



**FeeSimpleHosting**  
**IBM Estimates Services Fees**

**Revised**  
**November 2, 2001**



# **IBM Estimated Services Fees for FSH**

<b>Overview.....</b>	<b>3</b>
<b>Next Steps .....</b>	<b>4</b>
<b>1. Server Management Services.....</b>	<b>4</b>
<b>2. On-going Application Development and Maintenance.....</b>	<b>6</b>
<b>3. Single Point of Contact Help Desk (SPOC) .....</b>	<b>6</b>
<b>4. IT Operations, Support and Training.....</b>	<b>8</b>
<b>Summary of Estimated Fees .....</b>	<b>8</b>
<b>Attachment A - FSH Server Management Solution Summary.....</b>	<b>9</b>
<b>Attachment B – Services excluded from the IBM’s Managed Services</b>	<b>11</b>
<b>Attachment C - Overview of IBM Global Services Approach .....</b>	<b>12</b>
<b>Attachment D – Universal Server Farm Base Services .....</b>	<b>18</b>

# IBM Estimated Services Fees for FSH<sup>1</sup>

## Overview

In order to support the business plan development for the formation and operation of FSH's proposed IT infrastructure, IBM has revised its original estimates based upon FSH's requests.

We recognize that this is a start down the path of us jointly coming to a specific understanding of the IT and operational needs of FSH. As the design of the proposed system develops, both FSH and IBM will gain a fuller understanding of both the IT infrastructure requirements (hardware/software/network) to support FSH's new applications and the support necessary to manage the IT operations over time.

The estimates are being provided in four pieces and are in addition to the design and development estimates IBM delivered in a separate document. They include:

### 1. Server Management Services

Server management services include the initial transition and on-going operation of FSH's development, test and production servers and related network.

### 2. On-going Application Development and Maintenance

Application maintenance projections include on-going maintenance support (including level 2 and 3 support) of the production application software to be developed by IBM.

### 3. Single Point of Contact Help Desk

Estimated fees are for a single point of contact help desk for accepting calls from FSH users, routing business related calls to FSH personnel and answering/resolving IT and operations related questions.

### 4. Security Policy and Training

Estimated costs for the development of a 1-2 hour CBT course for the FSH application and the development of an FSH corporate security policy.

Attached to this description of IBM's planned services for FSH are four documents further describing the scope of IBM's projected services, including:

- Attachment A – Hardware and software configurations

---

<sup>1</sup> Please be advised that the estimated fees stated in this letter are for your information purposes only and are not proposed prices. They are non-binding and do not represent a commitment by IBM to deliver the products or services at the estimated fees or any other price. Services will only be delivered upon execution of a mutually acceptable agreement. Neither FSH nor IBM shall have any obligation to the other with respect to the proposed services until such agreement is executed. A formal Due Diligence study of FSH's proposed operations is required for a formal price. The estimated fees do not include inflation projections, are based upon a minimum three year term and FSH providing a third party financial guarantee.

- Attachment B – Services excluded from IBM’s projections
- Attachment C – An overview of IBM’s managed Services Approach
- Attachment D – Description of IBM’s Universal Server Farm Base Services

## **Next Steps**

Based upon our discussions to date, we anticipate that once you are through your initial round of discussions with the PTI's and are confident that FSH will be launched, a next appropriate step between FSH and IBM would be to draft a "Letter of Authorization" which we would jointly sign after FSH's funding is secured. The letter would give us the ability to start staffing IBM's development and support organization for FSH while we work through the specific details required to draft a long term outsourcing agreement. The outsourcing agreement may need to be developed in stages as the FSH start-up evolves over the first few months of organization and application development.

### **1. Server Management Services**

Our server management fee estimates are based on the conceptual server architecture that has been developed by IBM’s design team. Attachment A provides the two conceptual hardware configurations we used to estimate our fees.

- The initial figuration is designed to provide the required processing capabilities to handle the proposed FSH system and initial transaction volumes with adequate reliability for the start-up period.
- The High Availability solution assumes that we have no single points of failure to impact your application.

Annual fees of \$1.5 million are estimated for the initial configuration required to support the conceptual application architecture, start-up availability requirements, initial volume projections and at the same time provide the flexibility for future growth in volume. A one-time initial transition charge of \$150,000 also applies.

We have estimated server management costs for the High Availability solution at \$3.5 million annually, based upon the assumed volumes stated in the RFP and the configuration described in Appendix A. Additional one-time transition charges for upgrades to the High Availability configuration will be dependent on the nature and sequence of the upgrades.

As the application has not been developed or tested, the server configurations used are speculative.

We have provided the high-end estimates to provide FSH a basis for planning long-term server management costs. In actual practice, we would expect to jointly agree on an initial server configuration to establish in our base agreement, along with a mechanism for adding to the server complex as increased function, volume or performance

necessitate. Included in IBM's development plan will be a performance test to validate that the projected production server configuration will satisfy the application resource demands. Based upon the performance test results, we will be able to confirm the planned initial hardware configurations or adjust them prior to the full production implementation of the application.

The estimate above for the initial production configuration is based upon a full year of service delivery. As part of our next step of discussions we will develop a detail plan for the staging of server services from the initial development systems through the implementation of testing and production configurations over the application development period.

Specifics of the solution on which we based our estimates fees are outlined in Attachment A. At a high level the services include:

- Hardware and system software for development, test and production systems
- Network facilities to connect FSH's servers to the internet and backend connections to proposed accounting systems
- A highly secure environment to protect FSH's production servers from the potential risks associated with Internet applications.
- A highly skilled support staff to monitor, manage, and maintain FSH's servers on a daily, 24 x 7 basis
- Implementation at one of IBM's high availability Universal Server Farms to minimize downtime of the FSH environment
- *Disaster Recovery subscription service providing 48 hour disaster recovery utilizing one of IBM's disaster recovery facilities is included in the high availability option only.*

Based upon your requirements, we would operate your Web servers at one of IBM's Universal Server Farms. IBM has structured our Universal Server Farms (USF) to be completely resilient and to readily accommodate the diversity inherent in today's systems environments. Providing more than connectivity to the Internet, intranet, or extranet, our USFs' are specifically designed to provide a platform for e-business. The USFs' are designed to enable customers to conduct real business over the Web confidently, with seamless continuity in the event of failure and optimal performance in spite of explosive traffic volumes. IBM's management team uses rigorous process disciplines to oversee our Universal Server Farm operations and the Web hosting environment. These disciplines are the pillars of our support methodology and include performance management, change management, problem management, and recovery management.

Our USFs' are veritable "iron mountains," secured with uninterruptible power supplies, diesel-generated power backup, power line diversity, and dual carrier connectivity. They enable IBM to ensure nonstop, fault tolerant performance. Local and geographic load balancing maximize throughput and availability. Distributed caching improves response time for every customer accessing IBM-hosted Web sites, and the USFs' flexible component architecture ensures a readily scalable work environment. Additionally, our

USFs' employ rigorous physical security, multi-layered access controls, and a logical design that isolates customers' private data sources and shields them from internal and external intrusion. IBM's arsenal of security products and services developed for the Web has virtually eliminated the risks once associated with conducting business on the Internet. IBM's Web hosting solution offers IBM's experience of decades of investment in network and Internet

## **2. On-going Application Development and Maintenance**

True estimates of application development and maintenance expenses can be made once we have the final application design and an understanding of those future development requirements that may be staged after the initial application development is completed. Our experience indicates that more often than not there continues to be investment in additional function after a new application is developed and our estimates reflect that experience as much as specific thoughts of FSH's on-going application requirements. As in other service areas, we would expect to set a baseline staff size in our base contract and provide a mechanism to adjust development staff size as is appropriate, based upon the planned application development workload over time. Application support costs are estimated for the FSH application only.

For planning purposes we have estimated an ongoing support staff of approximately 2.5, including development, database and project management skills, to provide second and third level application support during prime shift and on call support for critical problem resolution off-shift. Estimated annual fees are \$500,000 and would start-up up 2-3 months prior to production turnover of the application in order to properly train the on-going support staff. Application support time not utilized for basic support and problem resolution would be available to FSH for development of system enhancements.

## **3. Single Point of Contact Help Desk (SPOC)**

IBM operates a state-of-the-art Help Desk to support our customers. The Help Desk mission is to resolve end user issues as quickly as possible. This is accomplished either by resolving the problem directly, or passing it to another level of support.

In order to provide financial estimates for the help desk, IBM has estimated SPOC services for FSH based upon the projected number of calls the SPOC will receive monthly. In actual practice, we will not know call volumes and duration until the FSH service is operational. We anticipate that in the next stage of our discussions, we will jointly conclude on what the start-up target volume should be, and price our base agreement on those volumes with a methodology for adjusting for increased or decreased call volumes overtime.

### **SPOC Financial Estimates**

Although we have estimated transition fees for set-up of the SPOC at \$150,000, when we have a firm understanding on the extent and complexity of the scripts required for the SPOC, will be a better position to estimate the initial transition fees. We have estimated annual SPOC services fees to be \$300,000 for the first year of services, based upon monthly call volume of 1,000 calls per month, growing to \$850,000 in year two and thereafter based upon 3,000 calls per month in the second year and thereafter. With customers such as FSH, where we do not have a history of help desk volumes, we ordinarily make our best volume forecast to set base volumes in our agreement, then provide a mechanism to adjust charges up or down based upon actual call volume and duration experience.

### **SPOC Services**

The IBM single-point-of-contact solution has a number of facets over and above providing a simple Help Desk. We have assumed our SPOC solution for FSH will include our typical help desk services, including the following:

- Establishing a Level 1 Help Desk to accept end-user calls available 24x7
- Problem and change management
- Problem escalation and notification
- Full support for Level 1 Help Desk calls
- Tracking and transfer for all other calls to the appropriate support group
- Dispatching all move, add, change, and tracking requests to the appropriate support group
- Dispatch of hardware break-fix and tracking
- FSH will be responsible for non-technical customer support and problem resolution. All calls related to these issues will be passed on to FSH's customer support group and tracked as open problems until closed successively
- Verify that client satisfaction is confirmed before inquires and problems are closed

### **Call Management**

All calls are routed through a call management system and answered in order of receipt. We have strict controls in place to measure both response time and levels of "resolved by first respondent." It is our intention to resolve as many issues as possible using the first respondent to save you time and money. In support of this, we have a number of systems in place to provide both technical and application level support for our clients.

### **Call Logging and Fault Recording**

All calls are logged, and once logged each call is tracked through to conclusion. We are committed to minimizing the number of calls to the Help Desk. This is achieved by

analyzing call type trends. When a particular issue is identified as causing an unacceptable number of calls, actions will be undertaken to resolve the cause (for example: user training issues).

### **Level 2 and Level 3 Help Desk**

If calls cannot be resolved at the Level 1 SPOC Help Desk, they will be escalated to Level 2 support. Level 2 support is provided by individuals who have a higher level of expertise and who are trained to address the specific needs of certain applications and environments. This complements the more general skill set that is provided by Level 1 SPOC personnel. IBM will supply Level 2 and Level 3 Help Desk for all those services directly under our responsibility and pass other calls, which cannot be resolved by Level 1, on to FSH or the appropriate third party supplier. All calls will be tracked by the Level 1 SPOC through completion, and escalated if appropriate based upon problem management rules that will be defined specifically for FSH.

## **4. Security Policy and CBT Training**

- In order to support the rollout of FSH's system to its user commuting, IBM's Learning services has estimated \$150,000-\$200,000 initial cost for the provision of CBT software and the development of 1-2 hours of material for FSH's application. Actual costs will depend upon the complexity of the training required and hours of curriculum. On-going changes to the CBT course can be done by FSH staff or contracted from IBM as needs arise.
- IBM's information security consultancy practice has estimated \$50,000 to develop a corporate information security policy for FSH internal use and review with its stakeholders and customers.

## **Summary of Estimated Fees**

### **1. Server Management Services**

Estimated fees – Initial configuration – \$1.5 million per year

Estimated fees - High Availability configuration - \$3.5 million per year

### **2. On-going Application Development and Maintenance**

Estimated annual fees - \$500,000 per year

### **3. Single Point of Contact Help Desk**

Transition - \$150,000

Calendar year 1 - \$325,000

Estimated annual fees at 1,000 calls per month - \$300,000

Annual fees at 3,000 calls per month - \$850,000

### **4. IT operations, support and training**

Estimated CBT Training development fees - \$150,000 - \$200,000

Estimated Security Policy development - \$50,000

## **Attachment A - FSH Server Management Solution Summary**

### **In Scope Services**

In response to your request for IBM to estimate our fees for managing FSH's servers, we have based our estimated fees upon the following included services:

- { Managed Operations for the servers located at a secure, hardened IBM site
- { 7 x 24 Technical Support
- { 7 x 24 Availability and Security Monitoring of the Network, Hardware, OS, and application
- { Daily Incremental Backups of the FSH Servers
- { Level 2 Help Desk for questions related to the hardware, system software and specialized management tools IBM utilizes
- { System Management Controls, disciplines and reports
- { Server hardware, software and related maintenance expenses are included in the estimated fees.

IBM's server management services estimates are based upon deploying the hardware and network solutions described below. These server configurations are speculative and based upon the conceptual server architecture that has been developed by IBM's design team.

### **Initial Configuration**

- The equivalent of 1 T-1 of bandwidth on our bank of OC-3s to the Internet
- 2 – Nokia FireWalls Model 440 with VPN Option
- 2 – Cisco 6506 Switch
- 2 – Dispatchers RS/6000 Model 43P, 1 processor, 256MB of memory
- 2 - Web Server RS/6000 Model 44P, 1 processor, 512 MB of memory
- 2 – Nokia FireWalls Model 440
- 1 – Application Server RS/6000 Model 44P, 1 processor, 512 MB of memory
- 1 – File Transfer Server Staging RS/6000 Model 44P, 1 processor, 512 MB of memory
- 1 – File Transfer/e-mail Server Processing RS/6000 Model 44P, 1 processor, 512 MB of memory
- 1 – DB2 Servers RS/6000 Model 44P, 1 processors, 1 GB of memory
- 2 – DB2 High Availability Servers pSeries 660 Model 6H1, 4 processors, 4 GB of memory
- 500 GB of Disk with backup
- 2 – Nokia FireWalls Model 440
- 1 – Accounting Server Model 44P, 1 processor, 512 MB of memory
- 5 – RS/6000 44P Servers for Staging, Test & Maintenance

1 – Backend connection of a T-1 with 512K CIR

### **High Volume Configuration**

The equivalent of 2 T-1s of bandwidth on our bank of OC-3s to the Internet

2 – Nokia FireWalls Model 440 with VPN Option

2 – Cisco 6509 Switch

2 – Dispatchers RS/6000 Model 43P, 1 processor, 256MB of memory

6 - Web Servers RS/6000 Model 44P, 1 processor, 512 MB of memory

2 – Nokia FireWalls Model 440

2 – Application High Availability Servers RS/6000 Model p660, 6 processors, 6 GB of memory

1 – File Transfer Servers Staging RS/6000 Model 44P, 1 processor, 512 MB of memory

1 – File Transfer Servers Processing RS/6000 Model 44P, 1 processor, 512 MB of memory

2 – DB2 Servers RS/6000 Model 44P, 2 processors, 1 GB of memory

2 – AFS High Availability Server RS/6000 Model 44P, 2 processors, 1 GB of memory

1 – E-Mail Server Netfinity 5100, 2 processors, 512 MB of memory

2 – DB2 High Availability Servers RS/6000 Model M80, 8 processors, 16 GB of memory

1 - Shark Storage 840 GB of Disk

1 - LTO Tape Library 4 TB Backup with Tivoli Storage Manager

2 – Nokia FireWalls Model 440

1 – Accounting Server AS/400

8 – RS/6000 44P Servers for Staging, Test & Maintenance

1 – Backend connection of a T-1 with 512K CIR

## **Attachment B – Services excluded from the IBM’s Managed Services**

Those responsibilities that are not identified within IBM’s scope of responsibilities are assumed to be supported by FSH are listed below. In the next stage of our discussions, we would expect to review FSH and IBM responsibilities in detail and draw clear understandings of those activities that will be maintained as FSH’s operating and financial responsibility. The list below generally highlights some the excluded activities, but is not meant to be all-inclusive.

- 1) Identification and documentation of FSH business Requirements
- 2) All communication with PTIs and AIOs except for training and technical problem resolution.
- 3) Procurement, installation and maintenance of FSH office LAN hardware, software and cable plant.
- 4) Network expenses for any backend communication to the FSH server complex at IBM’s Service Delivery Center in addition to the single 512 CIR connection identified.
- 5) Print operations and distribution other than identified on-site technical support
- 6) Other than the identified hardware and software capital and maintenance expenses (including financial applications, e-mail, desktop software, office servers and PCs, etc.)
- 7) Other than identified assets & 3rd party Contract Financials, including third party application software
- 8) Microfiche/CD-ROM Media
- 9) EDI Support
- 10) MasterCard operations support
- 11) FSH administration processes such as billing, accounts receivable processing. etc
- 12) Data/Voice Communication for FSH’s facilities
- 13) Facilities and related expenses for IBM staff located at FSH’s site
- 14) Cost of Living
- 15) Taxes, Travel, Transportation & Loaner Equipment
- 16) Disaster Recovery in Start-up configuration
- 17) LAN and WAN services other than that included in IBM’s server management services
- 18) Application software support for other than for the FSH custom application

## **Attachment C - Overview of IBM Global Services Approach**

### ***IBM Service Delivery Data Centers***

Controlling escalating information management costs is a key concern for our clients. To this end, IBM Global Services has made significant investments in its Service Delivery Centers. IBM has consolidated operations and equipped its centers with the latest in technology. These investments are aimed at providing superior service for our clients while maximizing efficiency. The Service Delivery Centers are classified as hardened sites, and are designed with uninterruptible power supply (UPS), dual water feeds, and dual power feeds from Public Service. They are equipped with multiple service providers to support the network. The Service Delivery Centers have in-depth skill and experience supporting a wide range of multi-vendor processors. In the event of a disaster, each site implements a comprehensive and detailed Business Recovery Plan. The plan identifies alternative recovery locations for internal systems, specifies staff relocation and placement strategies, and identifies alternatives and priorities for restoring the disaster site. In the event that IBM Global Services clients are affected by the disaster, the client's business recovery plan is implemented. At a minimum of once per year, the Service Delivery site business recovery plans are reviewed and audited for completeness, currency, and accuracy.

### **Security of Data and Systems**

IBM Global Services maintains a highly secure environment required for systems, data, and client proprietary materials. IBM Global Services determines the business policies that will govern data access for both client and IBM Global Services employees.

IBM Global Services' responsibilities, for data and systems in the scope of services, are to:

- Manage physical IBM Global Services Service Delivery Center security
- Install and maintain data access control software
- Implement and maintain safeguards to deter and prevent intentional or accidental security violations by IBM Global Services or your employees
- Accept responsibility for system data sets, libraries, and facilities (IBM Global Services personnel need access to this data as required to perform their jobs)
- Protect and secure client media, following the appropriate procedures for media receipt, transfer, disposal, storage, and retention
- Comply with your data and site security requirements
- Conduct scheduled reviews of the physical and electronic access logs for unusual access occurrences or unsuccessful attempts, and perform follow-up activities when necessary
- Continually review the security policies and procedures for effectiveness and recommend improvements
- Perform reviews of the IBM Global Services Computer Security Services (CSS) environment
- Keep abreast of the latest data access control concepts and techniques and share them with you
- Assist and work with you within the established data protection guidelines
- Administer IBM Global Services employee data access, with your approval and under our mutual security policies (you retain responsibility for your employee user policy and administration of all data access security).

To support these responsibilities, IBM Global Services establishes Information Asset Security (IAS) procedures. As appropriate, these procedures also apply to desktop and LAN environments. IBM Global Services monitors system security for compliance with IBM Global Services IAS guidelines. IBM Global Services' IAS responsibilities include:

- Monitoring and auditing the implementation of IAS procedures and practices
- Conducting a continuing IBM Global Services IAS awareness program and supporting it with management and employee education
- Identifying exposures and coordinating implementation of corrective action plans or risk acceptances, as appropriate
- Maintaining proper security controls by conducting active security checks and auditing programs for physical and intellectual assets
- Maintaining records to demonstrate compliance with policies, corporate instructions, and local practices
- Helping IBM Global Services management to comply with IAS procedures and practices.

### **Security Audit Practices**

IBM Global Services will work with you to implement Security Audit Practices that establish the information asset security requirements by classifying and protecting assets, either machine or hand-generated, that are owned by both parties.

### **User ID Registration Support**

To support the data security practices, IBM Global Services establishes a user ID administrator, who is a member of your staff. The user ID administrator supplies your and IBM Global Services' personnel with user IDs based on business needs and management approval and revalidates users each year to confirm a continuing business need. IBM Global Services provides your user ID administrator with the necessary system access and complies with your security standards. The user ID administrator's responsibilities include:

- Verifying that users are still employees, with your assistance
- Assigning unique user IDs to contractors and supplemental employees
- Deleting user IDs that have been inactive for a specified period of time
- Following a strict process for resetting passwords
- Developing and maintaining documentation that explains the user ID administrator's duties.

### **Audits**

Excellence in all we do is a primary objective for IBM Global Services. Periodic audits help us monitor progress toward this goal and tell us where we can improve our processes. IBM Global Services conduct audits and supports client-initiated audits.

IBM Global Services Business Control Reviews: IBM Global Services Business Controls performs periodic audits of each IBM Global Services data processing facility and outsourcing contract.

These reviews can cover a subset of the client resources in the Service Delivery Center and can include:

- Accounts payable
- Billing

- Contract management
- Financial reconciliation
- Information asset security
- Property and physical asset management
- Purchasing
- System Management Controls (Service Level Management, Problem Management, Change Management, Performance Management, Capacity Management, Recovery Management, Batch Management, On-line Management)
- Miscellaneous areas (inter-enterprise connectivity (IEC), operational and administrative support).

Data Center Level Reviews and Departmental Self Assessments: IBM Global Services reviews each Service Delivery Center's level of audit readiness on an ongoing basis. Local management conducts these functional and departmental reviews. In addition to these reviews, each process support area (such as Problem Management or Disaster Recovery) performs a semiannual self-assessment. IBM Global Services has been ISO9001 certified since 1994; this commitment to high quality continues with our biannual rectification as an ISO 9001-compliant organization. Client Audits: IBM Global Services will assist the customer in meeting audit and regulatory requirements, including providing access to the data center to enable the customer's auditors and examiners to conduct appropriate audits and examinations of the operations of IBM Global Services relating to the performance of the contracted services.

### **Staffing and Support**

A key member of the IBM Global Services delivery team working for each client is the Project Executive, who works directly with the client representative. The Project Executive, selected for his or her proven track record in client satisfaction and complex project management, is ultimately responsible for contract management, client relations, project management, and account management. The Project Executive resolves all issues, problems, concerns, or questions with the assistance of the Account Manager.

The Account Manager is responsible for Service Level management, account plans, project management, System Management Controls, Project Executive-client satisfaction, business controls, and issue management. The Account Manager works directly with the personnel who support various functions within the Information Systems environment, including help desk, operations, system support, and the network. These experienced personnel have an in-depth knowledge of the client's operating environment and industry applications.

IBM Global Services Service Delivery Data Centers has invested in skilled personnel and the latest in automated tools to provide round-the-clock support for our clients' operating environments. We have network operations; help desk staff, and situation managers available 24 hours a day, 7 days a week, 365 days a year. Situation managers perform a key tactical role in managing change and delivery, coordinating resources, and driving critical problems through to resolution. To support this staff, IBM Global Services uses the latest in automation to control computer operations and network management. Primary support personnel carry beepers that alert them to any system deviations that could impact the delivery of the client's operational environment. IBM Global Services is committed to providing the most responsive service possible.

IBM Global Services continues to focus on the skills and talents of its employees as it strives for continuous improvement in service and quality. Education and development plans are formulated and reviewed annually, with particular emphasis on acquiring industry-specific expertise. In addition, IBM Global Services' professionals frequently attend conferences and seminars to maintain an awareness of technical advances and state-of-the-art industry information. This information is shared and discussed with their peers. Through the implementation of an "ideas"

program, IBM Global Services also encourages employees to bring forward their ideas to cut costs and increase overall productivity. If ideas are implemented, the employees are eligible for recognition commensurate with the significance of their ideas. All of these efforts reflect IBM Global Services' commitment to Total Quality Management. IBM Global Services employees are focused on continuous improvement in the service they provide, with client satisfaction their number one priority.

### **Standardization Procedures and Documented Processes**

IBM Global Services Service Delivery Data Centers apply standard business processes such as Systems Management Control, Information Asset Security, Application Development and Maintenance, and Total Quality Management to the management of client environments. These processes help us stay abreast of today's rapidly advancing technologies and apply these advances to the clients' environments.

Some of IBM Global Services' standardized procedures and processes are illustrated in the following topics.

#### **Automation**

Increased systems availability and reduced overall data processing costs benefits both IBM Global Services and its customers. To address this challenge, Service Delivery Data Centers has a team that focuses on developing, maintaining, analyzing, and/or implementing any and all programs, tools, procedures, and processes.

This focus includes installation and customization of automated systems and network solutions to support multiple hardware and operating system platforms, multi-protocol networks, and a more productive and efficient command center, from which we can monitor and control our entire enterprise. Automation has allowed IBM Global Services Service Delivery Data Centers to provide our customers with state-of-the-art support for all their information technology needs.

#### **Help Desk (Customer Service Center - CSC)**

IBM Global Services provides Customer Service Center support staffed by experienced personnel who have in-depth knowledge of the client's operating environment. IBM Global Services personnel, including systems programmers, are available to the client on a 24 hour basis.

Service Delivery Data Centers Customer Service Center uses an interactive database tool to gain fast access to client support information. Documentation on each client's systems is added to the database, including support and recovery instructions. All problems reported to the Level 2 Help Desk are tracked through to satisfactory resolution by the problem management process. IBM Global Services and the client define measures of service levels for the Help Desk and IBM Global Services provides regular reporting on these measures.

#### **System Management Control Disciplines**

IBM Global Services has developed a set of disciplines or best practices known as Systems Management Controls that enables us to plan, organize, measure, and control the service delivery environments. We have leveraged the insight gained from over 30 years of experience working with customers around the world to develop a structured methodology that provides the design and execution architecture for implementing solutions. Our time-tested set of disciplines and tools offer maximum flexibility in implementation, while helping you maintain control of your day-to-day business. Through this series of processes and techniques, we can achieve improved quality assurance and productivity. Our ultimate objective is to administer a level of service that meets or exceeds your current service. Regardless of function, our service delivery will be guided by these six disciplines:

1. Service level management
2. Problem management

3. Change management
4. Recovery management
5. Performance management
6. Capacity management

A brief description of each process is as follows:

**Service Level Management** is the process of negotiating and defining the levels of user service (service levels) required by our customers. Service level management is the foundation on which delivery systems management is built. FSH and IBM Global Services arrive at specific objectives together first; then over a short period of time these objectives are documented and supported by a series of reports. Under the Service Level Management process, IBM Global Services will provide the following functions:

- a. Develop and document service level standards
- b. Write and maintain service level objectives
- c. Provide a process for measuring service levels
- d. Report quarterly service level statistics

**Problem Management** is the process of effectively managing any problems that impact the delivery of system service. In the IBM Global Services environment, this includes resolving problems, recognizing recurring problems, addressing procedures and containing or reducing the impact and number of problems. IBM Global Services will define and maintain problem management procedures in a written document that will be provided to FSH and will manage all problems in accordance with such procedures. IBM will:

- a. Record problems associated with the delivery of the services
- b. Report the problems status to the End User (FSH Level 1 Help Desk)
- c. Track problems to resolution
- d. Gain FSH's concurrence with problem resolution and closure
- e. Provide trend analysis and develop action plans to resolve problems
- f. Review problem summary reports quarterly

**Change Management** is a consistent method for installing changes so your systems run efficiently, and any possible negative impact of changes is minimized. IBM Global Services will define and maintain change management procedures for installing, de-installing, and changing hardware and system software on the standard configuration. IBM will manage all changes of such hardware and systems software materially affecting FSH's operations in accordance with such procedures. IBM will:

- a. Notify FSH of changes prior to implementation
- b. Provide change requirements for systems software and infrastructure
- c. Promote changes to production
- d. Conduct quarterly change management meetings
- e. Report on change success and failure quarterly
- f. Follow up and resolve identified problems areas

**Recovery Management** allows information management personnel to implement recovery procedures, and restore service. IBM Global Services will coordinate with FSH using the IBM standard backup process to provide recovery capability for the Standard Configuration. In the event that:

a. FSH has RAID or mirroring implemented, IBM will use standard system recovery processes to recover the system should a system or disk failure occurs.

b. FSH does not have RAID or mirroring implemented or FSH removes such systems, IBM will assist FSH's in recovery of the system and restore applications to the last valid backup for an additional charge. IBM will advise FSH of the charge associated with this service and will request FSH's approval prior to performing the service.

**Performance Management** is an ongoing process of planning, defining, measuring, analyzing, reporting, and tuning the performance of resources including hardware, operating systems, applications, and services. Under this process, IBM will restrict its focus to include only server availability and utilization measurements and reports. IBM will:

a. Provide a process for measuring server availability and utilization for the hardware and systems software

b. Report quarterly server availability and utilization measurements including measurements of processor, memory, and disk resources.

c. Review server availability and utilization measurements at quarterly meetings

**Capacity Management** works to determine the future system capacity needed to satisfy requirements, as documented in the Service Level objectives, cost-effectively. IBM will:

a. Collect and report historical workload data

b. Solicit inputs from FSH regarding current and future capacity needs

c. Document capacity projections for all resources (processor, disk, tape, print) needed to achieve the required service levels.

d. Monitor capacity of the system and recommend solutions

e. Maintain records of projected and actual processor utilization as an historical record

**Attachment D – Universal Server Farm Base Services**



**Universal Server Farm (USF)  
Base Services**

*IBM Global Services  
Managed Web Services*

April 27, 2000  
Version 1.0b

---

## Table of Contents

<b>Overview .....</b>	<b>20</b>
Summary services scope .....	20
Business matters .....	21
<b>Hosting environment .....</b>	<b>22</b>
Hardened facilities .....	22
Universal Server Farm .....	23
Switches and firewalls.....	23
<b>Customer server configurations .....</b>	<b>24</b>
Server types .....	24
Server sizing .....	24
Local load balancing .....	24
Geographic load balancing .....	24
Security considerations.....	24
<b>Operations and Services .....</b>	<b>25</b>
Hardware.....	25
Software installation.....	25
Physical DBA .....	25
Domain Name System (DNS).....	25
Availability .....	25
Customer care.....	26
Server monitoring.....	26
Change management .....	26
Disk backups.....	26
Security monitoring and response .....	27
Reporting.....	27
<b>Network Services.....</b>	<b>27</b>
Internet connectivity .....	27
Private back-end connectivity .....	27

---

## Table of Revisions

4/24/2000      Version 1.0a

FSH and IBM Confidential

## **Overview**

This document provides an overview of the “base services” that IBM provides to Managed Web Services customers.

The purpose of this document is to serve as a starting point from which the customer and IBM can discuss the customer’s requirements in relation to IBM’s environment and services.

The IBM services described in this document are those delivered by the IBM Managed Web Services delivery organization. (IBM can provide a full range of Web services, including consulting and application development, but such services are outside the scope of this document.)

Any services not listed in this document are not included in the cost of the services. Additional services are available at addition cost.

## **Summary services scope**

The IBM Managed Web Services delivery organization provides and manages the “hosting platform,” including:

- The hosting facility
- All infrastructure hardware and related operations
- All customer-specific hardware
- Operating system on customer servers
- HTTP daemons on customer servers (such as Netscape Enterprise Server)
- Utilities
- 7x24x365 server monitoring, including security monitoring
- Firewalls
- Disk backups to tape
- Internet bandwidth management and availability
- End-to-end management of private connectivity
- Change management for all aspects of the hosting platform
- Initial installation of software (such as database software) requiring root/admin access

The customer (or an authorized agent of the customer) manages all customer-specific functions, including:

- Customer content (such as HTML files and image files)
- Customer-supplied “middleware” (enabling software), utilities, and database software
- Customer applications (such as scripts and programs)

- Customer databases

For customer-specific functions, the customer retains control and responsibility for:

- Initial installation
- Change management (acceptance, scheduling, staging, and promotion to production)
- Monitoring of applications
- Application reporting
- Logical DBA
- Ongoing problem determination and corrective maintenance
- Any commercial software maintenance costs, fees, subscriptions, and renewals

### ***Business matters***

The following bullets highlight key business considerations of which the customer should be aware:

- The customer retains all application and content management, including the initial application installation and all ongoing problem determination and corrective maintenance, promote to production, etc.
- The customer retains any commercial software maintenance costs, fees, subscriptions, and renewals for customer-provided software.
- The solution does not contain any processing resources other than those specifically stated and identified. Additional processing resources required for any increased traffic, activity, or "events" will be provided by IBM (with reasonable lead-time) for additional costs.
- This solution does not contain any disaster recovery subscription or services.
- No end user support is included in this solution (call center, end user id administration, registration, 800 number contact, etc.)
- The customer agrees to all IBM "required" security policies for the Universal Server Farm and residence of the customer's workload(s) therein.
- Any IBM "recommended" security policies that the customer does not or cannot comply with will be documented, and risk abeyance signoff by the customer will be required.
- If the IBM solution is selected by the customer, the customer will participate in the "Technical Review Meeting" which IBM will facilitate (either in person or by phone) where certain implementation data and planning is performed. Any changes to the solution or additional services

the customer desires may generate different costs of delivery and hence a different price. Any such changes that are identified will be fully documented and reviewed with the customer for the customer's understanding and acceptance.

### **Hosting environment**

IBM provides Web hosting for mission-critical e-business sites through IBM's Universal Server Farm (USF) facilities. The USF is designed to be reliable through hardened sites with redundant Internet connectivity, multiple power sources, and secure physical access.

The two key elements of the USF are:

- Physical implementation of cabling, power, racking, and floor layout. The USF uses standardized racks, standardized shelving, and color-coded connections.
- Logical implementation of network connectivity, server connections, and network and systems management functions.

### **Hardened facilities**

IBM Managed Web Services are provided from reliable and secure USF facilities, currently located in:

- Boulder, CO
- Raleigh (Research Triangle Park), NC
- Southbury, CT
- St. Louis, MO
- Toronto, Canada
- Ehningen, Germany
- Mitaka Tokyo, Japan

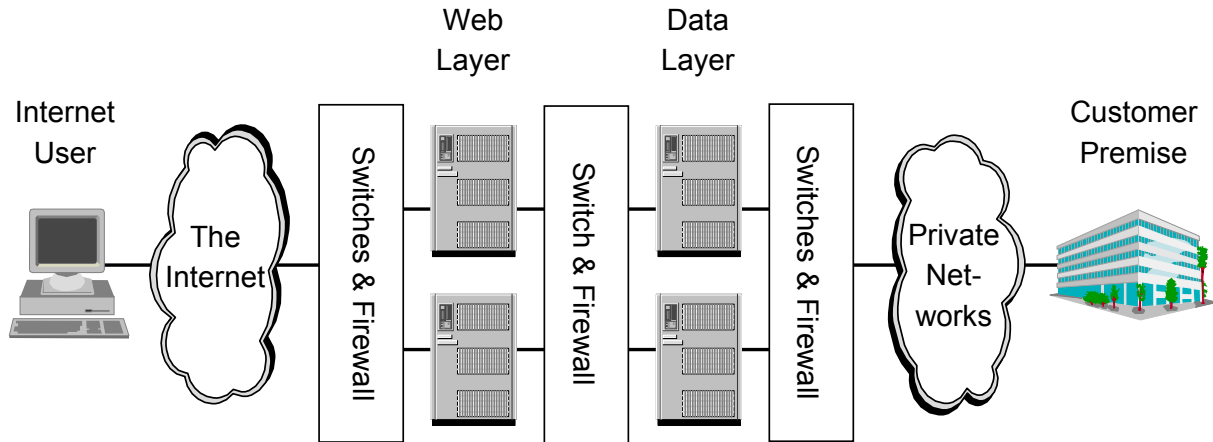
### **Physical Security**

Each USF facility controls access using photo-ID badges, key locks, and security card reader systems. Access to every area of the building must be authorized before entry is permitted. In the USF's restricted access spaces, such as critical equipment areas, only individuals with special access privileges may gain access.

Video cameras monitor and record all traffic entering and exiting the facilities. Critical system area doors employ built-in alarm systems monitored by IBM security. Video cameras supplement an onsite security staff that is on duty 24 hours a day, 7 days a week to oversee access to the USF facilities. For non-IBM employees, security guards employ strict sign-in procedures and ensure visitors are accompanied for the entire duration of their facility visit. IBM maintains detailed records of facility access by authorized personnel, as well as visitors and maintenance vendors.

## Universal Server Farm

Diagram 1 shows a highly simplified view of IBM's Universal Server Farm (USF) architecture.



**Diagram 1. Overview of USF layers and connectivity**

### Web Layer

The Web Layer is for any servers that need to be accessed from the Internet. Web (HTTP) servers and load balancing servers run in the Web Layer. Other types of servers that can be run in the Web Layer include:

- Database servers, if the database needs to be accessed or updated directly from the Internet, rather than from a server within the USF or over a private, back-end connection.
- Application or transaction servers, but only if such servers must have direct Internet connectivity (such as media servers).
- SMTP mail servers, typically used for outbound mail only.

### Data Layer

There is no direct access from the Internet to the Data Layer, so the Data Layer is inherently more secure than the Web Layer. Database servers, application servers, and transaction servers typically run in the Data Layer, unless direct Internet access is required.

## Switches and firewalls

The USF architecture is designed for security through multiple layers with switches and firewalls between layers. Virtual LAN (VLAN) technology allows secure logical separation of customers.

The USF infrastructure includes Checkpoint Firewall-1 between:

- The Internet and the Web Layer
- The Web Layer and the Data Layer
- The Data Layer and private connectivity

Firewall rules are set to allow no traffic except that which is absolutely necessary to the operation of the customer site. IBM works with the customer to determine the appropriate rules.

### **Customer server configurations**

IBM works with the customer to determine a hosting configuration that supports the customer's application architecture.

### **Server types**

Current hardware and operating systems supported:

- IBM RS/6000 servers for AIX
- IBM Netfinity servers for Microsoft Windows NT
- Sun servers for Sun Solaris

### **Server sizing**

One of the biggest challenges in designing a hosting solution is to select the proper quantity and model of servers for each category of servers (Web, application, database, other). Ideally, server sizing is calculated by using actual performance metrics determined through testing in combination with carefully considered volume projections and usage patterns. IBM can assist with server sizing, but the accuracy of the sizing can only be as good as the quality of the metrics and projections.

Applications should be scalable. It should be established whether the application is scalable horizontally (across servers) or vertically (taking advantage of larger servers and more processors) -- or ideally both. The scalability of the application must be taken into account when designing the server architecture.

### **Local load balancing**

Optional: Many customer configurations use a pair of AIX servers running IBM SecureWay Network Dispatcher for load balancing (or Cisco Local Director).

### **Geographic load balancing**

Optional: For customer sites that will run in more than one USF, IBM Global Services provides geographic load balancing through the use of the Site Selector service, using IBM's SLMDNS (Smart Load Monitoring Domain Name Server).

### **Security considerations**

Some traffic flows are not allowed (and others are strongly discouraged) in the USF due to security considerations.

Although IBM's actual USF Security Practices and Policies are substantially more detailed, major security considerations are:

- Only Web servers, outbound SMTP servers and other servers that must have direct Internet connectivity should run in the Web Layer.

- Any servers initiating traffic over the back-end connectivity should run in the Data Layer.
- Database servers and application servers should be accessed from servers in the Web Layer (typically Web servers), not directly from the Internet.
- Customer site management should be handled over secure back-end connectivity. If the customer must do site management over the Internet, plain FTP and Telnet are not allowed; instead, the customer should use software that allows all traffic (including passwords) to be encrypted. Examples include SSh for AIX and Solaris, or Carbon Copy 32 for Windows NT.

IBM retains Root access for AIX and Solaris and Administrator access for Microsoft Windows.

### **Operations and Services**

#### ***Hardware***

IBM retains ownership and control of all hardware within the Web hosting environment. IBM maintains hardware maintenance contracts for infrastructure hardware and customer-specific hardware.

#### ***Software installation***

IBM installs and maintains platform level software.

IBM performs up to 8 hours of installation service for customer-provided software such as database software or “middleware”

#### ***Physical DBA***

Optional: IBM can provide physical data base administrator (DBA) functions:

- Database setup: storage layout, initialization parameters, testing, backup and recovery
- Database maintenance: physical database structure, database system security, backup, reorgs, object exports/imports, software upgrades
- Database problem determination and resolution

#### ***Domain Name System (DNS)***

IBM provides primary and secondary DNS for the domain name associated with the customer’s Web site.

The customer is responsible for initial and ongoing payment of the domain name registration fee, directly with the issuing authority.

#### ***Availability***

IBM strives to make the Web Hosting Environment available for access by Internet users and the customer’s authorized representatives or agents 24 hours per day, each day of the

year, except during periods of scheduled maintenance. Currently, IBM's scheduled maintenance for the Web Hosting Environment is Sunday between 1:00 a.m. and 3:00 a.m. Eastern time each week and the scheduled maintenance for network access to the Web Hosting Environment is Sunday between 3:15 a.m. and 4:45 a.m. Eastern time each week (subject to change).

IBM's availability objective for the Web Hosting Environment is less than four hours per calendar month of downtime, subject to specific exclusions.

### ***Customer care***

The base service includes 24x7x365 help desk service, provided by IBM's Customer Care organization, a multilevel support organization.

Three customer-designated individuals are authorized to call Customer Care.

The customer is responsible for any end-user customer care.

### ***Server monitoring***

IBM monitors the server environment continuously with our Tivoli suite of industry-leading monitoring tools. This monitoring includes processor utilization, swap space utilization, file system full, and availability. Alerts for action by IBM's help desk are generated when mutually agreed upon thresholds are exceeded.

IBM makes commercially reasonable efforts to verify that the Web Hosting Environment is operational and available to users of the Internet, to identify any problems that occur, and to take corrective action.

The customer is responsible for customer application monitoring.

### ***Change management***

IBM is responsible for change management (including coordination with the customer) of platform level software only.

The customer is responsible for change management of all other content (HTML, images, middleware, CGI applications, and anything else that is above the platform level).

### ***Disk backups***

The base service includes backup and the ability to restore up to 20 GB of data per server using a shared Tivoli Storage Manager (TSM) infrastructure.

The base service for backup provides:

- Flat files only
- Daily incremental backup of all servers during a nightly backup window starts at 7:00 p.m. and ends at 7:00 a.m. local time
- Retention of up to 7 versions of database backup (flat file)
- Retention of up to 3 versions of non-database changed files
- Retention of 1 version of any file deleted from client
- Retention of extra versions (retain inactive versions) for 60 days

- Retention of the final version of a file deleted from the client for 90 days

The base service for backup assumes:

- 10% daily change rate and 20% data/storage growth per year for non-DB servers
- All databases reside on file systems (e.g., UFS, JFS)

The purpose of disk backups is to allow recovery to the most recent backup -- not to provide archival storage, legal storage, or reversion to a specific date.

The customer should have an application recovery plan for use in the event of file restoration from backup tapes. The customer or their designated DBA is responsible for setting up processes that allow successful backup and restore of databases (including to backup database to a flat file or shutdown while being backed up).

### ***Security monitoring and response***

Through IBM's Advanced Security Event Response Team (ASERT), IBM performs intrusion monitoring. IBM will make immediate commercially reasonable attempts to notify the customer's designated representatives if we detect an intrusion.

### ***Reporting***

IBM provides the customer with access to server log files which the customer can use for analysis.

IBM collects, analyzes and reports on resource utilization levels for each server.

IBM makes utilization level reports available to customers through secured IBM Web sites.

Optional: IBM monitors and analyzes Web site activity and makes the results available on a secure Web site.

### **Network Services**

#### ***Internet connectivity***

Each USF is connected to the Internet through multiple, redundant, high-bandwidth (DS3 or OC3) connections. IBM typically measures and charges for bandwidth in multiples that are each equivalent to a T1 circuit (1.544 Mbps).

The base service assumption is typically one T1 for each Web server.

#### ***Private back-end connectivity***

Optional: Most Managed Web Services customers require private connectivity from their servers in the USF to their own premise for content management, real-time transaction processing, or both.

For back-end connectivity, there are ten base services options. All of these configurations are for fully managed, IP only, frame relay circuits, with co-located MAC (in-house wiring) at the USF end and LEC (local exchange carrier) MAC at the customer end, with connection to customer's 10 Mbps Ethernet or 16 Mbps Token-Ring. The connectivity is provided by IBM's preferred network supplier, AT&T Global Network Services.

1. 512 Kbps media access control (MAC), 256 Kbps committed information rate (CIR), dedicated Cisco 250x router at USF, Cisco 250x router at customer site
2. 512 Kbps media access control (MAC), 256 Kbps CIR, dedicated Cisco 250x router at USF, Cisco 250x router at customer site, 128 Kbps ISDN backup
3. T1 MAC, 256 Kbps CIR, dedicated Cisco 250x router at USF, Cisco 250x router at customer site
4. T1 MAC, 256 Kbps CIR, dedicated Cisco 250x router at USF, Cisco 250x router at customer site, 128 Kbps ISDN backup
5. T1 MAC, 512 Kbps CIR, dedicated Cisco 250x router at USF, Cisco 250x router at customer site (This is the default option if no other option is chosen.)
6. T1 MAC, 512 Kbps CIR, dedicated Cisco 250x router at USF, Cisco 250x router at customer site, 256 Kbps ISDN backup
7. T1 MAC, 768 Kbps CIR, dedicated Cisco 250x router at USF, Cisco 250x router at customer site
8. T1 MAC, 768 Kbps CIR, dedicated Cisco 250x router at USF, Cisco 250x router at customer site, 512 Kbps ISDN backup
9. Dual, redundant T1 MACs, 512 Kbps CIR, two dedicated Cisco 250x routers at USF, two Cisco 250x routers at customer site, Hot Standby Routing Protocol (HSRP)
10. Dual, redundant T1 MACs, 768 Kbps CIR, two dedicated Cisco 250x routers at USF, two Cisco 250x routers at customer site, HSRP

The following technical assumptions apply to the ten options:

- Customer IP addresses are NIC registered
- Traffic is bi-directional
- Encryption hardware is not required
- Network Address Translation (NAT) is not required
- There are no special security requirements

The following general assumptions apply to the ten options:

- Solution applies within the US only (no international connectivity).
- The Web Hosting site is the IBM USF in the US
- Customer supplies POTS line for router management/troubleshooting.
- Customer provides floor space, power, lighting, and rack space for AT&T equipment.
- Customer provides appropriate vendors access to install customer premise equipment.
- Maintenance costs for all new equipment purchased are included and are as follows:

7x24x4 hour on-site commit for Cisco equipment

7x24x4 hour on-site commit for Lucent equipment  
Standard AT&T maintenance on AT&T equipment

- 7x24 Help Desk is included.
- The solution includes all hardware and circuit management.
- Standard utilization, latency, package delivery and availability reports are provided via a web site.
- The solution is covered by standard AT&T service level objective (SLO), 99.0%.
- Inside wire charges from the carrier are not included, and will be paid for by the customer.

When none of the ten options meets a customer's needs, IBM can provide custom frame relay and dedicated circuit solutions. Custom options include other CIRs, greater-than-T1 MACs, other protocols, network address translation (NAT), hardware encryption, ISDN backup, 100BaseT at customer premise, additional endpoints, and international endpoints.