEN CLIENT SUPPORT

- OS/2
- WINDOWS
- MACINTOSH
- AIX/UNIX

### SERVER-OF-CHOICE FOR

- Applications
- Database
- System Management



### INTEGRATED SOLUTIONS

- Ease of Use
- Hardware, Software Packaging
- Standardized Offerings
- Business Solutions

AS/400  
AS/400  
AS/400  
AS/400

... **Success Isn't Complicated**

RCK204.CH3

08/93







# CLIENT/SERVER USAGE IS EVOLVING...

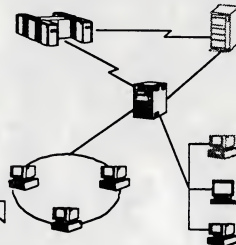
## SYSTEM BASE



### NEEDS

- o CO-OP PC APPLICATIONS
- o PWS TOOLS
- o CONNECT ISOLATED LANS
- o DISTRIBUTE DATA TO END USER

## Distributed Client/Server



### NEEDS

- o ACCESS TO ENTERPRISE DB
- o CONNECTION TO OTHER LANS
- o MIS SUPPORT SERVICES
- o RANGE AND GROWTH

## PC BASE



### NEEDS

- o SHARED RESOURCES
- o MORE USERS
- o GROWTH

AS/400  
AS/390  
AS/400  
AS/400  
AS/400

... *Success Isn't Complicated*





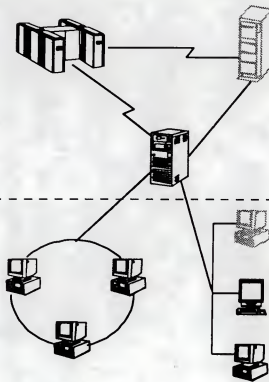
## A DIVERSE SET OF NEEDS

### SYSTEM INTEGRITY

- RELIABLE
- WELL MANAGED
- CENTRALLY ADMINISTERED
- SECURE ACCESS
- DATA INTEGRITY
- STRICT PROCEDURES
- BACKUP/ARCHIVE
- SELECTED APPLICATIONS
- DATABASE ADMINISTRATION

### USER AUTONOMY

- FLEXIBILITY
- INNOVATION
- "TRY IT"
- CUSTOMIZABLE
- RESPONSIVE
- EASY ACCESS
- APPLICATION CHOICES
- PERSONAL DATA



AS/400  
AS/400  
AS/400  
AS/400

... **Success Isn't Complicated**

1870

1871

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1899

1900



# IMPLEMENTATION FOCUS AREAS

## OPEN CLIENT



DESKTOP



MOBILE



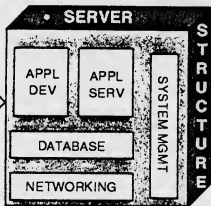
KEYLESS



HOME

• CLIENT SERVICE STANDARDS

## SERVER-OF-CHOICE



EDI



EFT



DATABASES



FILES



PRINTERS

• DCE SERVICE STANDARDS



REMOTE WORKGROUPS



APPLICATIONS

## INTEGRATED PACKAGING

AS/400  
AS/400  
AS/400  
AS/400

RCK275.CH3

*... Success Isn't Complicated*





## OPEN CLIENT DIRECTIONS

**OPEN CLIENT**

SERVER-OF-CHOICE

DISTRIBUTED RESOURCES



DESKTOP



MOBILE



KEYLESS



HOME

• CLIENT  
SERVICE  
STANDARDS



### KEY FEATURES

- DEVICE OF CHOICE  
DESKTOP, NOTEBOOKS, PEN, ...
- OPERATING SYSTEM OF CHOICE  
OS/2, WINDOWS, MACINTOSH,  
AIX/UNIX
- CONNECTION OF CHOICE  
LAN, WAN, DIAL,  
PAGERS, RADIO, CELLULAR
- CLIENT-BASED INTERFACE  
STANDARDS

INTEGRATED PACKAGING

AS/400  
AS/400  
AS/400  
AS/400  
RCK330.CH3

**Success Isn't Complicated**

08/93







# OPEN CLIENT INTERFACE STANDARDS

CLIENT-OF-CHOICE

VIA

SERVICE STANDARDS

**IBM**

OS/2  
AIX  
MOBILE



DATABASE

- ▶ ODBC
- ▶ IDAPI
- ▶ DAL



FILES

- DFS
- ▶ NFS
- ▶ FOLDERS



**Apple**

MACINTOSH  
MOBILE



MESSAGING

- VIM
- MAPI
- ▶ X.400



TRANSPORT

- ▶ APPC
- ▶ TCP/IP
- NETBIOS
- IPX

*Microsoft*<sup>®</sup>

WINDOWS  
MOBILE



APPLICATIONS

- RPC
- CORBA
- ▶ CPI-C
- ▶ MQI



ADMINISTRATION

- CID
- DMI
- LSAPI

**TALIGENT**

PINK

**UNIX**

▶ AVAILABLE OR ANNOUNCED

AS/400  
AS/400  
AS/400  
AS/400

RCK224.CH3

... *Success Isn't Complicated*

08/93





# OPEN CLIENT ANNOUNCEMENTS

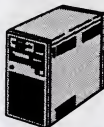


- OS/2 2.1
- CM/400 (05/93)



## MACINTOSH

- LOCALTALK IOA
- APPLTALK ON TR, ETH



## DOS/WINDOWS



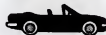
- MS-DOS 6.0
- IBM DOS 6.1



## AIX/UNIX

- WORKSTATION CONNECTION PROGRAM/400
  - RS/6000
  - HP, SUN

## MOBILE



- MOBILE NETWORK ACCESS (05/93)

## PORTABLE



- IBM
- TOSHIBA
- COMPAQ

AS/400  
AS/400  
AS/400  
AS/400  
RCK369.CH3

... *Success Isn't Complicated*

IBM CONFIDENTIAL UNTIL ANNOUNCED

08/93



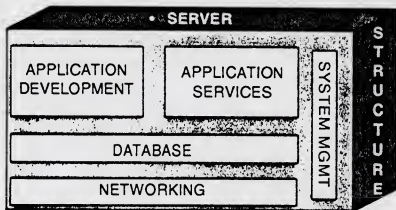


## AS/400--SERVER OF CHOICE

OPEN CLIENT

**SERVER-OF-CHOICE**

DISTRIBUTED RESOURCES



CLIENT/SERVER BUILDING BLOCKS



### KEY FEATURES

- ADVANCED SOLUTIONS
  - ▶ LINE OF BUSINESS
  - ▶ WORKGROUP
- INTEGRATED PERSONAL PRODUCTIVITY TOOLS
- PRODUCTIVE APPLICATION DEVELOPMENT ENVIRONMENT
- EASE OF USE
- INVESTMENT PROTECTION

AS/400  
AS/400  
AS/400  
AS/400

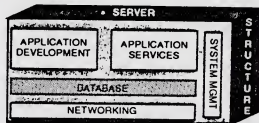
*... Success Isn't Complicated*





## DATA BASE DIRECTIONS

- OPEN DATABASE INTERFACES
- ADVANCED DB FUNCTIONALITY
- HIGH PERFORMANCE
- LOCATION TRANSPARENCY
- OBJECT ORIENTED EXTENSIONS
- INTEGRATED INFORMATION SYSTEM



### KEY FEATURES

- STANDARD APIs
  - ▶ ODBC, IDAPI, DAL
  - ▶ DRDA
- ADVANCED FUNCTION
  - ▶ STORED PROCEDURES
  - ▶ TRIGGERS
  - ▶ REFERENTIAL INTEGRITY
- DISTRIBUTED DATA ACCESS
  - ▶ DRDA
  - ▶ TWO-PHASE COMMIT
  - ▶ DIST UNIT OF WORK
  - ▶ DCE DIRECTORY
- HIGH PERFORMANCE
  - ▶ STATIC SQL
  - ▶ DB OPTIMIZATION
  - ▶ BLOCK FETCH
- OEM INTERFACES
  - ▶ ORACLE
  - ▶ PROGRESS
  - ▶ TECHGNOSIS
  - 
  - 
  -

AS/400  
AS/400  
AS/400  
AS/400

... *Success Isn't Complicated*

RCK318.CH3

07/93







# DATABASE EVOLUTION

## OPEN IT UP

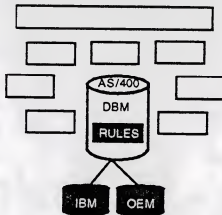
- EMPOWERING THE USER THROUGH GUI TOOLS
- OPENING ACCESS THROUGH OEM APIs



- REMOTE SQL
- DRDA RUOW
- GUI TOOLS
- OEM DB APIs
- PCS ODBC/IDAPI
- PERFORMANCE ENH
  - STATIC SQL
  - PATH LENGTHS
  - BLOCK FETCH
  - COMPILER ALGORITHMS

## ENFORCE BUSINESS RULES

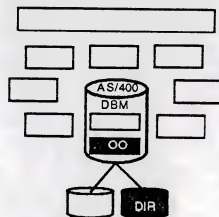
- ENFORCE BUSINESS RULES THROUGH ACTIVE DATABASE
- DISTRIBUTED DATA ENHANCEMENTS



- DRDA STAGE 2
  - DUOW
  - 2-PHASE COMMIT
- ACTIVE DATABASE
  - REF INTEGRITY
  - STORED PROCEDURES
  - TRIGGERS
- PERFORMANCE ENH

## ENCAPSULATE THROUGH OO

- OBJECT-ORIENTED EXTENSIONS
- EXPLOIT DCE FOR DISTRIBUTED DATA



- OBJECT-ORIENTED
  - BLOBs
  - USER DEFINED CAPABILITIES
  - ASSERTIONS
- EXPLOIT DCE
  - DIRECTORY
  - SECURITY
  - TIME
- SQL=NATIVE PERF

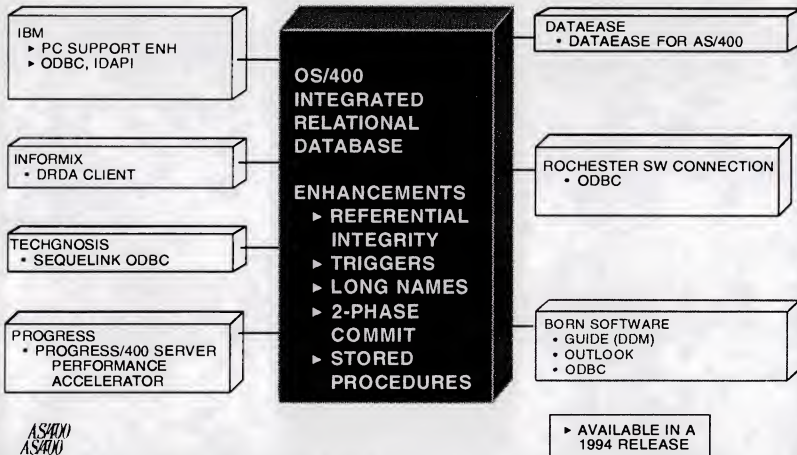
AS/400  
AS/400  
AS/400  
AS/400  
RCK225.CH3

... *Success Isn't Complicated.*





## DATABASE ANNOUNCEMENTS



AS/400  
AS/400  
AS/400  
AS/400  
RCK357.CH3

... *Success Isn't Complicated*

IBM CONFIDENTIAL UNTIL ANNOUNCED

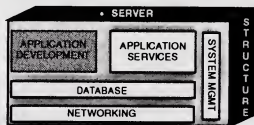
08/93





## C/S APPLICATION DEVELOPMENT DIRECTIONS

- PROGRAMMER PRODUCTIVITY
- HIGH CODE QUALITY
- RAPID APPLICATION DEVELOPMENT
- DEPLOYMENT FLEXIBILITY
- DISTRIBUTED APPLICATIONS



### KEY FEATURES

- ADVANCED TOOLS
  - ▶ VISUAL DEVELOPMENT
  - ▶ CLIENT/SERVER
  - ▶ TEAM PROGRAMING
- OBJECT ORIENTED
  - ▶ OO TOOLS (SMALLTALK, C++)
  - ▶ CLASS LIBRARIES
  - ▶ FRAMEWORKS
- INVESTMENT PROTECTION
  - ▶ 3 GLs (RPG, COBOL)
  - ▶ ADVANCED EMULATORS
  - ▶ DATABASE ACCESS

AS/400  
AS/400  
AS/400  
AS/400

RCK370.CH3

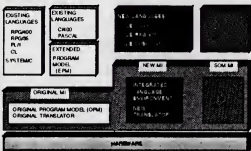
... *Success Isn't Complicated*





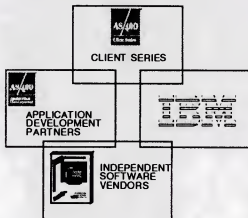
# APPLICATION DEVELOPMENT STRATEGY

## LANGUAGE OPTIMIZED PROGRAM MODELS



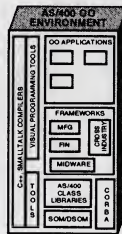
- RUNTIME PERFORMANCE
- DEPLOYMENT FLEXIBILITY
- INVESTMENT PROTECTION

## ADVANCED DEVELOPMENT TOOLS



- DEVELOPMENT PRODUCTIVITY
- CODE QUALITY
- DISTRIBUTED APPLICATIONS
- TOOLS-OF-CHOICE
- IMPROVED TIME TO MARKET

## OBJECT-ORIENTED PROGRAM ENVIRONMENT



- DEVELOPMENT PRODUCTIVITY
- CODE QUALITY
- MINIMUM MAINTENANCE COSTS
- IMPROVED TIME TO MARKET
- TECHNOLOGY INDEPENDENCE

AS/400  
AS/400  
AS/400  
AS/400

RCK371.CH3

... *Success Isn't Complicated.*







## EXTENDING THE LANGUAGE ENVIRONMENT

### EXISTING LANGUAGES:

RPG/400  
RPG/36  
PL/1  
CL  
SYSTEM/C

### EXISTING LANGUAGES:

C/400  
PASCAL

### EXTENDED PROGRAM MODEL (EPM)

### NEW LANGUAGES

ILE C/400  
ILE RPG/400  
ILE COBOL/400

### ORIGINAL MI

ORIGINAL PROGRAM MODEL (OPM)  
ORIGINAL TRANSLATOR

### NEW MI

INTEGRATED LANGUAGE ENVIRONMENT

NEW TRANSLATOR

### SOM MI

HARDWARE

AS/400  
AS/400  
AS/400  
AS/400

... *Success Isn't Complicated.*

RCK254.CH3

06/93



10



## PROVIDE LEADING-EDGE TOOLS



### CLIENT SERIES

- TOOL COEXISTENCE VALIDATION
- DEVELOPMENT RELATIONSHIP MGR
- CSP & OEM DISTRIBUTION MKTG
- IBM MERCHANDISING



### APPLICATION DEVELOPMENT PARTNER

- 3<sup>RD</sup> PARTY QUALIFICATION
- REFERENCE ACCOUNT ANALYSIS
- ASSOCIATION/400 MEMBERSHIP
- ADP EMBLEM MARKETING



### IBM LOGO

- INTERNALLY DEVELOPED OR IBM LOGO
- FULL INTEGRATION TESTING
- CROSS-IBM CONSISTENCY
- IBM MARKETING AND MERCHANDISING



### INDEPENDENT SOFTWARE VENDORS

- PLAN DISCLOSURES
- TECHNICAL ADVICE, CONSULTATION
- CATALOG MERCHANDISING FOR CLIENT/SERVER VENDORS

AS/400  
AS/400  
AS/400  
AS/400

**... Success Isn't Complicated.**

RCK373.CH3

08/93

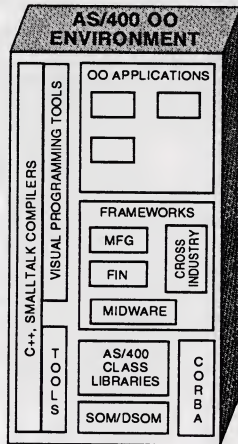




## THE OO APPLICATION SERVER



- **HIGH APPLICATION DEVELOPMENT PRODUCTIVITY**
  - CODE REUSABILITY
  - SIMPLIFIED APPLICATION DEVELOPMENT
  - RAPID APPLICATION DEVELOPMENT CYCLE
- **IMPROVED APPLICATION QUALITY**
  - CODE REUSE
- **MINIMIZED APPLICATION MAINTENANCE**
  - 50% REDUCTION IN MAINTENANCE TIME (FORRESTER STUDY)
- **IMPROVED "TIME TO MARKET"**
  - RAPID APPLICATION DEVELOPMENT
- **TECHNOLOGY INDEPENDENCE**
  - DATA AND PROGRAM ENCAPSULATION
  - NEW TECHNOLOGIES INTRODUCED WITHOUT EFFECTING EXISTING APPLICATIONS



AS/400  
AS/400  
AS/400  
AS/400

... *Success Isn't Complicated.*



## C/S APPLICATION DEVELOPMENT ANNOUNCEMENTS

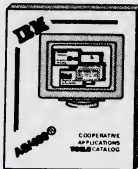


### NEW

- OMNIS 7

### ENHANCED

- SQLWindows
- PROGRESS
- ENVY/400



### ADDITIONAL ENTRIES

- Born ODBC
- Both™
- DATAEASE for AS/400 (09/93 ANN)
- DataPump/AS
- EISToolKit™
- GUIDE for AS/400
- OPNAccess/DAL
- ShowCase ODBC

AS/400  
AS/400  
AS/400  
AS/400  
RCK355.CH3

... **Success Isn't Complicated**

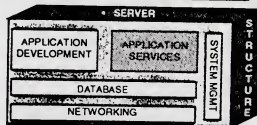






## APPLICATION SERVICES DIRECTIONS

- WORKGROUP ENVIRONMENT
  - OPEN CLIENT SUPPORT
  - DIRECTORY SERVICES
  - MAIL/MESSAGE ENABLING
- DISTRIBUTED ENVIRONMENT
- ADVANCED TECHNOLOGY INTEGRATION
  - CLIENT/SERVER, OBJECT-ORIENTED, MULTIMEDIA



### KEY FEATURES

- WORKGROUP ENABLING
  - ▶ MAIL, CONFERENCING
  - ▶ MULTIMEDIA SERVICES
  - ▶ DIRECTORY SERVICES
- DISTRIBUTED ENVIRONMENT
  - ▶ APPLICATIONS (CPI-C, RPC, MQI)
  - ▶ DATA (DRDA)
  - ▶ TRANSACTION PROCESSING (CICS)
  - ▶ OBJECT-ORIENTED (CORBA)
- STANDARD APIs
  - ▶ VIM, MQI, X.400, CMC, MAPI
- OBJECT-ORIENTED
  - ▶ CLASS LIBRARIES
  - ▶ APPLICATION FRAMEWORKS
  - ▶ OBJECT MODEL (SOM)
- MULTIMEDIA
  - ▶ APPLICATION APIs
  - ▶ CONFERENCING

AS/400  
AS/400  
AS/400  
AS/400

... *Success Isn't Complicated*

RCK320.CH3



## WORKGROUP APPLICATIONS



IMPROVED PRODUCTIVITY FOR EVERY USER AND BETWEEN USERS

AS/400  
AS/390  
AS/400  
AS/400  
RCK237.CH3

... *Success Isn't Complicated*





## APPLICATION SERVICES ANNOUNCEMENTS



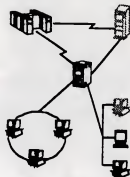
### WORKGROUP

- GROUPSHARE/400
- AUTOMATED WORK DISTRIBUTOR



### CLIENT/SERVER

- OEM APIs (IN TOOLS CATALOG)
- ▶ AS/400 SERVER API FRAMEWORKS
- ▶ PC SUPPORT RESTRUCTURE
  - PROTOCOL INDEPENDENCE
  - RELEASE INDEPENDENCE
  - AUTOMATED INSTALL, CONFIG



### DISTRIBUTED

- ▶ MESSAGE QUEUE MANAGER/400
- MOBILE NETWORK ACCESS (MAY ANN)
- ▶ CPI-C ON TCP/IP
- ▶ DRDA STAGE 2
  - DISTRIBUTED UNIT OF WORK
  - TWO-PHASE COMMIT
- ▶ SOCKETS ON APPC, TCP/IP

▶ AVAILABLE IN A  
1994 RELEASE

AS/400  
AS/400  
AS/400  
AS/400  
AS/400  
RCK354.CH3

*... Success Isn't Complicated*

IBM CONFIDENTIAL UNTIL ANNOUNCED

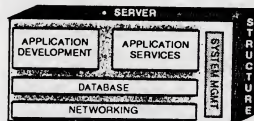
08/93





## SYSTEM MANAGEMENT DIRECTIONS

- SOFTWARE DISTRIBUTION
- GRAPHICAL OPERATIONS
- BACKUP AND RECOVERY TOOLS
- DATA DISTRIBUTION AND MANAGEMENT
- LICENSE MANAGEMENT
- SECURITY



### KEY FEATURES

- EXTEND SYSTEMVIEW TO CLIENT
  - ▶ LAN & PC CONFIGURATIONS
  - ▶ PC FILE CHANGES
  - ▶ SERVER PERFORMANCE TUNING
  - ▶ PC PROBLEM ALERTS
  - ▶ AUTOMATED BACKUP/RECOVERY
- USE CLIENT/SERVER ADMINISTRATION TOOLS
  - ▶ GRAPHICAL INTERFACES
  - ▶ HELP DESK
  - ▶ CENTRAL ADMINISTRATION
- MAINTAIN TRADITIONAL:
  - ▶ RELIABILITY
  - ▶ AVAILABILITY
  - ▶ SERVICEABILITY
  - ▶ SECURITY

AS/400  
AS/400  
AS/400  
AS/400

**... Success Isn't Complicated**

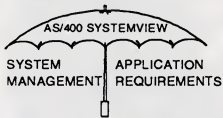


25





## EXTENDING SYSTEM MANAGEMENT TO DESKTOP



OPEN STANDARDS  
C/S TECHNOLOGY  
AS/400 SYSTEMVIEW



### CONFIGURATION

- PC SOFTWARE CONFIG, INSTALL, DISTR (CID)
- STANDARDIZE DESKTOP MGMT I/F (DMI)
- COLLECT, DISPLAY DESKTOP INVENTORY
- NETWORK CONFIGURATION DISPLAY (SNMP)

### CHANGE

- PC FILE UPDATE
- AUTOMATED FILE BACKUP
- CONTROL PC FILE LEVELS
- CENTRAL SITE ADMINISTRATION

### PROBLEM

- COLLECT PC HW, SW ALERTS
- LOG/FORWARD PC & SERVER ALERTS
- REAL TIME PROBLEM ANALYSIS
- CENTRAL HELP DESK
- ELECTRONIC CUSTOMER SUPPORT (ECS)

### PERFORMANCE

- PROFILE SERVER USAGE
- SELECT SERVER SIZE
- LOCATE BOTTLENECKS
- RECOMMEND SOLUTIONS

### OPERATIONS

- LICENSE MANAGEMENT
- USER-BASED PRICING
- BACKUP/RECOVERY SERVICES TO PCs & SERVERS

AS/400  
AS/400  
AS/400  
AS/400  
RCK322.CH3

*... Success Isn't Complicated*





## SYSTEM MANAGEMENT ANNOUNCEMENTS



	CFG	CHG	PROB	PERF	OPER
SYSTEM MGR/400	✓	✓	✓		
SYSTEM ADMIN TOOLS/400	✓	✓	✓		
PERF INVESTIGATOR/400				✓	✓
PERFORMANCE TOOLS/400				✓	
BEST/1				✓	
DATAHUB/400	✓				✓
PC SUPPORT/400	✓				
BRM SERVICES/400					✓
MANAGEWARE/400		✓			✓
LANRES/400					✓
ADSM/400		✓			

- MANAGEWARE/400
  - PC FILE DISTRIBUTION
  - PC SW INVENTORY
  - LICENSE USAGE/TRACKING
- LANRES/400
  - CENTRAL LAN ADMINISTRATION
  - PRINT SERVING
  - DATA DISTRIBUTION
  - DISK SERVING
- ADSM/400 SOD
  - AUTOMATED PC FILE BACKUP

AS/400  
AS/400  
AS/400  
AS/400

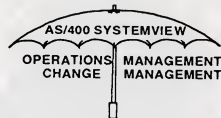
... **Success Isn't Complicated**





## MANAGWARE/400

- MAINTAINS INVENTORY OF SOFTWARE DISTRIBUTED TO INDIVIDUAL PCs
- EASY TO USE GRAPHICAL FRONT END
  - DRAG AND DROP INTERFACE
  - OS/2 AND WINDOWS
- TRACKS SOFTWARE LICENSE USAGE
  - HISTORY OF WHEN/WHERE EACH PACKAGE HAS BEEN DISTRIBUTED
  - VIEW LICENSE INFORMATION AND ALLOCATION
- DEFINE AND MANAGE GROUPS OF PCs
  - GROUP PCs TOGETHER
  - CREATE, CHANGE, DISPLAY, DELETE GROUPS
- SUPPORT OS/2, DOS, AND WINDOWS CLIENTS



AS/400  
AS/400  
AS/400  
AS/400

**... Success Isn't Complicated**



# LAN RESOURCE EXTENSION AND SERVICES/400



AS/400 SYSTEM

WIDE-AREA NETWORK



## PRINT SERVING:

- NETWORK TO AS/400 SYSTEM
- AS/400 SYSTEM TO NETWORK



## CENTRAL ADMINISTRATION:

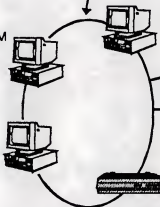
- ISSUE NETWORK COMMANDS FROM AS/400 TO MULTIPLE DISTRIBUTED NETWORK SERVER

## CENTRAL DATA DISTRIBUTION:

- DISTRIBUTE/RETRIEVE DATA
- CREATE/DELETE DIRECTORIES AND FILES
- LIST FILE AND DIRECTORIES ON THE SERVER

## DISK SERVING:

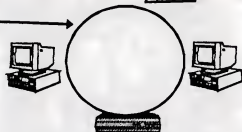
- INCREASED DISK STORAGE CAPACITY
- CENTRAL AUTOMATIC BACKUP/RESTORE FROM NETWORK TO AS/400 SYSTEM



NETWORK SERVER



NETWORK SERVER



AS/400  
AS/400  
AS/400  
AS/400

RCK334.CH3

... *Success Isn't Complicated*

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08/93

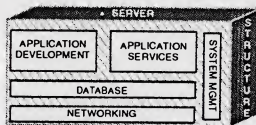






## SERVER STRUCTURE DIRECTIONS

- HIGH PERFORMANCE
- HARDWARE TECHNOLOGY INDEPENDENCE
- MULTIPLE OPERATING ENVIRONMENTS



### KEY FEATURES

- REDUCED CODE PATH LENGTHS
- ADJUSTED SYSTEM BALANCE
- LAN ONLY ORIENTATION
- SERVER-ORIENTED PROGRAM MODELS
- MICROKERNEL ON RISC HARDWARE

AS/400  
AS/400  
AS/400  
AS/400

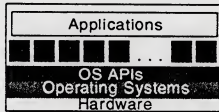
... *Success Isn't Complicated*



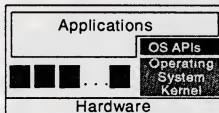


## SYSTEM STRUCTURE EVOLUTION

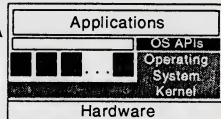
TRADITIONAL  
DISTRIBUTED SYSTEM  
STRUCTURE



TRADITIONAL  
CLIENT/SERVER  
SYSTEM  
STRUCTURE



NEW SYSTEM STRUCTURE



AS/400  
AS/400  
AS/400  
AS/400

... *Success Isn't Complicated.*

RCK239.CH3

06/93





## PERFORMANCE STRUCTURE ANNOUNCEMENTS

### 1993 DELIVERY

- PROGRESS ACCELERATOR
- SERVER MODELS



### 1994 DELIVERY

- REMOTE SQL ENHANCEMENTS
- APPC
- STORED PROCEDURES
- TCP/IP
- FILE SERVER ACCELERATOR

AS/400  
AS/400  
AS/400  
AS/400

RCK352.CH3

... ***Success Isn't Complicated*** —

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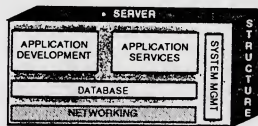
08/93





## NETWORKING DIRECTIONS

- HIGH SPEED LAN/WAN SUPPORT
- OPEN CONNECTIVITY STANDARDS
- TRANSPARENT NETWORKING
- INTEGRATED NETWORK SERVICES



### KEY FEATURES

- HIGH SPEED CLIENT ACCESS
  - ▶ HIGH SPEED LAN
  - ▶ FAST DATABASE & FILE SERVICES
- PROTOCOL INDEPENDENCE
  - ▶ APPC, TCP/IP, IPX/SPX, NETBIOS
  - ▶ MPTN NETWORKING BLUEPRINT
  - ▶ NETWORK INDEPENDENT APIs (RPC, CMI-C, MQI, CORBA)
- DCE INTEGRATION
  - ▶ SECURITY
  - ▶ DIRECTORY
  - ▶ TIME
- OEM LAN COEXIST
  - ▶ LAN SERVER, LAN MANAGER, NOVELL

AS/400  
AS/400  
AS/400  
AS/400

RCK317.CH3

... **Success Isn't Complicated**

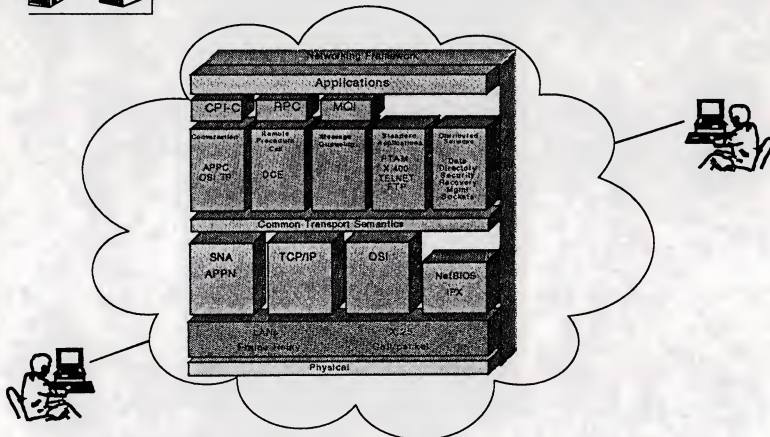
07/93







## MPTN NETWORKING BLUEPRINT



TRANSPARENT NETWORKING MODELED ON THE TELEPHONE SYSTEM

- PROTOCOL INDEPENDENCE
- CONNECTION INDEPENDENCE
- PATH INDEPENDENCE

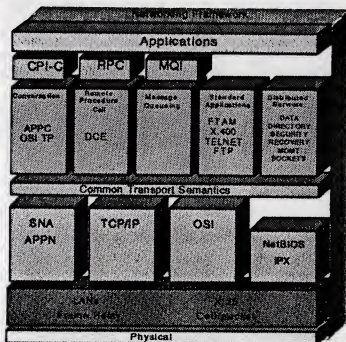
AS/400  
AS/400  
AS/400  
AS/400

... **Success Isn't Complicated**





## MPTN BLUEPRINT ANNOUNCEMENTS



- NEW ANNOUNCEMENTS
  - MQI (VIA MQM/400)
  - ▶ DCE EXPLOITATION
  - ▶ SOCKETS ON APPC, TCP/IP
  - ▶ ANYNET ON AS/400
  - ▶ CPI-C ON TCP/IP
- PREVIOUSLY ANNOUNCED IN 1993
  - ▶ DCE TOOLKIT
  - SECURITY
  - DIRECTORY
  - TIME
  - REMOTE PROCEDURE CALL

▶ AVAILABLE IN A 1994 RELEASE

AS/400  
AS/400  
AS/400  
AS/400 . . . **Success Isn't Complicated.**  
RCK351.CH3

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08/93





## DISTRIBUTED RESOURCES DIRECTIONS

OPEN CLIENT

SERVER-OF-CHOICE

DISTRIBUTED RESOURCES



### KEY FEATURES

- SINGLE LOGON
- SINGLE SYSTEM IMAGE
- INDUSTRY STANDARD
- HETEROGENEOUS COMPUTE PLATFORMS



EDI



EFT



DATABASES



FILES



PRINTERS



- DCE SERVICE STANDARDS



REMOTE WORKGROUPS



APPLICATIONS

AS/400  
AS/400  
AS/400  
AS/400

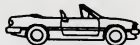
... **Success Isn't Complicated**

RCK313.CH3

08/93



# DISTRIBUTED COMPUTING ENVIRONMENT



WIRELESS

EDI



MAIL



DATABASES



PALMTOP



PEN-BASED



DIRECTORY



AS/400  
DCE SERVICES



AUTHENTICATION  
SECURITY



FILES



PRINTERS



TIME



NOTEBOOK



DESKTOP



EFT



APPLICATIONS

CLIENT-OF-CHOICE

DISTRIBUTED RESOURCES

AS/400  
AS/400  
AS/400  
AS/400

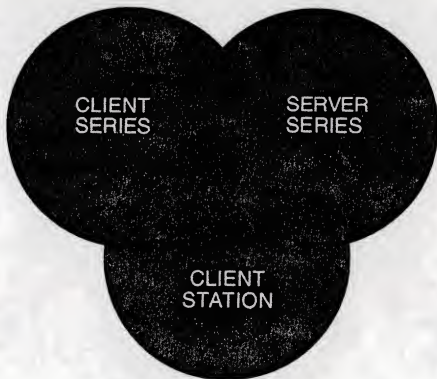
... *Success Isn't Complicated*







## INTEGRATED PACKAGING



AS/400  
AS/400  
AS/400  
AS/400

... ***Success Isn't Complicated***

RCK218.CH3

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06/93





## END-USER SOLUTIONS

- INTEGRATED PERSONAL  
PRODUCTIVITY

## APPLICATION DEVELOPMENT SOLUTIONS

- APPLICATIONS AND  
APPLICATIONS SERVICES

**AS/400**<sup>™</sup>

**Client Series**

## GROUPWARE SOLUTIONS

- WORKGROUP APPLICATIONS

## OPEN-SERVER SOLUTIONS

- ENTERPRISE NETWORKS  
AND DATA

AS/400  
AS/400  
AS/400  
AS/400

... **Success Isn't Complicated**

RCK344.CH3

08/93





# CLIENT SERIES ANNOUNCEMENTS



## TOOL ENHANCEMENTS

### CLIENT SERIES END-USER PRODUCTS

SOLUTION AREA	ENVIRONMENTS		
	OS/2	WINDOWS	MACINTOSH
ENHANCED USER INTERFACE	RUMBA/400	RUMBA/400	MACINTOSH CONNECTION
QUERY/REPORT WRITER	SHOWCASE VISTA	SHOWCASE VISTA	SHOWCASE VISTA
DECISION SPT	PERSONAL AS	PERSONAL AS	

### CLIENT SERIES DEVELOPMENT TOOLS

SOLUTION AREA	ENVIRONMENTS		
	OS/2	WINDOWS	MACINTOSH
SQL DEVELOPMENT	SQLWINDOWS	SQLWINDOWS	OMNIS 7
OBJECT-ORIENTED	ENVY/400	ENVY/400	
CROSS-PLATFORM	PROGRESS	PROGRESS	
AD CYCLE	SYNON/CSG		
EXEC INFO SUPPORT	TRACK	TRACK	

AS/400  
AS/400  
AS/400  
AS/400

... **Success Isn't Complicated**



40



## CLIENT SERIES ANNOUNCEMENTS



### NEW SOLUTIONS

#### GROUPWARE SOLUTIONS

SOLUTION AREA	ENVIRONMENTS		
	OS/2	WINDOWS	MACINTOSH
WORKFLOW	<b>AWD</b>	<b>AWD</b>	
FILE DISTRIBUTION	MANAGEWARE/400	MANAGEWARE/400	

#### OPEN SERVER ENABLERS

OEM VENDOR	ENABLER
MACINTOSH DATABASE CONNECTION	DAL
NOVELL NETWORK CONNECTION	LANRES/400

AS/400  
AS/400  
AS/400  
AS/400

**... Success Isn't Complicated**

RCK349.CH3

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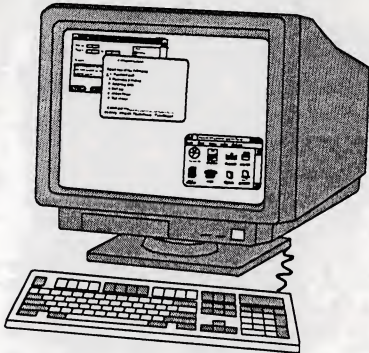
08/93







## CLIENT STATION ANNOUNCEMENT



- PS VALUEPOINT HARDWARE
  - 486 WITH 4-64 MB
  - MULTIPLE CONNECTIONS
  - 120, 245, 340 MB DASD
- PRELOADED SOFTWARE
  - DOS, WINDOWS
  - PC SUPPORT (V2R2)
  - LAN SUPPORT PGM
  - RUMBA/400 (V2R2)
- INTEGRATED PACKAGE
  - EASY TO ORDER
  - EASY TO INSTALL
  - READY TO USE
  - ATTRACTIVELY PRICED

AS/400  
AS/400  
AS/400  
AS/400

RCK367.CH3

*... Success Isn't Complicated*

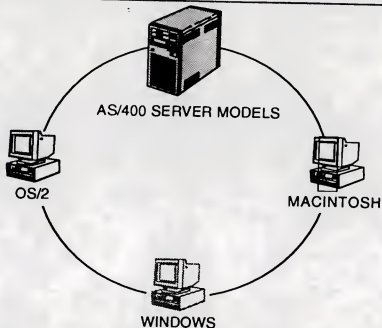
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08/93





## SERVER SERIES ANNOUNCEMENTS



- ALL CLIENT SERIES ENVIRONMENTS SUPPORTED
  - OS/2, WINDOWS, OR MACINTOSH
- AVAILABLE WITH SERVER MODELS 100, 135, 140
- TURNKEY SERVER INSTALLATION
  - IMAGEPLUS FILECABINET OPTION

AS/400  
AS/400  
AS/400  
AS/400

... **Success Isn't Complicated**

RCK376.CH3

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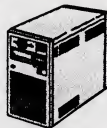




## SERVER MODELS ANNOUNCEMENT



9402  
MODEL 100



9404  
MODEL 135 & 140

- OPTIMIZED C/S PERFORMANCE
  - DATA BASE SERVING
  - APPLICATION SERVING
  - NETWORKING
  - PC FILE SERVING
- IMPROVED SERVER CONFIGURATION
  - INCREASED MEMORY, DASD, LAN ADAPTERS
- PRIMARY USERS
  - DISTRIBUTED CLIENT/SERVER ENVIRONMENT
  - DEDICATED PROCESSOR FOR STAND-ALONE C/S APPLICATIONS
  - CLIENT/SERVER APPLICATION DEVELOPMENT

AS/400  
AS/400  
AS/400  
AS/400

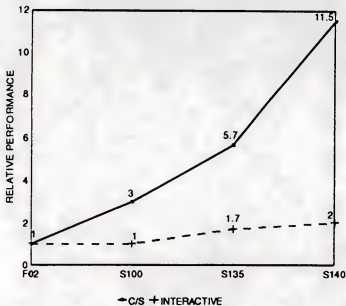
... **Success Isn't Complicated**



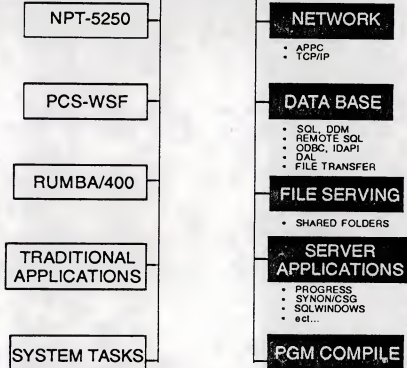


# SERVER MODEL PERFORMANCE

SERVER PERFORMANCE



## AS/400 SERVER INTERACTIVE SERVER



**NETWORK**

- APPC
- TCP/IP

**DATA BASE**

- SQL, DDM
- REMOTE SQL
- ODBC, IDAPI
- DAL
- FILE TRANSFER

**FILE SERVING**

- SHARED FOLDERS

**SERVER APPLICATIONS**

- PROGRESS
- SYNON/CSG
- SQLWINDOWS
- ect...

**PGM COMPILE**

AS/400  
AS/400  
AS/400  
AS/400

... *Success Isn't Complicated*







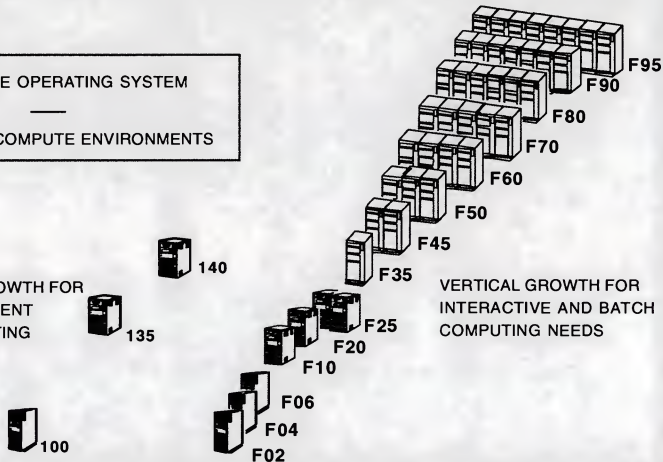
## AS/400 PRODUCT FAMILIES

A SINGLE OPERATING SYSTEM

MULTIPLE COMPUTE ENVIRONMENTS

HORIZONTAL GROWTH FOR  
DISTRIBUTED CLIENT  
SERVER COMPUTING  
NEEDS

VERTICAL GROWTH FOR  
INTERACTIVE AND BATCH  
COMPUTING NEEDS



AS/400  
AS/400  
AS/400  
AS/400  
RCK360.CH3

**... Success Isn't Complicated**

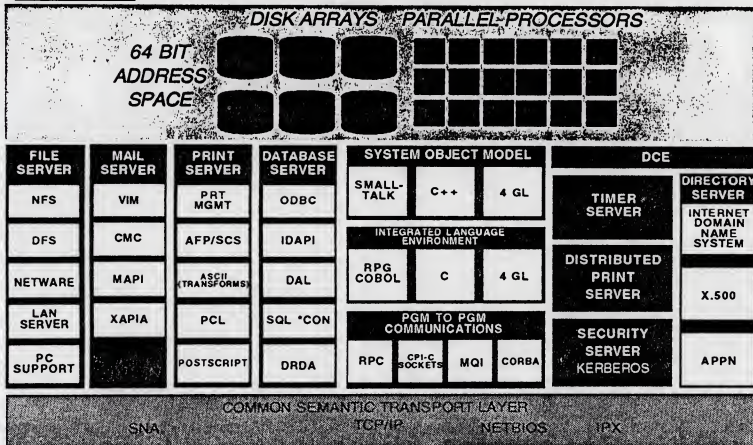
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# THE AS/400 SUPERSERVER



AS/400  
AS/400  
AS/400  
AS/400

*... Success Isn't Complicated*





## 9/93 CLIENT/SERVER ANNOUNCE SUMMARY



### DATABASE

- INFORMIX DRDA
- REFERENTIAL INTEGRITY
- TRIGGERS
- STORED PROCEDURES
- 2-PHASE COMMIT
- DRDA DUOW
- LONG COLUMN NAMES
- ANSI SQL 92
- MULTIKEY FIELDS



### APPLICATION DEVELOPMENT

- DATAEASE
- AWD WORKFLOW
- PROGRESS GUI
- SQLWINDOWS REL 4
- MQM/400
- DCE EXPLOITATION
- SOCKETS ON APPC, TCP/IP
- MPTF BLUEPRINT
- CPI-C ON TCP/IP



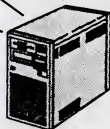
### SYSTEMS MANAGEMENT

- MANAGEWARE/400
- LANRES/400
- ADSM/400 SOD



### OPEN CLIENT

- WCP/400 ON HP, SUN
- OS/2 V2.1
- DOS V 6.0, 6.1
- ENVY/400 FOR WINDOWS (05/93)
- APPLTALK, LOCALTALK
- COMM MANAGER/400 (05/93)
- MOBILE NETWORK ACCESS (05/93)
- GROUPSHARE/400
- PCS ENHANCEMENTS
- ENH PHYSICAL FILE SYSTEM
- OPEN SERVER APIS



### INTEGRATED PACKAGING

- CLIENT SERIES ENH
- SERVER SERIES ENH
- CLIENT STATION
- CLIENT SERIES FOR EMEA
- CLIENT SERIES FOR AP

### PERFORMANCE STRUCTURE

- SERVER MODELS
- PROGRESS ACCEL
- FILE SERVER ACCEL
- APPC, TCP/IP ACCEL
- REMOTE SQL ENHANCEMENTS

▶ AVAILABLE IN A  
1994 RELEASE

AS/400  
AS/400  
AS/400  
AS/400

RCK345.CH3

... *Success Isn't Complicated.*

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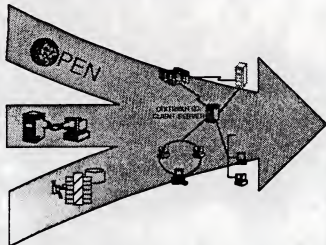
# THE AS/400 ADVANTAGE



**BUSINESS RESULTS YOU  
CAN COUNT ON**

INTEGRATED TECHNOLOGY...

FOR...



- ADVANCED SOLUTIONS
- APPLICATION DEVELOPMENT
- EASE OF USE
- TOTAL COST OF OWNERSHIP
- INVESTMENT PROTECTION

AS/400  
AS/400  
AS/400  
AS/400

**... Success Isn't Complicated**





***RICHARD KISCADEN***  
***CLIENT/SERVER SOLUTION MANAGER***  
***APPLICATION BUSINESS SYSTEMS***  
***IBM***

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***PROFILE***

Dick is the Client/Server Solution Manager in the AS/400 System Planning organization, a position he has held since January of 1990. His responsibilities include product strategy market development for the AS/400 in the emerging client/server technology.

Since joining IBM, Dick has been involved in the development of S/3, S/32, S/34, and S/36. He has held IBM staff assignments in New York, including Division Quality Manager, and Group Manager of System Architecture. He was Manager of the Program Management Team for the AS/400 announcement, and Manager of System Plan for Rochester before taking his present position.

