Planning for the migration to SWIFTNet™ FIN with IBM MERVA™

WebSphere software

A Migration Roadmap for IBM MERVA for ESA towards SWIFTNet FIN

Version: 2.1

Date: 06/06/2002

Legal Disclaimer

IBM plans the general availability of WebSphere Financial Network Integrator Version 1 for the 4th quarter of 2002. All information contained in this document is based on available information as of June 06, 2002, and is subject to change at any time without notice. At this date the product was still under development, and it is the nature of software products, that their specifications change before the final release. IBM disclaims all warranties as to the accuracy, completeness, or adequacy of such information. IBM shall have no liability for errors, omissions or inadequacies in the information contained herein or for interpretations thereof.

Table of Contents

Introduction

This document describes a migration planning method for IBM MERVA customers who have to fulfil the SWIFTNet migration requirement. The method provides IBM MERVA customers with best practice guidelines to plan the migration task in seven simple steps. The seven steps build on one another. In steps 2 - 6 MERVA customers are requested to prepare certain dedicated output documents that can be referred to in later steps of the planning procedure (Figure 1).

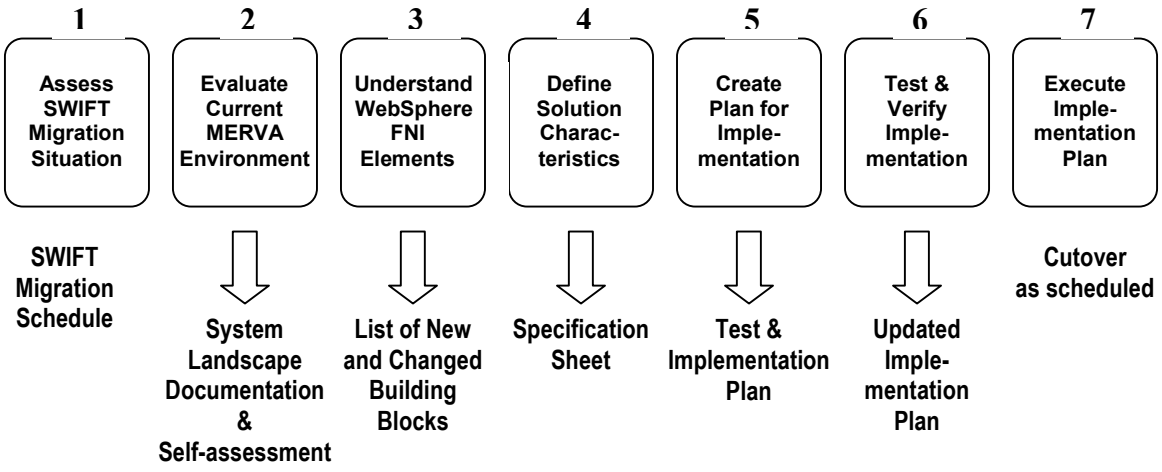


Figure 1. Migration steps and dedicated outputs

The following sections describe the seven steps, and give you tips and input on how to prepare the output documents.

Step 1: Assess SWIFT migration situation

According to SWIFT, the migration of FIN users from its X.25-based SWIFT Transport Network (STN) to its new Secure IP Network (SIPN) will start with early adopters in August 2002, and will continue until access to the STN is eliminated at the end of 2004. SWIFT has defined country migration windows, i.e. periods of time during which companies in a given country must complete the migration.

SWIFT recommends that financial institutions start preparing for the migration at least 6 months before the beginning of the allocated migration window. The need for action is underlined by SWIFT´s plans to impose surcharges and penalties on financial institutions that continue to use the STN.

On the basis of the SWIFT migration schedule, identify the migration window slot associated with your country by SWIFT.

SWIFT country migration window	

To see the overall timeframe for preparation and migration activities, fill in the table below with planning items as defined by SWIFT.

SWIFT planning items (as defined in SWIFTNet FIN Planning Guide)	
Register for your SWIFTNet FIN roadshow through www.swift.com	
Attend your SWIFTNet FIN roadshow	
Register for the SWIFTNet Migration Toolbox	
Use the configurator (www.swift.com) to determine your configuration and budget requirements	
Complete and submit the online ordering and registration forms	
Messaging Service Subscription Form to SWIFT	
Installation of leased line	
Confirm network readiness	

Installation of M-CPE(s)	
Confirm hardware installation and software readiness	
Install SWIFTNet enabled FIN Interface (if not already installed) and integration software (SWIFTNet Link)	
SWIFTNet FIN in T&T mode	
SWIFTNet FIN Live	
Decommission X.25 lines / connections	

Define the timeframe during which you would like to install, configure and test your IBM solution.

IBM migration date	

Step 2: Evaluate your current MERVA/SWIFT environment

MERVA ESA implementations vary from company to company. A typical MERVA ESA environment is usually made up of one or more of the following components:

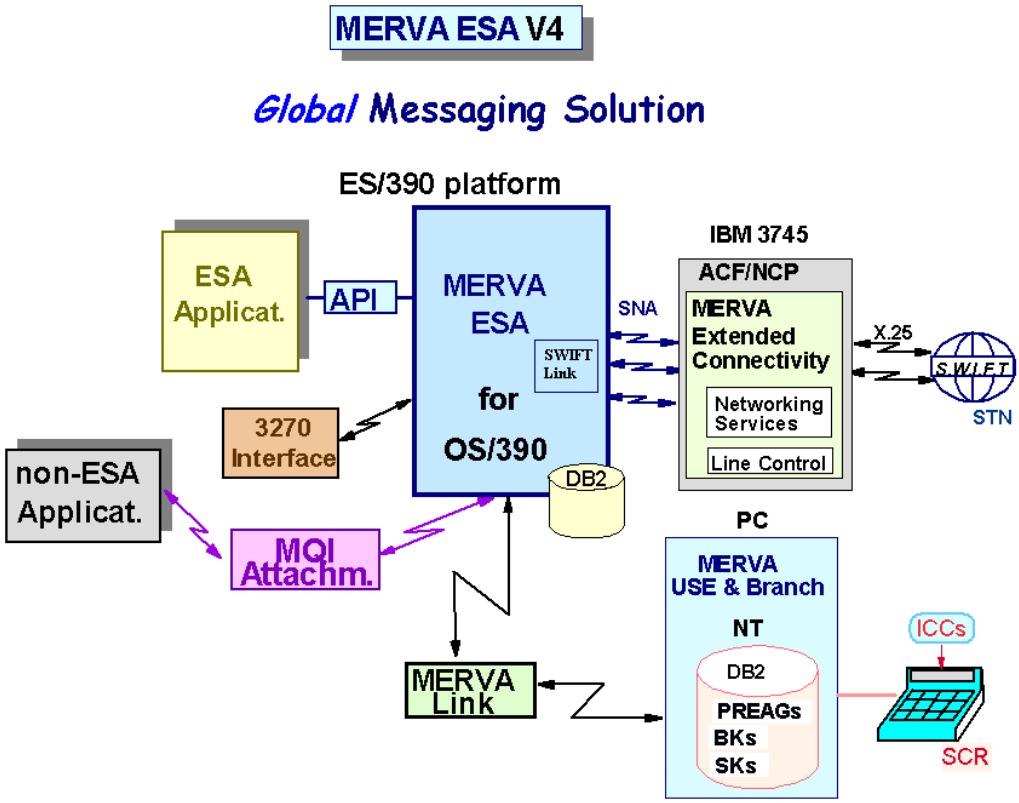


Figure 2. Main components of a typical MERVA ESA environment

A typical MERVA ESA/SWIFT scenario might look as follows:

Back-office applications send SWIFT messages via the MERVA ESA API or MQI Attachment to MERVA ESA, which routes the messages via the SWIFT Link component and MERVA Extended Connectivity to the SWIFT Transport Network (STN). MERVA Extended Connectivity, which controls the X.25 communication lines to SWIFT, runs on a 37xx communication controller. Connection between MERVA ESA SWIFT Link and MERVA Extended Connectivity is implemented by standard SNA sessions. Several MERVA ESA installations may be connected to a single MERVA Extended Connectivity. SWIFT USE and SLS processing is carried out on a workstation running MERVA USE & Branch.

For a thorough understanding of your current situation, document the components of your MERVA/SWIFT environment, with special attention to the following implementation aspects:

Checklist for MERVA ESA landscape documentation	
Check items	**Customer comments**
Number of SWIFT access points	
SWIFT LT set-up	
Location of X.25 access points	
Attached applications	
Interface methods/APIs in use	
MERVA ESA system configuration	
Used MERVA user exits	
MERVA database configuration	
SWIFT USE and SLS configuration	
MERVA Link connections	
Throughput history - typical, maximum	
User roles and responsibilities in your organization	
Security management organization	
Backup procedures	

For a thorough understanding of your requirements and motivation concerning the migration, please fill in the questionnaire below.

Customer self-assessment questionnaire	
How important is SWIFT to your business (e.g. vs bilateral or national networks)?	
Your motivation for moving to SWFTNet IP	
Your tentative timeline to move to SWIFTNet IP	
Do you have a need / plan to use other SWIFTNet services besides FIN (InterAct, FileAct, TrustAct)?	

What is the configuration of your current MERVA system(s)?	
How is your SWIFT setup (LT#s, access point etc.)?	
How many SWIFT messages do you process - monthly, daily, peak hours?	
Your main business purpose of using SWIFT - payments, securities, documents - percentages of use?	
Do you use additional products to access the SWIFT network, e.g. SWIFT Alliance Access - if yes, are there plans to consolidate or distribute access points?	
What market infrastructure are you using (settlement, clearing systems), including non-SWIFT based infrastructure?	
Are you a MQ customer, if yes, do you use MQ on the mainframe?	
Are you a WMQI (MQSI) customer, if yes, what platform?	
Do you use DB2, in the corporation, in the MERVA installation?	
Your skills and skill availability for the SW prerequisites?	
Besides MERVA SWIFT Link, which MERVA communication methods do you also use (MERVA Link, Telex, MQI Attachement, etc.)?	
How do your applications interface to MERVA (MERVA API, MQI, other)?	
Can you outline your MERVA application landscape?	
Are you already a SWIFTNet user (CLS, Axion4)?	
Did you discuss a potential SWIFT Alliance Gateway setup with SWIFT already - what is the outcome?	

How are your AIX skills - required to use SAG	
Your current backup concept for MERVA for SWIFT access	
Data entry to what extent do you use manual message input? are you a MERVA client user? do you use 3270 terminals for input? how does your message confirmation process work?	
How is your message repair process?	
If you use the MERVA recon feature - how is it used?	

#	Dedicated output	✓
1	Detailed system landscape documentation on current MERVA ESA/SWIFT environment, listing implementation characteristics	
2	Customer self-assessment questionnaire	

Step 3: Understand WebSphere FNI architecture and structural elements

IBM WebSphere Financial Network Integrator (WebSphere FNI) is an integration platform that integrates and operates multiple network protocols and services. The robust and highly scalable common base provides an all-round set of messaging services like a message warehouse, security mechanisms, event logging and auditing, on which extensions for specific communication channels can be built. The SWIFTNet extension in WebSphere FNI Release 1 is one such extension, designed to support, in combination with MERVA ESA, the new Internet-protocol based network service from SWIFT.

WebSphere FNI, built on IBM´s reliable middleware technology of MQ Series, WebSphere MQ Integrator and DB2, is not only a flexible solution that ensures resilience and continuity for the SWIFTNet migration process, but it is also a powerful tool to easily integrate current and future financial applications and communication channels into your business processes.

WebSphere FNI Release 1 combined with MERVA ESA provides MERVA customers with a means to carry out a seamless migration to SWIFTNet. A bridge between MERVA and the SWIFTNet extension of WebSphere FNI ensures that existing MERVA applications can access the new SWIFTNet FIN services without a change. As it is possible to send FIN messages from MERVA applications concurrently to the X.25 network as well as to the SIPN network via WebSphere FNI, migration can be carried out in a smooth and continuous way. The existing MERVA SWIFT Link for FIN over X.25 remains supported and might serve as a backup during the migration phase.

An integrated WebSphere FNI – MERVA ESA environment is made up of MERVA ESA, the MERVA Bridge, WebSphere FNI Base with SWIFTNet extension and the communication gateway components that are summarized here as a “SWIFTNet communication controller” or “SNCC” for easy reference.

Figure 3 provides a schematic picture of the required building blocks. The left side shows an existing MERVA ESA application with a SWIFT Link connection to the STN network. Messages from MERVA are routed via the Bridge to WebSphere FNI, which provides access to the SWIFTNet FIN services over SIPN. The right side shows the WebSphere FNI Base Product with the SWIFTNet Extension. On the bottom there are two SWIFTNet communication controllers connected to the SIPN (there can be one or more). Communication among the WebSphere FNI components is done via MQSeries queues.

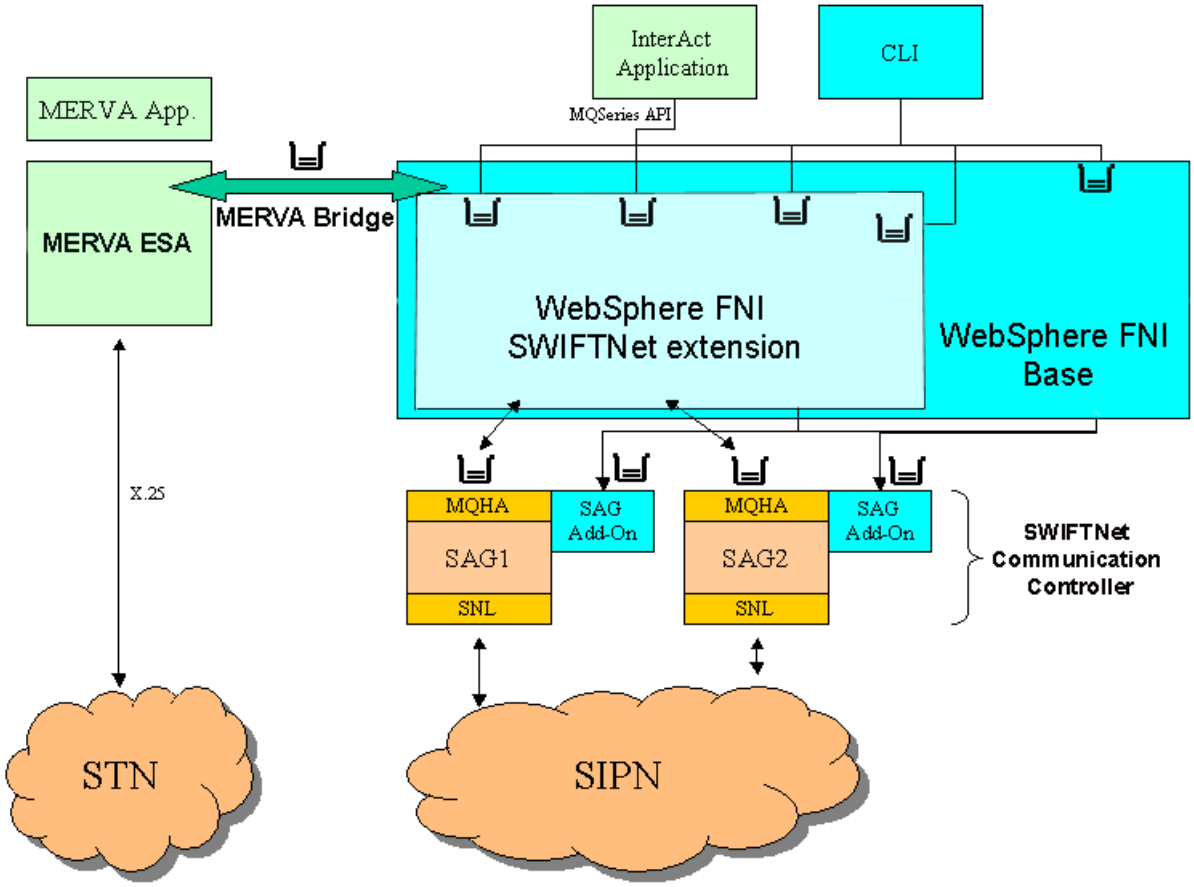


Figure 3. Main building blocks of an integrated WebSphere FNI – MERVA ESA environment

The following table provides a short description of the new building blocks of the integrated solution:

MERVA Bridge	establishes connection between MERVA ESA and WebSphere FNI. MERVA Bridge uses MQSeries to enable message flow between MERVA ESA and WebSphere FNI. The MERVA Bridge can only connect MERVA ESA running under OS/390 (CICS or IMS) to WebSphere FNI. It does not support MERVA ESA running under VSE/ESA (CICS).
WebSphere FNI Base	provides common messaging infrastructure services such as message warehousing, access control, audit and event logging, security management and communication channel administration. WebSphere FNI Base is built on IBM middleware: MQSeries, WebSphere MQ Integrator (WMQI) and DB2.

WebSphere FNI SWIFTNet extension

provides communication channel specific services such as:

operating the SWIFT logical terminals (LTs) via the WebSphere FNI command line interface (CLI)

processing of the Secure Login and Select mechanism by means of MERVA ESA

sending SWIFT FIN messages from MERVA ESA via SWIFTNet FIN including:

- checking whether message is in a valid SWIFT message format
- encapsulating the message in an InterAct compliant message format

SWIFTNet extension uses the following WebSphere FNI Base services:

Central configuration database
Central Access Control Facility
Audit and Event Logging
CLI and Monitor

SWIFTNet communication controller (SNCC)

is a collective expression used in this document to summarize the communication gateway components to SWIFTNet. An SNCC is made up of the following products and components: SWIFTNet Link (SNL), SWIFT Alliance Gateway 4.0 in SNCC mode, MQ Host Adapter (MQHA) and SAG add-on.

SWIFTNet Link (SNL)

is a SWIFT software product to access and use SWIFTNet services. SNL embeds software that implements SWIFT's security: SWIFTNet Public Key Infrastructure (PKI).

SWIFTAlliance Gateway (SAG)

is the interface product used by SNL to enable application-to-application communication over the SWIFTNet services. For backup or workload balancing purposes you can use several SAG instances with WebSphere FNI. (Note that multiple SAG instances running in parallel on one workstation are no longer supported in SAG version 4.0.)

With WebSphere FNI, it is possible to centrally operate, configure and monitor your SAG instances from the WebSphere FNI command line interface (CLI).

MQ Host Adapter (MQHA)

is a feature of the SAG that enables it to send and receive messages via MQSeries queues.

SAG add-on

is a WebSphere FNI SWIFTNet extension component by which a SAG is integrated into the WebSphere FNI environment. A SAG add-on handles one, and only one SAG instance. Thus, for each SAG instance to be integrated into the WebSphere FNI environment, a separate SAG add-on must be running.

Preleminary installation prerequisites[1]

Requirements for WebSphere FNI Base Product

The WebSphere FNI Base product runs on an S/390 mainframe or a zSeries mainframe. Additionally, it requires a Windows workstation for customizing WMQI message flows.

S/390 or zSeries mainframe
Processor: Any processor that can run one of the required operating systems
Software:

	PID	Install. system	Customer req.	Customiz. system	Customer req.	Runtime system	Customer req.	Upgrade needed
OS/390 V2.10 or z/OS V1.1	5647-A01 or 5694-A01	Y		Y		Y		
IBM C/C++ Compiler V2.10	5647-A01	-		-		Y		
DB2 Universal Database for OS/390 and zOS V7	5675-DB2	-		Y		Y		
IBM WebSphere MQ for z/OS V5.2	5655-F10	-		-		Y		
IBM WebSphere MQ Integrator for z/OS V2.1	5655-G97	-		-		Y		
XML Toolkit for OS/390 V1.3	5655-D44	-		-		Y		
REXX	incl. in OS	-		Y		-		
DB2 XML Extender V7.1	incl. in DB2 UD	-		-		Y		
IBM SMP/E for z/OS and OS/390 V3.1	5655-G44	Y		-		-		

WMQI Control Center workstation
Processor: Intel Uniprocessor
RAM: min. 512 MB
Software:

[1] This product prerequisite listing is for general guidance only and subject to change before the announcement of general availability. The final list of prerequisite hardware and software will be published with the announcement of general availability.

	PID	Install. system	Customer req.	Customiz. system	Customer req.	Runtime system	Customer req.	Upgrade needed
Windows 2000 SR 1 or Windows NT 4.0 SR 6	(non-IBM) or (non-IBM)	?		Y		?		
WebSphere MQ Integrator for Windows V2.1		?		Y		?		
Adobe Acrobat Reader 5.0 (for documentation)	(non-IBM)	?		Y		?		

Requirements for WebSphere FNI SWIFTNet Extension

WebSphere FNI SWIFTNet Extension runs on an S/390 mainframe or a zSeries mainframe, on which WebSphere FNI Base has been installed. Additionally, it requires one or more AIX or Windows workstations on which the SNCCs run.

S/390 or zSeries mainframe
Software:

	PID	Install. system	Customer req.	Customiz. System	Customer req.	Runtime system	Customer req.	Upgrade needed
WFNI Base		Y		Y		Y		
MERVA ESA Components V4.1, with WFNI PTF (only if WFNI is to be used to provide MERVA with access to the SIPN)		-		-		Y		

SNCC workstation
RAM: min. 256 MB
Disk space: min. 500 MB (depends on the SIPN Band chosen; see "SAG 4.0 Installation Guide" for more information)
Software:

	PID	Install. system	Customer req.	Customiz. System	Customer req.	Runtime system	Customer req.	Upgrade needed
AIX V4.3.3 or Windows 2000 SR 1	5767C3403 or (non-IBM)	Y		Y		Y		
SWIFT Alliance Gateway 4.0	(non-IBM)	-		-		Y		
SAG MQ Host Adapter 4.0	(non-IBM)	-		-		Y		
MQSeries Client AIX V5.2 or MQSeries Client for Windows V5.2.1		-		-		Y		
SWIFTNet Link Version 4.2	(non-IBM)	-		-		Y		

SWIFTAlliance Webstation is not a prerequisite but can be used to display information of the SAGs.

#	Dedicated output	✓
3	List of new building blocks and the ones that need to be changed	

Step 4: Define your solution characteristics

To fine-tune the set-up of your future solution, specify your individual requirements, such as:

Message throughput

Normal: _____

Maximum: _____

Profile:_____

Scaling

Number of access points to the SWIFTNet network:

_____

Number of processing hubs:

_____

Centralized vs. decentralized solution:

_____

Security operations

PKI administration: Centralized Decentralized

Comments: _____

_____

Double authorization:

_____

New roles and responsibilities for operation:

_____

_____

_____

Roles and responsibilities for system support:

_____

_____

_____

New security roles and organization:

_____

_____

_____

Backup requirements

Hot stand-by:_____

Backup frequency: _____

Time to recover from a failure: _____

Disaster recovery requirements

Type of backup center: Your own system Backup partner institution

Comments: _____

_____

Delivery of backup in case of catastrophy: _____

_____

Security keys: _____

_____

Application environment

What changes if any do you plan for your existing FIN applications: _____

_____

_____

Build or buy decisions

_____

_____

_____

Test & verification tactics

_____

_____

_____

Cutover strategy Stepwise Cold turkey Fallback

Comments: _____

_____

_____

#	Dedicated output	✓
4	Specification sheet stating the required solution characteristics	

Step 5: Create implementation plan

After the detailed assessment of your current environment and the required solution characteristics, a plan to carry out the migration process should be built. A list of tasks grouped under thematic headings is provided in this section to help you design a detailed implementation plan.

Recommended plan items for preparation and installation

- SWIFT preparation
  - Determine configuration
  - Registration
  - Ordering
- Install SWIFTNet prerequisite
  - SWIFT pre-req
    - SAG v.4.0
  - Connectivity Packs
- Network preparation
  - IP connection to SAG
  - Firewalls
- Application preparation
  - if necessary
- Administrative level preparation
- Operational level preparation
- Audit
  - Financial audit
  - Security
  - Other
- Test planning
- SW Installation Plan
  - WebSphere FNI
  - Web Sphere MQ Integrator
  - WebSphere Application Server (optional)
  - Tivoli (optional)
  - DB2
  - Installation of each SW package
  - Configuration of SW package from an installation guide
- MQ Network
  - IP connection to SAG v.4.0
  - Connectivity to MERVA
  - MQ channels to SAG and MERVA
- Customer System Management
  - Link installed software to System Management

Project tasks

- SWIFTNet planning & ordering
- SAG configuration

MQ infrastructure configuration
System configuration
Gap analysis (subcontractor skills)
Skill development (education plan)
Ordering solution hardware, software and services
Installation of hardware & software
Unit tests
Implementation verification
System test
Cutover and fallback

Resource Plan

Internal resources
- LOB specialists
- IT analysts & specialists
- System programmers
- Management & support
- End users

External resources
- SI professionals
- IT specialists
- Consultants
- Outsourcing

Plan for SAG and Connectivity pack

Plan for SWIFTAlliance Gateway (SAG will work in SNCC mode)
- AIX or Windows 2000
- One or more SAGs, depending on throughput, OS and backup
- MQ Host Adapter feature
- Opt. SA WebStation
- MQ Client or Server
- Exclusive for FIN or mixed

Plan for Connectivity Pack
- SWIFTNet Link (SNL) configuration (on the same machine as SAG)
- Smart cards/SW Crypto/accelerator
- Active/standby or not
- Active/active or not
- Disaster site or not

SIPN Access Configuration for CPE:
- Dial-up or M-CPE
- M-CPE resilience (Single/Dual-I/Dual-P)
- Bandwidth

Plan for MQ setup/configuration

MQ Server or Client
Queue naming schema
MQ Channels
MQ Sizes
Data/Storage plan

MERVA Routing considerations

Start with a subset of messages for testing and initial production

Apply MERVA routing rules
Add more rules over time
SWIFT Link to X.25 can remain as a backup

Skill development plan

SWIFTNet skills
- SWIFT CPE operations
- SWIFT Alliance Gateway operation and customization
- Understanding the new SWIFT security
  - Courses available from SWIFT

IBM SW skills
- System programmer skills:
  - DB2, MQSeries, WebSphere MQ, WebSphere MQI
  - Courses available by IBM Learning services
- MERVA Routing rules to switch between the bridge and X.25
- SWIFT BKE&SLS key handling with MERVA USE
- WebSphere FNI
  - WFNI courses planned for Q4 2002

#	Dedicated output	✓
5	Implementation plan	

Step 6: Test and verify implementation

Define and implement a verification scenario to test your system setup. The scenario you define:

should cover the most significant case
shall be used for migration verification
is a good learning vehicle
allows thorough testing with limited complexity
should be first candidate for migration in a stepwise cutover plan
provides input for an updated implementation plan

Checklist for test preparation			
Test Entry/Exit Criteria	**Defined**	**Met**	**Documented**

#	Dedicated output	✓
6	Updated implementation plan	

Step 7: Execute implementation plan

IBM and IBM partners offer services to support MERVA customers with:

Assessment
Planning support
Technical preparation
Installation and customization
Testing and verification
Pilot migration
Cutover

#	Dedicated output	✓
7	Quality/System assurence completed successfully	
8	Results documented	
9	Cut Over date	

For more information, please send an email to

WebSphere_FNI@de.ibm.com

and an IBM service representative will contact you.

WebSphere Financial Network Integrator contacts:

In Europe, Middle East and Africa:
Andrew Howarth - Tel.: +44-1256-344077
a@uk.ibm.com

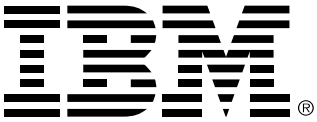
In Asia, Pacific and Japan:
Nool Park - Tel.: +822-3781-6546
npark@kr.ibm.com

In the Americas:
David Jackson - Tel. +1-614-659-7158
djackso3@us.ibm.com

Worldwide:
Maurice Chen - Tel. +1-516-349-3306
mauchen@us.ibm.com

E-mail: merva@de.ibm.com

For more information on MERVA ESA, visit:
ibm.com/software/merva



IBM Software Group
WebSphere Banking Solutions
Schönaicher Str. 220
71032 Böblingen
Germany

IBM may not offer the products, services, or features discussed in this document in all countries. Consult your local IBM representative for information on the products and services currently available in your area.

The IBM home page can be found on the Internet at www.ibm.com

The following terms are trademarks of the International Business Machines Corporation in the United States, other countries, or both:

AIX
AS/400
IBM
iSeries
OS/390
OS/400
S/390
z/OS

Lotus, Lotus Notes, Notes, Domino, and LotusScript are trademarks of Lotus Development Corporation in the United States, other countries, or both.

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, and service names may be trademarks or service marks of others.

This document is for general information only.